TOWN OF CUTLER BAY

PUBLIC WORKS DEPARTMENT INVITATION TO BID ITB No. 23-10

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

Joint Participation Agreement with Miami-Dade County

BID DUE DATE & TIME
Thursday, February 29, 2024, at 3:00 PM

MANDATORY "PRE-BID" MEETING DATE & TIME
Tuesday, January 23, 2024, at 10:00 AM

Small Business Enterprise - Construction (SBE-Con):
13.11% SBE-Con Goal
Small Business Enterprise - Services (SBE-Services):
4.00% SBE-Service Goal

TOWN OF CUTLER BAY
INVITATION TO BID
FRANJO ROAD ROADWAY IMPROVEMENTS
PROJECT ITB No. 23-10

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TOWN OF CUTLER BAY
INVITATION TO BID
FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT
ITB No. 23-10

The Town of Cutler Bay is requesting bids from qualified proposers to provide construction services for drainage improvements for the **FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT** as per plans and specifications for the Town of Cutler Bay. **Interested proposers should visit the Town's website at www.cutlerbay-fl.gov to obtain the Invitation to Bid package. Bid Packages may also be picked up during normal business hours at the office of the Town Clerk, Mauricio Melinu, CMC., located at:**

Town of Cutler Bay
10720 Caribbean Blvd., Suite 105
Cutler Bay, FL 33189

Sealed submittals including one (1) original and three (3) bound paper copies of the submittal, and one (1) readable/reproducible flash drive completely duplicating the original proposal of the submittals must be received **no later Thursday, February 29, 2024 at 3:00 PM** and be clearly marked on the outside, **"ITB No. 23-10 FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT", by Mauricio Melinu, CMC., Town Clerk, Town of Cutler Bay, 10720 Caribbean Blvd., Suite 105, Cutler Bay, Florida, 33189.** Late submittals and electronic submittals will **not** be accepted.

A MANDATORY "Pre-Bid" Meeting will be held on Tuesday, January 23, 2024, at 10:00 AM in the Town Hall Council Chambers, 10720 Caribbean Blvd., Suite No. 115, Cutler Bay, Florida 33189.

Pursuant to Town Code Chapter 24, Article II, Section 24-228 of the Town Charter, public notice is hereby given that a "Cone of Silence" is imposed concerning the Town's competitive purchasing process, which generally prohibits communications concerning the ITB from the time of advertisement of the ITB until such time as the Town Manager makes a written recommendation to the Town Council concerning the competitive purchase transaction. Please see the detailed specifications for the public solicitation for services for a statement fully disclosing the requirements of the "Cone of Silence".

This project is being funded by Miami Dade County under a Joint Participation Agreement with the Town of Cutler Bay. Bidders must be registered vendors with Miami-Dade County at the time the bids are submitted. This project has a 13.11% Small Business Enterprise - Construction (SBE-Con) goal, 4% Small Business Enterprise - Services (SBE-Services) goal, and Miami-Dade County Responsible Wages and Benefits will be applicable.

Pursuant to Section 4-19 of the Town Code; Section 7.6 of the Town Charter, vendors of the Town are required to disclose any campaign contributions to the Town Clerk, and each vendor must do so prior to and as a condition of the award of any Town contract to the vendor. Please see the detailed specifications of this solicitation for further details.

Women/Minority Owned and Emerging Small Businesses are invited to submit bids on this project.

The Town of Cutler Bay reserves the right to accept or reject any and/or all bids or parts of bid. Rafael G. Casals, ICMA-CM, CFM
Town Manager

Small Business Development Division

Project Worksheet

Project/Contract Title:	**Franjo Road Improvements from SW 184 Street to Old Cutler Road**	**Received Date:**	**10/21/2019**
Project/Contract No:	**20190519 (BUILD)**	**Funding Source:**	**Road Impact Fees**
Department:	**Transportation and Public Works**		
Estimated Cost of Project/Bid:	**$8,347,372.32**		
Description of Project/Bid:	**The project consists of widening Franjo Road from Old Cutler Road to SW 184 Street from two (2) to three (3) lanes. The project includes a center turn lane, curb and gutters, shared use path, storm drainage system, pavement markings and signage, signalization, and roadway lighting.**		

Contract Measures Recommendation

Measure	Program	Goal Percent
Goal	SBE - Con	13.11%
Goal	SBE - Services	4.00%

Reasons for Recommendation

SMALL BUSINESS ENTERPRISE – CONSTRUCTION (SBE-Con)
An analysis of the factors contained in the project package, as well as the factors contained in Section VI.C. of Implementing Order 3-22 indicates that a 13.11% Small Business Enterprise – Construction (SBE-Con) Subcontractor Goal is appropriate for this contract in the following trades: Highway, Street and Bridge Construction (Concrete work) – 12.01% and Painting and Wall Covering Contractors (Signage and Paving Markings) – 1.10%.

SMALL BUSINESS ENTERPRISE – SERVICES (SBE-Services)
An analysis of the factors contained in the project package, as well as the factors contained in Section VIII.B. of Implementing Order 3-41 & Ordinance 16-109 indicates a 4.00% Small Business Enterprise - Services (SBE-S) Subcontractor Goal is appropriate for this contract in Commodity #98852 (Landscaping).

CWP Not Applicable: Not in a DTA.

NIGP 98852 Landscaping, Including Design, Fertilizing, Planting, etc., NAICS 237310 Highway, Street, and Bridge Construction, NAICS 237990 Other Heavy and Civil Engineering Construction, NAICS 238320 Painting and Wall Covering Contractors

Small Business Contract Measure Recommendation

Subtrade	Category
Highway, Street, and Bridge Construction	SBE - Con
Painting and Wall Covering Contractors	SBE - Con
Landscaping, Including Design, Fertilizing, Planting, etc.	SBE - Services

Living Wages:	**YES**		**NO**	X	**Highway:**	**YES**	X	**NO**		**Heavy Construction:**	**YES**		**NO**	X
Responsible Wages:	**YES**	X	**NO**		**Building:**	**YES**		**NO**	X					

SBD Director

11-5-19

Date

SECTION 00100

INSTRUCTIONS TO BIDDERS

1. SEALED BIDS

Sealed bids for furnishing all goods and services necessary to complete the Work specified in these documents shall be received no later than:

Date: **Thursday, February 29, 2024**

Time: **3:00 PM**

Place: **Town Hall**
10720 Caribbean Blvd., Suite 105
Cutler Bay, Florida 33189

2. SCHEDULE OF EVENTS

No.	Event	Date*	Time* (EST)
1	Advertisement/Distribution of ITB & Cone of Silence Begins	12/15/2023	9:00 AM
2	**Mandatory Pre-Bid Conference** **10720 Caribbean Blvd., Suite 115** **Cutler Bay, Florida 33189**	1/23/2024	10:00 AM
3	Deadline to Submit Questions	2/6/2024	1:00 PM
4	Deadline to Town Responses to Questions	2/16/2024	5:00 PM
5	**Deadline to Submit Bid-Response**	2/29/2024	3:00 PM
6	Evaluation of Bid Responses	3/1/2024 through 3/29/2024	8:00 AM to 5:00 PM
7	Announcement of Selected Contractors/Cone of Silence Ends	4/17/2024	6:00 PM

*The Town reserves the right to change the scheduled dates and time.

3. DEFINITION OF TERMS

Certain terms used in these documents are defined as follows:

Bid\Proposal	The bid documents submitted by the Bidder.
Bidder	Any person, firm or corporation submitting a proposal for the Work covered by these specifications or his duly authorized representative.
Contract	The Contract for Construction to be executed by Contractor and Town for the Work.
Contractor	The person, firm or corporation with whom the Town has executed a contract for the Work.
Days	Shall refer to calendar days.
Responsible Bidder	In order to be considered a "responsible" bidder, the Bidder must possess integrity as well as adequate equipment and personnel to do the Work within the time limits that are established and adequate financial status to meet the obligations to perform the Work. The firm must not have defaulted on a prior contract or been disbarred by any agency.
Responsive Bidder	Any person, firm or corporation submitting a Bid for the Work whose Bid form is complete and includes all required attachments and enclosures, free from exclusions or special conditions and has no alternative Bids for any items, unless alternatives are requested in the specifications.
Town	The Town Council of the Town of Cutler Bay or the Town Manager, if applicable.
Town Engineer	The Town's general engineering consultant and project manager for this contract.
Work	The services required by the Contract Documents, including labor and materials.

4. DELIVERY OF BIDS

All Bids, whether mailed or delivered in person, shall be submitted in a SEALED ENVELOPE (One (1) Original / Three (3) copies / One (1) readable/reproducible flash drive containing all documents) bearing on the outside the following project information as well as the name of the Bidder and his address clearly marked:

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

Addressed to:

Town of Cutler Bay
Attn: Mauricio Melinu, CMC., Town Clerk
10720 Caribbean Blvd., Suite 105
Cutler Bay, Florida 33189

All Bids must be received by the Town no later than
Thursday, February 29, 2024 at 3:00 PM

5. BID GUARANTY

A certified or cashier's check drawn on a national or state bank, or bid bond, in the amount of **five percent (5%)** of the bid, shall accompany each bid as a guarantee that the Bidder will, if award is made, execute an Agreement to do the Work for the amount proposed and furnish any required certificates of insurance and bond documents. The bid bond shall be from a surety with an A-rating or better under Best's Guidelines, made payable to: The Town of Cutler Bay.

6. BID FORMS

The Bidder shall submit an original Bid on the bid forms attached to this Invitation to Bid, The Bidder shall fill in all the blank spaces completely for each and every unit item for which a Bid is tendered. The Bidder shall state the price, typewritten or in ink, for which he proposes to do each item of Work. The Bid shall include: 1) Agreement/Contract; 2) Bid Forms; 3) Certificate or Evidence of Insurance; 4) Bid Guarantee; 5) Qualifications Statement; 6) Sworn Statement on Public Entity Crime Form; 7) Addenda acknowledgement, if applicable; 8) Anti-Kickback Affidavit; 9) Non-Collusive Affidavit; 10) Certification Regarding Debarment, Suspension and other Responsibility Matters; 11) Buy American Certificate of Compliance; 12) Certification Regarding Lobbying; 13) Contractor's Questionnaire; 14) Drug Free Workplace form; and 15) a Corporate Resolution evidencing authorization to submit Bid, if applicable.

7. SIGNATURE ON BID

The Bidder shall sign the Bid as follows: If the Bid is made by an individual, the Bidder's name and address shall be shown. If made by a firm or partnership, the name and address of each member of the firm or partnership shall be shown. If made by a corporation, the person signing the Bid shall show the name of the state under the laws of which the corporation is chartered, also the names and business addresses of its corporate officers. The Bid shall bear the seal of the corporation attested by the secretary. Anyone signing the Bid as agent shall include in the Bid legal evidence of his/her authority to do so.

8. AWARD OF CONTRACT

The award of the Contract will be to the lowest responsive and responsible bidder; whose qualifications indicate the Award will be in the best interest of the Town and whose bid complies with the requirements of these specifications. In no case will the Award be made until all necessary investigations have been made into the responsibility of the bidder(s) and the Town Manager is satisfied that the bidder is qualified to do the work and have the necessary organization, capital and equipment to carry out the work in the specified timeframes. In evaluating responsibility, the Town may also consider previous contracts with the Town, past performance and experience with other contracts, compatibility of the project team with Town personnel, and any other criteria deemed relevant by the Town.

If the Town accepts a bid, the Town will provide a written notice of award to the lowest responsive and responsible bidder, who meets the requirements of section 1.10.1. If the successful bidder to whom the Contractor is awarded forfeits the Award by failing to meet the conditions of this Invitation to Bid, the Town may, at the Town's sole option, award the agreement to the next lowest Responsive and Responsible bidder or reject all bids orre-advertise the Work.

The Town, at its sole discretion, may consider the lowest and responsive bidder as the bidder who has the lowest bid amount for: FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT.

9. COST OF BIDS

All expenses involved with the preparation and submission of Bids to the Town or any work performed in connection therewith, shall be borne by the Bidder(s). No payment shall be made for any responses received, nor for any other effort required of or made by the Bidder(s) prior to commencement of work as defined by the Agreement duly approved by the Town Council.

10. QUALIFICATION OF BIDDERS

Each Bidder shall submit a completed Qualification Statement utilizing the form attached.

11. RIGHT TO REJECT BIDS

The Town of Cutler Bay reserves the right to accept or reject any and/or all Bids to workshop or negotiate any and all Bids, to waive irregularities, and to request re-Bids on the required materials or services.

12. RETURN OF THE BID GUARANTY

All Bid Guarantees of unsuccessful Bidders will be returned after the Agreement is awarded and executed.

13. EXECUTION OF CONTRACT

The successful Bidder(s) shall, within ten (10) days of receipt of a written notice of the Award of the Agreement, deliver to the Town a fully executed Agreement and all requested certificates of insurance and bonds.

14. FORFEITURE OF BID GUARANTY FOR FAILURE TO EXECUTE CONTRACT

The failure of the successful Bidder(s) to execute an Agreement and submit required insurance certificates and bonds will result in forfeiting of the Award. Each Bidder agrees in advance that the Town will sustain certain damages too difficult to accurately ascertain. Accordingly, if the Award is forfeited under this Section, the amount of the Bid Guaranty of the forfeiting Bidder will be retained by the Town, not as forfeiture or a penalty, but as liquidated damages.

15. TIME AND AWARD

The Bidder agrees to abide by the overall and unit prices quoted in the Bid for up to ninety (90) days from the date of bid opening to allow for the Town to review, award, and execute the Agreement.

16. INTERPRETATION AND CLARIFICATION

All questions about the meaning or intent of the Bid Documents and specifications shall be directed in writing to the Town Clerk's Office, Mauricio Melinu, CMC., at 10720 Caribbean Blvd., Suite No. 105, Cutler Bay, Florida 33189 or e-mail: MMelinu@cutlerbay-fl.gov. All correspondences whether in writing or through e-mail must be titled: "**FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT**".

Interpretation or clarifications considered necessary by the Town in response to such questions will be issued by means of addenda electronically mailed or delivered to all parties that are on record with the Town Clerk as having requested and received the Bid Documents. Provided however that it is each Bidder's sole responsibility to be informed of any changes to the Invitation To Bid in the form of written addenda and the Town shall not be responsible for any Bidder's failure to receive same. The Town has the right to rely on all Bids received and the submittal of a Bid shall represent the Bidder's acknowledgement that he has read and understood the Invitation to Bid and any addenda thereto. Written questions must be received by **February 6, 2024 at 1:00 PM**. Only questions answered by written addenda shall be binding. Oral and other interpretation or clarifications shall be without legal effect.

17. BID MODIFICATIONS

No modifications shall be submitted by Bidder or accepted by the Town.

18. WITHDRAWAL OF A BID

A Bidder may withdraw his Bid at any date and time prior to the time the Bids are scheduled to be opened. Notice of withdrawal should be made in writing to the Town Clerk's Office, Mauricio Melinu, CMC., at 10720 Caribbean Blvd., Suite No. 105, Cutler Bay, Florida 33189.

19. OPENING OF BIDS

Bids will be publicly opened and read aloud at the appointed time and place stated in the Invitation to Bid/Request for Proposals. Late Bids will not be considered. No responsibility will be attached to any Town Staff for the premature opening of a Bid not properly addressed and identified. Bidders or their authorized agents are invited to be present at the bid opening.

20. PUBLIC ENTITY CRIMES ACT

In accordance with the Public Entity Crimes Act, (Section 287.133, Florida Statutes) a person or affiliate who is a contractor, who had been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to the Town, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to the Town, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with the Town in excess of the threshold amount provided in Section 287.917, Florida Statutes, for Category Two for a period of 36 months form the date of being placed on the convicted vendor list. Violation of this section by the Contractor shall result in rejection of the Bid, termination of the contract, and may cause Contractor debarment.

21. TOWN LICENSES, PERMITS AND FEES

In accordance with the Public Bid Disclosure Act, 218.80, Florida Statutes, each license, permit, or fee a Contractor will have to pay the Town before or during the Work or the percentage method or unit method of all licenses, permits and fees required by the Town and payable to the Town by virtue of the Work as part of the Agreement are as follows:

21.1 Contractor shall have and maintain during the term of the Agreement all appropriate Town licenses, and fees for which shall be paid in full in accordance with the Town's Fee structure for such licenses. THERE WILL NOT BE ANY PERCENTAGE REDUCTION OR WAIVING OF TOWN LICENSE FEES.

21.2 During the performance of the Agreement there may be times when the Contractor will be required to obtain a Town permit for the Work. It is the responsibility of the Contractor to ensure that he or she has the appropriate Town permits to perform such Work as may become necessary during the performance of the Agreement. Any fees related to Town required permits in connection with the Agreement will be the responsibility of the Contractor and will not be reimbursed by the Town. Licenses, permits, and fees that may be required by County, State or Federal entities are not included in the above list.

22. INSURANCE

The Bidder shall be required to provide and maintain insurance coverage of such types and amounts as specified in Section 6 of the Agreement. The Bidder shall include with his or her Bid either Certificates of Insurance evidencing same or documentation from his or her insurer evidencing the insurability of the Bidder to meet the insurance requirements.

23. BONDS

A Performance and a Payment Bond for the entire base bid amount shall be required in connection with this contract.

24. FAMILIARITY WITH LAWS

The Bidder is assumed to be familiar with all applicable Federal, State, County, and local laws, ordinances, rules, and regulations that may in any manner affect the Work.

25. EXAMINATION OF BIDDER'S FACILITIES

The Town, as part of its evaluation, may perform an examination of the Bidder's facilities. The Town Manager or designee, as part of the evaluation, may perform this examination.

The term facilities as used in this solicitation shall include, but shall not be limited to, all properties operated by the Bidder, all equipment used in the performance of business by the Bidder, and/or any other evidence, tangible, or intangible, that the Town may deem necessary to substantiate the technical and other qualifications, and the abilities of the Bidder to perform the Work.

The examination shall include, but shall not be limited to, appearance and cleanliness of facilities, appearance, and cleanliness of equipment, "road worthiness" of vehicles, appearance, and visibility of all signage on vehicles, and possession and distribution of mandatory equipment. Vehicles shall be examined for compliance with State of Florida Statutes, as well as applicable County and Town Ordinances. Additionally, examination may include verification of some of the (physical) minimum requirements for Bidders. Additionally, the Town reserves the right to perform such examinations on the successful Bidder as often as it deems necessary, to ensure proper performance of the proposed Agreement.

26. ALLOWANCES

Included in the contract sum is an allocation account for unforeseen conditions, potential construction changes and quantity adjustments, and additional work or materials that the Town may deem necessary if ordered and authorized by the Town in accordance with the Contract Documents.

27. CAMPAIGN FINANCE RESTRICTIONS ON VENDORS

Pursuant to Town Code Chapter 24, Article II, Section 24-228 of the Town Charter, vendors of the Town are required to disclose any campaign contributions to the Town Clerk, and each vendor must do so prior to and as a condition of the award of any Town contract to the vendor.

Vendors' Campaign Contribution Disclosure:

1. General requirements:

   A) Any vendor required to disclose campaign contributions pursuant to the Charter of the Town of Cutler Bay, as may be amended, shall file a written disclosure with the Town Clerk, stating all contributions made that were accepted by an elected official of the Town, the official to whom they were made and the date they were made. The Town Clerk may develop a form to be used by vendors for such disclosure.

   B) The disclosure shall be filed prior to and as a condition of the award of any Town contract to the Vendor.

   C) The Town Clerk shall inform the Council of any disclosures which were made in relation to any items before the Council prior to the hearing on the item or prior to the award of the contract.

   D) If an existing vendor makes a contribution the vendor must report the same to the clerk within ten days of its acceptance or prior to being awarded any additional contract or renewal, whichever occurs first.

E) The Town Clerk shall file a quarterly report with the Council, which lists all the vendor disclosures in the quarter.

2. Disqualification:

A) As per Section 7.6 of the Town Charter, if a Vendor of products or services who directly or through a member of the person's immediate family or through a political action committee or through any other person makes a campaign contribution to a Town candidate and fails to disclose it then he/she/it shall be barred from selling any product or service to the town for a period of two years following the swearing in of the subject elected official.

28. CONE OF SILENCE

Notwithstanding any other provision of these specifications, the provisions of Town "Cone of Silence" are applicable to this transaction. The entirety of these provisions can be found in the Town Code Chapter 24, Article II, Section 24-228 of the Town Charter. The "Cone of Silence," as used herein, means a prohibition on any communication regarding a particular Request for Proposal ("RFP"), Request for Qualification ("RFQ") or bid, between:

1. A potential vendor, service provider, proposer, bidder, lobbyist, or consultant; and

2. The Town Council, Town's professional staff including, but not limited to, the Town Manager and his or her staff, any member of the Town's selection or evaluation committee.

The Cone of Silence shall be imposed upon each RFQ, RFP and bid after the advertisement of said RFQ, RFP, or bid. The Cone of Silence shall terminate at the beginning of the Town Council meeting at which time the Town Manager makes his or her written recommendation to the Town Council. However, if the Town Council refers the Manager's recommendation back to the Manager or staff for further review, the Cone of Silence shall be re-imposed until such time as the Manager makes a subsequent written recommendation.

The Cone of Silence shall not apply to:

a. Oral communications at pre-bid conferences;

b. Oral presentations before selection or evaluation committees;

c. Public presentations made to the Town Council during any duly noticed public meeting;

d. Communication in writing at any time with any Town employee, unless specifically prohibited by the applicable RFQ, RFP or bid documents. The bidder or proposer shall file a copy of any written communication with the Town Clerk. The Town Clerk shall make copies available to any person upon request;

e. Communications regarding a particular RFQ, RFP or bid between a potential vendor, service provider, proposer, bidder, lobbyist or consultant and the Town's Purchasing Agent or Town employee designated responsible for administering the procurement process for such RFQ, RFP or bid, provided the communication is limited strictly to matters of process or procedure already contained in the corresponding solicitation document;

f. Communications with the Town Attorney and his or her staff;

g. Duly noticed site visits to determine the competency of bidders regarding a particular bid during the time period between the opening of bids and the time the Town Manager makes his or her written recommendation;

h. Any emergency procurement of goods or services pursuant to Town Code;

i. Responses to the Town's request for clarification or additional information;

j. Communications to enable Town staff to seek and obtain industry comment or perform market research, provided all communications related thereto between a potential vendor, service provider, proposer, bidder, lobbyist, or consultant and any member of the Town's professional staff including, but not limited to, the Town Manager and his or her staff are in writing or are made at a duly noticed public meeting.

Please contact the Town Attorney for any questions concerning Cone of Silence compliance. Violation of the Cone of Silence by a particular bidder or proposer shall render any RFQ award, RFP award or bid award to said bidder or proposer voidable by the Town Council and/or Town Manager.

29. LOBBYIST REGISTRATION

Proposers must also comply with all Town Charter sections and Code provisions that pertain to lobbyists, including Section 7.6 of the Town Charter and implementing ordinance(s), including Sec. 2-11(s) of the Town Code and Ordinance 07-02. Please contact the Town Clerk at (305) 234-4262 for additional information.

30. PROTEST PROCEDURES

With respect to a protest of the terms, conditions, and specifications contained in a solicitation (RFP, RFQ, or Bid), including any provisions governing the methods for ranking bids, proposals, or replies, awarding contracts, reserving rights of further negotiation, or modifying or amending any contract, the notice of protest shall be filed pursuant to Town Code Chapter 24, Article II Division 8 Section 24-199.

31. PUBLIC RECORDS LAW

a. Contractor agrees to keep and maintain public records in CONTRACTOR's possession or control in connection with CONTRACTOR's performance under this Agreement. CONTRACTOR additionally agrees to comply specifically with the provisions of Section 119.0701, Florida Statutes. CONTRACTOR shall ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed, except as authorized by law, for the duration of the Agreement, and following completion of the Agreement until the records are transferred to the TOWN.

b. Upon request from the TOWN's custodian of public records, CONTRACTOR shall provide the TOWN with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided by Chapter 119, Florida Statutes, or as otherwise provided by law.

c. Unless otherwise provided by law, any and all records, including but not limited to reports, surveys, and other data and documents provided or created in connection with this Agreement are and shall remain the property of the TOWN.

d. Upon completion of this Agreement or in the event of termination by either party, any and all public records relating to the Agreement in the possession of the CONTRACTOR shall be delivered by the CONTRACTOR to the TOWN MANAGER, at no cost to the TOWN, within seven (7) days. All such records stored electronically by CONTRACTOR shall be delivered to the TOWN in a format that is compatible with the TOWN's information technology systems. Once the public records have been delivered upon completion or termination of this Agreement, the CONTRACTOR shall destroy any and all duplicate public records that are exempt or confidential and exempt from public records disclosure requirements.

e. Any compensation due to CONTRACTOR shall be withheld until all records are received as provided herein.

f. CONTRACTOR's failure or refusal to comply with the provisions of this section shall result in the immediate termination of this Agreement by the TOWN.

Section 119.0701(2)(a), Florida Statutes

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS.

Custodian of Records:	**Mauricio Melinu, CMC., Town Clerk**
Mailing address:	**10720 Caribbean Boulevard**
	Suite 105
	Cutler Bay, FL 33189
Telephone number:	**(305) 234-4262**
Email:	MMelinu@cutlerbay-fl.gov

[END OF SECTION]

MIAMI-DADE COUNTY

SMALL BUSINESS DEVELOPMENT
CERTIFICATE OF ASSURANCE (COA)
SMALL BUSINESS PARTICIPATION ON COUNTY PROJECTS

This form must be submitted with bid documents by all bidders/proposers on a Miami-Dade County project with Small Business Enterprise ("SBE") program measure(s).

Project No.: _____ Project Title: _____

Name of Bidder/Proposer: _____ Contact Person _____

Address: _____ City _____ State _____ ZIP _____

Phone Number: _____ Email address: _____

The bidder/proposer is committed to meeting the established measure(s) assigned to this project: _____% SBE-A/E, _____% SBE-Cons, ___Trade Set-aside SBE-Cons, _____% SBE-G, and/or _____% SBE-S.
(For Goals, write in the percentage. For Set-aside, put a check mark or x.)

Print Prime Bidder's Name & Title	Prime Bidder's Signature	Date

To satisfy the requirements for Step 1 – Bid Submittal and Compliance with Small Business Enterprise Program(s), the following are required:

1. Acknowledgement of the SBE-A/E, SBE-Cons, SBE-G and/or SBE-S measure(s) established for this project via this Certificate of Assurance.
2. Agree to engage in the solicitation of approved Miami-Dade County Small Business Enterprise firm(s) to achieve the established measure(s) as indicated in the Project Documents (specifications).
3. Agree to submit a list of certified SBEs to satisfy the measures via Miami-Dade County's Business Management Workforce System ("BMWS") within the specified timeframe, upon email notification from the Small Business Development ("SBD") Division or BMWS.

To satisfy the requirements for Step 2 – Bid Evaluation and Recommendation for Award, please attest that:

I understand that my company will be deemed non-compliant and not eligible for award if I fail to (1) submit this form with my bid documents and/or (2) submit my company's Utilization Plan which shall list all certified Miami-Dade County Small Business Enterprise firms whom will be subcontracted with to satisfy the project's established SBE measure(s) via BMWS, within the specified timeframe, upon email notification from SBD or BMWS. Each SBE subcontractor, subconsultant, and/or sub-vendor will also be required to confirm its contractual relationship via BMWS, within the specified timeframe, for final approval by SBD.

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

BEFORE ME, an officer duly authorized to administer oaths and take acknowledgement, personally appeared _____, who being first sworn deposes and affirms that the provided information statements are true and correct to the best of his/her knowledge information and belief.

_____
Signature of Owner

SWORN TO and subscribed before me this _____ day of _____, 20_____

_____
Signature of Notary Public-State of Florida

My Commission Expires:

Revised 6/18

SECTION 00210

MIAMI-DADE COUNTY
miamidade.gov

Internal Services Department
Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111 F 305-375-3160

FAIR WAGE AFFIDAVIT

Before me, the undersigned authority appeared _____ the
(PRINT NAME)

_____ of _____,
(PRINT TITLE) (PRINT NAME OF BIDDER OR PROPOSER)

who attests that _____shall pay workers on
(PRINT NAME OF BIDDER OR PROPOSER)

the project minimum wage rates in accordance with Responsible Wages and Benefits, Section 2-11.16 of the Code of Miami-Dade County and the Labor Provisions of the contract documents.

State of FLORIDA
County of Miami-Dade

Sworn to (or affirmed) and subscribed before me this _____day of _____, 202____.

☐ Personally, known or ☐ produced identification.

_____ _____
(Signature of Notary Public - State of Florida) **(Print, Type, or Stamp Commissioned Name of Notary Public)**

Type of identification produced:_____

SECTION 00220

MIAMI-DADE COUNTY, FLORIDA

RESPONSIBLE WAGES AND BENEFITS

SECTION 2-11.16 OF THE CODE OF MIAMI-DADE COUNTY

SUPPLEMENTAL GENERAL CONDITIONS

WAGES AND BENEFITS SCHEDULE

Construction Type: **HIGHWAY**

Highway Construction projects include the construction, alteration or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, and other similar projects not incidental to building or heavy construction.

NOTICE TO EMPLOYEES

FAIR WAGE AFFIDAVIT

LCPTRACKER – CONTRACTOR QUICK START GUIDE

2023

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RESPONSIBLE WAGES AND BENEFITS
CONSTRUCTION TYPE: HIGHWAY

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RESPONSIBLE WAGES AND BENEFITS
CONSTRUCTION TYPE: HIGHWAY

SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS

Bidders are advised that the provisions of § 2-11.16 *et seq.*, Code of Miami-Dade County (the "Code"), pertaining to Responsible Wages on County Construction Contracts, will apply to any contract awarded pursuant to this bid. By submitting a bid under these provisions, a bidder agrees to comply with these provisions of the Code and to acknowledge awareness of the penalties for non-compliance. A copy of the Code may be obtained from the department issuing the specifications for this bid or online at http://www.municode.com/resources/gateway.asp?pid=10620&sid=9.

This Supplemental General Conditions is organized with the following sections:

1. Minimum Wages and Posting of Information
2. Liability for Unpaid Wages, Liquidated Damages and Withholding
3. Payrolls Records, Reporting and Inspection of Records
4. Subcontracts
5. Complaints, Hearings and Contracts Termination and Debarment
6. Apprentices and Trainees
7. Other State and Federal Wage Laws

1. MINIMUM WAGES AND POSTING OF INFORMATION

A. Minimum Wages

All employees working on the project must be paid the combined dollar value (hourly rate and benefits) listed in the Wages and Benefits Schedule for work being performed. Payment to workers shall be made in the form of check, money order or direct deposit. Cash payments are not allowed. The rates paid shall be no less than those contained in the Wages and Benefits Schedule regardless of any contractual relationship that may exist between the contractor and the workers hired to perform under the contract. For any classification of workers, the hourly rate paid must equal the sum of the base rate and the fringe benefit rates listed for that classification in the Wages and Benefits Schedule. Paying below the base rate is not acceptable, even if the value of the fringe benefits exceeds the value of the required contribution. Paying the base wage rate or above and making payments to legitimate fringe benefits providers on behalf of workers is acceptable.

Wages and benefits listed in the Wages and Benefits Schedule will be reviewed and increased, if appropriate, once a year, on January 1st. The rates for wages and benefits to be paid for work performed under this contract and during each subsequent calendar year will be the rate in effect on January 1st of the year in which the work is performed.

B. Fringe Benefits

The contractor, or any subcontractor under the contractor, may pay the base rate to the employee plus pay contributions to employee benefit plans; or, pay the base rate plus the benefit rate in the Wages and Benefits Schedule in the form of check, money order or direct deposit, but not cash. If the value of the fringe benefits is less than the hourly amount required in the wage schedule the difference must be paid to the employee as an increase to their base pay.

Payments made to health insurance companies for hospitalization and medical costs, to dental insurance companies for dental costs, retirement plans, and life insurance companies for life insurance are fringe benefits.

Payments made irrevocably to a trustee or third party pursuant to a bona fide fringe benefit fund, plan or program for health, life, death, and dismemberment, dental, vision insurance and retirement/pension can be credited towards meeting the required wages. These payments must be made not less often than quarterly. Annual payments to a fringe benefit fund, plan or program will not be accepted.

C. More than One Classification

Workers must be paid the appropriate base rate and fringe benefits on the Wages and Benefits Schedule for the classification of work actually being performed without regard to skill. Workers performing work in more than one classification may be paid at the rate listed for each classification for the time they worked; however, the employer's payrolls must accurately show the time spent in each classification in which work is performed. This does not apply to workers performing tasks that are incidental to the trade they are working in, such as handling materials they will be installing or cleaning up the worksite after they complete their work.

D. Classification Not Listed in the Wage Schedule

If you do not find a wage classification in the Wages and Benefits Schedule that describes the work actually being done, you must contact Small Business Development. Questions concerning the comparability of worker classifications or the applicability of Davis Bacon classifications will be determined by the County.

E. Complaints by Workers

Any complaints of underpayment by the workers should be filed with:

Internal Services Department
Small Business Development Division
111 NW 1ST Street, 19TH Floor Miami, FL 33128
Telephone: (305 375-3111 FAX: (305 375-3160
Email: SBDMAIL@MIAMIDADE.GOV

Neither the contractor nor any subcontractor on the project may terminate an employee

performing work on the contract because of such employee's filing a complaint regarding underpayment of required wage rates.

F. Posting of Wages

The contractor and all subcontractors must permanently post the Wages and Benefits Schedule, together with a notice of the fines that may be assessed to the contractor or subcontractor, for failure to pay the required wage rates, at the site where the contract work is being performed in a prominent and accessible place where it can be easily seen by the workers. Failure to post the Wages and Benefits Schedule is a violation.

2. LIABILITY FOR UNPAID WAGES; PENALTIES; WITHHOLDING

A. Compliance by Bidders

In the event of underpayment of the required wage rates, the contractor shall be liable to the underpaid employee for such underpayment. In addition, the contractor shall pay a penalty in accordance with the requirements of the Code and section 2B below. Contractors must pay all back wages and penalties on previous contracts before being awarded or participating on a new contract.

B. Penalties

In addition to any under payment due to employees, contractors may be fined a penalty in an amount equal to twenty percent (20%) of the first underpayment; forty percent (40%) of the amount of the second underpayment; for the third and successive underpayments, a penalty in an amount equal to sixty percent (60%) of the underpayment. A fourth underpayment violation within a three (3) year period shall subject the contractor to debarment to be initiated by SBD in accordance with the debarment procedures of the County. A fourth underpayment violation shall also constitute a default of the subject contract and shall be cause for suspension or termination. If the required payments are not made within the specified period of time, the non-complying contractor and principal owners thereof shall be prohibited from bidding on or otherwise participating in County contracts for a period not to exceed three (3) years.

C. Withholding Contractor Payments

The County may stop payment of monies to the contractor necessary to pay any wages that are required, and any penalties owed by the contractor or subcontractor. The withheld monies shall be given to the employee in accordance with the provisions of Section 5, "Complaints and Hearings; Contract Termination and Debarment".

3. PAYROLL; BASIC RECORDS; REPORTING

A. Payroll Records

The contractor and all subcontractors must keep accurate written records, signed under oath as true and correct, showing payment of the required wages. These records must include the name, social security number of each worker, his or her address, correct classification, per hour rates of wages paid (including rates of contributions or costs anticipated for legitimate fringe benefits), and daily and weekly number of hours worked on this project. Contractors employing apprentices or trainees under approved programs shall keep records of the registration or apprenticeship programs, the certification of trainee programs, the registration of the apprentices and trainees, and wage rates as required by the applicable programs, in accordance with the provisions of Section 6 “Apprentices and Trainees”.

B. LCPtracker

Each contractor and every low-tier subcontractor is required to submit all certified payrolls and labor compliance documentation electronically by the 10th of every month for the previous month using LCPtracker, a web-based Certified Payroll Management System (www.lcptracker.net). The system is managed by Small Business Development (“SBD”), a division of the Internal Services Department. The use of the system is **mandatory**, pursuant to Miami-Dade County Ordinance No. 18-33.

Each contractor and subcontractor on applicable contracts will be provided a username and password to access LCPtracker system. Use of the system will involve data entry of weekly payroll information including: employee name, social security number, trade classification, total hours and fractions of hours for every type of trade classification work performed on the project, and wage and benefits paid. LCPtracker’ s software can also interface with most payroll and accounting software programs that are capable of generating a CSV (comma delimited file). If your program does not have this capability, LCPtracker may be able to build an interface to communicate with your accounting software.

Hands-on training sessions for the LCPtracker system is available. To RSVP, please visit https://mdcsbd.gob2g.com/events.asp and select the training session you would like to attend.

If you are not able to attend a training class in person, there are other free training options available for contractors:

Option 1: Web-Based Training Sessions. Online and live training sessions facilitated by members of LCPtracker’ s Customer Support Team are offered several times per month. All you need to participate is a computer with internet access, an email address, and access to a phone.

- Go to the LCPtracker Website: www.lcptracker.net
- Enter your username/password
- Select “Watch Now” on the Projects tab and register for the Online training sessions

Option 2: Computer-Based Training Courses. Pre-recorded videos can be viewed at any time by logging into the LCPtracker website (www.lcptracker.net) and following these simple steps:

- Enter your username/password
- Select the "Training Materials" link located at the top of the page
- Select Contractor Training Videos

C. Inspection of Records

The contractor or subcontractor must make these records available for inspection and copying by an authorized representative of the County and shall allow such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the reports or make the records on which they are based available, the County may, after written notice to the contractor, cause the stoppage of payments. Also, failure to submit the reports upon request or make the records available may be reason for debarment. The prime contractor is responsible for the submission of the information required and for the maintenance of records and provisions of access to same by all subcontractors.

4. SUBCONTRACTS

The contractor must insert into any subcontracts the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions and a clause reminding their subcontractors to include these paragraphs in any lower tier subcontract. The prime contractor will be responsible for compliance by all subcontractors and their lower tier subcontractors with the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions. In the event of non-payment or underpayment of the required wages, the prime contractor shall be liable to the underpaid employees of the subcontractor for each underpayment.

5. COMPLAINTS AND HEARINGS; CONTRACT TERMINATION AND DEBARMENT

A. Complaints

Upon receipt of a written complaint or identification of a violation pertaining to an employee wage underpayment of the required overall hourly rates, the County will investigate the complaint and notify the contractor or subcontractor employing said workers of the complaint/violation. The notice shall include a brief description of the said complaint/violation, the dollar amount that the contractor or subcontractor is liable for in back wages and fines, the required corrective action(s) to be taken and the due date for payment of back wages and fines or to request a compliance meeting. Failure to comply or request a compliance meeting within the due date specified shall constitute a waiver of the contractor's or subcontractor's right to a compliance meeting, and that such waiver shall constitute an admission of the complaint/violation. The County may withhold from the contractor so much accrued payments as may be considered necessary by the Contracting Officer to pay employees of the contractor or subcontractor under

them for the performance of the contract work, the difference between the combined overall hourly wage rate and benefits required to be paid by the contractor/subcontractor to the employee on the work and the amounts received by such employee where violations have been found.

Any employee of a contractor or subcontractor who performed work on a contract subject to this section, may instead of adhering to the County administrative procedure, but not in addition to such procedure, bring an action by filing suit against the contractor or subcontractor in any court of competent jurisdiction to enforce these provisions and may be awarded back pay, benefits, attorney's fees, costs. The applicable statute of limitations of such a claim will be two (2 years as provided in Section 95.11(4(c, Florida Statutes, in an action for payment of wages. The court may also impose sanctions on the employer, including those persons or entities aiding or abetting the employer, to include wage restitution to the affected employee and damages payable to the covered employee in the sum of up to five hundred dollars ($500.00 for each week each employer is found to have violated these provisions.

B. Hearings

A contractor or subcontractor has the right to an administrative hearing to appeal a determination of non-compliance within (30 days of the notice. To request a hearing the contractor or subcontractor must file a written request along with a $250.00 non-refundable filing fee with the County Mayor or his or her designee. Upon timely receipt of a request for an administrative hearing request, the County Mayor shall appoint a hearing officer and fix a time for an administrative hearing thereon. A notice of hearing (together with a copy of SBD's determination of non-compliance shall be served upon the contractor (or subcontractor. Upon completion of the hearing, the hearing officer shall submit proposed written findings and recommendations to the County Mayor within a reasonable time. The County Mayor or designee will review the findings and recommendations of the Hearing Officer and decide to accept or reject the recommendations of the Administrative Hearing Officer either with or without modifications.

C. Penalties

If the County Mayor or designee determines that the contractor or subcontractor substantially or repeatedly failed to comply, the non-complying contractor or subcontractor and the principal owners thereof shall be prohibited from bidding or otherwise participating in County contracts for the construction, alteration and/or repair, including painting or decorating, of public buildings or public works for a period of three years. The County Mayor or designee may order the withheld amount equal to any underpayment remitted to the employee. In addition, the County Mayor or designee may order payment of a penalty to the County. If the required payment is not made

within a reasonable period, the County Mayor or designee may order debarment as described above.

A breach of the clauses contained in this Supplemental General Conditions shall be deemed a breach of this contract and may be grounds for termination of the contract, and for debarment.

6. APPRENTICES AND TRAINEES

A. Apprentices

Apprentices will be permitted to work at less than the rate listed in the Wages and Benefits Schedule for the work they perform when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau, or if a person is employed in his or her first 90 days probationary employment who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a state apprenticeship agency (where appropriate to be eligible for probationary employment as an apprentice. All apprentices participating on a project must approved in LCPtracker by SBD. LCPtracker will not allow a contractor to enter an apprentice on its certified payrolls until SBD has received and approved the Apprenticeship Certification, which is only valid for 90 days after issuance. To obtain SBD's approval, the Program Sponsor must submit the Apprenticeship Certification to:

Internal Services Department
Small Business Development Division
111 NW 1ST Street, 19TH Floor Miami, FL 33128
Telephone: (305 375-3111 FAX: (305 375-3160
Email: SBDMAIL@MIAMIDADE.GOV

Any worker listed as an apprentice on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, must be paid not less than the wage on the Wages and Benefits Schedule for the classification of work actually performed.

B. Apprentice Ratio

The number of apprentices shall not be greater than the ratio listed in the Wages and Benefits Schedule. If the number of apprentices working on the project, is greater than the ratio permitted, the apprentices must be paid the wage rate on the Wages and Benefits Schedule for the work performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in the percentages of the journeyman's hourly rate specified in the contractor's or subcontractor's registered program shall be

observed. Every apprentice must be paid at least the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable schedule.

C. Apprentice Fringe Benefits

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable apprentice classification; fringe benefits shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a state apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is provided.

D. Trainees

The rules for trainees are similar to those of apprentices. Except as provided in 29 C.F.R. § 5.16, trainees cannot work for less than the predetermined rate listed in the Wages and Benefits Schedule unless they are registered in a program certified by the U. S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site must not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Trainees must be paid fringe benefits in accordance with the Trainee Program. If the Trainee Program does not specify fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the administrator of the wage and hour division determines that the rate is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination, which provides for less than the full fringe benefits for apprentices.

E. Summary of Apprentices and Trainees

Any worker who is not registered in a training plan approved by the Employment and Training Administration must be paid not less than the wage rate on the Wages and Benefits Schedule for the work actually performed without regard to skill. In addition, if the number of apprentices and trainees are in excess of the ratio permitted under the registered program, then the wages that must be paid are those listed on the Wages and Benefits Schedule for the work actually performed by the apprentices or trainees. If the Employment and Training Administration cancels approval of an apprenticeship or training program, the contractor will no longer be permitted to pay the trainee or apprenticeship rate.

7. OTHER STATE AND FEDERAL WAGE LAWS

All Miami-Dade County contracts require contractors to comply with all applicable state and federal wage laws including payment of overtime. To obtain information regarding these laws, please visit the U.S. Department of Labor Wage and Hours Division at www.dol.gov/whd.

MIAMI-DADE COUNTY
§2-11.16 CODE OF MIAMI-DADE COUNTY
RESPONSIBLE WAGES AND BENEFITS SCHEDULE
2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
BRICKLAYERS				
Bricklayer	$ 27.50	$ 5.40	$ 3.15	$ 36.05
Apprentices:				
1st 6 month period	$ 17.88	$ 5.40	$ 3.15	$ 26.43
2nd 6 month period	$ 19.25	$ 5.40	$ 3.15	$ 27.80
3rd 6 month period	$ 20.63	$ 5.40	$ 3.15	$ 29.18
4th 6 month period	$ 22.00	$ 5.40	$ 3.15	$ 30.55
5th 6 month period	$ 23.38	$ 5.40	$ 3.15	$ 31.93
6th 6 month period	$ 24.75	$ 5.40	$ 3.15	$ 33.30

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see page 6 of the Supplemental General Conditions for more information.

Apprentice Ratio: There shall be one (1) apprentice for every three (3) journeymen.

Scope of work under this trade includes but is not limited to: all forms of masonry construction, including all brick, stone, concrete block, marble, cement, plaster, mosaic, tile, terrazzo, terra cotta. The complete installation of all forms of masonry panels including the on-site fabrication, all integral elements of masonry construction and all forms of substitute masonry materials or building systems thereto utilized.

MIAMI-DADE COUNTY
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2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
CARPENTERS				
Carpenters	$ 25.65	$ 5.50	$ 6.65	$ 37.80
Foreman (5 or more workers)	$ 27.78	$ 5.50	$ 6.65	$ 39.93
Foreman (12 or more workers)	$ 31.54	$ 5.50	$ 6.65	$ 43.69
General Foreman (2 or more Foremen)	$ 33.84	$ 5.50	$ 6.65	$ 45.99
Apprentices:				
NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see page 6 of the Supplemental General Conditions for more information.				
1st 6 month period	$ 15.90	$ 5.50	$ 6.65	$ 28.05
2nd 6 month period	$ 17.19	$ 5.50	$ 6.65	$ 29.34
3rd 6 month period	$ 18.47	$ 5.50	$ 6.65	$ 30.62
4th 6 month period	$ 19.75	$ 5.50	$ 6.65	$ 31.90
5th 6 month period	$ 21.03	$ 5.50	$ 6.65	$ 33.18
6th 6 month period	$ 22.32	$ 5.50	$ 6.65	$ 34.47
7th 6 month period	$ 23.60	$ 5.50	$ 6.65	$ 35.75
8th 6 month period	$ 24.88	$ 5.50	$ 6.65	$ 37.03

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Forms

The fabrication and re-fabrication of all forms and dismantling of forms when they are to be reused. This includes removable corrugated metal forming systems and all other patented forming systems. When power rigging is used in the setting or dismantling of forms, and the necessary false work, all handling, rigging and signaling. The setting, leveling and aligning of all templates for anchor bolts for structural members, machinery, and the placing, leveling, bracing, burning and welding for all bolts. The installation of embedded materials where attached to forms and/or embedded materials for machinery. Framing in connection with the setting of bulkhead; fabrication of screeds and stakes for floors and form for articles. The handling of lumber, fabricated forms and form hardware installed by carpenters. The building and moving of all scaffolding for runways and staging. The cutting or framing of openings for piles, conduit, ducts, when they pass through floors, partitions or forms. All rigging, setting, aligning and hand signaling when setting up pre-cast units.

Railing

The installation of all construction of temporary guardrails, barricades and /or safety devices. The unloading, handling, distribution, installation and backing necessary for all aluminum, vinyl, plastic or wood handrails and guardrails.

MIAMI-DADE COUNTY
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RESPONSIBLE WAGES AND BENEFITS SCHEDULE
2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
ELECTRICAL WORKERS				
Electrician - Wireman	$ 38.71	$ 6.00	$ 5.81	$ 50.52
Electrician - Cable Splicer	$ 39.21	$ 6.00	$ 5.88	$ 51.09
Traffic Signal Installer	$ 19.07	$ -	$ -	$ 19.07
Welder	$ 39.21	$ 6.00	$ 5.88	$ 51.09
Foremen - Required on any job where 3-9 electricians are employed, one shall be designated foreman. One (1) additional electrician shall be designated foreman if there are 10-14 electricians, and one (1) additional for 15-21 electricians.	$ 42.58	$ 6.00	$ 6.39	$ 54.97
General Foreman (22 or more Electricians)	$ 46.45	$ 6.00	$ 6.97	$ 59.42

Per Hour Premiums:

$1.00 per hour to the per hour wage rate for electricians working in hazardous locations, above or below ground in high places such as silos, hangers, beacon lights, or other similar structures where a free fall of 30 feet or more is possible.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st year	$ 19.26	$ 4.57	$ 0.58	$ 24.41
2nd year	$ 20.36	$ 4.57	$ 3.05	$ 27.98
3rd year	$ 22.54	$ 4.57	$ 3.38	$ 30.49
4th year	$ 24.72	$ 4.57	$ 3.71	$ 33.00
5th year	$ 29.03	$ 4.57	$ 4.35	$ 37.95

APPRENTICE RATIO: Two (2) Apprentices to (1-3) Wiremen, Cable Splicer or Welders, four (4) Apprentices to (4 to 6) Wiremen, Cable Splicer or Welders, six (6) Apprentices to (7 to 9) Wireman, Cable Splicer or Welders

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: installation, inspection, operation, maintenance, service, repair, testing or retrofit of all energized and de-energized electrical power and communications conductors, electrical materials, electrical devices and electrical power distribution equipment, or a part of there which generates, transmits, transforms or utilize electrical energy in any form AC or DC voltages for heat, light or power used in the construction, alteration, temporary power, maintenance, service and repair of public and private premises including building, floating buildings, structures, bridges, street, highway and tunnel work including all signaling, shafts, dams or levees, river and harbor work, airports, mobile homes, recreational vehicles, yards, lots, parking lots, carnivals, tradeshows, events and industrial substations, The installations of electrical conductors and electrical distribution equipment that connect to the supply of electricity, installations used by an electric utility that are not an integral part of a generating plant, substation or control center and all electrical raceways of whatever form for electrical and communications conductors and fiber optics.

MIAMI-DADE COUNTY
§2-11.16 CODE OF MIAMI-DADE COUNTY
RESPONSIBLE WAGES AND BENEFITS SCHEDULE
2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE

ELECTRICAL WORKERS, Continued

As related to an electrical system in its entirety, the chasing, channeling, opening and closing of places above and below ground, placement, installation or temporary installation, erection, inspection, operation, welding, maintenance, service, repair, testing or connection of any electrical conductors, electrical lighting fixtures, appliances, instrumentation apparatus, raceway systems, conduit systems , pipe systems, underground systems, cable tray systems, grounding, bonding systems, lightening protection systems, power-generating green technology systems or other systems of renewable energy including but not limited to photovoltaic, solar, wind turbine, hydro-generation, geothermal or tidal systems, electric vehicle technology, electrical power conductors and communications conductors for energy management systems, electrical power conductors and communications conductors for building automation systems, railroad, signalman, maintainer and railroad communication, nuclear, or the erection, alteration, repair, modification, splicing, termination of electric transmission lines on private property, structured cabling systems for transmission of voice, data, video, notification, warning systems, smoke and fire alarm systems, other life safe safety and security systems and appurtenances.

The installation of electrical lighting, heating and power equipment, fiber optics, and the installation and connecting of all electronic equipment, including computing machines and devices, monitoring of radiation hazards where such monitoring work is not preempted or performed by an electrical utility, the installation of all temporary power and light wiring, high-voltage cable splicing and terminations, breaker testing and the commission and decommission of electrical control systems. Clean, service, repair, replace, operate and adjust high and low voltage switchgear; transformers, conductors, connectors, breakers, fuses and buses. Operations, maintenance and repair of high voltage electrical power connections, circuit protection devices and associated switchgear. Pre-fabricated parts and materials shall be unloaded, distributed and installed by employees covered under this trade and working for the electrical contractor. There are no restrictions on an employers utilization of pre-fabricated or pre-assembled parts, fixtures or other materials when obtained from a third party supplier, except as set forth above.

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2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
ELECTRICAL WORKERS (ELECTRIC SIGN)				
Electrical - Wireman	$ 38.71	$ 6.00	$ 5.81	$ 50.52
Foreman - Required on any job where ten (10) Electricians are employed, one shall be designated foreman.	$ 42.58	$ 6.00	$ 6.39	$ 54.97

Per Hour Premiums:

$2.00 per hour to the per hour wage rate for a Electrician working in high places, seventy-five feet (75') above the ground floor except safety-guarded swing stage, walkways, or 2 man remote baskets.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st year	$ 19.26	$ 4.57	$ 0.58	$ 24.41
2nd year	$ 20.36	$ 4.57	$ 3.05	$ 27.98
3rd year	$ 22.54	$ 4.57	$ 3.38	$ 30.49
4th year	$ 24.72	$ 4.57	$ 3.71	$ 33.00
5th year	$ 29.03	$ 4.57	$ 4.35	$ 37.95

APPRENTICE RATIO: Two (2) Apprentices to (1-3) Wiremen, four (4) Apprentices to (4 to 6) Wiremen, six (6) Apprentices to (7 to 9) Wiremen

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: the installation, alteration, dismantling or removing of all illuminated signs, non illuminated signs or displays, whether luminous tube, light emitting diodes, receptacle, plastic, reflector type, plaques and panels. The installation of all interior neo tubing and light emitting diodes for lighting or decorating all secondary conduit work, flashers, timers or other auxiliary equipment, also the steel structures for the support of signs or displays. In the event of billboards or displays not served from an existing building or group of buildings and which in itself is an individual entity, having its own service and meter, all such service conduit meter and secondary conduit. Also covered is the service, maintenance and patrolling of all electrical equipment on signs, displays, and tube lighting after they have been erected and in operation.

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TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
IRONWORKERS				
Ironworkers	$ 27.00	$ 6.00	$ 6.07	$ 39.07
Foreman *	$ 29.70	$ 6.00	$ 6.07	$ 41.77
General Foreman *	$ 32.40	$ 6.00	$ 6.07	$ 44.47

* A foreman is required when two (2) or more Ironworkers are employed by one employer, one shall be a foreman. When the crew exceeds 12 or more, another foreman is required. A general foreman is required if three (3) or more Ironworker Foreman are employed on a job.

Per Hour Premiums:
Diving Pay add $40.00 rental plus $5.00 to the Ironworker's wage rate.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st 6 months - 800 Hours	$ 16.20	$ 6.00	$ -	$ 22.20
2nd 6 months - 800 Hours	$ 17.55	$ 6.00	$ -	$ 23.55
3rd 6 months - 800 Hours	$ 18.90	$ 6.00	$ -	$ 24.90
4th 6 months - 800 Hours	$ 20.25	$ 6.00	$ -	$ 26.25
5th 6 months - 800 Hours	$ 21.60	$ 6.00	$ -	$ 27.60
6th 6 months - 800 Hours	$ 22.95	$ 6.00	$ -	$ 28.95
7th 6 months - 800 Hours	$ 24.30	$ 6.00	$ -	$ 30.30

APPRENTICE RATIO: One (1) Apprentice to four (4) Ironworkers. For ornamental work one (1) Apprentice to two (2) Ironworkers

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not limited to: erection and installation of all bridges, structural, ornamental, reinforcing, and reinforcing ironwork; which includes but is not limited to the following: reinforcing steel (rebar), post tensioning (cables), structural steel and iron, miscellaneous steel and iron, stairs – joist – decking, curtains and window walls, storefronts – windows, metal doors (manual and electric), glass doors (manual and electric) glass slider doors, screens – fences, tilt walls – precast – stone, space frames – skylights, pre-engineered metal buildings, cladding covers (all types), column covers (all types), towers – cranes – hoists, standing seam metal roofs, handrails – rails (all types), rigging – welding, conveyors – erectors and maintenance, glazing – caulking – sealants and louvers - fixed.

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This classification cannot be used for unskilled employees performing work in other trades OR for employees in other trades that handle their own materials and/or must clean up after their work is performed. Employees must be paid in accordance with the work they perform without regard to skill.				
LABORERS				
Laborer	$ 19.00	$ 4.25	$ 3.41	$ 26.66
Asphalt Laborer: Includes Manual Raker, Manual Shoveler, Manual Spreader	$ 15.00	$ -	$ -	$ 15.00

Per Hour Premiums:
Laborer Foreman (For every 4 laborers) - $2.00 per hour on top of the highest paid laborers
General Foreman (15 or more laborers) - $3.00 per hour on top of the highest paid laborers

$2.00 - Mason and Plaster Tenders, Concrete Placement-Patchmen, and Finisher Tenders, Scaffold Builders, Strippers and Wreckers (demolition), Electric and Air-Hammers, Concrete Grinders, Saws, Coring Machines, Nozzle and Hopper & Mixers, Cutting Torch, Hydro-Blasting (pressure washing) , Chain Saw.

$3.50 - Sidewalks and curb and gutter form builders and setters, Plaster and Concrete Finish and Repair, Loader, Lulls, Forklifts, Bobcats, Water Sewer and Storm Drain Pipe layers, Asbestos Removal, Hazardous Waste and Lead Removal, Remediation and Handling.

Contracts for the inspection of sew er lines for leakage and damage through the use of Closed Circuit T.V. inspections and the simultaneous sealing of leaks or other damage in the lines as the machine inspects the sew er line is covered under the Responsible Wages and Benefits. Contracts for inspection only are not covered. Workers performing on a Closed Circuit T. V. crew should be classified and paid as laborer. The CCTV Operator should receive the $3.00 per hour supplement for Water Sew er & Storm Drain Pipelayers. The rate for the Vactor Trucks Operator is listed under the Operating Engineers Wage Schedule.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st 6 month period	$ 15.20	$ 4.25	$ 3.41	$ 22.86
2nd 6 month period	$ 16.15	$ 4.25	$ 3.41	$ 23.81
3rd 6 month period	$ 17.10	$ 4.25	$ 3.41	$ 24.76
4th 6 month period	$ 18.05	$ 4.25	$ 3.41	$ 25.71

APPRENTICE RATIO: After employing one (1) Laborer, the next laborer employed may be an apprentice, after employing four (4) Laborers, an apprentice shall be employed as the next laborer employed. After the first apprentice is employed, the ratio of Apprentices to Laborers shall not exceed one (1) Apprentice for three (3) Laborers.

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work includes tending masons, plasterers, carpenters and other building and construction crafts. Tending shall consist of preparation of materials and the handling and conveying of materials. Unloading, handling and distributing of all materials, fixtures, furnishings and appliances from point of delivery to point of installation. Cleaning and clearing of all debris. Ageing and curing of concrete, mortar and other materials.

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LABORERS, Continued

Scaffolds: The erection, planking and removal of all scaffolds for lathers, plasterers, bricklayers and other construction trades. Building planking or installation and removal of all staging, swing and hanging scaffolds, including maintenance thereof up to a height of three (3) bucks.

Excavations and Foundations, Site Preparation and Clearance, Transportation and Transmissions Lines: Excavation for building and all other construction, digging of trenches, piers, foundations and holes, digging, lagging, sheeting, cribbing, bracing and propping of foundations, holes, caissons, cofferdams, dams, dikes, and irrigation trenches, canals and all handling filling and placing of sand bags connected therewith. All drilling, blasting and scaling on the site or along the right of way, as well as all access roads, reservoirs, including areas adjacent or pertinent to the construction site, installation of temporary lines. Preparation and compacting of roadbeds for highway construction and the preparation of trenches, footings, etc. for cross country transmission or underground lines or cables. On site preparation and right-of-way clearance, for construction of any structures or the installation of traffic and transportation facilities such as highways, pipelines, electrical transmission lines, dam sites and reservoir areas, access roads, etc.

Concrete, Bituminous Concrete and Aggregates: Mixing, handling, conveying, pouring, vibrating, gunniting and otherwise placing concrete or aggregates, whether done by hand or other process. Wrecking, stripping, dismantling and handling concrete forms and false work. Placing of concrete or aggregates whether poured, pumped, gunnited, or placed by any other process. All vibrating, grinding, spreading, flowing, puddling, leveling and strike off of concrete aggregates by floating rodding or screeding, by hand or mechanical means prior to finishing. The filling and patching of voids, crevices etc. to correct defects in concrete.

Streets, Ways and Bridges: Work in the excavation, preparation, concreting, ramming, curbing, flagging and surfacing of streets, ways, courts, underpasses, overpasses, bridges, approaches, and slope walls and the grading and landscaping thereof. Cleaning, grading, fence or guard rail, installation and/or removal for streets, highways, roadways, apron, runways, sidewalks, parking areas, airports, approaches and other similar installations. Preparation, construction and maintenance of roadbeds and subgrade for all paving, including excavation, dumping and spreading of subgrade material, ramming or otherwise compacting, setting, leveling, and securing or bracing of metal or other road forms and expansion joints, Cutting of concrete for expansion joints. Setting of curb forms and the mixing, pouring, cutting, flowing and strike-off of concrete used therefor. The setting, leveling and grouting of all pre-cast concrete or stone curbs sections. Installation of all joints, removal of forms and cleaning, stacking, loading, oiling and handling. Grading and landscaping in connection with paving work.

Trenches, Manholes, Handling and Distribution of Pipe, etc.: Cutting of streets and ways for laying pipes, cables or conduits for all purposes; digging of trenches, manholes, etc.; handling and conveying all materials; concreting, backfilling, grading, and resurfacing and all other labor connected therewith.

Sewers, Drains, Culverts and Multiplate: Unloading, sorting, stockpiling, wrapping, coating, treating, handling, distribution and lowering or raising of all pipe and multiplate. All digging, driving of sheet piling, lagging, bracing, shoring and cribbing, breaking of concrete back-filling, tamping, re-surfacing and paving of all ditches in preparation for the laying of pipe. Pipelaying, leveling and making of the joint of any pipe used for main or side sewers and storm sewers, and all pipe for drainage.

Underpinning, Lagging, Bracing, Propping and Shoring; Drilling and Blasting; Signal Men; General Excavation and Grading and Landscaping of all sites for all purposes; and wrecking (demolition).

Construction Cleaners, Janitors, Fire Watchers, Hole Watchers, Material Handlers, Escorts and Equipment Monitors, Decontamination Workers, Flaggers and Landscapers, Mowers, Guardrail and Fence Erector and Rod Carrier.

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MILLWRIGHTS, MACHINERY ERECTORS & DIVERS				
Millwrights, Machinery Erectors	$ 32.75	$ 5.50	$ 12.58	$ 50.83
Foreman - (2 to 10 Millwrights)	$ 35.04	$ 5.50	$ 12.58	$ 53.12
General Foreman - (2 or more Foremen and can serve as a Crew Foreman)	$ 36.03	$ 5.50	$ 12.58	$ 54.11
Diver - wet dry days (2)	$ 38.79	$ 5.50	$ 12.58	$ 56.87

Per Hour Premiums:
On wet days, a Diver shall be paid the Diver rate and penetration pay of $2.00 per foot per day in excess of twenty (20) feet after entering an enclosed structure that has no direct path to the surface.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st Year	$ 21.29	$ 5.50	$ 12.58	$ 39.37
2nd Year	$ 24.56	$ 5.50	$ 12.58	$ 42.64
3rd Year	$ 27.84	$ 5.50	$ 12.58	$ 45.92
4th Year	$ 31.11	$ 5.50	$ 12.58	$ 49.19

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

(2) Diver classification applies to any Millwright that performs work beneath the water surface.

Scope of work under this trade includes but is not limited to: installation, assembly, and, when necessary, dismantling machinery in factories, power plants, and construction sites.

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OPERATORS AND TRUCK DRIVERS				
OPERATORS				
Backhoe/Trackhoe	$ 16.24	$ -	$ -	$ 16.24
Bobcat/Skid Steer	$ 22.50	$ 4.25	$ 3.41	$ 30.16
Boom	$ 18.95	$ -	$ -	$ 18.95
Boring Machine	$ 15.29	$ -	$ -	$ 15.29
Broom/Sweeper	$ 15.00	$ -	$ -	$ 15.00
Bulldozer	$ 16.77	$ -	$ -	$ 16.77
Crane	$ 22.46	$ -	$ -	$ 22.46
Curb Machine	$ 20.74	$ -	$ -	$ 20.74
Distributor	$ 15.00	$ -	$ -	$ 15.00
Drill	$ 15.00	$ -	$ -	$ 15.00
Excavator	$ 16.24	$ -	$ -	$ 16.24
Forklift /Lull	$ 22.50	$ 4.25	$ 3.41	$ 30.16
Gradall	$ 15.00	$ -	$ -	$ 15.00
Grader/Blade	$ 20.22	$ 3.85	$ -	$ 24.07
Loader	$ 22.50	$ 4.25	$ 3.41	$ 30.16
Mechanic	$ 18.03	$ -	$ -	$ 18.03
Milling Machine	$ 15.00	$ -	$ -	$ 15.00
Oiler	$ 16.32	$ -	$ -	$ 16.32
Paver (Asphalt Aggregate, and Concrete)	$ 15.00	$ -	$ -	$ 15.00
Post Driver (Guardrail /Fences)	$ 15.00	$ -	$ -	$ 15.00
Roller	$ 15.00	$ -	$ -	$ 15.00
Scraper	$ 15.00	$ -	$ -	$ 15.00
Screed	$ 15.00	$ -	$ -	$ 15.00
Striping Machine	$ 15.07	$ -	$ -	$ 15.07
Spray Nozzleman	$ 15.00	$ -	$ -	$ 15.00
Tractor	$ 15.00	$ -	$ -	$ 15.00
Trencher	$ 15.00	$ -	$ -	$ 15.00
TRUCK DRIVERS				
Distributor Truck	$ 15.00	$ 2.17	$ -	$ 17.17
Dump Truck	$ 15.00	$ -	$ -	$ 15.00
Flatbed Truck	$ 15.00	$ -	$ -	$ 15.00
Lowboy Truck	$ 15.07	$ -	$ -	$ 15.07
Slurry Truck	$ 15.00	$ -	$ -	$ 15.00
Vactor Truck	$ 15.00	$ -	$ -	$ 15.00
Water Truck	$ 15.00	$ 1.60	$ -	$ 16.60

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

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PAINTERS/WALL COVERING INSTALLATIONS				
Painter - Commercial	$ 17.53	$ 6.72	$ 5.83	$ 30.08
Painter - Industrial	$ 21.76	$ 6.72	$ 5.83	$ 34.31
Painter - Bridge	$ 31.00	$ 6.72	$ 7.99	$ 45.71
Painter (Highway/Parking Lot Striper)	$ 15.00	$ -	$ -	$ 15.00
Operator (Spray Nozzleman)	$ 15.00	$ -	$ -	$ 15.00
Operator (Striping Machine)	$ 15.07	$ -	$ -	$ 15.07

Per Hour Premiums:

$1.00 Charge person working up to 5 employees
$1.50 Charge person working 6 or more employees
$1.00 General Foreman above highest paid charge person
$1.00 Swing-Stage
$2.00 Thermal-Spay/Metalizing
$ .50 Apprentices - steel, swing/stage, tanks, lead/asbestos abatement, power facilities, catalyzed epoxies, urethanes, HIPAC coatings

Industrial Rates are used on Water Treatment Plants, Pump Stations, Elevated / Ground Storage Tanks and Communication Towers.

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see pages 7-8 of the Supplemental General Conditions for more information.

1st 6 months	$ 11.39	$ 6.72	$ 1.67	$ 19.78
2nd 6 months	$ 12.27	$ 6.72	$ 1.67	$ 20.66
3rd 6 months	$ 13.15	$ 6.72	$ 1.67	$ 21.54
4th 6 months	$ 14.02	$ 6.72	$ 1.67	$ 22.41
5th 6 months	$ 14.90	$ 6.72	$ 1.67	$ 23.29
6th 6 months	$ 15.78	$ 6.72	$ 1.67	$ 24.17
7th and 8th 6 months	$ 16.65	$ 6.72	$ 1.67	$ 25.04

APPRENTICE RATIO: One (1) Apprentice to three (3) Painters or Wall Covering Installers

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not limited to: preparation, application and removal of all types of coatings and coating systems in relation to all painting, decorating, protective coatings, coating and staining of concrete floors and toppings, waterproofing, masonry restoration, fireproofing, fire retarding, metal polishing, refinishing, sealing, lining, fiber glassing, E-Glass fiberglass, carbon fiber, encapsulating, insulating, metalizing, flame spray, the application of Exterior Insulating Finishing Systems;

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PAINTERS/WALL COVERING INSTALLATIONS, Continued

Each and all such applications, and similar or substitute applications, on all surfaces, interior and exterior, to include, but not to be limited to: residences; buildings; structures; industrial, power, chemical and manufacturing plants; bridges; tanks; vats; pipes; stacks; light and high tension poles; parking, traffic and air strip lines; trucks; automobile and railroad cars; ships; aircraft; and all machinery and equipment;

Any and all material used in preparation, application or removal of any paint, coatings or applications, including, but not limited to: the handling and use of thinners, dryers, sealers, binders, pigments, primers, extenders, air and vapor barriers, emulsions, waxes, stains, mastics, plastics, enamels, acrylics, epoxies, epoxy injection and T-Lock welding, alkalis, sheet rubber, foams, seamless and tile-like coatings, etc.;

All preparation for and removal of any and all materials for finishes, such as deep cleaning, patching, all levels of finishing, taping/finishing skim coating, pointing, caulking, high pressure water, chemical and abrasive blasting, environmental blasting, wet/dry vacuum work, chemical stripping, scraping, air tooling, bleaching, steam cleaning, asbestos and lead abatement/removal; mold remediation and vapor barrier systems;

The inspection of all coatings and/or coating systems during their applications.

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PILEDRIVERS, BRIDGE CARPENTERS & DIVERS				
Piledrivers and Bridge Carpenters	$ 25.45	$ 4.60	$ 7.05	$ 37.10
Foreman	$ 28.95	$ 4.60	$ 7.05	$ 40.60
(All piledriving crews shall consist of at least one paid foreman)				
Divers (Wet days up to 59' or Dry days)	$ 29.90	$ 4.60	$ 7.05	$ 41.55
Diver Tenders	$ 29.90	$ 4.60	$ 7.05	$ 41.55
Foreman Diver	$ 33.40	$ 4.60	$ 7.05	$ 45.05

Diver Wet Days - The diver and tender must receive the diver rate with a premium pay of $1.00 per hour/ per foot per day for (60'-100'). Over 100' will be negotiated between the diver and the employer.

Foreman Wet Days - The foreman must receive the foremen rate with a premium pay of $2.00 per hour/ per foot per day for (50'-100'). Over 100' will be negotiated between the diver and the employer.

For Effluent Diving (working in hazardous waters such as waste water treatment plant/tanks, sewer pipes or storm water out fall pipes) the diver and tender must receive 1.5 times the diver and tender base rate and on wet days the diver and tender must also receive a premium pay of $1.00 per foot per day for (60' - 100') and over 100' will be negotiated between the diver and the employer.

Penetration: $1.00 per foot per day in excess of 20' after entering an enclosed structure that has no direct path to the surface.

Per Hour Premiums:
$0.50 Certified Welders

Apprentices:

NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - http://www.fldoe.org/workforce/apprenticeship. Please see page 6 of the Supplemental General Conditions for more information.

1st year	$ 17.05	$ 4.60	$ 7.05	$ 28.70
2nd year	$ 19.09	$ 4.60	$ 7.05	$ 30.74
3rd year	$ 20.87	$ 4.60	$ 7.05	$ 32.52
4th year	$ 22.91	$ 4.60	$ 7.05	$ 34.56

APPRENTICE RATIO: Two (2) Apprentices to three (3) Piledrivers/Bridge Carpenter

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: all work historically related to piledrivers, welders, drillers, burners, riggers, divers, bridge, deck and wharf builders, signaling, and highway construction. Such work includes, but is not limited to, the following kinds, classes, or descriptions of work: fabricating, erecting, dismantling, loading, unloading, moving, spotting, and handling of all piledriving equipment on the jobsite;

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PILEDRIVERS, BRIDGE CARPENTERS & DIVERS, Continued

Jobsite moving and spotting of barges used in connection with piledriving work; anchoring, bolting, boom-tending, bracing, building, burning, capping, caulking, cutting, chipping of all types of piles, dismantling, drilling, erecting, fabricating, fitting, handling, lagging, loading, moving, plumbing, rafting, securing, signaling, spotting, welding, wrapping, and tying back, unloading and removing, all materials of any kind, make, shape or composition, whether prestressed or post stressed concrete, pipe, corrugated shell where power rigging is used, sand piles, sheet piles, auger cast type piling, wood, plastic, fiberglass, steel or any metal or synthetic which is used or installed in, or for, the building, construction, alteration, maintenance, or repair of wharfs, bridges, docks, piers, bulkheads, trestles, offshore drilling platforms of oil, gas, or any other purpose, coal docks, cofferdams, tunnels, seawalls, seawall caps, boardwalks, deck, and temporary flotation devices;

Pilings used in retaining walls, reservoirs, ditches, canals, spillways, cuts, or in any place where retaining walls are used, made of any kind of material, whether temporary or permanent; weights for piers, caissons, and test piles; Test piles and other test materials, including the securing of such materials except for independent testing equipment done by an independent testing laboratory;

Foundation work, including all piling, whether cast-in-place, poured-in-place, driven, jetted, augured, pre-augured or placed, and all caisson, drilled shaft and vibro-flotation foundations;

The splicing, heading, placing of stringers for frame work, fabrication and placing of wailing, spring and fender lines of any material described above;

The driving, vibrating, jetting, sinking, or screwing of all materials described above, whether by steam, pneumatic, hydraulic, electric, diesel, gravity, or vibratory hammer power; All other work in connection with drilling of any holes, shafts or caissons, for foundation work, spotting, aligning, monitoring, plumbing, and leveling of all drilling equipment whether the drilling is vertical, diagonal, on land or water, and is performed by equipment mounted on trucks, cranes, platforms or barges, or any other kind of mounted or self-contained water or land unit; and the handling, loading, unloading, changing, setting up, repairing, welding, or maintenance of the drilling equipment on the job site.

The fabrication and placing of all decking and guards on all docks, wharfs, and piers on the jobsite. All labor (except the work of the Operating Engineers and Oilers) employed in the actual operation of Piledriving equipment used from whatever purpose, including the operation of deck winches. The operation of vibratory hammer controls, hammer throttle values and panels not permanently fixed to a crane within reach of the Operator work.

Diving: shall be defined as any work performed beneath the water surface, which require individual external life support systems for safe and efficient performance. All underwater construction and reconstruction and the salvage of, and removing of, underwater structures; underwater inspection and repair of hulls, docks, bridges and dams, underwater pipelines, sewages and water systems, underwater suction and discharge lines such as those used at chemical plants, pull mills, and desalinization plants; inspecting, surveying , removing, rescuing, and recovering of all objects below water surfaces; all underwater work necessary on offshore oil platforms permanent or temporary, including all offshore floating drill rights and offshore jack up platforms; all underwater work on pipelines and hookups including oil, gas, water sewage systems; the laying of under water power and telephone cables; offshore marine mining and dredging operations using divers in any phase of tier work; all petroleum, fisheries, oceanographic, research and experimental work, nuclear reactors where the use of divers is necessary; all underwater demolition and blasting work requiring divers.

MIAMI-DADE COUNTY
§2-11.16 CODE OF MIAMI-DADE COUNTY
RESPONSIBLE WAGES AND BENEFITS SCHEDULE
2023

"HIGHWAY CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

For any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract, Small Business Development for a wage determination.

Questions concerning the comparability of worker classifications or the applicability of Davis-Bacon classification shall be determined by the County.

Please Contact:

Internal Services Department
Small Business Development Division
The Stephen P. Clark Center
111 N.W. 1st Street - 19th Floor
Miami, Florida 33128-1906
Phone Number: (305) 375-3111
Fax Number: (305) 375-3160

NOTICE

County Code §2-11.16

NOTICE TO ALL EMPLOYEES WORKING ON COUNTY CONSTRUCTION PROJECTS

RESPONSIBLE WAGES AND BENEFITS

MINIMUM WAGE
You must be paid not less than the required base hourly rate and benefits listed in the Wages and Benefits Schedule for every hour worked. You may not be paid below the base rate even if the value of the fringe benefits provided to you exceeds the value of the health and pension required in the schedule. Additionally, you must be paid not less than the combined dollar value (Base Rate + Health + Pension Benefit) listed in the wage and benefits schedule posted with this notice for the type of work you are performing if benefits are not provided.

OVERTIME
You must be paid time and one-half of your rate of pay for all hours worked in excess of 40 hours in a week.

APPRENTICES & TRAINEES
Apprentices/trainees rates apply only to apprentices and trainees properly registered under an approved Federal or State apprenticeship or training program.

SANCTIONS
Sanctions for a first-time offender are 20% of the amount of underpayment payable to the County. The sanctions increase to 40% for the second underpayment and 60% for the third underpayment. Contractors found to have underpaid a fourth time may be subject to suspension or termination in accordance with the contract terms and debarment in accordance with the debarment procedures of the County.

COMPLAINTS Written complaints of underpayment should be filed with:

Internal Services Department
Small Business Development Division
111 NW 1ST Street, 19TH Floor Miami, FL 33128
Telephone: (305) 375-3111 FAX: (305) 375-3160
Email: SBDMAIL@MIAMIDADE.GOV

MIAMI-DADE COUNTY
miamidade.gov

Internal Services Department
Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111 F 305-375-3160

FAIR WAGE AFFIDAVIT

Before me, the undersigned authority appeared _____ the
(PRINT NAME)

_____ of _____,
(PRINT TITLE) **(PRINT NAME OF BIDDER OR PROPOSER)**

who attests that _____shall pay workers on
(**PRINT NAME OF BIDDER OR PROPOSER)**

the project minimum wage rates in accordance with Responsible Wages and Benefits, Section 2-11.16 of the Code of Miami-Dade County and the Labor Provisions of the contract documents.

State of FLORIDA
County of Miami-Dade

Sworn to (or affirmed) and subscribed before me this _____day of _____, 20_____.

_____Personally, known or_____ produced identification.

_____ _____
(Signature of Notary Public - State of Florida) **(Print, Type, or Stamp Commissioned Name of Notary Public)**

Type of identification produced:_____

Contractor Quick Start Guide

Version: 2
Date: 8/3/2022

LCPtracker
117 E. Chapman Ave. Orange, CA 92866

Table of Contents

Contractor Quick Start Guide

At LCPtracker (Labor Compliance Program Tracker), we are aware that using a Prevailing Wage Software may be a new undertaking for many Contractors. We have designed this guide to explain what LCPtracker is used for and how to start using the software.

The LCPtracker service is a paperless, online system of entering Certified Payroll Reports (CPRs). Payroll data may be entered directly into the system or uploaded from major construction accounting systems or payroll programs. This service eliminates the need for Contractors to submit paper documents and forms while providing an online database that stores all CPRs.

All contract-specific wage rates, fringe rates and worker crafts/classifications are online within the system, and Contractors may then select craft/classifications from a drop-down menu. Potential errors in wage rates or work classification entries can be flagged to Contractors preemptively, allowing them to submit data with corrections implemented. (This is contingent on how the Administrator set up their Project validations). Once you have submitted your CPR, an electronic version will be available, and you will have access to all Contractor reports within LCPtracker.

It is important to understand that the LCPtracker validation rules operate to assist you in your compliance process only insofar as the correct classifications are chosen by the user, and the correct data is entered by the user.

Contacting LCPtracker Support

There is no cost to Contractors for this service or for online training. We have a dedicated Support staff available Monday through Friday from 5:00am until 5:30pm PST.

Contractors may access the various options for training after receiving a User ID and password, which will be sent by a “no reply” email address from LCPtracker (i.e., NOREPLY@LCPtracker.com). This email, with login instructions, will be sent to Contractors once they’re assigned to an account in LCPtracker by your Agency or Prime Contractor. Every Contractor account is created by the Agency or their Prime Contractor. Complete and full support is offered directly to Contractors by LCPtracker for any technical questions on the use of the software.

Contact LCPtracker Support:

- 714-669-0052 option 4; or
- Support@LCPtracker.com; or
- Live Chat

If you send the Support Team an email or prefer to leave a voice message, LCPtracker asks that you include the information listed below (because of the high number of users stored within LCPtracker, we cannot look up your account with only your company name or project you are working on).

- Your Company Name
- Your User ID
- Your Name and Phone Number
- What the Issue is – please be a specific as possible so we can re-create the issue

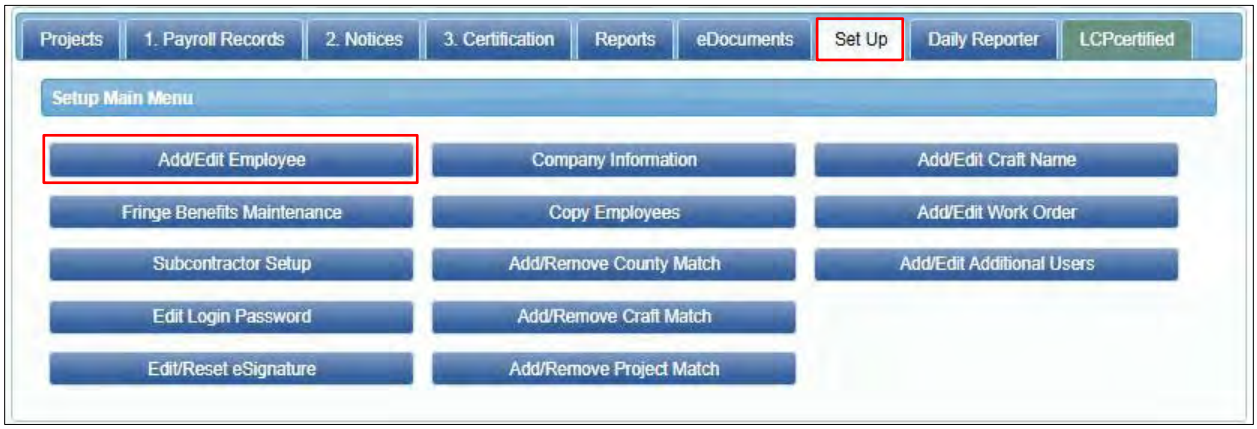
LCPtracker Training Options

Contractors can access the various options for training after receiving a User ID and password. An email with login instructions will be sent to Contractors once they are assigned to an account in LCPtracker. Every Contractor account is created by the Agency or their Prime Contractor.

Add/Edit Employee

This section is used to enter Contractor employee's personal information.

To add an employee into system or edit someone already in system, click 'Set Up' and then 'Add/Edit Employee'.



Add/Edit Employee Information

Enter the appropriate employee information in the data fields. Tab key or mouse click to move between fields. Any **RED** asterisk field(*) is required by the Agency, and the system will not save unless the information is entered in the required fields.

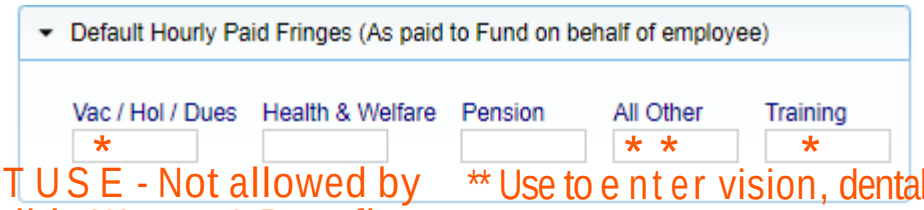
Default Hourly Paid Fringes (As paid to Fund on behalf of employee)

This section is known as a 'time saver'. It is optional to fill in the hourly fringe rates in this section. This will allow for ease of use when entering payroll records manually, as you will be able to click the 'Calculate Fringes' button on the Payroll Entry screen, and the system will perform the mathematical calculation of the hourly fringes multiplied by the hours worked.

*If there are any predetermined increases, or your Union updates once a year, you will need to come back to this section and update your fringes accordingly.

**If you have multiple projects with different fringe rates, built in increases, or everyone has the same fringes and you only want to enter those dollar values once, skip this section and use the 'Fringe Benefit Maintenance' table to enter your hourly fringe rates into system.

Note: Any fringe amount entered in this section will supersede the fringe amount entered in that time saver section of the employee setup.



* DO NOT USE - Not allowed by Responsible Wages & Benefits

** Use to enter vision, dental, life, and Accidental Death & Dismemberment insurance Only

Default Other Deductions Notes

Any deduction that is permissible according to the USDOL or your Agency (such as IRS garnishments, child support, a company loan, etc.) would fall under the 'other' deduction section. Any amount listed in 'other' will then dictate that 'other deduction notes' are required.

1. Payroll Records Tab

There are five methods of payroll entry available to all Contractors:

1. Copy Payroll feature in LCPtracker
2. Upload from a payroll system export file
3. Upload from the Excel spreadsheet
4. Direct Payroll Subscription / Interface (DPI)
5. Manual entry

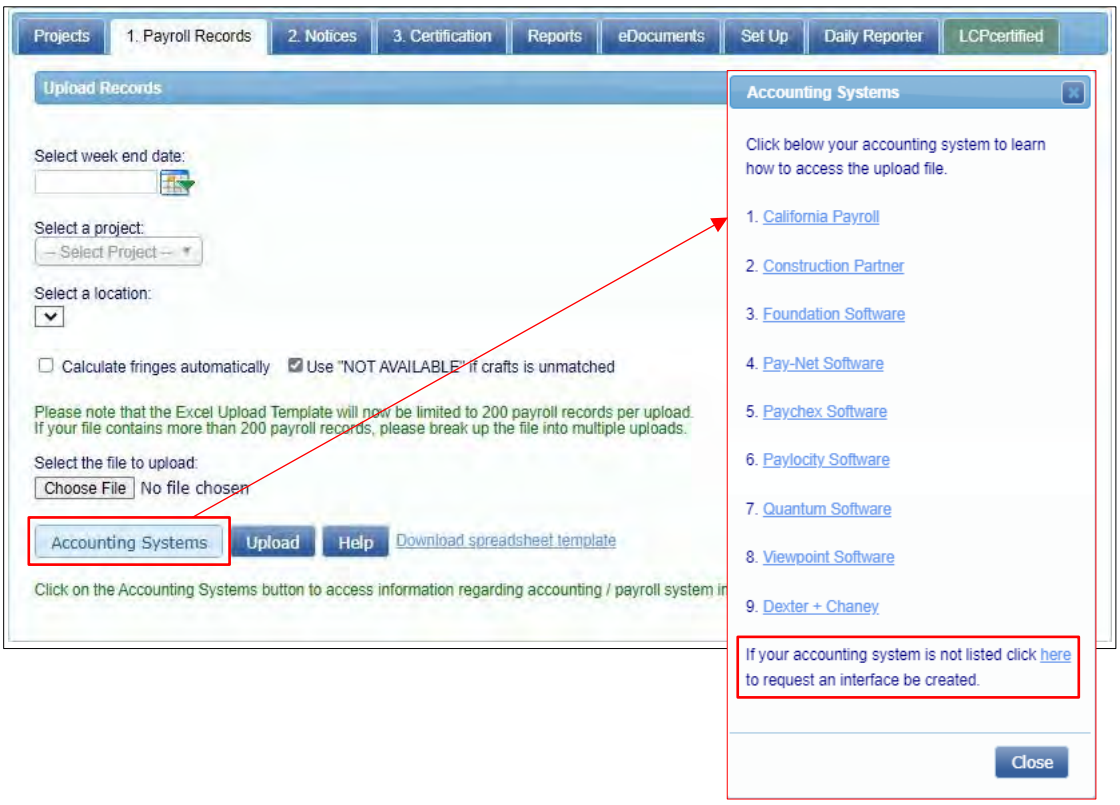
1. Copy Payroll

This option is only available if a week of payroll has been previously completed. In the Payroll Records tab, click the 'Copy Previous Payroll' button, select the project, then select the CPR to be copied.

2. Upload from a Payroll System Export File

In the Payroll Records tab, click the 'Upload Records' button, then click the 'Accounting Systems' button, you will see a partial list of the payroll companies that we have partnered with to create a payroll interface, or export file.

To see a complete list of payroll interfaces available, please visit www.lcptracker.com, and click the 'Resources' tab, then select 'Partners'. If you do not find your payroll company and would like to see if there is an opportunity to partner, please fill out the informational form listed under the "Upload Records" section and someone from LCPtracker will contact you.



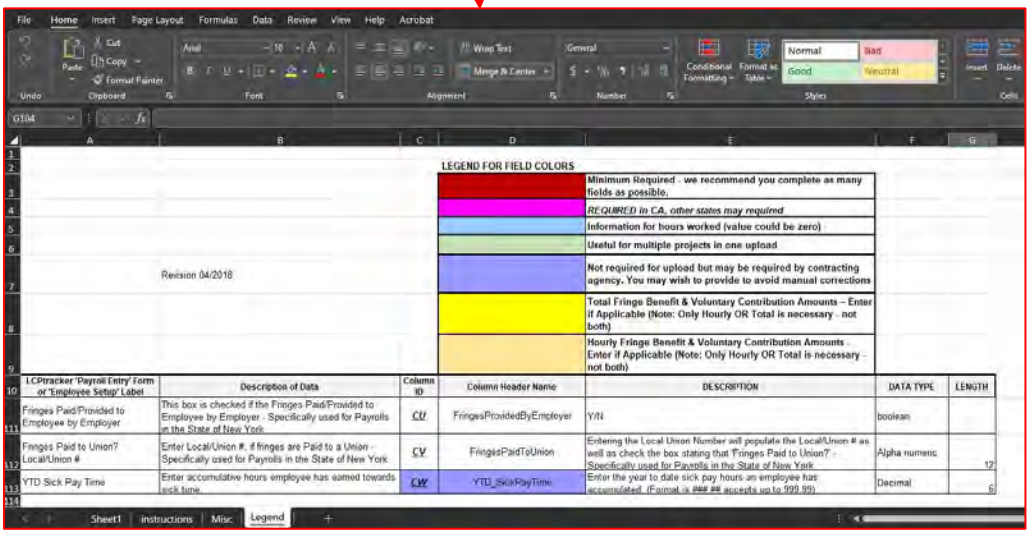
Click on the name of your payroll company, and a list of directions on how to obtain your export file will be available, or you will see a request that you contact your payroll company directly for instructions on how to obtain that export file.

Once you have the export file, you can use it to upload your CPR using the “Upload Records” button.

3. Upload from the Excel Spreadsheet

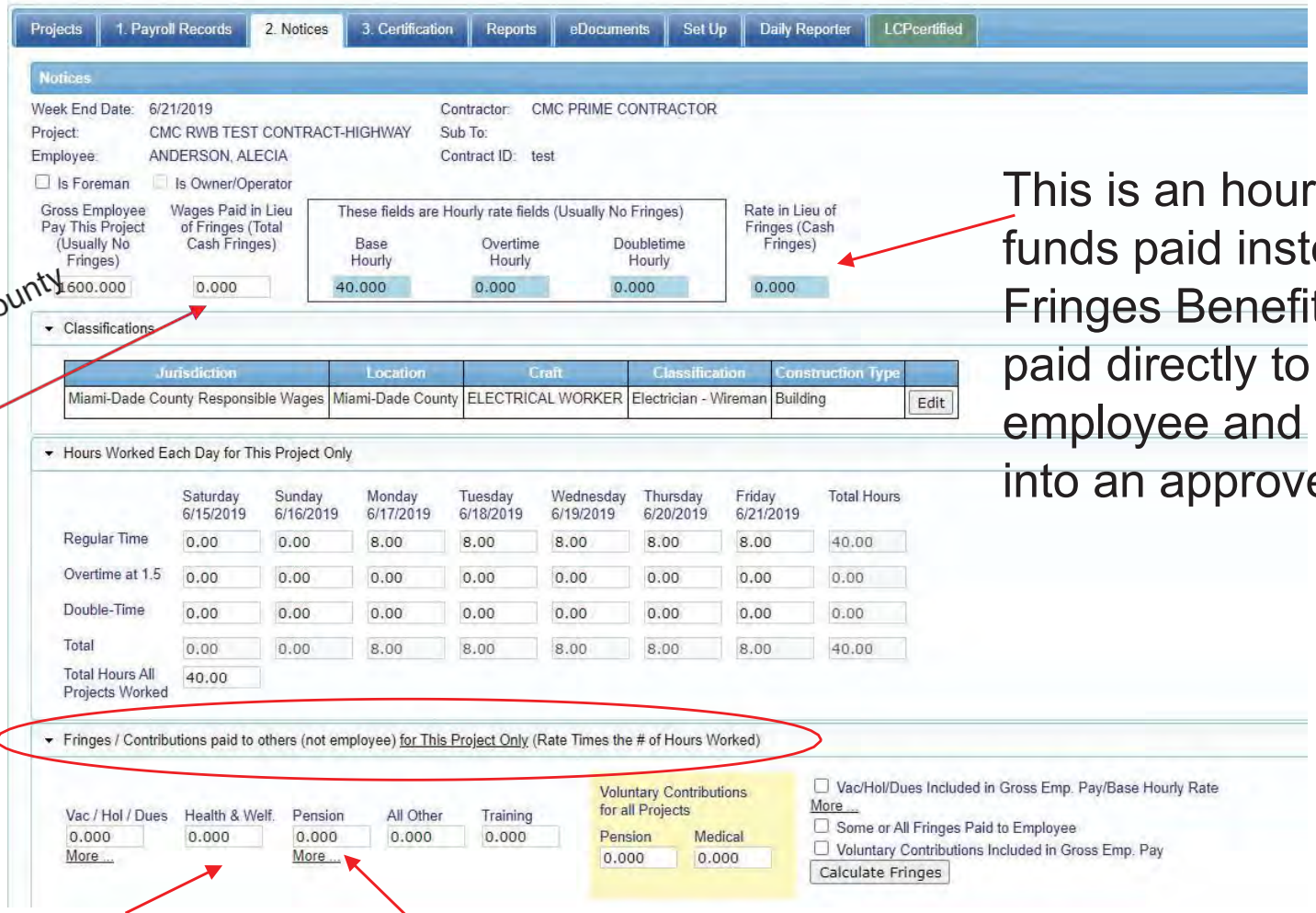
There is an Excel spreadsheet template available for you to download in the same ‘Upload Records’ section mentioned above. There is a legend as well as instructions available on the Excel template.

Information can be manually entered into this Excel spreadsheet, or you can confer with your IT department to see if they can utilize this spreadsheet to create a report out of your existing payroll system.



Entering Fringe Benefits on LCPTracker

Wages Paid in Lieu of Fringes (Total cash fringes) = hourly rate of fringe x hours worked on county job



This is an hourly rate of funds paid instead of Fringes Benefits. Funds paid directly to the employee and not paid into an approved plan.

Paid into approved Plan.

- Health Insurance
- Dental Insurance
- Vision Insurance
- Life Insurance
- Accident Death & Dismemberment

Paid into approved Plan

- Pension Plan
- 401K

Payroll record entry form (2 of 2)

Week End Date: 6/3/2018 Contractor: Darren's Demo
Project: M59 Realignment Sub To:
Employee: DUCK, DONALD Contract ID: 5

☐ Is Foreman ☐ Is Owner/Operator

Gross Employee Pay This Project (Usually No Fringes)	Wages Paid in Lieu of Fringes (Total Cash Fringes)	These fields are Hourly rate fields (Usually No Fringes)			Rate in Lieu of Fringes (Cash Fringes)
		Base Hourly	Overtime Hourly	Doubletime Hourly	
0.000	0.000	50.000	0.000	0.000	0.000

Gross Employee Pay This Project – The amount of basic wages paid for this project only. This is typically the hourly rate of pay multiplied by the hours worked (it could be more complex with overtime figured in).

Wages Paid-in-Lieu of Fringes – The amount paid to the employee instead of fringe benefits paid to a plan, fund or program. This amount is sometimes included in the Gross Employee Pay this Project depending on the accounting system and the agency reporting requirements. (Whether you are a Union Shop or Open Shop typically determines whether you pay these required fringes to an approved plan, fund or program, or pay them directly to the employee in cash.) This amount would be the rate-in-lieu of Fringes multiplied by the number of hours worked.

Lump Sum Payments

Rate-in-lieu of fringes – The hourly rate paid-in-lieu of fringes. If you pay your employees directly for the required fringe benefit instead of paying into an approved plan, fund or program, please list the hourly rate paid here.

Base Hourly – The hourly rate of pay not including fringes. Some accounting systems include taxable fringes and fringes paid-in-lieu in this amount, do not include those in this field.

Overtime Hourly – The hourly rate of pay multiplied by a factor of 1.5. Do not include fringe benefits in this equation, unless specifically called for by your Awarding Body.

Doubletime Hourly – The hourly rate of pay multiplied by a factor of 2. Do not include fringe benefits in this equation, unless specifically called for by your Awarding Body.

Rates

4. Direct Payroll Subscription/Interface (DPI)

This option allows you to choose to have LCPtracker map your existing payroll so that you may use it (as a PDF or .CSV file) as an upload file. Once you have it, you can use it to upload your CPR from that 'Upload Records' button.

5. Manual Entry

For Manual Entry, in the 'Enter Records' tab, you will enter a record each week for every employee that performs work covered by prevailing wages on their project.

If your employee works in more than one classification (i.e., they've worked 20 hours as a Carpenter and 20 hours as a Power Equipment Operator) enter two separate pay records to show that they are being paid according to the work performed.

Amounts Paid (top section of the Payroll Record Entry Form)

Enter the appropriate amounts in the appropriate sections. Keep in mind this is just a transfer of historical data from your already existing payroll records.

1. Gross Employee Pay This Project – The amount of basic wages paid for this project only. This is typically the hourly rate of pay multiplied by the hours worked (it could be more complex with overtime figured in).

2. Wages Paid-in-Lieu of Fringes – The amount paid to the employee instead of fringe benefits paid to a plan, fund or program. This amount is sometimes included in the Gross Employee Pay this Project depending on the accounting system and the agency reporting requirements. (Whether you are a Union Shop or Open Shop typically

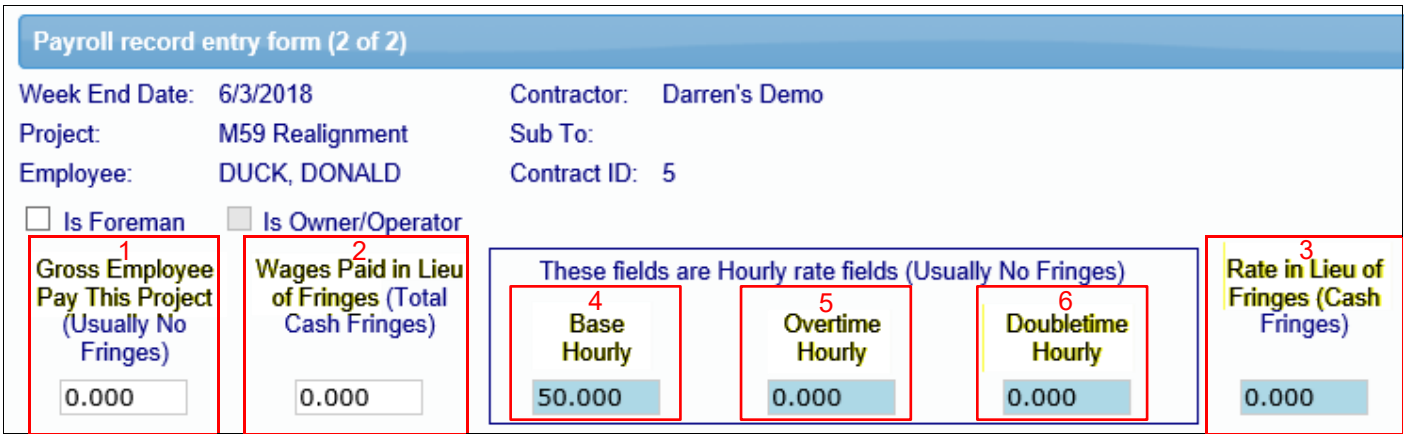
determines whether you pay these required fringes to an approved plan, fund or program, or pay them directly to the employee in cash.) This amount would be the rate-in-lieu of Fringes multiplied by the number of hours worked.

3. Rate-in-lieu of fringes – The hourly rate paid-in-lieu of fringes. If you pay your employees directly for the required fringe benefit instead of paying into an approved plan, fund, or program, please list the hourly rate paid here.

4. Base Hourly – The hourly rate of pay not including fringes. Some accounting systems include taxable fringes and fringes paid-in-lieu in this amount, do not include those in this field.

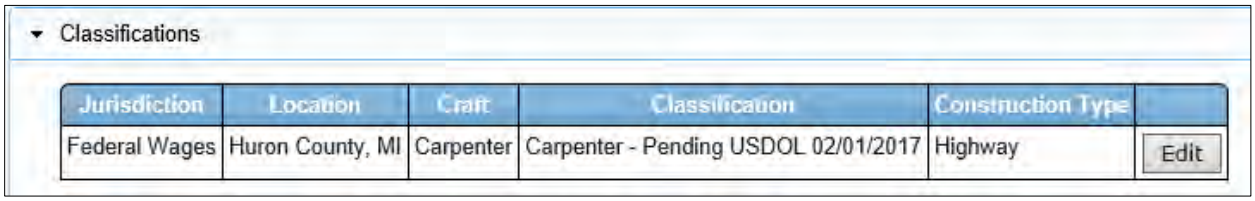
5. Overtime Hourly – The hourly rate of pay multiplied by a factor of 1.5. Do not include fringe benefits in this equation, unless specifically called for by your Agency.

6. Doubletime Hourly – The hourly rate of pay multiplied by a factor of 2. Do not include fringe benefits in this equation, unless specifically called for by your Agency.



Classifications

This section lists the craft and classification that your employee worked on your project and will be paid for. If you mistakenly choose the wrong classification on the original entry page, you may change it here by clicking on the Edit button. (Remember that if your employee worked in more than one classification within this work week, you would need to enter a separate payroll record for that classification).

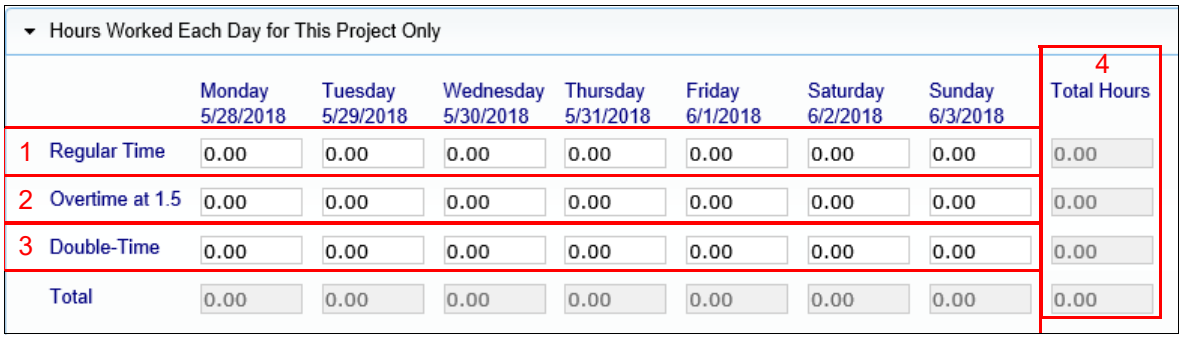


Hours Worked Each Day for This Project Only

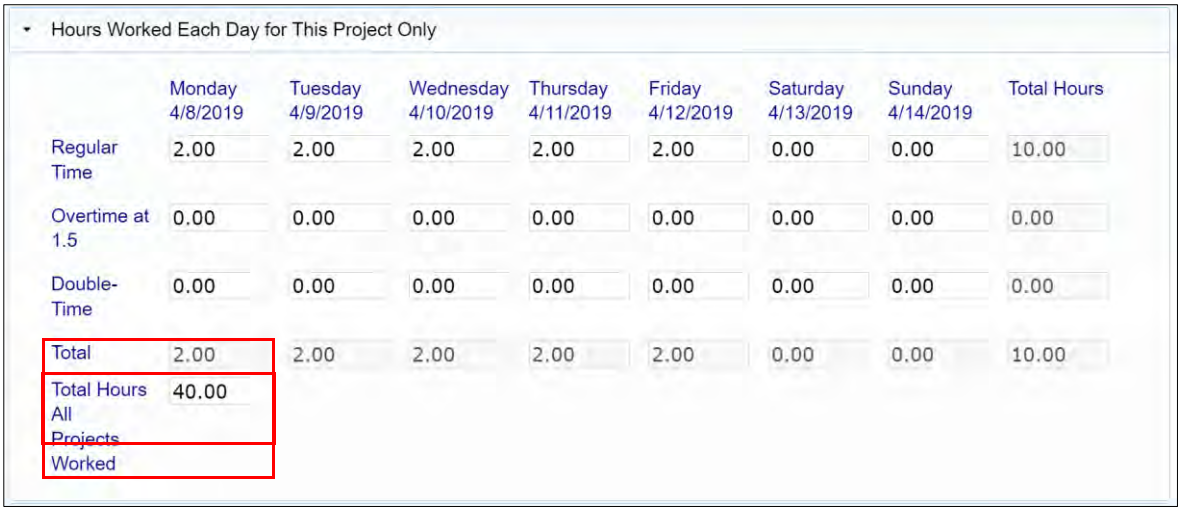
Enter the hours worked each day.

The first row is for regular time worked(1), the second row is for overtime worked(2) and the third row for is for double time worked(3).

ONLY enter hours worked on this prevailing wage job for this week. The system will total each type of hours worked, the days worked and the week under the totals hours column(4).



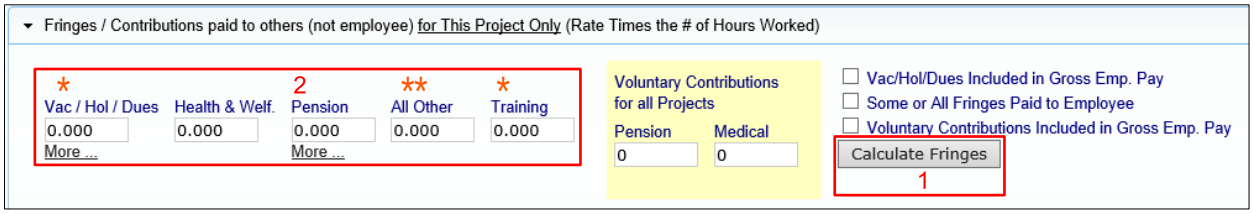
Note: If turned on by the Administrator, you may see an additional field 'Total Hours All Projects Worked' listed in the hours section. If so, this field will require a manual entry for your employee's full hours worked that week.



Fringes/Contributions Paid to Other (Not Employee) for This Project Only

You may utilize this section in two different ways:

1. Auto calculate
2. Manual entry



* DO NOT USE - Not allowed by Responsible Wages & Benefits

** Use to enter vision, dental, life, and Accidental Death & Dismemberment insurance Only

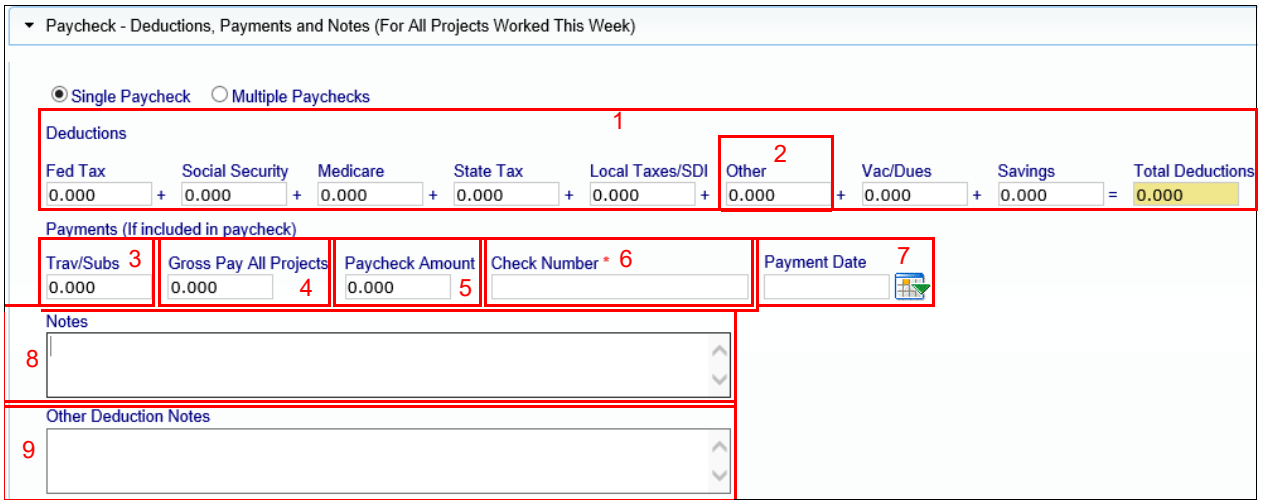
Auto Calculate: The first is by simply clicking the 'Calculate Fringes' button so that the system automatically calculates the fringe benefit rates paid.

Manual Entry: This only works if you filled out the hourly fringe benefit rates in the Add/Edit Employee screen (or the Fringe Benefit Maintenance section, also available in the Set Up tab). This function multiplies the hours worked times the fringe benefit rate to get the values.

The second way is to manually enter the total amounts paid per section (Vac/Hol/Dues, Health & Welfare, Pension, etc.) from your payroll register or paystubs. Mark the appropriate check boxes as required. If they are checked in the Add/Edit Employee setup, then that value carries over.

Paycheck – Deductions, Payments, and Notes

Values entered in this section apply to all hours worked on all projects during the week.



1. Deductions - the 'Total Deductions' box will add as you enter values in the taxes, other deductions, Vac/Dues and Savings fields.

2. Other Deduction - this field is for permissible deductions that do not fall into the other available fields. If you put an amount in the 'Other' deductions field, an 'Other Deduction Note' will become required.

3. Trav/Subs - this field is for travel or subsistence paid to your employee. This amount does figure into the mathematical calculation that the system to ensure that Gross and Net pays are correct.

4. Gross Pay All Projects – the gross amount on the paycheck for the week including all projects worked.

5. Paycheck Amount – this is also referred to as Net pay. This is the actual amount of pay the employee received.

6. Check Number – you have the option of putting different information in this field. If you hand out actual checks to your employees, please enter the check number in this field. If

you utilize direct deposit and no check numbers exists, enter 'DD'.

7. Payment Date – this is the actual date of the paycheck. Not all Agencies require this field.

8. Notes – this is a section that allows you to communicate anything out of the ordinary that you would like your Agency to know.

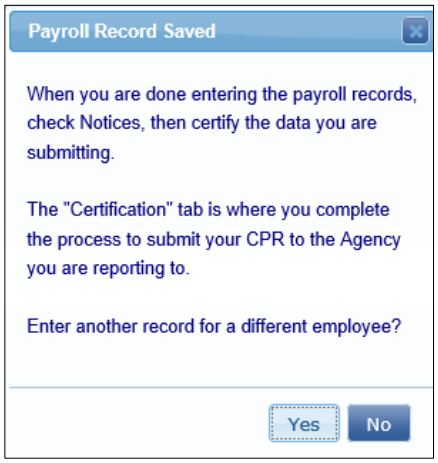
9. Other Deduction Notes – if you entered a permissible deduction in the above-mentioned field, then you will be required to leave a note describing that deduction. Please remember to be transparent in your notes entered. We recommend that you list what the actual deduction is, and not write "other deduction" or "N/A".

Saving the Payroll Record

When you have completed all the above-mentioned fields, Click Save.

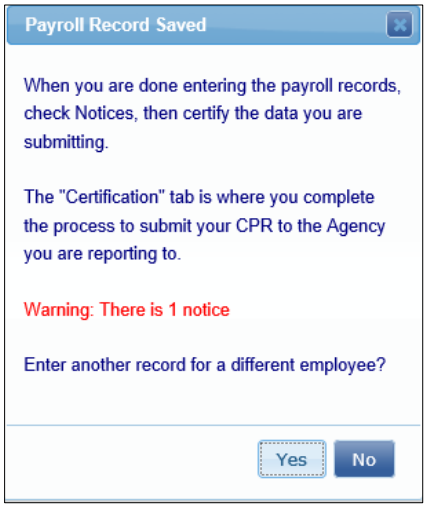
SAVE WITH NO NOTICES

With a successful save you will get this message:



SAVE WITH NOTICES

If you do not get this message, look for the **RED** message on the screen. You may have to scroll through the payroll record to see what you have missed that may be a required field.



2. Notices Tab

Once you have entered all payroll records for the week, go to the '2. Notices' tab to check and see if you have any payroll Notices.

After your records have been saved: there could be issues ranging from forgetting to add an employee ID or phone number to forgetting to enter the Gross Employee Pay This Project field at the top of the Payroll Record Entry screen, this will display in the Notices tab.

If an employee is displayed on the notices screen (see below), the notice will need to be cleared.

To clear the notice, click on the Edit button to the right of the employee's name. This will take you back into the Payroll Record Entry screen. Scroll down the bottom and you will see detailed notes on exactly what your notice is.

If you do not understand the notice, there are options on how to get help. You can click on the Video Assistance 'Play Now' button and you will see a video that explains what the notice is and how to address it, or you can contact our Support department and they will assist you.

All Notices must be cleared to certify the payroll.

3. Certification Tab

It's time to certify your payroll! You will do this for each week beginning when you first start work on your project until the last week on the project.

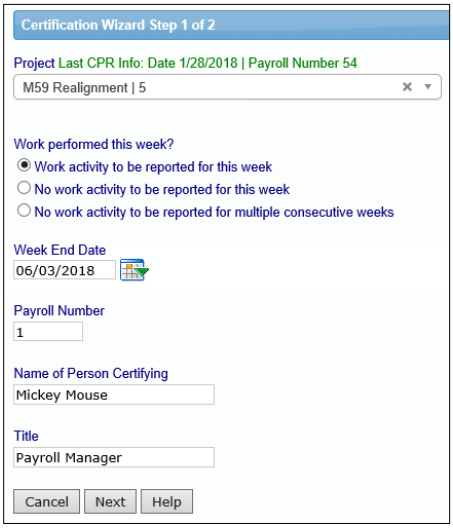
There are three options available to you when you certify your payroll:

1. Certify a payroll for a week during which work was performed
2. Certify a payroll for a week during which no work was performed (non-work week payroll)
3. Certify a payroll for multiple consecutive weeks during which no work was performed

Certification Wizard - Step 1 of 2

To certify your payroll:

- Choose your project
- Choose the type of payroll you are certifying
- Choose your week ending date (if you choose multiple consecutive weeks, you will enter the start date and the last date)
- Enter your name as the person certifying your payroll
- Enter your title
- Click next



Certification Wizard - Step 2 of 2

The Statement of Compliance (SOC) portion of your certified payroll report will display.

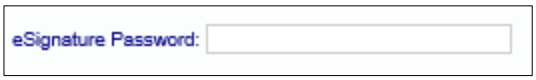
You now need to denote how you pay your fringe benefits (if you do both, you may choose both):

- 4a – paid into an approved plan, fund, or program
- 4b – paid in cash to the employee
- 4c – section to note any exceptions you might have, per craft/classification.

If you have any final remarks that you'd like to leave for your Agency, there is a section available to you to do so. Note: this field is mandatory is you are *recertifying* a CPR.

You may also click on a checkbox to note if your CPR is a final.

Enter your eSignature and click Save. This completes your CPR, and it will pop up in another window so long as you have your pop-up blocker turned off. (If you forget your e- Signature, go back to the Set Up tab, edit your eSignature, and then go back to the Certification Tab and follow the above procedures again.)



You have now completed certifying your payroll.

Your CPRs are electronically sent to your Administrator, and unless otherwise specified, there is no need to send or print out a hardcopy unless you would like to do so for your own records.

Remember that your CPR's will always be stored in your account to access at any time, so you may decide not to print out hardcopies.

State Specific Uploads

California DIR XML Upload

If you perform work on a California Public Works project, you also need to upload your payroll to the Department of Industrial Relations (DIR) eCPR system. Once you've certified your payroll, you can download the DIR XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the DIR XML button (make sure your pop-up blockers are off)
- Save this file to your desktop
- Upload into the DIR eCPR system

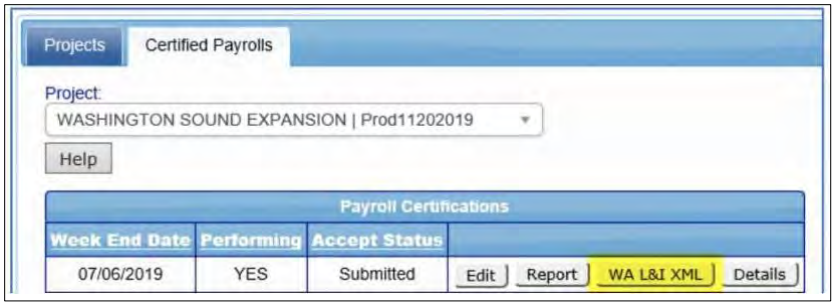
Washington L&I XML Upload

Beginning in January 2020, weekly certified payroll reports are required to be filed online with Washington State Department of Labor and Industries, or WA L&I, at least once a month for all public works projects. Once you've certified your payroll, you can download the WA L&I XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the WA L&I XML button (make sure your pop-up blockers are off)
- Save this file to your desktop

- Upload into the WA State PWIA portal

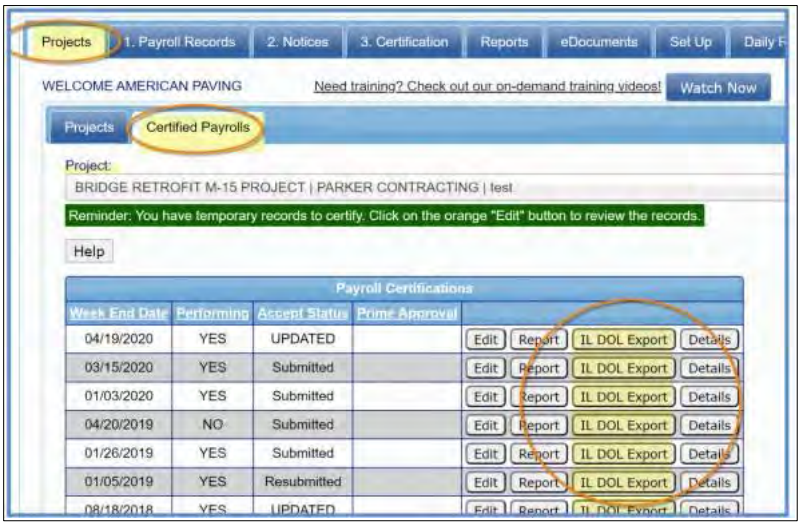


Illinois DOL Export Upload

Beginning in September 2020, weekly certified payroll reports are required to be filed online with the Illinois Department of Labor, or IDOL, by the 15th of each month for all state-funded public works projects. Once you've certified your payroll, you can download the IL DOL XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the IL DOL Export button (make sure your pop-up blockers are off)
- Save this file to your desktop
- Make any manual additions/adjustments to the CSV file
- Upload into the IDOL portal



Should you find that you have any further questions, please consult either the Contractor User Manual or call our Support department.

SECTION 00230

Residents First Training and Employment Program
Responsible Contractor/Subcontractor Affidavit Form (RFTE 1)
(Miami-Dade County Code Section 2-11.17)

In accordance with Section 2-11.17 of the Miami-Dade County Code, all contractors and subcontractors of any tier performing on a contract for (i) the construction, demolition, alteration and/or repair of public buildings or public works projects valued in excess of $1,000,000 funded completely or partially by Miami-Dade County, or (ii) privately funded projects or leases valued in excess of $1,000,000 for the construction, demolition, alteration or repair of buildings or improvements on County owned land, and which are subject to Section 2-11.16 of the Code of Miami-Dade County shall comply with the requirements of the Residents First Training and Employment Program.

If applicable, the undersigned □ Contractor / □ Subcontractor verifies that should they be awarded the contract, the undersigned understands their obligation to comply with the following:

i. Prior to working on the project, all persons employed by the contractor / subcontractor to perform construction shall have completed, the OSHA 10 Hour Safety Training course established by the Occupational Safety & Health Administration of the United States Department of Labor. Such training does not need to be completed at the time of bidding but shall be completed prior to the date persons are employed on the project.

ii. The contractor / subcontractor will make its best reasonable efforts to promote employment opportunities for local residents and seek to achieve a project goal of having fifty-one percent (51%) of all Construction Labor hours performed by Miami-Dade County residents. To verify workers' residency, firms shall require each worker to produce a valid driver's license or other form of government-issued identification.

Printed Name of Affiant | **Printed Title of Affiant** | **Signature of Affiant**

Name of Firm | **Date**

Address of Firm | **State** | **Zip Code**

Project Number/Name

Notary Public Information

Notary Public – State of _____ County of _____

Subscribed and sworn to (or affirmed) before me this _____day of, _____20____.

by _____He or she is personally known to me ☐or has produced identification ☐

Type of identification produced _____

Signature of Notary Public | Serial Number

Print or Stamp of Notary Public | Expiration Date | Notary Public Seal

FORM RFTE 1

SECTION 00240

Residents First Training and Employment Program/Community Workforce Program/Employ Miami-Dade Program Construction Workforce Plan (Miami-Dade County Code Sections 2-11.17, 2-1701 & A.O. 3-63) - Form RFTE 2

Contract No. _____ Prime Contractor: _____

☐ §2-1701 Community Workforce Program ☐ §2-11.17 Resident First Training and Employment Program ☐ A.O. 3-63 Employ Miami-Dade Program

In accordance with Sections 2-11.17 & 2-1701 of the Miami Dade County-Code, this form must be submitted by the Prime Contractor within 15 business days of award notification and prior to issuance of a Notice to Proceed. The Prime Contractor should enter the word "NONE" where appropriate below and sign the form below. Please duplicate this form if additional space is needed.

i. Specify the total number of persons that will be used by the Prime Contractor and all subcontractors to perform all of the construction trades and labor work of the contract, broken down by trade and labor category, minimum qualifications for each category, the number of persons to be utilized in each category, the number of positions to be hired by the contractor in each category which are not currently staffed, the number of positions to be filled form the Employ Miami-Dade Register and the number of employees which live within the project DTA. If the current workforce will not achieve the project goal of 51% construction labor hours performed by Miami-Dade County residents, include a Job Clearinghouse Affidavit or a statement on how Miami-Dade County residents will be recruited to fill the needed positions and meet the goal.

Contractor/Subcontractor Name	Trade/Category	Minimum Qualifications	# of Persons to be Utilized	# of Positions to be filled by Employ Miami Dade	# of Persons to be Hired	# of Persons who Reside in the DTA (if applicable)
Total:						

ii. Identify by name, address and trade category of all persons proposed to perform work under the contract currently on the contractor's (or on any proposed subcontractor's) payroll who reside in Miami-Dade County only and marking the correct box for DTA residents. Two forms of identification must be provided for each DTA resident demonstrating one year of residency.

Employee Name	Address	Trade/Category Performing	DTA Resident (if applicable)

iii. Attach a list of subcontractors that will be used on the project and executed Responsible Subcontractor Affidavits (Form RFTE 1) for each.

iv. Attach a list of all employees currently employed by the contractor and each subcontractor at the time of award that includes the last four digits of their social security.

I certify that the representations contained in this Construction Workforce Plan are to the best of my knowledge true and accurate.

_____ _____ _____ _____

Signature of Affiant **Print Name** **Print Title** **Date**

SECTION 00250

Residents First Training and Employment Program
Occupational Safety & Health Administration (OSHA)
10 Hour Safety Training Affidavit - Form RFTE 3

In accordance with Section 2-11.17 of the Miami-Dade County Code, all contractors and subcontractors of any tier performing on a County Construction Contract, shall satisfy the requirements of the Miami-Dade County Residents First Training and Employment Program which requires: for (i) all persons employed by the contractor to perform construction shall have completed the Occupational Safety & Health Administration (OSHA) 10 Hour safety training course established by the Occupational Safety & Health Administration of the United States Department of Labor

The undersigned verifies that every employee reported on the payroll has completed the OSHA 10 Hour or OSHA 30 Hour Safety Training Course prior to working on the project.

_____
Project Number, Title

_____ _____ _____
Printed Name of Affiant **Printed Title of Affiant** **Signature of Affiant**

_____ _____
Name of Firm **Date**

_____ _____ _____
Address of Firm **State** **Zip Code**

Notary Public Information

Notary Public – State of _____ County of _____

Subscribed and sworn to (or affirmed) before me this _____day of, _____20____.

by _____ He or she is personally known to me ☐ or has produced identification ☐

Type of identification produced _____

_____ _____
Signature of Notary Public Serial Number

_____ _____ _____
Print or Stamp of Notary Public Expiration Date Notary Public Seal

SECTION 00260

Residents First Training and Employment Program/Employ Miami-Dade Program Workforce Performance Report - Form RFTE 4 (Miami-Dade County Code Section 2-11.17 & A.O. 3-63)

Contract No. _____ Prime Contractor: _____

In accordance with Section 2-11.17 of the Miami-Dade County Code & A.O. 3-63, this report must be submitted by the Prime Contractor within thirty (30) days of completion of a County Capital Construction Contract to Small Business Development through the Contracting Officer. The Contracting Officer shall not authorize issuance of final payment for completion of a County Capital Construction Contract until the County receives a completed Workforce Performance Report.

Please provide the following information on the workforce employed in the execution of the contract:

_____ Total number of Construction Labor positions utilized on the project

_____ Total number of Construction Labor work hours performed on the project

_____ Total number Construction Labor work hours performed by Miami-Dade County residents

_____ Total number Construction Labor positions performed by Employ Miami-Dade participants

_____ Percentage of Construction Labor work hours performed by Miami-Dade County residents

Attach supporting documentation verifying construction labor work hours performed by Miami-Dade County residents & Employ Miami-Dade participants.

$_____Total amount of funds expended during the course of the project on other related skill and safety training programs

Were any positions on this project filled with new hires? _____Yes _____No

If you answered "yes" to the above question, please identify the new hires by name, address and trade category, and indicate whether they were Miami-Dade County residents or an Employ Miami-Dade participant. (Please attach additional sheets if necessary.)

Employee Name	Address	Trade/Category Performed	Miami-Dade County Resident (√)	Employ Miami-Dade County Participant (√)

Were all new hires Miami-Dade County residents? _____No _____Yes ____

Was the 20% labor workforce threshold met from the Employ Miami-Dade Register? _____No _____Yes

If you answered "no" to either of the above questions, please attach supporting documentation that verifies reasonable efforts to promote employment opportunities for local residents including participation in the Employ Miami-Dade Program, which shall include applicable advertisements in local newspapers, posting of job opportunities with CareerSource South Florida's Job Clearinghouse, referrals received from CareerSource South Florida, job applications received, candidates interviewed, and number of new hires.

I certify that the representations contained in this Construction Workforce Plan are to the best of my knowledge true and accurate.

_____ _____ _____

Signature of Affiant **Print Name, Title** **Date**

SECTION 00270

Miami-Dade County

Contractor Due Diligence Affidavit

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars ($1,000,000) or that otherwise must be presented to the Board for approval:

(1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;

(2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;

(3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Contracting Officer (PCO)/ AE Selection Coordinator overseeing this solicitation. The Vendor/Contractor attests to providing all of the above information, if applicable, to the PCO.

Contract No. : _____ Federal Employer Identification Number (FEIN): _____

Contract Title: _____

Printed Name of Affiant	Printed Title of Affiant	Signature of Affiant
Name of Firm		Date
Address of Firm	State	Zip Code

Notary Public Information

Notary Public - State of _____ County of _____

Subscribed and sworn to (or affirmed) before me this _____ day of, _____ 20 _____

by _____ He or she is personally known to me ☐ or has produced identification

Type of identification produced _____

Signature of Notary Public	Serial Number
Print or Stamp of Notary Public	Expiration Date / Notary Public Seal

2/2014

New Vendor Registration and Bid/Proposal Contract Language

1.1. DEFINITIONS FOR VENDOR REGISTRATION

Bid – shall refer to any offer(s) submitted in response to this solicitation.
Bidder – shall refer to anyone submitting a Bid in response to this solicitation.
Bid Solicitation – shall mean this solicitation documentation, including any and all addenda.
Bid Submittal Form – defines the requirement of items to be purchased, and must be completed and submitted with Bid. The Bidder should indicate its name in the appropriate space on each page.
County – shall refer to Miami-Dade County, Florida
DPM – shall refer to Miami-Dade County's Department of Procurement Management.
Enrolled Vendor – shall refer to a firm that has completed the necessary documentation in order to receive Bid notifications from the County.
Registered Vendor – shall refer to a firm that has completed the Miami-Dade County Business Entity Registration Application and has satisfied all requirements to enter into business agreements with the County.
The Vendor Registration Package – *shall refer to the Business Entity Registration Application.*

For additional information about on-line vendor enrollment or vendor registration contact the Vendor Assistance Unit at 111 N.W. 1st Street, 13th Floor, Miami, FL 33128, Phone 305-375-5773. Vendors can enroll online and obtain forms to register by visiting our web site at www.miamidade.gov/dpm

1.2. INSTRUCTIONS TO BIDDERS

A. Bidder Qualification

It is the policy of the County to encourage full and open competition among all available qualified vendors. All vendors regularly engaged in the type of work specified in the Bid Solicitation are encouraged to submit Bids. Vendors may enroll with the County to be included on a notification list for selected categories of goods and services. To be eligible for award of a contract (including small purchase orders), Bidders must become a Registered Vendor. Only Registered Vendors can be awarded County contracts. Vendors are required to register with the County by contacting the Vendor Assistance Unit. The County endeavors to obtain the participation of all qualified small business enterprises. For information and to apply for certification, contact the Department of Small Business Development at 111 N.W. 1 Street, 19th Floor, Miami, FL 33128-1900, or telephone at 305-375-3111. County employees and board members wishing to do business with the County are referred to Section 2-11.1 of the Miami-Dade County Code relating to Conflict of Interest and Code of Ethics.

B. Vendor Registration

To be recommended for award the County requires that vendors complete a Miami-Dade County Vendor Registration Package. Effective June 1, 2008, a new Vendor Registration Package, including a Uniform Affidavit Packet (Affidavit form), must be completed by vendors and returned to the Department of Procurement Management (DPM), Vendor Assistance Unit, within fourteen (14) days of notification of the intent to recommend for award. In the event the Vendor Registration Package is not properly completed and returned within the specified time, the County may in its sole discretion, award to the next lowest responsive, responsible Bidder. The Bidder is responsible for obtaining the Vendor Registration Package, including all affidavits by downloading from the DPM website at www.miamidade.gov or from the Vendor Assistance Unit at 111 N.W. 1st Street, 13th Floor, Miami, FL 33128.

Bidders are required to affirm that all information submitted with the Vendor Registration Package is current, complete and accurate, at the time they submit a response to a Bid Solicitation, by completing the provided Affirmation of Vendor Affidavit form.

In becoming a Registered Vendor with Miami-Dade County, the vendor confirms its knowledge of and commitment to comply with the following:

1. ***Miami-Dade County Ownership Disclosure Affidavit***
(Sec. 2-8.1 of the County Code)

2. ***Miami-Dade County Employment Disclosure Affidavit***
(*County Ordinance No. 90-133, amending Section 2.8-1(d)(2) of the County Code)*

3. ***Miami-Dade Employment Drug-free Workplace Certification***
(Section 2-8.1.2(b) of the County Code)

4. ***Miami-Dade Disability and Nondiscrimination Affidavit***
(Article 1, Section 2-8.1.5 Resolution R182-00 Amending R-385-95)

5. ***Miami-Dade County Debarment Disclosure Affidavit***
(Section 10.38 of the County Code)

6. ***Miami-Dade County Vendor Obligation to County Affidavit***
(*Section 2-8.1 of the County Code)*

7. ***Miami-Dade County Code of Business Ethics Affidavit***
(*Article 1, Section 2-8.1(i) and 2-11(b)(1) of the County Code through (6) and (9) of the County Code and County Ordinance No 00-1 amending Section 2-11.1(c) of the County Code)*

8. ***Miami-Dade County Family Leave Affidavit***
(Article V of Chapter 11 of the County Code)

9. ***Miami-Dade County Living Wage Affidavit***
(Section 2-8.9 of the County Code)

10. ***Miami-Dade County Domestic Leave and Reporting Affidavit***
(Article 8, Section 11A-60 11A-67 of the County Code)

11. ***Subcontracting Practices***
(Ordinance 97-35)

12. ***Subcontractor /Supplier Listing***
(Ordinance 97-104)

13. ***Environmentally Acceptable Packaging***
Resolution (R-738-92)

14. ***W-9 and 8109 Forms***
The vendor must furnish these forms as required by the Internal Revenue Service.

15. ***Social Security Number***
In order to establish a file for your firm, you must provide your firm's Federal Employer Identification Number (FEIN). If no FEIN exists, the Social Security Number of the owner or individual must be provided. This number becomes your "County Vendor Number". To comply with Section 119.071(5) of the Florida Statutes relating to the collection of an individual's Social Security Number, be aware that DPM requests the Social Security Number for the following purposes:

- Identification of individual account records
- To make payments to individual/vendor for goods and services provided to Miami-Dade County
- Tax reporting purposes
- To provide a unique identifier in the vendor database that may be used for searching and sorting departmental records

16. ***Office of the Inspector General***
Pursuant to Section 2-1076 of the County Code.

17. ***Small Business Enterprises***
The County endeavors to obtain the participation of all small business enterprises pursuant to Sections 2-8.2, 2-8.2.3 and 2-8.2.4 of the County Code and Title 49 of the Code of Federal Regulations.

18. ***Antitrust Laws***
By acceptance of any contract, the vendor agrees to comply with all antitrust laws of the United States and the State of Florida.

C. PUBLIC ENTITY CRIMES

To be eligible for award of a contract, firms wishing to do business with the County must comply with the following:

Pursuant to Section 287.133(2)(a) of the Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a contract to provide any goods or services to a public entity, may not submit a Bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 of the Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

Affirmation of Vendor Affidavits

In accordance with Ordinance 07-143 amending Section 2-8.1 of the Code of Miami-Dade County, effective June 1, 2008, vendors are required to complete a new Vendor Registration Package, including a Uniform Affidavit Packet (Vendor Affidavits Form), before being awarded a new contract. The undersigned affirms that the Vendor Affidavits Form submitted with the Vendor Registration Package is current, complete and accurate for each affidavit listed below.

Contract No. : _____ **Federal Employer Identification Number (FEIN):** _____

Contract Title: _____

Affidavits and Legislation/ Governing Body

1.	***Miami-Dade County Ownership Disclosure*** *Sec. 2-8.1 of the County Code*	6.	***Miami-Dade County Vendor Obligation to County*** *Section 2-8.1 of the County Code*
2.	***Miami-Dade County Employment Disclosure*** *County Ordinance No. 90-133, amending Section 2.8-1(d)(2) of the County Code*	7.	***Miami-Dade County Code of Business Ethics*** *Article 1, Section 2-8.1(i) and 2-11(b)(1) of the County Code through (6) and (9) of the County Code and County Ordinance No 00-1 amending Section 2-11.1(c) of the County Code*
3.	***Miami-Dade County Employment Drug-free Workplace Certification*** *Section 2-8.1.2(b) f the County Code*	8.	***Miami-Dade County Family Leave*** *Article V of Chapter 11 of the County Code*
4.	***Miami-Dade County Disability Non-Discrimination*** *Article 1, Section 2 8.1.5 Resolution R182 00 amending R-385-95*	9.	***Miami-Dade County Living Wage*** *Section 2-8.9 of the County Code*
5.	***Miami-Dade County Debarment Disclosure*** *Section 10.38 of the County Code*	10.	***Miami-Dade County Domestic Leave and Reporting*** *Article 8, Section 11A-60 11A-67 of the County Code*

Printed Name of Affiant | Printed Title of Affiant | Signature of Affiant

Name of Firm | Date

Address of Firm | State | Zip Code

Notary Public Information

Notary Public – State of _____ County of _____

Subscribed and sworn to (or affirmed) before me this _____ day of, _____ 20 _____.

by _____ He or she is personally known to me ☐ or has produced identification ☐

Type of identification produced _____

Signature of Notary Public | Serial Number

Print or Stamp of Notary Public | Expiration Date | Notary Public Seal

SECTION 00300

PROPOSAL
FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT
TOWN OF CUTLER BAY, FLORIDA

Town Clerk's Office
Town of Cutler Bay
10720 Caribbean Boulevard
Suite 105
Cutler Bay, Florida 33189

The undersigned, as Bidder, hereby declares that the only person or persons interested in the Proposal, as principal or principals, is or are named herein and that no other person than herein mentioned has any interest in the Proposal of the Contract to which the work pertains; that this Proposal is made without connection or arrangement with any other person, company, or parties making a bid or proposal and that the Proposal is in all respects fair and made in good faith without collusion or fraud.

The Bidder certifies that the bidder is not a nonresident alien, or a foreign corporation/entity formed under the laws of a country other than the United States.

The Bidder further declares that he has examined the site of the work and that from personal knowledge and experience, or that he has made sufficient observations of the conditions of the proposed Project Site to satisfy himself that such site is a correct and suitable one for this work and he assumes full responsibility therefore, that he has examined the Drawings and Specifications for the work and from his own experience or from professional advice that the Drawings, including bid item quantities, and Specifications are sufficient for the work to be done and he has examined the other Contractual Documents relating thereto, including the Notice of Bid Invitation, Instructions to Bidders, Proposal, Contract, Special Conditions, Technical Specifications, Drawings and has read all addenda prior to the receipt of bids, and that he has satisfied himself fully, relative to all matters and conditions with respect to the work to which this Proposal pertains.

The Bidder proposes and agrees, if this Proposal is accepted, to contract with the Town of Cutler Bay (Owner), in the form of contract specified, to furnish all necessary materials, all equipment, all necessary machinery, tools, apparatus, means of transportation, and labor necessary to complete the work specified in the Proposal and the Contract, and called for by the Drawings and Specifications and in the manner specified.

NOTE: THIS SCHEDULE OF BID ITEMS IS MERELY ILLUSTRATIVE OF THE MINIMUM AMOUNT/QUANTITY OF WORK TO BE PERFORMED UNDER THE CONTRACT. IN THE CASE OF ANY CONFLICT BETWEEN THIS SCHEDULE OF BID ITEMS AND THE DETAILED SPECIFICATIONS, THE DETAILED SPECIFICATIONS WILL PREVAIL.

The Bidder further proposes and agrees to comply in all respects with the time limits for commencement and completion of the work as stated in the Contract Form.

The Bidder further agrees that the deductions for liquidated damages, as stated in the Contract Form, constitute fixed, agreed, and liquidated damages to reimburse the Owner for additional costs to the Owner resulting from the work not being completed within the time limit stated in the Contract Form.

Payment Bonds each in the amount of one-hundred percent of the Contract price, within ten (10) consecutive calendar days after written notice being given by the Owner of the award of the Contract, and the undersigned agrees that in case of failure on his part to execute the said Contract and Performance and Payment Bonds within the ten (10) consecutive calendar days after the award of the Contract, the cashier's check or Bid Bond accompanying his bid and the money payable thereon shall be paid to the Owner as liquidation of damages sustained by the Owner; otherwise, the check accompanying the Proposal shall be returned to the undersigned after the Contract is signed and the Performance and Payment Bonds are filed.

Bidders Certificate of Competency No. _____

Bidders Occupational License No. _____

Acknowledgment is hereby made of the following Addenda received since issuance of the Project Manual:

Addendum No._____Dated:_____ Addendum No._____Dated:_____

Addendum No._____Dated:_____ Addendum No._____Dated:_____

Addendum No._____Dated:_____ Addendum No._____Dated:_____

Attached hereto is a cashier's check on the _____

_____Bank of _____

_____or Bid Bond for the sum of _____

_____Dollars

($_____), made payable to the Town of Cutler Bay, Florida.

_____L.S.
(Name of Bidder) (Affix Seal)

_____L.S.
Signature of Officer

_____L.S.
(Title of Officer)

Address: _____

City: _____ State: _____

The full names and residences of persons and firms interested in the foregoing bid, as principals, are as follows:

_____

_____

_____

Name of the executive who will give personal attention to the work:

_____

_____

LIST OF MAJOR SUB-CONTRACTORS

Bidders are required to list with the Proposal, on this sheet all major sub-contractors included for the prosecution of the work. Failure to complete the list may be cause for declaring the Proposal irregular.

The successful bidder shall employ the sub-contractors listed hereunder for the class of work indicated, which list shall not be modified in any way without the written consent of the Town of Cutler Bay.

The Bidder expressly agrees that:

1. If awarded a contract as a result of this proposal, the major sub-contractors used in the prosecution of the work will be those listed below.

2. The Bidder represents that the sub-contractors listed below are financially responsible and are qualified to do the work required.

CATEGORY OF CLASS	NAME OF SUB-CONTRACTOR	ADDRESS OF WORK

TOWN OF CUTLER BAY

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT
ITB No. 23-10

BID FORM

The following Bid Proposal is presented to assist the Town in evaluating the Bid. The Bid Amounts will include all items described in the Bid Documents (Detailed Specifications). Payment shall be made on the basis of Work actually performed and completed.

The Base Bid Amount includes all work on FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT:

BASE BID AMOUNT $_____

BASE BID AMOUNT (IN WORDS) _____

_____

Taxpayer Identification Number:

_____

BIDDER: _____
(Company Name)

_____
(Signature of Authorized Representative)

_____
(Printed Name and Title)

_____
(Company Address)

_____
(Company Phone Number)

[SPACE LEFT INTENTIONALLY BLANK]

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT
Town of Cutler Bay
Florida Town Project ITB
No. 23-10

BID FORM

The following Bid is presented to assist the Town in evaluating the Bid. The Total Bid Amount will include all items described in the Bid Documents. Bid unit prices stated in this proposal include all costs and expenses for labor, equipment, materials, swale restoration, clearing and grubbing, demolition, debris removal, disposal, root pruning, preparation, compaction, restoration, temporary striping, inlet protection (Baled Hay, Straw, or Filter Fabric), contractor's overhead and profit. Unit prices for the various work items are intended to establish a total price for completing the project in its entirety. At the end of the project the contractor shall furnish as-built plans signed and sealed by a professional land surveyor to the Town of Cutler Bay. The contractor shall include in the Bid price any work item and materials for which a separate pay item has not been included in the Bid Form. All work and incidental costs shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made thereof.

Payment shall be made on the basis of Work actually performed and completed.

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	General Items				
101-1	Mobilization	1	LS	$	$
102-1	Maintenance of Traffic and Access	1	LS	$	$
110-1-1	Clear and Grubbing	1	LS	$	$
104-1	Prevention, Control and Abatement of Erosion and Water Pollution	1	LS	$	$
110-8	Back of Sidewalk Restoration	1	LS	$	$
120-1	Regular Excavation	20,293	CY	$	$
120-6	Embankment	3,098	CY	$	$
160-40	Type "B" Stabilization (12") (Min. L.B.R. 40)	48,148	SY	$	$
210-1-2	Limerock Base (8") (Primed)	44,666	SY	$	$
327-70-5	Milling Existing Asphalt Pavement, 2" Avg. Depth	576	SY	$	$
334-2-13	Type Structural Course HWA (Traffic C) (2")	4,771	TN	$	$
337-7-83	Friction Course Type FC-9.5 HWA (1" Thick)	2,386	TN	$	$
425-110	Modify Existing Gutter Inlet to Manhole (Cover)	4	EA	$	$
425-6	Adjust Existing Valve Boxes, Mail-Boxes, Meter Boxes, Fire Hydrants Relocation, Manhole Covers and Catch Basins	1	LS	$	$
425-1-201	Inlets, Curb, Type P-9,42"x42", <10'	3	EA	$	$
425-1-201	Inlets, Curb, Type P-9,48" ø,<10'	13	EA	$	$
425-1-203	Inlets, Curb, Type J-9, 60"ø, <10'	5	EA	$	$
425-1-600F	Inlets, Curb, Type P-10M, 48"ø, <10' (including frame & grate)	25	EA	$	$

425-1-602	Inlets, Curb, Type J-10M, 60"ø, <10' (including frame & grate)	3	EA	$	$
425-1-331	Inlets, Curb, Type P-3, 48" ø, <10'	6	EA	$	$
425-1-341	Inlets, Curb, Type P-4, 48" ø, <10'	5	EA	$	$
425-1-351	Inlets, Curb, Type P-5, 48" ø, <10'	10	EA	$	$
425-1-361	Inlets, Curb, Type P-6, 42”x42” <10’	2	EA	$	$
425-1-361	Inlets, Curb, Type P-6, 48" ø <10'	23	EA	$	$
425-1-461	Inlets, Curb, Type J-6, 60"ø, <10'	2	EA	$	$
425-1-541	Inlets, Type D, <10’	1	EA	$	$
425-2-41	Manholes, P-7T, 48”ø, <10’	3	EA	$	$
425-2-72	Manholes, J-7T, 60”ø, <10’	39	EA	$	$
430-175-115	Pipe Culvert, Optional Material, Round, 15" S/CD (FDOT Approved 100 Year Design Service)	3,721	LF	$	$
430-175-124	Pipe Culvert, Optional Material, Round, 24" S/CD (FDOT Approved 100 Year Design Service)	160	LF	$	$
430-175-136	Pipe Culvert, Optional Material, Round, 36" S/CD (FDOT Approved 100 Year Design Service)	1,335	LF	$	$
443-70-36	Exfiltration Drain, 36" (Includes Ballast Rock, Trench & Plastic Filter Fabric)	6,549	LF	$	$
520-1-10A	Concrete Curb & Gutter, Type "F" (includes cost of limerock)	21,538	LF	$	$
520-2-12	Concrete Curb, Type "D" (includes cost of limerock)	4,353	LF	$	$
520-2-8A	Concrete Curb, Type "RA" (includes cost of limerock)	375	LF	$	$
522-1-1	Concrete Sidewalk Reconstruction (4" Thick) Category 1	8,288	SY	$	$
522-2	Concrete Sidewalk Reconstruction (6" Thick, 3,000 PSI @ 28 days)	8,680	SY	$	$
522-4E	Concrete Slab for Bus Shelter (8" Thick)	178	SY	$	$
522-8E	Concrete Crosswalk (12" Thick)	1,247	SY	$	$
523-1-3	Green Patterned Pavement	154	SY	$	$
526-1-1	Concrete Paver Road Surface (including Pavers, Concrete Slab, Compaction)	293	SY	$	$
527-1	Detectable Warning Surface	104	SY	$	$
700-1-40	Sign Single Post(R1-1/D3-1) (Stop Sign) (Intersecting Street Names)	20	EA	$	$
700-1-40	Sign Single Post(D1-1d) (Street Names) (Less than 12 SQ.FT.)	7	EA	$	$
700-1-40	Sign Single Post (R1-2) (Yield Sign) (Less than 12 SQ.FT.)	9	EA	$	$
700-1-40	Sign Single Post(R2-1) (Speed Limit) (Less than 12 SQ. FT.)	16	EA	$	$
700-1-40	Sign Single Post (R3-17) (Bike Lane) (Less than 12 SQ. FT.)	22	EA	$	$
700-1-40	Sign Single Post (R3-17/R2-17A) (Bike Lane) (Ahead) (Less than 12 SQ. FT.)	1	EA	$	$
700-1-40	Sign Single Post (R3-17/R2-17B) (Bike Lane) (Ends) (Less than 12 SQ. FT.)	7	EA	$	$

700-1-40	Sign Single Post (R4-11) (Bike may Use Full Lane) (Less than 12 SQ. FT.)	1	EA	$	$
700-1-40	Sign Single Post (R4-7/OM1-3) (Keep Right) (Object Marker) (Less than 12 SQ. FT.)	7	EA	$	$
700-1-40	Sign Single Post (W2-6/W13-1) (Traffic Circle) (15 MPH Speed Limit) (Less than 12 SQ. FT.)	7	EA	$	$
700-1-40	Sign Single Post(S1-1/W16-9P) (School Crossing) (Ahead) (Less than 12 SQ. FT.)	1	EA	$	$
700-1-40	Sign Single Post(W11-2/W16-7PL) (Crossing Sign) (Arrow) (Less than 12 SQ. FT.)	18	EA	$	$
700-1-40	Sign Single Post(W11-2/W16-9P) (School Crossing) (Ahead) (Less than 12 SQ. FT.)	1	EA	$	$
700-1-40	Sign Single Post(R6-4) (Roundabout Directional Chevron) (Less than 12 SQ. FT.)	7	EA	$	$
700-1-40	Sign Single Post (Emergency Evacuation Bus Pick-up Sign)	1	EA	$	$
700-1-50	Relocate Existing Sign (Single Post)	12	EA	$	$
706-3	Reflective Pavement Marker (See Plans for Details)	748	EA	$	$
711-11-120	Thermoplastic, White, Solid, 6"	13,365	LF	$	$
711-11-123	Thermoplastic, White, Solid, 12"	2,355	LF	$	$
711-11-125	Thermoplastic, White, Solid, 24"	1,145	LF	$	$
711-11-221	Thermoplastic, Yellow, Solid, 6"	9,410	LF	$	$
711-11-224	Thermoplastic, Yellow, Solid, 18"	290	LF	$	$
711-11-241	Thermoplastic, Yellow, 10'-30' Skip, 6"	5,665	LF	$	$
711-11-141	Thermoplastic, White, 2'-4' Skip, 6"	764	LF	$	$
711-11-141	Thermoplastic, White, 2'-2' Dotted, 6"	110	LF	$	$
711-11-160	Thermoplastic, White, Message (See Plans for Details)	39	EA	$	$
711-11-180	Thermoplastic, White, Yield Line	85	LF	$	$
		Sub-Total Roadway Items			***$***

LANDSCAPE ITEMS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
575-1	Landscaping Plans (including trimming of existing trees as necessary, root pruning, grading as necessary, new planting of trees, plants, shrubs, tree removals, tree relocations, tree protection, mulch, watering, warranty, etc.)	1	LS	$	$
575-2	Sodding (including watering, warranty)	13,210	SY	$	$
		Sub-Total Landscape Items			***$***

SIGNALIZATION ITEMS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
630-2-12	Conduit (Under Pavement) Furnish & Install Directional Bore	357	LF	$	$
635-2-11	Pull Boxes, Furnish & Install, 13"x24" Cover Size	5	EA	$	$
646-1-11	Aluminum Signal Pedestrian Pole, Furnish & Install	2	EA	$	$
646-1-12	Aluminum Signal Pole, Furnish & Install	2	EA	$	$
650-1-18	Furnish and Install Traffic Head (1 Way, 5 sections) (Backplates included)	2	AS	$	$
660-2-106	Loop Assembly, Furnish & Install (Type F, 6'x30')	4	EA	$	$
650-1-60	Remove Traffic Head (1 way, 3 sections)	2	AS	$	$
650-1-74	Relocate Traffic Head (1 way, 3 sections)	2	AS	$	$
665-1-60	Remove Pedestrian Detector	2	EA	$	$
		Sub-Total Signalization Items			***$***

ELECTRICAL ITEMS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
630-2-11	Conduit, F&I, Open Trench	13,421	LF	$	$
630-2-12	Conduit, F&I, Directional Bore	2,332	LF	$	$
635-2-11	Pull & Splice Box, F&I, 13"x24" Cover Size	126	EA	$	$
639-1-121	Electrical Power Service, F&I, Underground, Meter Furnished by Power Company	2	AS	$	$
639-2-16	Electrical Service Wire, F&I	900	LF	$	$
639-3-12	Electrical Service Disconnect, F&I, Pole Mount	2	EA	$	$
641-2-11	Prestressed Concrete Pole, F&I, Type P-II Pedestal	2	EA	$	$
715-1-12	Lighting Conductors, F&I, Insulated, No. 8 to No. 6	56,679	LF	$	$
715-7-11G	Load Center, F&I, Secondary Voltage	2	EA	$	$
700-7-212	Dynamic Message Sign, Furnish & Install, WO-UPS, Monochrome (Including foundation, rock cladding, utility connection)	2	EA	$	$
715-500-1C	Pole Cable Distribution System, F&I, Conventional	94	EA	$	$

715-511-140	Light Pole Complete, Special Design, F&I, Single Arm Shoulder Mount, Aluminum, 40'	92	EA	$	$
715-516-115	Light Pole Complete, Special design (Furnish & Install, Pole Top Mount, Aluminum and 15 feet Mounting Height)	2	EA	$	$
715-521-140	Spare Light Pole Assembly	18	EA	$	$
715-69-000	Removal of exist. Street Light Fixture (Optional to be used at Town discretion)	33	EA	$	$
		Sub-Total Electrical Items			***$***

MISCELLANEOUS ITEMS					
ITEM	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
750	Furnish & Install Bus Shelter Complete (Including bicycle bollard, trash receptacle and bench)	12	EA	$	$
750*	Additional Bench (same style as Bus Shelter Bench) (including concrete slab)	6	EA	$	$
800-7	Permit Allowance	1	LS	$25,000.00	$25,000.00
800-8	Off Duty Police Allowance	1	LS	$100,000.00	$100,00.00
980	Safety Act	1	LS	$1,000.00	$1,000.00
999	Contingency	1	LS	$1,500,000.00	$1,500,000.00
		Sub-Total Miscellaneous Items			***$***
		GRAND TOTAL			**$**

BASE BID AMOUNT: $_____

BASE BID AMOUNT (IN WORDS): _____

BID ITEM NOTES

101-1 Is a lump sum pay item for all mobilization costs. Includes all costs associated with leasing of staging area. Includes the construction of two (2) project signs that shall be displayed at each approach to the work zone of the project area. The intent is that the signs will be freestanding. The sign shall display on both sides the project name, town logo, elected officials, engineer, and contact information. Shop drawings must be submitted for approval prior to ordering the projects signs. Photos of the actual project signs must be submitted for approval prior to installation of the project signs.

102-1 To be accomplished in accordance with the Florida Department of Transportation index 600 series, the manual of uniform traffic control devices for streets and highways, U.S. Department of Transportation Federal Highway Administration (ANSI D6 1-1978), Public Works Manual of Metropolitan Dade County, and the latest revisions of the afore mentioned manuals. Includes the cost of furnishing, installing, maintaining, and removing all items of maintenance of traffic not paid for under separate items including but not limited to signs, barricades, flashing lights, traffic signal modification for traffic control, etc.

110-1-1 Includes removal of existing pavement, base, sub-grade concrete sidewalk, driveways, curb and gutter, drainage structures, slab covered trench and pipes, miscellaneous concrete, vegetation, trees, and debris to be disposed of in legal areas provided by the contractor. Includes the cost of cleaning out all existing drainage structures which are to remain within the limits of construction. For portions of existing drainage pipe that are under existing trees to remain shall be plugged with brick and mortar at each end and abandoned in place.

425-1 Cost of baffle, materials, metal pipe encasement, inlet and manhole pavement and base, labor & construction shall be included in cost of structures.

425-6 Within pavement area, all existing valves, manhole covers, utility boxes etc. Are to be adjusted to finished grade. All meter boxes within sidewalks shall be adjusted and replaced as needed to construct the new sidewalk. Fire hydrants shall be relocated away from the street as shown on the plans. All mailboxes in conflict with construction shall be protected and relocated as required; this includes temporarily during construction as needed. These items are contingent upon field conditions and may be increased, decreased, or eliminated by the engineer.

443-70-4 Includes the cost of excavation to plan elevation, perforated pipe, pea rock ballast rock, plastic filter fabric and backfilling with select fill (see detail of exfiltration drain to determine non-perforated pipe quantity) and all applicable items required to construct exfiltration drain.

520-1-10 Includes drop curb at driveways and 3 ft of curb ending as directed by the engineer.

522-2 Estimated quantity for driveways to be constructed at locations shown in the plans and/or as directed by the engineer.

522-2 **A**ll sidewalk ramps at intersections shall be 6" thick. All existing 5' wide sidewalks at right-of-way of new driveways shall be reconstructed to 6" thick concrete.

527-1 Detectable warning surface must be safety yellow and imbedded in concrete, and from the most recent of tested products.

a. Use detectable warnings listed on the FDOT approved products list (APL) and that have been further evaluated and found acceptable by the department. At the option of the contractor, an "or equal" product evaluation request, for an equivalent FDOT APL approved product that meets or exceeds the specification stipulated herein, may be submitted in writing to the engineer for review and acceptance.

b. The following products, subject to continued listing on the FDOT APL, have been evaluated by the department for use on department projects:

SURFACE APPLIED DETECTABLE WARNING DEVICES		
MANUFACTURER	PRODUCT	APL NUMBER
ENGINEERED PLASTICS, INC.	ARMOR-TILE SURFACE APPLIED INLINE DOME	527-000-006

EMBEDDED DETECTABLE WARNING DEVICES		
MANUFACTURER	PRODUCT	APL NUMBER
ADA SOLUTIONS, INC.	CAST-IN-PLACE COMPOSITE TACTILE	527-000-003
ADA SOLUTIONS, INC.	REPLACEABLE WET SET COMPOSITE	527-000-018
ENGINEERED PLASTICS, INC	ARMOR-TILE REPLACEABLE CAST IN PLACE	527-000-026
ENGINEERED PLASTICS, INC.	ARMOR-TILE CAST-IN-PLACE INLINE DOME TILE	527-000-027
CAPE FEAR SYSTEMS, LLC	ALERTCAST (REPLACEABLE) CAST-IN-PLACE	527-000-029
ACCESS PRODUCTS, INC.	ACCESS TILE REPLACEABLE CAST IN PLACE	527-000-033
STRONGGO INDUSTRIES	TEKWAY DOME TILE	527-000-035
TUFTILE, INC	TUFTILE CAST IRON (WET-SET) REPLACEABLE	527-000-044

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TRENCH SAFETY

Bidder acknowledges that included in the various items of the Bid and in the Total Bid Price are costs for complying with the Florida Trench Safety Act (90-96, Laws of Fla.) effective October 1, 1990. The Bidder identifies the costs included in the Total Bid Price to be summarized below.

TRENCH SAFETY MEASURE (DESCRIPTION)	UNITS OF MEASURE (LF, SY)	UNIT (QUANTITY)	UNIT COST	EXTENDED COST
A.				
B.				
C.				

Failure to complete the above shall result in the Bid being declared non-responsive.

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SECTION 00305

NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA
COUNTY OF MIAMI-DADE

_____("Affiant"), being first duly sworn, deposes and says that:

1. Affiant is_____of_____, (the "Bidder") and has submitted the attached Bid;

2. Affiant has personal knowledge of the matters set forth herein and is competent to testify:

3. Affiant is fully informed respecting the preparation and contents of the attached Bid and all pertinent circumstances respecting the Bid.

4. The Bid is genuine and is not a collusive or sham Bid.

5. Neither the Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including Affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other Bidder, firm, or person to submit a collusive or sham Bid, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit, or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against Town of Cutler Bay or any person interested in the proposed Contract.

By:_____

(Corporate Seal)

Title: _____

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

The foregoing instrument was acknowledged by means of physical presence or online notarization.

_____
Notary Public

_____
Print Name
My commission expires:

SECTION 00310

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

PRIMARY COVERED TRANSACTIONS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Signature: _____ Project Name: _____

Name: _____ Project Number: _____

Firm/Agency: _____

Street Address: _____

_____
CFR 24.510 & 24 CFR, Part 24, Appendix A

SECTION 00315
INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion-Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Non-procurement List (Telephone Number).

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntary excluded from participation in this transaction, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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SECTION 00320

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements
Appendix A – 49 CFR Part 20

The undersigned (Contractor) certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form—LLL, "Disclosure Form to Report Lobbying", in accordance with the instructions {as amended by "Government Wide Guidance for New Restrictions on Lobbying", 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*)}
3. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure. {{Note: Pursuant to 31 U.S.C. § 1352©(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such expenditure or failure}.

The Contractor,_____, certified or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq., apply* to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

Date _____

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SECTION 00325
ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA
COUNTY OF MIAMI-DADE

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the Town of Cutler Bay, its elected officials, and _____ or its design consultants, as a commission, kickback, reward, or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

The foregoing instrument was acknowledged before me by means of physical presence or online notarization this _____ day of _____, 20___, by _____ _____, on behalf of _____ _____. She/He is personally known to me or has produced _____ as identification.

_____
Notary Public

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SECTION 00330

SWORN STATEMENT ON PUBLIC ENTITY CRIMES
SECTION 287.133(3)(a), FLORIDA STATUTES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to the Town of Cutler Bay

by _____
[Print individual's name and title]
for _____
[Print name of entity submitting sworn statement]

whose business address is

_____

_____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____

(If the entity has no FEIN, include the Social Security Number of the individual

signing this sworn statement:_____)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)9g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or the United States, including, but not limited to, any bid or contract for goods and services to be provided to any public entity or an agency or political subdivision of any other state or of the United States involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction or a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand than an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

   a. A predecessor or successor of a person convicted of a public entity crime; or

   b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an entity.

6. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement. **[Indicate which statement applies.]**

_Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, not any affiliate of the entity, has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_This entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **[Attach a copy of the final order]**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND HAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES, FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
Signature of Entity Submitting Sworn Statement

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

The foregoing instrument was acknowledged before me by means of physical presence or online notarization this_____day of_____, 20___, by _____ _____, on behalf of _____ _____. She/He is personally known to me or has produced _____as identification.

_____
Notary Public

_____
Print Name

[SPACE LEFT INTENTIONALLY BLANK]

SECTION 00335

DRUG-FREE WORKPLACE FORM

The undersigned vendor in accordance with Section 287.087, Florida Statutes, hereby certifies that _____ does:

(Name of Business)

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5) Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

_____ _____

Proposers Signature Date

[END OF SECTION]

SECTION 00350

CONTRACTOR'S QUESTIONNAIRE / QUALIFICATION STATEMENT

Submitted to: The Mayor and Town Council of the Town of Cutler Bay, Florida:

By_____

Principal Office_____

How many years has your organization been in business as a General Contractor under your present business name?_____

Does your organization have current occupational licenses entitling it to do the work contemplated in this Contract? _____

State of Florida Occupational License (State type and number):

_____

Federal I.D. No: _____

Dade County Certificate of Competency (State type and number):

_____

Town of Cutler Bay Occupational License (State type and number):

_____

Please include copies of the above licenses and certifications with proposal.

How many years of experience in similar work has your organization had?

(A) As a General Contractor_____
(B) As a Sub-Contractor_____
(C) What contracts has your organization completed? State below:

Contract Amount	Class of Work	When Completed	Name & Address of Owner

How many years has your organization, or your concrete curb and sidewalk sub-contractor had in the actual construction of municipal, urban, decorative sidewalks and streetscapes?

_____Years

List the detailed experience below:

Name & tel. number of Owner	Project Name	Date Completed

Are you a Certified Disadvantaged Business Enterprise (DBE) with the State of Florida?

_____

Have you ever failed to complete any work awarded to you? _____

If so where, and why? _____

_____

Has any officer or partner of your organization ever failed to complete a contract handled in his own name? _____

If so, state name of individual, name of owner, and reason thereof:

_____

_____

_____

In what other lines of business are you financially interested or engaged?

_____

_____

_____

Give references as to experience, ability, and financial standing.

_____

_____

_____

What equipment do you own that is available for the proposed work and where is it located?

_____

_____

_____

Financial Statement: _____

_____

_____

What bank or banks have you arranged to do business with during the course of the Contract should it be awarded to you? _____

_____

_____

_____

_____

I hereby certify that the above answers are true and correct.

(Affix Seal)

Name of Bidder: _____

Signature of Officer: _____

Title of Officer: _____

[END OF SECTION]

SECTION 00410

SECTION V
TOWN OF CUTLER BAY
ITB NO. 23-10
FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____

as Principal and Proposer, and _____

Hereinafter called Surety, are held and firmly bound unto Town of Cutler Bay, a political subdivision of the State of Florida, and represented by its Town Manager, in the sum of five (5) percent (%) of the proposed annual base bid amount of:

_____

_____
(Written Dollar Amount)

dollars **($**_____) lawful money of the United States of America, for the payment of which well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally by these presents.

WHEREAS, the Principal contemplates submitting or has submitted, a bid to the Town of Cutler Bay for the furnishing of all labor, materials (except those to be specifically furnished by the Town), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the bid and the detailed Drawings and Specifications, entitled:

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

TOWN OF CUTLER BAY

ITB No. 23-10
FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

WHEREAS, it was a condition precedent to the submission of said bid that a cashier's check, certified check, or bid bond in the amount of 5% of the proposal amount be submitted with said bid as a guarantee that the Proposer would, if awarded the Contract, enter into a written Contract with the Town for the performance of said Contract, within ten (10) consecutive calendar days after written notice having been given of the award of the Contract.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal within ten (10) consecutive calendar days after written notice of such acceptance, enters into a written Contract with the Town of Cutler Bay and furnishes the Performance Bond, in an amount equal to one hundred percent of the **annual** base bid amount, satisfactory to the Town, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the Town of Cutler Bay and the Surety herein agrees to pay said sum immediately

upon demand of the Town in good and lawful money of the United States of America, as liquidated damages for failure thereof of said Principal.

IN WITNESS WHEREOF, the said _____

as Principal herein, has caused these presents to be signed in its name by its _____

_____ and attested by its _____

_____ under its corporate seal, and the said _____

_____ as Surety herein, has caused these

presents to be signed in its name by its _____

_____ and attested in its name by its _____

_____ under its corporate seal, this _____ day of _____ A.D.,

20____.

Signed, sealed, and delivered
_____
in the presence of:

_____
_____

_____
_____
As to Principal

PRINCIPAL:

BY:

NAME:

_____
Surety

BY:

_____
Attorney-in-Fact
(Power-of-Attorney to be attached)

BY:

Resident Agent

_____
_____
As to Surety

[END OF SECTION]

CERTIFICATES AS TO CORPORATE PRINCIPAL

I,_____, certify that I am the Secretary of the Corporation named as Principal in the within bond; that_____who signed said bond on behalf of the principal, was then_____of said corporation; that I know his signature, and his signaturehereto is genuine; and that said bond was duly signed, sealed, and attested for and on behalf of said corporation by authority of its governing body.

_____
Secretary (Corporate Seal)

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

Before me, a Notary Public duly commissioned, qualified, and acting, personally appeared _____, to be well known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the _____ and that he has been authorized by_____to execute the foregoing bond on behalf of the Contractor named therein in favor of the Owner, the Town of Cutler Bay.

Sworn and Subscribed to before me this_____day of_____, 20__, A.D.

Attach Power of Attorney _____

[END OF SECTION]

SECTION 00500

CONTRACT FOR CONSTRUCTION

THIS CONTRACT FOR CONSTRUCTION (this "Contract") is made this_____ day of _____, 202__ (the "Effective Date") by and between the **TOWN OF CUTLER BAY, FLORIDA**, a Florida municipal corporation, (the "Town"), **[**and **],** a **[ ]** (the "Contractor").

WHEREAS, the Town issued Invitation to Bid No. 2023-10 (the "ITB") for construction of **FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT** (the "Project"), which ITB is incorporated herein by reference and made a part hereof; and

WHEREAS, in response to the Town's ITB, the Contractor submitted a bid for the Project ("Bid"), which Bid is incorporated herein by reference and made a part hereof, and includes the Price Submittal ("Pricing") attached hereto as Exhibit "A"; and

WHEREAS, Contractor submitted the lowest, responsive and responsible bid in response to the ITB and was selected and awarded this Contract for performance of the Work (as hereinafter defined); and

WHEREAS, Contractor has represented to the Town that it possesses the necessary qualifications, experience and abilities to perform the Work or the Project, and has agreed to provide the Work on the terms and conditions set forth in this Contract.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the Contractor and the Town agree as follows:

1. SCOPE OF WORK

1.1. Scope of Work. Contractor hereby agrees to furnish all of the labor, materials, equipment, services and incidentals necessary to perform all of the work described in the Contract Documents (the "Work" or the "Project") including, without limitation as described in the approved plans, drawings and/or specifications prepared by Stantec Consulting Services, Inc. dated March 22, 2021 (the "Plans") and any other documents incorporated herein by reference and made a part of this Contract for the following Project:

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

1.2. Pre-Construction Conference. Within fourteen (14) calendar days after this Contract is executed by both parties, and before any Work has commenced, a pre-construction conference will be held between the Town, the Contractor, and the Project Consultant. The Contractor must submit its project schedule and schedule of values, if applicable, prior to this conference.

1.3. Project Schedule. Contractor must submit a proposed Project Schedule as follows:

1.3.1. Schedule must identify the schedule for each location comprising the Project. The proposed Project schedule must be submitted within ten (10) calendar days from the date this Contract is executed by both parties for the review and approval of the Project Consultant or Town as applicable. This initial schedule shall establish the baseline schedule for the Project.

1.3.2. All updates of schedules must be tracked against the baseline schedule and must be at a minimum submitted with each pay application. An updated schedule tracked against the baseline must also be submitted upon execution of each Change Order that impacts the Contract Time. Failure to submit such schedules will result in the rejection of any submitted payment application.

1.3.3. All Project Schedules must be prepared in Microsoft Project or approved equal by the Town. At the time of submission of schedules, Contractor must submit a hard copy as well as an electronic version. Electronic versions must not be submitted in a .pdf format.

1.4. <u>Records.</u>

1.4.1. As-Built Drawings. During the Work, Contractor must maintain records of all deviations from the Drawings as approved by the Project Consultant and prepare two copies of As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the Work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Drawings for errors and omissions prior to submittal to the Town and to certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all infrastructure, internal piping, and electrical/signal conduits in or below the concrete floor (indicating the size, depth, and voltage in each conduit). To record actual construction, Contractor must legibly mark on-site structures and site Work as follows:

1.4.1.1. Depths of various elements of foundation in relation to finish first floor datum.

1.4.1.2. All underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location. Horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe material, class, etc.

1.4.1.3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.

1.4.1.4. Field changes in dimensions and details.

1.4.1.5. Changes made by Project Consultant's written instructions or by Change Order.

1.4.1.6. Details not on original Contract Drawings.

1.4.1.7. Equipment, conduit, electrical panel locations.

1.4.1.8. Project Consultant's schedule changes according to Contractor's records and shop drawings.

1.4.1.9. Specifications and Addenda: Legibly mark each section to record:

1.4.1.9.1. Manufacturer, trade name, catalog number and Supplier of each product and item of equipment actually installed.

1.4.1.9.2. Changes made by Project Consultant's written instructions or by Change Order.

1.4.1.10. Approved Shop Drawings: Provide record copies for each process, equipment, piping, electrical system and instrumentation system.

1.4.1.10.1. As-built documents must be updated monthly as a condition precedent to payment, unless waived by the Town. A final survey signed and sealed by a surveyor must be provided to the Town at no additional cost, including digital l (CAD and PDF) versions.

1.4.1.10.2. For construction of new building, or building additions, field improvements, and or roadway improvements, as-built drawings must be signed and sealed by a Florida Licensed Registered Land Surveyor.

1.4.2. Record Set. Contractor must maintain in a safe place one record copy and one permit set of the Contract Documents, including, but not limited to, all Drawings, Specifications, amendments, COs, RFIs, and field directives, as well as all written interpretations and clarifications issued by the Project Consultant, in good order and annotated to show all changes made during construction. The record documents must be continuously updated by Contractor throughout the prosecution of the Work to accurately reflect all field changes that are made to adapt the Work to field conditions, changes resulting from COs and/or field directives as well as all written interpretations and clarifications, and all concealed and buried installations of piping, conduit and utility services. Contractor must certify the accuracy of the updated record documents. The record documents must be clean, and all changes, corrections and dimensions must be given in a neat and legible manner in red. Upon Final Completion and as a condition precedent to Contractor's entitlement to final payment, the Record Set must be delivered to the Project Consultant by the Contractor. The Record Set of Drawing must be submitted in both hard copy and as electronic plot files.

1.4.3. Construction Photographs. Prior to commencement of the Work the Contractor must take digital photographs and color audio-video recording to document existing conditions and submit copies in an acceptable format to the Town. Contractor must submit with each application for payment photographs that accurately reflect the progress of all aspects of the Work. The number of photographs to be taken will be based on the magnitude of the Work being performed. Contractor must submit one copy of each photograph in print and digitally. The photographs must be printed on 8" X 10" high resolution glossy commercial grade and weight color photographic print paper or in a format acceptable to the Town. Each photograph must be imprinted on its face with the title of the Project, the date, and time the picture was taken. Digital photographs must be taken using .jpeg format and will be submitted through a file-sharing site (such as Dropbox) or on a CD-ROM or flash drive clearly identifying the name of the Project, the name of the Contractor, and the timeframe in which the pictures were taken. Initial set up prints will be submitted in a three-ring binder with each picture protected by a clear plastic sleeve. Subsequent prints are to be submitted in clear plastic sleeves that can be added to the binder. The three-ring binder must be of such size to be able to hold all print pictures.

1.5. <u>Staging Site.</u>

1.5.1. The Contractor is solely responsible for making all arrangements for any staging site(s) that may be necessary for the performance of the Work and the Contractor is responsible for

all site security, including any fencing of the site, and any loss, damage or theft to its equipment and materials. Any fencing of the Staging Site is subject to the prior written approval of the Town.

1.5.2. The Town at its sole discretion may make a staging site available for use by the Contractor. If such site is made available by the Town, the Town assumes no responsibility or liability for the equipment or materials stored on the site, and the Contractor will be solely responsible for any loss, damage or theft to its equipment and materials. The Contractor must restore the site to its pre-existing condition prior to the Contractor's use of the site.

1.5.3. The Contractor may be required to provide or may choose to use an office trailer for the duration of the Project. The Contractor must have the prior written approval of the Town as to the use of any office trailer and the placement location for the office trailer. The Contractor must obtain all required permits from the appropriate regulatory agencies.

1.5.4. No parking is permitted at a Town provided staging site without the prior written approval of the Town.

1.6. Purchase and Delivery, Storage and Installation. All materials must be F.O.B. delivered and included in the cost of the Work. The Contractor is solely responsible for the purchase, delivery, off-loading and installation of all equipment and material(s). Contractor must make all arrangement for delivery. Contractor is liable for replacing any damaged equipment or material(s) and filing any and all claims with suppliers. All transportation must comply with all federal, state (including FDOT), Miami-Dade County, and local laws, rules and regulations. No materials will be stored on-site without the prior written approval of the Town.

1.7. Approval of Subcontractors. For any scope of work that the Contractor will utilize a subcontractor, the Contractor may only retain or utilize the services of the particular subcontractor with the prior written approval of the Town Manager, which approval may be granted or withheld in the Town Manager's sole and absolute discretion. The Contractor shall provide at least fourteen (14) days notice to the Town Manager and the Project Consultant of its intent to retain or utilize a subcontractor.

1.8. Project Signage. Contractor must furnish and install two (2) Project signs at the Project Site in accordance with the requirements provided by the Project Consultant or the Town as applicable.

2. CONTRACT TIME

2.1. Contractor shall be instructed to commence the Work by written instructions in the form of a Notice to Proceed providing a commencement date and issued by the Town Manager or designee. The Notice to Proceed will not be issued until Contractor's submission to Town of all required documents and after execution of this Contract.

2.2. Time is of the essence throughout this Contract. The Contractor shall prosecute the Work with faithfulness and diligence and the **Work shall be substantially completed within seven hundred (700) calendar days from the date specified in the Notice to Proceed ("Contract Time").** Substantial Completion shall be defined for this purpose as the date on which Town receives beneficial use of the Project. **The Work shall be fully completed in accordance with the Contract Documents within seven hundred thirty (730) calendar days from the date specified in the Notice to Proceed ("Final Completion Time").** The Final Completion date is defined as the date determined by the Town when all Work, including punch list items, has been completed in

accordance with the Contract Documents and Contractor has delivered to Town all documentation required herein.

2.3. Upon failure of Contractor to substantially complete the Work as defined in this Agreement within the Contract Time, Contractor shall pay to Town the sum of **five hundred dollars ($500)** for each calendar day after the expiration of the Contract Time that the Contractor fails to achieve Substantial Completion up until the date that the Contractor achieves Substantial Completion. Upon failure of Contractor to fully complete the Work and achieve Final Completion within the Final Completion Time, Contractor shall pay to Town the sum of **one thousand dollars ($1,000)** for each calendar day after expiration of the Final Completion Time that the Contractor fails to achieve Final Completion up until the date that the Contractor achieves Final Completion. These amounts are not penalties but are liquidated damages payable by Contractor to Town for the failure to provide full beneficial occupancy and use of the Project as required. Liquidated damages are hereby fixed and agreed upon between the parties who hereby acknowledge the difficulty of determining the amount of damages that will be sustained by Town as a consequence of Contractor's delay and failure of Contractor to complete the Work on time. The above-stated liquidated damages shall apply separately to each phase of the Project for which a time for completion is given.

2.4. Town is authorized to deduct the liquidated damages from monies due to Contractor for the Work under this Contract. In case the liquidated damage amount due to Town by Contractor exceeds monies due Contractor from Town, Contractor shall be liable and shall immediately upon demand by Town pay to Town the amount of said excess.

3. CONTRACT PRICE AND PAYMENT PROCEDURES

3.1. Guaranteed Maximum Price. The Town shall pay the Contractor an amount not to exceed $_____ for the performance of the Work in accordance with the line items and unit prices included in Exhibit "A" (the "Contract Price"). The Contract Price shall be full compensation for all services, labor, materials, equipment, and costs, including overhead and profit, associated with completion of all the Work in full conformity with the Contract Documents and adjusted only by written change orders signed by both parties and approved as required by local law. The Contract Price shall include all applicable sales taxes as required by law.

3.2. Schedule of Values. The Contractor must submit two copies of schedule of values within ten (10) calendar days from the date this Contract is executed by both parties. The schedule of values shall indicate a complete breakdown of labor and material of all categories of Work on the Project. Contractor's overhead and profit must be listed as separate line items if requested. Each line item must be identified with the number and title of the major specification section or major components of the items. The Project Consultant or Town as applicable may require further breakdown after review of the Contractor's submittal. The Town reserves the right to require such information from the Contractor as may be necessary to determine the accuracy of the schedule of values. The combined total value for mobilization under the Schedule of Values shall not exceed 5% of the value of the Contract. The accepted Schedule of Values must be incorporated into the Contractor's payment application form. The Contractor guarantees that each individual line item contained in the schedule of values submitted as part of a competitive solicitation shall not be increased without written approval by the Town Manager.

3.3. Payment Application Procedures. Town shall make progress payments, deducting the amount from the Contract Price above on the basis of Contractor's Applications for Payment on or before thirty (30) days after receipt of the Pay Application. Rejection of a Pay Application by the Town shall be within thirty (30) days after receipt of the Pay Application. Any rejection shall specify the applicable deficiency and necessary corrective action. Any undisputed portion shall be paid as specified above. All such payments will be made in accordance with the Schedule of Values established in the Contract Documents or, in the event there is no Schedule of Values, as otherwise provided in the Contract Documents. In the event the Contract Documents do not provide a Schedule of Values or other payment schedule, Applications for Payment shall be submitted monthly by Contractor on or before the 10th of each month for the prior month to the Town's Consultant, Stantec Consulting Services, Inc. (the "Town's Project Consultant"). Progress payments shall be made in an amount equal to the percentage of Work completed as determined by the Town or Town's Project Consultant, but, in each case, less the aggregate of payments previously made and less such amounts as Town shall determine or Town may withhold taking into account the aggregate of payments made and the percentage of Project completion in accordance with the Contract Documents and Schedule of Values, if any. The Contractor agrees that five percent (5%) of the amount due for each progress payment or Pay Application (the "Retainage") shall be retained by Town until final completion and acceptance of the Work by Town. In the event there is a dispute between Contractor and Town concerning a Pay Application, dispute resolution procedures shall be conducted by Town commencing within 45 days of receipt of the disputed Payment Application. The Town shall reach a conclusion within 15 days thereafter and promptly notify Contractor of the outcome, including payment, if applicable.

3.4. Progress Payment Applications. Each progress payment application submitted to the Town must include:

3.4.1. A sworn and certified progress payment affidavit indicating that all laborers, material suppliers, and subcontractors dealing with the Contractor were paid in full as it relates to all Work performed up to the time of the request for payment;

3.4.2. Partial conditional releases or waivers of lien by the Contractor, material suppliers, subcontractors, and any lienors serving a Notice to the Town and evidence of proof of payment of any indebtedness incurred with respect to the Work of the Contractor as may be required by the Town;

3.4.3. Evidence that all Work was fully performed as required by the Contract Documents up to the time of the request for payment and that the Work was inspected and accepted by the Town and any other governmental authorities required to inspect the Work; and

3.4.4. An updated Project schedule, including a two-week look-ahead schedule, as approved in writing by the Town Manager.

3.4.5. All Buy-Out Savings, including supporting documentation relating to the calculation of the Buy-Out Savings.

3.5. Final Payment. Upon Final Completion of the Work by Contractor in accordance with the Contract Documents and acceptance by the Town, and upon receipt of consent by any surety, Town shall pay the remainder of the Contract Price (including Retainage) as recommended by the Town's Project Consultant and Building Official. Final payment is contingent upon receipt by Town from Contractor of:

3.5.1. An affidavit that payrolls, bills for materials, equipment, and other indebtedness were paid in full as it relates to all Work performed under this Contract;

3.5.2. A certificate evidencing that insurance required by the Contract Documents shall remain in effect after final payment is made;

3.5.3. A written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents;

3.5.4. Documentation of any special warranties, including, but not limited to, any manufactures' warranties or specific subcontractor warranties;

3.5.5. Evidence that all Punch List items have been fully completed to the satisfaction of the Town;

3.5.6. All previously undelivered manufacturer and subcontractor guarantees, warranties, and manuals and documents required by the Contract Documents;

3.5.7. Final releases of lien, waivers of claim, satisfactions of liens or claims, and such other affidavits as may be reasonably required by the Town to assure a lien-free and claim-free completion of the Work;

3.5.8. Evidence that the Contractor has fully cleaned and restored the site, including removal of all rubbish and debris;

3.5.9. At least one complete set of as-built plans, reflecting an accurate depiction of Contractor's Work;

3.5.10. .Such other documents necessary to show that the Contractor has complied with all other requirements of the Contract Documents; and

3.5.11. Cost Savings, including supporting documentation used to calculate the Cost Savings.

3.6. Payment Withholding. The Town may withhold any payment, including a final payment, for application to such extent as may be necessary, as determined by the Town's Project Consultant, to protect the Town from loss for which the Contractor is responsible in the event that:

3.6.1. The Contractor performs defective Work and such Work has not been corrected, provided that the amount withheld shall be limited to the amount sufficient to cover such defective Work;

3.6.2. A third-party files a claim or lien in connection with the Work or this Contract;

3.6.3. The Contractor fails to make payments properly to subcontractors or suppliers for labor, materials, or equipment which has been paid by the Town, provided that the amount withheld shall be limited to the amount sufficient to cover such payments to subcontractors or suppliers for labor, materials, or equipment;

3.6.4. The Town has reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

3.6.5. The Contractor, its employees, subcontractors, or agents have damaged the Town;

3.6.6. The Town has reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover liquidated damages for the anticipated delay;

3.6.7. The Contractor has failed to progress the Work satisfactorily and/or according to the Contract Schedule;

3.6.8. The Contractor has failed to carry out the Work in accordance with the Contract Documents;

3.6.9. The Contractor has failed to provide requisite releases of lien for each payment application in accordance with the Contract Documents; and/or

3.6.10. Any other failure to perform a material obligation contained in the Contract Documents.

3.7. No Waiver of Town Rights. The payment of any Application for Payment by the Town, including the final request for payment, does not constitute approval or acceptance by the Town of any item of the Work reflected in such Application for Payment, nor shall it be construed as a waiver of any of the Town 's rights hereunder or at law or in equity.

3.8. Payment to Sub-Contractors; Certification of Payment to Subcontractors. The term "subcontractor," as used herein, includes persons or firms furnishing labor, materials or equipment incorporated into or to be incorporated into the Work or Project. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts as a condition precedent to payment to Contractor by the Town. The Contractor shall also return all retainage withheld to the subcontractors within 30 days after the subcontractor's work is satisfactorily complete and accepted by the Town.

3.9. Cost Savings and Value Engineering.

3.9.1. Cost Savings. In the event the Contractor rebids or renegotiates with any subcontractor to reduce subcontractor costs for the performance of the Work, then the difference between (i) the sum of the subcontractor costs used to establish the Contract Price, as set forth in the Schedule of Values, and (ii) the sum of the revised subcontractor costs, including any early payment or similar discounts (the "Cost Savings"), shall revert to the Town. The Contract

Price shall be adjusted in accordance with any Cost Savings through a Change and the Schedule of Values shall also be revised to reflect the new Contract Price.

3.9.2. Value Engineering. Contractor shall participate in Value Engineering the Contract Documents with the Town and the Architect with the goal of finding acceptable means for reducing the cost of the Work. Upon acceptance by the Town of recommendation for Value Engineering, the Contract Documents shall be modified to reflect such changes. All savings in connection with Value Engineering of the Work shall revert to Town.

4. CONTRACT DOCUMENTS

4.1. The Contract Documents, which comprise the entire agreement between the Town and the Contractor concerning the Work, consist of this Contract for Construction (including any change orders and amendments thereto), the Plans and Specifications, the Technical Specifications, any Bidding Documents or procurement documents for the Project, the Contractor's Bid for the Project (including the Schedule of Bid Items-Pricing), the Bonds (defined herein), Insurance Certificates, the Notice of Award, and the Notice to Proceed, all of which are deemed incorporated into and made a part of this Contract by this reference and govern this Project. In the event of any conflict among the foregoing, the documents shall govern in the order listed herein. Contractor is reminded and hereby recognizes that all Work under this Contract must comply with all applicable federal, state, and local law. Any mandatory clauses which are required by applicable law shall be deemed to be incorporated herein.

4.2. This Contract incorporates and includes all prior negotiations, correspondence, conversations, agreements, or understandings applicable to the matters contained herein and the parties agree that there are no commitments, agreements, or understandings concerning the subject matter of these Contract Documents that are not contained herein. Accordingly, it is agreed that no deviation from the terms hereof shall be predicated upon any prior representations or agreements, whether oral or written.

4.3. The Contract Documents shall remain the property of the Town. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; however in no circumstances shall the Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the Town's prior written authorization.

4.4. Conflicts; Order of Priority. This document without exhibits is referred to as the "Base Agreement." In the event of a conflict between the terms of this Base Agreement and any exhibits or attachments hereto, or any documents incorporated herein by reference, the conflict shall be resolved in the following order of priorities and the more stringent criteria for performance of the Work shall apply:

4.4.1. First Priority: Change Orders with later date taking precedence;

4.4.2. Second Priority: ARPA Contract Form, if applicable;

4.4.3. Third Priority: This Base Agreement;

4.4.4. Fourth Priority: Contract Documents, excluding this Base Agreement; and

4.4.5. Fifth Priority: Exhibit A, "Price Submittal Form."

5. INDEMNIFICATION

5.1. Contractor shall defend, indemnify, and hold harmless the Town of Cutler Bay, Miami-Dade County, its officers, agents and employees, from and against any and all demands, claims, losses, suits, liabilities, causes of action, judgment or damages, including legal fees and costs and through appeal, arising out of or, related to, or in any way connected with Contractor's negligence, recklessness, or intentional misconduct in the Contractor's performance or non-performance of this Contract, Contractor's obligations, or the Work related to the Contract, including by reason of any damage to property, or bodily injury or death incurred or sustained by any party. Additionally, the Contractor shall defend, indemnify, and hold the Town harmless from all losses, injuries or damages and wages or overtime compensation due its employees in rendering services pursuant to this Contract, including payment of reasonable attorneys' fees and costs in the defense of any claim made under the Fair Labor Standards Act, Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, the Americans with Disabilities Act or any other employment related litigation or worker's compensation claims under federal, state, or local law. The provisions of this section shall survive termination of this Contract.

6. INSURANCE AND BONDS

6.1. Insurance.

6.1.1. Contractor shall secure and maintain throughout the duration of this Contract insurance of such types and in such amounts not less than those specified below as satisfactory to the Town, naming the Town as an Additional Insured, underwritten by a firm rated A-X or better by Bests Rating and qualified to do business in the State of Florida. Certificates of Insurance shall be provided to the Town, reflecting the Town as an Additional Insured, no later than ten (10) days after award of this Contract and prior to the execution of this Contract by Town and prior to commencing any Work. Each certificate shall include no less than (30) thirty-day advance written notice to Town prior to cancellation, termination, or material alteration of said policies or insurance. The insurance coverage shall be primary insurance with respect to the Town, its officials, employees, agents and volunteers naming the Town as additional insured. Any insurance maintained by the Town shall be in excess of the Contractor's insurance and shall not contribute to the Contractor's insurance. The insurance coverages shall include at a minimum the amounts set forth in this Section 6.1.

6.1.1.1. Commercial General Liability coverage with limits of liability of not less than a $2,000,000 per Occurrence combined single limit for Bodily Injury and Property Damage. This Liability Insurance shall also include Completed Operations and Product Liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor. The General Aggregate Liability limit (except for Products/Completed Operations) shall be in the amount of $2,000,000.

6.1.1.2. Workers Compensation and Employer's Liability insurance, to apply for all employees for statutory limits as required by applicable State and Federal laws. The policy(ies) must include Employer's Liability with minimum limits of $1,000,000.00 each accident. No employee, subcontractor or agent of the Contractor shall be allowed to provide Work pursuant to this Contract who is not covered by Worker's Compensation insurance.

6.1.1.3. Business Automobile Liability with minimum limits of $1,000,000 per Occurrence, combined single limit for Bodily Injury and Property Damage. Coverage must be afforded on a form no more restrictive than the latest edition of the Business Automobile Liability policy, without restrictive endorsements, as filed by the Insurance Services Office, and must include Owned, Hired, and Non-Owned Vehicles.

6.1.1.4. Builder's Risk property insurance upon the entire Work to the full replacement cost value thereof. This insurance shall include the interest of Town and Contractor and shall provide All-Risk coverage against loss by physical damage including, but not limited to, Fire, Extended Coverage, Theft, Vandalism and Malicious Mischief.

6.1.1.5. Contractor acknowledges that it shall bear the full risk of loss for any portion of the Work damaged, destroyed, lost or stolen until Final Completion has been achieved for the Project, and all such Work shall be fully restored by the Contractor, at its sole cost and expense, in accordance with the Contract Documents.

6.1.2. Certificate of Insurance. On or before the Effective Date of this Contract, the Contractor shall provide the Town with Certificates of Insurance for all required policies. The Contractor shall be responsible for assuring that the insurance certificates required by this Section remain in full force and effect for the duration of this Contract, including any extensions or renewals that may be granted by the Town. The Certificates of Insurance shall not only name the types of policy(ies) provided, but also shall refer specifically to this Contract and shall state that such insurance is as required by this Contract. The Town reserves the right to inspect and return a certified copy of such policies, upon written request by the Town. If a policy is due to expire prior to the completion of the Work, renewal Certificates of Insurance shall be furnished thirty (30) calendar days prior to the date of their policy expiration. Each policy certificate shall be endorsed with a provision that not less than thirty (30) calendar days' written notice shall be provided to the Town before any policy or coverage is cancelled or restricted. Acceptance of the Certificate(s) is subject to approval of the Town.

6.1.2.1. Additional Insured. The Town is to be specifically included as an Additional Insured for the liability of the Town resulting from Work performed by or on behalf of the Contractor in performance of this Contract. The Contractor's insurance, including that applicable to the Town as an Additional Insured, shall apply on a primary basis and any other insurance maintained by the Town shall be in excess of and shall not contribute to the Contractor's insurance. The Contractor's insurance shall contain a severability of interest provision providing that, except with respect to the total limits of liability, the insurance shall apply to each Insured or Additional Insured (for applicable policies) in the same manner as if separate policies had been issued to each.

6.1.2.2. Deductibles. All deductibles or self-insured retentions must be declared to and be reasonably approved by the Town. The Contractor shall be responsible for the payment of any deductible or self-insured retentions in the event of any claim.

6.1.3. The provisions of this section shall survive termination of this Contract.

6.2. Bonds. If required by the Town, prior to performing any portion of the Work the Contractor shall deliver to Town the Bonds required to be provided by Contractor hereunder (the bonds referenced in this Section are collectively referred to herein as the "Bonds"). Pursuant to and in accordance with Section 255.05, Florida Statutes, the Contractor shall obtain and thereafter at all times during the performance of the Work maintain a separate performance bond and labor and material payment bond for the Work, each in an amount equal to one hundred percent (100%) of the Contract Price and each in the form provided in the Contract Documents or in other form satisfactory to and approved in writing by Town and executed by a surety of recognized standing with a rating of B plus or better for bonds up to Two Million Dollars. The surety providing such Bonds must be licensed, authorized and admitted to do business in the State of Florida and must be listed in the Federal Register (Dept. of Treasury, Circular 570). The cost of the premiums for such Bonds is included in the Contract Price. If notice of any change affecting the Scope of the Work, the Contract Price, Contract Time or any of the provisions of the Contract Documents is required by the provisions of any bond to be given to a surety, the giving of any such notice shall be Contractor's sole responsibility, and the amount of each applicable bond shall be adjusted accordingly. If the surety is declared bankrupt or becomes insolvent or its right to do business in Florida is terminated or it ceases to meet applicable law or regulations, the Contractor shall, within five (5) days of any such event, substitute another bond (or Bonds as applicable) and surety, all of which must be satisfactory to Town.

7. CONTRACTOR'S REPRESENTATIONS AND WARRANTIES

7.1. In order to induce the Town to enter into this Contract, the Contractor makes the following representations and warranties:

7.1.1. Contractor represents the following:

7.1.1.1. Contractor has examined and carefully studied the Contract Documents and the other data identified in the bidding documents, including, without limitation, the "technical data" and plans and specifications and the Plans.

7.1.1.2. Contractor has visited the Project site and become familiar with and is satisfied as to the general and local conditions and site conditions that may affect cost, progress, performance or furnishing of the Work.

7.1.1.3. Contractor is familiar with and is satisfied as to all federal, state and local laws, regulations and permits that may affect cost, progress, performance and furnishing of the Work. Contractor agrees that it will at all times comply with all requirements of the foregoing laws, regulations and permits.

7.1.1.4. Contractor has made, or caused to be made, examinations, investigations, tests and/or studies as necessary to determine surface and subsurface conditions at or on the site. Contractor acknowledges that the Town does not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to underground or ground facilities at, contiguous or near the site or for existing improvements at or near the site. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities and improvements) at, contiguous or near to the site or otherwise which may affect cost,

progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents.

7.1.1.5. Contractor is aware of the general nature of Work to be performed by the Town and others at the site that relates to the Work as indicated in the Contract Documents.

7.1.1.6. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

7.1.1.7. Contractor has given Town written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Town is acceptable to Contactor, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

7.1.1.8. The Contractor agrees and represents that it possesses the requisite qualifications and skills to perform the Work and that the Work shall be executed in a good and workmanlike manner, free from defects, and that all materials shall be new and approved by or acceptable to Town, except as otherwise expressly provided for in the Contract Documents. The Contractor shall cause all materials and other parts of the Work to be readily available as and when required or needed for or in connection with the construction, furnishing and equipping of the Project.

7.2. <u>No recovery for changed market conditions.</u>

7.2.1. In entering into the Contract, Contractor represents and warrants that it has accounted for any and all inflation-related events, recession, labor or material shortages, supply chain disruptions, delivery lead time, or price increases that may be caused by local and or national conditions, whether known or unknown at the time of entering into the Contract (the "Market Conditions"). Contractor further specifically represents and warrants that it has considered all impacts and potential impacts, including any current and future supply chain disruptions and labor shortages, associated with the following events: (1) worldwide pandemics including, but not limited to, COVID-19 and Monkey Pox (the "Pandemics") and (2) the current military conflict involving Russia and the Ukraine (the "Ukraine Military Conflict"). Contractor also represents and warrants that in determining time requirements for procurement, installation, and construction completion, Contractor has taken into account the impacts of Market Conditions, the Pandemics, and the Ukraine Military Conflict, and has included all of those factors in the Construction Schedule and Contract Sum.

7.2.2. Contractor shall not seek any price increases or time extensions relating to or arising from the impacts of any Market Conditions, the Pandemics or Ukraine Military Conflict.

7.2.3. The Town shall not make any adjustment in the Contract Sum or grant an extension to the Contract Time in connection with any failure by the Contractor to comply with the requirements of this Paragraph.

7.3. Contractor warrants the following:

7.3.1. Anti-Discrimination. Contractor agrees that it will not discriminate against any employees or applicants for employment or against persons for any other benefit or service under this Contract because of race, color, religion, sex, national origin, or physical or mental handicap where the handicap does not affect the ability of an individual to perform in a position of employment, and agrees to abide by all federal and state laws regarding non-discrimination.

7.3.2. Anti-Kickback. Contractor warrants that no person has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, and that no employee or officer of the Town has any interest, financially or otherwise, in the Project. For breach or violation of this warranty, the Town shall have the right to annul this Contract without liability or, in its discretion, to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

7.3.3. Licensing. Contractor represents that it is a properly qualified and licensed contractor in good standing within the jurisdiction within which the Project is located. Contractor warrants that it shall have, prior to commencement of Work under this Contract and at all times during said Work, all required licenses from the federal, state, Miami-Dade County, Town, or other governmental or regulatory entity. Contractor acknowledges that it is the obligation of Contractor to obtain all licenses required for this Project, including Town building permits. Prior to commencement of the Work, the Contractor shall provide the Town with copies of all required licenses.

7.3.4. Permits. Contractor warrants that it shall have, prior to commencement of Work under this Contract and at all times during said Work, all required permits from the federal, state, Miami-Dade County, Town, or other governmental or regulatory entity with jurisdiction over the site that are necessary to perform the Work. Contractor acknowledges that it is the obligation of Contractor to obtain all permits required for this Project, including Town building permits. Prior to commencement of the Work, the Contractor shall provide the Town with copies of all required permits. Town building permit fees may be waived for this Project. If permits are required by any other governing body or agency, the Contractor shall be obligated to pay the fees.

7.4. <u>Defective Work; Warranty and Guarantee.</u>

7.4.1. Town shall have the authority to reject or disapprove Work which the Town finds to be defective. If required by the Town, Contractor shall promptly either correct all defective Work or remove such defective Work and replace it with non-defective Work. Contractor shall bear all direct, indirect and consequential costs of such removal or corrections including cost of testing laboratories and personnel.

7.4.2. Should Contractor fail or refuse to remove or correct any defective Work or to make any necessary repairs in accordance with the requirements of the Contract Documents within

the time indicated in writing by the Town or its designee, Town shall have the authority to cause the defective Work to be removed or corrected, or make such repairs as may be necessary at Contractor's expense. Any expense incurred by Town in making such removals, corrections or repairs, shall be paid for out of any monies due or which may become due to Contractor. In the event of failure of Contractor to make all necessary repairs promptly and fully, Town may declare Contractor in default.

7.4.3. The Contractor shall unconditionally warrant and guarantee all labor, materials and equipment furnished and Work performed for a period of one (1) year from the date of Substantial Completion. If, within one (1) year after the date of substantial completion, any of the Work is found to be defective or not in accordance with the Contract Documents, Contractor, after receipt of written notice from Town, shall promptly correct such defective or nonconforming Work within the time specified by Town without cost to Town. Should the manufacturer of any materials and equipment furnished provide for a longer warranty, then the Contractor shall transfer such warranty to the Town prior to Final Completion. Nothing contained herein shall be construed to establish a period of limitation with respect to any other obligation which Contractor might have under the Contract Documents including but not limited to any claim regarding latent defects. Contractor shall provide and assign to Town all material and equipment warranties upon completion of the Work hereunder.

7.4.4. Failure to reject any defective Work or material shall not in any way prevent later rejection when such defect is discovered.

8. DEFAULT, TERMINATION, AND SUSPENSION; REMEDIES

8.1. Termination for Cause. If Contractor fails to timely begin the Work, or fails to perform the Work with sufficient workers and equipment or with sufficient materials to ensure the prompt completion of the Work within the Contract Time or Final Completion Time as specified in Section 2, or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable, or shall discontinue the prosecution of the Work pursuant to the accepted schedule or if the Contractor shall fail to perform any material term set forth in the Contract Documents or if Contractor shall become insolvent or be declared bankrupt, or commit any act of bankruptcy or insolvency, or shall make an assignment for the benefit of creditors, or from any other cause whatsoever shall not carry on the Work in an acceptable manner, Town may, upon seven (7) days after sending Contractor a written Notice of Termination, terminate the services of Contractor, exclude Contractor from the Project site, provide for alternate prosecution of the Work, appropriate or use any or all materials and equipment on the Project site as may be suitable and acceptable, and may finish the Work by whatever methods it may deem expedient. In such case Contractor shall not be entitled to receive any further payment until the Project is completed. All damages, costs and charges incurred by Town, together with the costs of completing the Project, shall be deducted from any monies due or which may become due to Contractor. In case the damages and expenses so incurred by Town shall exceed monies due Contractor from Town, Contractor shall be liable and shall pay to Town the amount of said excess promptly upon demand therefore by Town. In the event it is adjudicated that Town was not entitled to terminate the Contract as described hereunder for default, the Contract shall automatically be deemed terminated by Town for convenience as described below.

8.2. Termination for Convenience. This Contract may be terminated by the Town for convenience upon seven (7) calendar days' written notice to the Contractor. In the event of such a termination, the Contractor shall incur no further obligations in connection with the Project

and shall, to the extent possible, terminate any outstanding subcontractor obligations. The Contractor shall be compensated for all services performed to the satisfaction of the Town. In such event, the Contractor shall promptly submit to the Town its Application for Payment for final payment which shall comply with the provisions of the Contract Documents.

8.3. Suspension of Contract. This Contract may be suspended for convenience by the Town upon seven (7) calendar days' written notice to the Contractor or immediately if suspended in connection with a local or state declaration of emergency. Suspension of the Work will entitle the Contractor to additional Contract Time as a non-compensable, excusable delay.

8.4. Termination Due to Lack of Funding. This Contract is subject to the conditions precedent that: (i) Town funds are available, appropriated, and budgeted for the Work, the Project, and/or Contract Price; (ii) the Town secures and obtains any necessary proceeds, grants, and/or loans for the accomplishment of the Work and/or the Project pursuant to any borrowing legislation adopted by the Town Council relative to the Project; and (iii) Town Council enacts legislation which awards and authorizes the execution of this Contract if such is required.

8.5. No Damages for Delay. No claim for damages or any claim, other than for an extension of time shall be made or asserted against Town by reason of any delays. Contractor shall not be entitled to an increase in the Contract Price or payment or compensation of any kind from Town for direct, indirect, consequential, impact or other costs, expenses or damages, including but not limited to, costs of acceleration or inefficiency, arising because of delay, disruption, interference or hindrance from any cause whatsoever, whether such delay, disruption, interference or hindrance be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable or whether or not caused by Town. Contractor shall be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting delay.

8.6. Waiver of Consequential Damages. Contractor assumes all risks for the following items, none of which shall be the subject of any Change Order or Claim and none of which shall be compensated for except as they may have been included in the Contractor's Contract Price as provided in the Contract Documents: Loss of any anticipated profits, loss of bonding capacity or capability losses, loss of business opportunities, loss of productivity on this or any other project, loss of interest income on funds not paid, inefficiencies, costs to prepare a bid, cost to prepare a quote for a change in the Work, costs to prepare, negotiate or prosecute Claims, and loss of projects not bid upon, or any other indirect and consequential costs not listed herein. No compensation shall be made for loss of anticipated profits from any deleted Work.

8.7. Litigation of Claims. Mediation shall not be required before either party may proceed to litigation.

8.8. Rights and Remedies. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder and in accordance with this Contract shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

9. CHANGES IN THE WORK

9.1. Change Orders.

9.1.1. Without invalidating the Contract Documents, and without notice to any Surety, the Town reserves the right to make increases, decreases or other changes in the character or quantity of the Work under the Contract Documents as may be considered necessary or desirable to complete the Work in a manner satisfactory to the Town. The Town reserves the right to order changes, which may result in additions to or reductions from the amount, type or value of the Work shown in the Contract, and which are within the general scope of the Contract Documents, and all such changes will be authorized only by a change order ("CO") approved in advance, and issued in accordance with provisions of the Contract Documents.

9.1.2. For Contractor initiated change orders, the Contractor is required to provide the Project Consultant with a detailed Request for Change Order ("RCO") in a form approved by the Town, which must include the requested revisions to the Contract, including, but not limited to, adjustments in the Contract Price and/or Contract Time. The Contractor must provide sufficient supporting documentation to demonstrate the reasonableness of the RCO. The Town may require Contractor to provide additional data including, but not limited to, a cost breakdown of material costs, labor costs, labor rates by trade, work classifications, and overhead rates to support the RCO. If applicable, the RCO must include any schedule revisions accompanied by an explanation of the cost impact of the proposed change. Failure to include schedule revisions in an RCO will be deemed as the Contractor's acknowledgement that the changes included in an RCO will not affect the project schedule.

9.1.3. Any modifications to the Contract Work, Contract Time, or Contract Price, must be effectuated through a written CO executed by both parties and, if required by the Town Code of Ordinances, approved by the Town Council.

9.1.4. In the event a satisfactory adjustment cannot be reached, and a CO has not been issued, given that time is of the essence, the Town reserves the right, at its sole option, to direct the Contractor to proceed on a time and materials basis or make such arrangements as may be deemed necessary to complete the proposed additional Work at the unit prices provided in the Contract Documents. Where the Town directs the Contractor to proceed on a time and materials basis, the Town shall impose a maximum not-to-exceed amount and the Contractor must maintain detailed records of all labor and material costs including but not limited to payroll records and material receipts. Contractor must demonstrate its costs with sufficient evidence to be entitled to compensation from the Town.

9.2. Continuing the Work. Contractor must continue to perform all Work under the Contract Documents during all disputes or disagreements with Town, including disputes or disagreements concerning an RCO. Contractor shall not delay any Work pending resolution of any disputes or disagreements.

10. MISCELLANEOUS

10.1. No Assignment. Neither party shall assign the Contract or any sub-contract in whole or in part without the written consent of the other, nor shall Contractor assign any monies due or to become due to it hereunder, without the previous written consent of the Town Manager.

10.2. Contractor's Responsibility for Damages and Accidents.

10.2.1. Contractor shall accept full responsibility for the Work against all loss or damage of any nature sustained until final acceptance by Town and shall promptly repair any damage done from any cause.

10.2.2. Contractor shall be responsible for all materials, equipment and supplies pertaining to the Project. In the event any such materials, equipment and supplies are lost, stolen, damaged or destroyed prior to final acceptance by Town, Contractor shall replace same without cost to Town**.**

10.3. Governing Law. This Contract shall be construed in accordance with and governed by the laws of the State of Florida. Venue for any litigation arising out of this Contract shall be proper exclusively in Miami-Dade County, Florida.

10.4. Waiver of Jury Trial. TOWN AND CONTRACTOR KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT EITHER MAY HAVE TO A TRIAL BY JURY IN STATE AND OR FEDERAL COURT PROCEEDINGS IN RESPECT TO ANY ACTION, PROCEEDING, LAWSUIT OR COUNTERCLAIM BASED UPON THE CONTRACT FOR CONSTRUCTION, ARISING OUT OF, UNDER, OR IN CONNECTION WITH THE CONSTRUCTION OF THE WORK, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS OR ACTIONS OR INACTIONS OF ANY PARTY.

10.5. Prevailing Party; Attorneys' Fees. In the event of any controversy, claim, dispute or litigation between the parties arising from or relating to this Contract (including, but not limited to, the enforcement of any indemnity provisions), the prevailing party shall be entitled to recover from the non-prevailing party all reasonable costs, expenses, paralegals' fees, experts' fees and attorneys' fees including, but not limited to, court costs and other expenses through all trial and appellate levels. In addition, the prevailing party shall be entitled to recover from the non-prevailing party all litigation costs associated with discovery, processing, management, hosting, and production of electronically stored information (ESI).

10.6. Compliance with Laws. The Consultant shall comply with all applicable laws, ordinances, rules, regulations, and lawful orders of public authorities in carrying out Services under this Agreement, and in particular shall obtain all required permits from all jurisdictional agencies to perform the Services under this Agreement at its own expense.

10.7. Examination and Retention of Contractor's Records.

10.7.1. The Town or any of its duly authorized representatives shall, for five (5) years after final payment under this Contract, have access to and the right to examine any of the Contractor's books, ledgers, documents, papers, or other records involving transactions related to this Contract for the purpose of making audit, examination, excerpts, and transcriptions. In addition, the Contractor agrees to comply specifically with the provisions of Section 119.0701, Florida Statutes.

10.7.2. The Contractor agrees to include in any subcontractor contracts for this Project corresponding provisions for the benefit of Town providing for retention and audit of records.

10.7.3. The right to access and examination of records stated herein and in any subcontracts shall survive termination or expiration of this Contract and continue until disposition of any mediation, claims, litigation or appeals related to this Project.

10.7.4. The Town may cancel and terminate this Contract immediately for refusal by the Contractor to allow access by the Town Manager or designees to any Records pertaining to work performed under this Contact that are subject to the provisions of Chapter 119, Florida Statutes.

10.8. Authorized Representative.

10.8.1. Before commencing the Work, Contractor shall designate a skilled and competent authorized supervisor and representative ("Authorized Representative") acceptable to Town to represent and act for Contractor and shall inform Town, in writing, of the name and address of such representative together with a clear definition of the scope of his authority to represent and act for Contractor. Contractor shall keep Town informed of any subsequent changes in the foregoing. Such representative shall be present or duly represented at the Project site at all times when Work is actually in progress. All notices, determinations, instructions and other communications given to the authorized representatives of Contractor shall be binding upon the Contractor.

10.8.2. The Authorized Representative, project managers, superintendents and supervisors for the Project are all subject to prior and continuous approval of the Town. If, at any time during the term of this Contract, any of the personnel either functionally or nominally performing any of the positions named above, are, for any reasonable cause whatsoever, unacceptable to the Town, Contractor shall replace the unacceptable personnel with personnel acceptable to the Town.

10.9. Taxes. Contractor shall pay all taxes, levies, duties and assessments of every nature which may be applicable to any Work under this Contract. The Contract Price and any agreed variations thereof shall include all taxes imposed by law at the time of this Contract. Contractor shall make any and all payroll deductions required by law. Contractor herein indemnifies and holds the Town harmless from any liability on account of any and all such taxes, levies, duties and assessments.

10.10. Utilities. Contractor shall, at its expense, arrange for, develop and maintain all utilities at the Project to perform the Work and meet the requirements of this Contract. Such utilities shall be furnished by Contractor at no additional cost to Town. Prior to final acceptance of the Work, Contractor shall, at its expense, satisfactorily remove and dispose of all temporary utilities developed to meet the requirements of this Contract.

10.11. Safety. Contractor shall be fully and solely responsible for safety and conducting all operations under this Contract at all times in such a manner as to avoid the risk of bodily harm to persons and damage to property and in full compliance with Occupational Safety and Health Act requirements and all other similar applicable safety laws or codes. Contractor shall continually and diligently inspect all Work, materials and equipment to discover any conditions which might involve such risks and shall be solely responsible for discovery and correction of any such conditions. Contractor shall have sole responsibility for implementing its safety program. Town shall not be responsible for supervising the implementation of Contractor's safety program, and shall not have responsibility for the safety of Contractor's or its subcontractor's employees. Contractor shall maintain all portions of the Project site and Work in a neat, clean and sanitary condition at all times. Contractor shall assure that subcontractors performing Work comply with the foregoing safety requirements.

10.12. Cleaning Up. Contractor shall, at all times, at its expense, keep its Work areas in a neat, clean and safe condition. Upon completion of any portion of the Work, Contractor shall promptly remove all of its equipment, construction materials, temporary structures and surplus materials not to be used at or near the same location during later stages of Work. Upon completion of the Work and before final payment is made, Contractor shall, at its expense, satisfactorily dispose

of all rubbish, unused materials and other equipment and materials belonging to it or used in the performance of the Work and Contractor shall leave the Project in a neat, clean and safe condition. In the event of Contractor's failure to comply with the foregoing, the same may be accomplished by Town at Contractor's expense.

10.13. Liens. Contractor shall not permit any mechanic's, laborer's or materialmen's lien to be filed against the Project site or any part thereof by reason of any Work, labor, services or materials supplied or claimed to have been supplied to the Project. In the event such a lien is found or claimed against the Project, Contractor shall within ten (10) days after notice of the lien discharge the lien or liens and cause a satisfaction of such lien to be recorded in the public records of Miami-Dade County, Florida, or cause such lien to be transferred to a bond, or post a bond sufficient to cause the Clerk of the Circuit Court of Miami-Dade County, Florida, to discharge such lien pursuant to Chapter 713.24, F.S. In the event Contractor fails to so discharge or bond the lien or liens within such period as required above, Town shall thereafter have the right, but not the obligation, to discharge or bond the lien or liens. Additionally, Town shall thereafter have the right, but not the obligation, to retain out of any payment then due or to become due Contractor, one hundred fifty percent (150%) of the amount of the lien and to pay Town 's reasonable attorneys' fees and costs incurred in connection therewith.

10.14. Public Entity Crimes Affidavit. Contractor shall comply with Section 287.133, Florida Statutes, and (Public Entity Crimes Statute) notification of which is hereby incorporated herein by reference, including execution of any required affidavit.

10.15. Independent Contractor. The Contractor is an independent contractor under the Contract. This Contract does not create any partnership nor joint venture. Services provided by the Contractor shall be by employees of the Contractor and subject to supervision by the Contractor, and not as officers, employees, or agents of the Town. Personnel policies, tax responsibilities, social security and health insurance, employee benefits, purchasing policies and other similar administrative procedures, applicable to services rendered under the Contract shall be those of the Contractor.

10.16. Notices/Authorized Representatives. Any notices required by this Contract shall be in writing and shall be deemed to have been properly given if transmitted by hand-delivery, by registered or certified mail with postage prepaid return receipt requested, or by a private postal service, addressed to the parties (or their successors) at the addresses listed on the signature page of this Contract or such other address as the party may have designated by proper notice.

10.17. Ownership and Access to Records and Audits.

10.17.1. Contractor acknowledges that all inventions, innovations, improvements, developments, methods, designs, analyses, drawings, reports, compiled information, and all similar or related information (whether patentable or not) which relate to Services to the Town which are conceived, developed or made by Contractor during the term of this Contract ("Work Product") belong to the Town. Contractor shall promptly disclose such Work Product to the Town and perform all actions reasonably requested by the Town (whether during or after the term of this Contract) to establish and confirm such ownership (including, without limitation, assignments, powers of attorney and other instruments).

10.17.2. Contractor agrees to keep and maintain public records in Contractor's possession or control in connection with Contractor's performance under this Contract. The Town Manager or her designee shall, during the term of this Contract and for a period of five (5)

years from the date of termination of this Contract, have access to and the right to examine and audit any records of the Contractor involving transactions related to this Contract. Contractor additionally agrees to comply specifically with the provisions of Section 119.0701, Florida Statutes. Contractor shall ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed, except as authorized by law, for the duration of the Contract, and following completion of the Contract until the records are transferred to the Town.

10.17.3. Upon request from the Town's custodian of public records, Contractor shall provide the Town with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided by Chapter 119, Florida Statutes, or as otherwise provided by law.

10.17.4. Unless otherwise provided by law, any and all records, including but not limited to reports, surveys, and other data and documents provided or created in connection with this Contract are and shall remain the property of the Town.

10.17.5. Upon completion of this Contract or in the event of termination by either party, any and all public records relating to the Contract in the possession of the Contractor shall be delivered by the Contractor to the Town Manager, at no cost to the Town, within seven (7) days. All such records stored electronically by Contractor shall be delivered to the Town in a format that is compatible with the Town's information technology systems. Once the public records have been delivered upon completion or termination of this Contract, the Contractor shall destroy any and all duplicate public records that are exempt or confidential and exempt from public records disclosure requirements.

10.17.6. Any compensation due to Contractor shall be withheld until all records are received as provided herein.

10.17.7. Contractor's failure or refusal to comply with the provisions of this section shall result in the immediate termination of this Contract by the Town.

10.17.8. Notice Pursuant to Section 119.0701(2)(a), Florida Statutes. IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS: MAURICIO MELINU, TOWN CLERK, 10720 CARIBBEAN BLVD SUITE 110, CUTLER BAY, FL 33189, MMELINU@CUTLERBAY-FL.GOV.

10.18. E-Verify Affidavit. In accordance with Section 448.095, Florida Statutes, the Town requires all contractors doing business with the Town to register with and use the E-Verify system to verify the work authorization status of all newly hired employees. The Town will not enter into a contract unless each party to the contract registers with and uses the E-Verify system. The contracting entity must provide of its proof of enrollment in E-Verify. For instructions on how to provide proof of the contracting entity's participation/enrollment in E-Verify, please visit: https://www.e-verify.gov/faq/how-do-i-provide-proof-of-my-participationenrollment-in-e-verify. By entering into this Agreement, the Contractor

acknowledges that it has read Section 448.095, Florida Statutes; will comply with the E-Verify requirements imposed by Section 448.095, Florida Statutes, including but not limited to obtaining E-Verify affidavits from subcontractors; and has executed the required affidavit attached hereto and incorporated herein.

11. SPECIAL CONDITIONS

The following provisions in this Section 10 supersede any other provisions contained in this Contract only to the extent of any conflict with same. These provisions are particular to a given transaction and are transaction specific:

11.1. Unsatisfactory Personnel.

11.1.1. Contractor must at all times enforce strict discipline and good order among its employees and subcontractors at the Project(s) site(s) and must not employ on any Work any unfit person or anyone not skilled in the Work to which they are assigned.

11.1.2. The Town may make written request to the Contractor for the prompt removal and replacement of any personnel employed or retained by the Contractor, or any or Subcontractor engaged by the Contractor to provide and perform services or Work pursuant to the requirements of the Contract Documents. The Contractor must respond to the Town within five (5) calendar days of receipt of such request with either the removal and replacement of such personnel or written justification as to why that may not occur. The Town will make the final determination as to the removal of unsatisfactory personnel from the Work. The Contractor agrees that the removal of any of such individual(s) does not require the termination or demotion of said individual(s).

11.2. Hours of Work. Contractor shall conform to and obey all applicable laws, regulations, or ordinances with regard to labor employed, hours of Work and Contractor's general operations. Contractor shall conduct its operations so as not to interfere with or close any thoroughfare, without the written consent of the Town or governing jurisdiction. Work is anticipated to be performed Monday through Friday in accordance with the requirements and limitations of applicable law including, without limitation, the Town Code of Ordinances. The Contractor shall not perform Work beyond the time and days provided above without the prior written approval of the Town.

11.3. Maintenance of Traffic. Whenever required by the scope of Work, by federal, state, or local law, or requested by the Town to protect the public health, safety, and welfare, a Maintenance of Traffic ("MOT") must be performed in accordance with the applicable FDOT Index Numbers (600 Series) and as further stated herein. The manual on Uniform Traffic Control Devises for Streets and Highways (U.S. Department of Transportation, FHWA), must be followed in the design, application, installation, maintenance and removal of all traffic control devices, warning devices and barriers necessary to protect the public and workmen from hazards with the Project limits. Pedestrian and vehicular traffic must be maintained and protected at all times. Prior to commencement of the Work, Contractor must provide the Town with a proposed MOT plan for review. The Town may require revisions to the proposed MOT plan. The MOT plan must be updated by the Contractor every two weeks. Failure to provide an MOT plan may result in the issuance of a stop work order. The Contractor will not be entitled to additional Contract Time for delays resulting from its failure to provide the required MOT plan.

11.4. Royalties and Patents. All fees, royalties, and claims for any invention, or pretended inventions, or patent of any article, material, arrangement, appliance, or method that may be used

upon or in any manner be connected with the Work or appurtenances, are hereby included in the prices stipulated in the Contract for said Work.

11.5. Substitutions. Substitution of any specified material or equipment requires the prior written acceptance of the Project Consultant. It is the sole responsibility of the Contractor to provide sufficient information and documentation to the Project Consultant to allow for a thorough review and determination on the acceptability of the substitution. Approval of a substitution does not waive or mitigate the Contractor's responsibility to meet the requirements of the Contract Documents. The Town may require an adjustment in price based on any proposed substitution.

11.6. Severe Weather Preparedness. During such periods of time as are designated by the United States Weather Bureau or Miami-Dade County as being a severe weather event, including a hurricane watch or warning, the Contractor, at no cost to the Town, must take all precautions necessary to secure any Work in response to all threatened storm events, regardless of whether the Contractor has been given notice of same, in accordance with the Miami-Dade County Code. Compliance with any specific severe weather event or alert precautions will not constitute additional work. Suspension of the Work caused by a threatened or actual storm event, regardless of whether the Town has directed such suspension, will entitle the Contractor to additional Contract Time as non-compensable, excusable delay.

11.7. American Rescue Plan Act Contract Conditions. The Contractor acknowledges that the Work may be fully or partially funded utilizing Coronavirus State and Local Fiscal Recovery Funds allocated to the Town pursuant to the American Rescue Plan Act ("ARPA"). Towards that end, the Contractor shall be required to comply with all laws, rules, regulations, policies, and guidelines (including any subsequent amendments to such laws, regulations, policies, and guidelines) required by ARPA, as further detailed in the ARPA Contract Conditions.

If compliance with the ARPA Contract Conditions is required, the Town shall select this box: ☐.

11.8. Grant Funding. The Contractor acknowledges that the Work may be fully or partially funded utilizing funds from the grants listed below (the "Grant"). Accordingly, the Contractor warrants and represents that it has reviewed the terms and conditions for each Grant and will perform the Work in accordance with the terms and conditions of the Grant.

Grant Title	Grant Agreement Exhibit

If the Work will be funded utilizing Grant funds, the Town shall select this box:☐.

[Remainder of page intentionally left blank.
Signature pages follow.]

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed the day and year as first stated above.

TOWN OF CUTLER BAY

By: _____
Rafael G. Casals, ICMA-CM, CFM
Town Manager

Town Resolution No.: _____

Attest:

By: _____
Mauricio Melinu, CMC
Town Clerk

Approved as to form and legal sufficiency:

By: _____
Weiss Serota Helfman Cole & Bierman, P.L.
Town Attorney

Addresses for Notice:
Town of Cutler Bay
Attn: Town Manager
10720 Caribbean Blvd., Suite 105
Cutler Bay, FL 33189
305-234-4262 (telephone)
305-234-4251 (fax)
RCasals@cutlerbay-fl.gov (email)

With a copy to:
Weiss Serota Helfman Cole & Bierman, P.L.
Attn: Mitchell Bierman, Esq.
Town Attorney
2800 Ponce de Leon Boulevard, Suite 1200
Coral Gables, FL 33134
mbierman@wsh-law.com (email)

CONTRACTOR

By: _____

Name: _____

Title: _____

Entity:

Addresses for Notice:
_____
_____
_____
_____
_____(telephone)
_____(email)

With a copy to:
_____
_____
_____
_____
_____(telephone)
_____(email)

SECTION 00550

E-VERIFY AFFIDAVIT

In accordance with Section 448.095, Florida Statutes, the Town requires all contractors doing business with the Town to register with and use the E-Verify system to verify the work authorization status of all newly hired employees. The Town will not enter into a contract unless each party to the contract registers with and uses the E-Verify system.

The contracting entity must provide of its proof of enrollment in E-Verify. For instructions on how to provide proof of the contracting entity's participation/enrollment in E-Verify, please visit: https://www.e-verify.gov/faq/how-do-i-provide-proof-of-my-participationenrollment-in-e-verify

By signing below, the contracting entity acknowledges that it has read Section 448.095, Florida Statutes and will comply with the E-Verify requirements imposed by it, including but not limited to obtaining E-Verify affidavits from subcontractors.

☐ **Check here to confirm proof of enrollment in E-Verify has been attached to this Affidavit.**

In the presence of:	Signed, sealed and delivered by:
_____	_____
Witness #1 Print Name: _____	Print Name: _____
_____	Title: _____
Witness #2 Print Name: _____	Entity Name: _____

ACKNOWLEDGMENT

State of Florida
County of _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this _____ day of _____, 20___, by _____ _____(name of person) as _____ (type of authority) for _____ (name of party on behalf of whom instrument is executed).

_____
Notary Public (Print, Stamp, or Type as Commissioned)

_____Personally known to me; or
_____Produced identification (Type of Identification:_____)
_____Did take an oath; or
_____Did not take an oath

SECTION 00610

PERFORMANCE BOND

STATE OF FLORIDA
COUNTY OF MIAMI-DADE

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held, and firmly bound unto the Town of Cutler Bay, as Obligee, hereinafter called Owner, in the amount of _____ Dollars ($_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, contractor has by written agreement dated _____, 20___, entered into a Contract with Owner for:

FRANJO ROAD ROAWAY IMPROVEMENTS PROJECT
TOWN OF CUTLER BAY, FLORIDA

in accordance with Drawings and Specifications prepared by Town Engineer which Contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that, if the Principal shall in all respects promptly and faithfully perform and comply with the terms and conditions of said Contract and his obligations thereunder and shall indemnify the Owner and the Consulting Engineer and save either or all of them harmless against and from all costs, expenses and damages arising from the performance of said Contract or the repair of any work thereunder, then this obligation shall be void; otherwise, this Bond shall remain in full force and effect, in accordance with the following terms and conditions:

A. The Principal and Surety jointly and severally agree to pay the Owner any difference between the sum to which the said Principal would be entitled on the completion of the Contract, and that sum which the Owner may be obliged to pay for the completion of said work by Contract or otherwise, and any damages, direct or indirect or consequential, which the said Owner may sustain on account of such work, or on account of the failure of said Contractor to properly and in all things, keep and execute all of the provision of said Contract.

B. And this Bond shall remain in full force and effect for a period of one (1) year from the date of acceptance of the project by the Owner and shall provide that the Contractor guarantees to repair or replace for said period of one (1) year all work performed and materials and equipment furnished that were not performed or furnished according to the terms of the Contract, and shall make good, defects thereof which have become apparent before the expiration of said period of one (1) year. If any part of the project, in the judgment of the Owner, for the reasons above stated needs to be replaced, repaired, or made good during that time, the Owner shall so notify the Contractor in writing. If the Contractor refuses or neglects to do such work within five (5) days from the date of service of such Notice, the Owner shall have the work done by others and the cost thereof shall be paid by the Contractor or his Surety.

C. And the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive Notice of any change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

D. The surety represents and warrants to the Owner that they have a Best's Key Rating Guide General Policyholder's Rating of "_____" and Financial Category of "Class_____".

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this__day of_____20____A.D., the name and corporate seal of each Corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole Ownership or Partnership, two (2) Witnesses required)
(If Corporation, Secretary Only will attest and affix seal)

WITNESSES:

_____

_____

PRINCIPAL:

_____
Signature of Authorized Officer
(Affix Seal)

_____
Title

_____
Business Address

_____
City, State & Zip Code

WITNESSES:

_____

_____

SURETY:

_____
Corporate Surety

_____
Title

_____
Business Address

_____
City, State & Zip Code

_____
Name of Local Insurance Agency

CERTIFICATES AS TO CORPORATE PRINCIPAL

I,_____, certifythat I am the Secretary of the Corporation names as Principal in the within Bond; that_____who signed the said bond on behalf of the Principal, was the_____of said Corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and on behalf of said Corporation by authority of its governing body.

_____
Secretary (Corporate Seal)

STATE OF FLORIDA
COUNTY OF MIAMI-DADE

Before me, a Notary Public, duly commissioned, qualified, and acting, personally appeared _____To me well-known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the _____

_____and that he has been authorized by_____to execute the foregoing bond on behalf of the Contractor named therein in favor of the Town of Cutler Bay, Florida.

Sworn and subscribed to before me this_____day of_____, 20 ____A.D.

(Attach Power of Attorney)

_____
Notary Public - State of Florida
at Large
My Commission Expires:

[END OF SECTION]

SECTION 00620

PAYMENT BOND

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

KNOW ALL MEN BYTHESE PRESENTS, that_____as Principal, hereinafter called Contractor, and_____as Surety, hereinafter called Surety, are held and firmly bound unto the Town of Cutler Bay, as Obligee, hereinafter called Owner, in the amount of _____ _____Dollars ($_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated_____, 20___, entered into a Contract with Owner for:

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT
TOWN OF CUTLER BAY, FLORIDA

in accordance with Drawings and Specifications prepared by Town Engineer which Contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the Principal shall promptly make payment to all claimants, as herein below defined, then this obligation shall be void; otherwise, this Bond shall remain in full force and effect, subject to the following terms and conditions:

A. A claimant is defined as any person supplying the Principal with labor, material, and supplies, used directly or indirectly by the said Principal or any subcontractor in the prosecution of the work provided for in said Contract, and is further defined in Section 255.05(1) of the Florida Statutes.

B. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after performance of the labor or after complete delivery of materials and supplies by such claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.

C. No suit or action shall be commenced hereunder by any claimant.

1. Unless claimant, other than one having a direct contract with the Principal, shall within forty-five (45) days after beginning to furnish labor, materials or supplies for the prosecution of the work, furnish the Principal with a notice that he intends to look to this bond for protection.

2. Unless claimant, other than one having a direct contract with the Principal, shall within ninety (90) days after such claimant's performance of the labor or complete delivery of materials and supplies, deliver to the Principal written notice of the performance of such labor or delivery of such material and supplies and the nonpayment therefore.

3. After the expiration of one (1) year from the performance of the labor or completion of delivery of the materials and supplies; it being understood, however, that if any limitation embodied in this Bond is prohibited by any law controlling the construction hereof such limitations shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

4. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

D. The Principal and the Surety jointly and severally, shall repay the Owner any sum which the Owner may be compelled to pay because of any lien for labor or materials furnished for any work included in or provided by said Contract.

E. The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration of or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications applicable thereto shall in any way affect its obligations on this Bond, and the Surety hereby waives notice of any such change, extension of time, alterations of or addition to the terms of the Contract, or to the work or to the Specifications.

F. The Surety represents and warrants to the Owner that they have a Best's Key Rating Guide General Policyholder's rating of "_____" and Financial Category of "Class _____".

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this_day of_____20___, A.D., the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole Ownership or Partnership, two (2) Witnesses Required)
(If Corporation, Secretary Only will attest and affix seal)

WITNESSES:

_____

_____

PRINCIPAL:

_____
Signature of Authorized Officer
(Affix Seal)

_____
Title

_____
Business Address

_____
City, State & Zip Code

WITNESSES:

_____

_____

SURETY:

_____
Corporate Surety

_____
Title

_____
Business Address

_____
City, State & Zip Code

_____
Name of Local Insurance Agency

CERTIFICATES AS TO CORPORATE PRINCIPAL

I,_____, certify that I am the Secretary of the Corporation named as Principal in the within Bond; that_____who signed the said bond on behalf of the Principal, was then_____of said Corporation; that I know his signature, and his signaturehereto is genuine; and that said bond was duly signed, sealed, and attested for and on behalf of said Corporation by authority of its governing body.

_____

Corporate Secretary [Seal]

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared _____to be well known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the_____and that he has been authorized by to execute the foregoing bond on behalf of the Contractor named therein in favor of the Town of Cutler Bay, Florida.

Sworn and subscribed to before me this____day of_____, 20____A.D.

(Attach Power of Attorney)

_____

Notary Public - State of Florida
at Large
My Commission Expires:

[END OF SECTION]

SECTION 00650

CERTIFICATE OF INSURANCE

THIS IS TO CERTIFY THAT THE _____
(Insurance Company)

Address _____

of _____

has issued policies of insurance, as described below and identified by a policy number, to the insured named below; and to certify that such policies are in full force and effect at this time. It is agreed that none of these policies will be canceled or changed so as to affect the interest(s) of the Town of Cutler Bay (hereinafter sometimes called the Owner) until thirty (30) days after written notice of such cancellation or change has been delivered to the Town Clerk, copy to Engineer.

Insured _____

Address _____

Status of Insured: ☐ Corporation ☐ Partnership ☐ Individual

Location of Operations Insured _____

Description of Work:

FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT

TOWN OF CUTLER BAY, FLORIDA

INSURANCE POLICIES IN FORCE:

Forms of Coverage	**Policy Number**	**Exp. Date**
Workers Comp./Employers Liability		
Comprehensive Automobile Liability		
Comprehensive General Liability		
Excess Liability		
Other (Please specify type:_____)		

POLICY INCLUDES COVERAGE FOR:	YES	NO
1. Additional Insured: Owner & Engineer	☐	☐
2. Liability under the United States Longshoremen's and Harbor Workers' Compensation Act.	☐	☐
3. All owned, hired, or non-owned automotive equipment used in connection with work done for the Owner.	☐	☐
4. Contractual Liability	☐	☐
5. Damage caused by explosion, collapse or structural injury, and damage to underground utilities.	☐	☐
6. Products/Completed Operations	☐	☐
7. Owners and Contractors Protective Liability	☐	☐
8. Personal Injury Liability	☐	☐
9. Excess Liability applies excess of:		
(a) Employers Liability	☐	☐
(b) Comprehensive General Liability	☐	☐
(c) Comprehensive Automobile Liability	☐	☐

TYPES OF POLICY	FORMS OF COVERAGE	LIMITS OF LIABILITY
Workers' Compensation	Bodily Injury	$_____ Statutory
Employers Liability	Bodily Injury	$_____ Each Accident
	Disease	$_____ Each Person
	Disease	$_____ Policy Limit
Comprehensive Auto Liability	Combined Single Limit BI/PD	$_____ Each Accident

Comprehensive General Liability	Bodily Injury	$_____Each Occurrence
		$_____Aggregate
	Property Damage	$_____Each Occurrence
		$_____Aggregate
	OR	
	Combined Single Limit BI/PD	$_____Each Occurrence
		$_____Aggregate
Excess Liability	Combined Single Limit BI/PD	$_____Aggregate
Other		

The Insurance Company hereby agrees to deliver, within ten (10) days, two (2) copies of the above policies to the Engineer when so requested.

NOTE: Entries on this certificate are limited to the Authorized Agent or Insurance Company Representative.

Date_____ (SEAL) _____

Insurance Company

Issued at_____ _____

Authorized Representative

Insurance Agent or Company

Send original and one copy to:

Town of Cutler Bay
Public Works Department
Town of Cutler Bay Town Hall
10720 Caribbean Boulevard, Suite 105
Cutler Bay, Florida 33189
Attention: Mauricio Melinu, CMC., Town Clerk

[END OF SECTION]

SECTION 00660

ACKNOWLEDGEMENT OF CONFORMANCE WITH O.S.H.A. STANDARDS

TO THE TOWN OF CUTLER BAY:

We,_____, hereby acknowledge and agree that as Contractors for the construction of FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT, TOWN OF CUTLER BAY, FLORIDA, Town Project No. ITB No. 23-10, within the limits of the Town of Cutler Bay, Florida, that we have the sole responsibility for compliance with all requirements of the Federal Occupational Safety and Health Act of 1970, and all State and Local Safety and Health regulations, and agree to indemnify and hold harmless the Town of Cutler Bay, and its Consulting Engineers against any and all legal liability or loss the Town, or the Engineer may incur due to failure to comply with such act.

_____ _____

ATTEST CONTRACTOR

_____ BY: _____

ATTEST NAME

_____

DATE

[END OF SECTION]

SECTION 00665

TRENCH SAFETY ACT COMPLIANCE

Bidder acknowledges that the Florida Trench Safety Act, Section 553.60 et. seq. which became effective October 1, 1990, shall be in effect during the period of construction of the project. The Bidder, by signing and submitting the bids, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards. The Bidder further identifies the following separate item of costs of compliance with the applicable trench safety standards as well as the methods of compliance:

Methods of Compliance

_____

_____

_____

Total $_____

Bidder acknowledges that this cost is included in the applicable items of the Proposal and in the Grand Total Bid Price. Failure to complete the above will result in the bid being declared non-responsive.

The Bidder is, and the Owner and Engineer are not, responsible to review or assess Bidder's safety precautions, programs or costs, or the means, methods, techniques or technique adequacy, reasonableness of cost, sequences or procedures of any safety precaution, program, or cost, including but not limited to, compliance with any and all requirements of Florida Statute Section 553.60 et. seq. cited as the "Trench Safety Act". Bidder is, and the Owner and Engineer are not, responsible to determine if any safety or safety related standards apply to the project, including but not limited to, the "Trench Safety Act."

_____
Signature of Authorized Representative (Manual)

_____
Name of Authorized Representative (Typed or Printed)

Sworn to and subscribed before me in the State and County first mentioned above on the day of_____, 20__.

_____ (Affix Seal)
Notary Public
My Commission Expires:

SECTION 00700

A D D E N D U M

SECTION 00750

SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 100 GENERAL CONSTRUCTION OPERATIONS

DIVISION 500 MISCELLANEOUS CONSTRUCTION

101 MOBILIZATION (REV. 03-12-2013)

A. Description.

1. Perform preparatory work and operations in mobilizing for beginning work on the Project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site(s) and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities.
2. Include the costs of bonds and any required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

B. Basis of Payment.

1. When No Separate Item for Mobilization is Included in the Contract:
   a. All work and incidental costs specified as being covered under this Article will be included for payment under the several scheduled items of the overall Contract, and no separate payment will be made therefore.
2. When a Separate Pay Item for Mobilization is Included in the Contract:
   a. The work and incidental costs specified as being covered under this Article will be paid for at the Contract lump sum price for the Mobilization pay item, after an executed Notice to Proceed has been issued, by partial payments made in accordance with the following:
      1) For contracts of 120 contract days duration or less, partial payment will be made at 50% of the bid price per month for the first two months. For contracts in excess of 120 contract days duration, partial payment will be made at 25% of the bid price per month for the first four months. In no event shall more than 50% of the bid price be paid prior to commencing construction on the project site.
      2) Total partial payments for Mobilization on any project, including when more than one project or job is included in the Contract, will be limited to 10% of the original Contract amount for that project. Any remaining amount will be paid upon completion of all work on the Contract.
      3) Retainage, as specified in the Contract Documents, will be applied to all partial payments.
      4) Partial payments made on this Subarticle will in no way act to preclude or limit any of the provisions for partial payments otherwise provided for by the Contract.
3. Basis of Payment:
   a. No separate item for Mobilization will be provided under this contract.

102 MAINTENANCE OF TRAFFIC (REV. 12-15-2015)

A. Description.

1. General:
   a. Maintain, for the duration of the construction period including any temporary suspensions of the Work, all traffic including pedestrian traffic within the limits of the Project starting the day work begins on the Project or the first day Contract time is charged, or on the day work begins on the work order, whichever is earlier .
   b. Construct and maintain detours.
   c. Provide facilities for access to residences, businesses, etc., along the Project.
   d. Furnish, install and maintain traffic control and safety devices during construction in accordance with FDOT Index 600 Series of the FDOT Design Standards, or as directed by Engineer. MOT includes all facilities, devices and operations as required for safety and convenience of the public within the work zone. Provide pickup, removal and disposal of litter and mow turf or vegetation within the MOT limits as required by Article 107.
   e. Furnish and install work zone pavement markings for maintenance of traffic (MOT) in construction areas.
   f. Provide any other special requirements for safe and expeditious movement of traffic specified in the Plans or directed by Engineer.
2. Unless otherwise directed by Engineer or required by the Contract Documents, do not maintain traffic over those portions of the Project where no work is to be accomplished or where construction operations will not affect existing roads including sidewalks.
3. Do not obstruct or create a hazard to any traffic during the performance of the Work, and repair any damage to existing pavement open to traffic.
4. Traffic may be detoured only upon approval by the County Engineer. Contractor must submit for review and approval an updated MOT plan prior to closure of any roads.
5. The Department may temporarily suspend all activities, except traffic, erosion control and such other activities that are necessary for project maintenance and safety, for failure to comply with these provisions.
6. Due to traffic congestion, work hours other than normal established hours may be required by the Engineer. In the case of extreme traffic or weather conditions, Contractor may be required to remove their operation from the roadway and/or right of way, at the discretion of the Engineer or the Traffic Control Officer at no additional compensation.

B. Materials.

1. Meet the following requirements:

Bituminous Adhesive	FDOT Section 970
Temporary Retroreflective Pavement Markers	FDOT Section 990
Paint	FDOT Section 971
Removable Tape	FDOT Section 990
Glass Spheres	FDOT Section 971
Temporary Traffic Control Device Materials	FDOT Section 990
Retroreflective and Nonreflective Sheeting for Temporary Traffic Control Devices	FDOT Section 994

2. Temporary Traffic Control Devices: Use only the materials meeting the requirements of FDOT Section 990, FDOT Section 994, FDOT Design Standards and the Manual on Uniform Traffic Control Devices (MUTCD).
3. Detour: Provide all materials for the construction and maintenance of all detours.
4. Commercial Materials for Driveway Maintenance: Provide materials of the type typically used by FDOT for roadway base construction, including reclaimed asphalt pavement material, and having stability and drainage properties that will provide a firm surface under wet conditions.

C. Worksite Traffic Supervisor.

1. Provide a worksite traffic supervisor meeting the requirements of Article 105. Provide the worksite traffic supervisor with all equipment and materials needed to set up, take down, maintain traffic control, and handle traffic-related situations.
2. Ensure that the worksite traffic supervisor performs the following duties:
   a. On site direction of all traffic control on the Project.
   b. Is on site during all MOT set up and take down, and performs a drive through inspection immediately after set up.
   c. Is on site during all nighttime operations to ensure proper MOT.
   d. Immediately corrects all safety deficiencies and does not permit minor deficiencies that are not immediate safety hazards to remain uncorrected for more than 24 hours.
   e. Is available on a 24 hour per day basis and present within 45 minutes after notification of an emergency situation and is prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.
   f. Conducts daily daytime and weekly nighttime inspections of projects with predominately daytime work activities, and daily nighttime and weekly daytime inspections of projects with predominantly nighttime work activities of all traffic control devices, traffic flow, pedestrian, bicyclist, and business accommodations. Advise Engineer and the Project personnel of the schedule of these inspections and give them the opportunity to join in the inspection as is deemed necessary.
3. The Department may disqualify and remove from the Project a worksite traffic supervisor who fails to comply with the provisions of this Article.

D. Submittals

1. Traffic Control Plan
   a. Submit at Contractor's own expense a Traffic Control Plan (TCP) for approval by the County when a final TCP was not provided by the County as part of the original Contract Documents. Sequence the Work in a manner that will minimize disruption of vehicular and pedestrian access through and around the Project's construction area(s).
   b. The TCP must detail procedures and protective measures proposed by Contractor to provide for protection and control of traffic affected by the Work consistent with the following applicable standards:
      1) The Contract Documents;
      2) "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) and subsequent revisions and addendums, as published by the U.S. Department of Transportation, Federal Highway Administration;
      3) The 600 Series indices of the FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System; and
      4) The Miami-Dade County Public Works Manual.
   c. All references to the respective agencies in the above referenced standards shall be construed to also include more stringent requirements of the jurisdictional municipality as applicable for this Work.
   d. The TCP must be signed and sealed by a Professional Engineer registered in the state of Florida and shall include proposed locations and time durations of the following, as applicable:
      1) Pedestrian and public vehicular traffic routing.
      2) Lane and sidewalk closures, other traffic blockage and lane restrictions and reductions anticipated to be caused by construction operations. Show and describe the proposed location, dates, hours and duration of closure, vehicular and pedestrian traffic routing and management, traffic control devices for implementing pedestrian and vehicular movement around the closures, and details of barricades.
      3) Location, type and method of shoring to provide lateral support to the side of an excavation or embankment parallel to an open travel-way.
      4) Allowable on-street parking within the immediate vicinity of worksite.
      5) Access to buildings immediately adjacent to worksite.
      6) Driveways blocked by construction operations.
      7) Temporary traffic control devices, temporary pavement striping and marking of streets and sidewalks affected by construction

8) Temporary commercial and industrial loading and unloading zones.

9) Construction vehicle reroutes, travel times, staging locations, and number and size of vehicles involved.

e. Obtain and submit prior to erection, or otherwise impacting traffic, all required permits from all authorities having jurisdiction, including the Department, if applicable.

2. Alternative Traffic Control Plan.

a. Where a TCP is provided by the County with the Contract Documents, Contractor may still propose an alternative TCP to the plan presented in the Contract Documents. Prepare the TCP in conformance with the requirements stipulated in this Specification and in the form outlined in the current version of FDOT's Plans Preparation Manual. Indicate in the plan a TCP for each phase of activities. Have Contractor's Engineer of Record sign and seal the alternative plan. Take responsibility for identifying and assessing any potential impacts to a utility that may be caused by the alternate TCP proposed by Contractor, and notify the Department in writing of any such potential impacts to utilities.

b. Engineer's approval of the alternate TCP does not relieve Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, Design Plans (including TCPs) or other Contract Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

c. The Department reserves the right to reject any alternative TCP. Obtain Engineer's written approval before beginning work using an alternate TCP. Engineer's written approval is required for all modifications to the TCP. Engineer will only allow changes to the TCP in an emergency without the proper documentation.

3. Comprehensive Weekly Report:

a. Submit to Engineer a comprehensive weekly report of the daily inspections performed and detailing the condition of all traffic control devices (including pavement markings) being used.

b. Include assurances in the report that pedestrians are accommodated with a safe, accessible travel path around work sites separated from mainline traffic in compliance with the Americans with Disabilities Act (ADA) Standards for Transportation Facilities, that existing or detoured bicyclist paths are being maintained satisfactorily throughout the Project limits, and that existing businesses in work areas are being provided with adequate entrances for vehicular and pedestrian traffic during business hours.

c. When deficiencies are found, the worksite traffic supervisor is to note such deficiencies and include the proposed or implemented corrective actions, including the date corrected.

d. Have the worksite traffic supervisor sign the report and certify that all of the above issues are being handled in accordance with the Contract Documents.

E. Traffic Control.

1. Standards: FDOT Design Standards are the minimum standards for the use in the development of all TCPs. The MUTCD, Part VI is the minimum national standard for traffic control for highway construction, maintenance, and utility operations. Follow the basic principles and minimum standards contained in these documents for the design, application, installation, maintenance, and removal of all traffic control devices, warning devices and barriers which are necessary to protect the public and workers from hazards within the Project limits.

2. Maintenance of Roadway Surfaces:

a. Maintain all lanes that are being used for the MOT, including those on detours and temporary facilities, under all weather conditions. Keep the lanes reasonably free of dust, potholes and rutting. Provide the lanes with the drainage facilities necessary to maintain a smooth riding surface under all weather conditions.

3. Number of Traffic Lanes:

a. Maintain one lane of traffic in each direction.

b. Maintain two lanes of traffic in each direction at existing four (or more) lane cross roads, where necessary to avoid undue traffic congestion.

c. Construct each lane used for MOT at least as wide as the traffic lanes existing in the area before commencement of construction.

d. Do not allow traffic control and warning devices to encroach on lanes used for MOT.

e. Engineer may allow Contractor to restrict traffic to one-way operation for short periods of time provided that Contractor employs adequate means of traffic control and does not unreasonably delay traffic. When a construction activity requires restricting traffic to one-way operations, locate the flaggers within view of each other when possible. When visual contact between flaggers is not possible, equip them with 2-way radios, official, or pilot vehicles, or use traffic signals.

4. Crossings and Intersections:

a. Provide and maintain adequate accommodations for intersecting and crossing traffic. Do not block or unduly restrict any road or street crossing the Project unless approved by Engineer. Before beginning any construction, provide Engineer the names and phone numbers of persons that can be contacted when signal operation malfunctions.

5. Access for Residences and Businesses: Provide continuous access to all residences and all places of business.

6. Protection of the Work from Injury by Traffic: Where traffic would be injurious to a base, surface course, or structure constructed as a part of the work, maintain all traffic outside the limits of such areas until the potential for injury no longer exists.

7. Flagger: Provide trained flaggers in accordance with Article 105.

8. Conflicting Pavement Markings:

   a. Where the lane use or where normal vehicle or pedestrian paths are altered during construction, remove all pavement markings (paint, tape, thermoplastic, raised pavement markers, etc.) that will conflict with the adjusted vehicle or pedestrian paths. Use of paint to cover conflicting pavement markings is prohibited. Remove conflicting pavement markings using a method that will not damage the surface texture of the pavement and which will eliminate the previous marking pattern regardless of weather and light conditions.

   b. Remove all pavement markings that will be in conflict with "next phase of operation" vehicle pedestrian paths as described above, before opening to vehicle traffic or use by pedestrians.

   c. Cost for removing conflicting pavement markings (paint, tape, thermoplastic, raised pavement markers, etc.) to be included in the Project costs for Maintenance of Traffic (General).

9. Vehicle and Equipment Visibility:

   a. Equip all pickups and automobiles used on the Project with a minimum of one Class 2 amber or white warning light that meets the Society of Automotive Engineers Recommended Practice SAE J595, dated November 1, 2008, or SAE J845, dated December 1, 2007, and incorporated herein by reference. Existing lights that meet SAE J845, dated March, 1992, or SAE J1318, dated April, 1986, may be used to its end of service life. Warning lights shall be a high intensity amber or white rotating, flashing, oscillating or strobe light. Lights should be unobstructed by ancillary vehicle equipment such as ladders, racks or booms. If the light is obstructed, additional lights will be required. The lights shall be operating when a vehicle is in a work area where a potential hazard exists, when operating the vehicle at less than the average speed for the facility while performing work activities, making frequent stops or called for in the Plans or FDOT Design Standards.

   b. Equip all other vehicles and equipment with a minimum of 4 square feet of retroreflective sheeting or flashing lights.

   c. To avoid distraction to motorists, do not operate the lights on the vehicles or equipment when the vehicles are outside the clear zone or behind a barrier.

10. No Waiver of Liability: Conduct operations in such a manner that no undue hazard results due to the requirements of this Article. The procedures and policies described herein in no way acts as a waiver of any terms of the liability of Contractor or his surety.

F. Detours.

1. General: Construct and maintain detour facilities wherever it becomes necessary to divert traffic from any existing roadway or bridge, or wherever construction operations block the flow of traffic.

2. Construction: Plan, construct, and maintain detours for the safe passage of traffic in all conditions of weather. Provide the detour with all facilities necessary to meet this requirement. Where pedestrian facilities are detoured, blocked or closed during the work, provide safe alternate accessible routes through or around the work zone meeting the requirements of the ADA Standards for Transportation Facilities.

3. Construction Methods: Select and use construction methods and materials that provide a stable and safe detour facility. Construct the detour facility to have sufficient durability to remain in good condition, supplemented by maintenance, for the entire period that the detour is required.

4. Removal of Detours: Remove detours when they are no longer needed and before the Contract is completed. Take ownership of all materials from the detour and dispose of them, except for the materials on loan from the Department with the stipulation that they are returned.

5. Detours Over Existing Roads and Streets: When the Department specifies that traffic be detoured over roads or streets outside the Project area, do not maintain such roads or streets. However, maintain all signs and other devices placed for the purpose of the detour.

6. Operation of Existing Movable Bridges:

   a. At the pre-construction meeting, the Engineer and the Contractor will select a date for the County to turn over the bridge maintenance and operations responsibilities. In the event that this date is not discussed, the Contractor will take full responsibility at the NTP date.

   b. In addition to bridge maintenance responsibilities during the duration of the project, Contractor is responsible for having qualified and sufficient number of bridge operators to be able to operate the bridge in accordance USCG regulations – specifically, Title 33-Navigation and Navigable Waters, Chapter I - U.S. Coast Guard, Department of Homeland Security, Subchapter J-Bridges, Part 117--Drawbridge Operation Regulations, Subpart B--Specific Requirements § 117.5.

   c. County's bridge operators are scheduled as follows:

      1st Shift: 12am to 8am

      2nd Shift: 8am to 4pm

      3rd Shift: 4pm to 12am

   d. This allows the bridge to be operational on a 7 days/week, 365 days per year basis.

   e. When removing bridges: Once the bridge is removed Contractor is relieved of this responsibility; however, upon completion of the construction of the new bridge and until the new bridge is officially returned to the County, the contractor is obligated to operate the bridge in accordance with the established USCG regulation.

   f. Make immediate repairs of any damage to such structures caused by use or operations related to the work at no expense to the County, but do not provide routine repairs or maintenance. In the event that use or operations result in damage to a bridge requiring repairs, give such repairs top priority to any equipment, material, or labor available.

G. Traffic Control Officer.

1. Provide uniformed law enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic in the work zone as required by Engineer and when the following types of work is necessary on projects:
   a. Directing traffic/overriding the signal in a signalized intersection.
   b. When FDOT Design Standards, Index No. 655 Traffic Pacing for overhead work is called for in the Plans or approved by Engineer.
   c. When pulling conductor/cable above an open traffic lane on limited access facilities, when called for in the Plans or approved by Engineer.
   d. When FDOT Design Standards, Index No. 625 Temporary Road Closure 5 Minutes or Less is used.

H. Driveway Maintenance.

1. General: Ensure that each residence and business has safe, stable, and reasonable access.
2. Construction Methods:
   a. Place, level, manipulate, compact, and maintain the material, to the extent appropriate for the intended use.
   b. As permanent driveway construction is accomplished at a particular location, Contractor may salvage and reuse previously placed materials that are suitable for reuse on other driveways.

I. Temporary Traffic Control Devices.

1. Installation and Maintenance:
   a. Install and maintain temporary traffic control devices as detailed in the Plans, Index 600 of the FDOT Design Standards and when applicable, in accordance with the approved vendor drawings, as provided on FDOT's Approved Products List (APL) and the TSSQPL. Erect the required temporary traffic control devices to prevent any hazardous conditions and in conjunction with any necessary traffic re-routing to protect the traveling public, workers, and to safeguard the work area. Use only those devices that are on the FDOT APL and the TSSQPL. Immediately remove or cover any devices that do not apply to existing conditions.
   b. All temporary traffic control devices must meet the requirements of National Cooperative Highway Research Program Report 350 (NCHRP 350) or the Manual for Assessing Safety Hardware 2009 (MASH) and current FHWA directives.
   c. For devices requiring field assembly or special site preparation, vendor drawings shall include all field assembly details and technical information necessary for proper application and installation and must be signed and sealed by a Professional Engineer registered in the State of Florida.
   d. Ensure that the FDOT APL number is permanently marked on the device at a readily visible location. Sheeting used on devices is exempt from this marking requirement.
   e. Notify Engineer of any scheduled operation which will affect traffic patterns or safety sufficiently in advance of commencing such operation to permit his review of the plan for the proposed installation of temporary traffic control devices.
   f. Ensure an employee is assigned the responsibility of maintaining the position and condition of all temporary traffic control devices throughout the duration of the Contract. Keep Engineer advised at all times of the identification and means of contacting this employee on a 24 hour basis.
   g. Keep temporary traffic control devices in the correct position, properly directed, clearly visible and clean, at all times. Ensure that all traffic control devices meet acceptable standards as outlined in American Traffic Safety Services Association (ATSSA) "Quality Guidelines for Temporary Traffic Control Devices and Features". Immediately repair, replace or clean damaged, defaced or dirty devices. Traffic control devices shall not be cleaned while installed/used. Use of warning lights on any temporary traffic control device is prohibited.
2. Work Zone Signs:
   a. Furnish, install, maintain, remove and relocate signs in accordance with the Plans and FDOT Design Standards, Index No. 600. Use signs that meet the material and process requirements of FDOT Section 994. Use Type IV sheeting for fluorescent orange work zone signs. Roll-up signs must meet the requirements of Type VI sheeting. Use Type IV or Type XI sheeting for all other work zone signs. Attach the sign to the sign support using hardware meeting the manufacturer's recommendations on the FDOT APL vendor drawings or as specified in the FDOT Design Standards.
      1) Post Mounted Signs:
         a) Meet the requirements of FDOT Section 990-8.
      2) Portable Signs:
         a) Use only approved systems, which includes sign stands and attachment hardware (nuts, bolts, clamps, brackets, braces, etc.), meeting the vendor requirements specified on the FDOT APL drawings.
         b) Provide Federal Highway Administration's (FHWA) accepted sign substrate for use with accepted sign stands on the National Highway System (NHS) under the provisions of the NCHRP Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."
      3) Barrier Mounted Signs:
         a) When post mounting criteria cannot be achieved in accordance with FDOT Design Standards, Index No. 600 and a barrier or traffic railing exists, use temporary sign criteria provided in FDOT Design Standards, Index No. 11871.
3. Business Signs:
   a. Provide and place signs in accordance with the Plans and FDOT Design Standards, Index No. 600 series.

Furnish signs having retroreflective sheeting meeting the requirements of FDOT Section 990.

4. High Intensity Flashing Lights:
   a. Furnish Type B lights in accordance with the Plans and FDOT Design Standards.
5. Warning/Channelizing Devices:
   a. Furnish warning/channelizing devices in accordance with the Plans and FDOT Design Standards.
   b. Retroreflective Collars for Traffic Cones:
      1) Use collars for traffic cones listed on the FDOT APL that meets the requirements of FDOT Section 990. Use cone collars at night designed to properly fit the taper of the cone when installed. Place the upper 6 inch collar a uniform 3-1/2 inches distance from the top of the cone and the lower 4 inch collar a uniform 2 inches distance below the bottom of the upper 6 inch collar. Ensure that the collars are capable of being removed for temporary use or attached permanently to the cone in accordance with the manufacturer's recommendations. Provide a white sheeting having a smooth outer surface and that has the property of a retroreflector over its entire surface.
   c. Barrier Wall (Temporary):
      1) Furnish, install, maintain, remove and relocate a temporary barrier wall in accordance with the Plans. Ensure that temporary concrete barrier wall for use on roadway sections, complies with FDOT Design Standards, Index Nos. 412, 415 or 414 as specified in the Plans. Ensure that temporary concrete barrier wall for use on bridge and wall sections, complies with FDOT Design Standards, Index No 414 as specified in the Plans.
      2) Ensure that temporary water filled barrier wall used on roadway sections meets the NCHRP Report 350 criteria or the MASH and is listed on the FDOT APL. Barriers meeting the requirements of FDOT Design Standards, Index Nos. 412, 415 or temporary water filled barriers on the FDOT APL will not be accepted as an alternate to barriers meeting the requirements of FDOT Design Standards, Index No. 414.
      3) Trailer mounted barriers listed on the FDOT APL may be used at the option of the Contractor. Trailer mounted barriers listed on the FDOT APL must have an FHWA eligibility letter and be successfully crash tested in accordance with MASH TL-3 criteria. All trailer mounted barriers must be equipped with an FDOT APL listed truck mounted attenuator, an FDOT APL listed vehicle mounted arrow board and vehicle warning lights in accordance with this Article
      4) Temporary Barrier Wall Meeting the Requirements of Design Standards, Index Nos. 412 and 414:
         a) Ensure the marking requirements of the respective Index are met.
      5) Proprietary Precast Temporary Barrier Wall Fabricated prior to 2005:
         a) Contractor must submit a certification stating that all unmarked barrier wall units meet the requirements of the Specifications and the FDOT Design Standards. Certifications will be project specific and non-transferable
      6) Proprietary Precast Temporary Barrier Wall Fabricated in 2005 or later:
         a) Ensure each wall unit has permanent clear markings, showing the manufacture date, serial number, manufacturer's name or symbol, and the FDOT APL number. Label the markings on a plate, plaque, or cast in the unit. Proprietary barrier wall fabricated prior to 2016 and marked with the "INDX 521" in lieu of the FDOT APL number will be permitted.
      7) Glare Screen (Temporary):
         a) Use temporary glare screens listed on the FDOT APL that meet the requirements of FDOT Section 990. Furnish, install, maintain, remove and relocate glare screen systems in conjunction with temporary barrier wall at locations identified in the Plans.
         b) Ensure the anchorage of the glare screen to the barrier is capable of safely resisting an equivalent tensile load of 600 pounds per foot of glare screen, with a requirement to use a minimum of three fasteners per barrier section.
         c) When glare screen is utilized on temporary barrier wall, warning lights will not be required.
      8) Longitudinal Channelizing Devices (LCDs):
         a) Furnish LCDs in accordance with the Plans and FDOT Design Standards. LCDs are categorized as vehicular or pedestrian and shall be interlocked. For LCDs requiring internal ballasting, an indicator that clearly identifies the proper ballast level will be required.
         b) Use alternating orange and white pattern for solid color vehicular LCDs. Vehicular LCDs may be substituted for drums, vertical panels, or barricades.
6. Temporary Crash Cushion (Redirective/Gating):
   a. Furnish, install, maintain and subsequently remove temporary crash cushions in accordance with the details and notes shown in the Plans, the FDOT Design Standards, and requirements of the pre-approved alternatives listed on the FDOT APL.
   b. Maintain the crash cushions until their authorized removal. Repair all attachment scars to permanent structures and pavements after crash cushion removal. Make necessary repairs due to defective material, work, or Contractor operations at no cost to the Department.
   c. Restore crash cushions damaged by the traveling public within 24 hours after notification as authorized by Engineer.
7. Guardrail (Temporary):
   a. Furnish guardrail (temporary) in accordance with the Plans and Design Standards. Meet the requirements of Article 536.
8. Arrow Board:

a. Furnish arrow boards that meet the requirements of FDOT Section 990 as required by the Plans and Design Standards to advise approaching traffic of lane closures or shoulder work.

b. Type B arrow boards may be used on low to intermediate speed (0 mph to 50 mph) facilities or for maintenance or moving operations on any speed facility.

c. Type C arrow boards shall be used for all other operations on high-speed (50 mph and greater) facilities and may be substituted for Type B arrow boards on any speed facility.

9. Portable Changeable Message Sign (PCMS):

a. Furnish PCMSs or truck mounted changeable message signs that meet the requirements of FDOT Section 990 as required by the Plans and FDOT Design Standards to supplement other temporary traffic control devices used in work zones.

10. Portable Regulatory Signs (PRS):

a. Furnish PRSs that meet the requirements of FDOT Section 990 as required by the Plans and FDOT Design Standards.

b. Activate portable regulatory signs only during active work activities and deactivate when no work is being performed.

11. Radar Speed Display Unit (RSDU):

a. Furnish RSDUs that meet the requirements of FDOT Section 990 as required by the Plans and FDOT Design Standards to inform motorists of the posted speed and their actual speed.

b. Activate the radar speed display unit only during active work activities and deactivate when no work is being performed.

12. Temporary Signalization and Maintenance:

a. Provide temporary signalization and maintenance at existing, temporary, and new intersections including but not limited to the following:

1) Installation of temporary poles and span wire assemblies as shown in the Plans,

2) Temporary portable traffic signals as shown in the Plans,

3) Adding or shifting signal heads,

4) Trouble calls,

5) Maintaining intersection and coordination timing and preemption devices.

b. Restore any loss of operation within 12 hours after notification.

c. Provide traffic signal equipment that meets the requirements of Article 603 of FDOT Design Standards. Engineer may approve used signal equipment if it is in acceptable condition. Replacement components for traffic signal cabinet assemblies will be provided by the maintaining agency.

13. Temporary Traffic Detection and Maintenance:

a. Provide temporary traffic detection and maintenance at existing, temporary, and new signalized intersections. Provide temporary traffic detection equipment listed on the FDOT APL. Restore any loss of detection within 12 hours. Ensure 90% accuracy per signal phase, measured at the initial installation and after any lane shifts, by comparing sample data collected from the detection system with ground truth data collected by human observation. Collect the sample and ground truth data for a minimum of five minutes during a peak and five minutes during an off-peak period with a minimum three detections for each signal phase. Perform the test in the presence of Engineer.

14. Truck Mounted Attenuators and Trailer Mounted Attenuators:

a. Furnish, install and maintain only those attenuators that meet the requirements of NCHRP 350 or the MASH.

b. Use truck mounted attenuators or trailer mounted attenuators, when called for in the FDOT Design Standards. Use attenuators listed on the FDOT APL.

c. When attenuators are called for, use either a truck mounted attenuator or a trailer mounted attenuator system designed and installed in accordance with the manufacturers recommendations.

d. Equip the attenuator cartridge with lights and reflectors in compliance with applicable Florida motor vehicle laws, including turn signals, dual tail lights, and brake lights. Ensure that lights are visible in both the raised and lowered positions if the unit is capable of being raised.

e. Install either alternating black with yellow or white with orange sheeting on the rear of trailer mounted attenuators and on truck mounted attenuators, in both the operating and raised position. Use Type III (work zone) or Type IV sheeting consisting of 4 or 6 inch wide stripes installed to form chevrons that point upward. All sheeting except black shall be retroreflective.

f. Attenuators will not be paid for separately. Include the cost of the truck with either a truck mounted attenuator or a trailer mounted attenuator under Maintenance of Traffic (General). Payment includes all costs, including furnishing, maintaining and removal when no longer required, and all materials, labor, tools, equipment and incidentals required for attenuator maintenance.

15. Temporary Raised Rumble Strip Sets:

a. When called for in the Plans, furnish, install, maintain, remove, and reinstall temporary raised rumble strip sets.

b. Install the temporary raised rumble strip sets per the manufacturer's recommendations and in accordance with FDOT Design Standards, Index No. 603.

c. The temporary raised rumble strip may be either a removable polymer striping tape or a molded engineered polymer material.

16. Automated Flagger Assistance Devices (AFAD):

a. Furnish, install, maintain, remove and relocate AFADs in accordance with the Plans and FDOT Design Standards. Position AFADs where they are clearly visible to oncoming traffic and out of the lane of traffic. The devices may be operated either by a single flagger

at one end of the traffic control zone, from a central location, or by a separate flagger near each device's location.

b. AFADs may be either a remotely controlled Stop/Slow AFAD mounted on either a trailer or a movable cart system, or a remotely controlled Red/Yellow Lens AFAD.

c. AFADs will not be paid for separately. AFADs may be used as a supplement or an alternate to flaggers in accordance with FDOT Index 603. Include the cost for AFADs in Maintenance of Traffic (General).

17. Temporary Lane Separator:

a. Furnish, install, maintain, remove and relocate temporary lane separator in accordance with the Plans and FDOT Design Standards, Index No 600.

b. Anchor the portable temporary lane separator with a removable anchor bolt. Use epoxy on bridge decks where anchoring is not allowed. Remove the epoxy from the bridge deck by hydroblasting or other method approved by Engineer.

J. Work Zone Pavement Marking.

1. Description:

a. Furnish and install work zone pavement markings for MOT in construction areas and in close conformity with the lines and details shown in the Plans and FDOT Design Standards.

b. Centerlines, lane lines, edge lines, stop bars and turn arrows will be required in work zones prior to opening the road to traffic.

c. The most common types of work zone pavement markings are painted pavement markings and removable tape. Other types of work zone pavement markings may be identified in the Plans.

2. Painted Pavement Markings:

a. General: Use painted pavement markings meeting the requirements of Article 710. Use standard waterborne paint unless otherwise identified in the Plans or approved by Engineer.

3. Removable Tape:

a. General: Use removable tape listed on the FDOT APL and meeting the requirements of FDOT 990-4.

b. Application: Apply removable tape with a mechanical applicator to provide pavement lines that are neat, accurate and uniform. Equip the mechanical applicator with a film cut-off device and with measuring devices that automatically and accumulatively measure the length of each line placed within an accuracy tolerance of plus or minus 2%. Ensure removable tape adheres to the road surface. Removable tape may be placed by hand on short sections, 500 feet or less, if it is done in a neat accurate manner.

c. Retroreflectivity: Apply white and yellow traffic stripes and markings that will attain an initial retroreflectivity of not less than 300 mcd/lx·m2 for white and contrast markings and not less than 250 mcd/lx·m2 for yellow markings. Black portions of contrast tapes and black masking tapes must be non-reflective and have a reflectance of less than 5 mcd/lx m2. At the end of the six month service life, the retroreflectance of white and yellow removable tape shall not be less than 150 mcd/lx·m2.

d. Removability: Provide removable tape capable of being removed from bituminous concrete and portland cement concrete pavement intact or in substantially large strips, either manually or by a mechanical roll-up device, at temperatures above 40ºF, without the use of heat, solvents, grinding or blasting.

4. Temporary Retroreflective Pavement Markers (RPM's): Use markers listed on the FDOT APL and meeting the requirements of FDOT 990-5. Apply all markers in accordance with the FDOT Design Standards, Index Nos. 600 and 17352, prior to opening the road to traffic. Replace markers any time after installation when more than three consecutive markers fail or are missing, at no expense to the Department, in a timely manner, as directed by Engineer.

K. Method of Measurement.

1. General:

a. Devices installed/used on the Project on any calendar day or portion thereof, within the allowable Contract Time, including time extensions which may be granted, will be paid for at the Contract unit price for the applicable pay item, except those paid for as Maintenance of Traffic (General).

b. One or more of the following items may appear in a contract in addition to a direct payment item for Maintenance of Traffic (Lump Sum). Unless otherwise stipulated in the Contract Documents, only those items with an Awarded Unit Price will be considered for direct payment.

2. Traffic Control Officers:

a. The County will reimburse Contractor for the services of uniformed law enforcement officers authorized to serve as traffic control officers for the purpose of controlling or directing traffic in the work zone as part of the County approved Traffic Control Plan and Maintenance of Traffic provided by Contractor pursuant to the Contract Documents.

b. The quantity to be paid for will be the invoice unit price per hour for the actual number of officers certified to be on the project site, including any law enforcement vehicles and all other direct and indirect costs.

c. Payment will be made at invoice cost from an appropriate dedicated allowance established by the County.

d. Payment will be made only for those Traffic Control Officers specified in the Plans and authorized by the Engineer. The necessary invoices and documentation must be submitted to the Engineer along with the payment request.

3. Special Detours:

a. When a detour facility is specifically detailed in the Plans, or is otherwise described or detailed as a special item, and an item for separate payment is included in the proposal, the work of constructing, maintaining, and

subsequently removing such detour facilities will be paid for separately. Traffic control devices, warning devices, barriers, signing, and pavement markings for special detours will also be paid for separately.

b. When the Plans show more than one detour, each detour will be paid for separately, at the Contract lump sum price for each.

c. Where a separate item for a specific detour facility is included in the proposal, payment will be made under special detour.

4. Commercial Material for Driveway Maintenance:

a. The quantity to be paid for will be the certified volume, in cubic yards, of all materials authorized by the Engineer, acceptably placed, compacted and maintained for driveway maintenance. The volume, which is authorized to be reused, and which is acceptably salvaged, placed, compacted and maintained in other designated driveways will be included again for payment.

b. Arrow Board: The quantity to be paid at the contract unit price will be for the number of arrow boards certified as installed/used on the project on any calendar day or portion thereof within the contract time.

5. Work Zone Signs:

a. The number of temporary post-mounted signs (temporary regulatory, warning and guide) certified as installed/used on the project will be paid for at the Contract unit price for work zone signs. When multiple signs are located on single or multiple posts, each sign panel will be paid individually. Signs greater than 20 square feet and detailed in the Plans will be paid for under Maintenance of Traffic (General).

b. Temporary portable signs (excluding mesh signs) and vehicular mounted signs will be included for payment under work zone signs, only if used in accordance with the FDOT Design Standards.

c. The number of temporary barrier mounted signs (temporary regulatory, warning and guide) certified as installed/used on the project will be paid for at the Contract unit price for barrier mounted work zone signs.

6. Business Signs:

a. The number of business signs certified as installed/used on the project will be paid for at the Contract unit price for business signs.

7. High Intensity Flashing Lights:

a. The number of high intensity flashing lights (Type B) certified as installed/used on the project will be paid for at the Contract unit price for high intensity flashing lights (temporary - Type B).

8. Channelizing Devices:

a. The number of drums, vertical panels, pedestrian LCDs, and Type I, Type II, Type III, or direction indicator barricades, certified as installed/used on the project meeting the requirements of FDOT Design Standards, Index No. 600 and have been properly maintained will be paid for at the Contract unit prices for channelizing device.

b. Payment for vehicular LCDs will be paid as the length in feet installed divided by the device spacing for barricades, vertical panels, and drums and certified as installed/used on the project meeting the requirements of FDOT Design Standards, Index No. 600 and have been properly maintained will be paid for at the Contract unit price for channelizing device.

c. Payment will not be made for channelizing devices unsatisfactorily maintained, as determined by the Engineer.

d. Payment will be made for each channelizing device that is used to delineate trailer mounted devices.

e. Payment will be made for channelizing devices delineating portable changeable message signs during the period beginning 14 working days before Contract Time begins as authorized by the Engineer.

9. Barrier Wall (Temporary):

a. The Contract unit price for barrier wall (temporary) will be full compensation for furnishing, installing, maintaining, and removing the barrier wall. When called for, the Contract unit price for barrier wall (temporary/relocate) will be full compensation for relocating the barrier. The certified quantity to be paid for will be determined by the number of sections times the nominal length of each section.

10. Barrier Delineators:

a. The number of barrier delineators, installed on top of barrier wall, used on the project, meeting the requirements of FDOT Design Standards and Article 705.

11. Lights, Temporary, Barrier Wall Mount:

a. The number of Type C steady burn lights, mounted on barrier wall, certified as installed/used on the project, meeting the requirements of the Design Standards and have been properly maintained will be paid for at the Contract unit price for lights temporary, barrier wall mount.

12. Glare Screen (Temporary):

a. The certified quantity to be paid for will be determined by the number of sections times the nominal length of each section.

13. Temporary Crash Cushions:

a. Redirective:

1) The quantity to be paid for will be the number of temporary crash cushions (redirective) certified as installed/used and maintained on the project, including object marker.

b. Gating:

1) The quantity to be paid for will be the number of temporary crash cushions (gating) certified as installed/used and maintained on the project, including object marker.

14. Temporary Guardrail:

a. The quantity to be paid for will be the length, in feet, of temporary guardrail constructed and certified as installed/used on the project. The length of a run of

guardrail will be determined as a multiple of the nominal panel lengths.

15. Arrow Board:

    a. The quantity to be paid at the Contract unit price will be for the number of arrow boards certified as installed/used on the project on any calendar day or portion thereof within the Contract time.

16. Portable Changeable Message Sign:

    a. The quantity to be paid at the Contract unit price will be for the number of portable changeable message signs or truck mounted changeable message signs certified as installed/used on the project on any calendar day or portion thereof within the Contract time.

    b. Payment will be made for each portable changeable message sign that is used during the period beginning fourteen working days before Contract Time begins as authorized by Engineer.

17. Portable Regulatory Signs:

    a. The quantity to be paid for will be the number of portable regulatory signs certified as installed/used on the project on any calendar day or portion thereof within the Contract time, will be paid for the Contract unit price for portable regulatory sign.

18. Radar Speed Display Unit:

    a. The quantity to be paid for will be the number of radar speed display units certified as installed/used on the project on any calendar day or portion thereof within the Contract Time, will be paid for the Contract unit price for radar speed display unit.

19. Temporary Signalization and Maintenance:

    a. For existing intersections, the quantity to be paid for will be the number of signalized intersections per day for the full duration of the Contract. For temporary intersections, the quantity to be paid for will be the number of signalized intersections per day for the duration of the temporary intersection. No separate payment will be made for temporary signalization and maintenance at new intersections.

20. Temporary Traffic Detection and Maintenance:

    a. For existing intersections, the quantity to be paid for will be the number of signalized intersections per day beginning the day Contract Time begins and ending the day the permanent detection is operational and the final lane configuration is in place. For temporary and new intersections, the quantity to be paid for will be the number of signalized intersections per day beginning the day the temporary detection is functional and ending the day the permanent detection is operational and the final lane configuration is in place for a new intersection; or, when the detection is removed for a temporary intersection.

21. Work Zone Pavement Markings:

    a. The quantities, furnished and installed, to be paid for will be the length of skip and solid pavement markings, and the area of pavement markings placed as follows:

        1) The total transverse distance, in feet, of skip pavement marking authorized and acceptably applied. The length of actual applied line will depend on the skip ratio of the material used. Measurement will be the distance from the beginning of the first stripe to the end of the last stripe with proper deductions made for unpainted intervals as determined by plan dimensions or stations, subject to the requirements of the Contract Documents.

        2) The net length, in feet, of solid pavement marking authorized and acceptably applied.

        3) The number of directional arrows or pavement messages authorized and acceptably applied.

        4) The number of temporary RPM's authorized and acceptably applied.

22. Temporary Raised Rumble Strips:

    a. The quantity to be paid for will be the number of temporary raised rumble strip sets certified as installed/used on the project on any calendar day or portion thereof within the Contract Time.

    b. The number of strips used must meet the requirements of FDOT Design Standards, Index No. 603. No adjustment will be made to the per day measurement for the number of strips or sets used, or for the number of times the sets are relocated.

23. Temporary Lane Separator:

    a. The quantity of temporary lane separator to be paid for will be plan quantity, in feet, including drainage gaps, completed and accepted.

L. Submittals.

1. Submittal Instructions:

    a. Prepare a certification of quantities for certified MOT payment items for each project in the Contract. Submit the certification of quantities to Engineer. The Department will not pay for any disputed items until Engineer approves the certification of quantities.

2. Contractor's Certification of Quantities:

    a. Request payment by submitting a certification of quantities as directed by Engineer, based on the amount of work done or completed. Ensure the certification consists of the following:

    b. Contract Number, Certification Date and the period that the certification represents.

    c. The basis for arriving at the amount of the progress certification, less payments previously made and less an amount previously retained or withheld. The basis will include a detail breakdown provided on the certification of items of payment in accordance with 102-M. After the initial setup of the MOT items and counts, the interval for recording the counts will be made weekly on the certification sheet unless there is a change. This change will be documented on the day of occurrence. Some items may necessitate a daily interval of recording the counts.

M. Basis of Payment.

1. Maintenance of Traffic (General):

   a. No Direct Payment Provided: When no item for direct payment of Maintenance of Traffic (Lump Sum) is provided by the Contract, the costs for performing all work and requirements specified under this Article, except as may be specifically covered for payment under other items, will be included among the various scheduled items of the Contract.

   b. Direct Payment Provided: When direct payment for Maintenance of Traffic (Lump Sum) is provided in the Contract, the quantity to be paid all work and costs specified under this Article, except as may be specifically covered for payment under other items, will be the lump sum Contract Price.

2. Additional items of Direct Payment. Only those items with an Awarded Unit Price will be considered for direct payment.

   a. Traffic Control Officers:

      1) Price and payment will be full compensation for the services of the traffic control officers at invoice cost as specified under subarticle 102.K.2 above.

   b. Special Detours:

      1) Price and payment will be full compensation for providing all detour facilities shown in the Plans and all costs incurred in carrying out all requirements of this Article for general MOT within the limits of the detour, as shown in the Plans.

   c. Commercial Materials for Driveway Maintenance:

      1) Price and payment will be full compensation for all work and materials specified for this item, including specifically all required shaping and maintaining of driveways.

   d. Work Zone Signs:

      1) Price and payment will be full compensation for all work and materials for furnishing signs, supports and necessary hardware, installation, relocating, maintaining and removing signs.

   e. Business Signs:

      1) Price and payment will be full compensation for all materials and labor required for furnishing, installing, relocating, maintaining, and removing the signs as well as the cost of installing any logos provided by business owners.

   f. High Intensity Warning Lights:

      1) Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing high intensity flashing lights (Type B).

   g. Channelizing Devices:

      1) Prices and payment will be full compensation for furnishing, installing, relocating, maintaining and removing the channelizing devices, including the costs associated with attached warning lights as required.

   h. Barrier Wall (Temporary):

      1) Price and payment will be full compensation for furnishing, installing, maintaining, and removing the barrier. When called for, barrier wall (temporary) (relocate) will be full compensation for relocating the barrier.

   i. Lights, Temporary, Barrier Wall Mount:

      1) Price and payment will be full compensation for all work and materials for furnishing, installing and maintaining the warning lights mounted on barrier wall. Payment will not be made for lights that are improperly placed or are not working.

   j. Barrier Delineators:

      1) No separate payment will be made for barrier delineators installed on top of temporary barrier wall. The cost of furnishing, installing and maintaining the barrier delineators will be included in the cost of the temporary barrier wall.

   k. Glare Screen (Temporary):

      1) Price and payment will be full compensation for furnishing, installing, maintaining, and removing the glare screen certified as installed/used on the project. When called for, glare screen (relocate) will be full compensation for relocating the glare screen.

   l. Temporary Crash Cushion (Redirective/Gating):

      1) Price and payment will be full compensation for furnishing, installing, maintaining and subsequently removing such crash cushions. Payment for restoring damaged crash cushions will be the manufacturer's/distributor's invoice price for the new materials/parts plus 20% markup. The 20% markup is compensation for all necessary work including; but not limited to, labor, equipment, supplies and profit, as authorized by Engineer. Additional MOT required for the repair of the crash cushion will be paid for under the appropriate MOT pay item.

   m. Temporary Guardrail:

      1) Price and payment will be full compensation for furnishing all materials required for a complete installation, including end anchorage assemblies and any end connections to other structures and for installing, maintaining and removing guardrail.

   n. Arrow Board:

      1) Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing arrow boards.

   o. Portable Changeable Message Sign:

      1) Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing portable changeable message signs.

   p. Portable Regulatory Signs:

      1) Price and payment will be full compensation for furnishing, installing, relocating, maintaining and removing a completely functioning system as described in these Specifications portable

regulatory signs. Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing portable regulatory signs.

2) Payment will include all labor, materials, incidentals, repairs and any actions necessary to operate and maintain the unit at all times that work is being performed or traffic is being affected by construction and/or MOT operations.

q. Radar Speed Display Unit:

1) Price and payment will be made only for a completely functioning system as described in these specifications. Payment will include all labor, hardware, accessories, signs, and incidental items necessary for a complete system.

2) Payment will include any measurements needed to insure that the unit conforms to all specification requirements.

3) Payment will include all labor, materials, incidentals, repairs and any actions necessary to operate and maintain the unit at all times that work is being performed or traffic is being affected by construction and/or MOT operations. Price and payment will be full compensation for furnishing, installing, operating, relocating, maintaining and removing radar speed display unit.

r. Temporary Signalization and Maintenance:

1) Price and payment will constitute full compensation for furnishing, installing, operating, maintaining and removing temporary traffic control signals including all equipment and components necessary to provide an operable traffic signal. Payment will be withheld for each day at each intersection where the temporary signalization is not operational within 12 hours after notification.

s. Temporary Traffic Detection and Maintenance:

1) Price and payment will constitute full compensation for furnishing, installing, operating, maintaining and removing temporary traffic detection including all equipment and components necessary to provide an acceptable signalized intersection. Take ownership of all equipment and components. Payment will be withheld for each day at each intersection where the temporary detection is not operational within 12 hours after notification.

t. Temporary Raised Rumble Strips:

1) Price and payment will be full compensation for all work and materials described in this Article, including all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing, removal, reinstalling and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work.

u. Work Zone Pavement Markings:

1) Price and payment will be full compensation for all work specified including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

2) Removable tape may be substituted for work zone paint at no additional cost to the Department.

3) Payment for temporary RPMs used to supplement line markings will be paid for under temporary retroreflective pavement markers. Install these markers as detailed in the Design Standards.

v. Temporary Lane Separator:

1) Price and payment will be full compensation for all work specified in this Article.

3. Payment Items: Payment will be made under:

Item No.	Description	Unit
102- 1A	Maintenance of Traffic	LS
102- 61	Business Sign	EA
102-74-2	Barricades (Temporary, Type III, 6')	EA/DAY
102-74-1A	Barricades (Temporary, Type I, II, & VP')	EA/DAY
102- 76	Flashing Arrow Board (Temporary Multimode)	EA/DAY
102- 77	High Intensity Flashing Lights (Temporary - Type B)	EA/DAY
102- 81	Vehicular Impact Attenuator (Including relocation & reset) (To be used when required for Maintenance of Traffic and approved by the Engineer)	EA
102- 91-1A	Pavement Marking Temporary (Solid) (Any width) (Yellow or White) (Paint)	LF
102- 99	Variable Message Sign (Temporary)	EA/DAY
102-72A	Concrete Barrier - Class E (With high intensity flashing lights) (Temporary, including relocation)	LF
102-75A	Construction Signs	EA/DAY

104 PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION (REV. 01-09-12)

A. Description.

1. Provide erosion control measures on the Project and in areas outside the right-of-way where work is accomplished in conjunction with the Project, so as to prevent pollution of water, detrimental effects to public or private property adjacent to the Project right-of-way, and damage to work on the Project.

2. Construct and maintain temporary erosion control features and, as required, construct and maintain permanent erosion control features as shown in the Plans or as may be directed by Engineer.

B. General.

1. Coordinate the installation of temporary erosion control features with the construction of the permanent erosion control features to the extent necessary to ensure economical, effective, and continuous control of erosion and water pollution throughout the life of the Contract.
2. Maintain, at the work site, copies of all documents referenced by this Specification including: the Departmental Stormwater Pollution Prevention Plan (if provided); the approved contractor Erosion Control Plan; and applicable inspection reports, permits and certifications. Document compliance with all requirements pertaining to the aforementioned documents and this Specification.
3. Engineer may direct, when warranted by unforeseen conditions, the use of control features or methods other than those included in the original Contract. In such event, the Department will pay for this additional work as unforeseeable work.

C. Control of Contractor's Operations Which May Result in Water Pollution.

1. Prevent pollution of streams, canals, lakes, reservoirs, and other water impoundments with fuels, oils, bitumens, calcium chloride, or other harmful materials.
2. Conduct and schedule operations to avoid or otherwise minimize pollution or siltation of such water impoundments, and to avoid interference with movement of migratory fish. Do not dump any residue from dust collectors or washers into any water body.
3. Restrict construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments to those areas where it is necessary to perform filling or excavation to accomplish the work shown in the Plans and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, promptly clear rivers, streams, and impoundments of all obstructions placed therein or caused by construction operations.
4. Do not frequently ford live streams with construction equipment. Wherever an appreciable number of stream crossings are necessary at any one location, use a temporary bridge or other structure.
5. Except as necessary and authorized for Project construction, do not deposit excavated material in rivers, streams, canals, or impoundments, or in a position close enough thereto, to be washed away by high water or runoff.
6. Where pumps are authorized for use in removing highly turbid waters from enclosed construction areas such as cofferdams or forms, treat the water by one or more of the following methods prior to discharge into State waters:
   a. Pumping into grassed swales or appropriate vegetated areas or sediment basins.
   b. Confined by an appropriate enclosure such as turbidity barriers when other methods are not considered appropriate.
7. Do not disturb lands or waters outside the limits of construction as staked, except as authorized by Engineer.
8. Obtain Engineer's approval for the location of, and method of operation in, borrow pits, material pits, and disposal areas furnished for waste material from the project (other than commercially operated sources) such that erosion during and after completion of the work will not result in probability of detrimental siltation or water pollution.

D. Materials for Temporary Erosion Control.

1. Engineer will not require testing of materials used in construction of temporary erosion control features other than as provided for geotextile fabric in FDOT 985-3 unless such material is to be incorporated into the completed Project.
2. When no testing is required, Engineer will base acceptance on visual inspection.
3. Contractor may use new or used materials, subject to Engineer's approval, for the construction of temporary silt fence, staked turbidity barriers, and floating turbidity barrier not to be incorporated into the completed Project.

E. Erosion Control Plan.

1. Prepare the Erosion Control Plan (ECP) in a format acceptable to the Department and in accordance with the planned sequence of operations.
2. At the Preconstruction Conference, submit to the Department an ECP that:
   a. Meets the requirements or conditions of all permits authorizing construction of the Project. Where no permits are required or the approved permits do not contain conditions that specifically addresses erosion and water pollution, the requirements of the ECP will be governed by the Contract Documents and all applicable laws, rules, or regulations.
   b. Accompanies the Department's Stormwater Pollution Prevention Plan (SWPPP) when a SWPPP is provided for the Project.
   c. Includes and describes for each phase of construction operations or activities the following:
      1) Locations of all erosion control devices
      2) Types of all erosion control devices
      3) Estimated time erosion control devices will be in operation
      4) Monitoring schedules for maintenance of erosion control devices
      5) Methods of maintaining erosion control devices
      6) Containment or removal methods for pollutants or hazardous wastes
      7) The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.
   d. Includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure

for cleanup and reporting of non-stormwater discharges.

e. Describes all phases of operations, the prevention, control, and abatement of erosion and water pollution items or activities necessary for the Project, to include:

1) Types and locations of all erosion control devices

2) Estimated time erosion control devices will be in operation

3) Monitoring schedules for maintenance of erosion control devices

4) Methods for maintaining erosion control devices

5) Containment or removal methods for pollution or hazardous wastes

6) Name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.

3. Contractor must obtain Engineer's written approval of the ECP prior to commencing any construction activities.

4. For project requiring a Florida Department of Environmental Protection (FDEP) Generic Permit for Stormwater Discharge from Large and Small Construction Activities (Generic Permit):

a. Failure to sign any documents or certification statements required by the FDEP Generic Permit will be considered a default of the Contract.

b. Any soil disturbing activities performed without the required signed documents or certifications statements may be considered a violation of the FDEP Generic Permit.

F. Construction Requirements.

1. Limitation of Exposure of Erodible Earth:

a. Engineer may limit the surface areas of unprotected erodible earth exposed by the construction operation and may direct Contractor to provide erosion or pollution control measures to prevent contamination of any river, stream, lake, tidal waters, reservoir, canal, or other water impoundments or to prevent detrimental effects on property outside the Project right-of-way or damage to the Project.

b. Limit the area in which excavation and filling operations are being performed so that it does not exceed the capacity to keep the finish grading, turf, sod, and other such permanent erosion control measures current in accordance with the accepted schedule.

c. Do not allow the surface area of erodible earth that clearing and grubbing operations or excavation and filling operations expose to exceed 750,000 square feet without specific prior approval by Engineer. This limitation applies separately to clearing and grubbing operations and excavation and filling operations.

d. Engineer may increase or decrease the amount of surface area the Contractor may expose at any one time.

2. Incorporation of Erosion and Sediment Control Features:

a. Incorporate permanent erosion control features into the project at the earliest practical time. Use temporary erosion and sediment control features found in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (E&SC Manual) to correct conditions that develop during construction which were not foreseen at the time of design, to control erosion and sediment prior to the time it is practical to construct permanent control features, or to provide immediate temporary control of erosion and sediment that develops during normal construction operations, which are not associated with permanent erosion control features on the project. An electronic version of the E&SC Manual can be found at the following URL: http://www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/FLErosionSedimentManual060709.pdf

b. Install all sediment control devices in a timely manner to ensure the control of sediment and the protection of lakes, streams, gulf or ocean waters, or any wetlands associated therewith and to any adjacent property outside the right-of-way as required.

c. At sites where exposure to such sensitive areas is prevalent, complete the installation of any sediment control device prior to the commencement of any earthwork.

d. After installation of sediment control devices, repair portions of any devices damaged at no expense to the Department. Engineer may authorize temporary erosion and sediment control features when finished soil layer is specified in the Contract and the limited availability of that material from the grading operations will prevent scheduled progress of the work or damage the permanent erosion control features.

3. Scheduling of Successive Operations:

a. Schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposure of uncompleted construction to the elements is as short as practicable.

b. Schedule and perform clearing and grubbing so that grading operations can follow immediately thereafter. Schedule and perform grading operations so that permanent erosion control features can follow immediately thereafter if conditions on the project permit.

4. Details for Temporary Erosion and Sediment Control Features:

a. General: Use temporary erosion, sediment and water pollution control features found in the E&SC Manual. These features consist of, but are not limited to, temporary turf, rolled erosion control products, sediment containment systems, runoff control structures, sediment barriers, inlet protection systems, silt fences, and turbidity barriers. For design details for some of these items, refer to the Plans, the FDOT Design Standards and E&SC Manual.

b. Temporary Sod: Engineer may designate certain areas of sod constructed in accordance with the Specifications as temporary erosion control features. For areas not defined as sod, constructing temporary

turf by seeding only is not an option for temporary erosion control under this Article. Engineer may waive the turf establishment requirements of the Specifications for areas with temporary sod that will not be a part of the permanent construction. The work of placing temporary sod, approved as a temporary erosion control feature where directed by Engineer and in accordance with these Specifications, will be paid for as unforeseeable work.

c. Runoff Control Structures: Construct runoff control structures in accordance with the details shown in the Plans, the E&SC Manual, or as may be approved as suitable to adequately perform the intended function.

d. Sediment Containment Systems: Construct sediment containment systems in accordance with the details shown in the Plans, the E&SC Manual, or as may be approved as suitable to adequately perform the intended function. Clean out sediment containment systems as necessary in accordance with the Plans or as directed.

e. Sediment Barriers: Provide and install sediment barriers according to details shown in the Plans, as directed by Engineer, or as shown in the E&SC Manual to protect against downstream accumulation of sediment. Sediment Barriers include, but are not limited to synthetic bales, silt fence, fiber logs and geosynthetic barriers. Reusable barriers that have had sediment deposits removed may be reinstalled on the Project as approved by Engineer.

f. Silt Fence:

1) General: Furnish, install, maintain, and remove silt fences, in accordance with the manufacturer's directions, these Specifications, the details as shown on the Plans, the FDOT Design Standards, and the E&SC Manual.

2) Materials and Installation: Use a geotextile fabric made from woven or nonwoven fabric, meeting the physical requirements of FDOT Section 985 according to those applications for erosion control. Choose the type and size of posts, wire mesh reinforcement (if required), and method of installation. Do not use products which have a separate layer of plastic mesh or netting. Provide a durable and effective silt fence that controls sediment comparable to the FDOT Design Standards and the E&SC Manual. Erect silt fence at upland locations, across ditch lines and at temporary locations shown on the plans or approved by Engineer where continuous construction activities change the natural contour and drainage runoff. Do not attach silt fence to existing trees unless approved by Engineer.

3) Inspection and Maintenance: Inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, install additional silt fences as directed by Engineer. Remove sediment deposits when the deposit reaches approximately 1/2 of the volume capacity of the silt fence or as directed by Engineer. Dress any sediment deposits remaining in place after the silt fence is no longer required to conform with the finished grade, and prepare them in accordance with the Contract Documents and as directed by Engineer.

g. Floating Turbidity Barriers and Staked Turbidity Barriers:

1) Install, maintain, and remove turbidity barriers to contain turbidity that may occur as the result of dredging, filling, or other construction activities which may cause turbidity to occur in the waters of the State. Contractor may need to deploy turbidity barriers around isolated areas of concern such as seagrass beds, coral communities, etc. both within as well as outside the right-of-way limits. Engineer will identify such areas. Place the barriers prior to the commencement of any work that could impact the area of concern. Install the barriers in accordance with the details shown in the Plans or as approved by Engineer. Ensure that the type barrier used and the deployment and maintenance of the barrier will minimize dispersion of turbid waters from the construction site. Engineer may approve alternate methods or materials.

2) Operate turbidity barriers in such a manner to avoid or minimize the degradation of the water quality of the surrounding waters and minimize damage to areas where floating barriers installed.

h. Inlet Protection System: Furnish and install inlet protection systems as shown in the Plans, FDOT Design Standards and the E&SC Manual.

i. Rolled Erosion Control Products (RECPs):

1) General: Install RECPs in locations where temporary protection from erosion is needed. Two situations occur that require artificial coverings each having differing material requirements.

a) Temporary pauses in construction: Use RECPs composed of natural or synthetic fiber mats, plastic sheeting, or netting as protection against erosion, when directed by Engineer, during temporary pauses in construction caused by inclement weather or other circumstances. Remove the material when construction resumes.

b) Facilitating plant growth: Use RECPs as erosion control blankets, at locations shown in the plans, to facilitate plant growth while permanent grassing is being established. For the purpose described, use non-toxic, biodegradable, natural or synthetic woven fiber mats. Install erosion control blankets capable of sustaining a maximum design velocity of 6.5 ft/sec as determined from tests performed by Utah State University, Texas Transportation Institute or an independent testing laboratory approved by the Department. Furnish to Engineer, two certified copies of manufacturers test reports showing that the erosion control blankets meet the requirements of this Specification. Certification must be attested, by a person having legal authority to bind the manufacturing company.

Also, furnish two 4 by 8 inch samples for product identification. The manufacturers test records shall be made available to the Department upon request. Leave the material in place, as installed, to biodegrade.

5. Removal of Temporary Erosion Control Features: In general, remove or incorporate into the soil any temporary erosion control features existing at the time of construction of the permanent erosion control features in an area of the Project in such a manner that no detrimental effect will result. Engineer may direct that temporary features be left in place.

G. Maintenance of Erosion and Sediment Control Features.

1. General: Provide routine maintenance of permanent and temporary erosion and sediment control features, at no expense to the Department, until the Project is complete and accepted. If reconstruction of such erosion and sediment control features is necessary due to Contractor's negligence or carelessness or, in the case of temporary erosion and sediment control features, failure by the Contractor to install permanent erosion control features as scheduled, Contractor must replace such erosion control features at no expense to the Department. If reconstruction of permanent or temporary erosion and sediment control features is necessary due to factors beyond the control of Contractor, the Department will pay for replacement under the appropriate Contract pay item or items.

2. Inspect all erosion and sediment control features at least once every seven calendar days and within 24 hours of the end of a storm of 0.50 inches or greater. Maintain all erosion control features as required in the SWPPP, Contractor's ECP, the E&SC Manual, and as specified in the State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

H. Protection During Suspension of Contract Time.

1. If it is necessary to suspend the construction operations for any appreciable length of time, shape the top of the earthwork in such a manner to permit runoff of rainwater, and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains to carry runoff from cuts and embankments that are in the vicinity of rivers, streams, canals, lakes, and impoundments. Locate slope drains at intervals of approximately 500 feet, and stabilize them by paving or by covering with waterproof materials. Should such preventive measures fail, immediately take such other action as necessary to effectively prevent erosion and siltation. Engineer may direct Contractor to perform, during such suspensions of operations, any other erosion and sediment control work deemed necessary.

I. Method of Measurement.

1. Direct Payment Provided:

   a. When separate items for temporary erosion control features are included in the Contract and have awarded Contract prices, the quantities to be paid for will be the:

      1) Area, in square yards, of Rolled Erosion Control Products.

      2) Length, in feet, of Runoff Control Structures, measured along the surface of the work constructed.

      3) Number of Sediment Containment Systems constructed and accepted.

      4) Number of Sediment Containment System Cleanouts accomplished and accepted.

      5) Length, in feet, of Sediment Barriers.

      6) Length, in feet, of Floating Turbidity Barrier.

      7) Length, in feet, of Staked Turbidity Barrier.

      8) Number of inlet protection systems.

   b. Upon acceptance by the Engineer, the quantity of floating turbidity barriers, sediment barriers, staked turbidity barriers, and inlet protection devices will be paid for regardless of whether materials are new, used, or relocated from a previous approved installation on the Project.

2. No Direct Payment Provided: Unless otherwise specified, when no item for direct payment of temporary erosion control features is provided by the Contract, the costs for performing all work and meeting the requirements of this Article will be included among the various scheduled items of the Contract.

J. Basis of Payment.

1. Prices and payments will be full compensation for all work specified in this Article, including construction and routine maintenance of temporary erosion control features.

2. Any additional costs resulting from compliance with the requirements of this Article, other than construction, routine maintenance, and removal of temporary erosion control features, will be included in the Contract unit prices for the item or items to which such costs are related.

3. Separate payment will not be made for the cost of constructing temporary earth berms along the edges of the roadways to prevent erosion during grading and subsequent operations. Contractor must include these costs in the Contract prices for earthwork items.

4. Additional temporary erosion control features constructed as directed by Engineer will be paid for as unforeseeable work.

5. In case of repeated failure on the part of Contractor to control erosion, pollution, or siltation, Engineer reserves the right to employ outside assistance or to use the Department's own forces to provide the necessary corrective measures. Any such costs incurred, including engineering costs, will be charged to Contractor and appropriate deductions made from the monthly progress estimate.

6. Payment will be made under:

Item No.	Description	Unit
104-10-3	Sediment Barrier	LF

105 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS (REV. 08-23-12)

A. General.

1. Submit to Engineer a meeting the requirements stipulated in this Article and that addresses the transportation, storage, placement, sampling, inspection of Contract materials and related construction operations; and to ensure that all work and material incorporated into the Project meet the requirements of the Contract Documents.
2. Comply with all personnel qualification requirements stipulated in this Article and elsewhere in the Contract Documents.

B. Guidelines for Development of the CQCP

1. Use the following guidelines for developing the CQCP and include other additional items as necessary.
   a. General. Provide detailed policies, methods and procedures to ensure the specified quality of all applicable materials and related production and field operations.
   b. Process control testing. List the material to be tested by pay item, tests to be conducted, the location of sampling, and the frequency of testing.
   c. Inspection/control procedures. Address each of the following subjects in each phase of construction:
      1) Preparatory phase.
         a) Review all Contract requirements.
         b) Ensure compliance of component material to the Contract requirements.
         c) Coordinate all submittals including certifications.
         d) Ensure capability of equipment and personnel to comply with the Contract requirements.
         e) Ensure preliminary testing is accomplished.
         f) Coordinate surveying and staking of the work.
      2) Start-up phase.
         a) Review the Contract requirements with personnel performing the work.
         b) Inspect start-up of work.
         c) Establish standards of workmanship.
         d) Provide training as necessary.
         e) Establish detailed testing schedule based on the production schedule.
      3) Production phase.
         a) Conduct intermittent or continuous inspection during construction to identify and correct deficiencies.
         b) Inspect completed work before requesting Engineer inspection acceptance.
         c) Provide feedback and system changes to prevent repeated deficiencies.
   d. Description of records. List the records to be maintained.
   e. Personnel qualifications.
      1) Identify the primary contact that will communicate with the Department. Identify roles and responsibilities of the personnel involved in the Quality Control (QC) process. Document the name, authority, relevant experience, and qualifications of person with overall responsibility for the inspection system.
      2) Document the names, authority, and relevant experience of all personnel directly responsible for inspection and testing.
      3) Submit the Training Identification Numbers (TINs) or any other information which will be traceable to the certification agency's training location and dates for all technicians performing sampling, testing and inspection for both field and laboratory tests. Provide the names of the Florida Department of Transportation's Construction Training and Qualification Program (CTQP) certifications and other pertinent certifications held and the expiration dates for each certification for each technician. Include employed and subcontracted technicians.
   f. Subcontractors.
      1) Include the work of all subcontractors.
      2) If a subcontractor is to perform work subject to the requirements of this Article, detail how that subcontractor will interface with Contractor's and other subcontractor's organizations.
   g. Raw Materials:
      1) Source: Identify the sources of raw materials. Provide locations and plant or mine numbers when applicable. Include the mailing address, physical address including county of the plant, telephone and fax numbers, E-mail address, primary contact at the plant, responsible person in charge, facility number provided by the FDOT, Owner information and Vendor Number and other information as required.
      2) Certification: Describe methods of verifying compliance of certification with the Specifications.
      3) Disposition of Failing Materials: Describe the system for controlling non-conforming materials, including procedures for identification, isolation and disposition.
      4) Storage Facilities for Raw Materials: Describe measures and methods, including bedding details, for preventing segregation, contamination and degradation.
      5) Describe methods of identifying individual materials. Where applicable, submit a site plan showing the locations of various materials.

h. Production Equipment: Describe calibration frequencies, maintenance schedule and procedures for production equipment.

i. Other Requirements:

1) Copy of Certification: Attach certifications issued by the plant/Contractor for the products approved by the FDOT that will be used in the Project.

2) Statement of Compliance: Include a statement of compliance with all quality requirements set forth by the Department in the Contract Documents.

3) Information on Producers with Accepted FDOT Quality Control Programs: All producers of materials listed herein in Subarticle 105-G.1 must have FDOT accepted QC Programs and be listed on the FDOT's List of Producers with Accepted QC Programs. Identify the Producers of materials for the Project and include the FDOT's Facility Id number as part of the identification.

4) Describing Documentation Procedure: Identify location of document storage to enable Department review. Include QC charts, qualification/accreditation records, inspection reports, and other pertinent/supporting documents for an approved CQCP.

j. Final Manufactured Product - Plant Operations: Describe inspection schedule and methods for identifying defects and non-compliance with the specifications. Describe corrective actions and methods to resolve them.

1) Storage: When storage of the produced materials is required and it is not defined in the Contract Documents, describe the methods and duration for storage. Include measures and methods for preventing segregation, contamination and degradation during storage.

2) Disposition of Failing Materials: When not described in the specifications, describe the methods and measures for identifying and controlling the failing materials. Include preventive and corrective measures. Describe disposition of failing materials.

k. Final Manufactured Product - Field Operations:

1) Transportation: Describe the method of delivery from the point of production/storage to the point of placement.

2) Storage: When storage of the produced materials is required and it is not defined in the Contract Documents, describe the methods and duration for storage. Include measures and methods for preventing segregation, contamination and degradation during storage.

3) Placement: Describe the methods and identify the type of equipment used in incorporation of the materials into the project.

4) Disposition of Failing Materials: When not described in the specifications, describe the methods and measures for identifying and controlling the failing materials. Include preventive and corrective measures. Describe disposition of failing materials.

C. Quality Control Plan Submittal.

1. Submit the CQCP to Engineer for approval within 21 days after the Contract Award or at the Preconstruction Conference, whichever is sooner. Do not incorporate materials into the Project or begin any work subject to the CQCP prior to Engineer's acceptance of the CQCP.

2. Modifications or additions may be required to any part of the CQCP that is not adequately covered. Acceptance of the CQCP will be based on the inclusion of the required information. Acceptance does not imply any warranty by the County that the CQCP will result in consistent contract compliance. It remains the responsibility of Contractor to demonstrate such compliance.

3. If at any time Contractor is not in compliance with the approved CQCP, or a part thereof, affected portions of the CQCP will be disapproved. Cease work in the affected operation(s) and submit a revision to Engineer. If the CQCP, or a part thereof, must be revised, submit the revision to Engineer. Engineer will review the revision and respond within seven calendar days of receipt.

4. Continue to work on operations that are still in compliance with the approved sections of the CQCP.

5. As work progresses, submit to Engineer for acceptance supplementary documentation to the CQCP whenever quality control or quality control personnel changes are necessary.

D. Quality Control Documentation.

1. Maintain complete testing and inspection records by pay item number and make them accessible to Engineer. When or where required, submit the record and certification within one working day of the work being performed. If the record is incomplete, in error, or otherwise misleading, a copy of the record will be returned with corrections noted. When chronic errors or omissions occur, correct the procedures by which the records are produced.

2. Submission of Materials Certification and Reporting Test Results: Provide certifications prior to placement of materials. Report test results at completion of the test and meet the requirements of the applicable Specifications.

3. Worksheets: Make available to the Department, when requested, worksheets used for collecting test information. Ensure the worksheets at a minimum contain the following:

a. Project Identification Number,
b. Time and Date,
c. Laboratory Identification and Name,
d. Training Identification Numbers (TIN) and initials,
e. Record details as specified within the test method.

4. Inspections to Assure Compliance with Acceptance Criteria.

a. General: The Department is not obligated to make an inspection of materials at the source of supply, manufacture, or fabrication.

b. Quality Control Inspection: Provide all necessary inspection to assure effective Quality Control of the operations related to materials acceptance. This includes but is not limited to sampling and testing, production, storage, delivery, construction and placement. Ensure that the equipment used in the production and testing of the materials provides accurate and precise measurements in accordance with the applicable Specifications. Maintain a record of all inspections, including but not limited to, date of inspection, results of inspection, and any subsequent corrective actions taken. Make available to the Department the inspection records, when requested.

c. Notification of Placing Order:

1) Order materials sufficiently in advance of their incorporation in the work to allow time for sampling, testing and inspection. Notify Engineer, prior to placing orders for materials.

2) Submit to Engineer a fabrication schedule for all items requiring commercial inspection, before or at the preconstruction meeting. These items include, but are not limited to steel bridge components, overhead cantilevered sign supports with cantilevered arms exceeding 41 feet, moveable bridge components or any other item identified as an item requiring commercial inspection in the Contract Documents.

3) Notify Engineer at least 30 days before beginning any production and include a production schedule.

E. Contractor Certification of Compliance.

1. Provide Engineer with a notarized monthly certification of compliance with the requirements of this Article, to accompany each progress estimate, on a form acceptable by Engineer. The Department may not authorize payment of any progress estimate not accompanied by an executed certification document.

2. Final payment will not be made until a final notarized certification summarizing all QC exceptions has been submitted.

F. Personnel Qualifications.

1. General:

a. Provide qualified personnel for sampling, testing and inspection of materials and construction activities. Ensure that qualifications are maintained during the course of sampling, testing and inspection.

b. Construction operations that require a qualified technician must not begin until Engineer verifies that the technician is on the FDOT CTQP list of qualified technicians.

2. QC Manager:

a. Designate a QC Manager who has full authority to act as Contractor's agent to institute any and all actions necessary for the successful implementation of the CQCP. The QC Manager must speak and understand English. The QC Manager must be on-site at the Project on a daily basis or always available upon four hours notice to administer the CQCP. This includes administering, implementing, monitoring, and as necessary, adjusting the processes to ensure compliance with the Contract Documents. Ensure that the QC Manager is qualified as such through the FDOT CTQP.

b. Under the direction of the QC Manager, and using standard forms approved by Engineer, summarize the daily QC activities including testing and material sampling. Since erasures are strictly prohibited on all reports and forms, use blue or colored ink. Do not use black ink. If manual corrections to original data are necessary, strike through, correct, and date the entry, including the initials of the person making the correction. Make copies of the completed forms available for the Department to review daily unless otherwise required in the specifications. Maintain all QC related reports and documentation for a period of three years from final acceptance of the Project. Make copies available for review by the Department upon request.

3. Worksite Traffic Supervisor:

a. Provide a Worksite Traffic Supervisor who is responsible for initiating, installing, and maintaining all traffic control devices as described in Article 102 (Maintenance of Traffic) and in the Contract Documents. Ensure that the Worksite Traffic Supervisor is certified in the advanced training category by a FDOT approved training Provider. Approved Providers will be posted on the FDOT's website at the following URL address:

1) http://www.dot.state.fl.us/rddesign/MOT/MOT.shtm

b. Use approved alternate Worksite Traffic Supervisors when necessary.

4. Flagger: Provide trained flaggers to direct traffic where one-way operation in a single lane is in effect and in other situations as required. The Worksite Traffic Supervisor or others as approved by the Department will provide training for flaggers.

5. Earthwork Quality Control Personnel:

a. Earthwork Level I: Ensure the technician who samples soil and earthwork materials from the roadway project, takes earthwork moisture and density readings, and records those data in the Density Log Book holds a CTQP Earthwork Construction Inspection Level I qualification.

b. Earthwork Level II: Ensure the technician responsible for determining the disposition of soil and earthwork materials on the roadway, and for interpreting and meeting Contract Document requirements holds a CTQP Earthwork Construction Inspection Level II qualification.

6. Asphalt Quality Control Personnel:

a. Plant Technicians: For asphalt plant operations, provide a QC technician, qualified as a CTQP Asphalt Plant Level II technician, available at the asphalt plant at all times when producing mix for the Department. Perform all asphalt plant related testing with a CTQP Asphalt Plant Level I technician. As an exception, measurements of temperature may be performed by

someone under the supervision of a CTQP Plant Level II technician.

b. Paving Technicians: For paving operations (with the exception of miscellaneous or temporary asphalt), keep a qualified CTQP Asphalt Paving Level II technician on the roadway at all times when placing asphalt mix for the Department, and perform all testing with a CTQP Asphalt Paving Level I technician. As an exception, measurements of cross-slope, temperature, and yield (spread rate) can be performed by someone under the supervision of a CTQP Paving Level II technician at the roadway.

c. Mix Designer: Ensure all mix designs are developed by individuals who are CTQP qualified as an Asphalt Hot Mix Designer.

d. Documentation: Document all QC procedures, inspection, and all test results and make them available for review by Engineer throughout the life of the Contract. Identify in the asphalt producer's Quality Control Plan the Quality Control Manager(s) and/or Asphalt Plant Level II technician(s) responsible for the decision to resume production after a quality control failure.

7. Concrete QC Personnel:

a. Concrete Field Technician - Level I: Ensure technicians performing plastic property testing on concrete for materials acceptance are qualified CTQP Concrete Field Technicians Level I. Plastic property testing will include but not be limited to slump, temperature, air content, water-to-cementitious materials ratio calculation, and making and curing concrete cylinders. Duties will include initial sampling and testing to confirm specification compliance prior to beginning concrete placements, ensuring timely placement of initial cure and providing for the transport of compressive strength samples to the designated laboratories.

b. Concrete Field Inspector - Level II: Ensure field inspectors responsible for the quality of concrete being placed on major bridge projects are qualified CTQP Concrete Field Inspectors Level II. A Level II Inspector must be present on the jobsite during all concrete placements. Prior to the placement of concrete, the inspector will inspect the element to be cast to ensure compliance with Contract Documents. A Level II Inspector's duties may include ensuring that concrete testing, inspection, and curing in the field are performed in accordance with the Contract Documents. The QC Inspector will inform the Verification Inspector of anticipated concrete placements and LOT sizes.

c. Concrete Laboratory Technician:

1) Concrete Laboratory Technician - Level I: Ensure technicians testing cylinders and recording concrete strength for material acceptance are qualified CTQP Concrete Laboratory Technicians Level I. Duties include final curing, compressive strength testing, and the recording/reporting of all test data.

2) Concrete Laboratory Technician – Level II: Ensure that laboratories providing hardened property test results to the Department are under the supervision of a CTQP Concrete Laboratory Technician - Level II. This person is responsible to ensure that the tests are performed in accordance with Standard Test Methods, project specifications and other contract documents.

8. Supervisory Personnel – Post-Tensioned and Movable Bridge Structures:

a. General: Provide supervisory personnel meeting the qualification requirements only for the post-tensioned and movable bridge types detailed in this Article. Submit qualifications to Engineer at the pre-construction conference. Do not begin construction until the qualifications of supervisory personnel have been approved by Engineer.

b. Proof of License or Certification:

1) Submit a copy of the Professional Engineer license current and in force issued by the state in which registration is held. The license must be for the field of engineering that the construction work involves such as Civil, Electrical or Mechanical. Under certain circumstances Florida registration may be required.

2) Submit a copy of the license issued by the State of Florida for tradesmen that require a license indicating that the license is in force and is current. Submit a copy of the certification issued by the Instrumentation, Systems and Automation Society of America for each Certified Control Systems Technician.

c. Experience Record: Submit the following information for supervisory personnel to substantiate their experience record. The supervisor (project engineer, superintendent/manager or foreman) seeking approval must provide a notarized certification statement attesting to the completeness and accuracy of the information submitted. Provide the following experience information for each individual seeking approval as a supervisor:

1) Project owner's name and telephone number of an owner's representative, project identification number, state, city, county, highway number and feature intersected.

2) Provide a detailed description of each bridge construction experience, and the level of supervisory authority during that experience. Report the duration in weeks, as well as begin and end dates, for each experience period.

3) Provide the name, address and telephone number of an individual that can verify that the experience being reported is accurate. This individual should have been an immediate supervisor unless the supervisor cannot be contacted in which case another individual with direct knowledge of the experience is acceptable.

d. Concrete Post-Tensioned Segmental Box Girder Construction: Ensure the individuals filling the following positions meet the minimum requirements as follows:

1) Project Engineer-New Construction: Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction

Engineering and includes a minimum of one year in segmental casting yard operations and related surveying, one year in segment erection and related surveying, including post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder Construction Engineering. Ensure this individual is present at the site of construction, at all times while segmental box girder construction or segment erection is in progress.

2) Project Engineer-Repair and Rehabilitation: Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction Engineering and includes one year of post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder rehabilitation engineering or Segmental Box Girder new construction engineering.

3) Project Superintendent/Manager - New Construction:

   a) Ensure the Project Superintendent/Manager has a minimum of ten years of bridge construction experience or is a registered Professional Engineer with five years of bridge construction experience. Ensure that a minimum of three years of experience is in Segmental Box Girder construction operations and includes a minimum of one year in the casting yard operations and related surveying, one year in segment erection and related surveying including post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project

   b) Superintendent/Manager in responsible charge of Segmental Box Girder construction operations. Ensure this individual is present at the site of construction, at all times while segmental box girder construction or segment erection is in progress.

4) Project Superintendent/Manager-Repair and Rehabilitation: Ensure the Project Superintendent/Manager has a minimum of five years of bridge construction experience or is a registered Professional Engineer with three years of bridge construction experience. Ensure that a minimum of two years of experience is in Segmental Box Girder construction operations and includes a minimum of one year experience performing post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Superintendent/Manager in responsible charge of Segmental Box Girder rehabilitation operations or Segmental Box Girder new construction operations.

5) Foreman-New Construction: Ensure that the Foreman has a minimum of five years of bridge construction experience with two years of experience in Segmental Box Girder Operations and a minimum of one year as the foreman in responsible charge of Segmental Box Girder new construction Operations. Ensure this individual is present at the site of construction, at all times while segmental box girder construction or segment erection is in progress.

6) Foreman-Repair and Rehabilitation: Ensure the Foremen has a minimum of five years of bridge construction experience with two years of experience in Segmental Box Girder Operations and a minimum of one year as the foreman in responsible charge of Segmental Box Girder rehabilitation operations or Segmental Box Girder new construction operations.

7) Geometry Control Engineer/Manager:

   a) Ensure that the Geometry Control Engineer/Manager for construction of cast-in-place box segments is a registered Professional Engineer with one year of experience, a non-registered Engineer with three years of experience or a Registered Professional Land Surveyor with three years of experience in geometry control for casting and erection of cast-in-place box segments. Credit for experience in cast-in-place box girder geometry control will be given for experience in precast box girder geometry control but not vice versa.

   b) Ensure that the Geometry Control Engineer/Manager for precast box segments is a registered Professional Engineer with one year of experience or non-registered with three years of experience in casting yard geometry control of concrete box segments.

   c) The Geometry Control Engineer/Manager must be responsible for and experienced at implementing the method for establishing and maintaining geometry control for segment casting yard operations and segment erection operations and must be experienced with the use of computer programs for monitoring and adjusting theoretical segment casting curves and geometry. This individual must be experienced at establishing procedures for assuring accurate segment form setup, post-tensioning duct and rebar alignment and effective concrete placement and curing operations as well as for verifying that casting and erection field survey data has been properly gathered and recorded. Ensure this individual is present at the site of construction, at all times while cast-in-place segmental box girder construction is in progress or until casting yard operations and segment erection is complete.

8) Surveyor: Ensure that the Surveyor in charge of geometry control surveying for box segment casting and/or box segment erection has a minimum of one year of bridge construction surveying experience. Ensure this individual is present at the site of construction, at all times while segmental box girder construction or segment erection is in progress.

e. Movable Bridge Construction: Ensure the individual filling the following positions meet the minimum requirements as follows:

   1) Electrical Journeyman: Ensure the Electrical Journeyman holds, an active journeyman

electrician's license and has at least five years experience in industrial electrical work, or is a Certified Control Systems Technician. A Certified Control Systems Technician will not be permitted to perform electrical power work including, but not limited to, conduit and wire-way installation or power conductor connection. Ensure the electrical journeyman has successfully completed the installation of one similar movable bridge electrical system during the last three years.

2) Control Systems Engineer and Mechanical Systems Engineer: Ensure the Control Systems Engineer and Mechanical Systems Engineer are both registered Professional Engineers with a minimum of 10 years supervisory experience each in movable bridge construction. Ensure the engineers have working knowledge of the movable bridge leaf motion control techniques, mechanical equipment and arrangements specified for this project. Ensure that each Engineer has been in responsible control of the design and implementation of at least three movable bridge electrical control and machinery systems within the past 10 years of which, at least one of the three bridges was within the last three years. Ensure that a minimum of one of the three bridge designs incorporated the same type of leaf motion control and machinery systems specified for this project.

f. Concrete Post-Tensioned Other Than Segmental Box Girder Construction: Ensure the individual filling the following positions meet the minimum requirements as follows:

1) Project Engineer: Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure that a minimum of three years of experience is in concrete post-tensioned construction. Ensure that the three years of experience includes experience in girder erection, safe use of cranes, stabilization of girders; design of false work for temporary girder support, post-tensioning and grouting operations, and a minimum of one year as the Project Engineer in responsible charge of post-tensioning related engineering responsibilities.

2) Project Superintendent/Manager: Ensure the Project Superintendent/Manager has a minimum of ten years of bridge construction experience or is a registered Professional Engineer with five years of bridge construction experience and has a minimum of three years of supervisory experience in girder erection, safe use of cranes, stabilization of girders; design of falsework for temporary girder support post-tensioning, grouting operations and a minimum of one year as the Project Superintendent/Manager in responsible charge of post-tensioning related operations.

3) Foreman: Ensure the Foremen has a minimum of five years of bridge construction experience with two years of experience in post-tensioning related operations and a minimum of one year as the foreman in responsible charge of post-tensioning related operations.

g. Post-Tensioning (PT) and Grouting Personnel Qualifications: Perform all stressing and grouting operations in the presence of Engineer and with personnel meeting the qualifications of this article. Coordinate and schedule all PT and grouting activities to facilitate inspection by Engineer.

1) Post-Tensioning: Perform all PT field operations under the direct supervision of a Level II CTQP Qualified PT Technician who must be present at the site of the post-tensioning work during the entire duration of the operation. For the superstructures of bridges having concrete post-tensioned box or I girder construction, provide at least two CTQP qualified PT technicians, Level I or II, on the work crew. The supervisor of the work crew, who must be a Level II CTQP Qualified PT Technician, may also be a work crew member, in which case, the supervisor shall count as one of the two CTQP qualified work crew members. For PT operations other than the superstructures of post-tensioned box or I girder construction, perform all PT operations under the direct supervision of a Level II CTQP Qualified PT Technician who must be present at the site of the PT work during the entire duration of the operation. Work crew members are not required to be CTQP qualified.

2) Grouting:

a) Perform all grouting field operations under the direct supervision of a Level II CTQP Qualified Grouting Technician who must be present at the site of the grouting work during the entire duration of the operation. For the superstructures of bridges having concrete post-tensioned box or I girder construction, provide at least two CTQP qualified grouting technicians, Level I or II, on the work crew. The supervisor of the work crew, who must be a Level II CTQP Qualified Grouting Technician, may also be a work crew member, in which case, the supervisor shall count as one of two CTQP qualified work crew members.

b) For grouting operations other than the superstructures of post-tensioned box or I girder construction, perform all grouting operations under the direct supervision of a Level II CTQP Qualified Grouting Technician who must be present at the site of the grouting work during the entire duration of the operation. Work crew members are not required to be CTQP qualified.

c) Perform all vacuum grouting operations under the direct supervision of a crew foreman who has been trained and has experience in the use of vacuum grouting equipment and procedures. Submit the crew foreman's training and experience records to Engineer prior to performing any vacuum grouting operation.

h. Failure to Comply with Bridge Qualification Requirements:

1) Make an immediate effort to reestablish compliance. If an immediate effort is not put forth as determined by Engineer, payment for the bridge construction operations requiring supervisors to be qualified under this Specification will be withheld up

to 60 days. Cease all bridge construction and related activities (casting yard, etc.) if compliance is not met within 60 days, regardless of how much effort is put forth. Resume bridge construction operations only after written approval from Engineer stating that compliance is reestablished.

9. Prestressed Concrete Plant Quality Control Personnel:

   a. Ensure each prestressed concrete plant has an onsite production manager, an onsite Plant Quality Control Manager, a Plant engineer, and adequate onsite QC inspectors/technicians to provide complete QC inspections and testing.

   b. Ensure the Plant Manager for QC has at least five years of related experience and a current PCI QC personnel Level III certification and a certificate of completion of FDOT Section 450 Specification examination. Ensure that the QC inspector/technician has current PCI QC Technician/Inspector Level II certification and a certificate of completion of FDOT Section 450 Specification examination.

   c. Ensure that the batch plant operators of the ready mixed concrete batch plants meet the requirements of Section 9.2 of the FDOT Materials Manual. Ensure that the batch plant operators of the onsite centrally mixed concrete plants meet the training requirements of Subarticle 105-F.11.b.4) b) below.

10. Signal Installation Inspector:

   a. Provide an inspector trained and certified by the International Municipal Signal Association (IMSA) as a Traffic Signal Inspector to perform all signal installation inspections. Use only Department approved signal inspection report forms during the signal inspection activities.

   b. Ensure all equipment, materials, and hardware is in compliance with Department Specifications and verify that all equipment requiring certification is listed on the PWWM Traffic Signals And Signs Qualified Products List (TSSQPL) http://www.miamidade.gov/qpl/.

   c. Provide the completed signal inspection report form(s), certified by the IMSA Traffic Signal Inspector to Engineer. Sample forms are available at the FDOT webpage address: http://www.dot.state.fl.us/trafficoperations

11. Pipe and Precast Concrete Products Manufacturing Facilities Quality Control Personnel:

   a. General: Obtain personnel certifications from FDOT accredited training providers. The list of FDOT approved courses and their accredited providers is available on the State Materials Office website.

   b. Precast Concrete Drainage Structures, Precast Concrete Box Culvert, Precast Concrete Pipe, Incidental Precast Concrete, and Flexible Pipe Manufacturing Facilities Quality Control Personnel:

      1) Level I Quality Control Inspectors: Ensure that the Level I Inspectors have completed a minimum of a 12-hour, Department approved, Level I QC Inspector training course in the respective work area. As an exception to this, ensure Flexible Pipe Level I QC Inspectors have completed a minimum of an 8-hour, Department approved, Level I QC Flexible Pipe Inspector training course. For Incidental Precast Concrete, as an alternative to the completion of the 12-hour training course, the Department will accept QC personnel meeting the requirements of Subarticle 105-F.11.b.4)a) below and CTQP Concrete Field Technician level I certification or Precast/Prestressed Concrete Institute (PCI) Quality Control Technician/Inspector Level II certification.

      2) Level II Quality Control Inspectors: Ensure that Level II Inspectors have completed FDOT approved Level I QC Inspector training and a minimum of a 5-hour, FDOT approved, Level II QC Inspector training course in the respective work areas. For Incidental Precast Concrete, as an alternative to the completion of the 5-hour training course, the Department will accept CTQP Concrete Field Technician Level II or PCI Quality Control Level III certifications.

      3) Plant Quality Control Manager: Ensure that QC Manager has completed FDOT approved Level II QC Inspector training and has a minimum of 2 years construction related experience in the specific work area.

      4) Additional Requirements for Quality Control Personnel of Precast Concrete Drainage, Precast Concrete Box Culvert, and Incidental Precast Concrete Manufacturing Facilities:

         a) Testing Personnel: Ensure the personnel performing plastic property tests have ACI Concrete Field Testing Technician-Grade I certification. Ensure the personnel performing laboratory compressive strength testing have ACI Concrete Laboratory Testing Technician-Grade 1 certification or ACI Concrete Strength Testing Technician certification.

         b) Batch Plant Operator: Ensure the concrete batch plant operator is qualified as a CTQP Concrete Batch Plant Operator. As an alternative to CTQP qualification, the Department will accept the completion of a minimum of a 6-hour, FDOT approved, Batch Plant Operator training course.

12. Structural Steel and Miscellaneous Metals Fabrication Facility Quality Control Personnel:

   a. Ensure each fabrication facility has an onsite production manager, an onsite facility manager for QC, a plant engineer, and on site QC inspectors/technicians to provide complete QC inspections and testing.

   b. Ensure that the Facility Manager for QC and QC inspectors/technicians meet the certification requirements set forth in the latest version of AASHTO/NSBA Steel Bridge Collaboration S 4.1, Steel Bridge Fabrication QC/QA Guide Specification, including the years of experience required in Table 105-1 below. The Facility Manager for QC must meet the requirements of Table 105-1 for every Structural Steel Member Type produced by a plant with QC being managed by the Facility Manager for QC. The Facility Manager for QC will report directly to the plant manager or plant engineer and must not be the plant production manager nor report to or be the subordinate of the plant production manager. QC inspectors/technicians must

be the employees of, and must report directly to the Facility Manager for QC.

TABLE 105-1 Experience Requirements for QC Inspectors/Technicians And Facility Manager for Quality Control		
Structural Steel Member Type	Minimum Years of Experience Required	
	QC Inspector/Technician	Facility Manager for QC
Rolled beam bridges	1 year	3 years
Welded plate girders (I sections, box sections, etc.)	2 years	4 years
Complex structures, such as trusses, arches, cable stayed bridges, and moveable bridges	3 years	5 years
Fracture critical (FC) members	3 years	5 years

G. FDOT Quality Control Program.

1. Producers for the following materials must have an accepted FDOT Quality Control Program during the production of materials to be used on Department projects and be currently listed in the FDOT Materials/Producer Listings and must meet and maintain the approved FDOT Quality Control Program requirements at all times while producing materials that will be incorporated into the Project (http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/materialslistings/postjuly2002.shtm)
   a. Aggregate
   b. Asphalt Mix
   c. Cementitious Material
   d. Drainage Products
   e. Earthwork
   f. Galvanize Metal Products
   g. Portland Cement Concrete (Structural)
   h. Prestress/Precast Concrete Products
   i. Steel and Miscellaneous Metal
   j. Timber
2. When accreditation or certification is required, make supporting documents from the two previous inspections performed by the accrediting or certifying agency available to the Department upon request.
3. Prestressed Concrete Quality Control Program: Ensure that prestressed concrete plants participating in the FDOT's Acceptance Program are qualified. Obtaining qualification requires a current certification from a FDOT approved precast prestressed concrete plant certification agency and a FDOT approved Quality Control Plan. The list of FDOT approved certification agencies is available on the website of the FDOT State Materials Office.
4. Steel and Miscellaneous Metals Quality Control Program:
   a. Ensure that the fabricators of Steel and miscellaneous metal products participating in the FDOT's Quality Control Acceptance Program are qualified. Obtaining qualification requires an accepted FDOT Quality Control Plan. A current American Institute for Steel Construction (AISC) certification is a requirement for the Quality Control Acceptance Program of the steel and miscellaneous metal fabricators, provided that AISC certification program is available for the category of the fabrication products.
   b. Steel and Miscellaneous Metal products, including aluminum, are defined as the metal components of bridges, including pedestrian and moveable bridges, overhead and cantilevered sign supports, ladders and platforms, bearings, end wall grates, roadway gratings, drainage items, expansion joints, roadway decking, shear connectors, handrails, galvanized products, fencing, guardrail, light poles, high mast light poles, standard mast arm assemblies and Monotube assemblies, stay in-place forms, casing pipe, strain poles, fasteners, connectors and other hardware.

107 LITTER REMOVAL AND MOWING (REV. 11-25-2015)

A. Description.

1. Contractor to be responsible for the work below in areas where the County or the property owner has restricted or limited access to maintain the property.
   a. Provide pickup, removal and disposal of litter within the project limits from the outside edge of travel way to the right of way line. Include the median on divided highways, from the inside edge of travel way to the inside edge of travel way. Litter includes; but is not limited to, bottles, cans, paper, tires, tire pieces, lumber, vehicle parts, metal junk, and brush debris. Exclude any inaccessible areas or areas identified in the Plans as new landscaping in accordance with the Contract Documents.
   b. Mow turf or vegetation within the project limits. Turf consists of grasses planted in accordance with FDOT Section 570. Vegetation consists of planted and natural grasses, weeds, and other natural vegetation that have been previously mowed. Exclude any areas identified in the Plans as new landscaping in accordance with the Contract Documents.

B. Operation.

1. Frequency:
   a. Remove litter daily from the beginning of the project until final completion, unless otherwise directed by the Engineer. Continue litter removal until final acceptance.
   b. Begin mowing when directed by the Engineer and continue per the frequency agreed, (every month or less depending of the weather season) unless otherwise directed by the Engineer. Mow all areas to

obtain a uniform height of 6 inches. Maintain turf and vegetation height between 6 inches and 12 inches. Do not include seed stalk or wildflowers when measuring height. Continue mowing until final acceptance. After final acceptance perform litter removal and mowing until new turf is established in accordance with FDOT 570-4 at no cost to the County.

c. Perform litter removal prior to and in conjunction with mowing; however, the Engineer may direct litter pickups in addition to those performed in conjunction with mowing. Do not mow new turf until a healthy root system is established. In designated wildflower areas, avoid cutting wildflowers when in bloom and when re-seeding.

2. General:

a. Mow shoulders and medians concurrently so that not more than one mile will be left partially mowed at the conclusion of the working day. Mow turf and vegetation on slopes or around appurtenances concurrent with the mowing operation. In areas saturated with standing water, mow or cut to the surface of the water using hand labor or other specialized equipment when standard equipment will cause damage. Do not remove turf or other vegetation cuttings from the right-of-way, or rake or pick up the cuttings unless the cuttings are in the traveled ways, bike lanes, or sidewalk; are obstructing drainage structures; or are the result of cleaning the equipment.

3. Limitations:

a. Maintain traffic in accordance with Article 102-Maintenance of Traffic. When mowing within four feet of a travel lane, operate the equipment in the same direction of traffic, unless the adjacent lane is closed to traffic due to construction operations. Perform all work during daylight hours.

4. Disposal of Litter and Debris:

a. During each litter removal cycle, bag and remove all litter or piles at the end of each working day. Dispose of litter in accordance with applicable local and state laws. Do not store or stockpile litter within the project limits.

C. Method of Measurement.

1. No measure is included for litter removal or mowing.

D. Basis of Payment.

1. All work and incidental costs specified as being covered under this Article will be included for payment under the several scheduled items of the overall Contract, and no separate payment will be made.

110 CLEARING AND GRUBBING (REV. 05-16-11)

A. General.

1. Perform all Clearing and Grubbing required by the Contract Documents or necessary to prepare the Project site for the proposed construction.

2. Remove and dispose of all structures, material, product and debris not required to be salvaged or not required to complete the construction.

3. Trim trees and shrubs within the Project right-of-way that are required by the Contract Documents or necessary for the construction of the Project.

4. Perform the work and meet all the requirements for the miscellaneous operations described in Subarticle B.6 herein.

5. Protect and do not displace structures which are to remain in place.

B. Clearing and Grubbing:

1. Standard Clearing and Grubbing.

a. Perform Standard Clearing and Grubbing within:

1) Right-of-way of the roadway to be constructed.

2) All Project areas, whether or not shown in the Plans, that require Clearing and Grubbing including:

a) Areas where excavation is to be done.

b) Areas where roadway embankments will be constructed.

c) Areas where structures will be constructed or installed.

b. Work includes complete removal and disposal of:

1) All buildings, structures, appurtenances, existing pavement, trees, plants, vegetation, timber, brush, stumps, roots, rubbish, debris, and all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas.

2) All other structures and obstructions necessary to be removed and for which other items of the Contract do not specify the removal thereof.

3) Any boulders encountered in the roadway excavation or found on the surface of the ground unless otherwise permitted by the Contract Documents

c. Depths of Removal of Roots, Stumps, and Other Debris:

1) Completely remove and dispose of all stumps found within the roadway right-of-way.

2) Remove roots and other debris from all excavated material to be used in the construction of roadway embankment.

3) In all areas where excavation is to be performed or roadway embankments are to be constructed, plow the surface to a depth of at least 6 inches, and remove roots and other debris to a depth of 12 inches below the ground surface.

4) Remove all roots and other debris protruding through or appearing on the surface of the completed excavation within the roadway area and for structures, to a depth of at least 12 inches below the finished excavation surface.

5) In borrow pits, material pits, and lateral ditches, remove or cut off all stumps, roots, etc. below the surface of the completed excavation. Do not perform any clearing or grubbing within 3 feet inside the right-of-way line in borrow and material pits.

6) Within all other areas where Standard Clearing and Grubbing is to be performed, remove roots and other debris projecting through or appearing on the surface of the original ground to a depth of 12 inches below the surface, but do not plow or harrow these areas.

d. Trees to Remain:

1) As an exception to the above provisions, where so directed by the Engineer, trim, protect, and leave standing desirable trees within the Project area.

2) Trim branches of trees extending over the area occupied by the roadway as directed, to give a clear height of 16 feet above the roadway.

2. Selective Clearing and Grubbing.

a. Perform Selective Clearing and Grubbing only in areas so designated in the Plans or where directed by the Engineer.

b. Completely remove and dispose of stumps and remove and dispose of all vegetation, obstructions, etc., as required for Standard Clearing and Grubbing except that, where so elected, the Contractor may cut roots flush with the ground surface.

c. Entirely remove undergrowth except in specific areas designated by the Engineer to remain for aesthetic purposes.

d. Trim, protect, and leave standing desirable trees, with the exception of such trees as the Engineer may designate to be removed in order to facilitate right-of-way maintenance. Remove undesirable or damaged trees as so designated by the Engineer.

3. Removal of Buildings.

a. Completely remove all parts of the buildings, including utilities, plumbing, foundations, floors, basements, steps, connecting concrete sidewalks or other pavement, septic tanks, and any other appurtenances, by any practical manner which is not detrimental to other property and improvements. Remove utilities to the point of connection to the utility authority's cut-in.

b. After removing the sewer connections to the point of cut-in, construct a concrete plug at the cut-in point, as directed by the Engineer, except where the utility owners may elect to perform their own plugging. Contact the appropriate utility companies prior to removal of any part of the building to ensure disconnection of services.

c. Removal by Others: Where buildings within the area to be cleared and grubbed are so specified to be removed by others, remove and dispose of any foundations, curtain walls, concrete floors, basements or other foundation parts which might be left in place after such removal of buildings by others.

4. Removal of Existing Structures.

a. Structures to be removed include:

1) Structures, or portions of structures, shown in the Plans to be removed;

2) Structures, or portions of structures, found within the areas requiring Clearing and Grubbing, and directed by the Engineer to be removed;

3) Structures, or portion of structures, which are necessary to be removed in order to construct new structures; and

4) All other appurtenances or obstructions which may be designated in the Contract Documents as to be included for removal under this Article.

b. Removal Requirements:

1) General:

a) Remove and dispose of all materials from existing structures required to be removed.

b) Remove the structures in a neat manner so as to leave no obstructions to any proposed new structures, construction, or to any waterways.

c) Pull, cut off, or break off pilings to the requirements of the permit or other Contract Documents, whichever requires the deepest removal, but not less than 2 feet below the finish ground line.

d) If Plans indicate channel excavation to be done by others, consider the finish ground line as the limits of such excavation.

e) For materials which are to remain the property of the Department or are to be salvaged for use in temporary structures, avoid damage to such materials, and entirely remove all bolts, nails, etc. from timbers to be so salvaged.

f) Mark structural steel members for identification as directed.

2) Removal of Steel Members With Hazardous Coatings:

a) Provide to the Engineer for approval, a copy of the "Contractor's Lead in Construction Compliance Program" from the firm actually removing and disposing of these steel members before any members are disturbed.

b) Vacuum power tool clean any coated steel member to bare metal as defined by SSPC-SP11 a minimum of 4 inches either side of any area to be heated (torch cutting, sawing, grinding, etc.) in accordance with 29 CFR 1926.354. Abrasive blasting is prohibited.

c) Provide air supplied respirators in accordance with 29 CFR 1926.62 and 29 CFR 1910.134.

c. Partial Removal of Bridges:

1) For all demolition methods, submit for review and approval of the Engineer, a demolition plan that describes the method of removal, equipment to be used, types of rebar splices or couplers, and method of straightening or cutting rebars. In addition, for hydro-demolition, describe the method for control of water or slurry runoff and measures for safe containment of concrete fragments that are thrown out by the hydro-demolition machine.

2) Where concrete is to be removed to neat lines, use concrete saws or hydro-demolition methods capable of providing a reasonably uniform cleavage face. If the equipment used will not provide a uniform cut without surface spalling, first score the outlines of the work with small trenches or grooves.

3) On concrete bridges to be partially removed and widened, remove concrete by manually or mechanically operated pavement breakers, by concrete saws, by chipping hammers, or by hydro-demolition methods. Do not use explosives.

d. Authority of U.S. Coast Guard: For structures in navigable waters, when constructing the project under authority of a U.S. Coast Guard permit, the U.S. Coast Guard may inspect and approve the work to remove any existing structures involved therein, prior to acceptance by the Department.

e. Asbestos Containing Materials (ACM) Not Identified Prior to the Work:

1) When encountering or exposing any condition indicating the presence of asbestos, cease operations immediately in the vicinity and notify the Engineer.

2) Make every effort to minimize the disturbance of the ACM. Immediately provide for the health and safety of all workers at the job site and make provisions necessary for the health and safety of the public that may be exposed to any potentially hazardous conditions. Provisions shall meet all applicable laws, rules or regulations covering hazardous conditions and will be in a manner commensurate with the gravity of the conditions.

3) The Engineer will direct the Prime Contractor when operations may resume in the affected area.

5. Removal of Existing Concrete Pavement.

a. Remove and dispose of existing rigid portland cement concrete pavement, sidewalk, slope pavement, ditch pavement, curb, and curb and gutter etc., where shown in the plans or ordered by the Engineer to be removed or where required because of the construction operations.

b. The work under Removal of Existing Concrete Pavement does not include the removal of retaining walls, drainage structures and flexible asphalt pavement.

6. Miscellaneous Operations.

a. Water Wells Required to be Plugged:

1) Fill or plug all water wells within the right-of-way, including areas of borrow pits and lateral ditches that are not to remain in service, in accordance with applicable Water Management District rules or the Department of Environmental Protection regulations.

2) Cut off the casing of cased wells at least 12 inches below the ground line or 12 inches below the elevation of the finished excavation surface, whichever is lower. Water wells, as referred to herein, are defined either as artesian or non-artesian, as follows:

a) An artesian well is an artificial hole in the ground from which water supplies may be obtained and which penetrates any water-bearing rock, the water in which is raised to the surface by natural flow or which rises to an elevation above the top of the water-bearing bed. Artesian wells are further defined to include all holes drilled as a source of water that penetrate any water-bearing beds that are a part of the artesian water system of Florida, as determined by representatives of the applicable Water Management District.

b) A non-artesian (water-table) well is a well in which the source of water is an unconfined aquifer. The water in a non-artesian well does not rise above the source bed.

b. Landscape Areas: When certain areas of the right-of-way, outside of the limits of construction, are shown in the plans or designated by the Engineer to be landscaped, either under the construction Contract or at a later time, remove undesirable trees, stumps, undergrowth, and vegetation, as directed, and preserve and trim natural growth and trees as directed by the Engineer.

c. Leveling Terrain: Within the areas between the limits of construction and the outer limits of clearing and grubbing, fill all holes and other depressions, and cut down all mounds and ridges. Make the area of a sufficient uniform contour so that the Department's subsequent mowing and cutting operations are not hindered by irregularity of terrain. Perform this work regardless of whether the irregularities were the result of construction operations or existed originally.

d. Mailboxes: When the Contract Documents require furnishing and installing mailboxes, permit each owner to remove the existing mailbox. Work with the Local Postmaster to develop a method of temporary mail service for the period between removal and installation of the new mailboxes. Install the mailboxes in accordance with the Design Standards.

C. Ownership of Materials.

1. Except as may be otherwise specified in the Contract Documents, the Contractor shall take ownership of all buildings, structures, appurtenances, and other materials removed by him and shall dispose of them in accordance with subarticle D below.

D. Disposal of Materials.

1. General:

a. Dispose of all debris, timber, stumps, brush, roots, rubbish, and other waste material resulting from clearing and grubbing in areas and by methods meeting the applicable requirements of all Local, State and Federal regulations.

2. Disposal of Treated Wood:

a. Treated wood, including that which comes from bridge channel fender systems, must be handled and disposed of properly during removal.

b. Treated wood should not be cut or otherwise mechanically altered in a manner that would generate

dust or particles without proper respiratory and dermal protection.

c. Treated wood must be disposed of in at least a lined solid waste facility or through recycling/reuse.

d. Treated wood shall not be disposed by burning or placement in a construction and demolition (C&D) debris landfill.

e. All compensation for the cost of removal and disposal of treated wood will be included in the Cost of Removal of Existing Structures when an item for direct payment is provided in the Contract. If an item of direct payment is not provided in the Contract, the aforementioned cost is included in the cost for Clearing and Grubbing or among the other items of work in the Contract.

3. Hazardous Materials/Waste:

a. General:

1) Handle, transport and dispose of hazardous materials in accordance with all Local, State and Federal requirements including the following:

a) SSPC Guide 7

b) Federal Water Pollution Control Act, and

c) Resource Conservation and Recovery Act (RCRA).

2) Accept responsibility for the collection, sampling, classification, packaging, labeling, accumulation time, storage, manifesting, transportation, treatment and disposal of hazardous waste, both solid and liquid. Separate all solid and liquid waste and collect all liquids used at hygiene stations and handle as hazardous materials/waste. Obtain written approval from the Engineer and required agencies for all hazardous materials/waste stabilization methods before implementation.

3) Obtain an EPA/FDEP Hazardous Waste Identification Number (EPA/FDEP ID Number) before transporting and/or disposal of any hazardous materials/waste.

4) List the Department as the generator of all hazardous materials/waste.

5) Submit the following for the Engineers' approval before transporting, treatment or disposal of any hazardous materials/waste:

a) Name, address and qualifications of the transporter,

b) Name, address and qualifications of the treatment facility,

c) Proposed treatment and/or disposal of all Hazardous Materials/Waste.

6) Transport all hazardous materials/waste in accordance with applicable 40 CFR 263 Standards. Provide a copy of all completed Hazardous Materials/Waste manifest/bills of lading to the Engineer within 21 days of each shipment.

b. Steel Members With Hazardous Coating:

1) Unless otherwise required by the Contract Documents, dispose of steel members with hazardous coating in one of the following manners:

a) Deliver the steel members and other hazardous waste to a licensed recycling or treatment facility capable of processing steel members with hazardous coating.

b) Deliver any other hazardous materials/waste to a licensed hazardous materials/waste recycling treatment facility.

2) Dismantle and/or cut steel members to meet the required dimensions of the recycling facility, treatment facility or other regulatory agency.

3) All compensation for the cost of removal and disposal of hazardous materials/waste will be included in the Cost of Removal of Existing Structures when an item for direct payment is provided in the Contract. If an item of direct payment is not provided in the Contract, the aforementioned cost is included in the cost for Clearing and Grubbing or among the other items of work in the Contract.

c. Certification of Compliance:

1) Furnish two copies of Certification of Compliance from the firm actually removing and disposing of the hazardous materials/waste stipulating, the hazardous materials/waste has been handled, transported and disposed of in accordance with this Specification.

2) The Certification of Compliance shall be attested to by a person having legal authority to bind the company.

d. Maintain all records required by this Specification and ensure they are available to the Department upon request.

E. Method of Measurement.

1. Clearing and Grubbing:

a. No Direct Payment Provided: When no item for direct payment of Clearing and Grubbing is provided by the Contract, the costs for performing all work and meeting the requirements of this Article will be included among the various scheduled items of the Contract.

b. Direct Payment Provided: When direct payment for Clearing and Grubbing is provided in the Contract, the quantity to be paid for will be the lump sum quantity.

2. One or more of the following items may appear in a contract where no direct payment item for Clearing and Grubbing is provided. Only those items with an Awarded Unit Price will be considered for direct payment. All other work of Clearing and Grubbing is included among the various scheduled items of the Contract.

a. Removal of Existing Structures: When a separate item for the Removal of Existing Structures is provided for direct payment in the Contract, the quantity to be paid for will be the lump sum quantity or actual quantities for the specific structures removed, as stipulated in the Contract Documents.

b. Removal of Existing Concrete Pavement: When a separate item for Removal of Existing Concrete Pavement is provided for direct payment in the

Contract, the quantity to be paid for will be the number of square yards of existing pavement of the types listed in subarticle B.5 herein, acceptably removed and disposed of, as specified. The quantity will be determined by actual measurement along the surface of the pavement before its removal. Measurements for appurtenances which have irregular surface configurations, such as curb and gutter, steps, and ditch pavement, will be the area as projected to an approximate horizontal plane. Where the removal of pavement areas is necessary only for the construction of box culverts, pipe culverts, storm sewers, french drains, inlets, manholes, etc., these areas will not be included in the measurements.

c. Removal of Trees: When separate items for the Removal of Trees are provided for direct payment in the Contract, trees that are greater than 6 inches in diameter, will be paid on a per each basis by actual count by the Engineer of such trees under the appropriate item provided in the Contract. The diameter of a tree shall be obtained by measuring its circumference at 4.5 feet above the ground using a flexible tape measure and dividing the circumference by 3.14. If the tree is growing on a slope, the circumference is measured at 4.5 feet from the center of the slope. If the tree begins to branch below 4.5 feet, measure at the smallest circumference below the first branch.

d. Plugging Water Wells: When a separate item for Plugging of Water Wells is provided for direct payment in the Contract, the quantity to be paid for will be the number of water wells plugged, for each type of well (artesian or non-artesian).

e. Mailboxes: When a separate item is provided in the Contract for furnishing and installing mailboxes, the quantity to be paid for will be the number of mailboxes acceptably furnished and installed.

f. Delivery of Salvageable Material to the Department: When a separate item is provided in the Contract for the delivery of salvageable material to the Department, the quantity to be paid for will be the Lump Sum quantity for delivery of salvageable materials to the Department as indicated in the Plans or as directed by the Engineer.

F. Basis of Payment.

1. Clearing and Grubbing:

a. No Direct Payment Provided: When direct payment for Clearing and Grubbing is not provided in the Contract, the cost of any work of clearing and grubbing necessary for the proper construction of the Project and meeting all requirements of this Article, is included in the Contract price for the structure or other item of work for which such clearing and grubbing is required.

b. Direct Payment Provided:

1) Price and payment will be full compensation for all clearing and grubbing indicated or required for the construction of the entire Project, including all necessary hauling, furnishing equipment, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain and the landscaping work of trimming, etc., as specified herein, except for any areas designated to be paid for separately or to be specifically included in the costs of other work under the Contract.

2) Unless otherwise provided by the Contract, price and payment will be full compensation for all work required by this Article including Removal of Existing Structures, Removal of Existing Concrete Pavement, Removal of Trees, Plugging of Water Wells, Mailboxes, and Delivery of Salvageable Material to the Department.

3) Where construction easements are specified in the Plans and the limits of clearing and grubbing for such easements are dependent upon the final construction requirements, no adjustment will be made in the lump sum price and payment, either over or under, for variations from the limits of the easement defined on the Plans.

c. The Contractor shall include the cost of all clearing and grubbing which might be necessary in pits or areas from which base material is obtained in the Contract price for the base in which such material is used.

d. The clearing and grubbing of areas for obtaining stabilizing materials, where required only for the purpose of obtaining materials for stabilizing, will not be paid for separately.

2. Removal of Existing Structures:

a. Price and payment will be full compensation for all work of removal and disposal of the designated structures.

b. When direct payment for the removal of existing structures is not provided in the Contract, the cost of removing all structures is included in the Contract price for Clearing and Grubbing or, if no item of Clearing and Grubbing is included, in the compensation for the other items covering the new structure being constructed.

3. Removal of Existing Concrete Pavement:

a. Price and payment will be full compensation for performing and completing all the work of removal and satisfactory disposal including any saw cutting required.

b. When direct payment for the removal of existing concrete pavement is not provided in the Contract and no applicable item of excavation or embankment covering such work is included in the Contract, the Contractor shall include the costs of this work in the Contract price for the item of Clearing and Grubbing or, if no item of Clearing and Grubbing is included in the Contract, in any work, pipe or other structure for which the concrete pavement removal is required.

4. Removal of Trees:

a. Price and payment will be full compensation for complete removal and disposal of each tree counted by the Engineer pursuant to these specifications.

b. When direct payment for the removal of trees is not provided in the Contract, the cost of removing all trees is included in the Contract price for Clearing and Grubbing or, if no item of Clearing and Grubbing is included in the Contract, in the compensation for all other items in the Contract.

5. Plugging Water Wells:

a. Price and payment will be full compensation for each type of well acceptably plugged.

b. When direct payment for plugging water wells is not provided in the Contract, the cost plugging water wells is included in the Contract price for Clearing and Grubbing or, if no item of Clearing and Grubbing is included in the Contract, in the compensation for all other items in the Contract.

6. Mailboxes:

a. Price and payment will be full compensation for all work and materials required, including supports and numbers.

b. When direct payment for mailboxes is not provided in the Contract, the cost for all work and materials required, including supports and numbers, is included in the Contract price for Clearing and Grubbing or, if no item of Clearing and Grubbing is included in the Contract, in the compensation for all other items in the Contract.

7. Delivery of Salvageable Material to the Department:

a. Price and payment will be full compensation for all work required for delivery of the materials to the Department.

b. When the Contract does not provide direct payment for the Delivery of Salvageable Material that is to be delivered to the County, the cost of Delivery of Salvageable Material is included in the Contract price for Clearing and Grubbing or, where no item for Clearing and Grubbing is included in the Contract, in the compensation for all other items in the Contract.

8. Payment Items: Payment will be made under:

Item No.	Description	Unit
110- 1-1B	Clearing and Grubbing	LS
110- 2-00	Clean Existing Pipes (Including removal and disposal of trash and other deleterious materials)	L.F.
110-7-1A	Install new mailbox	EA

120 EARTHWORK AND RELATED OPERATIONS

A. Description.

1. General:

a. Earthwork and Related Operations consists of excavation for the construction of the roadway, excavation for structures and pipe, constructing backfill around structures and pipe, and constructing embankments as required for the roadway, ditches, and channel changes.

b. Perform Earthwork and Related Operations based on the type of work specified in the Contract Documents.

c. Meet the applicable requirements for materials, equipment and construction as specified in the Contract Documents.

B. Classes of Excavation.

1. Excavation of Unsuitable Material: Excavation of unsuitable material consists of the removal of muck, clay, rock or any other material that is unsuitable in its original position and that is excavated below the finished grading template. For stabilized bases and sand bituminous road mixes, the finished grading template is the top of the finished base, shoulders and slopes. For all other bases and rigid pavement, the finished grading template is the finished shoulder and slope lines and bottom of completed base or rigid pavement.

2. Lateral Ditch Excavation: Lateral Ditch Excavation consists of all excavation of inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right-of-way.

3. Channel Excavation: Channel Excavation consists of the excavation and satisfactory disposal of all materials from the limits of the channel as shown in the Plans.

4. Excavation for Structures and Pipe: Excavation for Structures consists of the excavation for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

C. Excavation Requirements.

1. Excavation and Replacement of Unsuitable Materials: Where rock, muck, clay, or other material within the limits of the roadway is unsuitable in its original position, excavate such material to the cross-sections shown in the Plans or indicated by the Engineer, and backfill with suitable material. Shape backfill materials to the required cross-sections. Where the removal of plastic soils below the finished earthwork grade is required, meet a construction tolerance of ± 0.2 foot in depth and ± 6 inches (each side) in width.

2. Lateral Ditch Excavation: Excavate inlet and outlet ditches to structures and roadway, changes in channels of streams and ditches parallel to the roadway. Dress lateral ditches to the grade and cross-section shown in the Plans.

3. Channel Excavation: Excavate and dispose of all materials from the limits of the channel as shown in the Plans. Excavate for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

4. Excavation for Structures and Pipe.

a. General: Excavate foundation pits to permit the placing of the full widths and lengths of footings shown in the Plans, with full horizontal beds. Do not round or undercut corners or edges of footings. Perform all excavation to foundation materials, satisfactory to the Engineer, regardless of the elevation shown on the Plans. Perform all excavation in stream beds to a depth at least 4 feet below the permanent bed of the stream, unless a firm footing can be established on solid rock before such depth is reached, and excavate to such additional depth as may be necessary to eliminate any danger of undermining. Wherever rock bottom is secured, excavate in such manner as to allow the solid

rock to be exposed and prepared in horizontal beds for receiving the masonry. Remove all loose and disintegrated rock or thin strata. Have the Engineer inspect and approve all foundation excavations prior to placing masonry.

b. Earth Excavation:

1) Foundation Material other than the Rock: When masonry is to rest on an excavated surface other than rock, take special care to avoid disturbing the bottom of the excavation, and do not remove the final foundation material to grade until just before placing the masonry. In case the foundation material is soft or mucky, the Engineer may require excavation to a greater depth and to backfill to grade with approved material.

2) Foundation Piles: Where foundation piles are used, complete the excavation of each pit before driving the piles. After the driving is completed, remove all loose and displaced material, leaving a smooth, solid, and level bed to receive the masonry.

3) Removal of Obstructions: Remove boulders, logs, or any unforeseen obstacles encountered in excavating.

c. Rock Excavation: Clean all rock and other hard foundation material, remove all loose material, and cut all rock to a firm surface. Either level, step vertically and horizontally, or serrate the rock, as may be directed by the Engineer. Clean out all seams, and fill them with concrete or mortar.

d. Pipe Trench Excavation:

1) Excavate trenches for pipe culverts and storm sewers to the elevation of the bottom of the pipe and to a width sufficient to provide adequate working room. Remove soil not meeting the classification specified herein for suitable backfill material for backfilling around pipe to a depth of 4 inches below the bottom of the pipe elevation. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of the pipe elevation. Remove muck or other soft material to a depth necessary to establish a firm foundation. Where the soils permit, ensure that the trench sides are vertical up to at least the mid-point of the pipe.

2) For pipe lines placed above the natural ground line, place and compact the embankment, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to four pipe diameters, and then excavate the trench to the required grade.

D. Disposal of Surplus and Unsuitable Material.

1. Ownership of Excavated Materials: Dispose of surplus and excavated materials as shown in the Plans or, if the Plans do not indicate the method of disposal, take ownership of the materials and dispose of them in an authorized and lawful manner.

2. Disposal of Muck on Side Slopes: As an exception to the provisions herein for Ownership of Excavated Materials, when approved by the Engineer, muck (A-8 material) may be placed on the slopes, or stored alongside the roadway, provided there is a clear distance of at least 6 feet between the roadway grading limits and the muck, and the muck is dressed to present a neat appearance. In addition, this material may also be disposed of by placing it on the slopes where, in the opinion of the Engineer, this will result in an aesthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where the Engineer permits the disposal of muck or other unsuitable material inside the right-of-way limits, do not place such material in a manner which will impede the inflow or outfall of any channel or of side ditches. The Engineer will determine the limits adjacent to channels within which such materials may be disposed.

3. Disposal of Paving Materials: Unless otherwise noted, take ownership of paving materials, such as paving brick, asphalt block, concrete slab, sidewalk, curb and gutter, etc., excavated in the removal of existing pavements, and dispose of them outside the right-of-way. If the materials are to remain the property of the Agency, place them in neat piles as directed. Existing limerock base that is removed may be incorporated in the stabilized portion of the subgrade. If the construction sequence will allow, incorporate all existing limerock base into the project as allowed by the Contract Documents.

4. Disposal Areas:

a. Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation.

E. Materials for Embankment.

1. General Requirements for Embankment Materials:

a. Construct embankments using suitable materials excavated from the roadway or delivered to the jobsite from authorized borrow pits.

b. Construct the embankment using maximum particle sizes (in any dimension) as follows:

1) In top 12 inches: 3 1/2 inches (in any dimension).

2) 12 to 24 inches: 6 inches (in any dimension).

3) In the depth below 24 inches: not to exceed 12 inches (in any dimension) or the compacted thickness of the layer being placed, whichever is less.

c. Spread all material so that the larger particles are separated from each other to minimize voids between them during compaction. Compact around these rocks in accordance with the requirements herein for Compaction of Embankments.

d. When and where approved by the Engineer, larger rocks (not to exceed 18 inches in any dimension) may be placed outside the one to two slope and at least 4 feet or more below the bottom of the base. Compact around these rocks to a firmness equal to that of the supporting soil. Where constructing embankments adjacent to bridge end bents or abutments, do not place rock larger than 3 1/2 inches in diameter within 3 feet of the location of any end-bent piling.

2. Use of Materials Excavated From the Roadway and Appurtenances: Assume responsibility for determining the suitability of excavated material for use on the project in accordance with the applicable Contract Documents. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

3. Authorization for Use of Borrow: Use borrow only when sufficient quantities of suitable material are not available from roadway and drainage excavation, to properly construct the embankment, subgrade, and shoulders, and to complete the backfilling of structures and pipe. Do not use borrow material until authorized by the Engineer, and then only use material from approved borrow pits.

   a. Haul Routes for Borrow Pits:

      1) Provide and maintain, at no expense to the County, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.

      2) Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible, and keep noise from hauling operations to a minimum. Advise the Engineer in writing of all proposed haul routes.

   b. Borrow Material for Shoulder Build-up: When so indicated in the Plans, furnish borrow material with a specific minimum bearing value, for building up of existing shoulders. Blend materials as necessary to achieve this specified minimum bearing value prior to placing the materials on the shoulders. Take samples of this borrow material at the pit or blended stockpile.

4. Materials Used at Pipes, Culverts, etc.: Construct embankments over and around pipes, culverts, and bridge foundations with selected materials.

F. Embankment Construction.

1. General: Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment.

2. Dry Fill Method:

   a. General:

      1) Construct embankments to meet the requirements of subarticle G (Compaction Requirements) and in accordance with the Acceptance Program requirements herein. Restrict the compacted thickness of the last embankment lift to 6 inches maximum.

      2) As far as practicable, distribute traffic over the work during the construction of embankments so as to cover the maximum area of the surface of each layer.

      3) Construct embankment in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

         a) For A-3 and A-2-4 Materials with up to 15% fines: Construct the embankment in successive layers with lifts up to a maximum compacted thickness of 12 inches. Ensure the percentage of fines passing the No. 200 US Standard sieve in the A 2 4 material does not exceed 15%.

         b) For A-1 Plastic materials (As designated in FDOT Design Standard Index 505) and A-2-4 Materials with greater than 15% fines: Construct the embankment in successive layers with lifts up to a maximum compacted thickness of 6 inches.

         c) Equipment and Methods: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

      4) When normal dewatering does not adequately remove the water, the Engineer may require the embankment material to be placed in the water or in low swampy ground in accordance with the requirements herein for Compaction Where Plastic Material Has Been Removed.

   b. Placing in Unstable Areas: Where depositing the material in water, or in low swampy ground that will not support the weight of hauling equipment, construct the embankment by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the embankment in layers in accordance with the applicable provisions herein for Compaction Where Plastic Material Has Been Removed and for Compaction of Grassed Shoulder Areas.

   c. Placing on Steep Slopes: When constructing an embankment on a hillside sloping more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut into steps the surface of the original ground on which the embankment is to be placed.

   d. Placing Outside Standard Minimum Slope: Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard minimum slope (approximately one to two), place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material which is suitable for normal embankment, outside such standard minimum slope, in 18 inch layers. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

3. Hydraulic Method:

   a. Method of Placing: When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the embankment by such method. Place and compact any dredged material that is rehandled, or moved and placed in its final position by any other method, as specified herein for Compaction of

Embankments. The Contractor may use baffles or any form of construction he may select, provided the slopes of the embankments are not steeper than indicated in the Plans. Remove all timber used for temporary bulkheads or baffles from the embankment, and fill and thoroughly compact the holes thus formed. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

b. Excess Material: Do not use excess material placed outside the prescribed slopes, below the normal high-water level, to raise the fill. Remove only the portion of this material required for dressing the slopes.

c. Protection of Openings in Embankment: Leave openings in the embankments at the bridge sites. Remove any material which invades these openings or existing channels without additional compensation to provide the same depth of channel as existed before the construction of the embankment. Do not excavate or dredge any material within 200 feet of the toe of the proposed embankment.

G. Compaction Requirements.

1. Moisture Content: Compact the materials at a moisture content such that the specified density can be attained. If necessary to attain the specified density, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate.

2. Compaction of Embankments:

a. Density requirements for earthwork and related operations associated with the construction of sidewalks and bike paths along with any drainage structures associated with these facilities; and for earthwork and related operations associated with the construction of turn lanes and other non-mainline traffic lanes, widening, roadway shoulders, concrete box culverts, retaining walls, and other drainage structures on the non-mainline pavement:

1) Reduce the minimum required density from 100% to 95% of AASHTO T99 Method C for all earthwork items requiring densities.

b. Density Requirements for earthwork and related operations associated with the construction of new mainline pavement, along with concrete box culverts, retaining walls, and other drainage structures on the mainline pavement:

1) Except for embankments constructed by the hydraulic method as specified herein, and for the material placed outside the standard minimum slope as specified herein for Placing Outside Standard Minimum Slope, and for other areas specifically excluded herein, compact each layer of the material used in the formation of embankments to a density of at least 100% of the maximum density as required by AASHTO T 99, Method C.

2) Uniformly compact each layer using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

c. Compaction Over Unstable Foundations: Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided herein under the requirements for Placing in Unstable Areas), compact the top 6 inches (compacted thickness) of such layer to the density as specified in the Acceptance Criteria herein.

d. Compaction Where Plastic Material Has Been Removed: Where unsuitable material is removed and the remaining surface is of the A 4, A 5, A 6, or A 7 Soil Groups, as determined by the Engineer, compact the surface of the excavated area by rolling with a sheepsfoot roller exerting a compression of at least 250 psi on the tamper feet, for the full width of the roadbed (subgrade and shoulders). Perform rolling before beginning any backfill, and continue until the roller feet do not penetrate the surface more than 1 inch. Do not perform such rolling where the remaining surface is below the normal water table and covered with water. Vary the procedure and equipment required for this operation at the discretion of the Engineer.

e. Compaction of Material to Be Used In Base, Pavement, or Stabilized Areas: Do not compact embankment material which will be incorporated into a pavement, base course, or stabilized subgrade, to be constructed as a part of the same Contract.

f. Compaction of Grassed Shoulder Areas: For the upper 6 inch layer of all shoulders which are to be grassed, since no specific density is required, compact only to the extent directed.

g. Compaction of Grassed Embankment Areas: For the outer layer of all embankments where plant growth will be established, do not compact. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting operations.

3. Compaction of Subgrade:

a. If the Plans do not provide for stabilizing, compact the subgrade in both cuts and fills to the density specified in the Acceptance Criteria herein. For undisturbed soils, do not apply density requirements where constructing narrow widening strips or paved shoulders 5 feet or less in width.

b. Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

c. Maintain the required density until the base or pavement is placed on the subgrade.

H. Backfilling Around Structures and Pipe.

1. Backfill Materials:

a. Backfill to the original ground surface or subgrade surface of openings made for structures, with a sufficient allowance for settlement. The Engineer may require that the material used for this backfill be obtained from a source entirely apart from the structure.

b. Do not allow heavy construction equipment to cross over culvert or storm sewer pipes until placing and compacting backfill material to the finished earthwork

grade or to an elevation at least 4 feet above the crown of the pipe.

c. Use of A-7 Material: In the backfilling of trenches, A 7 material may be used from a point 12 inches above the top of the pipe up to the elevation shown on the FDOT Design Standards as the elevation for undercutting of A 7 material.

d. Time of Placing Backfill: Do not place backfill against any masonry or concrete abutment, wingwall, or culvert until the Engineer has given permission to do so, and in no case until the masonry or concrete has been in place seven days or until the specified 28 day compressive strength occurs.

e. Placement and Compaction:

1) Place the material in horizontal layers not exceeding 6 inches compacted thickness, in depth above water level, behind abutments, wingwalls and end bents or end rest piers, and around box culverts and all structures including pipe culverts. When the backfill material is deposited in water, compact per the requirements herein for Compaction Under Wet Conditions and Backfill Under Wet Conditions.

2) The Contractor may elect to place material in thicker lifts of no more than 12 inches compacted thickness outside the soil envelope if he can demonstrate with a successful test section that density can be achieved. Notify the Engineer prior to beginning construction of a test section. Construct a test section of 500 feet in length. Perform five tests at random locations within the test section. All five tests must meet the density required by the Compaction of Embankments specified herein. Identify the test section with the compaction effort and soil classification in the Agency Logbook. In case of a change in compaction effort or soil classification, construct a new test section. When a test fails the Compaction Requirements specified herein, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time.

2. Additional Requirements for Structures Other than Pipe:

a. Density: Where the backfill material is deposited in water, obtain a 12 inch layer of comparatively dry material, thoroughly compacted by tamping, before verifying the layer and density requirements. Meet the requirements of the density Acceptance Criteria.

b. Box Culverts: For box culverts over which pavement is to be constructed, compact around the structure to an elevation not less than 12 inches above the top of the structure, using rapid-striking mechanical tampers.

c. Other Limited Areas: Compact in other limited areas using mechanical tampers or approved hand tampers, until the cover over the structure is at least 12 inches thick. When hand tampers are used, deposit the materials in layers not more than 4 inches thick using hand tampers suitable for this purpose with a face area of not more than 100 in^2. Take special precautions to prevent any wedging action against the masonry, and step or terrace the slope bounding the excavation for abutments and wingwalls if required by the Engineer.

d. Culverts and Piers: Backfill around culverts and piers on both sides simultaneously to approximately the same elevation.

e. Compaction Under Wet Conditions: Where wet conditions do not permit the use of mechanical tampers, compact using hand tampers. Use only A 3 material for the hand tamped portions of the backfill. When the backfill has reached an elevation and condition such as to make the use of the mechanical tampers practical, perform mechanical tamping in such manner and to such extent as to transfer the compaction force into the sections previously tamped by hand.

3. Additional Requirements for Pipe 15 Inches Inside Diameter or Greater:

a. General: Trenches for pipe may have up to four zones that must be backfilled.

1) Lowest Zone: The lowest zone is backfilled for deep undercuts up to within 4 inches of the bottom of the pipe.

2) Bedding Zone: The zone above the Lowest Zone is the Bedding Zone. Usually it will be the backfill which is the 4 inches of soil below the bottom of the pipe. When rock or other hard material has been removed to place the pipe, the Bedding Zone will be the 12 inches of soil below the bottom of the pipe.

3) Cover Zone: The next zone is backfill that is placed after the pipe has been laid and will be called the Cover Zone. This zone extends to 12 inches above the top of the pipe. The Cover Zone and the Bedding Zone are considered the Soil Envelope for the pipe.

4) Top Zone: The Top Zone extends from 12 inches above the top of the pipe to the base or final grade.

b. Material:

1) Lowest Zone: Backfill areas undercut below the Bedding Zone of a pipe with coarse sand, or other suitable granular material, obtained from the grading operations on the project, or a commercial material if no suitable material is available.

2) Soil Envelope: In both the Bedding Zone and the Cover Zone of the pipe, backfill with materials classified as A 1, A 2, or A 3. Material classified as A-4 may be used if the pipe is concrete pipe.

3) Top Zone: Backfill the area of the trench above the soil envelope of the pipe with materials allowed on Design Standard, Index No. 505.

c. Compaction:

1) Lowest Zone: Compact the soil in the Lowest Zone to approximately match the density of the soil in which the trench was cut.

2) Bedding Zone:

a) If the trench was not undercut below the bottom of the pipe, loosen the soil in the bottom of the trench immediately below the approximate middle third of the outside diameter of the pipe.

b) If the trench was undercut, place the bedding material and leave it in a loose condition below the middle third of the outside diameter of the pipe. Compact the outer portions to meet the density requirements of the Acceptance Criteria. Place the material in lifts no greater than 6 inches (compacted thickness).

3) Cover Zone: Place the material in 6 inches layers (compacted thickness), evenly deposited on both sides of the pipe, and compact with mechanical tampers suitable for this purpose. Hand tamp material below the pipe haunch that cannot be reached by mechanical tampers. Meet the requirements of the density Acceptance Criteria.

4) Top Zone: Place the material in layers not to exceed 12 inches in compacted thickness. Meet the requirements of the density Acceptance Criteria.

5) Backfill Under Wet Conditions:

a) Where wet conditions are such that dewatering by normal pumping methods would not be effective, the procedure outlined below may be used when specifically authorized by the Engineer in writing.

b) Granular material may be used below the elevation at which mechanical tampers would be effective, but only material classified as A 3. Place and compact the material using timbers or hand tampers until the backfill reaches an elevation such that its moisture content will permit the use of mechanical tampers. When the backfill has reached such elevation, use normally acceptable backfill material. Compact the material using mechanical tampers in such manner and to such extent as to transfer the compacting force into the material previously tamped by hand.

I. Acceptance Program.

1. Density over 105%: When a computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, perform a second density test within 5 feet. If the second density results in a value greater than 105%, investigate the compaction methods, examine the applicable Maximum Density and material description. If necessary, test an additional sample for acceptance in accordance with AASHTO T 99, Method C.

2. Maximum Density Determination: Determine the maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed below for Density Testing Requirements.

3. Density Testing Requirements: Ensure compliance, with the requirements of the Acceptance Criteria herein, by Nuclear Density testing in accordance with FDOT Florida Method FM 1 T 238. Determine the in-place moisture content for each density test. Use Florida Method FM 1 T 238, FM 5 507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D 4643 (Laboratory Determination of Moisture Content of Granular Soils By Use of a Microwave Oven) for moisture determination.

4. Soil Classification: Perform soil classification tests in accordance with AASHTO T 88. Classify soils in accordance with AASHTO M–145 in order to determine compliance with embankment utilization requirements.

5. Acceptance Criteria: Obtain a minimum density in accordance with the requirements herein for Compaction of Embankments with the following exceptions:

a. Embankment constructed by the Hydraulic Method as specified herein;

b. Material placed outside the standard minimum slope as specified in the requirements herein for Placing Outside Standard Minimum Slope;

c. Other areas specifically excluded herein.

6. Frequency: Conduct sampling and testing at a minimum frequency listed in the table below.

Test Name	Frequency
Maximum Density	One per soil type
Density	1 per 500’ RDWY (Alt Lift)
Soil Classification	One per Maximum Density

J. Maintenance and Protection of Work.

1. While construction is in progress, maintain adequate drainage for the roadbed at all times. Maintain a shoulder at least 3 feet wide adjacent to all pavement or base construction in order to provide support for the edges.

2. Maintain and protect all earthwork construction throughout the life of the Contract, and take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. Repair any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines, grades, and cross-sections shown in the Plans, until final acceptance of the Project.

K. Construction.

1. Construction Tolerances:

a. Shape the surface of the earthwork to conform to the lines, grades, and cross-sections shown in the Plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the plan cross-section with the following exceptions:

1) Shape the surface of shoulders to within 0.1 foot of the plan cross-section.

2) Shape the earthwork to match adjacent pavement, curb, sidewalk, structures, etc.

3) Shape the bottom of ditches so that the ditch impounds no water.

4) When the work does not include construction of base or pavement, shape the entire roadbed (shoulder point to shoulder point) to within 0.1 foot above or below the plan cross-section.

b. Ensure that the shoulder lines do not vary horizontally more than 0.3 foot from the true lines shown in the Plans.

2. Operations Adjacent to Pavement:

a. Carefully dress areas adjacent to pavement areas to avoid damage to such pavement.

b. Complete grassing of shoulder areas prior to placing the final wearing course. Do not manipulate any embankment material on a pavement surface.

c. When shoulder dressing is underway adjacent to a pavement lane being used to maintain traffic, exercise extreme care to avoid interference with the safe movement of traffic.

L. Method of Measurement.

1. Excavation: Excavation will be paid for by volume, in cubic yards, calculated by the method of average end areas, unless the Engineer determines that another method of calculation will provide a more accurate result. The material will be measured in its original position by field survey or by photogrammetric means as designated by the Engineer. Measurement for payment will include the excavation and disposal of unsuitable material, lateral ditch excavation, channel excavation, and excavation for structures and pipe. Payment will not be made for excavation or embankment beyond the limits shown in the Plans or authorized by the Engineer. Shrinkage or swell factors are Contractor's responsibility. When shown on the plans, factors are for informational purposes only.

2. Embankment:

a. Will be paid for in cubic yards, as accepted by Engineer, calculated by the method of average end areas, unless Engineer determines that another method of calculation will provide a more accurate result. Embankment will be measured in its final position by field survey or by photogrammetric means as designated by Engineer.

b. The measurement will include only material actually placed and compacted above the original ground line, within the lines and grades indicated in the Plans or directed by the Engineer. The length used in the computations will be the station-to-station length actually constructed. The original ground line used in the computations will be as determined prior to placing of embankment and no allowance will be made for subsidence of material below the surface of the original ground.

c. Deduct any quantity beyond the limits shown in the Plans or authorized by Engineer. No payment will be made for additional material required to obtain compaction, material placed by Contractor outside the limits of the typical cross section, or material placed to correct for settlement of the embankment. Shrinkage or swell factors are Contractor's responsibility. When shown on the plans, factors are for informational purposes only.

M. Basis of Payment.

1. When No Direct Payment is Provided:

a. When no item for Excavation or Embankment is included in the list of Contract Unit Prices, the cost of any excavation or embankment necessary for the proper construction of the Project is included in the Contract Prices for the work requiring excavation or embankment.

b. Where the Work includes structures including pipe culvert and french drain, all earthwork costs for the installation of these items are included in their associated Contract Price.

2. When Direct Payment for Excavation or Embankment is Provided in the Contract:

a. Prices and payments for the work items included in this Section will be full compensation for all work described herein, including excavating, dredging, hauling, placing, and compacting; dressing the surface of the earthwork; and maintaining and protecting the complete earthwork.

b. Excavation:

1) The total quantity of all excavation specified under this Section will be paid for at the Contract unit price for Excavation.

2) No payment will be made for the excavation of any materials which are used for purposes other than those shown in the Plans or designated by the Engineer.

3) No payment will be made for materials excavated outside the lines and grades given by the Engineer, unless specifically authorized by the Engineer.

c. Embankment:

1) The total quantity of embankment specified in this Section will be paid for at the Contract unit price for embankment.

2) No payment will be made for materials which are used for purposes other than those shown in the Plans or designated by the Engineer.

3) No payment will be made for materials placed outside the lines and grades given by the Engineer.

3. Payment will be made under:

Item No.	Description	Unit
120-1	Regular Excavation	CY
120-6	Embankment	CY

121 FLOWABLE FILL

A. Description.

1. When approved by the Engineer, furnish and place Flowable Fill per FDOT Design Standard Index 307, as an alternative to compacted soil, where compaction cannot be achieved through normal mechanical methods. Applications for this material include beddings, encasements, closures for tanks, pipes, general backfill for trenches, and other uses specified in the Plans.

B. Materials.

1. Meet the following requirements:

Fine Aggregate*	Section 902
Portland Cement (Types I, II, or III)	Section 921
Water	Section 923
Admixtures**	Section 924
Fly Ash, Slag and other Pozzolanic Materials	Section 929
*Any clean fine aggregate with 100% passing a 3/8 inch mesh sieve and not more than 15% passing a No. 200 sieve may be used. **High air generators or foaming agents may be used in lieu of conventional air entraining admixtures and may be added at jobsite and mixed in accordance with manufacturer's recommendation.	

C. Mix Design.

1. Flowable Fill is a mixture of portland cement, fly ash, fine aggregate, air entraining admixture and water. Flowable fill contains a low cementitious content for reduced strength development.
2. Submit mix designs to the Engineer for approval. The following are suggested mix guides for excavatable and non-excavatable flowable fill:

	Excavatable	Non-Excavatable
Cement Type 1	75-100 lb/yd3	75-150 lb/yd3
Fly Ash	None	150-600 lb/yd3
Water	*	*
Air**	5-35%	5-15%
28 Day Compressive Strength**	Maximum 100 psi	Minimum 125 psi**
Unit Weight (Wet)***	90-110 lb/ft3	100-125 lb/ft3
Fine Aggregate shall be proportioned to yield 1 yd3.		
*Mix designs shall produce a consistency that will result in a flowable self-leveling product at time of placement. **Minimum 300 psi where approved by the Engineer for use above pipe culverts having less than two feet of cover measured to top of rock base. ***The requirements for percent air, compressive strength and unit weight are for laboratory designs only and are not intended for jobsite acceptance requirements.		

D. Production and Placing.

1. Use flowable fill manufactured at a production facility that meets the requirements of FDOT 347-3.
2. Deliver flowable fill using concrete construction equipment. Revolution counter are waived. Place flowable fill by chute, pumping or other methods approved by the Engineer. Tremie flowable fill through water.

E. Construction Requirements.

1. Use straps, soil anchors or other approved means of restraint to ensure correct alignment when flowable fill is used as backfill for pipe or where flotation or misalignment may occur.
2. Place flowable fill to the designated fill line without vibration or other means of compaction. Do not place flowable fill during inclement weather, e.g. rain or ambient temperatures below 40ºF. Protect flowable fill from freezing for a period of 36 hours after placement.
3. Take all necessary precautions to prevent any damages caused by the hydraulic pressure of the fill during placement prior to hardening. Provide the means to confine the material within the designated space.

F. Acceptance.

1. Acceptance of flowable fill will be based on the following documentation and a minimum temperature of flowable fill at the point of delivery of 50ºF.
2. Furnish a delivery ticket to the Engineer for each load of flowable fill delivered to the worksite. Ensure that each ticket contains the following information:
   a. Project designation,
   b. Date,
   c. Time,
   d. Class and quantity of flowable fill,
   e. Actual batch proportions,
   f. Free moisture content of aggregates,
   g. Quantity of water withheld.
3. Leave the fill undisturbed until the material obtains sufficient strength. Sufficient strength, unless otherwise required by the Engineer, is 35 psi penetration resistance as measured using a hand held penetrometer in accordance with ASTM C-403. Provide a hand held penetrometer to measure the penetration resistance of the hardened flowable fill.

G. Method of Measurement

1. Flowable fill will be measured for payment in cubic yards in place, as accepted by the Engineer, when shown as a pay item in the Contract. When flowable fill is not shown as a pay item, include the cost of the work in the bid price for the appropriate item.

H. Basis of Payment.

1. When the item of flowable fill is included in the Contract, payment will be made at the Contract unit price per cubic yard. Such price and payment will include all cost of the mixture, in place and accepted, determined as specified above. No measurement and payment will be made for

material placed outside the neat line limits or outside the adjusted limits, or for unused or wasted material.

2. Payment will be made under:

   a. No separate item for Flowable Fill will be provided under this contract.

160 TYPE "B" STABILIZATION (SECTION 160)

A. Page 188, Section 160 - Stabilizing:

1. Delete the words "bearing value" or "Limerock Bearing Ratio Method" where they occur throughout this section and substitute the words "California Bearing Ratio."

2. Delete all contrary references to density requirements and substitute with the following:

   a. Compaction - The density requirements for all embankment and subgrade involved in this Section shall be a minimum ninety five (95) percent for non-roadway areas and ninety eight (98) percent for roadway areas, of maximum density as determined by AASHTO T-180.

3. Delete all mention of Bearing Value requirements entirely and substitute with the following:

   a. California Bearing Ratio Requirements: Suitability of the soil to be compacted shall be determined by the California Bearing Ratio Test as outlined in ASTM D 1883-87. Tests shall be made on each separate course, generally before the materials have been compacted. Any areas where the materials have a C.B.R. value of less than thirty (30) at ninety five (95) percent of the maximum density as determined by AASHTO T-180 shall be stabilized (or further stabilized) as specified herein.

B. Page 189, Subarticle 160-4.1- Commercial and Local Materials – Add the following:

1. Except that the limerock used for stabilization shall have a minimum of at least fifty (50) percent carbonates of calcium and magnesium.

C. Page 192, Subarticle 160-7.2.1.2- Undertolerances In…; is deleted in its entirety and replaced with the following:

1. There shall be no undertolerances in the C.B.R. permitted.

D. Page 195, Article 160-9- Basis of Payment; Is deleted in its entirety and replaced with the following:

1. Payment for stabilizing including all labor and materials shall be made at the Contract Unit Price Bid as indicated in the Bid Form of the Proposal.

2. Such price and payments shall constitute full compensation for all work specified in this Section for Type "B" Stabilization, including furnishing, spreading and mixing of all stabilizing material required and any reprocessing of stabilization areas necessary to attain the specified bearing value.

3. Payment Items: Payment will be made under:

Item No.	Description	Unit
160-4	Type "B" Stabilization (12" Thick) (CBR 30)	SY

200 LIMEROCK BASE (REV. 08-23-12)

A. Description.

1. Construct a base composed of limerock material. Perform work in accordance with an approved Quality Control Plan meeting the requirements of Article 105 of these Specifications.

B. Materials.

1. Limerock base:
   a. Meet the requirements of FDOT Section 911.
   b. Produced and obtained from an FDOT approved source listed on the current FDOT Approved Aggregate Products from Mines or Terminals Listings.
2. More than one source of base rock on a single Contract may be used provided that a single source is used throughout the entire width and depth of a section of base. Obtain approval from Engineer before placing material from more than one source. Place material to ensure total thickness single source integrity at any station location of the base.
3. Intermittent placement or “Blending” of sources is not permitted.
4. Do not use any of the existing base that is removed to construct the new base.
5. Limerock is referred to hereinafter as “rock”.

C. Equipment.

1. Use mechanical rock spreaders, equipped with a device that strikes off the rock uniformly to laying thickness, capable of producing even distribution. For crossovers, intersections and ramp areas; roadway widths of 20 feet or less; the main roadway area when forms are used and any other areas where the use of a mechanical spreader is not practicable; Contractor may spread the rock using bulldozers or blade graders.

D. Transporting Rock.

1. Transport the rock to its point of use, over rock previously placed if practicable, and dump it on the end of the preceding spread. Hauling and dumping on the subgrade will be permitted only when, in Engineer’s opinion, these operations will not be detrimental to the subgrade.

E. Spreading Rock.

1. Method of Spreading:
   a. Spread the rock uniformly.
   b. Remove all segregated areas of fine or coarse rock and replace them with properly graded rock.
2. Number of Courses:
   a. When the specified compacted thickness of the base is greater than 6 inches, construct the base in multiple courses of equal thickness. Individual courses shall not be less than 3 inches. The thickness of the first course may be increased to bear the weight of the construction equipment without disturbing the subgrade.
3. Approval requirements for thicker lifts.
   a. If, through field tests, Contractor can demonstrate that the compaction equipment can achieve density for the full depth of a thicker lift, and if approved by Engineer, the base may be constructed in successive courses of not more than 8 inches compacted thickness. Engineer will base approval on results of a test section constructed using Contractor’s specified compaction effort as follows:
      1) Notify Engineer prior to beginning construction of a test section.
      2) Construct a test section of the length of one LOT. Perform five QC density tests at random locations within the test section. At each test site, test the bottom 6 inches in addition to the entire course thickness. All QC tests and a Department Verification test must meet the density required by the Acceptance Criteria in this Article.
      3) Identify the test section with the compaction effort and thickness in the Logbook. Remove the materials above the bottom 6 inches, at no expense to the Department. The minimum density required on the thicker lift will be the average of the five results obtained on the thick lift in the passing test section.
      4) Maintain the exposed surface as close to “undisturbed” as possible; no further compaction will be permitted during the test preparation. If unable to achieve the required density, remove and replace or repair the test section to comply with the specifications at no additional expense to the Department. Contractor may elect to place material in 6 inches compacted thickness at any time.
      5) Once approved, a change in the source of base material will require the construction of a new test section. Do not change the compaction effort once the test section is approved. Engineer will periodically verify the density of the bottom 6 inches during thick lift operations.
      6) Engineer may terminate the use of thick lift construction and instruct Contractor to revert to the 6 inches maximum lift thickness if Contractor fails to achieve satisfactory results or meet applicable specifications.
4. Rock Base for Shoulder Pavement: Unless otherwise permitted, complete all rock base shoulder construction at any particular location before placing the final course of pavement on the traveled roadway. When dumping material for the construction of a rock base on the shoulders, do not allow material capable of scarring or contaminating the pavement surface on the adjacent pavement. Immediately sweep off any rock material that is deposited on the surface course.

F. Compacting and Finishing Base.

1. General:
   a. Perform work in accordance with an approved Quality Control Plan meeting the requirements of Article 105 of these Specifications and the Acceptance Criteria herein below.
   b. Construct mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts and retaining wall systems in sections of not less than 300 feet in length or for the full length of the rock base. For these, a LOT is defined as a single lift of finished embankment not to exceed 500 feet.
   c. Construct shoulder-only areas, bike/shared use paths, and sidewalks in sections of not less than 300 feet in length or for the full length of the rock base. For these, a LOT is defined as 1,000 feet or one Day's Production, whichever is greater. Shoulders compacted separately shall be considered separate LOTs.
2. Single Course Base: After spreading, scarify the entire surface. Shape the base to produce the required grade and cross-section, free of scabs and laminations, after compaction.
3. Multiple Course Base: Clean the first course of foreign material, then blade and bring it to a surface cross-section approximately parallel to the finished base. Before spreading any material for the upper courses, allow Engineer to make density tests for the lower courses to determine that the required compaction has been obtained. After spreading the material for the top course, scarify finish and shape its surface to produce the required grade and cross-section, free of scabs and laminations, after compaction.
4. Moisture Content: When the material does not have the proper moisture content to ensure the required density, wet or dry it as required. When adding water, uniformly mix it in to the full depth of the course that is being compacted. During wetting or drying operations, manipulate, as a unit, the entire width and depth of the course that is being compacted.
5. Thickness Requirements: Within the entire limits of the length and width of the finished base, meet the specified plan thickness in accordance with the Quality Control requirements specified in Depth and Surface Testing Requirements subarticle herein below.
6. Correction of Defects:
   a. Contamination of Base Material: If, at any time, the subgrade material becomes mixed with the base course material, dig out and remove the mixture, and reshape and compact the subgrade. Then replace the materials removed with clean base material, and shape and compact as specified above. Perform this work at no expense to the Department.
   b. Cracks and Checks: If cracks or checks appear in the base, either before or after priming, which, in the opinion of Engineer, would impair the structural efficiency of the base, remove the cracks or checks by rescarifying, reshaping, adding base material where necessary, and recompacting.
7. Compaction of Widening Strips:
   a. Where base construction consists of widening strips and the trench width is not sufficient to permit use of standard base compaction equipment, compact the base using vibratory compactors, trench rollers or other special equipment which will achieve the density requirements specified herein.
   b. When multiple course base construction is required, compact each course prior to spreading material for the overlaying course.

G. Acceptance Criteria:

1. Density: Within the entire limits of the width and depth of the base, obtain a minimum density in any LOT of 98% of modified Proctor maximum density as determined by FM 1-T 180, Method D. For shoulder only areas and bike/shared use paths, obtain a minimum density of 95% of the modified Proctor maximum density as determined by FM 1-T 180, Method D.
2. Frequency: Conduct QC sampling and testing at a minimum frequency listed in the table below. Engineer will perform Verification sampling and tests at a minimum frequency listed in the tables below.

Mainline Pavement Lanes, Turn Lanes, Ramps, Parking Lots, Concrete Box Culverts and Retaining Wall Systems		
Test Name	Quality Control	Verification
Modified Proctor Maximum Density	One per eight consecutive LOTs	One per 16 consecutive LOTs
Density	One per LOT	One per four LOTs
Roadway Surface	Ten per LOT	Witness
Roadway Thickness	Three per LOT	Witness

Shoulder-Only, Bike/Shared Use Path and Sidewalk Construction		
Test Name	Quality Control	Verification
Modified Proctor Maximum Density	One per two LOTs	One per four LOTs
Density	One per LOT	One per two LOTs
Surface	Five per 500 feet	Witness
Thickness	Three per 600 consecutive feet	Witness

3. Initial Equipment Comparison:
   a. Before initial production, perform a comparison test using the Quality Control, Verifications and Independent Assurance gauges. Unless Engineer instructs, do not perform the initial equipment comparison more than once per project. When comparing the computed dry density of one nuclear gauge to a second gauge, ensure that the difference between the two computed dry densities does not

exceed 2 lb/ft^3 between gauges from the same manufacturer, and 3 lb/ft^3 between gauges from different manufacturers. Repair or replace any Quality Control gauge that does not compare favorably with the Independent Assurance gauge.

b. Perform a comparison analysis between the Quality Control nuclear gauge and the Verification nuclear gauge any time a nuclear gauge or repaired nuclear gauge is first brought to the project. Repair and replace any Quality Control gauge that does not compare favorably with the Verification gauge at any time during the remainder of the project. Calibrate all Quality Control gauges annually.

4. Initial Production Lot:

a. Before construction of any other LOT, prepare a 500-foot initial control section consisting of one full LOT in accordance with the approved Quality Control Plan for the Project.

b. Notify Engineer at least 24 hours prior to production of the initial control section. Perform all QC tests required herein below. When the initial Quality Control test results pass specifications, Engineer will perform a Verification test to verify compliance with the specifications.

c. Do not begin constructing another LOT until successfully completing the initial production LOT. Engineer will notify Contractor of the initial production lot approval within three working days after receiving Contractor's Quality Control data when test results meet the following conditions:

1) Quality Control tests must meet the specifications.

2) Verification test must meet the specifications.

3) Difference between Quality Control and Verification computed Dry Density results shall meet the requirements provided above for Initial Equipment Comparison.

4) If Verification test result fails the density requirements of the Acceptance Critera, correct the areas of non-compliance. The Quality Control and Verification tests will then be repeated. Engineer will reject Contractor's Quality Control Plan after three unsuccessful Verification attempts. Submit a revised Quality Control Plan to Engineer for approval.

5. Density over 105%:

a. When a QC computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, Engineer will perform an Independent Verification density test within 5 feet.

b. If the Independent Verification density results in a value greater than 105%, Engineer will investigate the compaction methods, examine the applicable Standard Proctor Maximum Density and material description.

c. Engineer may collect and test an Independent Verification Standard Proctor Maximum Density sample for acceptance in accordance with the Acceptance Criteria.

6. Quality Control Tests:

a. Standard Proctor Maximum Density Determination: Determine the Quality Control standard Proctor maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed in the Acceptance Criteria.

b. Density Testing Requirements: Ensure compliance to the requirements of the Acceptance Criteria by Nuclear Density testing in accordance with FM 1-T 238. Determine the in-place moisture content for each density test. Use Florida Method FM 1-T 238, FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D-4643 (Laboratory Determination of Moisture Content of Granular Soils By Use of a Microwave Oven) for moisture determination.

c. Soil Classification: Perform soil classification tests on the sample collected for the Standard Proctor Maximum Density Determination above, in accordance with AASHTO T-88. Classify soils in accordance with AASHTO M–145 in order to determine compliance with embankment utilization requirements. Unless required by Engineer, do not test or classify materials for stabilized subgrade or base.

7. Department Verification:

a. Engineer will conduct a Verification test(s) in order to accept all materials and work associated with the Quality Control Tests. Engineer will verify the Quality Control results if they meet the Verification Comparison Criteria, otherwise Engineer will implement Resolution procedures.

b. Engineer will select test locations, including Station, Offset, and Lift, using a Random Number generator based on the Lots under consideration. Each Verification test evaluates all work represented by the Quality Control testing completed in those LOTs.

c. In addition to the Verification testing, Engineer may perform additional Independent Verification (IV) testing. Engineer will evaluate and act upon the IV test results in the same manner as Verification test results.

d. When the project requires less than four Quality Control tests per material type, Engineer reserves the right to accept the materials and work through visual inspection.

8. Reduced Testing Frequency: When no Resolution testing is required for 12 consecutive verified LOTs, or if required, the QC test data was upheld, reduce the QC density testing to one test every two LOTs by identifying the substantiating tests in the Density Log Book and notifying Engineer in writing prior to starting reduced frequency of testing. Generate random numbers based on the two LOTs under consideration. When Quality Control test frequency is reduced to one every two LOTs, obtain Engineer's approval to place more than one LOT over an untested LOT. Assure similar compaction efforts for the untested LOTs. If the Verification test fails, and Quality Control test data is not upheld by Resolution testing, the Quality Control testing will revert to the original frequency of one Quality Control test per LOT. Do not apply reduced testing frequency in construction of shoulder-only areas, bike/shared use paths and sidewalks.

9. Quality Control Testing:

a. Modified Proctor Maximum Density Requirement: Collect enough material to split and create three separate samples and retain two for Engineer's Verification and Resolution testing until Engineer accepts the 16 LOTs represented by the samples.

b. Depth and Surface Testing Requirements:

1) Notify Engineer a minimum of 24 hours before checking base depths and surface checking. Determine test locations including Stations and Offsets, using the Random Number generator approved by the Department. Do not perform depth and surface checks until Engineer is present to witness. Perform thickness check on the finished base or granular subbase component of a composite base. Provide traffic control, coring/boring equipment, and an operator for the coring/boring equipment. Traffic control is to be provided in accordance with the standard maintenance of traffic requirements of the Contract.

2) The thickness is considered deficient, if the measured depth is over 1/2 inch less than the specified thickness. Correct all deficient areas of the completed base by scarifying and adding additional base material. As an exception, if authorized by the Department, such areas may be left in place without correction and with no payment.

3) Check the finished surface of the base course with a template cut to the required crown and with a 15 foot straightedge laid parallel to the centerline of the road. Correct all irregularities greater than 1/4 inch to the satisfaction of the Engineer by scarifying and removing or adding rock as required, and recompact the entire area as specified hereinbefore.

c. Surface & Thickness Reduced Testing Frequency: When no Resolution testing is required for 12 consecutive verified LOTs, or if required, the QC test data was upheld, reduce the QC surface and/or thickness checks to one half the minimum requirements as stated in the frequency requirements above (e.g. Reduce frequency from ten per LOT to ten per two LOTs) by identifying the substantiating tests and notifying Engineer in writing prior to starting reduced frequency of testing. If the Verification test fails, and Quality Control test data is not upheld by Resolution testing the Quality Control testing will revert to the original frequency required by the Acceptance Criteria above. The results of the Independent Verification testing will not affect the frequency of the Quality Control testing.

10. Department Verification Tests:

a. Maximum Density: Engineer will randomly select one of the remaining two split samples and test in accordance with FM 1-T 180, Method D.

b. Thickness and Surface Testing Requirements: The Department will witness the base depth and surface checks to ensure compliance with the Depth and Surface Testing Requirements above. If the QC test results are not deficient as defined therein, the LOT or 500-foot section will be accepted. If the QC test results are deficient, resolve deficiencies in accordance with the Depth and Surface Testing Requirements. Repeat acceptance testing. Provide traffic control, coring/boring equipment, and an operator for the coring/boring equipment.

c. Verification Comparison Criteria and Resolution Procedures:

1) Modified Proctor Maximum Density: Engineer will compare the Verification test results for Maximum Density to the corresponding Quality Control test results. If the test result is within 4.5 lb/ft3 of the QC test result, the LOTs will be verified. Otherwise, Engineer will collect the Resolution split sample corresponding to the Verification sample tested. The State Materials Office or an AASHTO accredited laboratory designated by the State Materials Office will perform Resolution testing. The material will be sampled and tested in accordance with FM 1-T 180, Method D.

2) Engineer will compare the Resolution Test results with the Quality Control test results. If the Resolution Test result is within 4.5 lb/ft^3 of the corresponding Quality Control test result, Engineer will use the Quality Control test results for material acceptance purposes for each corresponding set of LOTs. If the Resolution test result is not within 4.5 lb/ft^3 of the corresponding Quality Control test, Engineer will collect the remaining Verification split sample for testing. Verification Test results will be used for material acceptance purposes for the LOTs in question.

3) Density: When a Verification or Independent Verification density test does not meet the requirements of the Acceptance Criteria, retest at a site within a 5 feet radius of the Verification test location and observe the following:

a) If the Quality Control retest meets the Acceptance Criteria and compares favorably with the Verification or Independent Verification test, Engineer will accept the LOTs in question.

b) If the Quality Control retest does not meet the Acceptance Criteria and compares favorably with the Verification or Independent Verification test, rework and retest the material in that LOT. Engineer will re-verify the LOTs in question.

c) If the Quality Control retest and the Verification or Independent Verification test do not compare favorably, complete a new Equipment-Comparison Analysis. Once acceptable comparison is achieved, retest the LOTs. Engineer will perform new verification testing. Acceptance testing will not begin on a new LOT until Contractor has a gauge that meets the comparison requirements.

4) Thickness and Surface Testing Requirements: Resolve deficiencies in accordance with the Depth and Surface Testing Requirements above.

H. Priming and Maintaining.

1. Priming: Apply the prime coat only when the base meets the specified density requirements and when the moisture content in the top half of the base does not exceed the optimum moisture of the base material. At the time of

priming, ensure that the base is firm, unyielding and in such condition that no undue distortion will occur.

2. Maintaining: Maintain the true crown and template, with no rutting or other distortion, while applying the surface course.

I. Thickness of Base.

1. Engineer will determine, as follows, the average thickness of the compacted limerock base for use in the measurements specified in the Method of Measurement:
   a. Average thickness will be calculated per typical cross-section for the entire job as a unit.
   b. Any measured thickness that is more than 1/2 inch greater than the design thickness shown on the typical cross-section in the Plans or, when no plans exist, the thickness specified in the description of the Contract pay item, will be considered as the design or specified thickness plus 1/2 inch.
   c. Any areas of existing base left in place will not be included in the calculations.

J. Method of Measurement.

1. The quantity to be paid for will be the pay area in square yards of limerock base constructed pursuant to these specifications that is measured, adjusted as specified below, and accepted by Engineer.
   a. Normal Thickness Base: The surface area of specified normal thickness base to be adjusted will be the measured quantity as specified above, omitting any areas not accepted for payment under Subarticle 200-J.2 below, and omitting areas which are to be included for payment under the Method of Measurement for Variable Thickness Base Authorized by Engineer. The pay area is determined by adjusting the aforementioned surface area using the formula below limited to a maximum for the final pay area of 105 percent of the surface area.
      1) Pay Area = Surface Area × ((Calculated Average Thickness per these Specifications)/(Plan or Specified Thickness))
   b. Variable Thickness Base Authorized by Engineer: Where the base is constructed to an authorized compacted thickness other than the normal thickness as shown on the typical section in the Plans, as specified on the Plans, the thickness specified in the description of the Contract pay item, or ordered as by Engineer for providing additional depths at culverts or bridges, or for providing transitions to connecting pavements; the volume of such authorized variable thickness compacted base will be calculated from authorized lines and grades, or by other methods selected by Engineer, and converted to equivalent square yards of normal thickness base for payment.
2. Additional areas that will not be included in the above measurements for payment include:
   a. Areas of existing base left in place;
   b. Areas where under-thickness is in excess of the allowable tolerance as specified in Subarticle 200-G.9; and
   c. Areas where the work under other Contract pay item(s) includes the construction or restoration of a limerock base.

K. Basis of Payment.

1. Price and payment will be full compensation for all the work specified in this Article, including correcting all defective surface and deficient thickness, removing cracks and checks as provided above in Crack and Checks, prime coat application meeting the requirements of FDOT Section 300, and the additional rock required for crack elimination.
2. Payment will be made under the item(s) below that are provided in the Contract having awarded Contract unit price(s):

Item No.	Description	Unit
200-1-10	Limerock Base (8" Thick, Primed)	SY

327 MILLING OF EXISTING ASPHALT PAVEMENT (REV. 05-14-12)

A. Description.

1. At the locations and to the average depth of cut specified by the Contract Documents or Work Order, remove existing asphalt concrete pavement by milling to improve the rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.
2. Take ownership of milled material.

B. Equipment.

1. Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents or Engineer. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.
2. Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.
3. To start the project, Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, Engineer will reject the milling machine for further use.
4. Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.
5. Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.
6. For complete pavement removal, Engineer may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

C. Construction.

1. General:
   a. Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.
   b. When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified by the Contract Documents or Work Order, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. Engineer may require the use of a stringline to ensure maintaining the proper alignment.
   c. Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown on the Plans or as directed by Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The Plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.
   d. Operate the milling machine to minimize the amount of dust being emitted. Engineer may require prewetting of the pavement.
   e. Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the plans.
   f. If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. Engineer will require the control the traveling speed of the milling machine to produce a texture that will provide an acceptable riding surface.
   g. Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.
   h. Sweep the milled surface with a power broom prior to placing asphalt concrete.
   i. In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.
   j. Perform the sweeping operation immediately after the milling operations or as directed by Engineer.
2. Quality Control Requirements:
   a. Furnish an electronic level with a length of 4 feet and an accuracy of plus or minus 0.1 degree approved by Engineer for the control of cross slope. Make this electronic level available at the jobsite at all times during milling operations. Calibrate and compare electronic levels at a minimum frequency of once per day before any milling operation, and at any time as directed by Engineer. If the comparison between the QC and Verification levels is within the comparison tolerance of plus or minus 0.2%, the QC level is considered to compare favorably and can be used for measurement and acceptance of cross slopes. If the levels do not compare favorably, perform a second comparison using another calibrated electronic level (PWWM or Contractor) for resolution. If this resolution level compares favorably with the QC level, the QC level is considered to be verified. If the second level does not compare favorably with the QC level, discontinue the use of the QC electronic level and

obtain another approved electronic level that meets the requirements of this specification. Regardless of the comparison analysis outcome, Contractor assumes all risk associated with placing the pavement at the correct cross slope.

b. Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Measure the cross slope of the milled surface by placing the level at the center location of a lane and perpendicular to the roadway centerline. Record all the measurements to the nearest 0.1% on an approved form and submit to Engineer for documentation.

   1) Tangent Sections: Measure the cross slope per lane at a minimum frequency of one measurement every 100 feet. Calculate the absolute deviation of cross slope at each measurement and then average the absolute deviation of ten consecutive cross slope measurements. The absolute deviation is the positive value of a deviation. When the average absolute deviation cross slope is consistently within the acceptance tolerance as shown in Table 327-1 and upon approval by Engineer, the frequency of the cross slope measurements can be reduced to one measurement every 200 feet during milling operations.

   2) Superelevated Sections: Measure the cross slope every 100 feet per lane within the length of full superelevation. Calculate the absolute deviation of each measurement and then average the absolute deviation of ten consecutive cross slope measurements. For every transition section, measure the cross slope at control points identified in the plans or, if not shown in the plans, at a control point at a location of 0.0% cross slope. For curves where the length of the fully superelevated section is less than 250 feet, measure the cross slope at the beginning point, midpoint and ending point of the fully superelevated section, calculate the absolute deviation and average. When the number of measurements is less than ten and the length of full superelevation is greater than 250 feet, average the absolute deviation of all measurements.

c. If the average absolute deviation of the cross slope measurements falls outside the acceptance tolerance shown in Table 327-1, stop the milling operations and make adjustments until the problem is resolved to the satisfaction of Engineer. If an individual cross slope deviation falls outside the acceptance tolerance as shown in Table 327-1, make corrections only in the deficient area to the satisfaction of Engineer at no cost to the Department. For pavement with multiple cuts, the deficient areas not caused by the final cut may be left in place upon approval of Engineer. All milling corrections shall be completed before placement of the asphalt course unless stated otherwise in the plans or as determined by Engineer.

d. The limits of deficient areas requiring correction may be verified and adjusted with more accurate measurement methods, including survey instruments, upon approval by Engineer at no cost to the Department. Should Contractor wish to have any corrections waived, submit a request to Engineer for approval. Engineer may waive the corrections at no reduction in payment if an engineering determination indicates that the deficiencies are sufficiently separated so as not to significantly affect the final cross slope or project grade.

e. For intersections, tapers, crossovers, transitions at the beginning and end of the project, bridge approaches and similar areas, adjust the cross slope to match the actual site conditions, or as directed by Engineer.

TABLE 327-1
Cross Slope Milling Acceptance Tolerance

Roadway Feature	Individual Absolute Deviation	Average Absolute Deviation
Tangent section (including turn lanes)	0.4%	0.2%
Superelevated curve	0.4%	0.2%
Shoulder	0.5%	0.5%

D. Milled Surface.

1. Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if Engineer determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations. Correct any unsuitable texture or profile, as determined by Engineer, at no additional expense to the Department.
2. Engineer may require remilling of any area where a surface lamination causes a non-uniform texture to occur.

E. Method of Measurement.

1. The quantity to be paid for will be the area, in square yards, over which milling is completed and accepted by Engineer.

F. Basis of Payment.

1. Price and payment will be full compensation for all work specified in this Article, including hauling off and stockpiling or otherwise disposing of the milled material.
2. Payment will be made under:

Item No.	Description	Unit
327-70-1A	Milling Existing Asphalt Pavement (1 Inch average depth)	SY

334 HOT MIX ASPHALT (REV. 01-29-15)

A. Description.

1. General.
   a. Construct plant mixed Hot Mix Asphalt (HMA) pavements based on the type of mixture specified in the Contract Documents and for the Asphalt Work Categories defined below.
   b. Meet all applicable requirements for plants, material, equipment, and construction specified herein.
2. Asphalt Work Categories.
   a. Asphalt Work Category 1: Includes the construction of shared use paths and miscellaneous asphalt.
   b. Asphalt Work Category 2: Includes the construction of new asphalt turn lanes, paved shoulders and other non-mainline pavement locations.
   c. Asphalt Work Category 3: Includes the construction of new mainline asphalt pavement l, milling and resurfacing.
3. Mix Types.
   a. Use a HMA mix that meets the requirements of this specification.
   b. In the event a mix type is not identified in the Contract Documents use, subject to Engineer's approval, the appropriate HMA mix from Table 1 below.
   c. Mixtures are based on the design traffic level of the project, expressed in 18,000 pounds Equivalent Single Axle Loads (ESAL's).
   d. A Type SP or FC mix one traffic level higher than the traffic level specified in the Contract may be substituted, at no additional cost.

Table 1
HMA Fine Mix Types

Asphalt Work Category	Mix Types	Traffic Level(2)
1	Type SP-9.5(1)	A
2	Structural Mixes: Types SP-9.5 or SP-12.5(1) Friction Mixes: Types FC-9.5 or FC-12.5(1)	B or C
3	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	C
(1) Equivalent mixes may be approved as determined by the Engineer.		
(2) Traffic Level (1x106 ESAL's): A is <0.3; B is 0.3 to <3; and C is 3 to <10		

4. Gradation Classification.
   a. Use only fine HMA mixes meeting the requirements of subarticle C.2.b below. The equivalent AASHTO nominal maximum aggregate size Superpave mixes are as follows:
      1) Type SP-9.5, FC-9.5 ……. 9.5 mm (3/8")
      2) Type SP-12.5, FC-12.5 …….. 12.5 mm (1/2")
5. Total Pavement Thickness.
   a. The total pavement thickness of the HMA Pavement will be based on a specified spread rate or plan thickness as shown in the Contract Documents. Before paving, propose a spread rate or thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan spread rate or thickness.
   b. When the total pavement thickness is specified as plan thickness, the plan thickness and individual layer thickness will be converted to spread rate using the following equation:
      1) Spread rate (lbs/yd^2) = t x G_{mm} x 43.3 where:
         a) t = Thickness (in.) (Plan thickness or individual layer thickness)
         b) G_{mm} = Maximum specific gravity from the mix design
         c) For target purposes only, spread rate calculations shall be rounded to the nearest whole number.
   c. Plan quantities are based on a G_{mm} of 2.540, corresponding to a spread rate of 110 lbs. per square yard per inch. Pay quantities will be based on the actual maximum specific gravity of the mix being used.
6. Layer Thicknesses.
   a. Structural Course Layer(s):
      1) Unless otherwise called for in the Contract Documents, the allowable layer thicknesses for fine Type SP HMA mixes are as follows:
         a) Type SP-9.5……...1 - 1 1/2 inches
         b) Type SP-12.5……...1 1/2 - 2 1/2 inches
      2) Fine Type SP-9.5 mixes are limited to the top two structural layers, two layers maximum.
   b. Friction Course Layer (FC-12.5 and FC-9.5):
      1) The thickness of the friction course layer will be the plan thickness as shown in the Contract Document or as directed in writing by the Engineer. For construction purposes, the plan thickness will be converted to spread rate as defined in Subarticle A.5 above.
7. Additional Requirements.
   a. Type SP HMA fine mixtures:
      1) When construction includes the paving of adjacent shoulders (≤5 feet wide), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless otherwise called for in the Contract Documents.
      2) For overbuild layers, use the minimum and maximum layer thicknesses as specified above unless called for differently in the Contract Documents. On variable thickness overbuild layers, the minimum allowable thickness may be reduced by 1/2 inch, and the maximum allowable thickness

may be increased by 1/2 inch, unless called for differently in the Contract Documents.

8. Weight of Mixture.

   a. The weight of the mixture shall be determined as provided in FDOT 320-2.2 (Electronic Weigh Systems).

B. Materials.

1. General Requirements: Meet the material requirements specified in FDOT Division III (Materials). Specific references as follows:

Superpave PG Asphalt Binder	FDOT 916-1
Recycling Agents	FDOT 916-2
Course Aggregate	FDOT Section 901
Fine Aggregate	FDOT Section 902

2. Asphalt Binder:

   a. For Type SP Mixtures:

      1) Unless specified elsewhere in the Contract Documents, use a PG 67-22 asphalt binder from the FDOT's Approved Products List (APL).

      2) Meet the requirements of FDOT Section 916 and Subarticle B.4 below.

   b. For Type FC Mixtures:

      1) Use an ARB-5 asphalt rubber binder meeting the requirements of FDOT Section 336 and any additional requirements or modifications specified herein for the various mixtures.

      2) If called for in the Contract Documents, use a PG 76-22 asphalt binder meeting the requirements of FDOT 916-1.

      3) For projects with a total quantity of FC-9.5 or FC-12.5 less than 500 tons, the Contractor may elect to substitute for the ARB-5, a PG 76-22 Asphalt Binder that meets the requirements of FDOT 916-1.

3. Aggregate:

   a. Provide certification from the aggregate supplier that the material meets all requirements for construction aggregates stipulated in the Contract Documents.

   b. Aggregates and sources used must be identified in the FDOT "Approved Aggregate Products from Mines or Terminals" current listings.

   c. For Type FC mixes:

      1) Use an aggregate blend that consists of crushed granite, crushed Oolitic limestone, other crushed materials (as approved by FDOT for friction courses per Rule 14-103.005, Florida Administrative Code), or a combination of the above. Crushed limestone from the Oolitic formation may be used if it contains a minimum of 12% silica material as determined by FDOT Test Method FM 5-510 and FDOT grants approval of the source prior to its use. As an exception, mixes that contain a minimum of 60% crushed granite may either contain:

         a) Up to 40% fine aggregate from other sources, or

         b) A combination of up to 15% Reclaimed Asphalt Pavement (RAP) Material and the remaining fine aggregate from other sources.

         c) A list of aggregates approved for use in friction courses may be available on the FDOT's website. The URL for obtaining this information, if available, is: https://mac.fdot.gov/smoreports

4. Reclaimed Asphalt Pavement (RAP) use in Type SP asphalt mixture:

   a. General requirements: RAP may be used as a component of the Type SP asphalt mixture, if approved by the Engineer. Usage of RAP is subject to the following requirements:

      1) Limit the amount of RAP material used in the mix to a maximum of 50 percent by weight of total aggregate.

      2) When using a PG 76-22 Asphalt Binder, limit the amount of RAP material used in the mix to a maximum of 20 percent by weight of total aggregate.

      3) Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.

      4) Provide RAP material having a minimum average asphalt content of 4.0 percent by weight of total mix. The Engineer may sample the stockpile to verify that this requirement is met.

      5) Use a grizzly or grid over the RAP cold bin, in-line roller crusher, screen, or other suitable means to prevent oversized RAP material from showing up in the completed recycle mixture. If oversized RAP material appears in the completed recycle mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.

   b. Material Characterization: Assume responsibility for establishing the asphalt binder content, gradation, viscosity and bulk specific gravity (Gsb) of the RAP material based on a representative sampling of the material.

   c. Asphalt Binder for Mixes with RAP:

      1) Select the appropriate asphalt binder grade based on Table 2 below.

      2) The Engineer reserves the right to change the asphalt binder type and grade at design based on the characteristics of the RAP asphalt binder, and reserves the right to make changes during production.

      3) Maintain the viscosity of the recycled mixture within the range of 5,000 to 15,000 poises.

Table 2
Asphalt Binder Grade for Mixes Containing RAP

Percent RAP	Asphalt Binder Grade
<20	PG 67-22

20 – 29	PG 64-22
≥ 30	Recycling Agent

C. Composition of Mixture.

1. General: Compose the asphalt mixture using a combination of aggregates, mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

2. Mix Design:

   a. General: Design the asphalt mixture in accordance with AASHTO R35 04, except as noted herein. Submit the proposed mix design with supporting test data indicating compliance with all mix design criteria to the Engineer. Prior to the production of any asphalt mixture, obtain the Engineer's conditional approval of the mix design. If required by the Engineer, send representative samples of all component materials, including asphalt binder to a laboratory designated by the Engineer for verification. The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and at his discretion, the Engineer may no longer allow the use of the mix design.

   b. Mixture Gradation Requirements: Combine the aggregates in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements at design as defined in AASHTO M323 04, Table 3. Aggregates from various sources may be combined.

      1) Mixture Gradation Classification: Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M323 04, Table 3, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M323 04, Table 4. Fine mixes are defined as having a gradation that passes above or through the primary control sieve control point. Use only fine mixes.

   c. Gyratory Compaction: Compact the design mixture in accordance with AASHTO T312 04. Use the number of gyrations as defined in AASHTO R35 04, Table 1.

   d. Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M323 04, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M323 04, Table 6.

   e. Moisture Susceptibility:

      1) Test 4 inch specimens in accordance with FM 1 T 283. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi. If necessary, add a liquid anti-stripping agent from the FDOT's Qualified Products List, or hydrated lime in order to meet these criteria.

      2) In lieu of moisture susceptibility testing, add a liquid anti-stripping agent from the FDOT's Qualified Products List. Add 0.5% liquid anti-stripping agent by weight of binder.

   f. Additional Information: In addition to the requirements listed above, provide the following information on each mix design:

      1) The design traffic level and the design number of gyrations (N_{design}).

      2) The source and description of the materials to be used.

      3) The FDOT source number and the FDOT product code of the aggregate components furnished from an FDOT approved source.

      4) The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.

      5) A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.

      6) The bulk specific gravity (G_{sb}) value for each individual aggregate and RAP component.

      7) A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1 percent.

      8) A target temperature at which the mixture is to be discharged from the plant and a target roadway temperature. Do not exceed a target temperature of 330°F for modified asphalts and 315°F for unmodified asphalts.

      9) Provide the physical properties achieved at four different asphalt binder contents. One shall be at the optimum asphalt content, and must conform to all specified physical requirements.

      10) The name of the Mix Designer.

      11) The ignition oven calibration factor.

D. Contractor Quality Control.

1. Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times. Perform any tests necessary at the plant and Project site for quality control purposes.

2. Acceptance of any automatic delivery ticket printout, electronic weight delivery ticket, or other evidence of weight of the materials or approval of any particular type of materials or production methods will not constitute agreement by the County that such matters are in accordance with the Contract Documents and it shall be the Contractor's responsibility to ensure that the materials

delivered to the project are in accordance with the Contract Documents.

E. General Construction Requirements.

1. Weather Limitations: Do not transport asphalt mix from the plant to the roadway unless all weather conditions are suitable for the laying operations.
2. Limitations of Laying Operations:
   a. General: Spread the mixture only when the surface upon which it is to be placed has been previously prepared, is intact, firm, and properly cured, and is dry.
   b. Air Temperature: Spread the mixture only when the air temperature in the shade and away from artificial heat is at least 40ºF for layers greater than 1 inch (100 lb/yd2) in thickness and at least 45ºF for layers 1 inch (100 lb/yd2) or less in thickness (this includes leveling courses). The minimum temperature requirement for leveling courses with a spread rate of 50 lb/yd2 or less is 50ºF.
3. Mix Temperature: Heat and combine the ingredients of the mix in such a manner as to produce a mixture with a temperature at the plant and at the roadway, within a range of ±30ºF from the target temperature as shown on the mix design. Reject all loads outside of this range.
4. Transportation of the Mixture: Transport the mixture in vehicles previously cleaned of all foreign material. After cleaning, thinly coat the inside surface of the truck bodies with soapy water or an asphalt release agent as needed to prevent the mixture from adhering to the beds. Do not allow excess liquid to pond in the truck body. Do not use diesel fuel or any other hazardous or environmentally detrimental material as a coating for the inside surface of the truck body. Cover each load at all times.
5. Preparation of Surfaces Prior to Paving:
   a. Cleaning: Clean the surface of all loose and deleterious material by the use of power brooms or blowers, supplemented by hand brooming where necessary.
   b. Patching and Leveling Courses: Where the HMA is to be placed on an existing pavement which is irregular, wherever the plans indicate, or if directed by the Engineer, bring the existing surface to proper grade and cross-section by the application of patching or leveling courses.
   c. Application over Surface Treatment: Where an asphalt mix is to be placed over a surface treatment, sweep and dispose of all loose material from the paving area.
   d. Tack Coat: Apply a tack coat on existing pavement structures that are to be overlaid with an asphalt mix and between successive layers of all asphalt mixes, unless directed otherwise by the Engineer. Use a tack coat product meeting FDOT Section 300 (Prime and Tack Coats for Base Courses). Use an emulsified tack coat spread rate of 0.02 to 0.08 gal/sy or as specified by the Engineer.
6. Paving:
   a. Alignment of Edges: With the exception of pavements placed adjacent to curb and gutter or other true edges, place all pavements by the stringline method to obtain an accurate, uniform alignment of the pavement edge. Control the unsupported pavement edge to ensure that it will not deviate more than ± 1.5 inches from the stringline.
   b. Rain and Surface Conditions: Immediately cease transportation of asphalt mixtures from the plant when rain begins at the roadway. Do not place asphalt mixtures while rain is falling, or when there is water on the surface to be covered. Once the rain has stopped and water has been removed from the tacked surface to the satisfaction of the Engineer and the temperature of the mixture caught in transit still meets the requirements as specified in subarticle E.3 above, the Contractor may then place the mixture caught in transit.
   c. Checking Depth of Layer: Check the depth of each layer at frequent intervals, and make adjustments when the thickness exceeds the allowable tolerance of 1/4". Address any material outside of this tolerance per the direction of the Engineer. When making an adjustment, allow the paving machine to travel a minimum distance of 32 feet to stabilize before the second check is made to determine the effects of the adjustment.
   d. Hand Spreading: In limited areas where the use of the spreader is impossible or impracticable, spread and finish the mixture by hand.
   e. Spreading and Finishing: Upon arrival, dump the mixture in the approved paver, and immediately spread and strike-off the mixture to the full width required, and to such loose depth for each course that, when the work is completed, the required weight of mixture per square yard, or the specified thickness, is secured. Carry a uniform amount of mixture ahead of the screed at all times.
   f. Thickness of Layers: Construct each course of Type SP mixtures in layers of thickness pursuant to subarticle A.6.a above.
7. Leveling Courses:
   a. Patching Depressions: Before spreading any leveling course, fill all depressions in the existing surface more than 1 inch deep by spot patching with leveling course mixture, and compact thoroughly.
   b. Spreading Leveling Courses: Place all courses of leveling with an asphalt paver or by the use of two motor graders, one being equipped with a spreader box. Other types of leveling devices may be used upon approval by the Engineer.
   c. Rate of Application: When using Type SP-9.5 (fine graded) for leveling, do not allow the average spread of a layer to be less than 50 lb/yd2 or more than 75 lb/yd2. The quantity of mix for leveling shown in the plans represents the average for the entire project; however, the Contractor may vary the rate of application throughout the project as directed by the Engineer. When leveling in connection with base widening, the Engineer may require placing all the leveling mix prior to the widening operation.
8. Compaction:
   a. For each paving or leveling train in operation, furnish a separate set of rollers, with their operators.

b. When density testing for acceptance is required (Asphalt Work Category 3), select equipment, sequence, and coverage of rolling to meet the specified density requirement. Regardless of the rolling procedure used, complete the final rolling before the surface temperature of the pavement drops to the extent that effective compaction may not be achieved or the rollers begin to damage the pavement.

c. When density testing for acceptance is not required (Asphalt Work Categories 1 and 2), use a rolling pattern approved by the Engineer.

d. Use hand tamps or other satisfactory means to compact areas which are inaccessible to a roller, such as areas adjacent to curbs, headers, gutters, bridges, manholes, etc.

9. Joints.

a. Transverse Joints: Construct smooth transverse joints, which are within 3/16 inch of a true longitudinal profile when measured with a 15 foot manual straightedge.

b. Longitudinal Joints: For all layers of pavement except the leveling course, place each layer so that longitudinal construction joints are offset 6 to 12 inches laterally between successive layers. Do not construct longitudinal joints in the wheelpaths. The Engineer may waive these requirement where offsetting is not feasible due to the sequence of construction.

10. Surface Requirements: Construct a smooth pavement with good surface texture and the proper cross-slope.

a. Texture of the Finished Surface of Paving Layers: Produce a finished surface of uniform texture and compaction with no pulled, torn, raveled, crushed or loosened portions and free of segregation, bleeding, flushing, sand streaks, sand spots, or ripples. Correct any area of the surface that does not meet the foregoing requirements in accordance with the requirements below for Correcting Unacceptable Pavement.

b. Cross Slope: Construct a pavement surface with cross slopes in compliance with the requirements of the Contract Documents.

c. Pavement Smoothness: Construct a smooth pavement meeting the requirements of this Specification. Furnish a 15 foot manual and a 15 foot rolling straightedge meeting the requirements of FM 5-509. Make them available at the job site at all times during paving operations for Asphalt Work Category 3 and make them available upon request of the Engineer for Asphalt Work Categories 1 and 2.

1) Asphalt Work Category 3:

a) Acceptance Testing: Using a rolling straightedge, test the final Type SP structural layer and the Type FC layer, where a friction course is called for in the Contract Documents. Test all pavement lanes where the width is constant using a rolling straightedge and document all deficiencies on a form approved by the Engineer. Notify the Engineer of the location and time of all straightedge testing a minimum of 48 hours before beginning testing.

b) Rolling Straightedge Exceptions: Testing with the rolling straightedge will not be required in the following areas: intersections, tapers, crossovers, parking lots and similar areas. In addition, testing with the rolling straightedge will not be performed on the following areas when they are less than 50 feet in length: turn lanes, acceleration/deceleration lanes and side streets. However, correct any individual surface irregularity in these areas that deviates from the plan grade in excess of 3/8 inch as determined by a 15 foot manual straightedge, and that the Engineer deems to be objectionable, in accordance with the requirement below for Correcting Unacceptable Pavement. The Engineer may waive or modify straightedging requirements if no milling, leveling, overbuild or underlying structural layer was placed on the project and the underlying layer was determined to be exceptionally irregular.

c) Final Type SP Structural Layer: Straightedge the final Type SP structural layer with a rolling straightedge behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 3/16 inch in accordance with the requirements below for Correcting Unacceptable Pavement (structural layer). If the Type SP layer is to be the final surface, corrections may be waived by the Engineer. Retest the corrected areas.

d) Friction Course Layer: Where a friction course is called for in the Contract, at the completion of all paving operations, straightedge the friction course either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 3/16 inch in accordance with the requirements below for Correcting Unacceptable Pavement (friction course), unless waived by the Engineer. Retest all corrected areas.

2) Asphalt Work Categories 1 and 2: If required by the Engineer, straightedge the final structural layer with a rolling straightedge, either behind the final roller of the paving train or as a separate operation. Correct all deficiencies in excess of 5/16 inch in accordance with the requirements below for Correcting Unacceptable Pavement (structural layer). Retest all corrected areas. If the Engineer determines that the deficiencies on a bicycle path are due to field geometrical conditions, the Engineer will waive corrections with no deduction to the pay item quantity.

d. Correcting Unacceptable Pavement:

1) General: Correct all areas of unacceptable pavement at no additional cost.

2) Structural Layers: Correct deficiencies in the Type SP structural layer by one of the following methods:

a) Remove and replace the full depth of the layer, extending a minimum of 50 feet on both sides of the defective area for the full width of the paving lane.

b) Mill the pavement surface to a depth and width that is adequate to remove the deficiency. (This option only applies if the structural layer is not the final surface layer.)

3) Friction Course: Correct deficiencies in the friction course layer by removing and replacing the full depth of the layer, extending a minimum of 50 feet on both sides of the defective area for the full width of the paving lane.

F. Acceptance of the Mixture.

1. General: The asphalt mixture will be accepted based on the Asphalt Work Category as defined below:

   a. Asphalt Work Category 1 – Certification by the Contractor as defined below.

   b. Asphalt Work Category 2 – Certification and quality control testing by the Contractor as defined below.

   c. Asphalt Work Category 3 – Quality control testing by the Contractor and acceptance testing by the Engineer as defined below.

2. Certification by the Contractor: On Asphalt Work Category 1 construction, the Engineer will accept the mix on the basis of visual inspection. Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project was in substantial compliance with the Specifications. The Engineer may run independent tests to determine the acceptability of the material.

3. Certification and Quality Control Testing by the Contractor: On Asphalt Work Category 2 construction, submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project was in substantial compliance with the Specifications, along with supporting test data documenting all quality control testing as described in the Quality Control Sampling and Testing Requirements (subarticle F.3.a. below). If so required by the Contract, utilize an Independent Laboratory as approved by the Engineer for the quality control testing. The mix will also require visual acceptance by the Engineer. In addition, the Engineer may run independent tests to determine the acceptability of the material.

   a. Quality Control Sampling and Testing Requirements:

      1) Perform quality control testing at a frequency of once per day. Obtain the samples in accordance with FDOT Method FM 1 T 168.

      2) Test the mixture at the plant for gradation (P-8 and P-200) and asphalt binder content (Pb).

      3) Test the mixture on the roadway for density using six-inch diameter roadway cores obtained at a frequency of three cores per day.

      4) Determine the asphalt content of the mixture in accordance with FM 5 563.

      5) Determine the gradation of the recovered aggregate in accordance with FM 1 T 030.

      6) Determine the roadway density in accordance with FM 1 T 166. The minimum roadway density will be based on the percent of the maximum specific gravity (Gmm) from the approved mix design. If the Contractor or Engineer suspects that the mix design Gmm is no longer representative of the asphalt mixture being produced, then a new Gmm value will be determined from plant-produced mix with the approval of the Engineer. Roadway density testing will not be required in certain situations as described in the Acceptance Testing Exceptions (subarticle F.4.a below).

      7) Assure that the asphalt content, gradation and density test results meet the criteria in Table 3 below.

Table 3
Quality Control and Acceptance Values

Characteristic	Tolerance
Asphalt Binder Content (percent)	Target ± 0.55
Passing No. 8 Sieve (percent)	Target ± 6.00
Passing No. 200 Sieve (percent)	Target ± 2.00
Roadway Density (average of three cores)	91.5% G_{mm}
Roadway Density (any single core)	90.0 % G_{mm}

4. Quality Control Testing by the Contractor and Acceptance Testing by the Engineer: On Asphalt Work Category 3, perform quality control testing as described in the Quality Control Sampling and Testing Requirements (subarticle F.3.a above). In addition, the Engineer will accept the mixture at the plant with respect to gradation (P-8 and P-200) and asphalt binder content (Pb). The mixture will be accepted on the roadway with respect to density. The Engineer will sample and test the material as described in subarticle F.3.a above. The Engineer will randomly obtain at least one set of samples per day. Assure that the asphalt content, gradation and density test results meet the criteria in Table 3 above. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer.

   a. Acceptance Testing Exceptions:

      1) When the total quantity of any mix type in the Project is less than 500 tons, or on Asphalt Work Category 1 construction, the Engineer will accept the mix on the basis of visual inspection. The Engineer may run independent tests to determine the acceptability of the material.

      2) Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, variable thickness overbuild courses, leveling courses, first lift of asphalt base course placed on subgrade, miscellaneous asphalt pavement, or any course with a specified thickness less than 1 inch or a specified spread rate less than 100 lbs/sy. In addition, density testing for acceptance will not be performed on the following areas when they are less than 1,000 feet in length: crossovers, intersections, turning lanes, acceleration lanes, deceleration lanes, or ramps.

Compact these courses in accordance with a standard rolling procedure approved by the Engineer. In the event that the rolling procedure deviates from the approved procedure, placement of the mix will be stopped.

G. Method of Measurement.

1. For the work specified under this Article, the quantity to be paid for will be the weight of the mixture, in tons.
2. The bid price for the asphalt mix will include the cost of the liquid asphalt or the asphalt recycling agent and the tack coat application as specified herein.

H. Basis of Payment.

1. General: Price and payment will be full compensation for all the work specified under this Article.

Item No.	Description	Unit
334-2-13-2	Hot Mix Asphalt, Traffic C, SP-12.5	Ton
337-8-42	Hot Mix Asphalt Friction Course, Traffic C, FC-9.5, PG 76-22	Ton

335 DRIVEWAY TRANSITIONS (REV. 06-23-11)

A. Description

1. General: Where required by the Contract Documents or directed by the Engineer, transition the driveway to meet the elevation of a newly constructed and abutting sidewalk or roadway.

B. Materials

1. Meet the following requirements:
   a. Limerock (FDOT Section 911)
   b. Concrete (FDOT Section 347; minimum compressive strength of 3,000 p.s.i. at 28 days)
   c. Hot Mix Asphalt; refer to HMA Specifications in these Contract Documents.
   d. Expansion Joints (FDOT 932-1.1)

C. Preparation and Construction

1. Full-depth saw cut a neat line along the entire width of the driveway where it abuts the new sidewalk or roadway and remove existing concrete or asphalt to provide for a maximum transition slope of 2” per foot.
2. Concrete Driveways:
   a. Remove or add any additional subgrade material necessary to meet final elevation requirements.
   b. Add the necessary amount of limerock to rework the rock base and compact to a minimum of 95% of AASHTO T 99 density.
   c. Construct a 6” thick concrete pavement.
   d. Form a ½ inch expansion joint between the sidewalk and the driveway or at fixed objects and driveway intersections.
   e. Finish surface of concrete to match existing driveway.
3. Asphalt Driveways:
   a. Remove or add any additional subgrade necessary to meet final elevation for a new 6” thick limerock base and a 1” thick Hot Mix Asphalt (HMA) pavement layer.
   b. Provide and compact new limerock base to obtain a minimum density of 98% of modified Proctor maximum density as determined by FM 1-T 180, Method D.
   c. Construct a minimum 1” thick HMA pavement layer (Type SP-9.5).
4. Dispose of all excess materials and debris properly.

D. Method of Measurement

1. The quantity to be paid for will be the area, in square yards, of approved HMA or concrete pavement transition, measured and accepted by the Engineer.

E. Basis of Payment

1. No separate pay item(s) for Driveway Transition will be provided under this contract.

339 MISCELLANEOUS ASPHALT PAVEMENT (REV. 08-25-11)

A. Description.

1. Construct asphalt pavement in areas where vehicular traffic does not travel, such as pavement under guardrail, bicycle paths, median pavement, sidewalks, etc.
2. Chemically treat the underlying soil to prevent plant growth.

B. Materials.

1. Use a plant-mixed hot bituminous mixture, other than an open-graded friction course (FC-5), meeting the requirements of a mix design approved by Engineer. For bicycle paths, use a mixture that produces a finished pavement which will not distort or mar under bicycle or commercial riding mower wheel loads.

C. Foundation.

1. Shape the soil in areas where pavement is to be constructed to a surface true to the lines, grades and typical cross-sections shown in the Plans.
2. Compact the soil to a firm unyielding state.

D. Soil Treatment.

1. Immediately before placing the pavement, uniformly apply a pre-emergent herbicide to the foundation soil meeting the following requirements:

a. Use only products approved by the Florida Department of Agriculture for the State of Florida found on www.flpesticide.us/ website.

b. Ensure that the herbicide carries an approved label for use under paved surfaces, and that herbicide is applied in accordance with directions on the label.

c. Do not use any products in the sulfonylurea family of chemicals.

2. Herbicide application by broadcast spraying is not allowed.

3. Prevent damage to any adjacent vegetation during herbicide application. Replace, at no expense to the Department, any plants damaged as the result of soil treatment outside designated areas.

4. Ensure that all employees applying insecticides and herbicides possess a current Florida Department of Agriculture Commercial Applicator license with the categories of licensure in Right-of-Way Pest Control and Aquatic Pest Control. Ensure that employees who work with herbicides comply with all applicable Federal, State, and local regulations. If application of synthetic organo-auxin herbicides is necessary, meet the requirements of Chapter 5E-2, Florida Administrative Code.

E. Placing Mixture.

1. Uniformly place the hot bituminous mixture by machine or hand methods at the rate of spread or dimensions indicated in the plans or as otherwise directed by Engineer.

2. If posts are to be constructed within the pavement area, the Contractor may cut holes for installation through the completed pavement.

3. After completing installation of posts and compaction of the backfill material, patch the area around each post with fresh hot bituminous mixture.

4. If directed by the Engineer, place miscellaneous asphalt pavement prior to placement of the final surface course.

F. Compacting Mixture.

1. Uniformly compact the hot bituminous mixture with lightweight rollers or vibratory compactors as directed by Engineer. The Contractor may use hand tamps for compaction in areas which are inaccessible to other compaction equipment.

G. Surface Requirements.

1. Provide a finished surface that is reasonably smooth, of uniform texture, and shaped so as to drain without ponding of water.

2. Upon completion of the pavement, shape the surface of the adjacent earth to match the pavement edges.

H. Method of Measurement.

1. The quantity to be paid for will be the weight, in tons, determined by an electronic weighing system as described in FDOT 320-2.2. The pay quantity will be based on the average spread rate of the area shown on the Plans or authorized by the Engineer.

2. For calculation, a weight of 100 lbs/yd2 per inch thickness of asphalt will be used.

3. Prepare a Certification of Quantities for the miscellaneous asphalt pavement pay item, based on the quantity of asphalt accepted by the Engineer. The certification must be provided monthly with each payment request and include the Contract Number, Certification Number, Certification Date, period represented by Certification, and the tons of miscellaneous asphalt pavement for the period.

I. Basis of Payment.

1. Price and payment will be full compensation for all work specified in this Article, including shaping and compacting the foundation, soil sterilization treatment, furnishing of the bituminous material used in the mixture, and shaping of adjacent earth surfaces.

2. Payment will be made under:

Item No.	Description	Unit
339-1	Miscellaneous Asphalt Pavement	Ton

344 PORTLAND CEMENT CONCRETE (REV. 10-26-11)

A. Description.

1. Use concrete composed of a mixture of Portland cement, aggregates, and water, with or without chemical or mineral admixtures. Construct Concrete based on the type of work as described in the Contract Documents and the Concrete Work Categories below.

a. Concrete Work Category 1: Includes the construction of sidewalks, curb and gutter, ditch and slope pavement, or other non-reinforced cast-in- place or precast elements.

b. Concrete Work Category 2: Includes the construction of precast concrete including concrete barriers, traffic railing barriers, parapets, sound barriers, inlets, manholes, junction boxes, pipe culverts, storm sewers, box culverts, prestressed concrete poles, concrete bases for light poles, highway sign foundations, retaining wall systems, traffic separators or other structural precast elements.

c. Concrete Work Category 3: Includes the work associated with the placement and/or construction of structural cast-in-place concrete requiring a class of concrete specified in FDOT Section 346.

B. Materials.

1. General: Certify that all materials used in concrete meet the following requirements:

Portland Cement:	FDOT Section 921 except Portland cements meeting the requirements of AASHTO M-

	85 or ASTM C-150 are allowed for nonstructural concrete.
Coarse Aggregate:	FDOT Section 901
Fine Aggregate:	FDOT Section 902
Water:	FDOT Section 923
Chemical Admixtures:	FDOT Section 924
Pozzolans and Slag:	FDOT Section 929

2. Admixture Requirements: Chemical admixtures may be added at the dosage rates recommended by the manufacturer.

3. Material Storage: Use a concrete production facility that meets the following requirements.

   a. Cementitious Materials Storage: Provide a separate and clearly labeled weatherproof facility to store each brand or type of cementitious material without mixing or contamination. Different brands of cement, cement of the same brand from different facilities, or different types of cement must be stored separately and must not be mixed. Provide a suitable, safe and convenient means of collecting cementitious material samples at each storage facility.

   b. Aggregate Storage: Provide suitable bins, stockpiles or silos to store and identify aggregates without mixing, segregating or contaminating different grades or types of materials. Identify aggregate type/gradation. Handle the aggregates in a manner to minimize segregation and meet the specification requirements when recovered from storage. Continuously and uniformly sprinkle coarse aggregate with water, for 24 hours preceding introduction into the concrete mix. Timers may be used to facilitate the sprinkling of aggregate stockpiles using an alternating on/off method. However, in no event shall the top surface of the stockpile be permitted to become dry prior to batching of concrete. Moisture probes may be used to determine the moisture content of the aggregate. Ensure that the accuracy of the probe is certified annually and verified weekly. Maintain stored aggregates in a well-drained condition to minimize free water content. Provide access for the Engineer to sample the aggregates from the recovery side of the storage facility.

C. Production, Mixing and Delivery of Concrete.

1. Concrete Production Requirements:

   a. Use concrete production facilities certified by the National Ready-Mixed Concrete Association (NRMCA) and approved by the FDOT.

   b. Produce concrete utilizing equipment that is in good operating condition and operated in a manner to ensure a consistent product. When moisture probes are not used, ensure that the concrete production facility determines the free moisture for the coarse and fine aggregates within two hours prior to each day's batching. On concrete placements expected to exceed three hours, perform an additional moisture test approximately half way through the batching operations and adjust batch proportions accordingly.

   c. Ensure that the calibration of the measuring devices of the concrete production facilities meets the requirements of Chapter 531 of the Florida Statutes, and are in accordance with Chapter 9.2 of the FDOT Materials Manual. At least quarterly, ensure that all scales, meters and other weighing or measuring devices are checked for accuracy by a qualified representative of a scale company registered with the Bureau of Weights and Measures of the Florida Department of Agriculture. As an alternative, the producer may have this frequency identified in an FDOT approved QC plan. The accuracy of admixture measuring dispensers will be certified annually by the admixture supplier.

   d. When Volumetric Mixers are used for Category I applications, deliver concrete in accordance with the requirements of Volumetric Mixer Manufacturers Bureau (VMMB) and ensure that the vehicle has a VMMB registered rating plate.

2. Classes of Concrete: Classes of concrete to be used on the Project will be as specified in the Contract Documents or FDOT Section 346 when applicable.

3. Contractors Quality Control: Provide Engineer for approval a Quality Control (QC) plan to identity to the Department how quality will be ensured at the project site. During random inspections Engineer will use this document to verify that the construction of the Project is in agreement with the QC plan and the Contract Documents.

4. Concrete Mix Design:

   a. Before producing any concrete, submit the proposed mix design to Engineer on a form provided by the Department. Otherwise, the Department may accept applicable mix designs previously described in an FDOT approved QC plan. In any event, use only concrete mix designs having prior approval of the Engineer.

   b. Materials may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required original approved design mix data and batch adjustments and substituted material on a Department approved concrete delivery ticket. Engineer may disqualify any concrete production facility for non-compliance with specification requirements.

5. Delivery:

   a. For cast-in-place applications, the maximum allowable mixing and agitation time of concrete is 90 minutes.

   b. Furnish a delivery ticket on a form approved by the Department with each batch of concrete before unloading at the placement site. The delivery ticket shall be printed. Record material quantities incorporated into the mix on the delivery ticket. Ensure that the Batcher responsible for producing the concrete certifies that the batch was produced in accordance with these Specifications and signs the delivery ticket. Contractor must sign the delivery ticket certifying that the concrete was batched, delivered and placed in accordance with these Specifications.

c. The Contractor is responsible for rejecting loads of concrete that do not meet the plastic properties of the approved mix design or the minimum compressive strength requirements.

d. At the sole option of the Department, the Engineer may accept concrete at a reduced pay when it is determined that the concrete will serve its intended function.

6. Placing Concrete:

a. Concreting in Cold Weather:

1) Do not place concrete when the temperature of the concrete at placement is below 45°F.

2) Meet the air temperature requirements for mixing and placing concrete in cold weather as specified in FDOT Section 346. During the curing period, if NOAA predicts the ambient temperature to fall below 35°F for 12 hours or more or to fall below 30°F for more than 4 hours, enclose the structure in such a way that the concrete and air within the enclosure can be kept above 60°F for a period of 3 days after placing the concrete or until the concrete reaches a minimum compressive strength of 1,500 psi.

3) Assume all risks connected with the placing and curing of concrete. Although Engineer may give permission to place concrete, Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the County.

b. Concreting in Hot Weather:

1) Meet the temperature requirements and special measures for mixing and placing concrete in hot weather as specified in FDOT Section 346.

2) When the temperature of the concrete as placed exceeds 75°F, incorporate in the concrete mix a water-reducing retarder or water reducer if allowed by FDOT Section 346.

c. Spray reinforcing steel and metal forms with cool fresh water just prior to placing the concrete in a method approved by the Engineer.

d. Assume all risks connected with the placing and curing of concrete. Although Engineer may give permission to place concrete, Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the County.

7. Mixers: Ensure that mixers are capable of combining the components of concrete into thoroughly mixed and uniform mass, free from balls or lumps of cementitious materials, and capable of discharging the concrete uniformly. Operate concrete mixers at speeds per the manufacturer's design. Do not exceed the manufacturer's rated capacity for the volume of mixed concrete in the mixer, mixing drum, or container.

8. Small Quantities of Concrete: With approval of the Engineer, small quantities of concrete, less than 3 yd3 placed in one day and less than 0.5 yd3 placed in a single placement may be accepted using a pre-bagged mixture. The Department may verify that the pre-bagged mixture is prepared in accordance with the manufacturer's recommendations and will meet the requirements of this Specification.

9. Sampling and Testing:

a. Category 1: Engineer may sample and test the concrete at his discretion to verify its quality. The minimum 28 day compressive strength requirement for this concrete is 3,000 psi.

b. Category 2: Provide a statement of certification from the manufacturer of the precast element that the element meets the quality control and inspection testing requirements of the Contract Documents.

c. Category 3: The Department will randomly select a sample from each 200 yd3 or one day's production to determine plastic properties and to make three 4 x 8 inch cylinders for testing by the Department at 28 days to ensure that the design compressive strength has been met. The Department may, at its discretion, test additional concrete samples to ensure compliance with the Specifications.

10. Records: Maintain the following records for review for at least 3 years after final acceptance of the Project:

a. Approved concrete mix designs.

b. Materials source (delivery tickets, certifications, certified mill test reports).

c. A copy of the scale company or testing agency report showing the observed deviations from quantities checked during calibration of the scales and meters.

d. A copy of the documentation certifying the admixture weighing/measuring devices.

e. For non structural concrete, the Department will accept recent NRMCA, VMMB or FDOT inspection records certifying the plant or truck can produce concrete. In addition, documentation will be available at the plant or in the truck showing that action has been taken to correct deficiencies noted during the inspections.

D. Acceptance of the Work.

1. Category 1 Work: Category 1 work will be accepted based upon compliance with Production, Mixing and Delivery Requirements specified in herein.

2. Category 2 Work: Precast elements will be accepted based upon certification from the Contractor that the elements were produced by a production facility on the FDOT's current approved plant list. In addition, the producers QC stamp will be displayed on the element.

3. Category 3 Work: Category 3 work shall be in full compliance with this Specification, and with current FDOT Specifications, FDOT Section 346 and associated Contractor Quality Control (QC) specifications governing cast-in-place concrete. In addition, a Delivery Ticket as described in Subarticle 344-B.5 will be required for acceptance of the material at the Project site.

E. Method of Measurement.

1. The quantities to be paid for will be the concrete items having awarded Contract Prices that are completed and accepted by Engineer.

F. Basis of Payment.

1. Prices and payments will be full compensation for all work and materials specified in this Article and the Articles applicable to the items of work having awarded Contract Prices measured and approved for payment.

425 INLETS, MANHOLES AND JUNCTION BOXES (SECTION 425)

A. Page 417, Subarticle 425-6.6 - Placing Pipe; The third sentence of this sub-article is modified to read:

1. When catch basins are called for, the inlet and outlet pipe may extend into the structure not to exceed 4 inches beyond the interior face of the wall.

B. Page 417, Subarticle 425-6.7 Backfilling; is modified to include the following:

1. Select material shall be used for backfill adjacent to catch basins and riser inlets, as detailed in the Plans. It shall consist of well-graded limerock or limerock and sand fill. Sand or fill having a high proportion of sand will not be accepted as select fill. All select fill shall be approved by the Engineer prior to placing. No separate payment will be made for select fill, but shall be included in the unit bid price for each particular item as indicated in the Bid Form of the Proposal.

C. Page 417, Subarticle 425-8.2 - Adjusted Structures; is expanded to include the following:

1. Upon completion of the work, and prior to acceptance and final payment, all such structures will be inspected by the Engineer to ensure that they are free of all debris and thoroughly cleaned. All drainage structures within the project limits shall be cleaned thoroughly and made free of all debris prior to final acceptance by the County. The Contractor shall include within the scheduled items listed on the Contract's Bid Form, the cost of all work necessary for cleaning and debris removal.

D. Page 418, Subarticle 425-8.3 – Payment Items; is expanded to include the following:

1. When a separate item is listed on the Bid Form for cleaning of structures, said item shall only be used when indicated on the Engineering Plans or as directed by the Engineer, and only for the cleaning of drainage structures that were not impacted by construction activities.
2. Payment will be made under:

Item No.	Description	Unit
425-1-311	Inlets (Curb)(Type P-1) < 10 '	EA
425-1-312	Inlet Curb Type P-1 (>10')	EA
425-1-321	Inlets (Curb)(Type P-2) <10'	EA
425-1-351	Inlets (Curb)(Type P-5) <10'	EA
425-1-361	Inlets (Curb)(Type P-6) <10'	EA
425-1-363	Inlets (Curb) (TYPE P-6) (>10')	EA
425-1-522	Ditch Bottom Inlet Type P-10 (>10)	EA
425-1-311A	Inlets (Curb)(Type P-1) < 10 ' (W/Skimmer)	EA
425-1-321B	Inlets (Curb)(Type P-2) < 10 ' (W/Skimmer)	EA
425-1-351B	Inlet Curb (Type P-5)< 10' (W/Skimmer)	EA
425-1-352C	Inlet (Curb) (Type P-5) (W/Skimmer)	EA
425-1-361C	Inlet, Curb (Type P-6) < 10' (W/Skimmer)	EA
425-1-363B	Inlets (Curb) (Type P-6) (>10') (W/Skimmer)	EA
425-1-521B	Ditch Bottom Inlet Type P-10 (<10)	EA
425-1-521C	Ditch Bottom Inlet Type P-10 (<10) (W/Skimmer)	EA
425-1-522A	Ditch Bottom Inlet Type P-10 (>10) (W/Skimmer)	EA
425-1-352OPT	Inlet (Curb) (Type P-5) >10'	EA
425-2-41B	Manhole (Type P-7) (< 10')	EA
425-2-42C	Manholes (P-7) (>10')	EA
425-2-72C	Manhole J-7, (>10')	EA

425A ADJUSTMENT OR RELOCATION OF VALVE, METER AND JUNCTION BOXES

1. The work under these pay items includes any adjustments (raising or lowering) of existing boxes or fire hydrants. When relocation of the box is required, the Contractor shall make all necessary arrangements with the utility companies, as the utility companies are responsible to relocate the valves and meters and valve and meter boxes.
2. No separate pay item(s) for Adjustment or Relocation of Valve, Meter and Junction Boxes will be provided under this contract

430 PIPE CULVERTS (REV. 01-12-16)

A. Description.

1. Furnish and install drainage pipe and end sections at the locations called for in the Plans or as directed by Engineer. Furnish and construct joints and connections to existing pipes, catch basins, inlets, manholes, walls, etc., as may be required to complete the work.
2. Construct structural plate pipe culverts or underdrains in accordance with FDOT Sections 435 and 440.
3. Obtain pipe culverts from a Producer currently on the FDOT's list of Producers with Accepted Quality Control Programs. Producers seeking inclusion on the list shall meet the requirements of FDOT 105-3.
4. When the producer's FDOT Quality Control Program is suspended, accept responsibility of either obtaining drainage products from another producer with an accepted FDOT Quality Control Program or await re-approval of the producer's FDOT Quality Control

Program. Engineer will not allow changes in Contract Time or completion dates as a result of the producer's FDOT Quality Control Program suspension. Accept responsibility for all delay costs or other costs associated with the producer's FDOT Quality Control Program suspension.

B. Materials.

1. Pipe: Meet the following requirements:

Concrete Pipe	FDOT Section 449
Round Rubber Gaskets	FDOT Section 942
Corrugated Steel Pipe and Pipe Arch	FDOT Section 943
Corrugated Aluminum Pipe and Pipe Arch	FDOT Section 945
Corrugated Polyethylene Pipe	FDOT Section 948
Polyvinyl Chloride (PVC) Pipe	FDOT Section 948

2. Joint Materials: Use joint materials specified in this Article according to type of pipe and conditions of usage.

3. Mortar: Use mortar composed of one part portland cement and two parts of clean, sharp sand, to which mixture Contractor may add hydrated lime in an amount not to exceed 15% of the cement content. Use mortar within 30 minutes after its preparation.

C. Type of Pipe to Be Used.

1. When the Plans designate a type (or types) of pipe, use only the type (or choose from the types) designated.

2. If the Plans do not designate a type (or types) of pipe, Contractor, subject to Engineer's approval, may use either a minimum Class I concrete pipe, corrugated steel pipe, corrugated aluminum pipe, corrugated polyethylene pipe or PVC pipe. If one of the metal types is chosen, use the minimum gage specified in FDOT Section 943 for steel pipe or FDOT Section 945 for aluminum pipe.

3. Class I corrugated Polyethylene Pipe may be used on local (non-arterial or non-collector) roads only.

D. Laying Pipe.

1. General:

   a. Lay all pipe, true to the lines and grades given, with hubs upgrade and tongue end fully entered into the hub. When pipe with quadrant reinforcement or circular pipe with elliptical reinforcement is used, install the pipe in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe are not more than five degrees from the vertical plane through the longitudinal axis of the pipe. Do not allow departure from and return to plan alignment and grade to exceed 1/16 inch per foot of nominal pipe length, with a total of not more than 1 inch departure from theoretical line and grade. Take up and relay any pipe that is not in true alignment or which shows any settlement after laying at no additional expense to the Department.

   b. Do not use concrete pipe with lift holes except round pipe which has an inside diameter in excess of 54 inches or any elliptical pipe.

   c. Repair lift holes, if present, by use of a hand-placed, stiff, non-shrink, 1-to-1 mortar of cement and fine sand, after first washing out the hole with water. Completely fill the void created by the lift hole with mortar. Cover the repaired area with a 24 by 24 inches piece of filter fabric secured to the pipe. Use a Type D-3 filter fabric meeting the requirements shown on FDOT Design Standards, Index 199 and the Contract Documents.

   d. Secure the filter fabric to the pipe using a method that holds the fabric in place until the backfill is placed and compacted. Use a grout mixtures, mastics, or strapping devices to secure the fabric to the pipe.

   e. When installing pipes in structures, construct inlet and outlet pipes of the same size and kind as the connecting pipe shown in the Plans. Extend the pipes through the walls for a distance beyond the outside surface sufficient for the intended connections, and construct the concrete around them neatly to prevent leakage along their outer surface as shown on the FDOT Design Standards, Index 201. Keep the inlet and outlet pipes flush with the inside of the wall. Resilient connectors as specified in FDOT 942-3 may be used in lieu of a masonry seal.

   f. Furnish and install a filter fabric jacket around all pipe joints and the joint between the pipe and the structure in accordance with FDOT Design Standards, Index Nos. 201 and 280. Use fabric meeting the physical requirements of Type D-3 specified on the FDOT Design Standards, Index 199 and the Contract Documents. The fabric shall extend a minimum of 12 inches beyond each side of the joint or both edges of the coupling band, if a coupling band is used. The fabric shall have a minimum width of 24 inches, and a length sufficient to provide a minimum overlap of 24 inches. Secure the filter fabric jacket against the outside of the pipe by metal or plastic strapping or by other methods approved by Engineer.

   g. Meet the following minimum joint standards:

Pipe Application	Minimum Standard
Storm and Cross Drains	Water-tight
Gutter Drain	Water-tight
Side Drains	Soil-tight

   h. When rubber gaskets are to be installed in the pipe joint, the gasket shall be the sole element relied on to maintain a tight joint. Soil tight joints must be watertight to 2 psi. Water-tight joints must be water-tight to 5 psi unless a higher pressure rating is required in the Plans.

2. Trench Excavation: Excavate the trench for storm and cross drains, and side drains as specified in the Contract Documents.

3. Foundation: Provide a suitable foundation, where the foundation material is of inadequate supporting value, as determined by Engineer. Remove the unsuitable material and replace it with suitable material, as specified in Article 120 (Earthwork and Related Operations) of these Specifications. Where in Engineer's opinion, the removal

and replacement of unsuitable material is not practicable, he may direct alternates in the design of the pipe line, as required to provide adequate support. Minor changes in the grade or alignment will not be considered as an adequate basis for extra compensation. Do not lay pipe on blocks or timbers, or on other unyielding material, except where the use of such devices is called for in the Plans.

4. Backfilling: Backfill around the pipe as specified in Article 120 (Earthwork and Related Operations) of these Specifications unless specific backfilling procedures are described in the Contract Documents.

5. Plugging Pipe:

   a. When existing pipe culverts are to be permanently placed out of service, fill them with flowable fill that is non-excavatable, contains a minimum 350 lbs/cy of cementious material and meets the requirements Article 121 (Flowable Fill) and/or plug them with masonry plugs as required by the Contract Documents. Install masonry plugs that are a minimum of 8 inches in thickness, in accordance with FDOT Design Standards Index 280.

   b. When proposed or existing pipe culverts are to be temporarily placed out of service, plug them with prefabricated plugs as shown in the Plans. Install prefabricated plugs in accordance with the manufacturer's recommendations. Do not fill, or construct masonry plugs in, any pipe culverts intended for current or future service.

6. End Treatment:

   a. Place an end treatment at each storm and cross drain, and side drain as shown in the Plans. Refer to the FDOT Design Standards for types of end treatment details.

   b. As an exception to the above, when concrete mitered end sections are permitted, Contractor may use reinforced concrete U-endwalls, if shop drawings are submitted to Engineer for approval prior to use.

   c. Provide end treatments for corrugated polyethylene pipe and PVC pipe as specified in FDOT Section 948, or as detailed in the Plans.

7. Metal Pipe Protection:

   a. Apply a bituminous coating to the surface area of the pipe within and 12 inches beyond the concrete or mortar seal prior to sealing, to protect corrugated steel or aluminum pipe embedded in a concrete structure, such as an inlet, manhole, junction box, endwall, or concrete jacket.

   b. Ensure that the surface preparation, application methods (dry film thickness and conditions during application), and equipment used are in accordance with the coating manufacturers' published specifications.

   c. Obtain Engineer's approval of the coating products used.

8. Final Pipe Inspection:

   a. Pipe must be lay under direct supervision of Engineer at all times. In the event that a specific job site requires a video inspection, and it is approved by Engineer, pipe must be inspected as per FDOT Article 430-4.8. County will pay for the cost of inspection and report.

E. Removing Existing Pipe.

1. If the Plans indicate that existing pipe is to remain the property of the Department, collect and stack along the right-of-way all existing pipe or pipe arch so indicated in the Plans to be removed, or that does not conform to the lines and grades of the proposed work and that is not to be re-laid, as directed by Engineer. Take care to prevent damage to salvageable pipe during removal and stacking operations.

F. Placing Pipe Under Railroad.

1. General: Construct pipe culverts under railroad tracks in accordance with the requirements of the railroad company. Perform all the shoring under the tracks, and sheeting and bracing of the trench, required by the railroad company or deemed necessary by Engineer in order to ensure safe and uninterrupted movement of the railroad equipment, at no expense to the Department.

2. Requirements of the Railroad Company:

   a. Install pipe using methods required by the railroad company and shown in the Contract Documents.

   b. When the general method of installation required by the railroad company is indicated in the Plans, do not alter such method, or any other specific details of the installation which might be indicated in the Plans, without receiving approval or direction from the railroad, followed by written approval from Engineer.

3. Notification to Railroad Company: Notify the railroad company and Engineer at least ten days prior to the date on which pipe is to be placed under the railroad tracks.

4. Placing Pipe by Jacking: Obtain Engineer's and the railroad company's approval of the details of the jacking method to be used, when placing pipe through the railroad embankment, before the work is started.

5. Use of Tunnel Liner: When the railroad company requires that a tunnel liner be used for placing the pipe in lieu of the jacking method, the Department will pay for the tunnel liner material separately in cases where the Contract Documents do not require the use of a tunnel liner. For these cases the Department will reimburse Contractor for the actual cost of the liner, delivered at the site. The Department will base such cost on a liner having the minimum gage acceptable to the railroad.

G. Specific Requirements for Concrete Pipe.

1. Sealing Joints: Seal the pipe joints with round rubber or profile gaskets meeting the requirements of FDOT Section 449. Ensure that the gasket and the surface of the pipe joint, including the gasket recess, are clean and free from grit, dirt and other foreign matter, at the time the joints are made. In order to facilitate closure of the joint, application of a vegetable soap lubricant immediately before closing of the joint will be permitted. Prelubricated gaskets may be used in lieu of a vegetable soap lubricant

when the lubricating material is certified to be inert with respect to the rubber material.

2. Laying Requirements for Concrete Pipe with Rubber Gasket Joints: Do not allow the gap between sections of pipe to exceed 5/8 inch for pipe diameters of 12 inches through 18 inches, 7/8 inch for pipe diameters of 24 through 66 inches, and 1 inch for pipe diameters 72 inches and larger. Where minor imperfections in the manufacture of the pipe create an apparent gap in excess of the tabulated gap, Engineer will accept the joint provided that the imperfection does not exceed 1/3 the circumference of the pipe, and the rubber gasket is 1/4 inch or more past the pipe joint entrance taper. Where concrete pipes are outside of these tolerances, replace them at no expense to the Department. Do not apply mortar, joint compound, or other filler to the gap which would restrict the flexibility of the joint.

3. Field Joints for Elliptical Concrete Pipe: Use either a preformed plastic gasket material or an approved rubber gasket to make a field joint.

   a. Plastic Gasket. For field joints that are made from preformed plastic gasket material; install field joints in accordance with the manufacturer's instructions and the following:

      1) Material: Meet the requirements of FDOT 942-2.

      2) Joint Design: Ensure that the pipe manufacturer furnishes Engineer with details regarding configuration of the joint and the amount of gasket material required to affect a satisfactory seal. Do not brush or wipe joint surfaces which are to be in contact with the gasket material with a cement slurry. Fill minor voids with cement slurry.

      3) Primer: Apply a primer of the type recommended by the manufacturer of the gasket material to all joint surfaces which are to be in contact with the gasket material, prior to application of the gasket material. Thoroughly clean and dry the surface to be primed.

      4) Application of Gasket: Apply gasket material to form a continuous gasket around the entire circumference of the leading edge of the tongue and the groove joint, in accordance with the detail shown on the Design Standards, Index No. 280. Do not remove the paper wrapper on the exterior surface of the gasket material until immediately prior to joining of sections. Apply plastic gasket material only to surfaces which are dry. When the atmospheric temperature is below 60ºF, either store plastic joint seal gaskets in an area above 70ºF, or artificially warm the gaskets to 70ºF in a manner satisfactory to Engineer.

      5) Installation of Pipe: Remove and reposition or replace any displaced or contaminated gasket as directed by Engineer. Install the pipe in a dry trench. Carefully shape the bottom of the trench to minimize the need for realignment of sections of pipe after they are placed in the trench. Hold to a minimum any realignment of a joint after the gaskets come into contact. Prior to joining the pipes, fill the entire joint with gasket material and ensure that when the pipes are joined there is evidence of squeeze-out of gasket material for the entire internal and external circumference of the joint. Trim excess material on the interior of the pipe to provide a smooth interior surface. If a joint is defective, remove the leading section of pipe and reseal the joint.

   b. Rubber Gasket. For field joints that are made with profile rubber gaskets; install field joints in accordance with the manufacturer's instructions and the following:

      1) Material: Meet the requirements of FDOT 942-4.

      2) Joint Design: Ensure that the pipe manufacturer furnishes Engineer with details regarding configuration of the joint and gasket required to effect a satisfactory seal. Do not apply mortar, joint compound, or other filler which would restrict the flexibility of the gasket joint.

4. Requirements for Concrete Radius Pipe:

   a. Design: Construct concrete radius pipe in segments not longer than 4 feet (along the pipe centerline), except where another length is called for in the Contract Documents. Join each segment using round rubber gaskets. Ensure that the pipe manufacturer submits details of the proposed joint, segment length and shape for approval by Engineer, prior to manufacture.

   b. Pre-Assembly: Ensure that the manufacturer pre-assembles the entire radius section in his yard, in the presence of Engineer, to ensure a proper fit for all parts. At the option of the manufacturer, Contractor may assemble the pipe without gaskets. Consecutively number the joints on both the interior and exterior surfaces of each joint, and make match marks showing proper position of joints. Install the pipe at the project site in the same order as pre-assembly.

H. Specific Requirements for Corrugated Metal Pipe.

1. Field Joints:

   a. General:

      1) Make a field joint with locking bands, as specified in Article 9 of AASHTO M 36 and AASHTO M 196M for aluminum pipe. For aluminum pipe, fabricate bands from the same alloy as the culvert sheeting.

      2) When existing pipe to be extended is helically fabricated, make a field joint between the existing pipe and the new pipe using one of the following methods:

         a) Cut the new pipe to remove one of the re-rolled annular end sections required in FDOT Sections 943 or 945, or fabricate the pipe so that the re-rolled annular section is fabricated only on one end. Use either a spiral (helical) band with a gasket or a flat band with gaskets as required by Subarticle 430-H.1.b.1) b) to join the pipe sections.

         b) Contractor may construct a concrete jacket as shown on the FDOT Design Standards, Index No. 280, provided that the minimum cover required by the FDOT Design Standards, Index No. 205 can be obtained.

   b. Side Drain, Storm and Cross Drain, and Gutter Drains: Where corrugated metal pipe is used as side drain,

storm and cross drain, or gutter drain, use a rubber or neoprene gasket of a design shown to provide a joint as specified in Subarticle 430-D.

1) Use a gasket of one of the following dimensions:

   a) For annular joints with 1/2 inch depth corrugation: either a single gasket a minimum of 7 inches by 3/8 inch or two gaskets a minimum of 3 1/2 inches by 3/8 inch; and for annular joints with 1 inch depth corrugations: either a single gasket a minimum of 7 inches by 7/8 inch or two gaskets a minimum of 3 1/2 inches by 7/8 inch.

   b) For helical joints with 1/2 inch depth corrugation: either a single gasket a minimum of 5 inches by 1 inch or two gaskets a minimum of 3 1/2 inches by 1 inch; and for helical joints with 1 inch depth corrugations: either a single gasket a minimum of 5 inches by 1 1/2 inches or two gaskets a minimum of 3 1/2 inches by 1 1/2 inches.

   c) Such other gasket designs as may be approved by Engineer.

2) If, in lieu of a single gasket spanning the joint, two gaskets are used, place these individual gaskets approximately 2 inches from each pipe end at the joint. When two gaskets are used, seal the overlapping area on the coupling band between the gaskets consistent with the joint performance specified. Contractor may tuck a strip of preformed gasket material over the bottom lip of the band for this purpose. Use coupling bands that provide a minimum circumferential overlap of 3 inches. As the end connections on the coupling band are tightened, ensure that there is no local bending of the band or the connection. Use precurved coupling bands on pipe diameters of 24 inches or less.

3) Use flat gaskets meeting the requirements of ASTM D-1056, designation 2C2 or 2B3. In placing flat gaskets on pipe prior to placing the coupling band, do not stretch the gasket more than 15% of its original circumference. Use circular gaskets meeting the requirements of ASTM C-361. Do not stretch the circular gasket more than 20% of its original circumference in placing the gasket on pipe. Use preformed plastic gasket material meeting the composition requirements of FDOT 942-2.2.

4) Apply an approved vegetable soap lubricant, as specified for concrete pipe in Subarticle 430-G.1.

c. Alternate Joint: In lieu of the above-specified combination of locking bands and flat gaskets, Contractor may make field joints for these pipe installations by the following combinations:

1) Use the metal bands as specified in Article 9 of AASHTO M 36M that are at least 10 1/2 inches wide and consist of a flat central section with a corrugated section near each end, designed to match the annular corrugation in the pipe with which they are to be used. Connect the bands in a manner approved by Engineer, with a suitable fastening device such as the use of two galvanized 1/2 inch diameter bolts through a galvanized bar and galvanized strap, suitably welded to the band. Use a strap that is the same gage as the band.

2) Where helically corrugated pipe is to be jointed by this alternate combination, ensure that at least the last two corrugations of each pipe section are annular, and designed such that the band will engage each pipe end with the next-to-outside annular corrugation.

3) For these bands, use a rubber gasket with a circular cross-section of the “O-ring” type conforming to ASTM C-361. Use gaskets having the following cross-sectional diameter for the given size of pipe:

Pipe Size	Gasket Diameter
12 inches through 36 inches (with 1/2 inch depth corrugations)	13/16 inch
42 inches through 96 inches (with 1/2 inch depth corrugations)	7/8 inch
36 inches through 120 inches (with 1 inch depth corrugations)	1 3/8 inches

4) Use preformed gasket material to seal the overlapping area on the coupling band between gaskets.

5) Use channel band couplers in helical pipe with ends which have been reformed and flanged specifically to receive these bands. Use channel band couplers that are of a two piece design, are fabricated from galvanized steel stock conforming to AASHTO M 36, have 2 by 2 by 3/16 inch angles fastened to the band ends to allow for proper tightening, and meet the following:

Band Thickness	Pipe Wall Thickness
0.079 inch	0.109 inch or lighter
0.109 inch	0.138 inch or heavier
3/4 inch wide	0.109 inch or lighter
1 inch wide	0.138 inch or heavier

6) Furnish two 1/2 inch diameter connection bolts with each band, that conform to ASTM A-307, Grade A and are electroplated in accordance with ASTM B-633.

7) Use a gasket with the joint that is a hydrocarbon blend of butyl rubber meeting the chemical composition and physical properties of FDOT 942-2.2. Use a 3/8 by 3/4 inch gasket for pipe fabricated from 0.109 inch or lighter material and a 3/8 by 1 inch gasket for pipe fabricated from 0.138 inch and heavier material.

8) Contractor may use a flange band coupler without the gasket for all applications other than side drain, storm and cross drain, and gutter drain.

9) Do not use the flange band coupler to join dissimilar types of pipe.

10) Contractor may join reformed flanged helical pipe to existing annular or reformed pipe having annular ends. On non-gasketed installations, use either an annular band or an alternate joint described in

Subarticle 430-H.1.c. On gasketed installations, use an annular band, minimum of five corrugations in width, in conjunction with two O-ring gaskets as specified in Subarticle 430-H.1.c. Use mastic material to seal the area of band overlap.

11) The minimum joint performance standards specified in Subarticle 430-D.1 applies.

2. Laying and Shape Requirements for Corrugated Metal Pipe: Install pipe using either a trench or open ditch procedure.

   a. Check pipe shape regularly during backfilling to verify acceptability of the construction method used. Pipe deflected 5% or more of the certified actual mean diameter of the pipe shall be replaced at no cost to the Department. Deflection measurements are taken at the point of smallest diameter on the corrugations.

I. Specific Requirements for Corrugated Polyethylene Pipe and Polyvinyl Chloride (PVC) Pipe.

1. Field Joints: Use gasketed joints to seal side drain, and storm and cross drain. Use gaskets meeting the requirements of FDOT Section 449. Ensure that the pipe manufacturer provides a joint design approved by Engineer before use.

2. Installation Requirements Including Trenching, Foundation and Backfilling Operations: Check structure shape regularly during backfilling to verify acceptability of the construction method used.

3. Pipe deflected 5% or more of the certified actual mean diameter of the pipe shall be replaced at no cost to the Department.

J. Desilting Pipe Culverts, Box Culverts, and Inlet Structures.

1. Description. Completely remove and dispose of silt, debris, vegetation, soil, rock, and any type of blockage inside existing pipe culvert(s), box culvert(s) or inlet structure(s) specified in the Contract Documents or directed by Engineer.

2. General.

   a. Access to the pipe or box culvert may require temporary removal of fence, signs, guardrail, grates or manhole covers.

   b. Clean the existing pipe or box culvert by completely removing all of the silt, debris, vegetation, soil, rock, and any type of blockage to restore the hydraulic conveyance design capacity of the pipe or box culvert.

   c. Clean the existing inlet structure by completely removing all of the silt, debris, vegetation, soil, rock, and any type of blockage.

   d. Perform desilting operations in a manner not to damage the pipe culverts, box culverts, and inlet structures or surrounding area.

   e. Meet the requirements of Federal, State and local environmental standards and laws when performing all activities.

   f. Meet the requirements of Article 104 of these Specifications (Prevention, Control, and Abatement of Erosion and Water Pollution).

   g. Identify and report to Engineer necessary repairs to the pipes or box culverts and structures exposed during the desilting operation.

   h. Pipe or Box Culverts:

      1) Replace according to Department standards at the completion of the desilting operation or each day, as appropriate for safety.

      2) Align infall and outfall ditches 50 feet from the pipe or box culvert to meet the existing line and grade. If the Right-of-Way line is less than 50 feet from the pipe or box culvert, align infall and outfall ditches to the Right-of-Way line. Grade and sod any disturbed areas caused by the desilting operation.

      3) Dispose of all silt and debris removed in the desilting operations in areas meeting Federal, State and local rules and regulations.

      4) Repair or replace damage to turf, pavement, signs or structures, etc. due to negligence to the satisfaction of Engineer at no additional cost to the Department. Complete repairs prior to submission of the invoice for work accomplished.

3. Inspection.

   a. When directed by Engineer, de-water the pipe or box culvert to facilitate inspection.

   b. Re-clean culverts and structures determined to be unacceptable by Engineer within the time directed at no additional cost to the Department.

K. Method of Measurement.

1. General:

   a. The quantity to be paid for will be the number completed pursuant to these specifications that is measured and accepted by Engineer.

   b. Only items of work required by this Article that have a Contract Unit Price will be measured by Engineer for payment. All other work described in this Article that is required by the Contract Documents but does not have a Contract Unit Price is considered incidental to the Work and its costs are included among the various scheduled items of the Contract.

2. New Pipe: The quantities of storm and cross drain pipe, storm drain trench, side drain pipe and gutter drain pipe to be paid for will be quantity, measured in place and accepted by Engineer. The quantity of pipe will be measured from the inside wall of the structure, along the centerline of the pipe.

3. Mitered End Section: The quantity to be paid for will be the number completed and accepted.

4. Desilting Pipe Culverts, Box Culverts, and Inlet Structures:

   a. General:

      1) The cost of temporary removal and subsequent replacement of fence, signs, guardrail, grates or

manhole covers will be included in the contract unit price for the related item.

2) Infall and outfall ditch alignment, grading and sodding will be included in the contract unit price of the related item.

3) Pipes or structures that are impacted by the Work must be cleaned at no cost to the County and will not be measured for payment.

b. Desilting Pipe Culverts: The quantities for payment will be the length in feet of existing pipe desilted and accepted by Engineer.

c. Desilting Box Culverts: The quantities for payment will be the volume in cubic yard of material removed from the existing box culvert as measured and accepted by Engineer.

d. Desilting Structures: The quantities for payment will be the number of existing Inlet Structures desilted and cleaned as counted and accepted by Engineer.

L. Basis of Payment.

1. General:

a. Prices and payments will be full compensation for all work specified in this Article including:

1) All excavation except the volume included in the items for the grading work on the Project, and except for other items specified for separate payment in Article 120 (Earthwork And Related Operations) of these Specifications;

2) All backfilling material and compaction; disposal of surplus material; and

3) All clearing and grubbing outside of the required limits of clearing and grubbing as shown in the Plans.

2. Removing Existing Pipe: When existing pipe is removed and replaced with new pipe approximately at the same location, the cost of excavating and removing the old pipe and of its disposal will be included in the Contract unit price for clearing and grubbing.

3. Site Restoration: The cost of completely restoring the areas of the Project Site that is disturbed for the purpose of constructing pipe culvert is included in the Contract unit price for the pipe culvert, unless designated specifically to be paid for under other items.

4. Plugging Pipes:

a. The cost of temporarily plugging a pipe culvert, either proposed or existing, will be incidental to the contract unit price for new pipe culvert.

b. The cost of filling and/or plugging an existing pipe culvert that is to be permanently placed out of service will be paid for at the contract unit price for filling and plugging pipe, per cubic yard. Price and payment will be full compensation for flowable fill, masonry, concrete, mortar, and all labor and materials necessary to complete the work.

5. Desilting Pipe Culverts, Box Culverts, and Drainage Structures: Price and payment will be full compensation for furnishing all equipment, tools, labor, removal and disposal of silt, debris, vegetation, soil, rock, and any type of blockage, de-watering, erosion and water pollution control, clean up and all incidentals necessary for the satisfactory performance of the work.

6. Flared End Sections: Price and payment will be full compensation for all work and materials required.

7. Mitered End Sections: Price and payment will be full compensation for all pipe, grates when required, fasteners, reinforcing, connectors, anchors, concrete, sealants, jackets and coupling bands, and all work required.

8. Railroad Requirements:

a. Where pipe culvert is constructed under railroad tracks, the Contract unit price for the pipe culvert will include the costs of any jacking operations and the operation of placing the pipe by use of a tunnel liner, (except as specified for unanticipated tunnel liner, in Subarticle 430-F.5, where reimbursement is to be made for such unanticipated liner), and all other work necessary to meet the requirements of the railroad company, excluding the costs of watchman or flagman services provided by the railroad company, except as provided below.

b. The Department will reimburse Contractor for the actual costs of any trestle bridge work which is performed by the railroad's forces, as billed to him by the railroad, less the value of any salvage materials derived there from, whether such salvage materials are retained by the railroad company or by Contractor. When the work of shoring and bracing is to be performed by the railroad, such fact will be stipulated in the Contract Documents and Contractor will be required to pay to the railroad the amount of such costs, which amount will be reimbursed to him by the Department. The Contract unit price for the pipe culvert shall include the costs of all other work of shoring and bracing.

9. Payment Items:

a. Payment will be made under the items below having an awarded Contract Unit Price.

Item No.	Description	Unit
430-175-115	Pipe Culvert Optional Material, Round Shape, 15"	LF
430-175-118	Pipe Culvert 18" Diameter (Round)	LF
430-175-124	Pipe Culvert Optional Material, Round Shape, 24	LF
430-175-136	Pipe Culvert Optional Material, Round Shape, 36"	LF

443 FRENCH DRAINS

A. Description.

1. Construct french drains, utilizing one of the authorized types of pipes listed below, with coarse aggregate, and plastic filter fabric (geotextile). Construct in accordance with FDOT Design Standards, Index No. 285 as modified by or otherwise specified in the Contract Documents.

B. Materials.

1. Pipe: Unless a particular type is specified in the Contract Documents, pipe furnished may be any of the following types:

   a. Concrete Pipe (Bell & Spigot): Slotted or perforated concrete pipe may be used.

      1) Meet the requirements of FDOT 449 for concrete pipe. Use the class of pipe specified on the FDOT Design Standards, Index No. 205. Do not use gaskets. Fully insert the spigot in the bell, and bring home. Conform to FDOT Design Standards, Index No. 285 for slotted pipe. Use perforated pipe having perforations equally located 360 degrees around the pipe.

      2) Furnish pipe having not less than 30 round perforations, 3/8 inch each, per square foot of inside pipe surface. Extend perforations to within 6 inches of the bell or spigot area. The Engineer will permit other perforations not less than 5/16 inch nor more than 3/8 inch in the least dimension if they provide an opening area not less than 3.31 in2/ft2 of pipe surface.

   b. Corrugated Aluminum Alloy Culvert Perforated Pipe:

      1) Meet the requirements of FDOT 945. Use perforated pipe having perforations equally located 360 degrees around the pipe. Locate perforations either on the inside crests or on the neutral axis of all corrugations except that perforations are not required within 4 inches of each end of each length of pipe or in a corrugation where seams are located.

      2) Furnish pipe having not less than 30 round perforations, 3/8 inch each, per square foot of pipe surface. The Engineer will permit other perforations not less than 5/16 inch nor more than 3/8 inch in the least dimension if they provide an opening area not less than 3.31 in2/ft2 of pipe surface.

   c. Corrugated Steel Perforated Pipe: Meet the requirements of FDOT 943. Space the perforations and meet the requirements as specified in b. 2) above.

   d. Bituminous Coated Corrugated Steel Perforated Pipe: Meet the requirements of FDOT 943. Space the perforations and meet the requirements as specified in b. 2) above. Place the perforations prior to the bituminous coating. The Engineer will accept the minimum opening of not less than 3.31 in2/ft2 of pipe if 50% of the opening area is maintained after coating.

   e. Corrugated Polyethylene Pipe:

      1) Meet the requirements of FDOT 948-2.3 except that Class I corrugated Polyethylene Pipe may only be used on local roads (non-arterial or non-collector).

      2) Space the perforations and meet the requirements as specified in b. 2) above.

   f. Polyvinyl Chloride (PVC) Pipe: Meet the requirements of FDOT 948-1.7. Space the perforations and meet the requirements as specified in b. 2) above.

2. Coarse Aggregate: No. 4 limestone aggregate meeting the requirements of FDOT 901. Aggregates must be an approved product from an approved source listed on the current FDOT Approved Aggregate Products from Mines or Terminals Listings.

3. Select Fill: Use select fill meeting the requirements of either FDOT 911, 913, 913A or 915.

C. Excavating Trench.

1. Excavate the trench in accordance with the Contract specifications for Earthwork and Related Operations (hereinafter referred to as Earthwork specifications) unless specific trench excavation procedures are described in the Plans.

2. Carefully excavate the trench to such depths as required to permit the filter fabric, coarse aggregate and the pipe to be placed in accordance with the details shown on the Plans.

D. Laying Pipe.

1. Lay all pipe conforming with the lines and grades specified in the plans and in accordance with these Specifications. Unless otherwise specified in the Plans or directed by the Engineer, set the pipe with a minimum cover of 30 inches in paved areas (24 inches for non-paved areas) and a maximum cover of 66 inches.

E. Placing Coarse Aggregate and Backfilling.

1. After placing the pipe and without disturbing the pipe, carefully place the coarse aggregate around the pipe to a depth shown in the plans. Fold the filter fabric over the coarse aggregate. Backfill and compact as described below.

   a. French Drains Under Pavement: Fill the area above the coarse aggregate with select fill material meeting the requirements of this Section. Place and compact the select fill according to the requirements for pipe as specified in the Earthwork specifications. The Department will allow use of additional coarse aggregate over the top of the pipe instead of select fill material. In this case, the filter fabric shall be extended to wrap the additional course aggregate. The top of the coarse aggregate shall not be higher than the bottom of the base, unless shown in the plans. The Department will not pay additional costs associated with substituting coarse aggregate for select fill.

   b. French Drains not Under Pavement: Fill and compact the area above the coarse aggregate according to the requirements for pipe in the Earthwork specifications, unless specific procedures are described in the Plans as specified in the Earthwork specifications.

F. Method of Measurement.

1. Quantity of french drains to be paid for under this Article shall be the length in linear feet completed in accordance

with Plans and specifications; measured in place and accepted by the Engineer subject to the following conditions:

a. French drain lengths having a depth of trench less than 10 feet below land surface (BLS) will not be accepted for payment by the Engineer.

b. For french drains with specified depth of trench of 15 feet BLS or greater, any length not meeting the specified depth for reasons approved by the Engineer will have the payment quantity calculated as:

   1) Quantity for Payment (LF) = Quantity Measured by the Engineer (LF) x Engineer Approved Depth Rounded to the Lowest Whole Foot (ft) / Specified Depth (ft)

G. Basis of Payment.

1. The quantities determined as provided above will be paid for at the Contract unit price for french drains. Such prices and payments will be full compensation for all work, labor, equipment and material necessary for construction of the french drains as specified in these Contract Documents including excavation, sheeting or shoring if required, the disposal of surplus material, providing plastic filter fabric, pipe, course aggregate, select backfill, tamping, and final dressing.

2. Price and payment shall also include all clearing and grubbing; and pavement, sidewalk, curb, and gutter restoration unless these items are specifically provided for under separate payment items in this Contract.

3. Payment will be made under:

Item No.	Description	Unit
443-70-36A	Exfiltration Drain 36" Diameter - (Includes the cost of perforated pipe, ballast rock, excavation, plastic filter fabric and back filling with selected fill material)	L.F.

514 GEOTEXTILE (REV. 11-04-11)

A. Description.

1. Install a geotextile (plastic filter) fabric.

B. Material.

1. Meet the plastic filter fabric requirements as specified in FDOT 985.
2. Geotextile used in the Drainage class (type D-3) applications listed in FDOT Design Standards Index 199 shall be woven monofilament geotextiles only. No Slit Film geotextiles are allowed.

C. Construction Methods.

1. General:
   a. Place the fabric in the manner and locations as shown on the construction drawings, in accordance with the manufacturer's directions, and as specified in these Specifications.
   b. Place the fabric on areas with a uniform slope that are reasonably smooth, free from mounds and windrows, and free of any debris or projections which might damage the fabric.
   c. Loosely lay the material. Do not stretch the material.
   d. Replace or repair any fabric damaged or displaced before or during placement of overlying layers to the satisfaction of the Engineer and at no expense to the Department.
   e. When overlapping is necessary, the Contractor may sew the seams to reduce overlaps as specified in FDOT 985-3.
   f. Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the Department.
2. Subsurface Drainage: When indicated in the plans, place the fabric with the long dimension parallel to the trench. Place the fabric to provide a minimum 12 inch overlap for each joint. Do not drop the filter material from heights greater than 3 feet.
3. Stabilization and Reinforcement: Overlap adjacent strips of fabric a minimum of 2 feet.
4. Riprap Filter:
   a. Overlap adjacent strips of fabric a minimum of 24 inches, and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.
   b. Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.
   c. Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.
   d. Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

D. Method of Measurement.

1. No separate payment for furnishing and placing the geotextile fabric is contained in the Contract Documents.

E. Basis of Payment.

1. All costs for the work specified herein, including furnishing, placing, and sewing or overlapping the fabric is included in the Contract price for the item or items to which the geotextile fabric is incidental.

519 DRIVEWAY PAVEMENT (REV. 08-23-12)

A. Description

1. Pursuant to the Contract Documents or as otherwise directed by the Engineer:
   a. Construct new asphalt concrete driveway approaches on public right-of-way.
   b. Restore existing asphalt or cement concrete driveways and approaches that have been authorized to be disturbed by the performance of the Work; and provide all other required labor, material and equipment necessary for complete restoration of the disturbed area.

B. Materials

1. Meet the following requirements:

Limerock	FDOT Section 911
Concrete	FDOT Section 350; Class I (Pavement)
Hot Mix Asphalt (HMA)	Per Article 334 of these Specifications
Joint Seal	FDOT Section 932

C. Preparation and Construction

1. General:
   a. Conform to applicable surface slope requirements of FDOT Index No. 304.
   b. Meet all applicable requirements of the Miami-Dade County Public Works Manual.
   c. Perform any required clearing and grubbing under Article 110 of these Specifications.
   d. Remove or add any additional subgrade material necessary to meet final surface elevation requirements after construction of a new limerock base and pavement of the thicknesses specified below.
   e. Provide a new six inch limerock base; or greater if needed to match existing. Build up in layers not to

exceed three inches and compact each layer to obtain a minimum density of 98% of modified Proctor maximum density as determined by FM 1-T 180, Method D.

f. Maintain the area of excavation in a safe condition and level with the surrounding pavement until work is complete.

g. Furnish and place all materials; construct all forms, joints, bracing, expansion joint materials, and accessories; apply required surface finishes; and all required clearing and grubbing, excavation and backfilling.

h. Remove all remaining excess material, dirt, and other debris from the roadways immediately after all construction or restoration of pavement under this Article has been completed.

2. Cement Concrete Pavement:

a. Concrete pavement for driveways, driveway aprons and sidewalk across driveways must be a minimum thickness of six inches. Materials and construction must conform to the requirements of FDOT Section 350.

b. Form a ½ inch expansion joint between the sidewalk and the driveway or at fixed objects and driveway intersections.

c. Finish surface of concrete to match existing pavement.

3. Asphalt Concrete Pavement:

a. Construct a minimum one inch thick HMA pavement layer (Type SP-9.5) meeting the material and construction requirements of Article 334 of these Specifications.

4. Additional Requirements for Restoration of Pavement:

a. Full-depth saw cut a smooth, straight, neat and square line along the entire width of damaged pavement that is to be restored. Immediately dispose of all excess debris properly.

b. Restore sidewalks across driveways, cut or damaged by construction, in full sections concrete curb or gutter to the existing height and cross section in full sections or lengths between joints.

D. Method of Measurement

1. The quantity to be paid for will be the area, in square yards, of approved driveway pavement constructed or restored in accordance with this Article, as measured and accepted by the Engineer.

E. Basis of Payment

1. Price and payment will be full compensation for all work and materials specified in this Article.

a. No separate pay item(s) for Driveway Pavement will be provided under this contract

520 CONCRETE GUTTER, CURB ELEMENTS, AND TRAFFIC SEPARATOR (SECTION 520)

A. Page 583, Article 520-1, Description: Is expanded to include the following:

1. The work specified under this section includes any type of curb and /or gutter in accordance with FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System 2008 and the Public Works Manual of Metropolitan Dade County (Standard Road Details R.14.1 and R.14.2) curb with or without gutter, driveway curbs, Type “C” median curb and Type “A” median curb, including the necessary preparation and compaction of the subgrade in both cut and fill areas, as well as backfilling, grading, excavation and final dressing required as directed by the Engineer.

B. Page 583, Article 520-2, Materials: Is amended as follows:

1. Class I Concrete shall have a minimum compressive strength of 3,000 p.s.i. at 28 days.

C. Page 591 Article 520-12, Basis of Payment: Is deleted in its entirety and replaced with the following:

1. The quantity of curb or curb and gutter, shall be paid for at the Contract unit price for the quantities completed and accepted by the Engineer and does not include ramp and sidewalk curb. Such price and payment shall be full compensation for all work specified under this Section, including the necessary preparation, limerock or suitable material and compaction of the subgrade in both, cut and fill areas, as well as backfilling, grading, excavation and final dressing required as directed by the Engineer.

2. Payment will be made at the Contract unit prices for the quantities completed and accepted by the Engineer under the following item(s) as applicable:

Item No.	Description	Unit
520-1-10	Concrete Curb and Gutter, Type F, Includes base	LF

522 CONCRETE SIDEWALK (SECTION 522)

A. Page 589, Article 522-1, Description: Is expanded to include the following:

1. The work specified under this Section consists of the forming, furnishing, placement, and finishing of concrete for the construction of concrete sidewalks, pedestrian ramps and sidewalk curbs (back of sidewalk) utilizing Class I Concrete. The width, thickness and type shall be as shown and noted in the Plans. All work will be in accordance with this Section except as modified herein.

B. Page 589, Article 522-2, Materials; is amended as follows:

1. Class I Concrete shall have a minimum compressive strength of 3,000 p.s.i. at 28 days.

C. Page 591 Article 522-9, Method of Measurement; is expanded to include the following:

1. The quantity to be paid for under this Article shall be the area in square yards of concrete sidewalk and pedestrian ramps, measured in place, complete and accepted. Measurement shall be the final dimensions measured along the surface of the completed work within the neat lines shown on the Plans or designated by the Engineer. No deduction will be made for the area occupied by trees left within the area of sidewalks or for any area occupied by manholes, inlets or other drainage or public utility appurtenances within the sidewalk area.

D. Page 591 Article 522-10, Basis of Payment; is deleted in its entirety and replaced with the following:

1. The quantity, determined as provided above, shall be paid for at the Contract unit price for the quantities completed and accepted by the Engineer. Such price and payment shall be full compensation for all work specified under this Section.
2. When curb and gutter is required for the construction of pedestrian ramps and no specific pay item has been included for the construction of the curb and gutter, such payment shall be included in the pay item for Sidewalk (including pedestrian ramps and sidewalk curbs).
3. No separate payment shall be made for the removal of forms or the filling of excavated area left by removal of forms. Contractor shall be responsible for any vandalized sidewalk until it is finally accepted by the Engineer.
4. Payment will be made at the Contract unit prices for the quantities completed and accepted by the Engineer under the following item(s) as applicable:

Item No.	Description	Unit
522-1(1)	Concrete Sidewalk (4" Thick, 3000 p.s.i. Concrete at 28 Days) (Includes the cost of Pedestrian Ramps and Sidewalk Curbs)	S.Y.
522-2(1)	Concrete Sidewalk (6" THICK) (Includes driveways)	S.Y.

523 PATTERNED PAVEMENT (REV. 01-06-2015)

A. Description

1. Install patterned pavement on asphalt or concrete pavement areas at locations and with the color and pattern as specified in the Plans. Use products listed on the FDOT Approved Product List (APL), as approved for use in areas subject to vehicular traffic or non-vehicular traffic, respectively, as specified herein. Install products in accordance with manufacturer's recommendations.
2. For the purpose of this Specification, patterned pavements are defined as a post applied surface marking overlay to either the pavement surface or to an imprinted pavement surface. Vehicular traffic areas are defined as those subject to vehicles within the traveled way, shoulders and auxiliary lanes. Non-vehicular travel areas include medians, islands, curb extensions, sidewalks, borders, plazas and other areas typically subject to foot traffic only.
3. Install overlay products in areas subject to vehicular traffic to a thickness not exceeding 180 mils. Do not use products requiring removal of pavement or requiring blockouts or trenches below the top of pavement.
4. Variations within a pattern shall comply with ADA requirements.

B. Materials

1. General:
   a. Use only patterned pavement products approved for use in vehicular and non-vehicular areas, as appropriate, and listed on the APL. Meet manufacturer's specifications for all patterns, textures, templates, sealers, coatings and coloring materials.
   b. Material coatings used to achieve the pattern and color shall produce an adherent, weather resistant, skid resistant, wear resistant surface under service conditions. Color shall be integral and consistent throughout the installation. The composition of materials is intended to be left to the discretion of the manufacturer.
   c. Materials shall be characterized as non-hazardous as defined by Resource Conservation and Recovery Act (RCRA), Subpart C, Table 1 of 40 CFR 261.24 "Toxicity Characteristic". Materials shall not exude fumes which are hazardous, toxic or detrimental to persons or property.
2. Approved Product List (APL):
   a. Manufacturers seeking evaluation of their product shall submit an application to FDOT in accordance with FDOT Section 6 along with the following documentation:
      1) Manufacturer's recommendations for applicability of use on concrete or asphalt surfaces.
      2) Manufacturer's recommendation for applicability of use in vehicular or non-vehicular travel areas.
      3) Manufacturer's specifications and procedures for materials and installation for each use above.
      4) For products proposed for use in vehicular traffic areas, independent test data verifying the material meets the requirements of this Section including verification that the product, installed in accordance with the manufacturer's specifications and procedures, has been tested in accordance with either:
         a) ASTM E-274, Skid Resistance of Paved Surfaces using a standard ribbed full scale tire at a speed of 40 mph (FN40R), and has a minimum FN40R value of 35, or
         b) ASTM E-1911, Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester (DFT), at a speed of 40 mph (DFT40), and has a minimum DFT40 value of 40.
      5) For products proposed for use in non-vehicular traffic areas, independent test data verifying the

material meets the requirements of this Section including verification that the product, installed in accordance with the manufacturer's specifications and procedures, has been tested in accordance with ASTM E-303 using the British Pendulum Tester and has a British Pendulum Number (BPN) of at least 40.

6) For products proposed for use as a bike lane application, independent testing verifying that the material can meet the color as identified in the April 15, 2011, Interim Approval for Optional use of Green Colored Pavement for Bike Lanes, Interim Approval (IA-14) Memorandum Valid Under the 2009 MUTCD (http://mutcd.fhwa.dot.gov/resources/interim_approval/ia14/ia14grnpmbiketlanes.pdf).

3. Performance Requirements for Products in Vehicular Travel Areas:

a. In addition to the submittal requirements of B.2 above, APL approval will be contingent on a field service test demonstrating that the patterned pavement product meets the following performance measures at the end of three years from opening to traffic:

1) The average thickness shall be a minimum of 50% of the original thickness.

2) Wearing of the material coating shall not expose more than 15% of the underlying surface area as measured within the traveled way.

3) Friction performance of patterned/textured pavement materials shall meet or exceed one of the following test method values:

a) FN40R value of 35 in accordance with ASTM E-274; or,

b) DFT40 value of 40 in accordance with ASTM E-1911.

c) Manufacturers shall provide a field service test installation of each product within a marked crosswalk on a roadway with an ADT of 6,000 to 12,000 vehicles per day per lane, on a site approved by the Department. The test installation shall be a minimum six feet wide and extend from pavement edge to pavement edge across all traffic lanes and shoulder pavement at the crosswalk location. The test installation shall be tested by the manufacturer in accordance with FM 5-592.

C. Construction

1. Product Submittals: Prior to installation, submit pattern and color samples to the Engineer for confirmation that the product meets the pattern and color specified in the Plans. Do not begin installation until acceptance by the Engineer.

2. Pavement Cuts: Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to product installation.

3. Surface Protection: Protect treated surfaces from traffic and environmental effects until the product is completely installed, including drying and curing according to the manufacturer's instructions.

4. Installation Acceptance:

a. For installation on new asphalt roadways, apply patterned pavement a minimum of 14 days after placement of the adjacent pavement.

b. Upon completion of the installation, the Engineer will check the area at random locations for geometric accuracy. If any of the chosen areas are found to be deficient, correct the entire patterned area at no additional cost to the Department.

c. Provide certification that the patterned pavement was installed in accordance with the manufacturer's requirements.

D. Method of Measurement.

1. The quantity to be paid will be the installed quantities in square yards of patterned pavement, completed and accepted. No deduction will be made for areas occupied by landscaping, manholes, inlets, drainage structures, or by any public utility appurtenances within the area.

E. Basis of Payment.

1. Price and payment will be full compensation for all work specified in this Article.

2. No separate pay item(s) for Patterned Pavement will be provided under this contract.

527 DETECTABLE WARNINGS ON WALKING SURFACES (REV. 12-20-16)

A. Description.

1. Furnish and install Safety Yellow Colored Detectable Warning devices on newly constructed and/or existing concrete or asphalt walking surfaces (curb ramps, sidewalks, shared-use paths, etc.) constructed in accordance with the FDOT Design Standards Index No. 304 and these specifications, where indicated on the Plans or directed by the Engineer.

B. Materials.

1. General:

a. Provide Detectable Warnings in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.

b. Provide only embedded Detectable Warning devices, set in wet concrete, for all construction except where retrofit applications of surface applied detectable warnings have been approved in writing by the Engineer.

c. Use Detectable Warnings consisting of materials intended for exterior use subject to routine pedestrian traffic and occasional vehicular traffic.

d. Use Detectable Warnings with size and pattern shown in the plans comprised of truncated domes aligned in

parallel rows in accordance with the FDOT Design Standards, Index No. 304. Do not use detectable warnings with a diagonal pattern.

e. Concrete stamping, field-formed materials, or methods or products used to form Detectable Warnings in wet concrete are not permitted.

2. Material Properties:

a. Provide Detectable Warnings that meet the following minimum material property requirements when tested in accordance with the indicated Standard appropriate to the material.

PROPERTY	STANDARD	TEST VALUE
Slip Resistance	FM 3-C 1028	Dry Coefficient of Friction – 0.8 min. Wet Coefficient of Friction – 0.65 min. (include recessed areas between truncated domes)
Wear Resistance	FM 5-594	Average Volume Loss: no more than 0.06 cm3
Water Absorption*	ASTM D-570	Not to exceed 5%.
Adhesion/Bond Strength**	FM 5-589	150 psi min. tensile adhesion strength
Non-Hazardous Classification	Submit Material Safety Data Sheet (MSDS)	Non-Hazardous, per RCRA Subtitle C
* Applies only to plastic materials. ** Applies only to surface-applied materials.		

3. Color/Contrast: Use Safety Yellow colored Detectable Warnings on concrete or asphalt walking surfaces. Acceptable Detectable Warnings must maintain a Light Reflectance Value (LRV) CAP Y of 25 – 45, as measured with a spectrophotometer, for a minimum duration of three years.

4. Approved Products List:

a. Use Detectable Warnings listed on the FDOT Approved Products List (APL) and that have been further evaluated and found acceptable by the Department. At the option of the Contractor, an “or equal” product evaluation request, for an equivalent FDOT APL approved product that meets or exceeds the specification stipulated herein, may be submitted in writing to the Engineer for review and acceptance.

b. The following products, subject to continued listing on the FDOT APL, have been evaluated by the Department for use on Department projects:

SURFACE APPLIED DETECTABLE WARNING DEVICES		
Manufacturer	**Product**	**APL Number**
Engineered Plastics, Inc.	Armor-Tile Surface Applied Inline Dome	527-000-006
TufTile	TufTile Polymer (Surface Applied)	527-000-045
TufTile	TufTile Polymer (Surface Applied) Radius	527-000-045-RW
EMBEDDED DETECTABLE WARNING DEVICES		
Manufacturer	**Product**	**APL Number**
ADA Solutions, Inc.	Cast-In-Place Composite Tactile	527-000-003
ADA Solutions, Inc.	Replaceable Wet Set Composite	527-000-018
Engineered Plastics, Inc	Armor-Tile Replaceable Cast in Place	527-000-026
Engineered Plastics, Inc.	Armor-Tile Cast-In-Place Inline Dome Tile	527-000-027
Cape Fear Systems, LLC	AlertCast (Replaceable) Cast-In-Place	527-000-029
Access Products, Inc.	Access Tile Replaceable Cast in Place	527-000-033
StrongGo Industries	TekWay Dome Tile	527-000-035
TufTile, Inc	TufTile Cast Iron (Wet-set) Replaceable	527-000-044
TufTile	TufTile Polymer (Wet Set) Replaceable	527-000-046
TufTile	TufTile Polymer (Wet Set) Radius	527-000-046-RW

A. Installation Procedures.

1. Surface Preparation and Installation: Prepare the surface in accordance with the manufacturer’s recommendations. Use only products and materials appropriate for the surface on which they will be applied. Install in accordance with the manufacturer’s instructions, using materials and equipment recommended and approved by the manufacturer. For surface-applied tiles or mats, use adhesives applied over the entire surface and mechanical fasteners.

B. Method of Measurement.

1. The quantity to be paid for will be the area, in square feet, of Detectable Warnings furnished and installed pursuant

to these specifications, measured in place and accepted by the Engineer.

C. Basis of Payment.

1. Price and payment will be full compensation for all work specified in this Article, including all labor, surface preparation, materials and incidentals necessary to complete the work for installation of Detectable Warnings on walking surfaces.
2. Payment will be made under:

Item No.	Description	Unit
527-2	Detectable Warning On Walking Surface	SF

528 RIPRAP FOR DRAINAGE STRUCTURES

A. General

1. This Article is for sand-cement riprap used to fill the void space adjacent to proposed inlet structures placed in existing slab-covered trenches, FDOT Section 530 is modified as follows:
2. Page 600, Section 530-2.1 – Materials/Sand-Cement; expand this Subarticle to include:
   a. Sand-Cement riprap to be placed in existing slab-covered trenches may consist of commercially available pre-bagged sand-cement mixes subject to the following:
      1) Prior to use, submit the manufacturer's product specifications and information for the proposed sand-cement product to the Engineer for approval.
      2) The sand-cement mix shall consist only of Portland Cement and sand meeting the requirements of FDOT Section 921 and 902-3.3 respectively.
      3) Sacks (bags) shall be permeable and absorptive enough to permit passage of water to provide for hydration of the cement.
      4) Ensure that sacks are free from holes and strong enough to withstand handling without ripping or splitting.
      5) Use only one type and size of pre-bagged sand-cement mix at any one structure.
3. Page 603, Section 530-3.1 – Construction Methods/Sand-Cement; delete this Subarticle and substitute the following:
   a. Place sand-cement sacks as shown in the engineering plans or as directed by the Engineer. Sacks are placed without ripping or splitting with its shorter dimension (width) abutting the structure. Lay the sacks in a regular pattern and pack against each other so as to form a close and molded contact after the sand and cement mixture has set up. Remove and replace sacks ripped or torn in placing with sound, unbroken sacks. Then, thoroughly saturate all sacks with water. Grouting, if required by the Engineer, shall be in accordance with FDOT 530-3.1.4.
   b. If mixing and filling sacks at the job site, the mixing and filling requirements of FDOT 530-3.1.1 (Mixing Materials) and FDOT 530-3.1.2 (Filling Sacks) shall also apply.
4. Page 603, Section 530-4.1 – Method of Measurements/Sand-Cement; Delete this Subarticle and substitute the following when using commercially available pre-bagged sand-cement mixes:
   a. The pay quantity for the work specified under this Section shall be the number of cubic yards of sand-cement mixture, placed in sacks or used in the grout, actually placed and accepted. For payment purposes, 1 cubic yard of sand-cement riprap shall constitute either 36 (60 lb) bags of sand-cement mixture or 27 (80 lb) bags of sand-cement mixture.
5. No separate pay item(s) for Riprap is be provided under this contract.

536 GUARDRAIL

A. Description.

1. Perform work, pursuant to the Contract Documents and the FDOT Design Standards, to include:
   a. Construction of metal guardrail on posts of timber or steel
   b. Removal of existing guardrail
   c. Construction of guardrail anchorages
   d. Replacement of guardrail posts

B. Materials.

1. Guardrail:
   a. Construct guardrail of the standard W-beam or thrie beam type. Use materials for the rail and rail elements meeting the steel requirements of FDOT 967-1.
2. Posts:
   a. General:
      1) Unless the Contract Documents or Engineer designate a particular type of post, the Contractor may choose the type of material of post to use.
      2) Use posts of either timber, or steel, and of the sizes and dimensions specified in the Contract Documents. Use the particular type selected throughout a run of rail, except where special steel posts are required.
   b. Timber Posts:
      1) Meet the requirements of the latest edition of the Southern Pine Inspection Bureau's Standard Grading Rules for Southern Pine Lumber, for No.1 grade timber, and treat the posts in accordance with the requirements for posts in FDOT 955-5.3. Ensure that penetration of preservative is in

accordance with requirements for round piles and fence posts in FDOT 955-6.2. Shape and drill the posts prior to treatment, and ensure that they do not vary more than 1 inch from the specified length. Dress all timber posts on all four sides (S4S).

c. Steel Posts:

1) Use steel posts meeting the requirements of ASTM A36 steel. Galvanize the posts in accordance with the requirements of ASTM A 123, with 2 oz/ft2 of zinc coating. Drill the posts prior to galvanizing. Ensure that the manufacturer furnishes certification showing physical and chemical properties of each heat, the amount of spelter coating, and conformance to ASTM A 123.

2) The Contractor may use steel guardrail posts of either a rolled section or a welded structural shape with nominal dimensions as shown in the FDOT Design Standards.

3) For welded structural shapes, meet the following requirements:

a) Ensure that the design properties of the shape meet or exceed the design properties for a W 6 x 9 shape as contained in the AISC Manual of Steel Construction.

b) Weld in accordance with the requirements of ASTM A 769.

c) After cutting posts to length, place a weld to seal the spaces between the web plate and flange plates.

d) Galvanize as specified above after completing all drilling and welding.

3. Anchor Blocks:

a. Use anchor blocks of Class I concrete, and construct and place them in accordance with the requirements shown in the Plans or as directed by the Engineer.

4. Offset Blocks:

a. Use guardrail offset blocks of either timber, steel, recycled plastic, or rubber, and of the sizes specified in the FDOT Design Standards.

b. Treat timber blocks in accordance with the requirements for posts in FDOT 955-5.3. Ensure that penetration of preservative is in accordance with requirements for round piles and fence posts in FDOT 955-6.2. For timber offset blocks, meet the requirements of the latest edition of the Southern Pine Inspection Bureau's Standard Grading Rules for Southern Pine Lumber, for No.1 grade timber. Dress all timber offset blocks on all four sides (S4S). Ensure that timber offset blocks do not vary more than 0.25 inch from the specified length

c. Use rubber blocks that have a minimum Durometer hardness of 50 (ASTM D 2240), show no cracking at the end of an ozone exposure of 100 ±10 pphm for 15 hours at 100ºF (ASTM D 1149 mounting type A), do not exceed 15 points change in Durometer hardness in oven ageing for 70 hours at 158ºF (ASTM D 573), and show no cutting or tearing under a 6,500 lb load applied through a guardrail section. Ensure that the blocks present a neat appearance and have plane surfaces. Provide rubber blocks that are 6 inches wide, 8 inches deep and 14 inches high. Allow dimensional tolerances of ±5/8 inch in height, ±3/8 inch in width, and ±3/8 inch in depth.

d. For Recycled Plastic offset blocks, meet the requirements of FDOT Section 972.

5. Reflector Elements:

a. Provide reflectors that meet the requirements of FDOT 993-5.

b. Mount reflectors onto the guardrail in accordance with the details shown in the Plans and the FDOT Design Standards.

6. Certification:

a. Provide the Engineer, at least ten days prior to guardrail construction, a certification from the manufacturer confirming that all materials (timber or steel posts, anchor and offset blocks, reflector elements, and all other accessories) meet the requirements of the Contract Documents and the FDOT Design Standards.

b. Furnish the Engineer a Certificate of Compliance certifying that the guardrail system, materials and construction practices, comply with applicable FDOT Design Standards and Contract Specifications.

c. Acceptance of furnished material will be based on the Certificate of Compliance, material certification and visual inspection by the Engineer.

C. Setting Posts.

1. Set standard length posts vertically to the depth shown in the FDOT Design Standards. Set special length posts vertically to the depth shown in the plans. Align and realign posts as necessary, until final acceptance. Where the posts are not set in concrete or mounted on structures, backfill the post holes with suitable thoroughly tamped material. As an alternate method, the Contractor may use a post-driving machine, meeting the approval of the Engineer and capable of driving the posts without damaging them.

2. For guardrail post replacement, backfill and compact the existing hole prior to setting the new post.

3. If driving timber posts, the Contractor may either block out holes in the asphalt for the posts during the asphalt paving operation or cut holes through the asphalt mat prior to the post installation. Blocked out holes or cut holes in the asphalt pavement shall be at least 50% larger than the sectional area of the timber post. After completing driving of the posts patch the area of asphalt around each post with fresh hot bituminous mixture.

4. If driving steel posts, drive the post directly through the asphalt mat. Fill depressions or cracks with fresh, hot bituminous mixture in a manner meeting the approval of the Engineer.

5. For either timber or steel post locations, in which rock, concrete or asphalt thicker than 2 inches exist, remove such material and backfill with suitable material, thoroughly tamped as detailed in the FDOT Design Standards.

D. Erection of Rail

1. Erect the guardrail panels, supports, anchors, etc., as shown in the FDOT Design Standards.

E. Existing Guardrail.

1. Stockpile guardrail, so specified, within the right-of-way at a location approved by the Engineer. Dispose of all remaining guardrail not specified for stockpiling.

F. Method of Measurement.

1. Guardrail:
   a. The quantity to be paid for will be the length, in feet, constructed, in place and accepted.
2. Miscellaneous items as provided by the Contract Documents:
   a. End Anchorage Assemblies:
      1) The quantity to be paid for will be the number of each type constructed, in place and accepted.
   b. Special Guardrail Posts:
      1) The quantity to be paid for will be the number of each, constructed, in place and accepted.
      2) The designation “Special Guardrail Posts” will include only such posts as require special fabrication, for installation at locations where the normal setting would conflict with concrete structures, such as approach slabs, culvert slabs, footings, inlets, etc. Special posts, however, will not include posts for double-face median guardrail, regardless of whether they are embedded in or attached to concrete.
   c. Bridge Anchorage Assemblies:
      1) The quantity to be paid for will be the number of each, constructed, in place and accepted.
   d. Guardrail Anchorage (Concrete Barrier Wall):
      1) The quantity to be paid for will be the number of each, constructed, in place and accepted.
   e. Guardrail Post Replacement:
      1) The quantity to be paid for will be the number of each, replaced.
   f. Removal of Existing Guardrail:
      1) The quantity to be paid for will be the length, in feet, measured prior to removal.
   g. Special Steel Guardrail Posts:
      1) The quantity to be paid for will be the number of each, constructed, in place and accepted.

G. Basis of Payment.

1. Guardrail:
   a. Price and payment will be full compensation for all work specified under this Article, including the furnishing and installing of the acrylic plastic reflectors and all other materials as specified. Payment will be made under the items as follows:
      1) Where the Contractor furnishes all materials for the guardrail, and the Engineer does not require shop-bent rails, payment will be made under the basic item of Guardrail.
      2) Where the radius of the guardrail installation is such as to require shop bending of the guardrail panels, payment will be made under the item of Guardrail (Shop-bent Panels).
   b. All component parts of the complete guardrail installation will be included in the price per foot for the above items except, when the Contract Documents provides for the separate payments to be made under the special items listed below.
      1) End Anchorage Assemblies:
         a) Price and payment will include all components specified in the Contract Documents and FDOT Design Standards.
      2) Special Guardrail Posts:
         a) Price and payment will include all costs for furnishing and installing the special posts that are over and above the costs for the normal posts, which are replaced by such special posts.
      3) Bridge Anchorage Assemblies:
         a) When the Contract Documents provide for direct payment for Bridge Anchorage Assemblies, price and payment will include furnishing and installing the special End Shoes, Wood Blocks or Retrofit Wing Posts, Concrete Anchor Posts and necessary hardware.
         b) When the Contract Documents do not provide for direct payment for Bridge Anchorage Assemblies, the Contractor shall include the cost for the assemblies in the Contract price per foot for the guardrail.
      4) Guardrail Anchorage (Concrete Barrier Wall):
         a) Price and payment will include installing connections to concrete barrier walls, as shown on the FDOT Design Standards, Index Nos. 400 and 410.
      5) Guardrail Post Replacement:
         a) Price and payment will include all labor, materials, and equipment required for removal and disposal of existing posts in areas provided by the Contractor, backfilling and compacting existing holes, and replacement with new posts.
      6) Removal of Existing Guardrail:
         a) Price and payment will include all labor and equipment required for removal and disposition of the existing guardrail, as specified in the Contract Documents. No additional payment will be made for the removal of the back rail on double face guardrail, thrie beam guardrail, nested rail, safety pipe rail, rub rail or end anchorages.

7) Special Steel Guardrail Posts with Accessories:

a) Price and payment will include all components specified in the Contract Documents and the FDOT Design Standards.

2. Payment Items: Payment will be made under the items listed below that are required by the Contract Documents for performance of the Work and with awarded Contract unit prices:

Item No.	Description	Unit
536-1-0	Guardrail-Roadway, General/Low Speed TL-2	LF
536-7-1	Special Guardrail Post - Deep Post for Slope Break Condition - Timber or Steel	EA
536-85-20	Guardrail End Treatment-Trailing Anchorage	EA
536-85-22	Guardrail, End Anchorage Assembly Flared	EA
536-85-24	Guardrail End Anchorage Assembly (Parallel) (Type SKT - 350)	EA

538 RESETTING GUARDRAIL

A. Description.

1. Remove the existing guardrail, and reset the salvaged guardrail with new materials. Reset the guardrail, at locations shown in the Plans or designated by the Engineer, in accordance with the FDOT design standards for guardrail construction, as modified by the Contract Documents.

B. Materials.

1. Prevent damage to reusable materials when removing existing guardrail.
2. Furnish all new materials necessary to complete the reset guardrail installation.
3. Provide only new offset blocks.
4. Meet the requirements specified in the Contract Documents for Guardrail.

C. Construction Methods.

1. Set posts in accordance with the requirements of the Contract Documents.
2. Erect guardrail panels, anchors, and hardware in accordance with the FDOT design standards for guardrail construction, as modified by the Contract Documents.
3. Replace any salvageable materials damaged by operations at no expense to the Department.
4. Use a consistent type of post throughout a run of guardrail.

D. Method of Measurement.

1. The quantities to be paid for will be as measured and accepted by the Engineer in feet of reset guardrail.
2. Additionally and where provided by the Contract Documents, the quantities of the following items to be paid for will be as measured and accepted by the Engineer:
   a. number of end anchorage assemblies of each type as designated,
   b. number of special posts, and
   c. number of bridge anchorage assemblies.

E. Basis of Payment.

1. Prices and payments for resetting guardrail will be full compensation for all work specified in this Article, including furnishing all required new hardware and posts, all new offset blocks, and replacement of any material damaged by the Contractor except as specified below.
2. Price and payment for end anchorage assemblies, special guardrail posts, and bridge anchorage assemblies will be as specified in the Contract Documents for Guardrail.
3. Payment for new guardrail panels furnished to replace such items determined to be non-salvageable, excluding any items damaged by the Contractor, will be paid for at the actual invoiced cost for the panels including transportation charges, to which cost will be added an amount equal to 25% of the total invoice amount.
4. No separate pay item(s) for Resetting Guardrail will be provided under this contract

550 FENCING TYPE "B" (SECTION 550)

A. Page 626, Section 550-6 - Basis of Payment:

1. Subarticle 6.1 is expanded to include:
   a. The Contract price per linear foot for the Item of Fencing, measured as specified in 550-5.2, shall be full compensation for all work and materials specified in this Section and necessary for the complete installation, including line posts, corner, end, and pull posts and the assemblies therefore, as provided below, and not including the payment stipulated for extra length posts. Such price and payment shall include, but not be limited to, the following specific incidental work:
      1) Any work required to level and prepare the terrain along the line of the fence.
      2) Any additional clearing incidental to construction of the fence.
      3) All preparation for post holes, in whatever type of material, as specified herein, including the Class I Concrete for the placement and setting of all posts.
      4) Any furnishing and installing of electrical grounds.
      5) Any additional work or materials required for special construction over irregular terrain, or terrain of inadequate support for the posts, including the

additional barbed wire, but not including the extra lengths of posts ordered by the Engineer.

6) Any costs of erection and removal of any temporary fencing, which might be necessary for maintaining security of livestock, etc., on adjacent property during construction of the new fence.

B. Subarticle 6.2: Delete in its entirety.

C. Basis of Payment:

1. Payment for removal and relocation of existing fences as directed by the Engineer will be included under:

Item No.	Description	Unit
550-10-228	FENCING (Type B) (5.1" to 6" Height) (Reset existing)	LF

575 SODDING

A. Description.

1. Establish a stand of grass within the specified areas, by furnishing and placing sod, and rolling, watering, and maintaining the sodded areas to ensure a healthy stand of grass.

B. Materials. Meet the following requirements:

1. Sod FDOT 981-2
2. Water FDOT Section 983

C. Construction Methods.

1. Preparation of Ground: Scarify or loosen the areas requiring sod to a depth of 6 inches. On areas where the soil is sufficiently loose, particularly on shoulders and fill slopes, the Engineer may authorize the elimination of the ground preparation. Limit preparation to those areas that can be sodded within 72 hours after preparation. Prior to sodding, thoroughly water areas and allow water to percolate into the soil. Allow surface moisture to dry before sodding to prevent a muddy soil condition.
2. Placing Sod: Place sod immediately after ground preparation. Do not use sod which has been cut for more than 72 hours. Stack all sod that is not planted within 24 hours after cutting and maintain proper moist condition.
   a. Do not sod when weather and soil conditions are unsuitable for proper results. Pre-wet the area prior to placing sod. Do not place sod on eroded or washed out sites.
   b. Place the sod on the prepared surface, with edges in close contact, and embed it firmly and smoothly by light tamping with appropriate tools.
   c. Place the sod to the edge of all the paving and shrub areas and 1 inch below adjoining pavement with an even surface and edge. Place rolled sod parallel with the roadway and cut any exposed netting even with the sod edge.
   d. Roll using a lightweight turf roller. Provide a true and even surface without any displacement of the sod or deformation.
   e. Where sodding in drainage ditches, stagger the setting of the sod pieces to avoid a continuous seam along the line of flow. Ensure that the offsets of individual strips do not exceed 6 inches. Tamp the outer pieces of sod to produce a featheredge effect.
   f. Peg sod at locations where the sod may slide. Drive pegs through sod blocks into firm earth, at intervals approved by the Engineer.
   g. Remove any sod as directed by the Engineer.
3. Watering: Thoroughly water the sod immediately after placing. Do not water in excess of 1 inch per week for establishment. The contractor shall water and maintain newly sodded areas as needed and adhere to the following minimum frequencies until final acceptance of the Project by the County unless otherwise approved by the Engineer:
   a. Minimum Watering Schedule (3/4” to 1” per watering)
      1) Every day for the first 14 days after placement, followed by
      2) Three times per week for next 14 days, followed by
      3) Two times per week until final acceptance of the project.
   b. Mowing Schedule
      1) Minimum bi-weekly after established, and
      2) Immediately prior to final acceptance.

D. Maintenance.

1. Maintain the sodded areas in a satisfactory condition until final acceptance of the project. Include in such maintenance the filling, leveling, and repairing of any washed or eroded areas, as may be necessary. The Department will pay for resodding necessary due to factors determined by the Engineer to be beyond the control of the Contractor.
2. Monitor placed sod for growth of pest plants and noxious weeds. If pest plants and/or noxious weeds manifest themselves within 30 days of placement of the sod, treat affected areas by means acceptable to the Department at no expense to the Department. If pest plants and/or noxious weeds manifest themselves after 30 days from date of placement of sod, the Engineer, at his sole option, will determine if treatment is required and whether or not the Contractor will be compensated for such treatment. If compensation is provided, payment approved by the Engineer will be made as unforeseeable work.
3. Maintenance of sodded areas is required for no less than thirty (30) days after placement or until the sodded area is determined to be established and satisfactory by the Engineer, whichever is greater.

E. Method of Measurement.

1. The quantities to be paid for will be the area of sodding measured and accepted by the Engineer.

2. Measurement for payment shall include only areas of sodding that have established a satisfactory root system (i.e. leaf blades break before sod can be pulled from the soil by hand).

F. Basis of Payment.

1. Prices and payments for Sodding will be full compensation for all work, water, and materials required to perform the work as specified in this Article, the satisfactory disposal of excavated material, and the furnishing and application of the water.
2. The costs for watering, mowing, and maintaining the sod in a moist condition for a period of at least two weeks, shall be included in the Contract unit price for Sodding.
3. Payment will be made under:

575-1-1	Sodding (Pensacola, Bahia or Match existing) (includes watering)	SY

575 RELOCATION OF TREES OR PALMS; AND PROTECTION OF EXISTING LANDSCAPE

A. Relocation of trees or palms

1. General
   a. Work consists of relocating trees and/or palms within the existing right of way, within a one (1) mile radius, in locations indicated in the drawings or as directed by the Engineer. Where drainage work is required, minor adjustments to the system may be necessary to minimize relocations.
   b. The Contractor shall be cognizant of and comply with the Miami-Dade County Ordinance regulating the removal and/or relocation of all trees. Permits required for tree removal and/or relocation shall be the responsibility of the Contractor.
2. Material
   a. Water: provide water by a method approved by the Engineer meeting the requirements of FDOT Section 983.
   b. Backfill Material: the existing material excavated from the planting pit is to be used as backfill.
3. Pruning
   a. Trees
      1) Prior to root pruning, prune tree canopy to ISA Standards and conform to ANSI A300. The extent of pruning shall be the minimum needed to reduce shock resulting from severing of roots.
      2) No more than 30 percent of total canopy branches greater than one inch in diameter may be removed. Interior sucker growth and dead wood shall be removed first, followed by selective pruning of branches and limbs. Limbs that run through the tree crown shall be removed before other limbs are removed. Pruning shall not destroy the form of the tree. All cuts shall be made outside of the branch collar.
      3) Trees shall be root pruned six (6) weeks prior to relocation. No backhoes or trenchers shall be used in the process. Backfill trench within 24 hours after root pruning with coarse sand.
      4) Where required by the Engineer or the designated County arborist, brace and guy the root pruned tree to support and maintain the tree in a stable vertical position until relocation.
4. Replanting
   a. Trees
      1) The planting pit shall be a minimum of 24” wider than the diameter of the rootball unless otherwise directed by the Engineer. The depth of the pit shall be adjusted so that the top of the rootball will be at the same elevation or slightly above the existing ground level. All plants shall be centered in the hole. Trees shall be watered in during the planting process to eliminate air pockets in the backfill.
      2) Size of the trees will be the trunk diameter measured at breast height (54 inches above grade).
      3) All trees are to be fertilized at the time of planting with Atlantic Florida East Coast Fertilizer Mixture (No. 5231) 12-06-08 slow-release fertilizer or approved equal. This fertilizer is to be spread evenly over the top of the planting pit after backfilling. The application rate is 2 lbs/tree.
   b. Palms
      1) The planting pit shall be a minimum of 24” wider than the diameter of the rootball unless otherwise directed by the Engineer. The depth of the pit shall be adjusted so that the top of the rootball will be at the same elevation or slightly above the existing ground level. All plants shall be centered in the hole. Burlap is to be untied and pulled away from the top of the ball, unless specified in writing by the Engineer. Plants are to be watered-in during the planting process to eliminate all air pockets in the backfill material.
      2) Size of the palm will be determined by measuring ground level to the topmost portion of the palm.
      3) All palms are to be fertilized at time of planting with Atlantic Florida East Coast Fertilizer Mixture 08-04-12 slow-release improved palm special fertilizer or equal. This fertilizer is to be spread evenly over the top of the planting pit after backfilling. The application rate of 3 lbs/palm.
5. Mulching:
   a. A planting saucer will be established, the same size as the diameter of the planting pit and the rim shall be no higher than 4 inches. The mulch is to be Forestry Research Products Florimulch (Melaleuca mulch) free of viable seed and burrowing nematodes and certified by the Florida Department of Agriculture, or equal, and is to be spread evenly inside the saucer to a depth of 3 inches.

b. Remove saucer prior to Project completion or as directed by the Engineer.

6. Staking and Guying:

a. This work shall be performed in accordance with the standard planting detail for trees and/or palms.

b. Palms shall be staked using the Arborlock Staking System or equal (with the approval of County representative).

c. Trees shall be guyed using Arbor Tie (a flat woven polypropylene material with 900 lbs. Break strength) manufactured by Deep Root Partners, L.P., or equal.

d. Six (6) month after planting, the Contractor shall return to the site and remove all materials used for staking and guying. At the discretion of the Engineer, the period for staking and guying may be extended beyond six (6) months but for no longer than one (1) year.

7. Watering Schedule:

a. After replanting trees and palms, they are to be watered as follows:

1) for the first 4 weeks 3 times/week

2) for the second 4 weeks 2 times/week

3) for the third 4 weeks 1 time/week

b. Application Rate:

1) Trees and slender trunk palms 6 gal/watering

2) Moderate and heavy trunk palms10 gal/watering

8. Guarantee of Relocated Trees and Palms

a. All trees and palms that are relocated shall be guaranteed for a period of one year after relocation.

B. Protection of Existing Landscaping

1. Description:

a. Install tree protection barricades when called for in the Contract Documents or by the Engineer to protect existing trees and landscape from damage during project construction. Place barricades, as directed by the Engineer, at the drip line of the landscape foliage or as far from the base of the tree trunk as possible. Barricades shall consist of Heavy-Duty Construction (Orange) Barrier Fence (Minimum 4-feet high) attached to 2-inch by 4-inch by 6-foot long vertical wooden posts per FDOT Index No. 544 except that 2-inch by 4-inch horizontal wooden top bars with a maximum 8-foot spacing between posts shall be used. Barricades shall be able to withstand bumps by heavy equipment and trucks. Maintain barricades in good condition.

b. All trees, shrubbery, and landscaping (on the R/W or adjacent property) irreparably damaged or destroyed by the Contractor during construction, as determined by the Engineer, shall be replaced by and at the Contractor's expense. Trees and shrubbery shall be replaced with like-sized plants; except for trees or shrubs removed pursuant to the requirements of the Contract Documents or at the specific direction of the Engineer. Replacement plant size shall be determined by calculating the total diameter at breast height (DBH) of affected trees, palms, and/or shrubbery, or the total averaged height of affected trees, palms, and/or shrubs. All replacement material must be Florida #1 Grade or better.

C. Method of Measurement:

1. The quantity to be paid for relocation of trees or palms will be the quantities measured, completed and accepted by the Engineer, under the items shown in the Contract Document.

2. The quantity to be paid for protection of existing landscape will be the quantity in linear feet of barricade, completed and accepted, measured by the Engineer.

D. Basis of Payment:

1. Price and payment shall be full compensation for all work specified in this Section inclusive of all labor, material, and equipment necessary for the proper relocation of trees or palms and protection of existing landscape as required by the Contract Documents.

2. Payment will be under:

Item No.	Description	Unit
580-322-1A	Tree Removal and Disposal (Less than 6" Dia.)	EA
580-322-2A	Tree Removal And Disposal (6" to 12" Dia.)	EA
580-322-4A	Tree Removal And Disposal (12" to 24")diameter	EA
580-322-5A	Tree Removal And Disposal (24" To 36" Dia.)	EA

580 LANDSCAPE INSTALLATION

A. Description.

1. Plant trees and shrubs of the species, size, and quality indicated in the plans.

2. The Engineer reserves the right to adjust the number and location of any of the designated types and species to be used at any of the locations shown, in order to provide for any unanticipated effects which might become apparent after the substantial completion of other phases of the Project, or for other causes.

B. Materials.

1. Plants:

a. Authority for Nomenclature; Species, etc.: For the designated authority in the identification of all plant material, refer to two publications of L.H. Bailey: "Hortus III" and "Manual of Cultivated Plants," and ensure that all specimens are true to type, name, etc., as described therein. For the standard nomenclature, refer to the publication of the American Joint Committee on Horticultural Nomenclature, "Standardized Plant Names."

b. Grade Standards and Conformity with Type and Species: Only use nursery grown plant material except

where specified as Collected Material. Use nursery grown plant material that complies with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".

1) Except where a lesser grade might be specifically specified in the plans, ensure that the minimum grade for all trees and shrubs is Florida No. 1. Ensure that all plants are the proper size and grade at the time of delivery to the site, throughout the project construction period and during any designated plant establishment period.

2) Ensure that plant materials are true to type and species and that any plant materials not specifically covered in Florida Department of Agriculture's "Grades and Standards for Nursery Plants" conform in type and species with the standards and designations in general acceptance by Florida nurseries.

3) Ensure that plant materials are shipped with tags stating the botanical and common name of the plant.

c. Inspection and Transporting: Move nursery stock in accordance with all Federal and State regulations and accompany each shipment with the required inspection certificates for filing with the Engineer.

2. Water: Water used in landscaping operations may be obtained from any approved source. Ensure that water is free of any substance which might be detrimental to plant growth. The use of effluent water is subject to approval and must meet all Federal, State and Local requirements.

C. Specific Requirements for the Various Plant Designations.

1. Balled-and-Burlapped Plants (B&B), and Wired Balled-and-Burlapped (WB & B):

a. General: Properly protect the root ball of these plants until planting them. The Engineer may reject any plant which shows evidence of having been mishandled.

1) Set the B&B and WB&B plants then remove the top 2/3 of all wire, rope, and binding surrounding the plant. Remove the burlap from the top 4 inches [100 mm] of the root ball. Do not disturb the root ball in any way. Bare root material is not allowed for substitution.

2) At least 90 days before digging out B & B and WB & B plants, root-prune those 1 1/2 inches [38 mm] or greater in diameter and certify such fact on accompanying invoices.

b. Provisions for Wiring: For plants grown in soil of a loose texture, which does not readily adhere to the root system (and especially in the case of large plants or trees), the Engineer may require WB & B plants. For WB & B plants, before removing the plant from the excavated hole, place sound hog wire around the burlapped ball, and loop and tension it until the tightened wire netting substantially packages the burlapped ball such as to prevent disturbing of the loose soil around the roots during handling.

2. Container-Grown Plants (CG): The Engineer will not accept any CG plants with roots which have become pot-bound or for which the top system is too large for the size of the container. Fully cut and open all containers in a manner that will not damage the root system. Do not remove CG plants from the container until immediately before planting to prevent damage to the root system.

3. Collected Plants (Trees and Shrubs) (C): Use C plants which have a root ball according to "Florida Grades and Standards for Nursery Plants". Do not plant any C plant before the Engineer's inspection and acceptance at the planting site.

4. Collected Plants (Herbaceous) (HC): The root mass and vegetative portions of collected herbaceous plants shall be as large as the specified container-grown equivalent. Do not plant any collected plant before inspection and acceptance by the Engineer.

5. Specimen Plants (Special Grade): When Specimen (or Special Grade) plants are required, label them as such on the plant list, and tag the plant to be furnished.

6. Palms: Wrap the roots of all plants of the palm species before transporting, except if they are CG plants and ensure that they have an adequate root ball structure and mass for healthy transplantation as defined in "Florida Grades and Standards for Nursery Plants".

a. The Engineer will not require burlapping if the palm is carefully dug from marl or heavy soil that adheres to the roots and retains its shape without crumbling. During transporting and after arrival, carefully protect root balls of palms from wind and exposure to the sun. Muck grown palms are not allowed. After delivery to the job site, if not planting the palm within 24 hours, cover the root ball with a moist material. Plant all palms within 48 hours of delivery to the site.

b. Move sabal and coconut palms in accordance with the "Florida Grades and Standards for Nursery Plants."

7. Substitution of Container-Grown (CG) Plants: With the Engineer's approval, the Contractor may substitute CG plants for any other root classification types, if he has met all other requirements of the Contract Documents.

D. Planting Requirements.

1. Layout: Prior to any excavation or planting, mark all planting beds and individual locations of palms, trees, large shrubs and proposed art and architectural structures, as shown in the plans, on the ground with a common bright orange colored spray paint, or with other approved methods, within the project limits. Obtain the Engineer's approval and make necessary utility clearance requests.

2. Excavation of Plant Holes: Excavate plant holes after an area around the plant three times the size of the root ball has been tilled to a depth of the root ball. Ensure that the plant hole is made in the center of the tilled area only to the depth of the plant root ball.

a. Where excess material has been excavated from the plant hole, use the excavated material to backfill to proper level.

3. Setting of Plants: Center plants in the hole. Lower the plant into the hole so that it rests on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance.

   a. Backfill with native soil, unless otherwise specified on the plans. Firmly rod and water-in the backfill so that no air pockets remain. Apply a sufficient quantity of water immediately upon planting to thoroughly moisten all of the backfilled earth. Keep plants in a moistened condition for the duration of the planting period.

   b. When so directed, form a water ring 6 inches [150 mm] in width to make a water collecting basin with an inside diameter equal to the diameter of the excavated hole. Maintain the water ring in an acceptable condition.

4. Special Bed Preparation: Where multiple or mass plantings are to be made in extended bedding areas, and the plans specify Special Bed Preparation, prepare the planting beds as follows:

   a. Remove all vegetation from within the area of the planting bed and excavate the surface soil to a depth of 6 inches [150 mm]. Backfill the excavated area with peat, sand, finish soil layer material or other material to the elevation of the original surface. Till the entire area to provide a loose, friable mixture to a depth of at least 8 inches [200 mm]. Level the bed only slightly above the adjacent ground level. Then mulch the entire bedding area, in accordance with 580 8.

E. Staking and Guying.

1. General: When specified in the plans, or as directed by the Engineer, stake plants in accordance with the following.

   a. Use wide plastic, rubber or other flexible strapping materials to support the tree to stakes or ground anchors that will give as the tree moves in any direction up to 30 degrees. Do not use rope or wire through a hose. Use guy chords, hose or any other thin bracing or anchorage material which has a minimum 12 inches [300 mm] length of high visibility flagging tape secured to guys, midway between the tree and stakes for safety.

   b. Stake trees larger than 1 inch [25 mm] diameter and smaller than 2 inches [50 mm] diameter with a 2 by 2 inch [50 by 50 mm] stake, set at least 2 feet [0.6 m] in the ground and extending to the crown of the plant. Firmly fasten the plant to the stake with flexible strapping materials as noted above.

2. Trees of 2 to 3 1/2 inches [50 to 90 mm] Caliper: Stake all trees, other than palm trees, larger than 2 inches [50 mm] caliper and smaller than 3 1/2 inches [90 mm] caliper with two 2 by 4 inch [50 by 100 mm] stakes, 8 feet [2.4 m] long, set 2 feet [0.6 m] in the ground. Place the tree midway between the stakes and hold it firmly in place by flexible strapping materials as noted above.

3. Large Trees: Guy all trees, other than palm trees, larger than 3 1/2 inches [90 mm] caliper, from at least three points, with flexible strapping materials as noted above.

   a. Anchor flexible strapping to 2 by 4 by 24 inch [50 by 100 by 600 mm] stakes, driven into the ground such that the top of the stake is at least 3 inches [75 mm] below the finished ground.

4. Special Requirements for Palm Trees: Brace palms which are to be staked with three 2 by 4 inch [50 by 100 mm] wood braces, toe-nailed to cleats which are securely banded at two points to the palm, at a point one third the height of the trunk. Pad the trunk with five layers of burlap under the cleats. Place braces approximately 120 degrees apart and secure them underground by 2 by 4 by 12 inch [50 by 100 by 300 mm] stake pads.

F. Tree Protection and Root Barriers.

1. Install tree barricades when called for in the Contract Documents or by the Engineer to protect existing trees from damage during project construction. Place barricades at the drip line of the tree foliage or as far from the base of the tree trunk as possible. Barricades shall be able to withstand bumps by heavy equipment and trucks. Maintain barricades in good condition.

2. When called for in the Contract Documents, install root barriers or fabrics in accordance with the details shown.

G. Pruning.

1. Prune all broken or damaged roots and limbs in accordance with established arboriculture practices. When pruning is completed ensure that all remaining wood is alive. Do not reduce the size or quality of the plant below the minimum specified.

H. Mulching.

1. Uniformly apply mulch material, consisting of wood chips (no Cypress Mulch is allowed), pine straw, compost, or other suitable material approved by the Engineer, to a minimum loose thickness of 3 inches [75 mm] over the entire area of the backfilled hole or bed within two days after the planting. Maintain the mulch continuously in place until the time of final inspection.

I. Disposal of Surplus Materials and Debris.

1. Dispose of surplus excavated material from plant holes by scattering or otherwise as might be directed so that it is not readily visible or conspicuous to the passing motorist or pedestrian. Remove all debris and other objectionable material from the site and clean up the entire area and leave it in neat condition.

J. Contractor's Responsibility for Condition of the Plantings.

1. Ensure that the plants are kept watered, that the staking and guying is kept adjusted as necessary, that all planting areas and beds are kept free of weeds and undesirable plant growth and that the plants are maintained so that they are healthy, vigorous, and undamaged at the time of acceptance.

K. Plant Establishment Period.

1. If the Contract Documents designate a Plant Establishment Period, assume responsibility for the

proper maintenance, survival and condition of all landscape items during such period at no additional cost.

L. Method of Measurement.

1. The quantities to be paid for will be the items shown in the plans, completed and accepted.

M. Basis of Payment.

1. No separate pay item(s) for Landscape Installation will be provided under this contract.

600 GENERAL PROVISIONS FOR TRAFFIC CONTROL DEVICES (REV. 04-14-15)

A. Please refer to Appendices to the Special Provisions for Traffic Signals and Signs Provisions and Specifications.

701 AUDIBLE AND VIBRATORY PAVEMENT MARKINGS (REV. 01-07-2014)

A. Description

1. Apply audible and vibratory pavement markings in accordance with the Contract Documents.

B. Materials

1. Thermoplastic:
   a. Use thermoplastic material meeting the requirements of FDOT 971-1 and 971-9 and listed on the FDOT's Approved Product List (APL) as an approved system. The Engineer will take random samples of the materials in accordance with the FDOT's Sampling, Testing and Reporting Guide schedule.
2. Retroreflective Elements:
   a. Use reflective elements recommended by the manufacturer that meet the requirements of FDOT 971-1.7 and are part of the system listed on the APL.

C. Equipment.

1. Use equipment capable of providing continuous, uniform heating of the striping material to temperatures exceeding 390ºF, mixing and agitating the material in the reservoir to provide a homogenous mixture without segregation. Use equipment that will maintain the striping material in a plastic state, in all mixing and conveying parts, including the line dispensing device until applied. Use equipment which is capable of producing a consistent pattern of transverse bumps positioned at regular and predetermined intervals. Use equipment which meets the following requirements:
   a. Capable of traveling at a uniform rate of speed, both uphill and downhill, to produce a uniform application of striping material and capable of following straight lines and making normal curves in a true arc.
   b. Capable of applying reflective elements to the surface of the completed stripe by automatic dispensers attached to the striping machine such that the reflective elements are dispensed closely behind the installed line. Use reflective element dispensers equipped with an automatic cut-off control that is synchronized with the cut-off of the thermoplastic material and applies the reflective elements uniformly on the entire traffic stripe surface with 50 to 60% embedment.
   c. Equipped with a special kettle for uniformly heating and melting the striping material. The kettle must be equipped with an automatic temperature control device and material thermometer for positive temperature control and to prevent overheating or scorching of the thermoplastic material.
   d. Meets the requirements of the National Fire Protection Association (NFPA), State and Local authorities.

D. Application

1. General:
   a. Before applying traffic stripes and markings, remove any material that would adversely affect the bond of the traffic stripes by a method approved by the Engineer.
   b. Before applying traffic stripes to any portland cement surface, apply a primer, sealer or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches from construction joints of portland cement concrete pavement.
   c. Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 50ºF and rising for asphalt surfaces and 60°F and rising for concrete surface.
   d. Apply striping to the same tolerances in dimensions and in alignment specified in Article 710, Painted Pavement Markings, Subarticle D. When applying traffic stripes and marking over existing markings, ensure that no more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.
   e. Conduct field tests in accordance with FM 5-541. Take test readings representative of the striping performance. Remove and replace markings not meeting the requirements of this Section.

E. Thickness:

1. Apply flat base lines having a thickness of 0.100 to 0.150 inches, exclusive of the audible bumps, when measured above the pavement surface.
2. Measure, record and certify and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.
3. The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

F. Dimensions of Audible Bumps:

1. Apply the raised bumps with a profile such that the leading and trailing edges are sloped at a sufficient angle to create an audible and vibratory warning.
2. Bumps on shoulder and centerline markings shall be at least 0.45 inches at the highest point of the bump, above the pavement surface, including the base line. The height shall be measured after application of drop-on reflective elements. Bumps shall have a minimum baseline coverage dimension of 2.5 inches in both transverse and longitudinal directions. The bumps may have a drainage channel, the width of each drainage channel will not exceed 1/4 inch at the bottom of the channel. The longitudinal distance between bumps shall be approximately 30 inches.

G. Retroreflectivity:

1. Apply white and yellow audible and vibratory markings that will attain an initial retroreflectance of not less than 300 mcd/lx·m2 and not less than 250 mcd/lx·m2, respectively. Measure, record, and submit to the

Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541.

H. Color:

1. Use pavement marking materials that meet the requirements of FDOT 971-1.

I. Reflective Elements:

1. Apply reflective elements to all markings at the rates determined by the manufacturer's recommendations as identified for the APL System.

J. Loss:

1. If more than 1% of the bumps or more than three consecutive bumps are missing or broken (less than half a bump remaining) within the first 45 days under traffic, replace all failed bumps at no expense to the Department. If more than 2% of the bumps fail within the first 45 days under traffic, the replacement period will extend an additional 45 days from the date all replacement bumps were installed. If, at the end of the additional 45 days, more the 2% of all bumps (initial and replacement) fail, replace all failed bumps at no expense to the Department. Measure, record, certify and submit to the Engineer, the loss of bumps.

K. Contractor's Responsibility for Notification.

1. Notify the Engineer prior to the placement of audible and vibratory markings. Furnish the Engineer with the manufacturer's name and batch numbers of the thermoplastic materials and reflective elements to be used. Ensure that the batch numbers appear on the thermoplastic materials and reflective elements packages.

L. Protection of Newly Applied Audible and Vibratory Markings.

1. Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause.

M. Observation Period.

1. Longitudinal pavement markings are subject to a 180 day observation period under normal traffic. The observation period will begin with the satisfactory completion and acceptance of the pavement marking work.
2. The longitudinal pavement markings shall show no signs of failure due to blistering, excessive cracking, chipping, discoloration, poor adhesion to the pavement, loss of reflectivity or vehicular damage. The retroreflectivity shall meet the initial requirements of Subarticle G. The Department reserves the right to check the retroreflectivity any time prior to the end of the observation period.
3. Replace, at no expense to the Department, any longitudinal pavement markings that do not perform satisfactorily under traffic during the 180 day observation period.

N. Corrections for Deficiencies.

1. Correct all deficiencies by removal and reapplication of a one mile section centered around the deficiency at no cost to the Department.

O. Submittals.

1. Submittal Instructions:
   a. Prepare and submit a certification of quantities to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

P. Method of Measurement.

1. The quantities to be paid for under this Section will be as follows:
   a. The length, in net miles, of 6 inches solid traffic stripe, authorized and acceptably applied.
   b. The total traversed distance in gross miles of 10-30 skip line. The actual applied line is 25% of the traverse distance for a 1:3 ratio. This equates to 1,320 feet of marking per mile of single line.

Q. Basis of Payment.

1. Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.
2. No separate pay item(s) for Audible and Vibratory Pavement Markings will be provided under this contract.

705 OBJECT MARKERS AND DELINEATORS (REV. 08-23-12)

A. Description.

1. Furnish and install object markers to mark obstructions within or adjacent to the roadway of the types and at the locations called for in the Contract Documents.
2. Furnish and install delineators along the side of the roadway to indicate the alignment of the roadway as indicated in the Contract Documents.
3. Meet all requirements of the FDOT Design Standards and the Contract Documents.

B. Materials.

1. General:

a. Meet the following requirements:

Object Markers and Delineators	FDOT Section 993
Retroreflective and Nonreflective Sign Sheeting	FDOT Section 994

2. Product Acceptance on the Project:

   a. Ensure that delineators, delineator posts, and markers used to delineate guardrail and barrier wall are listed on the FDOT Qualified Products List.

   b. Provide to the Engineer a manufacturer's certification conforming to the requirements of Article 1.04 (Controlling Materials) of Division 1, which confirms that each product meets the requirements of this Article.

C. Installation Requirements.

1. Install delineators, object markers, and reflector units for guardrail and barrier wall and in accordance with the MUTCD, FDOT Design Standards and Contract Documents.

D. Method of Measurement.

1. The quantity to be paid for will be the number of delineators or object markers furnished, installed and accepted.

E. Basis of Payment.

1. Prices and payments will be full compensation for work specified in this Article, including the cost of labor, materials, and incidental items required to complete the work.

2. No separate pay item(s) for Object Markers and Delineators will be provided under this contract.

706 RAISED RETRO-REFLECTIVE PAVEMENT MARKERS AND BITUMINOUS ADHESIVE (REV. 05-02-12)

A. Description.

1. Place raised Retro-Reflective Pavement Markers (RPMs) and adhesive, which upon installation produces a positive guidance system to supplement other reflective pavement markings.

B. Materials.

1. Use only Class B markers unless otherwise shown on the Plans.

2. Meet the requirements of FDOT Section 970.

3. Product Acceptance on the Project.

   a. Use only reflective pavement markers and bituminous adhesive that are listed on the FDOT Qualified Products List.

   b. Provide Engineer a producer's certification, conforming to the requirements of Article 1.04 (Controlling Materials) of the General Requirements to these Specifications, which confirms that each product meets the requirements of this Article.

C. Equipment.

1. Use equipment having either thermostatically controlled double boiler type units utilizing heat transfer oil or thermostatically controlled electric heating pots to install hot applied bituminous adhesive. Do not use direct flame melting units with flexible adhesives; however, this type of unit may be used with standard adhesive in accordance with manufacturer's recommendations. Use a melter/applicator unit suited for both melting and pumping the adhesive through heated applicator hoses.

2. Heat the adhesive to between 375 and 425ºF and apply directly to the bonding surface from the melter/applicator by either pumping or pouring. Maintain the application temperature between 375 and 425ºF. The adhesive may be reheated. Do not exceed the manufacturer's recommendations for pot life at application temperatures.

D. Application.

1. Apply RPMs to the bonding surface using bituminous adhesives only. Engineer will conduct field testing in accordance with Florida Method (FM) 5-566. Correct RPMs not applied in accordance with these requirements at no cost to the Department.

2. Prior to application of adhesive, clean the bonding surface to remove any material that would adversely affect the adhesive.

3. Apply the adhesive to the bonding surface, not the RPMs, so that 100% of the bonding area of the RPMs will be covered, in accordance with adhesive manufacturer's recommendations. Apply sufficient adhesive to ensure, that when the RPMs are pressed downward into the adhesive, adhesive will be forced out around the entire perimeter of each RPM.

4. Immediately remove excess adhesive from the bonding surface and exposed surfaces of the RPMs. Soft rags moistened with mineral spirits meeting Federal Specifications TT-T-291 or kerosene may be used to remove adhesive from exposed faces of the RPMs. Do not use any other solvent. If any adhesive, pavement marking materials or other foreign matter adheres to the reflective face of the RPM, replace the RPM at no cost to the Department.

5. Install RPMs with the reflective face of the RPM perpendicular to a line parallel to the roadway centerline. Do not install RPMs over longitudinal or transverse joints of the bonding surface.

6. Ensure that all final RPMs are in place prior to opening the road to traffic.

7. If more than 2 percent of the RPMs fail in adhesion or alignment within the first 45 days under traffic, replace all failed RPMs at no expense to the Department. If more than 5 percent of the RPMs fail in adhesion and or alignment during the initial 45 day period, Engineer will extend the replacement period an additional 45 days from the date that all replacement RPMs have been installed.

If, at the end of the additional 45 day period, more than 2 percent of all RPMs (initial installation and 45 day replacements combined) fail in adhesion or alignment, replace all failed RPMs at no expense to the Department.

E. Contractor's Responsibility for Notification.

1. Notify Engineer prior to the placement of RPMs. At the time of notification, indicate the manufacturer and the LOT numbers of RPMs and bituminous adhesive that are intended for use. Verify that the approved LOT numbers appear on the material packages. Furnish a test report to Engineer certifying that the materials meet all requirements specified.

F. Method of Measurement.

1. Unless otherwise specified herein, the quantities to be paid for will be the number of RPMs, furnished and installed, completed and accepted.

G. Basis of Payment.

1. Lump Sum Payment: When the pay item for Painted Pavement Markings (Final Surface) is included in the Contract, price and payment for RPMs is as stipulated in Article 710 of these Specifications. RPMs will not be measured or paid for separately.
2. Payment will be made under the item(s) below if provided in the Contract with awarded Contract unit price(s) for the completed quantities, measured and accepted by Engineer. Price and payment will be full compensation for all work specified in this Article.

Item	Description	Unit
706- 3	Retro-Reflective Pavement Marker	EA

710 PAINTED PAVEMENT MARKINGS (REV. 05-02-12)

A. Description.

1. Apply Painted Traffic Stripes and Raised Retro-Reflective Pavement Markers (RPMs), in accordance with the Contract Documents.

B. Materials.

1. Use only materials listed on the FDOT Qualified Products List (QPL) meeting the following requirements:

Raised Retro-reflective Pavement Markers and Bituminous Adhesive	FDOT Section 970
Standard Waterborne Fast Dry Traffic Paint	FDOT 971-1 and 971-3
Fast Dry Solvent Paint	FDOT 971-1 and 971-4
Glass Spheres	FDOT 971-1 and 971-2

C. Equipment.

1. Use equipment that will produce continuous uniform dimensions of pavement markings of varying widths and meet the following requirements:
   a. Capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, in order to produce a uniform application of paint and capable of following straight lines and making normal curves in a true arc.
   b. Capable of applying glass spheres to the surface of the completed stripe by an automatic sphere dispenser attached to the striping machine such that the glass spheres are dispensed closely behind the installed line. Use a glass spheres dispenser equipped with an automatic cut-off control that is synchronized with the cut-off of the traffic paint and applies the glass spheres in a manner such that the spheres appear uniform on the entire pavement markings surface with 50 to 60 percent embedment.
   c. Capable of spraying the paint to the required thickness and width without thinning of the paint.
2. Paint tank must be equipped with nozzles having cut-off valves, which will apply broken or skip lines automatically.

D. Application:

1. General:
   a. Remove, by a method approved by Engineer, existing pavement markings such that scars or traces of removed markings will not conflict with new stripes and markings. Refer to Subarticle J below for Removal of Existing Painted Traffic Stripes and Markings Clean and dispose at an approved site all resulting debris. Use of paint to cover conflicting pavement markings is prohibited. Cost for removal of pavement markings is incidental to the work specified in this Article and will not be measured separately for payment. Cost for removing conflicting pavement markings during maintenance of traffic operations is included in general costs for Maintenance of Traffic.
   b. Before applying traffic stripes and markings, remove any material that would adversely affect the bond of the traffic stripes by a method approved by Engineer and consistent with manufacturer's specifications.
   c. Remove any vegetation, soil, and other materials covering the pavement where the marking is to be applied.
   d. Apply traffic stripes and markings only to dry surfaces, and when the ambient air and surface temperature is at least 40ºF and rising. Do not apply traffic stripes and markings when winds are sufficient to cause spray dust.
   e. Apply traffic stripes and markings, having well defined edges, over existing pavement markings such that not more than 2 inches on either end and not more than 1 inch on either side is visible.
   f. Mix the paint thoroughly prior to pouring into the painting machine. Apply paint to the pavement by spray or other means approved by Engineer.
   g. Conduct field testing in accordance with Florida Method (FM) 5-541. Remove and replace traffic stripes and markings not meeting the requirements of this Article at no additional cost to the Department.

h. Apply all pavement markings prior to opening the road to traffic.

i. Apply all retro-reflective pavement markers per the requirements of Article 706 (Raised Retro-Reflective Pavement Markers and Bituminous Adhesive).

2. Painted Pavement Markings (Final Surface), when included as a single lumps sum item in the Contract having and awarded Contract price, will include two applications of standard painted pavement markings and one application of retro-reflective pavement markers applied to the final surface. Wait at least 14 days after the first application to apply the second application of Painted Pavement Markings (Final Surface). Second application must be applied prior to final acceptance of the project.

3. Thickness: Apply paint to attain a minimum wet film thickness in accordance with the manufacturer's recommendations.

4. Retroreflectivity:

a. Apply white and yellow standard pavement markings that will attain an initial retroreflectance of not less than 300 mcd/lx•m^2 and not less than 250 mcd/lx•m^2, respectively. Measure, record and certify on a Department approved form and submit to Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541.

b. The Department reserves the right to test the markings within 3 days of receipt of the Contractor's certification. Failure to afford the Department opportunity to test the markings will result in non-payment. The test readings should be representative of the Contractor's striping performance. If the retroreflectivity values measure below values shown above, reapply the pavement markings at no additional cost to the Department.

c. For standard pavement markings, ensure that the minimum retroreflectance of white and yellow pavement markings are not less than 150 mcd/lx m^2. If the retroreflectivity values fall below the 150 mcd/lx m^2 value within six months of initial application, the striping will be reapplied at the Contractor's expense.

5. Color: Use paint material that meets the requirements of FDOT 971-1.

6. Glass Spheres: Apply glass spheres on all pavement markings immediately and uniformly following the paint application. The rate of application shall be based on the manufacturer's recommendation.

E. Tolerances in Dimensions and in Alignment.

1. Establish tack points at appropriate intervals for use in aligning stripes, and set a stringline from such points to achieve accuracy.

2. Dimensions:

a. Longitudinal Lines: Apply painted skip line segments with no more than ±12 inches variance, so that over-tolerance and under-tolerance lengths between skip line and the gap will approximately balance. Apply longitudinal lines at least 2 inches from construction joints of Portland cement concrete pavement.

b. Transverse Markings, Gore Markings, Arrows, and Messages: Apply paint in multiple passes when the marking cannot be completed in one pass, with an overall line width allowable tolerance of ±1 inch

c. Contrast Lines: Use black paint to provide contrast on concrete or light asphalt pavement, when specified by Engineer. Apply black paint in 10 foot segments following each longitudinal skip line.

3. Alignment:

a. Apply painted stripes that will not deviate more than 1 inch from the stringline on tangents and curves one degree or less.

b. Apply painted stripes that will not deviate more than 2 inches from the stringline on curves greater than one degree.

c. Apply painted edge stripes uniformly, not less than 2 inches or more than 4 inches from the edge of pavement, without noticeable breaks or deviations in alignment or width.

d. Remove and replace at no additional cost to the Department, traffic stripes that deviate more than the above stated requirements.

4. Correction Rates: Make corrections of variations in width at a maximum rate of 10 feet for each 0.5 inches of correction. Make corrections of variations in alignment at a maximum rate of 25 feet for each 1 inch of correction, to return to the stringline.

F. Contractor's Responsibility for Notification.

1. Notify Engineer prior to the placement of the materials. Furnish Engineer with the manufacturer's name and batch numbers of the materials and glass spheres to be used. Ensure that the approved batch numbers appear on the materials and glass spheres packages.

G. Protection of Newly Painted Pavement Markings.

1. Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry.

2. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

H. Corrections for Deficiencies to Applied Painted Pavement Markings.

1. Reapply a 1.0 mile section centered around any deficiency, at no additional cost to the Department.

I. Submittals.

1. Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to Engineer. The Department will not pay for any disputed items until Engineer approves the certification of quantities.

2. Contractor's Certification of Quantities: Request payment by providing to Engineer a monthly certification of

quantities with each payment requisition or as directed by Engineer, based on the amount of work done or completed. Ensure the certification of quantities include the following:

a. Contract Number, Certification Number, Certification Date and the period that the certification represents.

b. The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

J. Removal of Existing Painted Traffic Stripes and Markings.

1. Removal Requirements.

a. Remove existing pavement markings by water blasting, sandblasting, or other method approved by the Engineer. Do not use chemicals for the removal of painted traffic stripes and/or markings. Provide positive means to control dust and accumulation of debris from the removal operations. Remove all pavement marking materials from the pavement surface. Remove accumulated piles of any debris as a result of the removal operation from the right of way and dispose of in accordance with applicable Federal, State, and Local regulations, at no additional cost to the Department.

2. Protection of Existing Pavement Surfaces.

3. Conduct removal operations in a manner that will not damage existing pavement surfaces (concrete or asphalt) or damage pavement joint materials. Repair, to the satisfaction of the Engineer, any damage as a result of the removal operations.

4. Do not paint over existing pavement markings to blackout, hide, or disguise markings.

K. Method of Measurement.

1. The quantities to be paid for under this Article will be as follows:

a. Length, in net miles, of 6 inch Solid Traffic Stripe, authorized and acceptably applied.

b. Total traversed distance in gross miles of 10-30 or 3-9 skip line. The actual applied line is 25 percent of the traverse distance for a 1:3 ratio. This equates to 1,320 feet of marking per mile of single line.

c. Net length, in feet, of each of all other types of lines and stripes, authorized and acceptably applied.

d. Number of pavement messages, symbols and directional arrows, authorized and acceptably applied. For bicycle marking, the bicycle symbol and the arrow will be paid as one unit.

e. Lump Sum, as specified under Final Surface above, when the item for Painted Pavement Markings (Final Surface) is provided in the Contract with an awarded Contract Unit Price.

2. The net length, in feet of dotted and skip stripes other than 10-30 and 3-9 will be measured as the distance from the beginning of the first painted stripe to the end of the last painted stripe with proper deductions made for unpainted intervals as determined by plan dimensions or stations, subject to the requirements of Subarticle 1.07 F.3 (Determination of Pay Areas) of the General Requirements to these Specifications. Unpainted intervals will not be included in pay quantity.

3. The gross-mile measurement of 10-30 and 3-9 Skip Traffic Stripes will be taken as the distance from the beginning of the first painted stripe to the end of the last painted stripe, and will include the unpainted intervals. It will not include any lengths of unpainted intervals which, by design or by other intent of the Department, are greater than 30 feet. Final measurement will be determined by plan dimensions or stations, subject to the requirements of Subarticle 1.07 F.3 of the General Requirements to these Specifications.

4. Removal:

a. The area, in square feet, for removal of existing markings acceptably removed.

b. Payment for removal of conflicting markings will be in accordance with 102-E.8. Payment for removal of non-conflicting markings will be paid separately.

c. The gross mile measurement will be taken as the distance from the beginning of the painted line to the end of the painted line and will include the unmarked gaps for skip and dotted lines.

d. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc.

L. Basis of Payment.

1. General:

a. Prices and payments will be full compensation for all work specified in this Article, including all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. There will be no separate payment for removal of conflicting markings.

b. Final payment will be withheld until all deficiencies are corrected.

2. Lump Sum Payment: When the item for Painted Pavement Markings (Final Surface) is included in the proposal, prices and payments will be full compensation for two applications of all painted pavement markings applied to the final surface, and one application of retro-reflective pavement markers applied to the final surface in accordance Article 706 of these Specifications.

3. Payment, for the completed quantities measured and accepted by Engineer, will be made under the item(s) below if provided in the Contract with awarded Contract unit price(s).

Item	Description	Unit
710-11-121	Painted Pavement Markings (Standard, White, solid, 6")	LF
710-11-122	Painted Pavement Markings, Standard, White, Solid, 8"	LF

710-11-123	Painted Pavement Markings,Standard,White,Solid,12"	LF
710-11-124	Painted Pavement Markings, Standard, White, Solid,18"	LF
710-11-125	Painted Pavement Markings, Standard, White, Solid, 24"	LF
710-11-141	Painted Pavement Markings (Standard) (White) (Skip) (6")	LF
710-11-170	Painted Pavement Markings, Standard, White, Arrows	EA
710-11-221	Painted Pavement Markings (Standard, Yellow, solid, 6")	LF
710-11-224	Painted Pavement Markings, Standard, Yellow, Solid,18"	LF
710-11-232	Painted Pavement Markings, Standard, Yellow, Skip, 6" (6/10)	LF
710-11-241	Painted Pavement Markings (Standard) (Yellow) (Skip) (6")	LF
710-11-141A	Painted Pavement Markings (Standard) (White) (Skip) (6") (6/10)	LF
710-11-141B	Painted Pavement Markings (Standard) (White) (Skip) (6") (10/30)	LF

711 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS (REV. 05-02-12)

A. Description.

1. Apply new thermoplastic traffic stripes and markings, or refurbish existing thermoplastic traffic stripes and markings, in accordance with the Contract Documents.

B. Materials.

1. Thermoplastic: Use only thermoplastic materials listed on the FDOT Qualified Products List (QPL). Engineer may require random samples of all material. Use materials meeting the following requirements:

Initial or Recapped Stripes and Markings:	FDOT 971-1 and 971-5
Refurbishing Existing Stripes and Markings:	FDOT 971-1 and 971-5
Preformed Stripes and Markings:	FDOT 971-1 and 971-6

2. Glass Spheres: Use only glass spheres listed on the FDOT QPL, meeting the requirements of FDOT 971-1 and 971-2. Engineer may require random samples of all glass spheres in accordance with ASTM D 1214.
3. Sand: Use materials meeting the requirements of FDOT 971-5.4.

C. Equipment.

1. Use equipment capable of providing continuous uniform heating of striping materials to temperatures exceeding 390ºF, mixing and agitation of the material reservoir to provide a homogeneous mixture without segregation. Use equipment that will maintain the striping material in a plastic state, in all mixing and conveying parts, including the line dispensing device until applied.
2. Use equipment which can produce varying width traffic stripes and which meets the following requirements:
   a. Capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, in order to produce a uniform application of striping material and capable of following straight lines and making normal curves in a true arc.
   b. Capable of applying glass spheres to the surface of the completed stripe by a double drop application for initial traffic striping and marking and a single drop application for recapping and refurbishing. The bead dispenser for the first bead drop shall be attached to the striping machine in such a manner that the beads are dispensed closely behind with the thermoplastic material. The second bead dispenser bead shall be attached to the striping machine in such a manner that the beads are dispensed immediately after the first bead drop application. Glass spheres dispensers shall be equipped with an automatic cut-off control that is synchronized with the cut-off of the thermoplastic material and applies the glass spheres in a manner such that the spheres appear uniform on the entire traffic stripes and markings surface with, 50 to 60 percent embedment.
   c. Equipped with a special kettle for uniformly heating and melting the striping material. The kettle must be equipped with an automatic temperature control device and material thermometer for positive temperature control and to prevent overheating or scorching of the thermoplastic material.
   d. Meet the requirements of the National Fire Protection Association, state, and local authorities.

D. Application.

1. General:
   a. Remove, by a method approved by Engineer, existing pavement markings such that scars or traces of removed markings will not conflict with new stripes and markings. Clean and dispose at an approved site all resulting debris. Use of paint to cover conflicting pavement markings is prohibited. Cost for removal of pavement markings is incidental to the work specified in this Article. Cost for removing conflicting pavement markings during maintenance of traffic operations to be included in Maintenance of Traffic.
   b. Remove any vegetation, soil, and other materials covering the pavement where the marking is to be applied.
   c. Before applying traffic stripes and markings remove, by a method approved by Engineer and consistent with manufacturer's specifications, any material that would adversely affect the bond of the traffic stripes. Before applying traffic stripes to any Portland cement concrete surface, apply a primer, sealer or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches

from any longitudinal joints of Portland cement concrete pavement.

d. Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 50ºF and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

e. Apply striping to the same tolerances in dimensions and in alignment specified under "Tolerances in Dimension and in Alignment" below. When applying traffic stripes and markings over existing markings, ensure that not more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.

f. Apply thermoplastic material to the pavement either by spray, extrusion or other means approved by Engineer.

g. Conduct field tests in accordance with Florida Method (FM) 5-541. Take test readings representative of the striping performance. Remove and replace traffic stripes and markings not meeting the requirements of this Article at no additional cost to the Department.

h. Apply all final pavement markings prior to opening the road to traffic.

i. Preformed Thermoplastic: Apply markings only to dry surfaces and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating.

2. Thickness:

a. Initial or Recapped Stripes and Markings:

1) Apply or recap traffic stripes or markings such that all lane lines, center lines, transverse markings and traffic stripes and markings within traffic wearing areas, will have a thickness of 0.10 to 0.15 inch when measured above the pavement surface.

2) Gore, island, and diagonal stripe markings, bike lane symbols and messages, wherever located, will have a thickness of 0.09 to 0.12 inch when measured above the pavement surface.

3) Measure, record, certify and submit to Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

b. Refurbishing Existing Traffic Stripes and Markings: Apply a minimum of 0.06 inch of thermoplastic material. Ensure that the combination of the existing stripe and the overlay after application of glass spheres does not exceed the maximum thickness of 0.150 inch for all lines.

3. Retroreflectivity:

a. Apply white and yellow traffic stripes and markings that will attain an initial retroreflectivity of not less than 450 mcd/lx•m^2 and not less than 350 mcd/lx•m^2, respectively for all longitudinal lines.

b. All transverse lines, messages and arrows will attain an initial retroreflectivity of not less than 300 mcd/lx•m^2 and 250 mcd/lx•m^2 for white and yellow respectively.

c. All pedestrian crosswalks, bike lane symbols or messages in a proposed bike lane shall attain an initial retroreflectivity of not less than 275 mcd/lx•m^2.

d. Measure, record, certify, and submit to Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541.

4. Glass Spheres:

a. Longitudinal Lines:

1) For initial traffic striping and marking, apply the first drop of Type 4 or larger glass spheres immediately followed by the second drop of Type 1 glass spheres.

2) For refurbishing, apply a single drop of Type 3 glass spheres.

3) Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

b. Transverse Stripes and Markings:

1) Apply a single drop of Type 1 glass spheres.

2) Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

3) Apply a mixture consisting of 50 percent glass spheres and 50 percent sharp silica sand to all thermoplastic pedestrian crosswalk lines and bike lane symbols at the rates determined by the manufacturer's recommendations.

c. Preformed Markings: These markings are factory supplied with glass spheres and skid resistant material. No additional glass spheres or skid resistant material should be applied during installation.

E. Tolerances in Dimensions and in Alignment.

1. Establish tack points at appropriate intervals for use in aligning stripes, and set a stringline from such points to achieve accuracy.

2. Dimensions:

a. Longitudinal Lines: Apply thermoplastic skip line segments with no more than ±12 inches variance, so that over-tolerance and under-tolerance lengths between skip line and the gap will approximately balance. Apply longitudinal lines at least 2 inches from construction joints of Portland cement concrete pavement.

b. Transverse Markings, Gore Markings, Arrows, and Messages: Apply thermoplastic in multiple passes when the marking cannot be completed in one pass, with an overall line width allowable tolerance of ±1 inch

c. Contrast Lines: Use black paint to provide contrast on concrete or light asphalt pavement, when specified by Engineer. Apply black paint in 10 foot segments following each longitudinal skip line.

3. Alignment:

a. Apply thermoplastic stripes that will not deviate more than 1 inch from the stringline on tangents and curves one degree or less.

b. Apply thermoplastic stripes that will not deviate more than 2 inches from the stringline on curves greater than one degree.

c. Apply thermoplastic edge stripes uniformly, not less than 2 inches or more than 4 inches from the edge of pavement, without noticeable breaks or deviations in alignment or width.

d. Remove and replace at no additional cost to the Department, traffic stripes that deviate more than the above stated requirements.

4. Correction Rates:

a. Make corrections of variations in width at a maximum rate of 10 feet for each 0.5 inches of correction. Make corrections of variations in alignment at a maximum rate of 25 feet for each 1 inch of correction, to return to the stringline.

F. Contractor's Responsibility for Notification.

1. Notify Engineer prior to the placement of the thermoplastic materials.

2. Furnish Engineer with the manufacturer's name and batch numbers of the thermoplastic materials and glass spheres to be used.

3. Ensure that the approved batch numbers appear on the thermoplastic materials and glass spheres packages.

G. Protection of Newly Applied Traffic Stripes and Markings.

1. Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry.

2. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

H. Observation Period.

1. Pavement markings are subject to a 180 day observation period under normal traffic. The observation period shall begin with the satisfactory completion and acceptance of the work.

2. The pavement markings shall show no signs of failure due to blistering, excessive cracking, chipping, discoloration, poor adhesion to the pavement, loss of reflectivity or vehicular damage. The retroreflectivity must meet the initial requirements stipulated above. The Department reserves the right to check the color and retroreflectivity any time prior to the end of the observation period.

3. Replace, at no additional expense to the Department, any pavement markings that do not perform satisfactorily under traffic during the 180 day observation period.

I. Corrections for Deficiencies.

1. Recapping applies to conditions where additional striping material is applied to new or refurbished traffic stripes or markings to correct a deficiency. Recap a 1.0 mile section centered around the deficiency with additional striping material or by complete removal and reapplication at no additional cost to the Department.

2. If recapping will result in a thickness exceeding the maximum allowed, the traffic stripes or markings must be removed and reapplied.

J. Submittals.

1. Submittal Instructions: Prepare a certification of quantities, for each project in the Contract. Submit the certification of quantities and daily worksheets to Engineer. The Department will not pay for any disputed items until Engineer approves the certification of quantities.

2. Contractor's Certification of Quantities: Request payment by submitting a certification of quantities with each payment requisition, based on the amount of work done or completed. Ensure the certification of quantities includes the following:

a. Contract Number, Certification Number, Certification Date and the period that the certification represents.

b. The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

K. Method of Measurement.

1. Quantities to be measured by Engineer for payment under this Article will be as follows:

a. The length, in net miles, of 6 inch Solid Traffic Stripe, authorized and acceptably applied.

b. The total traversed distance in gross miles of 10-30 or 3-9 skip line. The actual applied line is 25 percent of the traverse distance, for a 1:3 ratio. This equates to 1,320 feet of marking per mile of single line.

c. The net length, in feet, of all other types of lines and stripes, authorized and acceptably applied.

d. The area, in square feet, of Removal of Existing Pavement Markings, acceptably removed. Cost for removing conflicting pavement markings during maintenance of traffic operations is included in Maintenance of Traffic.

e. The number of pavement messages, symbols and directional arrows, authorized and acceptably applied.

L. Basis of Payment.

1. Prices and payments will be full compensation for all work specified in this Article, including all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

2. Payment, for the completed quantities measured and accepted by Engineer, will be made under the item(s) below if provided in the Contract with awarded Contract unit price(s).

Item	Description	Unit

711-11-121	Thermoplastic (White) Solid 6"	LF
711-11-122	Thermoplastic (White) Solid 8"	LF
711-11-123	Thermoplastic (White) Solid 12"	LF
711-11-124	Thermoplastic (White) Solid 18"	LF
711-11-125	Thermoplastic (White) Solid 24"	LF
711-11-141	Thermoplastic (White)(Skip) 6"	LF
711-11-170	Thermoplastic (White) Arrows	EA
711-11-221	Thermoplastic (Yellow) Solid 6"	LF
711-11-224	Thermoplastic (Yellow) Solid 18"	LF
711-11-232	Thermoplastic (Standard) (Yellow) (Skip) (6") (6'/10' Skip)	LF
711-11-241	Thermoplastic (Yellow) (Skip) (6")	LF
711-11-141A	Thermoplastic, STD (White) (6/10) (Skip) (6")	LF
711-11-141B	Thermoplastic, STD (White) (10/30) (Skip) (6")	LF
711-14-160	Thermoplastic, Preformed, White, Message	EA

715 ROADWAY LIGHTING (REV. 12-31-2015)

A. Description.

1. Install a roadway lighting system in accordance with the details shown in the Plans. Use pole assemblies as shown in the FDOT Design Standards when standard aluminum pole assemblies are required by the Contract Documents. Include in the system the light poles, bases, luminaires, ballasts, cable, conduit, protective devices, and control devices; all as specified or required for the complete facility.
2. Obtain conventional light pole assemblies from a fabrication facility that is listed on FDOT's Production Facility Listing with an Accepted Quality Control Program, meeting the requirements of FDOT 105-3.
3. Provide metal lighting poles with internal vibration damping devices in accordance with FDOT Design Standard 17515 in all installations on bridges, walls and concrete median barriers.
4. When used on bridges, in order to minimize vibration of light poles due to traffic, locate light poles near substructure supports.

B. Shop Drawings and Working Drawings.

1. Submit shop drawings and working drawings with descriptive specifications and engineering data for the service main, control panel enclosure, control panel main disconnect, lighting contactor, electrical panel, transformer, in-line fuse holders, surge protective devices, non-standard light poles (including brackets), luminaires, ballast, photo-electric cell, conduit and cable or any other item requested by Engineer as specified in the Contract Documents.

C. Materials and Equipment to be Installed.

1. General: Meet the materials and equipment requirements of FDOT Section 992.
2. Criterion Designation of Materials and Equipment: Where a criterion specification is designated for any material or equipment to be installed, by the name or catalog number of a specific manufacturer, understand that such designation is intended only for the purpose of establishing the style, quality, performance characteristics, etc., and is not intended to limit the acceptability of competitive products. Engineer will consider products of other manufacturers which are approved as similar and equal as equally acceptable.

D. Furnishing of Electrical Service.

1. Start the system with a weatherhead on a riser on a service pole and extend through the required metering equipment of the power company, and through the lighting system as shown on the Plans.
2. The power company will provide service to the areas in the vicinities indicated. Consult and cooperate with the power company in locating its distribution transformer and service pole so that the lines will be as short and direct as possible. Bear any line-extension costs up to the first 2,000 feet. Furnish or install only those parts of the metering equipment or connections that are customary and required by the power company in the locality involved.

E. Excavation and Backfilling.

1. General: For excavation and backfilling, meet the requirements of FDOT Section 125, except that when rock is encountered, carry the excavation 3 inches below the required level and refill with sand or with selected earth material, 100% of which passes the 1 inch sieve.
2. Trenches for Cable: Construct trenches for cable or conduit no less than 6 inches in width and deep enough to provide a minimum cover in accordance with the FDOT Design Standards.
3. Placing Backfill for Cable: For installation of the cable, place an initial layer of 6 inches thick, loose measurement, sand or selected earth material, 100% of which passes a 1 inch sieve. Place and compact the remaining material in accordance with FDOT 125-8.

F. Foundations for Light Poles.

1. Concrete Foundations: Provide foundations for light poles of the sizes and shapes shown in the Plans. Construct precast or cast-in-place concrete foundations in accordance with the FDOT Design Standards. Obtain precast foundations from a plant that is currently on the FDOT's Production Facility Listing with Accepted FDOT Quality Control Programs.
2. Setting Anchor Bolts: Set anchor bolts according to manufacturer's templates and adjust to a plumb line, check for elevation and location, and hold rigidly in position to prevent displacement while pouring concrete.
3. Installation:

a. Do not erect roadway light poles until the concrete strength in the cast-in-place foundation is at least 2,500 psi. Determine concrete strength from tests on a minimum of two test cylinders sampled and tested in accordance with ASTM C31 and ASTM C39 and verifying test results have been provided to Engineer.

b. Fill the voids around precast concrete foundations under roadway light poles with flowable fill meeting the requirements of Article 121 or clean sands placed using hydraulic methods to a level 6 inches below grade.

G. Pulling Conductors.

1. Leave at least 3 feet of conductor where the cable enters and leaves conduit. Protect conductors pulled into conduit or ducts against abrasion, kinking, and twisting. Locate pull boxes so that the conductors are not subjected to excessive pulling stresses.

H. Splicing.

1. Make all conductor splices in the bases of the light poles, or in pull boxes designed for the purpose. Do not make any other underground splices.
2. Unless otherwise shown in the FDOT Design Standards or authorized by Engineer, splices must be made with split bolt connectors. The connector must be sealed in silicone gel that easily peels away leaving a clean connection. The gel will be contained in a closure that when snapped around the split bolt will provide a waterproof connection without the use of tools or taping. This closure will be UV resistant, impact resistant and abrasion resistant.

I. Conduit and Ducts.

1. Install conduit at the locations shown in the Plans and in accordance with FDOT Section 630.

J. Erecting Light Poles.

1. General: Install the light poles at the locations and in accordance with the details shown in the Plans. Unless otherwise specifically approved by the Engineer, fasten bracket (truss) arms to the pole prior to erection. Do not field weld on any part of the pole assembly. Plumb the poles after erection and use metal shims or leveling nuts if necessary to obtain precise alignment. Use a thin cement grout where necessary to eliminate unevenness or irregularities in the top of the base.
2. Adjusting Anchor Bolts and Installing Nuts on Anchor Bolts: Where poles are to be placed on existing foundations or bases with anchor bolts in place, furnish poles with a base which fits the anchor bolt spacing. Include the cost of any necessary extension of existing anchor bolts in the price bid for the lighting system. For high mast light pole bases, install nuts on anchor bolts in accordance with FDOT 649-5.
3. Installation of Luminaire: Install the luminaire on the truss arm in accordance with the manufacturer's instructions, and place it so that the light pattern is evenly distributed along the roadway.
4. Electrical Connections: Make primary ballast connections in accordance with manufacturer's instructions. Install sufficient cable to allow all connections to be made outside the light pole base. Connect the ground conductor to the ground stud provided.
5. Identification Plates Stamp the identification plate on the pole with an identifying number or legend. Number the poles consecutively, beginning with number 1. Stamp each light pole number with 3/4 inch figures and stamp each circuit number with 1/2 inch figures.

K. Grounding.

1. Ground in accordance with the NEC, and local codes which exceed these Specifications.
2. Ground each metal light pole, not on a bridge structure, with an approved rod, 20 feet in length and at least 5/8 inch in diameter.
3. For poles on bridge structures, bring the grounding conductors out to a pull box at each end of the structure and connect them to driven ground rods, 20 feet in length and at least 5/8 inch in diameter.
4. The 20 feet length of rod may be either two rods 10 feet in length connected by a threaded coupling and driven as a single rod or two rods 10 feet in length separated by at least 6 feet.
5. Make all bonds between ground wires and grounding electrode assemblies or arrays with an exothermic bond with the following exception: do not exothermically bond grounding electrode to grounding electrode connections.
6. The work specified in this Subarticle will not be paid for directly, but will be considered as incidental work.

L. Labeling.

1. Stencil labels on the cases of transformer and panel board with white oil paint, as designated by Engineer. Also, mark the correct circuit designations in accordance with the wiring diagram on the terminal marking strips of each terminal block and on the card holder in the panel board.

M. Markers.

1. Construct duct, cable, and splice markers as shown in the Plans, and place them over the ends of underground ducts and at each change in direction of cable or conduit run. Place markers flat on the ground with 1 inch projecting above finished grade.

N. Tests of Installation.

1. Upon completion of the work, test the installation to ensure that the installation is entirely free of ground faults, short circuits, and open circuits and that it is in satisfactory working condition. Furnish all labor, materials, and apparatus necessary for making the required tests. Remove and replace any defective material or workmanship discovered as a result of these tests at no expense to the County, and make subsequent re-tests to the satisfaction of Engineer.

2. Make all arrangements with the power supplier for power. Pay all costs, excluding energy charges, required for the test period.
3. Not less than 48 hours prior to the beginning of the test period, give the power supplier the schedule for such test.
4. Test the installation under normal operating conditions during the seven day test period specified in 715-O below, rather than as a continuous burn test period.
5. If the work is not open to traffic at the end of the seven day test period, de-energize the lighting system until the work is opened.

O. Acceptance of Roadway Lighting.

1. Engineer may make partial acceptance of the roadway lighting based on satisfactory performance of all system for seven consecutive days. The seven day evaluation period may commence upon written authorization by the Engineer that roadway lighting is considered ready for acceptance evaluation. Contract Time will be charged during the entire roadway lighting evaluation period. Correct any defects in materials or workmanship which might appear during the evaluation period at no expense to the County. Transfer to the County any guarantees on equipment or materials furnished by the manufacturer and ensure that the manufacturer includes with such guarantees the provision that they are subject to such transfer, and proper validation of such fact. The County's written acceptance of roadway lighting and the transfer to the County of all manufacturer guarantees will be conditions precedent to final acceptance of all work under the Contract in accordance with Contract Final Acceptance.

P. Method of Measurement.

1. The quantities to be paid for will be as follows, completed and accepted:
   a. Conduit: Payment will be made in accordance with FDOT Section 630.
   b. Luminaire and Truss Arm: The Contract unit price will include the truss arm, luminaire with lamp, and all necessary mounting hardware as indicated in the Plans and the FDOT Design Standards.
   c. Electrical Power Service Assembly: The Contract unit price will include the service pole, insulators, weatherheads, transformers, enclosures, panel boards, breakers, safety switches, H.O.A. switches, lightning protectors, fuses, photo electric assembly, meter base, and all external and internal conduit and conductors for the service as indicated in the Plans and the PWWM Traffic Signals and Signs Section 639.
   d. Light Pole Foundation: The Contract unit price will include the foundation and anchor bolts with lock nuts and washers as indicated in the Plans and the FDOT Design Standards.
   e. Luminaire: The Contract unit price will include the luminaire with lamp and necessary mounting hardware as indicated in the Plans and the FDOT Design Standards.
   f. Pull Box: Payment will be made in accordance with Article 635.
   g. Frangible Base for Light Pole: The Contract unit price will include the frangible base, attachments, bolts, and washers as indicated in the Plans and the FDOT Design Standards.
   h. Photo Electric Control Assembly: The Contract unit price will include the photo electric control, transformers, conduit, and conductors as indicated in the Plans and the FDOT Design Standards.
   i. Pre-Fab Pilaster: The Contract unit price will include the pilaster and all mounting hardware as indicated in the Plans.
   j. Conductor: The length, in feet, as indicated in the Plans and the FDOT Design Standards.
   k. Lighting Pole Complete: The Contract unit price will include the pole, internal vibration damping device, truss arm, luminaire with lamp, anchor bolts with lock nuts and washers, frangible base and foundation.
   l. Pole Cable Distribution System: The Contract Unit price will include the surge protector, fuse holders with fuses, waterproof connectors and the waterproof wiring connection to the luminaries.

Q. Basis of Payment.

1. Prices and payments will be full compensation for all work specified in this Section, including all materials, equipment and tests.
2. Payment Items: Payment will be made under:

Item No.	Description	Unit
715-1-13	Lighting - Conductors (F&I) (No. 4 to No. 2)	LF
715-1-12A	Conductor (F&I, Insulated) (#6) (Including THWN Ground Rod).	LF
715-4-32	Light Pole Complete, Furnish & Install Utility Conflict Pole, FDOT Index 17515/715-002 Foundation, 35' Mounting Height	EA
715-4-111(D)	Pole top Complete (17' MH), F&I	EA
715-4-111B	Light Pole Complete (F & I) (Aluminum) (39' Mounting Height)	EA
715-7-12	Load Center, F&I, Primary Voltage	EA
715-95-2	Electric Service & Coordination	AS
715-500-1C	Pole Cable Distribution System (Furnish and Install)	EA

SECTION 00775

SUPPLEMENTARY CONDITIONS

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1. SUPPLEMENTARY CONDITIONS

Appendix C: Notice of Construction Clearing House Forms A, B and C

Appendix D: Residents First Training and Employment Program Compliance Forms (RTFE 1, RTFE 2, RFTE 3, and RFTE 4)

Appendix E: (OSHA) Forms 300, 300A and 301

1. SUPPLEMENTARY CONDITIONS

1.01 MISCELLANEOUS CONSTRUCTION CONTRACT (<<7360>> <<7040>> PLAN)

A. These Supplementary Conditions amend or supplement the Miscellaneous Construction Contract (MCC) <<CICC 7360-0/08>> <<CICC 7040-0/07>>, the MCC <<7360 7040>> Plan, and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect. All requirements of the Contract Documents, or portions thereof, which are not specifically modified, deleted, or superseded hereby, remain in full effect. The MCC Contract and Plan may also be supplemented elsewhere in the Contract Documents by provisions located in, but not necessarily limited to, Division 1 (General Requirements) of the Contract Specifications.

1.02 APPLICABLE WAGE RATES

A. Amend Paragraph <<2.17>><<2.23>> of the <<CICC 7360-0/08>><<CICC 7040-0/07>> Miscellaneous Construction Contract by adding the following:

1. <<When project is under $100,000.>><<As per 03-24 Responsible wages and Benefits do to apply to County construction contracts less than or equal to one hundred thousand dollars ($100,000.00)>>

2. The applicable Standard Industrial Classification (SIC) manual code is SIC 16 <<Highway>> <<Heavy>> Construction. The Responsible Wages and Benefits Schedule (Construction Type: <<Highway>> <<Heavy>>) for wages and benefits to be paid for work performed under this Contract will be the schedule in effect on January 1st of the calendar year in which the work is performed. The Responsible Wages and Benefits Schedule in effect at the time of Project Solicitation is provided as Appendix <<A>> to these Supplementary Conditions. Updated Responsible Wages and Benefits Schedules are available at http://www.miamidade.gov/smallbusiness/responsible-wages-and-benefits.asp

3. When a required classification is not listed as a separate class in the County's Responsible Wage rates schedule (e.g. Traffic Signal Technician), Contractor must use Davis-Bacon Wages for said classification.

4. To ensure that payroll reporting can be done more securely, quickly and efficiently, and to eliminate paper-based payrolls, the County has adopted LCPtracker, a web-based Certified Payroll Management System. Use of the system is mandatory and at no additional cost to the contractor. LCPtracker can be interfaced with contractor's existing payroll system. For more information on LCPtracker software or training, please contact Small Business Development (SBD) Division at 305.375.3111

B. <<WHEN CONTRACT IS UNDER FEDERAL FUNDING>> Use a different template:

1.03 CONTINGENCY ALLOWANCE FOR TIME

A. Paragraph <<2.58>> <<2.66>> of the <<CICC 7360-0/08>> <<CICC 7040-0/07>> Miscellaneous Construction Contract is hereby amended to provide a Contingency Allowance for time extension not to exceed ten percent of the original Contract Duration pursuant to a written request by Contractor for a time extension for an Excusable Delay, as described in Paragraph

<<2.58>><<2.66>> of the <<7360>><<7040>> Miscellaneous Construction Contract, that affects the critical path schedule of the Contract or any previously approved changes. The request must be accompanied by written documentation that supports the justification of a time extension, and is subject to review and concurrence by the department Engineer, or designee. If approved, a Contract Contingency Allowance Expenditure Authorization will be created for execution by all parties. Once executed the time extension will adjust the scheduled completion date. The cumulative total of all Contingency Allowance time extensions shall not exceed ten percent of the original Contract Duration rounded off to the next whole number.

1.04 WEATHER DELAYS

A. Schedule of Anticipated Weather Delay Days

1. The following schedule of average climatic range, based on National Oceanic and Atmospheric Administration (NOAA) normal data (1981-2010 Monthly Normals; GHCN Daily ID: USW00012839; MIAMI INTL AP, FL), will be used as the standard baseline for monthly evaluations of weather delays for this Contract.

Schedule of Anticipated Weather Delay Days												
Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	3	4	4	4	7	12	11	13	13	8	4	4

2. The above schedule provides the anticipated number of days each month during which construction activity exposed to weather conditions is expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days listed in the schedule, for each month, is included in the Work and is not eligible for extension of Contract Time. The Work Progress Schedule submitted by Contractor must reflect these anticipated adverse weather delays in all weather dependent activities.

B. Extension of Contract Time for Adverse Weather Days In Excess of the Standard Baseline

1. If the basis exists, in accordance with the Conditions of the Contract, for a claim for extension of time, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in a month that are in excess of the number of days listed above for that month in the Schedule of Anticipated Adverse Weather Delay Days.

2. Adverse Weather Day is defined, for the purpose of this Article, as the occurrence of one or more of the following weather conditions within a twenty-four (24) hour day that prevents scheduled critical path construction activity exposed to weather conditions:

   a. Precipitation in excess of one-tenth inch (0.10").

   b. Temperatures that do not rise above that required for the day's construction activity, if such temperature requirement is specified or accepted as standard industry practice.

   c. Sustained wind in excess of twenty-five (25) miles per hour.

3. Adverse Weather Day may include “dry-out” days, resulting from precipitation that occurs beyond the Anticipated Weather Delay Days for the month, only if there is a hindrance to site access or sitework and Contractor has taken all reasonable accommodations to avoid such hindrance; and, at a rate no greater than 1 make-up day for each precipitation day (or consecutive days) that total 1.0 inch or more of precipitation.

4. A Weather Delay Day may be counted by the Engineer, if adverse weather prevents work on the Project for fifty percent (50%) or more of the Contractor's normal scheduled work day and critical path construction activities were included in the day's schedule, including a weekend day or holiday approved by the Engineer with construction activity scheduled that day.

5. No additional compensation will be made for weather delays.

C. Contractor Documentation and Submittals

1. Organize claim to facilitate evaluation by calendar month and submit in accordance with the claims submittal requirements of the Contract Documents. Documentation is required for each Adverse Weather Day that results in a Weather Delay. Identify the number if days claimed for the month that exceeds the Schedule of Anticipated Adverse Weather Delays. Documentation must include:

   a. Daily jobsite work logs showing which and to what extent critical path construction activities have been affected by adverse weather.

   b. Daily weather data, obtained from the nearest NOAA weather station or other independently verified source approved by Engineer at beginning of the Project, to support claim for time extension. NOAA Global Historical Climatology Network (GHCN) Daily data may be obtained from the NOAA website at http://www.ncdc.noaa.gov/cdo-web/search.

2. If an extension of Contract Time is appropriate and approved by the Department, such extension will be made in accordance with the requirements of the Contract Documents.

1.05 ADDITIONAL FUNDING SOURCE PROVISIONS

A. People's Transportation Plan (PTP)

1. Since proceeds from the Charter County Transportation System Sales Surtax levied pursuant to Section 29.121 of the Code of Miami-Dade County may be used to pay for all or some part of the cost of this Contract, no award of this Contract shall be effective and thereby give rise to a contractual relationship with the County unless and until the Citizens' Independent Transportation Trust (CITT) and County Commission have approved the award of the Contract, and such award becomes final either by expiration of 10 days after such award without veto by the Mayor, or by Commission override of a veto.

<<OR>>

A. General Obligation Bond (GOB) Program

1. This contract is being funded, in whole or in part, through the Miami-Dade County's Building Better Communities (BBC) General Obligation Bond (GOB) program. An important part of this program is the training of members of the community in various construction trades. Miami-Dade County has independently contracted with a training provider to train and place individuals on GOB funded projects. The contractor is encouraged to contact the Office of Capital Improvement's BBC Division at 305.375.2504, to obtain referrals of trained individuals for placement in the trades that have either graduated or are currently being trained from this training program. For more information about the BBC program you can log into www.miamidade.gov/build.

2. <<OR>>

3. Road Impact Fee (RIF) <<or other>>

4. Contractor must comply with all requirements of the funding sources(s) for work issued under this Contract. This contract is being funded, in whole or in part, with Miami-Dade County funding sources including <<Road Impact Fees (RIF)>>

<<WHEN CONTRACT IS UNDER A FEDERAL FUNDING- Use a federally funded template:

1.06 <<ADDITIONAL SBE-CONST CONTRACT MEASURE REQUIREMENTS>>

<<WHEN REQUIRED for 7360>>

A. In accordance with Miami-Dade County Ordinance No.'s 97-52, 14-98, and 97-158; A.O. 3-22, a Small Business Enterprise-Construction (SBE-CONST) Contract Measure has been established for this Project. SBD Worksheet can be found under Appendix <<B>> to these Specifications Contractor must comply with the requirements of the Internal Services Department, Small Business Development Division (SBD) Small Business Enterprise-Construction Program (SBE-CONST) Participation Provisions and Small Business Enterprise Goods and Services (SBE-GS). A current copy of the provisions may be obtained at http://www.miamidade.gov/business/business-certification-programs.asp.

B. Unless waived by majority vote of the Miami-Dade Board of County Commissioners, Contractor must comply with the following provisions for all contracts where a SBE-CONST subcontractor goal(s) is established for SBE-CONSTs to perform and achieve said goals:

1. No SBE-CONST firm entering into a subcontract for $200,000 or less shall be required to execute and deliver a payment and performance bond as a condition of executing such subcontract or performing the work unless, in the case of a subcontract, the prime contractor has requested from the County, and the County has approved prior to the execution of the subcontract, such request based on information submitted by the prime contractor. Such information shall include, but not be limited to, the following: (1) subcontractor's prior work history; (2) subcontractor's number of years in business; (3) scope of work; (4) conditions affecting the work; (5) value of the subcontract; (6) schedule considerations; (7) subcontract terms; and (8) any other factors that may affect risk.

2. Upon the mutual agreement between the prime contractor and SBE-CONST, the SBE-CONST may be paid up to five percent (5%) of the value of the subcontract, exclusive of contingencies, in advance, upon written evidence reasonably satisfactory to the Internal Services Department, Small Business Development Division "SBD") of the SBE-CONST's imminent expenditure of those funds for mobilization directly related to the work. Such written evidence may include, but is not limited to, executed contracts, purchase orders, and invoices, and must be submitted to SBD and the contracting department.

3. Upon mutual agreement between the prime contractor and SBE-CONST subcontractor and prior approval by SBD, provided that (i) the SBE-CONST subcontractor is not in breach of its payment and performance obligations under the subcontract, and (ii) the SBE-CONST subcontractor is responsible for the negotiation and purchase of materials, the prime contractor shall pay directly for the purchase of any material to be incorporated in the work which is the object of the SBE-CONST's subcontract. Such direct payment shall be made by dual party check made payable to the material supplier and the SBE-CONST subcontractor and shall be credited against the prime contractor's payment obligations under the subcontract and credited against the agreed items in the schedule of values where the materials were used.

4. Any and all amounts withheld in retainage under a SBE-CONST's subcontract shall be paid in full upon satisfactory completion and acceptance of the SBE-CONST's work in compliance with its subcontract within the same number of days that the County has mandated as the billing cycle for said contract in operation, or within forty (40) calendar days of submittal of such billing(s) by the SBE-CONST subcontractor(s) to the prime contractor, whichever is less, regardless of whether the prime contractor has received payment from the County.

5. Within five (5) working days of the prime contractor becoming aware of a performance problem with a SBE-CONST, the prime contractor shall notify the SBE-CONST of such problem, in writing and with sufficient specificity to allow the SBE-CONST to identify and redress the problem, and shall allow the SBE-CONST a reasonable cure period. Disputes between the prime contractor and any SBE-CONST shall be submitted to SBD for expedited alternative dispute resolution.

6. A prime contractor shall not require of any SBE-CONST more than the minimum insurance coverage ($300,000 General Liability, $300,000 Automobile and Worker's Compensation in accordance with state law) unless the prime contractor has requested from the County, and the County has approved prior to the execution of the subcontract, such request based on information submitted by the prime contractor. Such information shall include, but not be limited to, the following: (1) work discipline covered by the subcontract; (2) subcontractor's prior work history; (3) subcontractor's number of years in business; (4) scope of work; (5) conditions affecting the work; (6) value of the subcontract; (7) schedule considerations; (8) contract terms; and (9) any other factors that may affect risk.

1.07 ADDITIONAL SBE-CONST CONTRACT MEASURE REQUIREMENTS

1. <<WHEN NOT REQUIRED for 7360>>

A. As per Miami-Dade County Ordinance No.'s 97-52 and 97-158; A.O. 3-22, a Small Business Enterprise - Construction (SBE-CONST) Contract Measure has not been established for this Project. Due to the funding source of this contract, a local preference is not allowed, however this project contains a Disadvantaged Business Enterprise (DBE) Contract Measurement.

1.08 ADDITIONAL SBE-CONST CONTRACT MEASURE REQUIREMENTS

1. <<for 7040 contracts>

B. This Project is Set-Aside for Level I, and II Small Business Enterprise-Construction Program (SBE-CONST). It is 100% self-performance

1.09 PROMPT PAYMENTS AND RETAINAGE:

1. In addition to Miami-Dade County Sec. 2-8.1.4. Sherman S. Winn Prompt Payment Ordinance and Administrative Order No.: 3-19 Prompt Payment, contractors, subcontractors and the County must also meet the requirements of Title 49 CFR part 26.29 and 26.37 and the Florida Prompt Pay Act. Prime contractors must pay subcontractors, including DBE'S, for satisfactory performance of their contracts no later than 30 calendar days after the date on which the payment request or a "*proper invoice"* is stamped received. Further, the prime contractor will

return retainage payments to the subcontractor within 30 days of the sub-contractor's satisfactory completion of work.

2. Proper Invoice means an invoice which conforms to the present requirements of the County's finance system, which includes the issuance of a valid purchase order or contract as well as applicable change orders or amendments, and any rules promulgated from time to time by Administrative Order of the Mayor. A proper invoice must include a statement by the vendor/contractor waiving claims for extra direct and indirect costs or time associated with work preceding the date of the invoice, or a statement in sufficient detail containing all rights reserved for work already performed. All present requirements or future rules pertaining to the execution of a proper invoice are available to contractors at the pre-construction meeting.

3. In any case in which an improper invoice is submitted by a contractor, the County will, within ten (10) days after the improper invoice is received by it, notify the contractor that the invoice is improper and indicate what corrective action on the part of the vendor is needed to make the invoice proper.

4. In the event a dispute occurs between the contractor and the County concerning payment of an invoice, such disagreement shall be resolved not later than forty-five (45) days after the date on which the improper invoice was received by the County, and shall be concluded by final written decision of the Mayor or his or her designee(s), not later than sixty (60) days after the date on which the improper invoice was received by the County.

5. If the dispute is resolved in favor of the contractor, then interest shall begin to accrue as of the original date the payment became due.

6. All payments due from the County, and are not made by the appropriate due date as described above, shall bear interest from thirty (30) days after the appropriate due date at the rate of one (1) percent per month on the unpaid balance. One (1) month shall constitute a period beginning on any day of a month and ending on the same day of the following month. Any overdue period of less than one (1) month shall be considered as one (1) month in computing interest. Unpaid interest shall compound monthly.

7. The vendor must be responsible for preparing and delivering an invoice to the County for any interest accrued in order to receive the interest payment. The invoice must include the following:

    a. Date proper invoice received by County, its applicable invoice number and amount.

    b. Date punch list was completed.

    c. Date and corresponding reference number of applicable purchase order, requisition or contract.

    d. Payment due date.

    e. Date interest commences.

    f. Interest due at one percent per month on unpaid balance.

8. Contractor may not hold retainage from its subcontractors and is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to this contract is satisfactorily completed or within 30 days after incremental acceptance of the subcontractor's work by the County and contractor's receipt of the partial retainage payment related to the subcontractor's work, whichever comes first.

1.10 COMMUNITY WORKFORCE PROGRAM

A. <<In accordance with Miami-Dade County Code §2-1701 and amended by Ordinance No. 13-66, this Contract has a <<##%>> Community Workforce Program (CWP) Goal. Contractor is required to comply with CWP Participation. Additional information is available at the County's website at http://www.miamidade.gov/smallbusiness/community-workforce-program.asp.

B. Contractor must submit a Workforce Plan to the Miami-Dade County Internal Service Department, Small Business Development Division through the Department (via the Engineer) within 15 days from the Recommendation for Award. The Workforce Plan form along with instructions on how to complete the Workforce Plan can be obtained in the County's website at http://www.miamidade.gov/smallbusiness/business-development-forms.asp.

1.11 CLEARINGHOUSE FOR POSTING NOTICE OF JOB OPPORTUNITIES

A. Pursuant to Miami-Dade County Resolution R-1145-99, Contractor must post a notice of job opportunities with the Miami-Dade County Job Clearinghouse (JCH) within ten (10) business days of the contract award or no later than five (5) business days after start of construction. If job opportunities are available, complete all portions of the Notice of Construction Clearinghouse Job Opportunity form (Form B). If no job opportunities are available, complete a JCH Affidavit- No Notice(s) of Construction Job Opportunities form (Form C). Submit the completed Form B or C (with copies to the Engineer) to:

Miami-Dade County Internal Service Department
Small Business Development Division
Project Review and Analysis Section
Attention: Job Clearinghouse
111 NW 1st Street, 19th floor
Miami, Florida 33128
Telephone: (305) 375-3111 Fax (305) 375-3160

B. Job applicants interested in posting an application for employment to be considered by contractors with job openings may complete a JCH Construction Clearinghouse Job Application (Form A) and submit it to the address provided in the Form.

C. The necessary forms are provided as Appendix <<C>> to these Supplementary Conditions. Additional information pertaining to the Miami-Dade County Job Clearinghouse is available in the County's website at http://www.miamidade.gov/sba/about-us-job-clearinghouse.asp.

1.12 RESIDENTS FIRST TRAINING AND EMPLOYMENT PROGRAM COMPLIANCE

Except where state or federal laws or regulations mandate to the contrary, all contractors and subcontractors of any tier performing on a County Construction Contract shall satisfy the requirements of this Article.

A. In accordance with Section 2-11.17 of the Code of Miami-Dade County and Implementing Order No. 3-61 (online at http://www.miamidade.gov/smallbusiness/business-development-legislation.asp), all contractors and subcontractors of any tier on (i) construction contracts valued in excess of $1 million for the construction, demolition, alteration and/or repair of public buildings, or public works; or (ii) contracts or leases valued in excess of $1 million for privately funded

construction, demolition, alteration or repair of buildings, or improvements on County-owned land shall comply, if applicable, with the following:

1. Bidders must:

   a. Submit a completed Responsible Contractor Affidavit (Form RTFE 1), along with the Bid Submittal Package. The Responsible Contractor Affidavit shall verify the following:

      1) Prior to working on the project, all persons employed by the contractor on the project to perform construction have completed the OSHA 10-hour safety training course, and

      2) Contractor will make its best reasonable efforts to have 51 percent of all construction labor hours performed by Miami-Dade County residents. County residents employed in furtherance of the goal set forth in the County‘s Community Workforce Program (CWP) shall be counted towards the 51% goal.

   b. In the event that form RTFE 1 is not submitted along with the bid package, the County will provide a notice that the bidder has 48 hours from the time of notification to submit the form or their bid or proposal will be deemed nonresponsive and disqualified.

2. Prior to the issuance of a Notice to Proceed, contractors must also submit the following:

   a. A Construction Workforce Plan (Form RFTE 2) and supporting documentation;

   b. A list of all subcontractors to be used on the project;

   c. A Responsible Subcontractor Affidavit (Form RFTE 1) for each subcontractor; and

   d. A list of all employees currently employed by the contractor.

   e. As per Miami-Dade County Resolution R-1181-18, Submit OSHA form 300 containing a list of the company’s work-related injury and illness data; and OSHA inspection data, for the previous three years, for the contractor and first tier subcontractors. The Department of Labor Occupational and safety Health Administration (OSHA) Form 300, 300Aand 301 can be found under Appendix <<E>> of these Supplementary Conditions

3. Submit OSHA Safety Training Affidavit (Form RFTE 3) with all certified payrolls.

4. .Submit a Workforce Performance Report (Form RFTE 4) within 30 business days of completion of the Project.

5. Any lessee shall include requirements of Section 2-11.7 of the Code of Miami-Dade County and Implementing Order No. 3-61, including the right of the County to access the contractor's and subcontractors' records to verify compliance, in any contract, subcontract, or sublease. Lessee shall be responsible to the County for payment of compliance monitoring costs and any penalties found due.

6. Forms RFTE 1, RFTE 2, RFTE 3, and RFTE 4 are included under Appendix <<D>> to these Supplemental Conditions.

1.13 EMPLOY MIAMI-DADE PROGRAM

Except where state or federal laws or regulations mandate to the contrary, all contractors and subcontractors of any tier performing on a County Construction Contract shall satisfy the requirements of this Article.

A. In accordance with Section 5.02 of the Miami-Dade County Home Rule Amendment and Charter, Section 2-8.1 of the Code of Miami-Dade County, and Administrative Order No. 3-63, all contractors

and subcontractors of any tier on (i) construction contracts valued in excess of one million dollars ($1,000,000) for the construction, demolition, alteration and/or repair of public buildings, or public works; or (ii) contracts or leases valued in excess of one million dollars ($1,000,000) for privately funded construction, demolition, alteration or repair of buildings, or improvements on County-owned land:

1. The awarded Contractor is hereby notified that the County will consider whether the Contractor made its best reasonable efforts to promote Employ Miami-Dade on this contract, as defined in A.O. 3-63, as part of the County's evaluation and responsibility review of the Contractor for new County contract awards.

2. Referral Procedures.

    a. Career Source South Florida shall compile and maintain the Employ Miami-Dade Register.

    b. The Contractor will notify Career Source South Florida of the vacancy by completing a Job Opening Form on the Employ Miami-Dade website (https://iapps.careersourcesfl.com/employmd/). The job order must contain a detailed description of the job responsibilities and qualifications.

    c. Career Source South Florida will then provide a list of qualified candidates available to the Contractor with copy to the Compliance Officer.

    d. Contractor will review the resumes and qualifications of the candidates, conduct interviews with those candidates who satisfy the minimum competency requirements, and make a good faith effort to fill at least 20% of the labor workforce required per Contractor's Construction Workforce Plan from the Employ Miami-Dade Register through Career Source South Florida.

    e. Positions filled from the Employ Miami-Dade Register must be full-time, for at least 120 days, in order to be considered towards attainment of the 20% labor workforce threshold herein.

    f. If the 20% labor workforce per Contractor's Construction Workforce Plan from Employ Miami-Dade is not met on the contract, the Contractor must provide the Compliance Officer with a detailed explanation of its efforts.

    g. Career Source South Florida may have funds to pay a portion of the salaries for Employ Miami-Dade participants. It shall be the responsibility of the Contractor to contact Career Source South Florida directly to determine eligibility for, and make arrangements as applicable with, Career Source South Florida to pay a portion of the salaries for a specified period and/or during on the job training for the Employ Miami-Dade participants employed on the contract.

B. Prior to the issuance of a Notice to Proceed, Contractors must also submit the following:

1. A Construction Workforce Plan (Form RFTE 2) and supporting documentation including:

    a. Specifying the total number of positions by trade that will be used by the Contractor and subcontractors to perform all the of the construction labor work.

    b. Indicate the number of positions to be filled by the Contractor from the Employ Miami-Dade Register.

    c. Contractor shall submit an updated Construction Workforce Plan to the Contracting Officer on a monthly basis.

C. Within thirty (30) days of completion, and prior to final payment, Contractors must also submit a Workforce Performance Report (Form RFTE 4) that includes the following information:

1. The total number of construction labor work positions performed by Employ Miami-Dade participants with supporting documentation.

2. Supporting documentation verifying reasonable efforts to promote Employ Miami-Dade if 20% labor workforce threshold was not met per Contractor's Construction Workforce Plan from the Employ Miami-Dade Register.

3. Determination if employee(s) will be retained beyond the contract.

D. The awarded Contractor is hereby notified that the County will consider whether a Contractor made its best reasonable efforts to promote Employ Miami-Dade on this contract, as defined in AO 3-63, as part of the County's evaluation and responsibility review of the Contractor for new County contract awards.

1.14 ACCEPTANCE TESTS

A. <<Replace Article 2.89 of the CICC 7360-0/08 Miscellaneous Construction Contract with the following:>>

A. <<Replace Article 2.99 of the CICC 7040-0/07 Miscellaneous Construction Contract with the following:>>

B. When Contractor informs Engineer that the Work is ready for inspection and testing, Engineer may request, from a County approved laboratory, the tests necessary to confirm that the required material, compaction, or work specifications are met. If the results of the tests reveal that the applicable specifications have not been met, Contractor, without additional compensation, must perform, to the satisfaction of Engineer, all work necessary to meet the applicable specifications and is responsible for the costs of all re-testing required by Engineer and the Contract Documents.

C. The Department will pay the laboratory for the first test (pass or fail); any re-testing will be the responsibility of Contractor. The Department will only pay for re-testing when authorized, in writing, by Engineer.

D. Contractor must comply with the conditions of the agreement between Miami-Dade County and Laboratory.

1.15 CHANGE ORDER PROCEDURES AND BASIS FOR PAYMENT

A. Extra Work shall result in an equitable adjustment (increase or decrease) to the applicable RPQ representing the reasonable cost or the reasonable financial savings related to the change in Work. Extra Work may also result in an equitable adjustment in the RPQ schedule for performance for both the Extra Work and any other Work affected by the Extra Work.

B. The County shall initiate the Extra Work procedure by a notice to Contractor outlining the proposed Extra Work. Upon receipt of the notice to proceed with the Extra Work, the Contractor is required to immediately start the Extra Work. The Contactor is required to obtain permission for an extension to start the Extra Work if it is beyond the Contractor's ability to start within the allotted timeframe.

C. The Contractor is required to provide the Project Manager with a detailed Change Order Proposal, if an Owner's Representative has been identified, which shall include requested revisions to the Contract, including but not limited to adjustments in the RPQ price and schedules for performance for the applicable RPQ. The change to the RPQ shall not exceed $100,000 or 10% of original RPQ, whichever is less. The Contactor is required to provide sufficient data in support of the cost proposal

demonstrating reasonableness. In furtherance of this obligation, the County may require that the Contractor submit any or all of the following: a cost breakdown of material costs, labor costs, labor rates by trade, and Work classification and overhead rates in support of Contractors Change Order Proposal. The Contractor's Change Order Proposal must include any schedule revisions and an explanation of the cost and schedule impact of the extra Work on the project. If the Contractor fails to notify the Project Manager of the schedule changes associated with a Notice of Proposed Change Order by submitting a revised schedule document, it will be deemed to be an acknowledgment by Contractor that the proposed Extra Work will not have any scheduling consequences. The Contractor agrees the Change Order Proposal will in no event include a combined profit and home office overhead rate in excess of fifteen (15%) percent of the direct labor and material costs, unless the Project Manager determines that the complexity and risk of the Extra Work is such that an additional factor is appropriate. The Change Order Proposal may be accepted or modified by negotiations between the Contractor and the County. If an agreement on the Extra Work is reached, both parties shall execute the Extra Work order in writing. The execution by the Contractor of the Extra Work order shall serve as a release of the County from all claims and liability to the Contractor relating to, or in connection with, the Extra Work, including any impact, and any prior acts, neglect or default of the County relating to the Extra Work.

1.16 MIAMI-DADE COUNTY'S USER ACCESS PROGRAM (UAP).

A. On November 5, 2013 the Board of County Commissioners adopted Ordinance No. 13-103 eliminating the construction contract exemption to the User Access Program set forth in Section 2-8.10 of the Code of Miami-Dade County with the exception of Miscellaneous Construction Contract Program contracts with a total contract value of less than $500,000. Ordinance No. 13-103 retained the other exemptions listed in Section 2-8.10 of the Code including an exemption for contracts "funded with any funding source, including federal, which prohibits or restricts the application of the credit to the County effected in the UAP." As bond funding would be a funding source "which prohibits or restricts the application" of the UAP, construction contracts funded by bond proceeds (e.g., General Obligation Bond (GOB), People's Transportation Plan (PTP)) remain exempt from the application of the County's User Access Program.

B. UAP <<applies>><<does not apply>> for this project, Therefore:

C. If applicable, this Contract is subject to a user access fee under the County's User Access Program (UAP) in the amount of two percent (2%) pursuant to Miami-Dade County Budget Ordinance No. 03-192. All construction services provided under this contract are subject to the 2% UAP. This fee applies to all Contract usage whether by County Departments or by any other governmental, quasi-governmental or not-for-profit entity. From every payment made to the Contractor under this contract (including the payment of retainage), the County will deduct the two percent (2%) UAP fee provided in the ordinance and the Contractor will accept such reduced amount as full compensation for any and all deliverables under the contract. The County shall retain the 2% UAP for use by the County to help defray the cost of its procurement program. Contractor participation in this pay request reduction portion of the UAP is mandatory.

1.17 PUBLIC RECORDS AND CONTRACTS FOR SERVICES PERFORMED ON BEHALF OF MIAMI-DADE COUNTY.

A. The Contractor shall comply with the Public Records Laws of the State of Florida, including but not limited to,:

1. Keeping and maintaining all public records that ordinarily and necessarily would be required by Miami-Dade County (County) in order to perform the service

2. Providing the public with access to public records on the same terms and conditions that the County would provide the records and at a cost that does not exceed the cost provided in Chapter 119, F.S., or as otherwise provided by law

3. Ensuring that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and

4. Meeting all requirements for retaining public records and transferring, at no cost, to the County all public records in possession of the Contractor upon termination of the contract and destroying any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements upon such transfer.

B. In addition, all records stored electronically must be provided to the County in a format that is compatible with the information technology systems of the County. Failure to meet any of these provisions or to comply with Florida's Public Records Laws as applicable shall be a material breach of the agreement and shall be enforced in accordance with the terms of the agreement.

C. For questions regarding the application of chapter 119, Florida Statutes, to The Contractor's Duty to Provide Public Records relating to this contract, contact the Custodian of Public Records at (305) 375-4735; isd-vss@miamidade.gov; 111 NW 1 Street, suite 1300, Miami, Florida 33128.

1.18 NONDISCRIMINATION

A. During the performance of this Contract, Contractor agrees to not discriminate against any employee or applicant for employment because of race, color, religion, ancestry, national origin, sex, pregnancy, age, disability, marital status, familial status, sexual orientation, gender identity or gender expression, status as victim of domestic violence, dating violence or stalking, or veteran status, and on housing related contracts the source of income, and will take affirmative action to ensure that employees and applicants are afforded equal employment opportunities without discrimination. Such action shall be taken with reference to, but not limited to: recruitment, employment, termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on the job training.

B. By entering into this Contract, the Contractor attests that it is not in violation of the Americans with Disabilities Act of 1990 (and related Acts) or Miami-Dade County Resolution No. R-385-95. If the Contractor or any owner, subsidiary or other firm affiliated with or related to the Contractor is found by the responsible enforcement agency or the County to be in violation of the Act or the Resolution, such violation shall render this Contract void. This Contract shall be void if the Contractor submits a false affidavit pursuant to this Resolution or the Contractor violates the Act or the Resolution during the term of this Contract, even if the Contractor was not in violation at the time it submitted its affidavit.

1.19 CONTRACTOR DUE DILIGENCE AFFIDAVIT

A. In accordance with Board of County Commissioners Resolution 63-14, Contractor, as a condition of award, must submit Contractor Due Diligence Affidavit Form on any contract that exceeds $1 million, or that is otherwise subject to Board approval.

1. Affidavit is attached in Section 2 of these Solicitation Documents and must be included in the solicitation package. Form requires that Contractors attest to the following under oath:

a. All of the lawsuits that have been filed against that entity, its directors, partners, principals, and/or board members, based on breach of contract by that entity in the five years prior to

bid or proposal submittal, including the case name and number and the disposition of the case;

b. Any instances in the five years prior to bid or proposal submittal where that entity has been defaulted and a brief description of the circumstances; and

c. All of the instances in the five years prior to bid or proposal submission where that entity has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

B. It is the responsibility of the Contractor to return the fully executed Affidavit at the time of bid or proposal submittal. This affidavit will be used as an additional measure of due diligence prior to award of a contract.

C. In accord with Resolution No. R-828-19, the County reserves the right to request from any bidder the disclosure of any lawsuits which include allegations of discrimination in the last ten years prior to date of solicitation, the disposition of such lawsuits, or statement that there are no such lawsuits.

D. As per Miami-Dade County Resolution R-1181-18, Submit OSHA form 300 containing a list of the company's work-related injury and illness data; and OSHA inspection data, for the previous three years, for the contractor and first tier subcontractors. The Department of Labor Occupational and safety Health Administration (OSHA) Form 300, 300Aand 301 can be found under Appendix <<E>> of these Supplementary Conditions.

<<FOR WORK ORDER DRIVEN CONTRACTS ADD AND MODIFY AS APPLICABLE THE FOLLOWING ARTICLE:

1.20 LIQUIDATED DAMAGES.

Expand Subarticle 1.06 J from the DTPW General Requirements as follows:

A. <<Specific sites are not identified at the time of advertisement; >>Engineer will issue a Work Order identifying the location, description and amount of work to be accomplished. Notify Engineer prior to beginning work on the project.

B. Initial Work Order may be issued with the Notice to Proceed. Contractor will be allowed fourteen (14) calendar days from receipt of the initial Work Order to respond and begin work. The fourteen (14) calendar days begin on the date the work order is received in person, by fax or by certified mail. Contractor will be expected to respond and begin work within five working days of receipt of any subsequent Work Order. If a start date later than 5 working days is identified in a Work Order, Contractor will be expected to begin work by the start date identified in the Work Order.

C. Charging of Contract time will begin on the actual day that work begins at the site, but no later than:

1. the 14th calendar day from receipt of the initial Work Order; or

2. the 5th working day from receipt of any subsequent Work Order; or

3. the "start date " identified in a Work Order (as described above) that is applicable to the specific Work Order issued.

D. If the Contractor does not begin work by the end of the day provided by the Work Order, or if the assignment of work on the Work Order is not complete within the number of calendar days specified on the Work Order, then the County may assess the Contractor, not as a penalty but as liquidated

damages, the amount shown in Subarticle 1.06, J, 2, Liquidated Damages, of the DTPW General Requirements.

E. All work locations will be described with sufficient particularity that will allow Contractor to proceed immediately to the location with minimum delay. The County will make every reasonable effort to plan work locations and develop work documents in systematic and concentrated regions so as to minimize the Contractor's travel requirements. A Pre-Work Conference may be scheduled prior to the commencement of work in accordance with DTPW General Requirements.

F. Upon completion of the assigned work of the Work Order, notify Engineer. Certify that the work quantities and quality were accomplished in accordance with these specifications by signing and returning the Work Order to the Department. All work completed will be reviewed to verify quantity and quality prior to approval of the Work Order.

G. Should inclement weather limit or stop the work, notify Engineer of such. Article 1.04 of these Supplemental Specifications describe Weather Delays adjustments.

Limitation or work stoppage. Schedule work in a manner that prevents delays, stoppages and rework.

1.21 CLAIMS

A. Amend Paragraph <<2.78>><<2.86>> of the <<CICC 7360-0/08>><<CICC 7040-0/07>> Miscellaneous Construction Contract by adding the following:

B. Notice of Claims

1. The Contractor will not be entitled to additional time or compensation otherwise payable for any act or failure to act by the Department, the happening of any event or occurrence, or any other cause, unless he shall have given the Project manager a written notice of claim therefore as specified in this article.

2. The Contractor shall provide immediate verbal notification with written confirmation within forty-eight (48) hours of any potential claims and of the anticipated time and/or cost impacts resulting thereof. The written notice of claim shall set forth the reasons for which the Contractor believes additional compensation and/or time will or may be due, the nature of the costs involved and the approximate amount of the potential claim.

3. It is the intention of this article, that differences between the parties arising under and by virtue of the Contract shall be brought to the attention of the Project Manager at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken.

4. The notice requirements of this article are in addition to those required in other articles of these Contract Documents, inclusive of the conditions listed under the MCC Plan.

5. The Contractor shall segregate all costs associated with each individual claim including but not limited to labor, equipment, material, subcontractor and supplier costs, and all other costs related to the claim. In the event that the Contractor has multiple claims, the Contractor will segregate each claim individually including the respective costs associated with each claim. Failure to segregate claims and their respective costs will be grounds for the Department's rejection of the claim. No “total cost claims” shall be allowed under this Contract.

6. The Contractor must maintain a cost accounting system as a condition for making a claim against the Department. The cost accounting system must segregate the costs of the work under the Contract (non-claims-related) from claims-related and other Contractor costs through the use of a job cost ledger and be otherwise in compliance with general accounting principles.

7. If the Department decides to pay all or part of a claim for which notice was not timely made, the Department does not waive the right to enforce the notice requirements in connection with any other claim.

8. Inasmuch as the notice of claim requirements of this article are intended to enable the Project Manager to investigate while facts are fresh and to take action to minimize or avoid a claim which might be filed thereafter, the Contractor's failure to make the required notice on time is likely to disadvantage the Department. Therefore, a claim that does not comply with the notice requirements above shall not be considered unless the Contractor submits with his claim proof showing that the Department has not been prejudiced by the Contractor's failure to so comply and, in the event the Department has been prejudiced by the Contractor's failure to submit a timely notice of claim, the Department will reduce any equitable adjustment claimed by the Contractor to reflect the damage.

C. Claim Submittals

1. Claims or requests for equitable adjustments filed by the Contractor shall be filed in full accordance with this article no later than 30 calendar days after the act giving rise to the claim and in sufficient detail to enable the Department to ascertain the basis and amount of said claims. In the case of continuing or on-going claim events, the Contractor shall be allowed to periodically amend his claim to more accurately reflect the impact of said claim, until the end of the claim event. No claims for additional compensation, time extension or for any other relief under the Contract shall be recognized, processed, or treated in any manner unless the same is presented in accordance with this Article. Failure to present and process any claim in accordance with this Article shall be conclusively deemed a waiver, abandonment or relinquishment of any such claim, it being expressly understood and agreed that the timely presentation of claims, in sufficient detail to allow proper investigation and prompt resolution thereof, is essential to the administration of this Contract.

2. The Department will review and evaluate the Contractor's claims. It will be the responsibility of the Contractor to furnish, when requested by the Project manager, such further information and details as may be required to determine the facts or contentions involved in his claims. The cost of claims preparation or Change Order negotiations shall not be reimbursable under this Contract.

3. Any work performed by the Contractor prior to Notice-to-Proceed (NTP) shall not be the basis for a claim from the Contractor of any kind.

4. Each claim must be certified by the Contractor as required by the Miami-Dade Code, False Claims Act (see Code Section 21-255, et seq.), and accompanied by all materials required by Miami-Dade County Code Section 21-257. A "certified claim" shall be made under oath by a person duly authorized by the claimant, and shall contain a statement that:

   a. The claim is made in good faith;

   b. The claim's supporting data is accurate and complete to the best of the person's knowledge and belief;

   c. The amount of the claim accurately reflects the amount that the claimant believes is due from the Department; and

   d. The certifying person is duly authorized by the claimant to certify the claim.

5. In order to substantiate time-related claims (delays, disruptions, impacts, etc.), the Contractor shall, if applicable and as determined by the Department, submit, in triplicate, the following information:

   a. Copy of Contractor's notice of claim in accordance with this article. Failure to submit the notice is sufficient grounds to deny the claim.

   b. The approved, as-planned Schedule in accordance with the applicable section of the Contract Documents and computer storage media, if applicable.

   c. The as-built Schedule reflecting changes to the approved schedule up to the time of the impact in question and computer storage media if applicable.

   d. The basis for the duration of the start and finish dates of each impact activity and the reason for choosing the successor and predecessor events affected in the schedule shall be explained. Also, the basis for the duration of any lead/lags inserted into the schedule and the duration in related activity duration shall be explained.

   e. A marked-up as-built Schedule indicating the causes responsible for changes between the as-planned and as-built schedule and establishing the required cause and effect relationships.

   f. After indicating specific time related changes on the as-built schedule, the documentation must be segregated into separate packages with each package documenting a specific duration change identified previously. This documentation package shall include Change Orders, Change Notices, Work Orders, written directions, meeting minutes, etc., related to the change in duration.

   g. Any loss of efficiency, acceleration, disruption and loss of productivity claims shall be compensated as part of the Liquidated Indirect Costs paid for compensable, excusable delays and mark-up on Direct Cost of changes as allowed by the Contract. Total cost and modified total cost claims will not be accepted and the Contractor agrees to waive the right to seek recovery by these methods. The claimed delay shall not result from a cause specified in the Contract Documents as a non-excusable delay.

   h. The Contractor assumes all risk for the following items, none of which shall be the subject of any claim and none of which shall be compensated for except as they may have been included in the compensation described under Liquidated Indirect Costs:

      1) Home office expenses or any Direct Costs incurred allocated from the headquarters of the Contractor;

      2) Loss of anticipated profits on this or any other project;

      3) Loss of bonding capacity or capability;

      4) Losses due to other projects not bid upon;

      5) Loss of business opportunities;

      6) Loss of productivity on this or any other project;

      7) Loss of interest income on funds not paid;

      8) Costs to prepare, negotiate or prosecute claims and

      9) Costs spent to achieve compliance with applicable laws and ordinances (excepting only sales taxes paid shall be reimbursable expense subject to the provisions of the Contract Documents).

   i. All non-time-related claim items for additional compensation for Direct Costs shall be properly documented and supported with copies of invoices, time sheets, rental agreements, crew sheets and the like.

j. Cost information shall be submitted in sufficient detail to allow for review. The basis for the budgeted or actual costs shall include man-hours by trade, labor rates, material and equipment costs etc. These costs shall be broken down by pay.

k. The documentation for budgeted cost shall, as a minimum, include:

1) Copies of all the Contractor's bid documents, bid quotes, faxed quotes, etc.

2) Copies of all executed subcontracts.

3) Other related budget documents as requested by the Project Manager.

l. The documentation for actual cost shall, as a minimum, include:

1) Time Sheets.

2) Materials invoices

3) Equipment invoices

4) Subcontractors' payments

5) Other related documents as required by the Project Manager.

m. The Contractor shall make all his books, employees, work sites and records available to the Department or its representatives for inspection and audit.

6. No payment shall be made to the Contractor by the Department for loss of anticipated profit(s) from any deleted work.

7. As indicated above, the Project Manager and the Field Representative shall be allowed full and complete access to all personnel, documents, work sites or other information reasonably necessary to investigate any claim. Within sixty (60) days after a claim has been received, the claim shall either be rejected with an explanation as to why it was rejected or acknowledged. Once the claim is acknowledged, the parties shall attempt to negotiate a satisfactory settlement of the claim, which settlement shall be included in a subsequent Work Order or Change Order. If the parties fail to reach an agreement on a recognized claim, the Department shall pay to the Contractor the amount of money it deems reasonable, less any appropriate retention, to compensate the Contractor for the recognized claim.

8. Failure of the Contractor to make a specific reservation of rights regarding any such disputed amounts in the body of the Change Order which contains the payment shall be construed as a waiver, abandonment, or relinquishment of all claims for additional monies resulting from the claims embodied in said Change Order. However, once the Contractor has properly reserved rights to any claim, no further reservations of rights shall be required and the Contractor shall not be required to repeat the reservation in any subsequent change order. Prior reservation of rights may however be modified, by express reference, in subsequent change orders. Notwithstanding the aforementioned, at the time of final payment under the Contract, the Contractor shall specify all claims which have been denied and all claims for which rights have been reserved in accordance with this section. Failure to so specify any particular claim shall be constructed as a waiver, abandonment, or relinquishment of such claim.

1.22 DISPUTES

A. Amend Paragraph <<2.81>><<2.89>> of the <<CICC 7360-0/08>><<CICC 7040-0/07>> Miscellaneous Construction Contract by adding the following:

B. Disputes

1. The following provisions shall govern disputes under this Contract unless the Special Provisions to this Contract contain the requirement for the use of an alternate dispute resolution method. For example, for large projects of great complexity, a Dispute Review Board (DRB) may be employed by the Department to settle disputes in lieu of the Department Director or Office of the Mayor (OOM) designee as specified below. In this case, the DRB alternative shall be specified by the Department in the Special Provisions and, if utilized, shall supersede this dispute provision.

    a. In the event the Contractor and the Department are unable to resolve their differences concerning any determination made by the Project Manager or Department on any dispute or claim arising under or relating to the Contract (referred to in this Section as a "Dispute"), either the Contractor or the Department may initiate a dispute in accordance with the procedure set forth in this article. Exhaustion of these procedures shall be a precondition to any lawsuit permitted hereunder.

    b. For contracts with a value of $5 million or less, all Disputes under this Contract shall be decided by the Department Director or his designee. For contracts valued at more than $5 million, Disputes shall be decided by a designee appointed by the OOM.

    c. As soon as practicable, the Department Director or OOM designee shall adopt a schedule for the Contractor and the Department to file written submissions stating their respective positions and the bases therefore. The written submissions shall include copies of all documents and sworn statements in affidavit form from all witnesses relied on by each party in support of its position. Within 20 working days of the date on which such written submissions are filed, the Department Director or OOM designee shall afford each party an opportunity to present a maximum of one hour of argument. The Department Director or OOM designee may decide the Dispute on the basis of the affidavits and other written submissions if, in his opinion, there is no issue of material fact and the party is entitled to a favorable resolution pursuant to the terms of this Contract. As part of such decision, the Department Director or OOM designee shall determine the timeliness and sufficiency of each notice of claim and claim at issue as provided in this article. The Department Director or OOM designee shall have the authority to rule on questions of law, including disputes over contract interpretation, and to resolve claims, or portions of claims, via summary judgment where there are no disputed issues of material fact. Furthermore, the Department Director or OOM designee is authorized by both parties to strike elements of claims seeking relief or damages not available under the contract (such as, but not limited to, claims for lost profits, off-site overhead, loss of efficiency or productivity claims or claim's preparation costs) by summary disposition.

    d. In the event that the Department Director or OOM designee determines that the affidavits or other written submissions present issues of material fact, he shall allow the presentation of evidence in the form of lay or expert testimony directed solely to the issues which he may specifically identify to require factual resolution. The testimonial portion of the process shall not exceed one day in duration per side, including opening statements and closing arguments, if allowed by the Department Director or OOM designee at his reasonable discretion.

    e. No formal discovery shall be allowed in connection with any proceeding under this article. Notwithstanding the foregoing, both parties agree that all of the audit, document inspection, information and documentation requirements set forth elsewhere in this contract shall remain in force and effect throughout the proceeding. The Department Director or OOM designee shall not schedule the hearing until both parties have made all their respective records available for inspection and reproduction and the parties have been afforded reasonable time to analyze the records. The continued failure of a party to comply with the document inspection, examination, or submission requirements set forth in this contract shall constitute a waiver of that party's claims and/or defenses, as applicable. Hearsay evidence shall be admissible but shall not form the sole basis for any finding of fact. Failure of any party to participate on a timely basis, to cooperate in the proceedings, or to furnish

evidence in support or defense of a claim shall be a criteria in determining the sufficiency and validity of a claim.

f. The Department Director or OOM designee shall issue a written decision within 15 working days after conclusion of any testimonial proceeding and, if no testimonial proceeding is conducted, within 45 days of the filing of the last written submission. This written decision shall set forth the reasons for the disposition of the claim and a breakdown of any specific issues or subcontractor claims.

g. If either party wishes to protest the decision of the Department Director or OOM designee, such party may commence an action in a court of competent jurisdiction, within the periods prescribed by law, it being understood that the review of the court shall be limited to the question of whether or not the Department Director or OOM designee's determination was arbitrary and capricious, unsupported by any competent evidence, or so grossly erroneous to evidence bad faith.

h. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Department's interpretation. Any presentation or request by the Contractor under this article will be subject to the same requirements for Submittal of Claims in this article.

1.23 EXTRA WORK

A. The following Subarticle replaces the following items: <<Article 2.83, Extra Work and Payment Therefore, of the Special Conditions of the MCC 7360 Plan>>. <<Articles 2.92, Extra Work, and portion of Article 2.94, Change Order Procedure and Basis for Payment of the MCC 7040 Plan>>; <<Subarticle 10.E, Extra Work, of the Standard Construction General Contract Conditions for Capital Projects>>:

1. Contractor may be asked to perform extra work, for which there is no price included in the Proposal, wherever it is deemed necessary or desirable by the Engineer to satisfactorily complete the Project as contemplated, and such extra work must be performed promptly in accordance with the Specifications and as directed by the Engineer, provided, however, that before any extra work is begun, a written order from the Engineer to do the work shall be given to the Contractor. No extra work will be paid for unless ordered in writing.

2. All changed or added work so authorized shall be performed by the Contractor at the time and in the manner specified.

3. The Change Order shall include, as a minimum:

   a. Scope of work to be added, deleted or modified;

   b. Cost of work to be added, deleted or modified;

   c. The Contract time extension or reduction in contract time in the case of deleted work required to perform the work to be added, deleted or modified;

   d. Full release of claims associated with the Contract through the date of the change order, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

4. The Work Order shall include, at a minimum:

   a. Scope of work to be added, deleted or modified;

   b. Cost of work to be added, deleted or modified;

c. The Contract time extension required to perform the work to be added, deleted or modified;

d. Full release of claims associated with the work order work, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

B. Extra Work Payment

1. The following Subarticle replaces the following items: <<Article 2.83, Extra Work and Payment Therefore, of the Special Conditions of the MCC 7360 Plan>>. <<Articles 2.92, Extra Work, and portion of Article 2.94, Change Order Procedure and Basis for Payment of the MCC 7040 Plan>>; <<Subarticle 10.D, Extra Work, of the Standard Construction General Contract Conditions for Capital Projects>>:

2. If Work is ordered, changed, or deleted which is not covered by Unit Prices, then, a NAM must be executed.

3. Extra work, for a complete job, will be paid for in a lump sum or at unit prices agreed to in writing by the Engineer and the Contractor before the extra work is ordered for performing the work. Payment for lump sum work will be based on the following:

   a. Contractor shall submit to the Engineer an estimated proposal containing a complete breakdown of costs to perform the work to which shall be added an amount equal to fifteen (15) percent of such sum for labor and the total thereof will be full compensation to the Contractor for performing the work which includes overhead and profit, home office expenses for general supervision and for furnishing and repairing small tools and ordinary equipment used in doing the extra work. In addition, the Contractor shall include their labor burden costs of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations and insurance and Contractor's public liability and property damage insurance involved in such extra work, based on the wages paid to such labor. Contractor's documentation of the labor burden costs must be provided upon demand by the Engineer.

   b. For all materials used, Contractor will include the estimate total cost of such materials, including taxes and freight charges, to which cost will be, added an amount equal to ten (10) percent thereof; for full compensation that includes overhead, profit and home office expenses.

   c. For any construction equipment .or special equipment including fuel and lubricant required for the economical performance of extra work, the Engineer will pay the Contractor a rental price, for every hour that such construction equipment or special equipment is estimated to operate on the work. This provision is intended to pay for heavy or special construction equipment; the County shall therefore not pay for small tools and equipment ordinarily used in construction. Where there is a question as to whether payment pursuant to this ·section is valid the Engineer will make the final determination as to the validity of such payment. The hourly rental price of such construction or special equipment will not exceed 1/176 part of the monthly rate stated for such equipment in the latest edition of the "Compilation of Rental Rates for Construction Equipment" by Associated Equipment Distributors. In the event that the equipment is not owned by the Contractor or his companies and the equipment is rented from a recognized equipment rental company, the Contractor will be paid the estimated time that the equipment will work at the hourly rental rate to which shall be added ten (10) percent for fuel, maintenance and lubrication for rented equipment.

4. Contractor is required to include a statement certifying that the proposal is consistent with the Plans and Specifications and he has reviewed all the costs for extra work and has found them to be accurate, fair and reasonable. If extra work is ordered, it must be included in the Contractor's monthly estimate when Allowance Account funds are available in the Contract for

the work actually done. An Allowance Account expenditure form shall be prepared and executed by all appropriate parties to the Contract. If no allowance account funds are available a change order will be issued.

5. The performance of any extra work or the furnishing of any extra material which, in the judgment of the Engineer, is of like character to and susceptible of classification under a unit price item of the Contract shall, if the order of the Engineer shall so provide, be paid for at the unit price bid for such item or items, where Allowance Account funds are available in the Contract with the Contractor's monthly estimate, for the work actually done. Said Allowance Account funds shall be transferred to the various Proposal payment item funds via the Allowance Account expenditure form, to allow payment for this extra work without depletion of the payment item fund.

6. All extra work performed hereunder will be subject to all of the provisions of the Contract. Whenever, in the judgment of the Engineer, such extra work or such extra material is not of like character to and susceptible of classification under a unit price item of the Contract, or the application of the unit price will result in unacceptably high costs to the Department, and it is impracticable because of the nature of the work, or for any other reason, to fix the price before the extra work order is issued, extra work and material will be paid for in the following manner:

    a. For all labor, including a working foreman in direct charge of the specified operation, the Contractor will receive a sum equal to the current local rate of wages for every hour that the labor is actually performed. For a working foreman who performs labor, the Contractor may charge one hundred (100) percent of his hourly wage rate; for a foreman who only directs workers in the performance of their work, the Contractor may charge the following: twenty five (25) percent of the working foreman's salary for directing up to two workers in their work; fifty (50) percent of sum salary for directing up to four workers in their work; seventy-five (75) percent for directing five workers in their work; and one hundred (l00) percent for directing six workers or more their work, to which shall be added an amount equal to fifteen percent of such sum, and the total thereof shall be full compensation to the Contractor for performing the work, which includes overhead and profit, home office expenses, general supervision and for furnishing and repairing small tools and ordinary equipment used in doing the extra work. In addition, the Contractor shall be paid their labor burden costs of social security taxes, unemployment· insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in such extra work, based on the actual wages paid to such labor.

    b. For all materials used, the Contractor shall receive the actual cost of such materials, including freight charges as shown by original receipted bills, to which costs will be added ·an amount equal to ten (10) percent thereof, for full compensation which includes overhead, profit and home office expenses.

    c. For any construction equipment or special equipment including fuel and lubricants, required for the economical! Performance of extra work, excluding the small tools and ordinary equipment as specified above, the Engineer shall allow the Contractor a rental price to be agreed upon in writing before such work is begun, for every 1 hour that such construction equipment or special equipment is actually operated on the work. Such hourly rental price shall not exceed 1/176 part of the monthly rate stated for such equipment in. the latest edition of the "Compilation of Rental Rates for Construction Equipment" by Associated Equipment Distributors. In the event that the equipment is not owned by the Contractor or his companies and the equipment is rented form a recognized equipment rental company, the Contractor will be paid for every hour that the equipment is actually working at the hourly rental rate to which will be added ten (10) percent for fuel, maintenance and lubricants for rented equipment.

7. Contractor's representative and the Counties representative will compare records of extra work done at the end of each day. Such records will be made in duplicate upon a form provided for such purpose by the Counties representative, and shall be signed by both the counties representative and the Contractor's representative, one copy being submitted to the Engineer and the other being retained by the Contractor.

8. Contractor upon certified statements will submit all claims for extra work done, to which shall be attached the original receipted bills covering the costs of and freight charges on all materials used in such work, and such statements, accompanied by copes of the orders authorizing the performance of the work, shall be submitted to the Engineer for inclusion in the estimate of month. In which the work was actually done, where allowance account funds are available in the contract. If no allowance account fund is available, the extra work shall be paid for, subject to approval of a change order for the work, by the county representative via Expedite Ordinance or the Board of County Commissioners.

9. If required, the Contractor shall produce any books, vouchers, other records, or memoranda .that will assist the Engineer in determining the true, necessary cost of work and materials to be paid for on a cost plus basis.

10. In the event that the Contractor employs a subcontractor to perform his extra work for any portion of the lump sum work, or for any portion of extra work, material or equipment. Contractor may charge an additional ten (10) percent for his full compensation for overhead, profit, home office expenses and general supervision for the portion of work performed by the .subcontractor.

11. The subcontractor must comply with all the requirements of the Contract for his portion of extra work and be compensated as permitted within this Section for the extra work.

12. No additional compensation will be paid for overhead, profit, home office expenses or supervision to any subcontractors working for subcontractors.

1.24 WARRANTY OF CONSTRUCTION

A. For a period of one year, except as provided below, from the date of Final Acceptance, the Contractor warrants that the Work conforms to the Contract requirements and the RPQ requirements and is free of any patent and/or latent defect of the material or workmanship.

1. Exception to the above year warranty:

a. Where the manufacturer of material provides a warranty in excess of one (1) year, the Contractor shall provide an assignment of warranty to the County with the manufacturer's written authorization. Contractors shall be obligated to provide to the County copies of all manufacturer's warranties and guarantees. Where the County specifies in an RPQ a warranty greater than one (1) year, such warranty will only be for the specified RPQ.

b. The warranty hereunder shall be in addition to whatever rights the County may have under law. The Contractor’s obligation under this warranty shall be at its own cost and expense, to promptly repair or replace (including cost of removal and installation), that item (or part of component thereof) which proves defective or fails to comply with the Contract within the warranty period such that it complies ·with the Contract.

c. In the event the Contractor fails to repair or replace defective Work in accordance with the terms of the Contract, the RPQ, and this warranty, the County shall have the right to collect such costs incurred or withhold the cost of the anticipated repairs by offsetting the amount

against any payment due the Contractor under any contract between the County and the Contractor.

d. The warranty covering defective Work shall be reinstated for a period of one (1) year effective as of the date when the defect is remedied. If the defect is found to have a significant effect on any other part, component or item, the reinstatement of the warranty shall then be extended to cover the part component, or item so affected as well, and shall start as of the date the interrelated parts, components and items function properly. The warranty reinstatement provided for in this paragraph shall apply only to the first replacement or repair of any such item, part and component and, in the case of a failure which has a significant effect on another part, component or item, to the first extension of the said warranty to such affected items, parts and components.

e. As specified in the construction documents. All guarantees and warranties under the Contract are fully enforceable by the County acting in its own name.

SECTION 00800

SPECIAL CONDITIONS

1.1 SCOPE

A. This project consists of FRANJO ROAD ROADWAY IMPROVEMENTS PROJECT within the Town of Cutler Bay, as shown on project manual.

1.2 NOTICES

A. In conformance with the requirements, all notices or other papers required to be delivered by the Contractor to the Owner shall be delivered to the office of the Owner's Engineer, at an address provided to the Contractor at the preconstruction conference.

1.3 COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

A. In case of discrepancy, computed dimensions shall govern over scaled dimensions; supplemental specifications shall govern over Standard Specifications; and Special Conditions shall govern over; Drawings, Supplemental and Standard Specifications.

1.4 LAYING OUT THE WORK

A. The Contractor shall be responsible for establishing all lines and grades together with all reference points as required by the various trades. All layout work shall be done using competent and experienced personnel under the supervision of a Land Surveyor registered in the State of Florida.

B. The Contractor shall provide all labor, instruments and stakes, templates, and other materials necessary for marking and maintaining all lines and grades. The lines and grades shall be subject to any checking the Owner or Engineer may decide necessary.

C. No separate cost item is provided for laying out the work, the cost of which is considered incidental to the work and shall be included in the unit prices for items in the Proposal.

D. The Contractor shall safeguard all existing and known Property corners, monuments, and marks adjacent to but not related to the work and shall bear the cost of re-establishing them if disturbed or destroyed. He shall also safeguard all points, stakes, grade marks, monuments and benchmarks made or established on the work, bear the cost of re-establishing them if disturbed and bear the cost of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes, and marks.

1.5 PRECONSTRUCTION CONFERENCE

A. The following parties will be asked to attend the Preconstruction Conference: BellSouth Telephone Company, Comcast Cable TV, Florida Power & Light Company, Town of Cutler Bay Public Works, City Gas Company of Florida, Miami-Dade Water and Sewer Department, and Miami-Dade County Public Works Department. At the preconstruction meeting, the Contractor shall present a construction phasing plan for the Engineers approval.

1.6 PERMITS AND LICENSE

A. Before starting work, the Contractor shall obtain and pay for all required licenses and permits.

1.7 CONTRACTOR'S OFFICE

A. The Contractor shall provide and maintain an office with telephone facilities where he or a responsible representative of his organization may be reached at any time while work is in progress. Such office may be at any location the Contractor considers desirable within Miami-Dade or Broward County.

1.8 USE OF EXPLOSIVES

A. No blasting shall be done.

1.9 USE OF PUBLIC STREETS

A. The use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Certain elements of the work will be conducted off peak hours as specified in the Contract Documents. Any earth or other excavated material spilled from trucks shall be removed immediately by the Contractor and the streets cleaned to the satisfaction of the Owner.

1.10 CARE OF TREES, SHRUBS AND GRASS

A. The Contractor shall be fully responsible for maintaining in good condition all cultivated grass plots, trees, and shrubs. Where maintained shrubbery, grass strips or area must be removed or destroyed incident to the construction operation, the Contractor shall, after completion of the work, replace or restore to the original condition all destroyed or damaged sod, shrubbery, or grass areas. Tree limbs which interfere with equipment operation and are approved for pruning shall be neatly trimmed and the tree cut coated with a tree paint. The cost for restoration shall be included in the total Bid amount, no separate pay item for this work provided.

1.11 OBSTRUCTIONS

A. All water pipes, storm drains, force mains, gas or other piping, telephone or power cables or conduits, and all other obstructions, whether or not shown, shall be temporarily removed from or supported across pipeline excavations. Before disconnecting any pipes or cables, the Contractor shall obtain permission from the owner, or shall make suitable arrangements for their disconnection by the owner. The Contractor shall be responsible for any damage to any such pipes, conduits, or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved. Approximate locations of known water, sanitary, drainage, power, and telephone installations along route of new pipelines or in vicinity of the work are shown but must be verified in the field by the Contractor. The Contractor shall uncover these pipes, ducts, cables, etc., carefully, by hand, to verify location and depth of cover. Any discrepancies or differences found shall be brought to the attention of the Owner and Engineer of Record in order that necessary changes may be made. These conditions are supplemental to general requirements elsewhere in these specifications. Where fences, walls or other man-made obstructions exist illegally in the public right-of-way, the Owner will have them removed upon adequate prior notice by the Contractor.

1.12 DAMAGE TO EXISTING STRUCTURES AND UTILITIES

A. The Contractor shall be responsible for and make good all damage to pavement and driveways beyond the limits of the work zone, to buildings, telephone or other cables, water pipes, sanitary pipes, or other structures which may be encountered, whether or not shown on the Drawings.

B. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. This information is not guaranteed, however, and it shall be this Contractor's responsibility to determine the location, character, and depth of any existing utilities. He shall assist the utility companies, by every means possible to determine said locations. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities.

1.13 NOTIFICATION TO UTILITY COMPANIES

A. The excavators shall comply with Florida Statute 553.851 regarding notification of existing gas and oil pipeline company owners and shall also notify "SUNSHINE STATE ONE CALL FOR FLORIDA, INC." at 1-(800)432-4770 prior to excavating. Evidence of such notice shall be furnished to the City prior to excavating.

1.14 TESTS

A. The Contractor will pay for all required tests. Generally, tests will be compaction and density tests, lime rock quality tests, concrete quality tests (cylinder breaks). On asphaltic concrete and pipe, the manufacturer's or supplier's certificate that the material meets the requirements of the specification will be accepted subject to verification by the Owner's Engineer. Any and all tests which have to be repeated because of the failure of the tested material to meet specifications shall be paid for by the Contractor and the costs of any such tests shall be deducted from payments due the Contractor. Water required for leakage tests shall be furnished by the Contractor.

B. Testing Frequencies

Concrete: Perform one (1) test per 50 C.Y., or at least one (1) per day if less than 50 C.Y.
One test shall consist of one (1) slump, temperature read and one (1) set of five (5) cylinders for compressive strength.

Roadway: For sub-grade perform one (1) density test every 500 L.F. each lane (100% T-99). Sample for proctor test.
For stabilized sub-grade, perform one (1) density test every 500 L.F. each lane (98% T-180). Sample for proctor test, and L.B.R.
For Lime rock Base, perform one (1) density test every 500 L.F. each lane (98% T-180). Use Pit Proctor.
For Curb Pad, perform one (1) density test every 1000 L.F. (98% T-180).

Drainage: For trenches, perform one (1) density test every 1000 L.F.

1.15 RECORD AS-BUILT DRAWINGS

A. During the entire construction operation, the Contractor shall maintain records of all deviations from the Drawings and Specifications and shall prepare therefrom "record" drawings showing correctly and accurately the locations of all improvements to reflect the work as it was actually constructed. The locations of all improvements shall be as surveyed and certified by a Land Surveyor licensed in the State of Florida and shall include edge of pavement and back of sidewalk elevations taken at 50-foot intervals and at high and low points, rim and invert elevations on all storm water inlets and manholes, trench bottom elevations on all trench drains taken at 25-foot intervals and top pipe elevations on all storm sewers taken at 25-foot intervals. These drawings shall consist of reproducible and shall conform to

recognized standards of drafting, shall be neat and legible. One set of reproducible and one set of blue line prints shall be submitted to the Owner. Final acceptance of the project will be withheld until delivery of the set of "record" drawings is made to the Owner.

1.16 SUBSURFACE INVESTIGATION

A. The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the nature and location of the work, the conformation of the ground, the character and quality of the substrata, the types and quantity of materials to be encountered, the nature of the ground water conditions, the character of equipment and facilities needed preliminary to and during the execution of the work, the general and local conditions and all other matters which can in any way affect the work under this contract. The prices established for the work to be done will reflect all costs pertaining to the work. Any claims for extras based on substrata or ground water table conditions will not be allowed.

1.17 SUSPENSION OF WORK

A. Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction because of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine to compensate for time lost by such delay, with such determination to be set forth in writing.

1.18 PAYMENT FOR UTILITIES

A. The Contractor shall obtain the necessary utility service by making application for the service and paying such fees and charges required by the utility companies.

1.19 MAINTENANCE OF TRAFFIC

A. General:

1. The Contractor shall be responsible for the proper maintenance control and detour of traffic in the area of construction, during the course of construction. All traffic control and maintenance procedures shall be in accordance with the requirements of the Florida Department of Transportation and Miami-Dade County traffic engineering and the Town of Cutler Bay. It shall be the Contractor’s responsibility, as Bidder, prior to submitting his Bid, to determine the requirements of these agencies so that his Proposal reflects all costs to be incurred, including the costs to hire off-duty police officers as required. No claims for additional payment will be considered for costs incurred in the proper maintenance, control, detour and protection of traffic.

2. Traffic shall be maintained at all times where practical and as more

particularly specified hereinafter. No traffic shall be detoured without prior knowledge and approval of the respective traffic control agency having jurisdiction. The Contractor shall notify such agencies 48 hours in advance of such time he proposes to detour traffic.

3. The Contractor shall keep all law enforcement, fire protection and ambulance agencies informed, in advance, of his construction schedules, and shall notify all such agencies, 48 hours in advance, in the event of detour of any roadway.

4. All traffic control signs and devices, barricades, flashers, flambeaus, and similar devices shall be furnished and maintained by the Contractor.

5. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic and pedestrian safety at all times. Necessary access to adjacent property shall be provided at all times.

6. The work shall be conducted in a manner to cause the least possible interruption to traffic. Where traffic must cross excavations, the Contractor shall provide suitable bridges at street intersections and driveways.

7. The Contractor shall notify all businesses in the area that will be affected by the proposed detour or lane closure, 48 hours in advance of proposed work.

8. The Contractor shall provide access to all private property and driveways at all times.

1.20 BARRICADES AND PROTECTION OF WORK

A. The Contractor shall protect his work throughout its length by the erection of suitable barricades and handrails, where required. He shall further indicate this work at night by the maintenance of suitable lights or flares, especially along or across through-fares. Wherever it is necessary to cross a public walk, he shall provide suitable safe walkways with hand railings. He shall also comply with all laws or ordinances covering the protection of such work and the safety measures to be employed therein. The Contractor shall carry out his work so as not to deny access to private property. All utility access manholes, valves, fire hydrants and letter boxes shall be kept accessible at all times.

[END OF SECTION]

SECTION 00900

SUMMARY OF WORK

1. GENERAL

1.1 DESCRIPTION

A. Work included: Listing of Significant Items:

1. Work Sequence
2. Contractor Use of Sites
3. Owner Use of Facilities
4. Coordination

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Work for this contract comprises work to be performed on the project entitled: **FRAJO ROAD ROADWAY IMPROVEMENTS PROJECT**, Town of Cutler Bay, Florida, as shown, described, and detailed within this project manual and on the project plans and specifications. The improvements include required drainage improvements as well as any necessary asphalt resurfacing, sidewalk repairs and improvements, and pavement markings.

1.3 WORK SEQUENCE

A. Construct Work in phases to accommodate Owner's Service requirements during construction period.

B. Coordinate construction schedule and operations with Engineer.

1.4 CONTRACTOR USE OF SITES

A. Limit use of sites for Work and for construction operations, to allow for:

1. Owner servicing areas with municipal services.
2. Work by other contractors.
3. Public and Florida Power and Light access to adjacent properties.

B. Limit access to construction area.

C. Coordinate use of sites under direction of Engineer.

1.5 OWNER USE OF FACILITIES

A. Owner will require use of roadway during entire period of construction.

B. Cooperate with Owner to minimize conflict, and to facilitate Owner's servicing of area's municipal service needs.

SECTION 01000

MEASUREMENT AND PAYMENT

1. GENERAL

1.1 DESCRIPTION

A. The Contractor shall receive and accept the compensation provided in the Proposal and the Contract as full payment for furnishing all materials, labor, tools and equipment, for performing all operations necessary to complete the work under the Contract, and also in full payment for all loss or damages arising from the nature of the work, or from any discrepancy between the actual quantities of work and quantities herein estimated by the Engineer/Architect, or from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Owner.

B. The prices stated in the proposal include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Drawings and specified herein.

C. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project does reflect his total price for completing the work in its entirety.

1.2 MEASUREMENT

A. The quantities for payment under this Contract shall be determined by measurements of the completed items, in place, ready for service and accepted by the Owner.

1.3 PAYMENT ITEMS

A. Basis of Payment

Contract prices for the various work items are intended to establish a total price for completing the project in its entirety. The Contractor shall include in the Bid price any work item and materials for which a separate pay item has not been included in the Bid Form. All work and incidental costs shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made therefor.

SECTION 01010

SUBMITTALS AND SUBSTITUTIONS

1. GENERAL

1.1 SECTION INCLUDES:

A. Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

1.2 RELATED SECTIONS:

A. Documents affecting work of Sections in Division 1 of these Specifications.

B. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.

C. Work not included:

1. Submittals which are not required will not be reviewed by the Engineer.

2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Engineer.

1.3 SUBMITTALS FOR REVIEW

A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.

1.4 QUALITY ASSURANCE

A. Coordination of submittals:

1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.

2. Verify that each item and the submittal for it conform in all respects with the specified requirements.

3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

B. Substitutions:

1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when listed at time of bidding, on the Contractors letterhead and when substantiated by the Contractor's submittal of required data within 10 calendar days after the bid opening.

2. The following products do not require further approval except for interface within the Work:

a. Products specified by reference to standard specifications such as ASTM and similar standards.

b. Products specified by manufacturer's name and catalog model number.

3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Engineer.

C. "Or Equal":

1. Where the phrase "or equal," or "or equal as approved by the Architect/Engineer," occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Engineer.

2. The decision of the Engineer shall be final.

2. PRODUCTS

2.1 SHOP DRAWINGS

A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.

B. Types of prints required:

1. Submit Shop Drawings in the form of three blue line or black line prints of each sheet.
2. Blueprints alone will not be acceptable.

C. Review comments of the Engineer will be shown on the blue line or black line when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.

2.1 MANUFACTURER'S LITERATURE

A. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.

B. Submit the number of copies which are required to be returned, plus one copy which will be retained by the Engineer.

2.2 SAMPLES (ONLY IF REQUIRED IN OTHER SECTIONS)

A. Provide Sample of Samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.

B. Number of Samples required:

1. Unless otherwise specified, submit Samples, in the quantity, which is required to be returned, plus one which will be retained by the Engineer.

2. By prearrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Engineer.

3. EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

A. Consecutively number all submittals.

1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.

2. On resubmittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Engineer for his review upon request.

3.2 GROUPING OF SUBMITTALS

A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.

B.

1. Partial submittals may be rejected as not complying with theprovisions of the Contract.
2. The Contractor may be held liable for delays so occasioned.

3.3 TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.

B. In scheduling, allow at least ten working days for review by the Engineer following his receipt of the submittal.

3.4 ENGINEER'S REVIEW

A. Review by the Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.

B. Revisions:

1. Make revisions required by the Engineer.
2. If the Contractor considers any required revision to be a change, he shall so notify the Engineer within ten calendar days in writing.
3. Make only those revisions directed or approved by the Engineer.

C. Reimbursement of Engineer's costs:

1. In the event substitutions are proposed to the Engineer after the Contract has been awarded, the Engineer will record all time used by him and by his consultants in evaluation of each such proposed substitution.
2. Whether or not the Engineer approves a proposed substitution, the Contractor promptly upon receipt of the Engineer's billing shall reimburse the Engineer at the rate of three times the direct cost to Engineer and his consultants for all time spent by them in evaluating the proposed substitution.

[END OF SECTION]

SECTION 01025

MAINTENANCE OF TRAFFIC

1. GENERAL

1.1 DESCRIPTION

A. The Contractor shall furnish all equipment, supplies, personnel, labor, and services to accomplish maintenance of traffic at all locations required to complete this project and as authorized by the Engineer.

B. The intent is to maintain safe and expeditious movement of traffic around every work area where the public may be exposed to the potential hazards of the contract operations.

C. The term "Maintenance of Traffic" as used in the contract drawings or in these Specifications shall mean the maintenance of traffic movement through and/or around any work site within a public right-of-way in a manner such as to provide minimum disruption and maximum safety to both the public and project personnel and equipment.

1.2 QUALITY ASSURANCE

A. Maintenance of Traffic in the public rights-of-way shall be in strict accordance with the manual of uniform traffic control devices (M.U.T.C.D.).

B. Maintenance of Traffic on F.D.O.T. roads shall be as indicated on the contract drawings and as specified in F.D.O.T. index 600.

C. All traffic control and warning devices so specified; which are not on F.D.O.T. roadways, shall unless otherwise specified by the Department of Traffic and Transportation, be furnished, installed according to the Miami-Dade County Public Works Manual, part I, Standard Details (No. R-19 series), and maintained by the contractor involved.

D. When required by the Town of Cutler Bay, supervision of traffic control and safety by a Uniformed Police Officer shall be furnished by the Contractor without cost to the Town. The Contractor is required to retain the services of the Town of Cutler Bay Police Officers for the supervision. Further, any and all additional traffic measures deemed necessary by such officers shall be carried out by the Contractor without cost to the Town.

1.3 ADDITIONAL REQUIREMENTS

A. All open trenches and holes adjacent to roadways or walkways shall be properly marked and barricaded to assure the safety of both vehicular and pedestrian traffic.

B. No trenches or holes near walkways, in roadways or their shoulders are to be left open during night-time hours without express permission of the Town of Cutler Bay, Public Works Department and the Engineer, in writing. Trenches shall be backfilled or covered with steel plates.

[END OF SECTION]

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SECTION 01340

PRODUCT HANDLING

1. GENERAL

1.1 SECTION INCLUDES

A. Work included: Protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.

1.2 RELATED SECTIONS

A. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of the Specifications.

B. Additional procedures also may be prescribed in other Sections of these Specifications.

1.3 QUALITY ASSURANCE

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.4 MANUFACTURER'S RECOMMENDATIONS

A. Except as otherwise approved by the Engineer determine and comply with manufacturer's recommendations on product handling, storage, protection, and installation.

1.5 PACKAGING

A. Deliver products to the job site in their manufacturer's original container with labels intact and legible.

1. Maintain packaged materials with seals unbroken and labels intact until time of use.

2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace it with material meeting the specified requirements, at no additional cost to the Owner.

B. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to manufacturer, grade, quality, and other pertinent information.

1.6 PROTECTION

A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.

B. Provide protection for finish floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.

C. Maintain finished surfaces clean, unmarked, and suitably protected until accepted by the Owner.

1.7 REPAIRS AND REPLACEMENTS

A. In the event of damage, promptly make replacements and repairs to the approval of the Engineer and at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the Contract Time of Completion.

[END OF SECTION]

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SECTION 01550

SUBSURFACE INVESTIGATION

1. GENERAL

1.1 DESCRIPTION

A. Bidders should visit the site and acquaint themselves with existing conditions.

B. Prior to bidding, bidders may make their own subsurface investigation to satisfy themselves as to site and subsurface conditions, but such investigations may be performed only under time schedules and arrangements approved in advance by the Engineer.

1.2 QUALITY ASSURANCE

A. Readjust work performed that does not meet technical or design requirements but make no deviation from the Contract Documents without specific and written approval from the Engineer.

[END OF SECTION]

SECTION 01640

SITE WORK

1. GENERAL

1.1 CLEARING AND GRUBBING

A. All roots, stumps, and other perishable matter shall be removed to a depth of two feet (2') below existing ground in areas of fill or two feet (2') below the finished subgrade surface in areas of excavation. The entire area shall be cleared of heavy vegetation, grass, roots and other perishable material before excavation or fill is started. Any holes or depressions resulting from the removal of stumps, roots, etc. shall be immediately filled with acceptable material, and brought to the same degree of compaction as the surrounding area. Any trees, poles, structures, etc. designated for preservation shall be protected and left standing. The Contractor shall remove from the job site, and dispose of, all timber, stumps, roots, and objectionable material resulting from clearing and grubbing. All trees and shrubs scheduled for removal shall be removed under this section. No extra cost shall be allowed for tree removal unless otherwise shown in the bid proposal.

[END OF SECTION]

SECTION 02010

SHORING AND BRACING OF EXCAVATIONS

1. GENERAL

1.1 DESCRIPTION

A. Work included: Provide shoring at excavations and else where as required to protect workmen, materials, other properties, and the public.

B. Related Work:

1. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of these Specifications.

2. The Contractor is solely responsible for means and methods of construction and for the sequences and procedures to be used.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Employ a professional engineer registered in the State of Florida, who is qualified to design the shoring system and to inspect and report on the quality of its construction. All plans must bear the signature and seal of this engineer.

C. Comply with pertinent requirements of governmental agencies having jurisdiction, and with the Florida Trench Safety Act (See Section 00665).

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Prior to submitting shoring design for approval of governmental agencies having jurisdiction, submit the design to the Engineer for review.

1. Should changes in the shoring design be required subsequent to the Engineers review, coordinate all such changes with the Engineer and secure the Engineer approval of changes in space allocations.

C. Upon completion of construction of this portion of the Work, submit to the Engineer two copies of a letter signed by the approved shoring design engineer stating that, to the best of the shoring design engineer's knowledge, the shoring system was constructed in accordance with the arrangement reviewed by the Engineer.

2. PRODUCTS

2.1 DESIGN

A. Design a shoring system which will safely and adequately prevent the collapse of adjacent materials, and which will permit construction of the Work to the arrangement shown on the Drawings.

B. Secure all needed approvals, including those of governmental agencies having jurisdiction and of adjacent property owners if required, at no additional cost to the Owner.

2.2 MATERIALS

A. Provide materials of all kinds as required for execution of the approved shoring system.

3. EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Construct and install the shoring system in strict accordance with the design approved by the governmental agencies having jurisdiction, and in strict accordance with the space arrangement approved by the Engineer.

[END OF SECTION]

SECTION 02020

EARTHWORK FOR UTILITY STRUCTURES

1. GENERAL

1.1 DESCRIPTION

A. Work included: Excavation, backfilling, and compaction for the installation of utility structures and related construction.

B. Related Work:

1. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of authorities having jurisdiction.

B. Testing and Inspection Services: Contractor shall employ and pay for a qualified independent geotechnical testing laboratory to perform soil testing and inspection service during earthwork operations.

C. Testing Laboratory Qualifications: To qualify for acceptance, the geotechnical testing laboratory must demonstrate to the Engineer's satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct required field and laboratory geotechnical testing without delaying the progress of the Work.

1.3 SUBMITTALS

A. Test Report: Submit the following reports directly to the Engineer from the testing services, with a copy to the Contractor:

1. Verification of suitability of each footing sub-grade material, in accordance with specified requirements.
2. Field reports; in-place soil density tests.
3. Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

1.4 PROJECT CONDITIONS

A. Site Information:

1. Test borings and exploratory operations may be performed by Contractor, at the Contractor's option; however, no change in the Contract Sum will be authorized for such exploration.

B. Existing Utilities: Locate existing underground utilities in areas of excavation of work. If utilities are indicated to remain in place, provide adequate means of support and protection during earthwork operations.

1. Should uncharted, or incorrectly charted, piping, or other utilities be encountered during excavation, consult Engineer immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair any damaged utilities to the satisfaction of utility owner.
2. Do not interrupt existing utilities serving facilities occupied by owner or others, during occupied hours, except when permitted in writing by the Engineer; and then only after acceptable temporary utility services have been provided.
3. Provide a minimum of 48-hour notice to the Engineer and receive written notice to proceed before interrupting any utility.

C. Use of Explosives: Use of explosives is not permitted.

D. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.

1. Operate warning lights as recommended by authorities having jurisdiction.
2. Protect building structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
3. Perform excavation by hand within dripline of large trees to remain. Protect root systems from damage or dry-out to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with moistened burlap.

2. PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, and SP.

B. Unsatisfactory soil materials are defined as those complying with ASTM D3487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

C. Sub-base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, crushed lime rock and natural or crushed sand.

D. Backfill and Fill Materials: Satisfactory soil materials free of clay, rock, or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

3. EXECUTION

3.1 EXCAVATION

A. Excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered. the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Excavation Classifications: The following classifications of excavation will be made when rock is encountered:

1. Earth Excavation includes excavation of pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as rock or unauthorized excavation.
2. Rock excavation for trenches and pits includes removal and disposal of materials and obstructions encountered that cannot be excavated with a track mounted power excavator, equivalent to Caterpillar Model No. 215CLC, and rated at not less than 115 HP flywheel power and 32,000-pound drawbar pull and equipped with a short stick and a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity. Trenches in excess of 10 feet in width and pits in excess of 30 feet in either length or width are classified as open excavation.
3. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered that cannot be dislodged and excavated with modern, track-mounted, heavy-duty excavating equipment is defined as Caterpillar Model No. 973 or equivalent track-mounted loader, rated not less than 210 HP flywheel power and developing minimum of 45,000-pound breakout force (measured in accordance with SAE J732).
    a. Typical of materials classified as rock are (boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledgers, and rock-hard cementitious aggregate deposits.
    b. Intermittent drilling or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.

3.2 STABILITY OF EXCAVATIONS

A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.

B. Slope sides of excavations to comply with local codes, ordinances, and requirements of agencies having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

C. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.

3.3 DEWATERING

A. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting structure bases, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.

3.4 STORAGE OF EXCAVATED MATERIALS

A. Stockpile excavated materials acceptable for backfill and fill where directed. Place, grade, and shape stockpiles for proper drainage.

B. Dispose of excess excavated soil material and materials not acceptable for use as backfill or fill.

3.5 EXCAVATION FOR STRUCTURES

A. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, and other construction and for inspection.

1. Excavations for footings and foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms of required lines and grades to leave solid base to receive other work.

3.6 BACKFILL AND FILL

A. General: Place soil material in layers to the required subgrade elevations, foreach area classification listed below, using materials specified in Part 2 of this Section.

B. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including where applicable, damp proofing, waterproofing, and perimeter insulation.

2. Removal of concrete formwork.

3. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in a manner to prevent settlement of the structure or utilities or leave in place if required.

4. Removal of trash and debris from excavation.

5. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

3.7 PLACEMENT AND COMPACTION

A. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

1. When existing ground surface has a density less than that specified under "Compaction" for a particular area classification, break up the ground surface, pulverize, moisture-condition to optimum moisture content, and compact to the required depth and percentage of maximum density.

B. Place backfill and fill materials in layers not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to the required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy.

D. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to the required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

E. Control soil and fill compaction, providing a minimum percentage of density as specified for each area classification indicated below. Correct improperly compacted areas or lifts as directed by the Engineer if soil density tests indicate inadequate compaction.

1. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density, in accordance with AASHTO T-1800:

a. Under structures, (and pavements, compact top 12 inches of subgrade and each layer of backfill or fill material at 98 percent minimum density.

2. Moisture Control: Where subgrade or a layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of the subgrade or layer of soil material. Apply water in minimum quantities as necessary to prevent free water from appearing on the surface during or subsequent to compaction operations.

a. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

b. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.8 GRADING

A. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated or between such points and existing grades.

B. Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes and as follows:

1. Pavement: Shape surface of areas under pavement to line, grade, and cross-section, with the finished surface not more than 1/2 inch above or below the required subgrade elevation.

C. Grading surface of fill under building slabs: Grade smooth and even, free of voids, compacted as specified, and to the required elevation. Provide final grades within a tolerance of 1/2 inch when tested with a 10-foot straight edge.

D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.9 FIELD QUALITY CONTROL

A. Quality Control Testing during Construction: Allow testing service to inspect and approve each subgrade and fill layer before further backfill or construction work is performed.

1. Perform field density tests in accordance with ASTM D 1556 (sand cone method) or ASTM D 2167 (rubber balloon method), as applicable.

    a. Field density tests may also be performed by the nuclear method in accordance with ASTM D 2922, providing that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. In conjunction with each density calibration check, check the calibration curves furnished with the moisture gages in accordance with ASTM D 3017.
    b. If field tests are performed using nuclear methods, make calibration checks of both density and moisture gages at the beginning of the work, on each different type of material encountered, and at intervals as directed by the Engineer.

2. Foundation Subgrade: For each strata of soil on which footings will be placed, perform at least one test to verify required design bearing capacities. Subsequent verification and approval of each foundation subgrade may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Engineer.

3. Paved Areas: In each compacted fill layer, perform one field density test for every 500 L.F. of overlaying or paved area, but in no case fewer than three tests.

4. Foundation Wall Backfill: Perform at least two field density tests at locations and elevations as directed.

5. If in the opinion of the Engineer, based on the testing service reports and inspections, subgrade or fills that have been placed are below the specified density, perform additional compaction and testing until the specified density is obtained.

3.10 EROSION CONTROL

A. Provide erosion control methods in accordance with requirements of authorities having jurisdiction.

3.11 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to the required density prior to further construction.

D. Settling: Where settling is measurable or observable at excavated areas during the general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work and eliminate evidence of restoration to the greatest extent possible.

3.12 DISPOSAL OF EXCESS AND WASTE MATERIAL

A. Removal to Designated Areas on Owner's Property: Transport acceptable excess excavated material to designated soil storage areas on Owner's property. Stockpile soil or spread as directed by the Engineer.

B. Removal from Owner's Property: Remove waste materials, including unacceptable excavated material, trash, and debris, and dispose of it off Owner's property.

[END OF SECTION]

SECTION 02151

TRENCHING, BEDDING, AND BACKFILL FOR PIPE

1. GENERAL

1.1 DESCRIPTION

A. Work included: The Contractor shall furnish all labor, equipment, and incidentals necessary to perform all excavation, backfill, fill, grading and slope protection required completing the piping work shown on the Drawings and specified herein. The work shall include, but not necessarily be limited to: manholes, vaults, duct conduit, pipe, roadways and paving; all backfilling, fill and required borrow; grading; disposal of surplus and unsuitable materials; and all related work such as sheeting, bracing, and water handling.

B. Related Work:

1. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of these Specifications.

2. Section 02150: Shoring and Bracing

3. Section 02201: Earthwork for Utility Structures

4. Section 02576: Paving and Resurfacing

1.2 TRENCH PROTECTION

A. A Contractor shall construct and maintain sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, existing piping and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.

B. For pipe trench sheeting, no sheeting is to be withdrawn if driven below mid-diameter of any pipe, and no wood sheeting shall be cut off at a level lower than 1 foot above the top of any pipe unless otherwise directed by the Engineer. If during the progress of the work the Engineer decides that additional wood sheeting should be left in place, he may direct the Contractor in writing. If steel sheeting is used for trench sheeting, removal shall be as specified above unless written approval is given by the Engineer for an alternate method of removal.

C. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose by watering or otherwise as may be directed.

D. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

1.3 JOB CONDITIONS

A. The Contractor shall examine the site and review the available test borings or undertake his own soil borings prior to submitting his bid, taking into consideration all conditions that may affect his work. The Owner and Engineer will not assume responsibility for variations of sub-soil quality or conditions at locations other than places shown and at the time the investigations were made. Boring log data and soil samples are available for examination after signing a release at the office of the Engineer.

B. Existing Utilities: Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

1. Should uncharted, or incorrectly charted, piping, or other utilities be encountered during excavation, consult the Engineer and the Owner for such piping or utility immediately for directions.

2. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

C. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

1.4 SUBMITTALS

A. The Contractor shall furnish the Engineer, for approval, a representative sample of fill material obtained from onsite sources weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.

B. For each material obtained from other than onsite sources, the Contractor shall notify the Engineer of the source of the material and shall furnish the Engineer, for approval, a representative sample weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.

2. PRODUCTS

2.1 MATERIALS

A. General:

1. Materials for use as base, fill and backfill shall be as described below:

a. Satisfactory soil materials are defined as those complying with American Association of State Highway and Transportation Officials (AASHTO) M-145, soil classification Groups A-1, A-2-4. A-2-5, and A-3.

b. Unsatisfactory soil materials are those defined in ASSHTO M-145 soil classification Groups A-2-6, A-2-7, A-6, and A-7 along with peat and other highly organic soils.

B. Structural Fill:

1. Structural fill material shall be satisfactory soil material consisting of a minimum of 60 percent clean medium to fine grain sized quartz sand, free of organic, deleterious and/or compressible material. Rock in excess of 2-1/2 inches in diameter shall not be used in the fill material. Structural fill shall not contain hardpan, stones, rocks, cobbles, or other similar materials.

C. Common Fill:

1. Common fill material shall be satisfactory soil material containing no more than 20 percent by weight finer than No. 200 mesh sieve. It shall be free from organic matter, much, marl, and rock exceeding 2-1/2 inches in diameter. Common fill shall not contain broken concrete, masonry, rubble, or other similar materials.

2. Material falling within the above specification, encountered during the excavation, may be stored in segregated stockpile for reuse. All material which, in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.

D. Rock Bedding:

1. Rock bedding shall be 3/8" to 3/4" washed and graded lime rock. This rock shall be graded so that 99% will pass a 3/4" screen and 80% will be retained on a No. 8 screen.

3. EXECUTION

3.1 GENERAL

A. All excavation, backfill and grading necessary to complete the work shall be made by the Contractor and the cost thereof shall be included in the contract price.

B. Material shall be furnished as required from offsite sources and hauled to the site.

C. The Contractor shall take all the necessary precautions to maintain the work area in a safe and workable condition.

D. The Contractor shall protect his work at all times by flagging, marking, lighting and barricading. It shall also be the Contractor's responsibility to preserve and protect all above and underground structures, pipelines, conduits, cables, drains or utilities which are existing at the time he encounters them. Failure of the Drawings to show the existence of these obstructions shall not relieve the Contractor from this responsibility. The cost of repair of any damage which occurs to these obstructions during or as a result of construction shall be borne by the Contractor without additional cost to the Owner.

3.2 TRENCH EXCAVATION

A. Excavation for all trenches required for the installation of pipes and electrical ducts shall be made to the depths indicated on the Drawings. Excavate trench to provide a minimum of 20-inch clear cover over the pipe bell unless otherwise noted on the Drawings. Excavate in such manner and to such widths as will give suitable room for laying the pipe or installing the ducts within the trenches, for bracing and supporting and for pumping and drainage facilities. The trench width at the top of the pipe shall not exceed the allowable as determined by the depth of cut and indicated on the Drawings.

B. Rock shall be removed to a minimum 8-inches clearance around the bottom and sides of all the pipe or ducts being laid.

C. Where pipe or ducts are to be laid in lime rock bedding or encased in concrete the trench may be excavated by machinery to or just below the designated subgrade provided that the material remaining in the bottom of the trench is no more than slightly disturbed.

D. Where the pipes or ducts are to be laid directly on the trench bottom, the lower parts of the trenches shall not be excavated to the trench bottom by machinery. The last of the material being excavated shall be done manually in such a manner that will give a flat bottom true to grade so that pipe or duct can be evenly and uniformly supported along its entire length on undisturbed material or bedding rock. Bell holes shall be made as required manually so that there is no bearing surface on the bells and pipes are supported along the barrel only.

3.3 PIPE INTERFERENCES AND ENCASEMENT

A. The Contractor shall abide by the following schedule of criteria concerning interferences with other facilities.

1. In no case shall there be less than 0.3 feet between any two pipelines or between pipelines and structures.

2. Class I Concrete Encasement: Wherever there is more than 0.3 feet but less than 1.5 feet clearance between sewers, sewer house laterals, force mains and water mains or water services, then a concrete encasement shall be provided in accordance with the typical detail as shown on the Drawings.

3. Class II Concrete Encasement: Wherever there is more than 0.3 feet but less than 1.0 feet clearance between any two pipelines, or between pipelines and structures, then a concrete encasement shall be provided in accordance with the typical detail as shown on the Drawings.

B. The Engineer shall have full authority to direct the placement of the various pipes and structures in order to facilitate construction, expedite completion and to avoid conflicts.

3.4 BACKFILLING

A. Backfilling over pipes shall begin as soon as practicable after the pipe has been laid, jointed, and inspected and the trench filled with suitable compacted material to the mid-diameter of the pipe.

B. Backfilling over ducts shall begin not less than three days after placing concrete encasement.

C. All backfilling shall be prosecuted expeditiously and as detailed on the Drawings.

D. Any space remaining between the pipe and sides of the trench shall be packed full by hand shovel with selected earth, free from stones having a diameter greater than 2-inches and thoroughly compacted with a tamper as fast as placed, up to a level of one foot above the top of the pipe. Compact to 95% maximum density in layers not to exceed 4 inches up to the centerline of the pipe from the trench bottom and in layers not to exceed 4 inches up to the centerline of the pipe from the trench bottom and in layers not to exceed 6 inches from the pipe centerline to 12 inches above the pipe.

E. The filling shall be carried up evenly on both sides with at least one many tamping for each man shoveling material into the trench.

F. The remainder of the trench above the compacted Backfill, as just described above, shall be filled, and thoroughly compacted with common fill by rolling, ramming, of puddling, as the Engineer may direct. Compact common fill in 6-inch layers to 98% maximum density.

G. The bedding rock in much areas shall consists of at least 6 inches of washed and graded lime rock placed in the trench to the proposed elevation of the centerline of the pipe prior to any pipe lying. This bedding shall not be used under any circumstances as a drain for ground water. The Contractor shall take all precautions necessary to maintain the bedding in a compacted state and to prevent washing, erosion or loosening of this bed.

H. In location where pipes pass through building walls, the Contractor shall take the following precautions to consolidate the refill up to an elevation of at least 1 foot above the bottom of the pipes:

1. Place structural fill in such areas for a distance of not less than 3 feet on either side of the center line of the pipe in level layers not exceeding 6-inches in depth.

2. Wet each layer to the extent directed and thoroughly compact each layer with a power tamper to the satisfaction of the Engineer.

3.5 GRADING

A. Grading shall be performed at such places as are indicated on the Drawings, to the lines, grades, and elevations shown or as directed by the Engineer and shall be made in such a manner that the requirements for formation of embankments can be followed. All unacceptable material encountered, of whatever nature within the limits indicated, shall be removed, and disposed of as directed. During the process of excavation, the grade shall be maintained in such condition that it will be well drained at all times. When directed, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the prosecution or condition of the work.

B. If at the time of excavation, it is not possible to place any material in its proper section of the permanent structure, it shall be stockpiled in approved areas for later use. No extras will be considered for stockpiling or double handling of excavating material.

C. The right is reserved to make minute adjustments or revisions in lines or grades if found necessary as the work progresses, due to discrepancies on the Drawings or in order to obtain satisfactory construction.

D. Stones or rock fragments larger than 2-1/2 inches in their greatest dimensions will not be permitted in the top 6 inches of the subgrade line of all dikes, fills or embankments.

E. All fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings, or as directed by the Engineer.

F. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings or as directed by the Engineers.

G. No grading is to be done in areas where there are existing pipe lines that may be uncovered or damaged until such lines which must be maintained are relocated, or where lines are to be abandoned, all required valves are closed and drains plugged at manholes.

H. The Contractor shall replace all pavement cut of otherwise damaged during the progress of the work as specified elsewhere herein.

3.6 DISPOSAL OF UNSUITABLE AND SUPPLY MATERIAL

A. All surplus and/or unsuitable excavated material shall be disposed of in one of the following ways as directed by the Engineer.

1. Transport to soil storage area on Owner's property and stockpile or spread as directed by the Engineer.

2. Transport from Owner's property and legally dispose of. Any permit required for the hauling and disposing of this material beyond Owner's property shall be obtained prior to commending hauling operations.

B. Suitable excavated material may be used for fill if it meets the specifications for common fill and is approved by the Engineer. Excavated material so approved may be neatly stockpiled at the site where designated by the Engineer provided there is an area available where it will not interfere with the operation of the facility nor inconvenience traffic or adjoining property owners.

[END OF SECTION]

SECTION 02201

EXCAVATION BELOW NORMAL GRADE AND GRAVEL REFILL

1. GENERAL

1.1 DESCRIPTION

A. If in the opinion of the Engineer, the material at or below the normal grade of the bottom of the trench (0.7-feet below the invert of the pipe) is unsuitable for foundation, it shall be removed to the depth directed by the Engineer and replaced by drain rock, at no additional cost to the Owner.

B. Related Work:

1. Documents affecting work of this section include but are not necessarily limited to Sections in Division 1 of these Specifications.

2. Section 02221: Trenching, Bedding and Backfill for Pipe.

4. PRODUCTS

4.1 MATERIALS

A. Drain rock shall be 3/8-inch to 3/4-inch washed and graded lime rock. The rock shall be graded so that 99% will pass a 3/4-inch screen and 80% will be retained on a No. 8 screen.

5. EXECUTION

5.1 EXCAVATION AND DRAINAGE

A. Whatever the nature of unstable material encountered or the groundwater conditions, trench drainage shall be complete and effective.

B. If the Contractor excavates below grade through error or for his own convenience, or through failure to properly dewater the trench, or disturbs the subgrade before dewatering is sufficiently complete, he may be directed by the Engineer to excavate below grade as set forth in the preceding paragraph, in which case the work of excavating below grade and finishing and placing the refill shall be performed at the Contractors own expense.

5.2 REFILL

A. If the material at the level of trench bottom consists of fine sand, sand and silt or soft earth which may work into the drain rock notwithstanding effective drainage, the subgrade material shall be removed to the extent directed and the excavation refilled with coarse sand, or a mixture graded from coarse sand to fine pea stone, to form a filter layer preserving the voids in the gravel bed of the pipe. The composition and gradation of gravel shall be approved by the Engineer prior to placement. Gravel shall be placed in 6-inch layers thoroughly compacted. If directed by the Engineer, drain rock shall be used for refill of excavation below grade.

[END OF SECTION]

SECTION 02221

PAVING AND RESURFACING

1. GENERAL

1.1 DESCRIPTION

A. The work of this section includes, but is not limited to:

1. Temporary Paving

2. Permanent Paving

B. Related Work:

1. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Florida Department of Transportation Standard Specifications for Road and Bridge Construction Latest Edition, including Supplements.

1.3 SUBMITTALS

A. Certificates:

1. Submit certification from bituminous and aggregate suppliers attesting that materials conform to the Controlling Agency Specifications.

1.4 JOB CONDITIONS

A. Control of Traffic:

1. Take measures to control traffic during repaving operations. Do not allow traffic on repaved areas until authorized by the Engineer.

2. Employ traffic control measures necessary to maintain and to protect traffic, to protect the work in progress, to protect adjacent property from excess dust resulting from the construction area and to maintain traffic through, around, or adjacent to the construction area. The work shall include the furnishing and maintaining of all traffic control devices, flaggers, construction of temporary structures when required, labor, equipment, and materials to keep the traveled road smooth and the furnishing and application of dust palliatives.

B. Restore existing paving outside the limits of the work that is damaged by the contractor's operations to its original condition at the expense of the Contractor.

2. PRODUCTS

2.1 FLEXIBLE PAVEMENT MATERIALS AND AGGREGATES

A. Bituminous Treatments, surface courses and concrete pavements shall conform to Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition. Thickness shall be a minimum of 1 inch of Type S-3 Asphaltic Concrete Pavement, unless otherwise noted on plans.

B. Refer to Section 300, Florida Department of Transportation Specifications, Latest Edition. All bituminous materials and aggregates used in paving and resurfacing are designated in these specifications and shall conform to the applicable portions of the State specifications.

3. EXECUTION

3.1 TEMPORARY PAVING

A. Place temporary paving immediately upon completion of trench back-filling. Unpaved trenches shall not remain unpaved longer than one working day after back-filling.

B. Shape and compact subgrade material, then place and compact crushed stone base course to the required thickness.

C. Place temporary paving material. Compact to required minimum thickness with trench roller having minimum 300 pounds per inch-width of compaction roll.

D. Continuously maintain temporary paving to the satisfaction of the Engineer and the state and local road departments.

E. Remove and dispose of temporary pavement prior to the placement of permanent pavement.

3.2 PERMANENT PAVING

A. Excavate to the lines and grades on plans to receive permanent pavement, including the disposal of surplus excavated material. Remove all muck and organic materials.

B. Remove temporary paving material. Construct permanent base and surface courses to the required compacted thickness shown on the plans in accordance with Florida Department of Transportation Standards for Road and Bridge Construction.

C. Trim existing paving to remove damaged areas. Cut straight joint lines and right-angle offsets.

D. Maintain permanent paving to the satisfaction of the Engineer and the local and state road departments throughout the contract maintenance period.

3.3 BITUMINOUS OVERLAY

A. Where indicated on the drawings, standard details, or directed by the engineer, place a bituminous overlay.

B. Construct in accordance with Florida Department of Transportation Standards for Road and Bridge Construction.

3.4 DRIVEWAYS

A. Trim concrete and bituminous driveway surfaces to remove damaged areas. Sawcut straight joint lines parallel to the centerline of the trench. Cut offsets at right angles to the trench centerline.

B. Restore existing concrete driveways trenched through with a 6" layer of concrete reinforced with 6 x 6 10/10 wire mesh.

C. Restore existing asphalt driveways trenched through in kind or with minimum 1" layer wearing course over 12" layer of D.O.T. road rock.

D. Restore earth driveways with a 6" layer of 3/4" stone backfill. Florida DOT 901-6 No. 14.

E. Restore brick driveways with like brick placed on a 4" thick wet sand bed. Place bricks in like pattern and spacing.

3.5 CONCRETE CURB AND SIDEWALK REPAIRS

A. Replace curbs and sidewalks damaged by construction to match existing.

B. Reconstruct curbs and sidewalks to the first expansion joint on either side of the damaged portion. Install preformed expansion joint material.

C. Sidewalks shall be new construction for the full width of the existing slabs.

D. Reconstruct sidewalks to 4-inch thickness of Class I concrete placed on a 4-inch base of compacted material.

E. Sidewalks and curbs materials and construction methods shall be in accordance with Sections 522 and 520 of the referenced Florida Department of Transportation Specifications.

[END OF SECTION]

SECTION 02223

THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

7ll-l DESCRIPTION

Apply new thermoplastic traffic stripes and markings, or refurbish existing thermoplastic traffic stripes and markings, in accordance with the Contract Documents.

711-2 MATERIALS

711-2.1 **Thermoplastic:** Use only thermoplastic materials listed on the QPL. The Engineer will take random samples of all material in accordance with the Departments Sampling, Testing and Reporting Guide Schedule.

7 11-2.1.1 **Initial or Recapped Stripes and Markings**: Use materials meeting the requirements of 971-1 and 971-5.

711-2.1.2 **Refurbishing Existing Stripes and Markings**: Use materials meeting the requirements of 971-l and 971-5.

711-2.1.3 **Preformed Stripes and Marking**: Use materials meeting the requirements of 971-1 and 971-6.

711-2.2 **Glass Spheres**: Use only glass spheres listed on the QPL, meeting the requirements of 971-1 and 971-2. The Engineer will take random samples of all glass spheres in accordance with ASH-·1 D 1214 and the DeparL111ent's Sampling, Testing and Reporting Guide schedule.

711-2.3 Sand: Use materials meeting the requirements of971-5.4.

711-3 EQUIPMENT

Use equipment capable of providing continuous uniform heating of striping materials to temperatures exceeding 390°F, mixing and agitation of the material reservoir to provide a homogeneous mixture without segregation. Use equipment that will maintain the striping material in a plastic state, in all mixing and conveying parts, including the line dispensing device until applied. Use equipment which can produce varying width traffic stripes, and which meets the following requirements:

A. Capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, in order to produce a uniform application of striping material and capable of following straight lines and making normal curves in a true arc.

B. Is capable of applying glass spheres to the surface of the completed stripe by a double drop application for initial traffic striping and marking and a single drop application for recapping and refurbishing. The bead dispenser for the first bead drop shall be attached to the striping machine in such a manner that the beads are dispensed closely behind with the thermoplastic material. The second bead dispenser bead shall be attached to the striping machine in such a manner that the beads are dispensed immediately after the first bead drop application. Glass sphere dispensers shall be equipped with an automatic cut-off control that is synchronized with the cut-off of the thermoplastic material and applies the glass spheres in a manner such that the spheres appear uniform on the entire traffic stripes and markings surface with, 50 to 60% embedment.

C. Equipped with a special kettle for uniformly heating and melting the striping material. The kettle must be equipped with an automatic temperature control device and material thermometer for positive temperature control and to prevent overheating or scorching of the thermoplastic material.

D. Meet the requirements of the National Fire Protection Association, state, and local authorities.

711-4 APPLICATION

7ll-4.1 **General**: Remove existing pavement markings such that scars or traces of removed markings will not conflict with new stripes and markings by a method approved by the Engineer. Cost for removing conflicting pavement markings during maintenance of traffic operations to be included in Maintenance of Traffic, Lump Sum.

Before applying traffic stripes and markings, remove any material by a method approved by the Engineer that would adversely affect the bond to the traffic stripes. Before applying traffic stripes to any port land cement concrete surface, apply a primer, sealer or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches from any longitudinal joints of port land cement concrete pavement.

Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 60°F and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply striping to the same tolerances in dimensions and in alignment specified in 710-5. When applying traffic stripes and markings over existing markings, ensure that no more than 2 inches on either end and not more than 1 Inch on either side of the existing line is visible.

Apply thermoplastic material to the pavement either by spray, extrusion or other means approved by the Engineer.

Conduct field tests in accordance with FM 5-541. Take test readings representative of the striping performance. Remove and replace traffic stripes and markings not meeting the requirements of this Section at no additional cost to the Department.

Apply all final pavement t markings prior to opening the 1oad to traffic.

711-4.1.1 **Preformed Thermoplastic**: Apply markings only to dry surfaces and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre- heating.

711-4.2 **Thickness**

711-4.2.1 **Initial or Recapped Stripes and Markings**: Apply or recap traffic stripes or markings such that all lane lines, center lines, transverse markings and traffic stripes and markings within traffic wearing areas, will have a thickness of 0.10 to 0.15 inch when measured above the pavement surface.

Also, all gore, island, and diagonal stripe markings, bike lane symbols and messages, wherever located, will have a thickness of 0.09 to 0.12 inch when measured above the pavement surface. Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

711-4.2.2 **Refurbishing Existing Traffic Stripes and Marking**: Apply a minimum of 0.06 inch of thermoplastic material. Ensure that the combination of the existing stripe and the overlay after application of glass spheres does not exceed the maximum thickness of0.150 inch for all inches.

711-4.3 **Retro reflectivity**: Apply white and yellow traffic stripes and markings that will attain an initial retro reflectivity of not less than 450 mcd/lx•m2 and not less than 350 mcd/lx•m2, respectively for all longitudinal lines. All transverse lines, messages and arrows will attain an initial retro reflectivity of not less than 300 mcd/lx ·m2 and 250 mcd/lx•m2 tor white and yellow respectively. All pedestrian crosswalks, bike lane symbols or messages in proposed bike lane shall attain an initial retro reflectivity of not less than 275 mcd/lx•m2.

Measure, record and certify on Department approved form and submit to the Engineer, the retro reflectivity of white and yellow pavement markings in accordance with FM 5-541.

711-4.4 Glass Spheres:

711-4.4.1 **Longitudinal lanes**: For initial traffic striping and marking, apply the first drop of Type 4 or larger glass spheres immediately followed by the second drop of Type I glass spheres.

For refurbishing, apply a single drop of Type 3 glass spheres, apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

711-4.4.2 **Transverse Stripes and Markings**: Apply a single drop of Type I glass spheres. Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

Apply a mixture consisting of 50% glass spheres and 50% sharp silica sand to all thermoplastic pedestrian crosswalk lines and bike lane symbols at the rates determined by the manufacturer's recommendations.

711-4.4.3 **Preformed Markings**: These markings m-e factory supplied with glass spheres and skid resistant material. No additional glass spheres or skid resistant material should be applied during installation.

711-5 CONTRACTOR'S RESPONSIBILITY FOR NOTIFICATION

Notify the Engineer prior to the placement of the thermoplastic materials. Furnish the Engineer with the manufacturer's name and batch numbers of the thermoplastic materials and glass spheres to be used. Ensure that the approved batch numbers appear on the thermoplastic materials and glass spheres package.

711-6 PROTECTION OF NEWLY APPLIED TRAFFIC STRIPES AND MARKINGS

Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

711-7 OBSERVATION PERIOD

Longitudinal pavement markings are subject to a 180-day observation period under normal traffic. The observation period shall begin with the satisfactory completion and acceptance of the work.

The longitudinal pavement markings shall show no signs of failure due to blistering, excessive

cracking, chipping, discoloration, and poor adhesion to the pavement, loss of reflectivity or vehicular damage. The retro reflectivity shall meet the initial requirements of 711-4.3. The Department reserves the right to check the color and retro reflectivity any time prior to the end of the observation period.
Replace at no additional expense to the Department, any longitudinal pavement markings that do not perform satisfactorily under traffic during the 180-day observation period.

711-8 CORRECTIONS FOR DEFICIENCIES

Recapping applies 10 conditions where additional striping material is applied 10 new or refurbished traffic stripes or markings to correct a deficiency. Recap a 1.0-mile section centered on the deficiency with additional striping material or by complete removal and reapplication at no additional cost to the Department.

If recapping will result in a thickness exceeding the maximum allowed, the traffic stripes or markings will be removed and reapplied.

7 11-9 SUBMITTALS

711-9.1 **Submittal Instructions**: Prepare eleven (11) certification of quantities, using the Department's current approved form, for each project in the contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

711-9.2 **Contractor's Certification of Quantities**: Request payment by submitting a certification of quantities no later than 12:00 noon, Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:

A. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.

B. The basis for arriving to the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

711-10 METHOD OF MEASUREMENT

The quantities to be paid for under this Section will be as follows:

A. The length in net miles, of 6-inch solid traffic stripe, authorized and acceptably applied.

B. The total traversed distance in gross miles of 10-30 or 3-9 skip line. The actual applied line is 25% of the traverse distance, for a 1:3 ratio. This equates to 1,320 feet of marking per mile of single line.

C. The net length, in feet of all other types of lines and stripes, authorized and acceptably applied.

D. The area, in square feet, of removal of existing, pavement markings, acceptably removed.

E. The number of pavement messages, symbols and directional arrows, authorized and acceptably applied.

7 11-11 BASIS OF PAYMENT

Prices and payments will be full compensation for all work specified in this Section, including all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic. Furnishing of all tools, machines, and equipment, and not incidentals necessary to complete the work Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 711- Thermoplastic

Traffic Stripes, Solid - per net mile
Traffic Stripes, Solid - per foot

[END OF SECTION]

SECTION 02576

CAST-IN-PLACE CONCRETE
SIDEWALKS, CURBS, CURBS & GUTTERS, CROSSWALKS
AND MISCELLANEOUS CONCRETE

1. GENERAL

1.1 DESCRIPTION

A. Work included: Provide cast-in-place concrete, sidewalks, curbs, curbs and gutters, crosswalks, and miscellaneous concrete, where shown on the Drawings as specified herein, and as needed for a complete and proper installation.

B. Related Work:

1. Documents affecting work of this Section include but are not necessarily limited to Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section. The concrete curb and sidewalk contractor/sub-contractor shall have a minimum of 5 years of experience in the construction of urban and decorative sidewalks.

B. Quality control:

1. See requirements for testing as stated in part 3 of this Section.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

2. PRODUCTS

2.1 CONCRETE MIXES

A. Provide a mix design prepared by the approved testing agency, based on strengths of the approved materials, and meeting the requirements stated on the Drawings, and Specifications.

1. Secure the Engineers approval of each mix design, including new mix designs required to be prepared should there occur a change in materials being used.

2.2 CONCRETE QUALITY

A. Concrete shall be Class I normal weight and shall attain a 28-day compressive strength of a minimum of 3000 psi.

1. The maximum water-cement ratio shall be 0.65.

2. The minimum cement content for concrete shall be five bags per cubic yard.

3. Concrete shall contain a water reducing admixture capable of increasing workability and reducing the amount of mixing water, conforming to ASTM C494-82, Type A. Other admixtures may be used if approved by the Engineer. Admixtures shall be added to the mix in accordance with the manufacturer's specifications, and at a controlled rate.

2.3 COLORING

A. Integral Colored Concrete mixture shall be Class I concrete, as described above. Concrete shall be supplied with the color admixture added. Admixture coloring, as specified in drawings, shall be plant mixed and shall be manufactured by the Lambert Corporation or an approved equal.

3. EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 SUBGRADE PREPARATION

A. All roots, vegetation and other deleterious materials shall be removed from the area of the proposed sidewalk. Roots, when present, shall be removed to a depth of 12". Existing rock shall be removed to at least 1" below proposed subgrade elevation. Fill materials, where required, shall be clean lime rock or mixture of lime rock and sand acceptable to the Engineer. Subgrade shall be compacted to a minimum field density of 95% of the maximum density as determined by AASHTO Method, Designation T180-74, and Method D.

3.3 FORMS

A. General: Steel forms shall be used for all work except at sidewalk radii where wood forms (1/4" min. thickness) may be used and which shall be bent to a smooth uniform curve. Wood forms shall not be used for Curb or Curb & Gutter work. Forms shall be as follows: (a) externally secured and braced where feasible; (b) substantial and unyielding; (c) of adequate strength to contain the concrete without building between supports and without apparent deviation form the neat lines, contours and shapes shown in the plans. They shall be designed to withstand the additional forces of vibration without apparent deviation from the desired shape or position. Assembled forms shall be mortar tight and shall be constructed to render a concrete surface of smooth, uniform finish. Provisions shall be made for the removal of forms without injury to concrete surfaces. Blocks and bracing shall be removed from the forms and in no case shall any portion of the forms be left in the concrete.

The Contractor where practical may use asphalt abutting the sidewalk in lieu of form work. The asphalt must be saw cut in such a manner that the edge of the sidewalk where it abuts the asphalt is true to grade and alignment.

The form shall be set plumb, properly aligned, and with their bottom in furl and continuous contact with the subgrade. Forms shall be cleaned and lightly oiled before concrete is placed.

B. Form Alignment, Bracing and These: Forms shall be constructed in such manner that they may be adequately secured for alignment, shape, and grade. Bracing systems, ties and anchorages used for this purpose shall be substantial and sufficient to insure against apparent deviation from shape, alignment, and grade. Nails driven into existing concrete shall not be used for this purpose. Bracing systems, ties anchorages shall not be used which will unnecessarily deface of mark or have an injuries or undesirable effect on surfaces which will be a part of the finished surface.

C. Preparation and Cleaning: The condition of the forms shall meet the following requirements at the time concrete casting is begun: (a) All forms shall be treated with an approved form-release agent before placing concrete. Material which will adhere to or disorder the concrete shall not be used. (b) The forms shall be cleaned of all dirt, sawdust, shavings, and other debris. (c) All inspection and cleanout holes shall be closed and secured.

3.4 CONCRETE MIXING

A. Job mixed concrete shall not be permitted.

B. Ready-mixed concrete shall be mixed and delivered in accordance with the requirements of the Standard Specification for Ready-Mixed Concrete, ASTM C94-85.

C. No concrete shall be re-tempered after it has not taken an initial set, nor shall any batch or portion thereof be deposited in forms more than one and one-half hours after the mixing of that particular batch has commenced.

D. No water shall be added at the job site to concrete delivered by truck as ready for use without the approval of the Engineer, and then, only when slump tests are made, and the concrete so delivered is known to be of less than the slump specified.

E. Concrete consistency:

1. Use the amount of water established by the approved mix design.

a. Do not exceed the maximum quantity specified for the grade of concrete.

b. Use the minimum amount of water necessary to produce concrete of the workability required by the Engineer.

c. Do not supplement the predetermined amount of water with additional water for any reason.

2. Measure concrete consistency by ASTM C143 method.

a. As part of the routine testing and inspecting, test twice each day or partial day's run of the mixer.

b. Maintain a complete and accurate record of tests.

3. Provide a 3" maximum concrete slump.

F. Miscellaneous provisions:

1. Provide strengths of concrete as shown on the Drawings.

2. Provide concrete dense and free from honeycomb and other defects.

3. Place and finish members to conform to the shapes and dimensions indicated, with all surfaces true to line, plumb, and level.

3.5 CONCRETE REINFORCEMENT

A. Provide reinforcement as detailed on Drawings and Specifications.

3.6 CONVEYING AND PLACING CONCRETE

A. Inspection: No concrete shall be placed until inspected for depth, forming and reinforcement. Proper finishing tools shall be on the jobsite at the time of inspection. Failure to obtain required inspection shall be sufficient cause for rejection. Such inspection and approval shall not relieve the contractor of the responsibility of obtaining satisfactory concrete surfaces, free from warping, bulging or other objectionable defects. Special attention shall be paid to the ties and bracing. Where the forms appear to be insufficiently braced or unsatisfactorily built, the progress of the work shall be stopped until the defects have been corrected to the satisfaction of the Engineer.

B. Preparation:

1. Remove all laitance, oil, and loose particles from concrete and concrete surfaces, and thoroughly clean the forms with water under stiff pressure.

2. Remove laitance after concrete has hardened partially (not less than two hours nor more than four hours after place in) by brushing with stiff bristles, or by directing a stream of water from a 1/4" nozzle, or by other method approved by the Engineer, to expose the clean top surface of the coarse aggregate.

3. Where cleaning is not satisfactory to the Engineer sandblast the surface and then wash again.

C. Method of Depositing

1. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to handling or flowing. The concrete shall be carried on at such a rate that the concrete is at all times plastic and flows readily. No concrete that has been contaminated by foreign materials shall be deposited on the work.

2. When concreting is started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level.

3. All concrete shall be thoroughly compacted by suitable means during the operation of placing, and shall be thoroughly worked, into corners.

4. Place concrete only under the degree of inspection described elsewhere in these Specifications, and as required by governmental agencies having jurisdiction.

5. Do not place concrete outside of regular working hours unless required inspection authorities have been notified properly and are present.

6. Concrete shall be pump-mix.

7. Deposit concrete so that the surface is kept level throughout, a minimum being permitted to flow from one position to another, and place as rapidly as practicable after mixing.

8. Do not use in this Work any concrete not placed within 30 minutes after leaving the mixer.

D. Adverse Weather:

1. The Contractor shall assume all risks connected with the placing of concrete during adverse weather conditions, and permission given to place concrete under such conditions will in no way relieve the Contractor of the responsibility for satisfactory results. Should concrete placed under such conditions, prove unsatisfactory, it shall be removed, disposed of and replaced at the Contractor's expense.

3.7 FINISHING

A. Exposed work shall have a steel troweled finish after which it shall be lightly broomed to eliminate a slick finish. After forms have been removed from exposed areas, all voids shall be filled and rubbed where necessary using color compound to give the face a finished look. All laitance and slop-over shall be thoroughly removed from any adjacent surfaces before the final finishing process is completed.

3.8 EDGES AND JOINTS

A. Edges of all sidewalks shall be finished with one-quarter inch (1/4") radius joint and edging tools. Edges of curbs shall be to the radius shown on typical section.

B. Joints in sidewalks shall be spaced uniformly equal to width of sidewalk except where sidewalk exceeds six feet (6') in which case the uniform spacing shall be one-half width with a longitudinal joint at mid-width. All such joints shall be formed with tool having a bit depth of one and one-half inches (1-1/2") as approved by the City and shall have a minimum tooled radius of one-quarter inch (1/4") each side.

At spacing of twenty feet (20') maximum (or nearest multiple of required joint spacing) there shall be an open joint one-quarter inch (1/4"), minimum, wide, and full depth of sidewalk which may be formed with removable spline but having edges tooled to a one-quarter inch radius. Expansion joints or saw cutting can only be used where approved in writing.

An open joint shall be provided where the new sidewalk abuts existing. A longitudinal joint parallel to curb poured monolithic with the sidewalk shall be tooled to a minimum depth of one-quarter inch and with a one-quarter inch radius on each side. Joints in curbs or curbs and gutters shall be at a maximum spacing of ten feet (10') or a minimum spacing of four feet (4') and formed with a one-quarter inch thick steel template of proper contour and with exposed edges tooled to a one-quarter inch radius.

C. Expansion material must be used between the back of curb (or curb and gutter) and sidewalk, between concrete driveway and sidewalk, between any existing vertical surface (except existing sidewalk) and sidewalk and between root barriers and sidewalk. Expansion joints shall be a maximum of 1/2" thick, and the expansion material shall be cut one-eighth inch (1/8") below the surface at the proposed sidewalk curb or gutter.

D. When specified on the plans or requested by the Contractor and approved by this department, saw-cutting of sidewalks, curb or gutter shall be done as follows:

1. All joints shall be formed (at wearing surface) with tool having a bit of at least one-half inch (1/2") deep and radius of one-quarter (1/4") each side.

2. Open joints where required shall be saw cut the full depth of sidewalk, curb or gutter.

3. Intermediate joints at spacing required shall be saw cut a minimum depth of one and one-half inch (1-1/2").

3. Saw blades used shall not be less than one-eighth inch (1/8") nor more than one-quarter (1/4") thick and shall not be allowed to deviate from a straight line, but such joints shall be clean cut and uniform in width with tooled edges at surface remaining undamaged.

4. Open joints shall be saw cut within forth-eight (48) hours and intermediate joints with twenty-four (24) hours after finishing.

E. Concrete sidewalks which are part of driveways and approaches shall have joint spacing to match adjoining sidewalk.

3.9 CURING

A. Concrete shall be cured by use of a clear compound compatible with the coloring compound and in accordance with manufacturer's recommendations. Submit the proposed material and method for approval prior to use.

B. Care shall be used in the use of water or plastic membranes as their use may have an adverse effect on the coloring compound and/or finish.

3.10 DEFECTIVE CONCRETE

A. The following concrete will be deemed to be defective and shall be removed promptly from the job site.

1. Concrete which is not formed as indicated, is not true to intended alignment, is not plumb or level where so intended, is not true to intended grades and levels;

2. Has voids or honeycomb that have been cut, resurfaced, or filled, unless with the approval of the Architect;

3. Has sawdust, shavings, wood, or embedded debris;

4. Or does not conform fully to provisions of the Contract Documents.

B. Repairs and replacement

1. Defective concrete may be cut out and repaired with gunite, or other approved methods, when and as directed by the Engineer.

2. Where defective concrete is found after removal of the forms, cut out the defective concrete, if necessary, and make the surfaces match adjacent surfaces.

3. Work uneven surfaces and angles of concrete to a surface matching adjacent concrete surfaces.

3.11 TESTING

A. The Engineer shall have the right to order tests on any material entering into concrete or reinforced concrete to determine its suitability for the proposed purpose. To order reasonable tests of the concrete from time to time to determine whether the materials and methods in use are such as to produce concrete of the necessary quality; and to order the test under load of any portion of the structure, when conditions have been such as to leave doubt as to the adequacy of the structure to serve the purpose for which it is intended.

B. Tests of materials and of concrete shall be in accordance with the requirements of the American Society for Testing Materials. Tests shall be made by a testing laboratory approved by the Engineer. Test reports shall be submitted to the Engineer. The costs of such tests resulting from construction related problems shall be assumed by the Contractor.

C. Tests on concrete used in construction shall be made by an approved testing laboratory, and reports submitted to the Engineer. The costs of such tests shall be assumed by the Contractor.

1. Not less than three specimens shall be made for each standard test, nor less than one test for each 50 cubic yards of concrete used on the project.

2. Specimens shall be made and cured in accordance with the Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field, ASTM C31-84.

3. Specimens shall be tested in accordance with the Standard Method of Test for Compression Strength of Molded Concrete Cylinders, ASTM C39-84. Reports to the Engineer shall be submitted for each test performed.

4. Test cylinders taken off truck-mixed concrete shall be taken at the approximate one-quarter point and the three-quarter point of the load.

D. The age for strength tests of concrete shall be 28 days. Strength tests for an earlier age shall be submitted if the Engineer has approved concrete in the structure to receive its full working loads at such earlier time. Seven-day tests may be used with the approval of the Engineer, provided that the relation between the seven and 28-day strengths of the concrete is established by tests for the materials and proportions used.

E. To conform to the requirements of these specifications, the average strength of the laboratory cured cylinders representing each class of concrete as well as the average of any five consecutive strength tests representing each class of concrete shall be equal to or greater than the specified strength and not more than one strength test in ten shall have an average value of less than 90 percent of the specified strength.

F. When there is a question as to the quality of the concrete in the structure, the Engineer shall have the right to require core tests in accordance with the Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete, ASTM C42-84a, to order load tests on that portion of the structure where the questionable concrete has been placed, or to require other reasonable tests to evaluate the strength of the structure.

[END OF SECTION]

APPENDIX "A"

SUPPLEMENTAL TECHNICAL SPECIFICATIONS

GENERAL SCOPE OF WORK – Contractor will be required to replace or install any sidewalk amount as ordered by the Public Works department. There will be no minimum parameter.

A. The work includes removal of grass and other materials to prepare the ground for sidewalk installation. Additional tasks will include installation of Americans with Disabilities Act (ADA) compliant ramps at intersections of Streets and Avenues where indicated by the Town. All form work and site preparation shall be conducted with minimum impact and/or damage to the adjacent properties.

B. Remove and dispose of existing trees as indicated by the Town. All trees to remain shall be preserved. See Tree Removal and Preservation Specifications. Size of tree will be paid based on proof from the contractor of size. If proof is not provided, the Town will make such determination of size deemed acceptable.

C. New, five- and six-foot-wide sidewalks shall be constructed per Typical Sidewalk Section Detail and Florida Accessibility Code for Building Construction, latest edition, and Section 522 of the FDOT-SSR&BC, latest edition and other requirement; as required.

D. ADA compliant ramps shall be installed at intersections of Streets and Avenues within the ROW only, per Typical Handicap Ramp Layout Detail.

E. Any disturbed swale areas, private property; other public property shall be re-sodded per Sod Specifications and graded properly as per specifications at the Contractor's expense.

F. Any damage to the roadway, driveway approaches, driveways, abutting sidewalks, aprons surrounding catch basins, manholes, etc. shall be repaired at no expense to the Town, if determined by the Town to be repairs due to negligence or lack of coordination on the part of the Contractor. Re-paving shall be per Pavement Specifications and Miami-Dade County Public Works Manual.

G. Drawings added include the following:

    1. Typical Drawings

H. At the discretion and direction of the Town. Surveys will be required at each block where "new" sidewalks are to be installed to establish R.O.W. centerline and topographic data.

REPLACEMENT & INSTALLATION OF SIDEWALKS TEMPORAY FACILITIES

SECURITY

A. The contractor is responsible for project security. Contractor shall protect and secure the site, materials, and equipment from theft and damage, by whatever means deems effective, at contractor's cost.

B. Work site(s) must be protected properly in accordance with all Federal, State, County and Municipal laws and ordinances, at the end of each workday and weekends.

SPECIAL CONTROLS

A. Water Control:
   1. Keep excavations dry.
   2. Shape excavations, particularly piles of excavated material, so as to divert water from excavations and low spots.

B. Erosion and Sedimentation Control:
   1. Prevent the pollution of land, air and water and control the erosion, washout and surface runoff of earth and stockpiled materials.
   2. Fill material shall contain no organic matter other than the normal organic component of topsoil.
   3. Immediately upon completion of final grading, stabilize graded areas with temporary or permanent vegetation, mulch, or paving.

MAINTENANCE OF TRAFFIC

A. Control of vehicles and Persons:
   1. Provide trained personnel to assure the orderly flow of vehicular traffic during construction.
   2. Contractor shall submit a Maintenance of Traffic Plan (MOT) for review and acceptance by the Town when required.
   3. Upon completion of work each day the lanes shall be opened to traffic. Lane closure procedures shall be in accordance to the F.D.O.T. Standards.
   4. Ensure that private property driveways are usable upon completion of daily work.

B. Limit of Operations:
   1. Any damage or alterations to areas outside the limit of operations shall be returned to original condition within 24 hours at no cost to the Town.

PROJECT IDENTIFICATION

A. No signs, or advertisements will be allowed to be displayed on the premises without the approval of the Town's Representative.

PROJECT HOUSEKEEPING

A. Trash Disposal

1. Keep adjacent streets and sites free from accumulations of waste materials and rubbish.

2. Provide central waste area with containers for at least daily removal.

B. Burning:

1. Do not burn any trash or other material on site.

C. Material Removal/Additional Soil:

1. Excess material, including demolished material, roots from trees, excess earth and excess building materials are property of the contractor and shall be removed from site daily and legally disposed of.

2. All material excavated or brought to the project for use/reuse shall be piled within the Public Right-of-Way in a location previously approved by the Town.

3. The Contractor shall leave all locations in an acceptable manner once concrete has been poured. Contractor shall coordinate work to ensure that all sites are clean, sodded as required, and acceptable prior to mobilizing to other locations.

4. The Contractor shall replace any sod, concrete and/or asphalt removed, damaged or displaced during demolition or performance of work at own expense.

QUALITY OF LIFE PRESERVATION

A. Noise Control

1. Contractor will use discretion whenever engaging in activities that might produce excessive noise and disturb residents in and around work areas.

2. The Town shall have the right to impose reasonable limitations on the Contractor to prevent excessive noise and disturb residents in and around work areas.

B. Access to Property:

1. The Contractor shall at all times maintain meaningful access to a given property for residents of that property.

C. Staging of Work

1. All staging for work by the Contractor within the Town shall be first approved by the Town's department of public works.

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REPLACEMENT & INSTALLATION OF SIDEWALKS
POURED CONCRETE
SIDEWALKS & HANDICAP RAMPS & CURBS

DESCRIPTION

A. Provide poured concrete at locations where no sidewalks or ramps exist to be per drawings and specifications

B. Provide poured concrete in locations where existing sidewalk must be replaced per drawings and specifications, as directed.

C. Provide curb cuts where proposed handicap ramps are installed and there is a conflict with existing curbs. Curb cuts shall allow for a three-foot (3') transition up to either side of the handicap ramp. Any and all cuts shall commence and extend at least four feet (4') from both sides of the handicap ramp. All curbs shall be cut and transitioned in an acceptable manner. All surrounding pavement, sod, asphalt shall be restored to the existing elevation at the Contractor's expense.

QUALITY ASSURANCE

A. Testing and Inspection of Installation

1. Concrete shall not be poured, placed or installed until such time as an inspection of all sites has taken place by the Town authorized personnel. Inspections shall be made to verify appropriate compaction of sub-base and to check forms for line and grade.

2. The Town will inspect the installation. If any concrete is found to be installed improperly, the Contractor will be required to remove and replace promptly. Upon notifications from the contractor, the Town will perform a re-inspection. Should additional concrete be found to be unsatisfactorily installed, and additional inspections required, these inspections shall be at the Contractor's cost, at the discretion of the Town.

PRODUCTS

A. Concrete:

1. Forms:
   Steel, wood, or other suitable material of size and strength to resist movement during concrete placement. Conform to ACI301.

2. All Joints:
   Joints must be scri
   bed to help prevent cracking

3. Concrete Mix Design:

Mix concrete in accordance with ASTM C94

Design mix to produce normal-weight concrete consisting of Portland cement, aggregate and water to produce the following properties:

a. Compressive strength:3000 psi, minimum at 28 days

b. Slump range: 4" to 6"

c. Air content: 5% to 8%

EXECUTION

A. Inspect surfaces for conditions that will adversely affect the quality of installation.
Do not proceed with the installation until adverse conditions have been corrected.

B. Compact sub-base surface immediately before placing concrete.

C. Replace organic material with clean fill and installed up to 6" lifts and compact to a minimum of 95% compaction. Contractor shall submit type of clean fill for Town's approval prior to construction.

D. The Town has the right to request compaction test at locations chosen by the Town.

E. Concrete finishing:

a. Smooth surface by screeding and floating. Produce a uniform texture.
b. Work edges of slab to a ½" radius. Eliminate tool marks on concrete surface.
c. Broom finish after excess moisture has disappeared.

INSTALLATION

A. General: Comply with requirements Florida Accessibility Code for Building Construction, latest edition, and Section 522 of the FDOT-SSR&BC, latest edition and other requirements as required.

B. All sidewalks and ramps shall be four inches (4") thick except across driveways, driveway approaches, and first five feet (5') of ramps closest to paved roadways where that shall be six inches (6") thick.

C. Sidewalk elevation shall be two inches (2") above the crown of the road, at the back side of the sidewalk, and the pitch shall be ¼ inch per foot toward the road. Elevation may be adjusted, based on the existing grade, as approved by the Town.

D. Contractor shall ensure that where handicap ramps are installed and there is a

conflict with a curb that the curbing shall be cut back and transitioned for a distance of three feet (3') on either side of the ramps. The cut shall be provided at least one foot (1') behind the transition point. All modifications to the curb shall match existing curbs and shall be flush without exception.

E. No wire or wire mesh shall be utilized within the public right of way. (R.O.W.).

F. Concrete shall not be poured, placed, or installed until such time as an inspection of all sites has taken place as per Section 3.1602 QUALITY ASSURANCE. **IF ANY WORK OR PORTION OF WORK HAS NOT BEEN INSPECTED AS PER SECTION 3.1602, THAT PORTION OF WORK SHALL BE IMMEDIATELY REMOVED AND REPLACED ONCE THE INSPECTION HAS BEEN CONFIRMED AT NO COST TO THE TOWN.**

G. Place concrete using methods which prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation of re-enforcing, dowel, and joint devices.

H. Deposit and spread concrete in a continuous operation between transverse joints, as far as possible.

I. Contractor shall replace all damaged or misaligned private walkways and driveways with a transition to the private property at 8 to 1 fill slope transition. All other locations shall have a 4 to 1 fill slope transition. Organic material can be used in areas outside walkways and driveways that require fill slopes. All costs associated with this task must be included in unit price.

J. Avoid premature cracking by installing expansions joint where required.

K. Utility boxes shall be raised to sidewalk elevations or flush with sidewalk as to prevent trip hazard.

L. Install root bio barrier prior to forming and pouring concrete.

M. Install root bio barrier at existing trees and new trees. Length of root bio barrier shall be ten feet (10') long centered on the tree by twelve inches (12") deep at one inch to two inch (1"-2") below the top of the sidewalk.

N. Concrete shall not be poured, installed or placed around manholes, cleanouts, or other structures until they are at required elevations and alignment. Contractor shall notify the Town in writing of manholes, cleanouts, or other items that may require relocation prior to pour.

O. All sidewalk that the Town has determined to be replaced due to deterioration, cracking, uplifting, improper sloping, misalignments, grade, etc. will be removed and replaced as required by specification.

P. Removal of existing sidewalk shall be performed by saw cutting the section of

unacceptable sidewalk (as determined by the Town) at the nearest acceptable five-foot (5') flag. New sidewalk shall be poured in its place as established by specifications.

Q. All areas where existing sidewalk is to be replaced must be prepared and graded to match adjacent sidewalk flags.

R. All replacement sidewalk sections shall be installed to match the existing sidewalk elevation.

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REPLACEMENT & INSTALLATION OF SIDEWALKS
PROTECTION STORM DRAINS

PROTECTION

A. All storm drain inlets must be protected from sediments entering the storm water conveyance system prior to disturbance to the area.

B. All sediment and erosion control practices must be in accordance with the Florida Department of Environmental Protection Storm Water Sediment and Erosion Control Manual Section 4.08 (Storm Drain Protection Procedures) (Best Management Practices BMPs).

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REPLACEMENT & INSTALLATION OF SIDEWALKS
TREE REMOVAL & PRESERVATION

REMOVALS

A. **ONLY** the trees and/or shrubs that are deemed by the Town to interfere with the intent of the contract shall be removed or root pruned as needed. All costs associated with vegetation removal and/or root pruning shall be included with the unit price.

B. The contractor shall be required to review the site prior to performance of work and ensure no conflicts exist. Any tree in conflict with the expected location of the new sidewalk shall be reported to the Town for review.

C. Remove trees and grind stumps and all surface roots to a minimum of 4" below grade.

D. Restore the location where tree removals take place with soil and sod at grade.

PRESERVATION

The following actions and precautions shall be done to protect any trees that will remain in all of the construction areas during construction. These trees shall be those located near new sidewalk installation.

A. Root Pruning

1. All existing trees shall be root pruned along the sidewalk prior to sidewalk removal, excavation, and installation.
2. The root cutting shall be clean with no tears with root pruning machine.
3. The cut shall extend from the tree out 4 feet minimum in both directions, or as the field may permit to ensure the protection of the tree.
4. The cut shall be 12 inches below grade.
5. The cut shall be no wider than 3 inches.

B. Protective Root Bio Barriers

1. Bio Barriers shall be placed no less than 6 feet around each tree or no less than 1 foot from edge of street, sidewalk, or driveway.
2. Bio Barriers shall be a minimum of 4 feet above ground level, constructed of wood, metal or rigid plastic, in the form of a fence. No barrier shall be secured in any way to the tree.
3. Bio Barriers shall be installed prior to construction and remain until the Town authorizes their removal.
4. No excess oil, fill, equipment, building materials or debris shall be placed within the barriers.
5. The existing grade within the bio barrier shall not be changed.

REPLACEMENT & INSTALLATION OF SIDEWALKS
SOD & INSTALLATION

MATERIALS

A. Sod shall be St. Augustine 'Floratam', grade A.

B. Sod shall be weed and insect free.

INSTALLATION

Those areas disturbed as a consequence of sidewalk installation and those areas disturbed as a consequence of Contractor mobilization and stock piling shall be restored promptly at **Contractor's expense**.

The Contractor shall not utilize methods of mobilization or execution of work that impacts private/public areas excessively and/or in a manner that is unacceptable to the Town. Contractor shall ensure that all private and/or public areas impacted by the mobilization, stock piling, or lack of coordination as interpreted by the Town are restored at no cost to the Town.

A. Only damaged areas of swales or private property shall be replaced. Where sidewalks require to be elevated above existing grade, swales shall be graded to a 12 to 1 fill slope with sod.

B. Sodded areas shall have any compaction relieved, raked smooth and rocks or debris removed.

D. Areas along the street and sidewalk shall be 2" inches below that surface so installed sod will be level with that surface.

E. Sod will be laid tightly together and cut to a uniform edge along hard surfaces and around trees or palms. The sod around trees or palms shall be laid encircling to within 18 inches, or up to the berm surrounding newly installed trees or palms.

F. Sod shall be watered within one hour of installation and shall be maintained moist.

QUALITY ASSURANCE

A. No sub-par sod or broken pieces will be accepted and shall be removed from the site daily.
B. No yellow sod will be accepted.
C. Sod shall not be placed together with scraps that do not contain sufficient roots to sustain growth.
D. Contractor is responsible for his own square foot take-offs to provide 100% sod coverage throughout the scope of the project.
E. Rejected areas will be removed and replaced immediately, and all sod maintained.

REPLACEMENT & INSTALLATION OF SIDEWALKS PAVEMENT

PAVEMENT

A. Pavement repairs of driveway approaches and section of driveways affected by installation of sidewalks shall be re-installed with one inch (1") of asphalt in accordance with the FDOT Manual of Uniform Minimum Standards for Design, Construction & Maintenance for Streets & Highways, latest edition.

B. Concrete repairs shall be limited to damage which results as part of construction and elevation changes of the new sidewalk.

EXECUTION

A. Contractor shall repair asphalt/concrete driveway approaches where existing approaches are damaged by construction process. Contractor shall photograph all existing approaches and sidewalks prior to starting construction or risk repairing at his cost.

QUALITY ASSURANCE

A. Testing and Inspection of Installation

1. The Town will inspect the installation. If any asphalt or concrete is found to not be installed adequately, the Contractor will be required to remove and replace promptly. Upon notifications from the contractor, the Town will perform a re-inspection. Should additional asphalt be found to be unsatisfactorily installed, and additional inspections are required, these inspections shall be at Contactor's cost, at the discretion of the Town.

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REPLACEMENT & INSTALLATION OF SIDEWALKS IRRIGATION

CONDITIONS

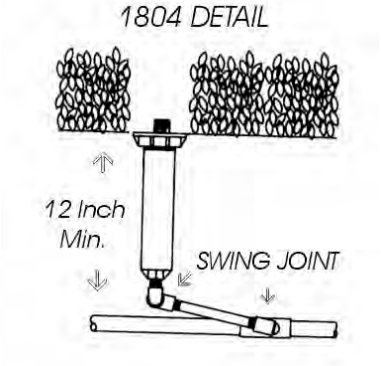
A. Contractor is responsible for identifying any irrigation piping that residents may have either in the swale or along the existing sidewalk. Any irrigation piping, sprinklers or wiring must be replaced to the residents' satisfaction.

B. Contractor shall identify and document all locations and notify the Town's authorize personnel of any existing irrigation systems. Documents will be used by the Town's authorize personnel for inspection to verify satisfactory repairs or replacements.

INSTALLATION

A. Any piping that is removed shall be replaced with equal size PVC; PR160 or PR200. Schedule 40 PVC fittings shall be used.

B. Sprinklers shall be Rainbird 1804, mounted with swing joints, with the appropriate pattern of nozzle (see detail 1804)



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REPLACEMENT & INSTALLATION OF SIDEWALKS FENCING

CONDITIONS

A. Contractor is responsible for identifying any existing fencing that residents may have either in the swale or along the existing sidewalk. Any fencing must be relocated to the Town's satisfaction.

B. Contractor shall identify and document all locations and notify the Town's authorized personnel of any existing fences. Documents will be used by the Town's authorized personnel for inspection to verify satisfactory re-location.

INSTALLATION

C. Any fencing that is removed shall be replaced with like material or re-located in compliance with applicable codes and regulations.

D. Contractor shall adjust heights of existing fence gates when the sidewalk elevation conflicts with their use.

[END OF SECTION]

MAP OF TOPOGRAPHIC SURVEY

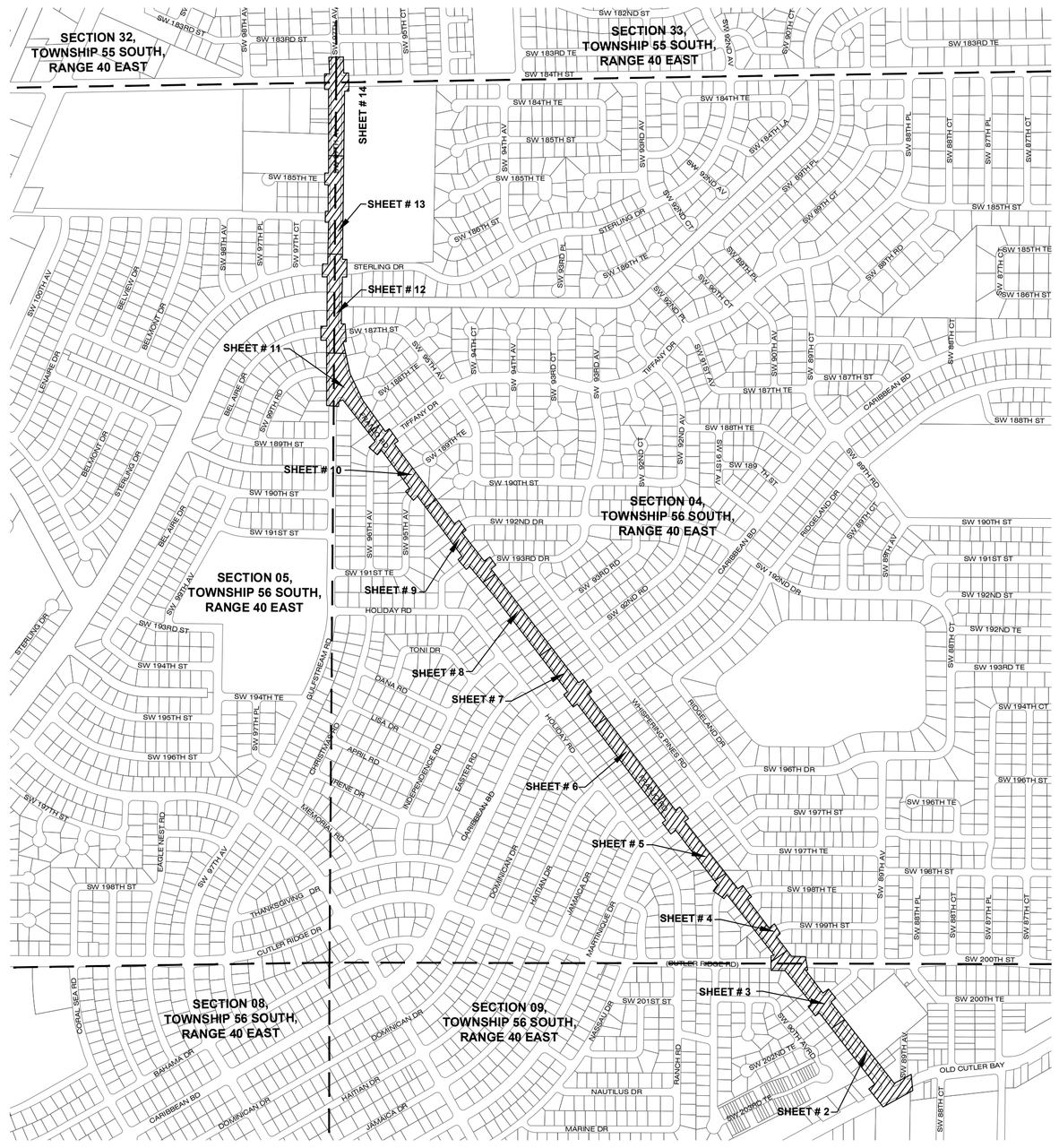
Section 04, 05, 09, 32 and 33 Township 56 South, Range 40 East, in The Miami-Dade County, Florida

Project Location: Franjo Road Between SW 184 Street and Old Cutler Road lying and being in the Town of Cutler Bay, FL.

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. SHEET 1 OF 15

LOCATION & VICINITY MAP



SCALE: NOT TO SCALE

INDEX OF SHEETS

SURVEYOR'S NOTES:

DATE OF FIELD SURVEY:

The date of completion of the original field Survey was on October 12, 2020.
The Survey was updated on February 24, 2021.
The Survey was updated on May 05, 2022.

SURVEY LIMITS:

A portion of The following Public Right of Way:
Franjo Road between SW 184 Street and Old Cutler Road, lying and being in the Miami-Dade County, FL.

ACCURACY:

The accuracy obtained by field measurement methods and office calculations of closed geometric figures meets and exceeds the Standards of Practice requirement for Suburban Area (Linear: 1 foot in 7,500 feet) as defined in Rule 5J-17.051, Florida Administrative Code.

The elevations as shown are based on a closed level between the two benchmarks noted above, and meets or exceeds the Standards of Practice as set forth by the Florida Board of Professional Surveyors and Mappers as contained in Chapter 5J-17.051, FAC.
The Vertical Accuracy obtained on this "Topographic Survey" exceed the calculated value of a closure in feet of plus or minus 0.05 feet times the square root of the distance in miles a commonly value accepted in the construction and surveying industry.

Elevations of well identified features as depicted on the Survey Map were measured to an estimated vertical position accuracy of 1/100 of a foot on hard surfaces and 1/10 of a foot on ground surfaces.

Well identified features as depicted on the Survey Map were measured to an estimated horizontal position accuracy of 1/10 of a foot.

This Map of Survey is intended to be displayed at a scale of One inch equals Twenty feet or smaller.

PERTINENT INFORMATION USED FOR SURVEY:

North arrow direction is based on an assumed Meridian.

Bearings as shown hereon are based upon the Centerline of FRANJO ROAD (SW 97th AVENUE) with an assumed bearing of S39°49'41"E, said line to be considered a well established and monumented line.

This project area appears to be located in Flood Zone "X", "AH",and "AE", with a Base Flood Elevation being "not determined", "7.0" AND "9.0" Feet respectively, as per Federal Emergency Management Agency (FEMA) Community-Panel Number 120218 (Town of Cutler Bay), Community-Panel Number 120218 (Town of Cutler Bay), Map No. 12086C0601 ,12086C0603 and 12086C0604 Suffix L Map Revised Date: September 11, 2009.

For Vertical Control:

All elevations shown hereon are based on the National Geodetic Vertical Datum of 1929 (N.G.V.D. '29) and a Benchmark supplied by the Public Works and Waste Management Department of Miami-Dade County, Florida.

Benchmark: S-122 Elevation: +6.48 (N.G.V.D. '29)
Located Sterling Drive (Approx SW 188 ST)
SW 97 Ave --- East side

Benchmark: BC-70 Elevation: +14.93 (N.G.V.D. '29)
Located SW 184 ST --- 32' South of C/L
SW 97 Ave --- 84' East of C/L

PERTINENT INFORMATION USED FOR SURVEY(CONTINUED):

Plat of "TENALLA OCEAN FARMS ADDITION" according to the Plat thereof as recorded in Plat Book 12 at Page 40 of the Public Records of Miami-Dade County, Florida.
Plat of "TOWN OF TENALLA" according to the Plat thereof as recorded in Plat Book 8 at Page 124 of the Public Records of Miami-Dade County, Florida.
Plat of "CUTLER RIDGE PINES" according to the Plat thereof as recorded in Plat Book 68 at Page 103 of the Public Records of Miami-Dade County, Florida.
Plat of "WHISPERING PINES ESTATES SECTION FOUR" according to the Plat thereof as recorded in Plat Book 68 at Page 9 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION TEN BEL AIRE" according to the Plat thereof as recorded in Plat Book 85 at Page 40 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION SEVEN BEL AIRE" according to the Plat thereof as recorded in Plat Book 84 at Page 63 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION THIRTEEN BEL AIRE" according to the Plat thereof as recorded in Plat Book 86 at Page 91 of the Public Records of Miami-Dade County, Florida.
Plat of "FRANJO PARK SECTION ONE" according to the Plat thereof as recorded in Plat Book 65 at Page 25 of the Public Records of Miami-Dade County, Florida.
Plat of "MORNINGSIDE ACRES" according to the Plat thereof as recorded in Plat Book 46 at Page 7 of the Public Records of Miami-Dade County, Florida.
Plat of "PERRINE GRANT" according to the Plat thereof as recorded in Plat Book 1 at Page 4 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION TWENTY-FOUR BEL-AIRE" according to the Plat thereof as recorded in Plat Book 110 at Page 60 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION ONE BEL-AIRE" according to the Plat thereof as recorded in Plat Book 65 at Page 36 of the Public Records of Miami-Dade County, Florida.
Plat of "SECTION THREE BEL-AIRE" according to the Plat thereof as recorded in Plat Book 65 at Page 133 of the Public Records of Miami-Dade County, Florida.
Plat of "HOLIDAY HOUSE SECTION TWO" according to the Plat thereof as recorded in Plat Book 66 at Page 39 of the Public Records of Miami-Dade County, Florida.
Plat of "HOLIDAY HOUSE SECTION ONE" according to the Plat thereof as recorded in Plat Book 60 at Page 51 of the Public Records of Miami-Dade County, Florida.
Plat of "PINE TREE HOMES" according to the Plat thereof as recorded in Plat Book 65 at Page 106 of the Public Records of Miami-Dade County, Florida.
Plat of "CUTLER RIDGE PINES" according to the Plat thereof as recorded in Plat Book 68 at Page 103 of the Public Records of Miami-Dade County, Florida.
Plat of "OLD CUTLER COVE" according to the Plat thereof as recorded in Plat Book 97 at Page 33 of the Public Records of Miami-Dade County, Florida.
Plat of "MOBIL CUTLER TRACT" according to the Plat thereof as recorded in Plat Book 111 at Page 67 of the Public Records of Miami-Dade County, Florida.

For Horizontal Control:

Bearing and coordinates (Northing and Easting) are relative to the Florida State Plane Coordinate System, Florida East Zone 0901, North American Datum (NAD) 1983 adjustment of 2011 (NAD83(2011)-Epoch 2010.0000;

Global Positioning System (G.P.S.), measurements were conducted in the field to acquire said coordinate values, which are based on the following Horizontal Control Station:

Code: FLMB
Geographic Coordinates:
Latitude: 25° 46' 57.83764" N
Longitude: 80° 8' 14.16768" W
State Plane Coordinates:
Northing: 527,654.41 US Feet
Easting: 940,056.84 US Feet

Code: HOME
Geographic Coordinates:
Latitude: 25° 30' 3.79552" N
Longitude: 80° 33' 0.42956" W
State Plane Coordinates
Northing: 424602.992
Easthing: 804549.63

RESTRICTIONS:

Since no other information were furnished other than that is cited under pertinent information, the Client is hereby advised that there may be legal restrictions on the Subject Property that are not shown on the Survey Map that may be found in the Public Records of Miami-Dade County.

The Surveyor makes no representation as to ownership or possession of the Subject Property by any entity or individual that may appear on the Public Records of this County.

No excavation or determination was made as to how the Subject Property is served by utilities.

No improvements were located, other than those shown. No underground foundations, improvements and/or utilities were located or shown hereon.

PURPOSE OF SURVEY:

The purpose of this survey is for design.

CLIENT INFORMATION:

This Topographic Survey was prepared at the insistence of and certified to:

STANTEC.

SURVEYOR'S CERTIFICATE:

I hereby certify: That this "Topographic Survey" and the Survey Map resulting therefrom was performed under my direction and is true and correct to the best of my knowledge and belief and further, that said "Topographic Survey" meets the intent of the applicable provisions of the Standards of Practice for Land Surveying in the State of Florida, pursuant to Rule 5J-17.051 through 5J-17.052 of the Florida Administrative Code and its implementing law, Chapter 472.027 of the Florida Statutes.

LONGITUDE SURVEYORS LLC., a Florida Limited Liability Company
Florida Certificate of Authorization Number LB7335

By: _____
Eduardo M. Suarez. PSM
Registered Surveyor and Mapper LS6313
State of Florida

NOTICE: Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to Survey Maps by other than the signing party are prohibited without the written consent of the signing party.

MIAMI - DADE COUNTY STORMWATER UTILITY

APPENDIX B

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
05-13-2022	JG	UPDATE SURVEY-SANITARY SEWER INVERTS						

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

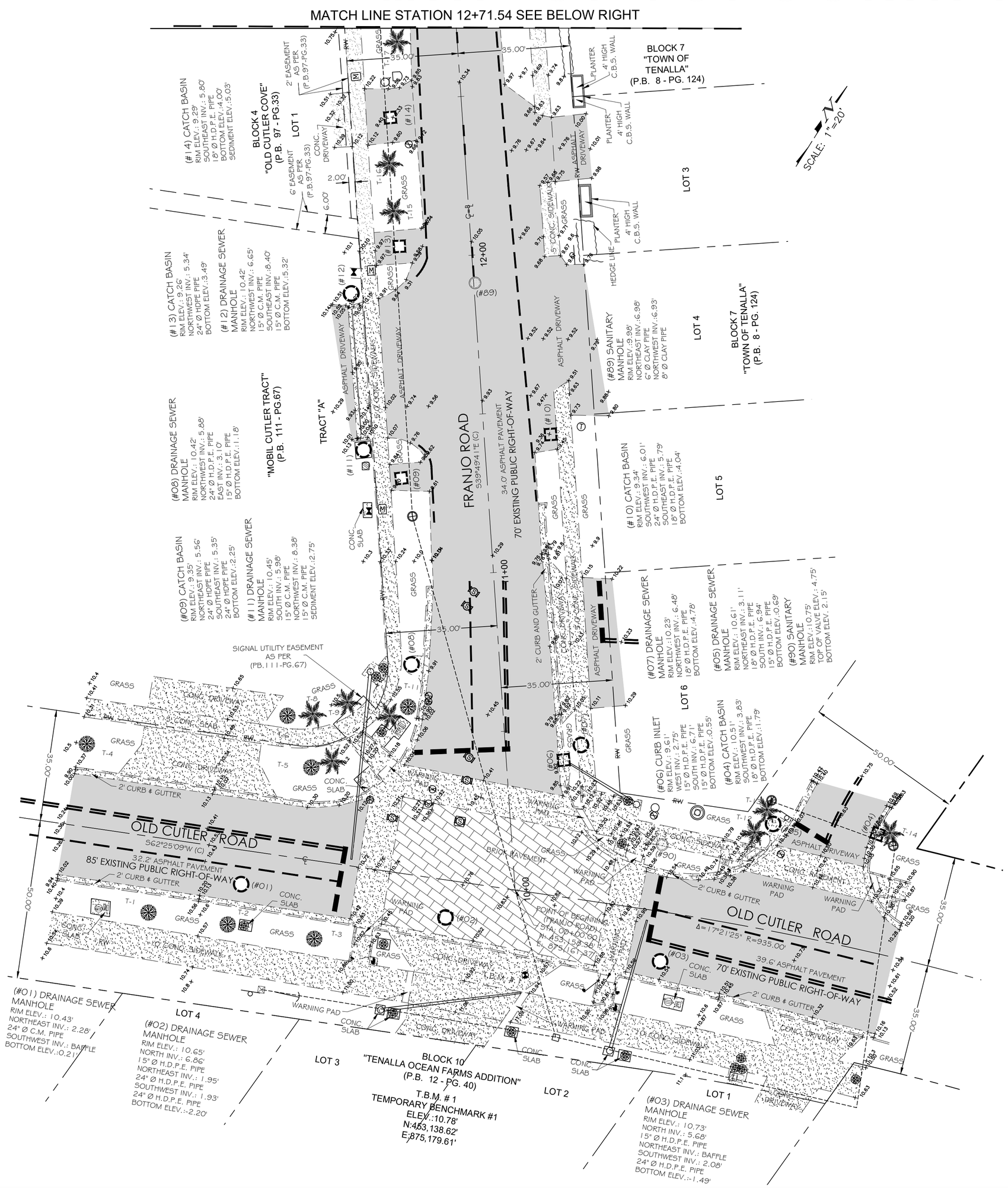
VICINITY, LOCATION MAP AND SURVEYOR'S NOTE

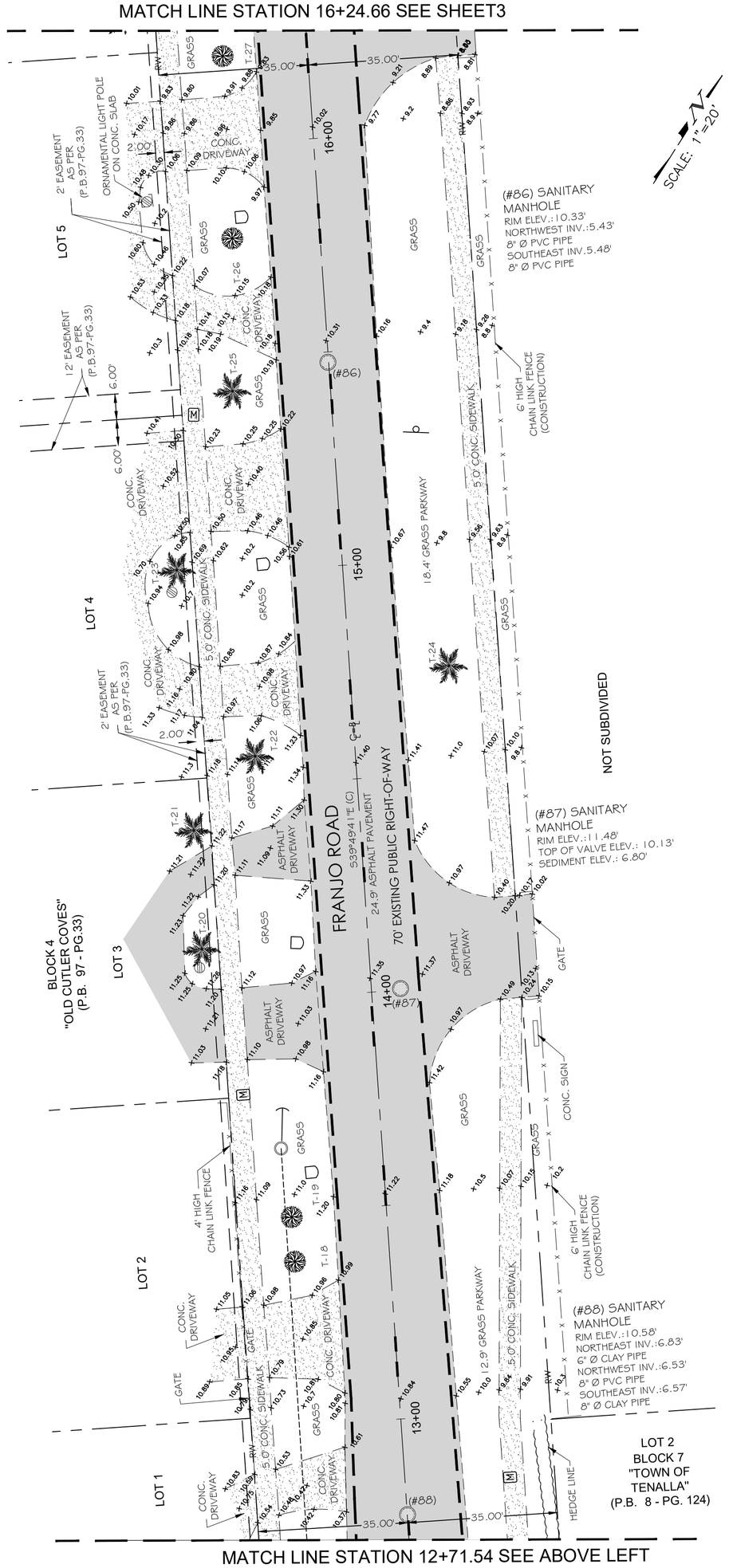
MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 2 OF 15

LEGEND AND ABBREVIATIONS:

ELEV = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(PG.) = PAGE
(P.B.) = PLAT BOOK
(M) = MEASURES
(P) = By PLAT
F.F.= FOUND
CND = CONCRETE NAIL & DISK
PKF = PK NAIL FOUND
CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
VG = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
PLS = PROFESSIONAL LAND SURVEYOR
= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
= METAL TRAFFIC LIGHT POLE
= METAL POWER POLE
= CONCRETE LIGHT POLE
= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
℄ = PROPERTY LINE
SEC. = SECTION
M = MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
(PI) = POINT OF INTERSECTION
(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
F.P.L. = F.P.L. OVERHEAD
U.G.? = F.P.L. UNDERGROUND
= WATER LINE MAIN
GAS = GAS MAIN
FM = FORCE MAIN
CATV = CABLE TV
AT&T = BELL SOUTH TELEPHONE CONDU
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGROUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE
= PALM
= TREE





REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 3 OF 15

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

MIAMI–DADE

STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

	NAME	DATE
DESIGNED BY	X.X.	
DRAWN BY	SF	10–13–2020
CHECKED BY	X.X.	
CHECKED BY	CS	10–16–2020

SUPERVISED BY:

DESCRIPTION	DATE	BY
UPDATE SURVEY–SANITARY SEWER INVERTS	05–13–2022	JG

REVISIONS

TOPOGRAPHIC SURVEY

SCALE: 1"=20'

MATCH LINE STATION 22+71.89 SEE SHEET 4

MATCH LINE STATION 19+48.35 SEE ABOVE LEFT

MATCH LINE STATION 19+48.35 SEE BELOW RIGHT

MATCH LINE STATION 16+24.66 SEE SHEET 2

SW 200th STREET
N89°09'09"E (C)
25.6' ASPHALT PAVEMENT
75' EXISTING PUBLIC RIGHT-OF-WAY

SW 89th COURT
N50°10'19"E (C)
20.6' ASPHALT PAVEMENT
50' EXISTING PUBLIC RIGHT-OF-WAY

FRANJO ROAD
S39°49'41"E (C)
24.4' ASPHALT PAVEMENT
70' EXISTING PUBLIC RIGHT-OF-WAY

POINT OF INTERSECTION
(FRANJO ROAD & SW 200th STREET)
STA: 21+97.55
N: 454,078.07'
E: 874,394.36'

POINT OF INTERSECTION
(FRANJO ROAD & SW 89th COURT)
STA: 18+32.55
N: 453,797.76'
E: 874,628.13'

TEMPORARY BENCHMARK #2
T.B.M. # 2
ELEV.:8.27'
N:453,787.02'
E:874,618.04'
STA: 18+30.77
OFFSET: 16.62' LEFT

"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
BLOCK 9
LOT 17

"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
BLOCK 9
LOT 16

"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
BLOCK 8
LOT 1

"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
BLOCK 8
LOT 5

"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
BLOCK 7
LOT 1

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 3
LOT 6

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 3
LOT 7

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 3
LOT 8

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 3
LOT 9

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 4
LOT 6

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 4
LOT 7

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 4
LOT 8

"OLD CUTLER COVER"
(P.B. 97 - PG.33)
BLOCK 4
LOT 9

BLOCK 9
"CUTLER RIDGE PINES"
(P.B. 68 - PG. 103)
LOT 16

BLOCK 6
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 5

BLOCK 6
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 6

BLOCK 7
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 7

BLOCK 7
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 8

BLOCK 7
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 9

BLOCK 8
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 1

BLOCK 8
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 2

BLOCK 8
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 5

BLOCK 9
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 6

BLOCK 9
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 7

BLOCK 9
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 8

BLOCK 9
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 9

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 1

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 2

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 5

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 6

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 7

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 8

BLOCK 10
"OLD CUTLER COVER"
(P.B. 97 - PG.33)
LOT 9

(#82) SANITARY MANHOLE
RIM ELEV.:10.02'
EAST INV.:1.73'
8" Ø CLAY PIPE
SOUTHEAST INV.:1.82'
8" Ø PVC PIPE
EAST INV.:1.77'
8" Ø CLAY PIPE
WEST INV.:1.83'
8" Ø CLAY PIPE

(#83) SANITARY MANHOLE
RIM ELEV.:7.57'
NORTHEAST INV.:3.49'
8" Ø CLAY PIPE
SOUTHEAST INV.:3.86'
6" Ø CLAY PIPE
NORTHWEST INV.3.87'
6" Ø CLAY PIPE

(#84) SANITARY MANHOLE
RIM ELEV.:8.41'
NORTHWEST INV.:3.31'
8" Ø PVC PIPE
SOUTHEAST INV.4.03'
8" Ø PVC PIPE
SOUTHWEST INV.3.36'
8" Ø PVC PIPE

(#85) SANITARY MANHOLE
RIM ELEV.:8.56'
NORTHEAST INV.:4.02'
8" Ø PVC PIPE
SOUTHWEST INV.:4.06'
8" Ø PVC PIPE
FULL OF EXCREMENT

(#14-A) CATCH BASIN
RIM ELEV.: 7.65'
SOUTHEAST INV.: 3.65'
15" Ø R.C.P.P.E. PIPE
BOTTOM ELEV.:0.08'

(#15) CATCH BASIN
RIM ELEV.: 7.73'
NORTHWEST INV.: 1.67'
4" Ø P.V.C. PIPE
BOTTOM ELEV.:1.67'

(#16) CATCH BASIN
RIM ELEV.: 7.73'
NORTHEAST INV.: 7.13'
2.50' WIDE TRENCH
BOTTOM ELEV.:7.13'

(#17) CATCH BASIN
RIM ELEV.: 7.79'
SOUTHEAST INV.:0.99'
2.50' WIDE TRENCH
BOTTOM ELEV.:0.99'

LEGEND AND ABBREVIATIONS:

ELEV =	ELEVATION
(T.B.M.) =	TEMPORARY BENCHMARK
(CONC.) =	CONCRETE
(PG.) =	PAGE
(P.B.) =	PLAT BOOK
(M) =	MEASURES
(P) =	By PLAT
F.I.F.D =	FOUND
CNCP =	CONCRETE NAIL & DISK
CNDF =	CONCRETE NAIL & DISK FOUND
CNF =	CONCRETE NAIL & DISK FOUND
CNC =	CONCRETE NAIL CUT
DHF =	DRILL HOLE FOUND
NAIL =	NAIL FOUND
NF =	PK NAIL & DISK FOUND
PK/D =	PK NAIL & DISK FOUND
R/W =	RIGHT OF WAY
RBAC =	ROCK BASE ASPHALT COMPOUND
℄ =	BASE LINE
℄ =	CENTER LINE
R =	RADIUS
L =	LENGTH OF CURVE
C&G =	CURB & GUTTER
V.G =	VALLEY GUTTER
E/P =	EDGE OF PAVEMENT
T.O.B =	TOP OF BANK
E/W =	EDGE OF WATER
PCP =	PERMANENT CONTROL POINT
RLS =	REGISTERED LAND SURVEYOR
PLS =	PROFESSIONAL LAND SURVEYOR
=	STREET SIGN
=	ALUM. FLASHING SCHOOL LIGHT
=	MAILBOX
=	DECORATIVE LIGHT POLE
=	METAL LIGHT POLE
=	METAL TRAFFIC LIGHT POLE
=	METAL POWER POLE
=	CONCRETE LIGHT POLE
=	CONCRETE POWER POLE
=	WOOD LIGHT POLE
=	WOOD POWER POLE
=	WOOD TELEPHONE POLE
=	FIBERGLASS LIGHT POLE
=	WATER MANHOLE
=	SANITARY MANHOLE
=	SANITARY SEWER VALVE (FM)
=	CABLE TV PEDESTRIAN
=	TV CABLE RISER BOX
=	TV CONTROL BOX
=	CABLE BOX
=	TELEPHONE HANDHOLE
=	TELEPHONE MANHOLE
=	TELEPHONE UTILITY BOX
=	TELEPHONE RISER BOX
=	TELEPHONE RISER CONTROL BOX
=	TELEPHONE CONTROL BOX
=	BOX
=	CROSSING SIGN
=	POST
=	INTERCOM
=	GAS VALVE
=	PVC POST
=	GUY WIRE
=	SPRINKLE HEAD
=	CENTRAL ANGLE OF CURVE
=	MONITORING WELL
=	PETROLEUM PIPELINE
=	ELECTRIC HANDHOLE
=	ELECTRIC MANHOLE
=	FIRE HYDRANT
=	WATER VALVE
=	WATER METER
=	R/W EXISTING
=	SECTION LINE
=	QUARTER SECTION LINE
=	EASEMENT LINE
=	BARBWIRE FENCE
=	EDGE OF THE PAVEMENT
℄ =	PROPERTY LINE
SEC. =	SECTION
M =	MONUMENT LINE
PVMT =	PAVEMENT
ASPH. =	ASPHALT
(R) =	RADIUS
(L) =	LENGTH
(CA) =	CENTRAL ANGLE OF THE CURVE
(PT) =	POINT OF TANGENCY
(PI) =	POINT OF INTERSECTION
(PC) =	POINT OF CURVATURE
=	TRAFFIC SIGH MANHOLE
=	TRAFFIC SIGH HANDHOLE
=	TRAFFIC CONTROL BOX
=	TRAFFIC SIGNAL BOX
=	ELECTRICAL CONTROL BOX
=	RAIL ROAD CROSSING (LIGHT)
=	FIBER OPTIC MARKER SIGN
=	FIBER OPTIC BOX
=	CONCRETE
=	ASPHALT
=	UNIMPROVED DRIVEWAY
=	GRAVEL
=	BRICK
=	TILE
=	STAMPED CONCRETE
=	CONCRETE BLOCK FENCE
=	TREE DIAMETER
=	EXISTING CATCH BASIN
=	EXISTING STORMWATER MANHOLE
=	BOLLARD
=	ELECTRIC METER
=	ELECTRIC PANEL
=	BACKFLOW PREVENTER
=	FIRE DEPARTMENT CONNECTION
=	TRAFFIC
=	VALVE COVER SUGAR
=	PEDESTRIAN SIGN
=	GAS METER
=	CLEAN OUT
=	WOOD FENCE
=	CHAIN LINK FENCE
=	IRON FENCE
=	EXISTING SIDEWALK
=	F.P.L. OVERHEAD
=	F.P.L. UNDERGROUND
=	WATER LINE MAIN
=	GAS MAIN
=	FORCE MAIN
=	CABLE TV
=	BELL SOUTH TELEPHONE CONDL
=	BASELINE
=	SANITARY SEWER
=	ELECTRIC EXISTING OVERHEAD
=	UNKNOWN UTILITY UNDERGROUND
=	TRASH
=	ROCK
=	BENCH
=	FLOW LIGHT
=	DUCTILE IRON PIPE
=	PALM
=	TREE

NOT SUBDIVIDED

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 4 OF 15

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

STEPHEN P. CLARK CENTER
111 NW 1 STREET, 17TH FLOOR
MIAMI, FLORIDA 33128

MIAMI—DADE

	NAME	DATE
DESIGNED BY	X.X.	
DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.	
CHECKED BY	GS	10-16-2020
SUPERVISED BY:		

REVISIONS			
DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG	

TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

MATCH LINE STATION 29+85.36 SEE SHEET 5

MATCH LINE STATION 26+30.87 SEE ABOVE LEFT

MATCH LINE STATION 26+30.87 SEE BELOW RIGHT

MATCH LINE STATION 22+7183 SEE SHEET 3

SCALE: 1"=20'

FRANJO ROAD
SW 198th TERRACE
SW 92th AVENUE
SW 199th STREET
BLOCK 10 "CUTLER RIDGE PINES" (P.B. 60 - PG. 103) LOT 22

LEGEND AND ABBREVIATIONS:

ELEV.	= ELEVATION
(T.B.M.)	= TEMPORARY BENCHMARK
(CONC.)	= CONCRETE
(PG.)	= PAGE
(P.B.)	= PLAT BOOK
(M)	= MEASURED
(R)	= RADIAL
F.I.Fd	= FOUND
CND	= CONCRETE NAIL & DISK
PKF	= PK NAIL FOUND
CNF	= CONCRETE NAIL FOUND
CNC	= CONCRETE NAIL & DISK FOUND
DHF	= DRILL HOLE FOUND
NF	= NAIL FOUND
PKDF	= PK NAIL & DISK FOUND
RPAC	= REFERENCE POINT
RBAC	= ROCK BASE ASPHALT COMPOUND
℄	= BASE LINE
℄	= CENTER LINE
R	= RADIUS
L	= LENGTH OF CURVE
C&G	= CURB & GUTTER
VG	= VALLEY GUTTER
E/P	= EDGE OF PAVEMENT
T/B	= TOP OF BANK
E/W	= EDGE OF WATER
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RLS	= REGISTERED LAND SURVEYOR
PLS	= PROFESSIONAL LAND SURVEYOR
	= STREET SIGN
	= ALUM. FLASHING SCHOOL LIGHT
	= MAILBOX
	= DECORATIVE LIGHT POLE
	= METAL LIGHT POLE
	= METAL TRAFFIC LIGHT POLE
	= METAL POWER POLE
	= CONCRETE LIGHT POLE
	= CONCRETE POWER POLE
	= WOOD LIGHT POLE
	= WOOD POWER POLE
	= WOOD TELEPHONE POLE
	= FIBERGLASS LIGHT POLE
	= WATER MANHOLE
	= SANITARY MANHOLE
	= SANITARY SEWER VALVE (FM)
	= CABLE TV PEDESTRIAN
	= TV CABLE RISER BOX
	= TV CONTROL BOX
	= CABLE BOX
	= TELEPHONE HANDHOLE
	= TELEPHONE MANHOLE
	= TELEPHONE UTILITY BOX
	= TELEPHONE RISER BOX
	= TELEPHONE RISER CONTROL BOX
	= TELEPHONE CONTROL BOX
	= BOX
	= CROSSING SIGN
	= POST
	= INTERCOM
	= GAS VALVE
	= GAS POST
	= OVU WIRE
	= SPRINKLE HEAD
	= CENTRAL ANGLE OF CURVE
	= MONITORING WELL
	= PETROLEUM PIPELINE
	= ELECTRIC HANDHOLE
	= ELECTRIC MANHOLE
	= FIRE HYDRANT
	= WATER VALVE
	= WATER METER
	= R/W EXISTING
	= SECTION LINE
	= QUARTER SECTION LINE
	= EASEMENT LINE
	= BARBWIRE FENCE
	= EDGE OF THE PAVEMENT
R	= PROPERTY LINE
SEC.	= SECTION
M	= MONUMENT LINE
PVMT	= PAVEMENT
ASPH.	= ASPHALT
(R)	= RADIUS
(L)	= LENGTH
(CA)	= CENTRAL ANGLE OF THE CURVE
(PT)	= POINT OF TANGENCY
(PI)	= POINT OF INTERSECTION
(PC)	= POINT OF CURVATURE
	= TRAFFIC SIGH MANHOLE
	= TRAFFIC SIGNAL HANDHOLE
	= TRAFFIC CONTROL BOX
	= TRAFFIC SIGNAL BOX
	= ELECTRICAL CONTROL BOX
	= PEDESTRIAN OVERHEAD (LIGHT)
	= FIBER OPTIC MARKER SIGN
	= FIBER OPTIC BOX
	= CONCRETE
	= ASPHALT
	= UNIMPROVED DRIVEWAY
	= GRAVEL
	= BRICK
	= TILE
	= STAMPED CONCRETE
	= CONCRETE BLOCK FENCE
	= TREE DIAMETER
	= EXISTING CATCH BASIN
	= EXISTING STORMWATER MANHOLE
	= BOLLARD
	= ELECTRIC METER
	= ELECTRIC PANEL
	= BACKFLOW PREVENTER
	= FIRE DEPARTMENT CONNECTION
	= TRAFIC
	= VALVE COVER SUGAR
	= PEDESTRIAN SIGN
	= GAS METER
	= CLEAN OUT
	= WOOD FENCE
	= CHAIN LINK FENCE
	= IRON FENCE
	= EXISTING SIDEWALK
	= F.P.L. OVERHEAD
	= F.P.L. UNDERGROUND
	= WATER LINE MAIN
	= GAS MAIN
	= FORCE MAIN
	= CABLE TV
	= BELL SOUTH TELEPHONE CONDU
	= BASELINE
	= SANITARY SEWER
	= ELECTRIC EXISTING OVERHEAD
	= UNKNOWN UTILITY UNDERGOUND
	= TRASH
	= ROCK
	= BENCH
	= FLOW LIGHT
	= DUCTILE IRON PIPE

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. SHEET 5 OF 15

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CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
= BASE LINE
℄ = CENTER LINE
= RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
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E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
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= MAILBOX
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= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
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= TRAFFIC SIGH MANHOLE
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= TRAFFIC CONTROL BOX
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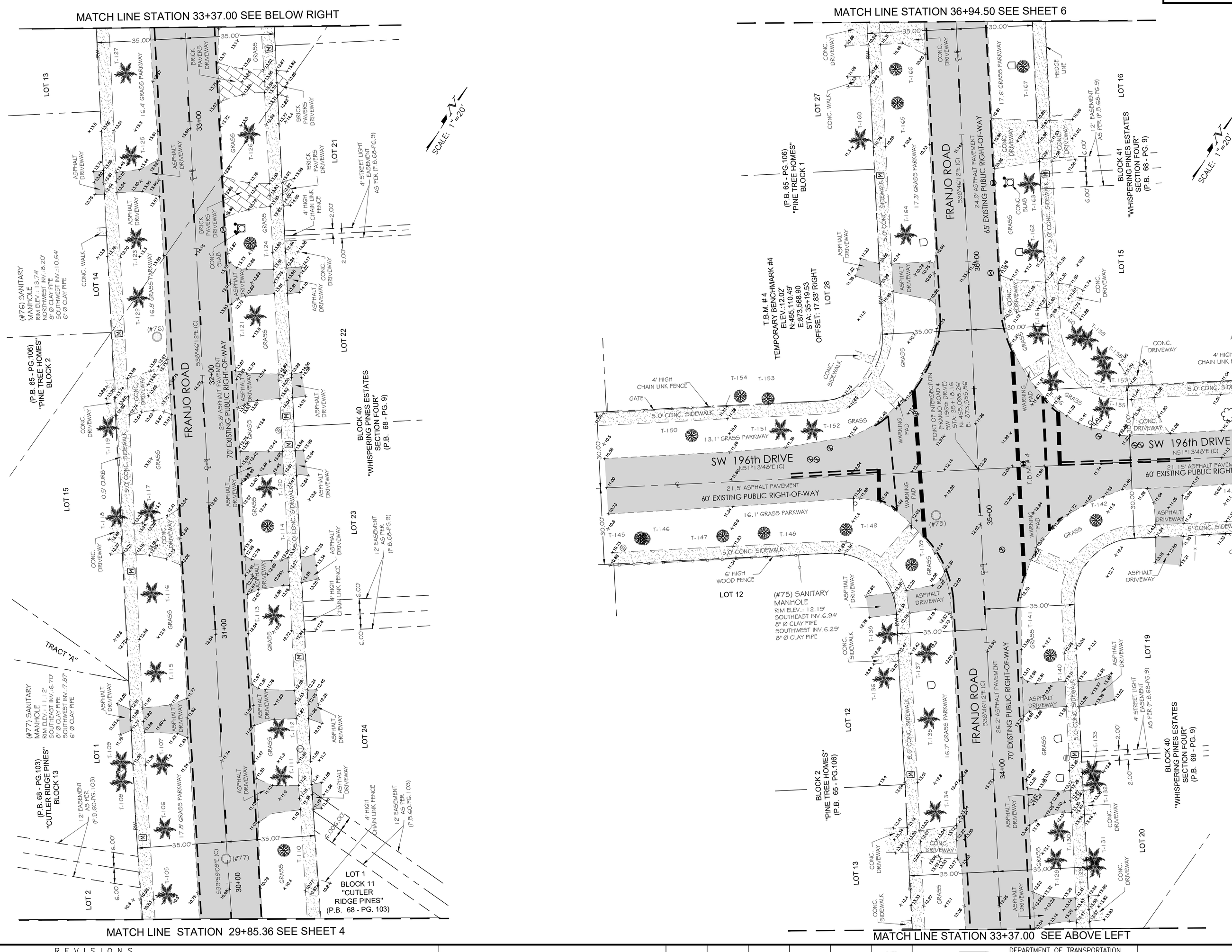
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
F.P.L. = F.P.L. OVERHEAD
U.G.T = F.P.L. UNDERGROUND
= WATER LINE MAIN
GAS = GAS MAIN
FM = FORCE MAIN
CATV = CABLE TV
= BELL SOUTH TELEPHONE CONDL
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGOUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE
= PALM
= TREE



REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 6 OF 15

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= MAILBOX
= DECORATIVE LIGHT POLE
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= CABLE TV PEDESTRIAN
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= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
℄ = PROPERTY LINE
SEC. = SECTION
M = MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
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(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
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= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
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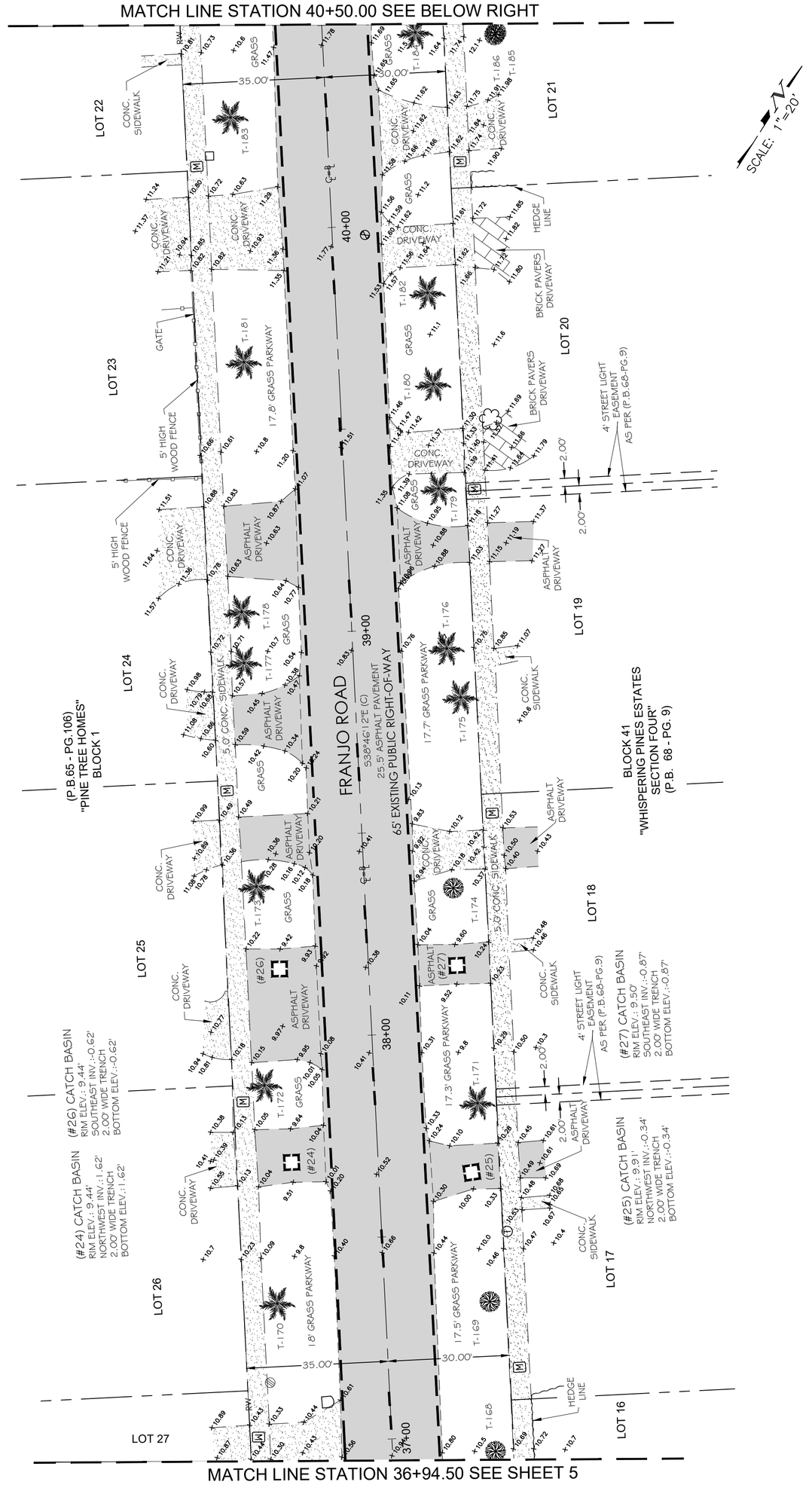
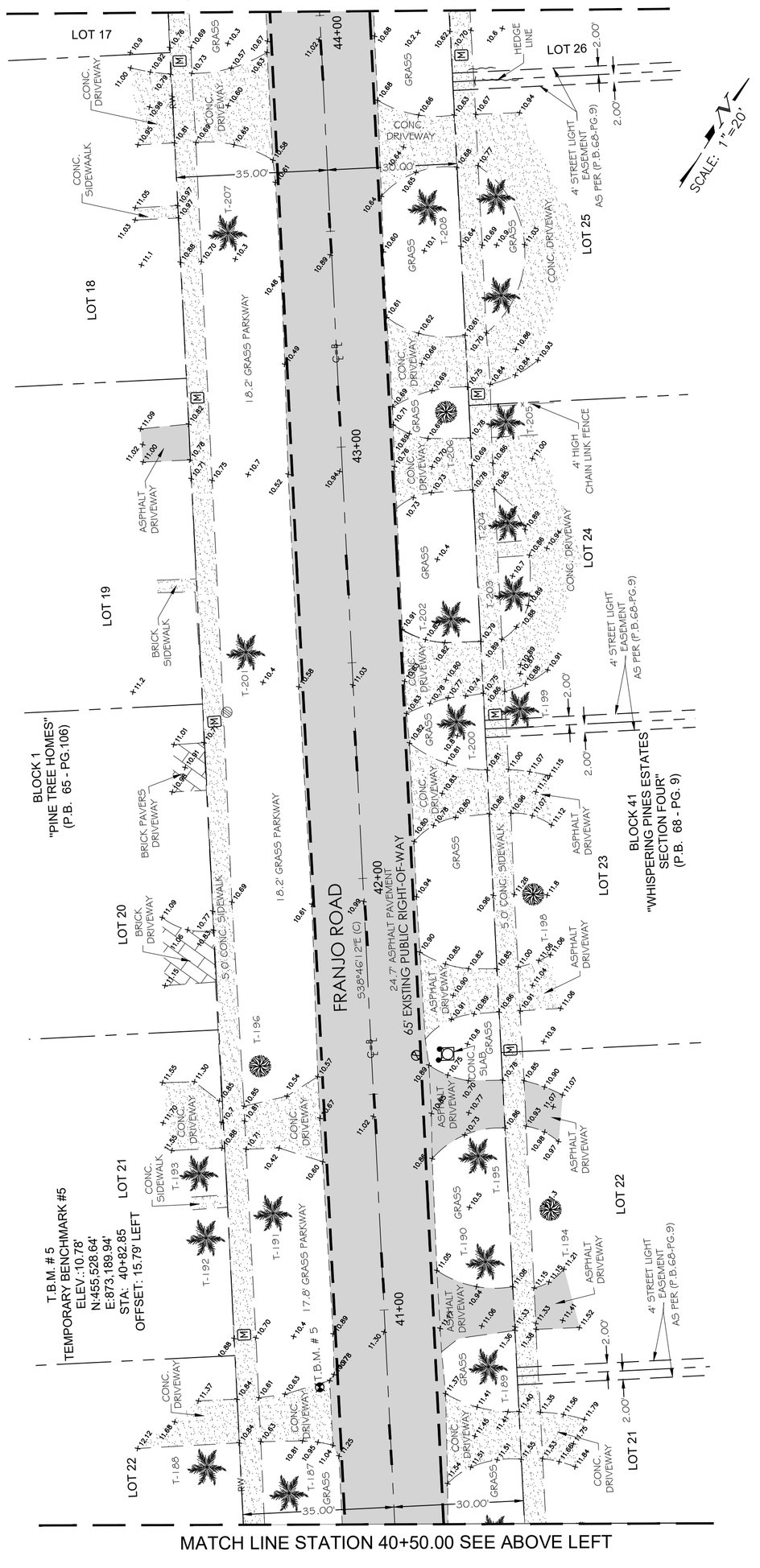
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
= F.P.L. OVERHEAD
= F.P.L. UNDERGROUND
= WATER LINE MAIN
= GAS MAIN
= FORCE MAIN
= CABLE TV
= BELL SOUTH TELEPHONE CONDUI
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGOUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE





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MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 7 OF 15

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= BOX
= CROSSING SIGN
= POST
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= TRASH
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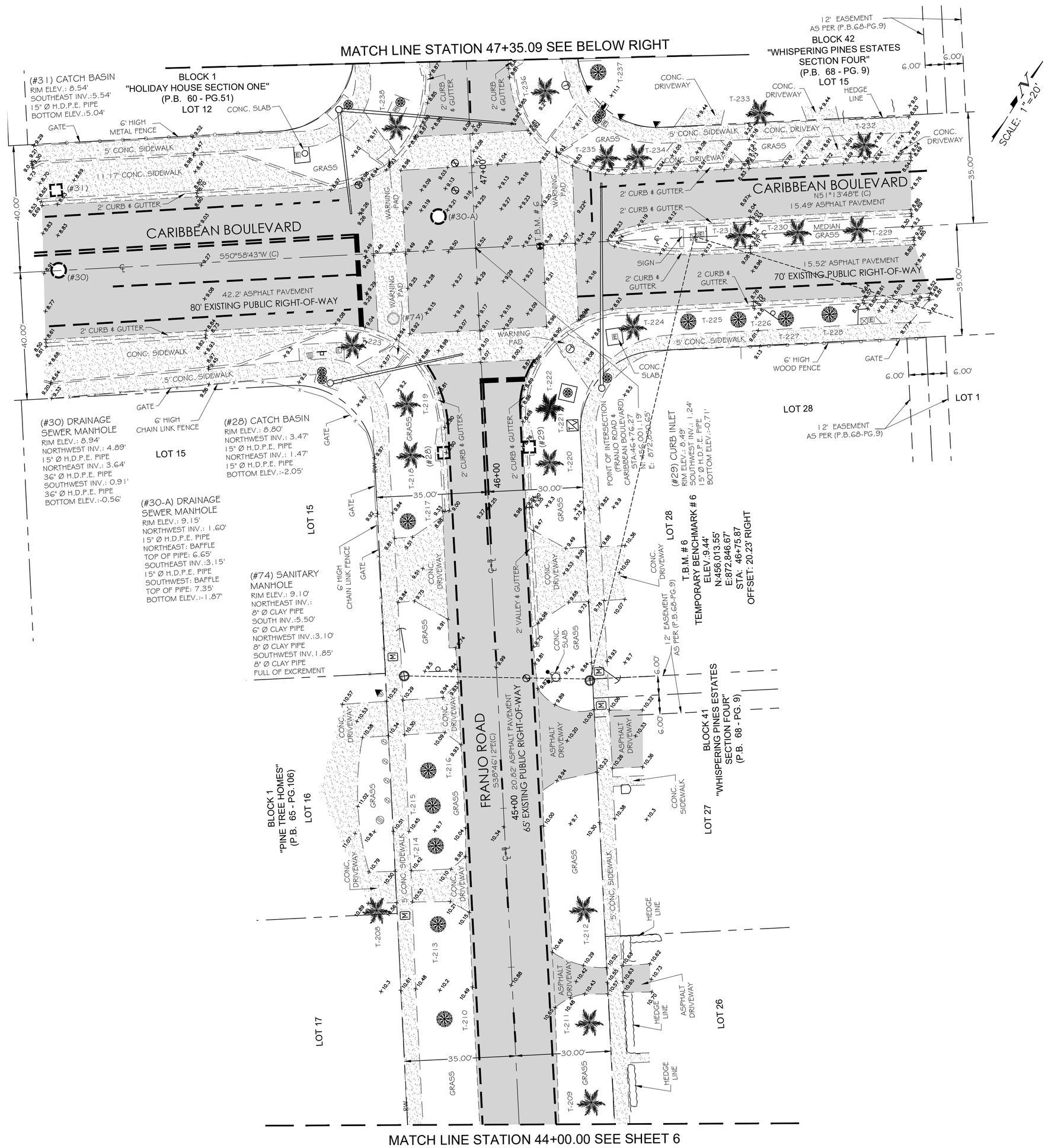

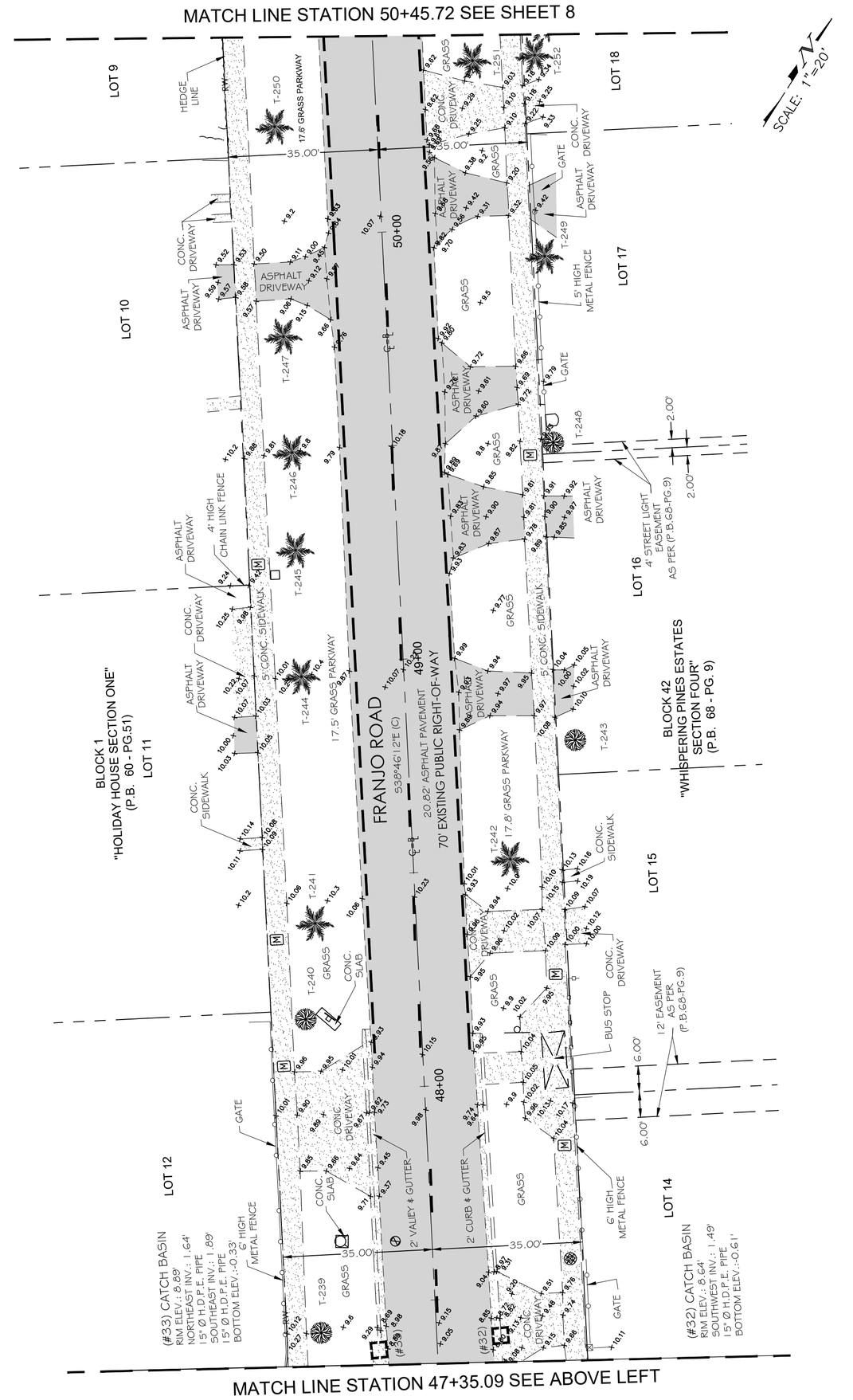

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FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 8 OF 15

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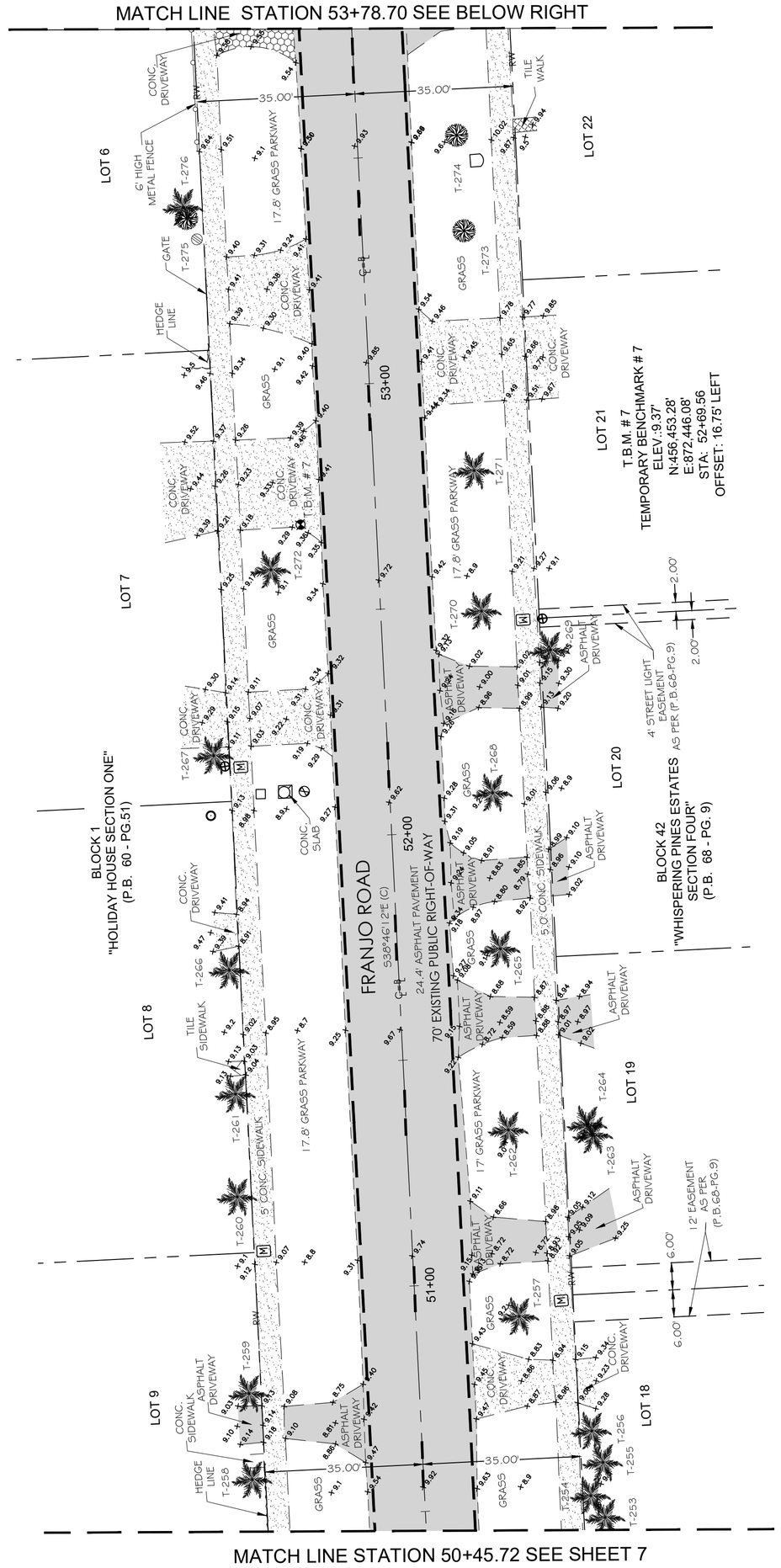
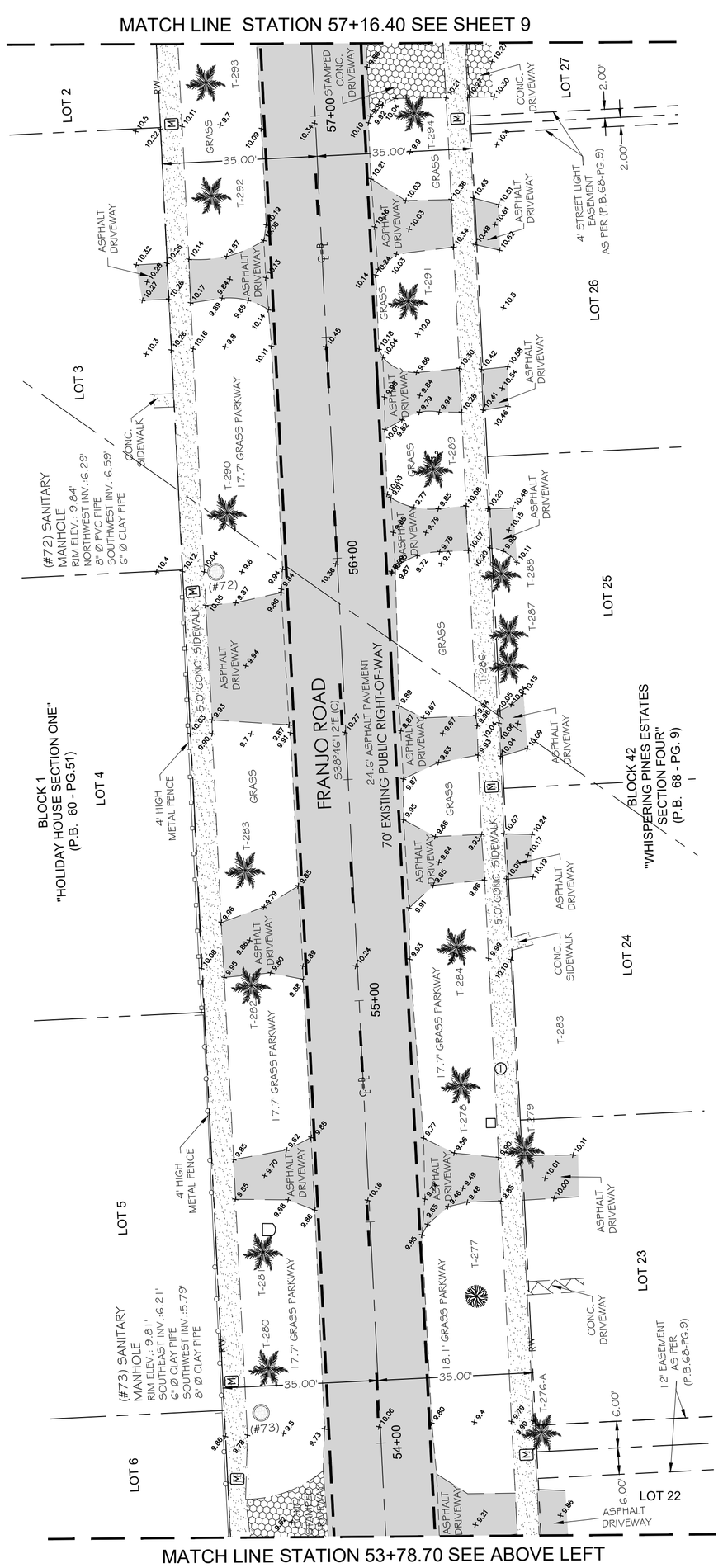
= ORNAMENTAL TREE





REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 9 OF 15

LEGEND AND ABBREVIATIONS:

ELEV. = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(PG.) = PAGE
(P.B.)= PLAT BOOK
(M) = MEASURES
(P) = By PLAT
F. Fd = FOUND
CND = CONCRETE NAIL & DISK
PKF = PK NAIL FOUND
CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
VG = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
PLS = PROFESSIONAL LAND SURVEYOR
= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
= METAL TRAFFIC LIGHT POLE
= METAL POWER POLE
= CONCRETE LIGHT POLE
= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
℄ = PROPERTY LINE
SEC. = SECTION
M = MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
(PI) = POINT OF INTERSECTION
(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
= F.P.L. OVERHEAD
= F.P.L. UNDERGROUND
= WATER LINE MAIN
= GAS MAIN
= FORCE MAIN
= CABLE TV
= BELL SOUTH TELEPHONE CONDUIT
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGOUND
= TRASH
= ROCK
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DIP = DUCTILE IRON PIPE
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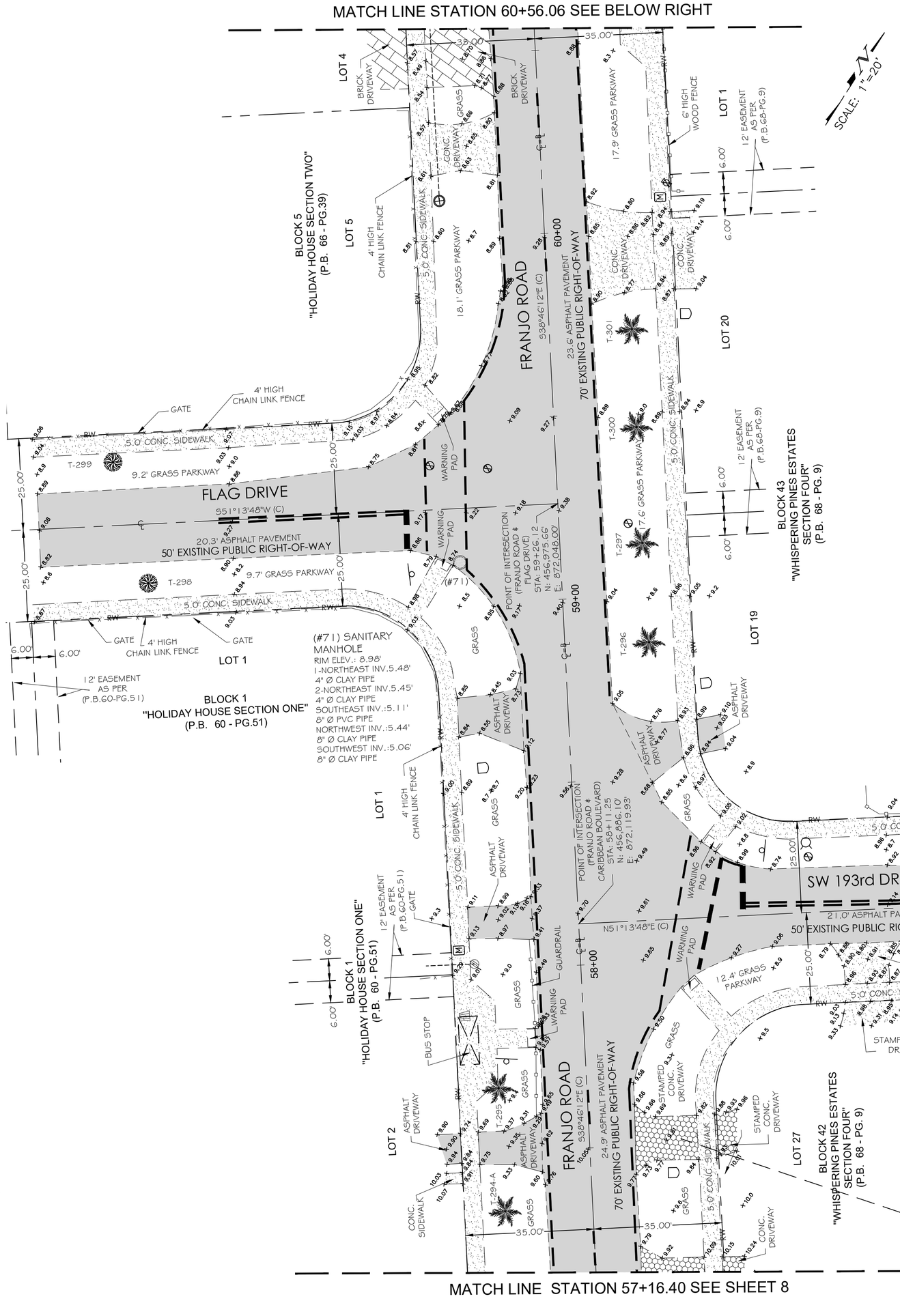

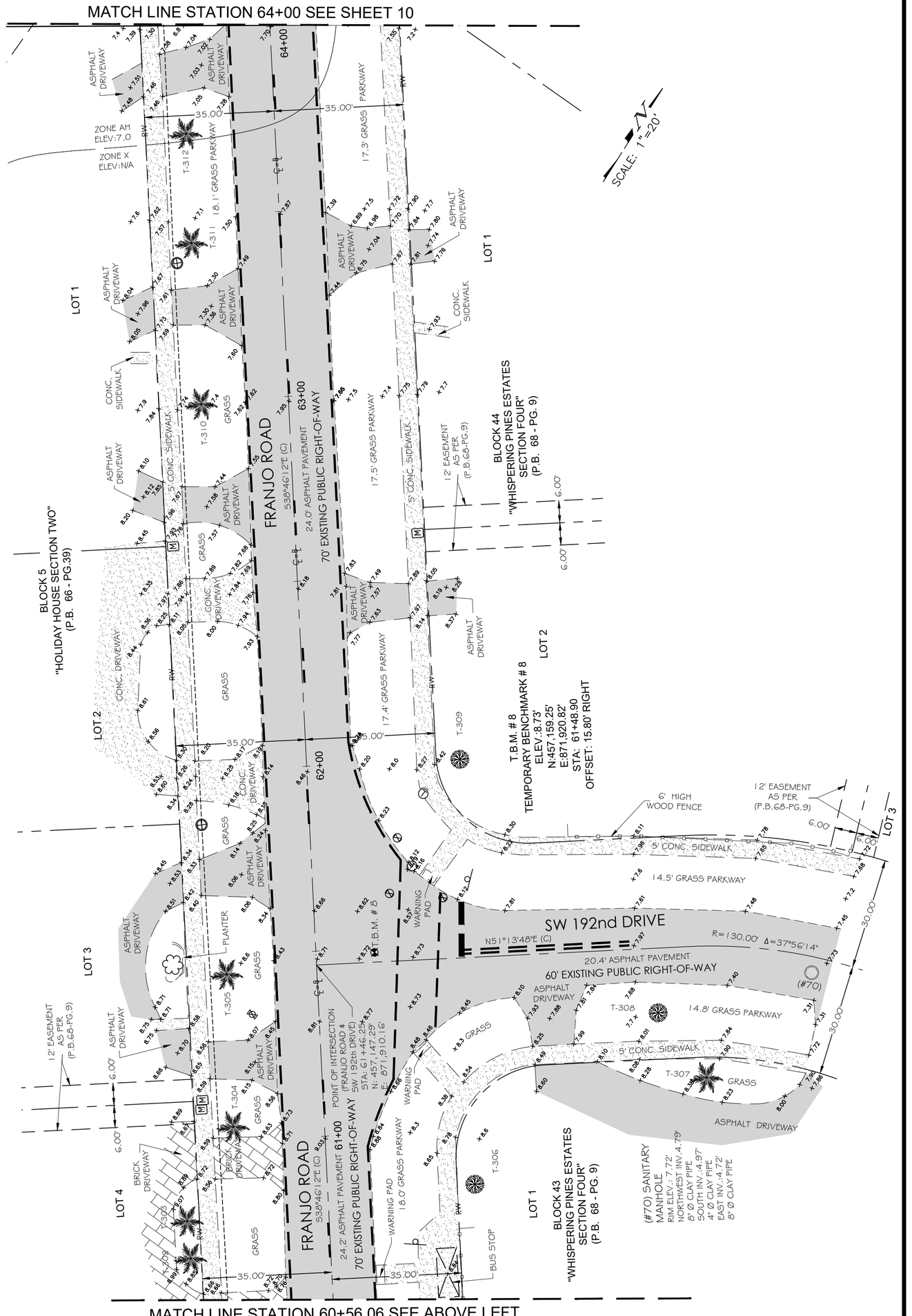

REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	07-20-2020
CHECKED BY	X.X.		CHECKED BY	GS	07-20-2020
SUPERVISED BY:					

MIAMI—DADE
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
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MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 10 OF 15

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= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
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= TRAFIC
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= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
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F.P.L. = F.P.L. OVERHEAD
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GAS = GAS MAIN
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CATV = CABLE TV
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= BASELINE
= SANITARY SEWER
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= UNKNOWN UTILITY UNDERGOUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE
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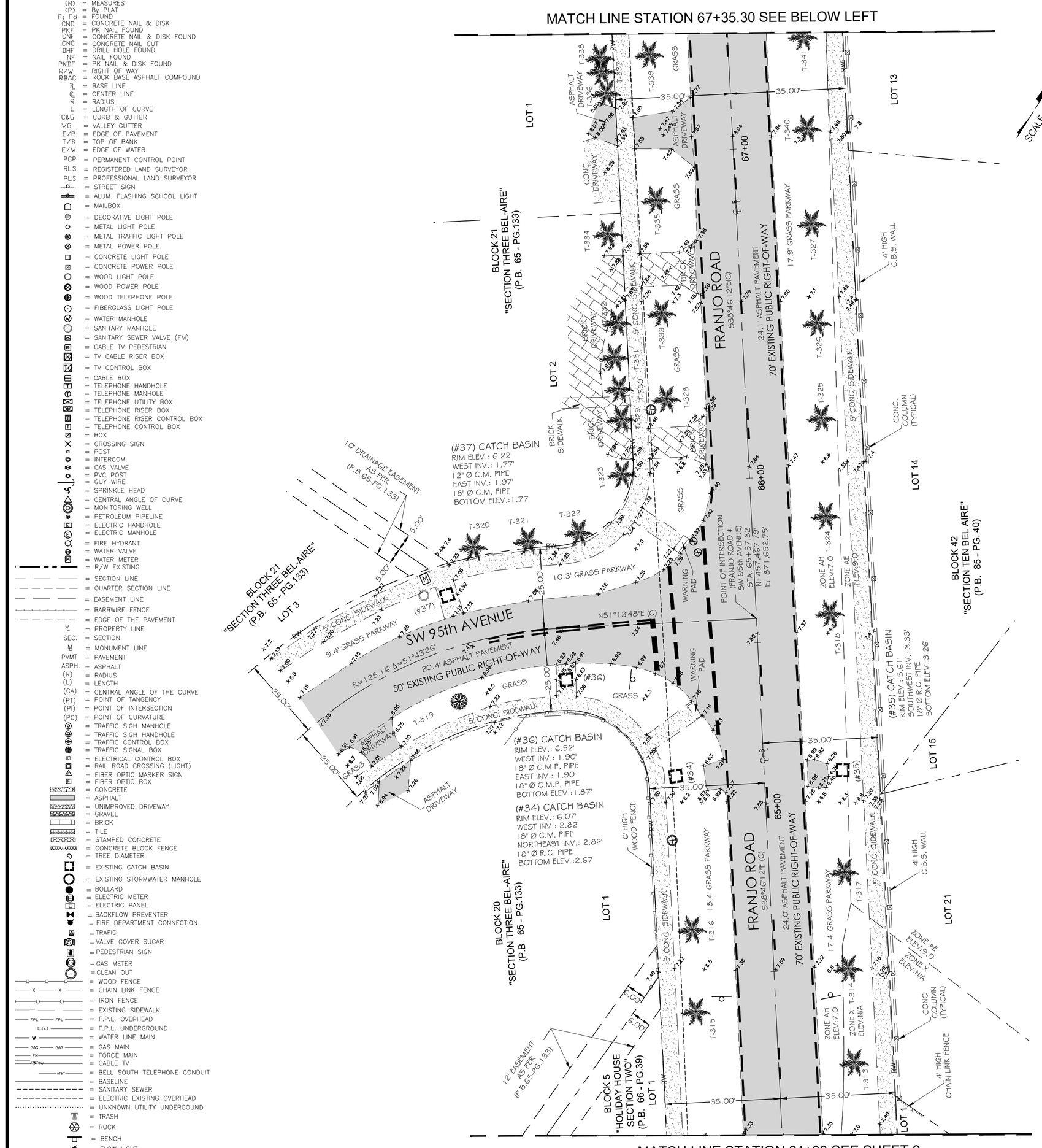
= ORNAMENTAL TREE



REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JC				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
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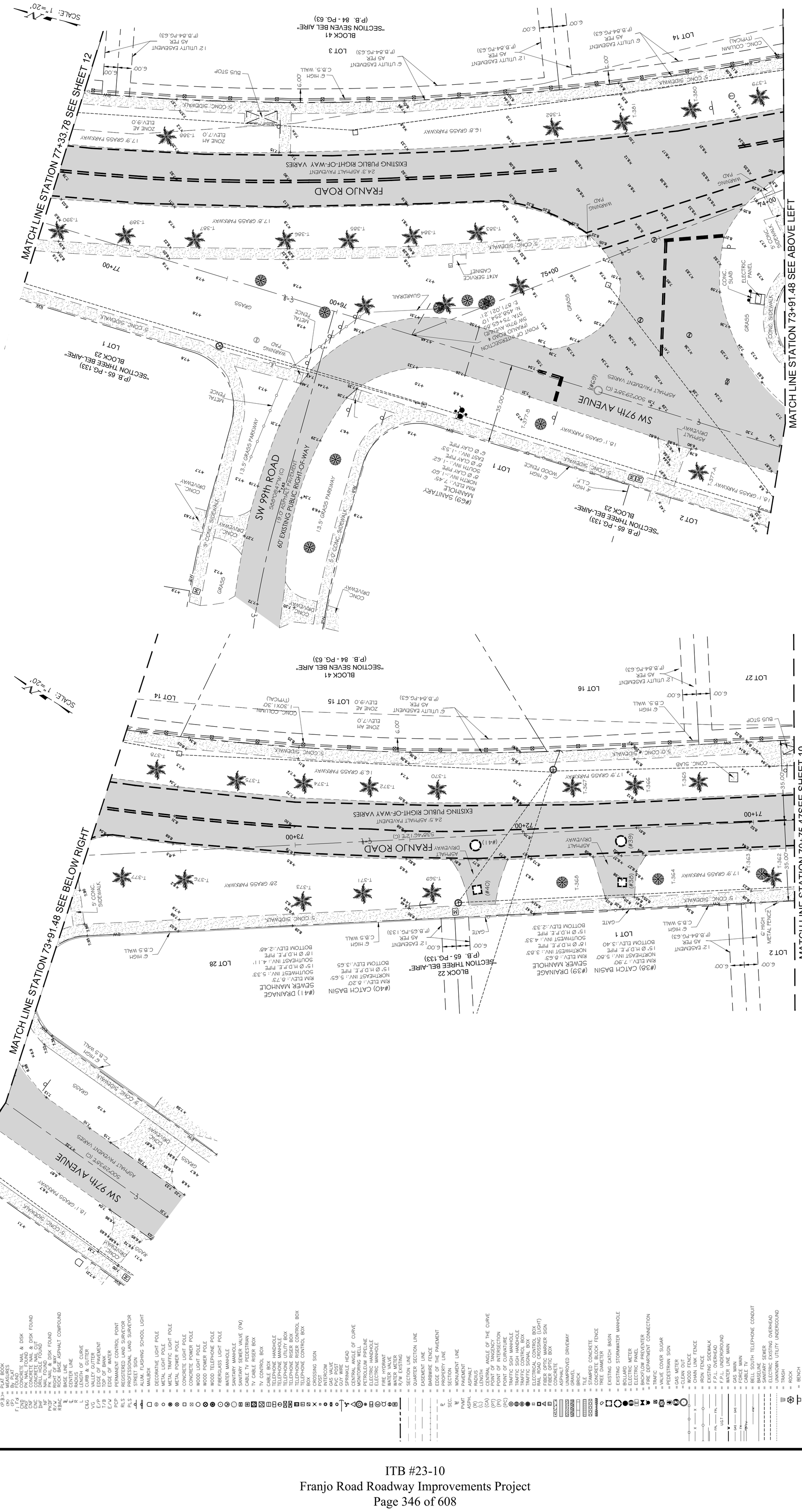
LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 11 OF 15

MAP OF TOPOGRAPHIC SURVEY



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= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PAY POST
= GUY WIRE
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= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
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= GRAVEL
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= TRASH
= ROCK
= BENCH
= FLOW LIGHT
= DUCTILE IRON PIPE
= PALM
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DESIGNED BY	NAME	DATE
CHECKED BY	X.X.	
SUPERVISED BY:	X.X.	

	NAME	DATE
DRAWN BY	SF	10-13-2020
CHECKED BY	GS	10-16-2020

DATE	BY	DESCRIPTION

REVISIONS		
DESCRIPTION	DATE	BY
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
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MIAMI-DADE
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MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 12 OF 15

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ELEV = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(PG.) = PAGE
(P.B.) = PLAT BOOK
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= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
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= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
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= FIRE HYDRANT
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DIP = DUCTILE IRON PIPE
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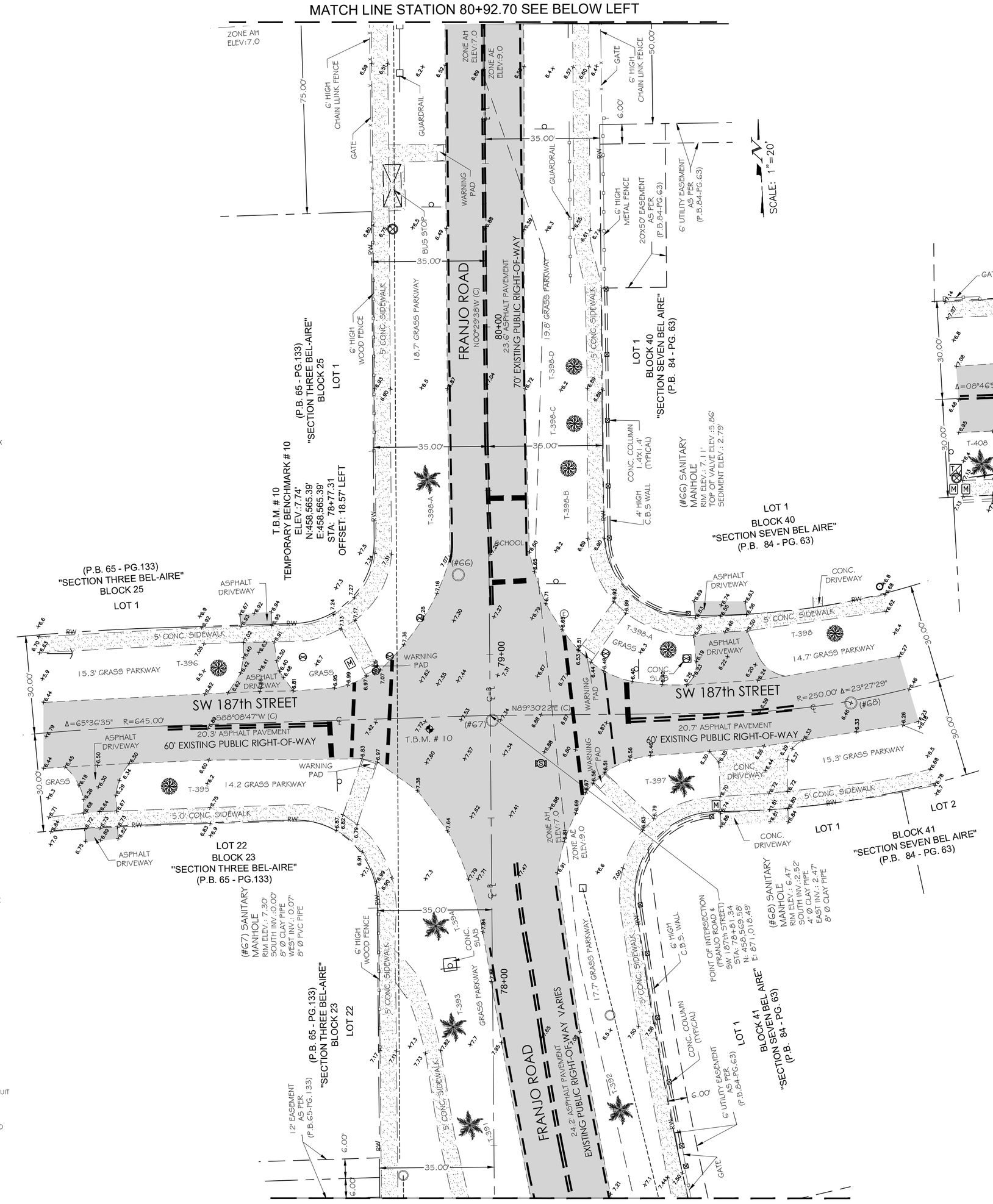
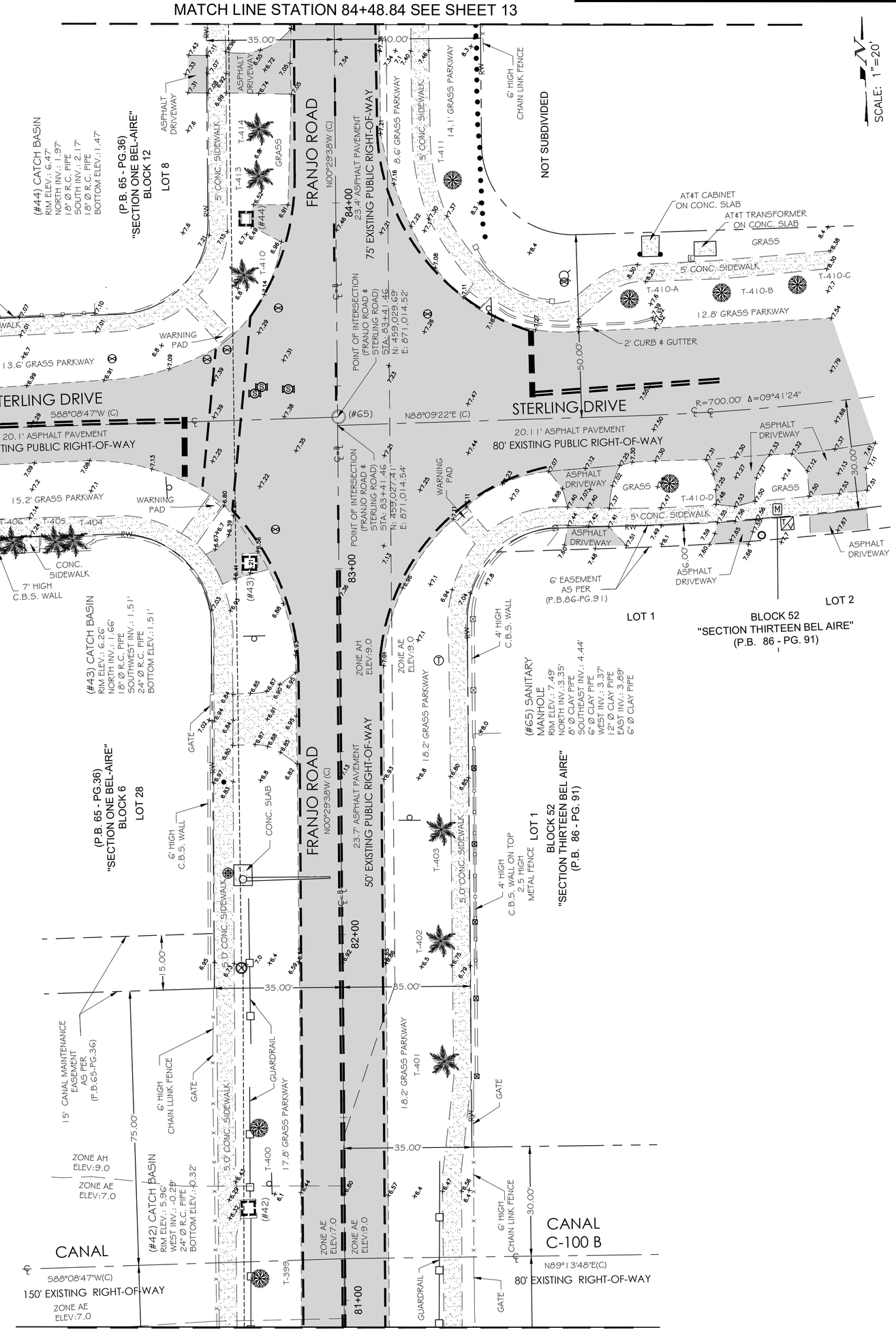
MATCH LINE STATION 80+92.70 SEE BELOW LEFT



MATCH LINE STATION 77+33.78 SEE SHEET 11

MATCH LINE STATION 84+48.84 SEE SHEET 13



MATCH LINE STATION 80+92.70 SEE BELOW LEFT

REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY–SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	DH-GS	10-16-2020
SUPERVISED BY:					

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FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. SHEET 13 OF 15

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= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
℄ = PROPERTY LINE
SEC. = SECTION
ℳ = MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
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(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
F.P.L. = F.P.L. OVERHEAD
U.G.T. = F.P.L. UNDERGROUND
= WATER LINE MAIN
GAS = GAS MAIN
FM = FORCE MAIN
CATV = CABLE TV
AT&T = BELL SOUTH TELEPHONE CONDUIT
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= TRASH
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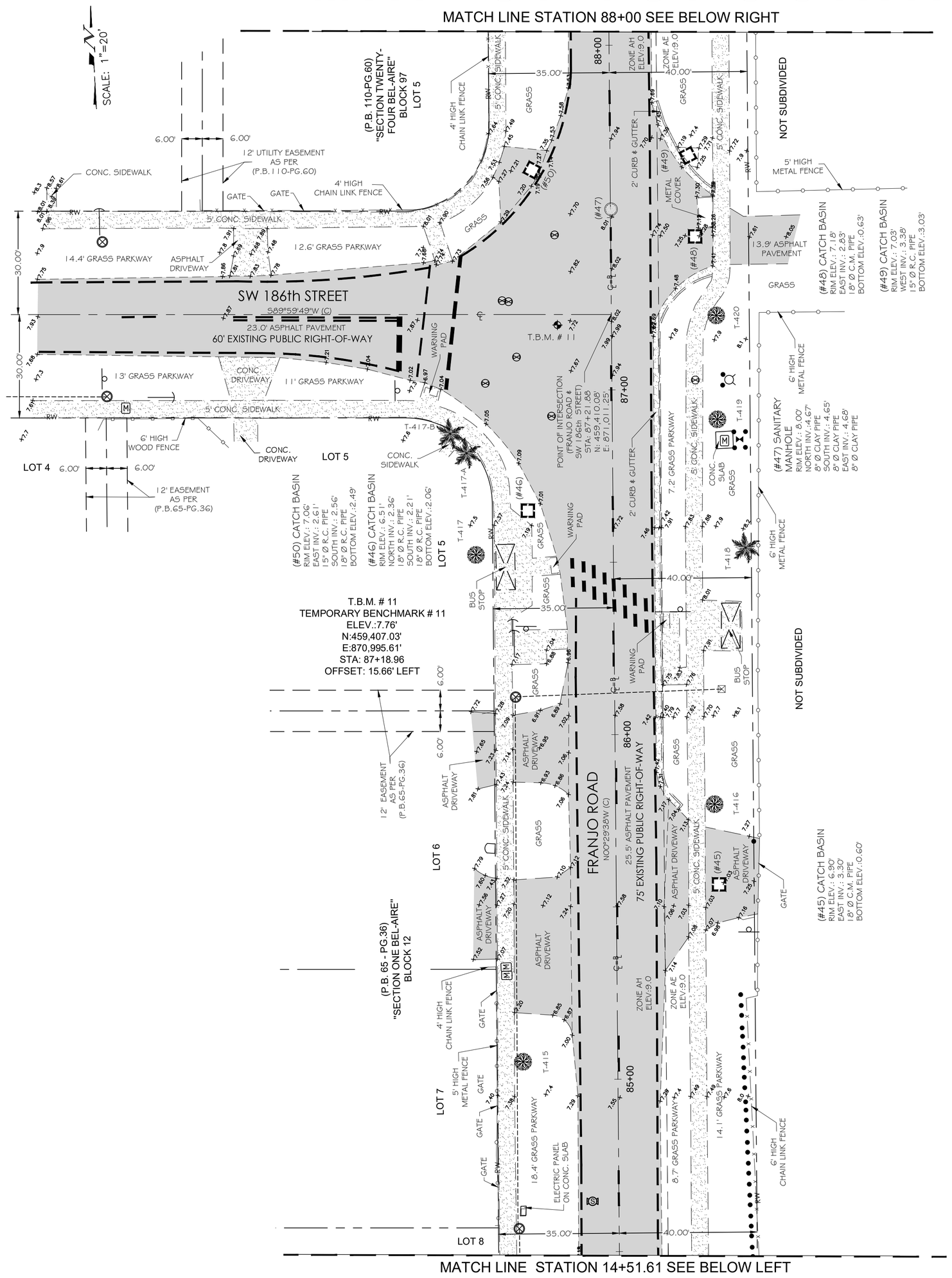
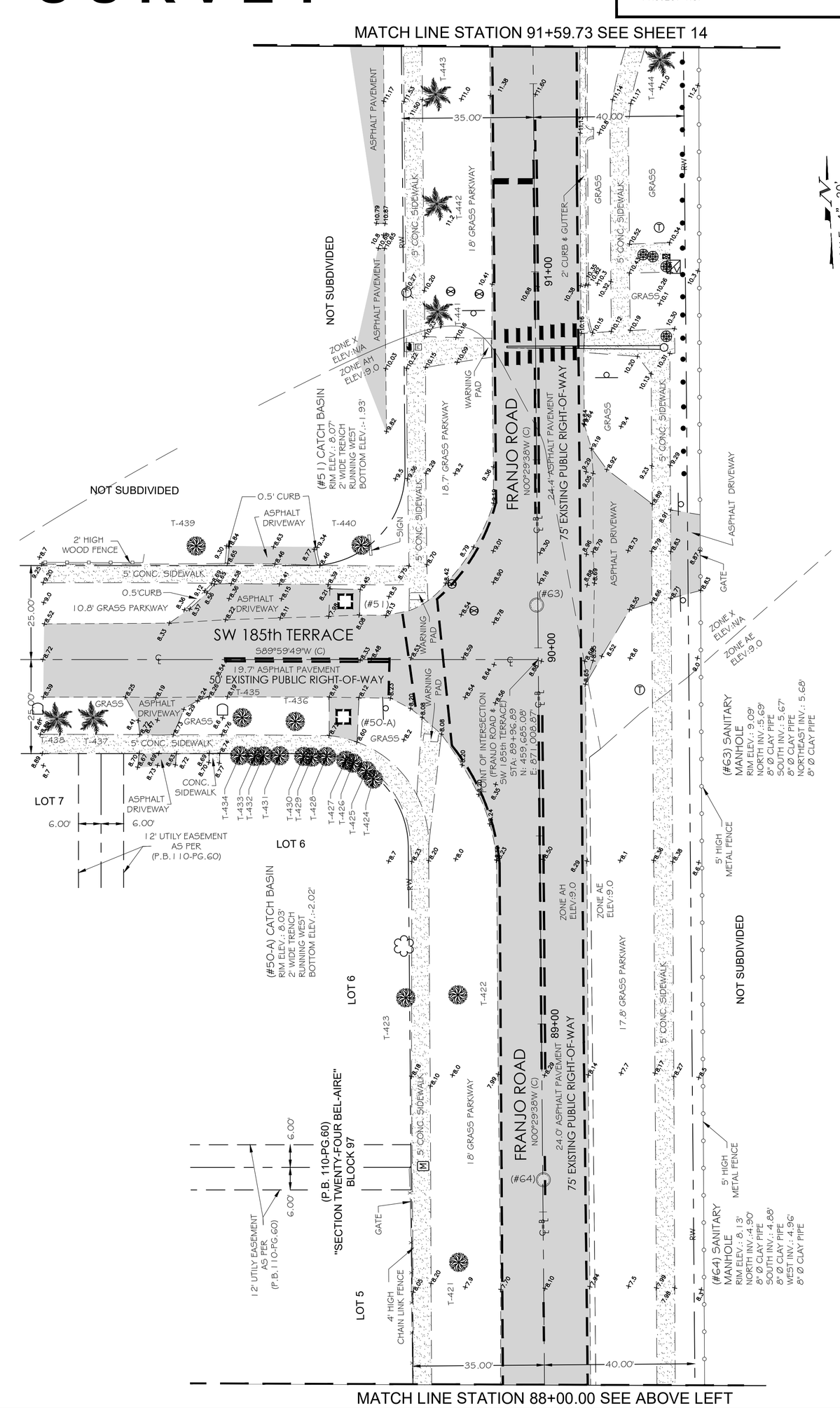
DIP = DUCTILE IRON PIPE
= PALM
= TREE





REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 14 OF 15

LEGEND AND ABBREVIATIONS:

ELEV = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(PG.) = PAGE
(P.B.)= PLAT BOOK
(M) = MEASURES
(P) = By PLAT
F., Fd = FOUND
CND = CONCRETE NAIL & DISK
PKF = PK NAIL FOUND
CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
VG = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
PLS = PROFESSIONAL LAND SURVEYOR
= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
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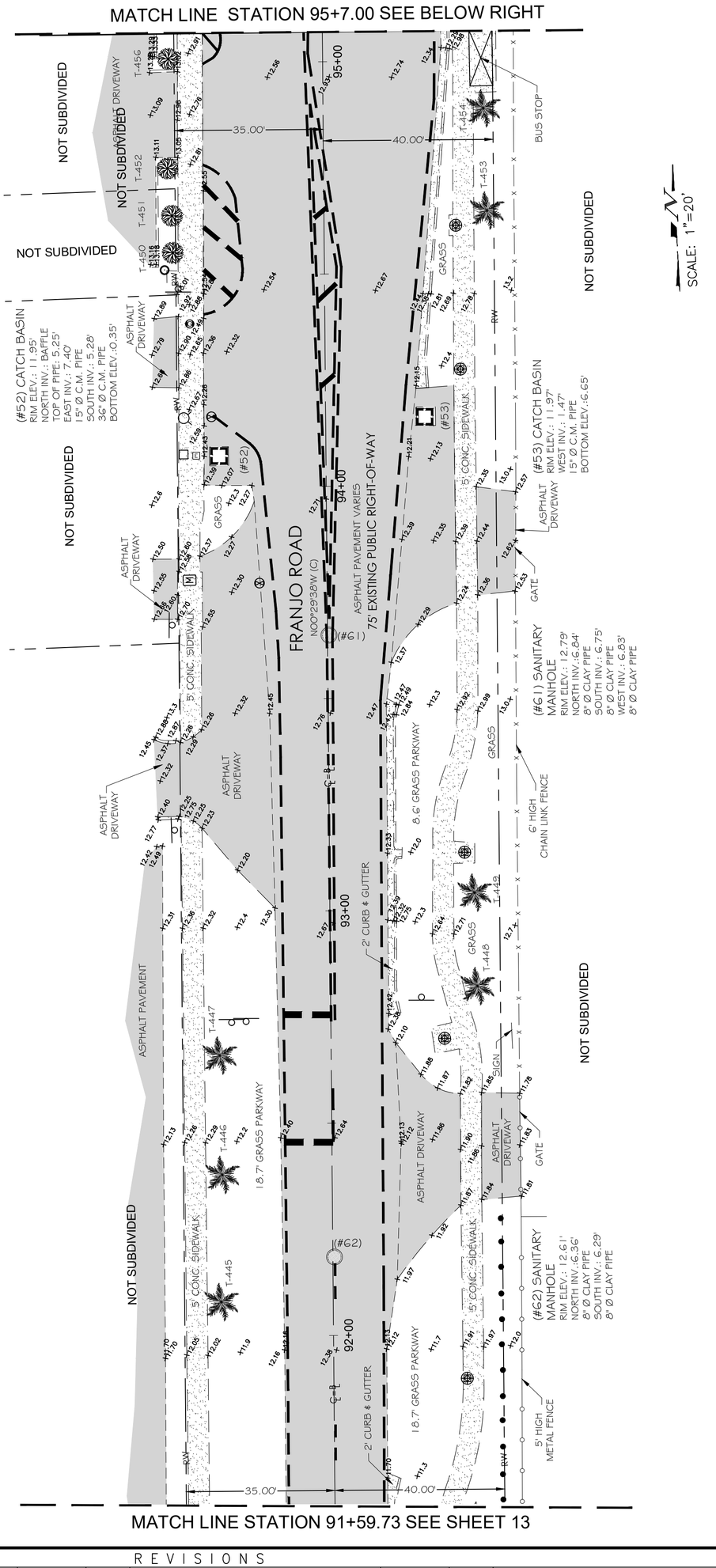

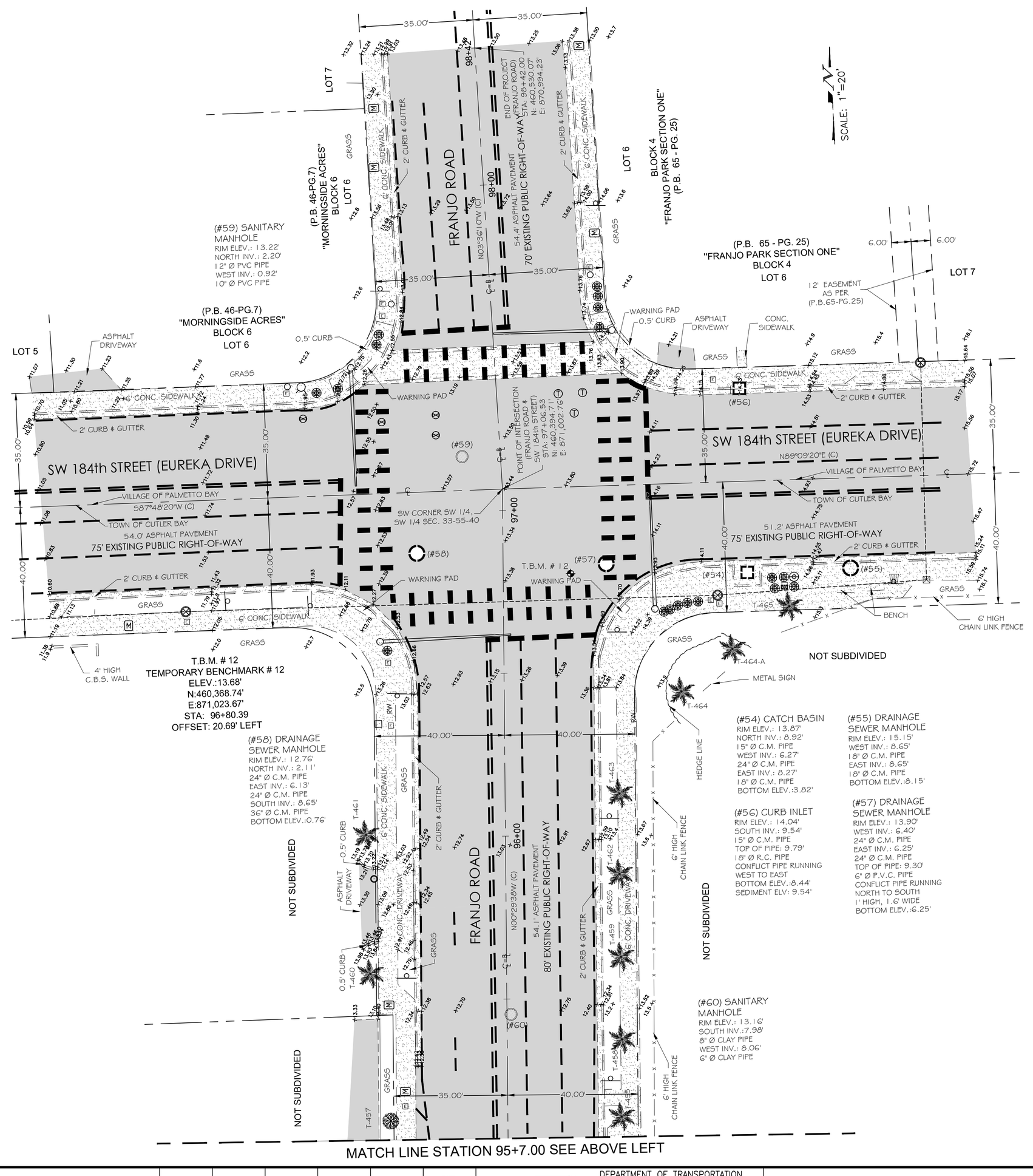

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PROJECT NO.

SHEET 15 OF 15

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FPL = F.P.L. OVERHEAD
U.G.T = F.P.L. UNDERGROUND
W = WATER LINE MAIN
GAS = GAS MAIN
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= UNKNOWN UTILITY UNDERGOUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE
= PALM
= TREE
= ORNAMENTAL TREE

TREE TABLE

No.	COMMON NAME	BOTANICAL NAME	DBH	HEIGHT	SPREAD
1	TREE OAK	QUERCUS	6"	15'	24"
2	TREE OAK	QUERCUS	6"	15'	24"
3	TREE OAK	QUERCUS	6"	15'	24"
4	YELLOW ROYAL POINCIAN	DELONIX REGIA	8"	14'	40'
5	BUSH				
6	BUSH				
7	SABAL PALM	SABAL PALMETTO	10"	12'	12'
8	SABAL PALM	SABAL PALMETTO	10"	15'	12'
9	SABAL PALM	SABAL PALMETTO	10"	15'	12'
10	SABAL PALM	SABAL PALMETTO	10"	12'	12'
11	BUSH				
12	SABAL PALM	SABAL PALMETTO	7"	10'	8'
13	SABAL PALM	SABAL PALMETTO	10"	14'	8'
14	SABAL PALM	SABAL PALMETTO	8"	14'	6'
15	COCONUT PALM	COCOS NUCIFERA	7"	12'	14'
16	COCONUT PALM	COCOS NUCIFERA	7"	16'	16'
17	COCONUT PALM	COCOS NUCIFERA	6"	13'	10'
18	MAMEY	POUTERIA SAPOTA	5"	13'	10'
19	MAMEY	POUTERIA SAPOTA	5"	13'	10'
20	SABAL PALM	SABAL PALMETTO	12"	7'	5'
21	CLUSTER PALM	CYRTOSTACHYS RENDA			
22	COCONUT PALM	COCOS NUCIFERA	6"	14'	16'
23	CLUSTER PALM	CYRTOSTACHYS RENDA			
24	ROYAL PALM	ROYSTONEA REGIA	12"	20'	18'
25	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
26	BLACK OLIVE	OLEA EUROPAEA	30"	24'	50'
27	MAHOGANY	SWIETENIA MACROPHYLLA	36"	26'	45'
28	SABAL PALM	SABAL PALMETTO	4"	7'	4'
29	COCONUT PALM	COCOS NUCIFERA	12"	27'	18'
30	MAHOGANY	SWIETENIA MACROPHYLLA	22"	25'	45'
31	MAHOGANY	SWIETENIA MACROPHYLLA	10"	18'	35'
32	MAHOGANY	SWIETENIA MACROPHYLLA	27"	25'	48'
33	MAHOGANY	SWIETENIA MACROPHYLLA	24"	24'	40'
34	MAHOGANY	SWIETENIA MACROPHYLLA	19"	19'	35'
35	COCONUT PALM	COCOS NUCIFERA	7"	23'	18'
36	COCONUT PALM	COCOS NUCIFERA	7"	18'	12'
37	COCONUT PALM	COCOS NUCIFERA	6"	12'	12'
38	COCONUT PALM	COCOS NUCIFERA	7"	18'	12'
39	COCONUT PALM	COCOS NUCIFERA	7"	18'	12'
40	COCONUT PALM	COCOS NUCIFERA	5"	10'	10'
41	COCONUT PALM	COCOS NUCIFERA	6"	15'	12'
42	BUSH				
43	MAHOGANY	SWIETENIA MACROPHYLLA	22"	24'	42'
44	SABAL PALM	SABAL PALMETTO	12"	6'	12'
45	GUMBO LIMBO	BURSERA SIMARUBA	18"	25'	40'
46	MAHOGANY	SWIETENIA MACROPHYLLA	24"	18'	40'
47	ROYAL PALM	ROYSTONEA REGIA	15"	21'	20'
48	ROYAL PALM	ROYSTONEA REGIA	15"	21'	20'
49	ORQUIDIA SALVAJE	NEOTINEA TRIDENTATA	24"	23'	35'
50	GUMBO LIMBO	BURSERA SIMARUBA	5"	16'	15'
51	CLUSTER PALM				
52	ROYAL PALM	ROYSTONEA REGIA			
53	BUSH				
54	BUSH				
55	BUSH				
56	ROYAL PALM	ROYSTONEA REGIA	14"	22'	16'
57	FICUS TREE	FICUS BENJAMINA	22"	16'	20'
58	MAHOGANY	SWIETENIA MACROPHYLLA	26"	25'	45'
59	SABAL PALM	SABAL PALMETTO	10"	17'	15'
60	MAHOGANY	SWIETENIA MACROPHYLLA	12"	25'	50'
61	MAHOGANY	SWIETENIA MACROPHYLLA	5"	16'	10'
62	MAHOGANY	SWIETENIA MACROPHYLLA	10"	16'	20'
63	PINE TREE	PINUS	12"	20'	10'
64	PINE TREE	PINUS	12"	20'	10'
65	COCONUT PALM	COCOS NUCIFERA	6"	14'	20'
66	SABAL PALM	SABAL PALMETTO	12"	16'	12'
67	COCONUT PALM	COCOS NUCIFERA	5"	14'	12'
68	COCONUT PALM	COCOS NUCIFERA	5"	14'	12'
69	ROYAL PALM	ROYSTONEA REGIA	13"	24'	16'
70	ROYAL PALM	ROYSTONEA REGIA	16"	6'	12'
71	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
72	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
73	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
74	OAK	QUERCUS	7"	11'	15'
75	OAK	QUERCUS	6"	8'	10'
76	GUMBO LIMBO	SEQUOIADENDRON GIGANTEUM	12"	14'	16'
77	GUMBO LIMBO	SEQUOIADENDRON GIGANTEUM	7"	12'	13'
78	ROYAL PALM	ROYSTONEA REGIA	12"	22'	16'
79	ROYAL PALM	ROYSTONEA REGIA	12"	25'	16'
80	FICUS TREE	FICUS BENJAMINA	12"	13'	10'
81	ROYAL PALM	ROYSTONEA REGIA	12"	25'	16'
82	FICUS TREE	FICUS BENJAMINA	24"	20'	30'
83	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
84	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
85	COCONUT PALM	COCOS NUCIFERA	5"	13'	10'
86	ROYAL PALM	ROYSTONEA REGIA	12"	25'	16"
87	COCONUT PALM	COCOS NUCIFERA	4"	8'	8'
88	COCONUT PALM	COCOS NUCIFERA	4"	8'	8'
89	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
90	ROYAL PALM	ROYSTONEA REGIA	12"	20'	16'
91	ROYAL PALM	ROYSTONEA REGIA	12"	20'	16'
92	BLACK OLIVE	OLEA EUROPAEA	18"	23'	45'
93	BLACK OLIVE	OLEA EUROPAEA	16"	22'	50'
94	ROYAL PALM	ROYSTONEA REGIA	4"	20'	10'
95	COCONUT PALM	COCOS NUCIFERA	7"	12'	20'
96	COCONUT PALM	COCOS NUCIFERA	10"	15'	20'
97	BLACK OLIVE	OLEA EUROPAEA	22"	24'	50'
98	BLACK OLIVE	OLEA EUROPAEA	18"	23'	50'
99	BLACK OLIVE	OLEA EUROPAEA	14"	22'	40'
100	BLACK OLIVE	OLEA EUROPAEA	24"	24'	50'
101	ROYAL PALM	ROYSTONEA REGIA	17"	25'	16'
102	BLACK OLIVE	OLEA EUROPAEA	22'	23'	55'
103	TREE OAK	QUERCUS	8"	16'	20'
104	ROYAL PALM	ROYSTONEA REGIA	12"	30'	10'
105	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
106	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
107	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
108	ROYAL PALM	ROYSTONEA REGIA	4"	18'	12'
109	ROYAL PALM	ROYSTONEA REGIA	5"	18'	12'
110	ABOCADO TREE	PERSEA AMERICANA	14"	15'	25'
111	ROYAL PALM	ROYSTONEA REGIA	12"	30'	10'
112	ROYAL PALM	ROYSTONEA REGIA	12"	30'	10'
113	ROYAL PALM	ROYSTONEA REGIA	12"	30'	10'
114	TREE ROYAL POINCIANA	DELONIX REGIA	12"	15'	25'
115	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
116	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
117	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
118	CHRITSMAS PALM	ADONIDIA MERRILLII	5"	18'	12'
119	CHRITSMAS PALM	ADONIDIA MERRILLII	5"	18'	12'
120	ROYAL PALM	ROYSTONEA REGIA	9"	25'	15'

TREE TABLE

No.	COMMON NAME	BOTANICAL NAME	DBH	HEIGHT	SPREAD
121	COCONUT PALM	COCOS NUCIFERA	9"	20'	15'
122	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
123	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
124	TREE OAK	QUERCUS	18"	25'	40'
125	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
126	ROYAL PALM	ROYSTONEA REGIA	1"	30'	13'
127	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
128	COCONUT PALM	COCOS NUCIFERA	6"	20'	15'
129	SABAL PALM	SABAL PALMETTO	6"	10'	10'
130	DATE PALM	PHOENIX DACTYLIFERA	5"	15'	10'
131	SABAL PALM	SABAL PALMETTO	6"	10'	10'
132	ARECA CLUSTER	CHRYSALIDOCARPUS LUTESCENS			
133	ARECA CLUSTER	CHRYSALIDOCARPUS LUTESCENS			
134	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
135	COCONUT PALM	COCOS NUCIFERA	18"	38'	20'
136	COCONUT PALM	COCOS NUCIFERA	18"	30'	20'
137	ROYAL PALM	ROYSTONEA REGIA	18"	30'	20'
138	COCONUT PALM	COCOS NUCIFERA	18"	28'	20'
139	TREE OAK	QUERCUS	12"	25'	20'
140	COCONUT PALM	COCOS NUCIFERA	6"	12'	12'
141	COCONUT PALM	COCOS NUCIFERA	6"	12'	12'
142	ROYAL POINCIANA	DELONIX REGIA	18"	25'	30'
143	COCONUT PALM	COCOS NUCIFERA	6"	15'	12'
144	COCONUT PALM	COCOS NUCIFERA	6"	15'	12'
145	TREE OAK	QUERCUS	7"	17'	17'
146	TREE OAK	QUERCUS	7"	17'	17'
147	TREE OAK	QUERCUS	7"	17'	17'
147-A	COCONUT PALM	COCOS NUCIFERA	10"	18'	15'
147-B	COCONUT PALM	COCOS NUCIFERA	10"	18'	15'
148	TREE OAK	QUERCUS	7"	17'	17'
149	TREE OAK	QUERCUS	7"	17'	16'
150	GUMBO LIMBO	BURSERA SIMARUBA	6"	15'	15'
151	COCONUT PALM	COCOS NUCIFERA	6"	18'	20'
152	COCONUT PALM	COCOS NUCIFERA	6"	18'	20'
153	GUMBO LIMBO	BURSERA SIMARUBA	18"	30'	35'
154	GUMBO LIMBO	BURSERA SIMARUBA	12"	30'	25'
155	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	30'	18'
156	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	24'	18'
157	COCONUT PALM	COCOS NUCIFERA	12"	45'	15'
158	COCONUT PALM	COCOS NUCIFERA	6"	17'	15'
159	COCONUT PALM	COCOS NUCIFERA	6"	15'	15'
160	COCONUT PALM	COCOS NUCIFERA	12"	45'	15'
161	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	24'	18'
162	SABAL PALM	SABAL PALMETTO	6"	15'	12'
163	SABAL PALM	SABAL PALMETTO	6"	17'	12'
164	SABAL PALM	SABAL PALMETTO	18"	38'	20'
165	PINK -THUMPER	ARCHONTOPHOENIX CUNNINGHAMIANA	12"	25'	25'
166	PINK -THUMPER	ARCHONTOPHOENIX CUNNINGHAMIANA	9"	25'	25'
167	TREE OAK	QUERCUS	12"	25'	20'
168	TREE OAK	QUERCUS	14"	25'	40'
169	TREE OAK	QUERCUS	30"	25'	40'
170	SABAL PALM	SABAL PALMETTO	12"	25'	15"
171	SABAL PALM	SABAL PALMETTO	12"	25'	15"
172	SABAL PALM	SABAL PALMETTO	8"	25'	15'
173	SABAL PALM	SABAL PALMETTO	12"	25'	15'
174	TREE	UNKNOWN NAME	4"	12'	12'
175	CLUSTER PALM	CARYOTA MITIS	4"	15'	12'
176	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
177	SABAL PALM	SABAL PALMETTO	12"	25'	15'
178	SABAL PALM	SABAL PALMETTO	12"	30'	15'
179	ROYAL PALM	ROYSTONEA REGIA	12"	40'	15'
180	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
181	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
182	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
183	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
184	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
185	ROYAL POINCIANA	DELONIX REGIA	17"	30'	38'
186	TREE	UNKNOWN NAME	24"	25'	40'
187	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
188	PALM FOX TAIL	WODYETIA BIFURCATA	5"	18'	12'
189	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
190	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
191	ROYAL PALM	ROYSTONEA REGIA	12"	50'	20'
192	SABAL PALM	SABAL PALMETTO	4"	18'	12'
193	SABAL PALM	SABAL PALMETTO	4"	18'	12'
194	ROYAL POINCIANA	DELONIX REGIA	16"	30'	38'
195	ROYAL PALM	ROYSTONEA REGIA	12"	35'	25'
196	TREE	UNKNOWN NAME	42"	35'	38'
198	TREE	UNKNOWN NAME	30'	35'	40'
199	SABAL PALM	SABAL PALMETTO	5"	15'	10'
200	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
201	ROYAL PALM	ROYSTONEA REGIA	12'	45"	25"
202	ROYAL PALM	ROYSTONEA REGIA	12'	35'	25'
203	SABAL PALM	SABAL PALMETTO	4"	10'	10'
204	SABAL PALM	SABAL PALMETTO	4"	8'	8'
205	SABAL PALM	SABAL PALMETTO	4"	20'	12'
206	TREE	UNKNOWN NAME	24"	35'	38'
207	ROYAL PALM	ROYSTONEA REGIA	12"	45'	25'
208	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
209	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
210	TREE	UNKNOWN NAME	24"	30'	30'
211	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
212	ROYAL PALM	ROYSTONEA REGIA	12"	38'	20'
213	TREE	UNKNOWN NAME	30"	40'	25'
214	TREE	UNKNOWN NAME	30"	50'	38'
215	TREE NISPERO	ERIOBOTRYA JAPONICA	8"	25'	20'
216	TREE	UNKNOWN NAME	24"	40'	38'
217	TREE	UNKNOWN NAME	8"	40'	50'
218	SABAL PALM	SABAL PALMETTO	5"	10'	8'
219	SABAL PALM	SABAL PALMETTO	5"	10'	8'
220	SABAL PALM	SABAL PALMETTO	5"	15'	10'
221	SABAL PALM	SABAL PALMETTO	5"	15'	10'
222	SABAL PALM	SABAL PALMETTO	5"	15'	10'
223	SABAL PALM	SABAL PALMETTO	5"	12'	8'
224	SABAL PALM	SABAL PALMETTO	5"	15'	10'
225	TREE	UNKNOWN NAME	4"	15'	8'
226	TREE	UNKNOWN NAME	4"	12'	6'
227	TREE	UNKNOWN NAME	4"	12'	6'
228	TREE	UNKNOWN NAME	4"	12'	6'
229	SABAL PALM	SABAL PALMETTO	8"	20'	10'
230	SABAL PALM	SABAL PALMETTO	8"	20'	10'
231	SABAL PALM	SABAL PALMETTO	8"	20'	10'
232	PALM DATE	PHOENIX DACTYLIFERA	4"	6'	5'
233	PALM CHRITSMAS	ADONIDIA MERRILLII	4"	12'	10'
234	SABAL PALM	SABAL PALMETTO	6"	15'	10'
235	SABAL PALM	SABAL PALMETTO	6"	15'	10'
236	SABAL PALM	SABAL PALMETTO	6"	15'	10'
237	TREE	UNKNOWN NAME	4"	8'	5'
238	SABAL PALM	SABAL PALMETTO	6"	15'	10'
239	MAHOGANY	SWIETENIA MACROPHYLLA	36"	50'	50'
240	MAHOGANY	SWIETENIA MACROPHYLLA	30"	50'	50'

TREE TABLE

No.	COMMON NAME	BOTANICAL NAME	DBH	HEIGHT	SPREAD
241	ROYAL PALM	ROYSTONEA REGIA	12"	29'	15'
242	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
243	TREE	UNKNOWN NAME	48"	40'	60'
244	ROYAL PALM	ROYSTONEA REGIA	12"	26'	15'
245	ROYAL PALM	ROYSTONEA REGIA	12"	32'	15'
246	ROYAL PALM	ROYSTONEA REGIA	12"	28'	15'
247	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
248	CHRISTMAS TREE	ARAUCARIA COLOMNARIS	5"	15'	15'
249	MAJESTY PALM	RAVENEA RIVULARIS	12"	10'	7'
250	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
251	ROYAL PALM	ROYSTONEA REGIA	22"	30'	15'
252	QUEEN PALM	SYAGRUS ROMANZOFFIANA	5"	18'	15'
253	QUEEN PALM	SYAGRUS ROMANZOFFIANA	5"	18'	15'
254	QUEEN PALM	SYAGRUS ROMANZOFFIANA	5"	18'	15'
255	QUEEN PALM	SYAGRUS ROMANZOFFIANA	5"	18'	15'
256	QUEEN PALM	SYAGRUS ROMANZOFFIANA	5"	18'	15'
257	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
258	CHRITSMAS PALM	ARAUCARIA COLOMNARIS	5"	12'	12'
259	CHRITSMAS PALM	ARAUCARIA COLOMNARIS	5"	10'	10'
260	COCONUT PALM	COCOS NUCIFERA	6"	15'	10'
261	COCONUT PALM	COCOS NUCIFERA	6"	18'	10'
262	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
263	COCONUT PALM	COCOS NUCIFERA	5"	20'	15'
264	COCONUT PALM	COCOS NUCIFERA	5"	18'	15'
265	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
266	CHRITSMAS PALM	ARAUCARIA COLOMNARIS	5"	13'	7'
267	CHRITSMAS PALM	ARAUCARIA COLOMNARIS	5"	15'	9'
268	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
269	COCONUT PALM	COCOS NUCIFERA	7"	18'	15'
270	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
271	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
272	ROYAL PALM	ROYSTONEA REGIA	15"	35'	18'
273	TREE	UNKNOWN NAME	18"	25'	40'
274	TREE	UNKNOWN NAME	18"	25'	40'
275	TREE	UNKNOWN NAME	15"	20'	25'
276	CHRITSMAS PALM	ARAUCARIA COLOMNARIS	5"	15'	9'
276-A	COCONUT PALM	COCOS NUCIFERA	7"	15'	16'
277	BLACK OLIVE	OLEA EUROPAEA	14"	13'	35'
278	ROYAL PALM	ROYSTONEA REGIA	14"	18'	10'
279	COCONUT PALM	COCOS NUCIFERA	7"	15'	16'
280	ROYAL PALM	ROYSTONEA REGIA	12"	15'	10'
281	ROYAL PALM	ROYSTONEA REGIA	12"	18'	10'
282	ROYAL PALM	ROYSTONEA REGIA	12"	18'	10'
283	ROYAL PALM	ROYSTONEA REGIA	12"	18'	10'
284	ROYAL PALM	ROYSTONEA REGIA	14"	18'	10'
286	CLUSTER PALM	CARYOTA MITIS			
287	CLUSTER PALM	CARYOTA MITIS			
288	TRAVELLER CLUSTER PALM	RAVENALA MADAGASCARIENSIS		16'	14'
289	ROYAL PALM	ROYSTONEA REGIA	12"	29'	12'
290	ROYAL PALM	ROYSTONEA REGIA	12"	35'	12'
291	ROYAL PALM	ROYSTONEA REGIA	12"	29'	12'
292	ROYAL PALM	ROYSTONEA REGIA	12"	35'	14'
293	ROYAL PALM	ROYSTONEA REGIA	12"	35'	14'
294	ROYAL PALM	ROYSTONEA REGIA	12"	35'	14'
294-A	ROYAL PALM	ROYSTONEA REGIA	12"	35'	14'
295	ROYAL PALM	ROYSTONEA REGIA	12"	40'	15'
296	ROYAL PALM	ROYSTONEA REGIA	13"	25'	16'
297	ROYAL PALM	ROYSTONEA REGIA	13"	25'	16'
298	BUSH				
299	OAK	QUERCUS	18"	20'	35'
300	ROYAL PALM	ROYSTONEA REGIA	13"	25'	16'
301	ROYAL PALM	ROYSTONEA REGIA	13"	25'	16'
302	SABAL PALM	SABAL PALMETTO	10"	8'	10'
303	SABAL PALM	SABAL PALMETTO	10"	8'	10'
304	SABAL PALM	SABAL PALMETTO	14"	25'	16'
305	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
306	ROYAL POINCIANA	DELONIX REGIA	17"	18'	42'
307	SABAL PALM	SABAL PALMETTO	4"	7'	6'
308	OAK	QUERCUS	7"	10'	24'
309	FICUS TREE	FICUS BENJAMINA	60"	18'	45"
310	ROYAL PALM	ROYSTONEA REGIA	14"	25'	16'
311	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
312	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
313	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
314	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
315	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
316	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
317	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
318	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
319	OAK	QUERCUS	6"	16'	16'
320	CLUSTER PALM	CARYOTA MITIS			
321	ROYAL PALM	ROYSTONEA REGIA	4"	10'	8'
322	CLUSTER PALM	CARYOTA MITIS			
323	COCONUT PALM	COCOS NUCIFERA	6"	12'	10'
324	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
325	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
326	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
327	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
328	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
329	SABAL PALM	SABAL PALMETTO	4"	8'	6'
330	SABAL PALM	SABAL PALMETTO	4"	8'	6'
331	CLUSTER PALM	CARYOTA MITIS			
332	SABAL PALM	SABAL PALMETTO	4"	8'	6'
333	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
334	ROYAL PALM	ROYSTONEA REGIA	10"	13'	10'
335	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
336	CLUSTER PALM	CARYOTA MITIS			
337	CLUSTER PALM	CARYOTA MITIS			
338	CLUSTER PALM	CARYOTA MITIS			
339	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
340	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
341	ROYAL PALM	ROYSTONEA REGIA	17"	22'	16'
342	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
343	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
344	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
345	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
346	ROYAL PALM	ROYSTONEA REGIA	17"	18'	16'
347	OAK	QUERCUS	6"	10'	13'
348	ROYAL PALM	ROYSTONEA REGIA	14"	17'	12'
349	BOTTLES BRUSH	CALLISTEMON	6"	8'	12'
350	OAK	QUERCUS	6"	8'	10'
351	BOTTLES BRUSH	CALLISTEMON	6"	7'	12'
352	MAHOGANY	SWIETENIA	18"	14'	25'
353	COCONUT PALM	COCOS NUCIFERA	10"	18'	20'
354	CLUSTER PALM	CARYOTA MITIS			
355	JUMBO PALM	TAHINA SPECTABILIS	6"	12'	12'
356	PINO PALM	BUTIA CAPITATA	12"	26'	8'
357	ROYAL PALM	ROYSTONEA REGIA	5"	8'	5'
358	ROYAL PALM	ROYSTONEA REGIA	8"	12'	8'
359	ROYAL PALM	ROYSTONEA REGIA	4"	11'	5'
360	ACKEE FRUIT	BLIGHI SAPIDA	10"	18'	40'

TREE TABLE

No.	COMMON NAME	BOTANICAL NAME	DBH	HEIGHT	SPREAD
121	COCONUT PALM	COCOS NUCIFERA	9"	20'	15'
122	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
123	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
124	TREE OAK	QUERCUS	18"	25'	40'
125	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
126	ROYAL PALM	ROYSTONEA REGIA	1"	30'	13'
127	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
128	COCONUT PALM	COCOS NUCIFERA	6"	20'	15'
129	SABAL PALM	SABAL PALMETTO	6"	10'	10'
130	DATE PALM	PHOENIX DACTYLIFERA	5"	15'	10'
131	SABAL PALM	SABAL PALMETTO	6"	10'	10'
132	ARECA CLUSTER	CHRYSALIDOCARPUS LUTESCENS			
133	ARECA CLUSTER	CHRYSALIDOCARPUS LUTESCENS			
134	ROYAL PALM	ROYSTONEA REGIA	12"	30'	12'
135	COCONUT PALM	COCOS NUCIFERA	18"	38'	20'
136	COCONUT PALM	COCOS NUCIFERA	18"	30'	20'
137	ROYAL PALM	ROYSTONEA REGIA	18"	30'	20'
138	COCONUT PALM	COCOS NUCIFERA	18"	28'	20'
139	TREE OAK	QUERCUS	12"	25'	20'
140	COCONUT PALM	COCOS NUCIFERA	6"	12'	12'
141	COCONUT PALM	COCOS NUCIFERA	6"	12'	12'
142	ROYAL POINCIANA	DELONIX REGIA	18"	25'	30'
143	COCONUT PALM	COCOS NUCIFERA	6"	15'	12'
144	COCONUT PALM	COCOS NUCIFERA	6"	15'	12'
145	TREE OAK	QUERCUS	7"	17'	17'
146	TREE OAK	QUERCUS	7"	17'	17'
147	TREE OAK	QUERCUS	7"	17'	17'
147-A	COCONUT PALM	COCOS NUCIFERA	10"	18'	15'
147-B	COCONUT PALM	COCOS NUCIFERA	10"	18'	15'
148	TREE OAK	QUERCUS	7"	17'	17'
149	TREE OAK	QUERCUS	7"	17'	16'
150	GUMBO LIMBO	BURSERA SIMARUBA	6"	15'	15'
151	COCONUT PALM	COCOS NUCIFERA	6"	18'	20'
152	COCONUT PALM	COCOS NUCIFERA	6"	18'	20'
153	GUMBO LIMBO	BURSERA SIMARUBA	18"	30'	35'
154	GUMBO LIMBO	BURSERA SIMARUBA	12"	30'	25'
155	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	30'	18'
156	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	24'	18'
157	COCONUT PALM	COCOS NUCIFERA	12"	45'	15'
158	COCONUT PALM	COCOS NUCIFERA	6"	17'	15'
159	COCONUT PALM	COCOS NUCIFERA	6"	15'	15'
160	COCONUT PALM	COCOS NUCIFERA	12"	45'	15'
161	PALM KING	ARCHONTOPHOENIX CUNNINGHAMIANA	6"	24'	18'
162	SABAL PALM	SABAL PALMETTO	6"	15'	12'
163	SABAL PALM	SABAL PALMETTO	6"	17'	12'
164	SABAL PALM	SABAL PALMETTO	18"	38'	20'
165	PINK -THUMPER	ARCHONTOPHOENIX CUNNINGHAMIANA	12"	25'	25'
166	PINK -THUMPER	ARCHONTOPHOENIX CUNNINGHAMIANA	9"	25'	25'
167	TREE OAK	QUERCUS	12"	25'	20'
168	TREE OAK	QUERCUS	14"	25'	40'
169	TREE OAK	QUERCUS	30"	25'	40'
170	SABAL PALM	SABAL PALMETTO	12"	25'	15"
171	SABAL PALM	SABAL PALMETTO	12"	25'	15"
172	SABAL PALM	SABAL PALMETTO	8"	25'	15'
173	SABAL PALM	SABAL PALMETTO	12"	25'	15'
174	TREE	UNKNOWN NAME	4"	12'	12'
175	CLUSTER PALM	CARYOTA MITIS	4"	15'	12'
176	ROYAL PALM	ROYSTONEA REGIA	12"	30'	15'
177	SABAL PALM	SABAL PALMETTO	12"	25'	15'
178	SABAL PALM	SABAL PALMETTO	12"	30'	15'
179	ROYAL PALM	ROYSTONEA REGIA	12"	40'	15'
180	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
181	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
182	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
183	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
184	ROYAL PALM	ROYSTONEA REGIA	9"	30'	15'
185	ROYAL POINCIANA	DELONIX REGIA	17"	30'	38'
186	TREE	UNKNOWN NAME	24"	25'	40'
187	ROYAL PALM	ROYSTONEA REGIA	9"	35'	20'
188	PALM FOX TAIL	WODYETIA BIFURCATA	5"	18'	12'
189	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
190	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
191	ROYAL PALM	ROYSTONEA REGIA	12"	50'	20'
192	SABAL PALM	SABAL PALMETTO	4"	18'	12'
193	SABAL PALM	SABAL PALMETTO	4"	18'	12'
194	ROYAL POINCIANA	DELONIX REGIA	16"	30'	38'
195	ROYAL PALM	ROYSTONEA REGIA	12"	35'	25'
196	TREE	UNKNOWN NAME	42"	35'	38'
198	TREE	UNKNOWN NAME	30'	35'	40'
199	SABAL PALM	SABAL PALMETTO	5"	15'	10'
200	ROYAL PALM	ROYSTONEA REGIA	14"	40'	25'
201	ROYAL PALM	ROYSTONEA REGIA	12'	45"	25"
202	ROYAL PALM	ROYSTONEA REGIA	12'	35'	25'
203	SABAL PALM	SABAL PALMETTO	4"	10'	10'
204	SABAL PALM	SABAL PALMETTO	4"	8'	8'
205	SABAL PALM	SABAL PALMETTO	4"	20'	12'
206	TREE	UNKNOWN NAME	24"	35'	38'
207	ROYAL PALM	ROYSTONEA REGIA	12"	45'	25'
208	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
209	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
210	TREE	UNKNOWN NAME	24"	30'	30'
211	ROYAL PALM	ROYSTONEA REGIA	12"	40'	20'
212	ROYAL PALM	ROYSTONEA REGIA	12"	38'	20'
213	TREE	UNKNOWN NAME	30"	40'	25'
214	TREE	UNKNOWN NAME	30"	50'	38'
215	TREE NISPERO	ERIOBOTRYA JAPONICA	8"	25'	20'
216	TREE	UNKNOWN NAME	24"	40'	38'
217	TREE	UNKNOWN NAME	8"	40'	50'
218	SABAL PALM	SABAL PALMETTO	5"	10'	8'
219	SABAL PALM	SABAL PALMETTO	5"	10'	8'
220	SABAL PALM	SABAL PALMETTO	5"	15'	10'
221	SABAL PALM	SABAL PALMETTO	5"	15'	10'
222	SABAL PALM	SABAL PALMETTO	5"	15'	10'
223	SABAL PALM	SABAL PALMETTO	5"	12'	8'
224	SABAL PALM	SABAL PALMETTO	5"	15'	10'
225	TREE	UNKNOWN NAME	4"	15'	8'
226	TREE	UNKNOWN NAME	4"	12'	6'
227	TREE	UNKNOWN NAME	4"	12'	6'
228	TREE	UNKNOWN NAME	4"	12'	6'
229	SABAL PALM	SABAL PALMETTO	8"	20'	10'
230	SABAL PALM	SABAL PALMETTO	8"	20'	10'
231	SABAL PALM	SABAL PALMETTO	8"	20'	10'
232	PALM DATE	PHOENIX DACTYLIFERA	4"	6'	5'
233	PALM CHRITSMAS	ADONIDIA MERRILLII	4"	12'	10'
234	SABAL PALM	SABAL PALMETTO	6"	15'	10'
235	SABAL PALM	SABAL PALMETTO	6"	15'	10'
236	SABAL PALM	SABAL PALMETTO	6"	15'	10'
237	TREE	UNKNOWN NAME	4"	8'	5'
238	SABAL PALM	SABAL PALMETTO	6"	15'	10'
239	MAHOGANY	SWIETENIA MACROPHYLLA	36"	50'	50'
240	MAHOGANY	SWIETENIA MACROPHYLLA	30"	50'	50'

REVISIONS

DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
UPDATE SURVEY-SANITARY SEWER INVERTS	05-13-2022	JG				

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

PLANS FOR PROPOSED

IMPROVEMENTS TO

FRANJO ROAD

FROM OLD CUTLER RD to SW 184th Street

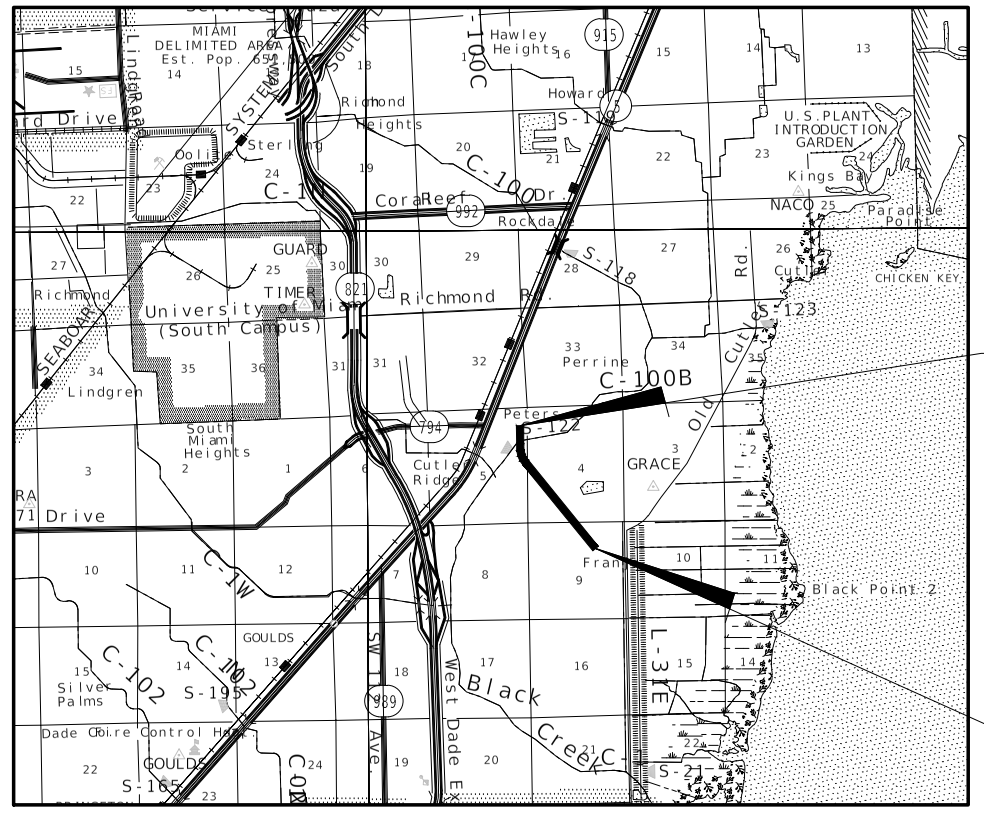
MIAMI–DADE COUNTY PROJECT NO. 20190519

[ROAD IMPACT FEE (RIF)]

INDEX OF SHEETS

STANDARD INDEX DRAWINGS

83–85	FDOT INDEX 520–001	CURB, CURB AND GUTTER
86	DCI–01	CURB INLET TYPES 1, 2, 3 & 4
87	DCI–02	CURB INLET TYPES 5 & 6
88	DDI–03	STANDARD DITCH BOTTOM INLETS TYPE C,D,E & H
89–90	DSD–01	SUPPLEMENTARY DETAILS FOR MH & INLET STRUCTURE
91	DSB–01	INLET, MANHOLE, JUNCTION BOX TYPES J & P
92	PCS–1	POLLUTION CONTROL STRUCTURE
93	SMI–1	SUPPLEMENTARY DETAILS FOR MH & INLET STRUCTURE
94	SMI–2	SUPPLEMENTARY DETAILS FOR MH & INLET STRUCTURE
95	3–E	DETAIL OF EXFILTRATION DRAIN WITH PERFORATED PIPE
96	15–B	MEDIAN OPENINGS ON DIVIDED ROADWAYS
97	14–A	MISCELLANEOUS DETAILS
98–99	GSE–02–01	SUPERELEVATION DETAILS FOR MUNICIPAL CONSTRUCTION
100–101	2613–M	STANDARD WARNING SIGN DETAILS
102	GEC–04	ERROSION CONTROL DEVICES SILT BARRIERS
103		INLET PROTECTION SYSTEM DETAIL
104		SEDIMENT BARRIERS DETAILS
105	1–PR–A	SIDEWALK WIDENING DETAIL
106–107	FDOT INDEX 330–001	PAVED AND GRADED DRIVEWAYS
108–109	FDOT INDEX 522–001	CONCRETE SIDEWALK
110–116	FDOT INDEX 522–002	DETECTABLE WARNING & PUBLIC SIDEWALK CURB RAMPS



NOTE:

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

LENGTH OF JOB		
	LIN. FT.	MILES
ROADWAY	8483.06	1.6
BRIDGE	–	–
GROSS LENGTH OF JOB	8483.06	1.6
EXCEPTIONS	–	–
NET LENGTH OF JOB	8483.06	1.6

PREPARED FOR

TOWN OF CUTLER BAY

BY

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

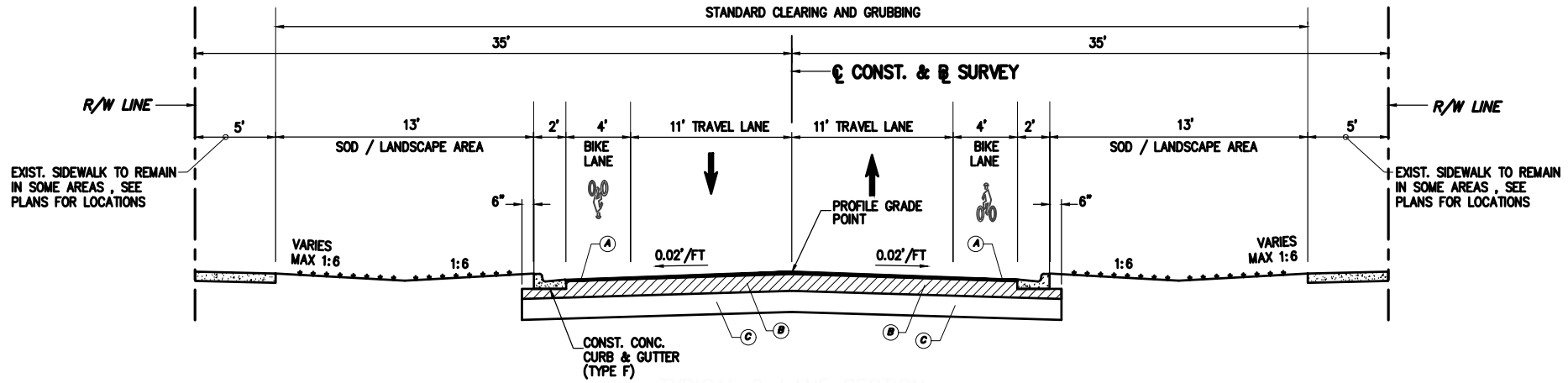
811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
www.callsunshine.com

100% SUBMITTAL PLAN

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE MIAMI–DADE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS AND SPECIFICATIONS PARTS 1, 2 AND 3. THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS. THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AS AMENDED BY CONTRACT DOCUMENTS.

ENGINEER OF RECORD:

CARLOS HERDOCIA, P.E.
FLORIDA REGISTRATION P.E. No. 47660



TYPICAL 2-LANE SECTION
FRANJO ROAD

TYPICAL SECTION NOTES:

1. ALL EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE INCORPORATED INTO THE STABILIZED PORTION OF THE SUBGRADE AND IS NOT TO BE USED IN CONSTRUCTION OF THE PROPOSED BASE.
2. EXTEND LIMEROCK BASE (8" THICK) 6" OUTSIDE EDGES OF PAVEMENT AT ALL CONNECTIONS AND INTERSECTIONS TO COUNTY STREETS AND ROADS.
3. STABILIZE ALL TURNOUTS AND INTERSECTIONS TO COUNTY ROADS AND STREETS TO A DEPTH OF 12" (MIN CBR OF 30) AND 12" OUTSIDE EDGES OF PAVEMENT, 6" BACK OF CURB.
4. DROP CURB & DRIVEWAY CONNECTIONS SHALL BE PROVIDED FOR ACCESS TO ALL PRIVATE PROPERTIES ADJACENT TO THE PROJECT CONSTRUCTION. FINAL LOCATION OF DRIVEWAY ACCESS TO BE DETERMINED BY THE ENGINEER.
5. COST OF LIMEROCK BASE BENEATH CURB & GUTTER ARE TO BE INCLUDED IN COST OF C & G (ITEM 520-1-10)

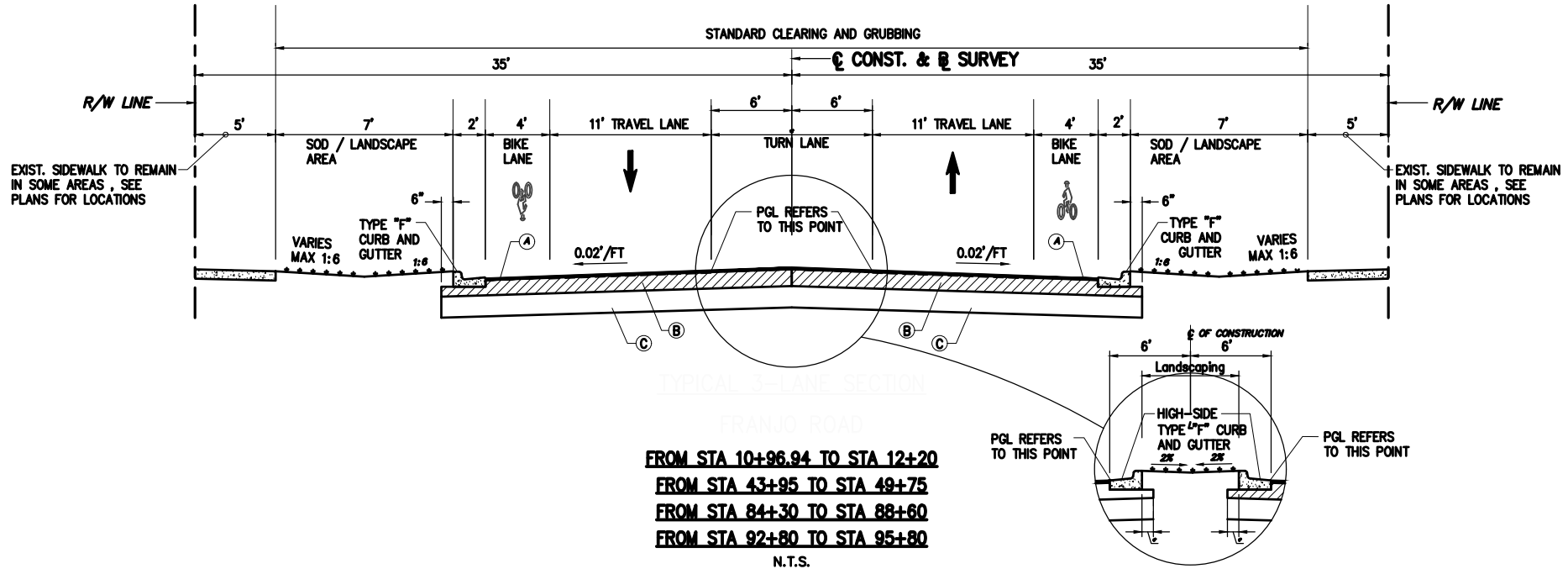
FROM STA 12+20 TO STA 92+80

N.T.S.

NEW CONSTRUCTION

- (A) TYPE SP STRUCTURAL COURSE (2") (TRAFFIC C) FRICTION COURSE TYPE FC-9.5(1" THICK) (110 LBS/SY)
- (B) LIMEROCK BASE (8" THICK) (PRIMED)
- (C) 12" STABILIZED SUBGRADE (LBR=40)

DESIGN SPEED 35 MPH



TYPICAL 3-LANE SECTION
FRANJO ROAD

FROM STA 10+96.94 TO STA 12+20
FROM STA 43+95 TO STA 49+75
FROM STA 84+30 TO STA 88+60
FROM STA 92+80 TO STA 95+80

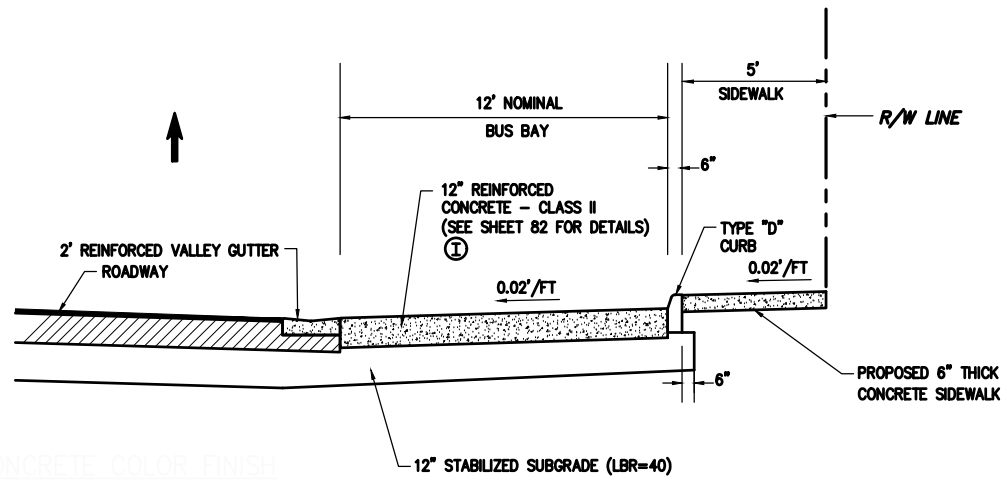
N.T.S.

NEW CONSTRUCTION

- (A) TYPE SP STRUCTURAL COURSE (2") (TRAFFIC C) FRICTION COURSE TYPE FC-9.5(1" THICK) (110 LBS/SY)
- (B) LIMEROCK BASE (8" THICK) (PRIMED)
- (C) 12" STABILIZED SUBGRADE (LBR=40)

TYPICAL DIVIDER SECTION (SEE PLANS FOR LOCATIONS)

N.T.S.



CONCRETE COLOR FINISH SCHEDULE

PROPOSED BUS BAY

- (I) INTEGRALLY-COLORED CONCRETE LAMBERT - CORAL GABLES BEIGE

(SEE PLANS FOR LOCATIONS)

N.T.S.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	02/16/2021	DRAWN BY	RM	02/16/2021
CHECKED BY	CMH		CHECKED BY	CMH	

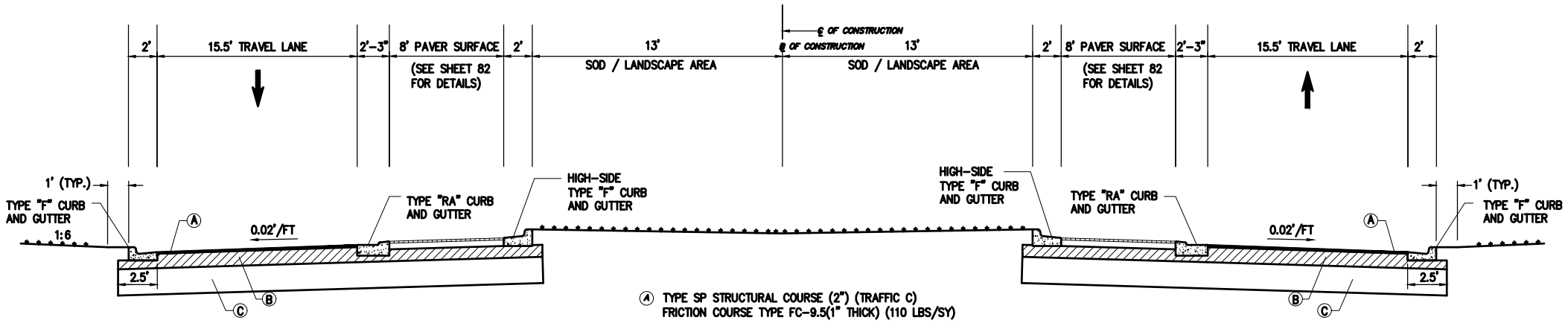
SUPERVISED BY:

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

TYPICAL SECTIONS

PLOTTED BY: MORALES, ROD DATE: 2/16/2023 4:34 PM
CREATED: 2022-10-05 - V:\2156\ACTIVE\215615902\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15902 TYPICAL SECTION.DWG



Ⓐ TYPE SP STRUCTURAL COURSE (2") (TRAFFIC C) FRICTION COURSE TYPE FC-9.5(1" THICK) (110 LBS/SY)
Ⓑ LIMEROCK BASE (8" THICK) (PRIMED)
Ⓒ 12" STABILIZED SUBGRADE (LBR=40)

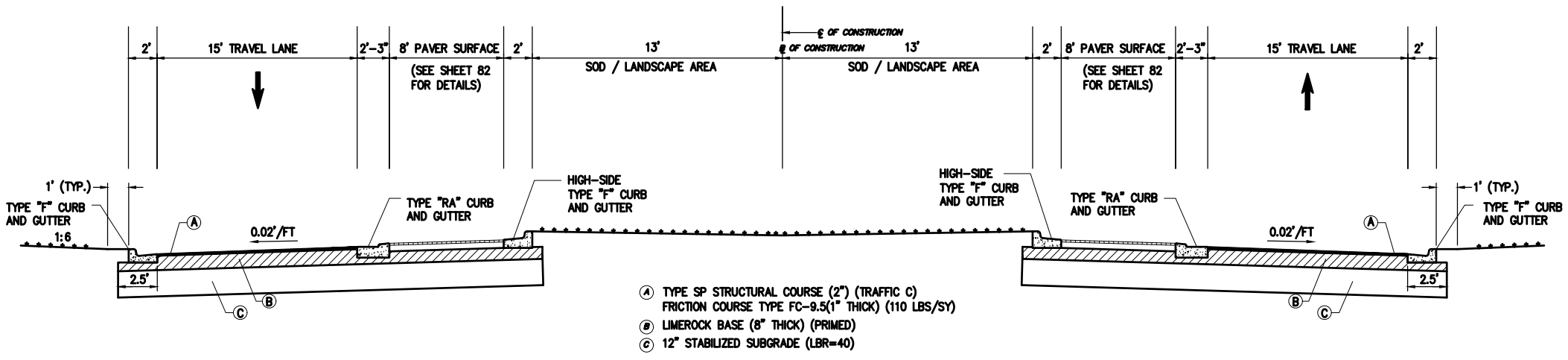
DESIGN SPEED 25 MPH

DETAIL SECTION ROUNDABOUT AT

GULF STREAM ROAD
N.T.S.

TYPICAL SECTION NOTES:

1. ALL EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE INCORPORATED INTO THE STABILIZED PORTION OF THE SUBGRADE AND IS NOT TO BE USED IN CONSTRUCTION OF THE PROPOSED BASE.
2. EXTEND LIMEROCK BASE (8" THICK) 6" OUTSIDE EDGES OF PAVEMENT AT ALL CONNECTIONS AND INTERSECTIONS TO COUNTY STREETS AND ROADS.
3. STABILIZE ALL TURNOUTS AND INTERSECTIONS TO COUNTY ROADS AND STREETS TO A DEPTH OF 12" (MIN CBR OF 30) AND 12" OUTSIDE EDGES OF PAVEMENT, 6" BACK OF CURB.
4. DROP CURB & DRIVEWAY CONNECTIONS SHALL BE PROVIDED FOR ACCESS TO ALL PRIVATE PROPERTIES ADJACENT TO THE PROJECT CONSTRUCTION. FINAL LOCATION OF DRIVEWAY ACCESS TO BE DETERMINED BY THE ENGINEER.
5. COST OF 2.5' LIMEROCK BASE BENEATH CURB & GUTTER ARE TO BE INCLUDED IN COST OF C & G (ITEM 520-1-10)



Ⓐ TYPE SP STRUCTURAL COURSE (2") (TRAFFIC C) FRICTION COURSE TYPE FC-9.5(1" THICK) (110 LBS/SY)
Ⓑ LIMEROCK BASE (8" THICK) (PRIMED)
Ⓒ 12" STABILIZED SUBGRADE (LBR=40)

DESIGN SPEED 25 MPH

DETAIL SECTION ROUNDABOUT AT

SW 192 DRIVE
N.T.S.

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	02/16/2021	DRAWN BY	RM	02/16/2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

TYPICAL SECTIONS

PLOTTED BY: MORALES, ROD DATE: 2/16/2023 4:34 PM
CREATED: 2022-10-05 - V:\2156\ACTIVE\215613952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\13952 TYPICAL SECTIONS.DWG

SUMMARY OF QUANTITIES

PAY ITEM NO.	ITEM	UNIT	QUANTITY	ADDITIONAL QUANTITY	TOTAL QUANTITY
101-1	MOBILIZATION	L.S.	1	–	1
102-1	MAINTENANCE OF TRAFFIC (SEE NOTE)	L.S.	1	–	1
102-14	TRAFFIC CONTROL OFFICER	HRS.	–	–	–
104-1A	ARTIFICIAL COVERING / ROLLED EROSION CONTROL PRODUCTS	L.S.	1	–	1
110-1-1	CLEARING AND GRUBBING	L.S.	1	–	1
120-1	REGULAR EXCAVATION	C.Y.	15,610	4,683	20,293
120-6	EMBANKMENT	C.Y.	2,383	715	3,098
160-40	TYPE 'B' STABILIZATION (12") (MIN. L.B.R. OF 40)	S.Y.	37,719	5,658	43,377
210-1-2	LIMEROCK BASE (8") (PRIMED)	S.Y.	38,840	5,826	44,666
327-70-5	MILLING EXISTING ASPHALT PAVEMENT, 2" AVG. DEPTH	S.Y.	501	75	576
334-2-13	TYPE STRUCTURAL COURSE HMA (TRAFFIC C) (2")	TON	4,149	622	4,771
337-7-83	ASPHALT CONCRETE, FRICTION COURSE C, FC-12.5, PG 76-22	TON	2,075	311	2,386
425-6 *	ADJUST AND/OR RELOCATE EXISTING VALVE BOXES	EACH	57	6	63
	ADJUST AND/OR RELOCATE EXISTING WATER METERS BOXES	EACH	53	5	58
	ADJUST EXISTING MANHOLE COVERS	EACH	36	4	40
	ADJUST AND/OR RELOCATE EXISTING MAIL BOXES	EACH	8	1	9
	ADJUST AND/OR RELOCATE EXISTING FIREHYDRANTS	EACH	4	1	5
425-110	MODIFY EXISTING DRAINAGE STRUCTURE	EACH	4	–	4
425-1-201	GUTTER INLET P-9	EACH	16	2	18
425-1-203	GUTTER INLET J-9	EACH	5	1	6
425-1-600F	INLET TYPE P-10M (ANY DIMENSION) (MAX 15' DEPTH)	EACH	25	4	29
425-1-602	INLET TYPE J-10M	EACH	3	1	4
425-1-331	GUTTER INLET TYPE P-3	EACH	6	1	7
425-1-341	GUTTER INLET TYPE P-4	EACH	5	1	6
425-1-351	INLET TYPE P-5 (<10')	EACH	10	2	12
425-1-361	INLET TYPE P-6 (<10')	EACH	25	4	29
425-1-461	INLET TYPE J-6 (<10')	EACH	2	1	3
425-1-521	INLET TYPE C	EACH	1	1	2
425-2-41	MANHOLES, TYPE P-7T	EACH	2	1	3
425-2-72	MANHOLES, TYPE J-7T (ANY DIMENSION) (MAX 15' DEPTH)	EACH	40	6	46
425-79	CORE & TIE TO EX. DRAINAGE STRUCTURE (ANY PIPE SIZE HOLE OPENING) (INCLUDING MORTAR SEAL)	EACH	–		
430-175-115	PIPE CULVERT, OPTIONAL MATERIAL, ROUND SHAPE, 15" (FDOT APPROVED 100 YEAR DESIGN SERVICE)	L.F.	3,236	485	3,721
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND SHAPE, 24" (FDOT APPROVED 100 YEAR DESIGN SERVICE)	L.F.	139	21	160
430-175-136	PIPE CULVERT, OPTIONAL MATERIAL, ROUND SHAPE, 36" (FDOT APPROVED 100 YEAR DESIGN SERVICE)	L.F.	1,161	174	1,335
443-70-36	EXFILTRATION DRAIN PIPE (36") (INCLUDES, BALLAST ROCK, TRENCH, AND PLASTIC FILTER FABRIC)	L.F.	6,549	–	6,549
520-1-10A	CONCRETE CURB AND GUTTER (TYPE "F") & HIGH SIDE (TYPE "F") INCLUDES COST OF LIMEROCK	L.F.	18,728	2,810	21,538
520-2-12	CONCRETE CURB (TYPE "D") M	L.F.	3,785	568	4,353
520-2-8A	CONCRETE CURB (TYPE "RA")	L.F.	326	49	375
522-1-1	CONCRETE SIDEWALK (4" THICK) CATEGORY 1	S.Y.	5,920	2,368	8,288
522-2	CONCRETE SIDEWALK (6" THICK, 3,000 PSI AT 28 DAYS) (INCLUDES PEDESTRIAN RAMPS & SIDEWALKS)	S.Y.	6,200	2,480	8,680
522-4E	BUS SHELTER SLAB CONCRETE (8" THICK)	S.Y.	148	30	178
522-8E	CONCRETE CROSSWALK (12" THICK)	S.Y.	1,084	163	1,247
523-1-3	GREEN PATTERNED PAVEMENT	S.Y.	134	20	154
526-1-1	CONCRETE PAVER ROAD SURFACE	S.Y.	255	38	293
527-1	DETECTABLE WARNING SURFACE	S.Y.	90	14	104
575-1	SODDING (MAY BE INCREASED, DECREASED OR ELIMINATED BY THE ENGINEER)	S.Y.	SEE LANDSCAPE PLANS		
721-77	BICYCLE PARKING RACK	EACH	12	–	12
751-38-19	BENCH FURNISH & INSTALL	EACH	18	–	18
751-35-32	BUS SHELTER	EACH	12	–	12
751-37	TRASH RECEPTACLE (FURNISH & INSTALL)	EACH	12	–	12

* (THIS ITEMS ARE CONTINGENT UPON FIELD CONDITIONS & MAY BE INCREASED DECREASED OR ELIMINATED BY THE ENGINEER)

PAY ITEM NOTES

102-1 TO BE ACCOMPLISHED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION INDEX 600 SERIES, THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION (ANSI D6 1-1978), PUBLIC WORKS MANUAL OF METROPOLITAN DADE COUNTY, AND THE LATEST REVISIONS OF THE AFORE MENTIONED MANUALS. INCLUDES THE COST OF FURNISHING, INSTALLING, MAINTAINING, AND REMOVING ALL ITEMS OF MAINTENANCE OF TRAFFIC NOT PAID FOR UNDER SEPARATE ITEMS INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES, FLASHING LIGHTS, TRAFFIC SIGNAL MODIFICATION FOR TRAFFIC CONTROL, ETC.

110-1-1 INCLUDES REMOVAL OF EXISTING PAVEMENT, CONCRETE SIDEWALK, DRIVEWAYS, CURB AND GUTTER, DRAINAGE STRUCTURES, SLAB COVERED TRENCH AND PIPES, MISCELLANEOUS CONCRETE, VEGETATION, TREES AND DEBRIS TO BE DISPOSED OF IN LEGAL AREAS PROVIDED BY THE CONTRACTOR. INCLUDES THE COST OF CLEANING-OUT ALL EXISTING DRAINAGE STRUCTURES WHICH ARE TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION. FOR PORTIONS OF EXISTING DRAINAGE PIPE THAT ARE UNDER EXISTING TREES TO REMAIN SHALL BE PLUGGED WITH BRICK AND MORTAR AT EACH END AND ABANDONED IN PLACE

425-1 COST OF BAFFLE, MATERIALS, METAL PIPE ENCASEMENT, INLET AND MANHOLE PAVEMENT AND BASE, LABOR & CONSTRUCTION SHALL BE INCLUDED IN COST OF STRUCTURES.

425-6 WITHIN PAVEMENT AREA, ALL EXISTING VALVES, MANHOLE COVERS, UTILITY BOXES ETC. ARE TO BE ADJUSTED TO FINISHED GRADE. ALL METER BOXES WITHIN SIDEWALKS SHALL BE ADJUSTED AND REPLACED AS NEEDED TO CONSTRUCT THE NEW SIDEWALK. FIRE HYDRANTS SHALL BE RELOCATED AWAY FROM THE STREET AS SHOWN ON THE PLANS. ALL MAILBOXES IN CONFLICT WITH CONSTRUCTION SHALL BE PROTECTED AND RELOCATED AS REQUIRED; THIS INCLUDES TEMPORARILY DURING CONSTRUCTION AS NEEDED. THESE ITEM ARE CONTINGENT UPON FIELD CONDITIONS AND MAY BE INCREASED, DECREASED, OR ELIMINATED BY THE ENGINEER.

443-70-4 INCLUDES THE COST OF EXCAVATION TO PLAN ELEVATION, PERFORATED PIPE, PEA ROCK BALLAST ROCK, PLASTIC FILTER FABRIC AND BACKFILLING WITH SELECT FILL (SEE DETAIL OF EXFILTRATION DRAIN TO DETERMINE NON-PERFORATED PIPE QUANTITY) AND ALL APPLICABLE ITEMS REQUIRED TO CONSTRUCT EXFILTRATION DRAIN.

520-1-10 INCLUDES DROP CURB AT DRIVEWAYS AND 3 FT OF CURB ENDING AS DIRECTED BY THE ENGINEER.

522-2 ESTIMATED QUANTITY FOR DRIVEWAYS TO BE CONSTRUCTED AT LOCATIONS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

522-2 ALL SIDEWALK RAMPS AT INTERSECTIONS SHALL BE 6" THICK. ALL EXISTING 5' WIDE SIDEWALKS AT RIGHT-OF-WAY OF NEW DRIVEWAYS SHALL BE RECONSTRUCTED TO 6" THICK CONCRETE.

527-1 DETECTABLE WARNING SURFACE MUST BE SAFETY YELLOW AND IMBEDDED IN CONCRETE, AND FROM THE MOST RECENT OF TESTED PRODUCTS.

a. USE DETECTABLE WARNINGS LISTED ON THE FDOT APPROVED PRODUCTS LIST (APL) AND THAT HAVE BEEN FURTHER EVALUATED AND FOUND ACCEPTABLE BY THE DEPARTMENT. AT THE OPTION OF THE CONTRACTOR, AN "OR EQUAL" PRODUCT EVALUATION REQUEST, FOR AN EQUIVALENT FDOT APL APPROVED PRODUCT THAT MEETS OR EXCEEDS THE SPECIFICATION STIPULATED HEREIN, MAY BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

b. THE FOLLOWING PRODUCTS, SUBJECT TO CONTINUED LISTING ON THE FDOT APL, HAVE BEEN EVALUATED BY THE DEPARTMENT FOR USE ON DEPARTMENT PROJECTS:

SURFACE APPLIED DETECTABLE WARNING DEVICES

MANUFACTURER	PRODUCT	APL NUMBER
ENGINEERED PLASTICS, INC.	ARMOR-TILE SURFACE APPLIED INLINE DOME	527-000-006

EMBEDDED DETECTABLE WARNING DEVICES

MANUFACTURER	PRODUCT	APL NUMBER
ADA SOLUTIONS, INC.	CAST-IN-PLACE COMPOSITE TACTILE	527-000-003
ADA SOLUTIONS, INC.	REPLACEABLE WET SET COMPOSITE	527-000-018
ENGINEERED PLASTICS, INC	ARMOR-TILE REPLACEABLE CAST IN PLACE	527-000-026
ENGINEERED PLASTICS, INC.	ARMOR-TILE CAST-IN-PLACE INLINE DOME TILE	527-000-027
CAPE FEAR SYSTEMS, LLC	ALERTCAST (REPLACEABLE) CAST-IN-PLACE	527-000-029
ACCESS PRODUCTS, INC.	ACCESS TILE REPLACEABLE CAST IN PLACE	527-000-033
STRONGGO INDUSTRIES	TEKWAY DOME TILE	527-000-035
TUFTILE, INC	TUFTILE CAST IRON (WET-SET) REPLACEABLE	527-000-044

575-1 INCLUDES SOD TO BE USED IN THE RESTORATION OF LAWNS AND MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER. PENSACOLA OR TO MATCH EXISTING SOD.

1. SUMMARY OF EARTHWORK IS BASED ON THE CONSTRUCTION OF LIMEROCK BASE 8" THICK AS INDICATED ON THE CROSS SECTIONS.
2. ANY EXCAVATED MATERIAL, IF UNSUITABLE, SHALL NOT BE USED IN THE CONSTRUCTION OF THE EMBANKMENT.
3. ANY EXCESS MATERIAL TO BE DISPOSED OF BY THE CONTRACTOR IN LEGAL AREAS PROVIDED BY HIM. NO SEPARATE PAYMENT WILL BE MADE FOR THIS ITEM.

SUMMARY OF EARTHWORK

ITEM	QUANTITY
REGULAR EXCAVATION	15,609.94 C.Y.
REGULAR EXCAVATION + 30%	20,293 C.Y.
FILL	2,382.67 C.Y.
FILL + 30%	3,098 C.Y

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

SUPERVISED BY:

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

SUMMARY OF QUANTITIES

GENERAL NOTES

1. B.M. DATA IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.-29).
2. ANY N.G.V.D. BENCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED AND PROPERLY REFERENCED BY A REGISTERED-LAND SURVEYOR IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THE SITE. IF ANY MONUMENT IS IN DANGER OF DAMAGE, THE PROJECT ENGINEER SHALL NOTIFY RON TAYLOR, FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION (FDEP) SURVEYING AND MAPPING, 3900 COMMONWEALTH BLVD., MAIL STATION 105, TALLAHASSEE, FLORIDA 32399-3000 TELEPHONE (850) 245-2606.
3. ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED BY THE CONTRACTOR AS FOLLOWS: CORNERS AND MONUMENTS IN CONFLICT WITH THE WORK AND IN DANGER OF BEING DAMAGED, DESTROYED, OR COVERED SHALL BE PROPERLY REFERENCED BY A REGISTERED-LAND SURVEYOR IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THE SITE. THE CONTRACTOR SHALL RETAIN THE LAND SURVEYOR TO REFERENCE, AND RESTORE UPON COMPLETION OF THE WORK, ALL SUCH CORNERS AND MONUMENTS AND SHALL FURNISH TO MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT A SIGNED AND SEALED COPY OF THE LAND SURVEYOR'S REFERENCE DRAWING.
4. ALL STATIONS AND OFFSETS REFER TO CENTERLINE OF CONSTRUCTION, UNLESS OTHERWISE STATED.
5. ALL GRADES SHOWN IN PLAN ARE FINISHED GRADES.
6. THE CONTRACTOR SHALL PAINT ALL STATIONS WITH STENCILED NUMBERS ON THE FACE OF CURB:
   A. FROM THE BEGINNING OF THE PROJECT WHERE THE CURB IS TO REMAIN.
   B. AT NEW CURB NOT LATER THAN 72 HOURS AFTER BEING POURED.
   C. WHERE CURB DOES NOT EXIST AND SHALL NOT BE CONSTRUCTED,
   THE CONTRACTOR SHALL MAINTAIN STATIONING WITH SURVEYING STAKES.
   CONTRACTOR SHALL MAINTAIN THE STATION MARKS VISIBLE UNTIL FINAL INSPECTION.
7. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT, AND ANY OTHER STATE OR LOCAL AGENCY WITH JURISDICTION. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
8. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE EPA AND THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES).
9. THE LOCATION AND SIZE OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE ONLY. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS AND BY PRE-TRENCHING IN COORDINATION WITH ALL UTILITY COMPANIES, PRIOR TO BEGINNING ANY CONSTRUCTION OPERATION. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS MUST BE RESOLVED BY THE ENGINEER AND THE OWNER. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
10. EXISTING TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY PREPARED BY LONGITUDE SURVEYORS LLC.
11. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE-CALL AT 1-(800)-432-4770 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN UTILITY COMPANIES LOCATE THEIR FACILITIES. CONTRACTOR SHALL CALL ALL UTILITY COMPANIES TO VERIFY EXACT LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL COORDINATE WORK WITH ALL UTILITY COMPANIES, TOWN OF CUTLER BAY AND OTHER CONTRACTORS TO MINIMIZE DISRUPTION OR INTERFERENCE TO THE CONTRACTOR'S WORK.
12. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD AND UNDERGROUND UTILITIES.
14. MIAMI-DADE WATER AND SEWER DEPARTMENT REQUIRES THAT ACCESS TO ALL WATER AND SEWER VALVES, SANITARY MANHOLES, AND OTHER CONTROL MECHANISMS BE MAINTAINED THROUGHOUT CONSTRUCTION IN THE EVENT OF AN EMERGENCY TO ENSURE THE PUBLIC HEALTH AND SAFETY. COVERING VALVE BOXES AND MANHOLES CAN BE CONSIDERED UNAUTHORIZED OBSTRUCTION OF AND TAMPERING WITH DEPARTMENT UTILITIES. ALL REQUESTS FOR UTILITY ADJUSTMENTS MUST BE MADE IN WRITING AT LEAST TWO (2) WEEKS IN ADVANCE. FOR MANHOLE AND VALVES, CONTACT THE CONSTRUCTION MANAGEMENT SECTION, PUMP STATIONS UNIT, 3071 SW 38 AVENUE, FAX NO. 305-668-3626. THE DEPARTMENT WILL MAKE ONE FINAL AND PERMANENT ADJUSTMENT AT NO COST TO THE REQUESTING AGENCY. FOR THE ADJUSTMENT OF WATER METERS, CONTACT THE CHIEF OF METER OPERATIONS AND MAINTENANCE, FAX NO. 305-545-3482. FOR ANY FIRE HYDRANTS THAT ARE DAMAGED OR BUMPED DURING CONSTRUCTION, CONTACT THE MDWASD HYDRANT SHOP AT 305-805-4575 BEFORE POURING CONCRETE FOR THE SIDEWALK. IN THE EVENT OF A WATER OR SEWER EMERGENCY, CONTACT MIAMI DADE WATER AND SEWER DEPARTMENT AT 305-274-9272. THIS LINE IS OPEN 24 HOURS, 7 DAYS A WEEK.
15. KNOWN UTILITY COMPANIES IN THE PROJECT LIMITS INCLUDE, BUT ARE NOT LIMITED TO:
    FP&L (800) 868-9554 & (305) 442-5172 EDGAR AGUILAR
    AT&T (305) 222-8745 (561) 997-0240 DINO FARRUGGIO
    MIAMI-DADE WATER AND SEWER DEPT. (786) 268-5393 ALBERTO AGUILERA
    COMCAST CABLE (954) 239-8386 CHRISTOPHER TAYLOR
    FLORIDA CITY GAS (305) 835-3612 HARRY ROCHA
    MIAMI DADE COUNTY PUBLIC WORKS (305) 412-0891 x102 OCTAVIO VIDAL
    CROWN CASTLE NG FIBER (786)610-7073 DANNY HASKETT
    MASTEC INC (FIBER) (305)803-0346 RICKIE QUINN
16. THE CONTRACTOR IS ADVISED THAT PROPERTIES ADJACENT TO THE PROJECT HAVE ELECTRIC, TELEPHONE, GAS, WATER, AND/OR SEWER SERVICE LATERALS WHICH MAY NOT BE SHOWN IN PLANS. THE CONTRACTOR MUST REQUEST THE LOCATION OF THESE LATERAL SERVICES FROM THE UTILITY COMPANIES. THE ADDITIONAL COST OF EXCAVATING, INSTALLING, BACKFILLING, AND COMPACTING AROUND THESE LATERAL SERVICES MUST BE INCLUDED IN THE BID RELATED ITEM FOR THE WORK BEING DONE.
17. ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ASPHALT, CONCRETE OR PAVER DRIVEWAYS ON PRIVATE PROPERTY ABUTTING RIGHT-OF-WAY WHICH ARE DAMAGED OR IMPACTED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.
18. ANY ENCROACHMENT WITHIN THE LIMITS OF CONSTRUCTION SHALL BE RELOCATED OR PROTECTED BY THE ADJACENT PROPERTY OWNER AT THEIR EXPENSE.
19. CLEARING AND GRUBBING, GRADING AND OTHER INCIDENTAL WORK NECESSARY FOR HARMONIZATION OUTSIDE R/W SHALL BE INCLUDED IN RELATED BID ITEMS.
20. ALL GRASS AREAS AFFECTED BY CONSTRUCTION SHALL BE RE-SODDED. SODDING TO BE USED AT LOCATIONS WHERE EXISTING LAWNS OR SWALES ARE DISTRUBED, AT CONTRACTORS EXPENSE AS DIRECTED BY THE ENGINEER.
21. THE CONTRACTOR SHOULD TAKE SPECIAL NOTE OF SOIL CONDITIONS THROUGHOUT THIS PROJECT. ANY SPECIAL SHORING, SHEETING OR OTHER PROCEDURES NECESSARY TO PROTECT ADJACENT PROPERTY, PUBLIC OR PRIVATE, DURING THE EXCAVATION OF SUBSOIL MATERIAL AND EXFILTRATION TRENCH, OR FILLING OF ANY AREA, OR FOR ANY OPERATION DURING CONSTRUCTION, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
22. IF SHEETING, SHORING, OR DEWATERING, INCLUDING WELL POINTS ARE NECESSARY, THE CONTRACTOR MUST MONITOR AND CONTROL ALL WORK THAT MAY CAUSE CRACKING TO ANY ADJACENT BUILDING, STRUCTURE, OR PROPERTY AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES CAUSED BY THESE OPERATIONS. COST OF SHEETING, SHORING, OR DEWATERING SHALL BE INCLUDED IN THE RELATED BID ITEM FOR THE WORK BEING DONE.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE DEWATERING PERMIT. COST OF THE PERMIT AND DEWATERING SHALL BE INCLUDED IN THE THE RELATED BID ITEM FOR THE WORK BEING DONE.
24. THE CONTRACTOR WILL RESTRICT PERSONNEL, THE USE OF EQUIPMENT, AND THE STORAGE OF MATERIALS TO AREAS WITHIN THE LIMITS OF CONSTRUCTION AND DESIGNATED STAGING AREA.
25. EXPLORATORY OR PRE-TRENCHING IN THE ALIGNMENT AND GRADE OF PROPOSED PIPES STRUCTURES, FRENCH DRAINS, CONDUITS, POLE FOUNDATIONS AND/OR SUB-GRADE SHALL BE PERFORMED SEVEN DAYS IN ADVANCE OF ITS CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE UNDERGROUND UTILITY OWNERS AND THE DEPARTMENT WITH IMMEDIATE NOTIFICATION OF ANY CONFLICT WITH PROPOSED CONSTRUCTION. THIS NOTIFICATION SHALL PROVIDE SURVEY INFORMATION ABOUT EXISTING UTILITY ALIGNMENT, GRADE AND POSSIBLE CONFLICTS. PAYMENT FOR EXPLORATORY OR PRE-TRENCHING, SURVEY AND BACKFILLING SHALL BE INCLUDED IN THE COST OF THE RELATED BID ITEM FOR THE WORK BEING DONE.
26. ALL DITCH EXCAVATIONS SHALL BE PERFORMED IN FULL COMPLIANCE WITH THE PROVISIONS OF THE TRENCH SAFETY ACT.
27. ALL EXCESS MATERIAL, AS DESIGNATED BY THE ENGINEER, IS TO BE DISPOSED BY THE CONTRACTOR IN AREAS PROVIDED BY HIM WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION AREA AND AT THE CONTRACTOR'S EXPENSE.
28. ALL DISPOSAL OF MATERIALS, RUBBISH, AND DEBRIS SHALL BE MADE AT A LEGAL DISPOSAL SITE OR BY OTHER PRIOR APPROVED MANNER. MATERIAL CLEARED FROM THE SITE AND DEPOSITED ON ADJACENT OR NEARBY PROPERTY WILL NOT BE CONSIDERED AS HAVING BEEN DISPOSED OF SATISFACTORILY.
29. ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE ENGINEER WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION, AND REMEDIATION OF THE HAZARDOUS MATERIAL. THE CONTRACTOR SHALL NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE PROJECT ENGINEER.
30. EXISTING ABOVE GROUND FEATURES ARE SHOWN ACCORDING TO THE BEST AVAILABLE DATA AND MAY NOT ACCURATELY REFLECT PRESENT CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH CURRENT SITE CONDITIONS, AND SHALL REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO STARTING WORK.
31. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES AND UTILITIES, WHICH MAY NOT BE SHOWN ON PLANS. ANY STRUCTURE, PAVEMENT, TREES OR OTHER EXISTING IMPROVEMENT NOT SPECIFIED FOR REMOVAL WHICH IS TEMPORARY DAMAGED, EXPOSED OR IN ANY WAY DISTURBED BY CONSTRUCTION PERFORMED UNDER THIS CONTRACT, SHALL BE REPAIRED, PATCHED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
32. CONTRACTOR TO RELOCATE TREES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL AVOID DAMAGE TO ANY EXISTING TREES TO REMAIN. EXISTING TREES SHALL BE REMOVED ONLY IF REQUIRED FOR CONSTRUCTION. THOSE TREES NOT INTERFERING WITH CONSTRUCTION SHALL BE PROTECTED IN PLACE.
33. TRAFFIC SHALL BE MAINTAINED ON DUST FREE ASPHALT SURFACE AT ALL TIMES. THE CONTRACTOR SHALL USE A STREET SWEEPER (USING WATER) OR OTHER EQUIPMENT CAPABLE OF CONTROLLING AND REMOVING DUST. APPROVAL OF THE USE OF SUCH EQUIPMENT IS CONTINGENT UPON ITS DEMONSTRATED ABILITY TO DO THE WORK.
34. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL ITEMS USED IN THIS PROJECT.
35. WHEN DISSIMILAR MATERIAL CONNECTIONS ARE MADE, SUCH AS CONCRETE TO METAL, THE DISSIMILAR MATERIAL SHALL BE SEPARATED BY COATING THE CONTACT SURFACE WITH BITUMASTIC MATERIAL.
36. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING AND NEW INLETS CLEAN OF MILLING MATERIAL, LIMEROCK, DEBRIS, ETC. DURING THE CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. ALL LINES AND STRUCTURES SHALL BE CLEANED PRIOR TO FINAL INSPECTION AND ACCEPTANCE.
37. CAST IRON PRODUCTS: HEAVY-DUTY CLASSIFICATION SUITABLE FOR HIGHWAY TRAFFIC LOADS OR 16,000 LBS WHEEL LOADS.
38. STEEL GRATING AND COVERS: TRAFFIC CLASSIFICATION H-20; 16,000 LBS OVER 8"X20" AREA.
39. EXISTING DRAINAGE STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED UNLESS OTHERWISE NOTED.
40. EXISTING MANHOLES AND INLETS SCHEDULED TO REMAIN SHALL BE THOROUGHLY CLEANED BY REMOVING ALL DEBRIS AND SEDIMENTS, AND THE INTERIOR SHALL BE SEALED WITH AN APPROVED NON-TOXIC BITUMASTIC SEALANT.
41. PRIOR TO CONSTRUCTION THE CONTRACTOR WILL INSPECT ALL EXISTING STRUCTURES WHICH ARE TO REMAIN AND NOTIFY THE ENGINEER OF ANY OBVIOUS STRUCTURAL DEFICIENCIES.
42. CONTRACTOR SHALL ADJUST ALL EXISTING CATCH BASINS, GRATES, AND STORM MANHOLE COVERS TO MEET NEW GRADES WHERE APPLICABLE. PAY ITEM No. 425-6
43. RADII ON CURB RETURNS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
44. PRIOR TO CONSTRUCTION THE CONTRACTOR WILL VERIFY INVERT ELEVATIONS OF ALL PIPES WHICH ARE TO REMAIN AND NOTIFY THE ENGINEER OF ANY ELEVATION DEVIATIONS.
45. THERE SHALL BE NO MORE THAN THREE LATERAL DRAINAGE INSTALLATIONS WITHOUT BACKFILLING. BACKFILLING OF LATERAL DRAINAGE SHALL NOT LAG MORE THAN 72 HOURS BEHIND THE START OF EXCAVATION.
46. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES EXTEND INTO THE STABILIZED PORTION OF THE ROADBED AND EXTREME CAUTION SHOULD BE USED IN THE STABILIZING OPERATIONS AT THESE LOCATIONS.
47. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION, INSTALLATION, AND MAINTENANCE OF ALL TRAFFIC CONTROL AND SAFETY DEVICES, IN ACCORDANCE WITH SPECIFICATIONS OUTLINED IN THE PUBLIC WORKS STANDARD DETAILS, THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND THE FDOT DESIGN STANDARDS.
48. WHERE NEW PAVEMENT MEETS EXISTING, CONNECTION SHALL BE MADE IN A NEAT STRAIGHT LINE AND FLUSH WITH THE EXISTING PAVEMENT.
49. THE LOCATION OF SOME EXISTING DRIVEWAYS IS APPROXIMATE. VERIFICATION OF EXACT LOCATION AND DIMENSIONS IS RECOMMENDED.
50. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH, UNLESS OTHERWISE SHOWN IN PLANS.
51. WHERE CONNECTIONS TO EXISTING SIDEWALKS AND DRIVEWAYS ARE NOT INDICATED ON PLANS, PROPER CONNECTIONS ARE TO BE MADE AS DIRECTED BY THE ENGINEER. DROP CURB AND DRIVEWAY CONNECTIONS SHALL BE PROVIDED FOR ACCESS TO ALL PRIVATE PROPERTIES ADJACENT TO THE PROJECT. PAYMENT SHALL BE INCLUDED IN THE COST OF RELATED BID ITEMS.
52. CONTRACTOR TO INSTALL ½" PREFORMED EXPANSION JOINT WHEN PROPOSED SIDEWALK IMPROVEMENTS IS IMMEDIATELY ADJACENT TO EXISTING CONCRETE SLAB AND/OR BUILDING.
53. THE SIDEWALK AT ALL PROPOSED DRIVEWAY TURNOUTS SHALL BE 6" CONCRETE, INCLUDING 5' WIDE SIDEWALK AT RIGHT-OF-WAY AS WELL AS ENTIRE DRIVEWAY WIDTH AND FLARES.
54. ALL BUS STOP SIGNS TO BE FURNISHED AND INSTALLED BY MIAMI-DADE TRANSIT (MDT). ENGINEER TO CONTACT MIAMI-DADE COUNTY TRANSIT AT (305)637-3753 ONE (1) WEEK PRIOR TO POURING SIDEWALKS AND COORDINATE THE REMOVAL AND REPLACEMENT OF BUS STOP SIGNS AND BENCHES. CONTRACTOR TO COORDINATE RELOCATION AND/OR REMOVAL OF BUS BENCHES, BUS SHELTERS AND BUS ROUTE SIGNS WITH MR. RICARDO AGUILAR AT 305-889-6743.
55. COMPLETE AS-BUILT INFORMATION RELATIVE TO LOCATION AND DEPTH OF PIPES, MANHOLES, ETC. SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE WORK. ALL ELEVATIONS SHALL BE TAKEN BY A FLORIDA REGISTERED SURVEYOR AND SHOWN ON THE RECORD DRAWINGS.
56. DESIGN WATER TABLE ELEVATION: 3.00
57. MIAMI-DADE COUNTY FLOOD CRITERIA ELEVATION: 6.00
58. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH BIDS WILL BE BASED.
59. ALL PAVEMENT DIMENSIONS ARE TO LIP OF GUTTER, AS APPLICABLE, UNLESS INDICATED OTHERWISE.
60. LOCAL RESIDENTS, PROPERTY OWNERS AND TENANTS WHEN THE AREA OF CONSTRUCTION SHALL BE GIVEN ACCESS TO THEIR PROPERTY DURING ALL PHASES OF CONSTRUCTION.
61. CONTRACTOR SHALL REMOVE ANY EXISTING STRIPING THAT CONFLICTS WITH THE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION AND PROVIDE ADEQUATE TEMPORARY SIGNING AND/OR STRIPING USING REFLECTORIZED PAINT.
62. PAVED ASPHALT TEMPORARY PAVEMENT AND CONNECTIONS SHALL BE PROVIDED THROUGHOUT PROJECT, AS NEEDED AND DIRECTED BY THE ENGINEER TO MAINTAIN TRAFFIC AND ACCESS.
63. CONTRACTOR SHALL PRESERVE ALL STREET SIGNS, BENCHES, TRAFFIC CONTROL SIGNS, ETC. AS DIRECTED BY THE ENGINEER. WHEN DIRECTED BY THE ENGINEER, CONTRACTOR SHALL REINSTALL OR DELIVER SAID PUBLIC PROPERTY TO THE TOWN OF CUTLER BAY AND/OR MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT.
64. CONTRACTOR SHALL COORDINATE WITH THE IRRIGATION AND ELECTRICAL SUB-CONTRACTORS FOR THE INSTALLATION OF ANY NECESSARY SLEEVES UNDER THE PAVEMENT.
65. CONTRACTOR SHALL REPLACE EXISTING WATER METER BOXES AND ADJUST EXISTING WATER METERS AS NEEDED, CONTRACTOR SHALL ADJUST OR REPLACE EXISTING ELECTRICAL AND SIGNAL PULL BOXES AS NEEDED. ASSOCIATED COSTS TO BE INCLUDED IN SIDEWALK BID ITEM.
66. ALL EXISTING FIRE HYDRANTS SHALL REMAIN UNDISTURBED UNLESS OTHERWISE NOTED.
67. CONTRACTOR SHALL CAREFULLY SAW-CUT ANY ROOTS IN CONFLICT WITH CONSTRUCTION OF CURB, SIDEWALK, DRAINAGE OR UTILITIES. ROOTS TORN BY BACKHOE WILL NOT BE ALLOWED.
68. CONTRACTOR SHALL MAINTAIN TRENCHING TO THE MINIMUM REQUIRED TO DO WORK TO AVOID DAMAGE TO TREES.
69. RESIDENTS, PROPERTY OWNERS AND TENANTS ALONG PROJECT ROUTE SHALL RECEIVE MINIMUM SEVEN (7) DAY ADVANCE WRITTEN NOTIFICATION BY CONTRACTOR OF WORK TO BE PERFORMED IN FRONT OF THEIR PROPERTY.
70. ALL SIDEWALK CLOSURES SHALL BE PROVIDED BY THE CONTRACTOR WITH PROPER PEDESTRIAN DIRECTIONAL DETOUR SIGNAGE, OR AS DIRECTED BY THE ENGINEER.
71. CONTRACTOR SHALL RELOCATE ALL EXISTING MAILBOXES IN CONFLICT WITH PROPOSED CONSTRUCTION AS PER MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT ROADWAY STANDARDS AND CONSTRUCTION STANDARD DETAILS.
72. CONTRACTOR SHALL CONFORM TO ALL LATEST STANDARDS OF F.D.O.T. AND MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT ROADWAY STANDARDS AND CONSTRUCTION STANDARD DETAILS.
73. NOTHING, INCLUDING UTILITIES, FURNISHINGS AND LANDSCAPING CAN PROTRUDE INTO THE PEDESTRIAN CLEAR PATH ZONE, FROM 27" TO 80" HIGH, AND FOR NOT MORE THAN 4' IN WIDTH.

LEGEND

PROP. COLORED CONCRETE CROSSWALK	PROP. TYPE "F" CURB AND GUTTER
PROP. CONCRETE SIDEWALK	PROP. TYPE "D" CURB
PROP. CONCRETE PAVERS	PROP. TYPE "RA" CURB AND GUTTER
PROP. ROADWAY WIDENING	EXIST. E.O.P.
PROP. ASPHALT DRIVEWAY	EXIST. SIDEWALK
PROP. NO. OF SIDEWALK FLAGS TO BE REPLACED (2)	EXIST. LOT LINE
PROP. LIGHT POLE	EXIST. R/W LINE
	CL OF CONSTRUCTION
	Ex. 2" Gas EXIST. GAS LINE
	EXIST. POWER POLE
	EXIST. MAILBOX
	EXIST. LIGHT POLE
	EXIST. BUS BENCH

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REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04/13/2021	DRAWN BY	RM	04/13/2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

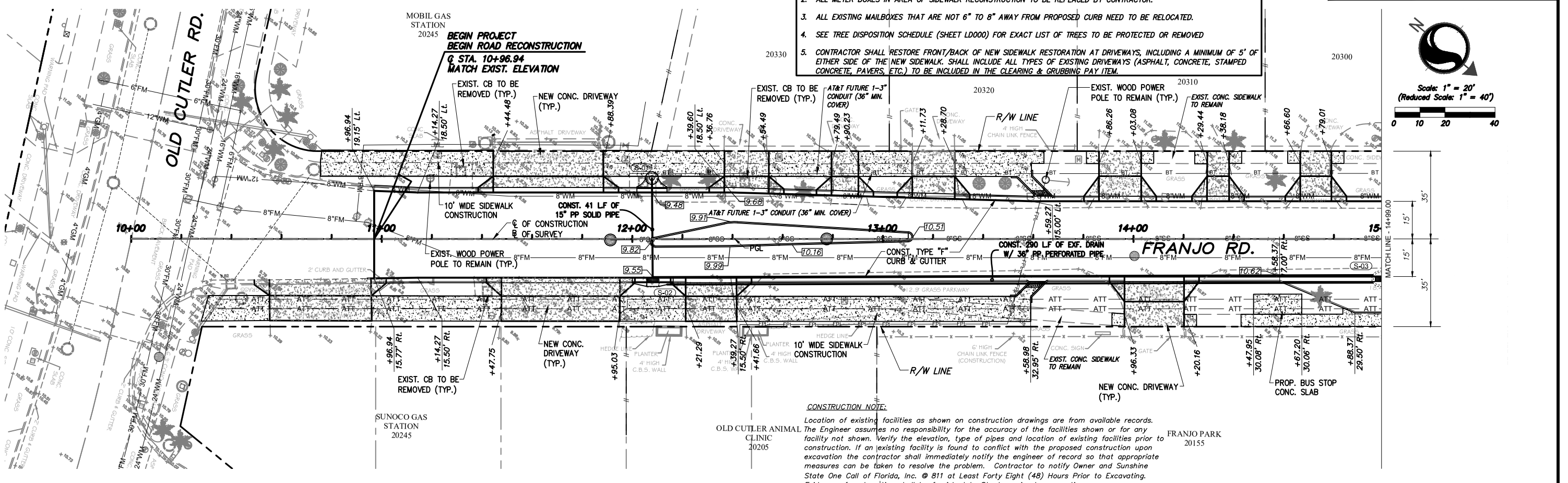
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

GENERAL NOTES & LEGEND

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-06 OF 82

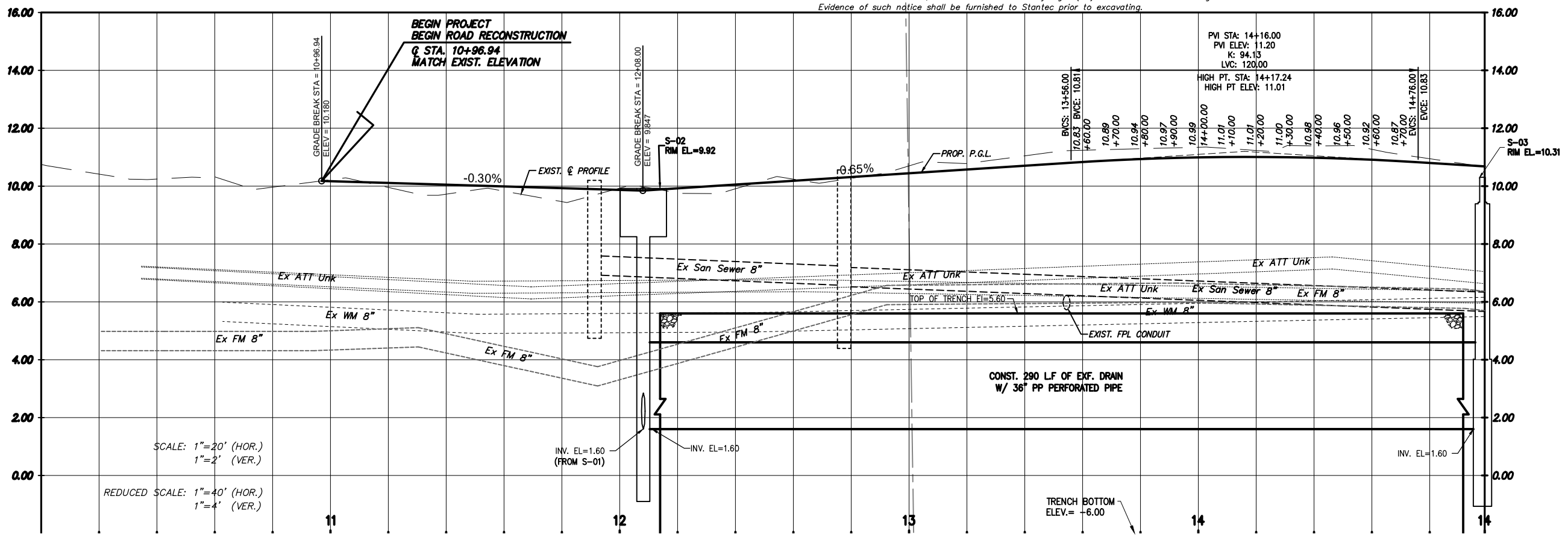
NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
2. ALL METER BOXES IN AREA OF SIDEWALK RECONSTRUCTION TO BE REPLACED BY CONTRACTOR.
3. ALL EXISTING MAILBOXES THAT ARE NOT 6" TO 8" AWAY FROM PROPOSED CURB NEED TO BE RELOCATED.
4. SEE TREE DISPOSITION SCHEDULE (SHEET LD000) FOR EXACT LIST OF TREES TO BE PROTECTED OR REMOVED
5. CONTRACTOR SHALL RESTORE FRONT/BACK OF NEW SIDEWALK RESTORATION AT DRIVEWAYS, INCLUDING A MINIMUM OF 5' OF EITHER SIDE OF THE NEW SIDEWALK. SHALL INCLUDE ALL TYPES OF EXISTING DRIVEWAYS (ASPHALT, CONCRETE, STAMPED CONCRETE, PAVERS, ETC.) TO BE INCLUDED IN THE CLEARING & GRUBBING PAY ITEM.



CONSTRUCTION NOTE:

Location of existing facilities as shown on construction drawings are from available records. The Engineer assumes no responsibility for the accuracy of the facilities shown or for any facility not shown. Verify the elevation, type of pipes and location of existing facilities prior to construction. If an existing facility is found to conflict with the proposed construction upon excavation the contractor shall immediately notify the engineer of record so that appropriate measures can be taken to resolve the problem. Contractor to notify Owner and Sunshine State One Call of Florida, Inc. @ 811 at Least Forty Eight (48) Hours Prior to Excavating. Evidence of such ndtice shall be furnished to Stantec prior to excavating.



REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

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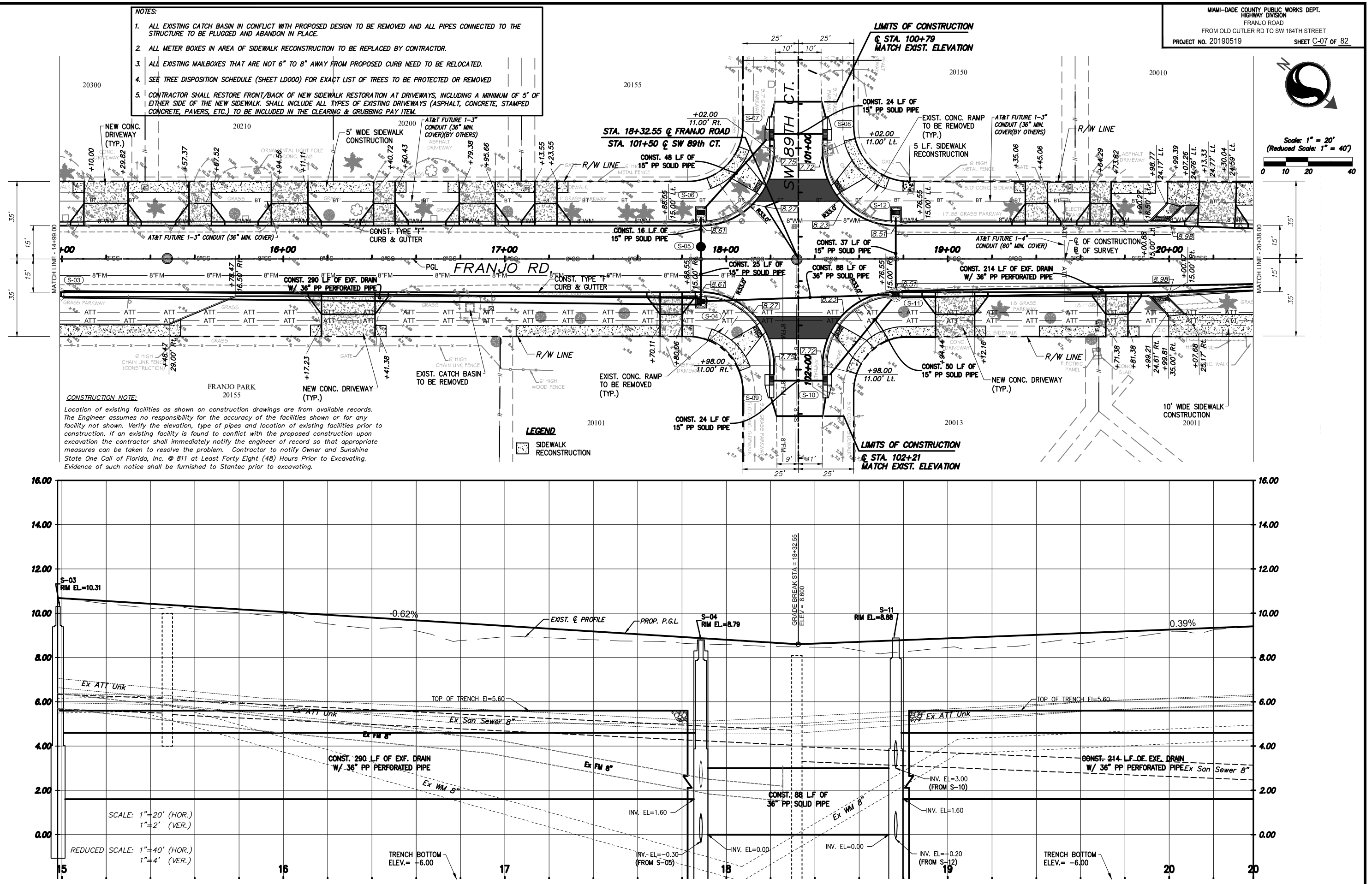
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-07 OF 82

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
2. ALL METER BOXES IN AREA OF SIDEWALK RECONSTRUCTION TO BE REPLACED BY CONTRACTOR.
3. ALL EXISTING MAILBOXES THAT ARE NOT 6" TO 8" AWAY FROM PROPOSED CURB NEED TO BE RELOCATED.
4. SEE TREE DISPOSITION SCHEDULE (SHEET LD000) FOR EXACT LIST OF TREES TO BE PROTECTED OR REMOVED
5. CONTRACTOR SHALL RESTORE FRONT/BACK OF NEW SIDEWALK RESTORATION AT DRIVEWAYS, INCLUDING A MINIMUM OF 5' OF EITHER SIDE OF THE NEW SIDEWALK. SHALL INCLUDE ALL TYPES OF EXISTING DRIVEWAYS (ASPHALT, CONCRETE, STAMPED CONCRETE, PAVERS, ETC.) TO BE INCLUDED IN THE CLEARING & GRUBBING PAY ITEM.



CONSTRUCTION NOTE:

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REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, RIGO DATE: 3/20/2023 12:45 PM
CREATED: 2023-02-15 - V:\2156\ACTIVE\215619902\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\19902_FRANJO_PLAN & PROFILE 01.DWG

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
2. ALL METER BOXES IN AREA OF SIDEWALK RECONSTRUCTION TO BE REPLACED BY CONTRACTOR.
3. ALL EXISTING MAILBOXES THAT ARE NOT 6" TO 8" AWAY FROM PROPOSED CURB NEED TO BE RELOCATED.
4. SEE TREE DISPOSITION SCHEDULE (SHEET LD000) FOR EXACT LIST OF TREES TO BE PROTECTED OR REMOVED
5. CONTRACTOR SHALL RESTORE FRONT/BACK OF NEW SIDEWALK RESTORATION AT DRIVEWAYS, INCLUDING A MINIMUM OF 5' OF EITHER SIDE OF THE NEW SIDEWALK. SHALL INCLUDE ALL TYPES OF EXISTING DRIVEWAYS (ASPHALT, CONCRETE, STAMPED CONCRETE, PAVERS, ETC.) TO BE INCLUDED IN THE CLEARING & GRUBBING PAY ITEM.

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-08 OF 82

Scale: 1" = 20'
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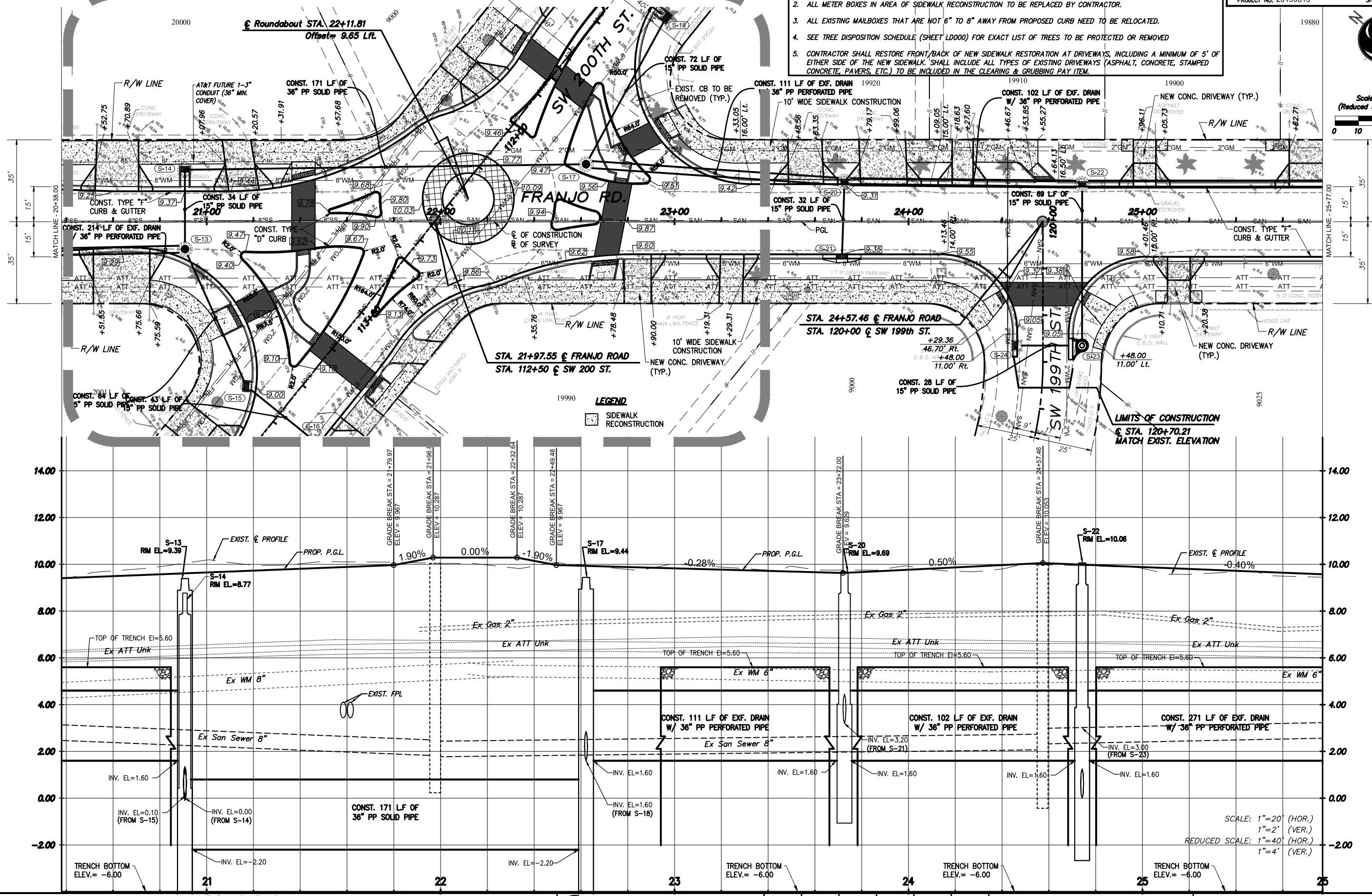

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/20/2023 12:46 PM
CREATED: 2023-02-15 - V:\(2156)ACTIVE\(2156139S)\CIVIL\DESIGN\DRAWING\CIVIL PLANS\139S2_FRNJO_PLAN & PROFILE 01.DWG

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
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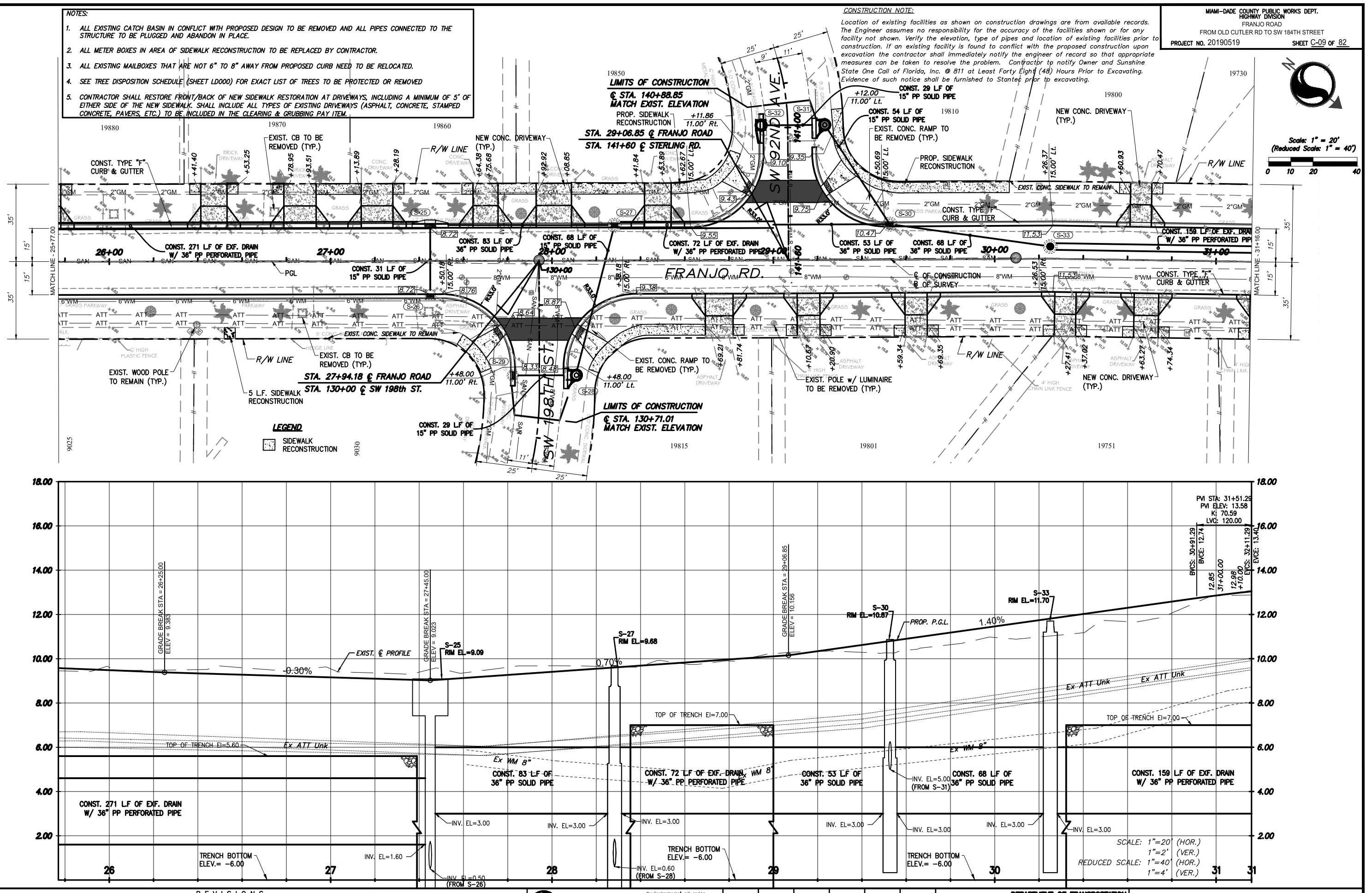
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-09 OF 82



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(Reduced Scale: 1" = 40')
0 10 20 40

SCALE: 1"=20' (HOR.)
1"=2' (VER.)
REDUCED SCALE: 1"=40' (HOR.)
1"=4' (VER.)

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/30/2023 12:47 PM
CREATED: 2023-02-15 - V:\215KJACTIVE\215615902\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 01.DWG

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
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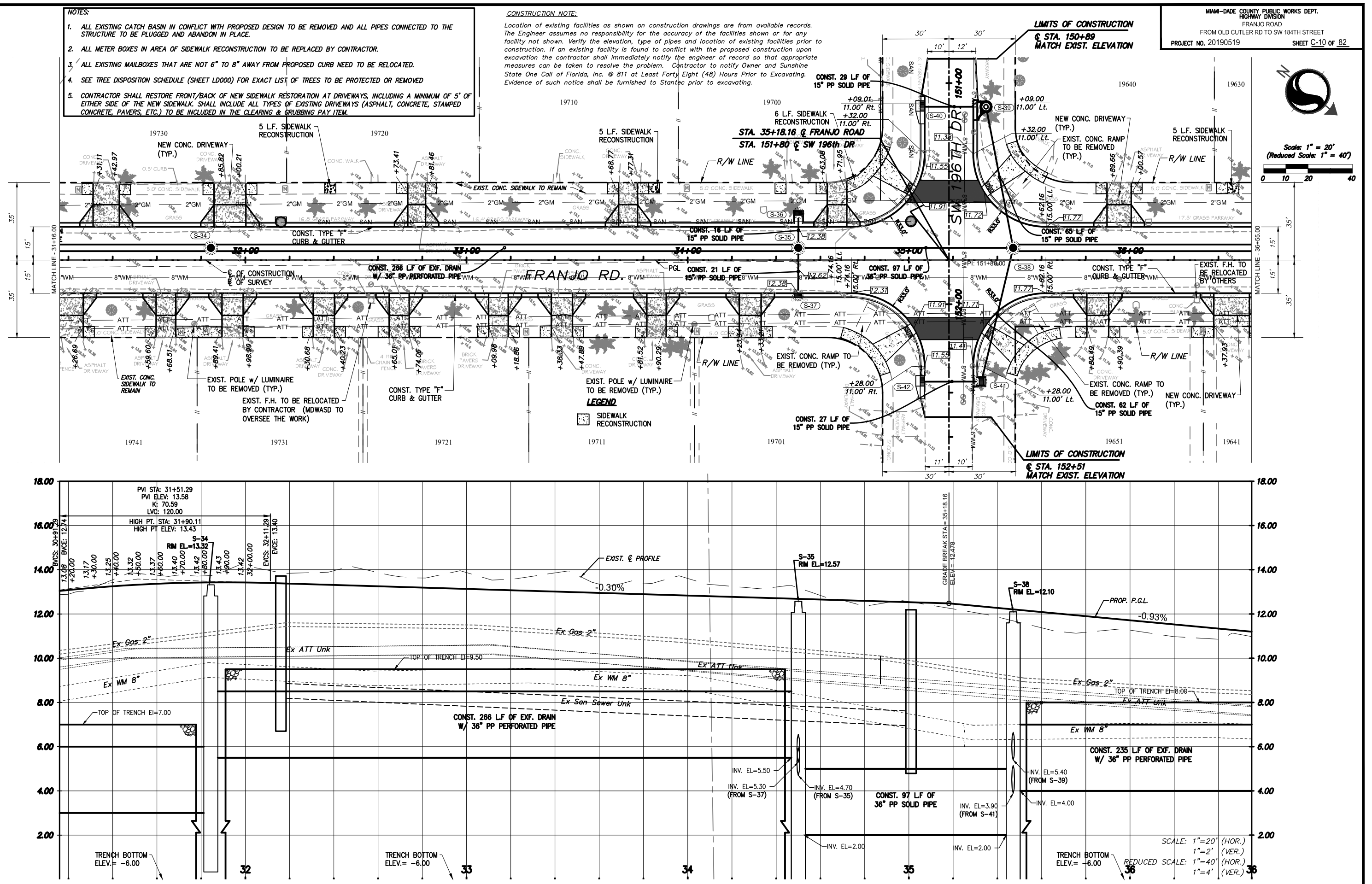
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-10 OF 82



REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, RDD DATE: 3/20/2023 12:48 PM
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CONSTRUCTION NOTE:

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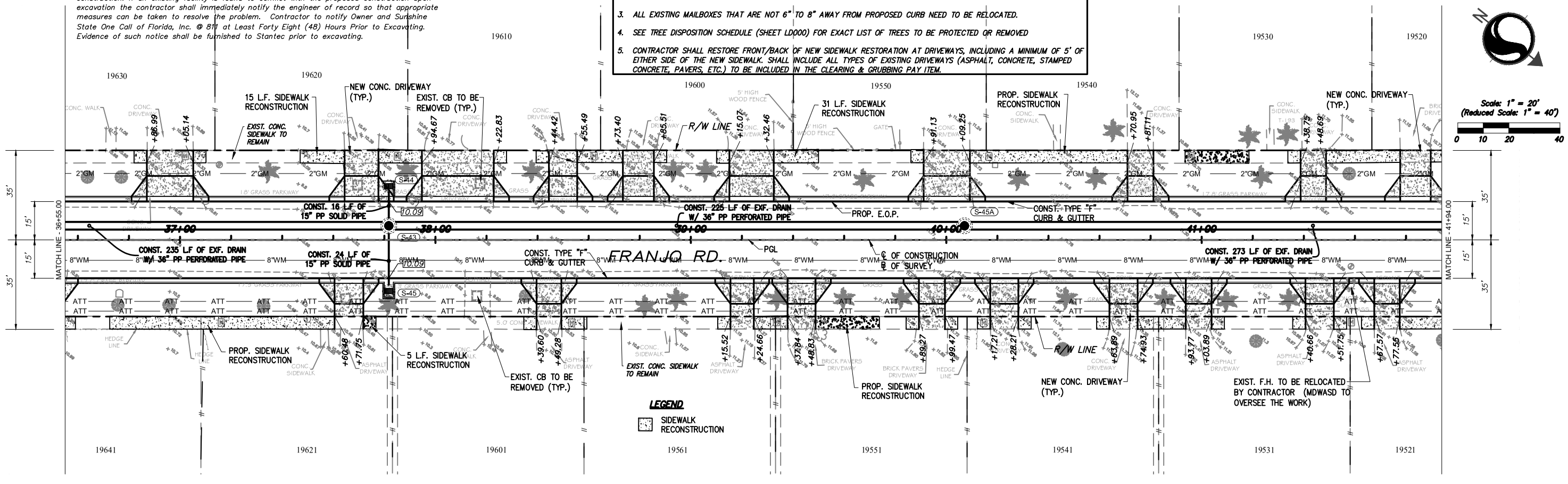
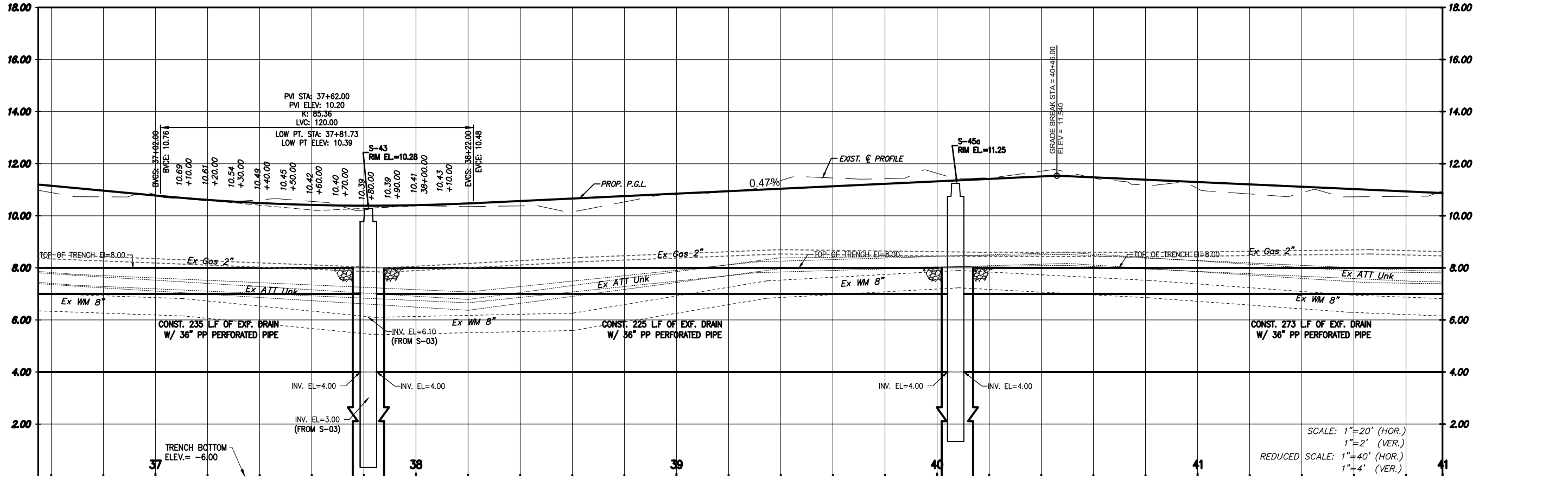
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-11 OF 82





REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/20/2023 12:49 PM
CREATED: 2023-02-15 - V:\1758\ACTIVE\215615902\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\15902_FRANJO_PLAN & PROFILE 01.DWG

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
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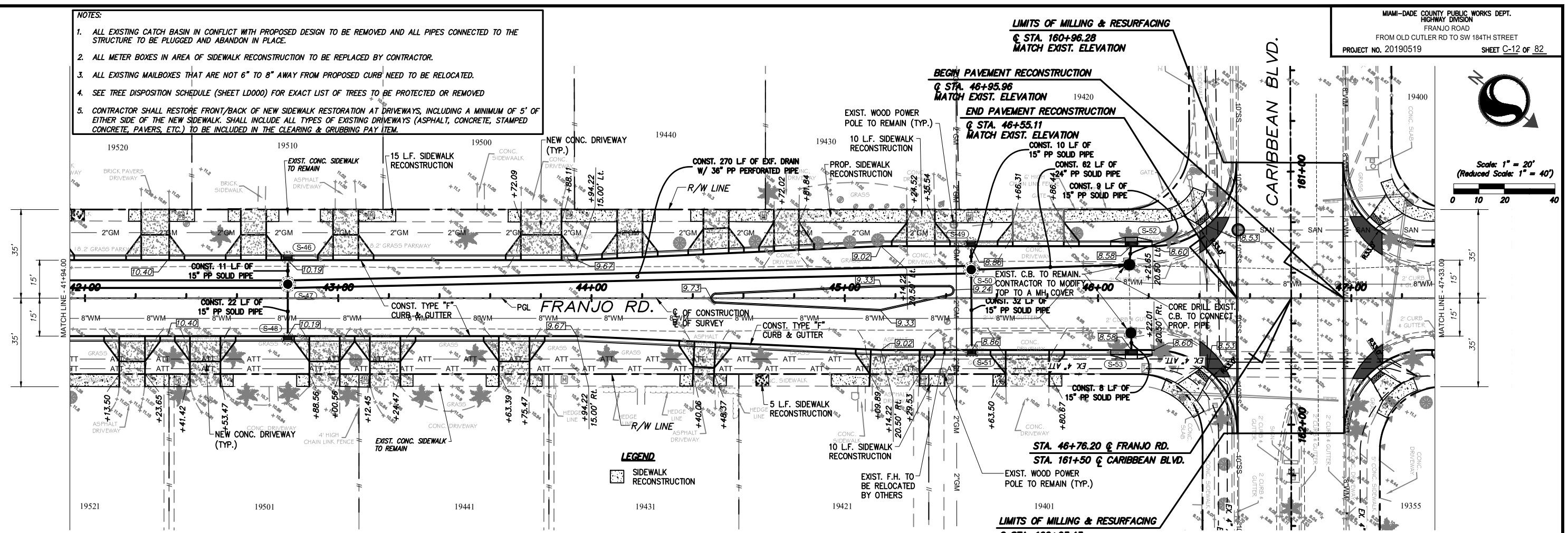
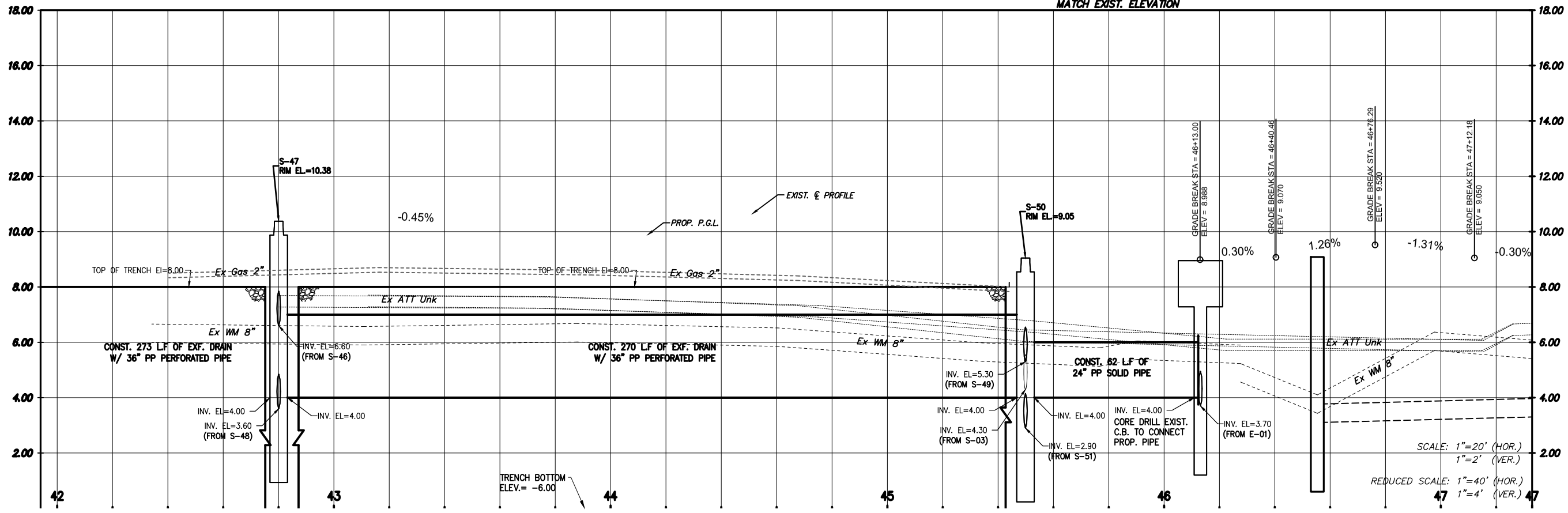
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-12 OF 82





REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, RIOD DATE: 3/20/2023 12:49 PM
CREATED: 2023-02-15 - V:\2156\ACTIVE\215619502\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\19502_FRANJO_PLAN & PROFILE 01.DWG

CONSTRUCTION NOTE:

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NOTES:

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2. *ALL METER BOXES IN AREA OF SIDEWALK RECONSTRUCTION TO BE REPLACED BY CONTRACTOR.*
3. *ALL EXISTING MAILBOXES THAT ARE NOT 6" TO 8" AWAY FROM PROPOSED CURB NEED TO BE RELOCATED.*
4. *SEE TREE DISPOSITION SCHEDULE (SHEET LD000) FOR EXACT LIST OF TREES TO BE PROTECTED OR REMOVED.*
5. *CONTRACTOR SHALL RESTORE FRONT/BACK OF NEW SIDEWALK RESTORATION AT DRIVEWAYS, INCLUDING A MINIMUM OF 5' OF EITHER SIDE OF THE NEW SIDEWALK, SHALL INCLUDE ALL TYPES OF EXISTING DRIVEWAYS (ASPHALT, CONCRETE, STAMPED CONCRETE, PAVERS, ETC.) TO BE INCLUDED IN THE CLEARING & GRUBBING PAY ITEM.*

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-13 OF 82

Scale: 1" = 20'
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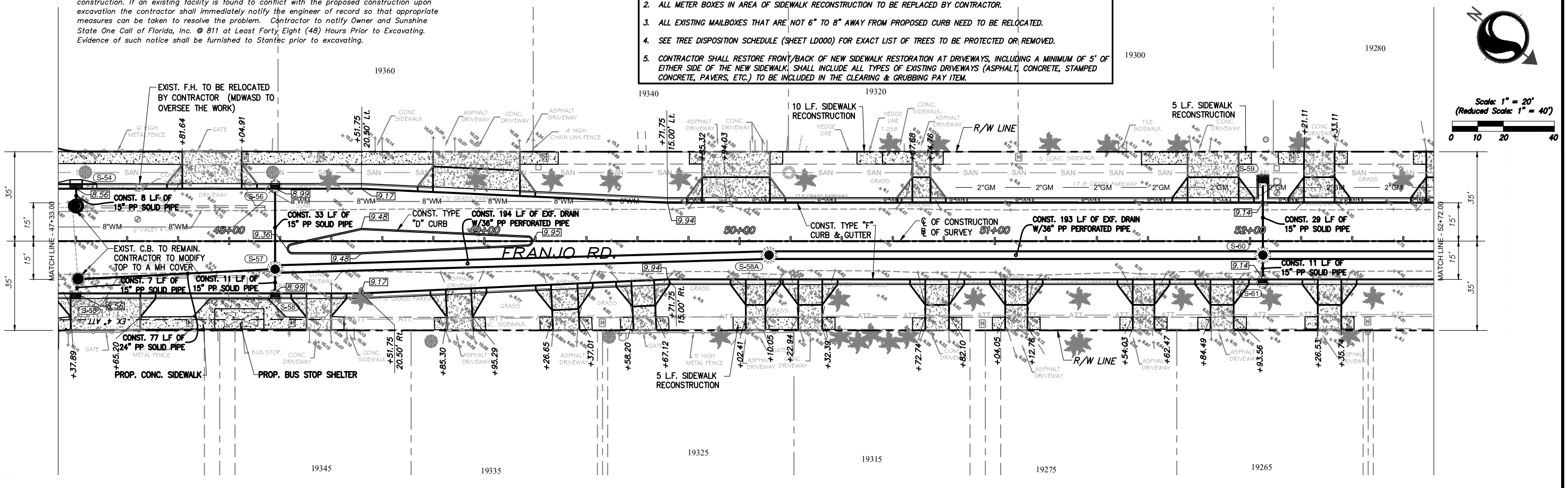

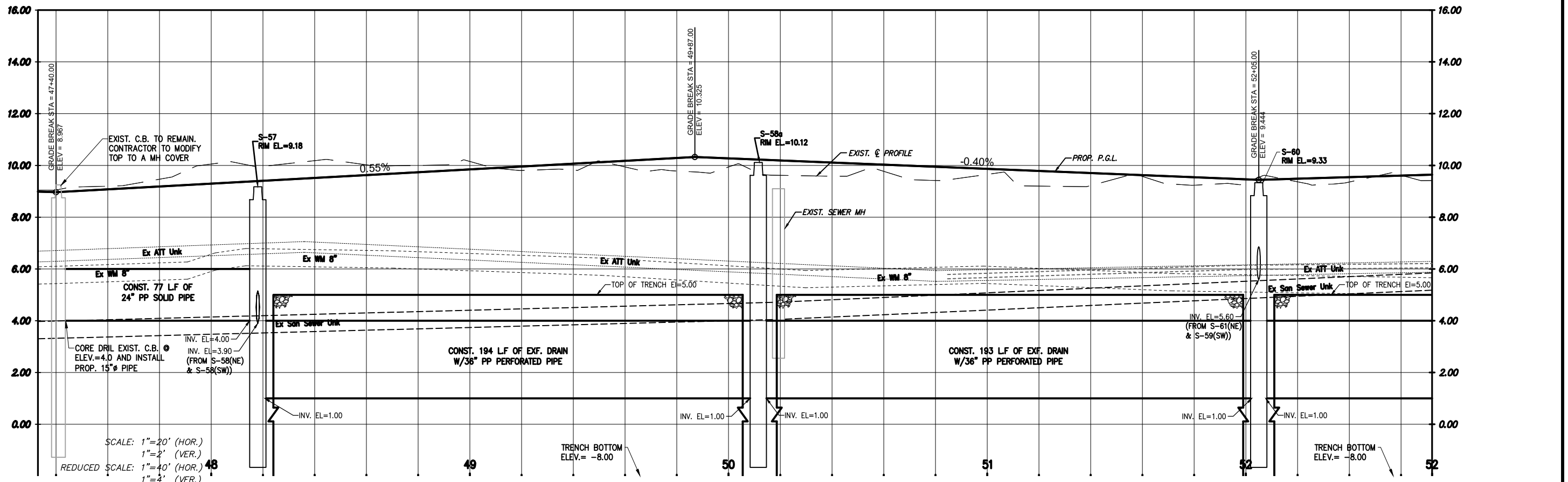

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MR RAGUES, ROD DATE: 3/20/2023 12:50 PM
CREATED: 2023-03-20 - V:\2156\ACTIVE\215615952\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 02.DWG

CONSTRUCTION NOTE:

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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-14 OF 82

Scale: 1" = 20'
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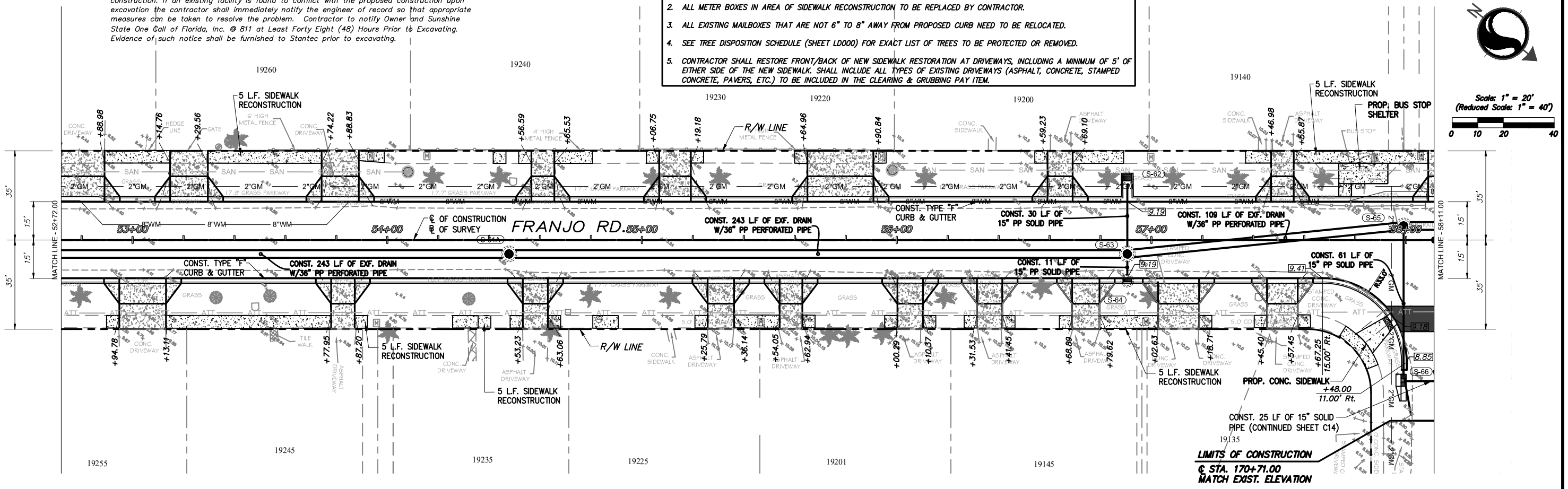

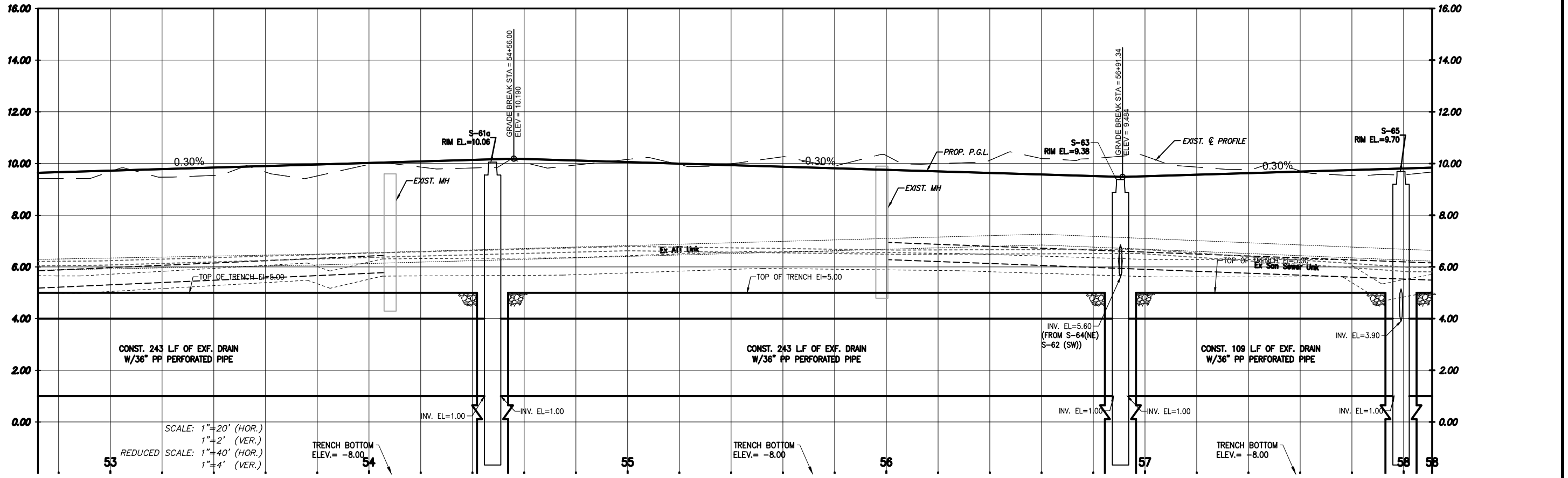

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/29/2023 12:51 PM
CREATED: 2023-03-20 - V:\12565\ACTIVE\215615952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 02.DWG

NOTES:

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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-15 OF 82

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
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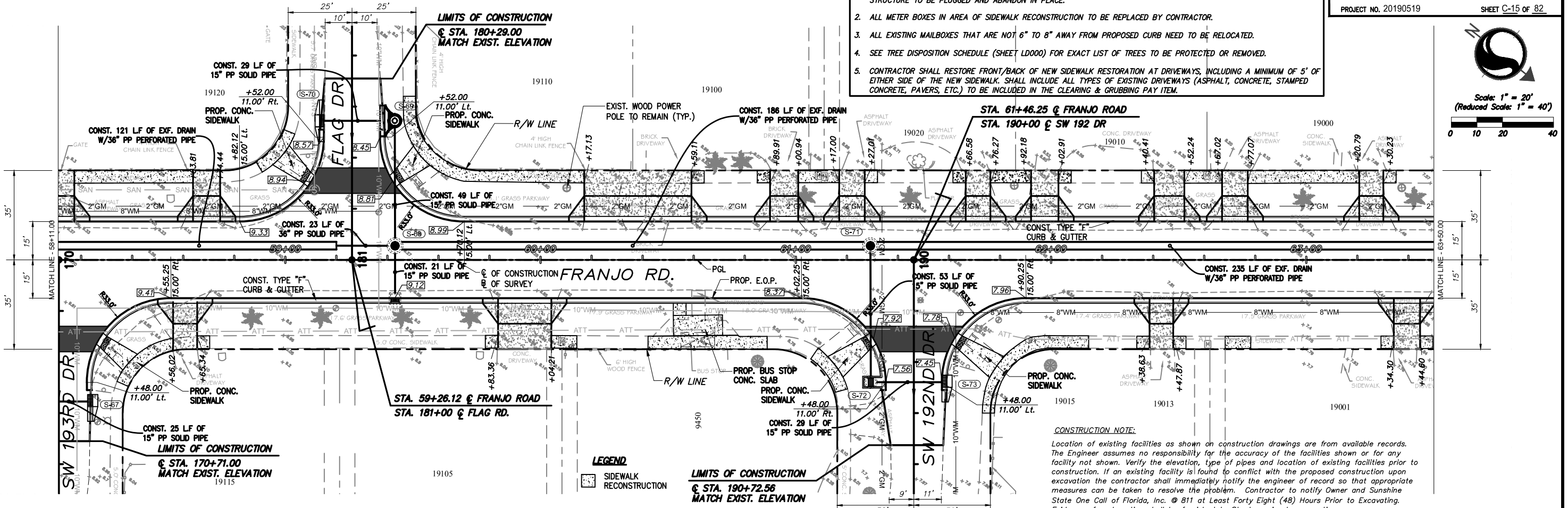

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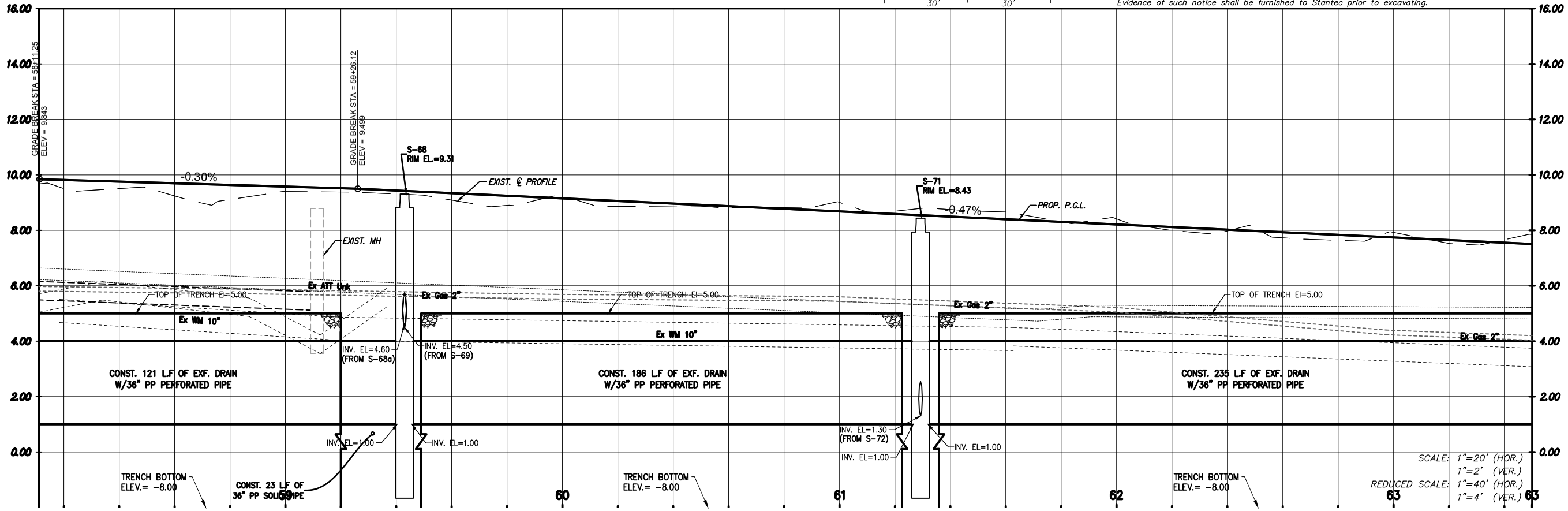


SCALE: 1"=20' (HOR.)
1"=2' (VER.)
REDUCED SCALE: 1"=40' (HOR.)
1"=4' (VER.)

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

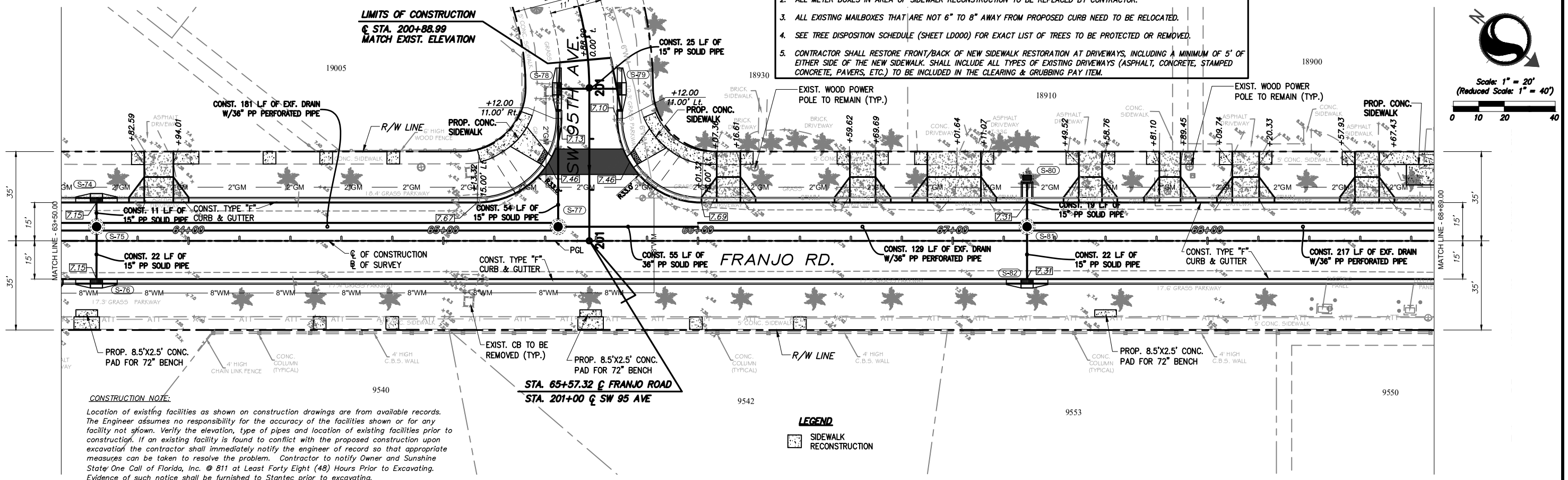
PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/30/2023 12:52 PM
CREATED: 2023-03-20 - V:\215KJACTIVE\215615902\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 02.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-16 OF 82

NOTES:

1. ALL EXISTING CATCH BASIN IN CONFLICT WITH PROPOSED DESIGN TO BE REMOVED AND ALL PIPES CONNECTED TO THE STRUCTURE TO BE PLUGGED AND ABANDON IN PLACE.
2. ALL METER BOXES IN AREA OF SIDEWALK RECONSTRUCTION TO BE REPLACED BY CONTRACTOR.
3. ALL EXISTING MAILBOXES THAT ARE NOT 6" TO 8" AWAY FROM PROPOSED CURB NEED TO BE RELOCATED.
4. SEE TREE DISPOSITION SCHEDULE (SHEET LD000) FOR EXACT LIST OF TREES TO BE PROTECTED OR REMOVED.
5. CONTRACTOR SHALL RESTORE FRONT/BACK OF NEW SIDEWALK RESTORATION AT DRIVEWAYS, INCLUDING A MINIMUM OF 5' OF EITHER SIDE OF THE NEW SIDEWALK. SHALL INCLUDE ALL TYPES OF EXISTING DRIVEWAYS (ASPHALT, CONCRETE, STAMPED CONCRETE, PAVERS, ETC.) TO BE INCLUDED IN THE CLEARING & GRUBBING PAY ITEM.



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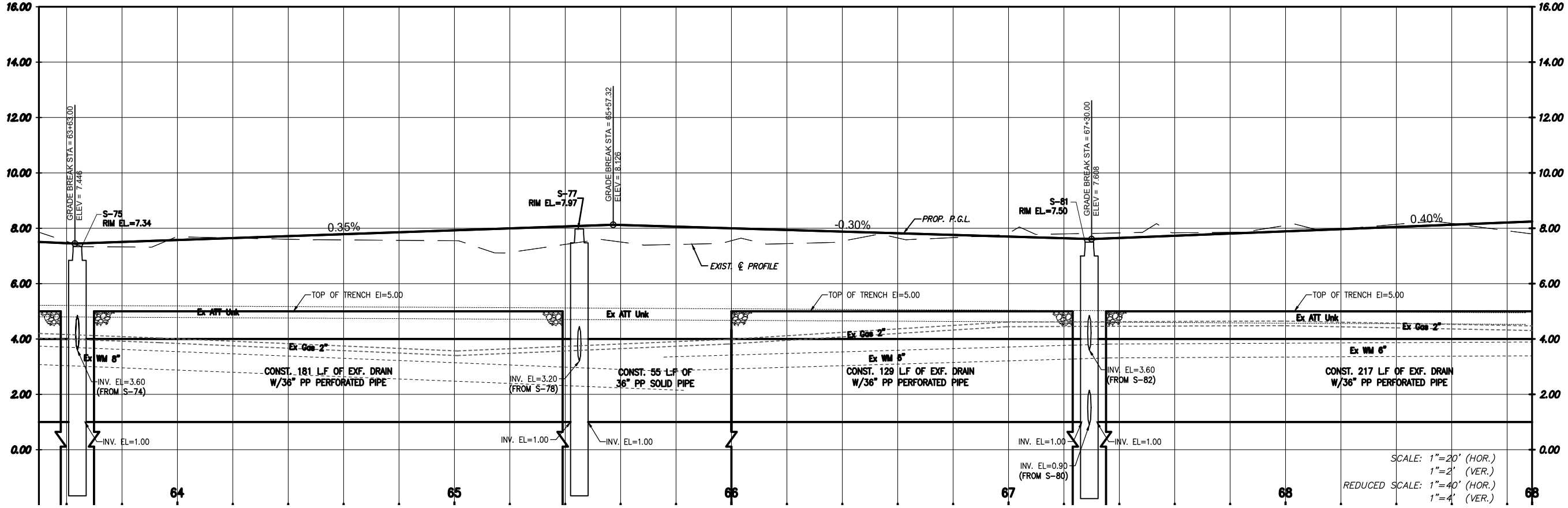
LEGEND

SIDEWALK RECONSTRUCTION



SCALE: 1"=20' (HOR.)
1"=2' (VER.)
REDUCED SCALE: 1"=40' (HOR.)
1"=4' (VER.)

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

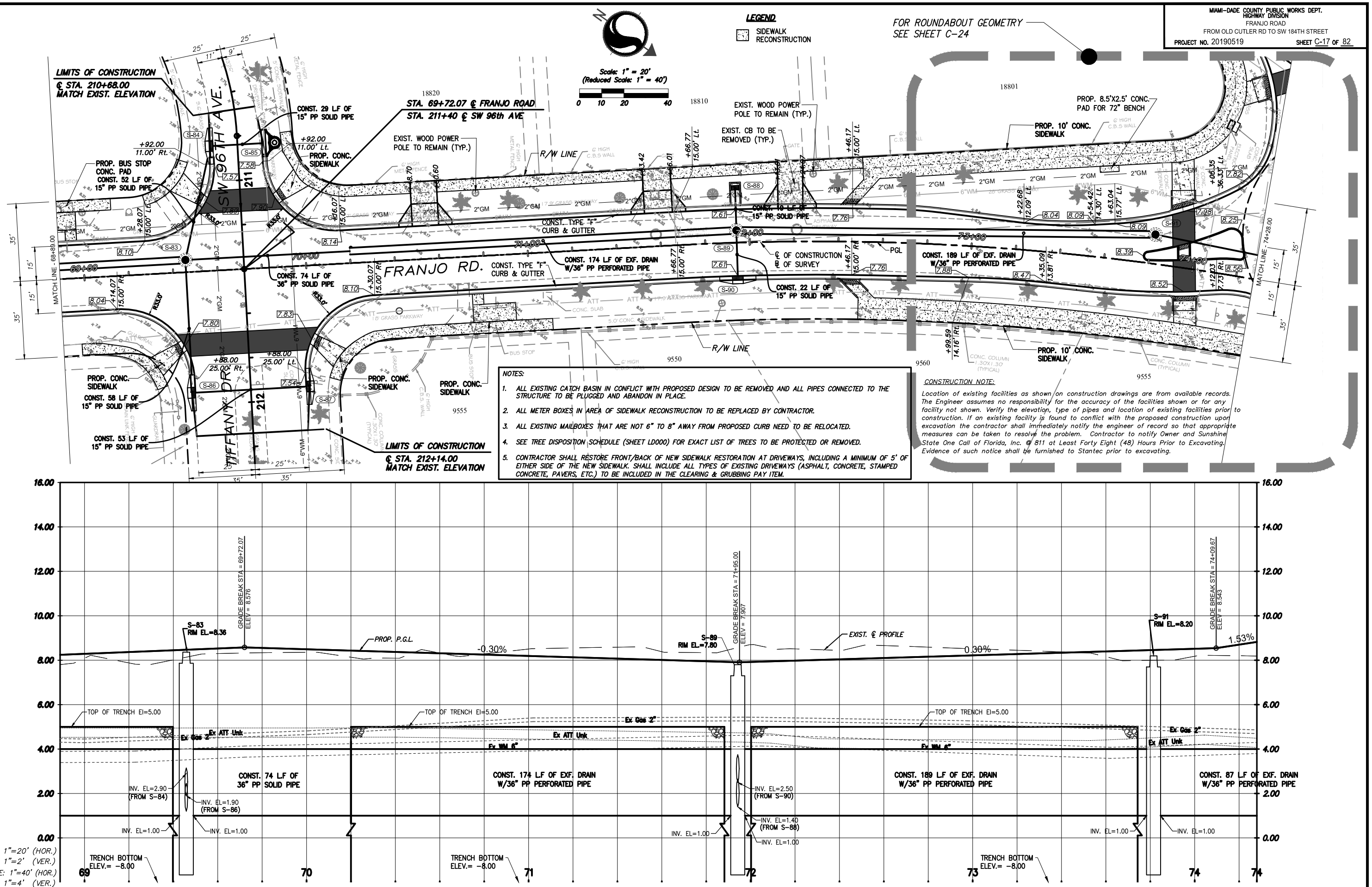
SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/30/2023 12:53 PM
CREATED: 2023-03-20 - V:\2156\ACTIVE\215615952\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 02.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-17 OF 82



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Stantec
901 Ponce de Leon Blvd. Suite 900
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SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, RDD DATE: 3/20/2023 12:54 PM
CREATED: 2023-03-20 - V:\21156\ACTIVE\21561592\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952_FRANJO_PLAN & PROFILE 02.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-18 OF 82

FOR ROUNDABOUT GEOMETRY
SEE SHEET C-24

CONSTRUCTION NOTE:

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Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

CONST. 100 LF OF 15" PP SOLID PIPE
PROP. 8.5'X2.5' CONC. PAD FOR 72" BENCH
PROP. 10' CONC. SIDEWALK
CONTRACTOR TO COORDINATE WITH AT&T FOR RELOCATION OF CABINET
CONST. 68 LF OF 15" PP SOLID PIPE
CONST. 41 LF OF 15" PP SOLID PIPE
CONST. 67 LF OF 36" PP SOLID PIPE
CONST. TYPE "F" CURB & GUTTER
CONST. 116 LF OF EXF. DRAIN W/36" PP PERFORATED PIPE
CONST. 78 LF OF EXF. DRAIN W/36" PP PERFORATED PIPE
PROP. 10' CONC. SIDEWALK
PROP. BUS STOP CONC. SLAB
CONST. 19 LF OF 15" PP SOLID PIPE
CONST. 89 LF OF 36" PP SOLID PIPE
CONST. 32 LF OF 15" PP SOLID PIPE
CONST. 111 LF OF 36" PP SOLID PIPE
PROP. CONC. SIDEWALK
CONST. 120 LF OF EXF. DRAIN W/36" PP PERFORATED PIPE
CONST. 93 LF OF 15" PP SOLID PIPE
CONST. 25 LF OF 15" PP SOLID PIPE
CONST. TYPE "F" CURB & GUTTER
PROP. 8.5'X2.5' CONC. PAD FOR 72" BENCH
EXIST. TREES TO BE REMOVED
PROP. 10' CONC. SIDEWALK
PROP. 8.5'X2.5' CONC. PAD FOR 72" BENCH
PROP. CONC. SIDEWALK
PROP. CONC. SIDEWALK
PROP. CONC. SIDEWALK

SW 97th AVE
SW 99th RD
SW 187TH ST.
FRANJO RD.
PGL
℄ OF CONSTRUCTION
℄ OF SURVEY
R/W LINE
MATCH LINE - 74+28.00
MATCH LINE - 79+67.00

℄ Roundabout STA. 74+45.67
Offset= 19.48' Lft.

STA. 74+45.67 ℄ FRANJO ROAD
STA. 222+30 ℄ SW 97TH AVE

STA. 75+90.55 ℄ FRANJO ROAD
STA. 232+00 ℄ SW 99TH RD

STA. 78+51.20 ℄ FRANJO ROAD
STA. 241+50 ℄ SW 187 ST.

NOTES:

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LEGEND
SIDEWALK RECONSTRUCTION

GRADE BREAK STA = 74+33.17 ELEV = 8.903
GRADE BREAK STA = 74+58.17 ELEV = 8.903
GRADE BREAK STA = 74+81.67 ELEV = 8.543
GRADE BREAK STA = 75+90.55 ELEV = 7.926
GRADE BREAK STA = 76+80.00 ELEV = 7.417

S-92 RIM EL=8.55
S-96 RIM EL=7.84
S-99 RIM EL=7.61
S-102 RIM EL=7.87
S-103 RIM EL=7.79

0.00% -1.53% -0.57% -0.30% 0.30% -0.96%
PROP. P.G.L.
EXIST. ℄ PROFILE

PVI STA: 78+30.00
PVI ELEV: 8.23
K: 95.38
LVC: 120.00
HIGH PT. STA: 77+98.61
HIGH PT ELEV: 8.09
BVCS: 77+70.00
BVCE: 8.05
EVCS: 78+90.00
EVCE: 7.65

PVI STA: 79+80.00
PVI ELEV: 6.79
K: 95.76
LVC: 120.00
BVCS: 79+20.00
BVCE: 7.36
EVCS: 80+40.00
EVCE: 6.67

TOP OF TRENCH El=5.00
TOP OF TRENCH El=5.02
TRENCH BOTTOM ELEV. = -8.00
Ex Gas 4"
Ex ATT Unk
Ex WM 8" (RETIRED)
Ex WM 16"
Ex FM 6"
INV. EL=4.40 (FROM S-93)
INV. EL=0.30 (FROM S-96a)
INV. EL=1.40 (FROM S-101)
INV. EL=0.00 (FROM S-100)
INV. EL=0.15 (FROM S-106)
CONST. 89 LF OF 36" PP SOLID PIPE
CONST. 111 LF OF Ex FM 6" 36" PP SOLID PIPE

SCALE: 1"=20' (HOR.)
1"=2' (VER.)
REDUCED SCALE: 1"=40' (HOR.)
1"=4' (VER.)

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

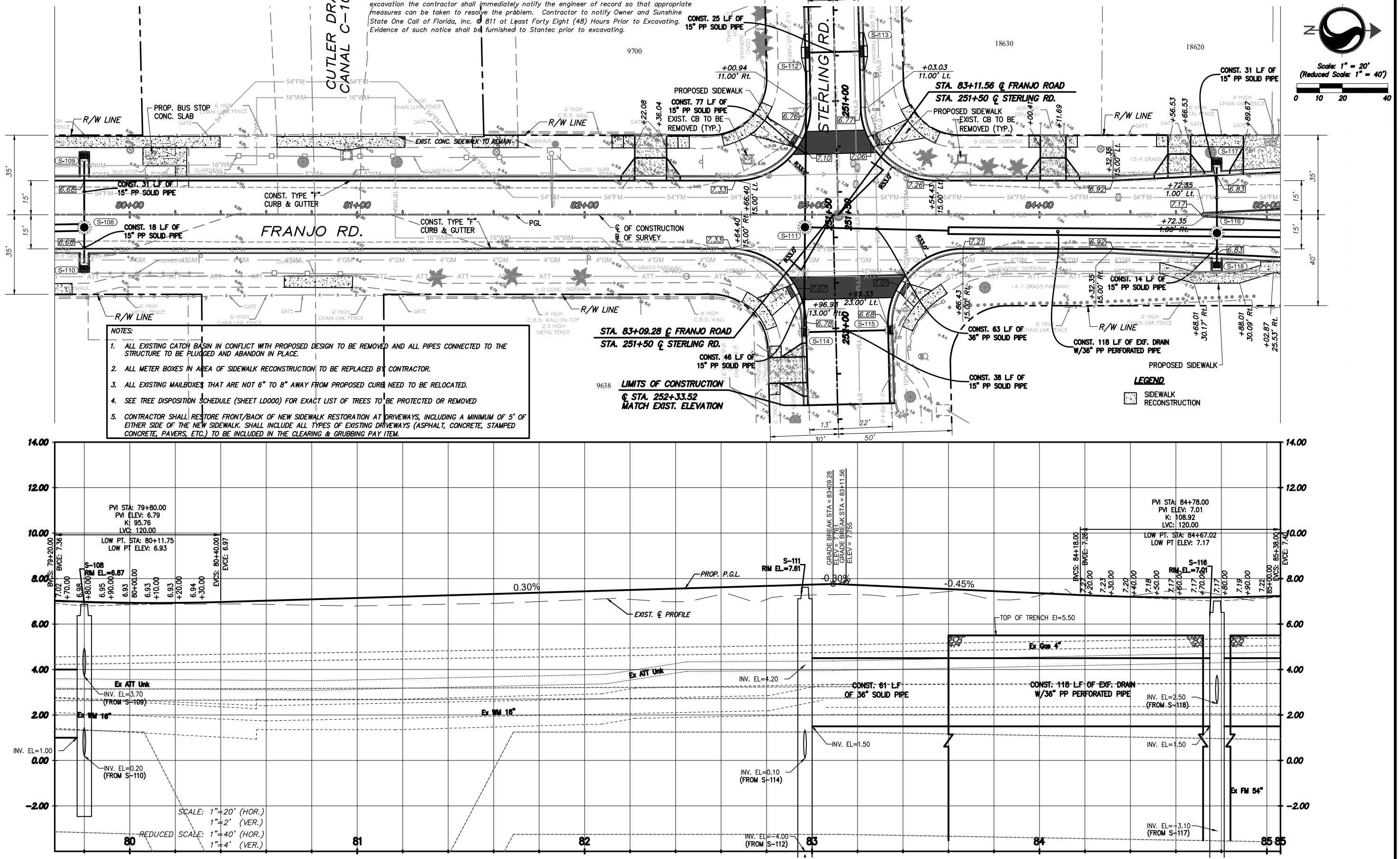
PLAN & PROFILE

PLOTTED BY: MORALES, ROSI DATE: 3/30/2023 12:55 PM
CREATED: 2023-03-20 - V:\2156\ACTIVE\215615892\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\15892_FRANJO_PLAN & PROFILE 02.DWG

CONSTRUCTION NOTE:

Location of existing facilities as shown on construction drawings are from available records. The Engineer assumes no responsibility for the accuracy of the facilities shown or for any facility not shown. Verify the elevation, type of pipes and location of existing facilities prior to construction. If an existing facility is found to conflict with the proposed construction upon excavation the contractor shall immediately notify the engineer of record so that appropriate measures can be taken to resolve the problem. Contractor to notify Owner and Sunshine State One Call of Florida, Inc. @ 811 at Least Forty Eight (48) Hours Prior to Excavating. Evidence of such notice shall be furnished to Stantec prior to excavating.

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-19 OF 82



NOTES:

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REVISIONS								
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SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, RIGO DATE: 3/20/2023 12:56 PM
CREATED: 2022-09-29 - V:\2156\ACTIVE\215619962\CIVIL\DESIGN\DRAWING\CIVIL PLANS\19962_FRANJO_PLAN & PROFILE 03.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-20 OF 82

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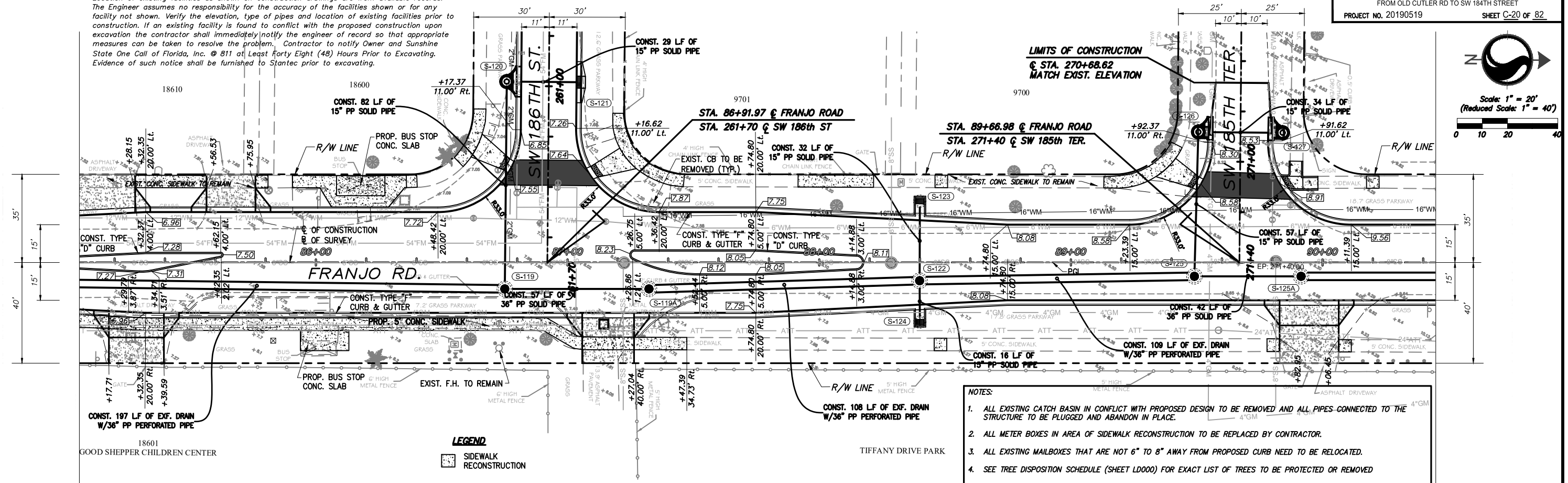

LEGEND

SIDEWALK RECONSTRUCTION

NOTES:

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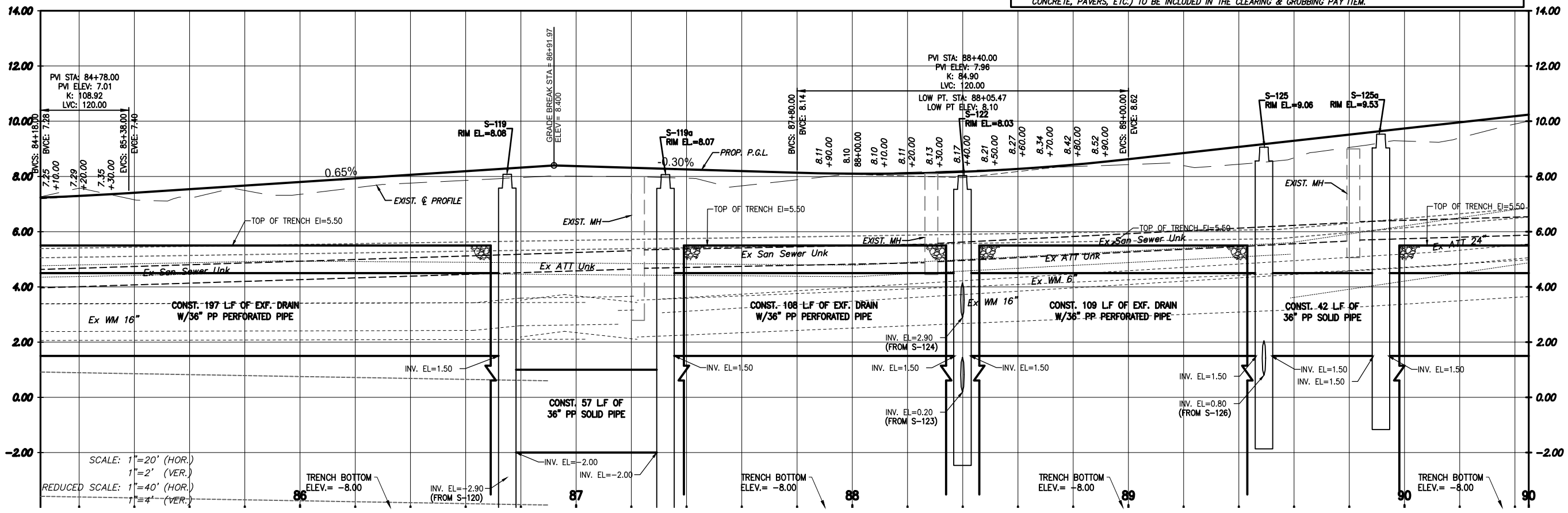

REVISIONS								
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Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

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CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/29/2023 12:56 PM
CREATED: 2022-09-29 - W:\2156\ACTIVE\21561960\CIVIL\DESIGN\DRAWING\CIVIL PLANS\19952_FRANJO_PLAN & PROFILE 03.DWG

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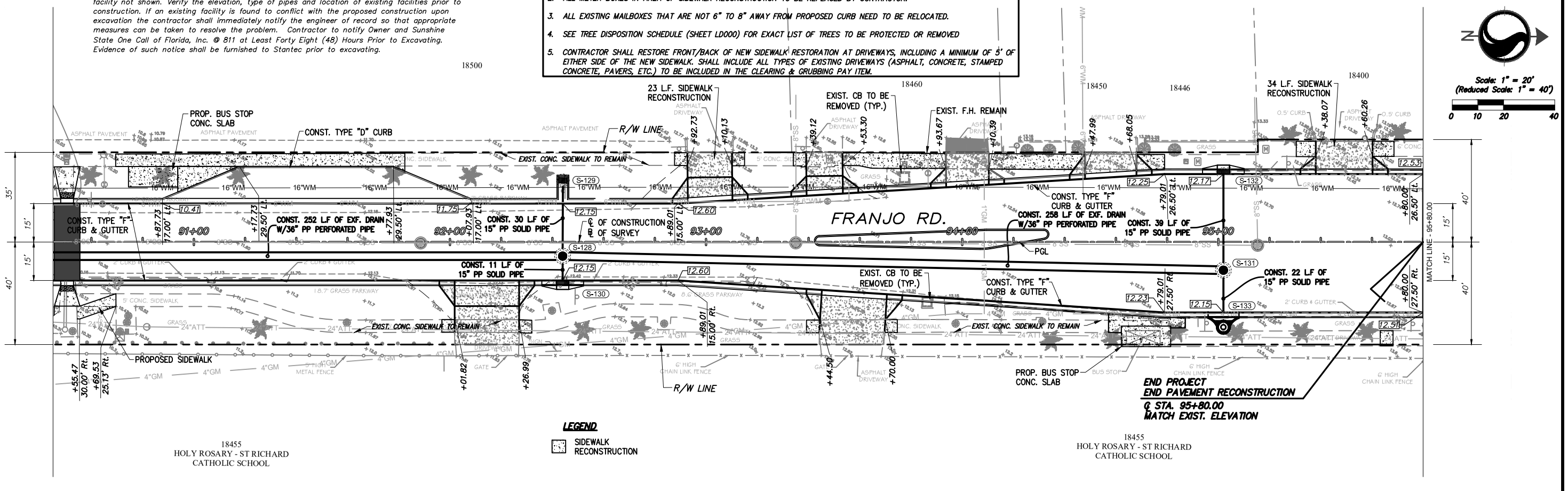
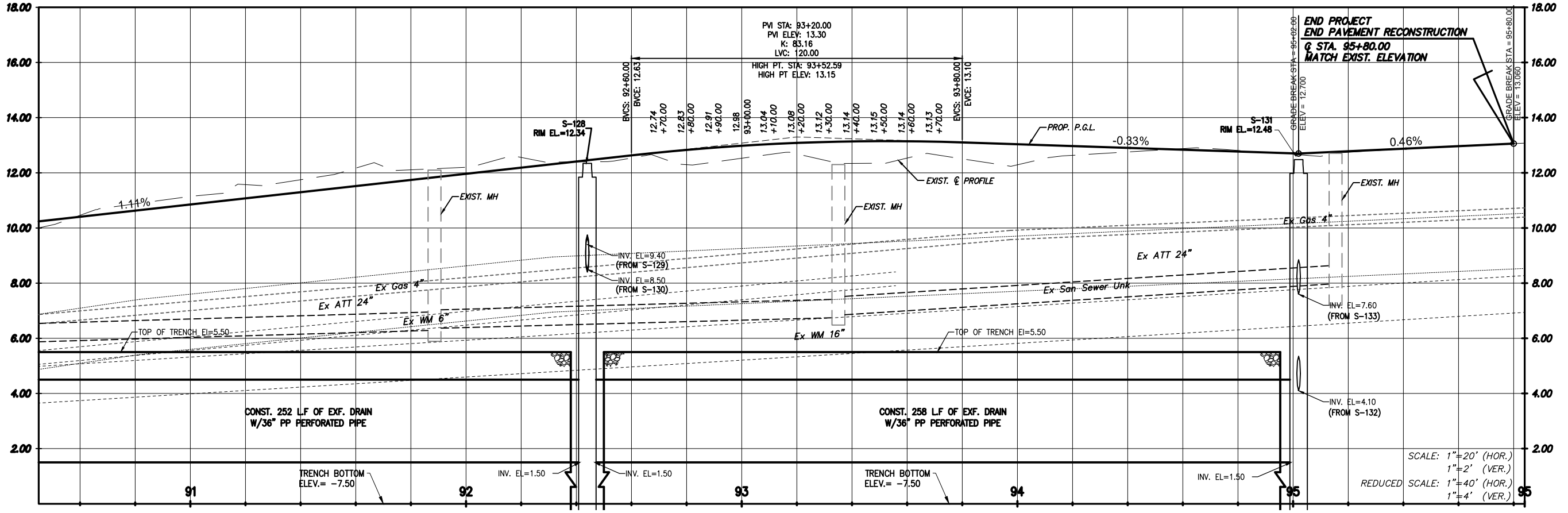
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-21 OF 82

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40





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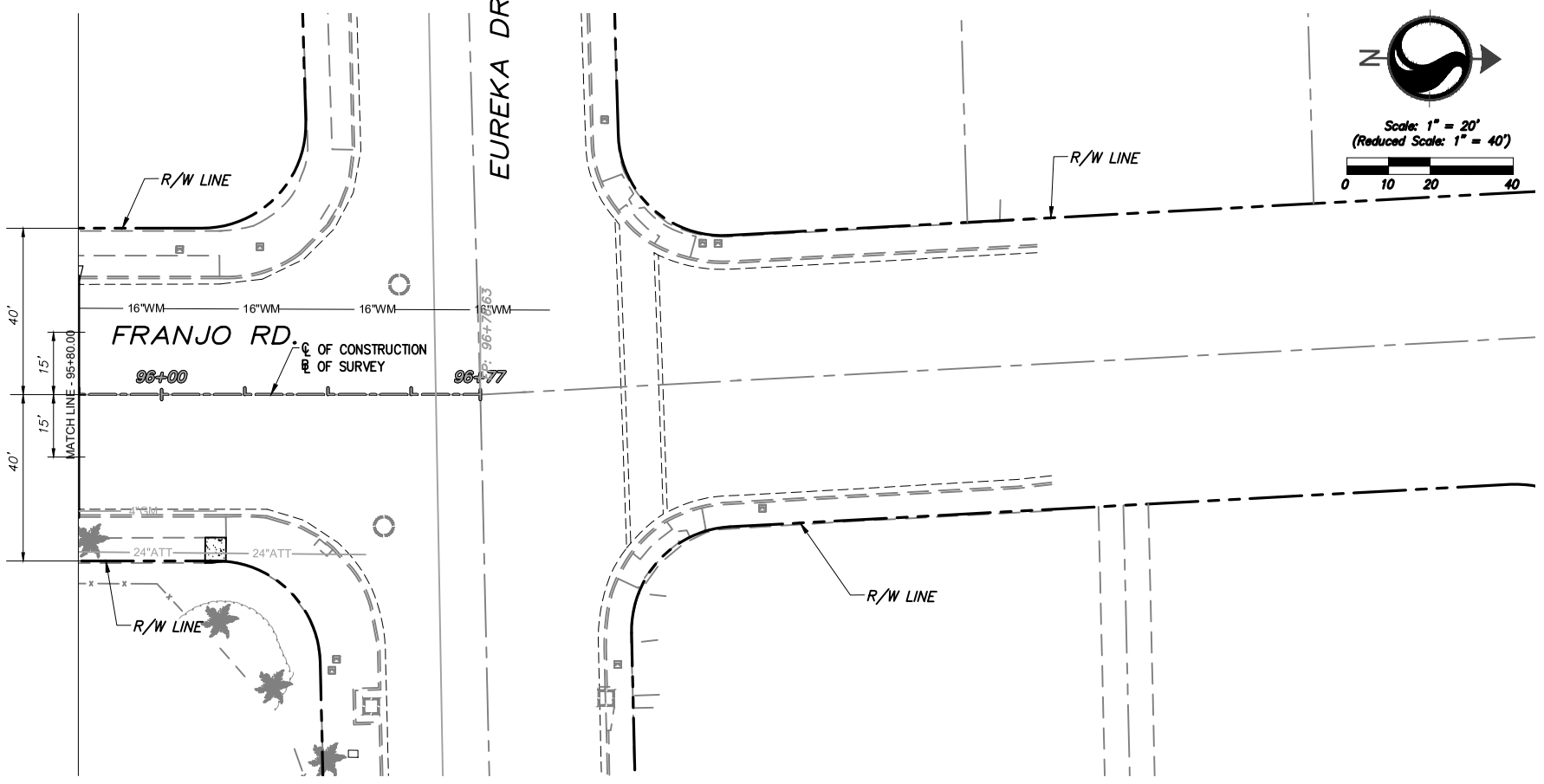
SUPERVISED BY:					

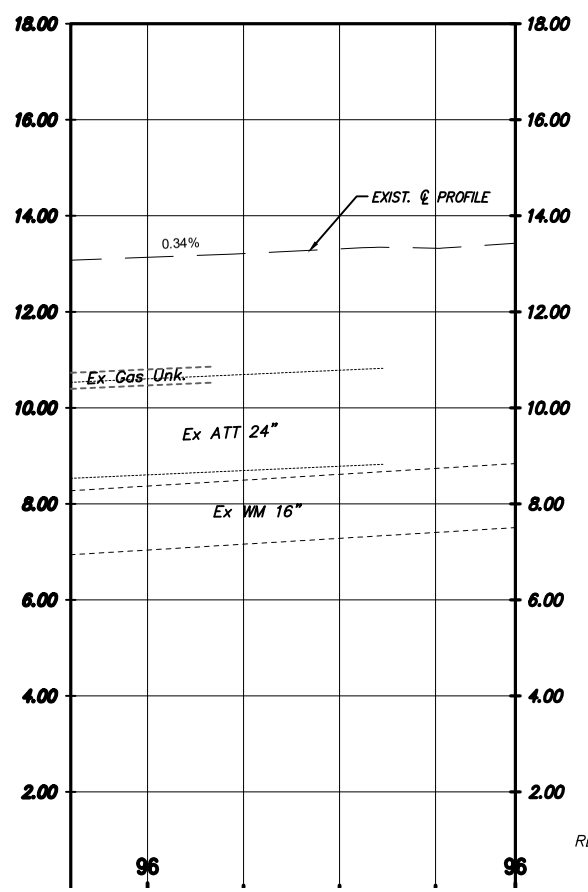
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/30/2023 12:57 PM
CREATED: 2022-09-29 - V:\215\ACTIVE\215615902\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15902_FRANJO_PLAN & PROFILE 03.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-22 OF 82





SCALE: 1"=20' (HOR.)
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Coral Gables, Florida 33134
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CHECKED BY	CMH		CHECKED BY	CMH	

SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLAN & PROFILE

PLOTTED BY: MORALES, ROD DATE: 3/20/2023 12:58 PM
CREATED: 2022-09-29 - V:\21561\ACTIVE\21561992\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15992_FRANJO_PLAN & PROFILE 03.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-23 OF 82

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

℄ Roundabout STA. 22+11.81
Offset= 9.65 Lft.

STA. 21+97.55 ℄ FRANJO ROAD
STA. 112+50 ℄ SW 200 ST.

FRANJO ROAD

SW 200TH ST

SW 199TH ST

SW 200TH ST

20010 20000 9000 19920 19910 19900 20011 20011 19990 9000

REVISIONS								
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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

ROUNDABOUT GEOMETRY

PLOTTED BY: MORALES, ROD DATE: 7/19/2023 4:53 PM
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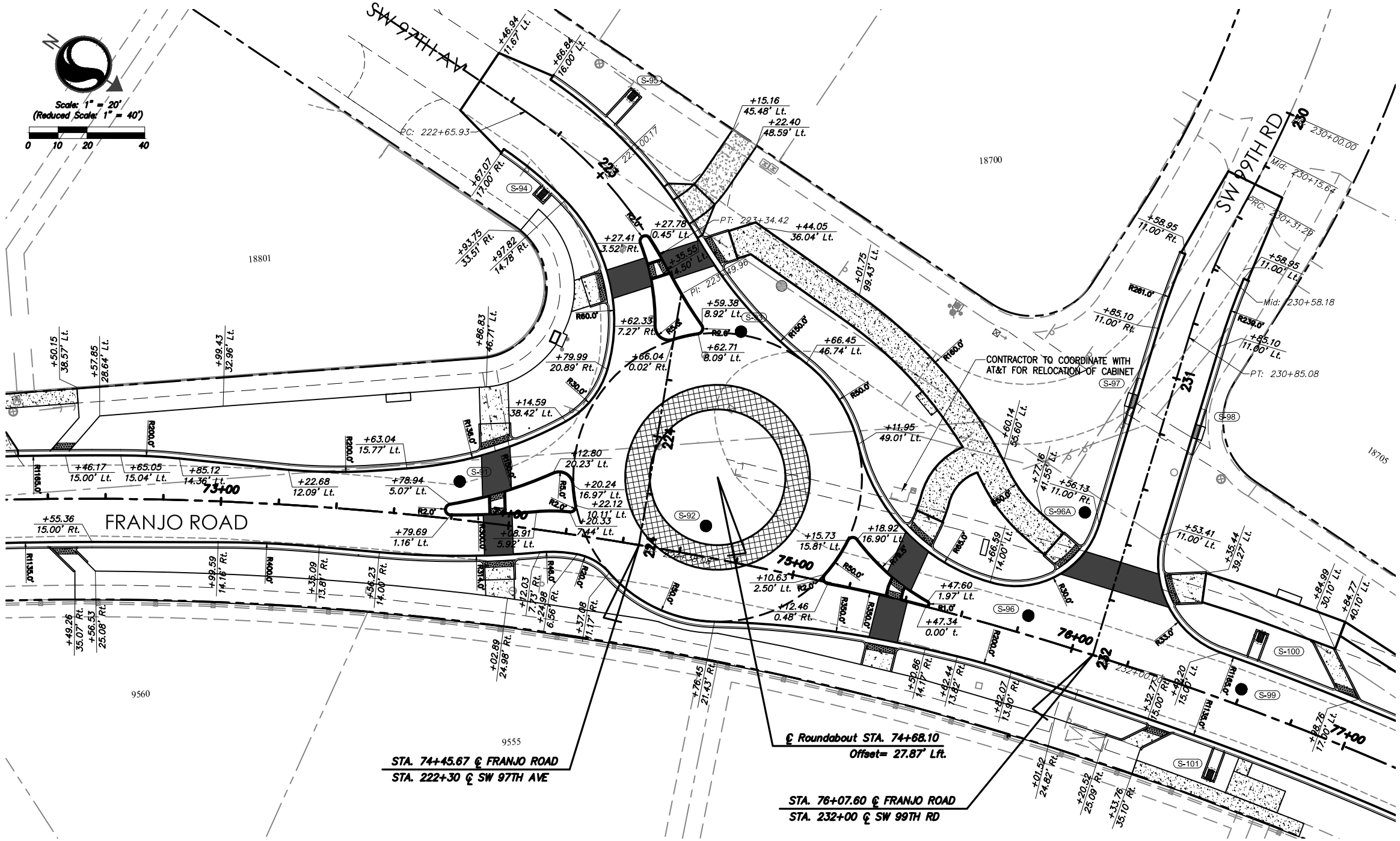

REVISIONS								
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www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

ROUNDABOUT GEOMETRY

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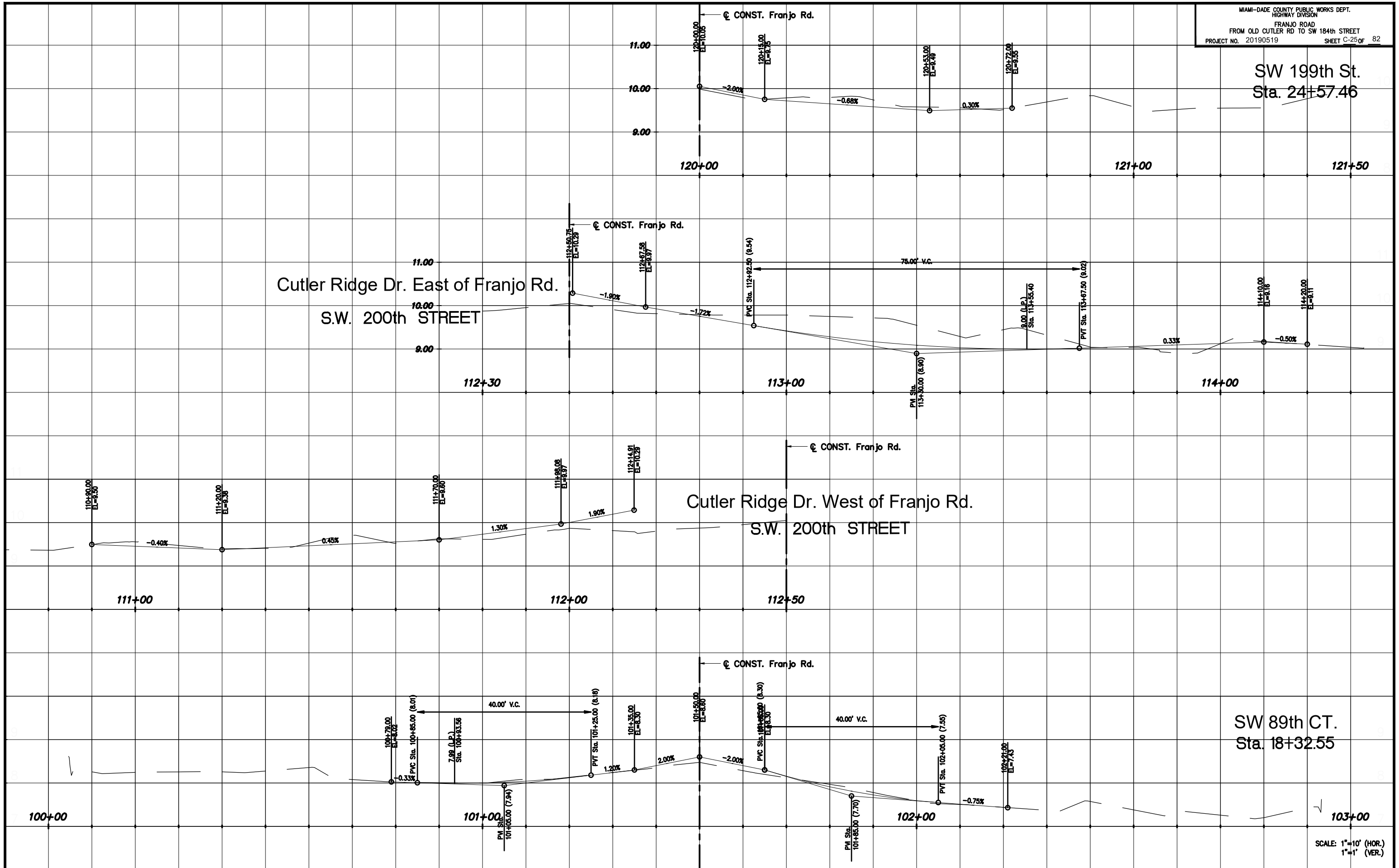
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-25 OF 82



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MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
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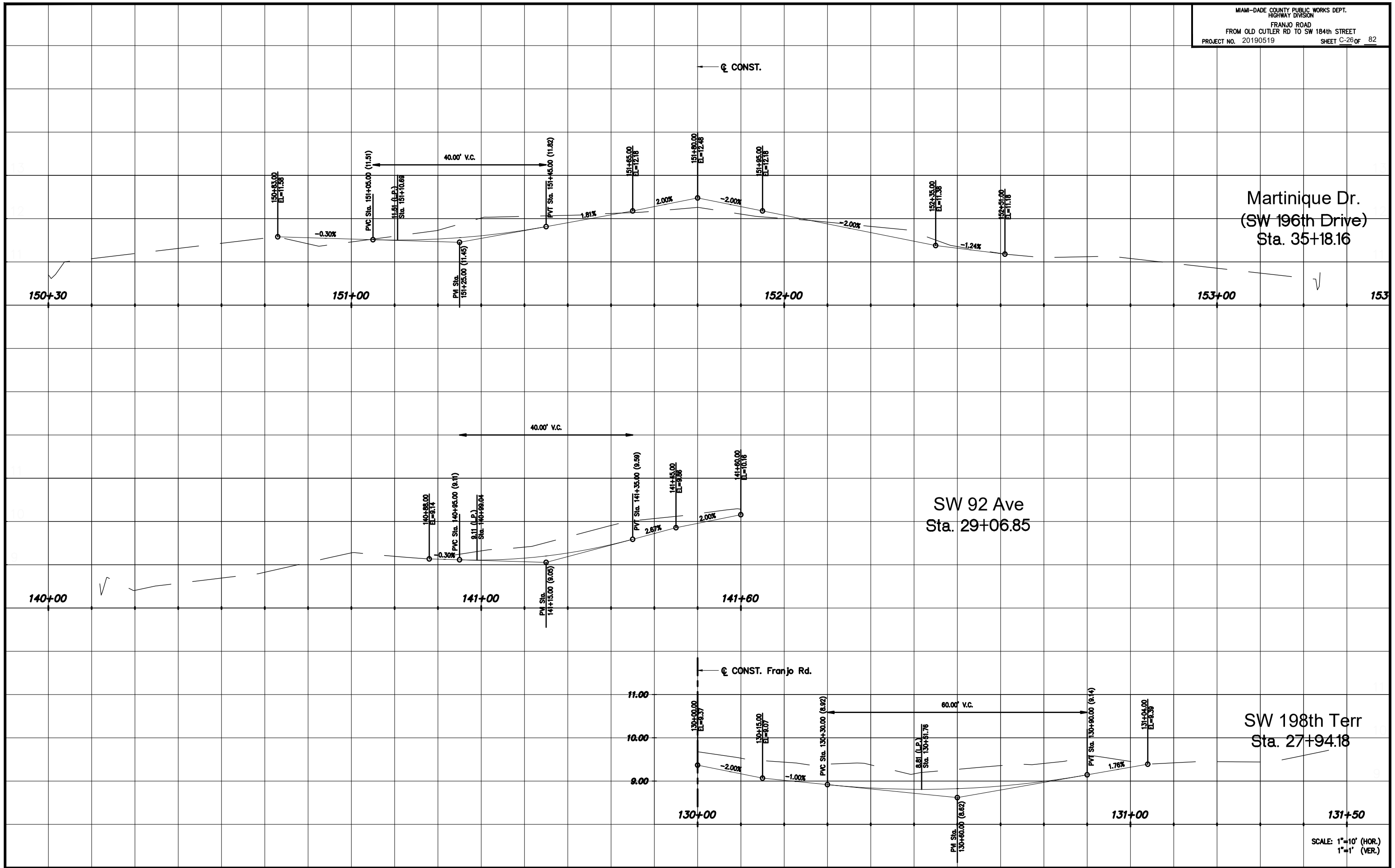
INTERSECTING STREET PROFILES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-26 OF 82



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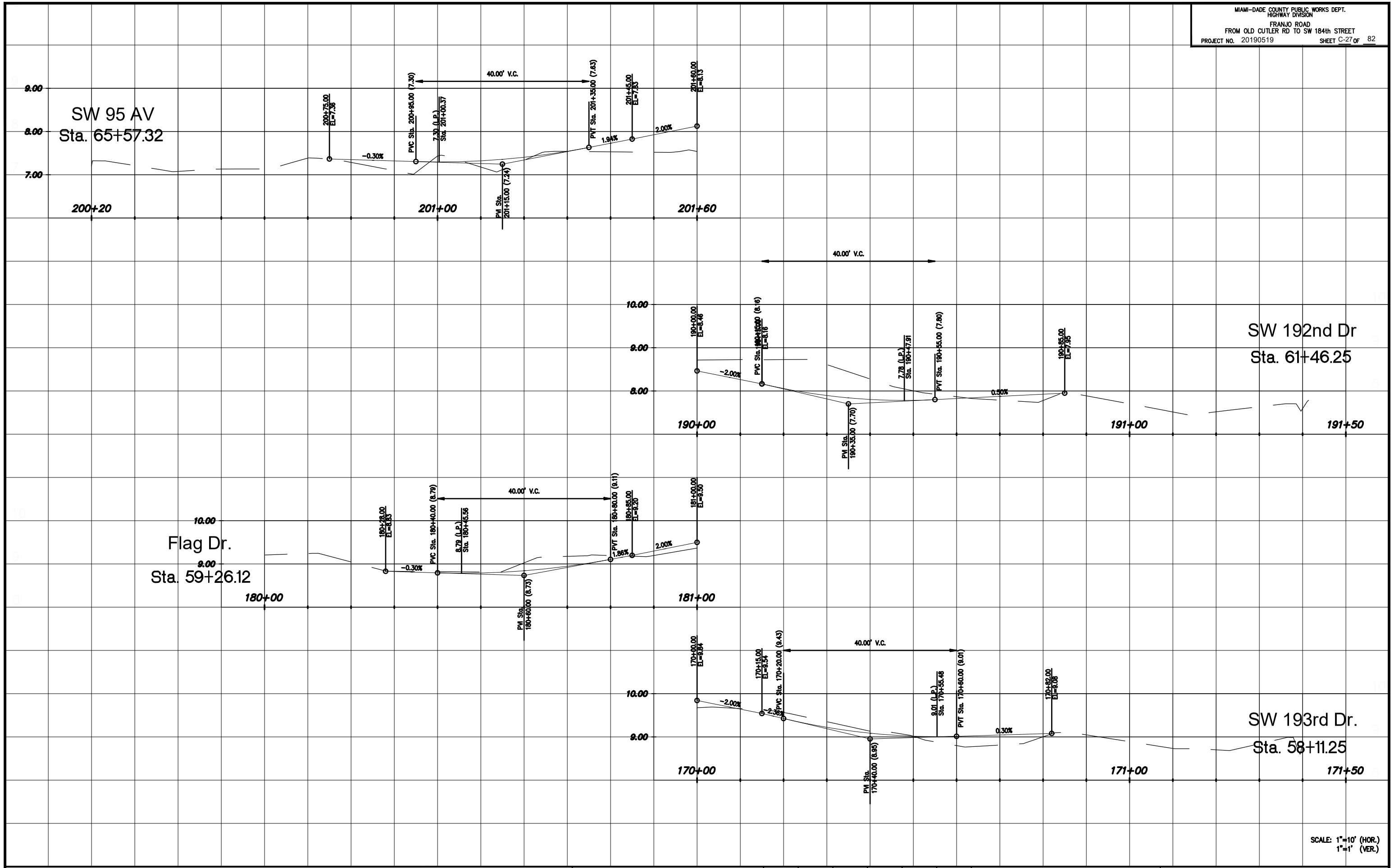
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-27 OF 82



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1"=1' (VER.)

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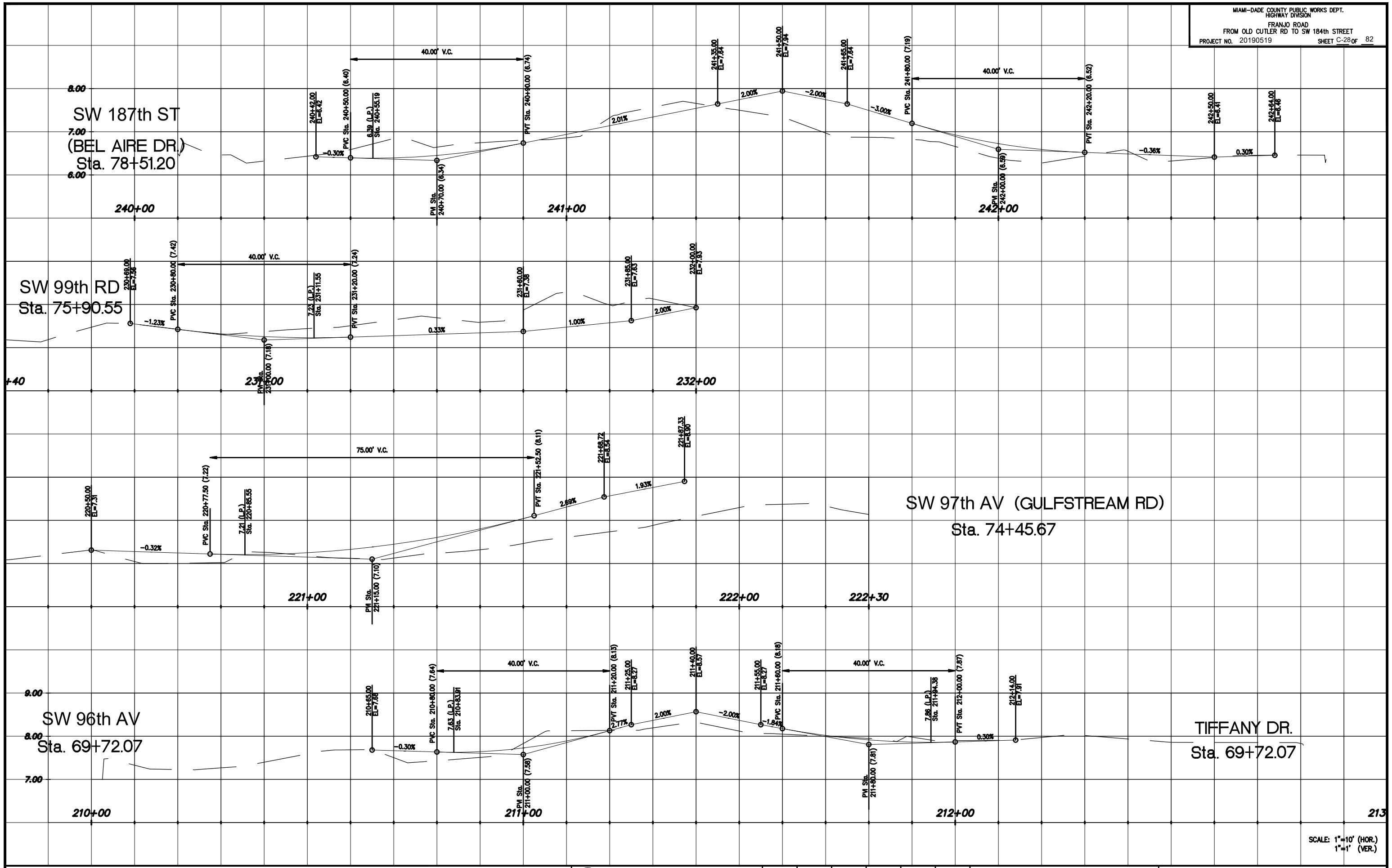
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-28 OF 82



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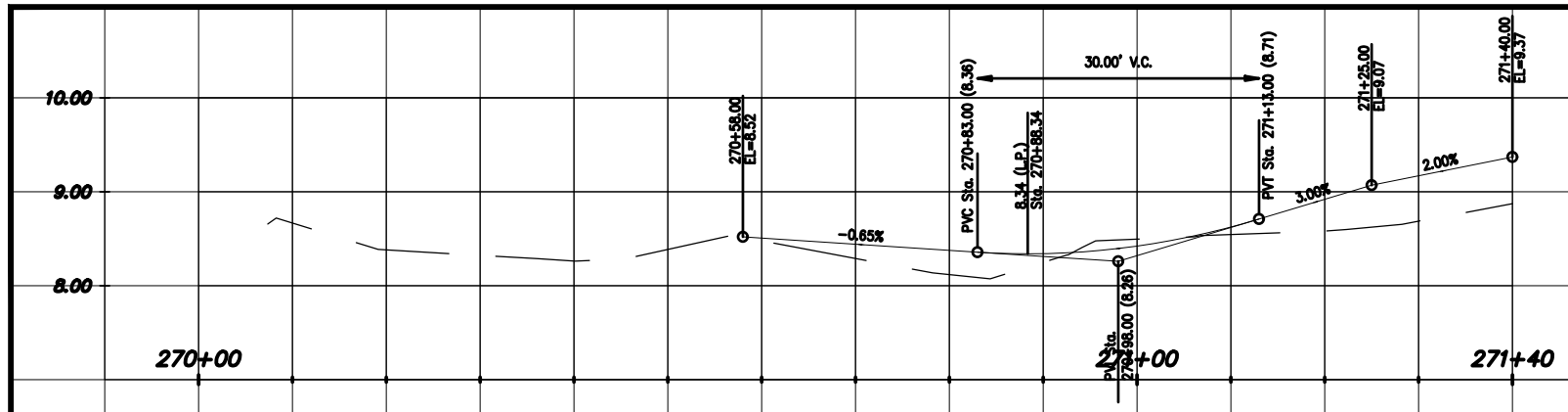
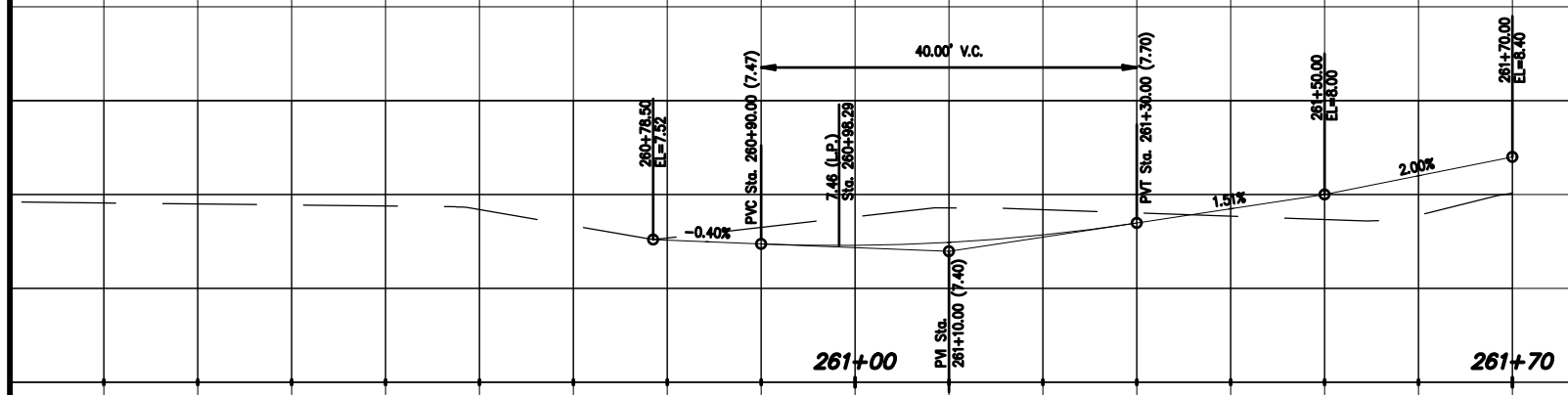
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-29 OF 82

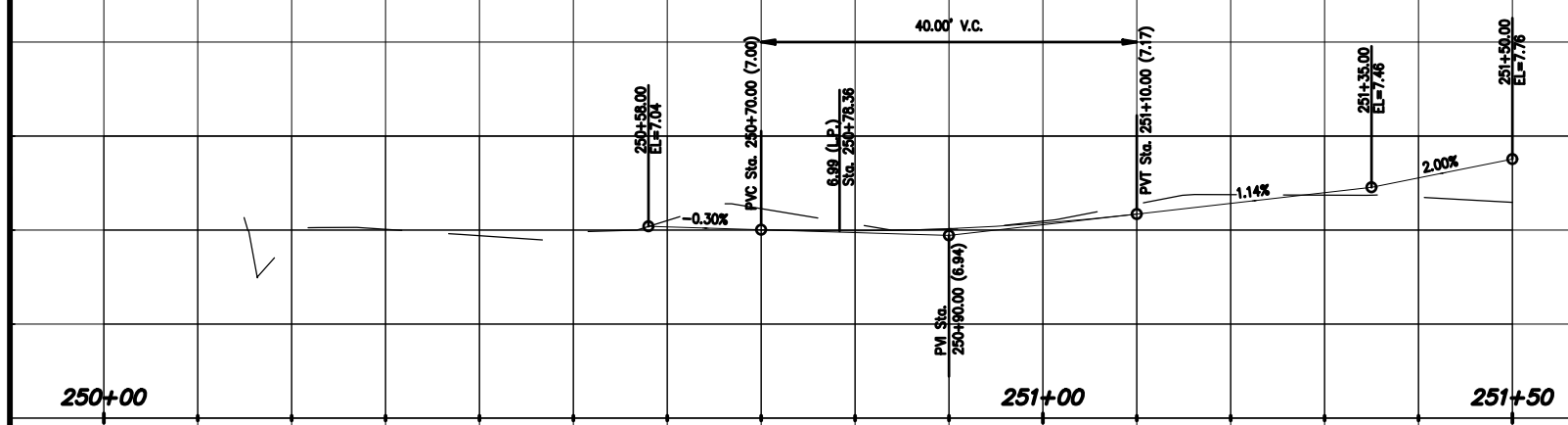


SW 185th Terr
Sta. 89+66.98



SW 186th St.
Sta. 86+91.97

STERLING DR EAST OF FRANJO
Sta. 83+09.28



STERLING DR WEST OF FRANJO
Sta. 83+11.56

SCALE: 1"=10' (HOR.)
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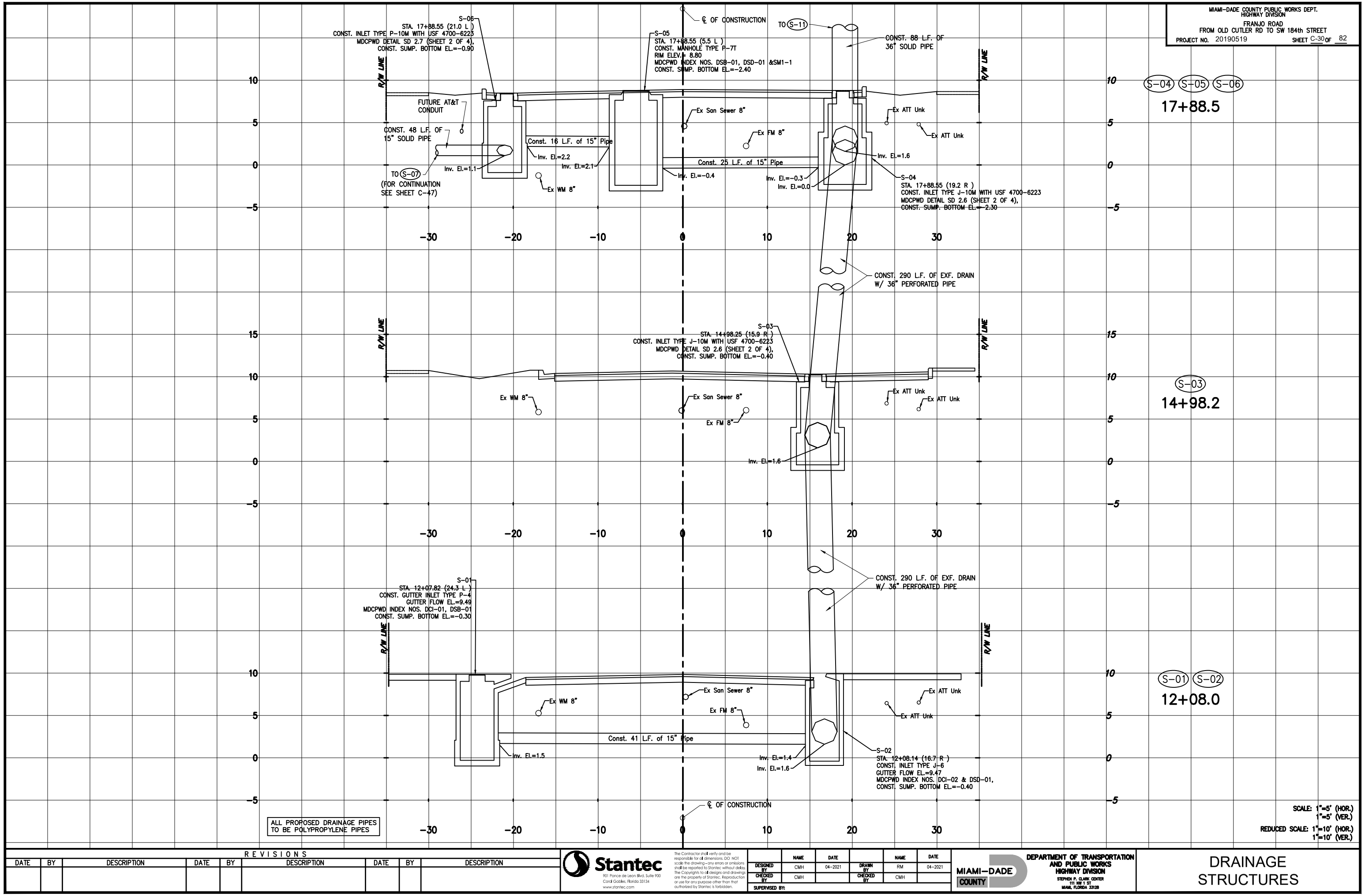
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-30 OF 82



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HIGHWAY DIVISION
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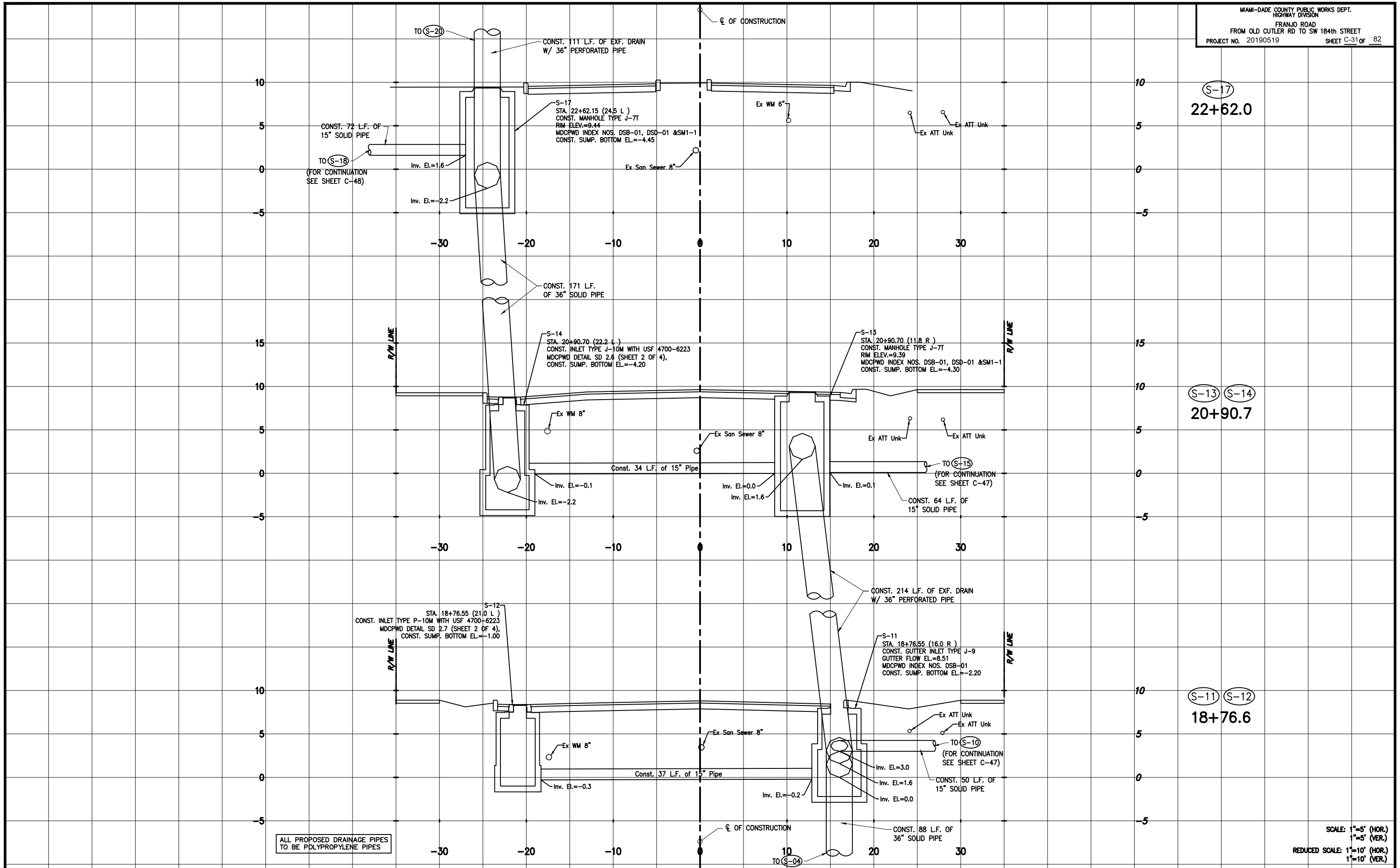
MIAMI, FLORIDA 33128

DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-31 OF 82



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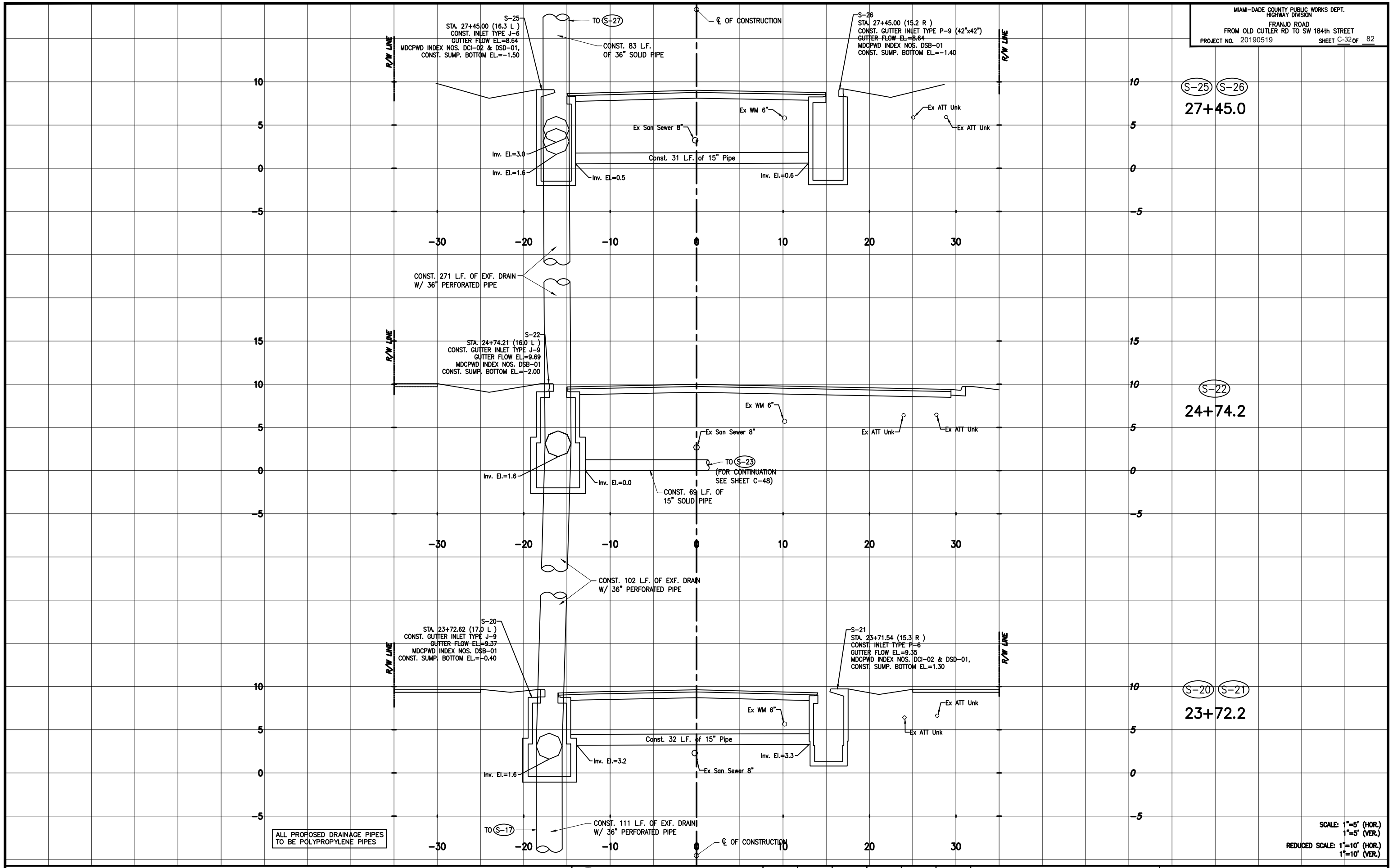
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-32 OF 82



SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
1"=10' (VER.)

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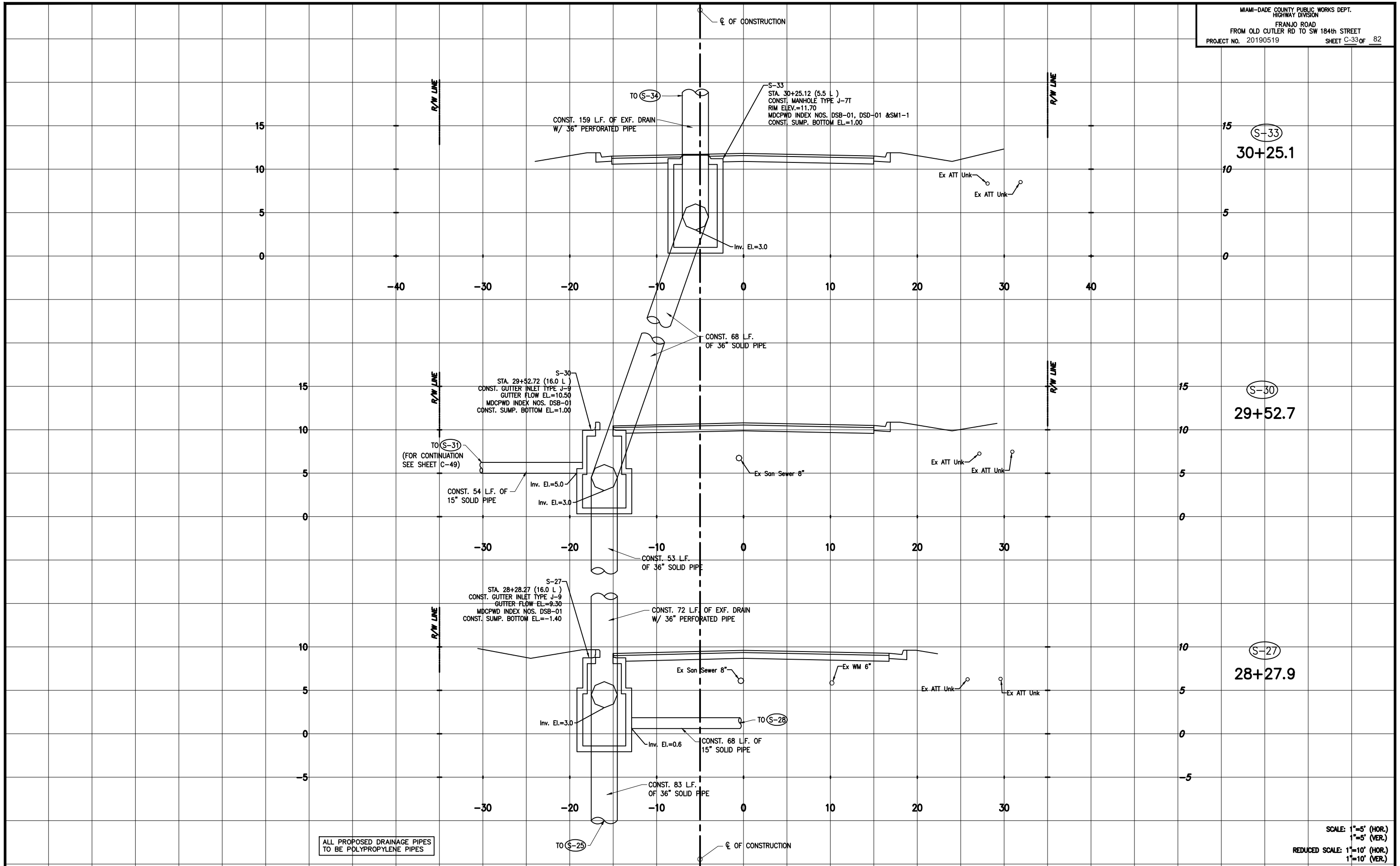
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-33 OF 82



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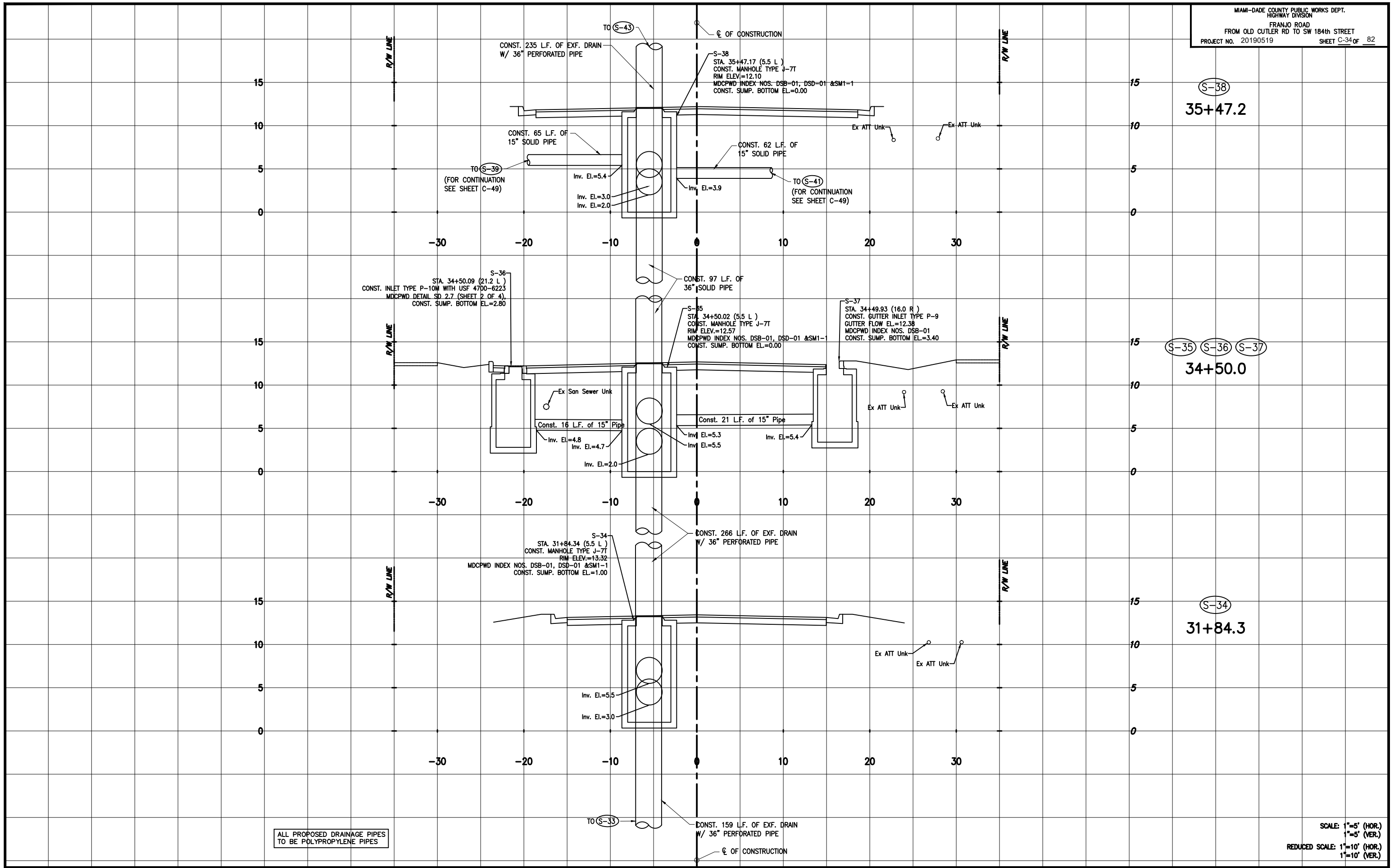
MIAMI, FLORIDA 33128

DRAINAGE STRUCTURES



ALL PROPOSED DRAINAGE PIPES
TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
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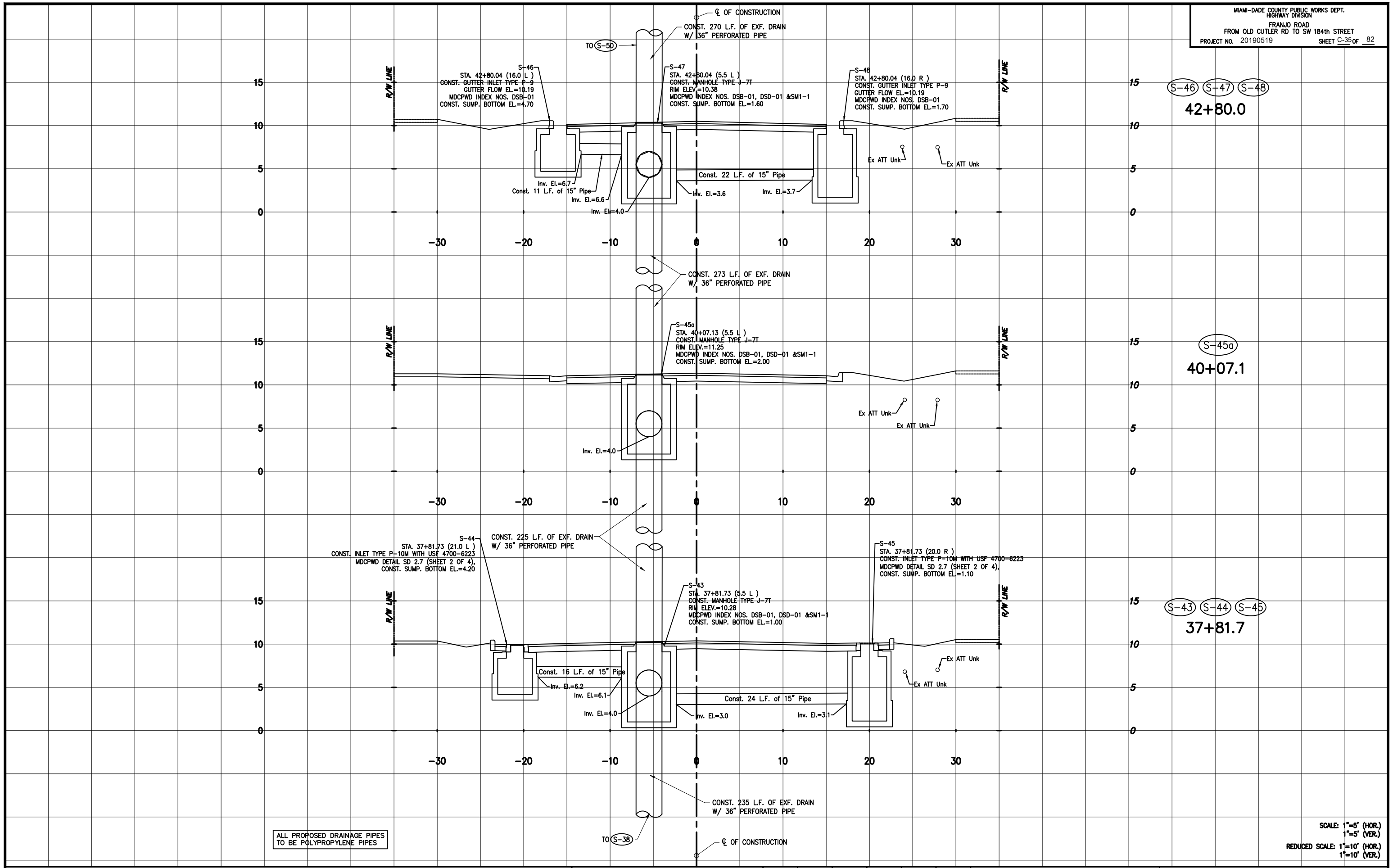
MIAMI, FLORIDA 33128

DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-35 OF 82



ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
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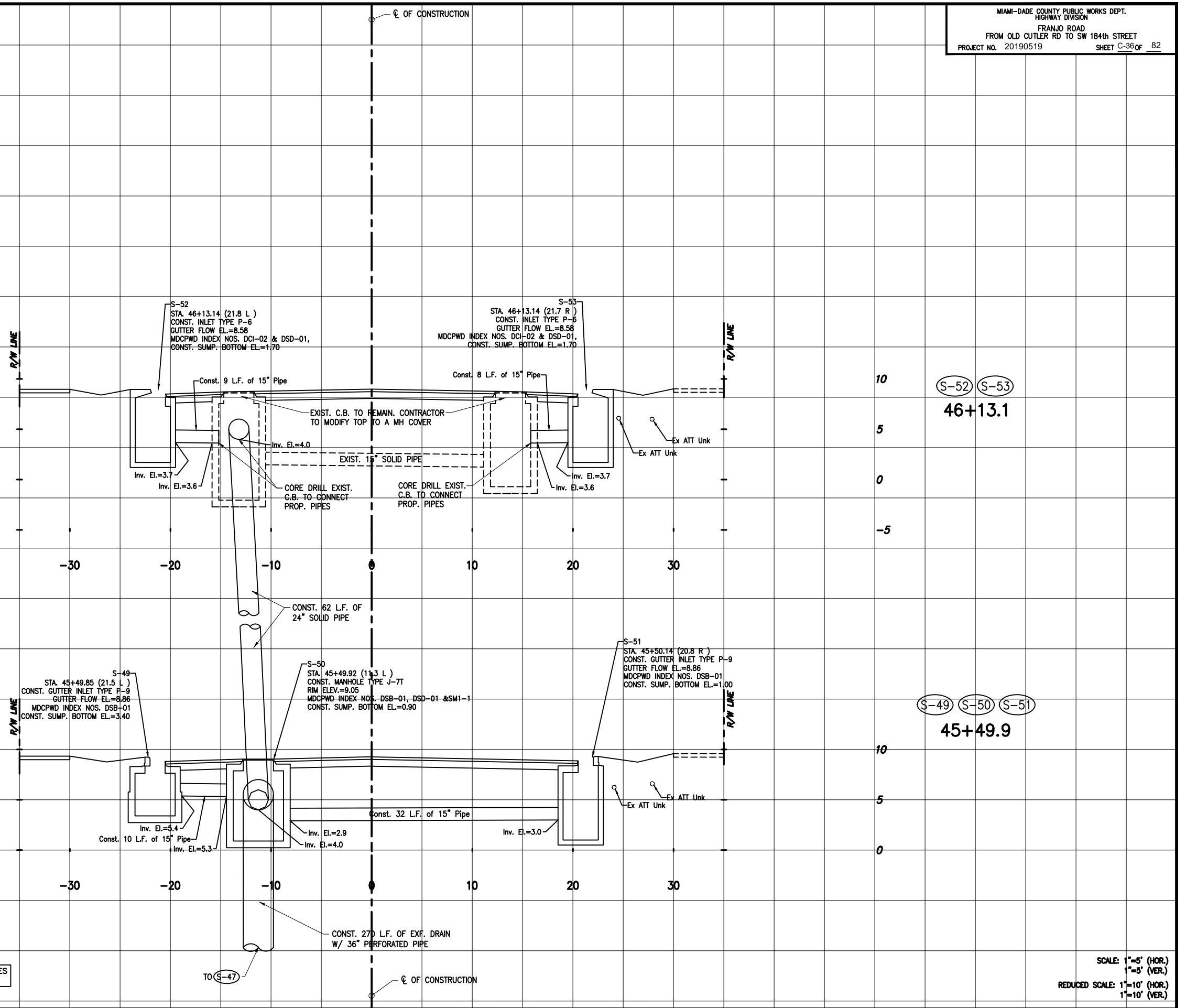
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-36 OF 82



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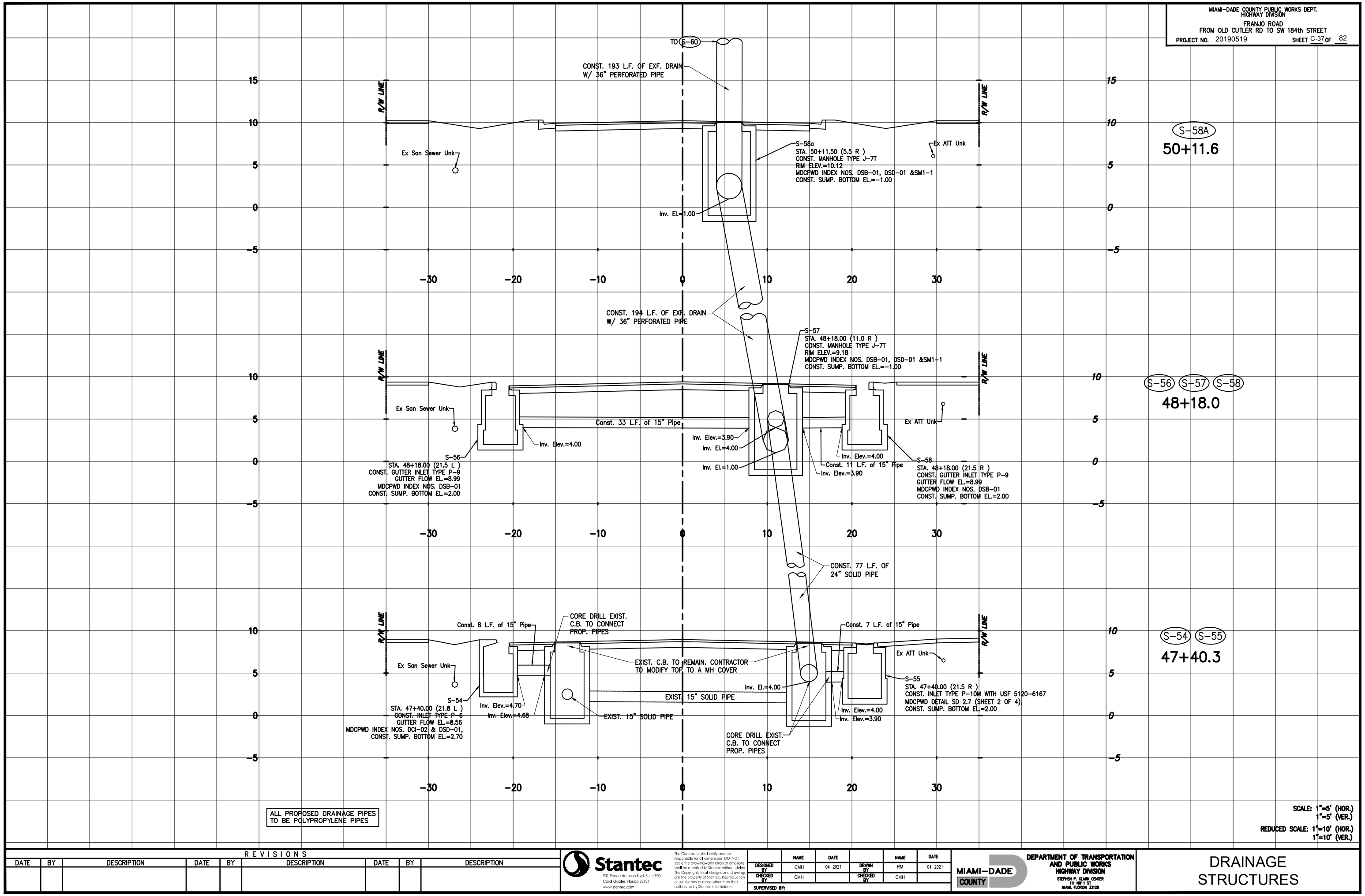
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-37 OF 82



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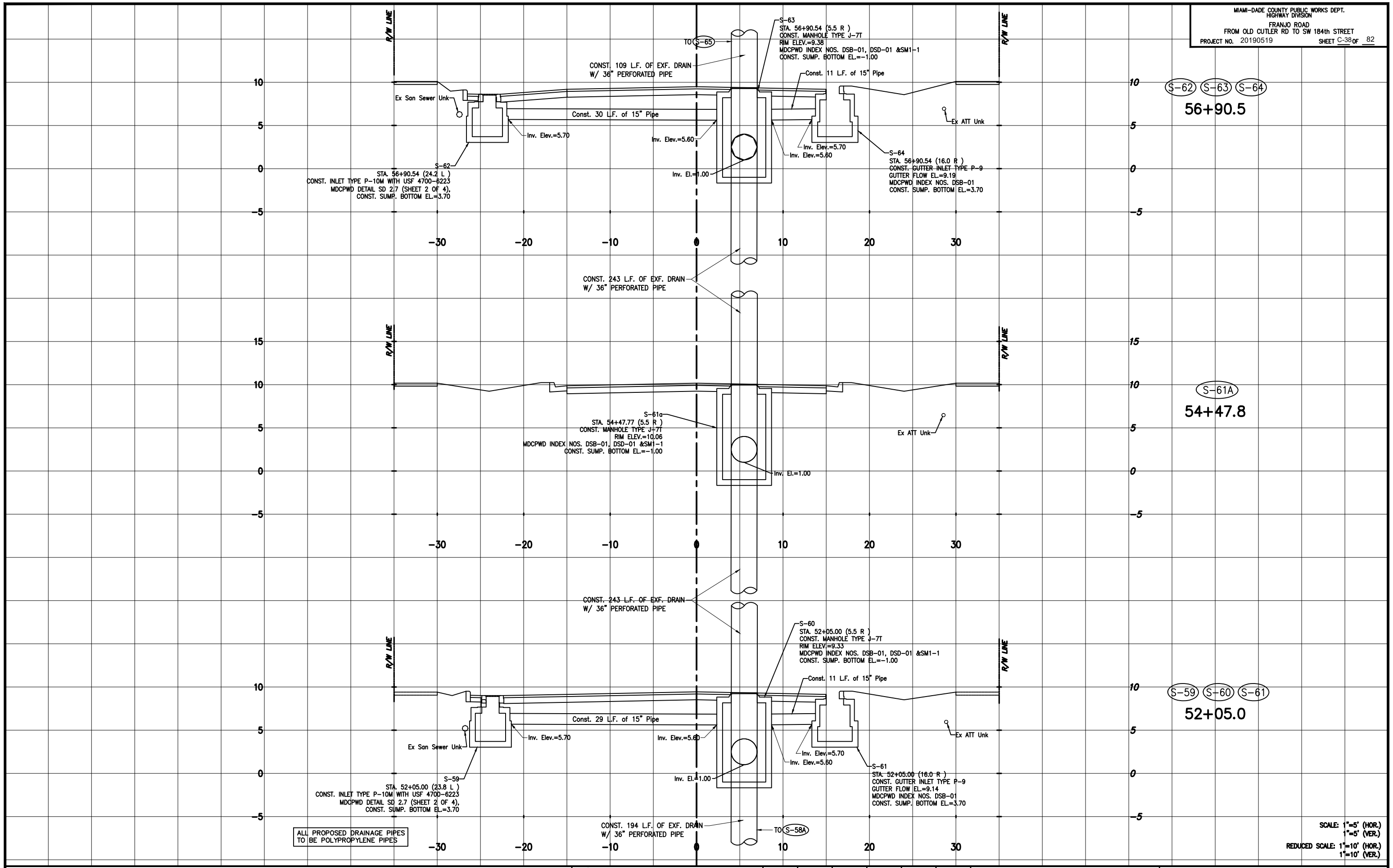
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-38 OF 82



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FROM OLD CUTLER RD TO SW 184th STREET
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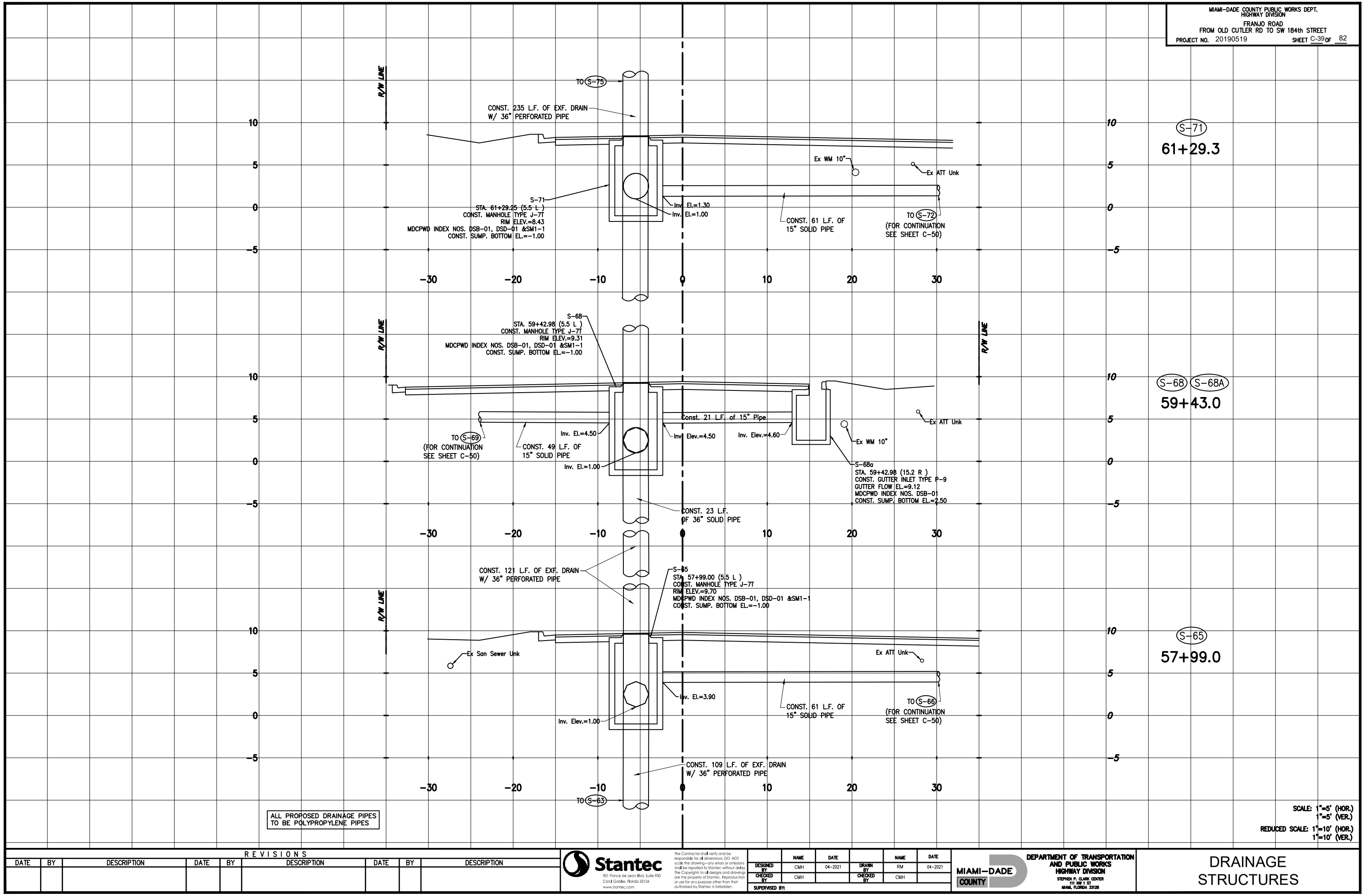

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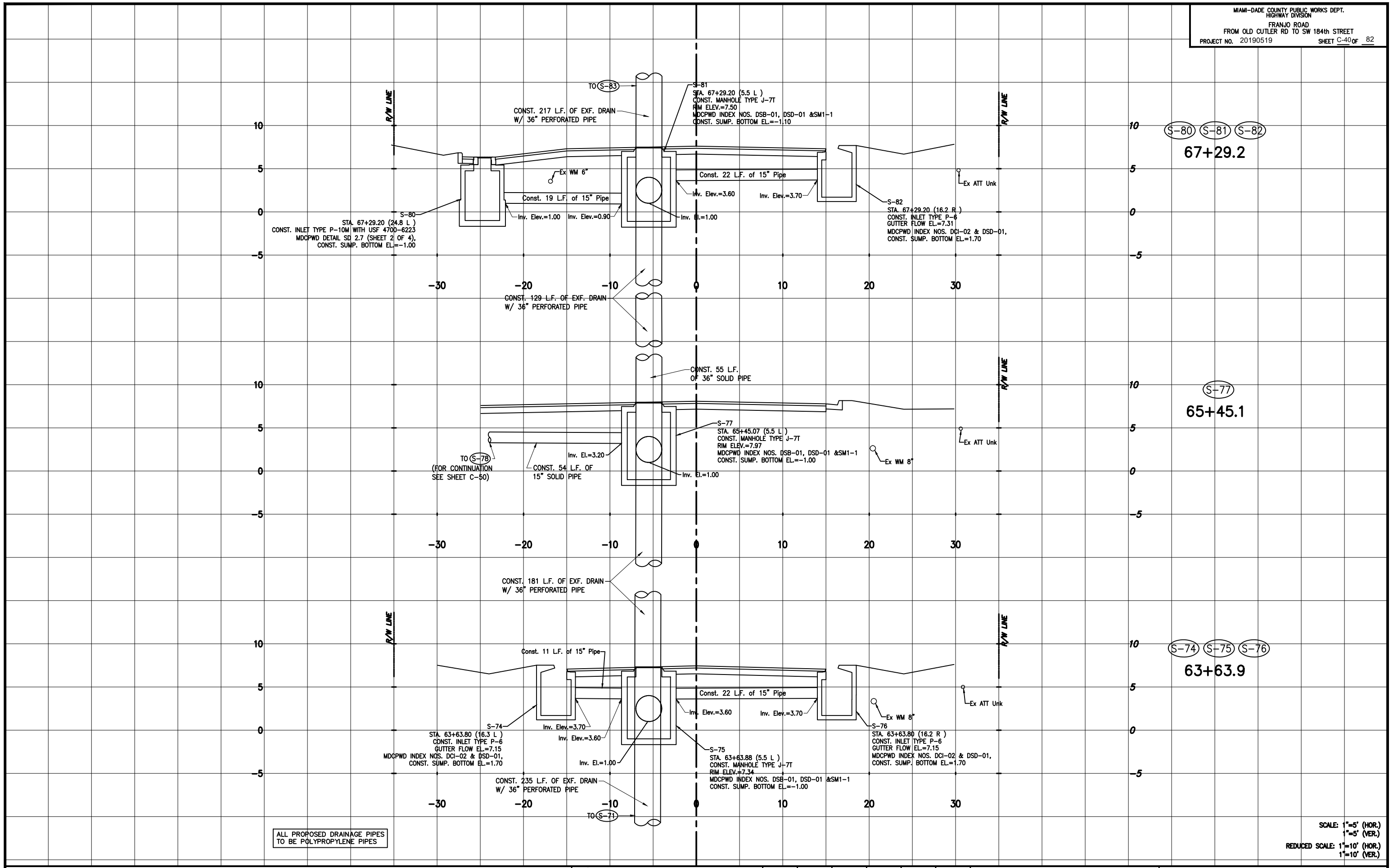
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-40 OF 82



ALL PROPOSED DRAINAGE PIPES
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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
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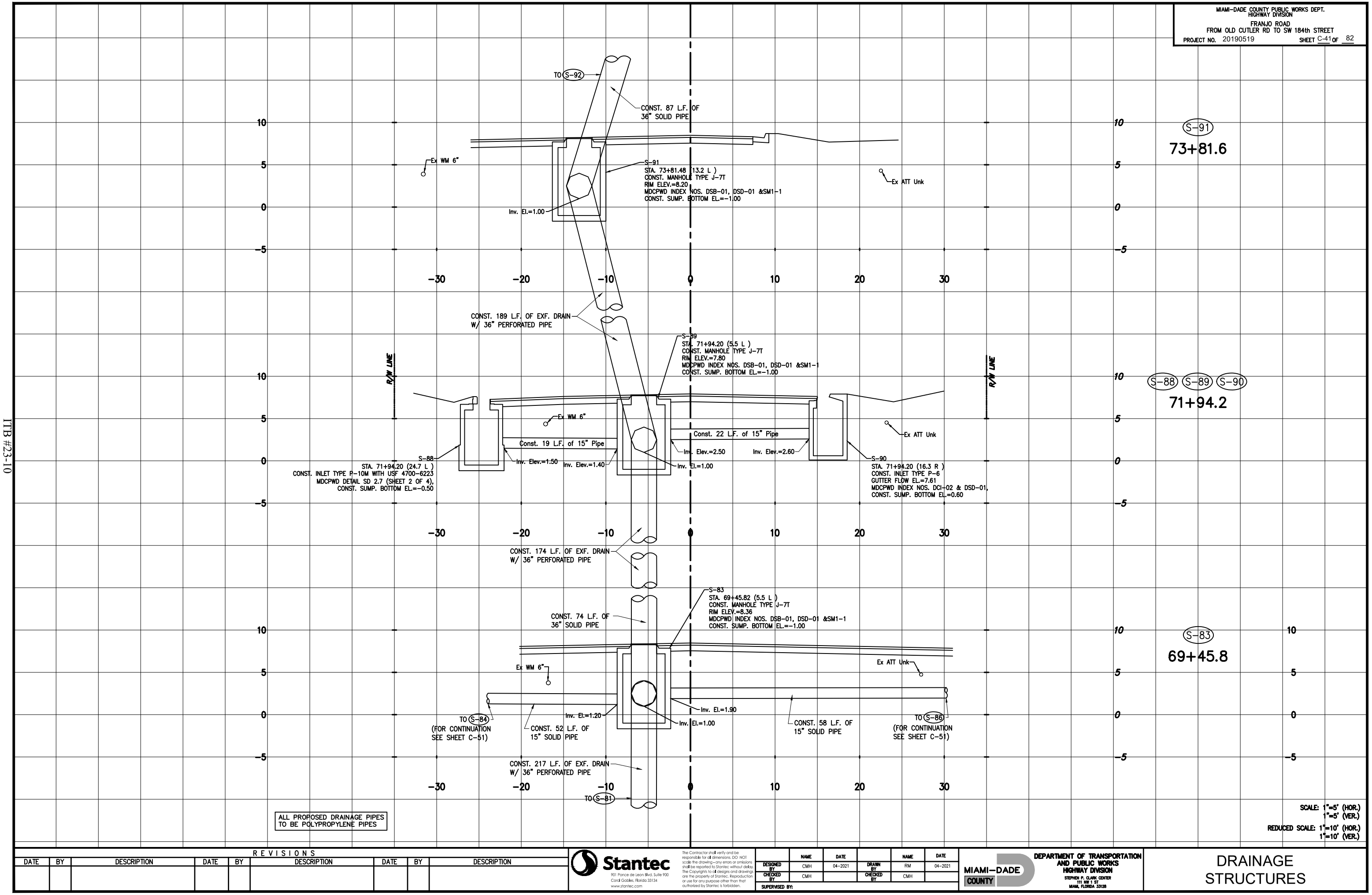
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-41 OF 82



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DRAINAGE STRUCTURES

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HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-42 OF 82

S-99 (S-100) (S-101)
76+60.0

S-96 (S-96a)
75+80.9

S-92 (S-93)
74+67.2

S-99
STA. 76+60.00 (5.5 L)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=7.61
MDCPWD INDEX NOS. DSB-01, DSD-01 &SM1-1
CONST. SUMP. BOTTOM EL.=-3.60

TO (S-102)

CONST. 89 L.F.
OF 36" SOLID PIPE

R/W LINE

Ex FM 6"

Ex Gas 4"

Ex ATT Unk

Const. 32 L.F. of 15" Pipe

Const. 19 L.F. of 15" Pipe

Inv. Elev.=1.40

Inv. Elev.=1.50

Inv. Elev.=0.10

Inv. Elev.=0.00

Inv. El.=1.00

Inv. El.=-1.60

S-100
STA. 76+60.00 (24.7 L)
CONST. INLET TYPE P-10M WITH USF 5105-6148
MDCPWD DETAIL SD 2.7 (SHEET 2 OF 4),
CONST. SUMP. BOTTOM EL.=-1.90

S-101
STA. 76+60.00 (26.0 R)
CONST. INLET TYPE P-10M WITH USF 5105-6148
MDCPWD DETAIL SD 2.7 (SHEET 2 OF 4),
CONST. SUMP. BOTTOM EL.=-0.50

CONST. 78 L.F. OF EXF. DRAIN
W/ 36" PERFORATED PIPE

S-96a
STA. 75+90.68 (46.4 L)
CONST. MANHOLE TYPE P-7T
RIM ELEV.= 7.00
MDCPWD INDEX NOS. DSB-01, DSD-01 &SM1-1
CONST. SUMP. BOTTOM EL.=-6.30

S-96
STA. 75+82.31 (6.5 L)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=7.84
MDCPWD INDEX NOS. DSB-01, DSD-01 &SM1-1
CONST. SUMP. BOTTOM EL.=-1.70

Ex FM 6"

Ex Gas 4"

Ex ATT Unk

Const. 41 L.F. of 15" Pipe

Inv. Elev.=0.30

Inv. Elev.=0.40

Inv. El.=1.00

CONST. 38 L.F. OF
15" SOLID PIPE

TO (S-97)
(FOR CONTINUATION
SEE SHEET C-52)

Inv. El.=-4.30

CONST. 116 L.F. OF EXF. DRAIN
W/ 36" PERFORATED PIPE

S-93
STA. 74+66.78 (78.9 L)
CONST. MANHOLE TYPE P-7T
RIM ELEV.= 8.20
MDCPWD INDEX NOS. DSB-01, DSD-01 &SM1-1
CONST. SUMP. BOTTOM EL.=-2.00

S-92
STA. 74+67.26 (10.6 L)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=8.55
MDCPWD INDEX NOS. DSB-01, DSD-01 &SM1-1
CONST. SUMP. BOTTOM EL.=-1.00

Ex FM 6"

Ex Gas 4"

Ex ATT Unk

Const. 68 L.F. of 15" Pipe

Inv. Elev.=2.00

Inv. El.=0.00

Inv. Elev.=1.90

Inv. El.=1.00

TO (S-94)
(FOR CONTINUATION
SEE SHEET C-51)

CONST. 84 L.F. OF
15" SOLID PIPE

CONST. 87 L.F. OF
36" SOLID PIPE

TO (S-91)

ALL PROPOSED DRAINAGE PIPES
TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
1"=10' (VER.)

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
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www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	04-2021	DRAWN BY	RM	04-2021
CHECKED BY	CMH		CHECKED BY	CMH	

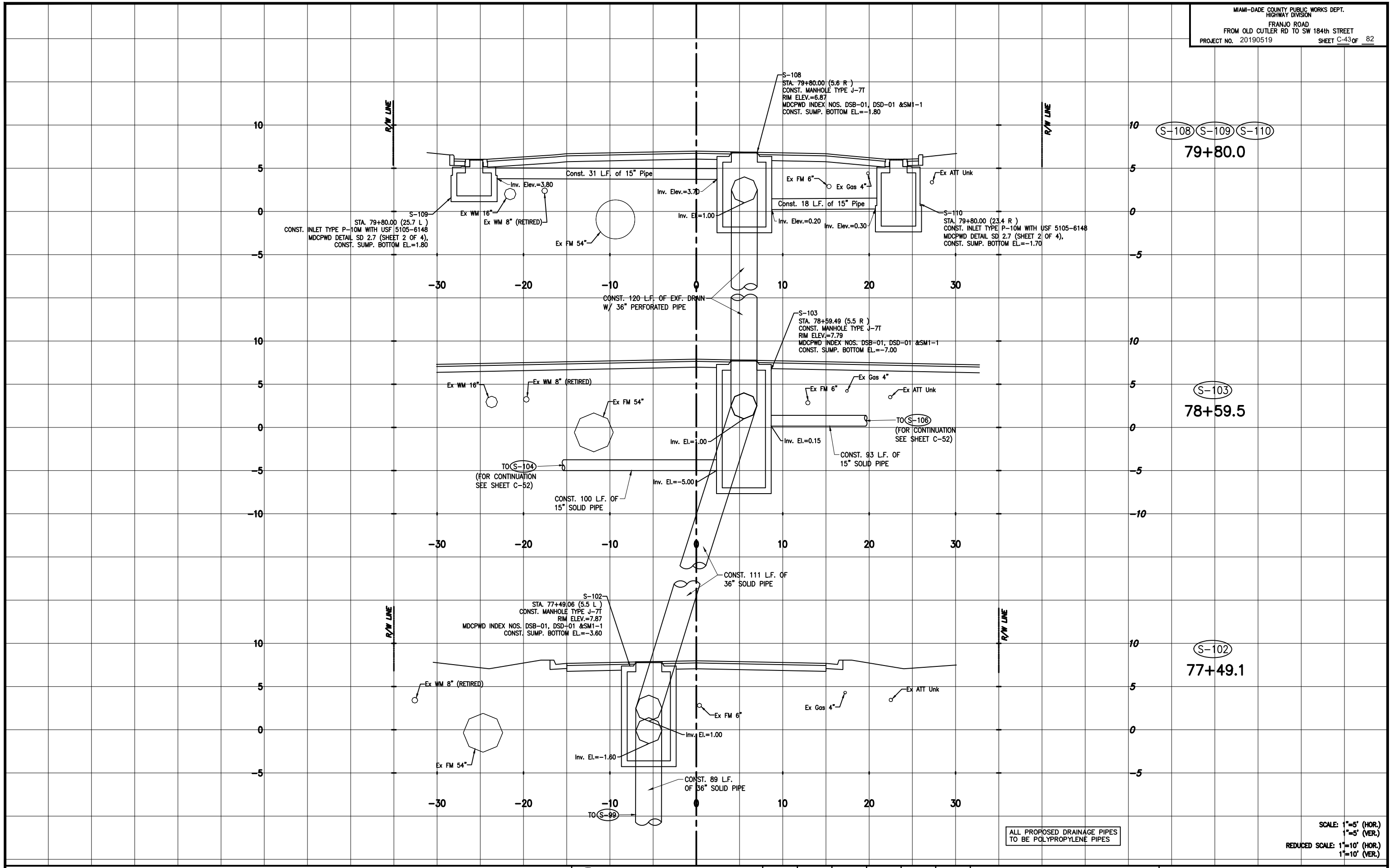
SUPERVISED BY:

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-43 OF 82



ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
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REDUCED SCALE: 1"=10' (HOR.)
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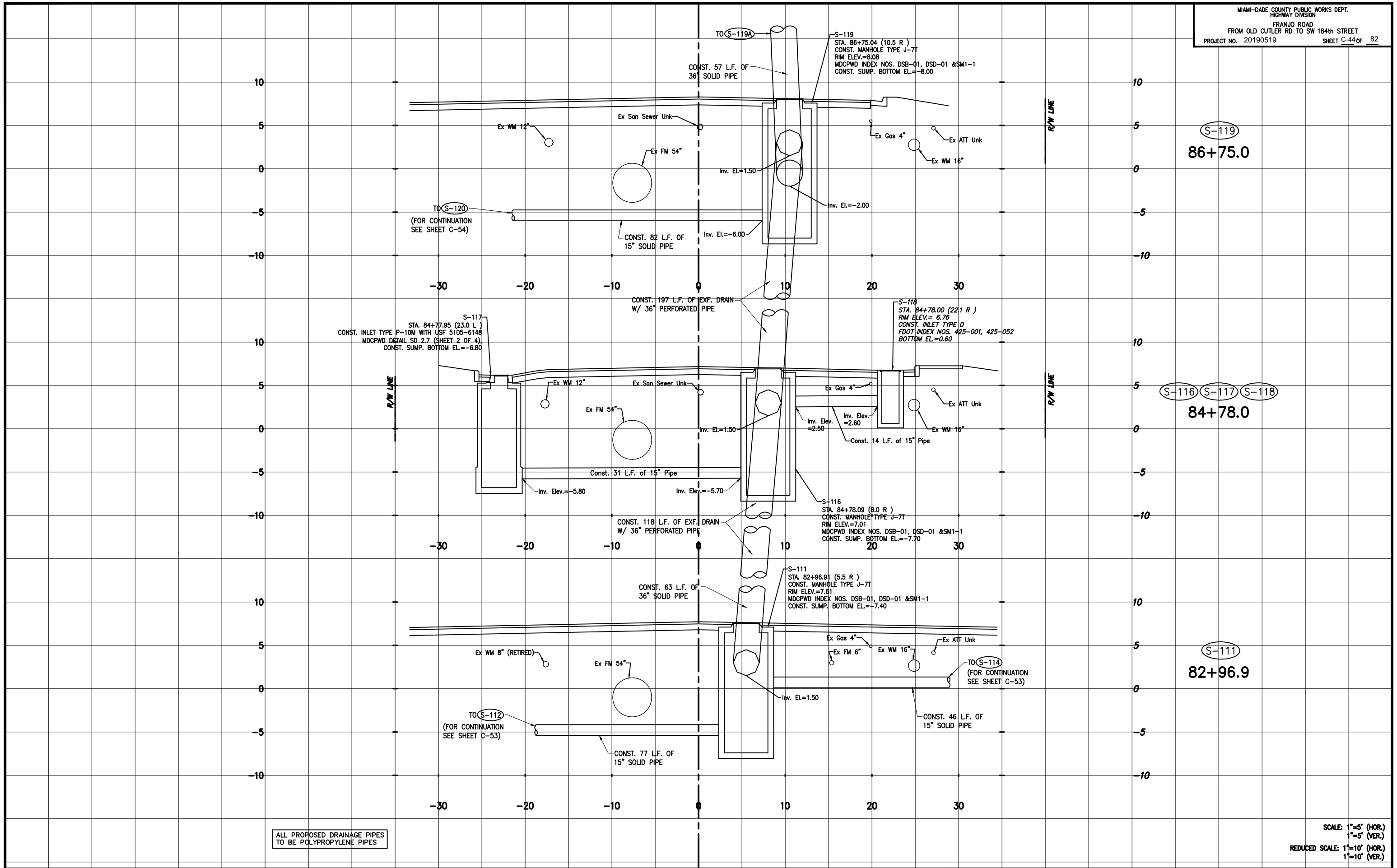
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-44 OF 82



ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
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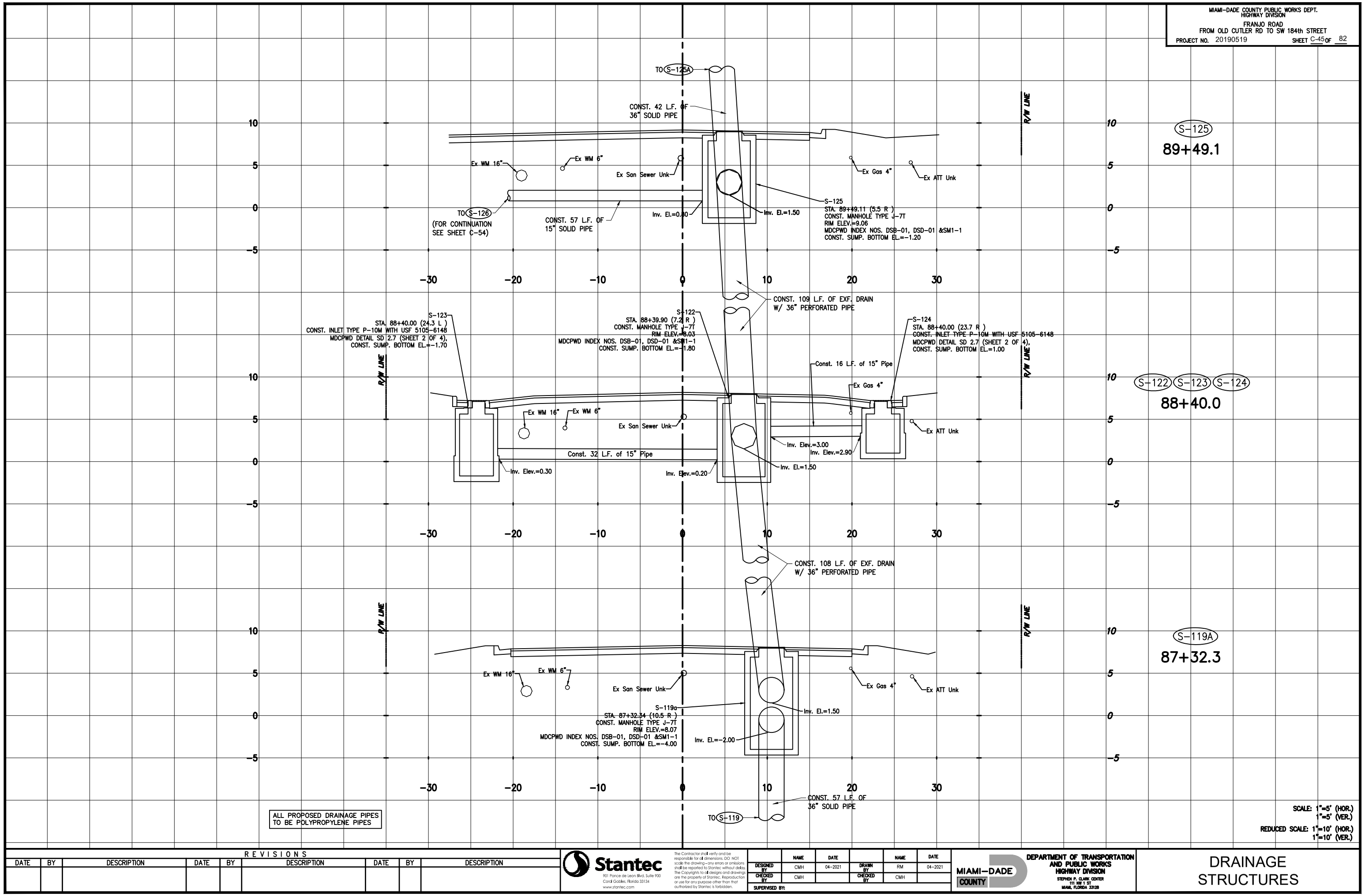
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-45 OF 82



ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
1"=10' (VER.)

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DRAINAGE STRUCTURES

ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

S-125
TO

STA. 89+91.48 (5.5 R)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=9.53
MIDCPWD INDEX NOS. DSB-01, DSD-01 &SW1-1
CONST. SUMP. BOTTOM EL.=-0.50
S-125a
Inv. El.=1.50
CONST. 42 L.F. OF 36" SOLID PIPE
Ex ATT 24"
Ex San Sewer Unk
Ex WM 6"
Ex WM 16"
R/W LINE
89+91.5
S-125A

CONST. 252 L.F. OF EXF. DRAIN W/ 36" PERFORATED PIPE

STA. 92+43.98 (5.5 R)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=12.34
MIDCPWD INDEX NOS. DSB-01, DSD-01 &SW1-1
CONST. SUMP. BOTTOM EL.=-0.50
S-128
Inv. El.=1.50
Inv. Elev.=8.50
Const. 11 L.F. of 15" Pipe
Inv. Elev.=8.60
Ex ATT 24"
Ex San Sewer Unk
Ex WM 6"
Ex WM 16"
Inv. Elev.=8.40
Const. 30 L.F. of 15" Pipe
STA. 92+44.00 (16.2 R)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=12.15
MIDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=6.60
S-130
R/W LINE
S-129
STA. 92+44.07 (24.1 L)
CONST. INLET TYPE P-10W WITH USF 5105-6148
MIDCPWD DETAIL SD 2.7 (SHEET 2 OF 4),
CONST. SUMP. BOTTOM EL.=7.50
92+44.0
S-128 S-129 S-130

CONST. 258 L.F. OF EXF. DRAIN W/ 36" PERFORATED PIPE

STA. 95+02.00 (11.0 R)
CONST. MANHOLE TYPE J-7T
RIM ELEV.=12.48
MIDCPWD INDEX NOS. DSB-01, DSD-01 &SW1-1
CONST. SUMP. BOTTOM EL.=-0.50
S-131
Inv. El.=1.50
Inv. Elev.=4.10
Const. 39 L.F. of 15" Pipe
Inv. Elev.=4.20
Ex San Sewer Unk
Ex WM 16"
STA. 95+02.00 (27.8 L)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=12.17
MIDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=2.20
S-132
Inv. Elev.=7.70
Const. 22 L.F. of 15" Pipe
Inv. Elev.=7.60
Ex ATT 24"
Ex Gas 4"
STA. 95+02.00 (33.3 R)
CONST. GUTTER INLET TYPE P-4
GUTTER FLOW EL.=12.15
MIDCPWD INDEX NOS. DCI-01, DSB-01
CONST. SUMP. BOTTOM EL.=5.70
S-133
95+02.0
S-131 S-132 S-133

REDUCED SCALE: 1"=10' (HOR.) 1"=10' (VER.)
SCALE: 1"=5' (HOR.) 1"=5' (VER.)

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
FRANJO ROAD
HIGHWAY DIVISION
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-46 OF 82

DRAINAGE STRUCTURES

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

MIAMI-DADE COUNTY

DESIGNED BY	NAME	DATE
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CHECKED BY	CHAI	
DRAWN BY	RM	04-2021
CHECKED BY	CHAI	

SUPERVISED BY:

Stantec
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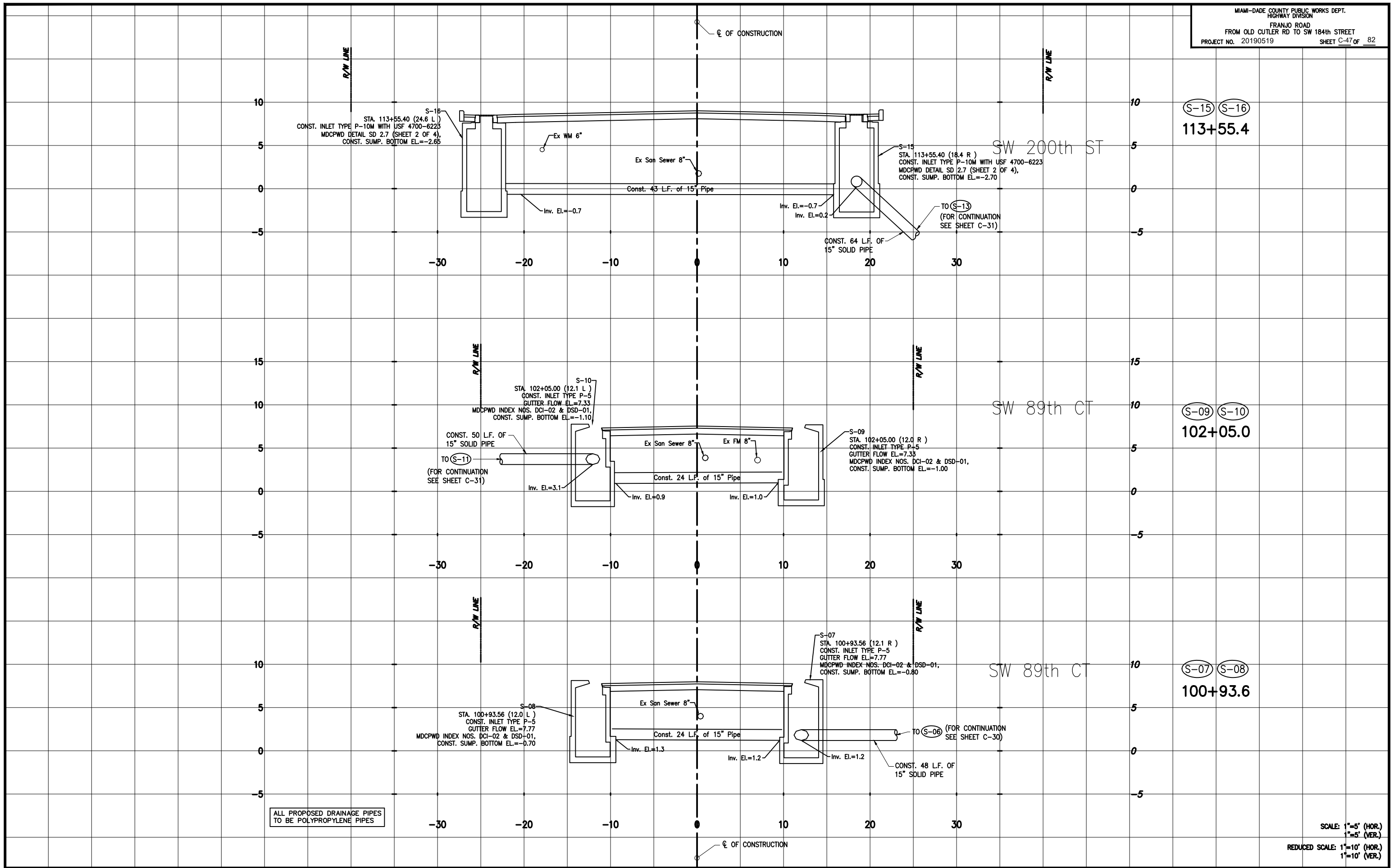
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-47 OF 82



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SUPERVISED BY:					

MIAMI-DADE COUNTY
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HIGHWAY DIVISION
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111 NW 1 ST
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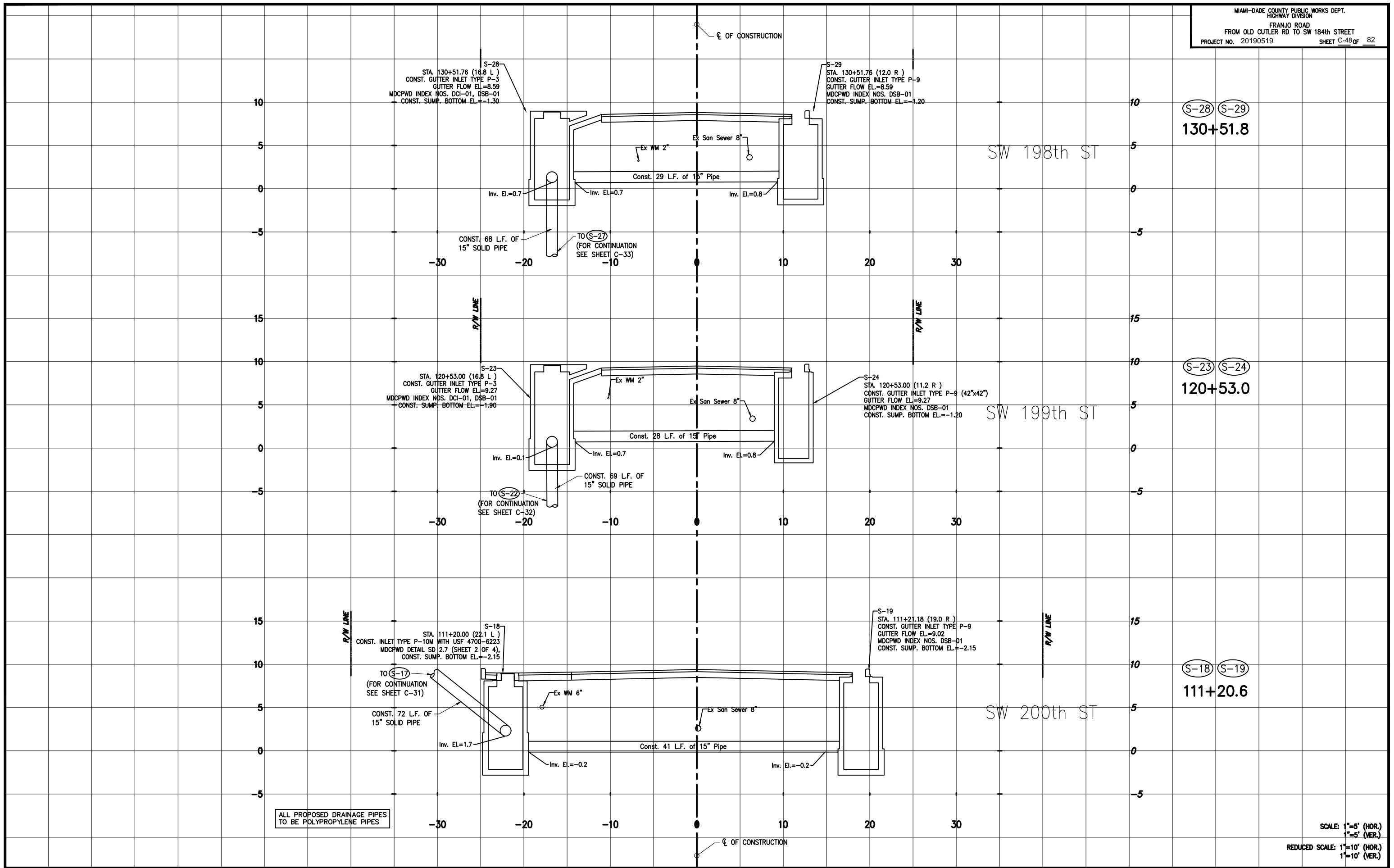
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-48 OF 82



SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
1"=10' (VER.)

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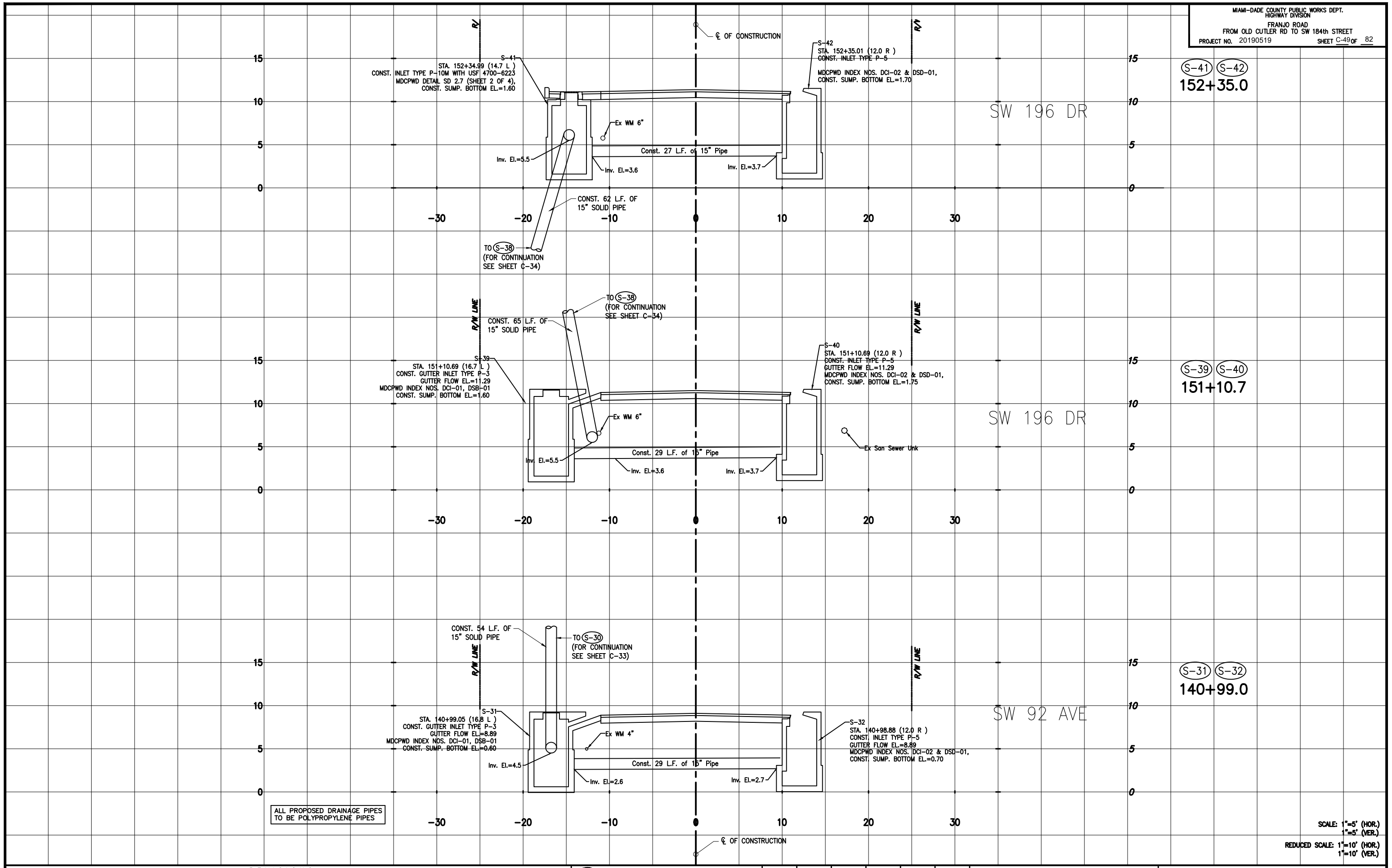
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-49 OF 82



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REDUCED SCALE: 1"=10' (HOR.)
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DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-50 OF 82

SW 95 AVE

R/W LINE

S-79
STA. 201+00.37 (12.2 L)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=7.10
MDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=1.70

Ex WM 6"

Inv. Elev.=3.70

Const. 25 L.F. of 15" Pipe

Inv. Elev.=3.60

CONST. 54 L.F. OF
15" SOLID PIPE

TO S-71
(FOR CONTINUATION
SEE SHEET C-40)

S-78
STA. 201+00.37 (12.2 R)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=7.00
MDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=1.30

Inv. El.=3.30

SW 192 DR

R/W LINE

Ex WM 10"

S-73
STA. 190+47.91 (12.0 L)
CONST. GUTTER INLET TYPE P-9
GUTTER FLOW EL.=7.40
MDCPWD INDEX NOS. DSB-01
CONST. SUMP. BOTTOM EL.=2.00

Const. 29 L.F. of 15" Pipe

Inv. El.=1.40

S-72
STA. 190+47.91 (16.9 R)
CONST. INLET TYPE P-10M WITH USF 5105-6148
MDCPWD DETAIL SD 2.7 (SHEET 2 OF 4),
CONST. SUMP. BOTTOM EL.=-0.60

CONST. 61 L.F. OF
15" SOLID PIPE

TO S-71
(FOR CONTINUATION
SEE SHEET C-39)

FLAG DR

R/W LINE

TO S-68
(FOR CONTINUATION
SEE SHEET C-39)

CONST. 49 L.F. OF
15" SOLID PIPE

S-69
STA. 180+45.55 (16.8 L)
CONST. GUTTER INLET TYPE P-4
GUTTER FLOW EL.=8.58
MDCPWD INDEX NOS. DCI-01, DSB-01
CONST. SUMP. BOTTOM EL.=0.00

Inv. El.=4.60

Ex WM 10"

Inv. El.=2.01

Const. 29 L.F. of 15" Pipe

Inv. El.=2.09

S-70
STA. 180+45.55 (12.2 R)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=8.55
MDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=0.10

Ex San Sewer Unk

SW 193 DR

R/W LINE

S-67
STA. 170+55.49 (12.2 L)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=8.55
MDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=0.10

Ex WM 10"

Inv. Elev.=2.10

Const. 25 L.F. of 15" Pipe

Inv. Elev.=2.00

S-66
STA. 170+55.49 (12.2 R)
CONST. INLET TYPE P-6
GUTTER FLOW EL.=8.83
MDCPWD INDEX NOS. DCI-02 & DSD-01,
CONST. SUMP. BOTTOM EL.=0.00

Inv. El.=4.00

CONST. 61 L.F. OF
15" SOLID PIPE

TO S-65
(FOR CONTINUATION
SFF SHFFT C-39)

ALL PROPOSED DRAINAGE PIPES
TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
REDUCED SCALE: 1"=10' (HOR.)
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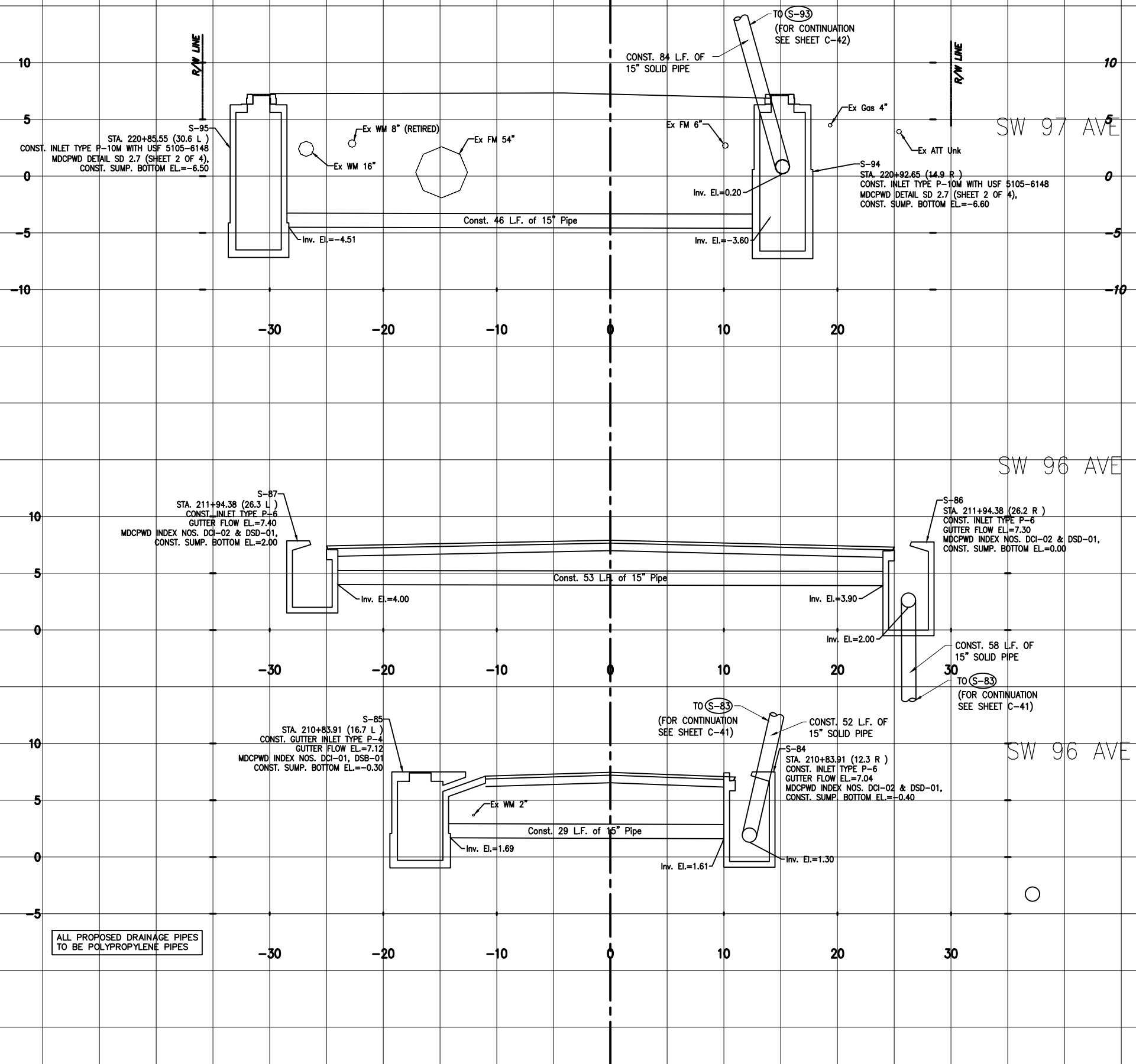
DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-51 OF 82



ALL PROPOSED DRAINAGE PIPES
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SCALE: 1"=5' (HOR.)
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DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
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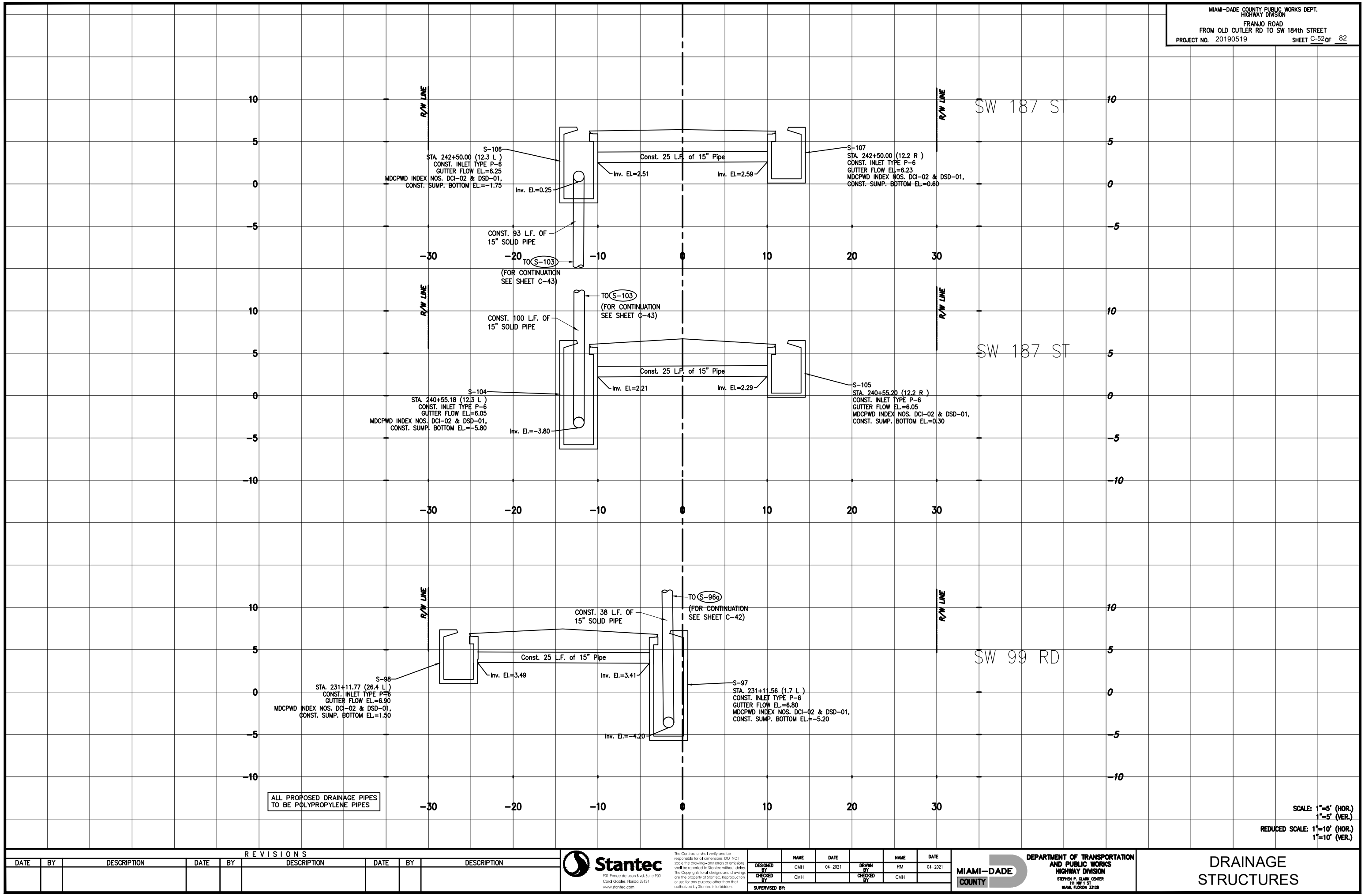

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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
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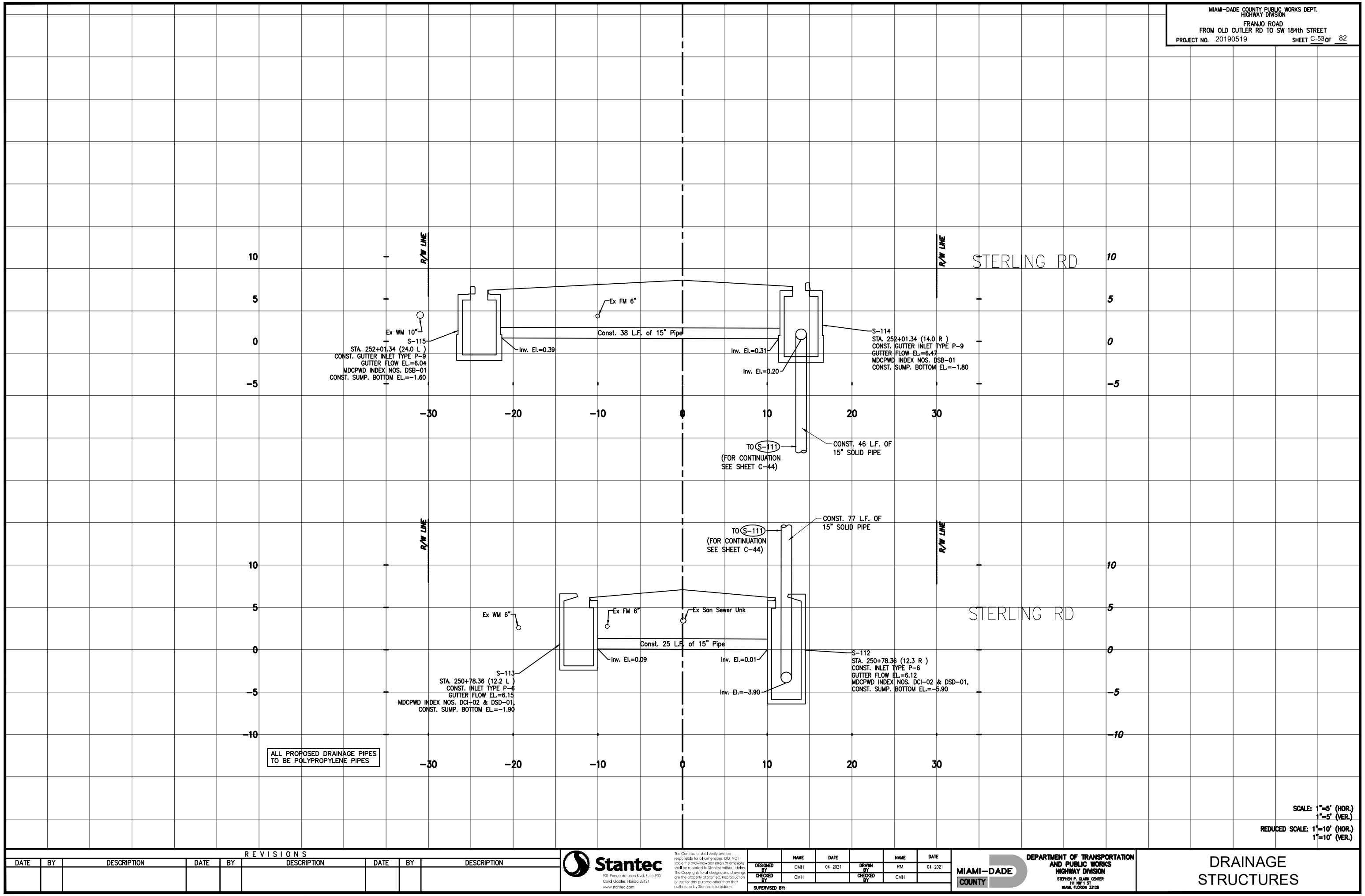

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FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
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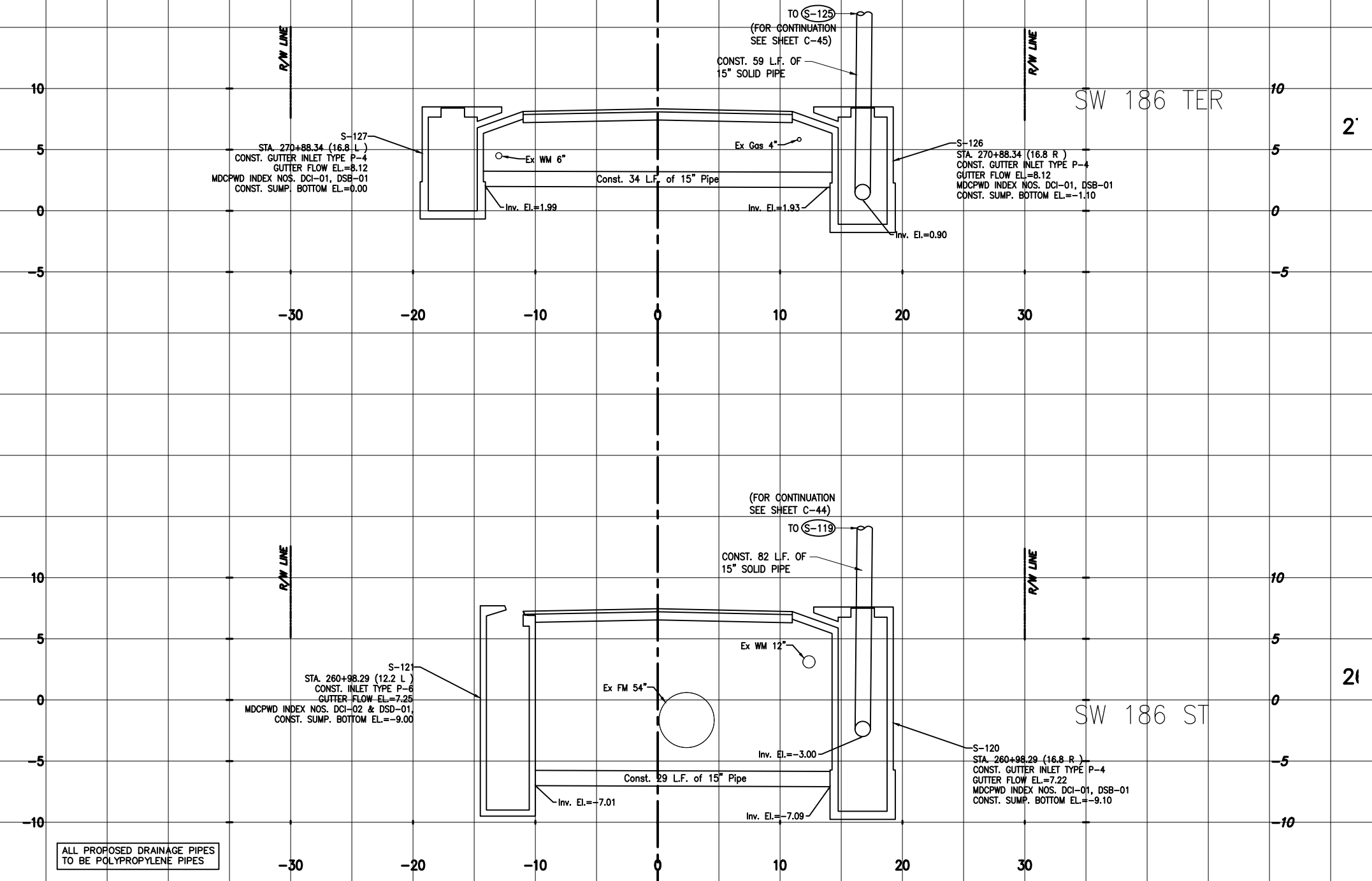

ALL PROPOSED DRAINAGE PIPES TO BE POLYPROPYLENE PIPES

SCALE: 1"=5' (HOR.)
1"=5' (VER.)
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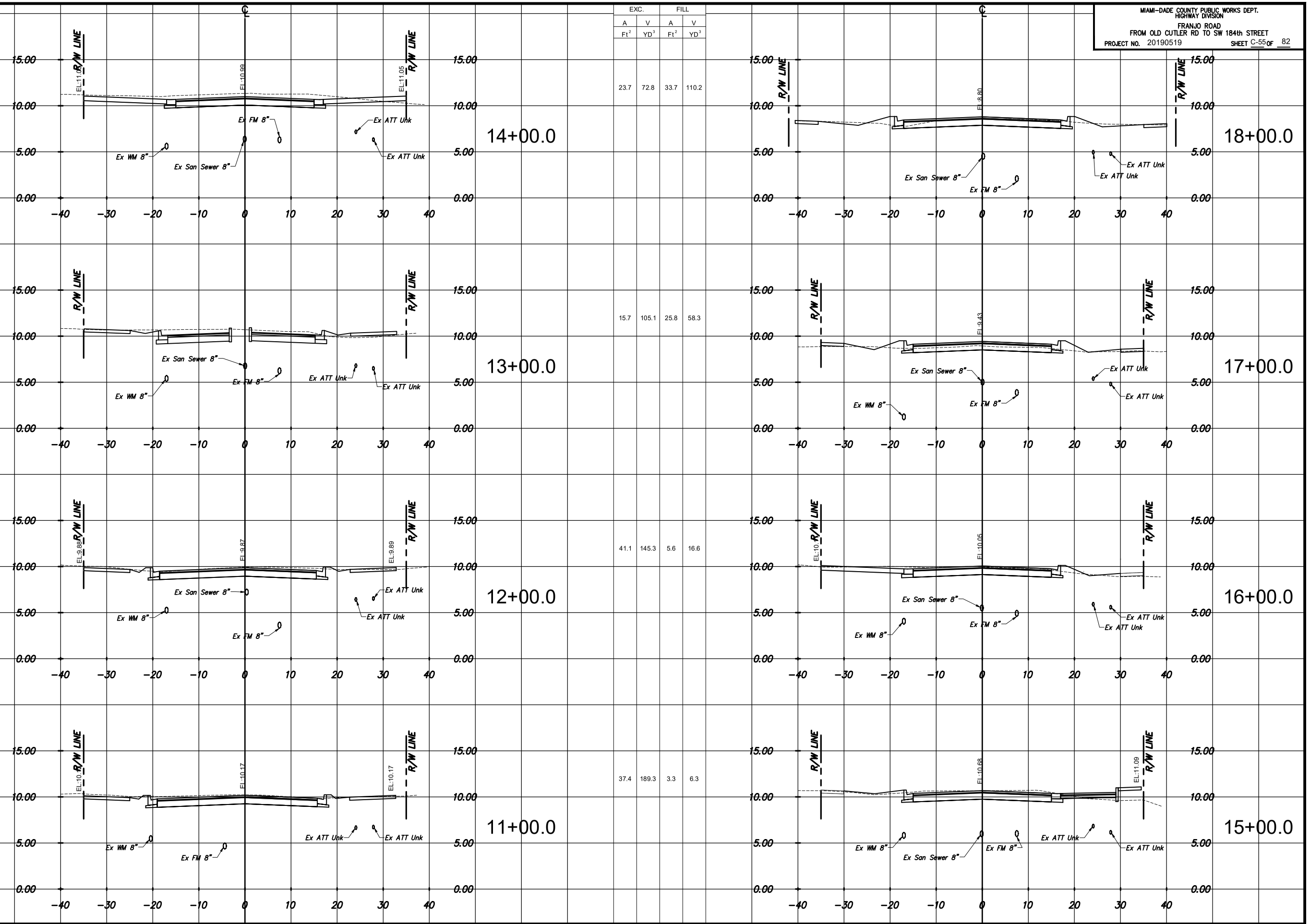
MIAMI, FLORIDA 33128

DRAINAGE STRUCTURES

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-55 OF 82

EXC. A (Ft²)	EXC. V (YD³)	FILL A (Ft²)	FILL V (YD³)	
64.9	218.1	0.1	3.5	14+00.0
52.9	185.0	1.8	6.4	13+00.0
47.0	179.5	1.6	5.1	12+00.0
			0.0	11+00.0
23.7	72.8	33.7	110.2	18+00.0
15.7	105.1	25.8	58.3	17+00.0
41.1	145.3	5.6	16.6	16+00.0
37.4	189.3	3.3	6.3	15+00.0



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Stantec
901 Ponce de Leon Blvd, Suite 900
Coral Gables, Florida 33134
www.stantec.com

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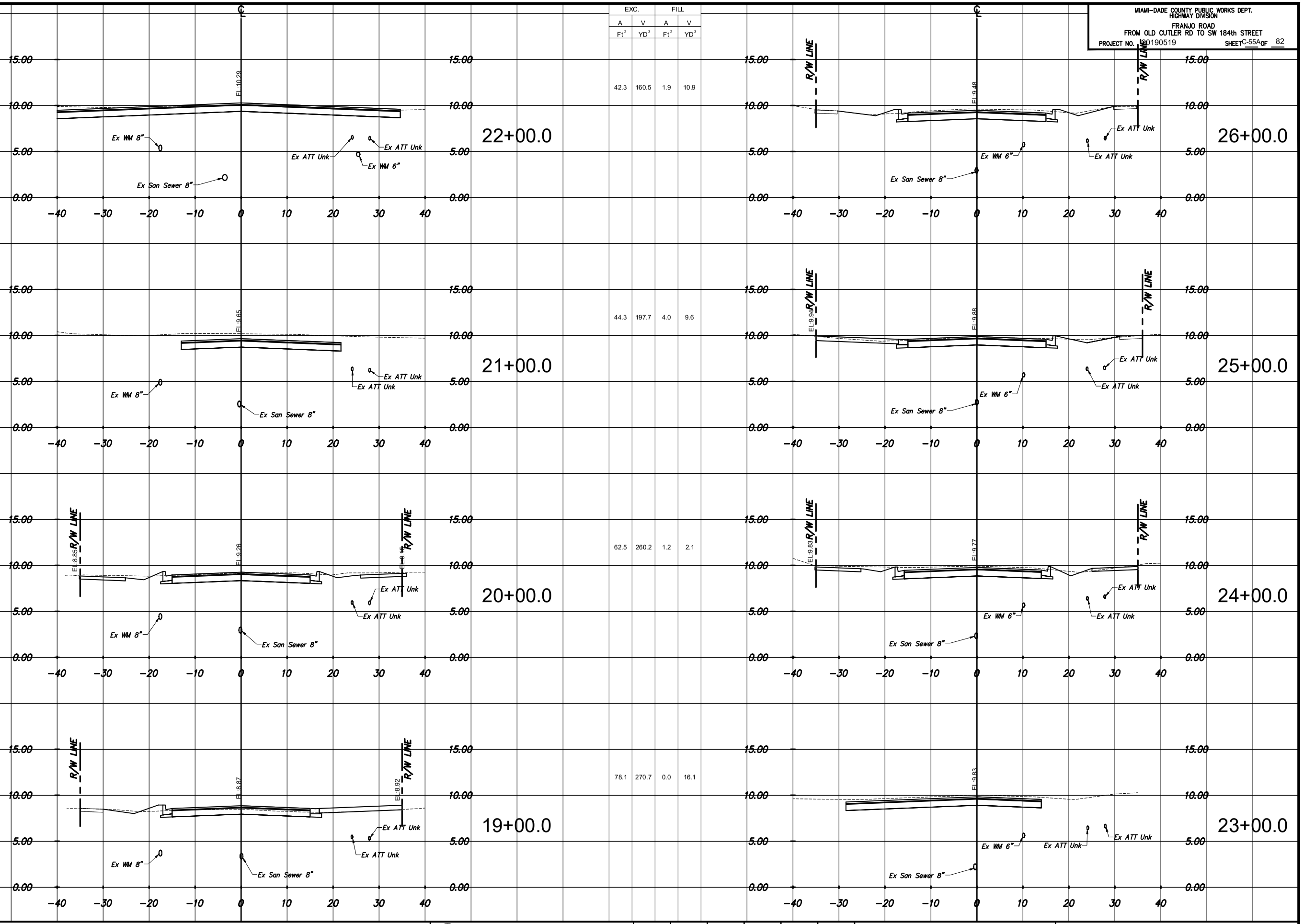
DESIGNED BY	CMH	04/11/2021	DRAWN BY	RM	04/11/2021
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

CROSS SECTIONS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 50190519 SHEET C-55A OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³		EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³	
68.1	279.7	8.7	16.1	22+00.0	42.3	160.5	1.9	10.9	26+00.0
82.9	234.8	0.0	8.1	21+00.0	44.3	197.7	4.0	9.6	25+00.0
43.9	120.4	4.4	42.0	20+00.0	62.5	260.2	1.2	2.1	24+00.0
21.2	83.0	18.3	96.3	19+00.0	78.1	270.7	0.0	16.1	23+00.0



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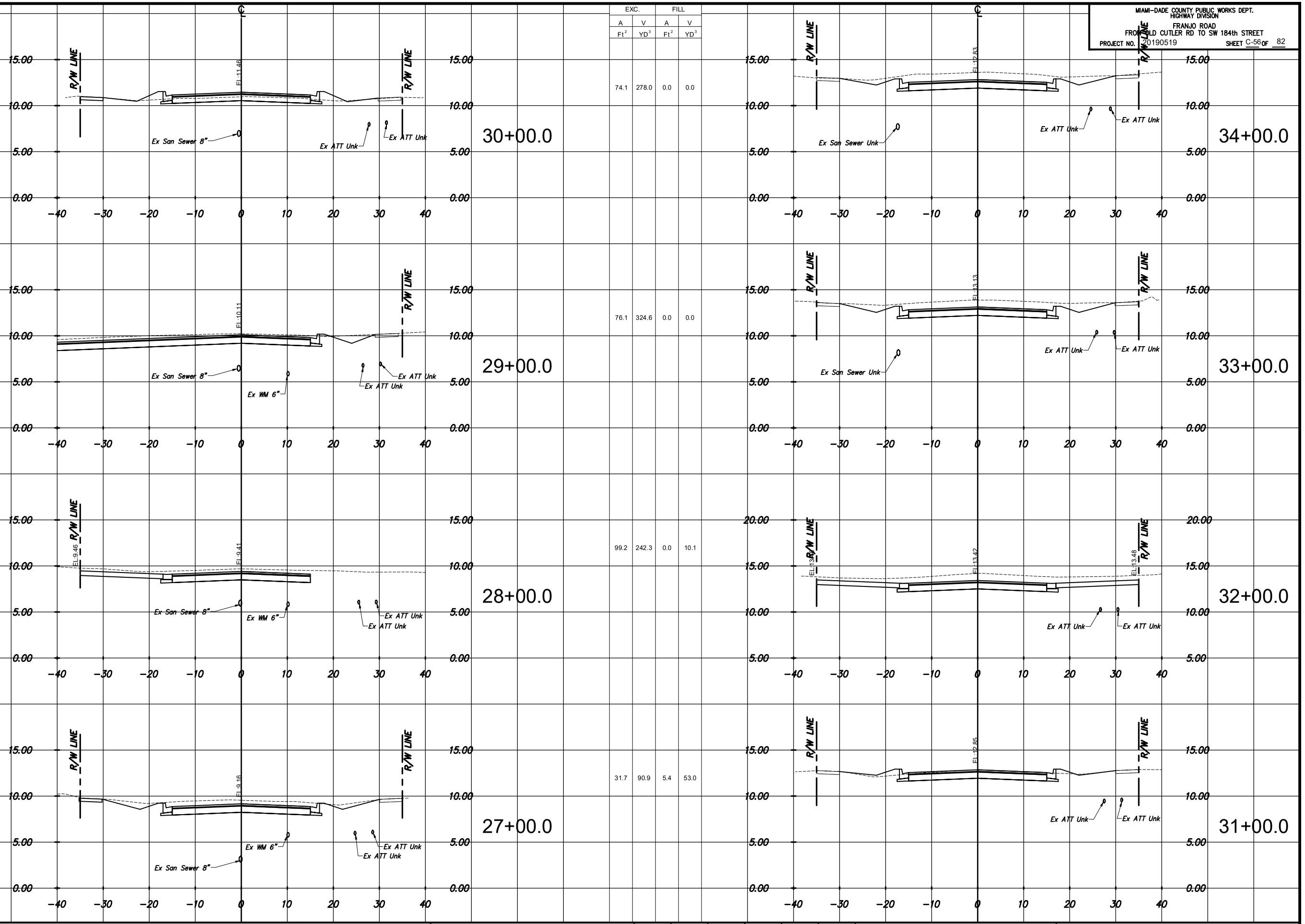
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-56 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³
17.4	166.8	23.2	43.9
72.7	308.9	0.5	1.2
94.1	284.3	0.1	0.4
59.4	188.4	0.1	3.7
74.1	278.0	0.0	0.0
76.1	324.6	0.0	0.0
99.2	242.3	0.0	10.1
31.7	90.9	5.4	53.0



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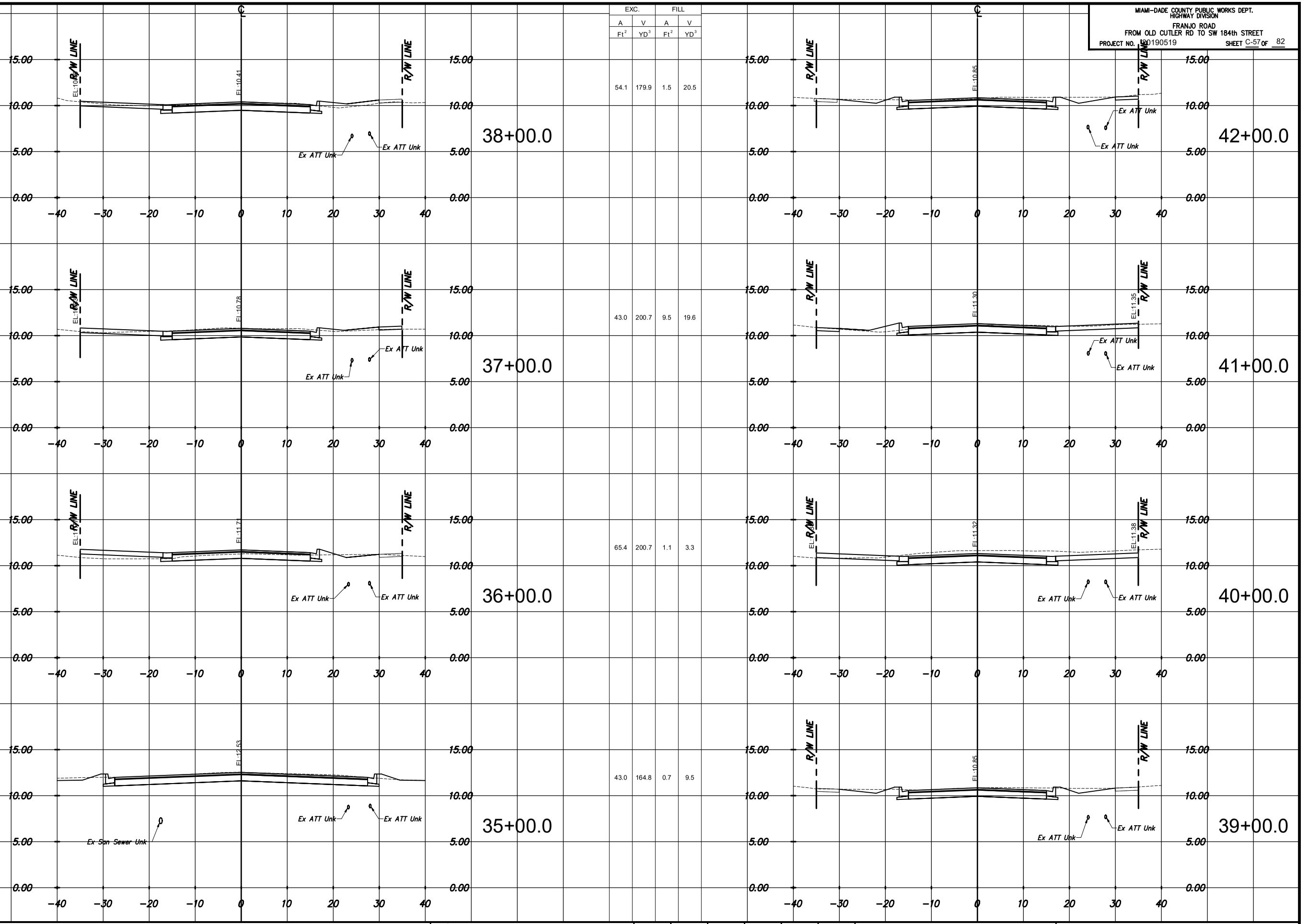
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 50190519 SHEET C-57 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³
46.0	172.2	4.4	11.6
47.0	127.0	1.8	41.7
21.6	150.5	20.7	43.2
59.7	247.7	2.6	4.9
54.1	179.9	1.5	20.5
43.0	200.7	9.5	19.6
65.4	200.7	1.1	3.3
43.0	164.8	0.7	9.5



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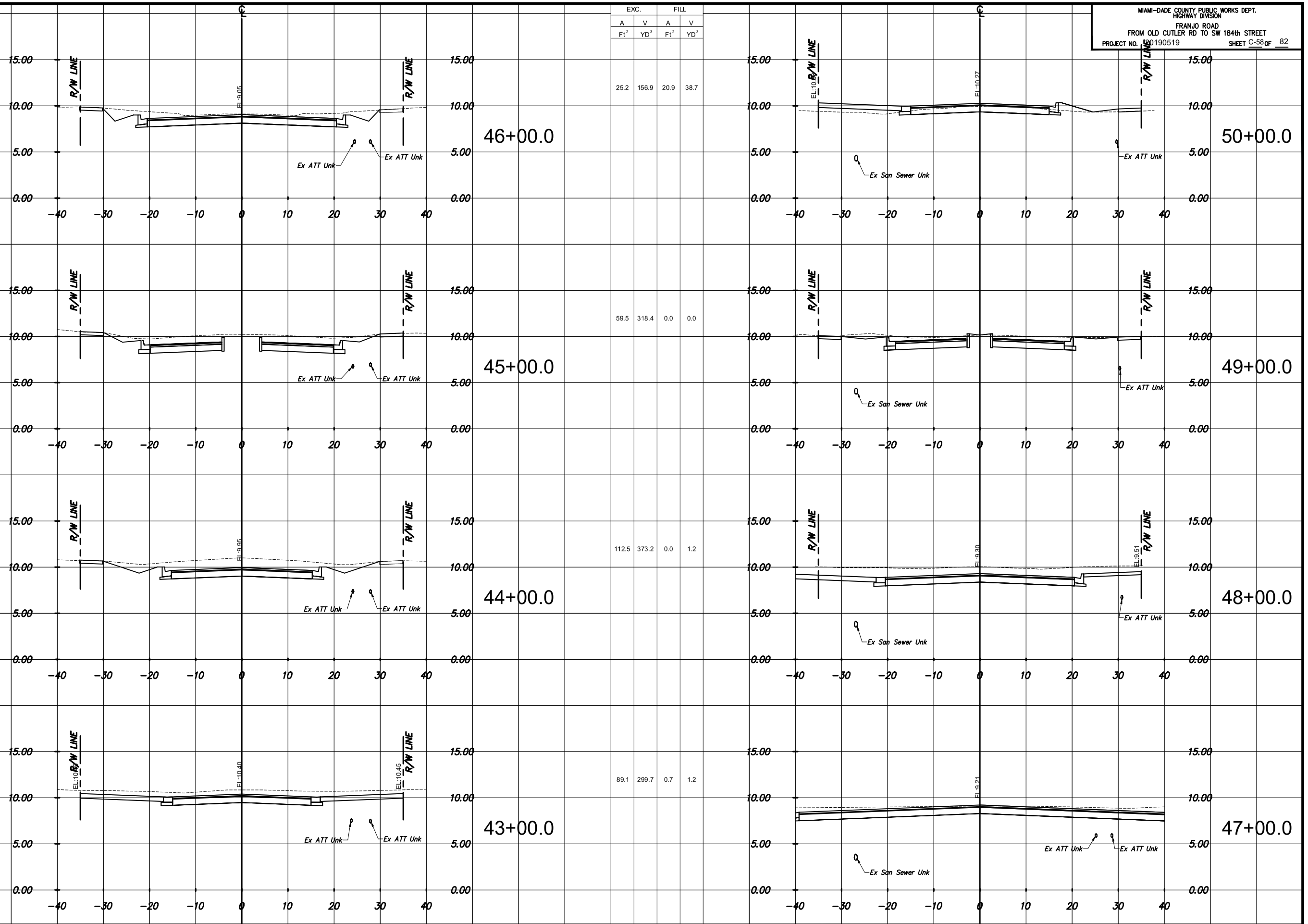
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 5050190519 SHEET C-58 OF 82

EXC. A (Ft²)	EXC. V (YD³)	FILL A (Ft²)	FILL V (YD³)	
72.8	296.1	0.0	0.0	46+00.0
87.1	328.3	0.0	0.0	45+00.0
90.2	342.3	0.0	0.0	44+00.0
94.7	275.6	0.0	2.9	43+00.0
25.2	156.9	20.9	38.7	50+00.0
59.5	318.4	0.0	0.0	49+00.0
112.5	373.2	0.0	1.2	48+00.0
89.1	299.7	0.7	1.2	47+00.0



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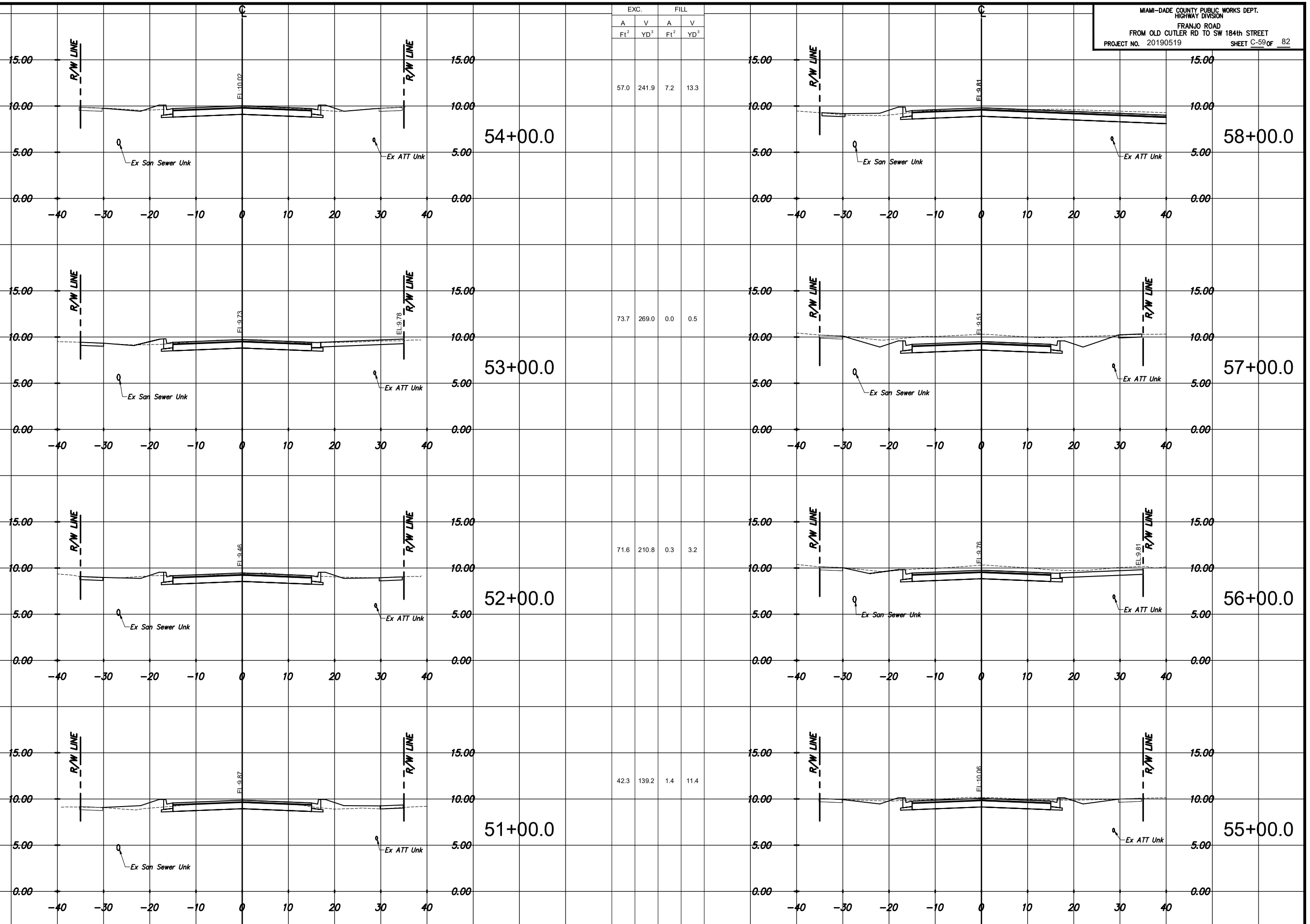
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-59 OF 82

EXC. A (Ft²)	EXC. V (YD³)	FILL A (Ft²)	FILL V (YD³)	
32.9	145.8	4.7	16.4	54+00.0
45.8	150.4	4.1	13.9	53+00.0
35.4	112.2	3.4	37.5	52+00.0
25.2	93.4	16.9	69.9	51+00.0
57.0	241.9	7.2	13.3	58+00.0
73.7	269.0	0.0	0.5	57+00.0
71.6	210.8	0.3	3.2	56+00.0
42.3	139.2	1.4	11.4	55+00.0



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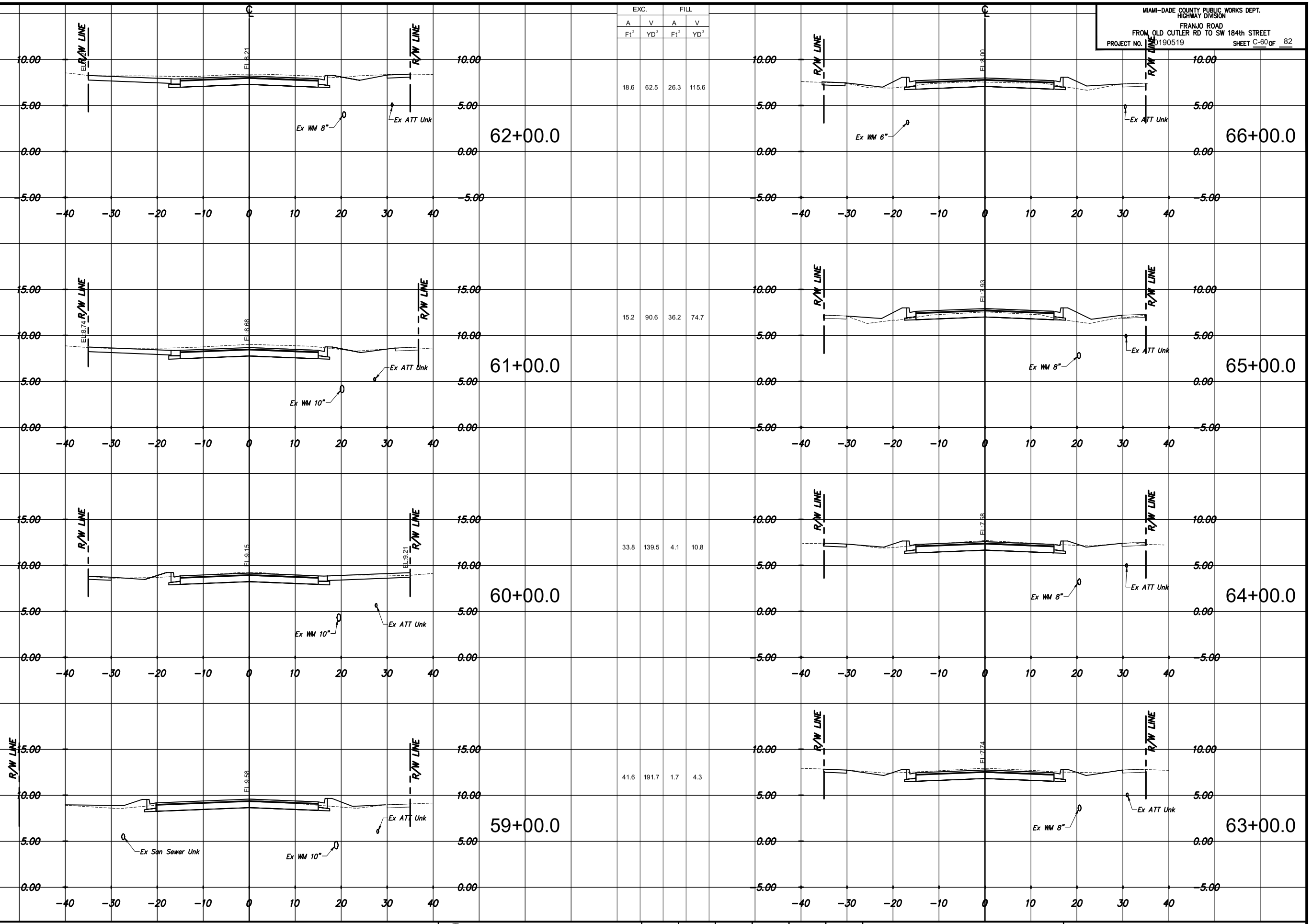
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 30190519 SHEET C-60 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³	
62.0	228.5	0.6	2.3	62+00.0
61.4	193.0	0.6	6.4	61+00.0
42.8	132.4	2.9	35.5	60+00.0
28.7	158.5	16.3	43.6	59+00.0
18.6	62.5	26.3	115.6	66+00.0
15.2	90.6	36.2	74.7	65+00.0
33.8	139.5	4.1	10.8	64+00.0
41.6	191.7	1.7	4.3	63+00.0



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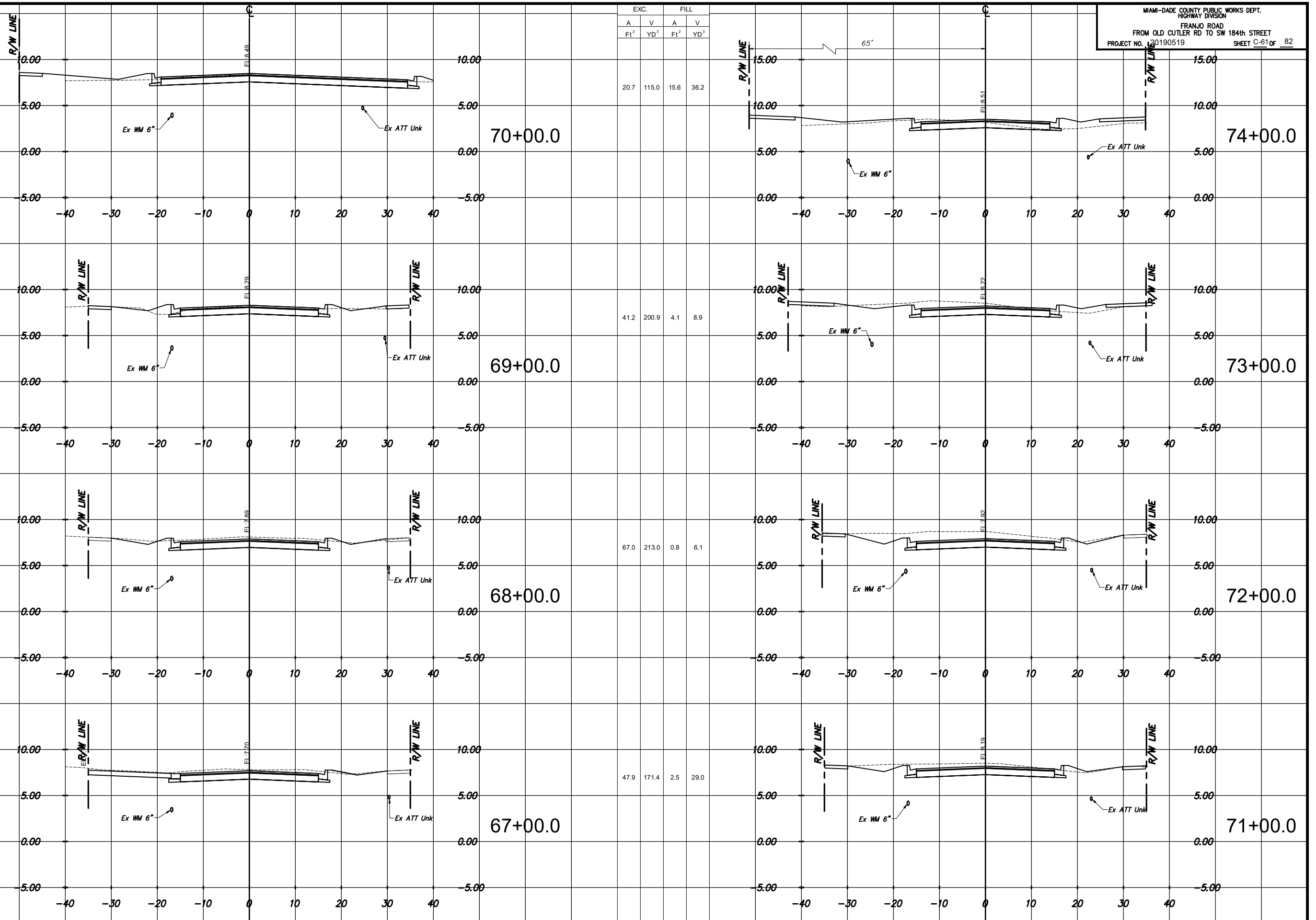
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-61 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³
44.7	134.8	13.1	45.8
28.1	134.4	11.6	24.2
44.5	188.5	1.5	5.4
57.3	140.6	1.4	51.2
20.7	115.0	15.6	36.2
41.2	200.9	4.1	8.9
67.0	213.0	0.8	6.1
47.9	171.4	2.5	29.0



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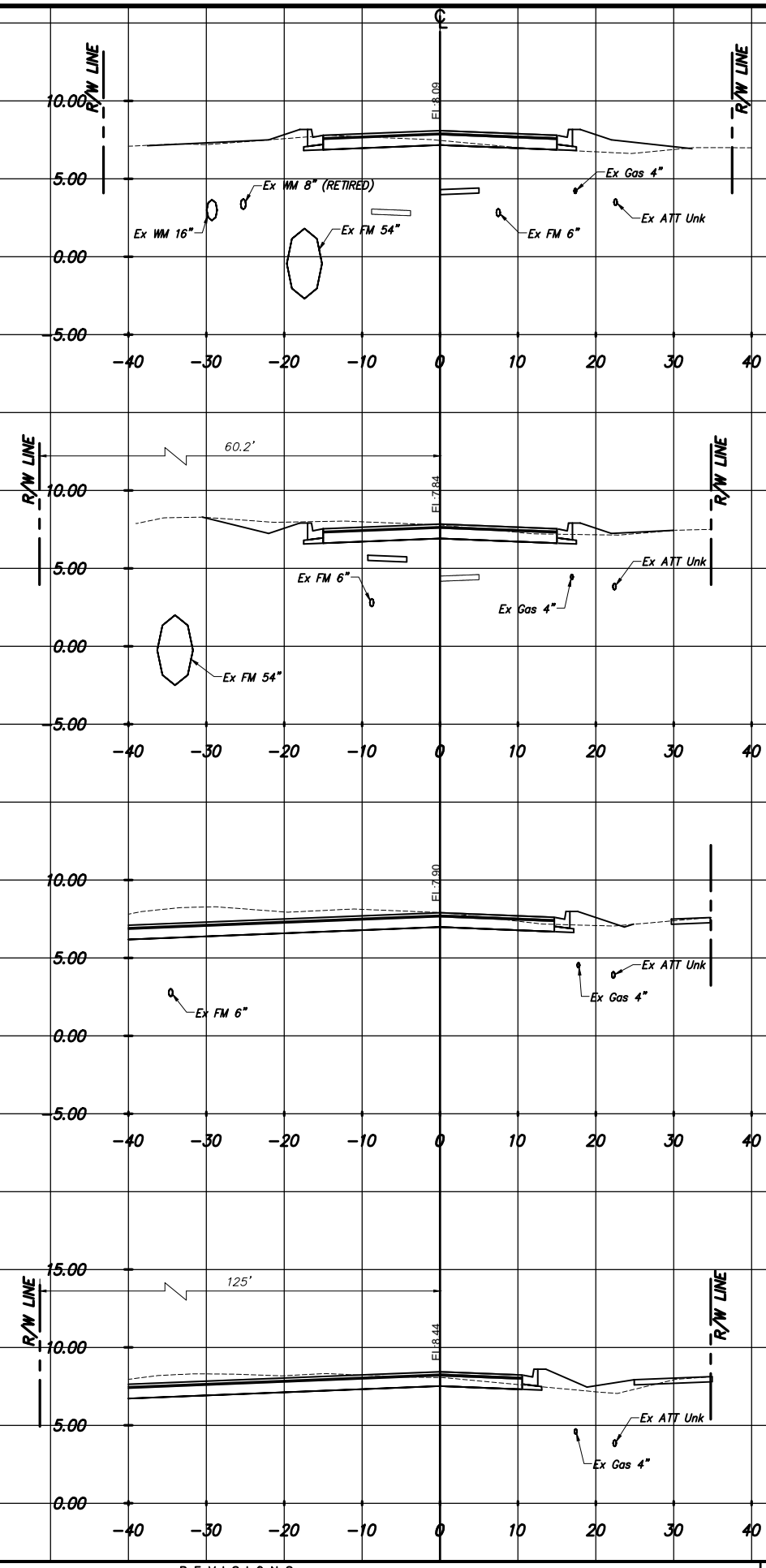
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-62 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³	
14.0	96.8	29.7	67.5	78+00.0
38.1	212.3	7.1	27.4	77+00.0
75.4	250.8	7.9	50.1	76+00.0
58.5	148.0	19.4	64.3	75+00.0
20.7	73.4	17.1	68.7	82+00.0
18.9	88.6	19.9	51.2	81+00.0
28.9	91.0	7.7	56.7	80+00.0
20.2	63.6	23.0	96.8	79+00.0



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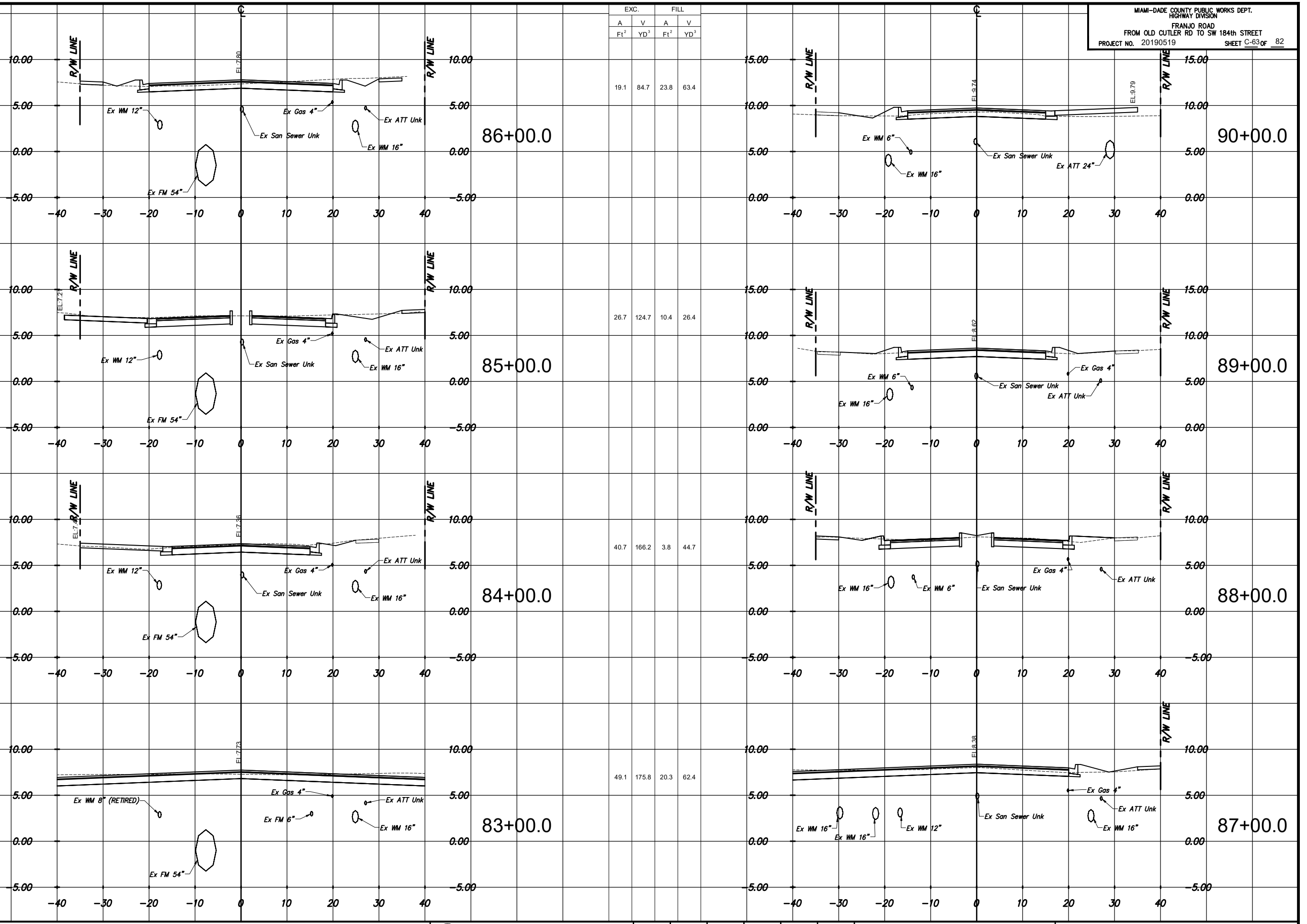
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-63 OF 82

EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³	
45.9	225.5	13.4	26.7	86+00.0
75.9	241.1	1.1	9.1	85+00.0
54.3	231.0	3.9	26.5	84+00.0
70.4	168.7	10.4	51.1	83+00.0
19.1	84.7	23.8	63.4	90+00.0
26.7	124.7	10.4	26.4	89+00.0
40.7	166.2	3.8	44.7	88+00.0
49.1	175.8	20.3	62.4	87+00.0



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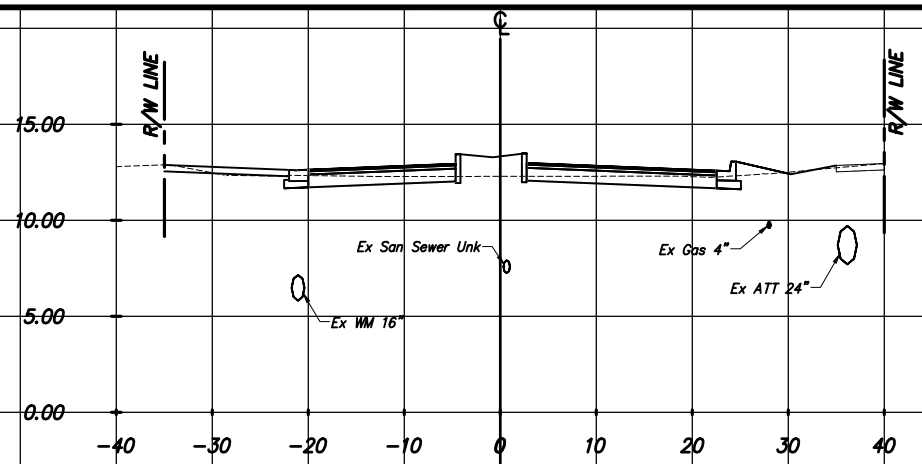
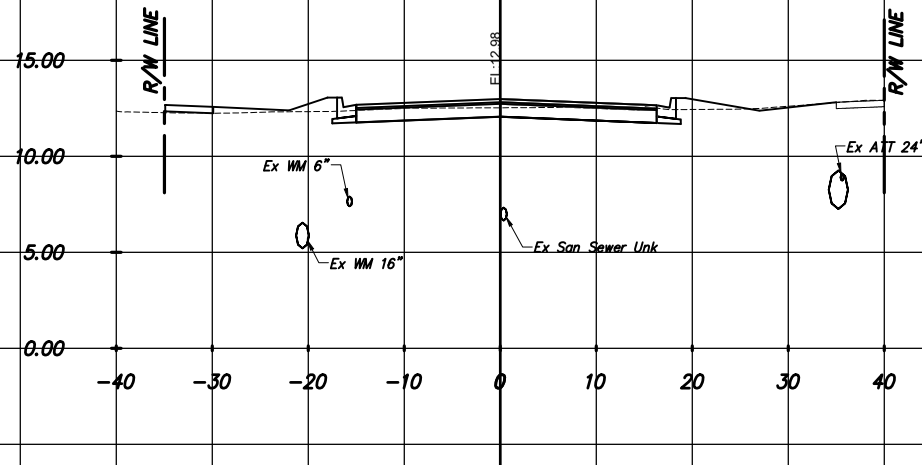
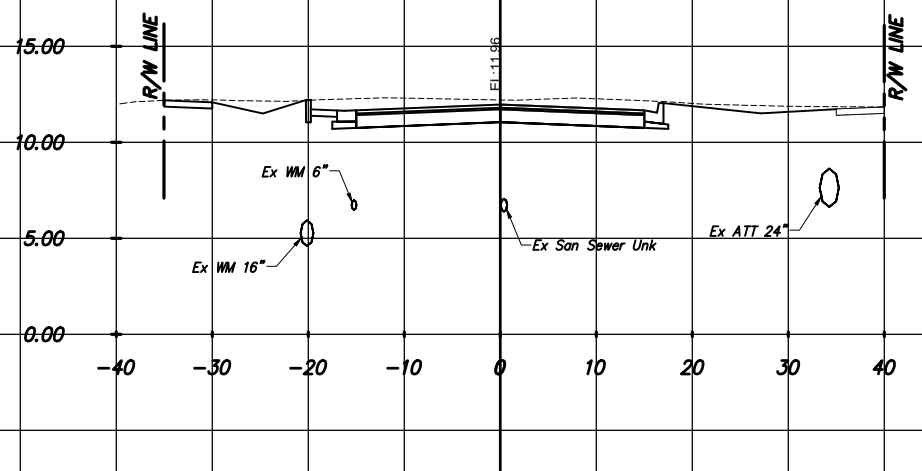
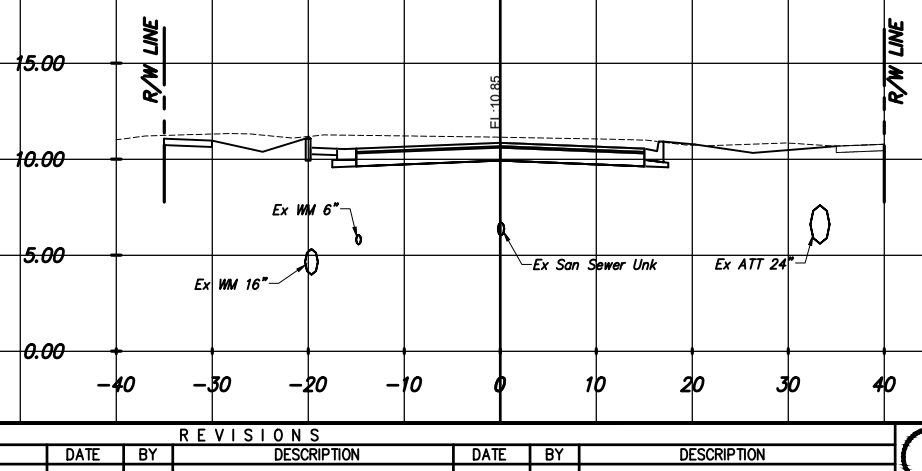
PROJECT NO. 20190519 SHEET C-64 OF 82

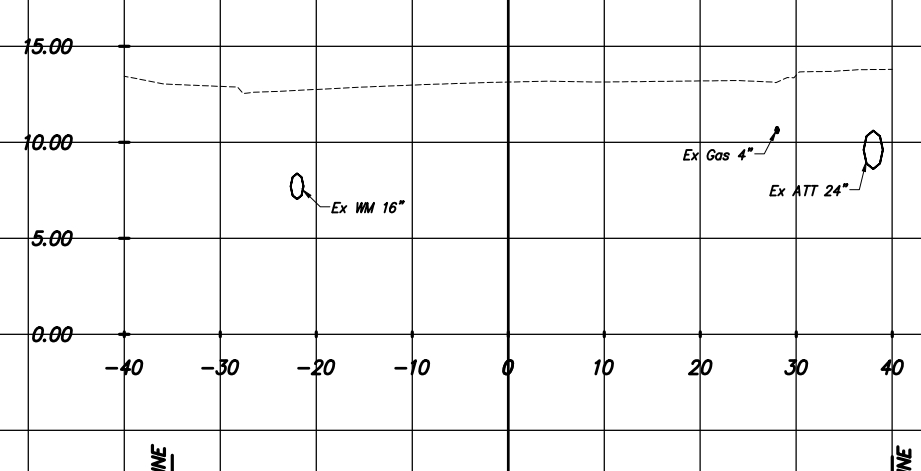
EXC. A Ft²	EXC. V YD³	FILL A Ft²	FILL V YD³	
20.6	79.3	27.7	79.8	94+00.0
22.2	147.1	15.4	28.5	93+00.0
57.3	219.3	0.0	0.3	92+00.0
61.1	148.5	0.1	44.4	91+00.0
0.0	128.2	0.0	0.5	96+00.0
69.2	166.4	0.3	51.9	95+00.0

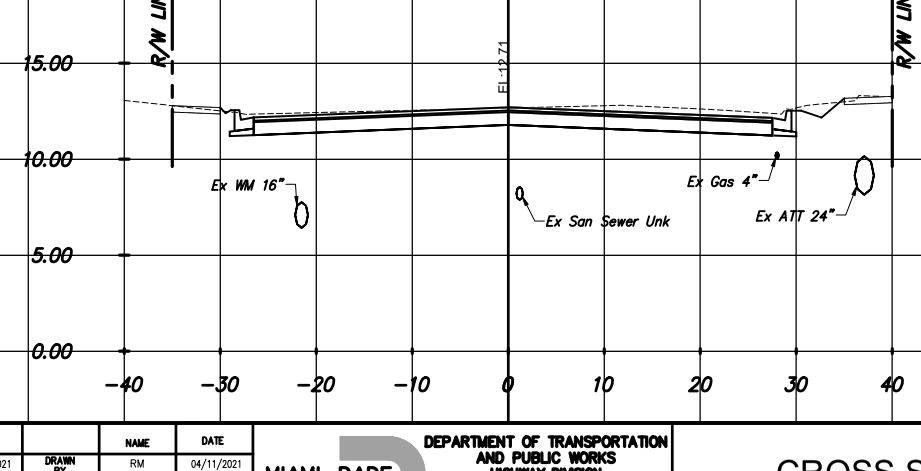












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CROSS SECTIONS

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBER C-66 ORIG.	C-66 FINAL	C-67 ORIG.	C-67 FINAL	C-68 ORIG.	C-68 FINAL	C-69 ORIG.	C-69 FINAL	C-70 ORIG.	C-70 FINAL	C-71 ORIG.	C-71 FINAL	C-72 ORIG.	C-72 FINAL	C-73 ORIG.	C-73 FINAL	C-74 ORIG.	C-74 FINAL	C-75 ORIG.	C-75 FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL
700-40-1	SIGN SINGLE POST (LESS THAN 12 SQ FT.)	AS.																						
	R1-1/D3-1 (STOP) (INTERSECTING STREET NAMES)	AS.	2		2		2		0		4		4		4		0		1		1		20	
	D1-1d (STREET NAMES)	AS.	0		0		0		0		0		0		0		0		4		3		7	
	R1-1 (STOP SIGN)	AS.	0		0		0		0		0		0		0		0		0		0		0	
	R1-2 (YIELD SIGN)	AS.	0		0		0		0		0		0		0		0		6		3		9	
	R2-1 (SPEED LIMIT SIGN)	AS.	2		1		4		2		2		0		3		1		1		0		16	
	R3-17 (BIKE LANE)	AS.	3		3		2		2		4		4		4		0		0		0		22	
	R3-17/R2-17A (BIKE LANE) (AHEAD)	AS.	1		0		0		0		0		0		0		0		0		0		1	
	R3-17/R2-17B (BIKE LANE) (ENDS)	AS.	1		0		0		0		0		2		1		0		2		1		7	
	R4-11 (BIKE MAY USE FULL LANE)	AS.	0		0		0		0		0		0		0		1		0		0		1	
	R4-7/OM1-3 (KEEP RIGHT) (OBJECT MARKER)	AS.	0		0		0		0		0		0		0		0		4		3		7	
	W2-6/W13-1 (TRAFFIC CIRCLE) (15 MPH SPEED LIMIT)	AS.	0		0		1		0		0		0		0		0		3		3		7	
	S1-1/W16-9P (SCHOOL CROSSING) (AHEAD)	AS.	0		0		0		0		0		1		0		0		0		0		1	
	W11-2/W16-7PL (CROSSING SIGN) (ARROW)	AS.	0		0		0		0		0		0		2		0		10		6		18	
	W11-2/W16-9p (CROSSING SIGN) (AHEAD)	AS.	0		0		0		0		0		0		1		0		0		0		1	
	R6-4 (ROUNDABOUT DIRECTIONAL CHEVRON)	AS.	0		0		0		0		0		0		0		0		4		3		7	
	EMERGENCY EVACUATION BUS PICK-UP SIGN	AS.	1		0		0		0		0		0		0		0		0		0		1	
700-46-21	RELOCATE EXISTING SIGN (SINGLE POST)	AS.	0		0		0		1		2		4		4		1		0		0		12	
706-3	REFLECTIVE PAVEMENT MARKER (SEE PLANS FOR DETAILS)	EA.	65		44		63		130		48		35		80		62		155		66		748	
711-11-160	THERMOPLASTIC (WHITE) (MESSAGE) SEE PLANS FOR DETAILS	EA.	5		3		2		4		4		5		7		9		0		0		39	
711-11-120	THERMOPLASTIC (WHITE) (SOLID) (6")	LF.	1,665		1,470		1,880		2,480		2,110		1,160		1,980		620		0		0		13,365	
711-11-123	THERMOPLASTIC (WHITE) (SOLID) (12")	LF.	130		200		130		410		260		325		350		0		340		210		2,355	
711-11-125	THERMOPLASTIC (WHITE) (SOLID) (24")	LF.	60		40		30		120		50		80		190		0		370		205		1,145	
711-11-221	THERMOPLASTIC (YELLOW) (SOLID) (6")	LF.	1,010		300		660		1,440		400		300		1,980		940		1,760		620		9,410	
711-11-224	THERMOPLASTIC (YELLOW) (SOLID) (18")	LF.	10		0		40		140		0		0		10		90		0		0		290	
711-11-241	THERMOPLASTIC (YELLOW) (10'-30' SKIP) (6")	LF.	730		910		1,015		720		1,200		840		250		0		0		0		5,665	
711-11-141	THERMOPLASTIC (WHITE) (2'-4' SKIP) (6")	LF.	110		0		0		250		0		88		25		166		65		60		764	
711-11-141	THERMOPLASTIC (WHITE) (2'-2' DOTTED) (6")	LF.	0		0		0		0		0		0		0		0		50		60		110	
711-11-180	THERMOPLASTIC (WHITE) (YIELD LINE)	LF.	0		0		0		0		0		0		0		0		50		35		85	

NOTES

1. ALL SIGNING AND PAVEMENT MARKINGS SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS.
2. ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE SPECIFIED. BEFORE STARTING THE PROJECT, THE CONTRACTOR WILL REVIEW EXISTING SIGNS SHOWN ON THE PLANS TO BE RELOCATED OR TO REMAIN. THE CONTRACTOR WILL NOTIFY IN WRITING TO THE PROJECT ENGINEER OF ANY MISSING SIGNS BEFORE CONSTRUCTION STARTS. SIGNS DAMAGED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED AT NO COST TO THE DEPARTMENT. IF EXISTING SIGNS TO BE RELOCATED HAVE A DAMAGED POLE OR A POLE NOT MEETING HEIGHT SPECIFICATION REQUIREMENTS, THE COST OF A NEW POLE WILL BE INCLUDED IN THE RELOCATION BID ITEM.
3. ALL PAVEMENT MARKINGS, MESSAGES, AND ARROWS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
4. REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.
5. MATCH EXISTING PAVEMENT MARKINGS AT THE BEGINNING AND AT THE END OF THE PROJECT AND AT ALL SIDE STREETS WITHOUT JOGS OR OFFSETS.
6. THE CONTRACTOR SHALL REMOVE EXISTING MARKINGS BY FDOT APPROVED METHOD WITHOUT DAMAGE TO THE FRICTION COURSE.
7. SIGN ASSEMBLY LOCATIONS SHOWN ON PLANS WHICH ARE IN CONFLICT WITH LIGHTING, UTILITIES, DRIVEWAYS, WHEELCHAIR RAMPS, ETC. MAY BE ADJUSTED SLIGHTLY AS DIRECTED BY THE ENGINEER. EXTREME LOCATION CHANGES MUST BE APPROVED BY MIAMI-DADE SIGNALS AND SIGNS DIVISION.
8. THE CONTRACTOR SHALL RELOCATE ALL EXISTING POST-MOUNTED STREET NAME AND STOP SIGNS TO A VISIBLE AREA UNDISTURBED BY THE CONSTRUCTION SO AS TO MINIMIZE DAMAGE TO THE SIGNS. NEW STREET NAME SIGNS WILL BE ATTACHED AT THE TOP OF THE NEW STOP SIGNS ON MINOR SIDE STREETS AT THE END OF CONSTRUCTION.
09. EXTRUDED ALUMINUM SIGN SUPPORT CLAMPS ARE NOT ACCEPTABLE. ALL RELOCATED SIGNS MUST COMPLY WITH THE DESIGN STANDARDS AS IF THEY WERE NEW SIGNS. IF EXISTING CLAMPS, BRACKETS, POLES, ETC. NEED TO BE REPLACED THE COST SHALL BE INCLUDED IN THE RELOCATION PAY ITEM.
10. ANY SIGNING MATERIALS, INCLUDING SUPPORTS, TO BE REMOVED AS NOTED ON PLAN SHEETS, SHALL BE DELIVERED BY THE CONTRACTOR IN EXISTING CONDITION, IN CARE OF THE STOREKEEPER AT THE MIAMI-DADE COUNTY MAINTENANCE YARD, 7100 NW 36 STREET, MIAMI, FL 33166.
11. SCHOOL CROSSING SIGNAGE AND SCHOOL SPEED ZONE SIGNAGE TO CONFORM WITH MUTCD/FDOT STANDARDS (FLUORESCENT YELLOW-GREEN BACKGROUNDS).
12. REFLECTIVE PAVEMENT MARKERS AS PER FDOT STANDARD INDEX NO 17352.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
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DESIGNED BY	MS	09/27/21	DRAWN BY	MS	09/27/21
CHECKED BY	CMH	09/27/21	CHECKED BY	CMH	09/27/21
SUPERVISED BY:	CMH				

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PAVEMENT MARKINGS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-66 OF 82

MOBIL GAS STATION 20245
SUNOCO GAS STATION 20245
OLD CUTLER ANIMAL CLINIC 20205
FRANJO PARK 20155
20330
20320
20310
20300
20300
20210
20200
20155
20150
20010
20000
20101
20013
20011
20011

OLD CUTLER RD
FRANJO ROAD
SW 89TH CT

BEGIN PROJECT
BEGIN PAVEMENT MARKING
℄ STA. 10+96.94
MATCH EXIST. PAVEMENT MARKINGS

PROPOSED PAVEMENT MARKING TO MATCH EXISTING
PROP. W/R RPM @ 20' O.C. PER FDOT INDEX 706-001
INSTALL PROP. MD/Y RPM AND YELLOW PAINT AT MEDIANS PER FDOT INDEX 706-001 (TYP.)
PROP. W/R RPM PER FDOT INDEX 706-001
PROP. 6" YELLOW (10'-30' SKIP) WITH Y/Y RPM'S AS PER FDOT INDEX No. 706-001
PROP. 6" WHITE
PROP. 6" DOUBLE YELLOW W/ Y/Y RPM'S @ 40' O.C.
PROP. 18" YELLOW @ 45'-10' O.C.
PROP. 6" YELLOW
PROP. 6" WHITE 2'-4' SKIP
PROP. 50 L.F. OF GREEN PAINT
PROP. 18" WHITE @ 45'-10' O.C.
PROP. 24" WHITE
PROP. 12" WHITE
PROP. CONCRETE CROSSWALK (TYP.)
PROP. DETECTABLE WARNING SURFACE (TYP.)
BLUE RPM
PROP. 6" DOUBLE YELLOW
PROP. 50 L.F. OF 6" DOUBLE YELLOW WITH Y/Y RPMs @ 40' O.C.
R/W LINE
R3-17 & R2-17A
11+25, 20' R
R2-1
12+60, 19' R
R3-17 & R2-17B
13+71, 20' L
R3-17
13+71, 19' R
R2-1
14+94, 18' L
14+58, 20' R PROP. SIGN
R1-1 & D3-1
18+18, 40' L
R3-17
17+79, 19' L
R1-1 & D3-1
18+48, 41' R
R3-17
18+87, 19' R
W2-6 & W13-1
19+40, 20' R
R3-17 & R2-17B
19+89, 20' R
MATCH LINE STA. - 15+00.00
MATCH LINE STA. - 20+88.00
SEE SHEET C74 FOR ROUNDABOUT PAVEMENT MARKING AND SIGNAGE

NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

REVISIONS								
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Stantec
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CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PAVEMENT MARKINGS

PLOTTED BY: MORALES, RDO DATE: 2/16/2023 5:12 PM
CREATED: 2022-12-14 - V:\2156\ACTIVE\215615952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952 PAVEMENT MARKINGS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519
SHEET C-67 OF 82

PAVEMENT MARKINGS

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1ST STREET
MIAMI, FLORIDA 33128

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

FRANJO ROAD

SW 199TH ST

SW 200TH ST

SW 92ND AVE

SW 198TH TER

MATCH LINE STA. - 26+97.00

MATCH LINE STA. - 32+96.00

MATCH LINE STA. - 20+96.00

SEE SHEET C74 FOR ROUNDABOUT PAVEMENT MARKING AND SIGNAGE

NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.

PROP. 6" WHITE
PROP. 6" YELLOW (10'-30' SKIP) WITH Y/Y RPM'S AS PER FDOT INDEX No. 706-001
PROP. 6" DOUBLE YELLOW
PROP. 12" WHITE
PROP. 24" WHITE
PROP. 50 L.F. OF 6" DOUBLE YELLOW WITH Y/Y RPMs @ 40' O.C.
PROP. DETECTABLE WARNING SURFACE (TYP.)
PROP. CONCRETE CROSSWALK (TYP.)
BLUE RPM
R/W LINE

R3-17 BIKE LANE 25+05, 19' R
R3-17 & R2-17B 24+78, 19' L
W2-6 & W13-1 24+36, 19' L
R1-1 & D3-1 24+73, 40' R
R1-1 & D3-1 28+92, 40' L
R1-1 & D3-1 28+10, 40' R
R2-1 SPEED LIMIT 30 31+15, 20' L
R3-17 BIKE LANE 28+46, 18' R
R3-17 BIKE LANE 28+61, 19' L
ENDS BIKE LANE
STOP

DESIGNED BY	NAME	DATE
CHECKED BY	CMH	07/29/2020
	CMH	
SUPERVISED BY:		

DRAWN BY	NAME	DATE
CHECKED BY	MS	07/29/2020
	CMH	

DATE	BY	DESCRIPTION

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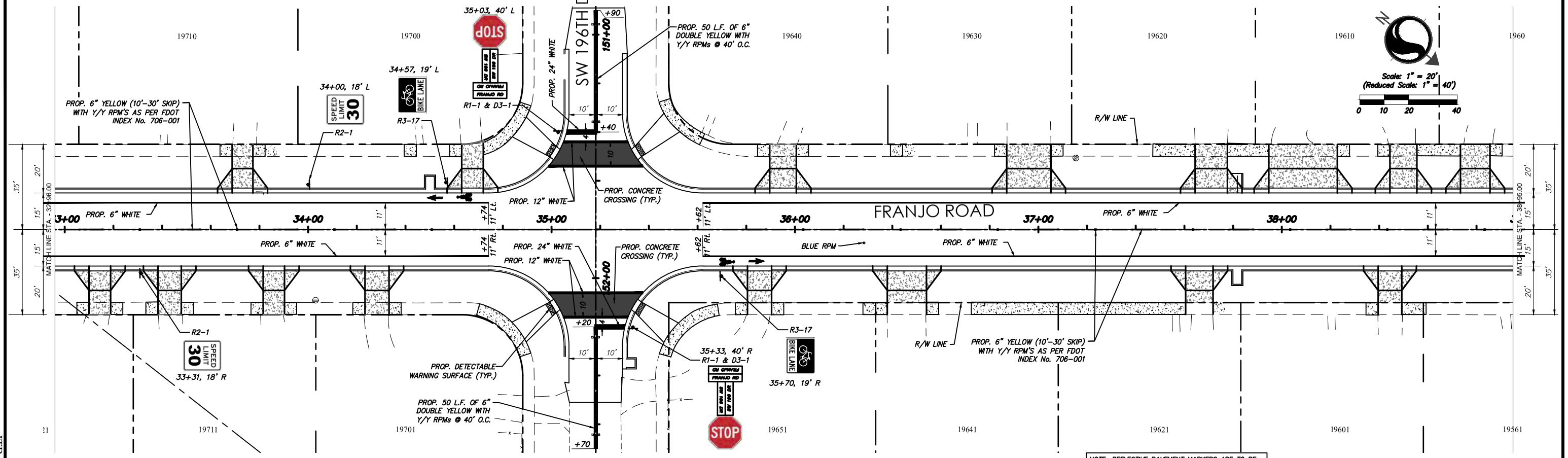
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-68 OF 82



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CHECKED BY	CMH		CHECKED BY	CMH	
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HIGHWAY DIVISION
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PAVEMENT MARKINGS

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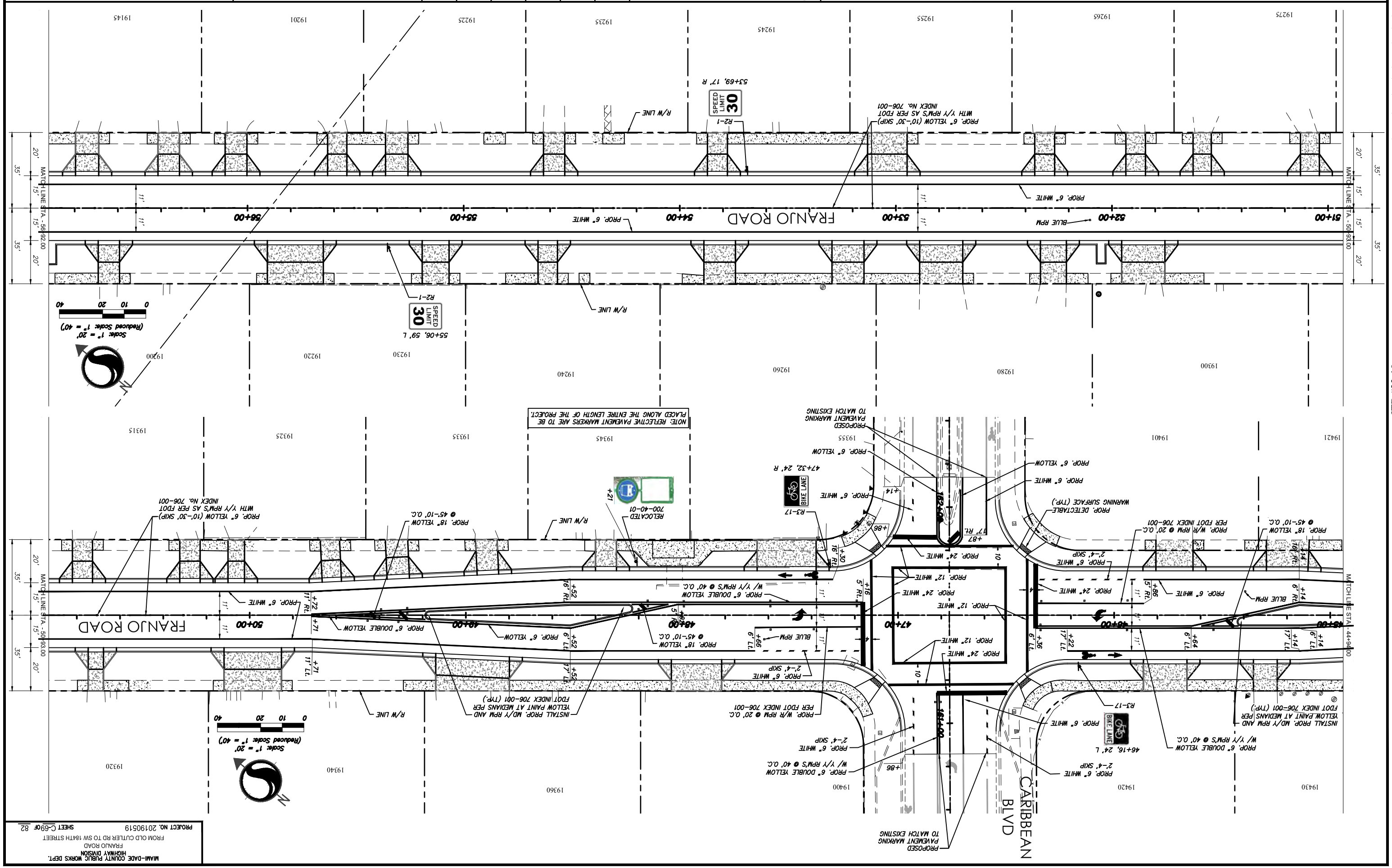

PAVEMENT MARKINGS

DEPARTMENT OF TRANSPORTATION
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HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET

PROJECT NO. 20190519 SHEET C-69 OF 82

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ITB #23-10
Franjo Road Roadway Improvements Project
Page 420 of 608

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-70 OF 82

FRANJO ROAD

SW 193RD DR

FLAG DR

SW 192ND DR

SW 95TH AVE

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.

REVISIONS								
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HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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PAVEMENT MARKINGS

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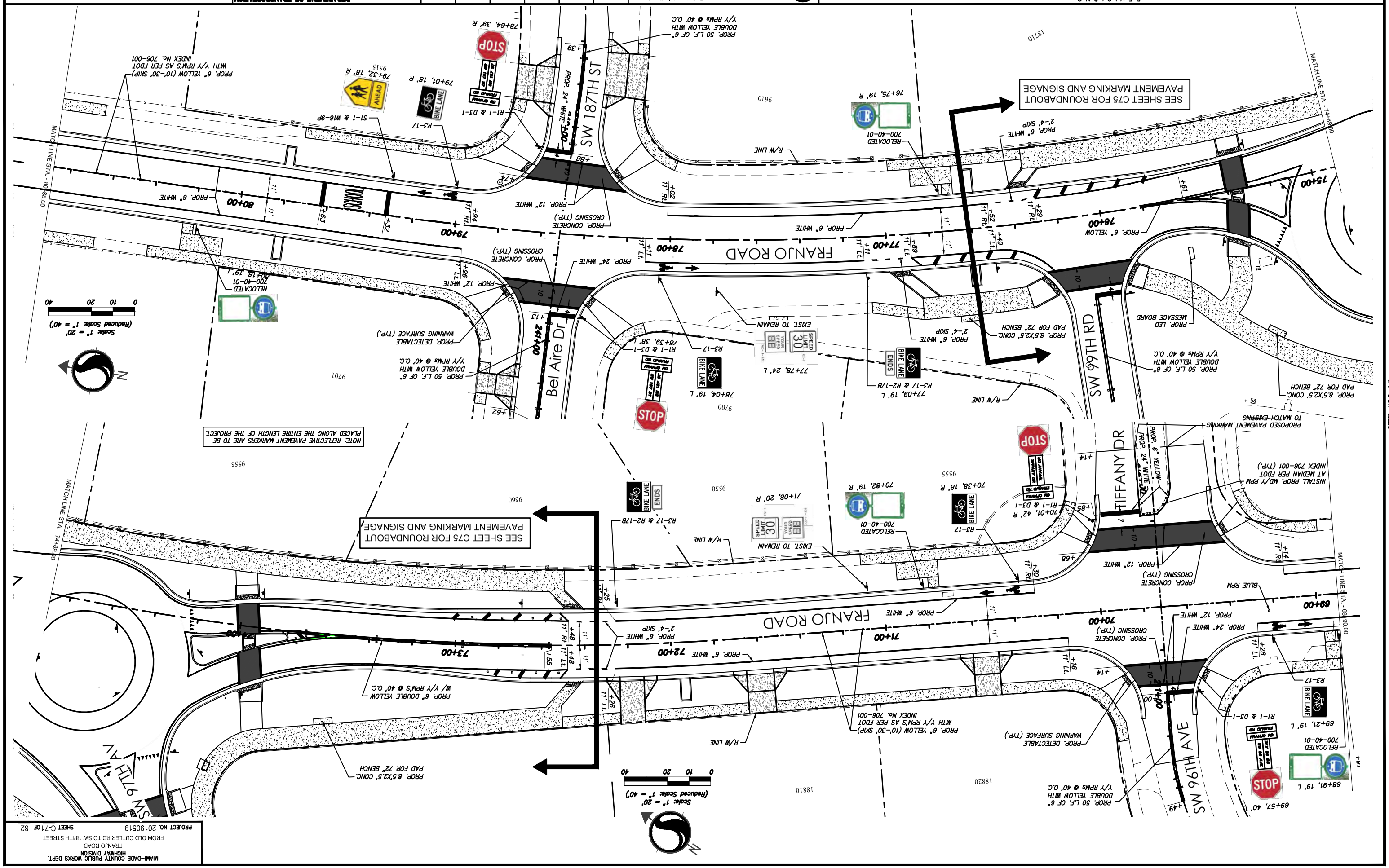
PAVEMENT MARKINGS
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128
Stantec
REVISIONS
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DETAILED BY
CHECKED BY
DRAWN BY
CHECKED BY
SUPERVISED BY
SEE SHEET C75 FOR ROUNDABOUT PAVEMENT MARKING AND SIGNAGE
FRANJO ROAD
SW 187TH ST
Bel Aire Dr
SW 99TH RD
SW 96TH AVE
TIFFANY DR
SW 94TH AVE
MATCH LINE STA. 68+90.00
MATCH LINE STA. 74+89.90
NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT No. 20190519
SHEET C-71 OF 82

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-72 OF 82

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

FRANJO ROAD

STERLING DR

SW 186TH ST

SW 185TH TER

MATCH LINE STA. - 80+88.00

MATCH LINE STA. - 86+87.00

MATCH LINE STA. - 92+86.00

82+96, 41' L STOP
82+59, 18' L BIKE LANE
R1-1 & D3-1
R3-17
PROP. 24" WHITE
PROP. 50 L.F. OF 6" DOUBLE YELLOW WITH Y/Y RPMs @ 40' O.C.
PROP. DETECTABLE WARNING SURFACE (TYP.)
PROP. CONCRETE CROSSING (TYP.)
PROP. 12" WHITE
PROP. 6" WHITE
PROP. 6" YELLOW (10'-30' SKIP) WITH Y/Y RPM'S AS PER FDOT INDEX No. 706-001
9700
18630
18620
18600
9638
18601
GOOD SHEPPER CHILDREN CENTER

INSTALL PROP. MD/Y RPM AND YELLOW PAINT AT MEDIANS PER FDOT INDEX 706-001 (TYP.)
R/W LINE
85+44, 24' L SPEED LIMIT 30 R2-1
86+01, 24' L RELOCATED 700-40-01
86+37, 90' L STOP
86+41, 23' L BIKE LANE R3-17
R1-1 & D3-1
PROP. 6" DOUBLE YELLOW W/ Y/Y RPM'S @ 40' O.C.
PROP. 6" WHITE WITH W/R RPM @ 20' O.C. PER FDOT INDEX 706-001
PROP. 18" YELLOW @ 45'-10' O.C.
PROP. 6" YELLOW
83+74, 19' R BIKE LANE R3-17
83+38, 41' R R1-1 & D3-1
EXIST. SIGNS TO REMAIN
84+28, 19' R
R2-1 84+70, 22' R SPEED LIMIT 30
86+06, 25' R RELOCATED 700-40-01
BLUE RPM
NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.

89+53, 40' L STOP
88+19, 23' L SPEED LIMIT 15 SCHOOL
RELOCATED EXIST. SIGN
89+16, 18' L BIKE LANE R3-17
R1-1 & D3-1
PROP. 18" YELLOW @ 45'-10' O.C.
PROP. 6" YELLOW
PROP. 6" DOUBLE YELLOW
PROP. 6" DOUBLE YELLOW W/ Y/Y RPM'S @ 40' O.C.
PROP. 6" DOUBLE YELLOW 2'-4' SKIP
PROP. CONCRETE CROSSING (TYP.)
PROP. 12" WHITE
PROP. 24" WHITE @ 24" O.C.
PROP. 24" WHITE
PROP. 6" WHITE 2'-4' SKIP
INSTALL PROP. MD/Y RPM AND YELLOW PAINT AT MEDIANS PER FDOT INDEX 706-001 (TYP.)
W11-2 & W16-9p AHEAD
88+20, 12' R
TIFFANY DRIVE PARK
9701
9700
18455
HOLY ROSARY - ST RICHARD CATHOLIC SCHOOL

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

PROP. 50 L.F. OF GREEN PAINT
90+59, 19' L W11-2 & W16-7pL
90+87, 19' L
RELOCATED 700-40-01
R/W LINE
92+49, 20' L SPEED LIMIT 15
EXIST. SIGNS TO REMAIN
PROP. 50 L.F. OF GREEN PAINT
PROP. 24" WHITE @ 24" O.C.
BUS ONLY
BLUE RPM
PROP. 6" WHITE 2'-4' SKIP
PROP. 6" DOUBLE YELLOW W/ Y/Y RPM'S @ 40' O.C.
R2-1 91+40, 19' R SPEED LIMIT 30
EXIST. SIGN TO REMAIN SPEED LIMIT 15 SCHOOL
92+47, 19' R
R3-17 & R2-17B BIKE LANE ENDS
92+82, 20' R
W11-2 & W16-7pL 90+43, 19' R
18500

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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DESIGNED BY	CMH	07/29/2020	DRAWN BY	MS	07/29/2020
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PAVEMENT MARKINGS

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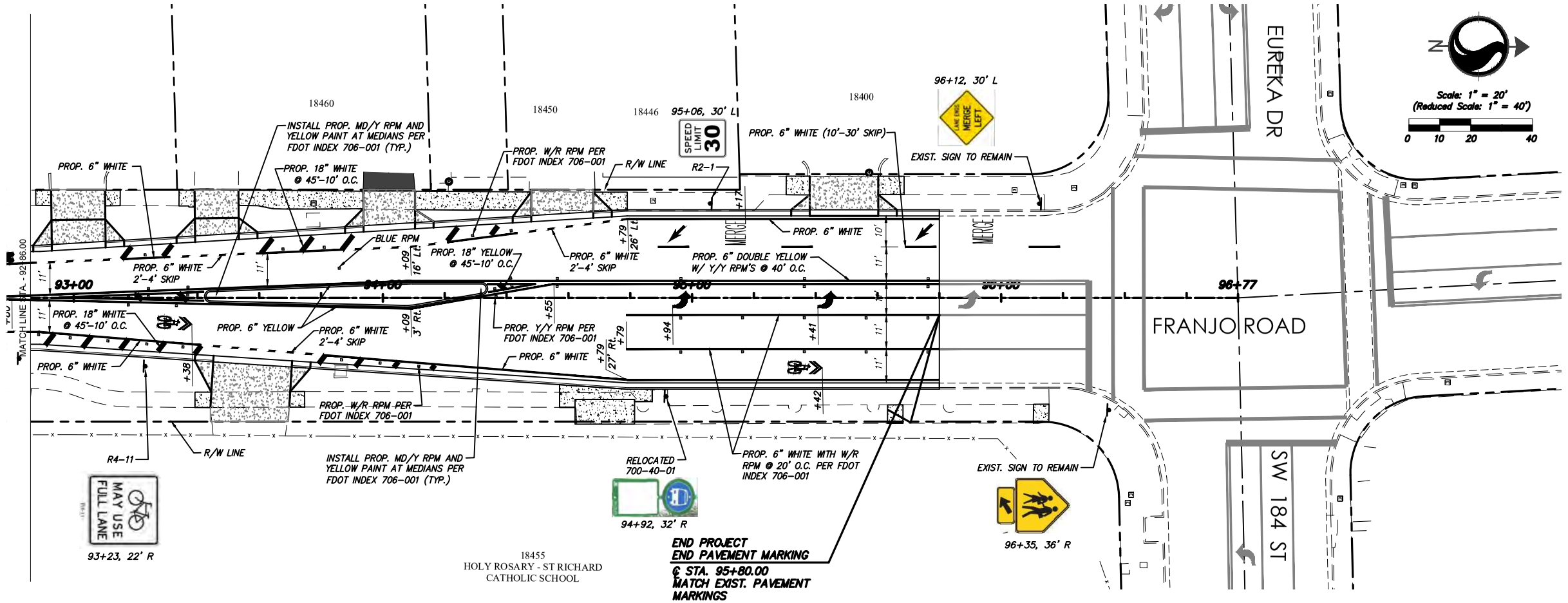
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-73 OF 82

NOTE: REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE PROJECT.



NOTES

1. ALL SIGNING AND PAVEMENT MARKINGS SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS AND JANUARY 2021 STANDARD SPECIFICATION eBOOK.
2. ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE SPECIFIED. BEFORE STARTING THE PROJECT, THE CONTRACTOR WILL REVIEW EXISTING SIGNS SHOWN ON THE PLANS TO BE RELOCATED OR TO REMAIN. THE CONTRACTOR WILL NOTIFY IN WRITING TO THE PROJECT ENGINEER OF ANY MISSING SIGNS BEFORE CONSTRUCTION STARTS. SIGNS DAMAGED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED AT NO COST TO THE DEPARTMENT. IF EXISTING SIGNS TO BE RELOCATED HAVE A DAMAGED POLE OR A POLE NOT MEETING HEIGHT SPECIFICATION REQUIREMENTS, THE COST OF A NEW POLE WILL BE INCLUDED IN THE RELOCATION BID ITEM.
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6. THE CONTRACTOR SHALL REMOVE EXISTING MARKINGS BY FDOT APPROVED METHOD WITHOUT DAMAGE TO THE FRICTION COURSE.
7. SIGN ASSEMBLY LOCATIONS SHOWN ON PLANS WHICH ARE IN CONFLICT WITH LIGHTING, UTILITIES, DRIVEWAYS, WHEELCHAIR RAMPS, ETC. MAY BE ADJUSTED SLIGHTLY AS DIRECTED BY THE ENGINEER. EXTREME LOCATION CHANGES MUST BE APPROVED BY MIAMI-DADE SIGNALS AND SIGNS DIVISION.
8. THE CONTRACTOR SHALL RELOCATE ALL EXISTING POST-MOUNTED STREET NAME AND STOP SIGNS TO A VISIBLE AREA UNDISTURBED BY THE CONSTRUCTION SO AS TO MINIMIZE DAMAGE TO THE SIGNS. NEW STREET NAME SIGNS WILL BE ATTACHED AT THE TOP OF THE NEW STOP SIGNS ON MINOR SIDE STREETS AT THE END OF CONSTRUCTION.
9. EXTRUDED ALUMINUM SIGN SUPPORT CLAMPS ARE NOT ACCEPTABLE. ALL RELOCATED SIGNS MUST COMPLY WITH THE LATEST FDOT DESIGN STANDARDS AS IF THEY WERE NEW SIGNS. IF EXISTING CLAMPS, BRACKETS, POLES, ETC. NEED TO BE REPLACED THE COST SHALL BE INCLUDED IN THE RELOCATION PAY ITEM.
10. ANY SIGNING MATERIALS, INCLUDING SUPPORTS, TO BE REMOVED AS NOTED ON PLAN SHEETS, SHALL BE DELIVERED BY THE CONTRACTOR IN EXISTING CONDITION, IN CARE OF THE STOREKEEPER AT THE MIAMI-DADE COUNTY MAINTENANCE YARD, 7100 NW 36 STREET, MIAMI, FL 33166.
11. SCHOOL CROSSING SIGNAGE AND SCHOOL SPEED ZONE SIGNAGE TO CONFORM WITH MUTCD/FDOT STANDARDS (FLUORESCENT YELLOW-GREEN BACKGROUNDS).

12 REFLECTIVE PAVEMENT MARKERS AS PER FDOT STANDARD INDEX NO 706-001(INCLUDING BLUE RPMS FOR FIRE HYDRANTS).

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

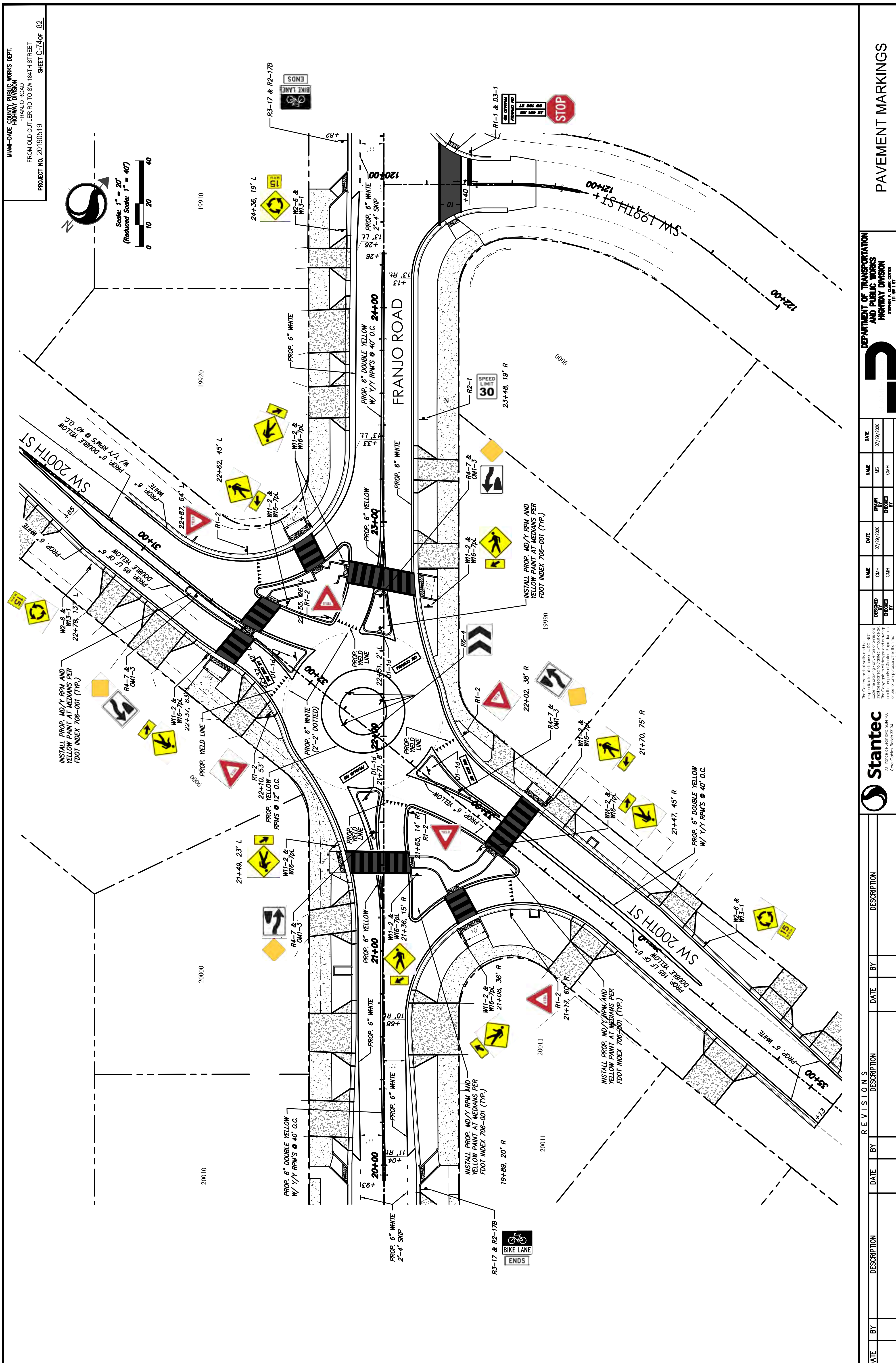
Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

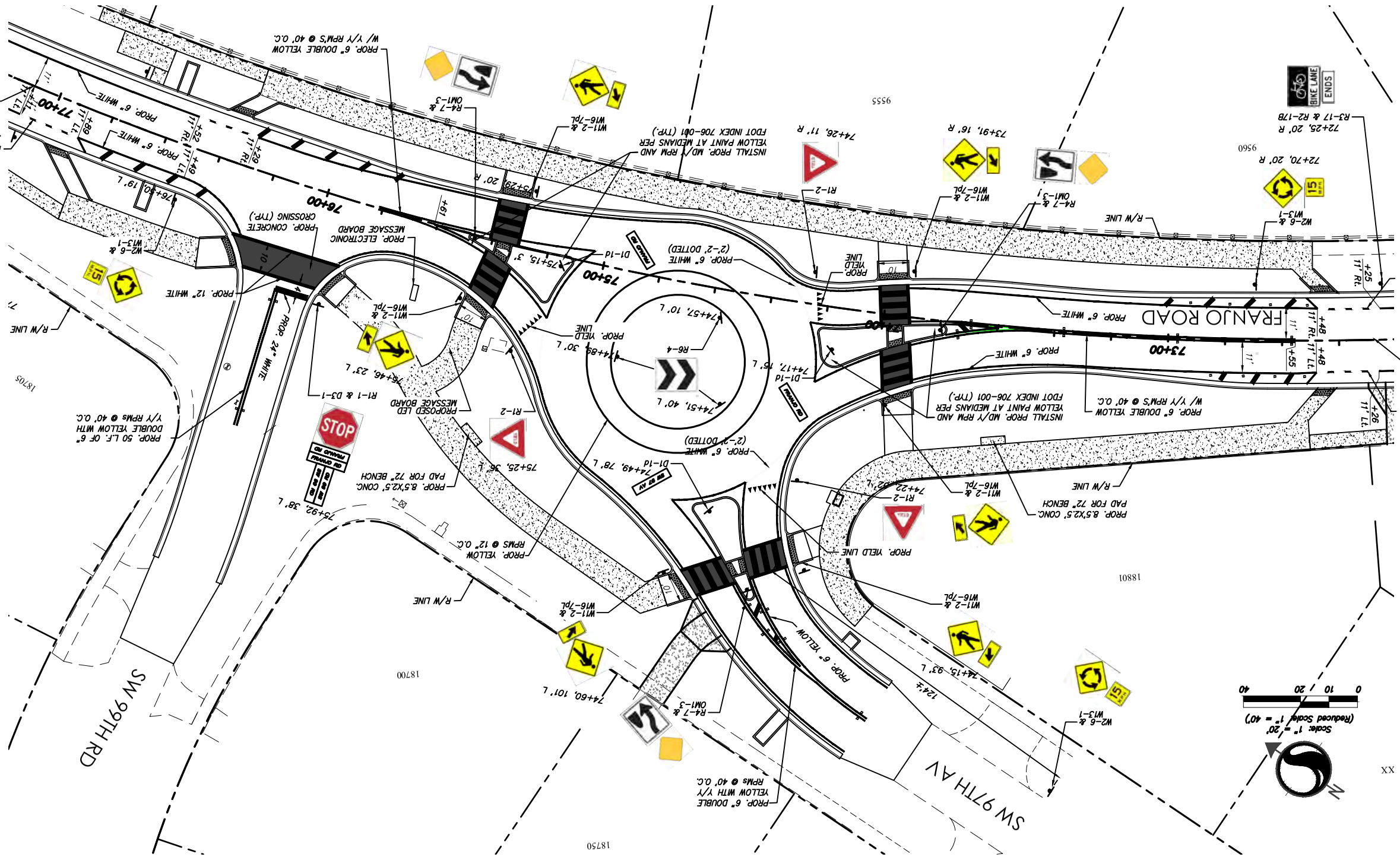
	NAME	DATE		NAME	DATE
DESIGNED BY	CMH	07/29/2020	DRAWN BY	MS	07/29/2020
CHECKED BY	CMH		CHECKED BY	CMH	
SUPERVISED BY:					

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PAVEMENT MARKINGS

PLOTTED BY: MORALES, ROD DATE: 2/16/2023 5:14 PM
CREATED: 2022-12-14 - V:\2156\Active\20561952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\19952 PAVEMENT MARKINGS.DWG


MIAMI-DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519
SHEET C-74 OF 82
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
FRANJO ROAD
SW 200TH ST
SW 199TH ST
PROP. 6" DOUBLE YELLOW W/ Y/Y RPM'S @ 40' O.C.
PROP. 6" WHITE
PROP. 6" YELLOW
PROP. YIELD LINE
PROP. 6" WHITE 2'-4' SKIP
INSTALL PROP. MD/Y RPM AND YELLOW PAINT AT MEDIANS PER FDOT INDEX 706-001 (TYP.)
R3-17 & R2-17B
BIKE LANE
ENDS
SPEED LIMIT 30
STOP
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
Stantec
PAVEMENT MARKINGS
REVISIONS
DATE
BY
DESCRIPTION



MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET

PROJECT NO. 20190519 SHEET C-75OF 82

DEPARTMENT OF TRANSPORTATION
AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PAVEMENT MARKINGS

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CHECKED BY	CVH	07/29/2020
CHECKED BY	CVH	07/29/2020

DRAWN BY	NAME	DATE
CHECKED BY	MS	07/29/2020
	CVH	07/29/2020

SUPERVISED BY:

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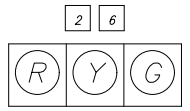
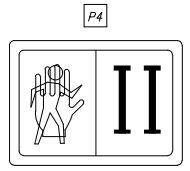
CREATED: 2022-2-14 - V:\2196\ACTIVE\219619562\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\19562 PAVEMENT MARKINGS.DWG

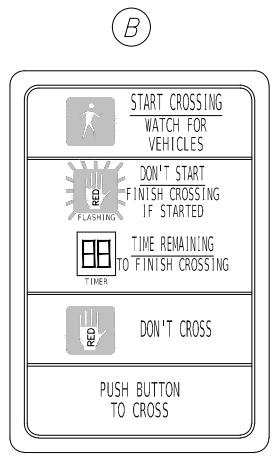
DETAIL OF SIGNAL HEADS



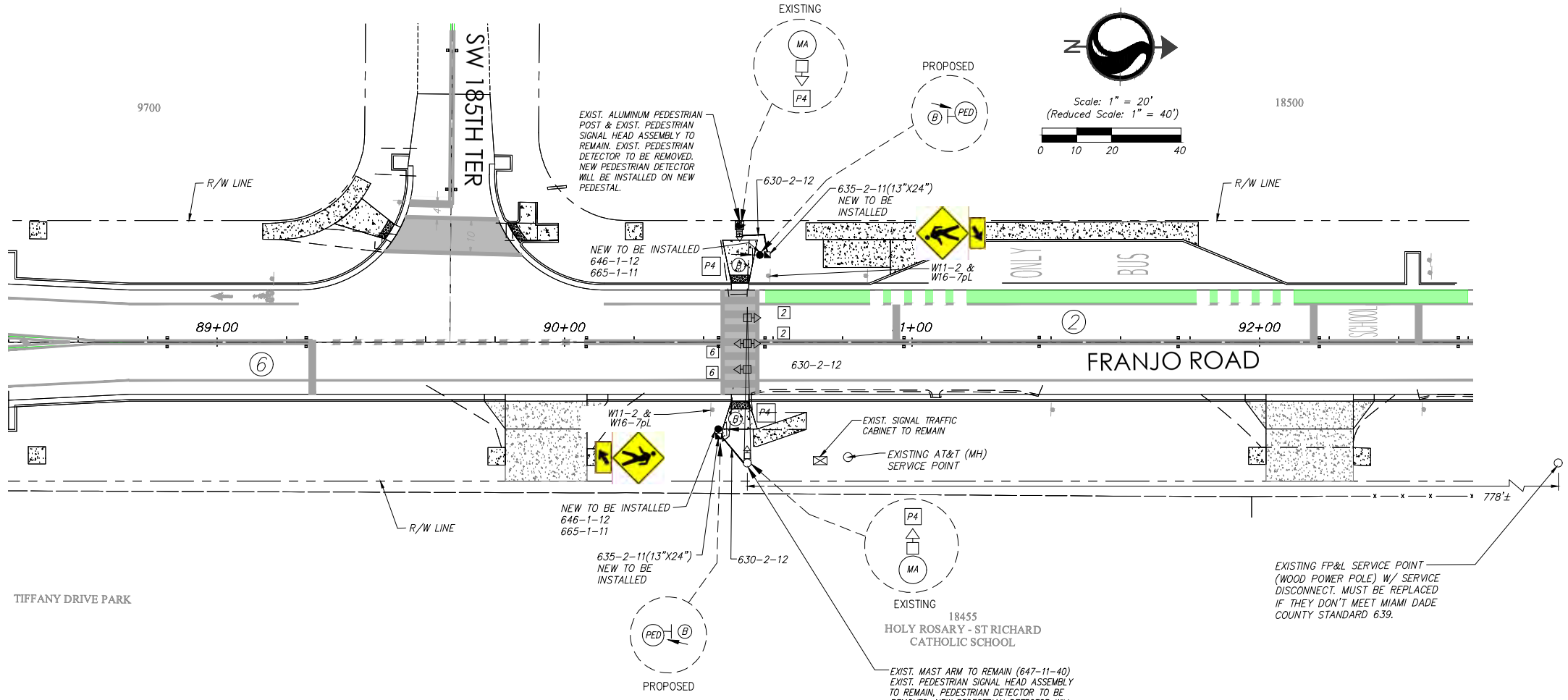
LED ILLUMINATED
3 SECTION , 1 WAY
(4 EXISTING, TO REMAIN)



PEDESTRIAN COUNTDOWN SIGNAL
(2 EXISTING, TO REMAIN)



R10-3N
TO BE INCLUDED IN THE COST
OF ITEM NO. 665-11
(2 REQ'D)



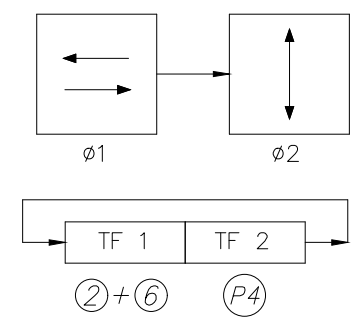
CONTROLLER OPERATIONS

1. MAJOR STREET IS : FRANJO RD, PHASE 1 (MOVEMENTS 2 & 6)
   MINOR STREET: PEDESTRIAN MOVEMENT PHASE 2 (P4)
2. STANDARD SIGNAL OPERATING PLAN NO. 17 WITH THE FOLLOWING:
   (A) COORDINATION ON PHASE 1 (MOVEMENTS 2 & 6).
   (B) ACTUATED PEDESTRIANS FOR PHASE 2 (P4)
   (C) FLASHING OPERATION: MOVEMENTS 2 & 6 – YELLOW

REMOVAL ITEMS		
ITEM NO.	ITEM DESCRIPTION	QTY
665-1-60	PEDESTRIAN DETECTOR	2

CONTROLLER TIMING REFERENCE TABLE									
VEHICLE MOVEMENT		1	2	3	4	5	6	7	8
FUNCTION	APPROACH DIRECTION	–	SB	–	–	–	NB	–	–
	APPROACH POSTED SPEED	–	30	–	–	–	30	–	–
	ALL RED DISTANCE	–	40	–	–	–	118	–	–
	YELLOW CLEARANCE	–	4.0	–	–	–	4.0	–	–
	ALL RED CLEARANCE	–	2.0	–	–	–	2.0	–	–
			P2		P4		P6		
FUNCTION	PED. CROSSING DISTANCE	–	–	–	30	–	–	–	–
	PEDESTRIAN WALK	–	–	–	10	–	–	–	–
	PEDESTRIAN CLEARANCE	–	–	–	8	–	–	–	–

SIGNAL TIMINGS ARE APPROXIMATE AND FINAL TIMINGS SHALL BE PROVIDED BY D.C.P.W. SIGNALS & SIGN DIVISION



SIGNAL OPERATION PLAN

FRANJO RD. BET. SW 184 186 ST
SIGNALIZATION PLAN
INT. ID# 3416

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
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		NAME	DATE		NAME	DATE
DESIGNED BY		CMH	07/29/2020	DRAWN BY	RM	07/29/2020
CHECKED BY		CMH		CHECKED BY	CMH	

SUPERVISED BY:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

SIGNALIZATION PLANS

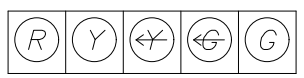
PLOTTED BY: MORALES, ROD DATE: 2/17/2023 2:23 PM
CREATED: 2023-02-17 - V:\2156\ACTIVE\21561952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952 SIGNALIZATIONLONG

PLOTTED BY: MORALES, ROD DATE: 2/17/2023 2:24 PM
CREATED: 2023-02-17 - V:\2154\ACTIVE\21561952\CIVIL\DESIGN\DRAWING\CIVIL PLANS\19952 SIGNALIZATION.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-77 OF 82

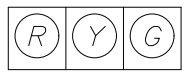
DETAIL OF SIGNAL HEADS

3/8 7/4



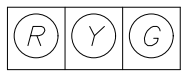
LED ILLUMINATED
5 SECTION , 1 WAY
(2 PROPOSED)
ITEM NO. 650-1-18

4 8



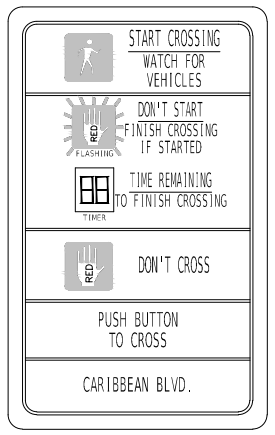
LED ILLUMINATED
3 SECTION , 1 WAY
(4 EXISTING, TO REMAIN)

2 6



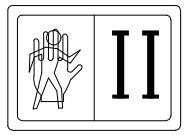
LED ILLUMINATED
3 SECTION , 1 WAY
(2 EXISTING, TO BE RELOCATED)
ITEM NO. 650-1-74

Ⓒ



R10-3N
(4 EXISTING)

P2 P4 P6 P8



PEDESTRIAN COUNTDOWN SIGNAL
(8 EXISTING)

REMOVAL ITEMS		
ITEM NO.	ITEM DESCRIPTION	QTY
650-1-60	TRAFFIC SIGNAL HEAD ASSEMBLY	2

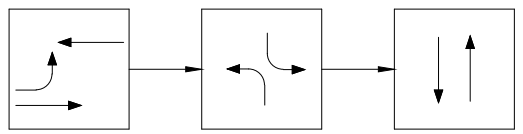
Ⓧ

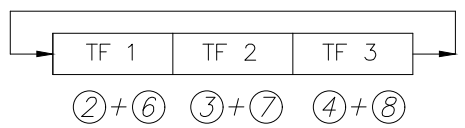
LED ILLUMINATED STREET SIGN
(2 EXISTING)

Ⓨ

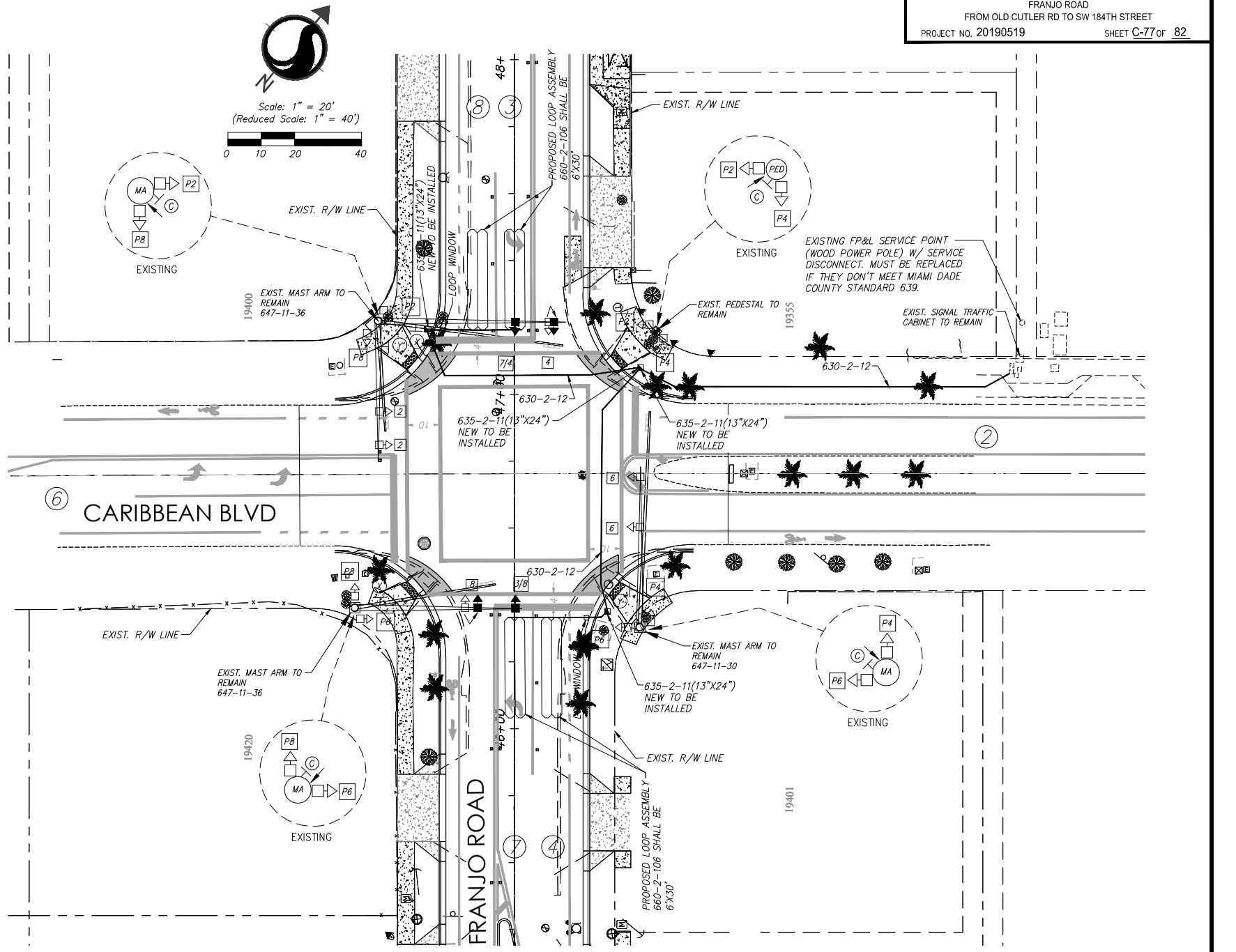
LED ILLUMINATED STREET SIGN
(2 EXISTING)

DETECTORS FOR LOOPS		
MVM'T NO.	NO. OF LOOPS	NO. OF DETS.
L-3	1	1
L-4	1	1
L-7	1	1
L-8	1	1





SIGNAL OPERATION PLAN



CONTROLLER TIMING REFERENCE TABLE									
VEHICLE MOVEMENT		1	2	3	4	5	6	7	8
FUNCTION	APPROACH DIRECTION	–	WB	–	NB	–	EB	–	SB
	APPROACH POSTED SPEED	–	30	–	30	–	30	–	30
	ALL RED DISTANCE	–	52	–	61	–	51	–	61
	YELLOW CLEARANCE	–	3.7	–	3.7	–	3.7	–	3.7
	ALL RED CLEARANCE	–	2	–	2	–	2	–	2
			P2		P4		P6		P8
FUNCTION	PED. CROSSING DISTANCE	–	57	–	65	–	57	–	64
	PEDESTRIAN WALK	–	7	–	7	–	7	–	7
	PEDESTRIAN CLEARANCE	–	14	–	16	–	14	–	16

SIGNAL TIMINGS ARE APPROXIMATE AND FINAL TIMINGS SHALL BE PROVIDED BY D.C.P.W. SIGNALS & SIGN DIVISION

CONTROLLER OPERATIONS

1. MAJOR STREET IS CARIBBEAN BLVD, MINOR STREET IS FRANJO RD
2. SIGNAL OPERATING PLAN AS SHOWN
3. PHASE(S) 2 ACTUATED, PHASE 1 RECALL
4. MOVEMENT(S) N/A IS(ARE) PROTECTED/PERMISSIVE
5. SIGNAL COORDINATION PHASE IS 1
6. FLASHING OPERATION: 2 , 6 YELLOW; 4 & 8 RED

NOTES:

1. THE DEMAND WATTAGE FOR THIS INTERSECTION IS XXX WATTS.
2. REMOVE ALL PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS AND SIGNS IN CONFLICT WITH THIS PLAN.
3. REMOVE EXISTING SIGNAL EQUIPMENT AND RETURN UNDAMAGED TO MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT, SIGNAL AND SIGNS DIVISION (7100 N.W. 36 ST)
4. SIGNAL TIMING SHALL BE PROVIDED BY MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT.
5. PAVEMENT MARKING ARE SHOWN FOR INFORMATION ONLY. SEE SIGNING & PAVEMENT MARKING PLANS.

FRANJO RD. & CARIBBEAN BLVD
SIGNALIZATION PLAN
INT. ID# 3968

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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CHECKED BY	CMH		CHECKED BY	CMH	

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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

SIGNALIZATION PLANS

TABULATION OF SIGNALIZATION QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBER C-76 ORIG.	C-76 FINAL	C-77 ORIG.	C-77 FINAL					TOTAL THIS SHEET ORIG.	TOTAL THIS SHEET FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL
630-2-12	CONDUIT (UNDER PAVEMENT) FURNISH & INSTALL DIRECTIONAL BORE	LF	28		329								357	
635-2-11	PULL BOXES, FURNISH & INSTALL, 13"X24" COVER SIZE.	EA	2		3								5	
646-1-11	ALUMINUM SIGNAL PEDESTRIAN POLE, FURNISH & INSTALL	EA	2		0								2	
646-1-12	ALUMINUM SIGNAL POLE, FURNISH & INSTALL	EA	2		0								2	
650-1-18	FURNISH AND INSTALL TRAFFIC HEAD (1 WAY, 5 SECTIONS) (BACKPLATES INCLUDED)	AS	0		2								2	
660-2-106	LOOP ASSEMBLY, FURNISH & INSTALL (TYPE F, 6'X30')	EA	0		4								4	
650-1-60	REMOVE TRAFFIC HEAD (1 WAY, 3 SECTIONS)	AS	0		2								2	
650-1-74	RELOCATE TRAFFIC HEAD (1 WAY, 3 SECTIONS)	AS	0		2								2	
665-1-60	REMOVE PEDESTRIAN DETECTOR	EA	2		0								2	

NOTES

1. ALL TRAFFIC SIGNALIZATION CONDUIT AND WIRING SHALL BE IN ACCORDANCE WITH SIGNALIZATION PLANS AND SHALL BE SUFFICIENT QUANTITY FOR COMPLETE INSTALLATION.
2. ALL HARDWARE INCIDENTAL TO THE COMPLETE SIGNALIZATION AS INDICATED ON PLAN SHEETS AND SUMMARY OF QUANTITIES SHEET SHALL BE INCLUDED IN THE COST OF ITEMS SUPPLIED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE ASSEMBLY WHEN SPECIFIED IN THE TABULATION OF QUANTITIES.
4. WHEN TWO, THREE, AND FOUR WAY SIGNAL HEAD BRACKETS ARE SPECIFIED, THE TOP BRACKET SHALL BE CONSTRUCTED OF HOLLOW CAST ALUMINUM AND THE BOTTOM BRACKET SHALL BE CAST ALUMINUM, BOTH WITH STAINLESS STEEL STUDS, WASHERS, AND NUTS.
5. SIGNAL HEADS SHALL BE OF CAST ALUMINUM AND SHALL HAVE FLAT BLACK BODIES WITH FLAT BLACK TUNNEL VISORS AND DOORS. THE SIGNAL LENSES SHALL BE GLASS.
6. ALL GROUND RODS SHALL BE COPPER CLAD 5/8" X10'-0" SECTIONS WITH BONDING WIRE AND CLAMP.
7. LOOP DETECTORS SHALL BE TWO-CHANNEL "SCANNING" TYPE SHELF MODEL WITH RELAY FAIL CALL OUTPUT PER MIAMI-DADE COUNTY SPECIFICATIONS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPENSATING AT&T FOR PROVIDING AND CONNECTING SERVICE PICK-UP. THE CONTRACTOR SHALL ALSO PROVIDE PULL WIRE FOR AT&T SERVICE CONDUIT.
9. THE CONTRACTOR SHALL CONTACT FP&L AND AT&T REPRESENTATIVE PRIOR TO INSTALLING CONDUITS TO THEIR MANHOLES. THE SERVICE CONDUIT SHALL BE BROUGHT TO THE MANHOLES FROM THE SIDES AND NOT THE TOP.
10. CONTRACTOR SHALL REPLACE ENTIRE SIDEWALK FLAG WHEN SIDEWALK IS DISTURBED BY CONSTRUCTION. CONTRACTOR SHALL RESTORE EXISTING PAVEMENT MARKINGS DISTURBED BY TRENCHING OF SAW CUTTING.
11. INSTALL SPARE CONDUIT OF EQUAL LENGTH TO SIGNAL CONDUIT WITHIN SAME TRENCH.

PLOTTED BY: MORALES, ROD; DATE: 2/16/2023 5:17 PM
CREATED: 2023-02-16 - V:\2156\ACTIVE\215615952\CIVIL\DESIGN\DRAWINGS\CIVIL PLANS\15952 SIGNALIZATION.DWG

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CHECKED BY	CMH		CHECKED BY	CMH	

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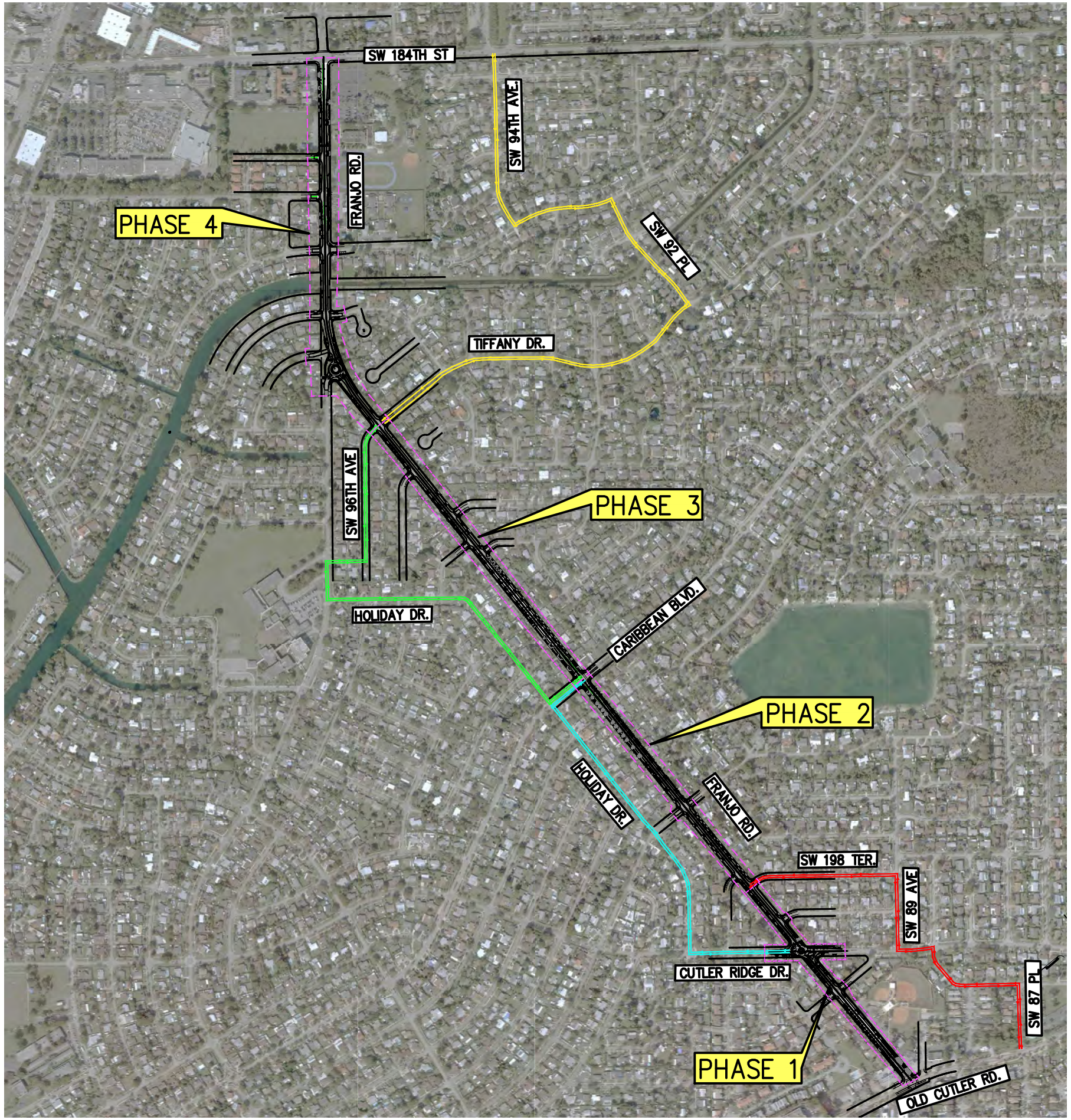
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

SIGNALIZATION PLANS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 20190519 SHEET C-78 OF 82



N

0 400 800
SCALE 1"=400'
(REDUCED SCALE: 1" = 800')

LEGEND:
- PHASE 1 DETOUR
- PHASE 2 DETOUR
- PHASE 3 DETOUR
- PHASE 4 DETOUR

*** PHASING CONSTRUCTION NOTE:**

PHASING ORDER IS TO BE DETERMINED AND IS NOT REQUIRED TO BE AS NOTED ABOVE. CONTRACTOR TO SUBMIT TO MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT HIGHWAY DIVISION AND TOWN OF CUTLER BAY FOR APPROVAL.

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
www.callsunshine.com

CONSTRUCTION NOTE:

LOCATION OF EXISTING FACILITIES AS SHOWN ON CONSTRUCTION DRAWINGS ARE FROM AVAILABLE RECORDS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN OR FOR ANY FACILITY NOT SHOWN. VERIFY THE ELEVATION, TYPE OF PIPES AND LOCATION OF EXISTING FACILITIES PRIOR TO CONSTRUCTION. IF AN EXISTING FACILITY IS FOUND TO CONFLICT WITH THE PROPOSED CONSTRUCTION UPON EXCAVATION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE THE PROBLEM. CONTRACTOR TO NOTIFY MIAMI-DADE COUNTY AND SUNSHINE STATE ONE CALL OF FLORIDA, INC. @ 811 AT LEAST FORTY EIGHT (48) HOURS PRIOR TO EXCAVATING. EVIDENCE OF SUCH NOTICE SHALL BE FURNISHED TO ENGINEER OF RECORD PRIOR TO EXCAVATING.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Coral Gables, Florida 33134
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	NAME	DATE		NAME	DATE
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CHECKED BY	CMH		CHECKED BY	CMH	

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MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

MOT PHASING PLAN

PLOTTED BY: MORALES, ROD DATE: 7/19/2023 5:21 PM
CREATED: 2022-09-27 - V:\2154\ACTIVE\215619962\CIVIL\DESIGN\DRAWING\CIVIL PLANS\15952 MOT.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET C-78 OF 82

GENERAL NOTES

1. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS, THE MIAMI-DADE COUNTY PUBLIC WORKS MANUAL AS PERTAINS TO MAINTENANCE OF TRAFFIC, THE 2023-24 EDITION OF THE FLORIDA DOT DESIGN STANDARDS (102-600 SERIES), THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS MINIMUM CRITERIA

2. THE CONTRACTOR SHALL DEVELOP MAINTENANCE OF TRAFFIC PLAN OF HIS OWN, MEETING THE REQUIREMENTS SPECIFIED IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION AND THE FDOT INDEX 102-600 SERIES. THE CONTRACTOR'S MAINTENANCE OF TRAFFIC PLANS SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION. THE PLANS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

3. TEMPORARY PAVEMENT SHALL CONSIST OF A MINIMUM OF 6 INCH LIMEROCK BASE, PRIME COAT AND HMA. THE BASE LAYER SHALL BE PLACED OVER A FIRM, UNYIELDING, WELL-COMPACTED SUBGRADE. COST OF CONSTRUCTION AND REMOVAL OF TEMPORARY PAVEMENT TO BE INCLUDED IN PAY ITEM 339-1 TEMPORARY PAVEMENT.

4. NOTIFICATION OF LANE CLOSURES OR TEMPORARY DETOURS SHALL BE ACCOMPLISHED 14 WORKING DAYS PRIOR TO CLOSURE OR DETOUR BY COORDINATING WITH MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT'S TRAFFIC ENGINEERING DIVISION AND TRAFFIC CONTROL CENTER.

5. AT THE DISCRETION OF THE TRAFFIC ENGINEER, IF A LANE CLOSURE CAUSES EXTENDED CONGESTION OR DELAY, THE CONTRACTOR SHALL BE DIRECTED TO REOPEN THE CLOSED LANE(S) UNTIL SUCH TIME THAT THE TRAFFIC FLOW HAS RETURNED TO AN ACCEPTABLE LEVEL.

6. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA.

7. LANE CLOSURE SHALL OCCUR ONLY DURING NON-PEAK HOURS ON NONEVENT DAYS/NIGHTS. NO INTERRUPTION TO TRAFFIC IS PERMITTED FROM MONDAY-FRIDAY 7-9 A.M. AND 4-6 P.M. OR ON WEEKENDS AND HOLIDAYS OR DURING SCHOOL ARRIVAL OR DISMISSAL PERIODS IN THE VICINITY OF SCHOOLS.

8. REGULATORY SPEED ESTABLISHED WITHIN THE WORK ZONE TRAVEL WAYS SHALL BE 20 M.P.H. REDUCED SPEED AND REGULATORY SPEED SIGNS SHALL BE INSTALLED ON SEPARATE POSTS IN ACCORDANCE WITH THE STANDARD INDEXES AND MUTCD.

9. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY DURING ALL PHASES OF CONSTRUCTION. LOCAL RESIDENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE GIVEN ACCESS TO THEIR PROPERTY DURING ALL PHASES OF CONSTRUCTION. LOCAL RESIDENTS INCLUDE ALL COMMERCIAL ESTABLISHMENTS AND BUSINESSES.

10. SIGNS ARE TO BE LOCATED BEFORE EACH BUSINESS OR SHOPPING PLAZA ENTRANCE WHERE CONSTRUCTION NEGATIVELY IMPACTS THE ACCESS TO THE BUSINESS OR SHOPPING PLAZA OR AS DIRECTED BY THE ENGINEER. TWO SIGNS WILL TYPICALLY BE REQUIRED AT EACH ENTRANCE. SIGNS ARE TO BE DISPLAYED AS DESCRIBED IN INDEX 102-600 OF THE ROADWAY AND TRAFFIC DESIGN STANDARDS.

11. AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE. COST OF COVERING AND UNCOVERING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

12. CONTRACTOR SHALL REMOVE, RELOCATE, OR COVER ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS. WHEN THE CONFLICT NO LONGER EXISTS, THE CONTRACTOR SHALL RESTORE THE SIGNS TO THEIR ORIGINAL POSITION. COST OF TEMPORARILY REMOVING, RELOCATING, COVERING, AND RESTORING THE SIGNS SHALL BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

13. EACH EXISTING STREET NAME AND TRAFFIC SIGN AFFECTED BY CONSTRUCTION SHALL BE RELOCATED AND MAINTAINED IN AN APPROPRIATE LOCATION FOR THE DURATION OF THE PROJECT. WHEN NO LONGER AFFECTED BY CONSTRUCTION, THESE SIGNS SHALL BE RESTORED IN THEIR ORIGINAL POSITION AND CONDITION. IF DAMAGED, SIGNS ARE TO BE REPLACED. COST OF TEMPORARILY RELOCATING AND RESTORING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

14. THE CONTRACTOR SHALL NOT PROPOSE ANY ALTERNATIVE TRAFFIC CONTROL PLAN THAT REDUCES THE NUMBER OF TRAVEL LANES SHOWN ON THE CONTRACT TRAFFIC CONTROL PLANS.

15. ARROWS ON THE TRAFFIC CONTROL PLAN DENOTE THE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS UNLESS SPECIFICALLY NOTED.

16. FOR DROP-OFF, THE CONTRACTOR'S ATTENTION IS DIRECTED TO FDOT STANDARD INDEX NO. 102-600, SHEET 8 OF 11. THE CONTRACTOR SHALL USE SHOULDER TREATMENT DETAIL WHEN NO BARRIERS ARE REQUIRED IN THE PLANS.

17. DURING ASPHALT CONSTRUCTION OPERATIONS, NO MORE THAN 1¼" DROP-OFF BETWEEN ADJACENT TRAVEL LANES OR AT TRANSVERSE JOINTS SHALL BE ALLOWED WHEN LANES ARE OPEN TO TRAFFIC. WHERE DROP OFF CONDITIONS EXIST, THE SIGNING FOR UNEVEN PAVEMENT SHALL BE INSTALLED FOR THE DURATION OF THE CONDITION (W8-9AP).

18. THE CONTRACTOR IS TO PLACE TEMPORARY OR REMOVABLE PAVEMENT MARKINGS BETWEEN EACH LAYER OF PAVEMENT, AND IS RESPONSIBLE FOR THE TEMPORARY RELOCATION OF STOP BARS & STOP SIGNS AS APPLICABLE. PAVEMENT MARKINGS AND BARRICADES PLACEMENT SHALL BE APPROPRIATELY COORDINATED.

19. THE CONTRACTOR SHALL REMOVE ANY EXISTING OR TEMPORARY PAVEMENT MARKINGS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS. GRINDING OR MILLING SHALL ONLY BE PERMITTED IN NON-TRAFFIC AREAS. COST OF REMOVAL OF TEMPORARY PAVEMENT MARKINGS, REGARDLESS OF METHOD, IS INCLUDED IN THE RELATED PAY ITEMS. USE OF BLACK PAINT TO COVER EXISTING AND/OR TEMPORARY PAVEMENT MARKINGS IS PROHIBITED.

20. TEMPORARY RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED ON THE EDGE, CENTER, AND LANE LINES OF ALL CROSS-OVERS, TRANSITIONS, AND TANGENT SECTIONS WITHIN THE WORK ZONE WHERE THE VEHICLE PATHS ARE ALTERED. THE SPACING FOR THESE RPMS SHALL BE 40 FT. ON CENTERS FOR TANGENT SECTIONS AND 5 FT. FOR TRANSITIONS, CURVES, AND CROSSOVERS. THE RPMS SHALL EXTEND 100 FT. ON THE TANGENT SECTION BEYOND EACH END OF THESE CROSSOVERS OR TRANSITION AREAS. COST OF THE TEMPORARY RPMS SHALL BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

21. CONTRACTOR SHALL NOTIFY MIAMI-DADE COUNTY TRAFFIC SIGNS AND SIGNALS DIVISION LOCATED AT 7100 NW 36 STREET, MIAMI, FLORIDA 33166 AND PHONE NO. (305) 592-3470, AND FDOT PHONE NO. (305) 640-7249, 48 HOURS PRIOR TO ANY MODIFICATION OF AN EXISTING TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR THE MAINTENANCE OF THE EXISTING OR TEMPORARY TRAFFIC SIGNAL(S) WITHIN THE PROJECT LIMITS. COST OF RELOCATING TRAFFIC SIGNAL HEADS, PROVIDING AND REMOVING TEMPORARY SIGNALS, AND MAINTAINING THE EXISTING TEMPORARY TRAFFIC SIGNAL SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC. CONTRACTOR TO SUBMIT A DETAILED LANE CLOSURE FORM, NOTING WORK AND TIME PHASES TO THE DEPARTMENT AT LEAST TWO (2) WEEKS PRIOR TO ACTUAL LANE CLOSURE WORK WITHIN THE FDOT RIGHT OF WAY. THERE SHALL BE NO LANE CLOSURES BETWEEN THANKSGIVING AND NEW YEAR'S EVE. WORKING HOURS WITHIN THE FDOT RIGHT OF WAY SHALL BE BETWEEN THE HOURS OF 9:30 AM AND 3:30 PM.. MOT MUST BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS- INDEX 102-600 SERIES AND M.U.T.C.D. AS A MINIMUM.

22. WHEN CONSTRUCTION ACTIVITIES INVOLVE SIDEWALKS ON BOTH SIDES OF THE STREET, EFFORTS SHOULD BE MADE TO STAGE THE CONSTRUCTION SO BOTH SIDEWALKS ARE NOT OUT OF SERVICE AT THE SAME TIME.

23. IN THE EVENT THAT SIDEWALKS ON BOTH SIDES OF THE STREET ARE CLOSED, PEDESTRIANS SHALL BE GUIDED AROUND THE CONSTRUCTION ZONE.

24. THE PROPOSED SIGNALS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE REMOVAL OF THE EXISTING SYSTEM AND SHALL BE ADJUSTED TO THE TRAFFIC NEEDS FOR EACH CONSTRUCTION PHASE.

25. THE CONTRACTOR SHALL MAINTAIN ON-LINE COMMUNICATION OF EXISTING OR TEMPORARY SIGNALIZATION VIA INTERCONNECT OR PHONE LINE CONSTRUCTION. CONTRACTORS SHALL PROVIDE TEMPORARY LINES AND CONNECTIONS IF NECESSARY. COST OF MAINTAINING COMMUNICATION, INCLUDING TEMPORARY LINES AND CONNECTIONS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

26. INTERSECTIONS SHALL BE RECONSTRUCTED WORKING ON A CONTINUOUS DAILY BASIS UNTIL COMPLETE AND UNTIL STRUCTURAL COURSE IS IN PLACE.

27. AT ALL INTERSECTING STREETS, NO LESS THAN ONE "ROAD CONSTRUCTION AHEAD" SIGN AND ONE "END CONSTRUCTION" SIGN MUST BE INSTALLED. (TWO EACH FOR STREETS WITH MEDIAN).

28. ADJACENT INTERSECTIONS SHALL NOT BE CONSTRUCTED SIMULTANEOUSLY UNLESS DIRECTED BY THE ENGINEER. FOR EVERY BLOCK, CONSTRUCTION OF DRAINAGE AND SIDEWALK SHOULD BE CONCURRENT WITH ROADWAY CONSTRUCTION.

29. MOT TRANSITIONS AND TEMPORARY INTERSECTION CROSSOVERS WHERE CONSTRUCTION HAS CAUSED GRADE DIFFERENCES BETWEEN THE EXISTING AND NEW ROADWAYS SHALL BE CONSTRUCTED USING A 1:20 TYPE HMA SLOPE TO ACCOMMODATE VEHICULAR TRAFFIC FROM ANY DIRECTION. ALL MATERIAL, WORK, INCLUDING ITS REMOVAL, SHALL BE INCLUDED IN PAY ITEM 102-1 AND 339-1, MAINTENANCE OF TRAFFIC AND TEMPORARY PAVEMENT.

30. COORDINATION WITH DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT WILL BE REQUIRED.

31. PAVED TEMPORARY CONNECTIONS SHALL BE PROVIDED AT INTERSECTIONS AS DIRECTED BY THE ENGINEER.

32. TRAFFIC SHALL BE MAINTAINED ON A PAVED, DUST-FREE SURFACE AT ALL TIMES.

33. THE CONTRACTOR MUST MAINTAIN TWO LANES OF TRAFFIC AT ALL TIMES. ALL LANES TO BE A MINIMUM OF 10 FT. IN WIDTH.

34. PLANS INDICATE ONLY THE PHASES FOR CONSTRUCTION. MILLING AND RESURFACING OPERATIONS MUST FOLLOW THE SAME FDOT 102-600 INDEX SERIES, AND MUST BE ACCOMPLISHED AT HOURS APPROVED BY THE ENGINEER.

35. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ROADWAY LIGHTING ILLUMINATION LEVELS DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN EXISTING LIGHTING OR SUPPLY TEMPORARY LIGHTING UNTIL THE PROPOSED SYSTEM IS IN OPERATION. THE CONTRACTOR SHALL SUBMIT A COMPLETE PROPOSED METHOD OF MAINTAINING LIGHTING FOR APPROVAL BY COUNTY ENGINEER PRIOR TO BEGINNING WORK. REFER TO ROADWAY LIGHTING PLANS AND OTHER APPLICABLE DRAWINGS FOR INFORMATION ON EXISTING AND PROPOSED ROADWAY LIGHTING AND DETAIL OF ROADWAY CONSTRUCTION. IF ANY PART OF THE SYSTEM IS OWNED BY F.P.&L, COORDINATE CLOSELY WITH F.P.&L.

36. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE EROSION CONTROL MEASURES TO PREVENT CLOG OF PROPOSED DRAINAGE STRUCTURES AND SEDIMENT INTRUSION ON WATERWAYS DURING CONSTRUCTION. THESE MEASURES SHALL BE APPROVED BY THE ENGINEER AND CONFORM WITH CURRENT EDITION OF THE FDOT DESIGN STANDARDS FOR EROSION CONTROL (100 SERIES).

37. CONTRACTOR MUST MAINTAIN DRAINAGE AT ALL TIMES. THE EXISTING DRAINAGE SYSTEM SHALL BE KEPT OPERATIONAL OR TEMPORARY DRAINAGE PROVIDED WHILE THE PROPOSED DRAINAGE SYSTEM IS BEING CONSTRUCTED. THE CONTRACTOR SHALL PROVIDE THE NECESSARY TEMPORARY DRAINAGE AS APPROVED BY THE ENGINEER. ALL COSTS SHALL BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

38. AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP OFF GREATER THAN 6 INCHES (150 MM) ADJACENT TO THE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAVEL PATHS SHALL BE BACKFILLED FLUSH WITH SAID PATHS OR PROTECTED WITH TEMPORARY FENCE, CONCRETE BARRIER WALL OR APPROVED HANDRAIL. COST SHALL BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

39. PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC SHALL BE MAINTAINED AND GUIDED USING APPROVED WARNING LIGHTS, SIGNING, AND DELINEATION DEVICES ON AT LEAST ONE SIDE OF THE PROJECT AT ALL TIMES THROUGHOUT THE PROJECT LIMITS. THE TRAVEL PATH SHALL BE A MINIMUM OF 4 FT. WIDE WITH A SMOOTH SURFACE THAT IS NOT SLICK AND IT SHOULD BE RAMPED AS NECESSARY FOR CONTINUITY. COST SHALL BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC. MIDBLOCK CROSSWALKS SHALL BE MAINTAINED WITH ADA ACCESSIBLE PATH CONNECTING BOTH SIDES OR A PEDESTRIAN M.O.T. SHALL BE SUBMITTED AND APPROVED BY TRAFFIC ENGINEERING DIVISION FOR ALTERNATE ROUTE.

40. THE CONTRACTOR SHALL FURNISH AND MAINTAIN VARIABLE MESSAGE SIGNS AS DIRECTED BY THE ENGINEER. MESSAGES FOR THE VMS SHALL BE AS DIRECTED BY THE ENGINEER. THE VMS SHALL BE IN PLACE ONE WEEK BEFORE THE START OF ANY WORK ITEMS AFFECTING THE EXISTING VEHICULAR AND PEDESTRIAN TRAFFIC. VMS INSTALLATION, OPERATION, AND REMOVAL TO BE INCLUDED IN THE PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

41. THE CONTRACTOR MUST PROVIDE FLASHING ARROW BOARD FOR ANY LANE THAT IS CLOSED OR DIVERTED.

GENERAL NOTES

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Coral Gables, Florida 33134
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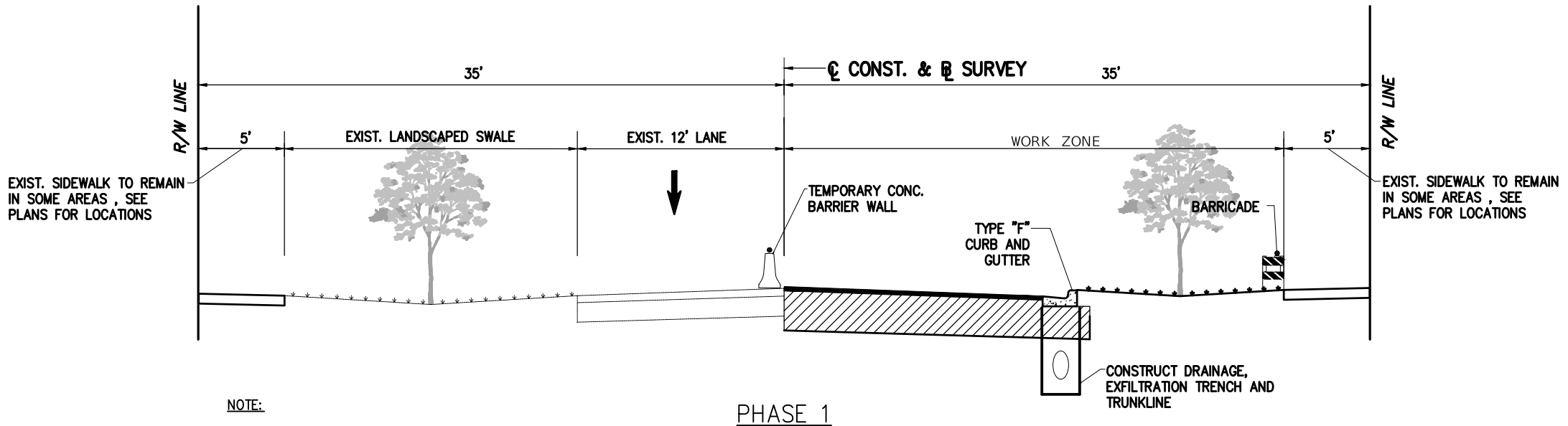
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS



NOTE:

SEE SHEET C-78 FOR NORTHBOUND TRAFFIC DETOUR ROUTE

PHASE 1

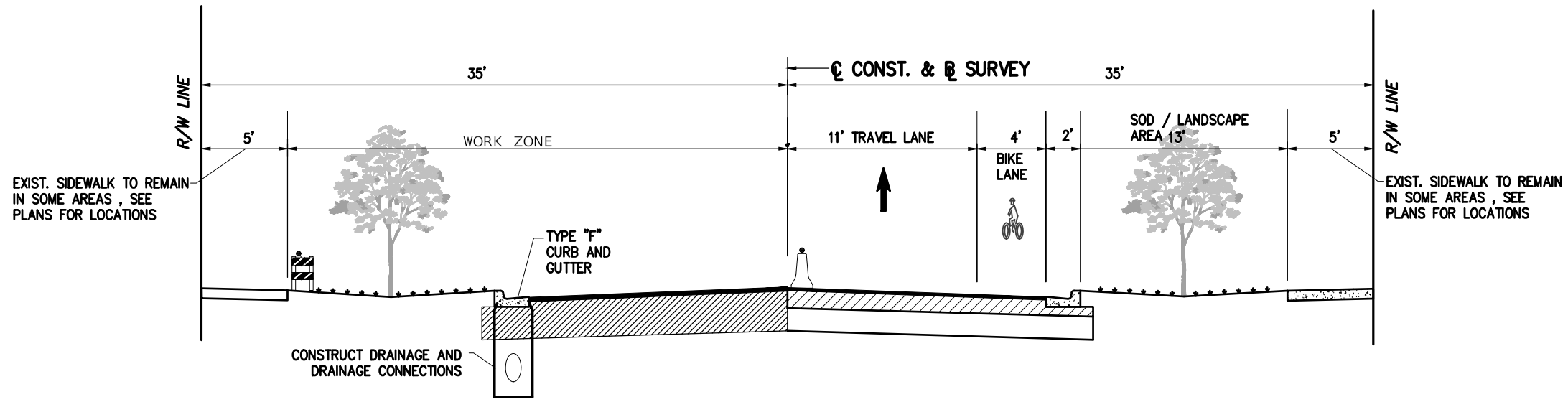
SUB-PHASE "A"

FROM STA 10+96 TO STA 27+94

N.T.S.

CONSTRUCTION SEQUENCE

PHASE 1: FROM STA 10+96 TO STA 27+94 REMOVE EXIST. PAVEMENT, CONSTRUCT EXFILTRATION TRENCH, PROPOSED PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE SYSTEM AND LIGHTING. MAINTAIN 1-11' (MIN) TRAFFIC LANES IN THE EXISTING PAVEMENT AS SHOW IN TYPICAL SECTION. PROVIDE TEMPORARY SIGNAL AND PAVEMENT MARKINGS, AND BARRICADES.



NOTE:

SEE SHEET C-78 FOR SOUTHBOUND TRAFFIC DETOUR ROUTE

PHASE 1

SUB-PHASE "B"

FROM STA 10+96 TO STA 27+94

N.T.S.

PHASE 1

REVISIONS								
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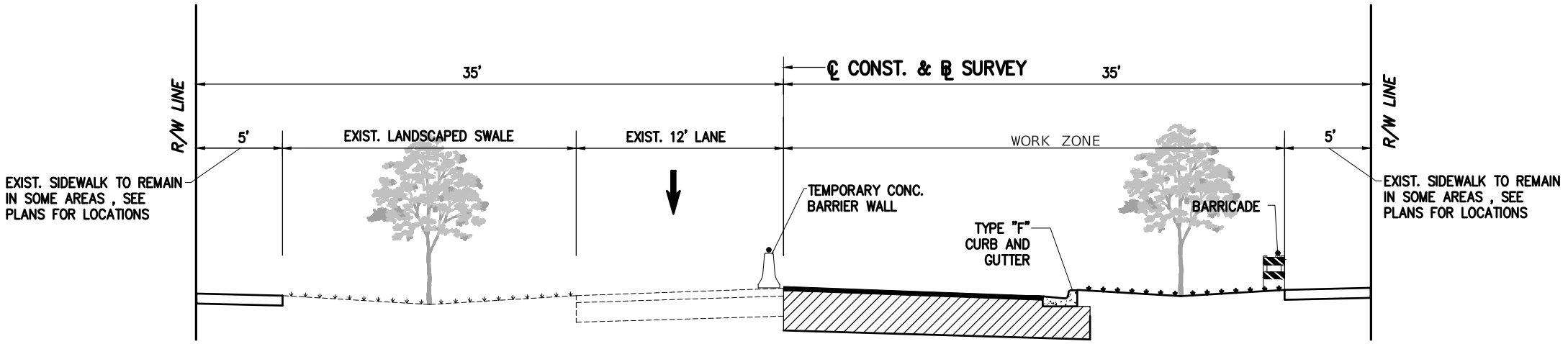
MAINTENANCE OF TRAFFIC TYPICAL SECTIONS



NOTE:

SEE SHEET C-78 FOR NORTHBOUND TRAFFIC DETOUR ROUTE

PHASE 2

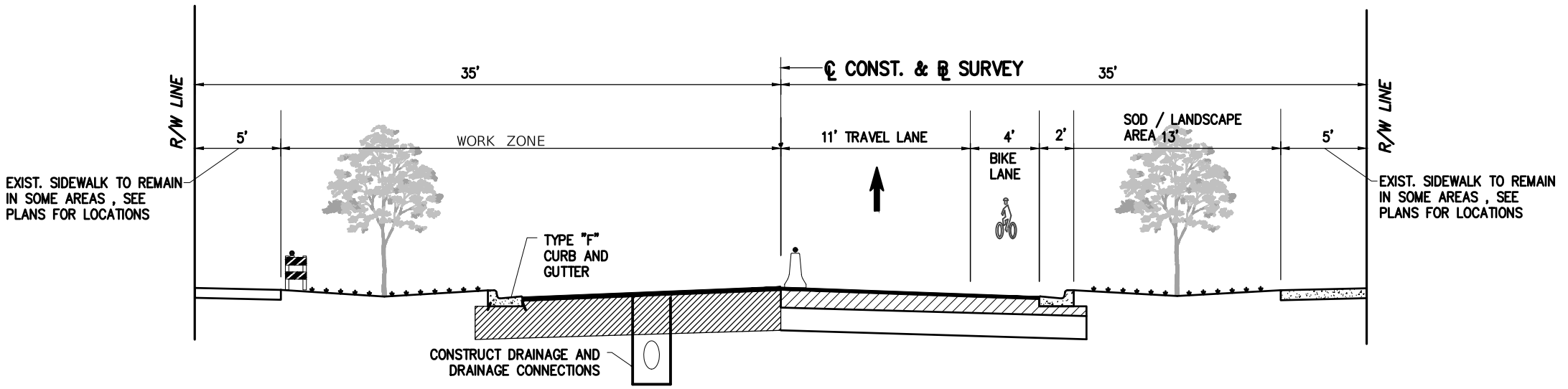
SUB-PHASE "A"

FROM STA 27+94 TO STA 46+55

N.T.S.

CONSTRUCTION SEQUENCE

PHASE 2: FROM STA 27+94 TO STA 46+55 REMOVE EXIST. PAVEMENT, CONSTRUCT EXFILTRATION TRENCH, PROPOSED PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE SYSTEM AND LIGHTING. MAINTAIN 1-11' (MIN) TRAFFIC LANES IN THE EXISTING PAVEMENT AS SHOW IN TYPICAL SECTION. PROVIDE TEMPORARY SIGNAL AND PAVEMENT MARKINGS, AND BARRICADES.



NOTE:

SEE SHEET C-78 FOR SOUTHBOUND TRAFFIC DETOUR ROUTE

PHASE 2

SUB-PHASE "B"

FROM STA 27+94 TO STA 46+55

PHASE 2

REVISIONS								
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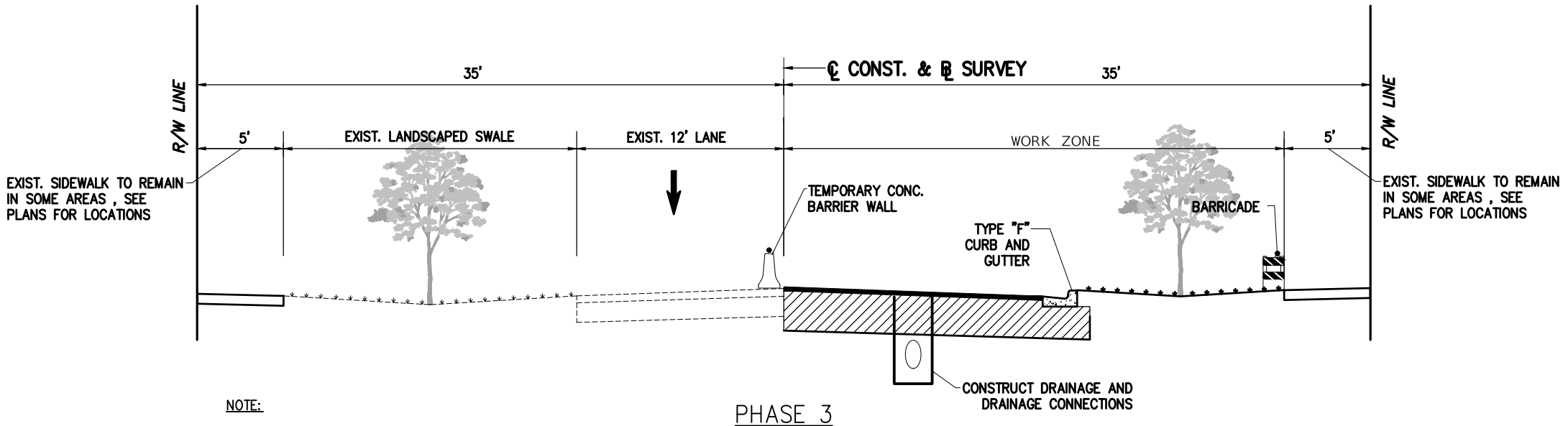
MAINTENANCE OF TRAFFIC TYPICAL SECTIONS



NOTE:

SEE SHEET C-78 FOR NORTHBOUND TRAFFIC DETOUR ROUTE

PHASE 3

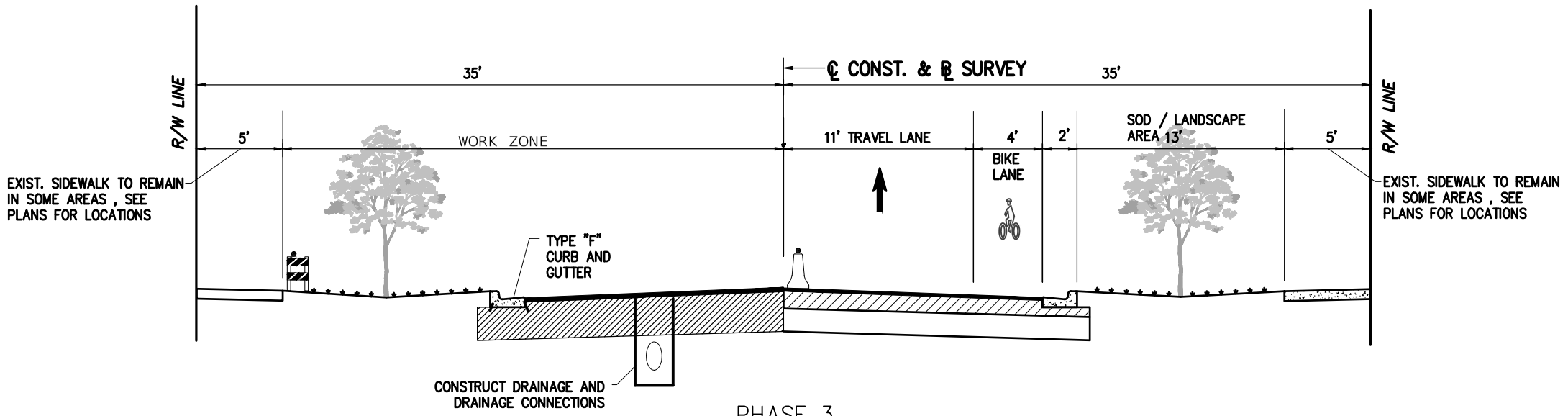
SUB-PHASE "A"

FROM STA 46+95 TO STA 69+72

N.T.S.

CONSTRUCTION SEQUENCE

PHASE 3: FROM STA 46+95 TO STA 69+72 REMOVE EXIST. PAVEMENT, CONSTRUCT EXFILTRATION TRENCH, PROPOSED PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE SYSTEM AND LIGHTING. MAINTAIN 1-11' (MIN) TRAFFIC LANES IN THE EXISTING PAVEMENT AS SHOW IN TYPICAL SECTION. PROVIDE TEMPORARY SIGNAL AND PAVEMENT MARKINGS, AND BARRICADES.



NOTE:

SEE SHEET C-78 FOR SOUTHBOUND TRAFFIC DETOUR ROUTE

PHASE 3

SUB-PHASE "B"

FROM STA 46+95 TO STA 69+72

N.T.S.

PHASE 3

REVISIONS								
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HIGHWAY DIVISION
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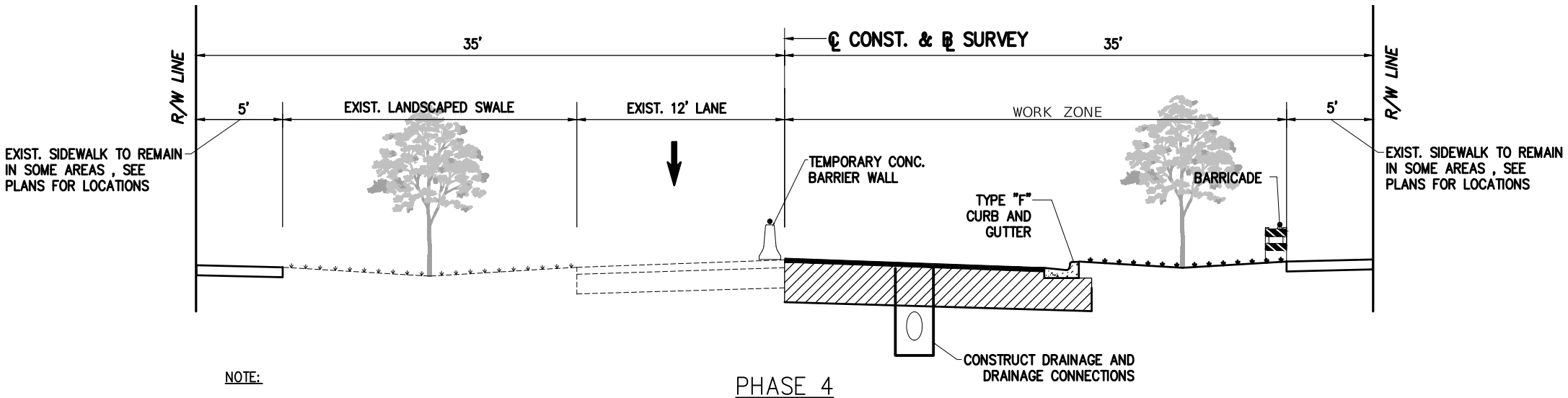
MAINTENANCE OF TRAFFIC TYPICAL SECTIONS



NOTE:

SEE SHEET C-78 FOR NORTHBOUND TRAFFIC DETOUR ROUTE

PHASE 4

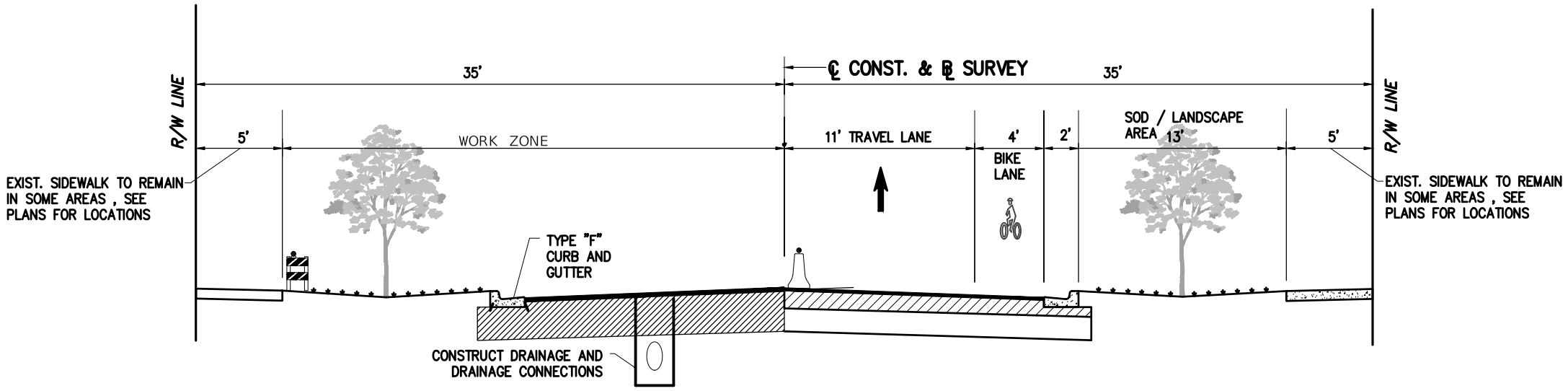
SUB-PHASE "A"

FROM STA 69+72 TO STA 95+80

N.T.S.

CONSTRUCTION SEQUENCE

PHASE 4: FROM STA 69+72 TO STA 95+80 REMOVE EXIST. PAVEMENT, CONSTRUCT EXFILTRATION TRENCH, PROPOSED PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE SYSTEM AND LIGHTING. MAINTAIN 1-11' (MIN) TRAFFIC LANES IN THE EXISTING PAVEMENT AS SHOW IN TYPICAL SECTION. PROVIDE TEMPORARY SIGNAL AND PAVEMENT MARKINGS, AND BARRICADES.



NOTE:

SEE SHEET C-78 FOR SOUTHBOUND TRAFFIC DETOUR ROUTE

PHASE 4

SUB-PHASE "B"

FROM STA 69+72 TO STA 95+80

N.T.S.

PHASE 4

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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MIAMI, FLORIDA 33128

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-01 OF 19

LEGEND

SYMBOLS	DESCRIPTION
	LIGHT POLE COMPLETE WITH LED LUMINAIRE. ONE PULL BOX AT BASE OF POLE, SINGLE ARM, AND FRANGIBLE BASE.
	EXISTING LIGHT POLE TO BE DEMOLISHED.
	1-2" HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT (UNDER PAVEMENT, DIRECTIONAL BORE), UL EPEC-80, WITH RHW-2/XLP CONDUCTORS INSIDE EACH CONDUIT: LIGHTING CIRCUIT (480V) - ONE WITH BROWN INSULATION, ONE WITH ORANGE INSULATION, AND ONE GROUND WITH GREEN INSULATION. (NUMBER AND SIZE OF CONDUCTORS AS SHOWN ON SCHEMATIC SHEETS)
	1-2" SCHEDULE 40 PVC CONDUITS WITH RHW-2/XLP CONDUCTORS INSIDE EACH CONDUIT: LIGHTING CIRCUIT (480V) - ONE WITH BROWN INSULATION, ONE WITH ORANGE INSULATION, AND ONE GROUND WITH GREEN INSULATION. (NUMBER AND SIZE OF CONDUCTORS AS SHOWN ON SCHEMATIC SHEETS) SIGN CIRCUIT - ONE WITH BLACK INSULATION, ONE NEUTRAL WITH WHITE INSULATION, AND ONE GROUND WITH GREEN INSULATION. (NUMBER AND SIZE OF CONDUCTORS AS SHOWN ON SCHEMATIC SHEETS)
■	SERVICE POINT
◪	PULL BOX

PULL BOXES REQUIRED AT EACH:

1. ONE (1) PULL BOXES AT BASE OF SERVICE POLE.
2. ONE (1) PULL BOXES AT BASE AT EACH POLE.
3. AS NECESSARY FOR COMPLETION OF THE PROJECT.

LIGHTING DESIGN CRITERIA
SOURCE: MIAMI-DADE ROADWAY LIGHTING DESIGN MANUAL 2016

DESIGN SPEED:	30 MPH
AVERAGE:	0.6fc
AVERAGE/MIN:	4:1 OR LESS
MAX/MIN:	10:1 OR LESS
VEILING LUMINANCE RATIO:	0.3:1 OR LESS
ROUNDABOUT AVERAGE:	0.78fc TO 1.2fc (1.3x TO 2x APPROACH)
ROUNDABOUT AVG/MIN:	3:1 OR LESS
MIDBLOCK CROSSWALK:	2.3fc VERTICAL
CARIBBEAN INTERSECTION:	1.7fc

FIXTURE SCHEDULE

TAG	MFGR	MODEL	DISTRIBUTION	VOLTAGE	WATTS	NOTES
A	HALOPHANE	ESL2 P20S 30K HVOLT BK TG3 LTHSS180	TYPE III	480V	83	LED LUMINAIRE, INCLUDES 180 DEGREE DEFLECTOR SHIELD AND UBICQUIA UBICELL SMART NODE MODULE IN 7-PIN RECEPTACLE AND SPARE SHORTING CAP.
B	HALOPHANE	ESL2 P40S 30K HVOLT BK TG3 LTHSS180	TYPE III	480V	140	LED LUMINAIRE, INCLUDES 180 DEGREE DEFLECTOR SHIELD AND UBICQUIA UBICELL SMART NODE MODULE IN 7-PIN RECEPTACLE AND SPARE SHORTING CAP.
C	HALOPHANE	ESL2 P10S 30K HVOLT BK SG3	TYPE III	480V	57	LED LUMINAIRE, INCLUDES UBICQUIA UBICELL SMART NODE MODULE IN 7-PIN RECEPTACLE AND SPARE SHORTING CAP.

GENERAL NOTES

1. POWER COMPANY SHALL PROVIDE INCOMING SERVICE AT LOCATION SPECIFIED IN ACCORDANCE WITH THE PLANS. THE DATE REQUIRED FOR INCOMING SERVICE TO BE COMPLETED MUST BE COORDINATED BY THE CONTRACTOR WITH THE POWER COMPANY AT THE PRE CONSTRUCTION MEETING.
2. ALL EXPOSED CONDUIT OR SURFACE MOUNTED CONDUIT SHALL BE GALVANIZED STEEL AND GROUNDED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND STRUCTURAL CONFLICTS IN COOPERATION WITH THE UTILITY COMPANY(S).
4. STATIONING MAY BE ADJUSTED AS DIRECTED TO AVOID UTILITY OR STRUCTURAL CONFLICTS NOT INDICATED IN THE PLANS.
5. SIDEWALK SLABS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN FULL AND COLORED WHEN NECESSARY TO MATCH THE EXISTING SIDEWALK.
6. CONTRACTOR MUST MAINTAIN THE EXISTING LIGHTING SYSTEM IN OPERATION OR SUPPLY A TEMPORARY ONE UNTIL THE NEW LIGHTING SYSTEM CAN BE ACTIVATED. IF THE EXISTING LIGHTING SYSTEM IS OWNED BY F.P.&L, SEE FDOT SPECIFICATION FOR ROADWAY LIGHTING SPECIAL PROVISIONS, SECTION 715.
7. ALL MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNDERWRITERS LABORATORY APPROVED.
8. POLES, BRACKET ARMS, AND TRANSFORMER BASES SHALL BE ALUMINUM AND DESIGNED IN ACCORDANCE WITH LOCAL DESIGN CRITERIA USING THE APPLICABLE EQUATIONS FOUND IN THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR HIGHWAY, SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS," CURRENT EDITION.
9. THE WIRES AT THE POLE, HANDHOLE, AND PULL BOXES SHALL BE LOOPED AS INDICATED IN THE PLAN DETAIL WITH SUFFICIENT LENGTH TO COMPLETELY REMOVE CONNECTORS TO THE OUTSIDE, TO MAKE THEM ACCESSIBLE FOR CHANGING FUSES AND TROUBLE SHOOTING THE SYSTEM.
10. THE LUMINAIRE MANUFACTURER SHALL PLACE A PERMANENT TAG ON THE LUMINAIRE HOUSING ON WHICH IS IMPRINTED THE FOLLOWING INFORMATION: WATTAGE, BALLAST TYPE, LAMP SHOWN ON DESIGN PLANS, LAMP SETTING (POSITION IN LUMINAIRE), I.E.S., LIGHT DISTRIBUTION WITH THIS LAMP IN THE POSITION SPECIFIED, INPUT VOLTAGE AND POWER FACTOR, LUMINAIRE PHOTOMETRIC SUBMITTALS REQUIRED.
11. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. WHERE THE RESISTANCE IS NOT AS LOW AS 25 OHMS, TWO OR MORE GROUND RODS CONNECTED IN PARALLEL SHALL BE USED.
12. CONTRACTOR WILL INCLUDE IN THE COST OF THE LIGHTING POLE ANY LEVELING AND GRADING REQUIRED TO INSURE THAT ALL POLES ARE INSTALLED AT THE PROPER ELEVATION.
13. ALL SALVAGEABLE MATERIALS AND ALL MATERIALS TO BE FURNISHED BY THE CONTRACTOR SHALL BE TRANSPORTED AND OFF LOADED TO THE FOLLOWING LOCATION FOR INSPECTION AND ACCEPTANCE BY THE COUNTY:
    MIAMI-DADE COUNTY MAINTENANCE YARD
    7100 NW 36th STREET
    MIAMI, FL 33166
    TELEPHONE: (305) 592-3580
14. CONTRACTOR MUST CONTACT BELL SOUTH, FP&L, AND OTHER UTILITY COMPANIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND MUST NOTIFY ENGINEER AND MIAMI-DADE COUNTY IF FIELD CONDITIONS DIFFER FROM CONDITIONS INDICATED ON THESE DRAWINGS.
15. IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (N.E.C.) OR WITH THE MIAMI-DADE COUNTY STANDARDS, THE CONTRACTOR MUST IDENTIFY ALL CIRCUITS AND EQUIPMENT INCLUDING THE PROPOSED LIGHT POLE ASSEMBLIES.
16. PULL BOXES, JUNCTION BOXES, AND ALL ELECTRICAL WORK MUST CONFORM TO N.E.C. (LATEST REQUIREMENTS), THE NATIONAL ELECTRICAL SAFETY CODE AND MIAMI-DADE COUNTY STANDARDS.
17. USE PVC SCHEDULE 40 CONDUIT THROUGHOUT THE ENTIRE UNDERGROUND SYSTEM UNLESS OTHERWISE NOTED, AT STREET CROSSINGS THE CONDUIT SHOULD BE EMBEDDED IN 1:10 CONCRETE MIXTURE.
18. ANY INCIDENTAL ITEMS OR ACCESSORIES REQUIRED TO COMPLETE THE WORK FOR A GIVEN BID ITEM, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THAT SPECIFIC ITEM AS INDICATED IN THE BID FORM. INCIDENTAL ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO: ELBOWS, SPLIT BOLT CONNECTORS, FUSES AND FUSE HOLDERS, ELECTRICAL TAPE, SCOTCHKOTE, PVC GLUE, TRENCHING, BACKFILLING, PAVEMENT RESTORATION, CONCRETE SLAB REPLACEMENT, ETC.
19. POLES SHALL HAVE A FRANGIBLE TRANSFORMER BASE.
20. ALL GROUNDING CONNECTIONS SHALL BE EXOTHERMICALLY WELDED FOLLOWING THE MANUFACTURER'S GUIDELINES.
21. CONTRACTOR MUST MINIMIZE TRENCHING ACROSS STREETS BY COORDINATING THE LIGHT PLANS WITH THE SIGNALIZATION INTERCONNECT CONDUIT/WIRING AS DEPICTED ON THESE DRAWINGS.
22. MAINTAINING AGENCY FOR LIGHTING IS MIAMI-DADE COUNTY. CONTRACTOR MUST CONTACT/COORDINATE WITH APPLICABLE COUNTY OFFICIALS AND INSPECTORS PRIOR TO CONSTRUCTION.
23. CONTRACTOR SHALL MAINTAIN SAFE ACCESS TO SIDE STREETS, PRIVATE, AND COMMERCIAL DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.
24. ALL CONDUIT TRENCHING MUST BE PROPERLY BACKFILLED TO PROVIDE SAFE CROSSING AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ONE BECOMES INACTIVE.
25. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN WORKING THE VICINITY OF EXISTING AND PROPOSED UNDERGROUND AND OVERHEAD UTILITIES.
26. STREET LIGHTS MUST COMPLY WITH OSHA REQUIRED MINIMUM CLARENCE SEPARATION FROM FPL LINES AND COMMUNICATION LINES.
27. THE CONTRACTOR SHALL FURNISH SIGNED AND SEALED AS-BUILT DRAWINGS, SENT ELECTRONICALLY, WHICH ARE TO INCLUDE THE GPS COORDINATES FOR ALL INSTALLED POLES AND SERVICE POINT LOCATIONS.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	BB	3/26/2021	DRAWN BY		
CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

LEGEND, DESIGN CRITERIA, & GENERAL NOTES

PLOTTED BY: LINDER, FRANCINE DATE: 12/13/2022 2:41 PM
CREATED: 2022-12-06 - \\SI0231-APPS01\WORKGROUP\21545\ACTIVE\215615952\ELECTRICAL\DRAWING\001-002_POLE-OWL-DATA.DWG

Point Number	Station	Offset	Latitude	Longitude	Description	MTG HT	Arm Length	Circuit #
1	11+00.67	21.79'	N25° 34' 44.61"	W80° 20' 08.71"	A	39 FT	6	3
2	12+12.68	21.59'	N25° 34' 45.47"	W80° 20' 09.49"	A	39 FT	6	3
3	13+20.06	21.59'	N25° 34' 46.29"	W80° 20' 10.24"	A	39 FT	6	2
4	14+19.97	-21.08'	N25° 34' 46.78"	W80° 20' 11.29"	A	39 FT	6	2
5	15+00.10	34.40'	N25° 34' 47.74"	W80° 20' 11.38"	A	39 FT	6	3
6	15+86.81	-21.42'	N25° 34' 48.05"	W80° 20' 12.45"	A	39 FT	6	2
7	16+95.08	21.09'	N25° 34' 49.15"	W80° 20' 12.85"	A	39 FT	6	3
8	17+95.27	-21.97'	N25° 34' 49.64"	W80° 20' 13.91"	A	39 FT	6	2
9	18+87.31	21.11'	N25° 34' 50.62"	W80° 20' 14.18"	A	39 FT	6	3
10	19+81.47	-21.06'	N25° 34' 51.07"	W80° 20' 15.19"	A	39 FT	6	2
11	20+44.30	18.92'	N25° 34' 51.80"	W80° 20' 15.29"	A	39 FT	6	3
12	21+31.03	-21.07'	N25° 34' 52.21"	W80° 20' 16.23"	A	39 FT	6	2
13	21+57.33	93.09'	N25° 34' 53.13"	W80° 20' 15.46"	A	39 FT	6	3
14	21+94.47	-49.74'	N25° 34' 52.52"	W80° 20' 16.92"	A	39 FT	6	2
15	22+27.75	34.33'	N25° 34' 53.30"	W80° 20' 16.44"	A	39 FT	6	3
16	22+39.86	-91.49'	N25° 34' 52.60"	W80° 20' 17.58"	A	39 FT	6	2
17	23+26.70	-23.97'	N25° 34' 53.69"	W80° 20' 17.62"	A	39 FT	6	2
18	24+11.44	-22.87'	N25° 34' 54.34"	W80° 20' 18.20"	A	39 FT	6	2
19	25+02.54	21.14'	N25° 34' 55.32"	W80° 20' 18.46"	A	39 FT	6	3
20	26+12.19	-21.18'	N25° 34' 55.89"	W80° 20' 19.58"	A	39 FT	6	2
21	27+32.19	21.62'	N25° 34' 57.08"	W80° 20' 20.05"	A	39 FT	6	3
22	28+32.26	-21.12'	N25° 34' 57.57"	W80° 20' 21.11"	A	39 FT	6	2
23	29+32.06	21.50'	N25° 34' 58.60"	W80° 20' 21.44"	A	39 FT	6	3
24	30+32.04	-21.17'	N25° 34' 59.10"	W80° 20' 22.50"	A	39 FT	6	2
25	31+47.28	21.24'	N25° 35' 00.26"	W80° 20' 22.92"	A	39 FT	6	3
26	32+46.98	-21.14'	N25° 35' 00.77"	W80° 20' 23.96"	A	39 FT	6	2
27	33+58.37	21.66'	N25° 35' 01.89"	W80° 20' 24.35"	A	39 FT	6	3
28	34+57.36	-21.37'	N25° 35' 02.40"	W80° 20' 25.39"	A	39 FT	6	2
29	35+59.35	21.34'	N25° 35' 03.45"	W80° 20' 25.72"	A	39 FT	6	3
30	36+47.05	-21.12'	N25° 35' 03.87"	W80° 20' 26.68"	A	39 FT	6	2
31	37+47.95	21.13'	N25° 35' 04.91"	W80° 20' 27.00"	A	39 FT	6	3
32	38+64.70	-21.40'	N25° 35' 05.55"	W80° 20' 28.16"	A	39 FT	6	2
33	39+74.99	21.14'	N25° 35' 06.67"	W80° 20' 28.55"	A	39 FT	6	3
34	40+94.66	-21.13'	N25° 35' 07.34"	W80° 20' 29.72"	A	39 FT	6	2
35	41+94.46	21.09'	N25° 35' 08.37"	W80° 20' 30.04"	A	39 FT	6	3
36	42+92.69	-21.12'	N25° 35' 08.87"	W80° 20' 31.07"	A	39 FT	6	2
37	43+94.54	21.13'	N25° 35' 09.92"	W80° 20' 31.40"	A	39 FT	6	3
38	44+99.75	-29.14'	N25° 35' 10.43"	W80° 20' 32.54"	A	39 FT	6	2
39	46+24.02	26.82'	N25° 35' 11.74"	W80° 20' 32.91"	B	39 FT	6	1
40	47+31.05	26.82'	N25° 35' 12.57"	W80° 20' 33.64"	B	39 FT	6	1
41	48+30.21	-29.51'	N25° 35' 12.99"	W80° 20' 34.79"	A	39 FT	6	4
42	49+14.93	23.77'	N25° 35' 13.98"	W80° 20' 34.91"	A	39 FT	6	1
43	50+16.89	-21.13'	N25° 35' 14.49"	W80° 20' 35.99"	A	39 FT	6	4
44	51+24.98	21.28'	N25° 35' 15.59"	W80° 20' 36.36"	A	39 FT	6	1
45	52+40.25	-23.16'	N25° 35' 16.21"	W80° 20' 37.52"	A	39 FT	6	4
46	53+24.63	21.09'	N25° 35' 17.14"	W80° 20' 37.72"	A	39 FT	6	1
47	54+24.65	-24.77'	N25° 35' 17.63"	W80° 20' 38.79"	A	39 FT	6	4
48	55+19.19	21.24'	N25° 35' 18.65"	W80° 20' 39.04"	A	39 FT	6	1
49	56+23.07	-33.79'	N25° 35' 19.11"	W80° 20' 40.22"	A	39 FT	6	4
50	57+26.62	21.38'	N25° 35' 20.25"	W80° 20' 40.45"	A	39 FT	6	1
51	58+26.55	-21.12'	N25° 35' 20.77"	W80° 20' 41.49"	A	39 FT	6	4
52	59+26.44	22.97'	N25° 35' 21.81"	W80° 20' 41.79"	A	39 FT	6	1
53	60+05.87	-25.67'	N25° 35' 22.13"	W80° 20' 42.75"	A	39 FT	6	4
54	61+37.01	-25.46'	N25° 35' 23.15"	W80° 20' 43.64"	A	39 FT	6	4
55	62+30.77	23.61'	N25° 35' 24.18"	W80° 20' 43.86"	A	39 FT	6	1
56	63+36.51	-23.74'	N25° 35' 24.70"	W80° 20' 44.98"	A	39 FT	6	4
57	64+37.23	23.49'	N25° 35' 25.78"	W80° 20' 45.26"	A	39 FT	6	1
58	65+22.24	-24.39'	N25° 35' 26.14"	W80° 20' 46.25"	A	39 FT	6	4
59	66+26.76	21.10'	N25° 35' 27.23"	W80° 20' 46.57"	A	39 FT	6	1
60	67+22.18	-24.39'	N25° 35' 27.69"	W80° 20' 47.61"	A	39 FT	6	4
61	68+16.66	21.12'	N25° 35' 28.70"	W80° 20' 47.86"	A	39 FT	6	1
62	69+35.45	-25.11'	N25° 35' 29.34"	W80° 20' 49.06"	A	39 FT	6	4
63	70+37.01	25.87'	N25° 35' 30.44"	W80° 20' 49.32"	A	39 FT	6	1
64	71+32.23	-25.69'	N25° 35' 30.86"	W80° 20' 50.41"	A	39 FT	6	4
65	72+31.65	25.77'	N25° 35' 31.95"	W80° 20' 50.62"	A	39 FT	6	1
66	73+32.00	-18.71'	N25° 35' 32.54"	W80° 20' 51.62"	A	39 FT	6	4
67	73+83.08	18.80'	N25° 35' 33.17"	W80° 20' 51.53"	A	39 FT	6	1
68	74+18.01	-52.01'	N25° 35' 33.16"	W80° 20' 52.39"	A	39 FT	6	4
69	74+10.11	-99.57'	N25° 35' 32.88"	W80° 20' 52.82"	A	39 FT	6	4
70	74+69.87	28.35'	N25° 35' 33.97"	W80° 20' 51.83"	A	39 FT	6	1
71	75+09.03	-64.51'	N25° 35' 33.98"	W80° 20' 52.94"	A	39 FT	6	4
72	75+54.14	-21.74'	N25° 35' 34.56"	W80° 20' 52.68"	A	39 FT	6	4
73	76+43.96	25.04'	N25° 35' 35.55"	W80° 20' 52.47"	A	39 FT	6	1
74	77+32.73	-21.46'	N25° 35' 36.30"	W80° 20' 53.18"	A	39 FT	6	4
75	78+19.47	-31.19'	N25° 35' 37.16"	W80° 20' 53.42"	A	39 FT	6	4
76	79+19.72	23.77'	N25° 35' 38.19"	W80° 20' 52.89"	A	39 FT	6	1
77	80+29.54	23.87'	N25° 35' 39.27"	W80° 20' 52.89"	A	39 FT	6	1
78	81+29.23	23.87'	N25° 35' 40.26"	W80° 20' 52.90"	A	39 FT	6	1
79	82+48.22	22.37'	N25° 35' 41.44"	W80° 20' 52.92"	A	39 FT	6	1
80	83+61.14	22.40'	N25° 35' 42.56"	W80° 20' 52.92"	A	39 FT	6	1
81	84+49.77	30.10'	N25° 35' 43.43"	W80° 20' 52.84"	A	39 FT	6	1
82	85+69.74	30.10'	N25° 35' 44.62"	W80° 20' 52.85"	A	39 FT	6	1
83	86+65.92	30.10'	N25° 35' 45.58"	W80° 20' 52.85"	A	39 FT	6	1
84	87+69.87	35.81'	N25° 35' 46.61"	W80° 20' 52.79"	A	39 FT	6	1
85	88+65.30	23.70'	N25° 35' 47.55"	W80° 20' 52.93"	A	39 FT	6	1
86	89+69.13	21.46'	N25° 35' 48.58"	W80° 20' 52.96"	A	39 FT	6	1
87	90+35.19	21.08'	N25° 35' 49.23"	W80° 20' 52.97"	C	15 FT	6	1
88	90+66.87	-24.75'	N25° 35' 49.54"	W80° 20' 53.47"	C	15 FT	6	4
89	90+98.61	-26.02'	N25° 35' 49.86"	W80° 20' 53.48"	A	39 FT	6	4
90	91+69.74	21.14'	N25° 35' 50.57"	W80° 20' 52.97"	A	39 FT	6	1
91	92+69.69	-25.88'	N25° 35' 51.55"	W80° 20' 53.49"	A	39 FT	6	4
92	93+78.94	27.04'	N25° 35' 52.64"	W80° 20' 52.91"	A	39 FT	6	1
93	94+81.08	-32.67'	N25° 35' 53.65"	W80° 20' 53.57"	A	39 FT	6	4
94	95+99.46	33.68'	N25° 35' 54.82"	W80° 20' 52.85"	A	39 FT	6	1
STREET LIGHTING SERVICE POINT AND LOAD CENTER	45+52.99	33.47'	N25° 35' 10.82"	W80° 20' 32.94"				
MESSAGE BOARD SERVICE POINT	75+48.65	46.85'	N25° 35' 34.43"	W80° 20' 52.92"				

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-02 OF 19

ITB #23-10
Franjo Road Roadway Improvements Project
Page 437 of 608

PLOTTED BY: UNDER FRANCINE DATE: 12/12/2022 2:41 PM
CREATED: 2022-12-06 - \\S0231-HPFS01\WORKGROUP\215654\ACTIVE\215615952\ELECTRICAL\DRAWING\001-002_POLE-DATA.DWG

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	BB	3/26/2021	DRAWN BY		
CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

POLE DATA

PLOTTED BY: LINDER, FRANCINE DATE: 12/12/2022 2:41 PM
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MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-03 OF 19

TABULATION OF LIGHTING QUANTITIES

			SHEET NUMBER																GRAND	
			E-04		E-05		E-06		E-07		E-08		E-09		E-10		E-11		TOTAL	
PAY ITEM NO.	DESCRIPTION	UNIT	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	456	x	1954	x	2215	x	2216	x	2107	x	1906	x	2057	x	510	x	13421	x
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	307	x	407	x	190	x	272	x	300	x	592	x	264	x	0	x	2332	x
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	12	x	19	x	13	x	17	x	18	x	23	x	21	x	3	x	126	x
639-1-121	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER FURNISHED BY POWER COMPANY	AS	0	x	0	x	0	x	1	x	0	x	1	x	0	x	0	x	2	x
639-2-16	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	0	x	0	x	0	x	150	x	0	x	750	x	0	x	0	x	900	x
639-3-12	ELECTRICAL SERVICE DISCONNECT, FURNISH & INSTALL	EA	0	x	0	x	0	x	1	x	0	x	1	x	0	x	0	x	2	x
641-2-11	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II PEDESTAL	EA	0	x	0	x	0	x	1	x	0	x	1	x	0	x	0	x	2	x
715-1-11	LIGHTING CONDUCTORS, F&I, INSULATED, NO. 10 OR SMALLER	LF	0	x	0	x	0	x	0	x	0	x	0	x	0	x	0	x	0	x
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO. 8 TO NO. 6	LF	5529	x	7947	x	7935	x	8328	x	8985	x	8502	x	7827	x	1626	x	56679	x
715-7-11G	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	0	x	0	x	0	x	1	x	0	x	0	x	0	x	0	x	1	x
700-7-212	DYNAMIC MESSAGE SIGN, FURNISH & INSTALL- WO UPS, MONOCHROME	EA	0	x	0	x	0	x	0	x	0	x	2	x	0	x	0	x	2	x
715-500-1C	POLE CABLE DISTRIBUTION SYSTEM, FURNISH AND INSTALL	EA	11	x	15	x	11	x	11	x	12	x	16	x	14	x	3	x	93	x
715-516-115	LIGHT POLE COMPLETE, SPECIAL DESIGN (FURNISH & INSTALL, POLE TOP MOUNT, ALUMINUM AND 15 FEET MOUNTING HEIGHT)	EA	0	x	0	x	0	x	0	x	0	x	0	x	2	x	0	x	2	x
715-511-140	LIGHT POLE COMPLETE - SPECIAL DESIGN, F&I, SINGLE ARM SHOULDER MOUNT, ALUMINUM, 40'	EA	11	x	15	x	11	x	11	x	12	x	16	x	12	x	3	x	92	x
715-521-140	SPARE LIGHT POLE ASSEMBLY	EA		x		x		x		x		x		x		x		x	18	x

PAY ITEM NOTES:

1. INCIDENTAL ITEMS OR ACCESSORIES REQUIRED TO COMPLETE THE WORK FOR EACH ITEM BID SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THAT SPECIFIC ITEM AS INDICATED IN THE BID FORM; SUCH AS, BUT NOT LIMITED TO: ELBOWS, SPLIT BOLT CONNECTORS, FUSES & FUSE HOLDER, ELECTRICAL TAPE, SCOTCHKOTE, P.V.C. GLUE, TRENCHING, BACKFILLING, PAVEMENT RESTORATION, CONCRETE SLAB REPLACEMENT, ETC.

2. PAY ITEM NO. 630-2-11 AND 630-2-12 FOR CONDUIT SHALL BE BASED ON THE HORIZONTAL PATH OF THE INSTALLED CONDUIT AS MEASURED BETWEEN THE CENTER OF PULL BOXES, CABINETS, ETC.. NO ALLOWANCE SHALL BE MADE FOR SWEEPS OR VERTICAL DISTANCES ABOVE OR BELOW GROUND. INCLUDES CONDUIT, ELBOWS, SWEEPS, CONNECTING HARDWARE, TRENCHING AND BACKFILLING AS PER THE PLANS AND STANDARD INDEXES. ALSO INCLUDES THE COST OR RESTORING CUT PAVEMENT, SIDEWALKS, SOD, AND ETC. TO ITS ORIGINAL CONDITION.

3. PAY ITEM 639-1-121 INCLUDES THE COST OF FURNISHING AND INSTALLING NEW SERVICE. INCLUDES THE COST ESTABLISHING NEW SERVICE WITH LOCAL ELECTRIC UTILITY.

4. PAY ITEM 639-2-16 INCLUDES THE COST OF FURNISHING AND INSTALLING THE SERVICE CONDUCTOR BETWEEN THE SERVICE CONNECTION POINT, UTILITY METER, AND SERVICE DISCONNECT SWITCH.

5. PAY ITEM 639-3-12 INCLUDES THE COST OF FURNISHING AND INSTALLING NEW SERVICE EQUIPMENT. INCLUDES THE COST OF FURNISHING AND INSTALLING A NEMA 4X S.S. SERVICE DISCONNECT, SPD, METER SOCKET, AND MOUNTING HARDWARE.

6. PAY ITEM NO. 715-1-## FOR CONDUCTOR SHALL BE BASED ON THE LINEAR FEET OF EACH CONDUCTOR IN HORIZONTAL MEASUREMENT. NO ALLOWANCE SHALL BE MADE FOR CONNECTION IN PULL BOXES AND CABINETS. ALL CONDUCTOR USE/ RHW-XLP AS SPECIFIED IN FDOT SECTION 992 AND AS PER MIAMI-DADE COUNTY MAINTENANCE AGENCY SPECIFICATIONS. OTHER TYPE OF CABLE SHALL NOT BE ALLOWED (EXCEPT GROUND WIRE WHICH SHALL BE THWN).

7. PAY ITEM 715-7-11G PAYMENT FOR LOAD CENTER SHALL INCLUDE FURNISHING AND INSTALLING ALL ITEMS AS DEPICTED ON MIAMI-DADE COUNTY SERVICE POINT DETAILS. TRANSFORMER CONNECTION AND ALL WORK RELATED TO ELECTRICAL POWER SERVICE SHALL BE COORDINATED WITH THE F.P.&L. REPRESENTATIVE. INCLUDES THE COST OF THE GROUNDING ELECTRODE AND GROUND RODS, INCIDENTAL TO NEW SERVICE

7' PAY ITEM 700-7-212 INCLUDES THE COST OF FURNISHING AND INSTALLING THE MESSAGE BOARD, INCLUDING MOUNTING HARDWARE AND OPTIONAL FEATURES AS DESCRIBED ON PLAN. INCLUDE FEES TO SETUP REMOTE COMMUNICATION INCLUDING ACTIVATION OF CELLULAR RADIO.

8. PAY ITEM 715-500-1C INCLUDES THE SURGE PROTECTOR, FUSE HOLDERS WITH FUSES, WATERPROOF CONNECTORS AND WATERPROOF WIRING CONNECTION TO THE THE LUMINAIRE, GROUNDING ELECTRODE, AND GROUND ROD. (MG SQUARE LIGHT POLE DISTRIBUTION SYSTEM)

9. PAY ITEM NO. 715-516-115 AND 715-511-140 INCLUDES THE COST OF FURNISHING AND INSTALLING 20 FT. OF GROUND ROD AT EACH PULL BOX, EACH LIGHT POLE PULL BOX, AND AT EACH SERVICE POINT PER MIAMI-DADE COUNTY DESIGN REQUIREMENTS, INCLUDING GROUND ROD, GROUND WIRE, ROCKS AND CLAMPS. INCLUDES THE COST OF FURNISHING AND INSTALLING THE POLE, POLE BRACKET ARM, LUMINAIRE WITH UBICQUIA UBICELL SMART NODE MODULE AND SPARE SHORTING CAP, FOUNDATION AND ALL MOUNTING HARDWARE. CONTRACTOR TO INCLUDE IN BID PRICE THE COST FOR TRIMMING TREES AS REQUIRED.

10. PAY ITEM NO. 715-521-140 INDICATES THE COST OF FURNISHING 20% ADDITIONAL SPARE POLE ASSEMBLIES TO TSS.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
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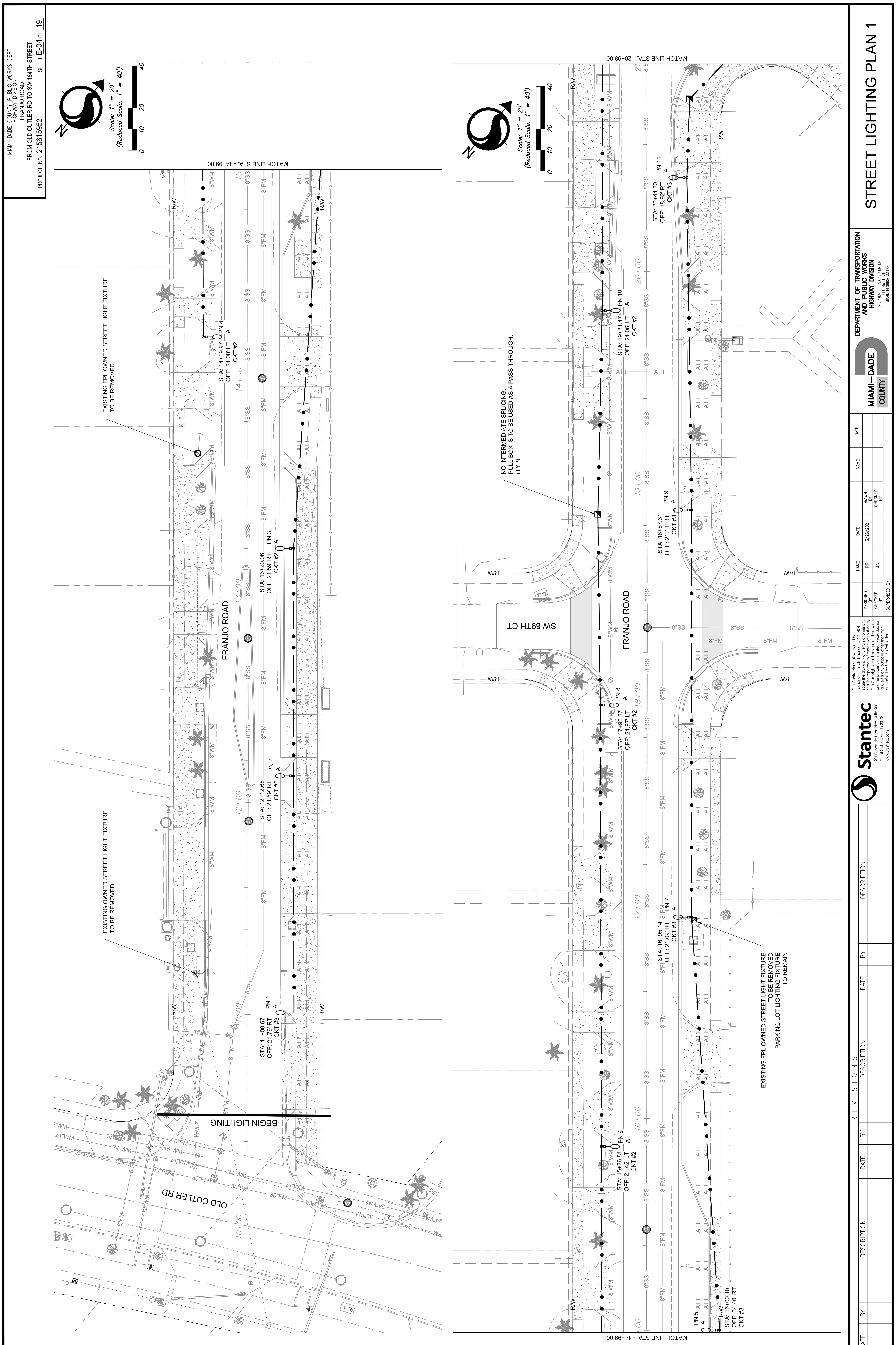
CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

TABULATION OF LIGHTING QUANTITIES


MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21615952
SHEET E-04 of 19
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
MATCH LINE STA. - 14+99.00
MATCH LINE STA. - 20+98.00
FRANJO ROAD
SW 89TH CT
OLD CUTLER RD
BEGIN LIGHTING
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
EXISTING OWNED STREET LIGHT FIXTURE TO BE REMOVED
NO INTERMEDIATE SPLICING. PULL BOX IS TO BE USED AS A PASS THROUGH. (TYP)
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED PARKING LOT LIGHTING FIXTURE TO REMAIN
STA: 11+00.67 OFF: 21.79' RT CKT #3 PN 1 A
STA: 12+12.68 OFF: 21.59' RT CKT #3 PN 2 A
STA: 13+20.06 OFF: 21.59' RT CKT #2 PN 3 A
STA: 14+19.97 OFF: 21.08' LT CKT #2 PN 4 A
STA: 15+00.10 OFF: 34.40' RT CKT #3 PN 5 A
STA: 15+86.81 OFF: 21.42' LT CKT #2 PN 6 A
STA: 16+95.14 OFF: 21.09' RT CKT #3 PN 7 A
STA: 17+95.27 OFF: 21.97' LT CKT #2 PN 8 A
STA: 18+87.31 OFF: 21.11' RT CKT #3 PN 9 A
STA: 19+81.47 OFF: 21.06' LT CKT #2 PN 10 A
STA: 20+44.30 OFF: 18.92' RT CKT #3 PN 11 A
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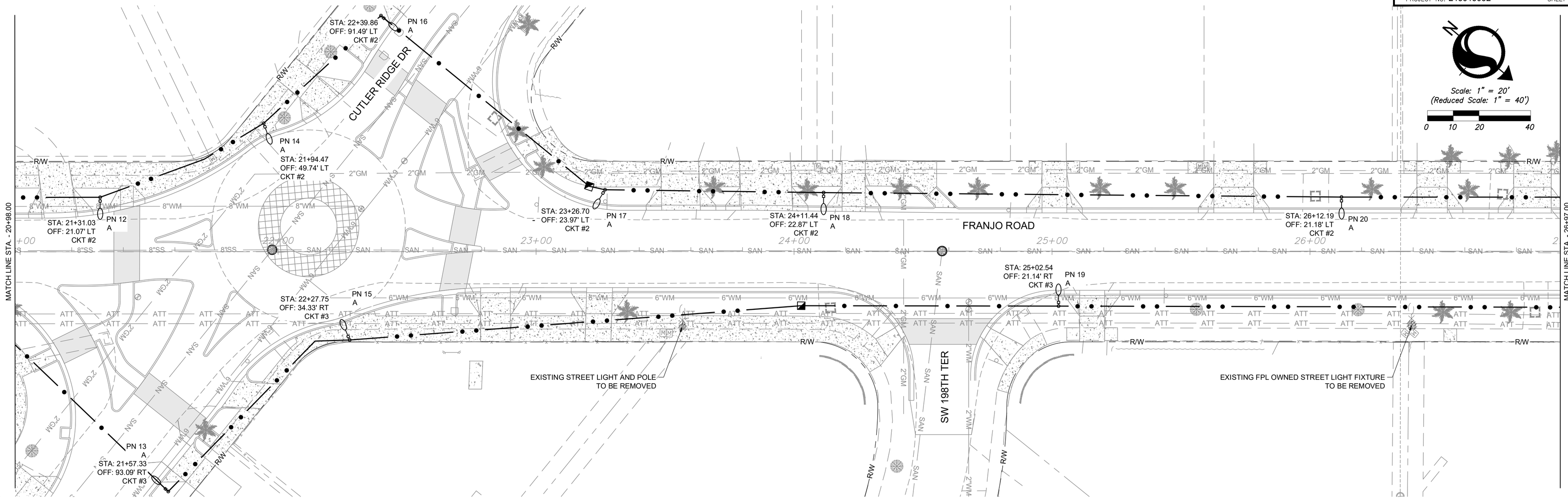
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY DIVISION
STREET LIGHTING PLAN 1
REVISIONS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-05 OF 19



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CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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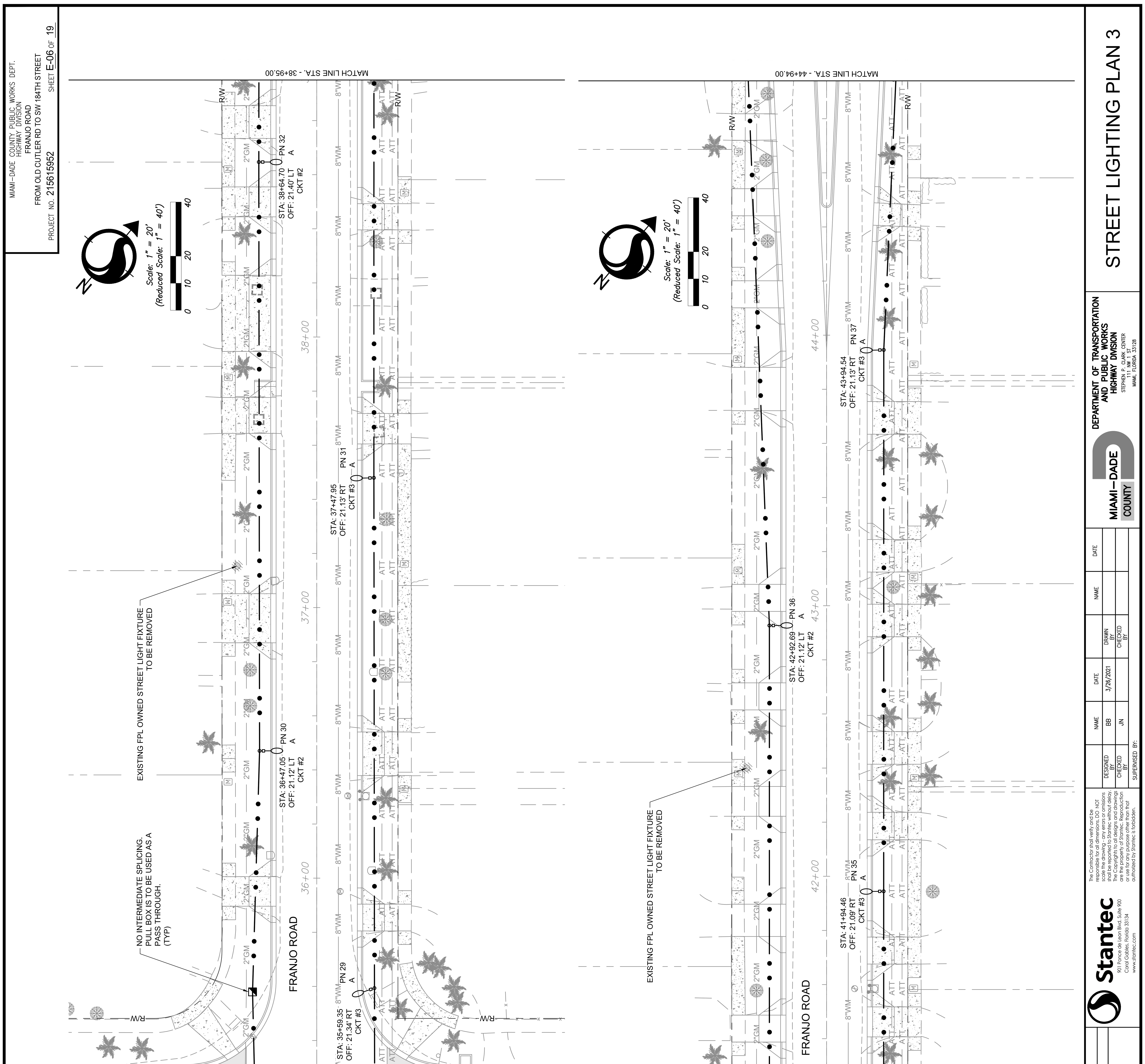
MIAMI, FLORIDA 33128

STREET LIGHTING PLAN 2

PLOTTED BY: LINSER, FRANOMIE DATE: 12/13/2022 2:47:04 PM
CREATED: 2021-12-09 - \\US0231-PPFSS01\WORKGROUP\215615952\ELECTRICAL\DRAWING\004-011_STRT-LITG.DWG


STREET LIGHTING PLAN 3
FRANJO ROAD
MARTINIQUE DR
SW 196TH DR
MATCH LINE STA. - 38+95.00
MATCH LINE STA. - 44+94.00
MATCH LINE STA. - 32+96.00
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
NO INTERMEDIATE SPLICING. PULL BOX IS TO BE USED AS A PASS THROUGH. (TYP)
STA: 38+64.70 OFF: 21.40' LT CKT #2 PN 32 A
STA: 37+47.95 OFF: 21.13' RT CKT #3 PN 31 A
STA: 36+47.05 OFF: 21.12' LT CKT #2 PN 30 A
STA: 35+59.35 OFF: 21.34' RT CKT #3 PN 29 A
STA: 34+57.36 OFF: 21.37' LT CKT #2 PN 28 A
STA: 33+58.37 OFF: 21.66' RT CKT #3 PN 27 A
STA: 43+94.54 OFF: 21.13' RT CKT #3 PN 37 A
STA: 42+92.69 OFF: 21.12' LT CKT #2 PN 36 A
STA: 41+94.46 OFF: 21.09' RT CKT #3 PN 35 A
STA: 40+94.66 OFF: 21.13' LT CKT #2 PN 34 A
STA: 39+74.99 OFF: 21.14' RT CKT #3 PN 33 A
Scale: 1" = 20' (Reduced Scale: 1" = 40')
MIAMI-DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION
FRANJO ROAD FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21561952
SHEET E-06 OF 19
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY DIVISION
Stantec
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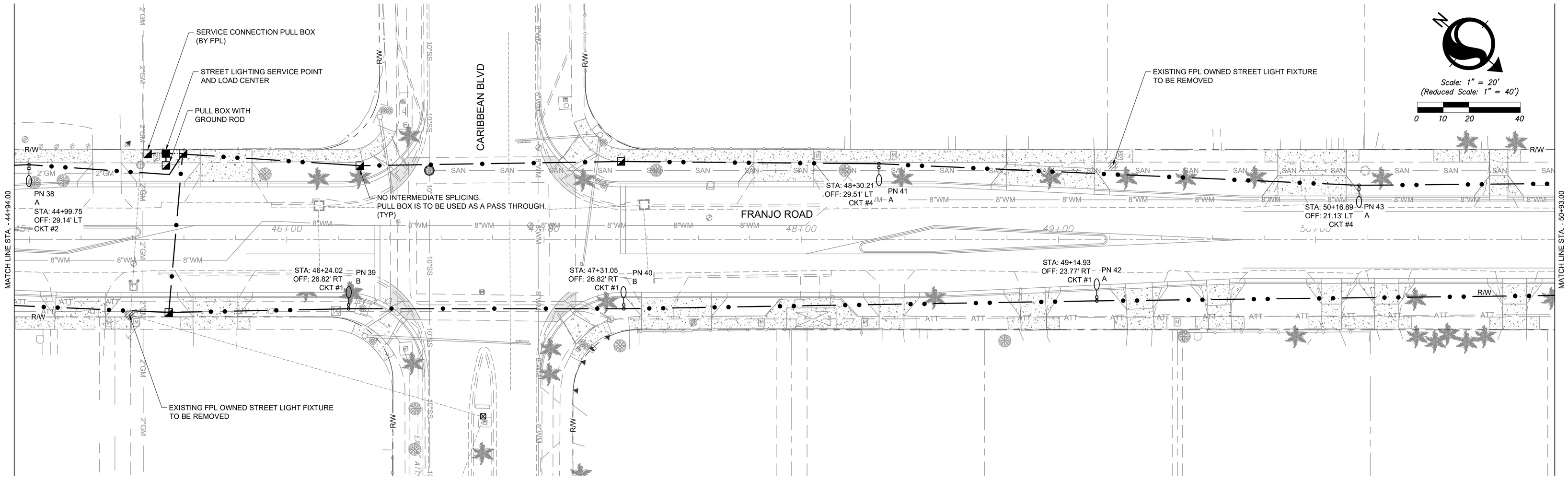
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-07 OF 19



REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Coral Gables, Florida 33134
www.stantec.com

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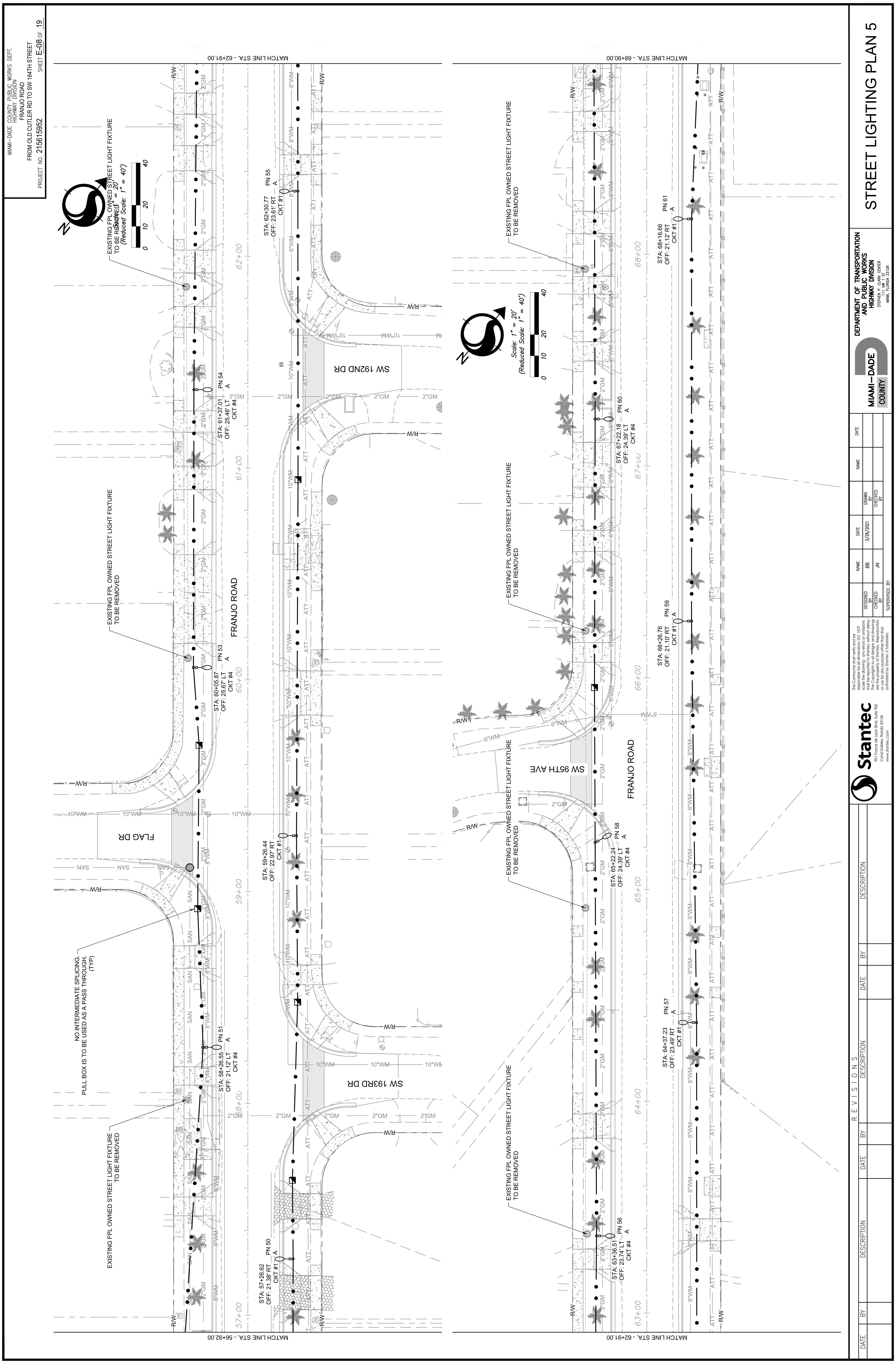
DESIGNED BY	BB	3/26/2021	DRAWN BY		
CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

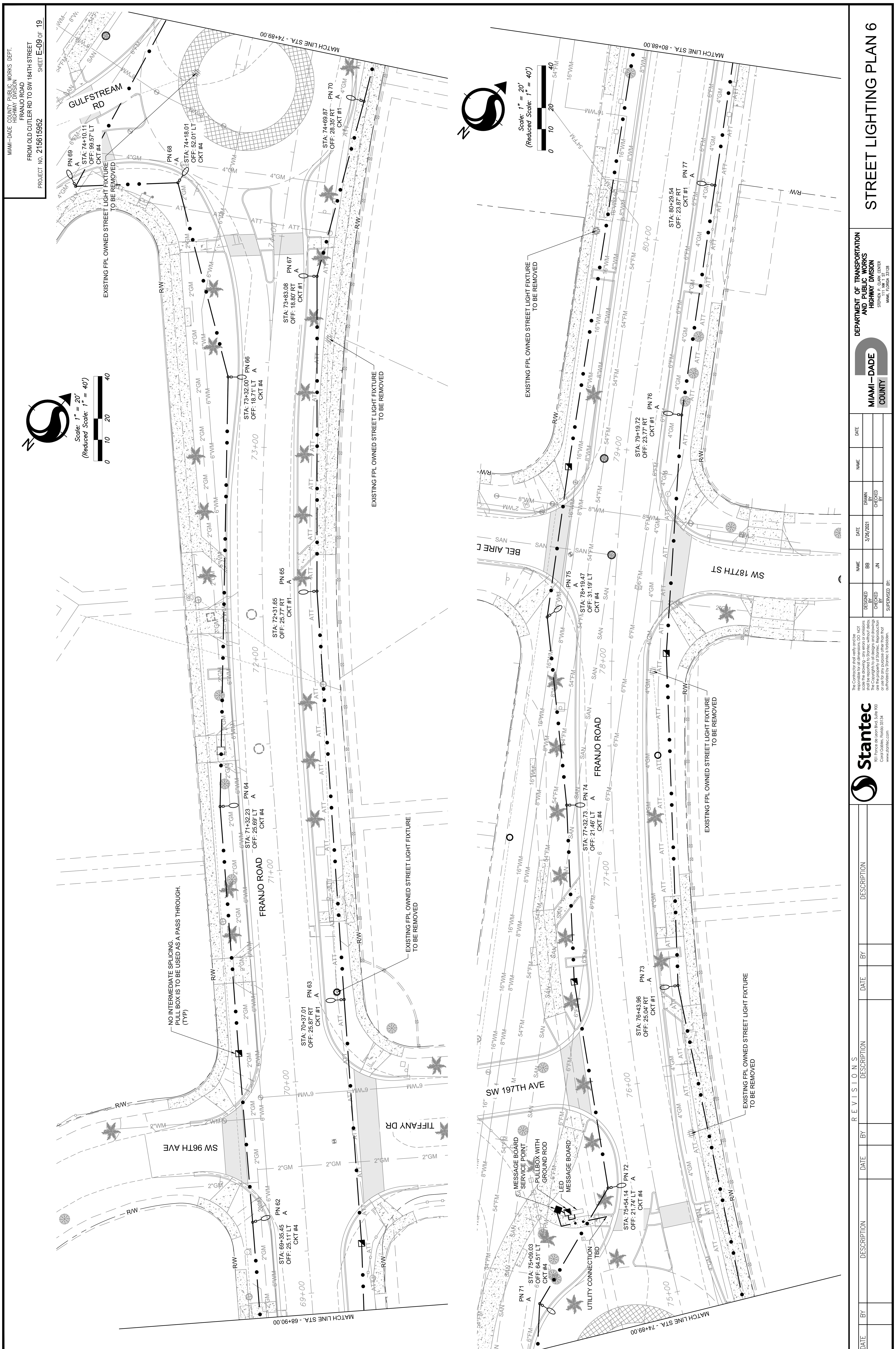
MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

STREET LIGHTING PLAN 4

PLOTTED BY: LINDER, FRANCINE DATE: 1/13/2022 2:42 PM
CREATED: 2022-12-09 - \\550231-FPFS001\WORKGROUP\215615952\ELECTRICAL\DRAWING\004-011_STRT-LTG.DWG


STREET LIGHTING PLAN 5
FRANJO ROAD
SW 192ND DR
SW 193RD DR
FLAG DR
SW 95TH AVE
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
NO INTERMEDIATE SPLICING. PULL BOX IS TO BE USED AS A PASS THROUGH. (TYP)
MATCH LINE STA. - 62+91.00
MATCH LINE STA. - 68+90.00
MATCH LINE STA. - 56+92.00
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY DIVISION
Stantec
MIAMI-DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21615952
SHEET E-08 of 19
REVISIONS


STREET LIGHTING PLAN 6
MIAMI-DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21615952
SHEET E-09 of 19
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY DIVISION
MIAMI-DADE COUNTY
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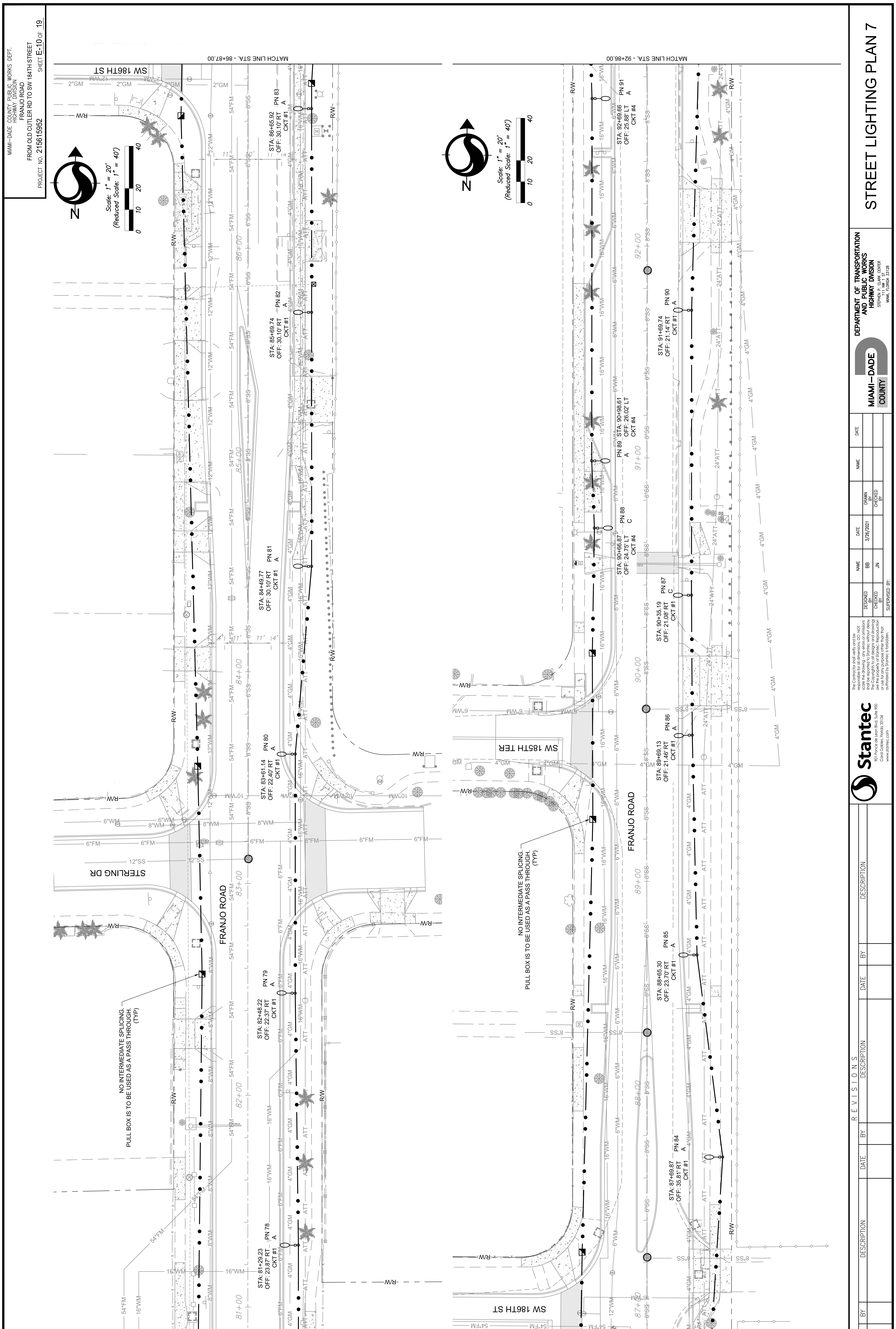
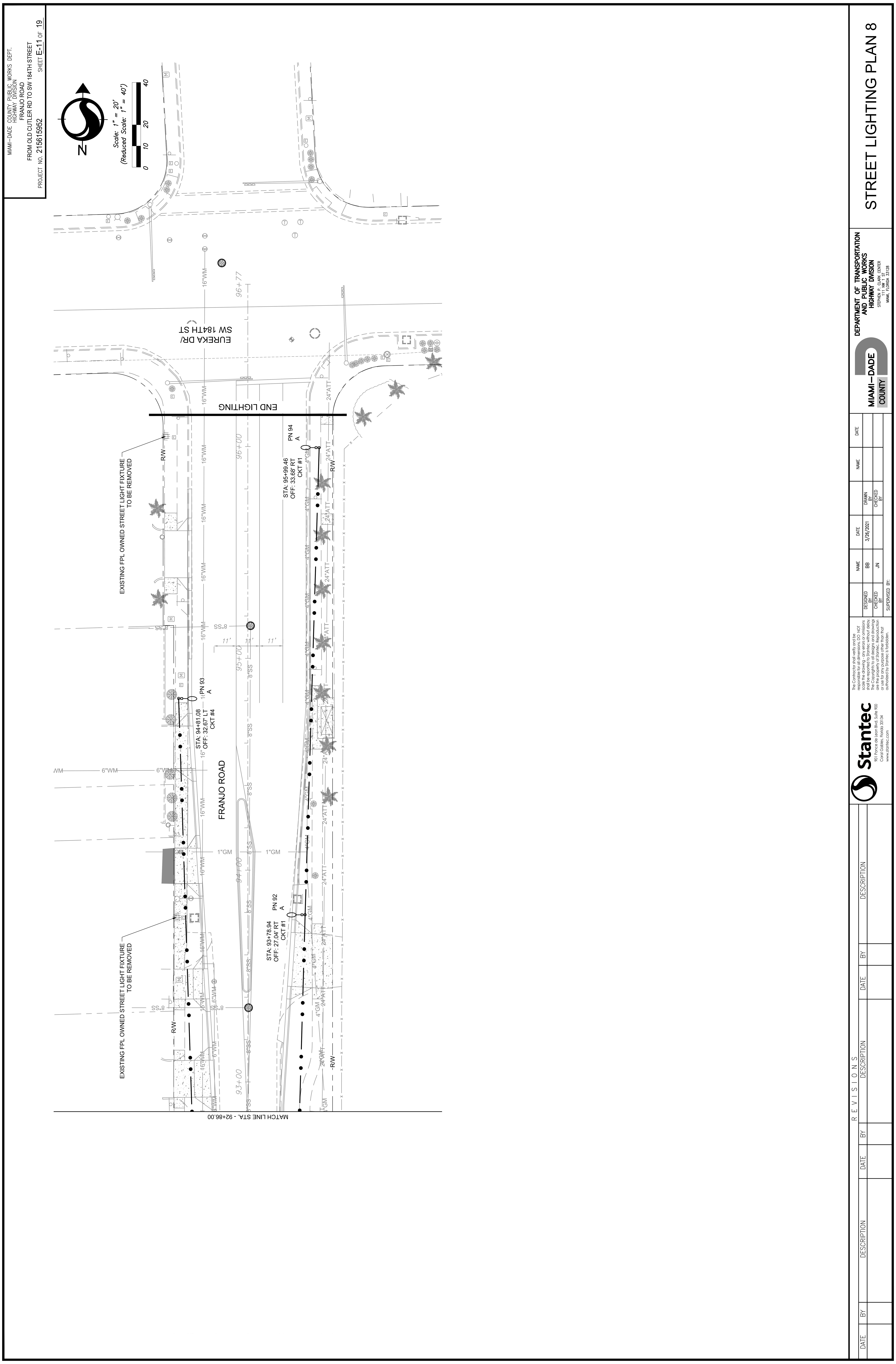
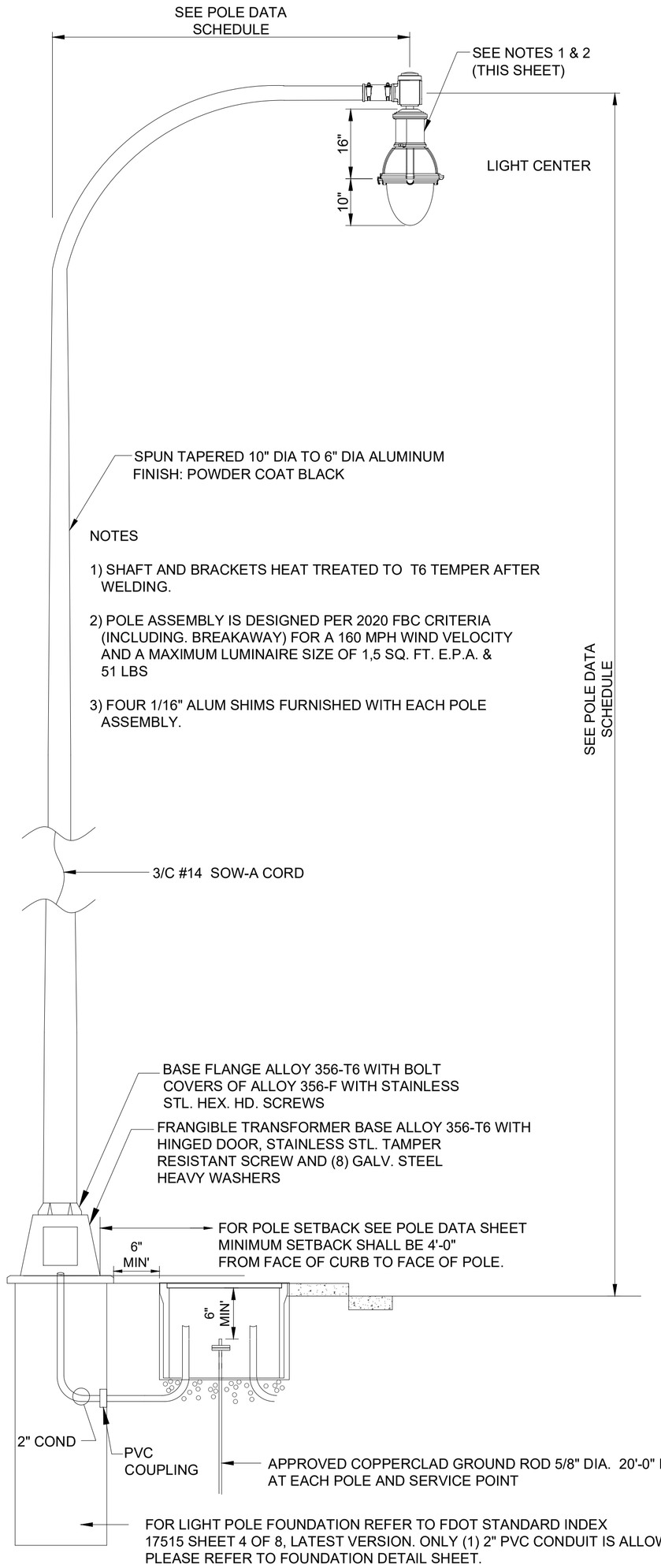
REVISIONS
FRANJO ROAD
GULFSTREAM RD
SW 96TH AVE
TIFFANY DR
SW 197TH AVE
BEL AIRE C
SW 187TH ST
MATCH LINE STA. - 68+90.00
MATCH LINE STA. - 74+89.00
MATCH LINE STA. - 80+88.00
Scale: 1" = 20' (Reduced Scale: 1" = 40')
PN 62 A STA: 69+35.45 OFF: 25.11' LT CKT #4
PN 63 A STA: 70+37.01 OFF: 25.87' RT CKT #1
PN 64 A STA: 71+32.23 OFF: 25.69' LT CKT #4
PN 65 A STA: 72+31.65 OFF: 25.77' RT CKT #1
PN 66 A STA: 73+32.00 OFF: 18.71' LT CKT #4
PN 67 A STA: 73+83.08 OFF: 18.80' RT CKT #1
PN 68 A STA: 74+18.01 OFF: 52.01' LT CKT #4
PN 69 A STA: 74+10.11 OFF: 99.57' LT CKT #4
PN 70 A STA: 74+69.87 OFF: 28.35' RT CKT #1
PN 71 A STA: 75+09.03 OFF: 64.51' LT CKT #4
PN 72 A STA: 75+54.14 OFF: 21.74' LT CKT #4
PN 73 A STA: 76+43.96 OFF: 25.04' RT CKT #1
PN 74 A STA: 77+32.73 OFF: 21.48' LT CKT #4
PN 75 A STA: 78+19.47 OFF: 31.19' LT CKT #4
PN 76 A STA: 79+19.72 OFF: 23.77' RT CKT #1
PN 77 A STA: 80+29.54 OFF: 23.87' RT CKT #1
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
NO INTERMEDIATE SPLICING. PULL BOX IS TO BE USED AS A PASS THROUGH. (TYP)
MESSAGE BOARD SERVICE POINT
PULLBOX WITH GROUND ROD
LED MESSAGE BOARD
UTILITY CONNECTION TBD



MIAMI-DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21615952
SHEET E-10 of 19
STREET LIGHTING PLAN 7
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY DIVISION
MIAMI-DADE COUNTY
Stantec
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
MATCH LINE STA. - 86+87.00
MATCH LINE STA. - 80+88.00
MATCH LINE STA. - 92+86.00
SW 186TH ST
SW 185TH TER
STERLING DR
FRANJO ROAD
NO INTERMEDIATE SPLICING. PULL BOX IS TO BE USED AS A PASS THROUGH. (TYP)
STA: 81+29.23 OFF: 23.87' RT CKT #1 PN 78 A
STA: 82+48.22 OFF: 22.37' RT CKT #1 PN 79 A
STA: 83+61.14 OFF: 22.40' RT CKT #1 PN 80 A
STA: 84+49.77 OFF: 30.10' RT CKT #1 PN 81 A
STA: 85+69.74 OFF: 30.10' RT CKT #1 PN 82 A
STA: 86+65.92 OFF: 30.10' RT CKT #1 PN 83 A
STA: 87+69.87 OFF: 35.81' RT CKT #1 PN 84 A
STA: 88+65.30 OFF: 23.70' RT CKT #1 PN 85 A
STA: 89+69.13 OFF: 21.46' RT CKT #1 PN 86 A
STA: 90+35.19 OFF: 21.08' RT CKT #1 PN 87 C
STA: 90+66.87 OFF: 24.75' LT CKT #4 PN 88 C
STA: 90+98.61 OFF: 26.02' LT CKT #4 PN 89 A
STA: 91+69.74 OFF: 21.14' RT CKT #1 PN 90 A
STA: 92+69.66 OFF: 25.88' LT CKT #4 PN 91 A
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY BB 3/26/2021
CHECKED BY JN
SUPERVISED BY:


STREET LIGHTING PLAN 8
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 21615952
SHEET E-11 of 19
Scale: 1" = 20'
(Reduced Scale: 1" = 40')
END LIGHTING
EUREKA DR/
SW 184TH ST
FRANJO ROAD
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
EXISTING FPL OWNED STREET LIGHT FIXTURE TO BE REMOVED
PN 94
A
STA: 95+99.46
OFF: 33.68' RT
CKT #1
PN 93
A
STA: 94+81.08
OFF: 32.67' LT
CKT #4
PN 92
A
STA: 93+78.94
OFF: 27.04' RT
CKT #1
MATCH LINE STA. - 92+86.00
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
Stantec
REVISIONS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-12 OF 19



TYPICAL METAL POLE INSTALLATION DETAIL
N.T.S.

SHOP DRAWINGS

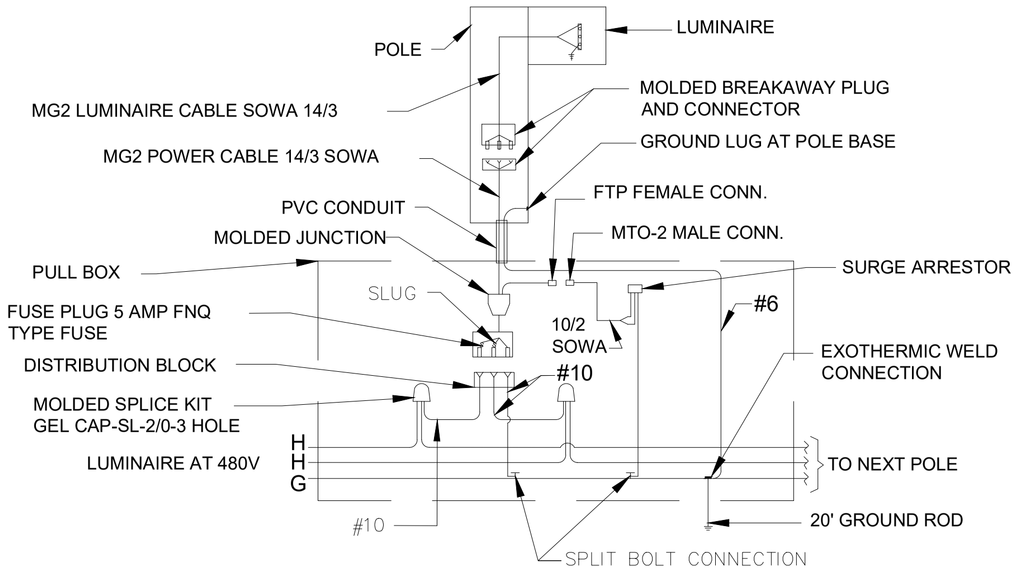
A. DESIGN CRITERIA/PARAMETERS/POLE SHOP DRAWINGS
   1. MUST COMPLY WITH CURRENT AASHTO SPECIFICATIONS IN REGARD TO GROUP LOADING,WIND VELOCITY,HEIGHT & DRAG COEFFICIENT ETC.
   2. LIST: AREA OF WIND EXPOSURE,COMPONENT DEAD WEIGHTS, APPLICABLE COEFFICIENT FOR EACH
   3. IDENTIFY ANY EXCEPTIONS TO AASHTO (LOADING/AND OR ANALYSIS)
   4. PROVIDE MATERIALS SPECIFICATIONS,ALLOWABLE STRESSES, METHODS OF ANALYSIS.

B. POLE SHAFT COMPUTATIONS
   1. CONSIDER WIND AND DEAD LOAD ON ALL COMPONENTS
   2. ANALYSE EFFECTS OF COMBINED STRESS
      A) MOMENT
      B) SHEAR
      C) TORSION
      D) COMPUTE CSR PER AASHTO
   3. CRITICAL AREAS OF STRESS
      A) BASE OF POLE
      B) MANHOLE
      C) POLE CROSS-SECTION

C. ARM STRESS COMPUTATIONS
   1. CONSIDER WIND AND DEAD LOAD ON ALL COMPONENTS.
   2. ANALYZE EFFECTS OF COMBINED STRESS.
      A) MOMENT
      B) SHEAR
      C) COMPUTE CSR PER AASHTO
   3. CRITICAL AREAS OF STRESS
      A) TUBE COMPONENTS AT POLE CONNECTION
      B) ACTUAL CONNECTION/FASTENERS

D. MISCELLANEOUS COMPUTATIONS / ANALYSIS
   1. SECTION PROPERTIES
   2. WELD ANALYSIS (IF APPLICABLE)
   3. LOADING DIAGRAM (POLE AND ARM)
   4. CONNECTION DETAILS
   5. TEST REFERENCES,EQUATIONS

E. THE TEST REPORT SHALL BE CERTIFIED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

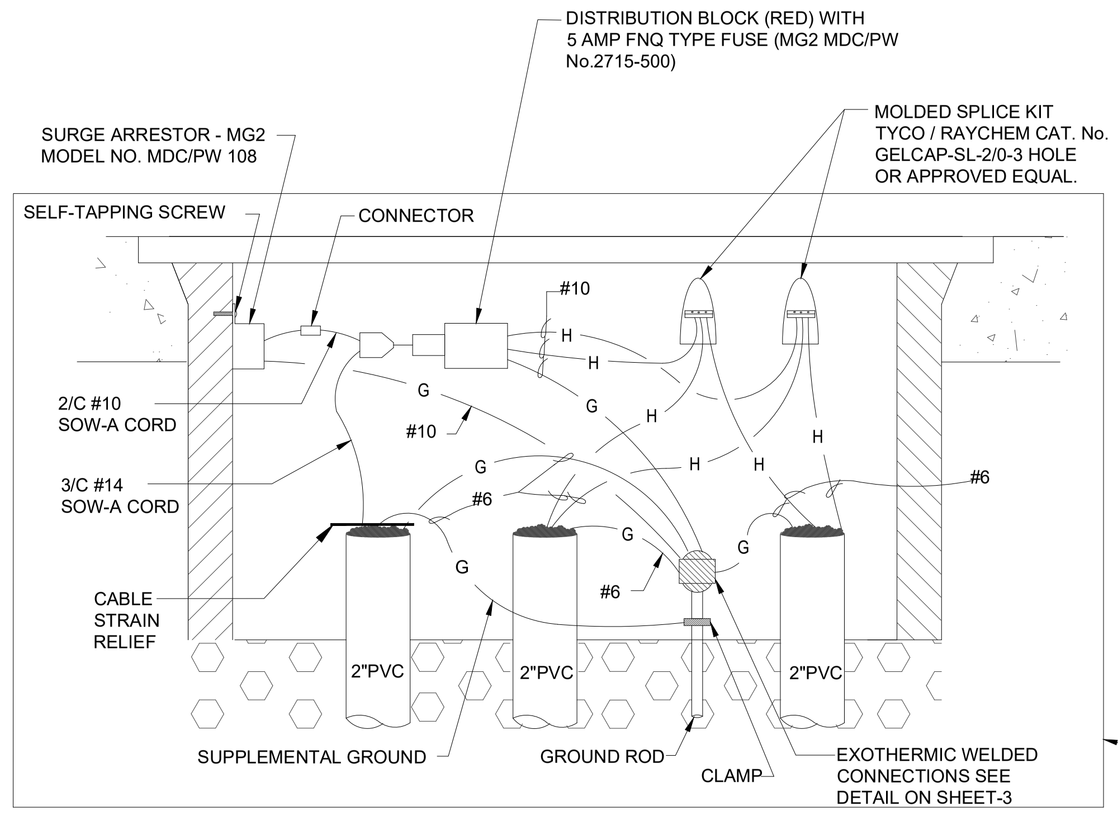


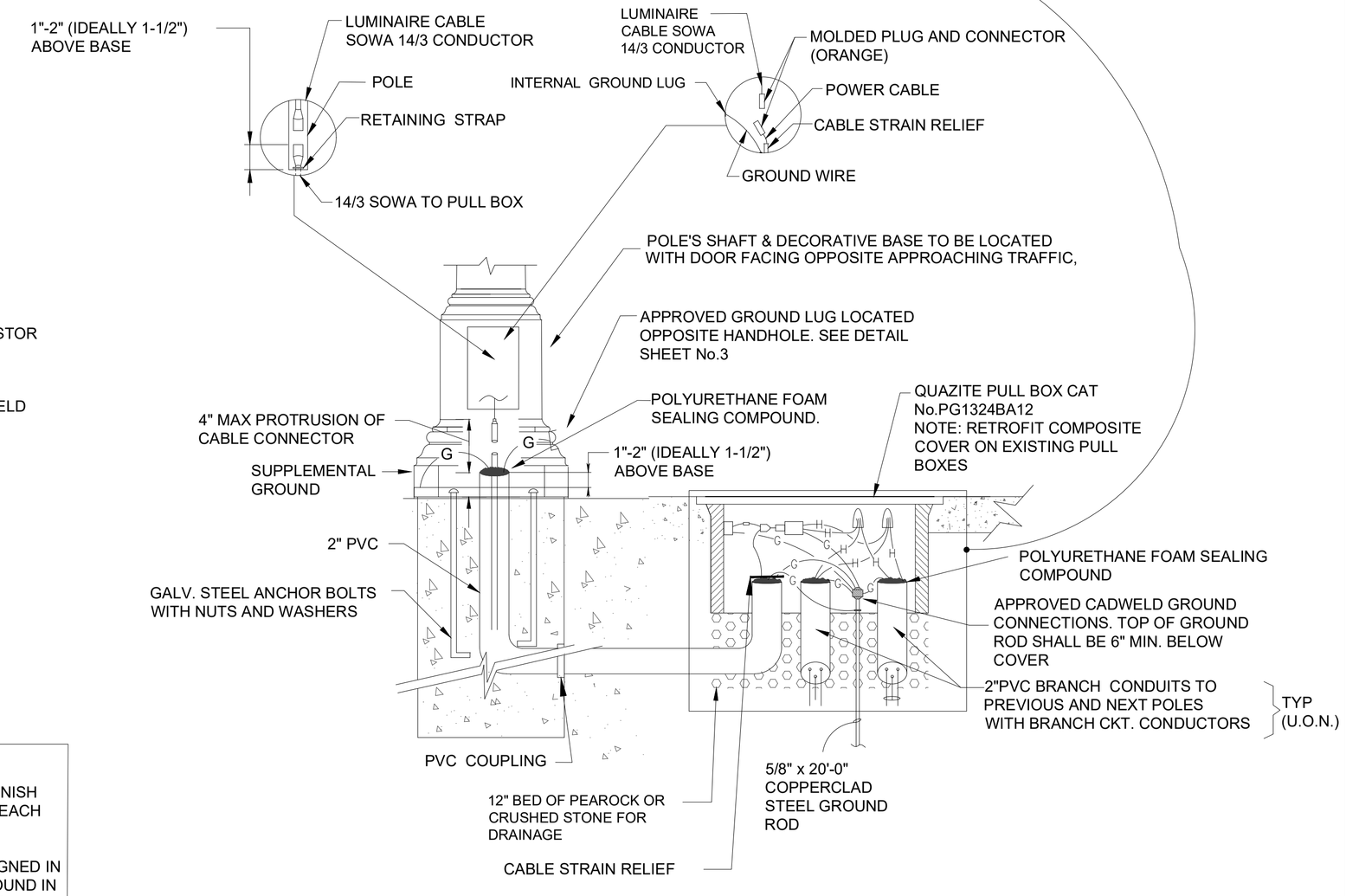
WIRING DIAGRAM (MG SQUARE LIGHT POLE CABLE DISTRIBUTION SYSTEM)
N.T.S.

NOTES:

1) REFER TO THE FIXTURE SCHEDULE ON THE LEGEND SHEET FOR FIXTURE TYPE. FURNISH AND INSTALL A UBICQUIA UBICELL SMART NODE MODULE IN 7-PIN RECEPTACLE FOR EACH FIXTURE.

2) POLES, BRACKETS ARMS AND TRANSFORMER BASES SHALL BE ALUMINUM AND DESIGNED IN ACCORDANCE WITH LOCAL DESIGN CRITERIA USING THE APPLICABLE EQUATIONS FOUND IN "STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS" PUBLISHED BY CURRENT A.A.S.H.T.O. THE CONTRACTOR (SUPPLIER) SHALL SUBMIT EVIDENCE OF DEMONSTRATED COMPLIANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION ALONG WITH HIS EQUIPMENT SUBMITTAL DATA. NO POLES ARE TO BE INSTALLED PRIOR TO DEPARTMENT APPROVAL.





POLE WIRING DETAIL WITH PULL BOX
N.T.S.

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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	NAME	DATE		NAME	DATE
DESIGNED BY	BB	3/26/2021	DRAWN BY		
CHECKED BY	JN		CHECKED BY		
SUPERVISED BY:					

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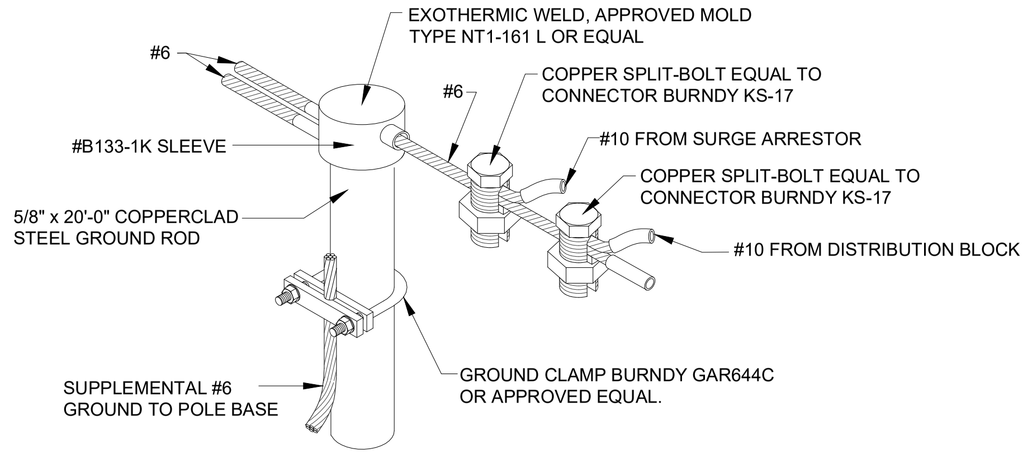
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

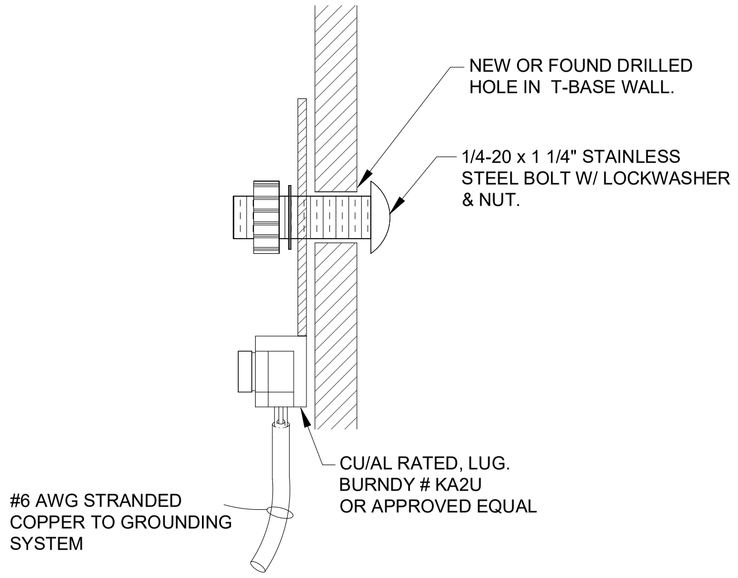
DECORATIVE POLE DETAIL

PLOTTED BY: LINDER, FRANCINE DATE: 12/12/2022 2:44 PM
CREATED: 2022-10-04 - \\SI0031-PFPSS01\WORKGROUP\215615952\ELECTRICAL\DRAWING\012-014_DETAILS.DWG



CABLE TO GROUND ROD DETAIL
(COPPER WIRE FOR GROUNDING)

N.T.S.



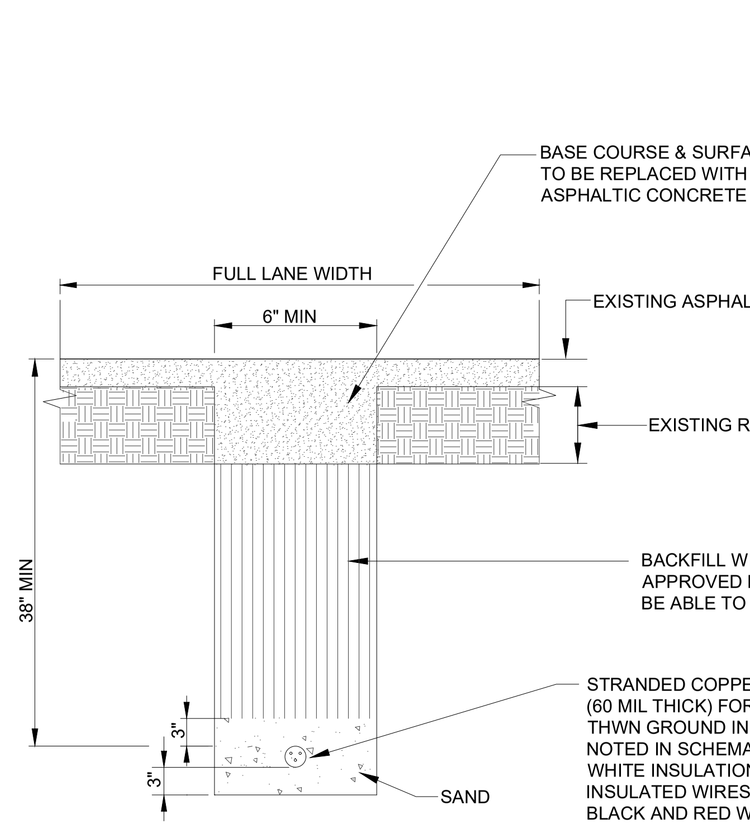
GROUND LUG DETAIL
(COPPER WIRE FOR GROUNDING)

N.T.S.

PULL BOX SPECIFICATION

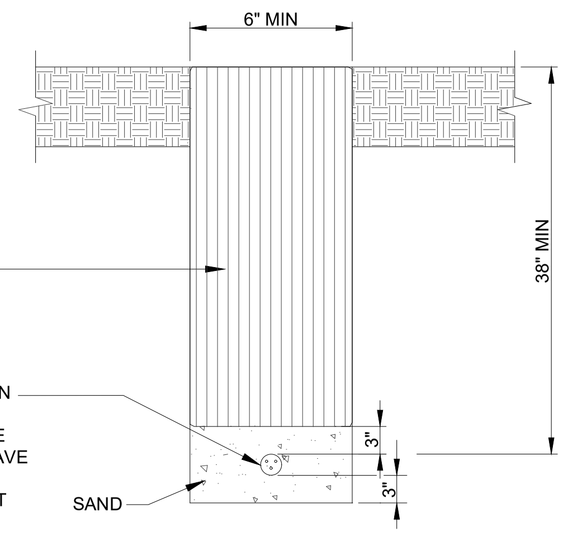
1. ALL STREET LIGHT PULL BOXES SHALL HAVE AN OPEN-BOTTOM, QUAZITE POLYMER CONCRETE DESIGN OR PRECAST CONCRETE DESIGN CONSTRUCTED OF CLASS I CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT TWENTY- EIGHT (28) DAYS. POLYMER CONCRETE PULL BOX SHALL BE QUAZITE PRODUCT NO. PG1324BA12 OR APPROVED EQUIVALENT. CONCRETE PULL BOX SHALL BE BROOKS 38 SERIES OR APPROVED EQUIVALENT. IN EITHER CASE, BOTH PULL BOXES SHALL BE CONSTRUCTED PER ABOVE SPECIFIED MANUFACTURERS SIZE, MATERIALS AND PERFORMANCE SPECIFICATIONS. THEREFORE, BELOW SPECIFIED PULL BOX COVER SHALL BE FULLY INTER- CHANGEABLE WITH EITHER PULL BOX. ALL PULL BOX COVERS FURNISHED AND INSTALLED SHALL BE POLYMER CONCRETE QUAZITE PRODUCT NO. PG1324HA00 OR APPROVED EQUIVALENT. NO OTHER DESIGN, SIZE, MODIFICATION OR MATERIALS SHALL BE ACCEPTABLE. PULL BOX COVERS SHALL BE MARKED "STREET LIGHTING" OR "ELECTRIC/ MIAMI-DADE HD".

2. IN SITUATIONS WHERE PULL BOX IS LOCATED OUTSIDE OF SIDEWALK, i.e. SWALE AREA. THE PULL BOX IS TO HAVE A 6'x5' MIN CONCRETE APRON (6" THICK) PLACED AROUND IT. COST OF CONCRETE APRON IS TO BE INCLUDED IN THE PULL BOX INSTALLATION COST.



TRENCH DETAIL (ROAD)

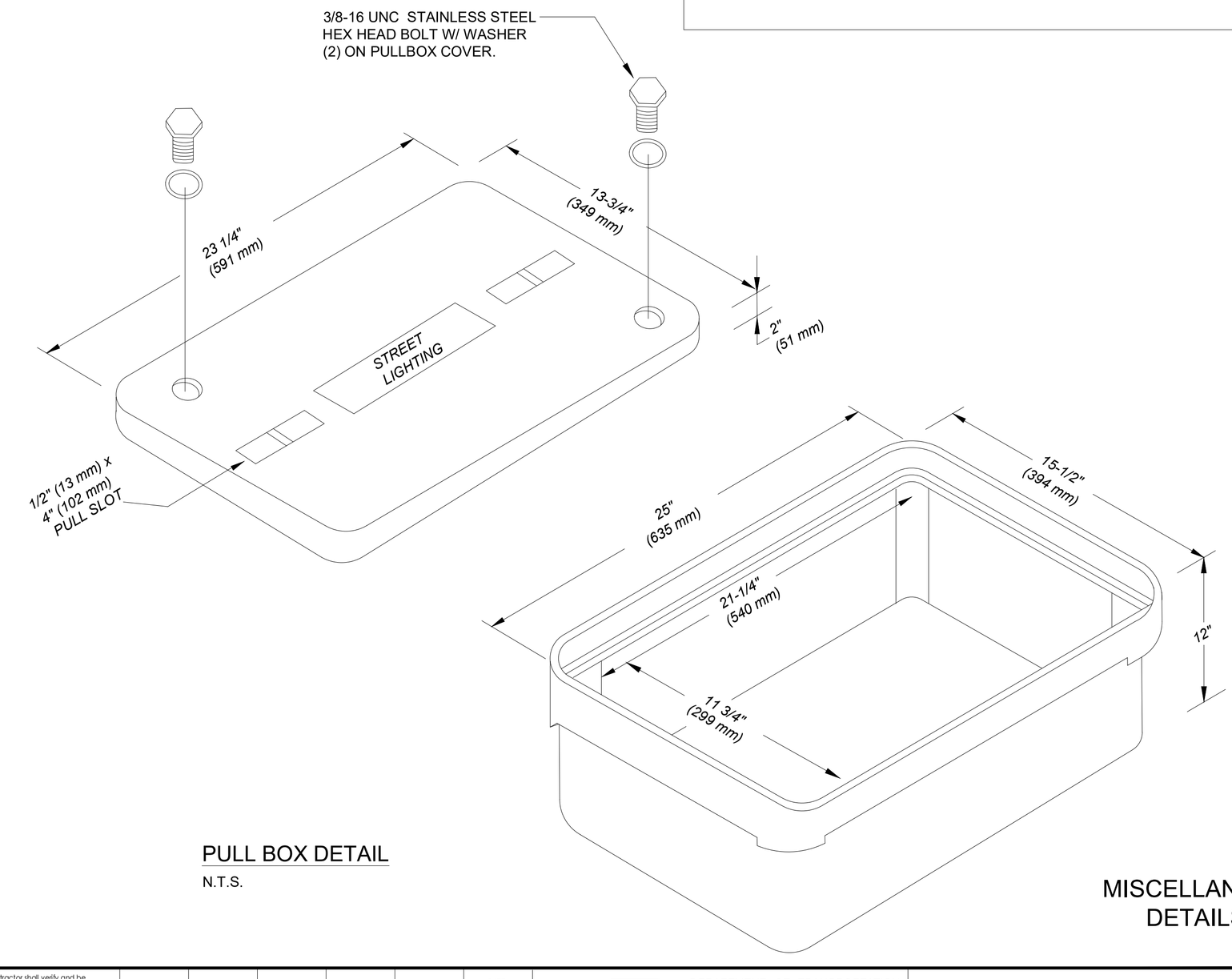
N.T.S.



TRENCH DETAIL (SWALE)

N.T.S.

* IF IN THE OPINION OF THE ENGINEER, APPRECIABLE SETTLEMENT OCCURS DURING THE ONE YEAR GUARANTEE PERIOD, THE CONTRACTOR WILL BE REQUIRED TO RESTORE THE AREA OF CUT TO ADJACENT ROADWAY ELEVATION. SEE "TRAFFIC CONTROL EQUIPMENT SPECIFICATIONS AND STANDARDS FOR THE MTCSMDC".



PULL BOX DETAIL

N.T.S.

MISCELLANEOUS
DETAILS 1

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HIGHWAY DIVISION
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MISCELLANEOUS DETAILS

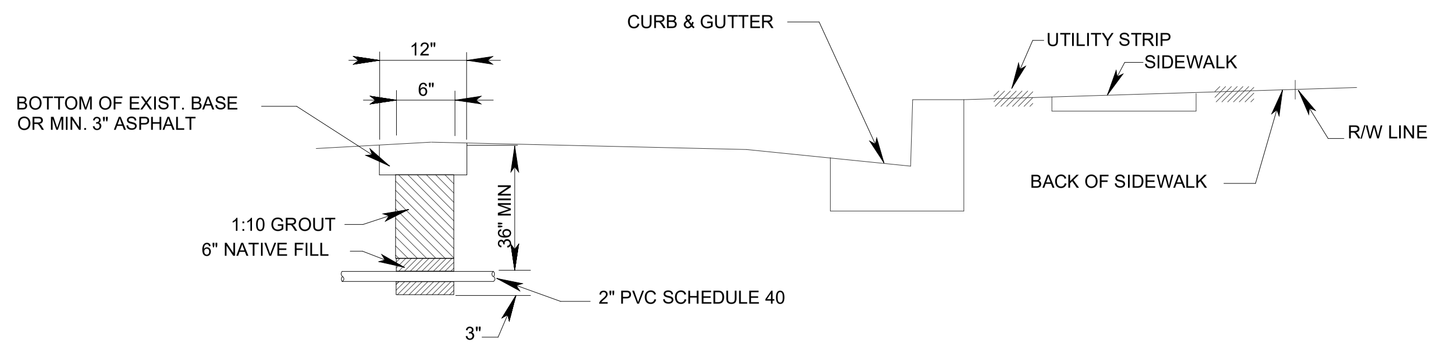
PLOTTED BY: LINDER, FRANCINE DATE: 12/13/2022 2:44 PM
CREATED: 2022-10-04 - \\GIS031-HPFS501\WORKGROUP\215615\ACTIVE\215615952\ELECTRICAL\DRAWING\013-014_DETAILS.DWG

PLOTTED BY: JIN UNDER: FRANCINE DATE: 12/13/2022 3:44 PM
CREATED: 2022-10-04 - \\GI0231-FPFS001\WORKGROUP\215KA\ACTIVE\215615952\ELECTRICAL\DRAWING\013-014_DETAILS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-14 OF 19

1 OPTION

CONDUIT BURIED WHEN CROSSING ROAD

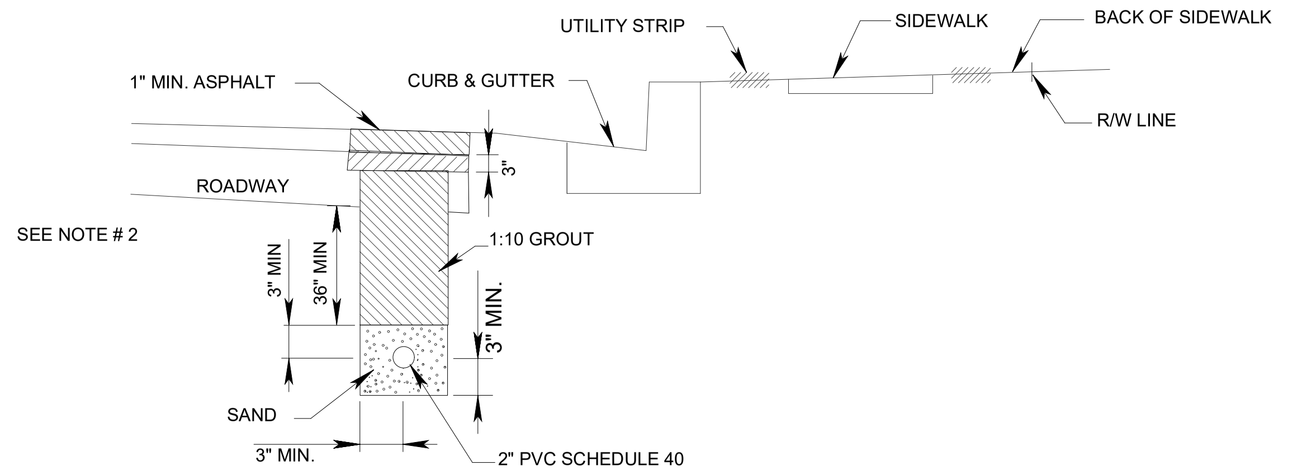


NOTE:
TRENCH NOT TO BE OPENED MORE THAN 250' AT A TIME

* MAY BE ADJUSTED IN FIELD DUE TO FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

2 OPTION

CONDUIT BURIAL IN ROADWAY



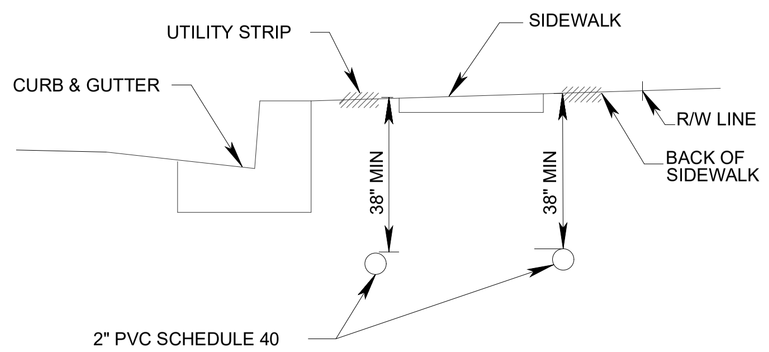
NOTE:

1. TRENCH NOT TO BE OPENED MORE THAN 250' AT A TIME.
2. THIS AREA SHALL BE BACKFILLED WITH TYPE S-1 ASPHALTIC CONCRETE TO WITHIN 1 INCH OF FINISHED GRADE.

* MAY BE ADJUSTED IN FIELD DUE TO FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

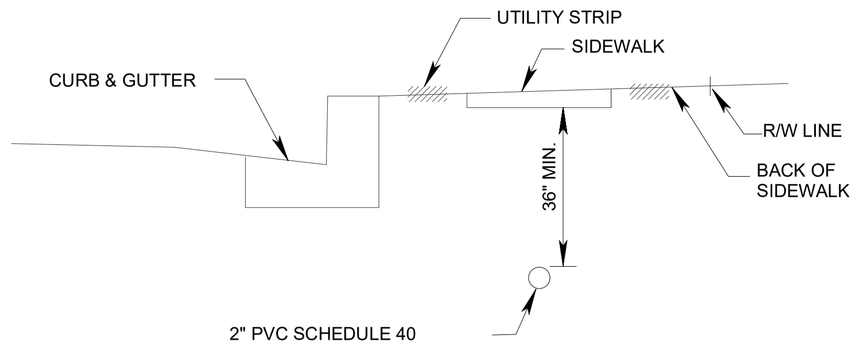
3 OPTION

CONDUIT IN UTILITY AND BACK OF SIDEWALK



4 OPTION

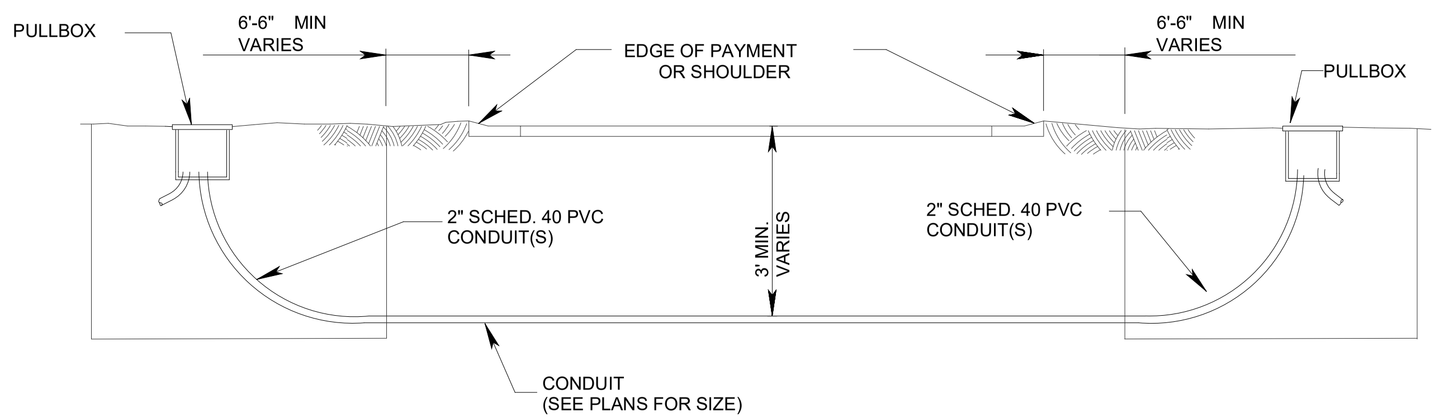
CONDUIT UNDER SIDEWALK



NOTE:
IN PLACING CONDUIT UNDER SIDEWALK REPLACEMENT OF ENTIRE SIDEWALK SECTION SHALL BE NECESSARY.

5 OPTION

CONDUIT DIRECTIONAL BORE



NOTES:

1. DIRECTIONAL BORING OPERATIONS SHALL BE DONE IN ACCORDANCE WITH THE F.D.O.T. UTILITY ACCOMODATION MANUAL.

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HIGHWAY DIVISION
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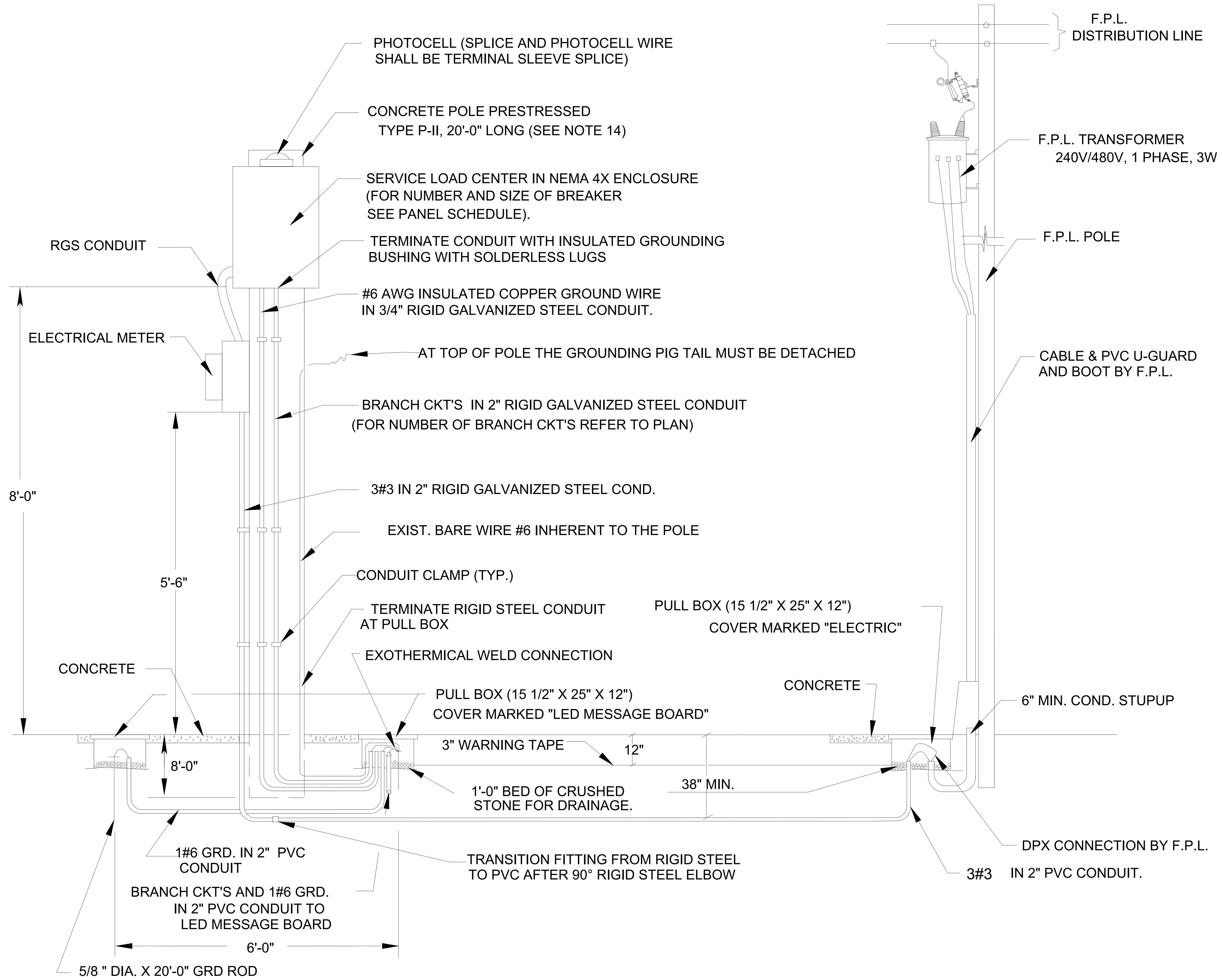
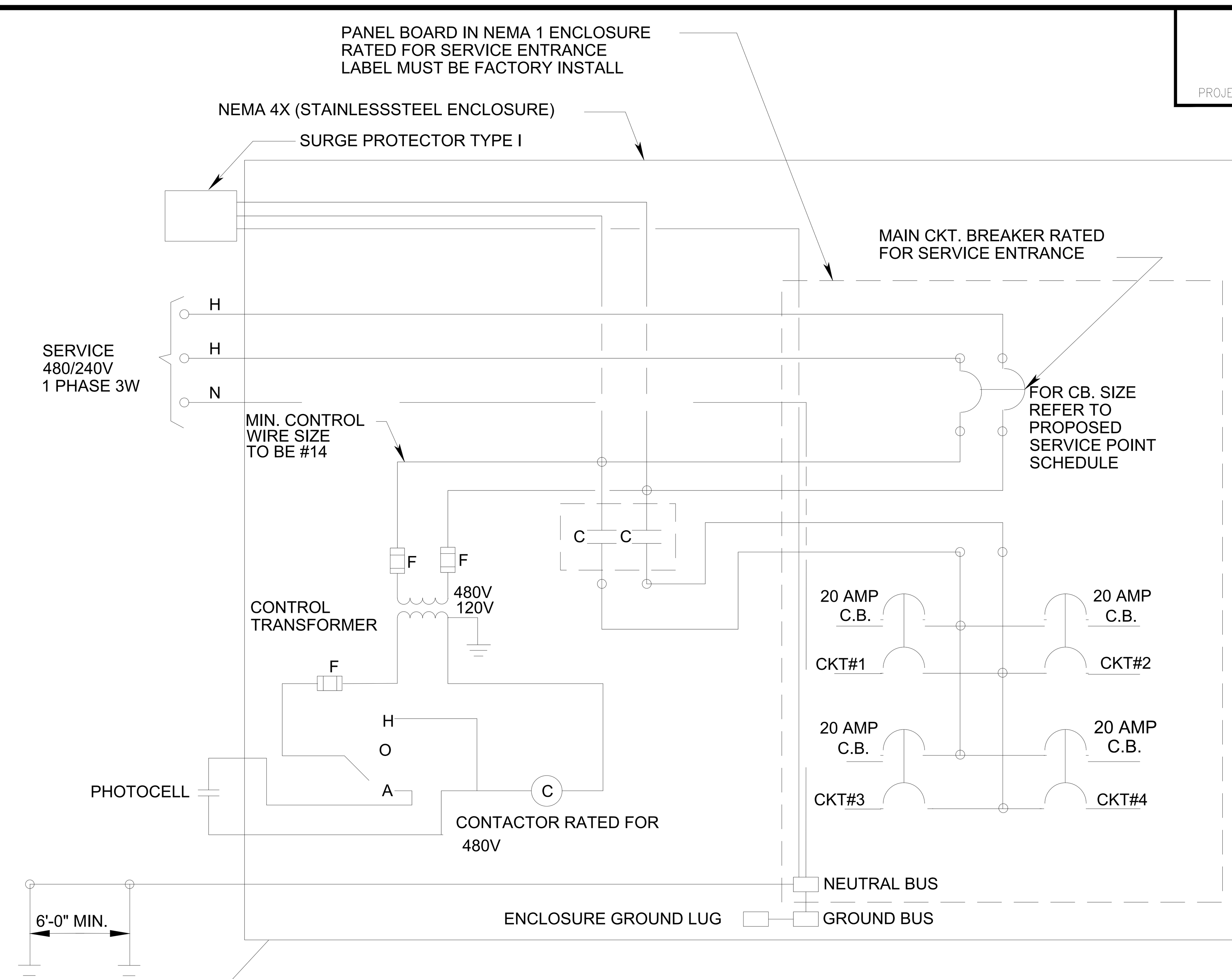
111 NW 1 ST.
MIAMI, FLORIDA 33128

CONDUIT BURIAL DETAILS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-15 OF 19



SERVICE POINT DETAIL
N.T.S

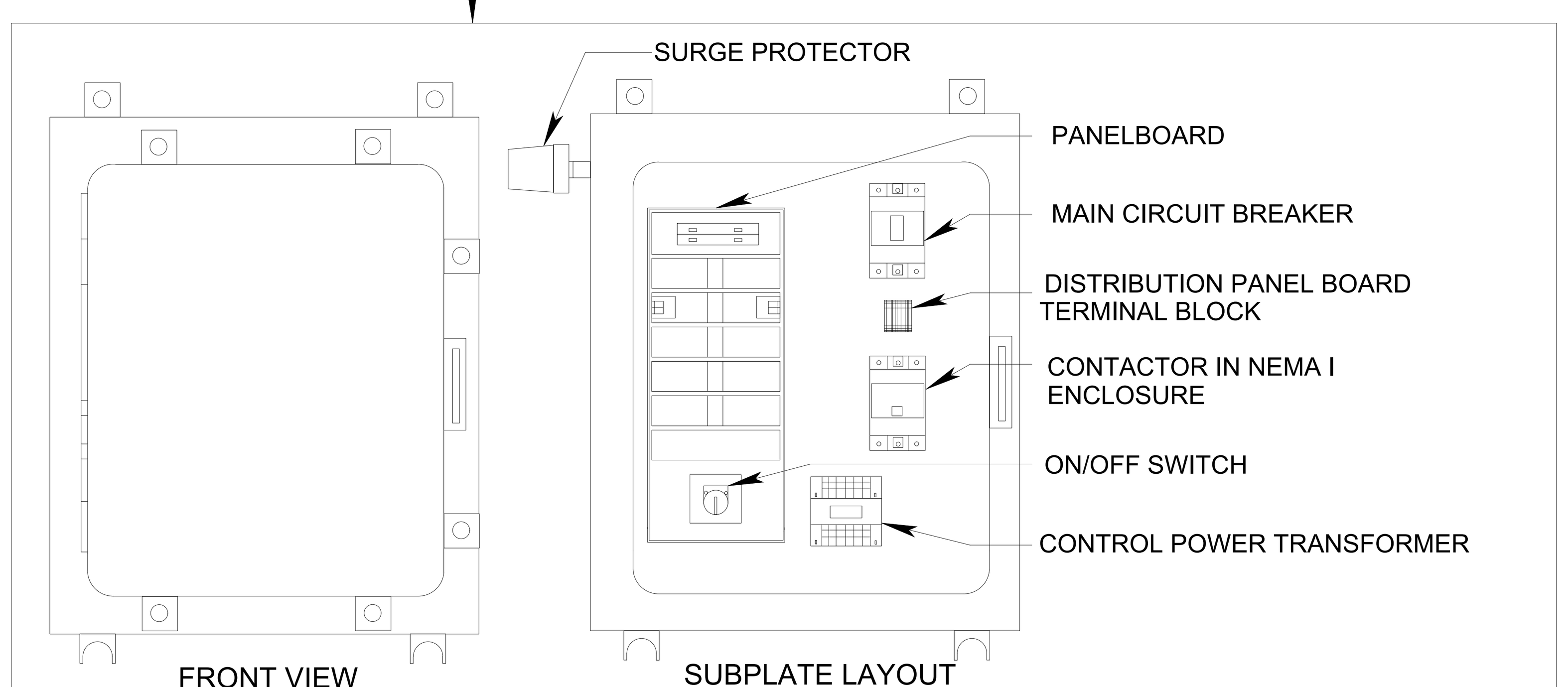


NOTES (CONT.)

12. CONDUCTORS BETWEEN THE LOAD CENTER AND FIRST POLE HAVE NO SPLICES. SPLICES ARE NOT PERMITTED AT THE LOAD CENTER PULL BOX.
13. ALL GROUND ROD SHALL BE INTERCONNECTED (USING #6 GROUND WIRE).
14. PROVIDE SUPPLEMENTARY GROUND ELECTRODE SPACED AT LEAST 6FT APART (AS PER N.E.C. REQUIREMENT).
15. ALL CONDUCTOR SHALL BE TYPE RHH-RHW-2-XLP. (OTHER TYPE OF CONDUCTOR IS NOT ALLOWED. EXCEPT GROUND WIRE WHICH SHALL BE TYPE THWN.)
16. CONTRACTOR SHALL SUBMIT STRUCTURAL CALCULATIONS OF THE POLE, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
17. AFTER OPENING THE PANEL, THE PANEL BOARD SHALL HAVE A DEAD FRONT COVER FOR THE PURPOSE OF COVERING ALL THE WIRING AND EXPOSING ONLY THE BUTTONS OF THE BREAKERS; IN COMPLIANCE WITH THE N.E.C.
18. ALL WIRES EXTERNAL TO CONTROL CABINET TO BE TERMINATED TO A TERMINAL.
19. WIRES END WITHIN CABINET TO BE IDENTIFIED WITH WIRE MARKERS.
20. DESIGNATES TERMINAL FOR CUSTOMER CONNECTIONS.

NOTES:

1. THE ENCLOSURE SHALL BE NEMA 4X (STAINLESS STEEL), POLE MOUNTED, RIGIDLY ATTACHED TO THE POLE FACE.
2. THE ENCLOSURE DOOR SHALL BE SECURED BY LOCKABLE LATCH. THE DOOR SHALL HAVE A MINIMUM OF THREE HINGES AND BE LATCHABLE. NO SCREWS TO BE USED TO ATTACH DOOR.
3. 250V MINIMUM RATING BOLT TYPE BREAKERS SHALL BE USED.
4. A 600V SURGE PROTECTOR TYPE I SHALL BE WIRED OUTSIDE THE ENCLOSURE. NO SPLICING IN ENCLOSURE.
5. A MAIN BREAKER IS REQUIRED IN ALL SERVICE PANELS WITH 2 OR MORE FEEDER BREAKERS.
6. ALL SERVICE EQUIPMENT SHALL BE U.L. APPROVED.
7. BUS BAR TO BE COPPER COATED AND HAVE A MINIMUM RATING OF 60 AMP. WHEN MAIN BREAKER EXCEEDS 60 AMPS BUS BAR TO MATCH MAIN BREAKER AMPERAGE
8. LOCATE CONTACTOR, TRANSFORMER, AND H.O.A. SWITCH INSIDE ENCLOSURE. THE ENCLOSURE TO BE SIZED TO ACCOMMODATE AS MANY BREAKERS AS CALLED FOR AND ALL OTHER SERVICE EQUIPMENT.
9. THE ENCLOSURE TO BE RIGIDLY ATTACHED TO THE POLE FACE.
10. CONTRACTOR SHALL COORDINATE WITH F.P.L. ENGINEERS FOR THE INSTALLATION OF THE F.P.L. RISER WHICH INCLUDES A CONNECTION FEE. (THIS FEE SHALL BE INCLUDED IN BID ITEM 715-7-11)
11. THE CONTRACTOR SHALL FURNISH ARC FLASH PROTECTION LABEL ON THE SERVICE DISCONNECTING MEANS. THE LABEL SHALL BE BASED OFF THE AVAILABLE FAULT CURRENT PROVIDED BY THE ELECTRIC UTILITY AND FURNISHED EQUIPMENT. THE LABEL SHALL INCLUDE INCIDENT ENERGY, ARC FLASH PROTECTION BOUNDARIES AND PERSONAL PROTECTIVE EQUIPMENT (PPE).



LIGHTING CONTROL CENTER

PANEL BOARD SCHEDULE

NEMA-1 1O,3W,240/480V, (2P - 60 A MCB)
35,000 RMS SYMETRICAL SURF-MTD

CKT NO	SERVING	KVA	AMPS	C. BKR	WIRE/CONDUCT
1	SEE VDROP SCHEDULE	1.9	4.0	20A	SEE VDROP SCHEDULE
2	SEE VDROP SCHEDULE	2.8	5.8	20A	SEE VDROP SCHEDULE
3	SEE VDROP SCHEDULE	1.6	3.5	20A	SEE VDROP SCHEDULE
4	SEE VDROP SCHEDULE	1.8	3.7	20A	SEE VDROP SCHEDULE

DISCONNECT SWITCH LOAD CALCULATION:

CONTINUOUS LOADS= 8,166VA 25%
CONT. LOAD = 2,042VA TOTAL
= 10,208VA

$$AMP = \frac{10{,}028VA}{480V} = 21A$$

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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SERVICE POINT DETAIL FOR STREET LIGHTING

PLOTTED BY: LINDER, FRANCINE DATE: 12/12/2022 2:45 PM
CREATED: 2022-10-04 - \\DI0231-PFSS01\WORKGROUP\2156\ACTIVE\215615952\ELECTRICAL\DRAWING\016_SVC-PNT-DETL-DISC-SWTCHNG

NOTES:

1. METER INSTALLATION CONNECTION AND ALL WORK RELATED TO ELECTRICAL POWER SERVICE SHALL BE COORDINATED WITH FPL UTILITY REPRESENTATIVE. COORDINATE EXACT LOCATION, EQUIPMENT DIMENSIONS, AND SERVICE INSTALLATION.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ELECTRICAL INSTALLATIONS WITH ALL OTHER TRADES TO AVOID ANY CONFLICTS.
3. ALL NEW WIRING SHALL BE INSTALLED IN CONDUIT WITHOUT EXCEPTION. MINIMUM SIZE CONDUIT SHALL BE 3/4".
4. ALL NEW CONDUCTORS SHALL BE TYPE THHN/THWN-2 90C COPPER FOR #10 AND SMALLER AND XHHW-2 FOR #8 AND LARGER.
5. THE USE OF NO. 14 AWG COPPER CONDUCTORS SHALL BE RESTRICTED TO CONTROL AND INSTRUMENT WIRING.
6. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.
7. ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW RACEWAYS OR EQUIPMENT SHALL BE PERFORMED BY A TRADESMAN EXPERIENCED IN THE WORK REQUIRED. ALL FINISHES SHALL MATCH EXISTING ADJACENT SURFACES.
8. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LOSS OR DAMAGE CAUSED BY HIM OR HIS WORKMAN TO THE LOCATION DURING THE COURSE OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH LOSS OR DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
9. THE ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE AND SERVING ELECTRICAL UTILITY CODES, ORDINANCES, RULES AND REGULATIONS. THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH OR SURPASS THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
10. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, LABOR, PLAN CHECK FEES, ETC., FOR A COMPLETE ELECTRICAL INSTALLATION UNLESS OTHERWISE NOTED ON PLANS.
11. ALL MATERIALS FURNISHED BY THE ELECTRICAL CONTRACTOR SHALL BE NEW AND OF FIRST CLASS QUALITY, SHALL BE U.L. LISTED AND FREE OF ANY DEFECTS UNLESS OTHERWISE NOTED ON PLANS.
12. ALL EQUIPMENT SHALL BE RATED FOR USE INTENDED - VOLTAGE, H.P., ETC. ALL DISCONNECT SWITCHES FURNISHED SHALL BE LOAD BREAK RATED.
13. ALL NECESSARY PERMITS REQUIRED FOR ELECTRICAL INSTALLATIONS ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND SHALL BE CONSIDERED TO BE PART OF HIS CONTRACT FEE.
14. THE ELECTRICAL CONTRACTOR SHALL FULLY GUARANTEE THE INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER AGAINST IMPERFECT WORKMANSHIP AND MALFUNCTION OF EQUIPMENT. ANY WORK FOUND TO BE DEFECTIVE WITHIN THIS PERIOD SHALL BE REPAIRED OR REPLACED PROMPTLY AT NO ADDITIONAL COST TO THE OWNER.
15. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND CANNOT SHOW EVERY CONNECTION, JUNCTION BOX, WIRE, CONDUIT, ETC. THE EXACT LOCATION AND ARRANGEMENT OF ALL PARTS SHALL BE DETERMINED AS THE WORK PROGRESSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM.
16. ALL SERVICE EQUIPMENT SHALL BE U.L. LISTED..
17. ELECTRICAL CONTRACTOR TO VERIFY AND PROVIDE EQUIPMENT GROUNDING CONDUCTOR AS PER NEC 250. ALL EXPOSED METAL PARTS ARE TO BE BONDED TO THE GROUND SYSTEM.

KEYED NOTES

(1) THE ENCLOSURE SHALL BE NEMA 4X POLE MOUNTED, RIGIDLY ATTACHED TO THE POLE FACE. THE ENCLOSURE DOOR SHALL BE LOCKABLE BY PADLOCK AND FOUR KEYS PROVIDED. NO SCREWS TO BE USED TO ATTACH DOOR.

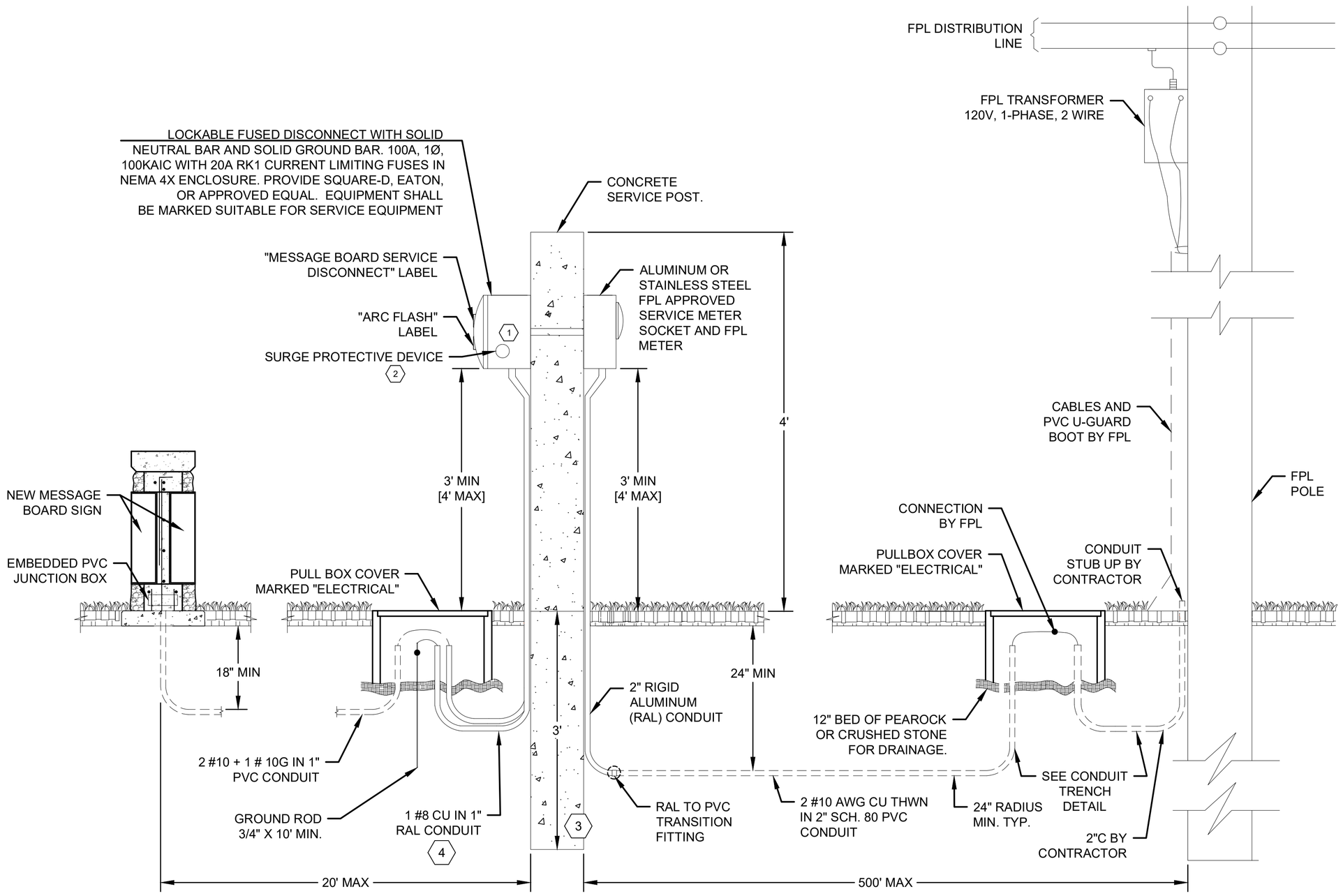
(2) SPD SHALL BE WIRED INSIDE THE ENCLOSURE. PROVIDE SQUARE D SDSA1175 OR APPROVED EQUIVALENT. CONNECT PER MANUFACTURER INSTRUCTIONS.

(3) MODIFY EMBEDMENT DEPTH AS REQUIRED BY FIELD CONDITIONS.

(4) BOND RGS CONDUIT TO GROUNDING ELECTRODE CONDUCTOR AT BOTH ENDS.

(5) NEW SIGN WITH TWO MESSAGE BOARDS (ONE ON EACH SIDE). ALPHA ECLIPSE STREET SMART 48X64 AMBER, 17MM, WITH CELLULAR RADIO.

(6) THE CONTRACTOR SHALL FURNISH ARC FLASH PROTECTION LABEL ON THE MESSAGE BOARD SERVICE DISCONNECTING MEANS. THE LABEL SHALL BE BASED OFF THE AVAILABLE FAULT CURRENT PROVIDED BY THE ELECTRIC UTILITY AND FURNISHED EQUIPMENT. THE LABEL SHALL INCLUDED INCIDENT ENERGY, ARCH FLASH PROTECTION BOUNDARIES AND PERSONAL PROTECTIVE EQUIPMENT (PPE).



SECTION
N.T.S.

PIPING LEGEND:

PVC SCHEDULE 40 CONDUIT (UNLESS OTHERWISE NOTED). REFER TO PLANS FOR SIZING.

RGS CONDUIT. REFER TO PLANS FOR SIZING AND QUANTITY.

TYPICAL SERVICE POINT DETAILS
N.T.S.

DESCRIPTION	VA
MESSAGE BOARD SIDE 1	626.4
MESSAGE BOARD SIDE 2	626.4
25% OF CONTINUOUS LOADS	313.2
TOTAL LOAD	1,566.0

AMPS@120V=13A

SERVICE 1 LOAD CALCULATION
N.T.S.

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

SERVICE POINT DETAIL FOR MESSAGE BOARD

Circuit Number	Source	Servicing	Feeder Voltage (V)	Power Factor	Segment Length (ft)	Wire Size (AWG or kcmil)	Conductor Material	Conduit Material	Parallel Sets	Load (VA)	Total Load (VA)	Total Amperage (A)	Conductor Impedance ZC (Ω/1000ft)	Segment Voltage Drop (V)	Total Voltage Drop (%)
	Utility XFMR	LC-A	240/480V, 1Ø	0.9	50	3	Cu	PVC	1	50	8788	18.31	0.2455	0.45	0.09%
1	LC-A	POLE 39	480V, 1Ø	0.9	139	6	Cu	PVC	1	156	3049	6.35	0.4632	0.82	0.26%
	POLE 39	POLE 40	480V, 1Ø	0.9	108	6	Cu	PVC	1	156	2893	6.03	0.4632	0.60	0.39%
	POLE 40	POLE 42	480V, 1Ø	0.9	184	6	Cu	PVC	1	92	2737	5.70	0.4632	0.97	0.59%
	POLE 42	POLE 44	480V, 1Ø	0.9	211	6	Cu	PVC	1	92	2645	5.51	0.4632	1.08	0.82%
	POLE 44	POLE 46	480V, 1Ø	0.9	200	6	Cu	PVC	1	92	2553	5.32	0.4632	0.99	1.02%
	POLE 46	POLE 48	480V, 1Ø	0.9	195	6	Cu	PVC	1	92	2461	5.13	0.4632	0.93	1.21%
	POLE 48	POLE 50	480V, 1Ø	0.9	208	6	Cu	PVC	1	92	2369	4.93	0.4632	0.95	1.41%
	POLE 50	POLE 52	480V, 1Ø	0.9	200	6	Cu	PVC	1	92	2276	4.74	0.4632	0.88	1.60%
	POLE 52	POLE 55	480V, 1Ø	0.9	305	6	Cu	PVC	1	92	2184	4.55	0.4632	1.29	1.86%
	POLE 55	POLE 57	480V, 1Ø	0.9	207	6	Cu	PVC	1	92	2092	4.36	0.4632	0.84	2.04%
	POLE 57	POLE 59	480V, 1Ø	0.9	190	6	Cu	PVC	1	92	2000	4.17	0.4632	0.73	2.19%
	POLE 59	POLE 61	480V, 1Ø	0.9	190	6	Cu	PVC	1	92	1907	3.97	0.4632	0.70	2.34%
	POLE 61	POLE 63	480V, 1Ø	0.9	221	6	Cu	PVC	1	92	1815	3.78	0.4632	0.77	2.50%
	POLE 63	POLE 65	480V, 1Ø	0.9	194	6	Cu	PVC	1	92	1723	3.59	0.4632	0.65	2.63%
	POLE 65	POLE 67	480V, 1Ø	0.9	149	6	Cu	PVC	1	92	1631	3.40	0.4632	0.47	2.73%
	POLE 67	POLE 70	480V, 1Ø	0.9	86	6	Cu	PVC	1	92	1539	3.21	0.4632	0.26	2.78%
	POLE 70	POLE 73	480V, 1Ø	0.9	170	6	Cu	PVC	1	92	1446	3.01	0.4632	0.47	2.88%
	POLE 73	POLE 76	480V, 1Ø	0.9	270	6	Cu	PVC	1	92	1354	2.82	0.4632	0.71	3.03%
	POLE 76	POLE 77	480V, 1Ø	0.9	110	6	Cu	PVC	1	92	1262	2.63	0.4632	0.27	3.08%
	POLE 77	POLE 78	480V, 1Ø	0.9	100	6	Cu	PVC	1	92	1170	2.44	0.4632	0.23	3.13%
	POLE 78	POLE 79	480V, 1Ø	0.9	120	6	Cu	PVC	1	92	1077	2.24	0.4632	0.25	3.18%
	POLE 79	POLE 80	480V, 1Ø	0.9	113	6	Cu	PVC	1	92	985	2.05	0.4632	0.21	3.23%
	POLE 80	POLE 81	480V, 1Ø	0.9	89	6	Cu	PVC	1	92	893	1.86	0.4632	0.15	3.26%
	POLE 81	POLE 82	480V, 1Ø	0.9	120	6	Cu	PVC	1	92	801	1.67	0.4632	0.19	3.30%
	POLE 82	POLE 83	480V, 1Ø	0.9	109	6	Cu	PVC	1	92	709	1.48	0.4632	0.15	3.33%
	POLE 83	POLE 84	480V, 1Ø	0.9	93	6	Cu	PVC	1	92	616	1.28	0.4632	0.11	3.35%
	POLE 84	POLE 85	480V, 1Ø	0.9	97	6	Cu	PVC	1	92	524	1.09	0.4632	0.10	3.37%
	POLE 85	POLE 86	480V, 1Ø	0.9	104	6	Cu	PVC	1	92	432	0.90	0.4632	0.09	3.39%
	POLE 86	POLE 87	480V, 1Ø	0.9	67	6	Cu	PVC	1	63	340	0.71	0.4632	0.04	3.40%
	POLE 87	POLE 90	480V, 1Ø	0.9	135	6	Cu	PVC	1	92	277	0.58	0.4632	0.07	3.42%
	POLE 90	POLE 92	480V, 1Ø	0.9	210	6	Cu	PVC	1	92	184	0.38	0.4632	0.07	3.43%
	POLE 92	POLE 94	480V, 1Ø	0.9	221	6	Cu	PVC	1	92	92	0.19	0.4632	0.04	3.44%
2	LC-A	POLE 38	480V, 1Ø	0.9	72	6	Cu	PVC	1	92	1752	3.65	0.4632	0.24	0.14%
	POLE 38	POLE 36	480V, 1Ø	0.9	208	6	Cu	PVC	1	92	1660	3.46	0.4632	0.67	0.28%
	POLE 36	POLE 34	480V, 1Ø	0.9	199	6	Cu	PVC	1	92	1568	3.27	0.4632	0.60	0.41%
	POLE 34	POLE 32	480V, 1Ø	0.9	230	6	Cu	PVC	1	92	1476	3.07	0.4632	0.66	0.55%
	POLE 32	POLE 30	480V, 1Ø	0.9	218	6	Cu	PVC	1	92	1383	2.88	0.4632	0.58	0.67%
	POLE 30	POLE 28	480V, 1Ø	0.9	190	6	Cu	PVC	1	92	1291	2.69	0.4632	0.47	0.77%
	POLE 28	POLE 26	480V, 1Ø	0.9	211	6	Cu	PVC	1	92	1199	2.50	0.4632	0.49	0.87%
	POLE 26	POLE 24	480V, 1Ø	0.9	215	6	Cu	PVC	1	92	1107	2.31	0.4632	0.46	0.96%
	POLE 24	POLE 22	480V, 1Ø	0.9	201	6	Cu	PVC	1	92	1014	2.11	0.4632	0.39	1.04%
	POLE 22	POLE 20	480V, 1Ø	0.9	221	6	Cu	PVC	1	92	922	1.92	0.4632	0.39	1.13%
	POLE 20	POLE 18	480V, 1Ø	0.9	201	6	Cu	PVC	1	92	830	1.73	0.4632	0.32	1.19%
	POLE 18	POLE 17	480V, 1Ø	0.9	85	6	Cu	PVC	1	92	738	1.54	0.4632	0.12	1.22%
	POLE 17	POLE 16	480V, 1Ø	0.9	105	6	Cu	PVC	1	92	646	1.34	0.4632	0.13	1.25%
	POLE 16	POLE 14	480V, 1Ø	0.9	62	6	Cu	PVC	1	92	553	1.15	0.4632	0.07	1.26%
	POLE 14	POLE 12	480V, 1Ø	0.9	70	6	Cu	PVC	1	92	461	0.96	0.4632	0.06	1.27%
	POLE 12	POLE 10	480V, 1Ø	0.9	117	6	Cu	PVC	1	92	369	0.77	0.4632	0.08	1.29%
	POLE 10	POLE 8	480V, 1Ø	0.9	187	6	Cu	PVC	1	92	277	0.58	0.4632	0.10	1.31%
	POLE 8	POLE 6	480V, 1Ø	0.9	209	6	Cu	PVC	1	92	184	0.38	0.4632	0.07	1.33%
	POLE 6	POLE 4	480V, 1Ø	0.9	167	6	Cu	PVC	1	92	92	0.19	0.4632	0.03	1.33%

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MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

VOLTAGE DROP CALCULATIONS 1

Circuit Number	Source	Servicing	Feeder Voltage (V)	Power Factor	Segment Length (ft)	Wire Size (AWG or kcmil)	Conductor Material	Conduit Material	Parallel Sets	Load (VA)	Total Load (VA)	Total Amperage (A)	Conductor Impedance ZC (Ω/1000ft)	Segment Voltage Drop (V)	Total Voltage Drop (%)
3	LC-A	POLE 37	480V, 1Ø	0.9	229	6	Cu	PVC	1	92	1752	3.65	0.4632	0.77	0.25%
	POLE 37	POLE 35	480V, 1Ø	0.9	220	6	Cu	PVC	1	92	1660	3.46	0.4632	0.70	0.40%
	POLE 35	POLE 33	480V, 1Ø	0.9	220	6	Cu	PVC	1	92	1568	3.27	0.4632	0.67	0.54%
	POLE 33	POLE 31	480V, 1Ø	0.9	228	6	Cu	PVC	1	92	1476	3.07	0.4632	0.65	0.68%
	POLE 31	POLE 29	480V, 1Ø	0.9	189	6	Cu	PVC	1	92	1383	2.88	0.4632	0.50	0.78%
	POLE 29	POLE 27	480V, 1Ø	0.9	201	6	Cu	PVC	1	92	1291	2.69	0.4632	0.50	0.89%
	POLE 27	POLE 25	480V, 1Ø	0.9	220	6	Cu	PVC	1	92	1199	2.50	0.4632	0.51	0.99%
	POLE 25	POLE 23	480V, 1Ø	0.9	215	6	Cu	PVC	1	92	1107	2.31	0.4632	0.46	1.09%
	POLE 23	POLE 21	480V, 1Ø	0.9	200	6	Cu	PVC	1	92	1014	2.11	0.4632	0.39	1.17%
	POLE 21	POLE 19	480V, 1Ø	0.9	195	6	Cu	PVC	1	92	922	1.92	0.4632	0.35	1.24%
	POLE 19	POLE 15	480V, 1Ø	0.9	276	6	Cu	PVC	1	92	830	1.73	0.4632	0.44	1.33%
	POLE 15	POLE 13	480V, 1Ø	0.9	95	6	Cu	PVC	1	92	738	1.54	0.4632	0.14	1.36%
	POLE 13	POLE 11	480V, 1Ø	0.9	143	6	Cu	PVC	1	92	646	1.34	0.4632	0.18	1.40%
	POLE 11	POLE 9	480V, 1Ø	0.9	158	6	Cu	PVC	1	92	553	1.15	0.4632	0.17	1.43%
	POLE 9	POLE 7	480V, 1Ø	0.9	193	6	Cu	PVC	1	92	461	0.96	0.4632	0.17	1.47%
	POLE 7	POLE 5	480V, 1Ø	0.9	196	6	Cu	PVC	1	92	369	0.77	0.4632	0.14	1.50%
	POLE 5	POLE 3	480V, 1Ø	0.9	181	6	Cu	PVC	1	92	277	0.58	0.4632	0.10	1.52%
	POLE 3	POLE 2	480V, 1Ø	0.9	108	6	Cu	PVC	1	92	184	0.38	0.4632	0.04	1.53%
	POLE 2	POLE 1	480V, 1Ø	0.9	113	6	Cu	PVC	1	92	92	0.19	0.4632	0.02	1.53%
4	LC-A	POLE 41	480V, 1Ø	0.9	278	6	Cu	PVC	1	92	2184	4.55	0.4632	1.17	0.34%
	POLE 41	POLE 43	480V, 1Ø	0.9	187	6	Cu	PVC	1	92	2092	4.36	0.4632	0.76	0.50%
	POLE 43	POLE 45	480V, 1Ø	0.9	224	6	Cu	PVC	1	92	2000	4.17	0.4632	0.86	0.68%
	POLE 45	POLE 47	480V, 1Ø	0.9	185	6	Cu	PVC	1	92	1907	3.97	0.4632	0.68	0.82%
	POLE 47	POLE 49	480V, 1Ø	0.9	199	6	Cu	PVC	1	92	1815	3.78	0.4632	0.70	0.96%
	POLE 49	POLE 51	480V, 1Ø	0.9	204	6	Cu	PVC	1	92	1723	3.59	0.4632	0.68	1.10%
	POLE 51	POLE 53	480V, 1Ø	0.9	180	6	Cu	PVC	1	92	1631	3.40	0.4632	0.57	1.22%
	POLE 53	POLE 54	480V, 1Ø	0.9	132	6	Cu	PVC	1	92	1539	3.21	0.4632	0.39	1.30%
	POLE 54	POLE 56	480V, 1Ø	0.9	200	6	Cu	PVC	1	92	1446	3.01	0.4632	0.56	1.42%
	POLE 56	POLE 58	480V, 1Ø	0.9	186	6	Cu	PVC	1	92	1354	2.82	0.4632	0.49	1.52%
	POLE 58	POLE 60	480V, 1Ø	0.9	200	6	Cu	PVC	1	92	1262	2.63	0.4632	0.49	1.62%
	POLE 60	POLE 62	480V, 1Ø	0.9	214	6	Cu	PVC	1	92	1170	2.44	0.4632	0.48	1.72%
	POLE 62	POLE 64	480V, 1Ø	0.9	197	6	Cu	PVC	1	92	1077	2.24	0.4632	0.41	1.81%
	POLE 64	POLE 66	480V, 1Ø	0.9	203	6	Cu	PVC	1	92	985	2.05	0.4632	0.39	1.89%
	POLE 66	POLE 68	480V, 1Ø	0.9	95	6	Cu	PVC	1	92	893	1.86	0.4632	0.16	1.92%
	POLE 68	POLE 69	480V, 1Ø	0.9	49	6	Cu	PVC	1	92	801	1.67	0.4632	0.08	1.94%
	POLE 69	POLE 71	480V, 1Ø	0.9	112	6	Cu	PVC	1	92	709	1.48	0.4632	0.15	1.97%
	POLE 71	POLE 72	480V, 1Ø	0.9	64	6	Cu	PVC	1	92	616	1.28	0.4632	0.08	1.99%
	POLE 72	POLE 74	480V, 1Ø	0.9	183	6	Cu	PVC	1	92	524	1.09	0.4632	0.19	2.03%
	POLE 74	POLE 75	480V, 1Ø	0.9	90	6	Cu	PVC	1	92	432	0.90	0.4632	0.08	2.04%
	POLE 75	POLE 88	480V, 1Ø	0.9	1251	6	Cu	PVC	1	63	340	0.71	0.4632	0.82	2.21%
	POLE 88	POLE 89	480V, 1Ø	0.9	32	6	Cu	PVC	1	92	277	0.58	0.4632	0.02	2.22%
	POLE 89	POLE 91	480V, 1Ø	0.9	172	6	Cu	PVC	1	92	184	0.38	0.4632	0.06	2.23%
	POLE 91	POLE 93	480V, 1Ø	0.9	212	6	Cu	PVC	1	92	92	0.19	0.4632	0.04	2.24%

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MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
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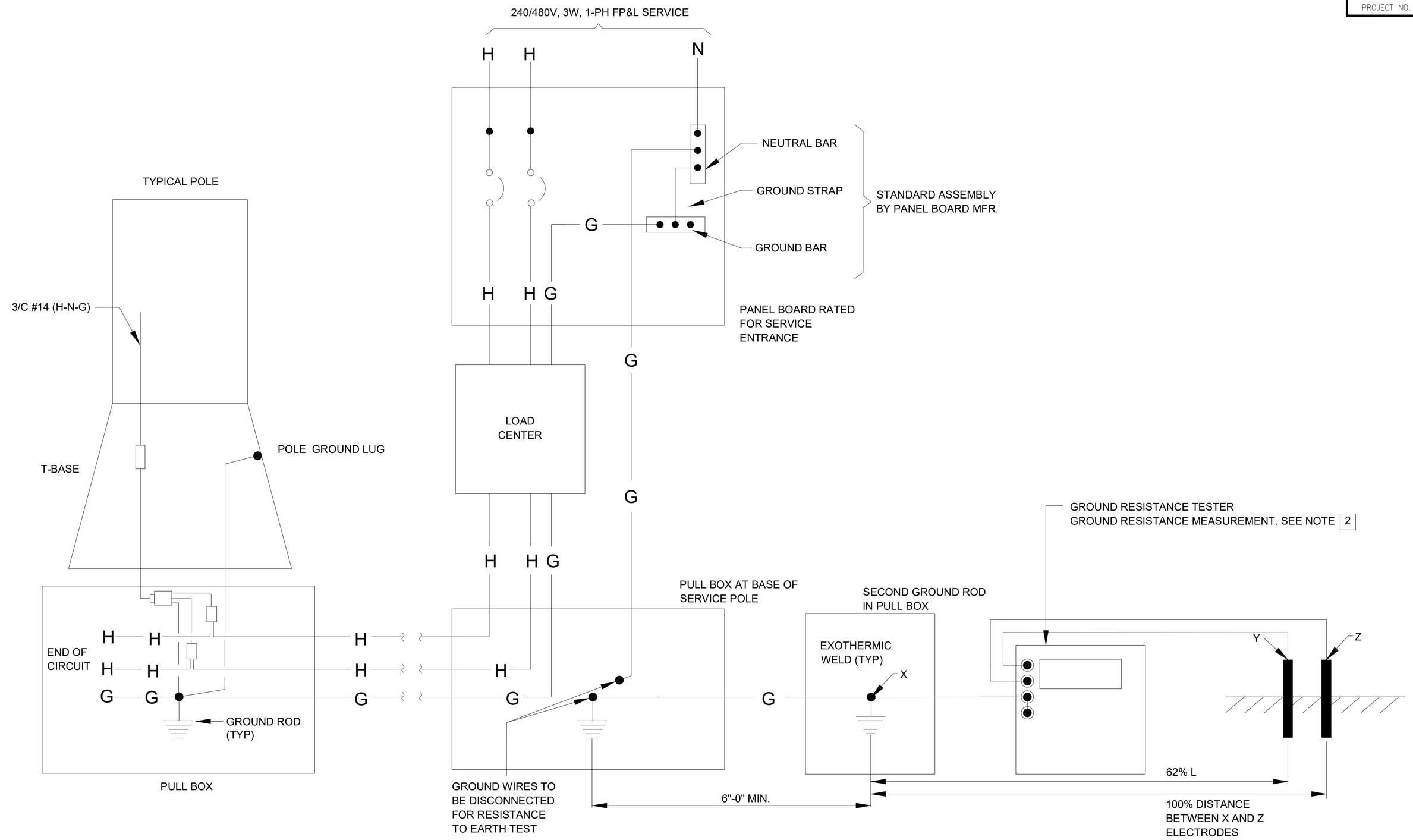
VOLTAGE DROP CALCULATIONS 2

PLOTTED BY: LINSER, FRANCINE DATE: 12/12/2022 2:46 PM
CREATED: 2022-12-09 - \\SDD31-PFPSS01\WORKGROUP\215615952\ELECTRICAL\DRAWING\D19_GRND-TEST-62P-METH.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET E-19 OF 19



RESISTANCE TO EARTH (FALL OF POTENTIAL TEST (62% METHOD)) & CONTINUITY TESTS SCHEMATIC

GROUND TEST NOTES

1. THE INTENTION OF THIS TEST IS TO DETERMINE THE RESISTANCE TO EARTH OF THE SERVICE POINT. THIS IS MORE ACCURATE THAN THE "CLAMP-ON" METHOD AND THEREFORE IT IS THE METHOD THAT SHALL BE USED UNLESS THERE IS A LACK OF SUFFICIENT REAL ESTATE.
2. USE GROUND RESISTANCE TESTER, AEMC MODEL 4620, 4630 OR APPROVED EQUAL, CALIBRATED WITHIN THE PAST 180 DAYS. RESISTANCE-TO-GROUND MEASUREMENT ABOVE 25 OHMS SHALL BE CONSIDERED INADEQUATE.
3. ELECTRICAL CONTRACTOR SHALL SUBMIT CERTIFICATION LETTER CONFIRMING 1,2 & 3 INCLUDING READING, CALCULATION AND RESULTS.

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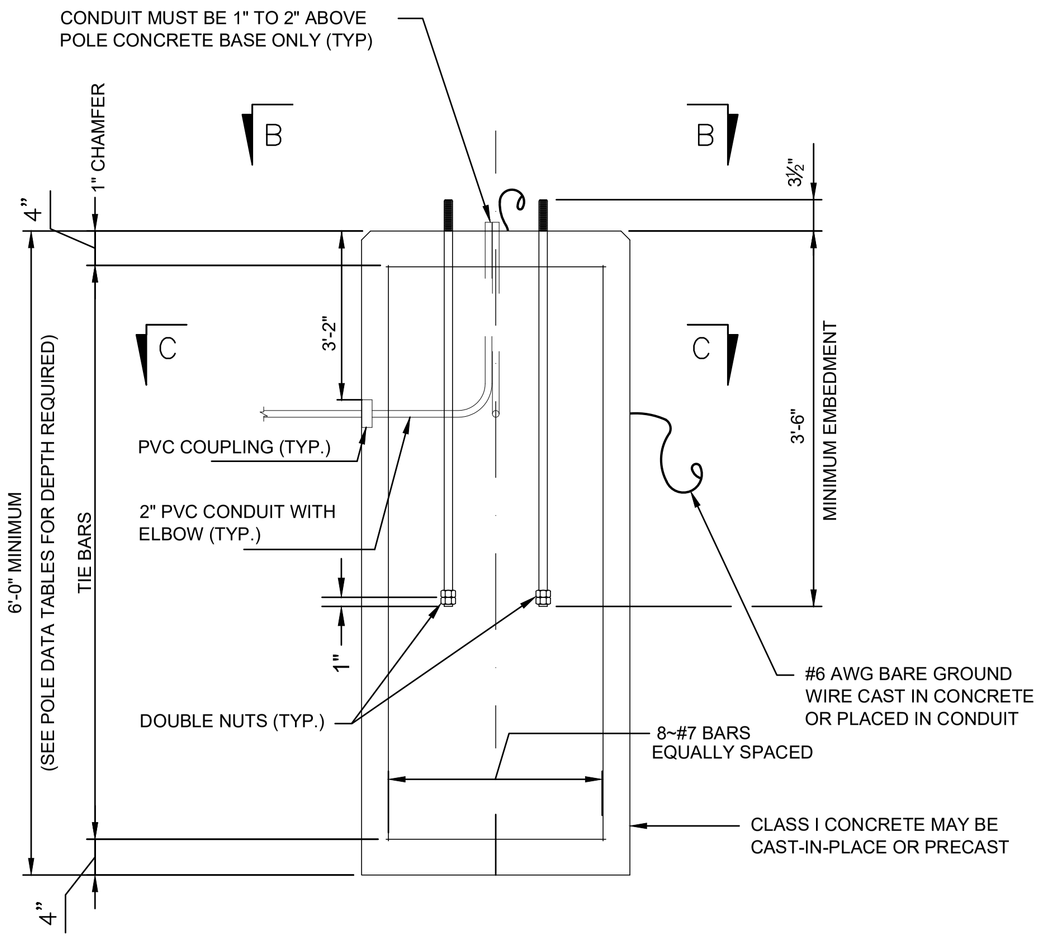
GROUND TEST 62% METHOD

PLOTTED BY: LINDER, FRANCINE DATE: 12/1/2022 2:47 PM
DESIGNED: 2022-10-04 - \\USR031-PFPSS01\WORKSPACE\P 21561\ACTIVE\215615952\ELECTRICAL\DRAWING\020_FDTN-DETL.DWG

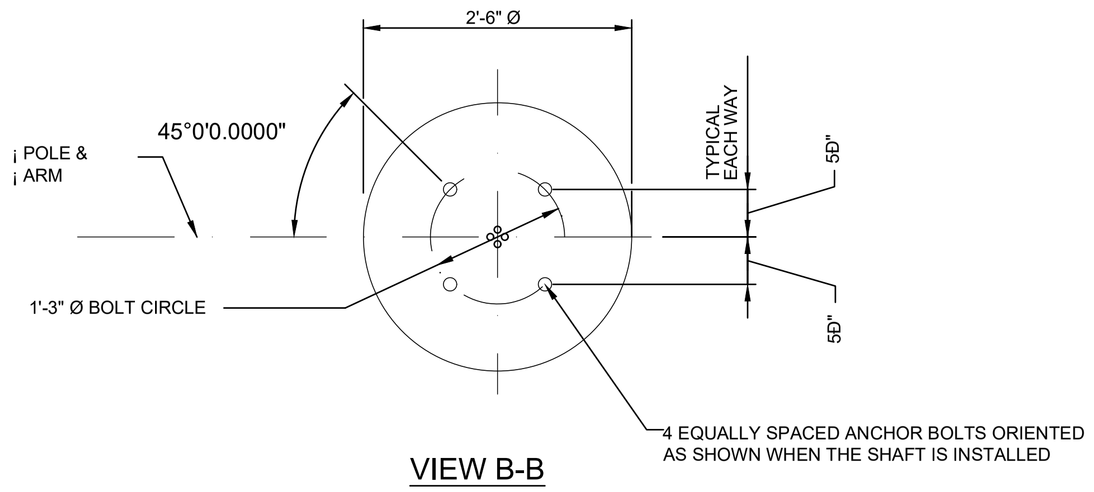
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET S-01 OF 2



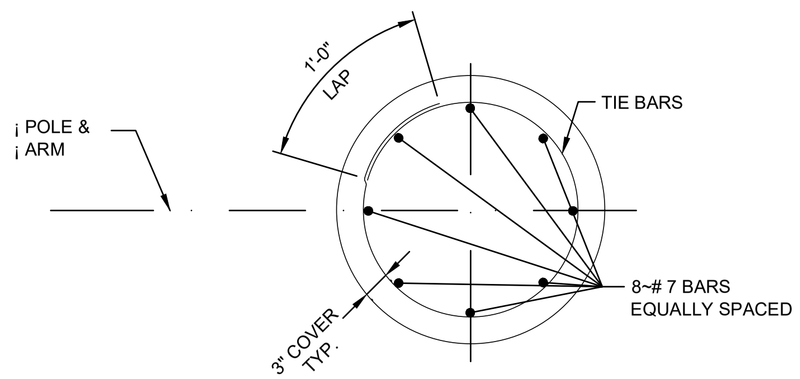
FOUNDATION

DRILLED SHAFT FOUNDATION DETAILS

#4 TIE BARS @ 12" CENTERS (MAX.) OR D10 (OR W10) SPIRAL @ 6" PITCH, 3 FLAT TURNS TOP AND 1 FLAT TURN BOTTOM.



VIEW B-B



SECTION C-C

FOUNDATION TABLE W/ARM		
WIND SPEED (MPH)	DESIGN MOUNTING HEIGHT (FT)	TOTAL DEPTH (FT)
160	15	*
160	40	*

*THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, WITH DETAILS AND CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. THE LIGHT POLES AND FOUNDATIONS SHALL MEET FLORIDA BUILDING CODE REQUIREMENTS AND THE WIND LOAD REQUIREMENTS PROVIDED HEREIN.

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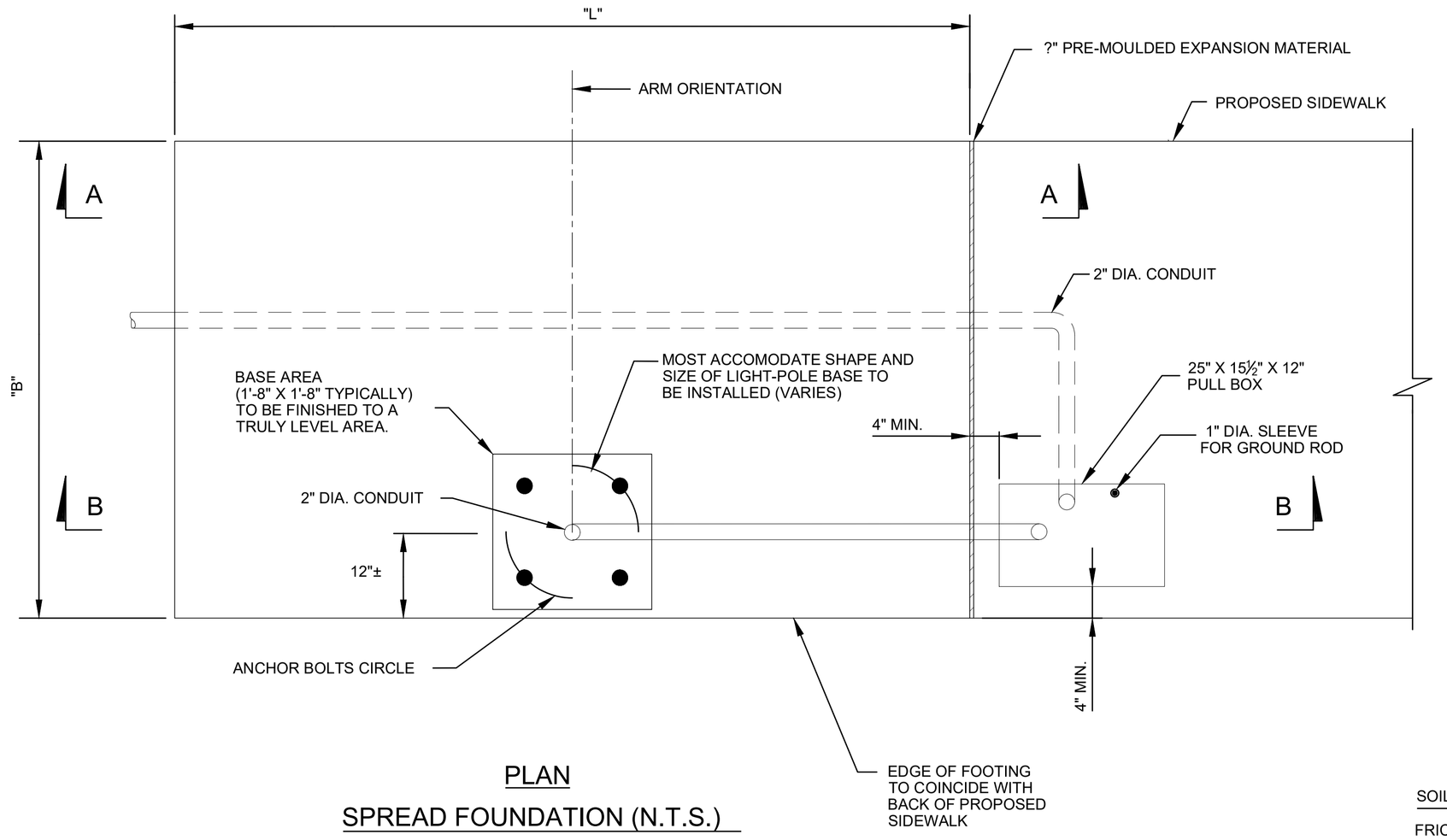
FOUNDATION DETAIL

PLOTTED BY: LINSER, FRANCINE DATE: 12/12/2022 2:47 PM
DESKED: 2022-12-08 - \\US0231-PPFS001\WORKGROUP*2156\ACTIVE\215615952\ELECTRICAL\DRAWINGS\101_SPRD-DETL.DWG

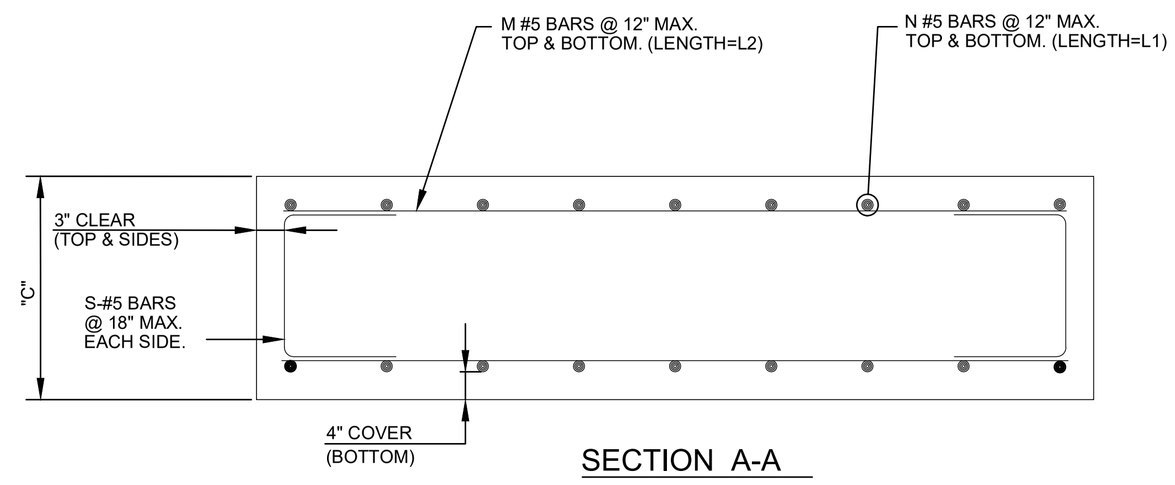
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET S-02 OF 2



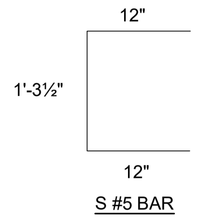
PLAN

SPREAD FOUNDATION (N.T.S.)

NOTE:
SPREAD FOUNDATION SHALL BE ENGRAVED WITH THIS WARNING: "FOUNDATION".



SECTION A-A

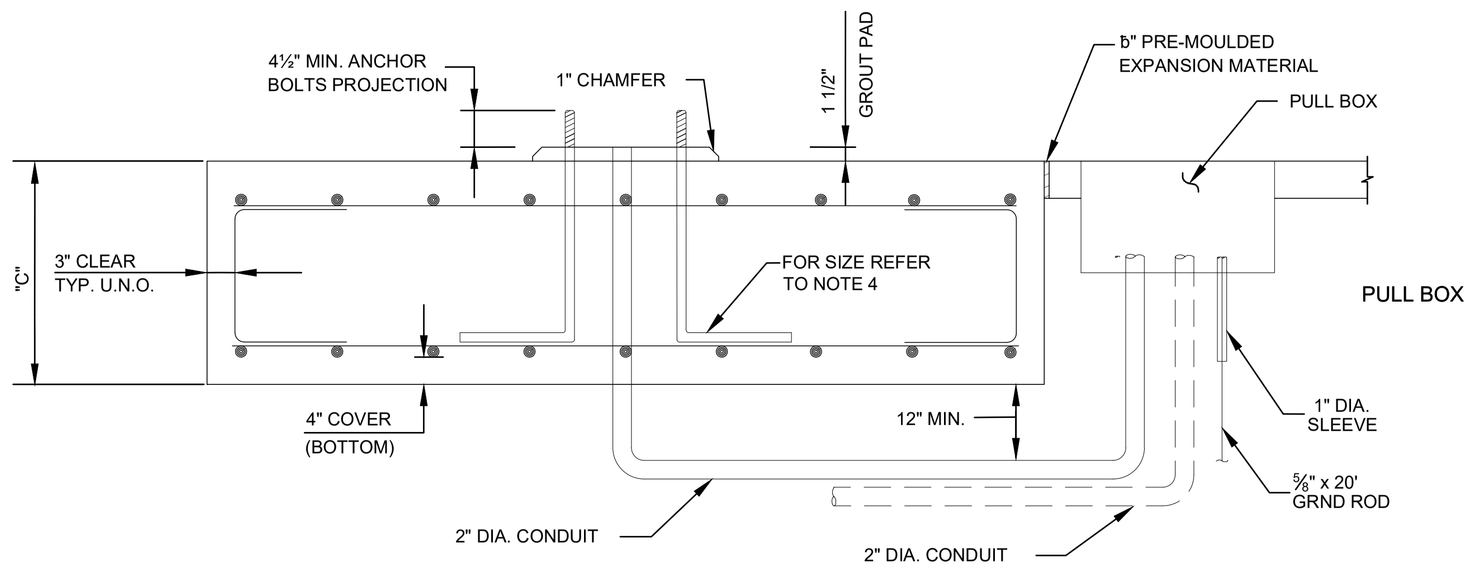


S #5 BAR

SOIL DESIGN PARAMETERS:

FRICTION ANGLE : *
SOIL DRY UNIT WEIGHT : *
SOIL SUBMERGED UNIT WEIGHT : *
ALLOWABLE BEARING CAPACITY: *
ULTIMATE BEARING CAPACITY : *
PERFORMANCE FACTOR: *

* TO BE PROVIDED BY GEOTECHNICAL ENGINNER



SECTION B-B

(CONTRACTOR MAY ADJUST BARS AS REQUIRED TO AVOID CONFLICT WITH CONDUITS)

TABLE OF SPREAD FOOTING PARAMETERS

POLE NO.	STATION	FOOTING TYPE	DIM. L	DIM. B	DIM. C	N	M	L1	L2	S
10-X	10	1	*	*	*	*	*	*	*	*

NOTE: N & M INCLUDE TOP AND BOTTOM STEEL MATS

* THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, WITH DETAILS AND CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. THE LIGHT POLES AND FOUNDATIONS SHALL MEET FLORIDA BUILDING CODE REQUIREMENTS AND THE WIND LOAD REQUIREMENTS PROVIDED HEREIN.

NOTES:

1. USE SPREAD FOUNDATION ONLY IF/WHERE REQUIRED TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES.
2. DESIGN SPECIFICATIONS:
   - 160 MPH WIND SPEED
   - FDOT STRUCTURES MANUAL, JANUARY 2023
   - AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS (6TH ED)
   - WITH INTERIM REVISIONS AND AS MODIFIED BY FDOT
3. CONCRETE: CLASS II CONCRETE F'C=3400 PSI 28 DAYS MINIMUM COMP. STRENGTH.
4. SOIL SHALL BE CAPABLE OF WITHSTANDING BEARING PRESSURE.
5. ALL CONDUITS SHALL BE P.V.C. SCHEDULE 40.
6. WORK THIS SHEET IN CONJUNCTION WITH LIGHTING PLANS.
7. CONDUIT SHALL NOT BE EMBEDDED IN FOOTING EXCEPT AS SHOWN IN SECTION B-B.

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MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
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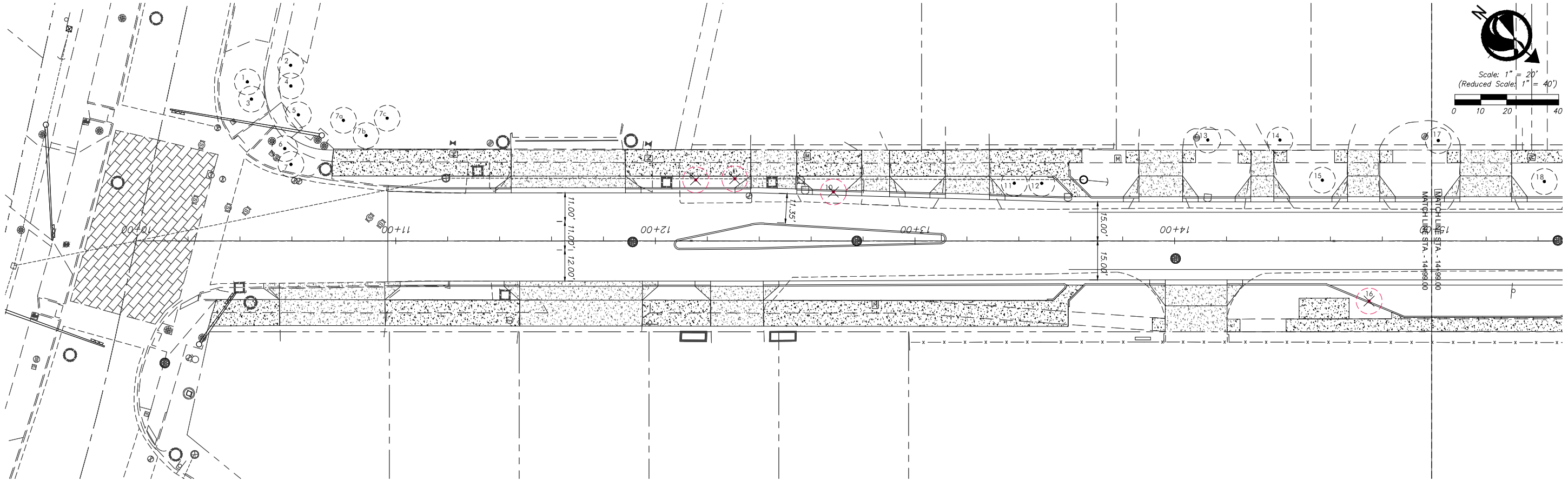
SPREAD FOUNDATION

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-1 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
1	Jatropha integerrima	Jatropha	6	6	3	X			
2	Jatropha integerrima	Jatropha	6	6	3	X			
3	Sabal palmetto	Sabal Palm	10	10	10	X			
4	Sabal palmetto	Sabal Palm	15	10	10	X			
5	Sabal palmetto	Sabal Palm	15	10	10	X			
6	Sabal palmetto	Sabal Palm	10	10	10	X			
7	Jatropha integerrima	Jatropha	6	6	3	X			
7A	Roystonea regia	Royal Palm	20	10	10	X			
7B	Roystonea regia	Royal Palm	20	10	10	X			
7C	Roystonea regia	Royal Palm	20	10	10	X			
8	Syagrus romanzoffiana	Queen Palm	10	10	10		X		N/A
9	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
10	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
11	Eriobotrya japonica	Loquat	10	8	4	X			
12	Eriobotrya japonica	Loquat	10	8	4	X			
13	DEAD						X		N/A
14	Sabal palmetto	Sabal Palm	12	12	Multi	X			
15	Cocos nucifera	Coconut Palm	15	10	10	X			
16	Roystonea regia	Royal Palm	20	10	10		X		79

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

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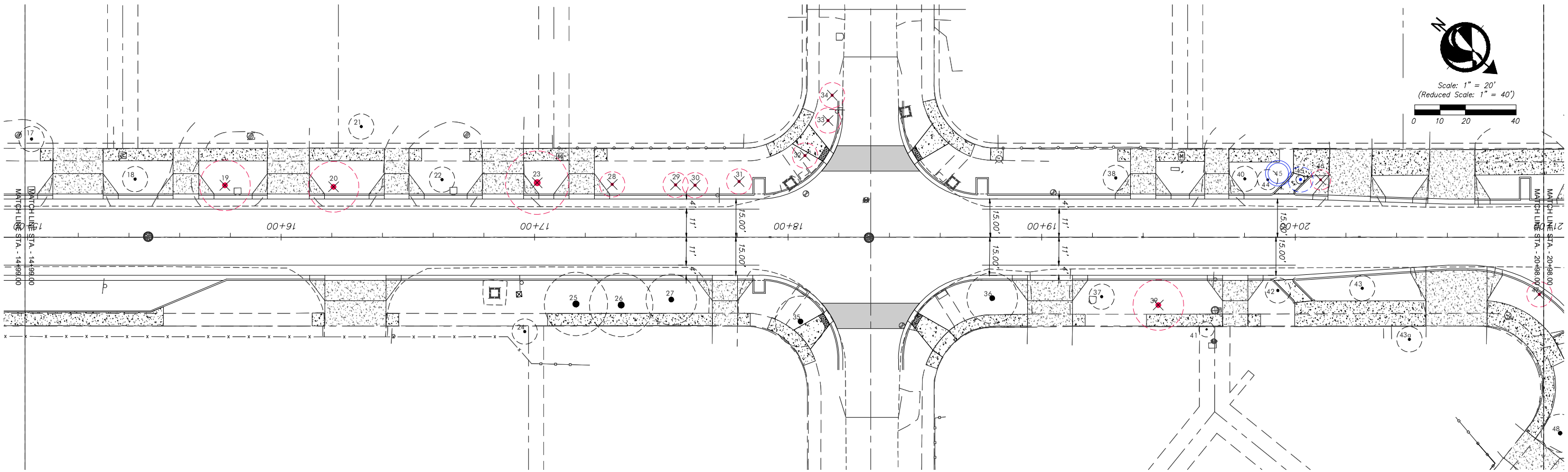
SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: HEIN, SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\GSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-2 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
17	Adonidia merrillii	Christmas Palm	8	10	Multi	X			
18	Roystonea regia	Royal Palm	35	10	10	X			
19	Bucida buceras	Black Olive	30	20	31		X		628
20	Swietenia mahagoni	Mahogany	30	20	32		X		628
21	Phoenix canariensis	Canary Island Date Palm	6	10	10	X			
22	Cocos nucifera	Coconut Palm	35	10	10	X			
23	Swietenia mahagoni	Mahogany	25	25	25.2		X		982
24	Filicium decipiens	Japanese Fern Tree	20	15	Multi	X			
25	Swietenia mahagoni	Mahogany	30	30	29	X			
26	Swietenia mahagoni	Mahogany	30	25	26.5	X			
27	Swietenia mahagoni	Mahogany	20	20	20+18	X			
28	Syagrus romanzoffiana	Queen Palm	20	10	10		X		N/A
29	Syagrus romanzoffiana	Queen Palm	12	10	10		X		N/A
30	Syagrus romanzoffiana	Queen Palm	10	10	10		X		N/A
31	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
32	Syagrus romanzoffiana	Queen Palm	12	10	10		X		N/A
33	Syagrus romanzoffiana	Queen Palm	8	10	10		X		N/A
34	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
35	Swietenia mahagoni	Mahogany	30	20	26.5	X			
36	Swietenia mahagoni	Mahogany	30	20	26	X			
37	Roystonea regia	Royal Palm	35	10	10	X			
38	Roystonea regia	Royal Palm	35	10	10	X			
39	Bauhinia blakeana	Hong Kong Orchid	30	25	20+21+21		X		N/A
40	Roystonea regia	Royal Palm	40	10	10	X			
41	Bursera simaruba	Gumbo-Limbo	12	6	6	X			
42	Ptychosperma elegans	Solitaire Palm	12	10	Multi	X			
43	Ptychosperma elegans	Solitaire Palm	12	10	10	X			
43a	Cocos nucifera	Coconut Palm	20	10	10	X			
44	Coccoloba uvifera	Sea Grape	10	4	Multi	X			
45	Plumeria speciosa	Frangi Pani	12	6	Multi			X	
46	Coccoloba uvifera	Sea Grape	10	5	Multi		X		20
47	Roystonea regia	Royal Palm	40	10	10		X		79

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd, Suite 900
Coral Gables, Florida 33134
www.stantec.com

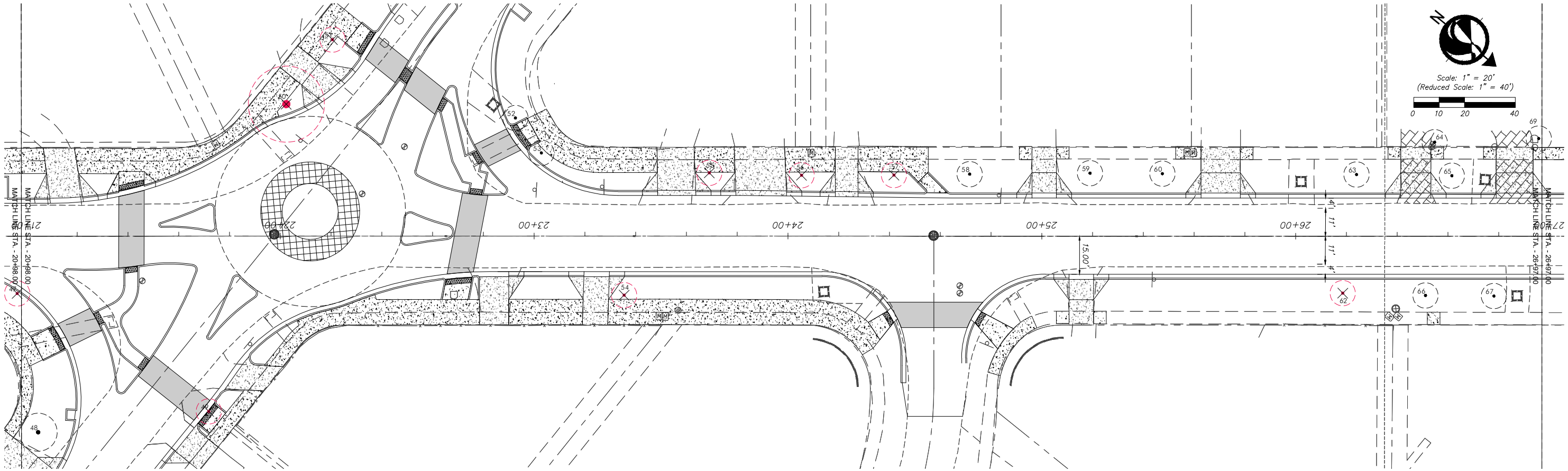
	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - D:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\DSSA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-3 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE			DISPOSITION			MITIGATION
			HT.(ft.)	SPD.(ft.)	DBH.(in.)	REMAIN	REMOVE	TRANSPL.	S.F. CANOPY
48	Ficus benjamina	Benjamin Fig	20	15	Multi	X			
49	Dypsis decaryi	Triangle Palm	15	10	10		X		79
50	Swietenia mahagoni	Mahogany	35	35	25		X		1924
51	Swietenia mahagoni	Mahogany	20	8	6		X		50
52	Cocos nucifera	Coconut Palm	15	10	10	X			
53	Cocos nucifera	Coconut Palm	15	10	10	X			
54	Roystonea regia	Royal Palm	35	10	10		X		79
55	Phoenix canariensis	Canary Island Date Palm	10	15	14		X		177
56	Roystonea regia	Royal Palm	35	10	10		X		79
57	Roystonea regia	Royal Palm	35	10	10		X		79
58	Roystonea regia	Royal Palm	35	10	10	X			
59	Roystonea regia	Royal Palm	30	10	10	X			
60	Roystonea regia	Royal Palm	40	10	10	X			
61	Intentionally omitted								
62	Ficus benjamina	Benjamin Fig	25	15	Multi		X		N/A
63	Roystonea regia	Royal Palm	35	10	10	X			
64	Adonidia merrillii	Christmas Palm	10	10	3	X			
65	Roystonea regia	Royal Palm	30	10	10	X			
66	Roystonea regia	Royal Palm	45	10	10	X			
67	Roystonea regia	Royal Palm	30	10	10	X			
68	Intentionally omitted								
69	Adonidia merrillii	Christmas Palm	10	10	3	X			

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

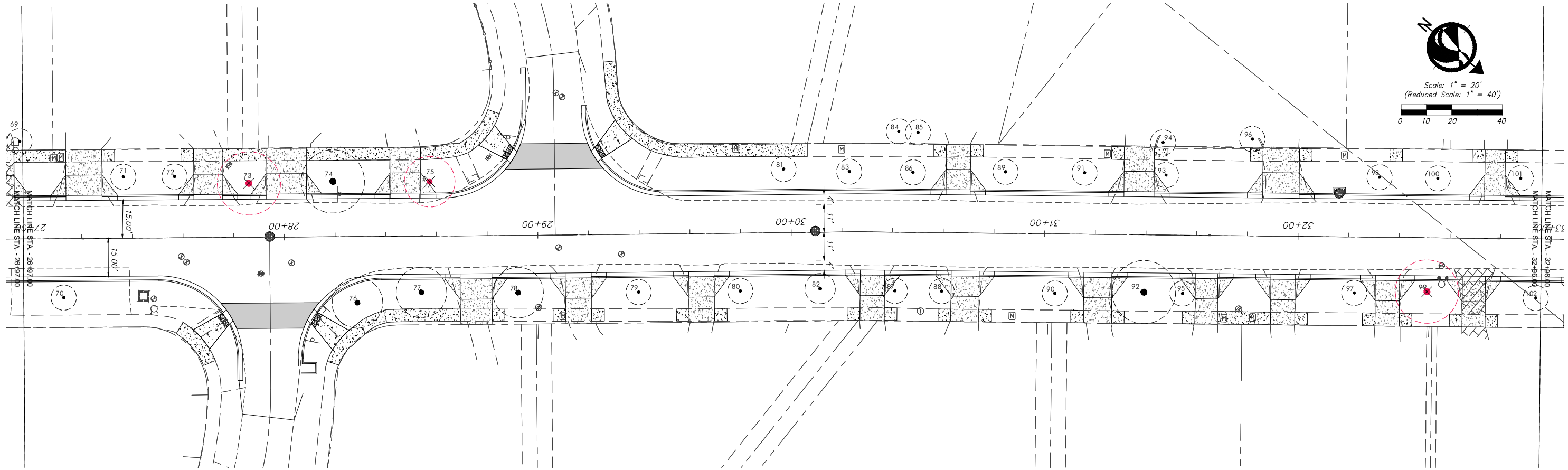
SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - D:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\OSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET L-4 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
70	Roystonea regia	Royal Palm	35	10	10	X			
71	Roystonea regia	Royal Palm	30	10	10	X			
72	Roystonea regia	Royal Palm	35	10	10	X			
73	Bucida buceras	Black Olive	25	30	22		X		1414
74	Bucida buceras	Black Olive	25	30	21.6	X			
75	Bucida buceras	Black Olive	25	25	18		X		982
76	Bucida buceras	Black Olive	30	20	27	X			
77	Bucida buceras	Black Olive	25	20	20+18+7	X			
78	Bucida buceras	Black Olive	25	20	26	X			
79	Roystonea regia	Royal Palm	35	10	10	X			
80	Roystonea regia	Royal Palm	35	10	10	X			
81	Roystonea regia	Royal Palm	30	10	10	X			
82	Persea americana	Avocado	12	10	14	X			
83	Roystonea regia	Royal Palm	35	10	10	X			
84	Syagrus romanzoffiana	Queen Palm	12	10	10	X			
85	Syagrus romanzoffiana	Queen Palm	12	10	10	X			
86	Roystonea regia	Royal Palm	35	10	10	X			
87	Roystonea regia	Royal Palm	35	10	10	X			
88	Roystonea regia	Royal Palm	35	10	10	X			
89	Roystonea regia	Royal Palm	40	10	10	X			
90	Roystonea regia	Royal Palm	40	10	10	X			
91	Roystonea regia	Royal Palm	35	10	10	X			
92	Delonix Regia	Royal Ponciana	20	25	20	X			
93	Roystonea regia	Royal Palm	35	10	10	X			
94	Adonidia merrillii	Christmas Palm	12	10	Multi	X			
95	Roystonea regia	Royal Palm	25	10	10	X			
96	Adonidia merrillii	Christmas Palm	15	10	Multi	X			
97	Cocos nucifera	Coconut Palm	25	10	10	X			
98	Roystonea regia	Royal Palm	25	10	10	X			
99	Quercus virginiana	Live Oak	30	25	22		X		982
100	Roystonea regia	Royal Palm	30	10	10	X			
101	Roystonea regia	Royal Palm	30	10	10	X			
102	Roystonea regia	Royal Palm	30	10	10	X			

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

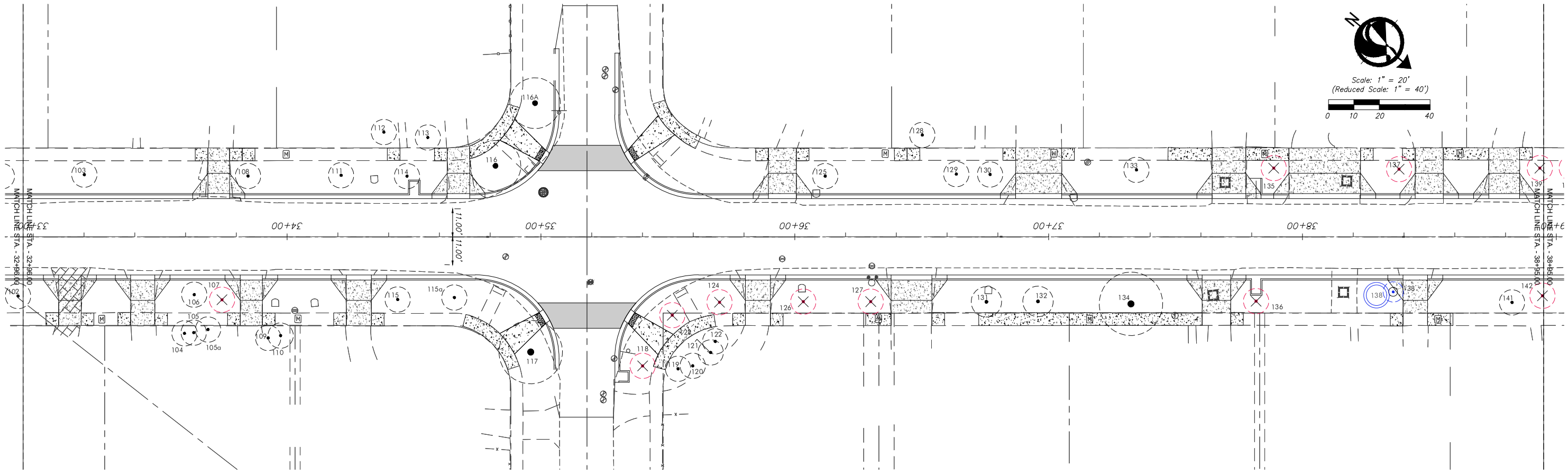
SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - G:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\DSUA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-5 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft)	SIZE SPD.(ft)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL	MITIGATION S.F. CANOPY
103	Roystonea regia	Royal Palm	30	10	10	X			
104	Washingtonia robusta	Mexican Fan Palm	4	10	10	X			
105	Phoenix canariensis	Canary Island Date Palm	20	10	10	X			
105a	Washingtonia robusta	Mexican Fan Palm	4	10	10	X			
106	Cocos nucifera	Coconut Palm	20	10	10	X			
107	Syagrus romanzoffiana	Queen Palm	8	10	10		X		N/A
108	Roystonea regia	Royal Palm	25	10	10	X			
109	Dypsis lutescens	Areca Palm	20	10	Multi	X			
110	Dypsis lutescens	Areca Palm	20	10	Multi	X			
111	Roystonea regia	Royal Palm	40	10	10	X			
112	Cocos nucifera	Coconut Palm	40	10	10	X			
113	Cocos nucifera	Coconut Palm	40	10	10	X			
114	Roystonea regia	Royal Palm	30	10	10	X			
115	Cocos nucifera	Coconut Palm	12	10	10	X			
115a	Cocos nucifera	Coconut Palm	10	10	10	X			
116	Quercus virginiana	Live Oak	20	20	17	X			
116A	Quercus virginiana	Live Oak	20	20	12	X			
117	Delonix Regia	Royal Poinciana	25	25	27	X			
118	Syagrus romanzoffiana	Queen Palm	20	10	10		X		N/A
119	Sabal palmetto	Sabal Palm	40	10	10	X			
120	Sabal palmetto	Sabal Palm	12	10	10	X			
121	Sabal palmetto	Sabal Palm	12	10	10	X			
122	Sabal palmetto	Sabal Palm	40	10	10	X			
123	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
124	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
125	Roystonea regia	Royal Palm	45	10	10	X			
126	Syagrus romanzoffiana	Queen Palm	12	10	10		X		N/A
127	Syagrus romanzoffiana	Queen Palm	12	10	10		X		N/A
128	Roystonea regia	Royal Palm	40	10	10	X			
129	Tabebuia heptaphylla	Pink Trumpet Tree	20	10	13.5	X			
130	Tabebuia heptaphylla	Pink Trumpet Tree	15	10	5.6+6	X			
131	Quercus virginiana	Live Oak	15	12	15.4	X			
132	Quercus virginiana	Live Oak	15	12	16.5	X			
133	Sabal palmetto	Sabal Palm	15	10	10	X			
134	Bursera simaruba	Gumbo limbo	15	30	Multi	X			
135	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
136	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
137	Syagrus romanzoffiana	Queen Palm	15	10	10		X		N/A
138	Bulnesia arborea	Verawood	8	6	2+2+3+3.2+4			X	
139	Syagrus romanzoffiana	Queen Palm	20	10	10		X		N/A
140	Syagrus romanzoffiana	Queen Palm	20	10	10		X		N/A
141	Adonidia merrillii	Christmas Palm	12	10	Multi	X			
142	Syagrus romanzoffiana	Queen Palm	20	10	10		X		N/A

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

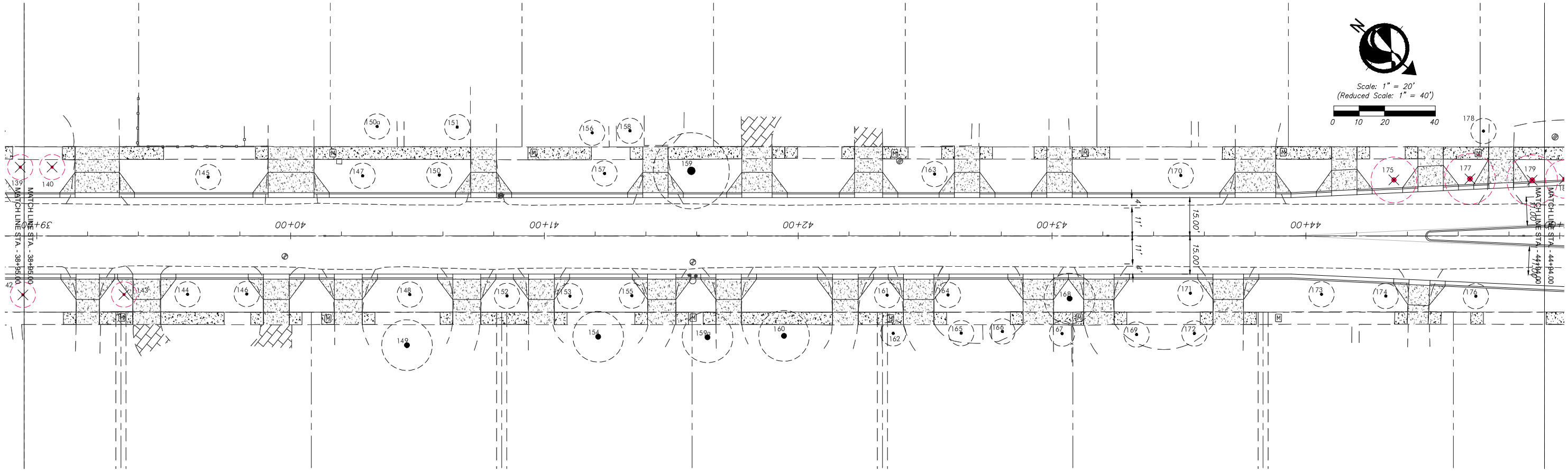
	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN
-FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - G:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\GSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-6 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
143	Roystonea regia	Royal Palm	30	10	10		X		79
144	Roystonea regia	Royal Palm	35	10	10	X			
145	Roystonea regia	Royal Palm	30	10	10	X			
146	Roystonea regia	Royal Palm	35	10	10	X			
147	Roystonea regia	Royal Palm	25	10	10	X			
148	Roystonea regia	Royal Palm	35	10	10	X			
149	Bucida buceras	Black Olive	35	20	27	X			
150	Roystonea regia	Royal Palm	35	10	10	X			
150A	Cocos nucifera	Coconut Palm	20	10	10	X			
151	Dypsgrus romanzoffiana	Queen Palm	15	10	10	X			
152	Roystonea regia	Royal Palm	35	10	10	X			
153	Roystonea regia	Royal Palm	40	10	10	X			
154	Delonix Regia	Royal Poinciana	25	25	20	X			
155	Roystonea regia	Royal Palm	30	10	10	X			
156	Adonidia merrillii	Christmas Palm	12	10	10	X			
157	Roystonea regia	Royal Palm	40	10	10	X			
158	Adonidia merrillii	Christmas Palm	12	10	10	X			
159a	Schefflera actinophylla	Umbrella Tree	30	20	28.2	X			
159	Ficus aurea	Strangler Fig	35	25	49.8	X			
160	Bischofia javanica	Bishopwood	30	20	38	X			
161	Roystonea regia	Royal Palm	30	10	10	X			
162	Ficus aurea	Strangler Fig	35	25	49.8	X			
163	Roystonea regia	Royal Palm	25	10	10	X			
164	Roystonea regia	Royal Palm	25	10	10	X			
165	Adonidia merrillii	Christmas Palm	8	10	5	X			
166	Adonidia merrillii	Christmas Palm	6	10	5	X			
167	Adonidia merrillii	Christmas Palm	15	10	Multi	X			
168	Swietenia mahagani	Mahogany	25	20	22.7	X			
169	Adonidia merrillii	Christmas Palm	7	10	Multi	X			
170	Roystonea regia	Royal Palm	35	10	10	X			
171	Roystonea regia	Royal Palm	30	10	10	X			
172	Adonidia merrillii	Christmas Palm	7	10	Multi	X			
173	Roystonea regia	Royal Palm	30	10	10	X			
174	Roystonea regia	Royal Palm	30	10	10	X			
175	Bucida buceras	Black Olive	20	18	16.7		X		254
176	Roystonea regia	Royal Palm	25	10	10	X			
177	Bucida buceras	Black Olive	20	18	16.7		X		254
178	Cocos nucifera	Coconut Palm	25	10	10	X			
179	Bucida buceras	Black Olive	20	20	18		X		628

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN
-FRANJO ROAD - 100% CDs-

PLOTTED BY: KEN, SEMLER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\CSSA SHEETS.DWG

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

Stantec
301 Yamato Road, Boca Raton, Florida 33431
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NAME	K.S.			
DATE	2-10-2022			
BY				

MIAMI–DADE

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN
-FRANJO ROAD - 100% CDs-

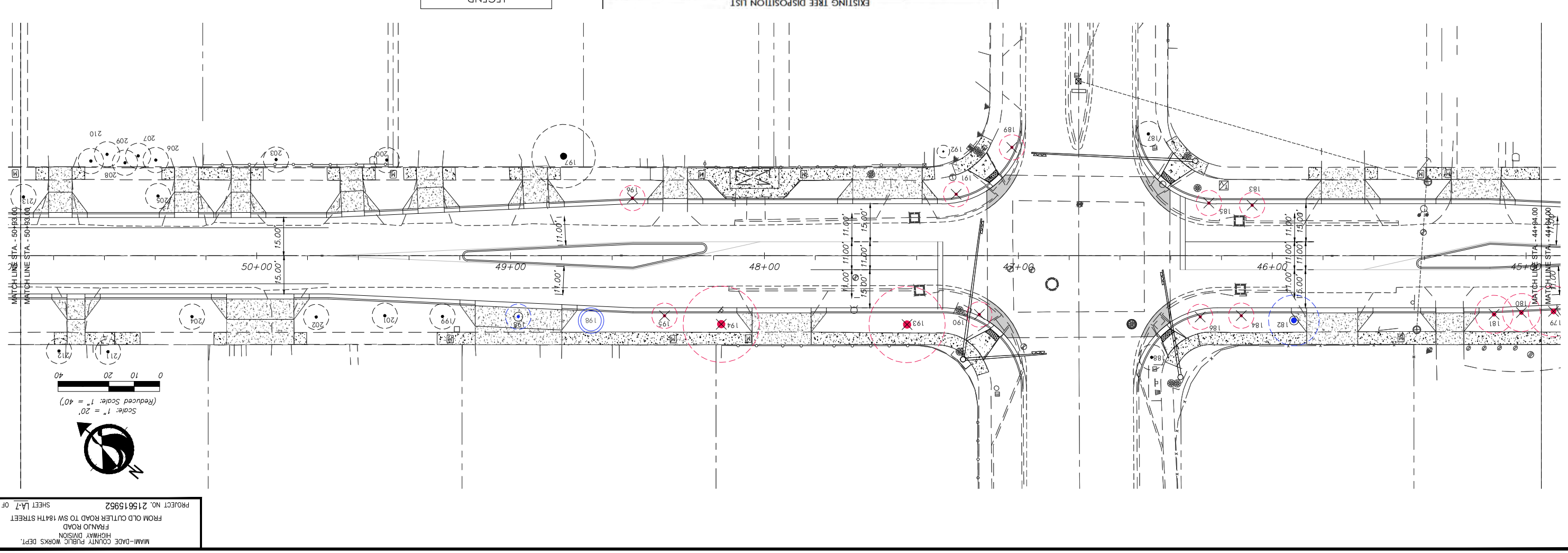
PLOTTED BY: KEON, TARMER DATE: 12/14/2022 1:51 PM
CREATED: 2022-12-14 - 01/PANO ROAD SOUTH (STANTEC)\2022-12-01\DGN\ SHEETS.DWG

EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT. [ft]	SPD [ft]	DBH. [in.]	DISPOSITION REMAIN	REMOVE	TRANSPL	MITIGATION S.F. CANOPY
180	Agonis flexuosa 'Jeddeloh'	Jeddeloh Dwarf Tree	15	12	8			X	113
181	Swietenia mahagoni	Mahogany	20	15	16.4		X		177
182	Swietenia mahagoni	Mahogany	20	20	10			X	
183	Livistona chinensis	Chinese Fan Palm	12	10	10		X		79
184	Livistona chinensis	Chinese Fan Palm	12	10	10		X		79
185	Livistona chinensis	Chinese Fan Palm	15	10	10		X		79
186	Livistona chinensis	Chinese Fan Palm	10	10	10		X		79
187	Livistona chinensis	Chinese Fan Palm	7	10	10	X			
188	Livistona chinensis	Chinese Fan Palm	12	10	10		X		79
189	Livistona chinensis	Chinese Fan Palm	12	10	10		X		79
190	Livistona chinensis	Chinese Fan Palm	15	10	10		X		79
191	Livistona chinensis	Chinese Fan Palm	15	10	10		X		79
192	Conocarpus erectus	Silver Buttonwood	8	4	2	X			
193	Swietenia mahagoni	Mahogany	30	35	16+20+35		X		1924
194	Swietenia mahagoni	Mahogany	30	30	35		X		1414
195	Roystonea regia	Royal Palm	40	10	10		X		79
196	Roystonea regia	Royal Palm	40	10	10		X		79
197	Pimenta dioica unguis-cati	Cat's Claw	30	25	25+30	X			
198	Roystonea regia	Royal Palm	35	10	10		X		
199	Roystonea regia	Royal Palm	35	10	10	X			
200	Agonis flexuosa	Chinamas Palm	15	10	14+8		X		
201	Roystonea regia	Royal Palm	40	10	10		X		
202	Roystonea regia	Royal Palm	40	10	10		X		
203	Roystonea regia	Royal Palm	35	10	10		X		
204	Roystonea regia	Royal Palm	35	10	10		X		
205	Roystonea regia	Royal Palm	35	10	10		X		
206	Syagrus romanzoffiana	Queen Palm	15	10	10		X		
207	Syagrus romanzoffiana	Queen Palm	15	10	10		X		
208	Syagrus romanzoffiana	Queen Palm	15	10	10		X		
209	Syagrus romanzoffiana	Queen Palm	15	10	10		X		
210	Syagrus romanzoffiana	Queen Palm	15	10	10		X		
211	Agonis flexuosa	Chinamas Palm	12	10	14+8		X		
212	Agonis flexuosa	Chinamas Palm	12	10	14+8		X		
213	Roystonea regia	Royal Palm	35	10	10		X		

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

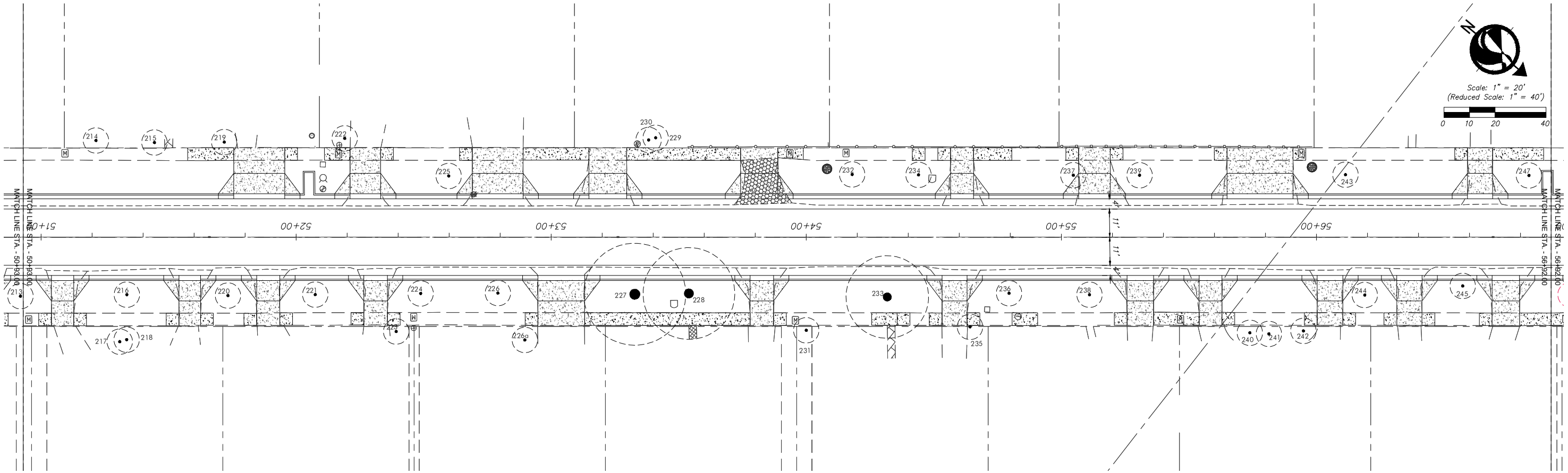


MIAMI–DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET

PROJECT NO. 2156159S2 SHEET LA-7 OF 35

ITB #23-10
Franjo Road Roadway Improvements Project
Page 463 of 608

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-8 OF 35



Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

N

EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
214	Cocos nucifera	Coconut Palm	12	10	10	X			
215	Roystonea regia	Royal Palm	30	10	10	X			
216	Cocos nucifera	Coconut Palm	20	10	10	X			
217	Cocos nucifera	Coconut Palm	15	10	10	X			
218	Cocos nucifera	Coconut Palm	15	10	10	X			
219	Adonidia merrillii	Christmas Palm	20	10	10	X			
220	Roystonea regia	Royal Palm	32	10	10	X			
221	Roystonea regia	Royal Palm	35	10	10	X			
222	Adonidia merrillii	Christmas Palm	40	10	10	X			
223	Cocos nucifera	Coconut Palm	15	10	10	X			
224	Cocos nucifera	Coconut Palm	35	10	10	X			
225	Roystonea regia	Royal Palm	40	10	10	X			
226	Roystonea regia	Royal Palm	30	10	10	X			
226A	Cocos nucifera	Coconut Palm	12	10	10	X			
227	Bucida buceras	Black Olive	30	40	16.7	X			
228	Bucida buceras	Black Olive	35	40	10	X			
229	Ptychosperma elegans	Solitaire Palm	10	10	10	X			
230	Bucida buceras	Black Olive	20	18	26	X			
231	Cocos nucifera	Coconut Palm	15	10	10	X			
232	Roystonea regia	Royal Palm	30	10	10	X			
233	Bucida buceras	Black Olive	28	36	25	X			
234	Roystonea regia	Royal Palm	30	10	10	X			
235	Cocos nucifera	Coconut Palm	15	10	10	X			
236	Roystonea regia	Royal Palm	35	10	10	X			
237	Roystonea regia	Royal Palm	35	10	10	X			
238	Roystonea regia	Royal Palm	35	10	10	X			
239	Roystonea regia	Royal Palm	35	10	10	X			
240	Adonidia merrillii	Christmas Palm	12	10	10	X			
241	Adonidia merrillii	Christmas Palm	12	10	10	X			
242	Strelitzia nicolai	White Bird of Paradise	12	10	10	X			
243	Roystonea regia	Royal Palm	35	10	10	X			
244	Roystonea regia	Royal Palm	40	10	10	X			
245	Roystonea regia	Royal Palm	40	10	10	X			
246	Roystonea regia	Royal Palm	30	10	10		X		79
247	Roystonea regia	Royal Palm	35	10	10	X			

LEGEND

- # EXISTING TREE TO REMAIN
- # EXISTING TREE TO BE REMOVED
- # EXISTING TREE TO BE TRANSPLANTED
- # NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

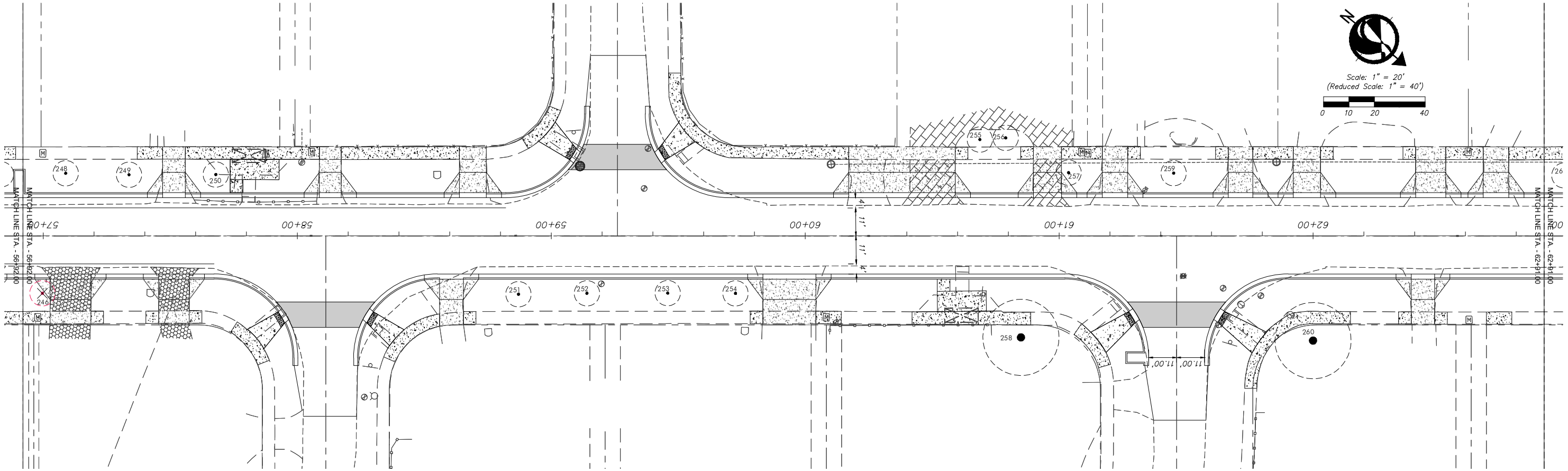
SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - D:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\VSSA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-9 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE			DISPOSITION			MITIGATION
			HT.(ft.)	SPD.(ft.)	DBH.(in.)	REMAIN	REMOVE	TRANSPL.	S.F. CANOPY
248	Roystonea regia	Royal Palm	30	10	10	X			
249	Roystonea regia	Royal Palm	30	10	10	X			
250	Roystonea regia	Royal Palm	30	10	10	X			
251	Roystonea regia	Royal Palm	35	10	10	X			
252	Roystonea regia	Royal Palm	35	10	10	X			
253	Roystonea regia	Royal Palm	35	10	10	X			
254	Roystonea regia	Royal Palm	30	10	10	X			
255	Phoenix canariensis	Canary Island Date Palm	12	10	10	X			
256	Phoenix canariensis	Canary Island Date Palm	12	10	10	X			
257	Roystonea regia	Royal Palm	30	10	10	X			
258	Roystonea regia	Royal Palm	35	10	10	X			
259	Delonix Regia	Royal Poinciana	20	30	31	X			
260	Ficus aurea	Strangler Fig	30	30	50	X			

LEGEND

- # EXISTING TREE TO REMAIN
- # EXISTING TREE TO BE REMOVED
- # EXISTING TREE TO BE TRANSPLANTED
- # NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Coral Gables, Florida 33134
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SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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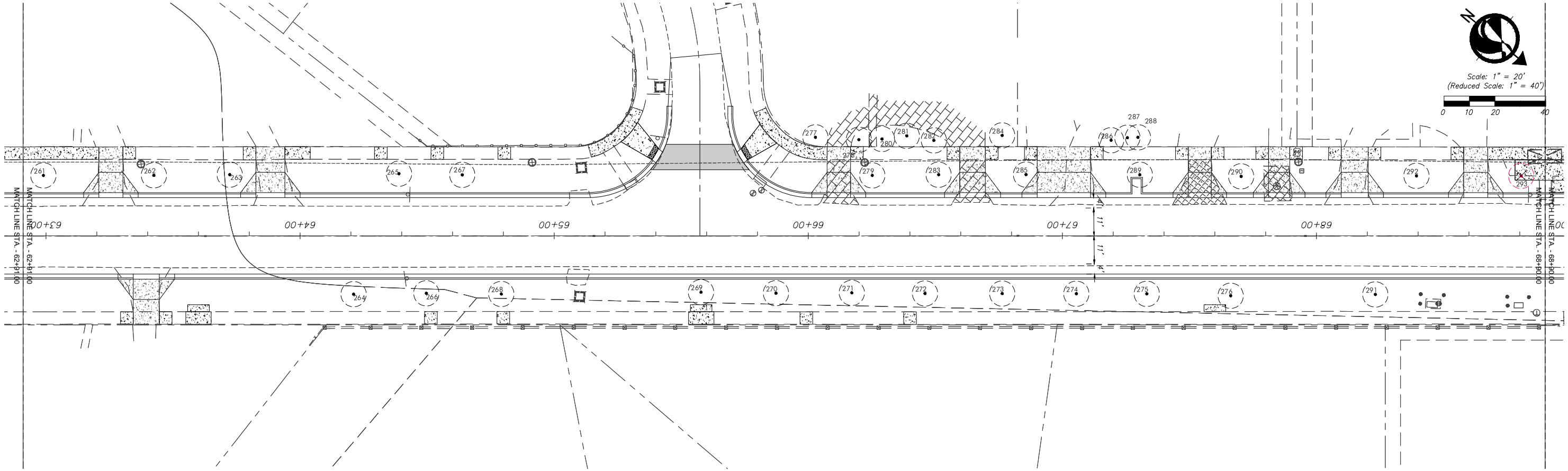
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\DGN SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-10 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SPD.(ft.)	DBH.(in.)	DISPOSITION REMAIN	REMOVE	TRANSPL.	MITIGATION S.F. CANOPY
261	Roystonea regia	Royal Palm	40	10	10	X			
262	Roystonea regia	Royal Palm	35	10	10	X			
263	Roystonea regia	Royal Palm	35	10	10	X			
264	Roystonea regia	Royal Palm	35	10	10	X			
265	Roystonea regia	Royal Palm	35	10	10	X			
266	Roystonea regia	Royal Palm	40	10	10	X			
267	Roystonea regia	Royal Palm	35	10	10	X			
268	Roystonea regia	Royal Palm	35	10	10	X			
269	Roystonea regia	Royal Palm	35	10	10	X			
270	Roystonea regia	Royal Palm	35	10	10	X			
271	Roystonea regia	Royal Palm	35	10	10	X			
272	Roystonea regia	Royal Palm	35	10	10	X			
273	Roystonea regia	Royal Palm	35	10	10	X			
274	Roystonea regia	Royal Palm	35	10	10	X			
275	Roystonea regia	Royal Palm	35	10	10	X			
276	Roystonea regia	Royal Palm	35	10	10	X			
277	Syagrus romanzoffiana	Queen Palm	20	10	10	X			
278	Phoenix roebelenii	Pigmy Date Palm	15	10	10	X			
279	Roystonea regia	Royal Palm	35	10	10	X			
280	Phoenix roebelenii	Pigmy Date Palm	35	10	10	X			
281	Veitchia merrillii	Christmas Palm	18	12	double	X			
282	Phoenix roebelenii	Pigmy Date Palm	15	10	Multi	X			
283	Roystonea regia	Royal Palm	35	10	10	X			
284	Syagrus romanzoffiana	Queen Palm	25	10	10	X			
285	Roystonea regia	Royal Palm	25	10	10	X			
286	Veitchia merrillii	Christmas Palm	15	10	10	X			
287	Dypsis lutescens	Areca Palm	12	10	10	X			
288	Veitchia merrillii	Christmas Palm	15	10	10	X			
289	Roystonea regia	Royal Palm	25	10	10	X			
290	Roystonea regia	Royal Palm	25	10	10	X			
291	Roystonea regia	Royal Palm	30	10	10	X			
292	Roystonea regia	Royal Palm	30	10	10	X			
293	Roystonea regia	Royal Palm	30	10	10		X		79

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
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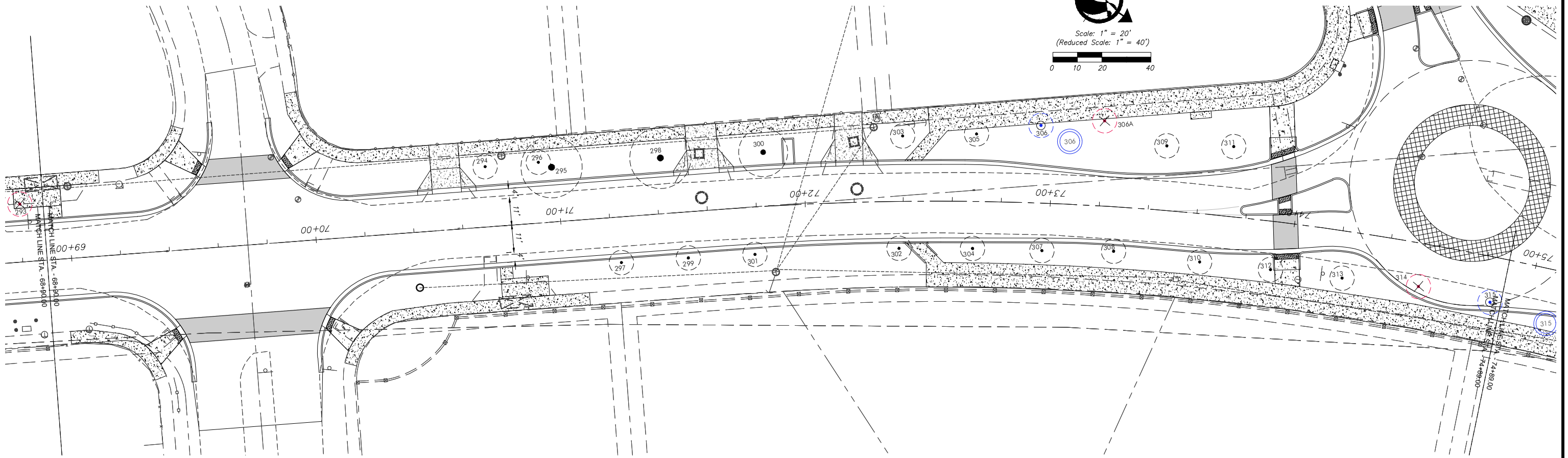
	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KENL SEMLER DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - G:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\GEOLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-11 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
294	Roystonea regia	Royal Palm	40	10	10	X			
295	Swietenia mahagoni	Mahogany	35	35	30	X			
296	Sabal palmetto	Sabal Palm	35	10	10	X			
297	Roystonea regia	Royal Palm	35	10	10	X			
298	Swietenia mahagoni	Mahogany	25	25	47	X			
299	Roystonea regia	Royal Palm	35	10	10	X			
300	Swietenia mahagoni	Mahogany	20	20	28	X			
301	Roystonea regia	Royal Palm	30	10	10	X			
302	Roystonea regia	Royal Palm	35	10	10	X			
303	Sabal palmetto	Sabal Palm	15	10	10	X			
304	Roystonea regia	Royal Palm	35	10	10	X			
305	Roystonea regia	Royal Palm	30	10	10	X			
306	Roystonea regia	Royal Palm	30	10	10			X	
306A	Sabal palmetto/Schefflera spp.	Sabal/Umbrella Tree	20	12	10		X		113
307	Roystonea regia	Royal Palm	30	10	10	X			
308	Roystonea regia	Royal Palm	35	10	10	X			
309	Roystonea regia	Royal Palm	30	10	10	X			
310	Roystonea regia	Royal Palm	30	10	10	X			
312	Roystonea regia	Royal Palm	30	10	10	X			
313	Roystonea regia	Royal Palm	25	10	10	X			
314	Roystonea regia	Royal Palm	30	10	10		X		79
315	Roystonea regia	Royal Palm	25	10	10			X	

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
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	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
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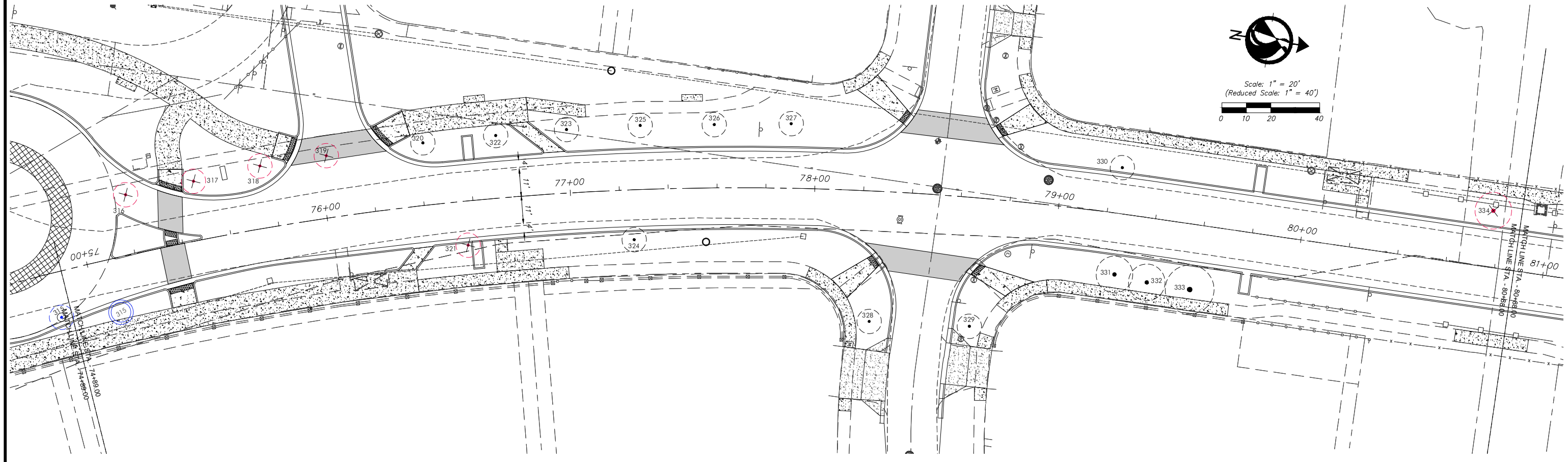
MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KENL SEMLER; DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\GSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-12 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft	SIZE DBH.(in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
316	Roystonea regia	Royal Palm	30	10	10		X		79
317	Roystonea regia	Royal Palm	30	10	10		X		79
318	Roystonea regia	Royal Palm	30	10	10		X		79
319	Roystonea regia	Royal Palm	25	10	10		X		79
320	Roystonea regia	Royal Palm	35	10	10	X			
321	Roystonea regia	Royal Palm	35	10	10		X		79
322	Roystonea regia	Royal Palm	25	10	10	X			
323	Roystonea regia	Royal Palm	40	10	10	X			
324	Roystonea regia	Royal Palm	35	10	10	X			
325	Roystonea regia	Royal Palm	35	10	10	X			
326	Roystonea regia	Royal Palm	25	10	10	X			
327	Roystonea regia	Royal Palm	25	10	10	X			
328	Phoenix roebelenii	Pygmy Date Palm	12	10	Multi	X			
329	Phoenix roebelenii	Pygmy Date Palm	12	10	Multi	X			
330	Roystonea regia	Royal Palm	35	10	10	X			
331	Callistemon viminalis	Bottle Brush	15	10	15	X			
332	Callistemon viminalis	Bottle Brush	15	15	38	X			
333	Callistemon viminalis	Bottle Brush	15	20	38.8	X			
334	Bauhinia blakeana	Hong Kong Orchid	20	15	Multi		X		N/A

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
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	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

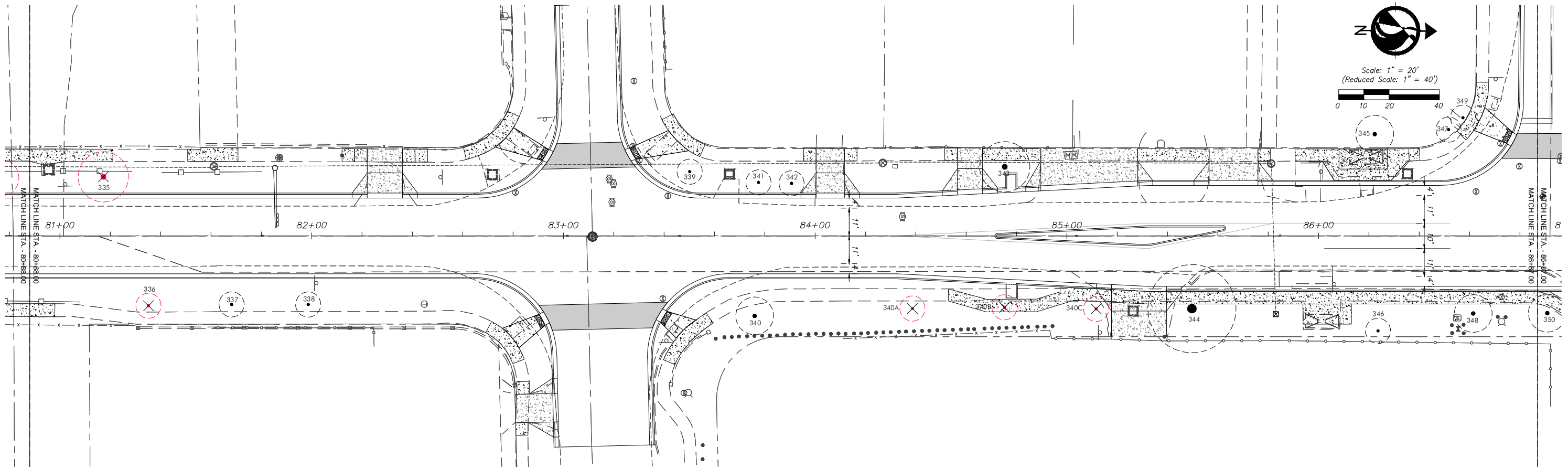
SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KENL SEMLER DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\XSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-13 OF 35



EXISTING TREE DISPOSITION LIST								
			SIZE			DISPOSITION			MITIGATION
KEY	BOTANICAL NAME	COMMON NAME	HT.(ft.)	SPD.(ft)	DBH.(in.)	REMAIN	REMOVE	TRANSPL.	S.F. CANOPY
335	Bauhinia blakeana	Hong Kong Orchid	20	20	Multi		X		N/A
336	DEAD						X		N/A
337	Roystonea regia	Royal Palm	35	10	10	X			
338	Roystonea regia	Royal Palm	40	10	10	X			
339	Phoenix roebelenii	Pygmy Date Palm	5	10	10	X			
340	Quercus virginiana	Live Oak	15	15	13	X			
340a	Quercus laurifolia	Laurel Oak	10	5	3	X			
340b	Quercus laurifolia	Laurel Oak	10	5	2	X			
340c	Quercus laurifolia	Laurel Oak	8	9	2	X			
341	Phoenix roebelenii	Pygmy Date Palm	5	10	10	X			
342	Phoenix roebelenii	Pygmy Date Palm	5	10	10	X			
343	Ficus aurea	Strangler Fig	20	20	42	X			
344	Quercus virginiana	Live Oak	24	30	14	X			
345	Tabebuia heptaphylla	Pink Trumpet Tree	15	20	14+13	X			
346	Tabebuia caraiba	Golden Trumpet Tree	15	6	13	X			
347	Cocos nucifera	Coconut Palm	20	10	10	X			
348	Quercus virginiana	Live Oak	25	25	13.8	X			
349	Cocos nucifera	Coconut Palm	20	15	10	X			

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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MIAMI-DADE
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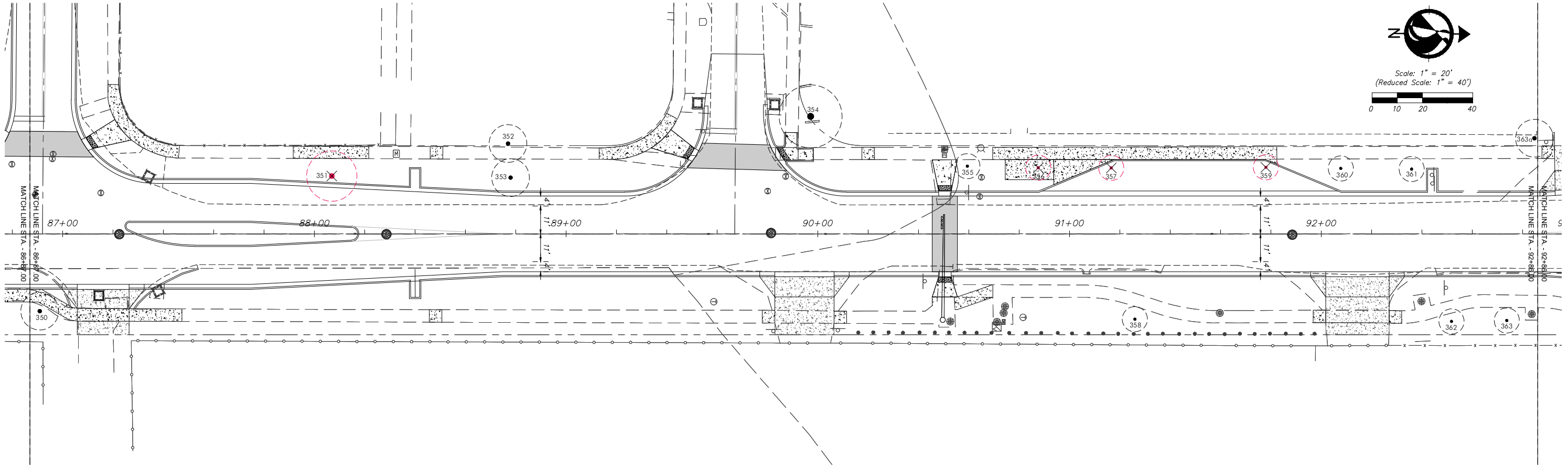
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

PLOTTED BY: KERL SEMER DATE: 12/14/2022 1:52 PM
CREATED: 2022-12-14 - O:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\OSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-14 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE			DISPOSITION			MITIGATION
			HT.(ft.)	SPD.(ft.)	DBH. (in.)	REMAIN	REMOVE	TRANSPL	S.F. CANOPY
350	Quercus virginiana	Live Oak	28	28	15	X			
351	Bursera simaruba	Gumbo Limbo	20	20	Multi		X		314
352	Bursera simaruba	Gumbo Limbo	25	15	15+13	X			
353	Bursera simaruba	Gumbo Limbo	25	15	Multi	X			
354	Bucida buceras	Black Olive	35	25	24.3	X			
355	Roystonea regia	Royal Palm	20	10	10	X			
356	Roystonea regia	Royal Palm	30	10	10		X		79
357	Roystonea regia	Royal Palm	35	10	10		X		79
358	Roystonea regia	Royal Palm	25	10	10	X			
359	Roystonea regia	Royal Palm	40	10	10		X		79
360	Roystonea regia	Royal Palm	25	10	10	X			
361	Roystonea regia	Royal Palm	35	10	10	X			
362	Roystonea regia	Royal Palm	20	10	10	X			
363	Roystonea regia	Royal Palm	35	10	10	X			
363a	Bucida buceras	Black Olive	25	20	18.8	X			

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

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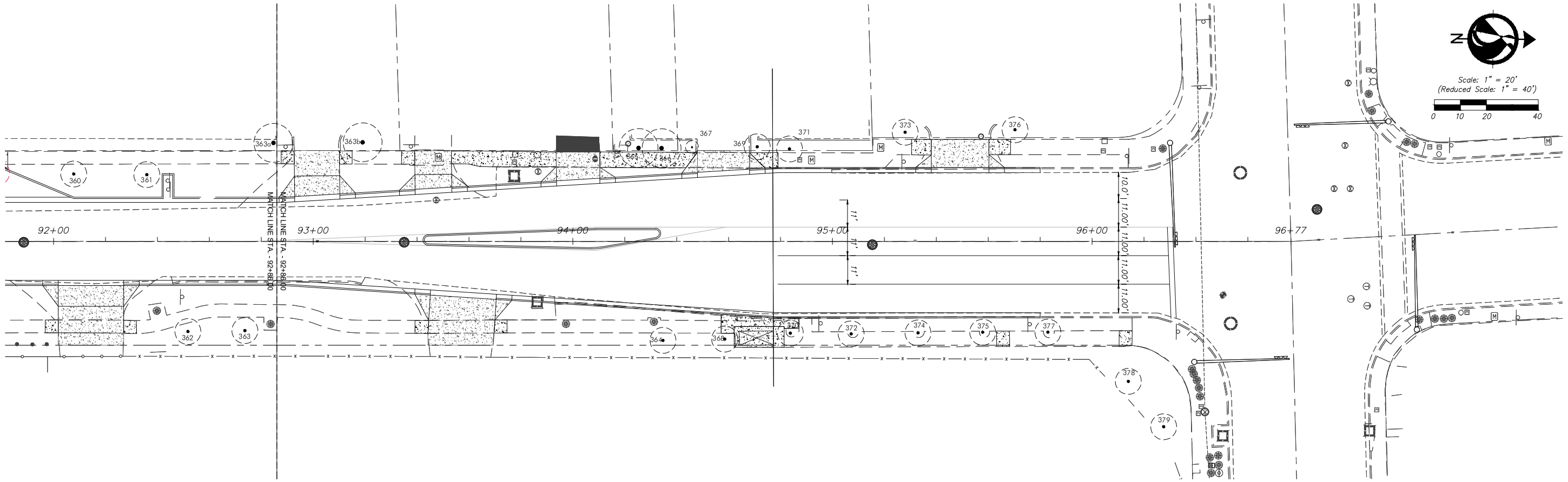
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-15 OF 35



EXISTING TREE DISPOSITION LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE HT.(ft.)	SIZE SPD.(ft.)	SIZE DBH. (in.)	DISPOSITION REMAIN	DISPOSITION REMOVE	DISPOSITION TRANSPL.	MITIGATION S.F. CANOPY
363b	Bucida buceras	Black Olive	30	25	22.8	X			
364	Roystonea regia	Royal Palm	30	10	10	X			
365	Quercus virginiana	Live Oak	15	15	11	X			
366	Quercus virginiana	Live Oak	15	15	10	X			
367	Quercus virginiana	Live Oak	15	5	3+2	X			
368	Roystonea regia	Royal Palm	35	10	10	X			
369	Quercus virginiana	Live Oak	15	8	5.5	X			
370	Roystonea regia	Royal Palm	22	10	10	X			
371	Quercus virginiana	Live Oak	15	10	6	X			
372	Roystonea regia	Royal Palm	20	10	10	X			
373	Ptychosperma elegans	Solitaire Palm	15	10	Multi	X			
374	Roystonea regia	Royal Palm	35	10	10	X			
375	Roystonea regia	Royal Palm	30	10	10	X			
376	Ptychosperma elegans	Solitaire Palm	15	10	Multi	X			
377	Roystonea regia	Royal Palm	20	10	10	X			
378	Phoenix canariensis	Canary Island Date Palm	16	10	10	X			
379	Phoenix canariensis	Canary Island Date Palm	16	10	10	X			

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- NEW LOCATION OF TRANSPLANTED TREE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

EXISTING TREE DISPOSITION PLAN -FRANJO ROAD - 100% CDs-

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TOTAL CANOPY S.F. TO BE REPLACED			15,099
*Mitigation provided (see plant list for species):			
MITIGATION TYPE	QTY.	MITIGATION EA. (S.F.)	TOTAL MITIGATION (S.F.)
Shade Tree 1	201	500	100500
Shade Tree 2	107	300	32100
Palm Tree 1	0	300	0
Palm Tree 2	187	100	18700
Small Tree	0	200	0
GRAND TOTAL S.F. MITIGATION CANOPY PROVIDED*			151300

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MITIGATION CALCULATIONS
-FRANJO ROAD - 100% CDs-

TREE TRANSPLANTING SPECIFICATIONS

1.01 Root Pruning, Watering Before Transplanting

A. Prior to root pruning and before excavating holes for transplanted trees, check with all local utilities to locate existing underground utilities. If any unknown utilities or sprinkler pipes are in advertently broken, do not cover them up. Immediately notify the utility and/or the Client, and take all necessary steps to repair the break.

B. Root prune trees a minimum of eight (8) weeks prior to moving them. It is not necessary to root prune palms prior to transplanting unless specifically instructed to do so by the Landscape Architect. Prior to root pruning, thoroughly water the root zone with at least 2"-3" of water.

C. Root pruning shall be accomplished by digging a trench two-thirds (2/3) of the way around the tree at a minimum of twenty four (24) inches deep. Root prune only with a mechanical root-pruning saw or a trencher with a maximum trench width of 8 inches. This trench shall form a rootball of the minimum following sizes:

Up to 5" caliper	5' diameter
6"-8" caliper	6'-7' diameter
9"-12" caliper	9'-10' diameter
Over 12" caliper	12' diameter

D. All exposed roots shall be cut off smoothly, with sharp instruments. Backfill trenches with soil consisting of 30% silica sand and 70% mulch. Water them thoroughly immediately after root pruning, and once weekly during the root regeneration period. Every 2 weeks add a soluble fertilizer that has a 20.20.20 analysis at manufacturer's recommended rate, to the watering mix.

E. It may be necessary to remove curbing and/or paving to complete the root pruning operation. Where this is required, the Contractor shall first cut cleanly with a concrete saw, any section of curb or pavement before cutting the roots. This material shall be removed from the site by the Contractor and the area of pavement cut and removed by the root pruning shall be filled to flush with adjacent pavement.

1.02 Top Pruning and Thinning

A. The amount of general pruning and thinning shall be limited to the minimum necessary to remove dead or injured twigs or branches and to compensate for the loss of roots as a result of transplanting operations. Approximately 1/3 of the mass of the canopy shall be removed unless otherwise instructed by the Landscape Architect. Pruning and thinning shall be done in such a manner as not to change the natural habit or shape of a plant. For very large trees that must be transported on public R.O.W.'s or where obstacles require it, additional pruning may be allowed at time of transport; cut back trees to the maximum size which can be transported after limbs are tied in as much as possible. The Landscape Architect shall be contacted prior to performing any major pruning or thinning.

1.03 Bracing and Guying of Trees After Root Pruning

A. Bracing and Guying shall be provided to assure the trees' stability during the root regeneration period, if required by the Landscape Architect.

1.04 Balling and Burlapping

A. Plant material which is in a soil of a loose texture, which does not readily adhere to the root system, especially in the case of large plants or trees, shall have the rootball wrapped in burlap and then wire, if directed by the Landscape Architect.

1.05 Transplanting Plant Material

A. Movement of plants on public R.O.W.'s shall comply with all ordinances, codes and safety requirements, etc.

B. Transport materials on vehicles large enough to allow plants to not be crowded and damaged. Plants shall be covered to prevent wind damage during transit.

C. Protect plant material during transporting to prevent damage to the root system and desiccation of leaves. Trees shall be protected by tying in the branches and covering all exposed branches as necessary. Do not bend or bind-tie plant material in such a manner as to damage bark, break branches or alter the natural shape.

D. The Contractor shall exercise care in handling, loading, unloading, storing, and transporting material to prevent damage. The Contractor shall assume full responsibility for protection and safekeeping of materials stored.

E. Transplanting must be done within 24 hours after being dug. Store plants in shade and keep the root ball and canopy moist.

1.06 Installation

A. Excavation of Holes: Plant holes shall be roughly cylindrical in shape with sides approximately vertical. The depth of the hole shall be equal to the rootball depth plus 12" unless further depth is required to provide adequate drainage. The diameter of the hole shall be a minimum of 24" larger than the rootball diameter.

B. Setting of Plants

1) Plant material shall be planted at their natural and original planting level prior to their placement on this project or job. When lowered into the hole, the plants shall rest on the prepared hole bottom such that the surface roots at the top of the rootball are level or slightly above the level of the top of the hole. Create a saucer, approximately 6" deep to help hold water. The practice of plunging, burying or planting and plant material such that the surface roots at the top of the rootball are below the level of the surrounding final grade will not be permitted unless it is indicated otherwise in these specifications. The plants shall be set straight or plumb or normal to the relationship of their growth prior to transplanting. The Landscape Architect reserves the right to realign any plant material after it has been set.

C. Backfilling

1) Use planting soil consisting of 40% silica sand, 40% muck, and 20% well-rotted compost derived from yard wastes.

2) Backfill the bottom two-thirds of the planting hole and firmly tamp and settle by watering as backfilling progresses. After having tamped and settled the bottom two-thirds of the hole, thoroughly puddle with water and fill remaining one-third of the hole with planting soil, tamping and watering to eliminate air pockets.

3) Add Diehard" transplant innoculant supplied by Horticultural Alliance, Inc. (800-628-6373) or equal. Mix into top 8-10 inches of planting hole, making sure it is contact with the root ball. Add at a rate of one (1) 8oz. bag per 2 inches of trunk caliper.

1.07 Watering Transplanted Trees:

A. Once trees have been relocated and well-watered in during the transplanting, provide water for a period of 60 days after transplanting.

B. Rootball Watering: Maintain a soil moisture in the root zone at an optimum level for growth, by deep watering of the entire rootball area according to the following schedule:

When	Frequency	Amount
first week	once daily	3" per tree
second week	every other day	2" per tree
following month	twice a week	1" per tree
last 2 weeks	once per week	1" per tree

C. In addition to the rootball watering, the canopy of the large shade trees (over 12" caliper) shall be watered with an automatic irrigation system spraying the canopy. Spray heads shall be installed near the top of the canopy and spaced so that the entire canopy shall be sprayed. This system shall remain in place until directed by the Landscape Architect to be removed.

D. If there is no source for water available at the project, such as a hose bib(s) or fire hydrants(s) if approved for use, then the Contractor shall be responsible for supplying water by means of a truck or tank. It is the Contractor's responsibility to pay any fees for water use.

1.08 Mulching of Plant Saucer

A. Spread 3" thick layer of shredded Eucalyptus or Melaleuca mulch over entire area of the rootball.

1.09 Application of Fertilizer

A. At time of watering root-pruned trees prior to transplanting, drench rootball once per week during the course of watering with a soluble fertilizer that has a 20.20.20 analysis at manufacturer's recommended rate.

B. Three (3) weeks after transplanting, and after mulching, apply on the surface, evenly spread over the area of the entire rootball, FEC (Florida East Coast Fertilizer Co) #5231 (12-6-8) or equal at the rate of one (1) pound per inch of trunk diameter.

1.10 Staking Trees

A. Stake all trees and palms at the new site with new timbers with a minimum 2" x 4" dimension as per the details enclosed, or in the case of obstacle, in another manner which will support the trees.

1.11 Clean-Up

A. Disposal of Waste: All waste and other objectionable material created through planting operations and landscape construction shall be removed completely on a daily basis from the job or as directed by the Landscape Architect. Any paved areas, including curbs and sidewalks which have been strewn with soil, sod waste, fertilizer or other waste shall be thoroughly swept. The Client is not required to supply areas or facilities for storage or removal of waste on-site.

B. The Contractor shall remove and dispose of stakes and battens and untie any tied-up canopies when it is determined by the Landscape Architect that sufficient time has elapsed for the plants to root stabilizing the plant. This shall be done even if the project has been completed and given final acceptance.

C. Backfilling shall be done immediately after tree removal, or suitable barricades shall be provided to prevent injuries. The Contractor shall backfill holes with clean fill to a level flush with adjacent grade.

1.12 Maintenance of Traffic

A. During all transplanting operations, the Contractor is responsible to maintain the safe flow of vehicular and pedestrian traffic around hazardous areas. The Contractor shall provide barricades, cones, signal boards, etc. as necessary to adequately warn traffic and maintain flow of traffic around or through construction zones. Work shall be performed in such a manner that minimizes the amount of time traffic is impeded by construction activities. Coordinate with Landscape Architect.

1.13 Guarantee and Replacement

A. Plant material which is on the site and scheduled to be transplanted is not covered by the guarantee, except in the case of Contractor's negligence or work that has been done in an unworkmanlike manner. If it is determined by the Landscape Architect that the Contractor's negligence or unworkmanlike operations has severely damaged or poses a threat to the health of material to be transplanted or already transplanted, then the Contractor shall be required to replace the tree at a size equal to the transplanted tree, at his cost, and water it as per 1.07.

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MIAMI–DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
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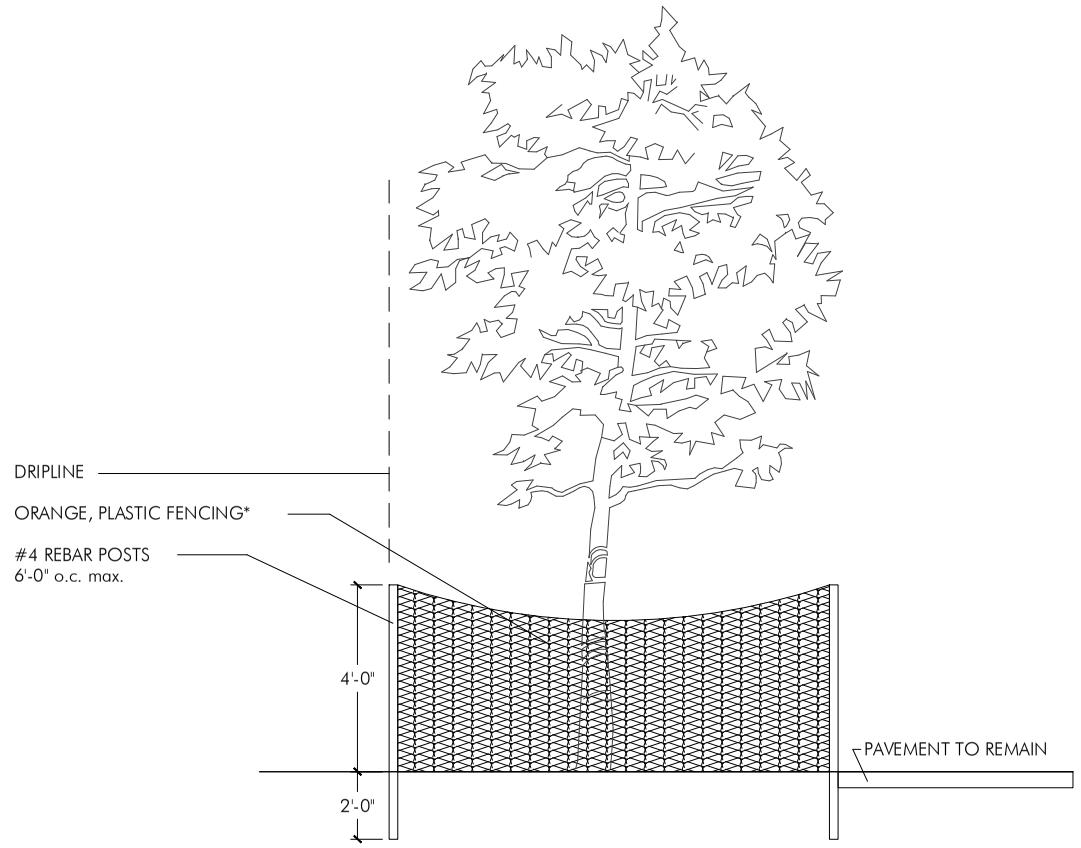
MIAMI, FLORIDA 33128

TREE TRANSPLANT SPECS
-FRANJO ROAD - 100% CDs-



*LIMITS OF TREE PROPECTION ARE TO BE ESTABLISHED BASED ON ANSI A300 ROOT MANAGEMENT STANDARDS. AS A GENERAL RULE THE TREE PROTECTION ZONE MUST EXTEND 10" PER 1" OF TREE DBH.
-PLACE ORANGE, PLASTIC FENCING (BY TENSAR OR OTHER APPROVED EQUAL) AROUND INDIVIDUAL TREES AND TREE CLUMPS TO REMAIN ON SITE IN ANY AREAS WITHIN THE LIMITS OF CONSTRUCTION. BARRIER SHALL BE MAINTAINED IN AN UPRIGHT POSITION AT ALL TIMES.

TREE PROTECTION DETAIL

N.T.S.

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TREE PROTECTION DETAIL
-FRANJO ROAD - 100% CDs-

PLANT LIST

TREES

KEY	PLANT NAME	QTY.	UT.	SIZE
BUAR	Bulnesia arborea ...Verawood	25	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
BUSI	Bursera simaruba ...Gumbo Limbo	30	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
CESP	Ceiba speciosa ...Silf Floss Tree	1	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
COES	Conocarpus erectus "Sericeus" ...Silver Buttonwood	18	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
ILCA	Ilex cassine ...Dahoon Holly	73	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee" ...Crepe Myrtle	20	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
LYLA	Lysiloma latisiliquum ...Wild Tamarind	79	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min
QUVI	Quercus virginiana ...Live Oak	68	ea.	12' tall x 5' spread, 2 1/2" cal., 4' CT min

PALMS

KEY	PLANT NAME	QTY.	UT.	SIZE
PSSA	Pseudophoenix sargentii ...Buccaneer Palm	27	ea.	4' CW
SAPA	Sabal palmetto ...Sabal Palm	79	ea.	22' tall OA, smooth trunks, hurricane cut
THRA	Thrinax radiata ...Thatch Palm	86	ea.	7' tall OA

SHRUBS AND GROUNDCOVERS

KEY	PLANT NAME	QTY.	UT.	SIZE
AEBL	Aechmea blanchetiana "Orange Form" ...Orange Bromeliad	60	ea.	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis" ...Horizontal Cocoplum	1943	ea.	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island" ...Green Island Ficus	2688	ea.	18"x18", install 24" o.c.
LADE	Lantana depressa ...Pineland Lantana	152	ea.	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum" ...Fringeflower	486	ea.	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris ...Muhly Grass	2653	ea.	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica ...Indian Hawthorne	1115	ea.	18"x18", install 24" o.c.
ZAPU	Zamia pumila ...Coontie	1265	ea.	18"x18", install 24" o.c.

MISCELLANEOUS

sod	St. Augustine "Citrablue"	as req.	s.f.	solid sod, patch as required
	Planting Soil 70% Silica Sand 20% Everglades Muck 10% Shredded Pinebark	as req.	c.y.	excavate and backfill 12" in all shrub beds
	Shredded Melaleuca Mulch	as req.	c.y.	2" layer in all shrub beds

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PROPOSED PLANT LIST
-FRANJO ROAD - 100% CDs-

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FRANJO ROAD
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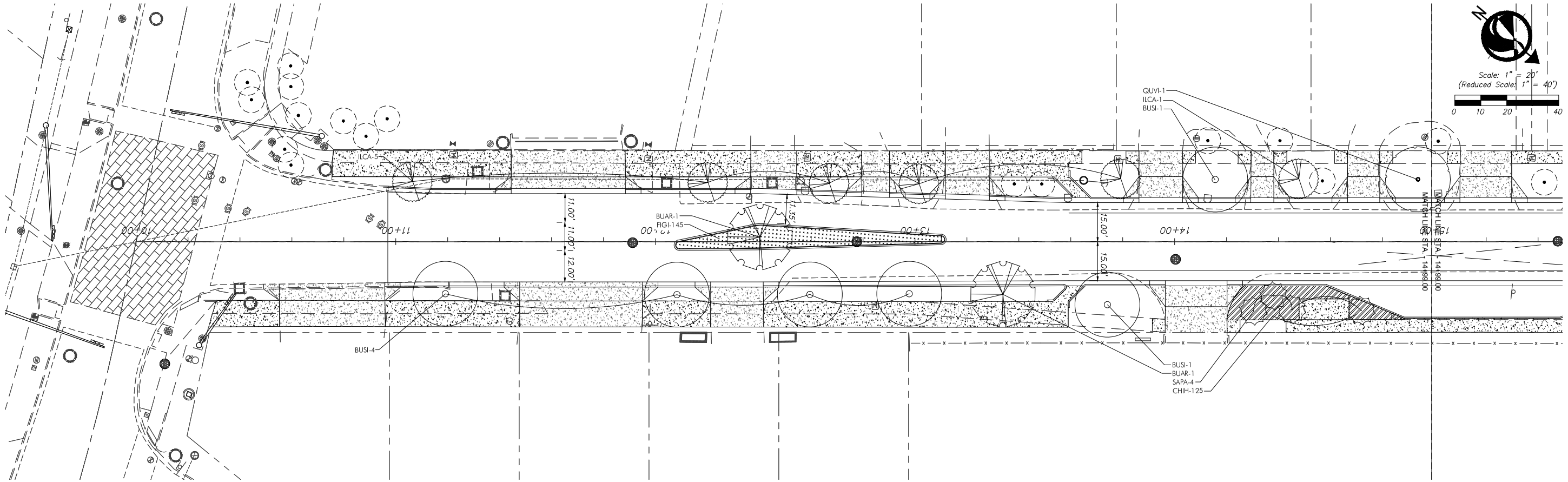

PLANT LIST

KEY	PLANT NAME		SIZE
TREES			
BUAR	Bulnesia arborea	...Verawood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
BUSI	Bursera simaruba	...Gumbo Limbo	12' tall x 5' spread, 2 1/2" cal., 4' CT min
CESP	Ceiba speciosa	...Silf Floss Tree	12' tall x 5' spread, 2 1/2" cal., 4' CT min
COES	Conocarpus erectus "Sericeus"	...Silver Buttonwood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
ILCA	Ilex cassine	...Dahoon Holly	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee"	...Crepe Myrtle	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
LYLA	Lysiloma latisiliquum	...Wild Tamarind	12' tall x 5' spread, 2 1/2" cal., 4' CT min
QUVI	Quercus virginiana	...Live Oak	12' tall x 5' spread, 2 1/2" cal., 4' CT min
PALMS			
KEY	**PLANT NAME**		**SIZE**
PSSA	Pseudophoenix sargentii	...Buccaneer Palm	4' CW
SAPA	Sabal palmetto	...Sabal Palm	22' tall OA, smooth trunks, hurricane cut
THRA	Thrinax radiata	...Thatch Palm	7' tall OA
SHRUBS AND GROUNDCOVERS			
KEY	**PLANT NAME**		**SIZE**
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis"	...Horizontal Cocoplum	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

LEGEND

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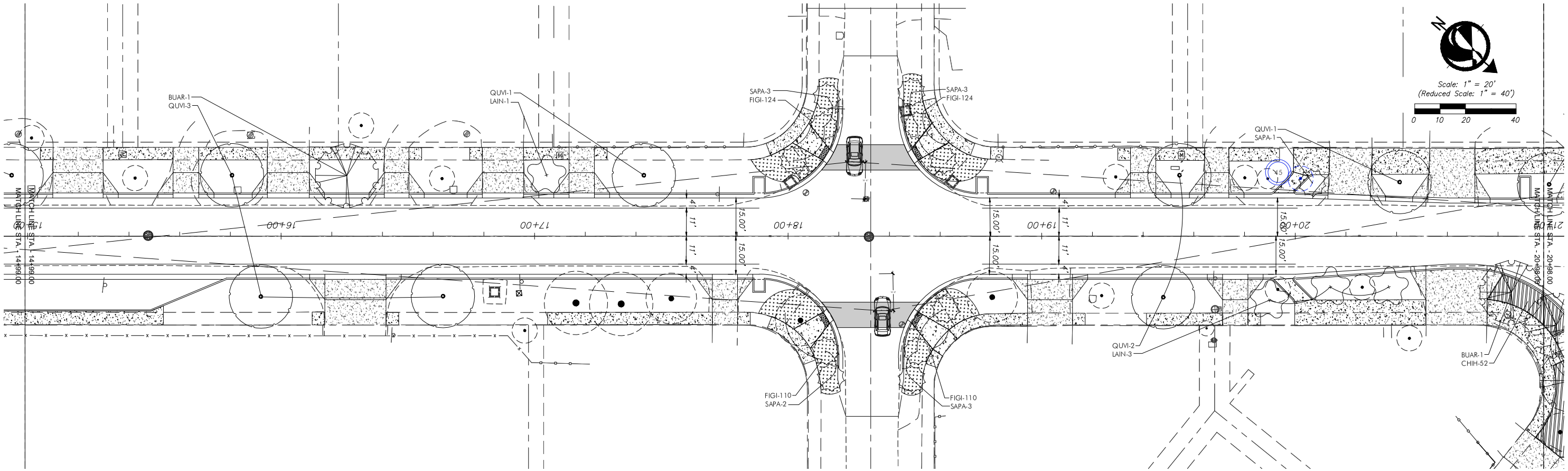

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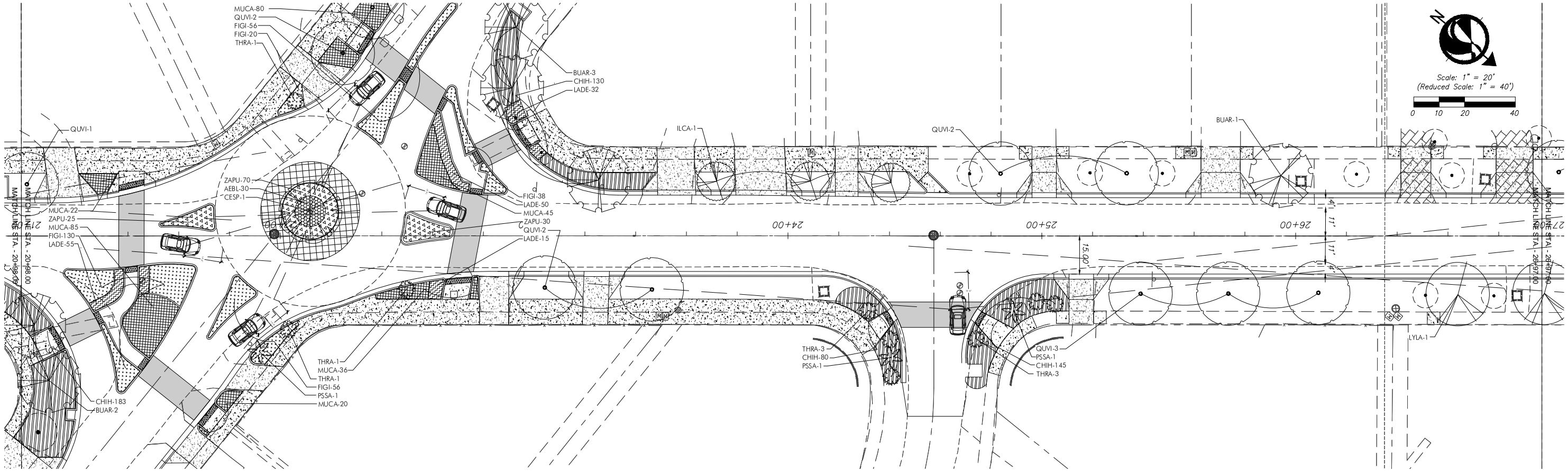
MIAMI, FLORIDA 33128

PLANTING PLAN
-FRANJO ROAD - 100% CDs-

PLOTTED BY: KEHL SEMLER DATE: 12/14/2022 1:53 PM
CREATED: 2022-12-14 - D:\FRANJO ROAD SOUTH (STANTEC)\2022-12-9\GSLA SHEETS.DWG

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-22 OF 35



PLANT LIST

KEY	PLANT NAME		SIZE
TREES			
BUAR	Bulnesia arborea	...Verawood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
BUSI	Bursera simaruba	...Gumbo Limbo	12' tall x 5' spread, 2 1/2" cal., 4' CT min
CESP	Ceiba speciosa	...Silf Floss Tree	12' tall x 5' spread, 2 1/2" cal., 4' CT min
COES	Conocarpus erectus "Sericeus"	...Silver Buttonwood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
ILCA	Ilex cassine	...Dahoon Holly	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee"	...Crepe Myrtle	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
LYLA	Lysiloma latisiliquum	...Wild Tamarind	12' tall x 5' spread, 2 1/2" cal., 4' CT min
QUVI	Quercus virginiana	...Live Oak	12' tall x 5' spread, 2 1/2" cal., 4' CT min
PALMS			
KEY	**PLANT NAME**		**SIZE**
PSSA	Pseudophoenix sargentii	...Buccaneer Palm	4' CW
SAPA	Sabal palmetto	...Sabal Palm	22' tall OA, smooth trunks, hurricane cut
THRA	Thrinax radiata	...Thatch Palm	7' tall OA
SHRUBS AND GROUNDCOVERS			
KEY	**PLANT NAME**		**SIZE**
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis"	...Horizontal Cocoplum	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

LEGEND

EXISTING TREE TO REMAIN

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		

SUPERVISED BY:

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLANTING PLAN
-FRANJO ROAD - 100% CDs-

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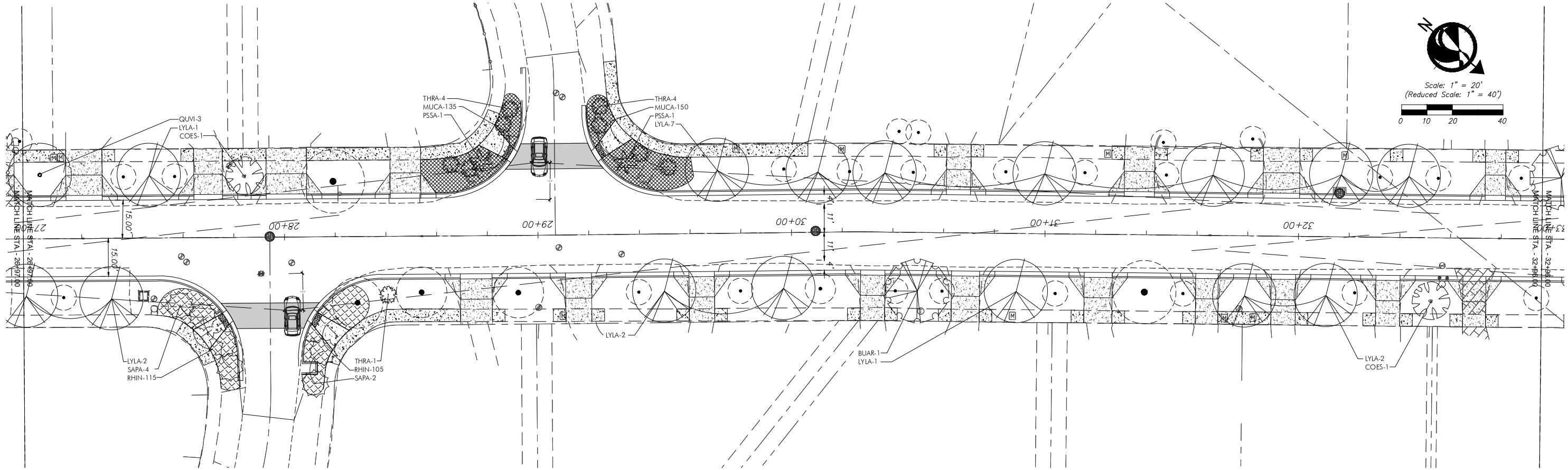
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-23 OF 35



PLANT LIST

KEY	PLANT NAME		SIZE
TREES			
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BUSI	Bursera simaruba	...Gumbo Limbo	12' tall x 5' spread, 2 1/2" cal., 4' CT min
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ILCA	Ilex cassine	...Dahoon Holly	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee"	...Crepe Myrtle	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
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SHRUBS AND GROUNDCOVERS			
KEY	**PLANT NAME**		**SIZE**
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis"	...Horizontal Cocoplum	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

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PLANTING PLAN
-FRANJO ROAD - 100% CDs-

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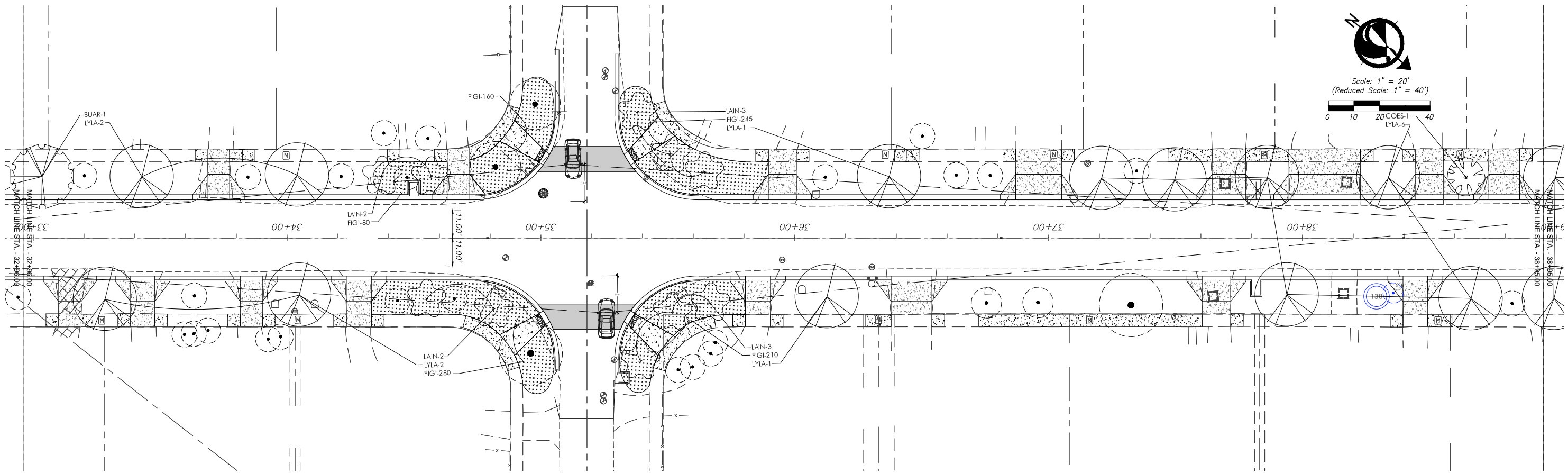
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-24 OF 35



PLANT LIST

TREES

KEY	PLANT NAME		SIZE
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ILCA	Ilex cassine	...Dahoon Holly	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee"	...Crepe Myrtle	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
LYLA	Lysiloma latisiliquum	...Wild Tamarind	12' tall x 5' spread, 2 1/2" cal., 4' CT min
QUVI	Quercus virginiana	...Live Oak	12' tall x 5' spread, 2 1/2" cal., 4' CT min

PALMS

KEY	PLANT NAME		SIZE
PSSA	Pseudophoenix sargentii	...Buccaneer Palm	4' CW
SAPA	Sabal palmetto	...Sabal Palm	22' tall OA, smooth trunks, hurricane cut
THRA	Thrinax radiata	...Thatch Palm	7' tall OA

SHRUBS AND GROUNDCOVERS

KEY	PLANT NAME		SIZE
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis"	...Horizontal Cocoplum	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

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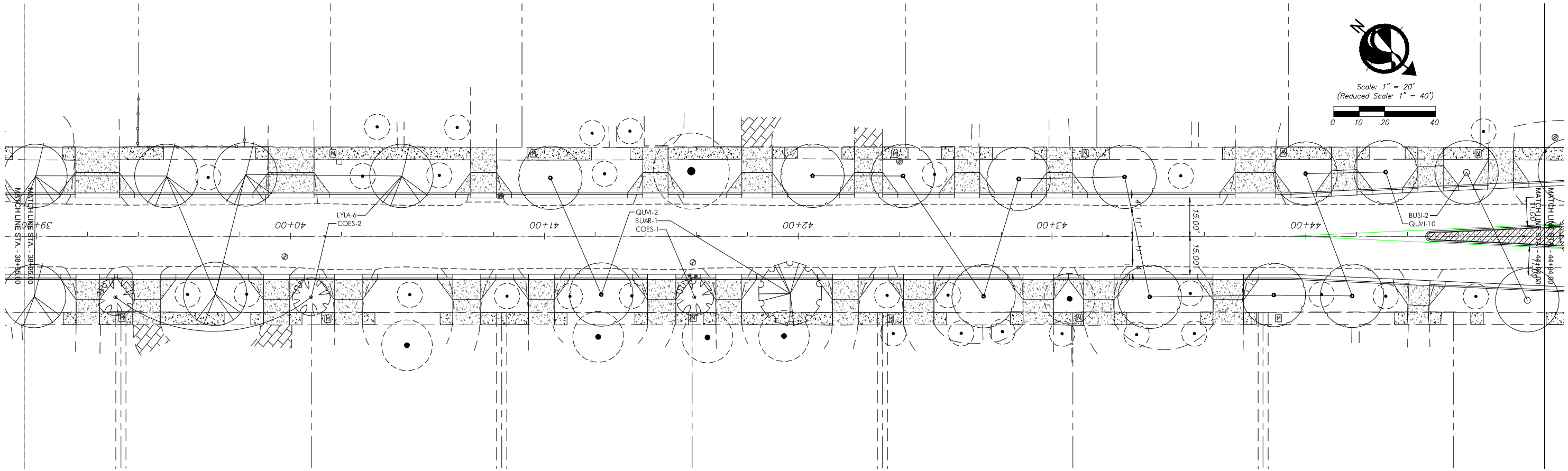
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-25 OF 35



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KEY	PLANT NAME		SIZE
TREES			
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FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

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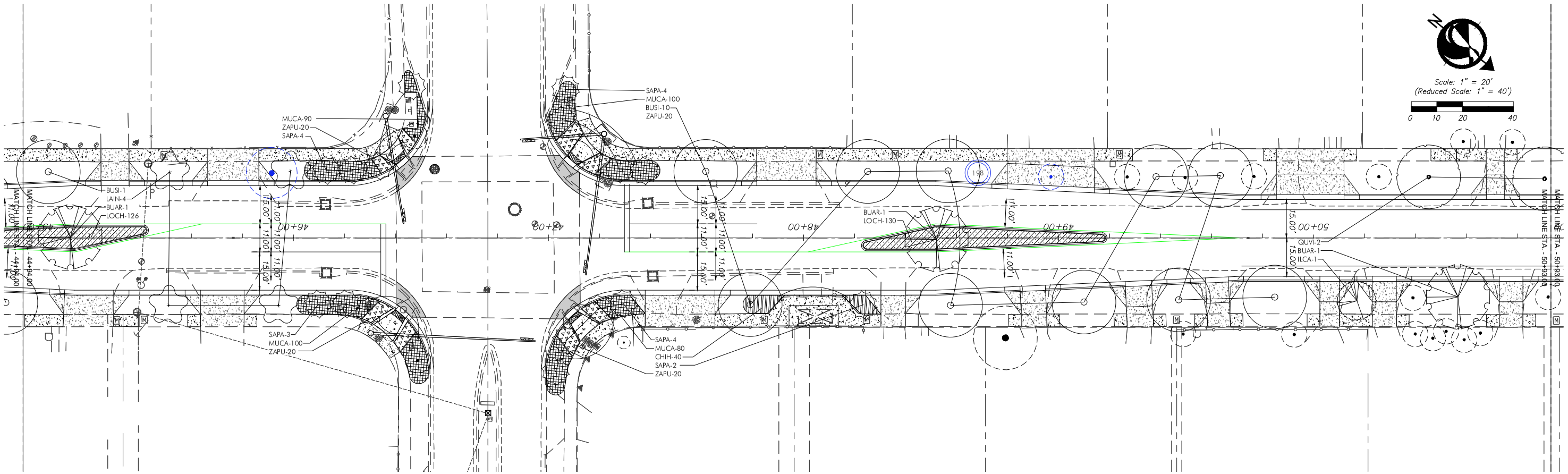

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KEY	**PLANT NAME**		**SIZE**
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
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FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

LEGEND

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-FRANJO ROAD - 100% CDs-

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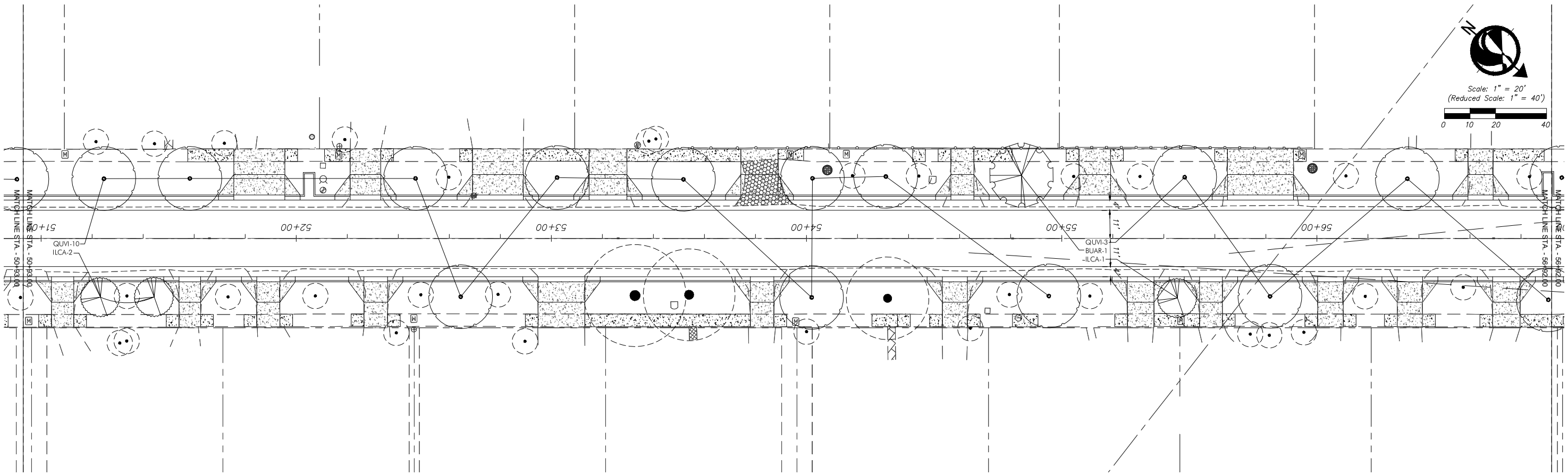
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-27 OF 35



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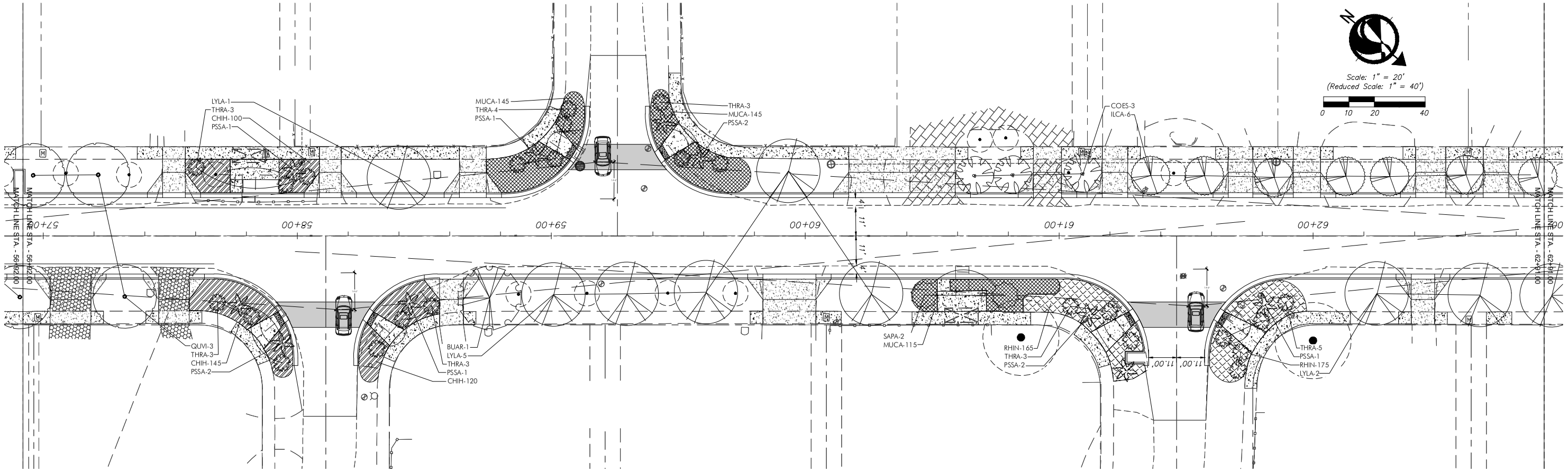
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-28 OF 35



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DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
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PLANTING PLAN
-FRANJO ROAD - 100% CDs-

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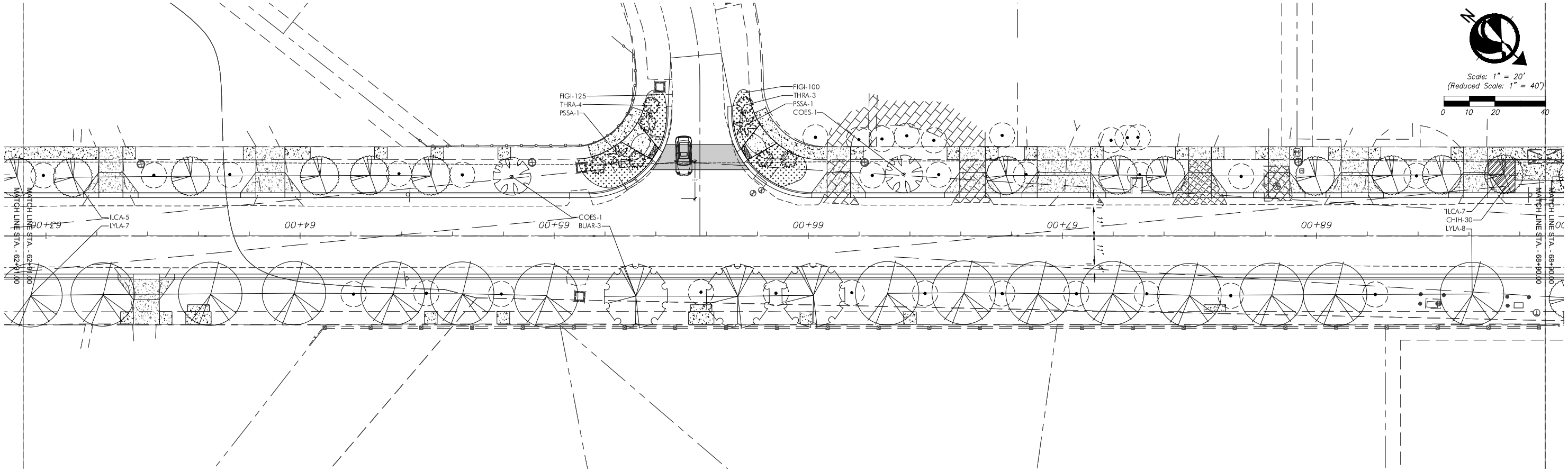
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-29 OF 35



PLANT LIST

TREES

KEY	PLANT NAME		SIZE
BUAR	Bulnesia arborea	...Verawood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
BUSI	Bursera simaruba	...Gumbo Limbo	12' tall x 5' spread, 2 1/2" cal., 4' CT min
CESP	Ceiba speciosa	...Silf Floss Tree	12' tall x 5' spread, 2 1/2" cal., 4' CT min
COES	Conocarpus erectus "Sericeus"	...Silver Buttonwood	12' tall x 5' spread, 2 1/2" cal., 4' CT min
ILCA	Ilex cassine	...Dahoon Holly	12' tall x 5' spread, 2 1/2" cal., 4' CT min
LAIN	Lagerstroemia indica "Muscogee"	...Crepe Myrtle	12' tall x 5' spread, 2 1/2" cal., 4' CT min, Purple Flowers
LYLA	Lysiloma latisiliquum	...Wild Tamarind	12' tall x 5' spread, 2 1/2" cal., 4' CT min
QUVI	Quercus virginiana	...Live Oak	12' tall x 5' spread, 2 1/2" cal., 4' CT min

PALMS

KEY	PLANT NAME		SIZE
PSSA	Pseudophoenix sargentii	...Buccaneer Palm	4' CW
SAPA	Sabal palmetto	...Sabal Palm	22' tall OA, smooth trunks, hurricane cut
THRA	Thrinax radiata	...Thatch Palm	7' tall OA

SHRUBS AND GROUNDCOVERS

KEY	PLANT NAME		SIZE
AEBL	Aechmea blanchetiana "Orange Form"	...Orange Bromeliad	24"x18", install 24" o.c.
CHIH	Chrysobalanus icaco "Horizontalis"	...Horizontal Cocoplum	12"x18", install 24" o.c.
FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

LEGEND

EXISTING TREE TO REMAIN

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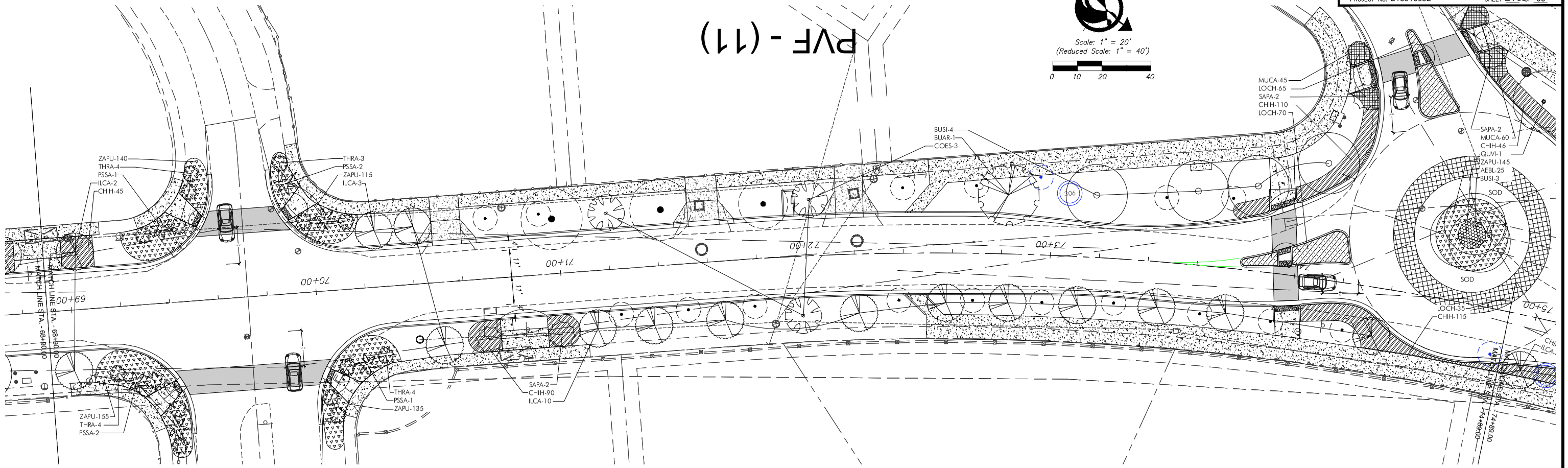

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MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
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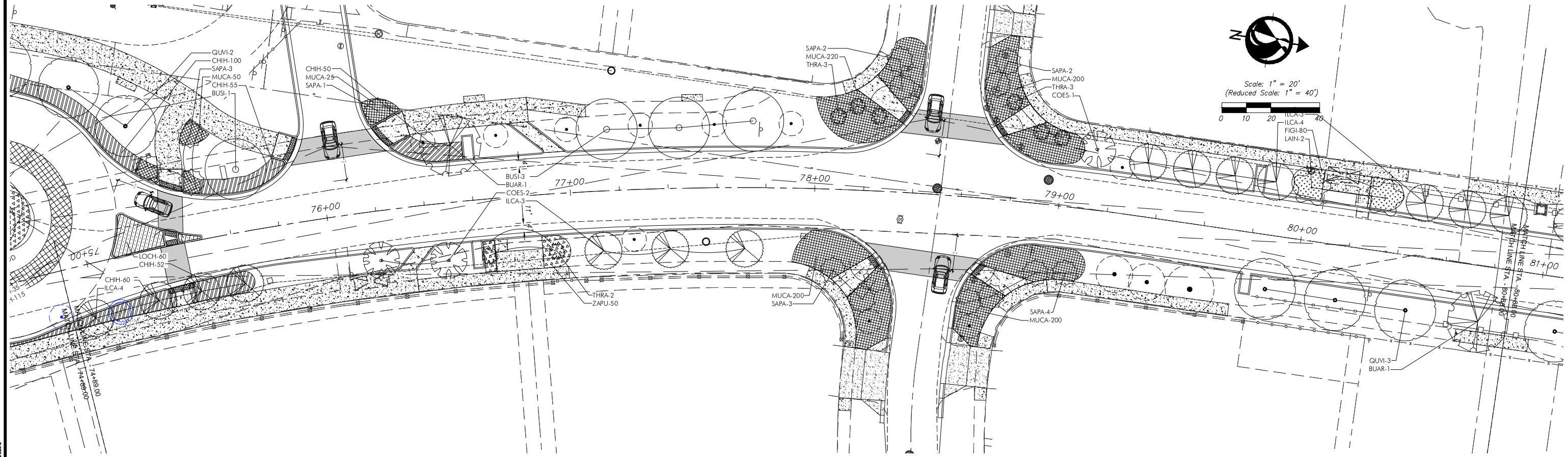

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MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
ZAPU	Zamia pumila	...Coontie	18"x18", install 24" o.c.

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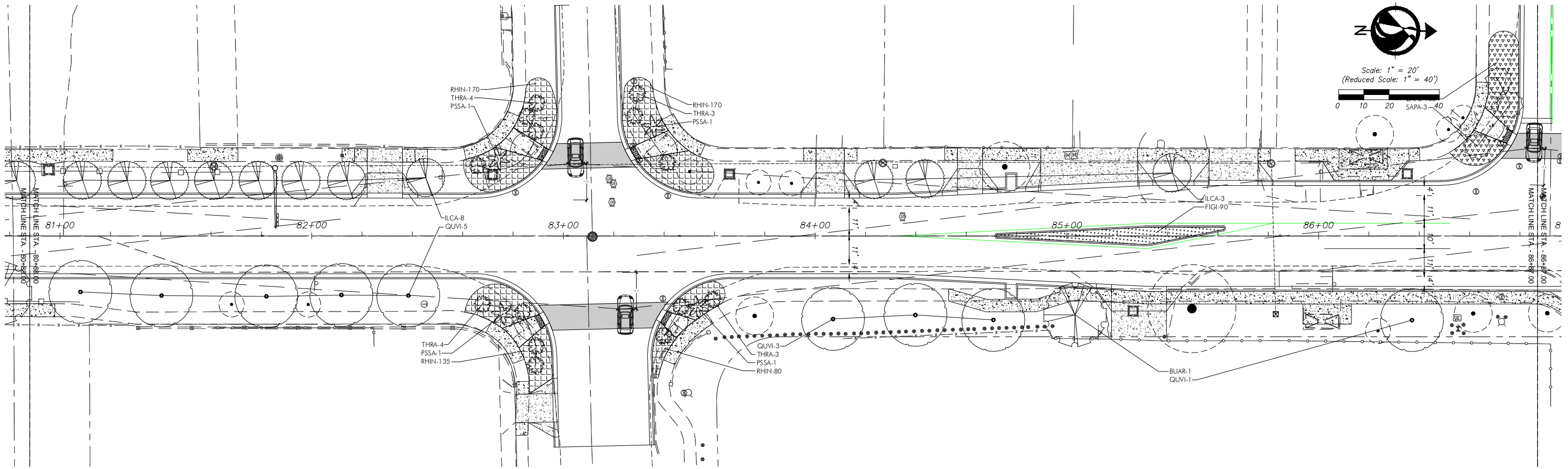
FROM OLD CUTLER ROAD TO SW 184TH STREET
PROJECT NO. 215615952 SHEET LA-32 OF 35



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FIGI	Ficus microcarpa "Green Island"	...Green Island Ficus	18"x18", install 24" o.c.
LADE	Lantana depressa	...Pineland Lantana	18"x18", install 18" o.c.
LOCH	Loropetalum chinensis "Rubrum"	...Fringeflower	18"x18", install 24" o.c.
MUCA	Muhlenbergia cappilaris	...Muhly Grass	3 gal cans, full, install 24" o.c.
RHIN	Rhaphiolepis indica	...Indian Hawthorne	18"x18", install 24" o.c.
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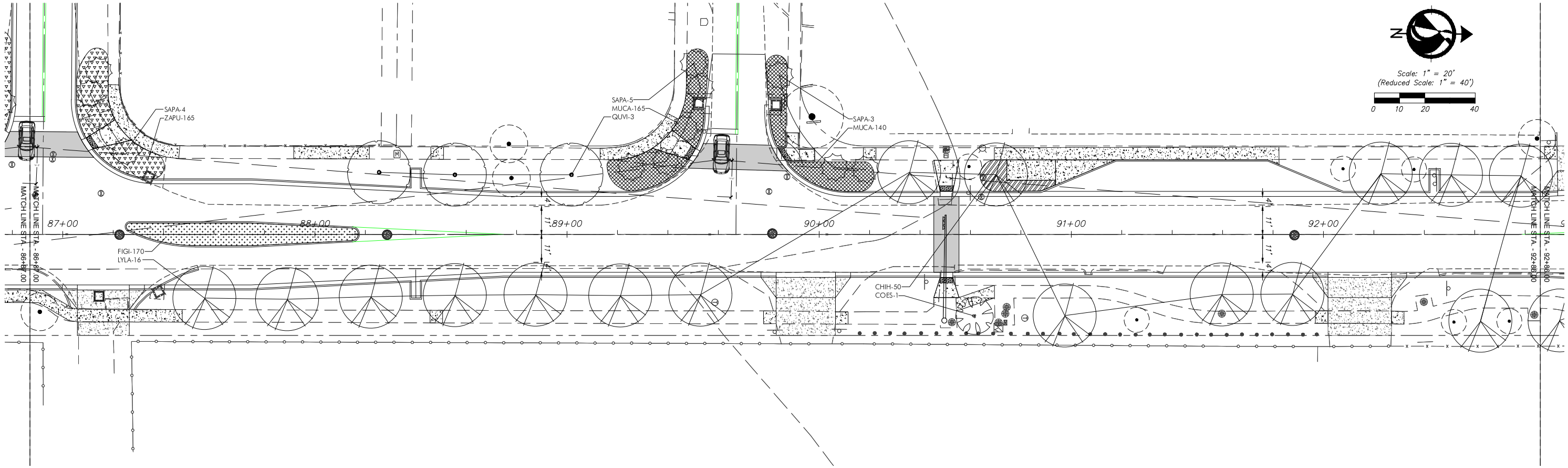

Scale: 1" = 20'
(Reduced Scale: 1" = 40')
0 10 20 40

PLANT LIST

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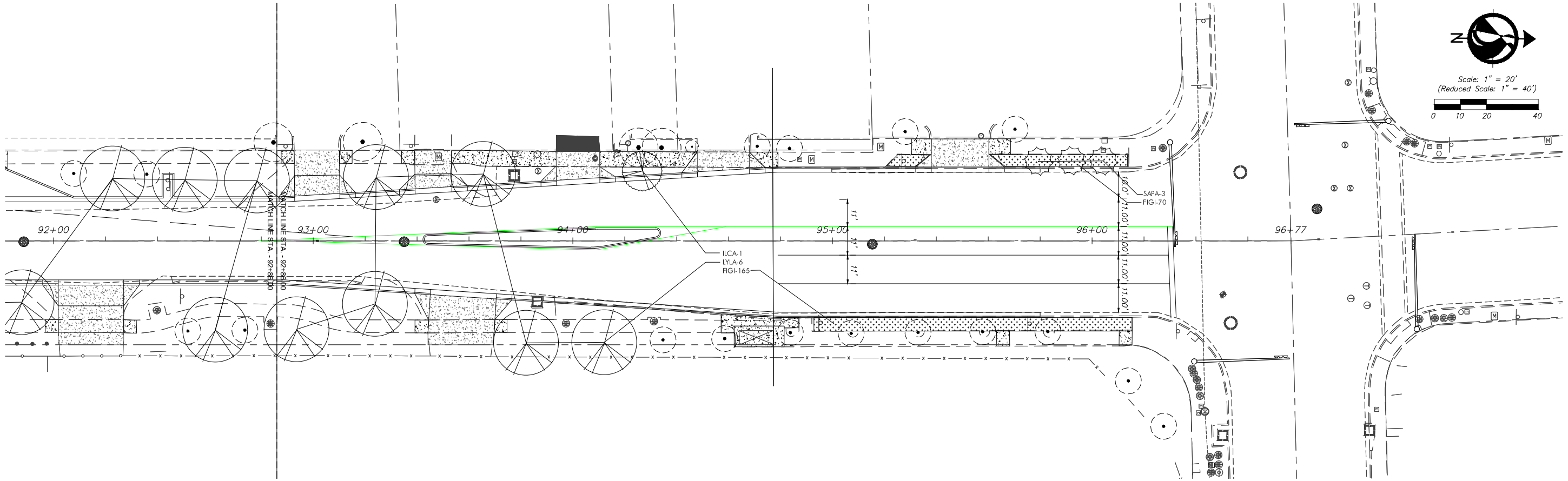

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LANDSCAPE SPECIFICATIONS
PART 1 - GENERAL

1.1 SCOPE
A. Contractor shall provide all labor, materials, equipment, supervision, and related work necessary to complete the landscape work in accordance with the intent of the landscape plans, schedules and these specifications. The extent of work is shown on the drawings which are a part of this document.

1.2 CONTRACTOR QUALIFICATIONS
A. Landscape installation work to be performed by a Contractor Certified by the Florida Nurserymen, Growers and Landscape Association (FNGLA) as a Certified Landscape Contractor. Any pruning to be supervised by an Arborist, certified by the International Society of Arboriculture (ISA) and licensed in County where work is performed.

1.3 INVESTIGATION OF UTILITIES
A. Prior to beginning work, the Contractor shall be responsible to locate existing underground utilities. Check with all utility companies and Sunshine State, call (811).

1.4 SUBSTITUTIONS
A. Only materials specified will be accepted, unless approved in writing by the Landscape Architect in advance.

1.5 PLANT SIZES
A. All plant sizes shall equal or exceed the minimum sizes as specified in the plant list. When plant sizes are specified as a range of size, installed materials shall average the mean of the range specified. Plants shall be measured following pruning, with branches in normal position. All necessary pruning shall be done at the time of planting.

1.6 PLANT QUALITY
A. All plant material shall be equal to or better than Florida No. 1 as classified by "Grades and Standards for Nursery Plants" by the Division of Plant Industry, Florida Department of Agriculture. They shall have a growth habit that is normal for the species; healthy, vigorous, free from insects, disease and injury.

B. The Owner or Landscape Architect reserves the right to refuse any plant material which does not conform to the intent of the written specifications or design.

C. CIRCLING ROOTS FOUND ON CONTAINER-GROWN MATERIAL WILL NOT BE ACCEPTED UNLESS REMEDIAL ROOT PRUNING, APPROVED BY THE LANDSCAPE ARCHITECT IS DONE BEFORE PLANTING.

1.7 PLANT QUANTITY
A. The plant quantities shown on the plant list are to be used only as an aid to bidders. In the case of discrepancy between the plant list and the plan, the quantity on the plan shall override the plant list.

1.8 UNIT PRICES
A. The successful bidder shall furnish to the Owner and the Landscape Architect, a unit price breakdown for all materials. The Owner may, at his discretion, add to or delete from the materials utilizing the unit price breakdown submitted to and accepted by the Owner.

1.9 SUBMITTALS
A. Fertilizer: The Contractor shall submit to the Owner and Landscape Architect documentation that all the fertilizer used for the project is of the analysis specified and placed at the rates specified in section 2.2 FERTILIZER.

B. Planting soil: The Contractor shall submit a sample of the planting soil (approximately 1 cu. Ft.) for approval by the Landscape Architect prior to delivery to the site.

1.10 CLEAN-UP & MAINTENANCE OF TRAFFIC
A. Follow procedures in FDOT Index 600 for maintenance of traffic during construction.

B. At the end of each work day, the Contractor shall remove debris and shall barricade the un-filled holes in a manner appropriate in the path of pedestrians and motorists.

C. Upon completion of the work or any major portion of the work or as directed by the Landscape Architect, all debris and surplus material from his work shall be removed from the job site.

1.11 MAINTENANCE PRIOR TO ACCEPTANCE
A. The Contractor is responsible to maintain the plantings until they are accepted under the provisions of 1.12 "ACCEPTANCE OF INSTALLATION".

1. Plants: Begin maintenance immediately following the final plant installation operation for each plant and continue until all plant installation is complete and accepted. Maintenance shall include watering all plants, weeding, mulching, pest and disease control, tightening and repairing of guys, repair of braces, removal of dead growth, resetting of plants to proper grade or up-right position, restoration of plant saucer, litter pick-up in plant beds and other necessary operations to assure specified minimum grade of Florida No. 1.

2. Turf Areas: Begin maintenance of turf immediately following the placement of sod and continue until sod installation is complete and accepted. Maintenance shall include but not be limited to, watering, leveling, mowing, weed and pest control, fungus and disease control and other necessary operations as determined by the Landscape Architect and good nursery practice.

3. Re-setting or straightening trees and palms:
The Contractor shall re-set and/or straighten trees and palms as required at no additional cost to the Owner unless caused by sustained winds of 75 mph or more. Then, the costs of the operations may be charged to the owner. Re-set trees within 48 hours.

1.12 ACCEPTANCE OF INSTALLATION
A. Inspection: Inspection of the work, to determine completion of contract work, exclusive of the possible replacement of plants and turf, will be made by the Landscape Architect at the conclusion of the maintenance period. Written notice requesting such an inspection and submitted by the Contractor at least ten (10) days prior to the anticipated date.

1.13 GUARANTEE
A. Guarantee all plants for a period of one year (CCD). Guarantee shall commence from the date of written acceptance. Plant material which is on the site and scheduled to be relocated is not covered by the guarantee except in the case of Contractor's negligence or work that has been done in an unworkman-like manner. The Contractor is not responsible for loss due to acts of god, (i.e.) sustained winds of 75 mph or more, floods, frost, lightning, vandalism or theft.

1.14 REPLACEMENT
A. Replacement shall be made during the guarantee period as directed by the Landscape Architect within ten (10) days from time of notification. For all replacement plant material, the guarantee period shall extend for an additional forty-five (45) days beyond the original guarantee period. The Contractor shall be responsible to provide water to the replacement plants in sufficient quantity to aid in their establishment. At the end of the guarantee period, inspection will be made by the Landscape Architect, upon written notice requesting such inspection and submitted by the Contractor at least five (5) days before the anticipated date. Replacement plants must meet the requirements of Florida No. 1 at time of inspection. Remove from the site all plants that are dead or in a state of unsatisfactory growth, as determined by the Landscape Architect. Replace these and any plants missing due to the Contractor's negligence as soon as conditions permit.

1. Materials and Operations: All replacement plants shall be of the same kind and size as indicated on the plant list. The Contractor shall supply and plant the plants as specified under planting operations.

2. Cost of Replacements: A sum sufficient to cover the estimated cost of possible replacements, including material and labor will be retained by the Owner and paid to the Contractor after all replacements have been satisfactorily made and approved by the Landscape Architect.

PART 2 - MATERIALS

2.1 PLANTING SOIL
A. Planting soil for trees, shrubs and ground covers shall be of the composition noted on the plans, measured by volume.

B. Soil for Sodded Areas: shall be coarse lawn sand.

2.2 FERTILIZER
A. Fertilizer for trees, palms, shrubs, and groundcovers shall be as follows: LESCO Palm Special 13-3-13 or equal, Sulfur coated with iron and other minor elements and maximum of 2% chlorine, or brand with equal analysis. The fertilizer shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original unopened containers, bearing the manufacturer's guaranteed analysis. Fertilizer for sod and seeded areas shall be 8-6-8, 50% organically derived nitrogen, or equal.

2.3 WATER
A. The Contractor shall provide potable water on site, available from the start of planting. The Contractor is responsible to ascertain the location and accessibility of the water source. The Contractor is responsible to provide the means of distribution (i.e. water truck, hoses, etc.) for distribution of water to the planting areas.

2.4 MULCH
A. Mulch shall be as specified on the Plant List.

2.5 ROOT BARRIER MATERIAL
A. Root barrier material shall be 24" deep polypropolylene panels by DeepRoot or approved equal.

B. Install per details in the plans.

PART 3 - INSTALLATION PROCEDURES

3.1 LAYOUT
A. Verify location of all underground utilities and obstructions prior to excavation.

3.2 HERBICIDE TREATMENT
A. In all areas infected with weed and/or grass growth, a systemic herbicide shall be applied per manufacturer's rates. When it has been established where work will be done, the systemic herbicide shall be applied in accordance with manufacturer's labeling to kill all noxious growth. Contractor shall schedule his work to allow more than one application to obtain at least 95% kill of undesirable growth. If necessary, Contractor shall conduct a test to establish suitability of product and applicator to be used on this project, prior to execution of the full application.

3.3 PLANT PIT EXCAVATION AND BACKFILLING
A. Trees: See the Planting and Bracing Details and notes.

B. All planting holes shall be hand dug where machine dug holes may adversely affect utilities or improvements.

C. Shrubs and Groundcover: Shrubs and groundcover shall be planted in a soil bed as described in the notes and details. Space shrubs and provide setback from curb and pavements as shown in the plans.

D. Watering of field-grown plants: Thoroughly puddle in water to remove any air pockets in the plant hole.

3.4 WATERING
A. The Contractor is responsible to provide the water for all new plants and transplants and means of distribution (i.e. hand watering or water truck) during the maintenance period and extending into the period after acceptance until the full schedule as listed below is complete. Water for trees and other large field grown plants shall be supplemented by hand or water truck, in addition to the irrigation system, (if one is provided). Contractor can adjust watering schedule during heavy rain season upon approval of the Landscape Architect.

AMOUNT OF WATER PER APPLICATION
For trees up to 5 inch caliper - 5 gallons
From 5 to 8 inch caliper - 25 gallons
9 inch and up caliper - 50 gallons

FREQUENCY OF WATER
Daily for the first week
3 times per week for weeks 2 - 5
2 times per week for weeks 6 - 8
1 time per week for weeks 9 - 12

B. Water in plants by thoroughly soaking of the entire root ball immediately after planting. For large trees and shrubs, add water while backfilling hole to eliminate any air pockets in the soil around the root ball.

C. Water shrubs, sod and groundcover a minimum of once daily for a week or until an irrigation system is fully operational. If no irrigation system is to be installed, the Contractor shall be responsible for watering the shrub, sod, and groundcover for the time specified above, after installation of each section of the planting installed.

3.5 FERTILIZING
A. Add fertilizer on top of the surface of shrubs beds and tree and palms root balls two (2) months after installation. Fertilize sod within two (2) days after installing after planting of each segment of the job. Fertilizer shall be applied after soil has been well moistened. Fertilizer shall be washed off of plant leaves and stems immediately after application. Apply at the following rates:

1. Trees and Large Shrubs: One (1) pound per inch of trunk diameter, spread evenly over the root ball area.

2. Shrubs: One half (1/2) handful per shrub, spread evenly over the root ball area.

3. Groundcover: Twelve (12) pounds per 100 sq. ft. of bed area.

4. Sod: Twelve (12) pounds per 1,000 sq. ft. Wash fertilizer off blades immediately after spreading.

3.6 MULCHING
A. Spread mulch two (2) inches thick uniformly over the entire surface of shrubs and groundcover beds, depth measured after settling, unless otherwise specified in the plans. Provide 36" diameter bed of mulch, measured from outer edge of the trunk, for all trees and palms planted in sod areas. Keep mulch away from contact with the trunk. Create a 6" high ring of mulch at the outer edge of tree and palm holes.

3.7 GUYING AND BRACING
A. See the details bound herewith or made part of the plans.

3.8 SODDING
A. Provide a blanket of lawn sand as described in the notes in these plans. Prior to planting, remove stones, sticks, etc. from the sub-soil surface. Excavate existing non-conforming soil as required so that the finish grade of sod is flush with adjacent pavement or top of curb as well as adjacent sod in the case of sod patching.

B. Place sod on moistened soil, with edges tightly butted, in staggered rows at right angles to slopes. The sod shall be rolled with a 500 pound hand roller immediately after placing.

C. Keep edge of sod bed a minimum of 18" away from groundcover beds and 24" away from edge of shrub beds and 36" from trees, measured from the edge of plant or tree trunk.

D. Sod shall be watered immediately after installation to uniformly wet the soil to at least two inches below the bottom of sod strips.

E. Apply fertilizer to the sod as specified in Section 3.5.

F. Excavate and remove excess soil so top of sod is flush w/top of curb or adjacent pavement, or adjacent existing sod.

PLANT BED PREPARATION NOTES

1. In all areas where new sod and shrub and groundcover masses are to be planted, kill all existing weeds by treating with systemic herbicide prior to beginning soil preparation.

2. In all shrub and groundcover beds, excavate and backfill soil as described in "Plant List(s)". If no specific preparation is noted, prepare soil as described below for either condition, over the entire area to be planted:

Condition A:
If any compacted road base or asphalt or rocky soil is encountered, remove compacted material entirely to allow an 18" depth of planting soil per plant list unless otherwise stated. Backfill the entire area of the shrub and groundcover beds with 18" planting soil (as specified in Plans) to within 2 inches of the adjacent pavement or top of curb. Remove all debris and rocks and pebbles larger than 2 inches in size and level the grade before planting.

Condition B:
Where no compacted soil is encountered, thoroughly mix 6 inches of planting soil per plant list into the existing soil to a depth of 18 inches unless otherwise stated. If required, excavate and remove the existing soil to lower the grade, so that the prepared mix is finished to a minimum of 2 inches below top of curb or adjacent walkway. Remove all debris and rocks and pebbles larger than 2 inches in size and level the grade before planting.

For all sod areas, spread a 2" deep layer of lawn sand prior to sodding. Remove all debris and rocks and pebbles larger than 2 inchs in size and level the grade before sodding. Remove, if required, existing soil so that top of sod is flush with and adjacent top of curb or pavement.

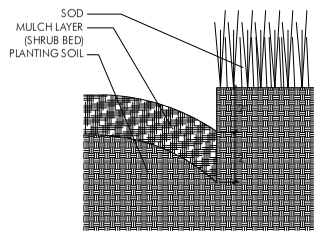
For Trees and shrubs larger than 7 gallon, Add Diehard® transplant innoculant supplied by Horticultural Alliance, Inc. (800-628-6373) or equal. Mix into top 8-10 inches of planting hole, making sure it is contact with the root ball. Add at a rate specified by manufacturer (typically 4oz. per 1 inches of trunk caliper or 7 gallon can).

SPACING OF PLANTS (SEE PLANT SPACING DETAIL)

1. Plants shall be planted sufficiently away from edges of pavements or curbs, to allow for growth toward the edges of the bed.

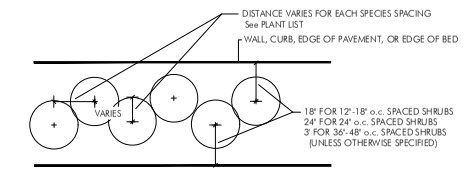
PROTECTION OF PLANTS

1. The Contractor shall be responsible to protect existing trees and shrubs in and adjacent to the area of work. Erect barriers as necessary to keep equipment and materials, any toxic material, away from the canopy drip line of trees and shrubs. DO NOT PILE SOIL OR DEBRIS AGAINST TREE TRUNKS OR DEPOSIT NOXIOUS BUILDING SUPPLIES OR CHEMICALS WITHIN THE DRIP LINE.



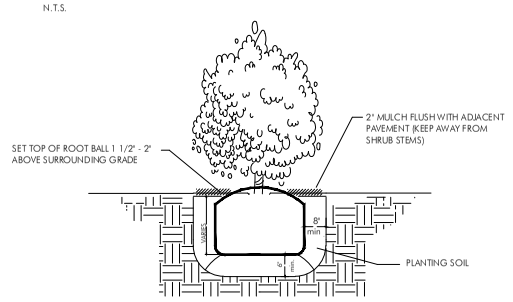
PLANT BED EDGING DETAIL

N.T.S.



SHRUB SPACING DIAGRAM

N.T.S.



SHRUB INSTALLATION DETAIL

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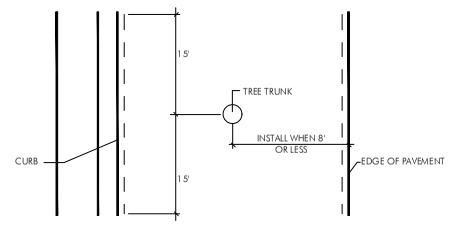
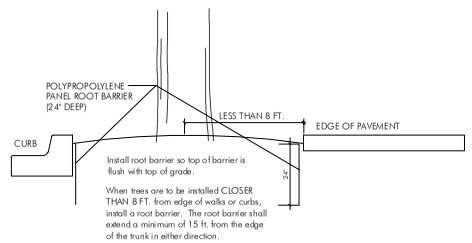


PLAN VIEW



ROOT BARRIER INSTALLATION DETAIL

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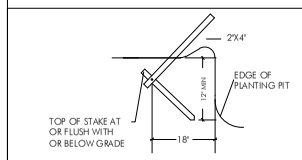
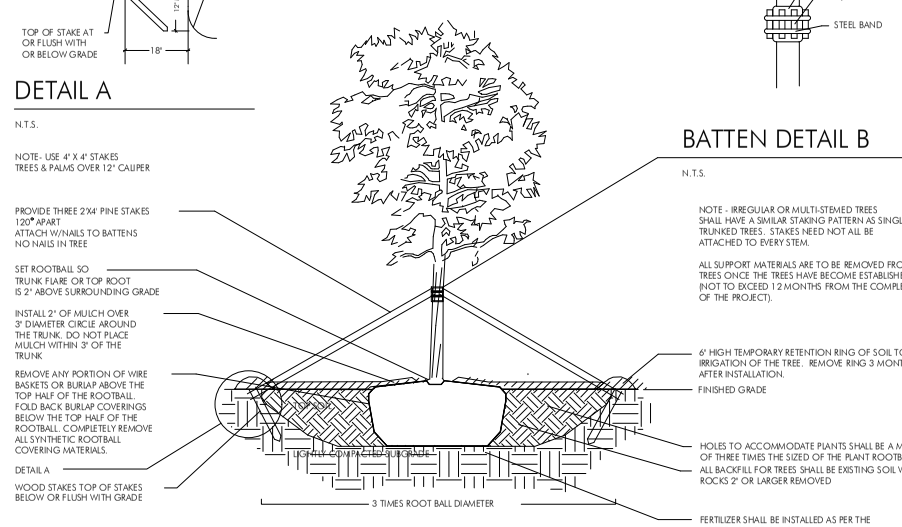


DETAIL A

N.T.S.

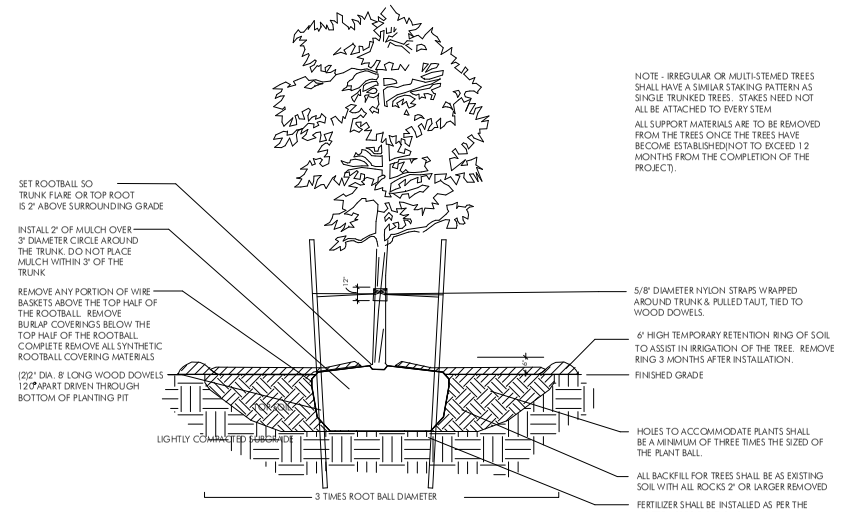


BATTEN DETAIL B

N.T.S.

PLANTING & BRACING DETAIL OVER 3 1/2" CALIPER

N.T.S.



PLANTING & BRACING DETAIL UNDER 3 1/2" CALIPER

N.T.S.

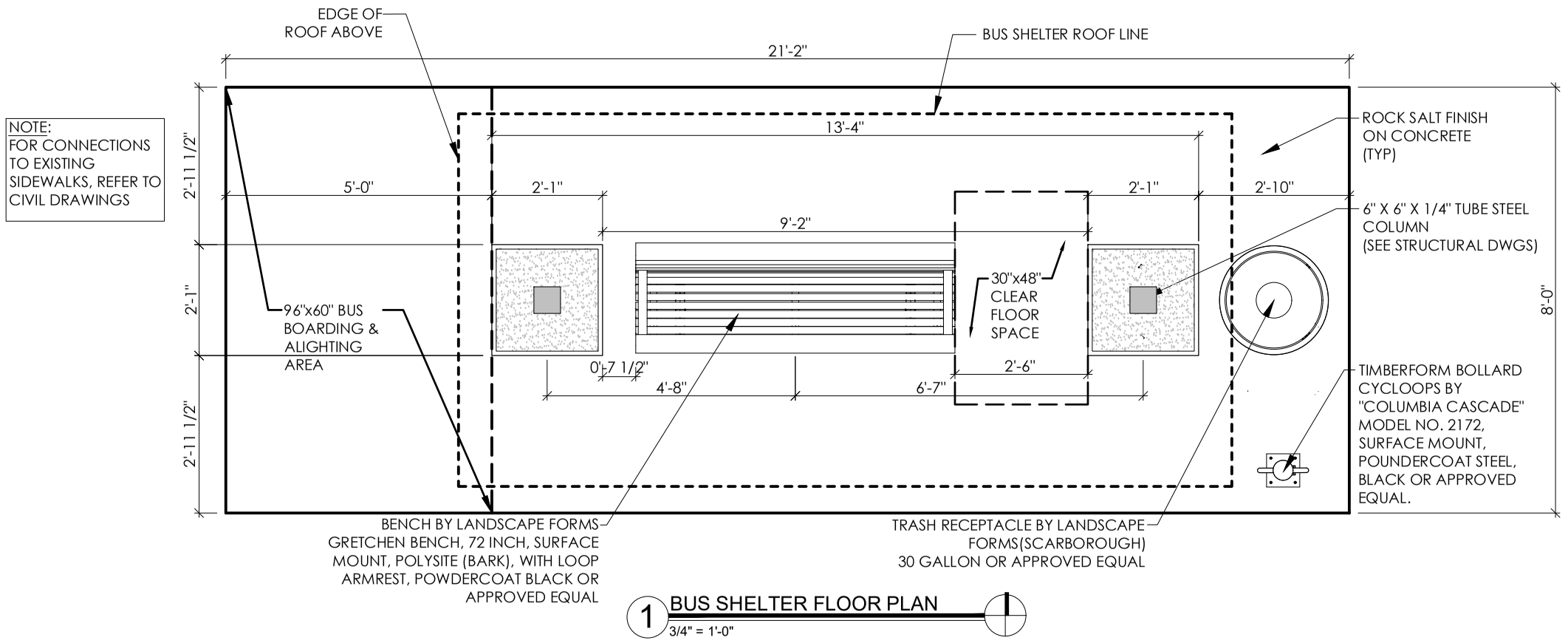
REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY	C.G.	2-10-2022	DRAWN BY		
CHECKED BY	K.S.	2-10-2022	CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

PLANTING SPECS & DETAILS -FRANJO ROAD - 100% CDs-



1 BUS SHELTER FLOOR PLAN
3/4" = 1'-0"

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

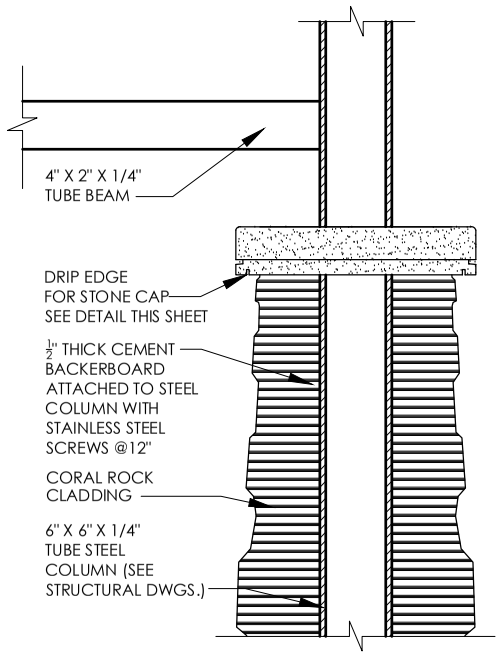
Stantec
901 Ponce de Leon Blvd. Suite 900
Coral Gables, Florida 33134
www.stantec.com

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY:					

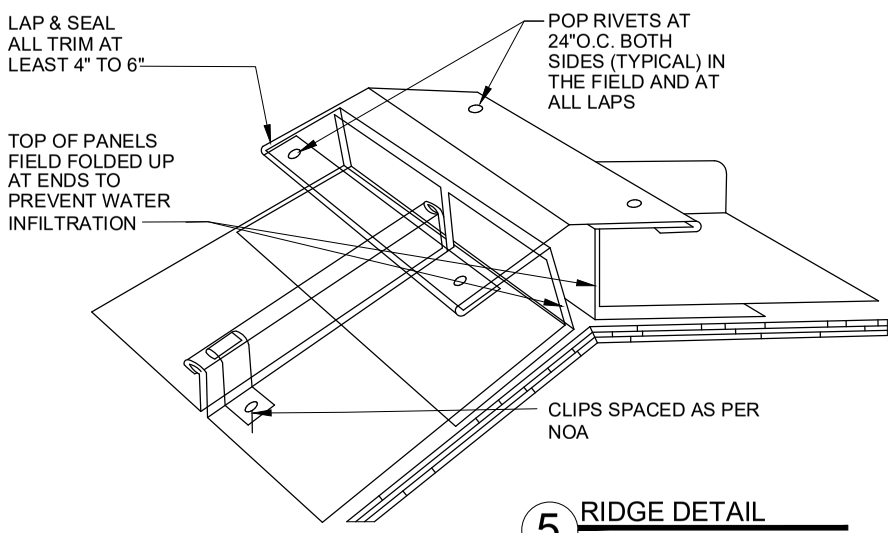
MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST.
MIAMI, FLORIDA 33128

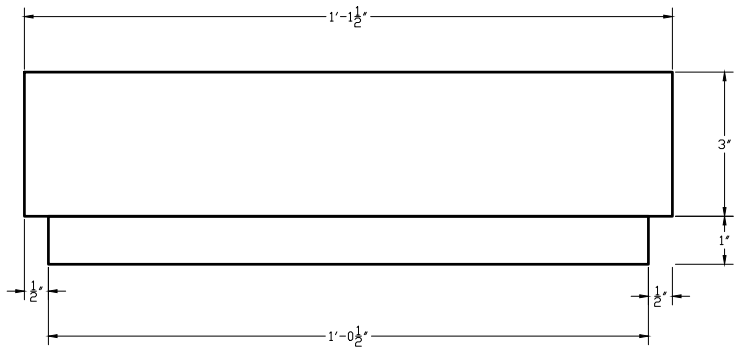
ARCHITECTURAL DETAILS



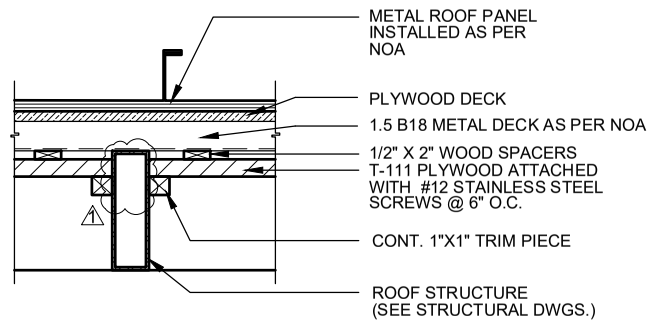
1 COLUMN DETAIL
1 1/2" = 1'-0"



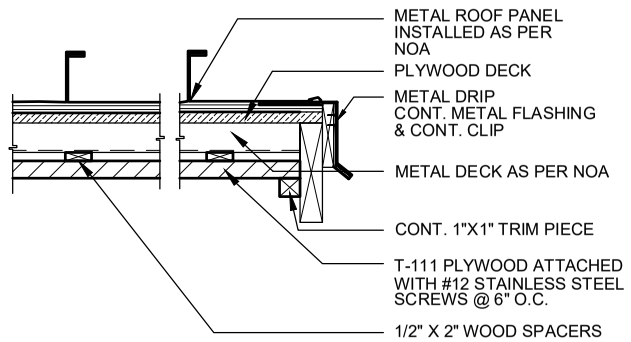
5 RIDGE DETAIL
NTS



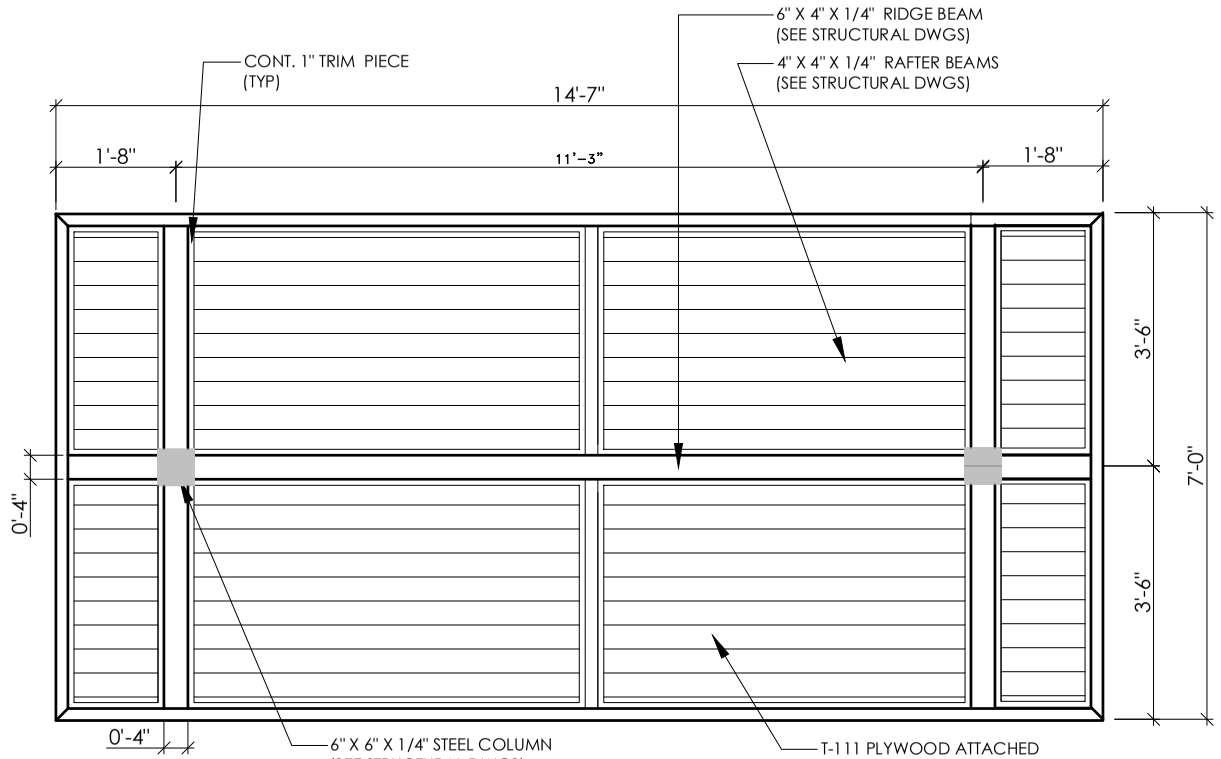
6 STONE CAP DETAIL
NTS



2 ROOF DETAIL
1/2" = 1'-0"



4 ROOF EDGE DETAIL
1/2" = 1'-0"



3 FRAMING PLAN
3/4" = 1'-0"

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
⚠ MDCPS COMMENTS			RHF SC 18.06.21					

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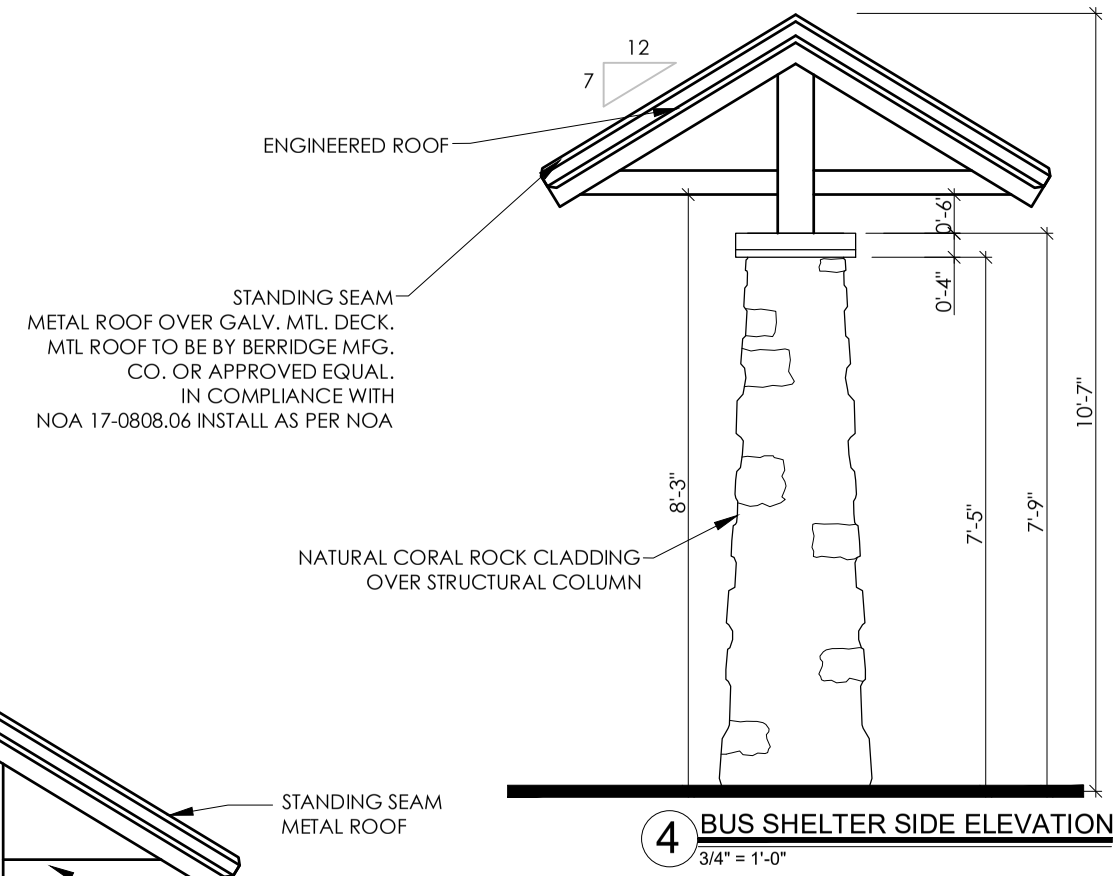
	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY:					

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

ARCHITECTURAL DETAILS



4 BUS SHELTER SIDE ELEVATION
3/4" = 1'-0"

3 BUS SHELTER SECTION
3/4" = 1'-0"

5 BUS SHELTER FRONT ELEVATION
3/4" = 1'-0"

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

ARCHITECTURAL DETAILS

GENERAL NOTES

1. THE GOVERNING CODE FOR THIS PROJECT IS THE **FLORIDA BUILDING CODE, 2020 EDITION**. THIS CODE PRESCRIBES WHICH EDITION OF EACH REFERENCED STANDARD APPLIES TO THIS PROJECT.

2. TO THE BEST OF OUR KNOWLEDGE, THE STRUCTURAL DRAWINGS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE GOVERNING BUILDING CODE.

3. CONSTRUCTION IS TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.

4. THE STRUCTURAL DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH THE CIVIL DOCUMENTS. IF A CONFLICT EXISTS, THE MORE STRINGENT GOVERNS.

5. DETAILS LABELED "TYPICAL" APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED, WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING THE APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE ENGINEER.

6. CONTRACTORS WHO DISCOVER DISCREPANCIES, OMISSIONS OR VARIATIONS IN THE CONTRACT DOCUMENTS DURING BIDDING SHALL IMMEDIATELY NOTIFY THE ENGINEER. THE ENGINEER WILL RESOLVE THE CONDITION AND ISSUE A WRITTEN CLARIFICATION.

7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL CONTRACT DOCUMENTS WITH FIELD CONDITIONS AND DIMENSIONS AND PROJECT SHOP DRAWINGS PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS; USE ONLY PRINTED DIMENSIONS. REPORT ANY DISCREPANCIES IN WRITING TO THE ENGINEER PRIOR TO PROCEEDING WITH WORK. DO NOT CHANGE SIZE OR LOCATION OF STRUCTURAL MEMBERS WITHOUT WRITTEN INSTRUCTIONS FROM THE STRUCTURAL ENGINEER OF RECORD.

8. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY, HIS OWN WORK AND THE PUBLIC FROM HARM. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND JOBSITE SAFETY INCLUDING ALL OSHA REQUIREMENTS.

9. THE STRUCTURE IS DESIGNED TO BE STRUCTURALLY SOUND WHEN COMPLETED. PRIOR TO COMPLETION, THE CONTRACTOR IS RESPONSIBLE FOR STABILITY AND TEMPORARY BRACING, INCLUDING, BUT NOT LIMITED TO, MASONRY WALLS. WHEREVER THE CONTRACTOR IS UNSURE OF THESE REQUIREMENTS, THE CONTRACTOR SHALL RETAIN AN ENGINEER LICENSED IN THE STATE WHERE THIS PROJECT IS LOCATED TO DESIGN AND INSPECT THE TEMPORARY BRACING AND STABILITY OF THE STRUCTURE.

10. DESIGN WIND LOADS

a. GOVERNING CODE	ASCE 7-16
b. BUILDING RISK CATEGORY	II
c. ULTIMATE DESIGN WIND SPEED	VULT = **175 MPH** (3 SECOND GUST)
d. NOMINAL DESIGN WIND SPEED	VASD = **136 MPH** (3 SECOND GUST)
e. MEAN ROOF HEIGHT	**5** FEET
f. DIRECTIONALITY FACTOR	KD = **0.85**
g. TOPOGRAPHIC FACTOR	KZT = **1.0**
h. EXPOSURE	**C**
i. ENCLOSURE CLASSIFICATION	**OPEN**
INTERNAL PRESSURE COEFFICIENT	GCPI = **0**

SHOP DRAWINGS

1. TWENTY WORKING DAYS PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR EOR'S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SHOP DRAWINGS AND THE DATE THE SHOP DRAWINGS WILL BE RECEIVED BY THE ARCHITECT. THE EOR SHALL HAVE THE OPPORTUNITY TO REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR. THE FINAL SHOP DRAWING SCHEDULE SHALL BE DEVELOPED AND SUBMITTED TO THE EOR. IN ACCORDANCE WITH THE SHOP DRAWING SCHEDULE, THE EOR WILL RETURN THE SHOP DRAWING ITEMS WITHIN **TEN** WORKING DAYS, UNLESS OTHERWISE NEGOTIATED BETWEEN STANTEC AND THE CLIENT, AFTER HAVING RECEIVED THE ELECTRONIC SHOP DRAWING.

2. SUBMIT SPECIFIC COMPONENTS, SUCH AS COLUMNS, FOOTINGS, ETC., IN A SINGLE PACKAGE. SUBMIT SIMILAR FLOORS TOGETHER.

3. ON FIRST SUBMITTAL, CLEARLY FLAG AND CLOUD ALL DIFFERENCES FROM THE CONTRACT DOCUMENTS. ON RESUBMITTALS, FLAG AND CLOUD ALL CHANGES AND ADDITIONS TO PREVIOUS SUBMITTAL; ONLY CLOUDED ITEMS WILL BE REVIEWED.

4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT THE JOB SITES, FOR TOLERANCES, CLEARANCES, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THE WORK WITH OTHER TRADES AND FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS.

5. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL REVIEW AND APPROVE SUBMITTALS AND SHALL SIGN AND DATE EACH DRAWING PRIOR TO SUBMITTING TO THE ARCHITECT. THIS APPROVAL IS TO CONFIRM THAT THE SUBMITTAL IS COMPLETE, COMPLIES WITH THE SUBMITTAL REQUIREMENTS AND IS COORDINATED WITH FIELD DIMENSIONS, OTHER TRADES, ERECTION SEQUENCING AND CONSTRUCTABILITY.

6. THE STRUCTURAL ENGINEER REVIEWS SUBMITTALS TO CONFIRM THAT THE SUBMITTAL IS IN GENERAL CONFORMANCE WITH THE DESIGN CONCEPT PRESENTED IN THE CONTRACT DOCUMENTS. QUANTITIES AND DIMENSIONS ARE NOT CHECKED. NOTATIONS ON SUBMITTALS DO NOT AUTHORIZE CHANGES TO THE CONTRACT SUM. CHECKING OF THE SUBMITTAL BY THE STRUCTURAL ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DEVIATIONS FROM THE CONTRACT DOCUMENTS AND FROM ERRORS OR OMISSIONS IN THE SUBMITTAL.

A. THE CONTRACTOR MAY REQUEST CAD FILES OF THE STRUCTURAL DRAWINGS, WHICH MAY BE PROVIDED - AT THE STRUCTURAL ENGINEER'S DISCRETION - UPON A WRITTEN AGREEMENT BETWEEN THE STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR.

8. THE FOLLOWING ITEMS ARE SHOP DRAWINGS THAT SHALL BE SUBMITTED FOR REVIEW:

a. REINFORCING STEEL
b. CONCRETE/GROUT MIXES
c. COMPACTION REPORTS
d. PRODUCT DATA/ACCESSORIES
e. EMBEDDED ITEMS
f. UTILITY PENETRATIONS THROUGH STRUCTURAL MEMBERS
g. EMBEDDED UTILITIES IN STRUCTURAL MEMBERS

SHALLOW FOUNDATIONS

1. FOOTING SIZES AND REINFORCING ARE BASES ON AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF **2,000 PSF**. ALL FOOTINGS SHALL BEAR ON NATURAL SOIL OR ROCK COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D-1557.

2. SUBGRADE PREPARATION SHALL BE FIELD CONTROLLED AND TESTED. PROVIDE COMPACTION REPORTS TO THE ENGINEER FOR RECORD.

3. CENTER ALL FOOTINGS UNDER THEIR RESPECTIVE COLUMNS OR WALLS, UNO.

EXCAVATION, BACKFILL AND DEWATERING

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT AND OSHA REGULATIONS. DO NOT EXCAVATE WITHIN ONE FOOT OF THE ANGLE OF REPOSE OF ANY SOIL BEARING FOUNDATION UNLESS THE FOUNDATION IS PROPERLY AGAINST SETTLEMENT.

2. DO NOT BACKFILL AGAINST WALLS UNTIL 7 DAYS AFTER THE WALLS ARE BRACED BY THE STRUCTURE OR ARE TEMPORARY BRACED. DO NOT BACKFILL CANTILEVERED RETAINING WALLS UNTIL CONCRETE IS 3 DAYS OLD. DO NOT BACKFILL UNTIL AFTER COMPLETION AND INSPECTION OF ANY WATERPROOFING.

3. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL ACCUMULATED WATER IN A MANNER THAT DOES NOT INCONVENIENCE OR DAMAGE THE WORK.

REINFORCED CONCRETE

1. COMPLY WITH ACI 301 AND 318.

2. PROVIDE STRUCTURAL CONCRETE WITH A MINIMUM ULTIMATE COMPRESSIVE DESIGN STRENGTH OF 4000 PSI IN 28 DAYS.

3. USE NORMAL WEIGHT CONCRETE FOR ALL STRUCTURAL MEMBERS UNO.

4. THE USE OF CALCIUM CHLORIDE AND/OR OTHER CHLORIDE CONTAINING AGENTS IN CONCRETE IS PROHIBITED.

5. CONCRETE MIXES SHALL USE LARGEST COARSE AGGREGATE PRACTICAL FOR MEMBERS BEING CAST.

6. PROVIDE ASTM A-615 GRADE 60 REINFORCING STEEL. REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE, WITH APPROPRIATE BAR SUPPORTS AND SPACERS. LAP CONTINUOUS REINFORCING 48 BAR DIA. PROVIDE COVER OVER REINFORCING AS FOLLOWS:

ELEMENT	BOTTOM	TOP	SIDES
FOOTINGS AND PILE CAPS	3"	2"	3"
BEAMS ABOVE GRADE	1 1/2"	1 1/2"	1 1/2"
COLUMNS	-	-	1 1/2"
SLABS ON GRADE	2"	1"	2"
SLABS ABOVE GRADE	3/4"	3/4"	1"
SLABS EXPOSED TO WEATHER	1 1/2"	1 1/2"	1 1/2"
WALLS RETAINING FILL	-	-	2"
WALLS EXPOSED TO WEATHER	-	-	1 1/2"
WALLS - ALL OTHERS	-	-	1"

7. UTILITIES SHALL NOT PENETRATE BEAMS OR COLUMNS BUT MAY PASS THROUGH SLABS AND WALLS INDIVIDUALLY, UNO. FOR OPENINGS 24" LONG OR LESS, CUT REINFORCING AND REPLACE ALONGSIDE OPENING WITH SPLICE BARS OF EQUIVALENT AREA WITH 48 BAR DIA. LAP. PREPARE AND SUBMIT SHOP DRAWINGS FOR OPENINGS LONGER THAN 24". FOR RECTANGULAR OPENINGS 12" LONG OR LONGER, ADD 1#5 X 6' MID DEPTH DIAGONAL AT ALL 4 CORNERS.

8. WHERE REINFORCING STEEL CONGESTION PERMITS, CONDUIT AND PIPES UP TO 1" DIAMETER MAY BE EMBEDDED IN CONCRETE PER ACI 318, SECTIONS 20.7 AND 26.8. SPACE AT 3 DIAMETERS O/C. PLACE BETWEEN OUTER LAYERS OF REINFORCING. IF CONDUITS ARE SIGNIFICANTLY CONGESTED, ADDITIONAL REINFORCING PERPENDICULAR TO PIPING MAY BE REQUIRED. REQUESTS TO EMBED LARGER PIPES SHOULD BE ACCOMPANIED BY A DETAILED DESCRIPTION AND BE SUBMITTED TO THE ARCHITECT FOR EVALUATION.

9. PROVIDE 3/4" CHAMFER FOR ALL EXPOSED CORNERS.

10. PROVIDE REINFORCING STEEL PLACER WITH A SET OF STRUCTURAL DRAWINGS FOR FIELD REFERENCE. INSPECT REINFORCING STEEL PLACING FROM STRUCTURAL DRAWINGS.

11. SUBMIT SHOP DRAWINGS FOR ALL CONCRETE MIXES INDICATING CONCRETE STRENGTH, SPECIFICATIONS FOR ADMIXTURES, PROPOSED LOCATIONS OF USE AND AMOUNTS OF MIXING WATER TO BE WITHHELD FOR LATER ADDITION AT PROJECT SITE. DO NOT ADD AIR ENTRAINING ADMIXTURES FOR SLABS ON GRADE.

12. SUBMIT STEEL REINFORCEMENT SHOP DRAWINGS THAT DETAIL FABRICATION, BENDING AND PLACEMENT. INCLUDE BAR SIZES, LENGTHS, SPACING, MATERIAL GRADE, BAR SCHEDULES, BENT BAR DIAGRAMS, BAR ARRANGEMENT, SPLICES AND LAPS, MECHANICAL CONNECTIONS AND SUPPORTS FOR CONCRETE REINFORCEMENT.

13. TEST COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C172:

a. OBTAIN AT LEAST ONE COMPOSITE SAMPLE FOR EACH 100 CU. YD. OR FRACTION THEREOF OF EACH CONCRETE MIXTURE PLACED EACH DAY.
b. OBTAIN ONE SLUMP TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE. COMPLY WITH ASTM C143.
c. CAST AND LABORATORY CURE TWO SETS OF TWO STANDARD SPECIMENS FOR EACH COMPOSITE SAMPLE.
d. CAST AND FIELD CURE TWO SETS OF TWO STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
e. TEST ONE LABORATORY-CURED SPECIMEN AT 7 DAYS AND THREE AT 28 DAYS. IF ONE OF THE FIRST TWO 28 DAY TESTS FALLS BELOW SPECIFIED STRENGTH, TEST THE REMAINING SPECIMEN AT 56 DAYS.
f. WHEN STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85 PERCENT OF COMPANION LABORATORY-CURED CYLINDERS, CONTRACTOR SHALL EVALUATE OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND CURING IN-PLACE CONCRETE.
g. TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING.

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Stantec
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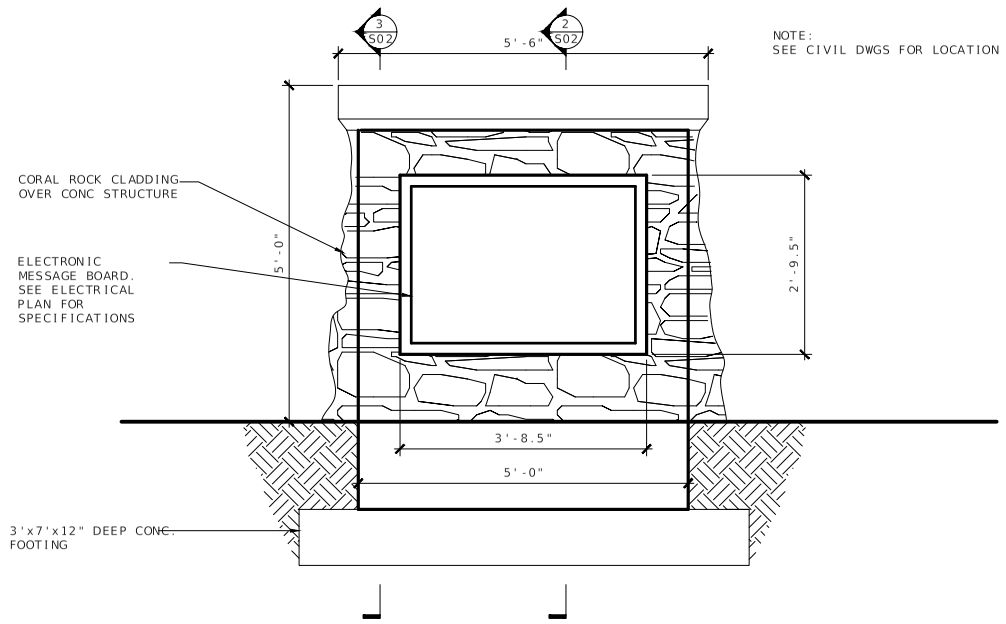
CHECKED BY	PG	09/27/21	CHECKED BY	PG	09/27/21
SUPERVISED BY:	PG				

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

STRUCTURAL DETAILS

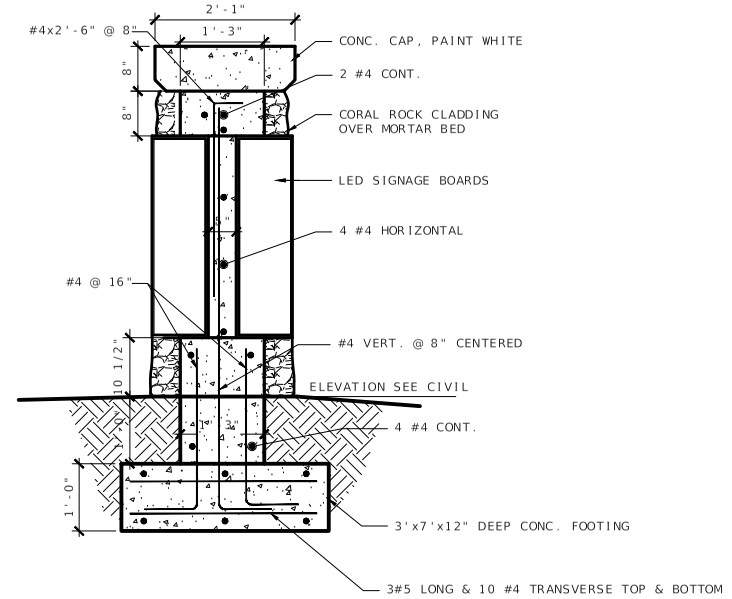


1 MESSAGE BOARD ELEVATIONS
SCALE: 3/4" = 1'-0"

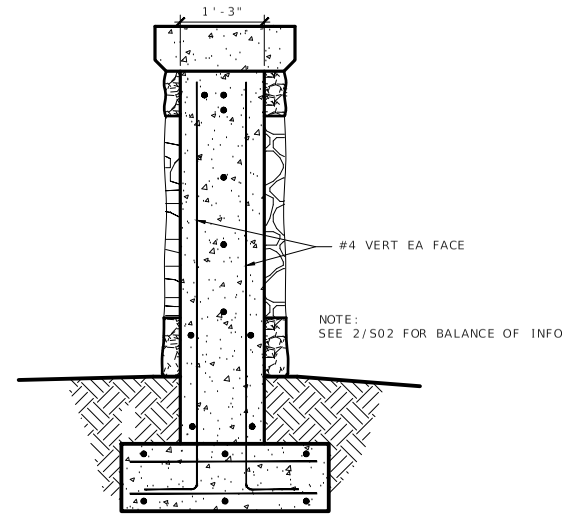
NOTES:
1. THICKNESS OF MORTAR VARIES DUE TO SIZE OF ROCKS. MORTAR SHOULD BE STRUCK AND SHALL BE NO MORE THAN 1" AND NO LESS THAN 1/2".

2. ROCK SIZES SHALL VARY AND BE NO MORE THAN 18" AND NO LESS THAN 4" (MAXIMUM DIMENSIONS).

3. CONTRACTOR TO COORDINATE THIS WORK WITH ELECTRICAL & TELEPHONE PROVISIONS AS SHOWN ON ELECTRICAL LIGHTING PLANS.



2 MESSAGE BOARD SECTION AT MIDDLE
SCALE: 3/4" = 1'-0"



3 MESSAGE BOARD SECTION AT ENDS
SCALE: 3/4" = 1'-0"

REVISIONS								
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SUPERVISED BY:	PG				

MIAMI-DADE COUNTY
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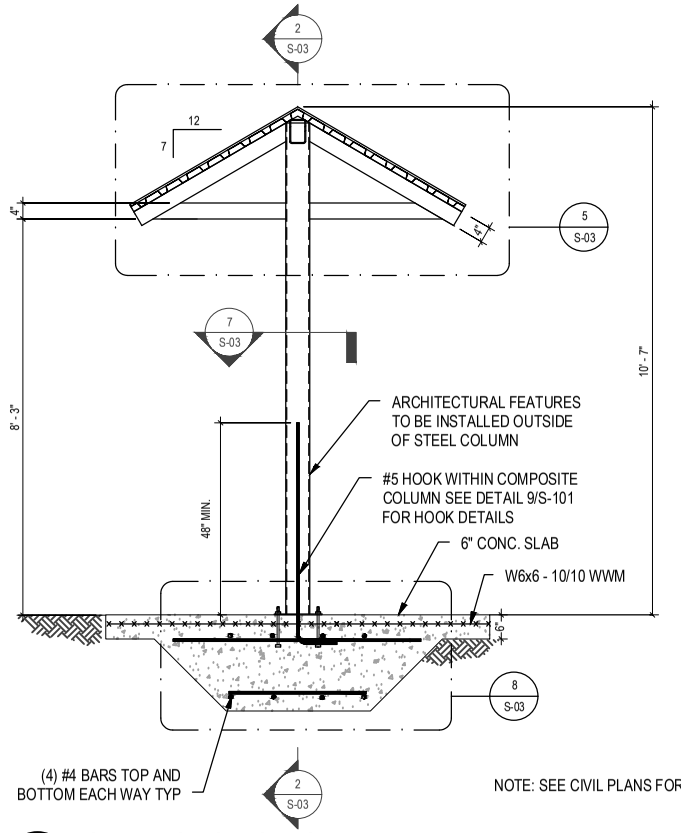
STRUCTURAL DETAILS

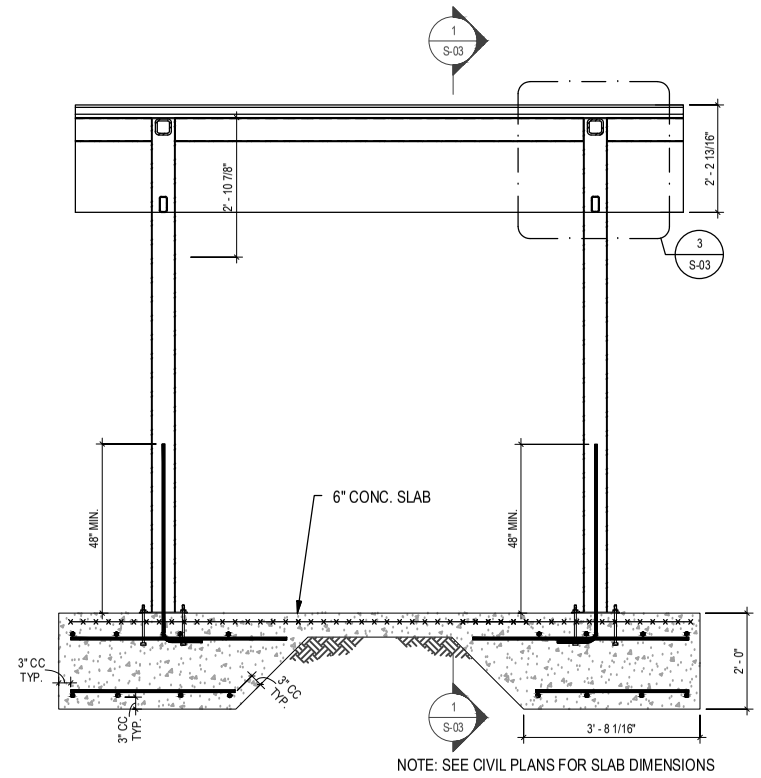
MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
FRANJO ROAD
FROM OLD CUTLER RD TO SW 184th STREET
PROJECT NO. 20190519 SHEET S03 OF 82



NOTE: CONCRETE SLAB / SIDEWALK AND FOOTING SHALL BE POURED MONOLITHICALLY

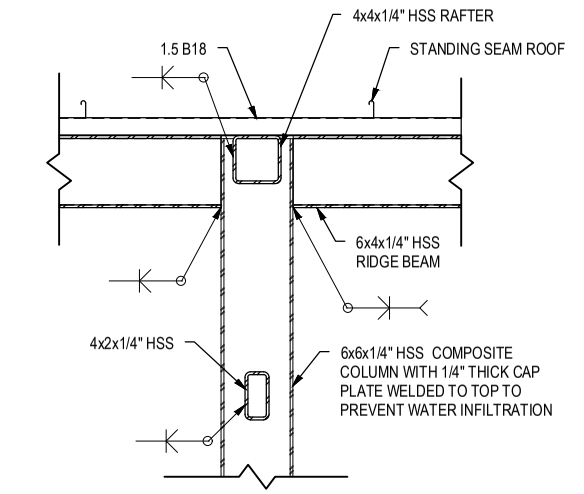
NOTE: SEE CIVIL PLANS FOR SLAB DIMENSIONS

1 S-03 SIDE - SECTION CUT
1/2" = 1'-0"

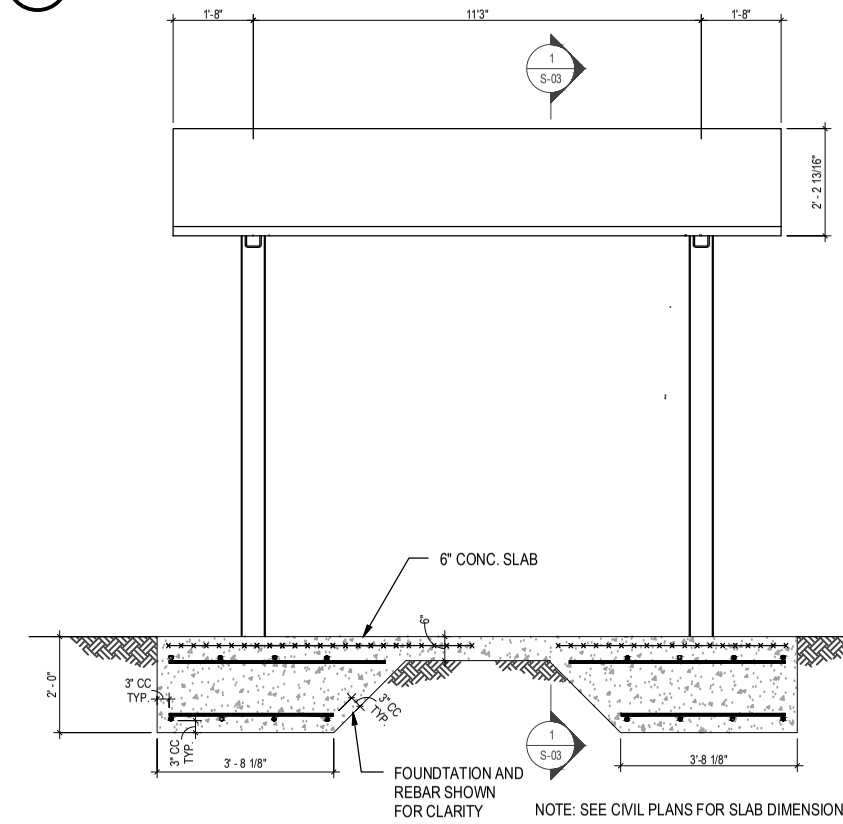


NOTE: SEE CIVIL PLANS FOR SLAB DIMENSIONS

2 S-03 SOUTH SECTION CUT
1/2" = 1'-0"

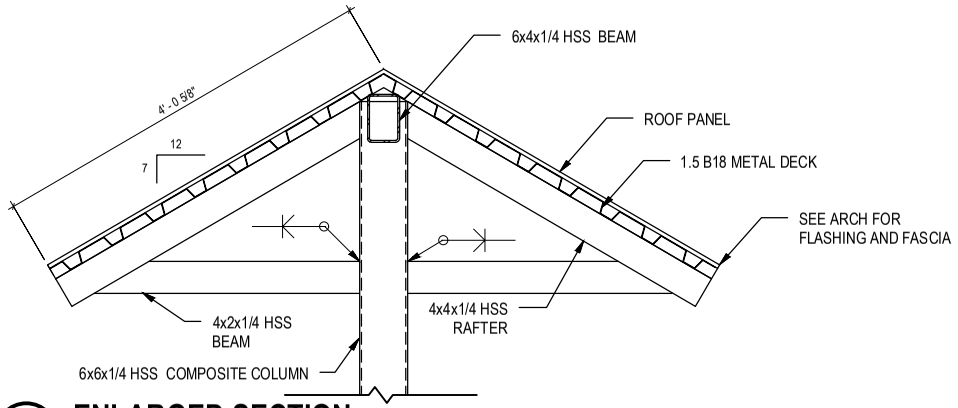


3 S-03 ENLARGED SECTION CUT
1 1/2" = 1'-0"

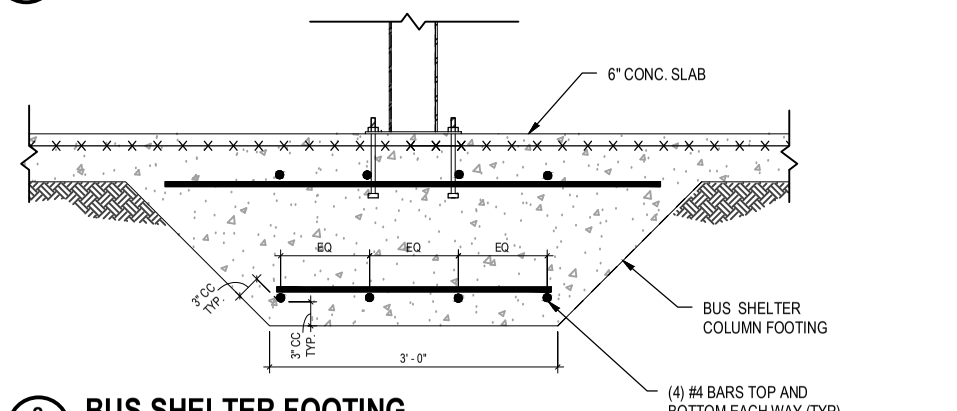


NOTE: SEE CIVIL PLANS FOR SLAB DIMENSIONS

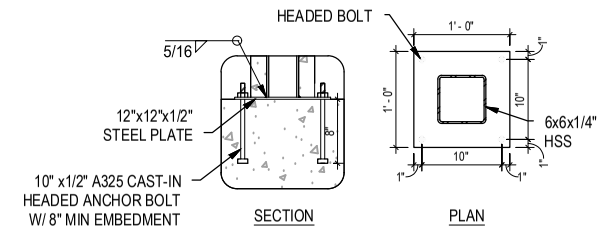
4 S-03 SOUTH ELEVATION
1/2" = 1'-0"



5 S-03 ENLARGED SECTION
1" = 1'-0"

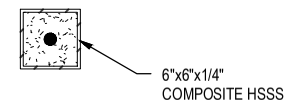


8 S-03 BUS SHELTER FOOTING
1" = 1'-0"

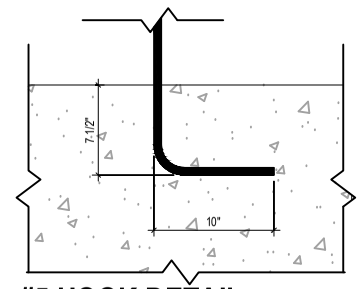


6 S-03 ANCHOR PLATE
1" = 1'-0"

NOTE: STEEL PLATES FOR LARGE BUS SHELTER SHALL BE 12" x 12" x 3/4"



7 S-03 COMPOSITE COLUMN
1 1/2" = 1'-0"



9 S-03 #5 HOOK DETAIL
1 1/2" = 1'-0"

REVISIONS								
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SUPERVISED BY:

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DIVISION
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111 NW 1 ST
MIAMI, FLORIDA 33128

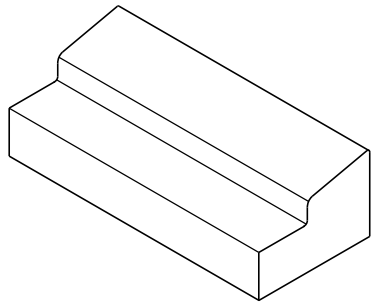
STRUCTURAL DETAILS

GENERAL NOTES:

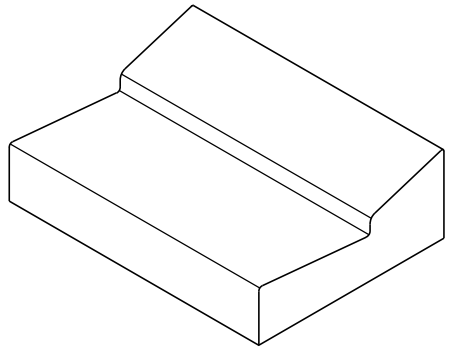
1. For curb, gutter and curb & gutter provide ⅛" – ¼" contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints, with intermediate joints not to exceed 10' centers.

2. Locate expansion joints for curb, gutter and curb & gutter in accordance with Specification 520.

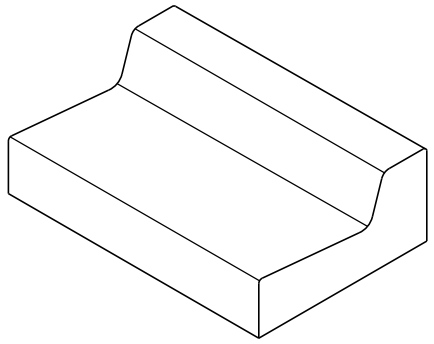
TABLE OF CONTENTS:



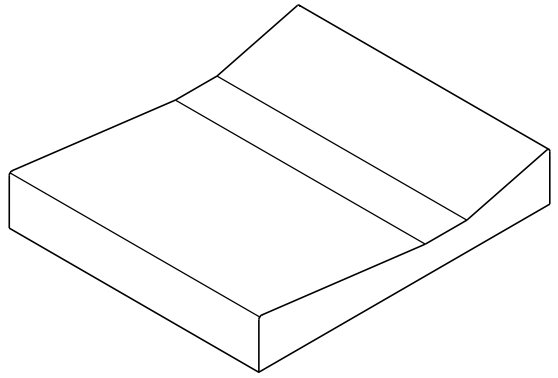
TYPE A



TYPE E

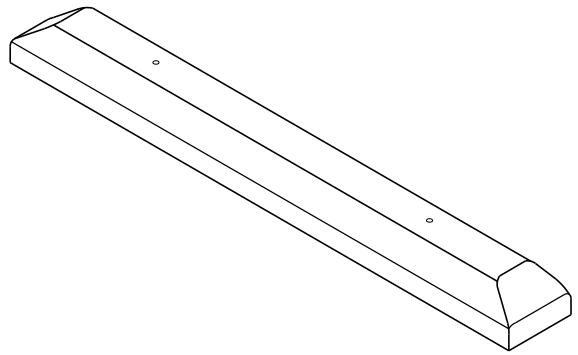


TYPE F



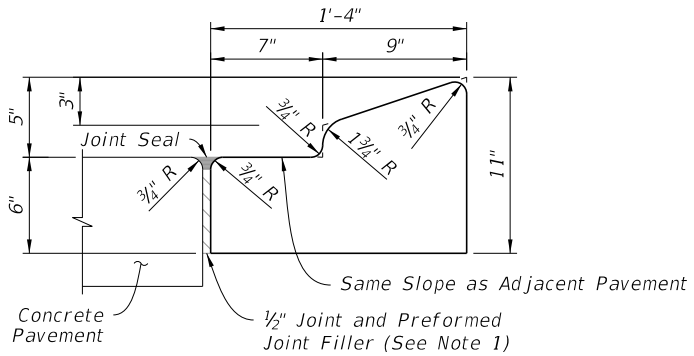
SHOULDER GUTTER

TYPE A, TYPE E, TYPE F, AND SHOULDER GUTTER
(Other Types Similar)



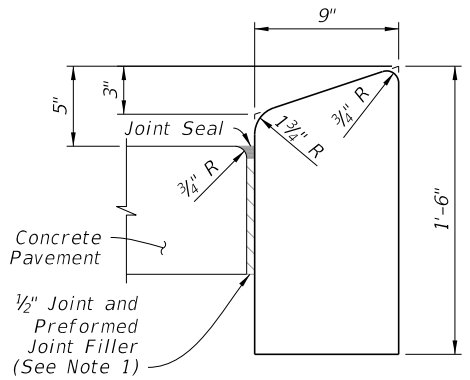
CONCRETE BUMPER GUARD

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	CURB AND GUTTER	INDEX	SHEET
11/01/21						520-001	1 of 3



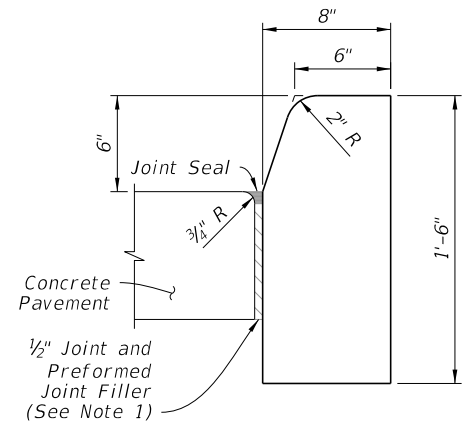
NOTE: For use adjacent to concrete or flexible pavement, concrete shown (See Note 4).

TYPE A



NOTE: For use adjacent to concrete or flexible pavement, concrete shown.

TYPE B

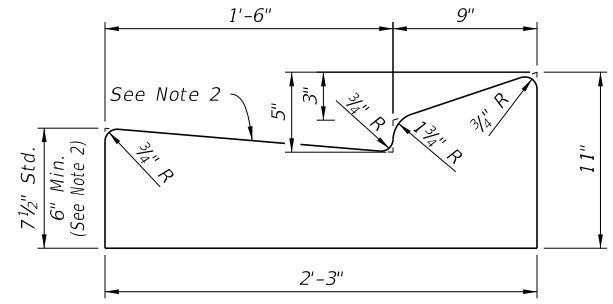


NOTE: For use adjacent to concrete or flexible pavement, concrete shown.

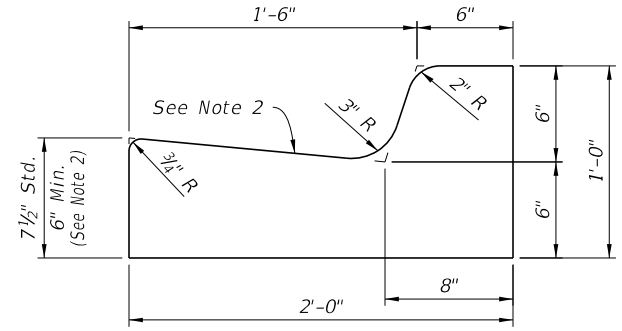
TYPE D

NOTES:

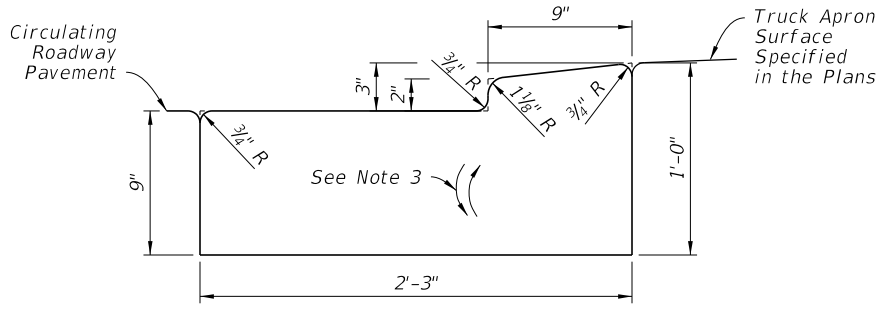
1. For Type A, Type B, and Type D Curb: Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 3.
2. For Type E, Type F, Drop Curb, and Valley Gutter: When used on high side of roadways, match the cross slope of the gutter to the cross slope of the adjacent pavement. The thickness of the lip is 6", unless otherwise shown on Plans.
3. For Type RA, rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.
4. For details depicting usage of Type A Curb adjacent to flexible pavement see Sheet 3.



TYPE E

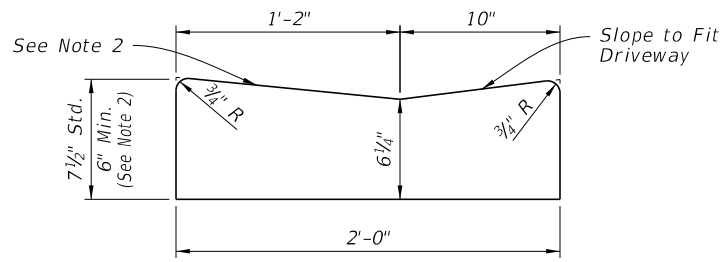


TYPE F

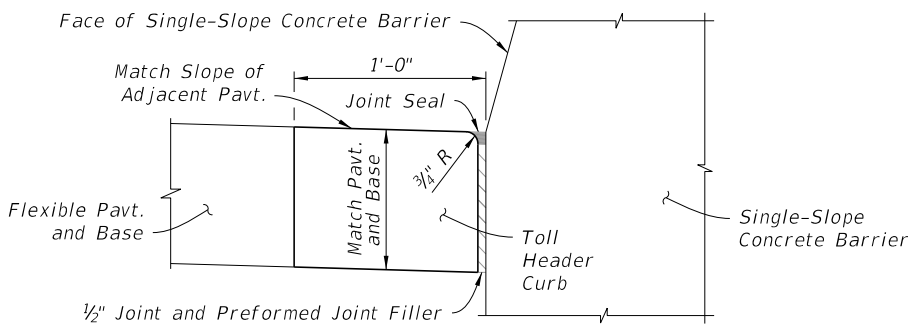


NOTE: Traffic Bearing Sections for use in Roundabout Central Island Construction.

TYPE RA

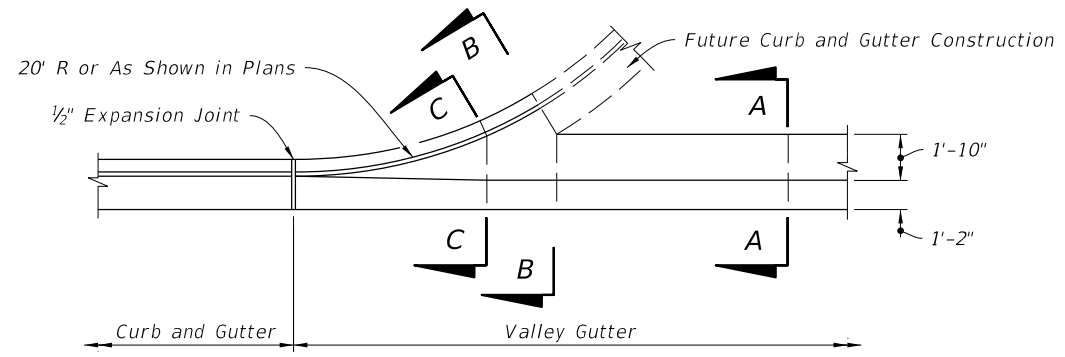


DROP CURB

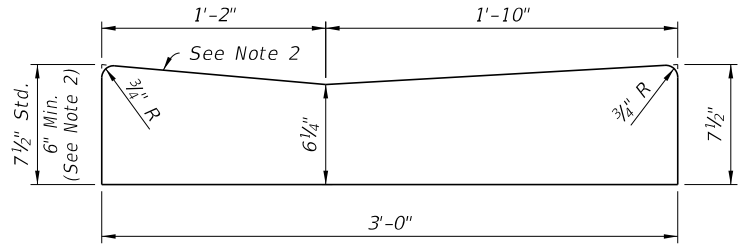


NOTE: See the toll site details for conduit requirements.

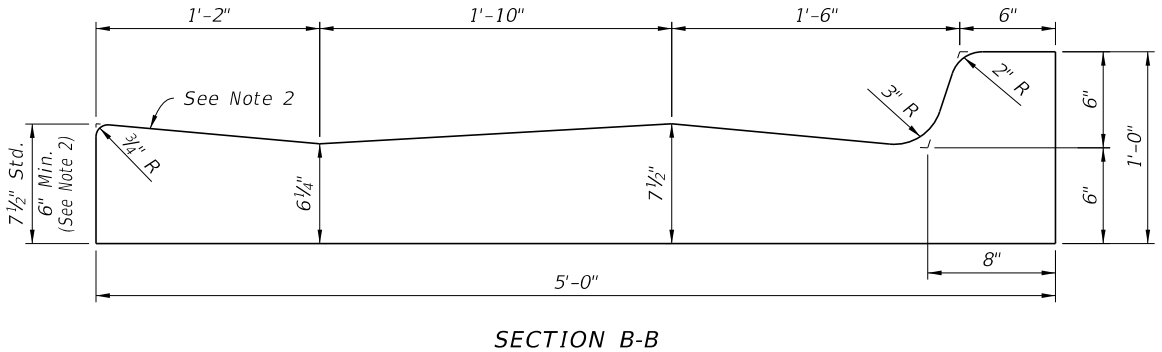
TOLL HEADER CURB



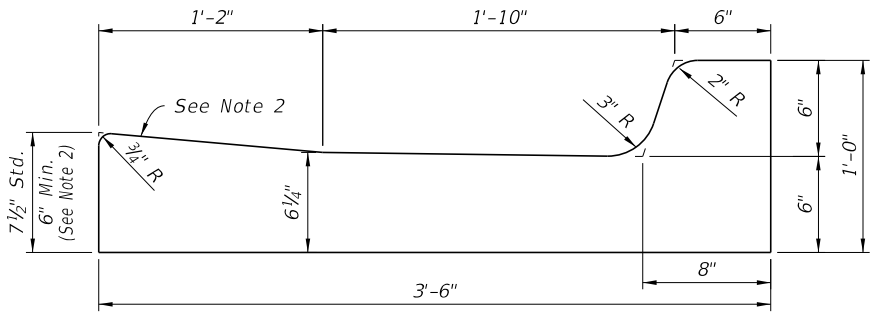
PLAN VIEW



SECTION A-A

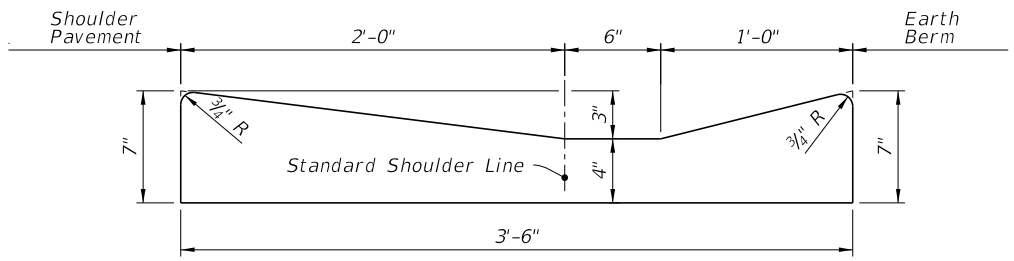


SECTION B-B



SECTION C-C

VALLEY GUTTER



SHOULDER GUTTER

CONCRETE CURB AND GUTTER

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/21			FDOT FY 2022-23 STANDARD PLANS	CURB AND GUTTER	520-001	2 of 3

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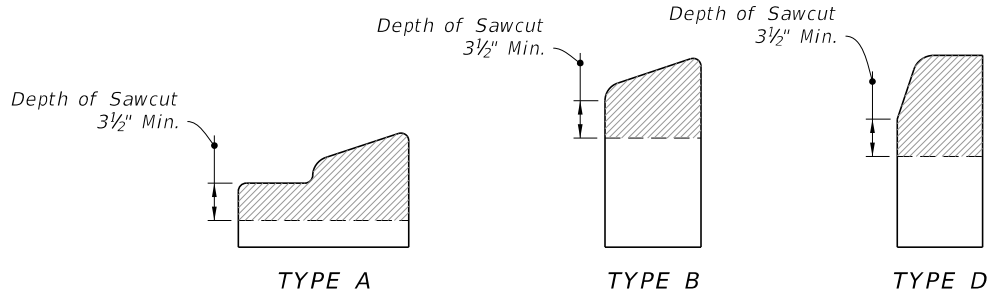
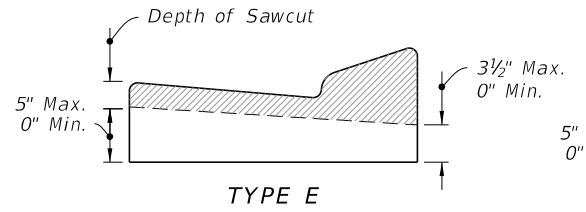
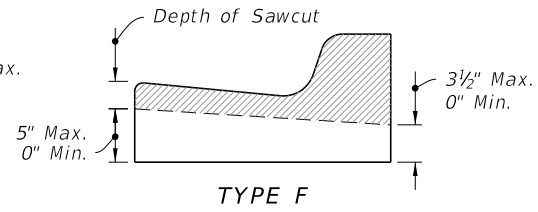
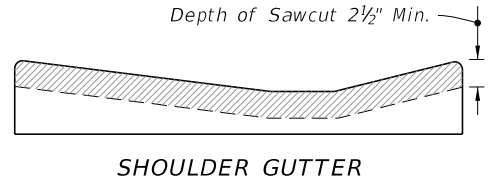


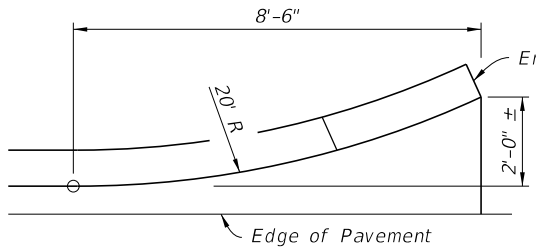




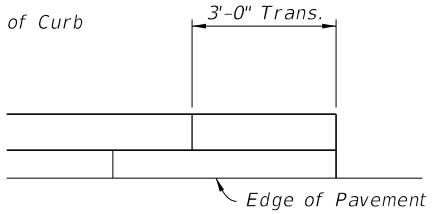


NOTE: Sawcuts should be avoided within valley gutter and within curb and gutter endings.

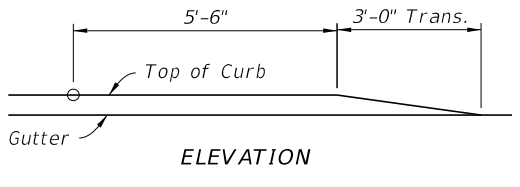
CONTRACTION JOINTS IN CURB



PLAN

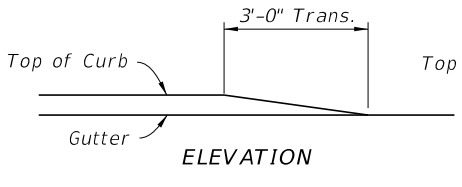


PLAN



ELEVATION

FLARED END

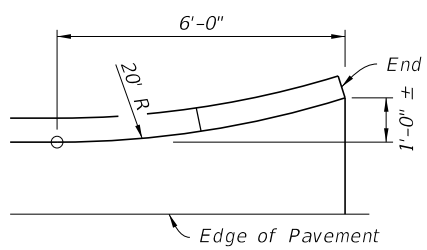


ELEVATION

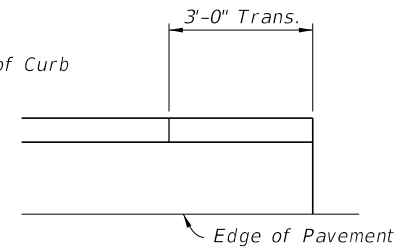
STRAIGHT END

CURB TYPE A

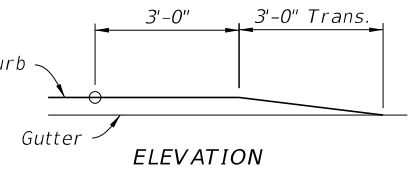
CONTRACTION JOINTS IN CURB & GUTTER



PLAN

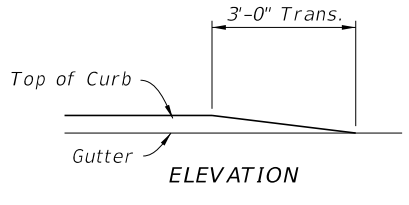


PLAN



ELEVATION

FLARED END



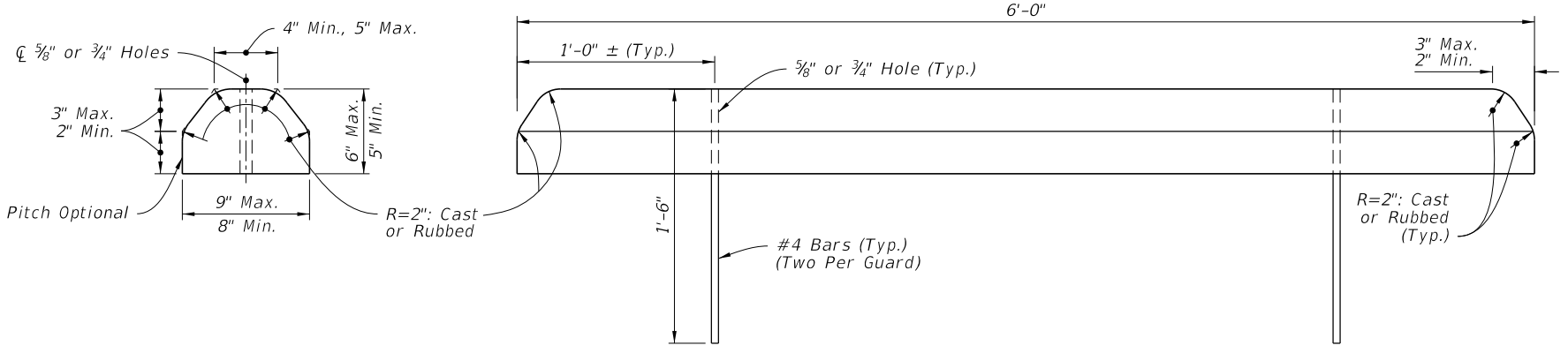
ELEVATION

STRAIGHT END

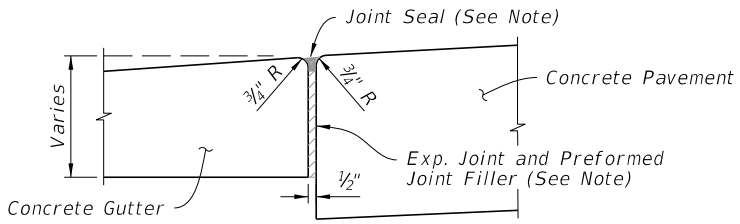
CURB AND GUTTER TYPE E AND TYPE F

NOTE: Ends of Type B and D Curb transition from full to zero heights in 3 ft.

CURB AND CURB & GUTTER ENDINGS

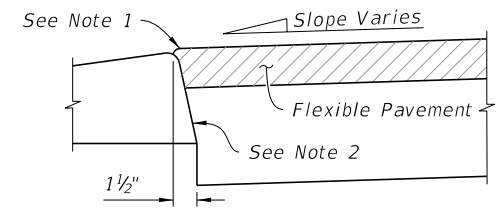


CONCRETE BUMPER GUARD



NOTE: Joint Seal application applies to both high and low sides of pavement, low side shown.

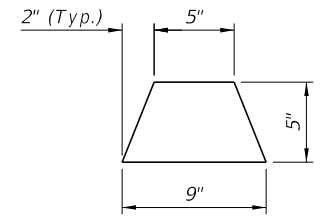
EXPANSION JOINT BETWEEN GUTTER AND CONCRETE PAVEMENT



NOTES:

1. Surface on Low Side of Pavement to be ¼" Above Lip of Gutter. Surface on High Side to be Flush With Lip of Curb or Curb & Gutter.
2. Applies to both high and low sides of pavement, low side shown. Applies to shoulder gutter only where adjoining traffic lanes.

CURB AND GUTTER AND TYPE A CURB ADJACENT TO FLEXIBLE PAVEMENT

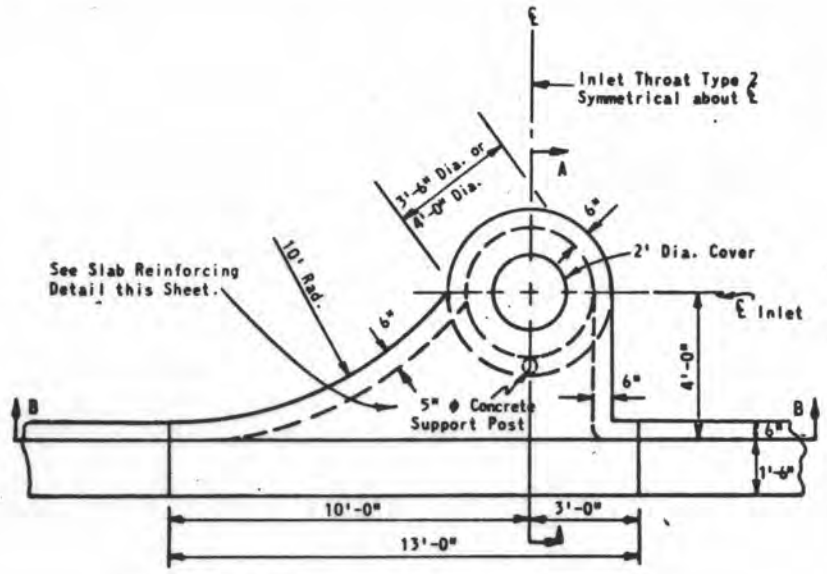


ASPHALTIC CONCRETE CURB

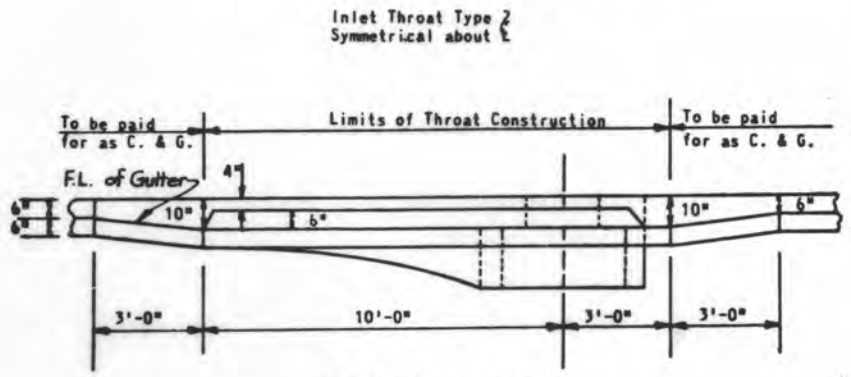
CURB AND GUTTER JOINTS AND ENDINGS, CONCRETE BUMPER GUARD, AND ASPHALTIC CONCRETE CURB

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/21			FDOT FY 2022-23 STANDARD PLANS	CURB AND GUTTER	520-001	3 of 3

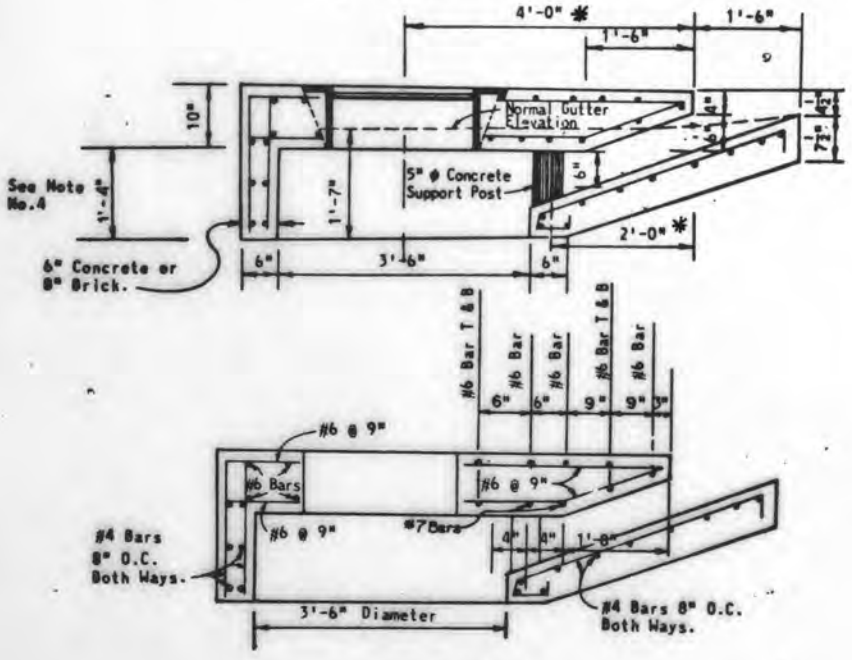
FED. ROAD DIV. No.	STATE	PROJECT No.	FISCAL YEAR	SHEET No.
9	FLA.			



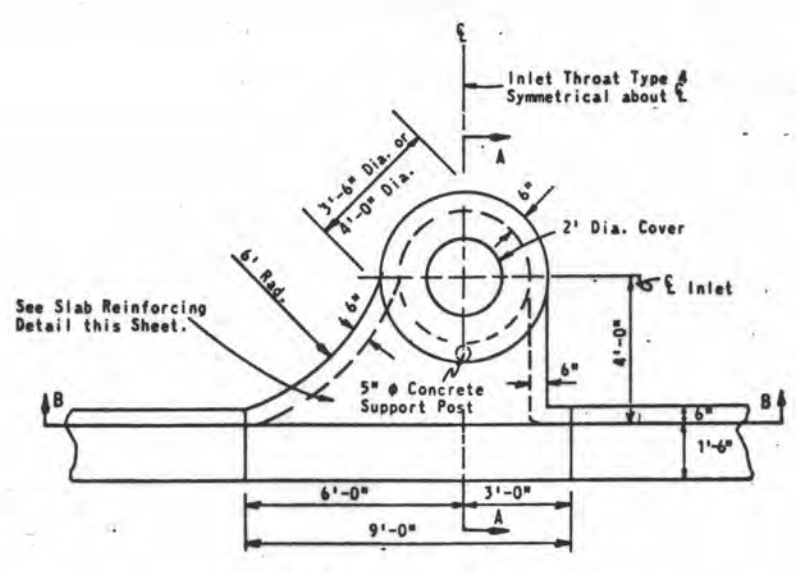
INLET THROAT TYPE 1



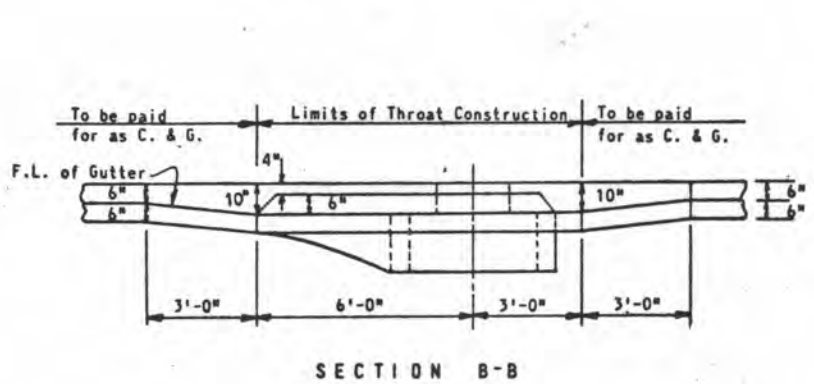
SECTION B-B



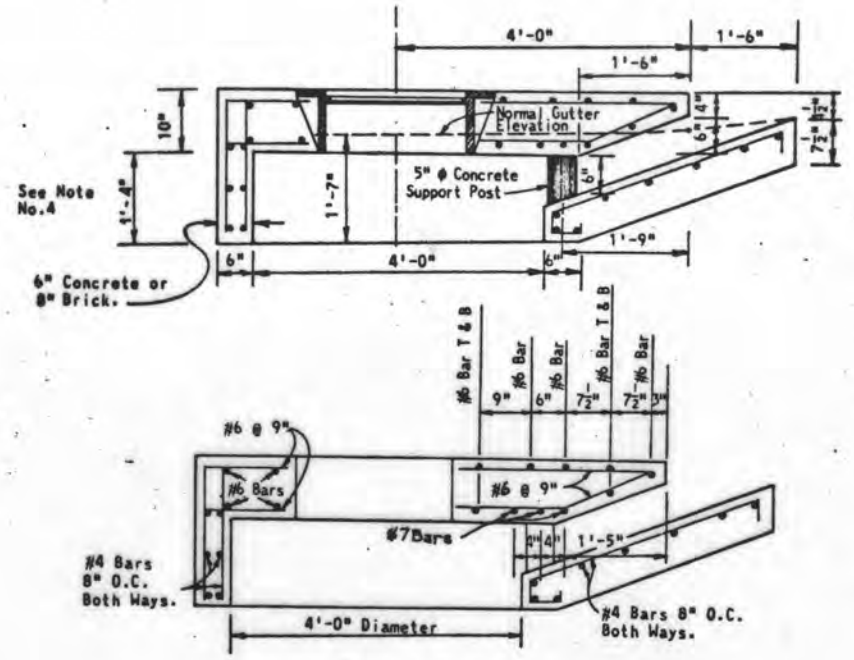
3'-6" DIAMETER



INLET THROAT TYPE 3



SECTION B-B



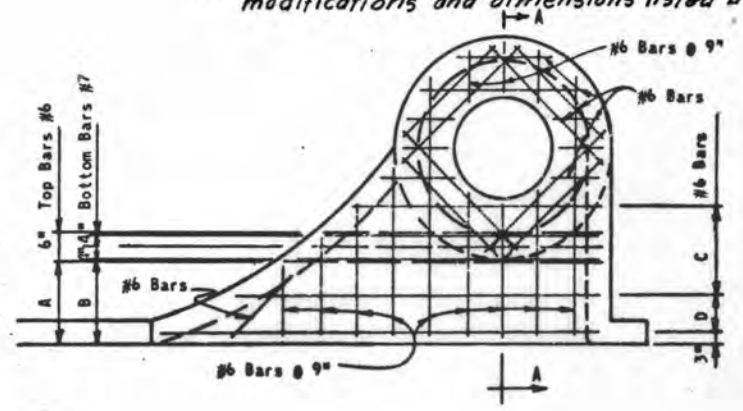
4'-0" DIAMETER

* For 5' Sidewalks change 4'-0" To 3'-3" and 2'-0" To 1'-3"

SECTION A-A FOR INLETS TYPE 1, 2, 3 & 4

GENERAL NOTES

1. The finished grade and slope of the inlet tops are to conform with the finished cross slope and grade of the proposed sidewalk and/or parkway.
2. When inlets are to be constructed on a curve, refer to the plans to determine the radius and, where necessary, modify the inlet details accordingly. Bend steel when necessary.
3. All steel in throats shall have 1½" minimum cover unless otherwise shown. Inlet throats shall be either cast-in-place or precast concrete.
4. The rear wall portion of throat Types 1, 2, 3 & 4 may be constructed with brick. Dowels to top slab required.
5. Only round concrete support post will be acceptable.
6. For supplemental details see index no. DSD-01.
7. These inlet throats were designed for use with std. curb & gutter and Type E curb. Locate outside of pedestrian cross traffic if possible.
8. For 5' sidewalks the contractor must utilize a 3'-6", See modifications and dimensions listed below.



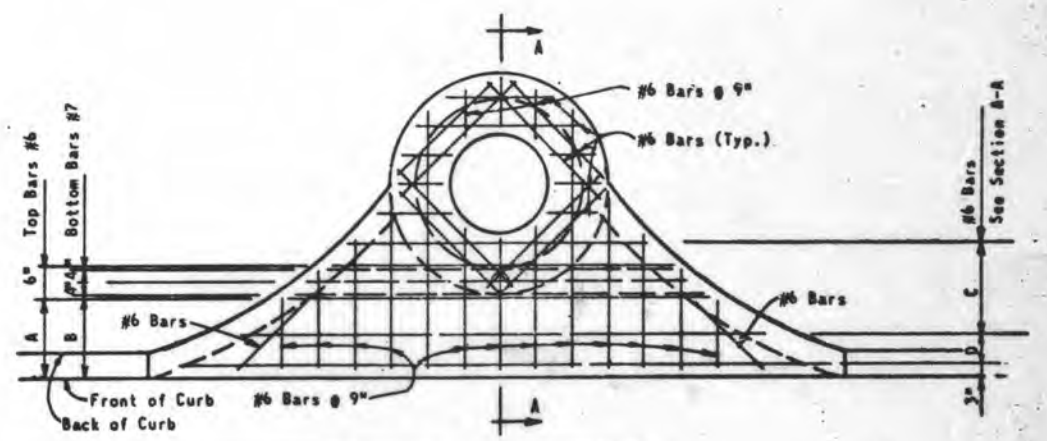
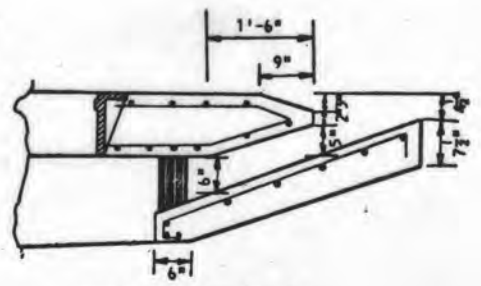


TABLE OF VARIABLE DIMENSIONS		
DIMENSION	3'-6"	4'-0"
A	1'-9"	1'-6"
B	1'-8"	1'-5"
C	1'-9"	1'-10⅜"
D	9"	7⅜"

SLAB REINFORCING DETAILS
INLETS 1, 2, 3 & 4



* INLET TOP MODIFICATION FOR TYPE "E" CURB

FHWA Approved: 5-1-75

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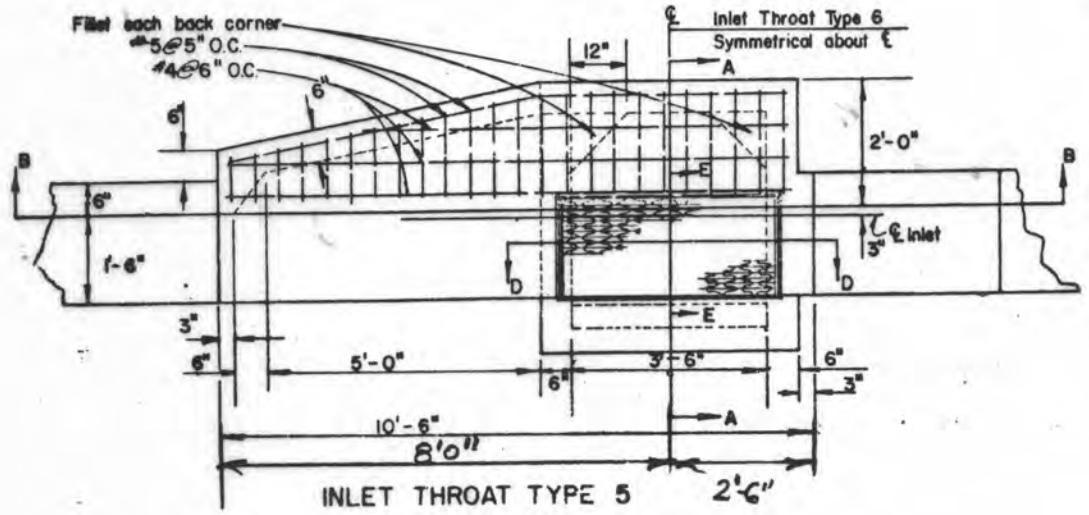
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

REVISIONS	
Dates	Descriptions
5-7-75	Redrown-Chgd Index No.

DESIGN	DCI-01
DRAWN	
CHECK	CURB INLET
PROPOSED	TYPES 1,2,3 & 4

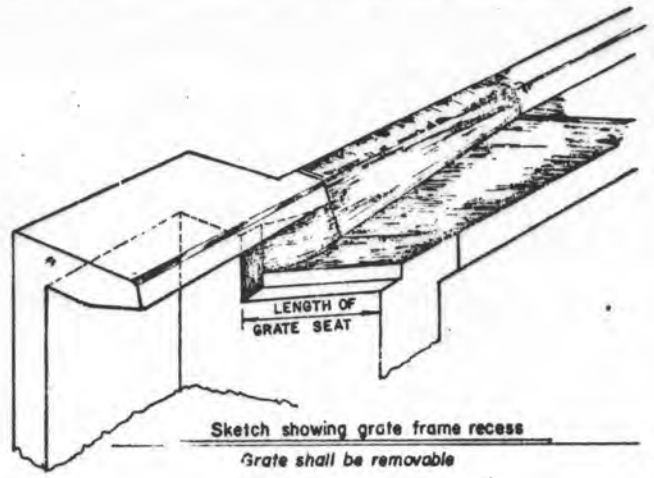
SUBMITTED	RECOMMENDED	APPROVED
HIGHWAY ENGINEER	CHIEF ENGINEER	DIRECTOR
DATE	PROJ.	SHEET 1 OF 1

STATE PROJ. NO.	SHEET NO.
6621	



INLET THROAT TYPE 5

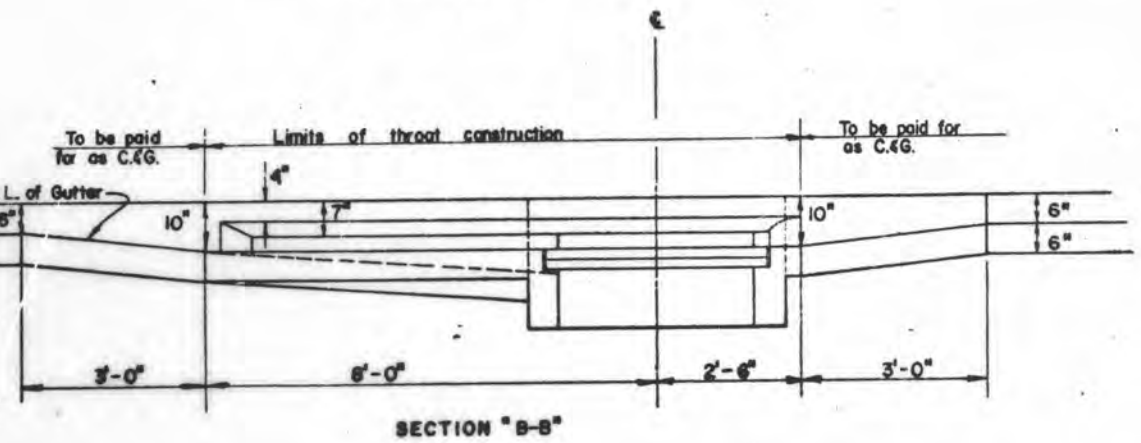
Inlet Throat Type 6
Symmetrical about ℄



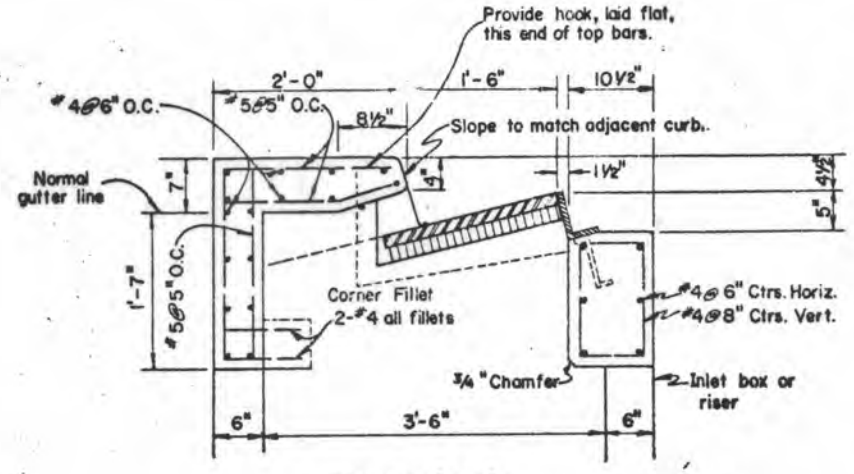
Sketch showing grate frame recess
Grate shall be removable

GENERAL NOTES:

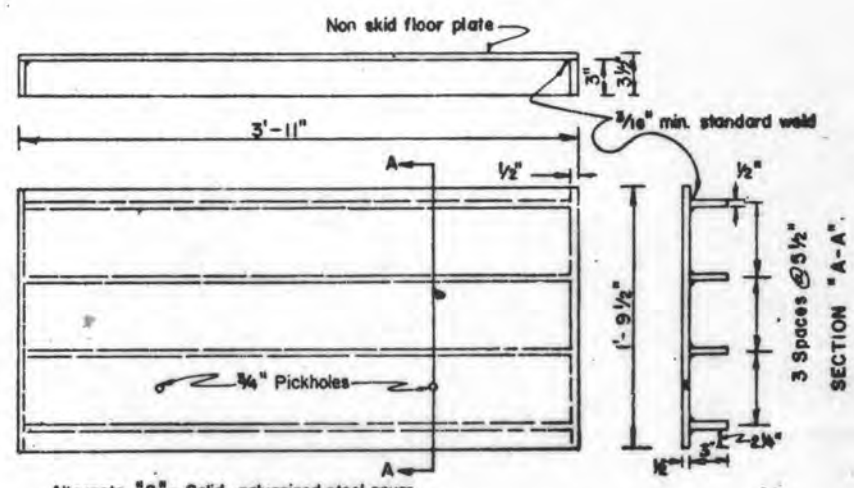
1. The finished grade and slope of the inlet tops are to conform with the finished cross slope and grade of the proposed sidewalk and / or parkway.
2. When inlets are to be constructed on a curve, refer to the plans to determine the radius and, where necessary, modify the inlet details accordingly. Bend steel when necessary.
3. All steel in throats shall have 1¼" minimum cover unless otherwise shown. Inlet throats shall be either cast-in-place or precast concrete.
4. The corner fillets shown for rectangular throats (Type 5&6) are necessary only when throats are to be used in conjunction with circular inlet boxes or when used on skew with rectangular inlet boxes.
5. See Index DSD-01 for means of locking grate or cover to inlet.
6. These inlet throats were designed for use with std. curb & gutter and Type E curb. Locate outside of pedestrian cross traffic if possible.



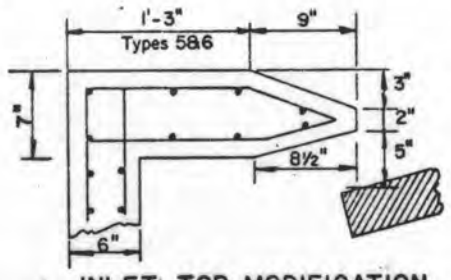
SECTION "B-B"



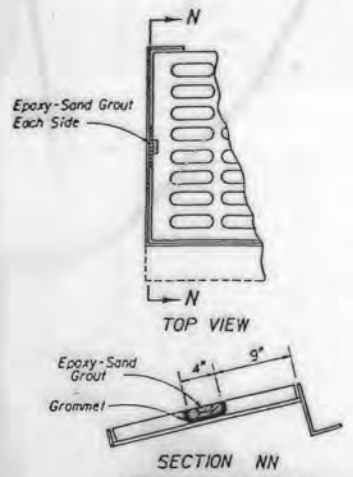
SECTION "A-A"



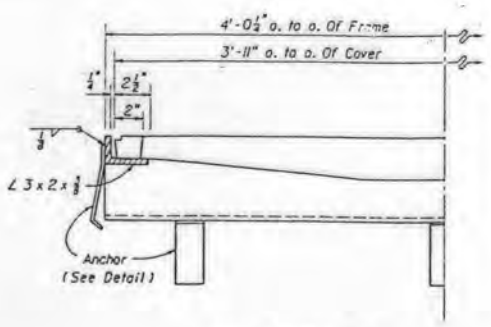
Alternate "G" – Solid, galvanized steel cover for Type 5&6 inlets. Cover to be hot dip galvanized after fabrication. To be used where specified on the plans.



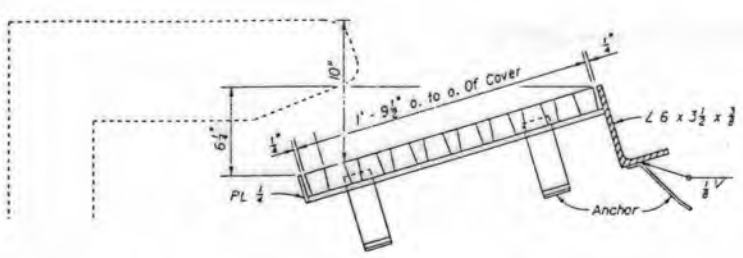
INLET TOP MODIFICATION FOR TYPE "E" CURB



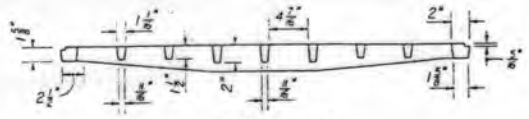
SECTION NN
GROUTING DETAILS

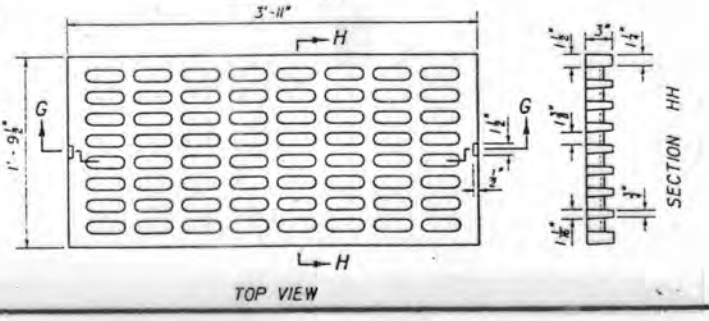


HALF SECTION DD



SECTION EE





CAST IRON COVER

FHWA Approved: 5-1-75

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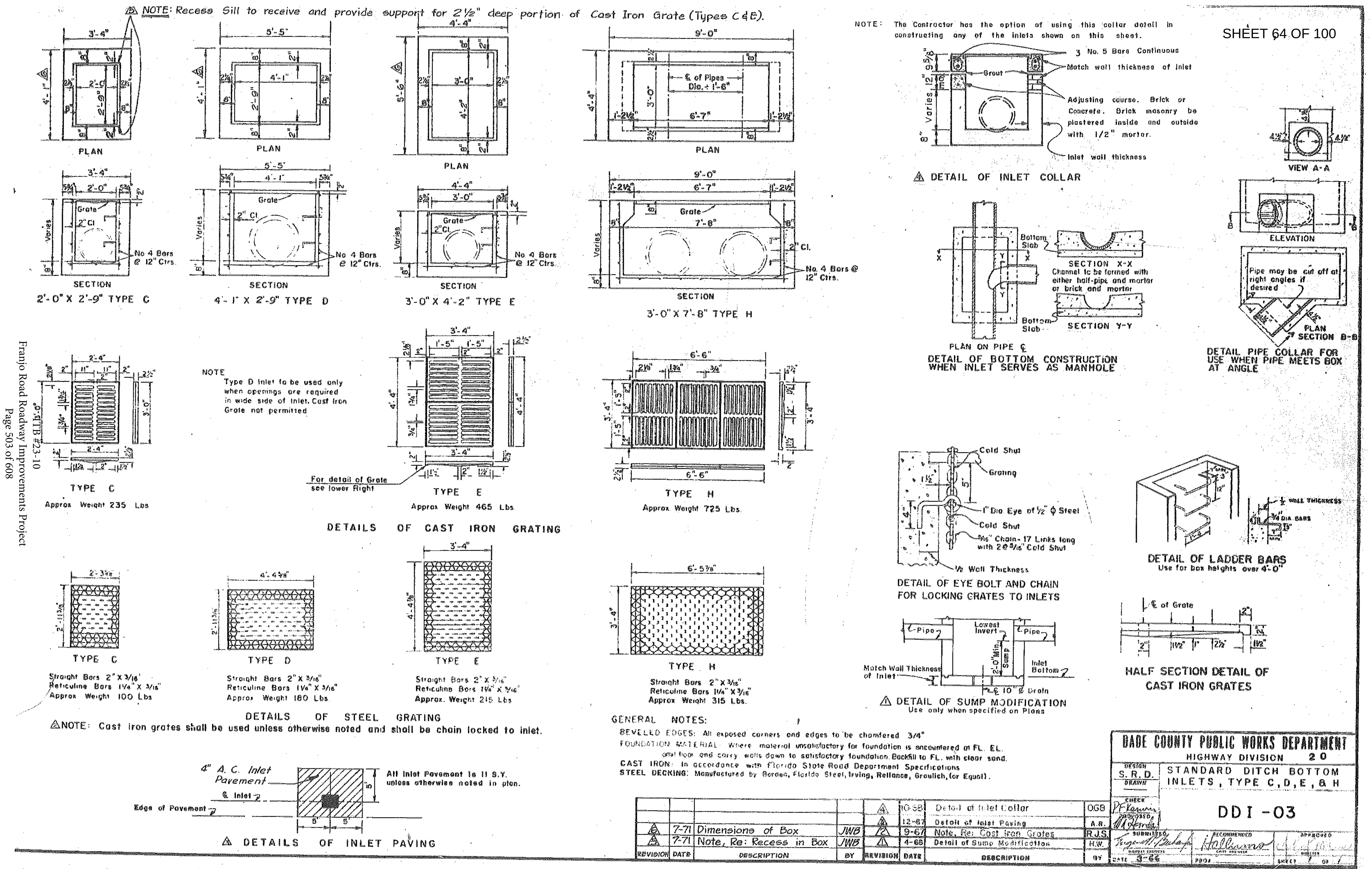
REVISIONS	
Dates	Descriptions
5-74	Redrawn-Chgd Index No

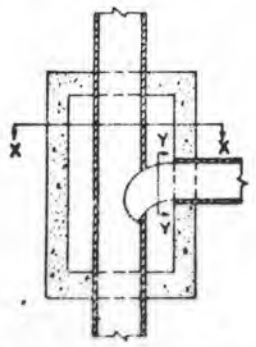
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

DESIGN	DCI - 02
DRAWN	CURB INLET
CHECK	TYPES "5" & "6"
PROPOSED	

SUBMITTED	RECOMMENDED	APPROVED
HIGHWAY ENG. MGR.	CHIEF ENGINEER	DIRECTOR
DATE	PROJ.	SHEET 1 OF X


NOTE: Recess Sill to receive and provide support for 2½" deep portion of Cast Iron Grate (Types C & E).
SHEET 64 OF 100
PLAN
SECTION
2'-0" X 2'-9" TYPE C
4'-1" X 2'-9" TYPE D
3'-0" X 4'-2" TYPE E
3'-0" X 7'-8" TYPE H
Grate
No 4 Bars @ 12" Ctrs.
℄ of Pipes Dia. + 1'-6"
NOTE: The Contractor has the option of using this collar detail in constructing any of the inlets shown on this sheet.
3 No. 5 Bars Continuous
Match wall thickness of inlet
Grout
Adjusting course. Brick or Concrete. Brick masonry be plastered inside and outside with 1/2" mortar.
Inlet wall thickness
DETAIL OF INLET COLLAR
VIEW A-A
ELEVATION
Pipe may be cut off at right angles if desired
PLAN SECTION B-B
DETAIL PIPE COLLAR FOR USE WHEN PIPE MEETS BOX AT ANGLE
Bottom Slab
SECTION X-X
Channel to be formed with either half-pipe and mortar or brick and mortar
SECTION Y-Y
PLAN ON PIPE ℄
DETAIL OF BOTTOM CONSTRUCTION WHEN INLET SERVES AS MANHOLE
NOTE: Type D Inlet to be used only when openings are required in wide side of inlet. Cast Iron Grate not permitted
For detail of Grate see lower Right
TYPE C
Approx Weight 235 Lbs
TYPE E
Approx Weight 465 Lbs
TYPE H
Approx Weight 725 Lbs
DETAILS OF CAST IRON GRATING
Cold Shut
Grating
1" Dia Eye of 1/2" ɸ Steel
5/16" Chain - 17 Links long with 2 @ 5/16" Cold Shut
1/2 Wall Thickness
DETAIL OF EYE BOLT AND CHAIN FOR LOCKING GRATES TO INLETS
DETAIL OF LADDER BARS
Use for box heights over 4'-0"
℄ of Grate
HALF SECTION DETAIL OF CAST IRON GRATES
TYPE C
Straight Bars 2" X 3/16"
Reticuline Bars 1¼" X 3/16"
Approx Weight 100 Lbs
TYPE D
Straight Bars 2" X 3/16"
Reticuline Bars 1¼" X 3/16"
Approx Weight 180 Lbs
TYPE E
Straight Bars 2" X 3/16"
Reticuline Bars 1¼" X 3/16"
Approx Weight 215 Lbs
TYPE H
Straight Bars 2" X 3/16"
Reticuline Bars 1¼" X 3/16"
Approx Weight 315 Lbs
DETAILS OF STEEL GRATING
NOTE: Cast iron grates shall be used unless otherwise noted and shall be chain locked to inlet.
Lowest Invert
Pipe
Sump
2'-0" Min.
Inlet Bottom
Match Wall Thickness of Inlet
10" ɸ Drain
DETAIL OF SUMP MODIFICATION
Use only when specified on Plans
4" A. C. Inlet Pavement
℄ Inlet
Edge of Pavement
All Inlet Pavement is 11 S.Y. unless otherwise noted in plan.
DETAILS OF INLET PAVING
GENERAL NOTES:
BEVELED EDGES: All exposed corners and edges to be chamfered 3/4"
FOUNDATION MATERIAL: Where material unsatisfactory for foundation is encountered at FL. EL. grade floor and carry walls down to satisfactory foundation. Backfill to FL. with clean sand.
CAST IRON: In accordance with Florida State Road Department Specifications
STEEL DECKING: Manufactured by Borden, Florida Steel, Irving, Reliance, Graulich, (or Equal).
7-71 Dimensions of Box JWB
7-71 Note, Re: Recess in Box JWB
10-68 Detail of Inlet Collar OGB
12-67 Detail of Inlet Paving A.R.
9-67 Note, Re: Cast Iron Grates R.J.S.
4-66 Detail of Sump Modification H.W.
REVISION DATE DESCRIPTION BY
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION 20
DESIGN S.R.D.
DRAWN
CHECK
STANDARD DITCH BOTTOM INLETS, TYPE C, D, E, & H
DDI-03
SUBMITTED
RECOMMENDED
APPROVED
DATE 3-66

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FINAL SHEET NO.	SHEET NO.
3	FLA.			



PLAN ON PIPE ℄

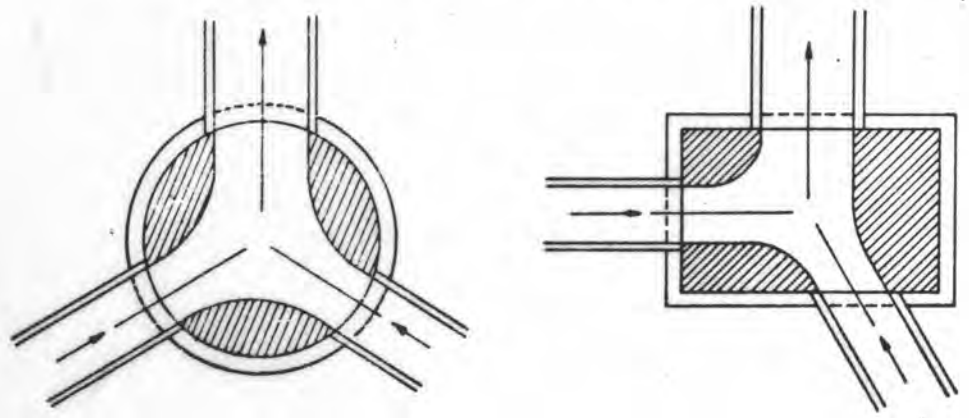
SECTION X-X

Channel to be formed with either half-pipe and mortar or brick and mortar.

SECTION Y-Y

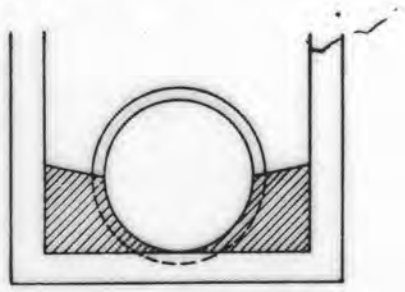
DETAIL OF BOTTOM CONSTRUCTION WHEN INLET SERVES AS MANHOLE

GENERAL NOTE:
Mortar used to seal the pipe into the walls of precast units will be of such a mix that shrinkage will not cause leakage into or out of the units. Maximum opening for pipe shall be the O.D. of the pipe required plus 6".

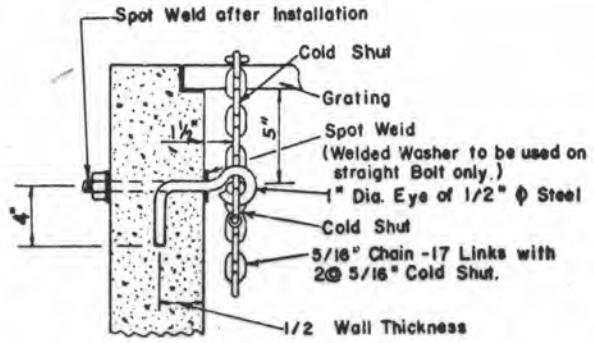


DETAIL OF CHANNELIZATION

Note: Channelization required at all drainage structures with two or more pipes.

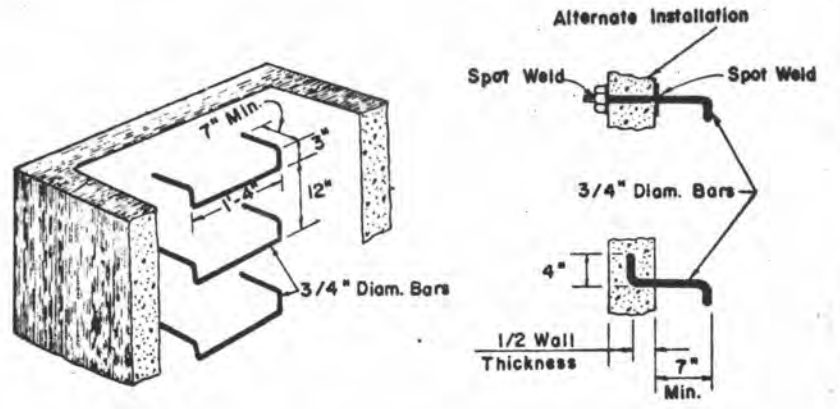


Smooth flow channels composed of concrete, or brick and mortar shall be constructed in the bottoms of all structures to a depth equal to half the diameter of the largest pipe.



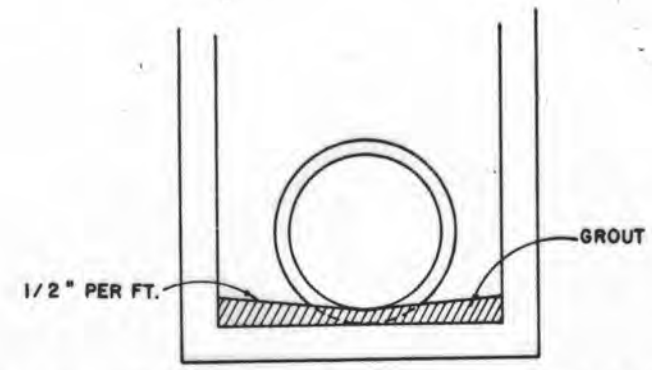
DETAIL OF EYE BOLT AND CHAIN FOR LOCKING GRATES TO INLETS

Note: One required per inlet grate.



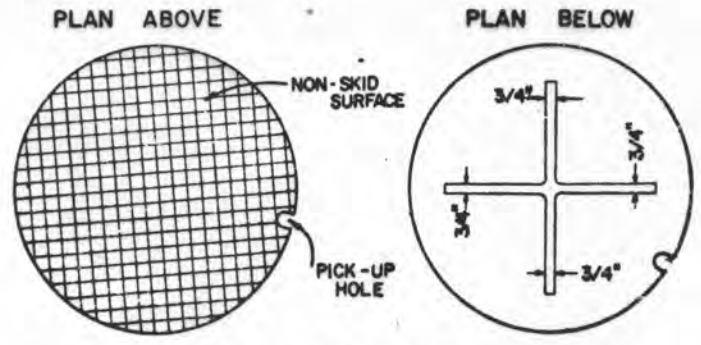
DETAIL OF LADDER BARS

Use for box heights over 10'-0"

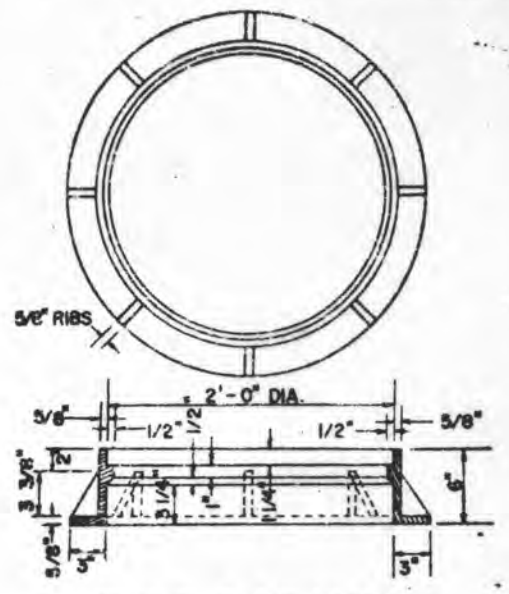


ALTERNATE LOCATION OF PIPE IN STRUCTURE WHEN PREFABRICATED FLOOR SLAB IS USED

COMPLETE FLOW CHANNEL IS REQUIRED WHEN THERE IS FLOW THROUGH THE STRUCTURE

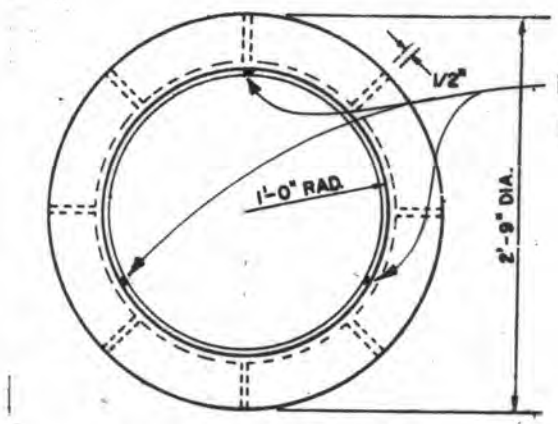


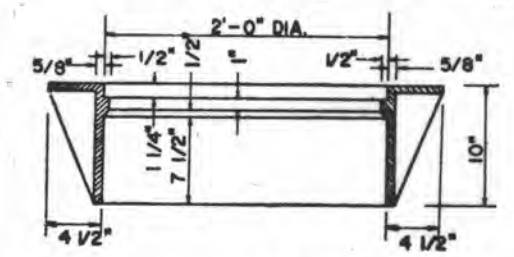
COVER FOR ALL FRAMES
(WHEEL LOADS H-20)



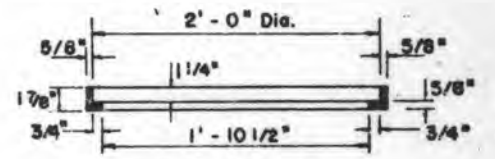
TYPE I FRAME FOR MANHOLES
AS SHOWN ON INDEX DSB-01

PROVIDE 3- 1/4" TACK WELDS ON MANHOLE TOPS IN SIDEWALK





TYPE II FRAME
For Type 1, 2, 3 & 4 Inlets



TYPE III FRAME
For Type 7 & 8 Inlets

CAST IRON

FRAME AND COVER DETAILS

Note: Tack Weld all Covers to Frames (3 places) as directed by the Engineer.

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FHWA Approved: 5-1-75

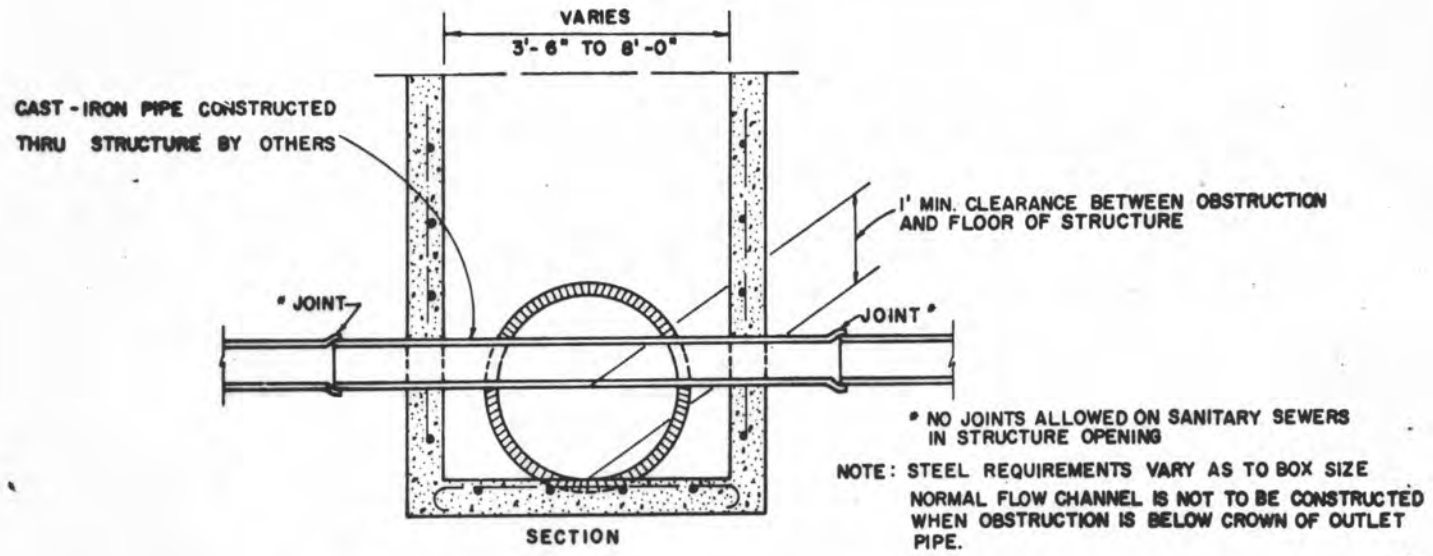
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

DESIGN	DSD-01
DRAWN	
CHECK	SUPPLEMENTARY DET. FOR MANHOLE & INLET STRUCT.
PROPOSED	

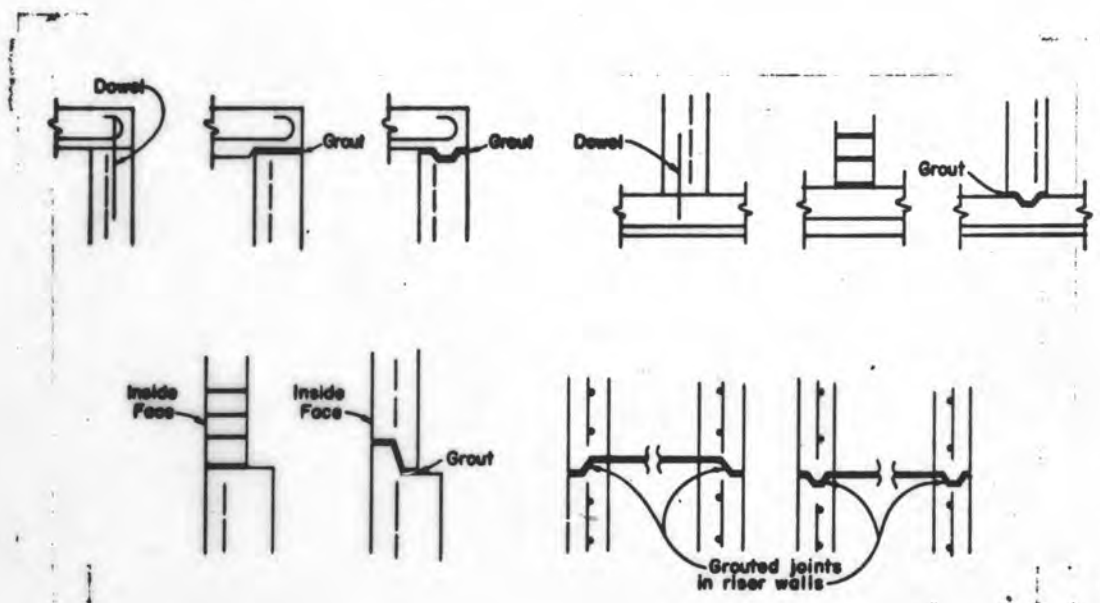
SUBMITTED	RECOMMENDED	APPROVED
HIGHWAY ENGINEER	CHIEF ENGINEER	DIRECTOR
DATE	PROJ.	SHEET 1 OF 2

REVISIONS	
Date	Description

STD. DRWG. NO.	SHEETS	PROJECT NO.	FISCAL YEAR	SHEET NO.
D	FIA.			



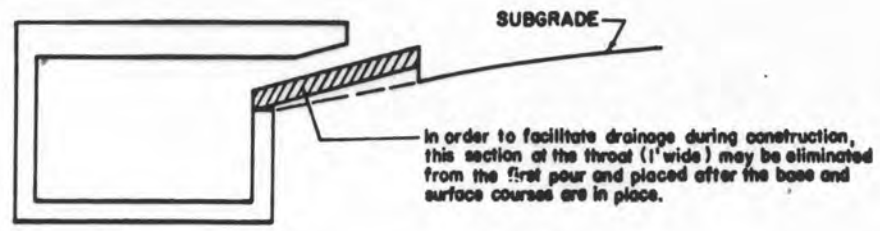
DETAIL SHOWING PIPE CONSTRUCTED THRU STORM SEWER STRUCTURE



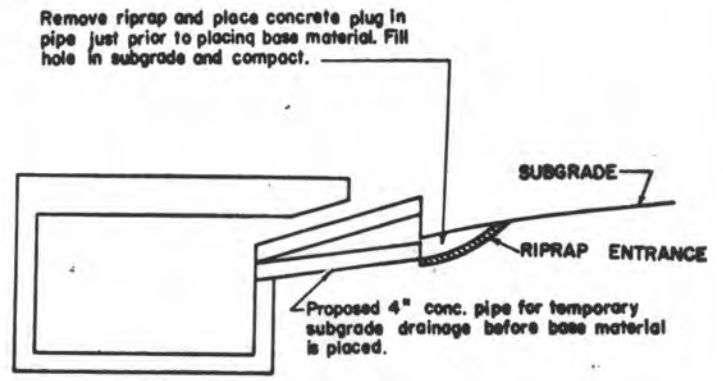
NOTES -

1. Any type joint may be used in conjunction with any other type joint.
2. All grouted joints are to have a maximum thickness of 1".
3. Keyways are to be a minimum of 1 1/2" deep.
4. Joint dowels are to be #4 bars, 12" long with a minimum of 6 bars per joint evenly spaced.
5. Minimum cover on reinforcing bars is 1 1/4".

OPTIONAL CONSTRUCTION JOINTS



ALTERNATE A



ALTERNATE B

(Cost to be included in the unit price bid for inlets.)

DETAIL OF TEMPORARY SUBGRADE DRAINS

(Optional with Contractor)

NOTE:
For all manhole, inlet and junction box structures the mortar used to seal the pipe into the walls of the precast units will be of such a mix that shrinkage will not cause leakage into or out of the units. Maximum opening for pipe shall be max. reqd O.D.+6".

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FHWA Approved: 5-1-75

REVISIONS	
Date	Description
2-75	REDRAWN

DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

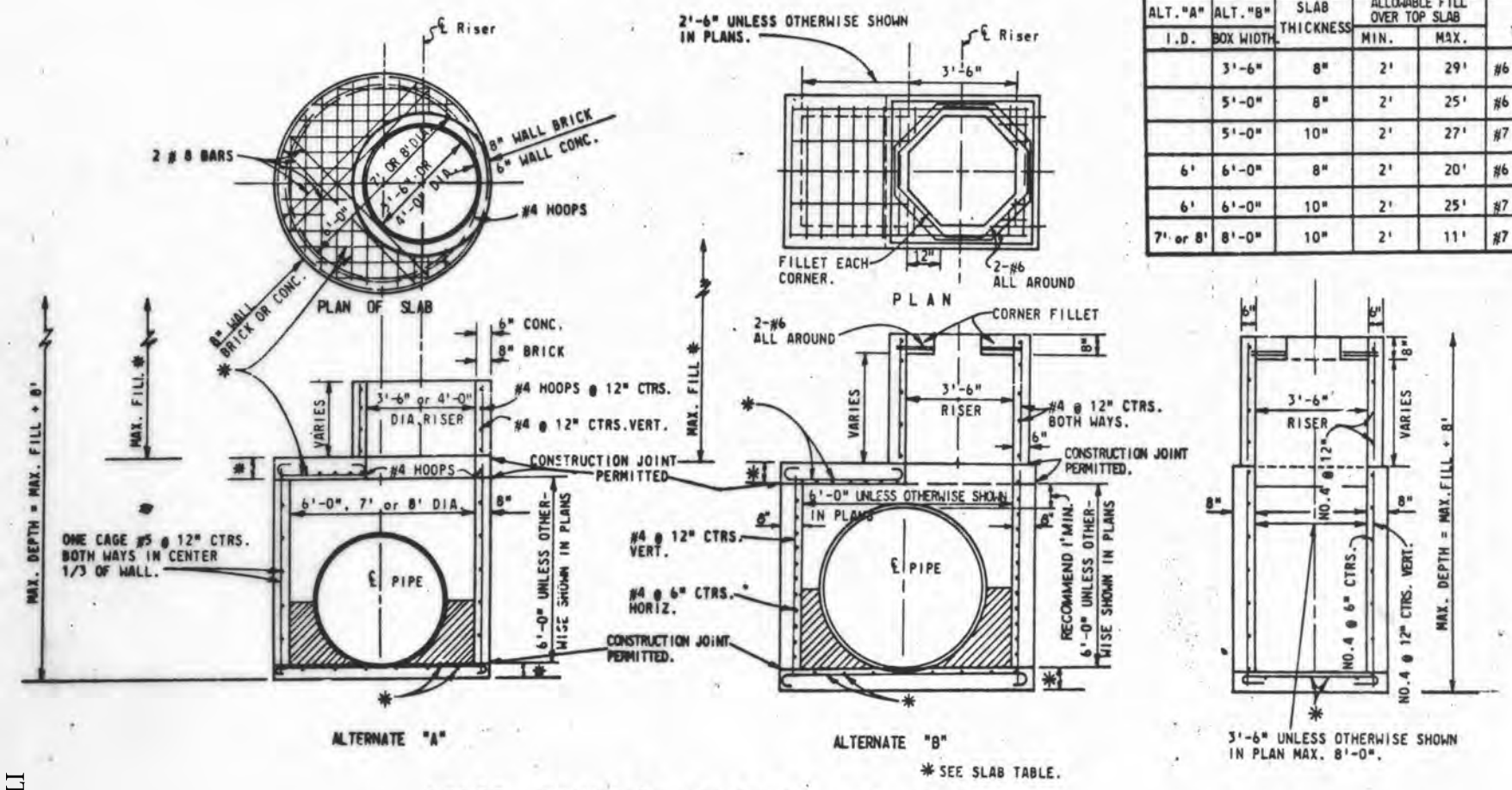
DESIGN	DSD-01
DRAWN	
CHECK	SUPPLEMENTARY DET. FOR
PROPOSED	MANHOLE & INLET STRUCTURES

SUBMITTED	RECOMMENDED	APPROVED
HIGHWAY ENGINEER	CHIEF ENGINEER	DIRECTOR

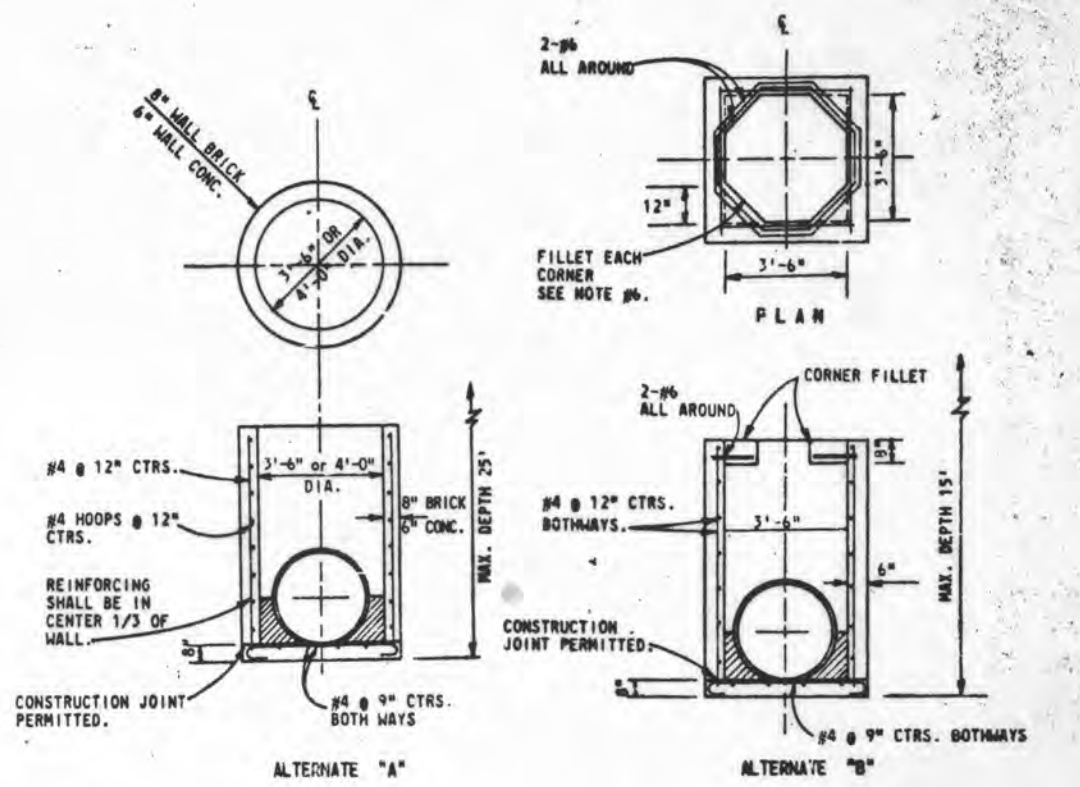
DATE _____ PROJ _____ SHEET 2 OF 2

FED. ROAD DIV. No.	STATE	PROJECT No.	FISCAL YEAR	SHEET No.
9	FLA.			

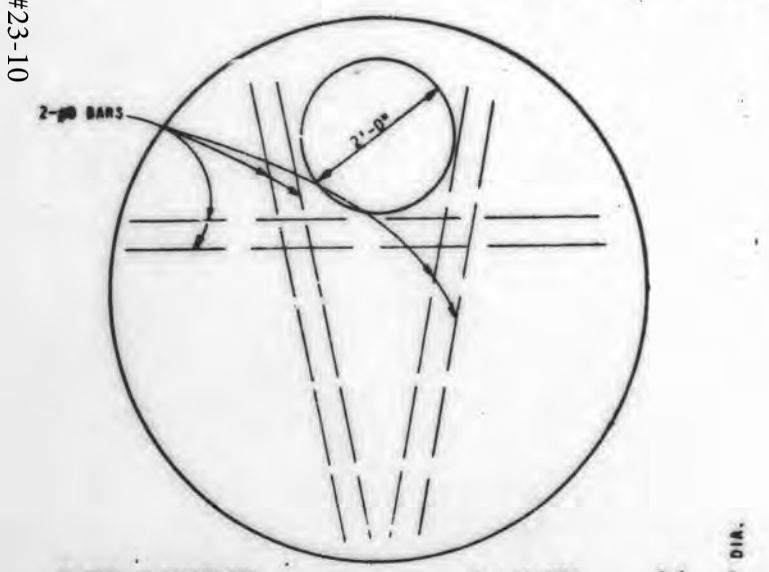
TOP AND FLOOR SLAB TABLE TYPE "J"					
ALT. "A" I.D.	ALT. "B" BOX WIDTH	SLAB THICKNESS	ALLOWABLE FILL OVER TOP SLAB MIN.	ALLOWABLE FILL OVER TOP SLAB MAX.	REINFORCING TOP & FLOOR SLABS
	3'-6"	8"	2'	29'	#6 @ 6" CTRS. B.W.
	5'-0"	8"	2'	25'	#6 @ 6" CTRS. B.W.
	5'-0"	10"	2'	27'	#7 @ 6" CTRS. B.W.
6'	6'-0"	8"	2'	20'	#6 @ 6" CTRS. B.W.
6'	6'-0"	10"	2'	25'	#7 @ 6" CTRS. B.W.
7' or 8'	8'-0"	10"	2'	11'	#7 @ 6" CTRS. B.W.

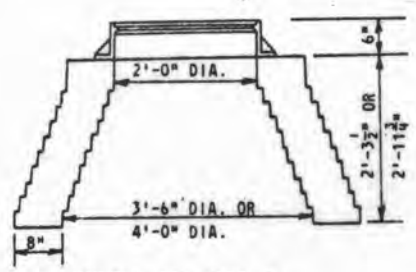


INLET, MANHOLE, JUNCTION BOX TYPE J



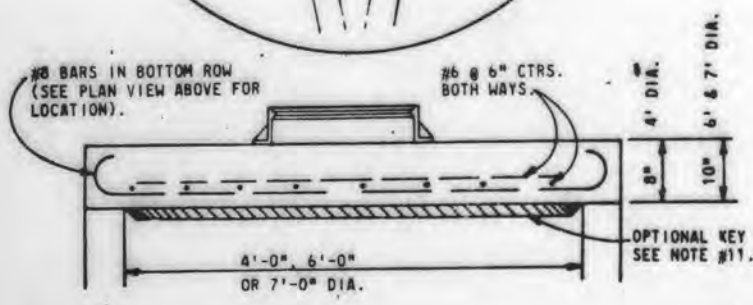
INLET, MANHOLE, JUNCTION BOX TYPE P





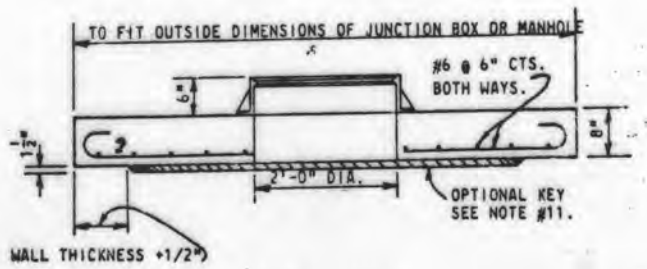
MANHOLE TOP TYPE 8

NOTE: DETAIL SHOWN IS FOR BRICK CONSTRUCTION.



JUNCTION BOX OR MANHOLE TOP TYPE 7-T

FOR USE WHEN TOP SLAB IS SUBJECTED TO WHEEL LOADS (H-20) (TRAFFIC)



JUNCTION BOX OR MANHOLE TOP TYPE 7-NT

FOR USE WHEN TOP SLAB IS NOT SUBJECTED TO WHEEL LOADS (NON-TRAFFIC)

GENERAL NOTES

1. WALLS OF CIRCULAR STRUCTURES (ALTERNATE "A") MAY BE CONSTRUCTED OF CONCRETE OR BRICK, BUT RECTANGULAR STRUCTURES (ALTERNATE "B") SHALL BE CONSTRUCTED OF CONCRETE ONLY. THE CONCRETE MAY BE CAST-IN-PLACE OR PRECAST.
2. WALL REINFORCEMENT AND THICKNESS ARE FOR EITHER CAST-IN-PLACE OR PRECAST CONCRETE UNITS EXCEPT THAT THE MANUFACTURER MAY FURNISH PRECAST CIRCULAR UNITS IN ACCORDANCE WITH A.S.T.M. SPECIFICATION C-478 UP TO 72" IN DIA. OR PRECAST CIRCULAR UNITS A.S.T.M. SPECIFICATION C-76, TABLE III, FOR "B" WALL CONCRETE PIPE. TOP AND FLOOR SLAB THICKNESS AND REINFORCEMENT ARE FOR ALL TYPES OF CONSTRUCTION.
3. ELLIPTICAL STEEL, ASTM SPECIFICATION C-76, TABLE III, "B" WALL, IS MODIFIED TO USE A CIRCULAR CAGE OF STEEL AREA EQUAL TO THAT OF THE ELLIPTICAL CAGE AND PLACED IN THE CENTER ONE-THIRD OF THE WALL. THIS MODIFICATION IS FOR PRECAST CIRCULAR UNITS PRODUCED IN ACCORDANCE WITH ASTM C-76.
4. TOP AND FLOOR SLABS FOR TYPE J UNITS AND TYPE 7 MANHOLE TOPS SHALL BE OF CLASS II CONCRETE. CONCRETE AS SPECIFIED IN ASTM C-478 MAY BE USED FOR PRECAST UNITS.
5. ANY INLET, MANHOLE OR JUNCTION BOX MAY BE USED IN CONJUNCTION WITH ANY INLET THROAT OR MANHOLE TOP. FOR EXAMPLE, AN INLET WITH A TYPE J BOX AND A TYPE 2 THROAT WOULD BE CALLED AN INLET TYPE J-2 IN THE PLANS. THE CONTRACTOR MAY AT HIS OPTION USE EITHER ALTERNATE A OR B STRUCTURES, UNLESS OTHERWISE SHOWN IN THE PLANS.
6. RECTANGULAR STRUCTURES MAY BE ROTATED AS DIRECTED BY THE ENGINEER IN ORDER TO FACILITATE CONNECTIONS BETWEEN THE STRUCTURE WALLS AND STORM SEWER PIPES.
7. THE CORNER FILLETS SHOWN FOR RECTANGULAR STRUCTURES ARE NECESSARY ONLY WHEN STRUCTURES ARE USED IN CONJUNCTION WITH CIRCULAR INLET THROATS (TYPES 1, 2, 3 & 4) OR WHEN USED ON SKEW WITH RECTANGULAR INLET THROATS (TYPES 5 & 6).
8. INLET THROATS, RISERS OR MANHOLE TOPS SHALL BE SECURED TO STRUCTURES WITH A MINIMUM OF 6 - NO. 4 BARS 12" LONG OR AS SHOWN ON INDEX NO. DSD-01.
9. STRUCTURES WITH DEPTHS OVER 14' ARE TO BE CHECKED FOR FLOTATION BY DESIGNER OF PROJECT DRAINAGE.
10. ALL STEEL BARS SHALL HAVE 1½" MINIMUM COVER UNLESS OTHERWISE SHOWN AND SHALL BE HOOKED WHERE INDICATED. HORIZONTAL STEEL IN RECTANGULAR STRUCTURES SHALL BE LAPPED A MINIMUM OF 24 BAR DIAMETERS AT CORNERS. ON PRECAST UNITS, FLOOR SLABS MAY BE SECURED TO STRUCTURE WALLS BY NO. 4 DOWEL BARS (A MINIMUM OF 6 DOWELS) PUSHED INTO THE WET CONCRETE AFTER THE FLOOR SLAB IS PLACED.
11. TYPE 7 TOP SLABS MAY BE OF CAST-IN-PLACE OR PRECAST CONSTRUCTION. THE OPTIONAL KEY IS FOR PRECAST TOPS AND IS IN LIEU OF DOWELS. FRAME AND SLAB OPENINGS ARE TO BE OMITTED WHEN TOP IS USED OVER A JUNCTION BOX. FRAME CAN BE ADJUSTED WITH FROM ONE TO SIX COURSES OF BRICK.
12. MANHOLE TOP TYPE 8 MAY BE OF CAST-IN-PLACE OR PRECAST CONCRETE CONSTRUCTION OR BRICK CONSTRUCTION. FOR CONCRETE CONSTRUCTION, THE CONCRETE AND STEEL REINFORCEMENT SHALL BE THE SAME AS THE SUPPORTING WALL UNIT. AN ECCENTRIC CONE MAY BE USED.
13. LARGER THAN SPECIFIED STANDARD UNITS MAY BE SUBSTITUTED AT THE CONTRACTOR'S OPTION WHEN THESE UNITS WILL NOT CAUSE OR INCREASE THE SEVERITY OF UTILITY CONFLICTS. SUCH LARGER UNITS SHALL BE FURNISHED AT NO ADDITIONAL COST TO THE DEPARTMENT. LARGER ALTERNATE "A" UNITS CANNOT REPLACE ALTERNATE "B" UNITS WITHOUT APPROVAL OF THE ENGINEER. THIS NOTE APPLIES TO THIS INDEX ONLY.
14. FOR SUPPLEMENTARY DETAILS SEE INDEX NO. DSD-01 AND 3-E OR 3-E-1.

FHWA Approved: 5-1-75

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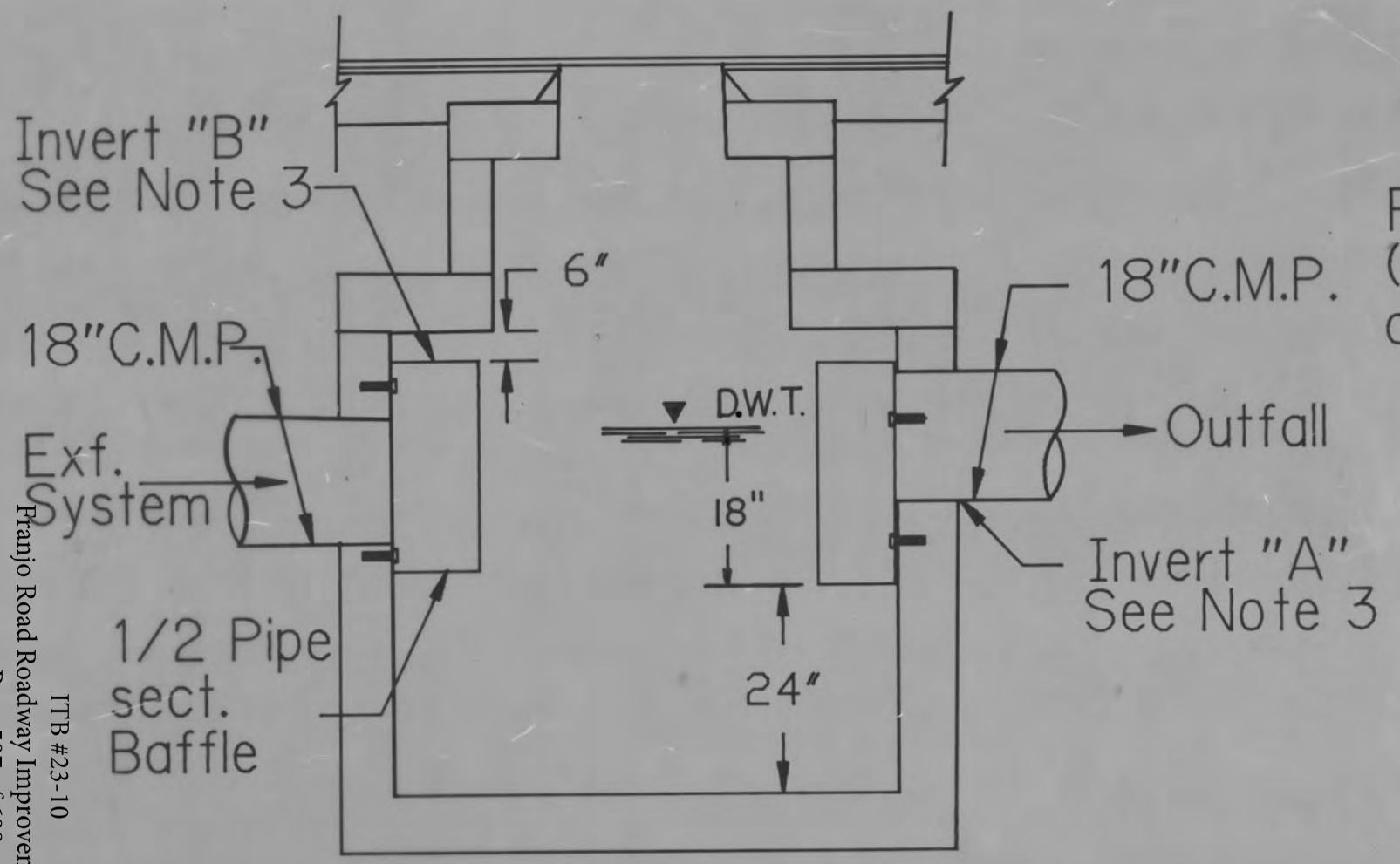
REVISIONS	
Dates	Descriptions
10-74	Changed Index No.

DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

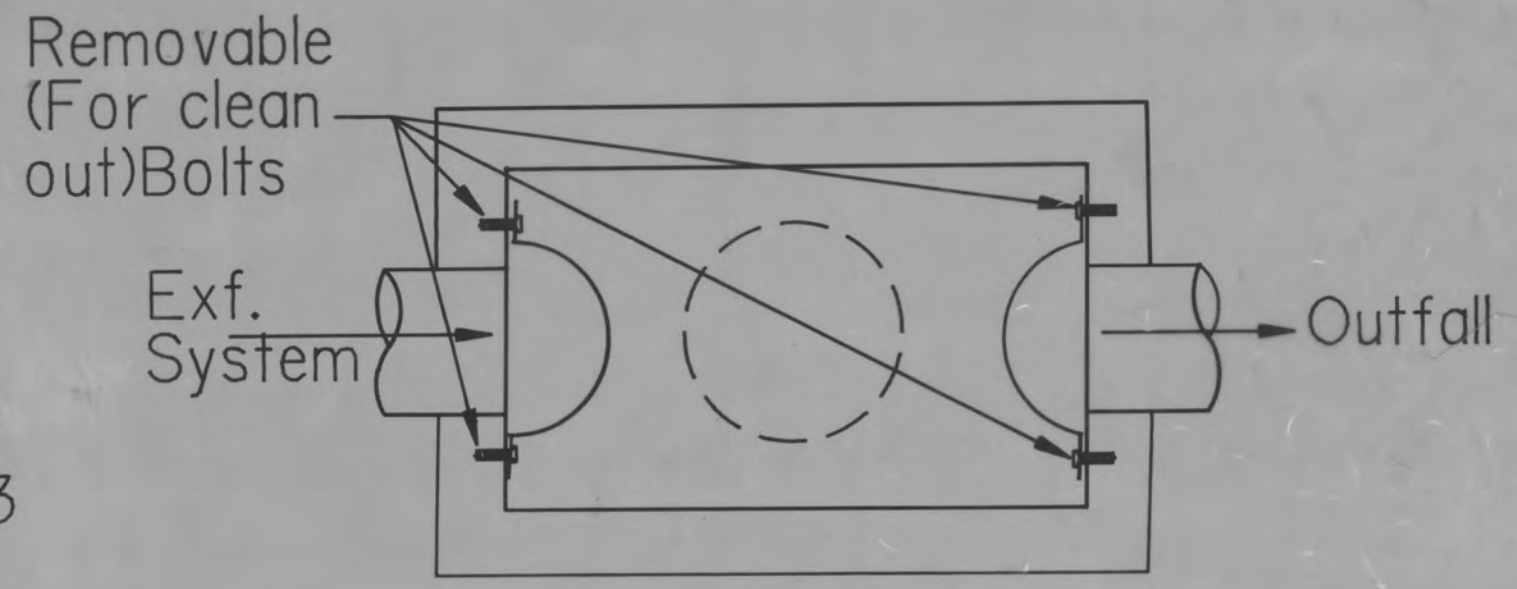
DESIGN	DSB-01
DRAWN	INLET, MANHOLE, JUNCTION BOX TYPES J & P
CHECK	
PROPOSED	

SUBMITTED	RECOMMENDED	APPROVED
HIGHWAY ENGINEER	CHIEF ENGINEER	DIRECTOR
DATE	PROJ.	SHEET 1 OF 1

POLLUTION CONTROL STRUCTURE



SIDE VIEW



TOP VIEW

NOTES:

1. All dimensions are minimum.
2. Standard 3'-6" x6'"J" Box. See Index DSB-01 for details.
3. Invert "A" to be set at weir elevation. Where not possible, invert "B" to be weir elevation with bottom of 1/2 pipe closed. If neither possible, next box into exfiltration system to have weir.
4. There will be a neoprene seal between the structure wall and 1/2 pipe.

29.2

DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION 29.2

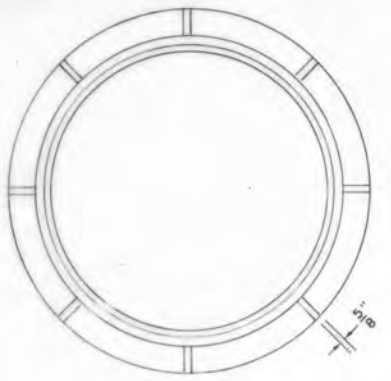
DESIGN
DRAWN
CHECK
PROPOSED

P. C. S. - 1

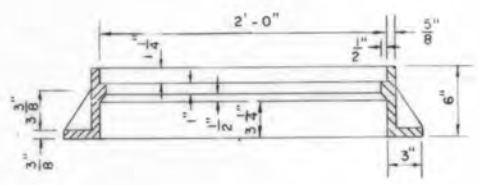
SUBMITTED RECOMMENDED APPROVED

DATE July, 1989 PROJ. SHEET OF

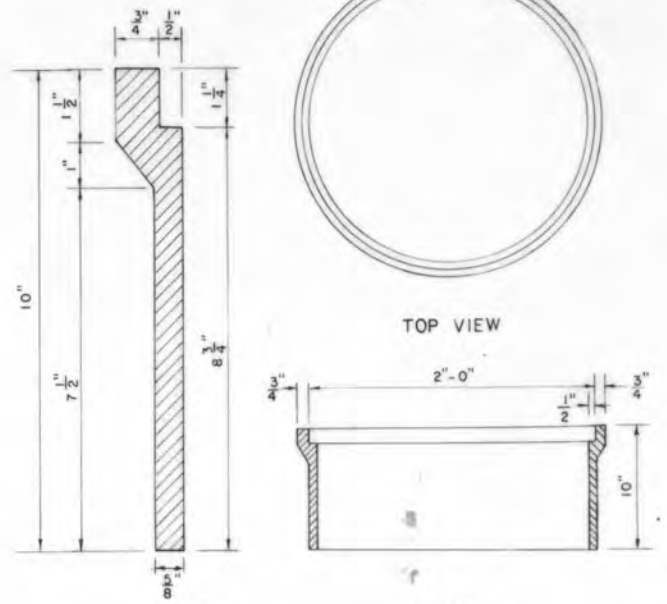
DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
PROJECT NO. _____ SHEET ___ OF ___



TOP VIEW



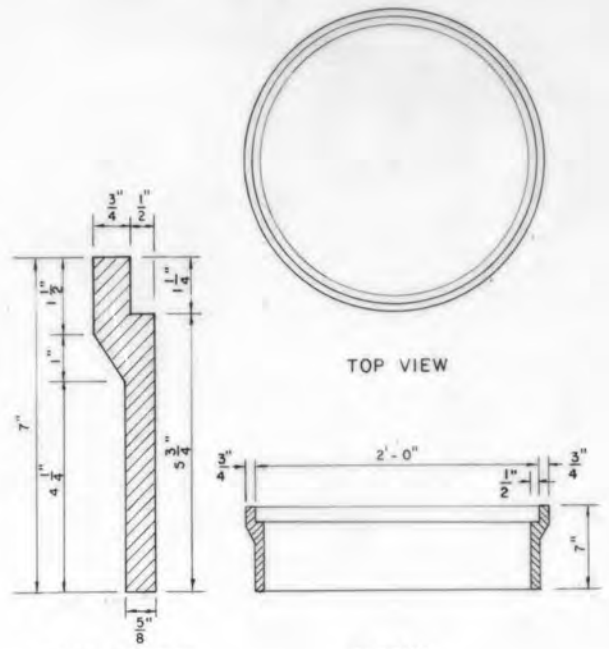
SECTION
TYPE I
FOR MANHOLES



TOP VIEW

WALL SECTION SECTION

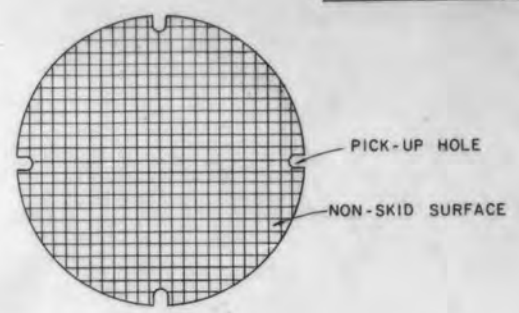
TYPE II
FOR CURB INLETS TYPES 1, 2, 3, & 4



TOP VIEW

WALL SECTION SECTION

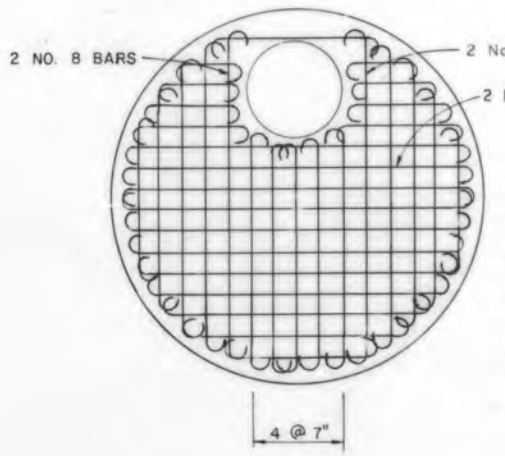
TYPE III
FOR CURB INLETS TYPES 7 & 8



TOP VIEW

BOTTOM VIEW

CAST IRON FRAMES



REINFORCEMENT PLAN

ALL REINFORCEMENT No. 6 BARS EXCEPT 6 No. 8 BARS SHOWN. BARS SPACED @ 6" CENTERS BOTH WAYS EXCEPT MIDDLE BARS SHOWN @ 7" CENTERS. ALL BARS WITH ACI STANDARD HOOKS CANTED APPROX. 45°, OR EMBEDDED IN ACCORDANCE WITH THE SLAB REINFORCEMENT DETAIL SHOWN UNDER OPTIONAL CONSTRUCTION JOINTS, SHEET NO. 2 of 2 EXCEPT ALL NO. 8 BARS AND NO. 6 BARS AROUND MANHOLE OPENING SHALL BE HOOKED.

SECTION
TYPE 7-T (TRAFFIC) (H-20)

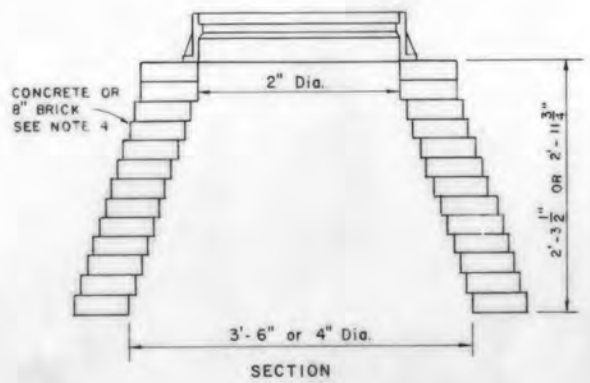
REINFORCEMENT PLAN

SECTION
TYPE 7-NT (NON-TRAFFIC)

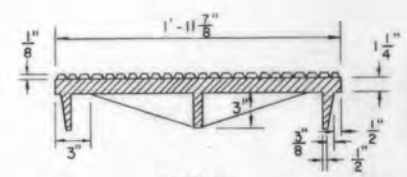
MANHOLES OR JUNCTION BOXES

REINFORCING BARS @ 6" CENTERS BOTH WAYS EXCEPT MIDDLE BARS SHOWN @ 7" CENTERS. ALL BARS WITH ACI STANDARD HOOKS CANTED APPROX. 45°, OR EMBEDED IN ACCORDANCE WITH THE SLAB. REINFORCEMENT DETAIL SHOWN UNDER OPTIONAL CONSTRUCTION JOINTS, SHEET 3 OF 3, EXCEPT BARS AROUND MANHOLE OPENING SHALL BE HOOKED.

BAR SIZE	TOP DIAMETER
No. 4	3'-6" & 4'
No. 5	6'
No. 6	7'



SECTION
TYPE 8
MANHOLES



SECTION

COVER FOR ALL FRAMES

NOTES (TOPS, FRAMES AND COVER):

1. ALL STEEL BARS SHALL BE NEW BARS IN ACCORDANCE WITH ASTM A 615, GRADE 60 AND HAVE 1½" MINIMUM COVER UNLESS OTHERWISE SHOWN AND SHALL BE HOOKED WHERE INDICATED.
2. MANHOLE TOP TYPE 7 SLABS SHALL BE OF CLASS II CONCRETE (fc'= 3400 P.S.I.).
3. MANHOLE TOP TYPE 7 SLABS MAY BE OF CAST-IN-PLACE OR PRECAST CONSTRUCTION. THE OPTIONAL KEY IS FOR PRECAST TOPS AND IN LIEU OF DOWELS. FRAME AND SLAB OPENINGS ARE TO BE OMITTED WHEN TOP IS USED OVER A JUNCTION BOX. FRAMES CAN BE ADJUSTED WITH FROM ONE TO SIX COURSES OF BRICK.
4. MANHOLE TOP TYPE 8 MAY BE OF CAST-IN-PLACE OR PRECAST CONCRETE CONSTRUCTION OR BRICK CONSTRUCTION. FOR CONCRETE CONSTRUCTION, THE CONCRETE AND STEEL REINFORCEMENT SHALL BE THE SAME AS THE SUPPORTING WALL UNIT. AN ECCENTRIC CONE MAY BE USED.
5. MANHOLE TOPS SHALL BE SECURED TO STRUCTURES BY OPTIONAL CONSTRUCTION JOINTS AS SHOWN ON SHEET NO. 2 OF THIS DETAIL.
6. ALL COVERS TO BE TACK WELDED TO FRAMES AT THIRD POINTS OR GROUTED AT THIRD POINTS WITH EXPOXY. (TOTAL ELEVEN (11) OUNCES OF MIXED EPOXY).
7. THE 212 LB. COVER IS THE REPLACEMENT FOR ALL PREVIOUS 1 1/4" DEEP FRAMES (TRAFFIC TYPE). THE 185 LB. COVER IS THE REPLACEMENT FOR ALL PREVIOUS 1/2" DEEP FRAMES (NON-TRAFFIC TYPE).

WEIGHT OF CASTINGS	
TYPE I	126 Lbs.
TYPE II	134 Lbs.
TYPE III	98 Lbs.
COVER	212 Lbs.

STRUCTURE TOPS

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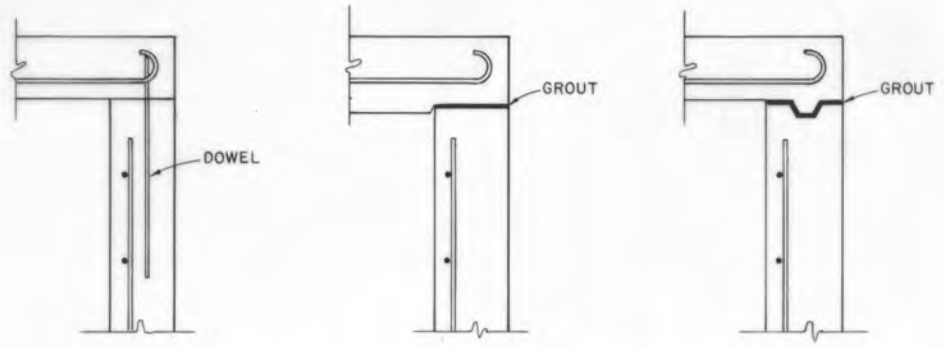
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

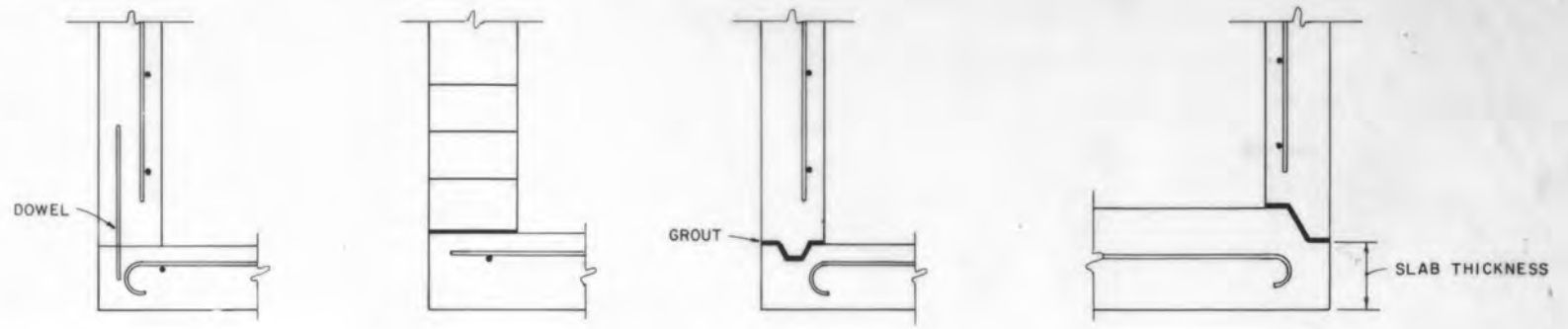
DESIGN S.R.D.	SUPPLEMENTARY DETAILS FOR MANHOLES AND INLETS
DRAWN F.B.	
CHECK W. Stinson	SMI-1
PROPOSED	

SUBMITTED: HIGHWAY ENGINEER — RECOMMENDED: CHIEF ENGINEER — APPROVED: DIRECTOR
DATE NOV. 1983 PROJ. ____ SHEET 1 OF 2

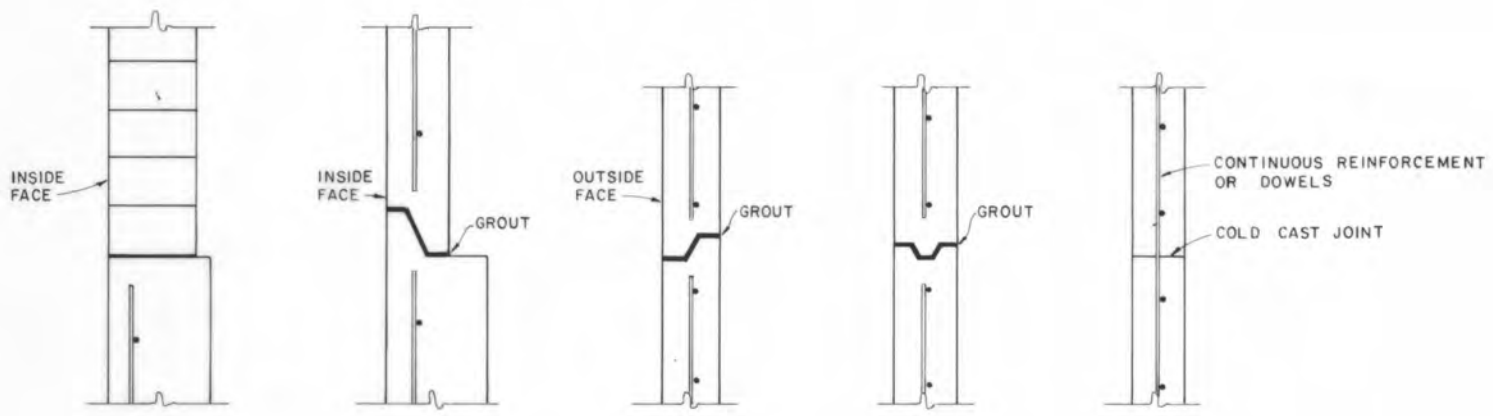
DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
PROJECT NO. _____ SHEET ___ OF ___



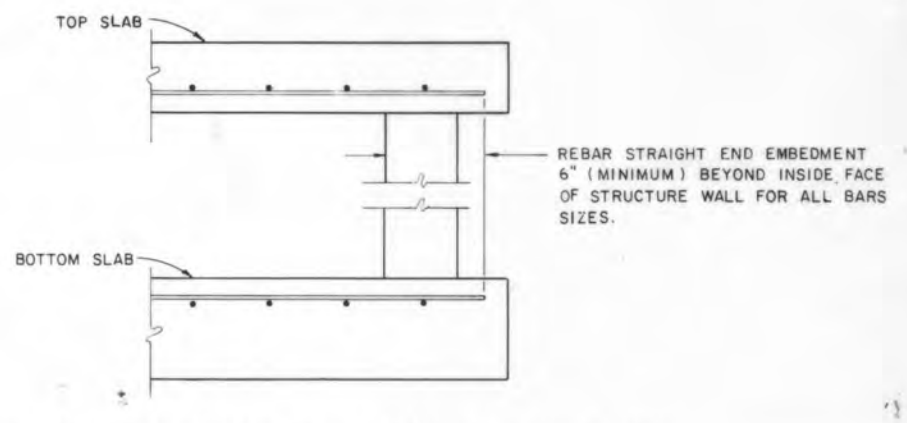
TOP SLABS TO WALLS



BOTTOM SLABS TO WALLS



WALL JOINTS



REBAR STRAIGHT END EMBEDMENT IN LIEU OF ACI STANDARD HOOKS FOR TOP AND BOTTOM SLABS

1. ONE OR MORE TYPES OF JOINTS MAY BE USED IN A SINGLE STRUCTURE, EXCEPT BRICK WALL STRUCTURE. BRICK WALL CONSTRUCTION IS PERMITTED ON CIRCULAR UNITS ONLY
2. ALL GROUTED JOINTS ARE TO HAVE A MAXIMUM THICKNESS OF 1"
3. KEYWAYS ARE TO BE A MINIMUM OF $1\frac{1}{2}$" DEEP.
4. JOINT DOWELS ARE TO BE #4 BARS, 12" LONG WITH A MINIMUM OF 6 BARS PER JOINT, APPROXIMATELY EVENLY SPACED.
5. MINIMUM COVER ON REINFORCING BARS IS $1\frac{1}{4}$".
6. REBAR STRAIGHT AND EMBEDMENT MAY BE USED IN LIEU OF ACI STANDARD HOOKS FOR TOP AND BOTTOM SLABS EXCEPT WHEN HOOKS ARE SPECIFICALLY CALLED FOR IN PLANS OR STANDARD DRAWINGS.

OPTIONAL CONSTRUCTION JOINTS

GENERAL NOTES

1. FOR SQUARE OR RECTANGULAR PRECAST DRAINAGE STRUCTURES EITHER DEFORMED OR SMOOTH WELDED WIRE FABRIC MAY BE USED BASED ON SUBSTITUTION OF EQUAL STEEL AREAS PROVIDED:
   a) THE SMOOTH WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A-185, AND DEFORMED WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A-497.
   b) WIDTH AND LENGTH OF THE UNIT IS FOUR TIMES THE SPACING OF THE CROSS WIRES.
   c) WIRE FABRIC SHALL BE CONTINUOUS AROUND THE BOX, SPLICED AT QUARTER POINT (S) WITH OVERLAP OF NOT LESS THAN THE SPACING OF CROSS WIRES PLUS TWO INCHES.
2. WELDING OF SPLICES AND LAPS IS PERMITTED. THE REQUIREMENTS AND RESTRICTIONS PLACED ON WELDING IN AASHTO M-259 SHALL APPLY.
3. HORIZONTAL STEEL IN RECTANGULAR STRUCTURES SHALL BE LAPPED A MINIMUN OF 24 BAR DIAMETER AT CORNERS.

33

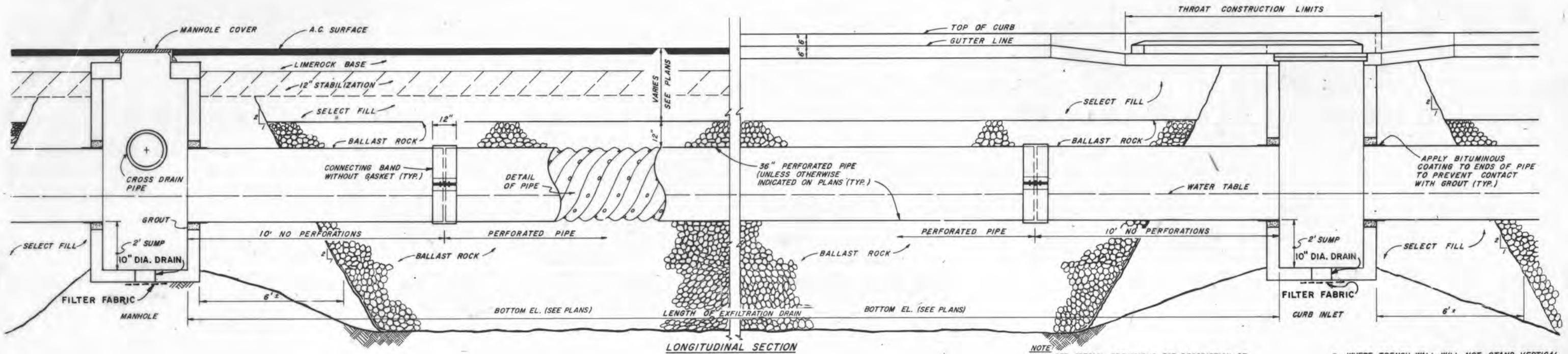
DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

DESIGN	SUPPLEMENTARY DETAILS FOR MANHOLES AND INLETS
S.R.D.	
DRAWN F.B.	
CHECK W. Stevens	SMI-02
PROPOSED	

SUBMITTED _____ HIGHWAY ENGINEER
RECOMMENDED _____ CHIEF ENGINEER
APPROVED _____ DIRECTOR
DATE NOV. 1983 PROJ. SHEET 2 OF 2

DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION

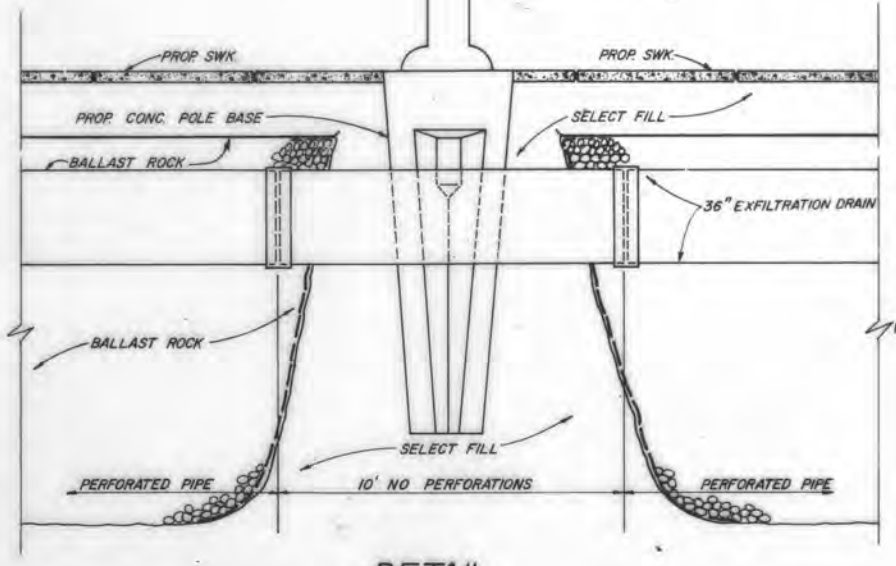
PROJECT NO. _____ SHEET ___ OF ___



LONGITUDINAL SECTION

NOTE

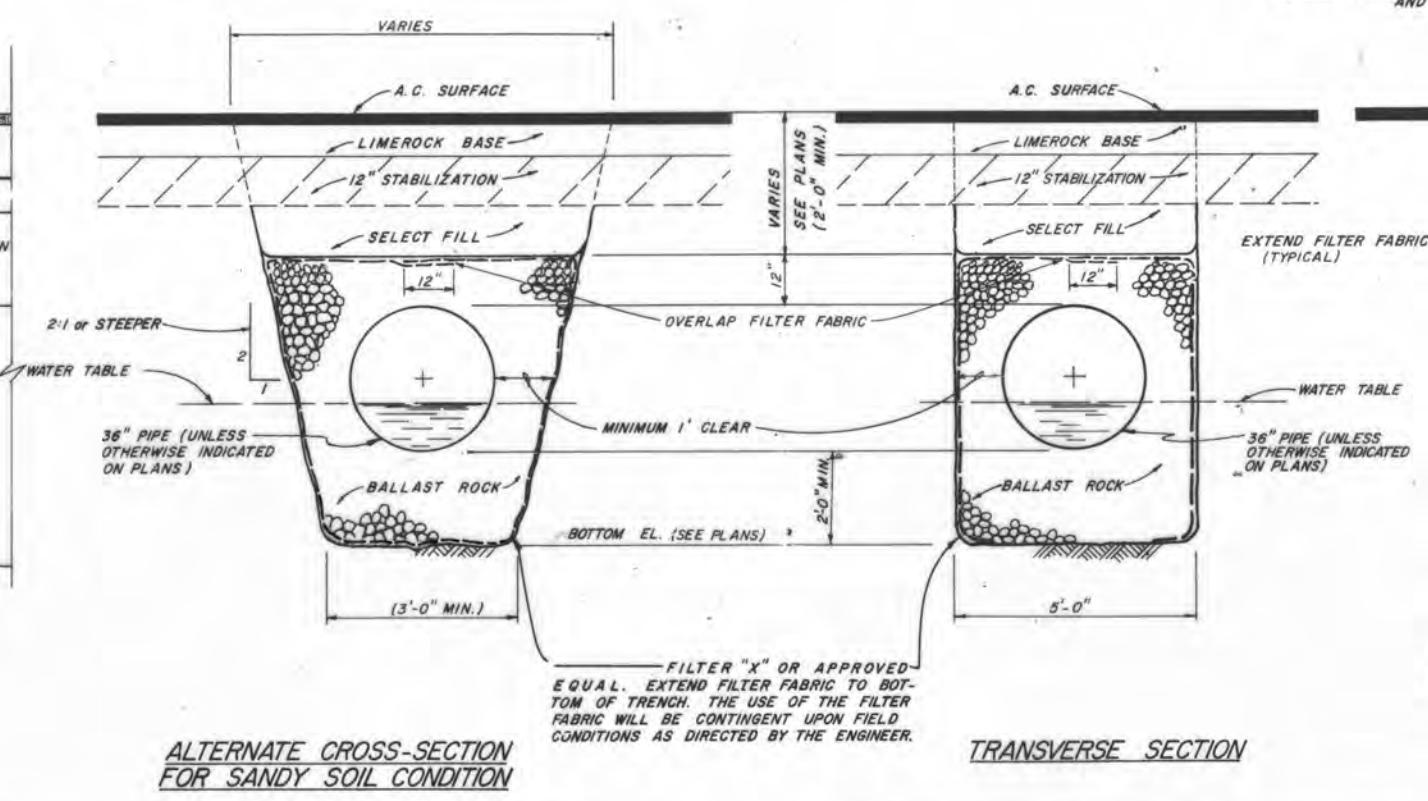
1. SEE SPECIAL PROVISIONS FOR DESCRIPTION OF SELECT FILL, BALLAST ROCK, PERFORATED PIPE AND POLYPROPYLENE FILTER FABRIC.
2. THE COST OF CONSTRUCTION OF THE EXFILTRATION DRAIN (ITEM NO. 443-70, PER LINEAR FOOT) SHALL INCLUDE THE COST OF EXCAVATION, BOTH PERFORATED AND NON-PERFORATED PIPE, BALLAST ROCK, AND BACKFILLING WITH SELECT FILL.
3. WHERE TRENCH WALL WILL NOT STAND VERTICAL OR WHERE CAVE-IN BELOW THE WATER TABLE IS LIKELY, ALTERNATE SECTION IS TO BE USED AT THE DISCRETION OF THE ENGINEER. THERE WILL BE NO ADDITIONAL PAYMENT FOR THIS CROSS SECTION.



DETAIL

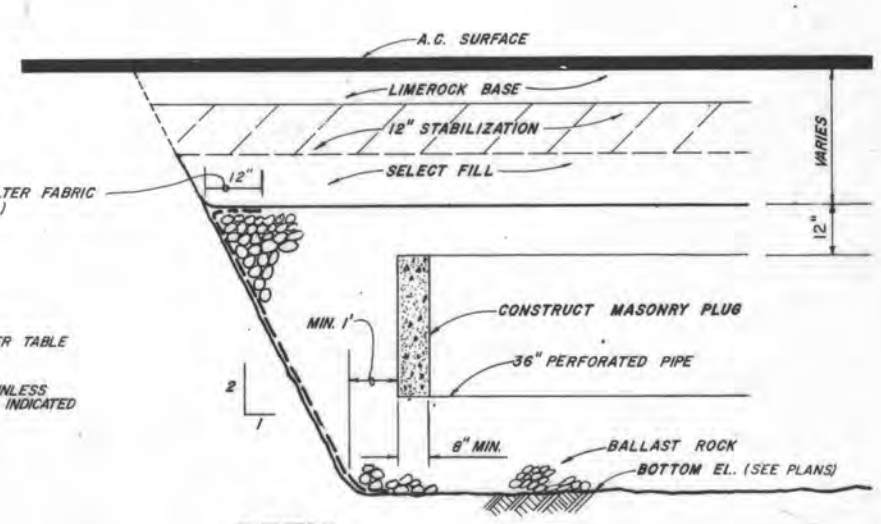
CONSTRUCTION OF EXFILTRATION DRAIN ADJACENT TO PROPOSED ROADWAY LIGHTING POLES

(FOR USE WHEN ℄ PIPE IS 7FT. OR LESS FROM ℄ OF POLE BASE)



ALTERNATE CROSS-SECTION FOR SANDY SOIL CONDITION

TRANSVERSE SECTION



DETAIL

FOR ENDING EXFILTRATION DRAIN WITHOUT A DRAINAGE STRUCTURE.

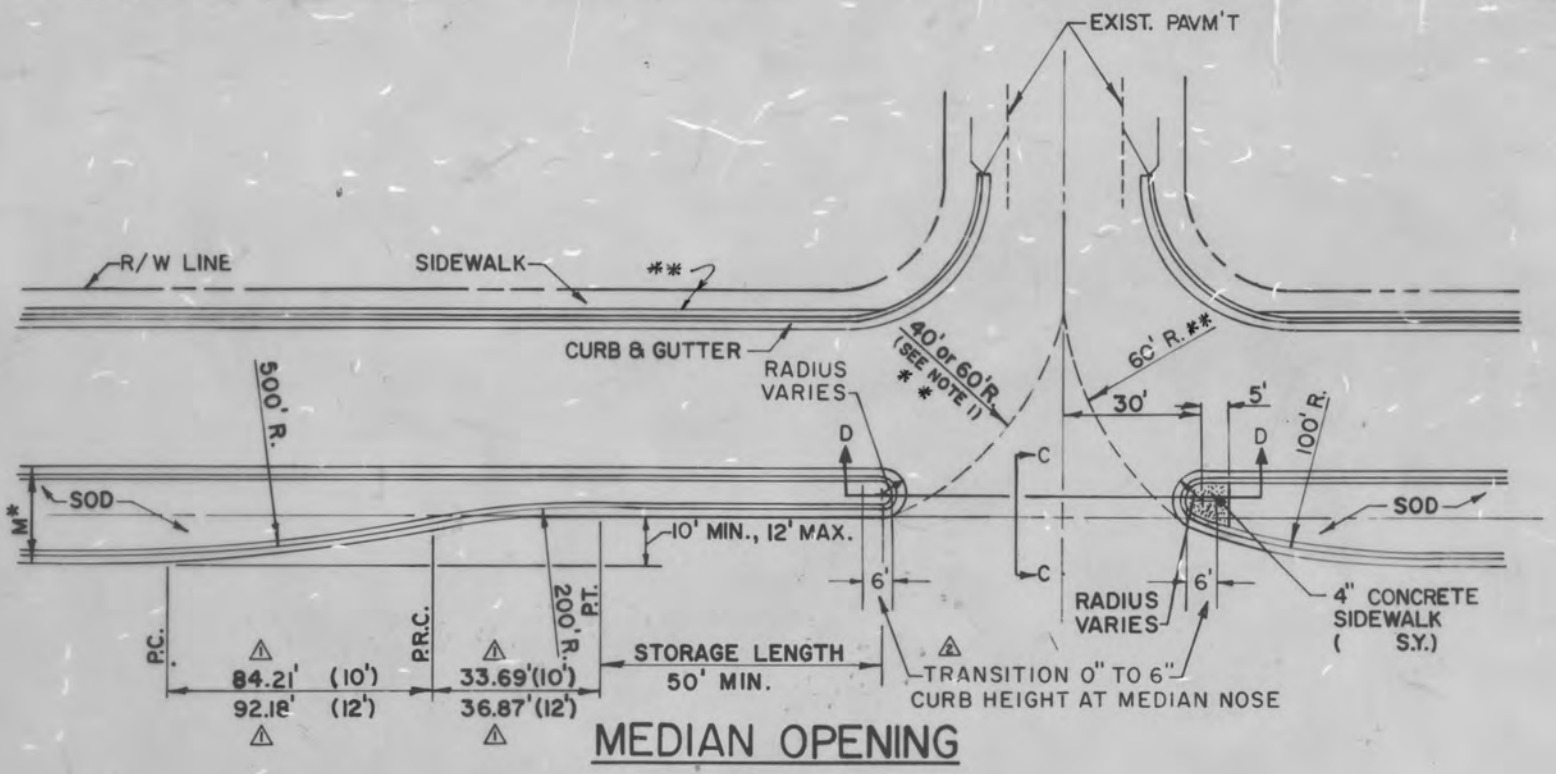
36

3-E

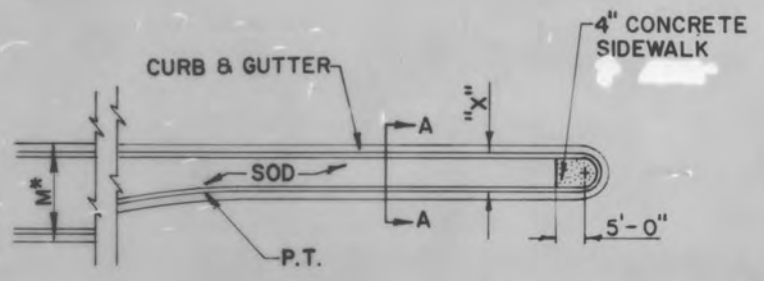
DETAIL OF EXFILTRATION DRAIN WITH PERFORATED PIPE

G.M.	J.D.L.	1-79
DRAWN BY	CHECKED BY	DATE

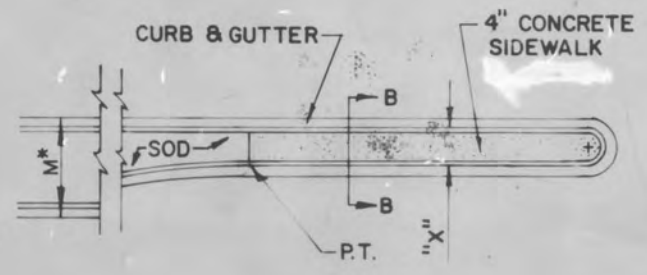
REV. 11/89



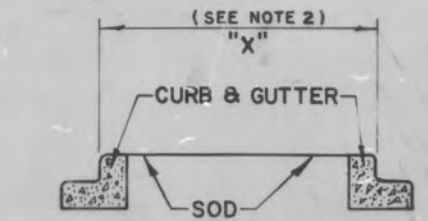
MEDIAN OPENING



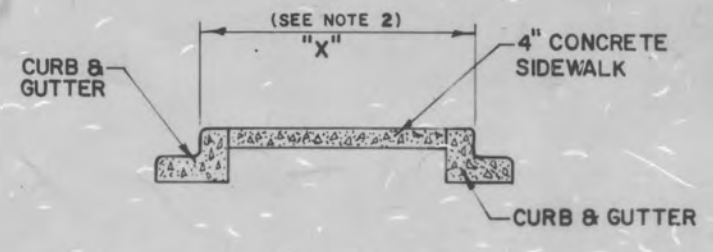
DETAIL 'A'



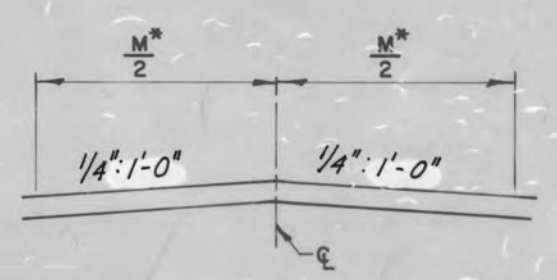
DETAIL 'B'



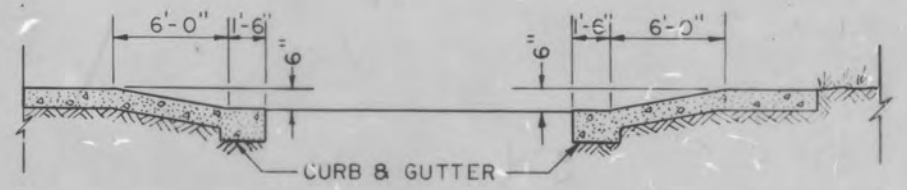
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

* M=TOTAL EFFECTIVE MEDIAN WIDTH

** THESE ITEMS MAY NOT BE TYPICAL, SEE CONSTRUCTION PLANS FOR PROPER DETAILING.

NOTES:

1. MINOR INTERSECTIONS 40' R. (LOCAL STREETS)
   MAJOR INTERSECTIONS 60' R. (ARTERIAL STREETS)
2. WHEN DIMENSION "X" IS MORE THAN 6'-0"
   USE DETAIL A; WHEN LESS THAN 6'-0" USE DETAIL B

REVISION	DATE	DESCRIPTION	BY
2	2-27-75	Curb Height Transition	L.C.
1	2-15-74	Distance, P.C., P.R.C. & P.T.	L.C.

DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

DESIGN: KEDWIN
DRAWN: S.L.
CHECK: R. Young
APPROVED: [illegible]

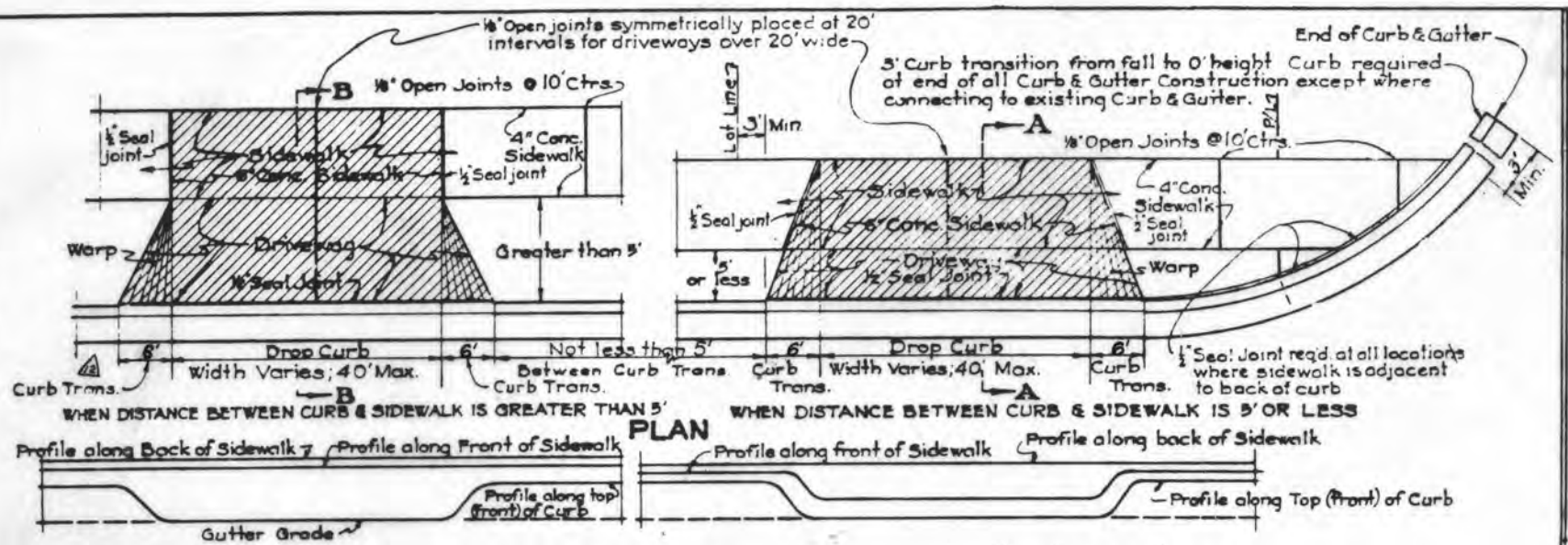
MEDIAN OPENING ON DIVIDED ROADWAYS

15-B

SUBMITTED: [illegible] RECOMMENDED: [illegible] APPROVED: [illegible]

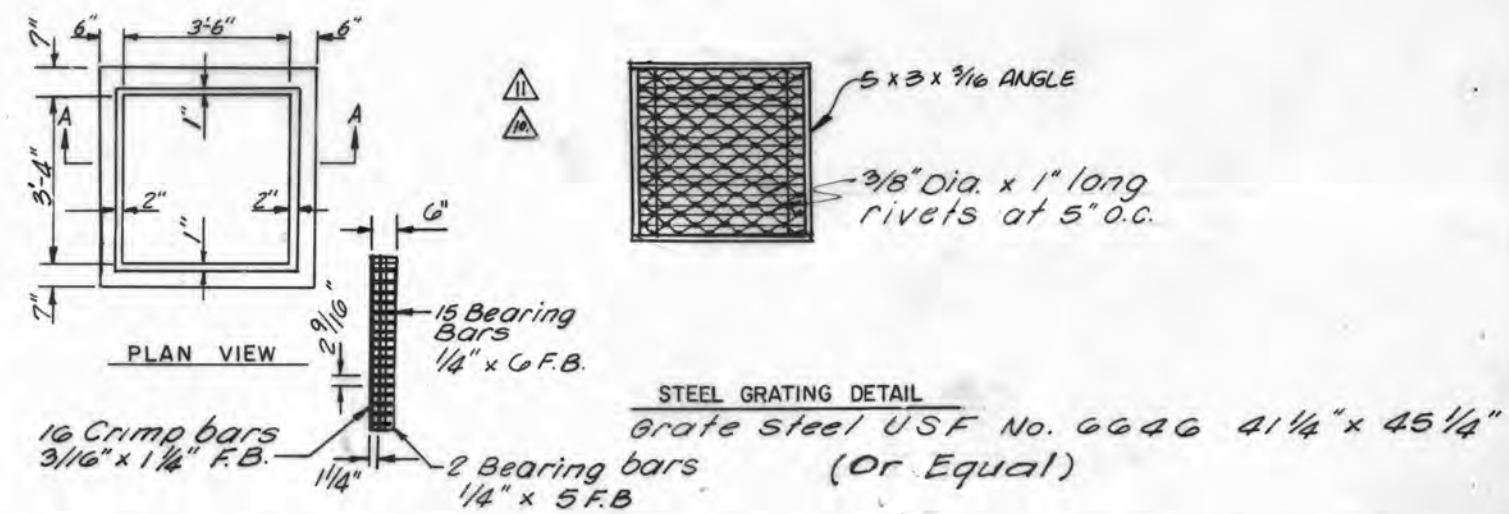
DATE: [illegible] PROJECT ENGINEER: [illegible] SHEET 92

55



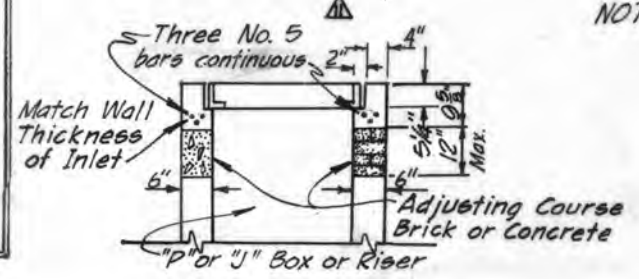
DETAIL OF SIDEWALK AND PAVED DRIVEWAY CONSTRUCTION

No paved driveways are to be constructed without compensation for materials from the owner except for replacement of driveways existing at the time of beginning of construction of the project and if desired by the owner, and at all other locations where the need becomes evident prior to the completion of the construction of the curb and gutter and sidewalk at a particular location. All new or reconstructed driveways must conform to the size limits as indicated above.



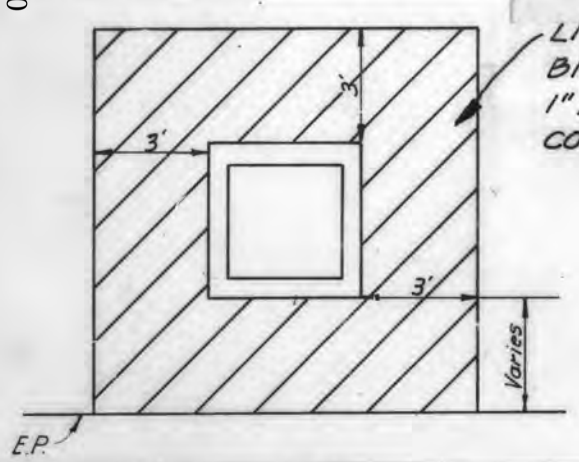
STEEL GRATING DETAIL

Grate Steel USF No. 6646 41¼" x 45¼" (Or Equal)



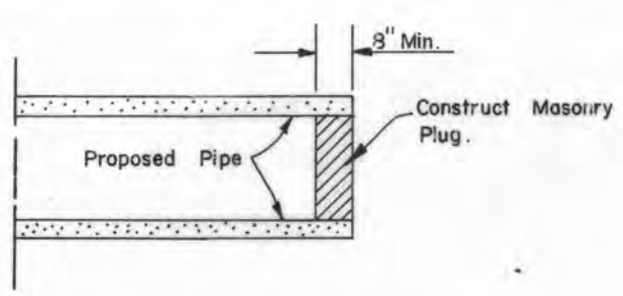
NOTE: 1. This inlet top to be used in conjunction with Index No. P & J Type Inlet Boxes
2. The Contractor may use a precast top collar and an adjusting course (12" max.) concrete or brick masonry. If brick is used, stucco inside and outside surface. (½" plaster)

INLET TOP TYPE 10

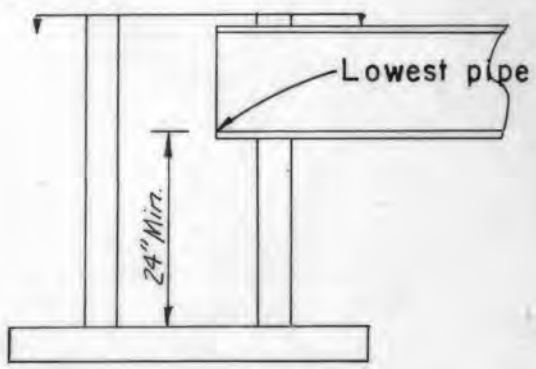


LIMEROCK BASE (6" THICK) OR BITUMINOUS BASE (4" THICK) WITH 1" ASPHALTIC CONCRETE SURFACE COURSE.

INLET PAVING DETAIL

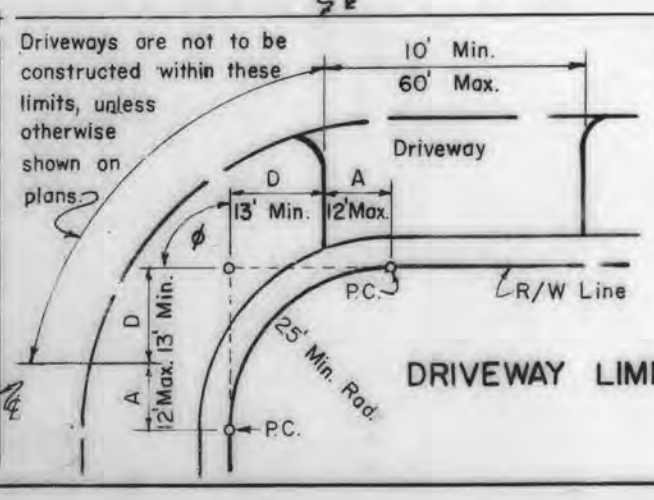


DETAIL OF PIPE PLUG



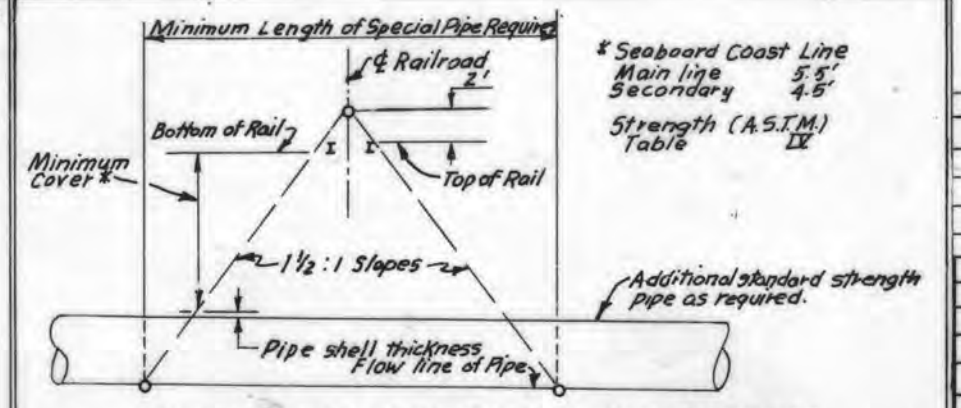
SUMP DETAIL

FOR DRAINAGE STRUCTURES



NOTE:
1. Where the intersection angle φ is 90° or less, dimension "A" controls.
2. Where the intersection angle φ is over 90°, dimension "D" controls.

DRIVEWAY LIMITS NEAR INTERSECTIONS



METHOD FOR DETERMINING THE LENGTH OF EXTRA STRENGTH PIPE REQUIRED UNDER RAILROAD

REVISION	DATE	DESCRIPTION	BY
12	12/73	Add 6' Curb Transition	R.M.
11	9-15	Dimensions of Grating and Box	JWB
10	5-71	Dimensions of Grating	RSD
9	11-68	2' Sump Detail	C.G.
8	10-68	Special Pipe Detail	A.R.
7	10-68	Added Pipe Plug	C.G.
6	9-68	Added Inlet Top Type #10	C.G.
5	9-68	Added Inlet Paving Detail	C.G.
4	8-68	Remove 1 & 2	CG
3	2-67	Adjust for Flexible Pavement	M.J.A
2	3-65	Added Driveway Limits Near Intersec.	JAD
1	10-64	Added Detail of 9" Curb and Gutter.	RC

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DADE COUNTY PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION

MISCELLANEOUS DETAILS

14-A

DESIGN S. R. D.
DRAWN —
CHECK Herndon
PROPOSED
SUBMITTED M.E. Card
RECOMMENDED
APPROVED
DATE 6-6-1961
PROJ.
SHEET OF

FED. ROAD DIV No	STATE	PROJECT No.	FISCAL YEAR	SHEET No
1	FLA			

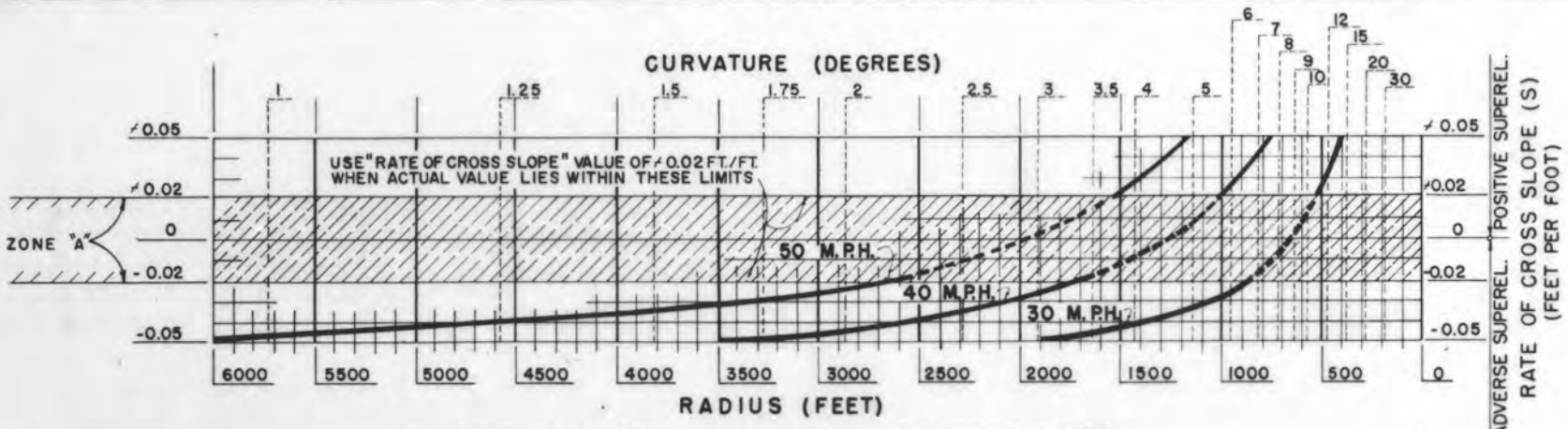
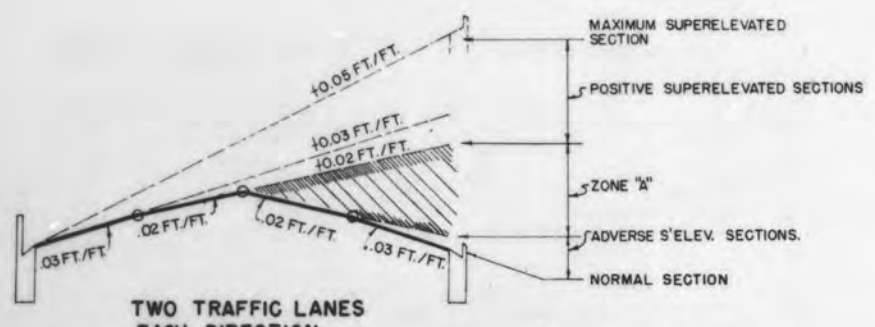
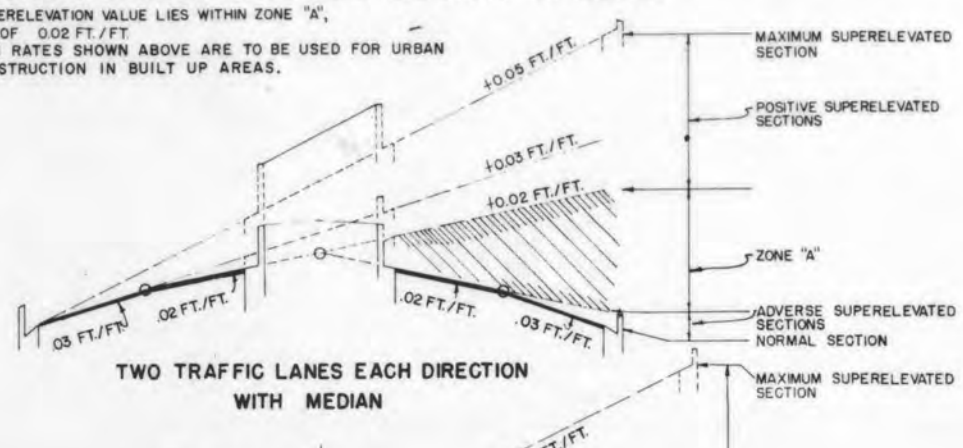


CHART SHOWING REMOVAL OF CROWN AND OR SUPERELEVATON NECESSARY FOR CURVATURE AT VARIOUS DESIGN SPEEDS

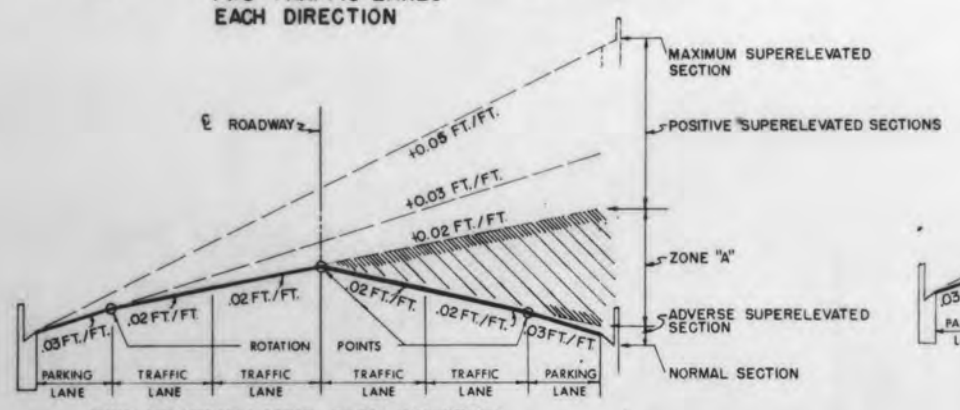
NOTE: WHEN THE ACTUAL SUPERELEVATION VALUE LIES WITHIN ZONE "A", USE A POSITIVE RATE OF 0.02 FT./FT. THE SUPERELEVATION RATES SHOWN ABOVE ARE TO BE USED FOR URBAN (CURB & GUTTER) CONSTRUCTION IN BUILT UP AREAS.



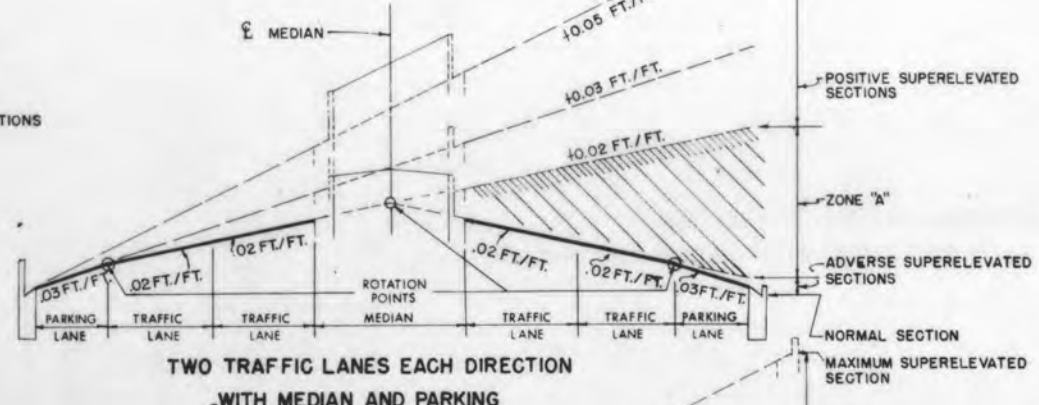
TWO TRAFFIC LANES EACH DIRECTION



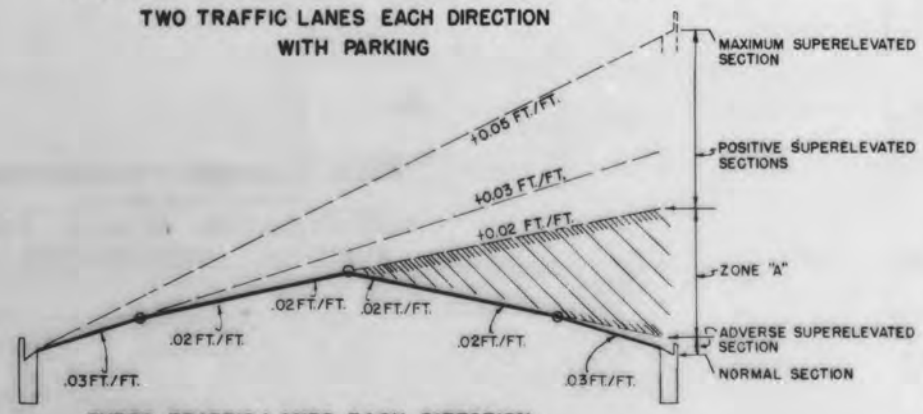
TWO TRAFFIC LANES EACH DIRECTION WITH MEDIAN



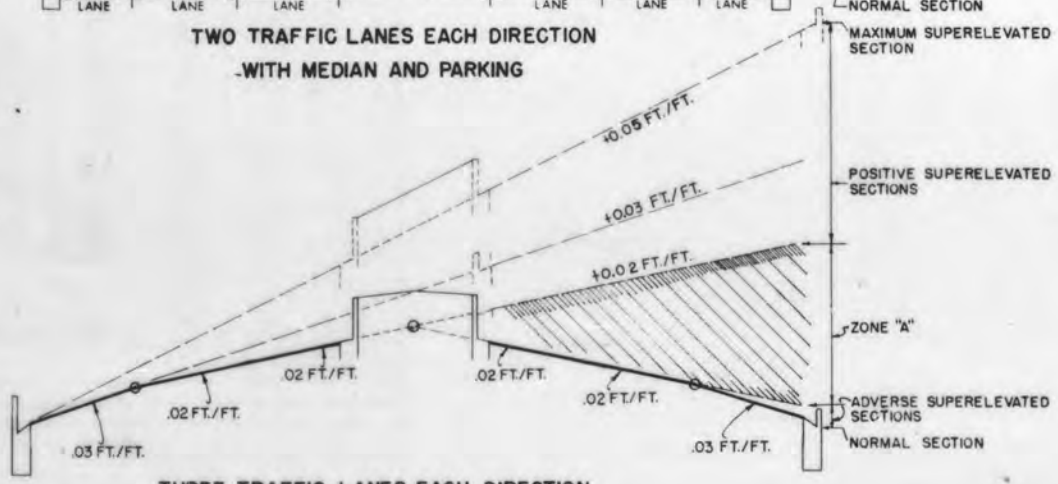
TWO TRAFFIC LANES EACH DIRECTION WITH PARKING



TWO TRAFFIC LANES EACH DIRECTION WITH MEDIAN AND PARKING



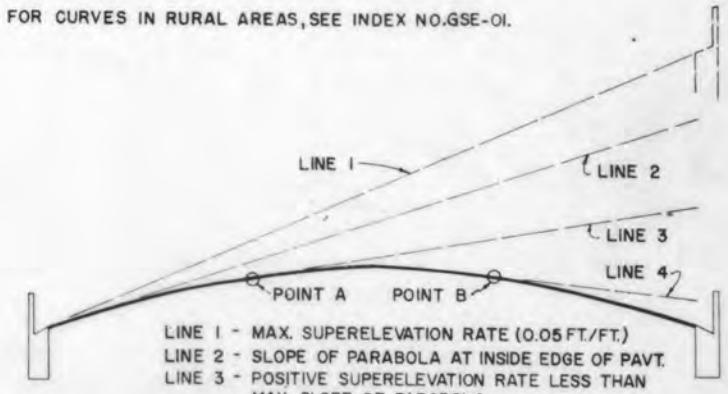
THREE TRAFFIC LANES EACH DIRECTION



THREE TRAFFIC LANES EACH DIRECTION WITH MEDIAN

GENERAL NOTES FOR SUPERELEVATION

1. MAXIMUM RATE OF SUPERELEVATION (IN MUNICIPAL CONSTRUCTION) SHALL BE 0.05 FT./FT.
2. SUPERELEVATION SHALL BE OBTAINED BY ROTATING THE PLANE SUCCESSIVELY ABOUT THE BREAK POINTS OF THE SECTION UNTIL THE PLANE HAS ATTAINED A SLOPE EQUAL TO THAT REQUIRED BY THE CHART. SHOULD THE ROTATION TRAVERSE THE ENTIRE SECTION AND FURTHER SUPERELEVATION BE REQUIRED, THE REMAINING ROTATION OF THE PLANE SHALL BE ABOUT THE LOW EDGE OF THE INSIDE TRAVEL LANE.
   ADVERSE SUPERELEVATION OF SECTIONS WITH PARKING LANES. NO SUPERELEVATION WILL BE REQUIRED WHEN THE MAXIMUM ADVERSE SUPERELEVATION RATE IS GREATER THAN THE NORMAL SLOPE OF THE TRAFFIC LANE ADJACENT TO THE PARKING LANE.
3. WHEN POSITIVE SUPERELEVATION IS REQUIRED, THE SLOPE OF THE GUTTER ON THE HIGH SIDE SHALL BE A CONTINUATION OF THE SLOPE OF THE SUPERELEVATED PAVEMENT.
4. IN CONSTRUCTION, SHORT VERTICAL CURVES SHALL BE PLACED AT ALL ANGULAR PROFILE BREAKS WITHIN THE LIMITS OF THE SUPERELEVATION TRANSITION.
5. MINIMUM GUTTER GRADES WITHIN THE LIMITS OF THE SUPERELEVATION TRANSITION SHALL BE 0.2%.
6. THE VARIABLE SUPERELEVATION TRANSITION LENGTH "L" SHALL HAVE A MINIMUM VALUE OF 50 FEET FOR DESIGN SPEEDS UNDER 40 M.P.H. AND 75 FEET FOR DESIGN SPEEDS OF 40 M.P.H. OR GREATER.
7. MUNICIPAL SECTIONS HAVING LANE ARRANGEMENTS DIFFERENT FROM THOSE SHOWN, BUT COMPOSED OF A SERIES OF PLANES, SHALL BE SUPERELEVATED IN A SIMILAR MANNER.
8. FOR CURVES IN RURAL AREAS, SEE INDEX NO. GSE-01.



LINE 1 - MAX. SUPERELEVATION RATE (0.05 FT./FT.)
LINE 2 - SLOPE OF PARABOLA AT INSIDE EDGE OF PAVT.
LINE 3 - POSITIVE SUPERELEVATION RATE LESS THAN MAX. SLOPE OF PARABOLA.
LINE 4 - ADVERSE SUPERELEVATION.

VALUES OBTAINED FROM THE CHART ARE ALSO APPLICABLE TO A PARABOLIC CROWN SECTION. WHEN THIS TYPE SECTION IS USED, SUPERELEVATION IS ESTABLISHED BY ROTATING A TANGENT ABOUT THE ARC OF THE PARABOLIC CROWN UNTIL THE DESIRED SLOPE IS ATTAINED (POINTS A & B ON SKETCH). THE NORMAL PARABOLIC CROWN WILL BE MAINTAINED OUTSIDE THE LIMITS OF THE PLANE THUS FORMED.

SUPERELEVATION OF PARABOLIC SECTION

65

FHWA APPROVED: 5-20-77

FLORIDA DEPARTMENT OF TRANSPORTATION
ROADWAY PLANS SECTION - 65

SUPERELEVATION DETAILS FOR MUNICIPAL CONSTRUCTION

REVISIONS		REVISIONS	
Dates	Descriptions	Dates	Descriptions
5-77 LMF	Added note under S.E. Chart	3-67 M.J.T.	REVISED FOR PLANE SECTION
		1-73 RWS	Changed all fractions to decimals.
		10-74 LMF	Changed Index No Updated pav't slope to current policy

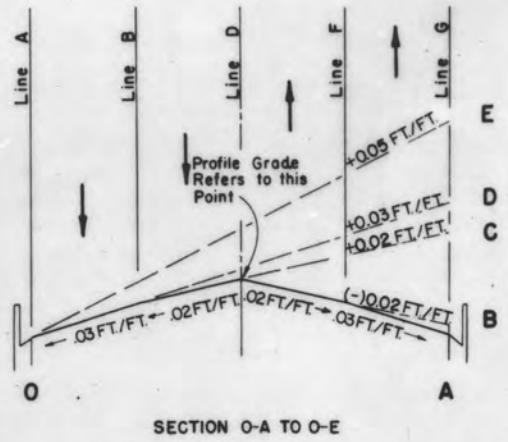
ROAD NO.	COUNTY	PROJECT NO.

	Names	Dates
Detailed by	W. L. B	2-66
Checked by	R. L. Q.	12-66
Quantities by		
Checked by		
Traced by	C. D. R.	1-67

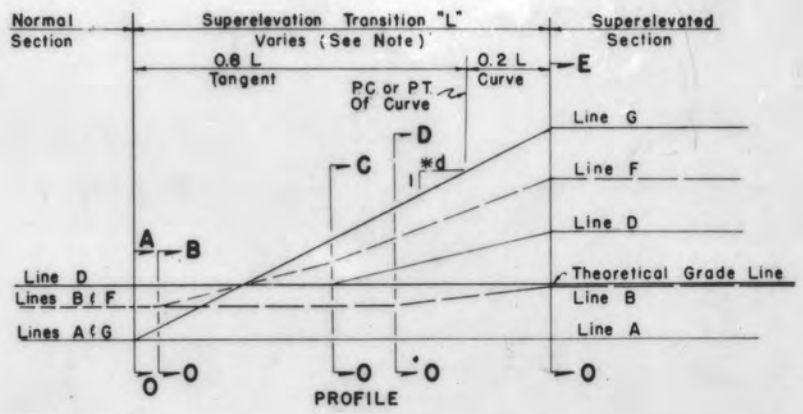
Recommended For Approval by: Engineer of Road Design
APPROVED BY: Asst. State Highway Engineer

Drawing No. 1 OF 2 | Index No. GSE-02-1

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



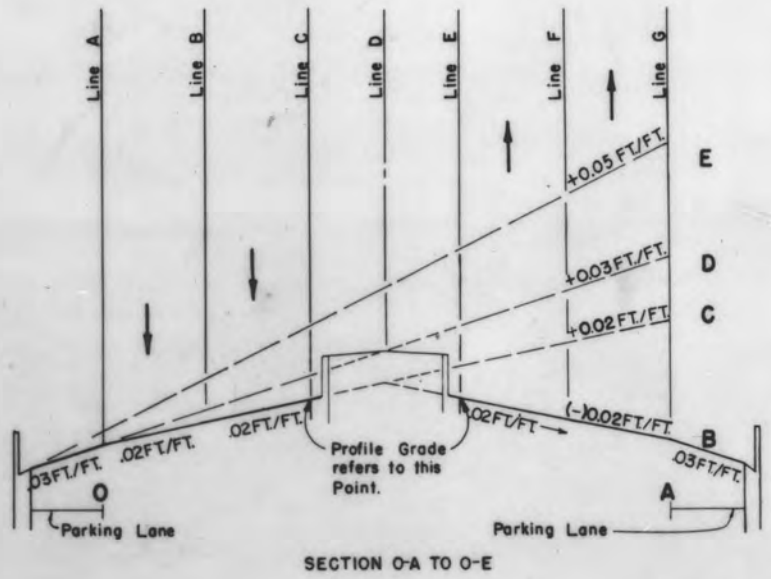
SECTION O-A TO O-E



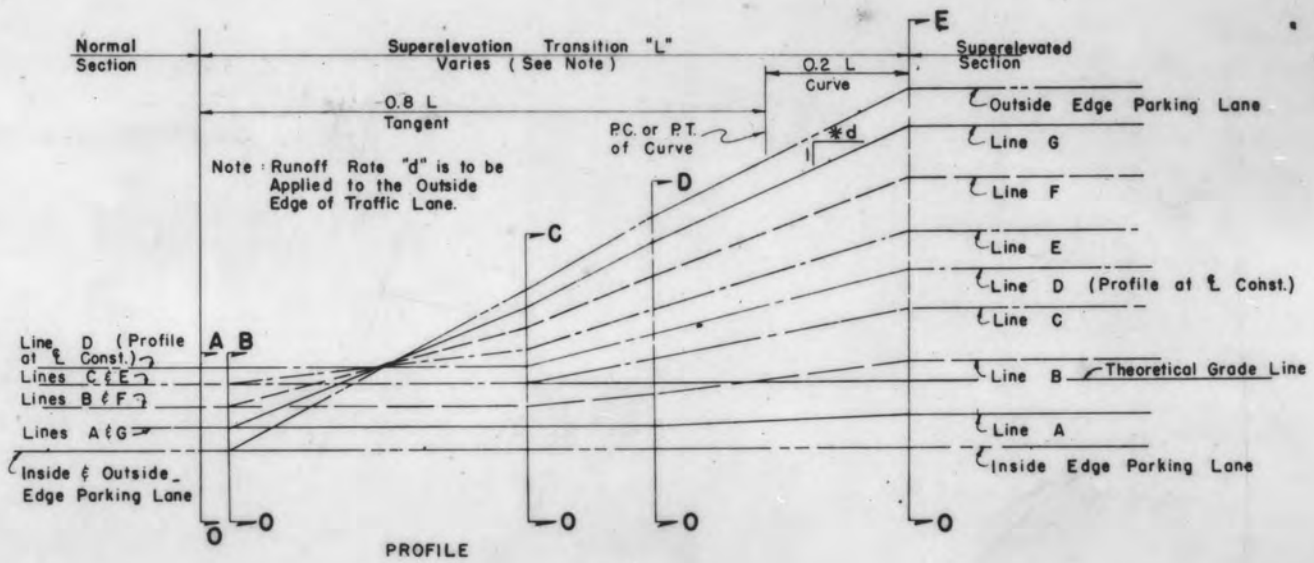
PROFILE

DETAIL OF SUPERELEVATION TRANSITION FOR TWO TRAFFIC LANES EACH DIRECTION

LINE	DESCRIPTION
A	INSIDE TRAFFIC LANE
B	INSIDE LANE LINE
C	INSIDE MEDIAN EDGE PAVEMENT
D	℄ CONSTRUCTION
E	OUTSIDE MEDIAN EDGE PAVEMENT
F	OUTSIDE LANE LINE
G	OUTSIDE TRAFFIC LANE



SECTION O-A TO O-E



PROFILE

*d (SLOPE RATIO)	
30 MPH	1 : 100
40 MPH	1 : 125
50 MPH	1 : 150

DETAIL OF SUPERELEVATION TRANSITION FOR TWO TRAFFIC LANES EACH DIRECTION WITH MEDIAN AND PARKING

D	R	V=30mph e	V=40mph e	V=50mph e
0° 15'	22918'	NC	NC	NC
0° 30'	11459'	NC	NC	NC
0° 45'	7639'	NC	NC	RC
1° 00'	5730'	NC	RC	RC
1° 30'	3820'	RC	RC	.024
2° 00'	2865'	RC	.022	.028
2° 30'	2292'	RC	.026	.031
3° 00'	1910'	.020	.029	.033
3° 30'	1637'	.023	.032	.036
4° 00'	1432'	.025	.033	.038
5° 00'	1146'	.028	.036	.043
6° 00'	955'	.031	.039	.047
7° 00'	819'	.032	.041	
8° 00'	716'	.034	.044	
9° 00'	637'	.035	.046	
10° 00'	573'	.037	.048	
11° 00'	521'	.038		
12° 00'	477'	.039		
13° 00'	441'	.040		
14° 00'	409'	.043	e Max.=0.05	
16° 00'	358'	.045		
18° 00'	318'	.047		
20° 00'	286'	.050		

The superelsvation rates shown above are to be used for urban (curb & gutter) arterials in suburban areas where sufficient R/W may be acquired to make suitable connections.

NOTE: THE SECTIONS AND PROFILES SHOWN ON THIS SHEET ARE EXAMPLES OF THE SUPERELEVATION TRANSITIONS. SIMILAR SCHEMES SHOULD BE USED FOR ROADWAYS HAVING DIFFERENT SECTION DESIGNS.

FHWA APPROVED: 5-20-77

66

FLORIDA DEPARTMENT OF TRANSPORTATION
ROADWAY PLANS SECTION

SUPERELEVATION DETAILS FOR MUNICIPAL CONSTRUCTION

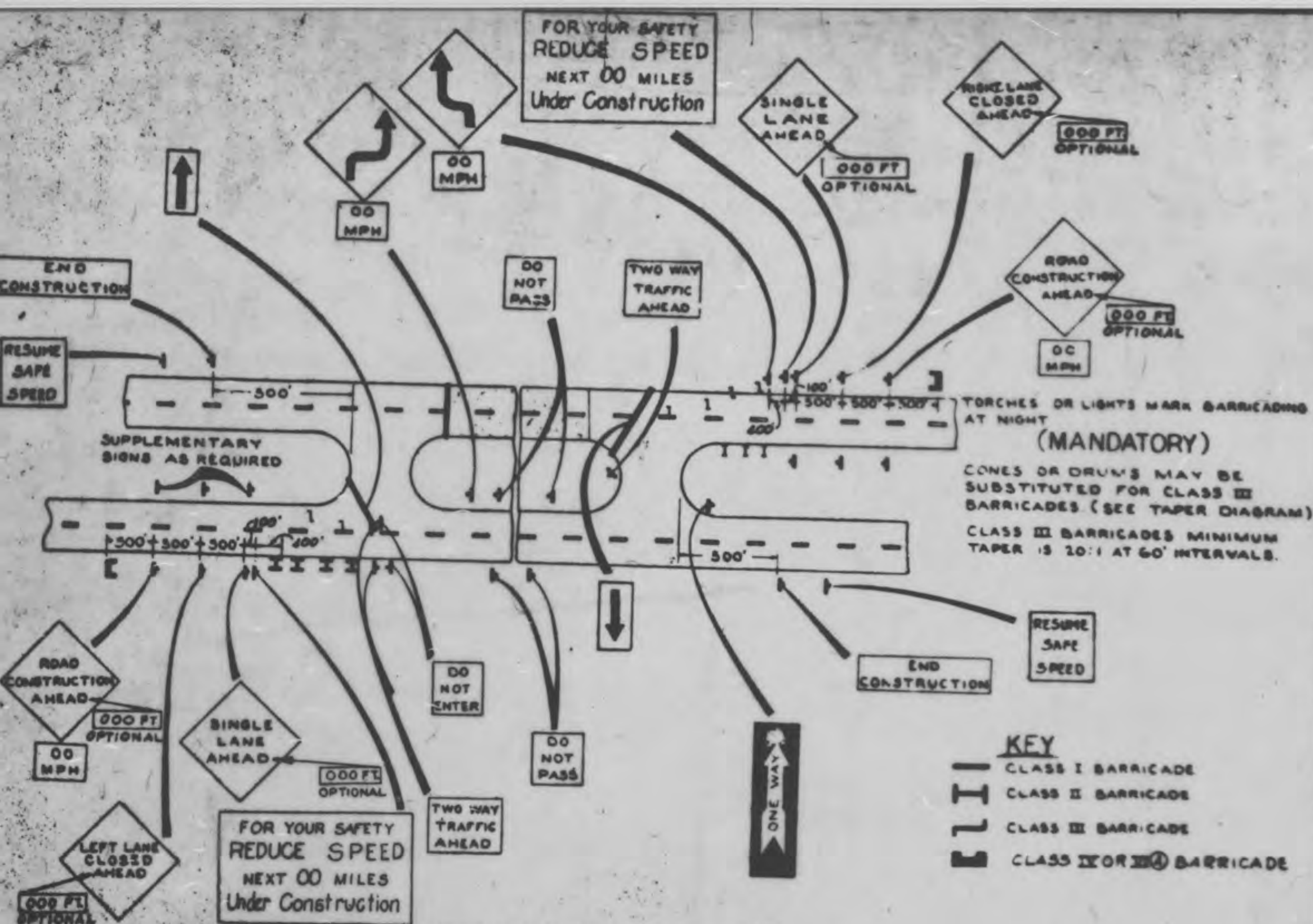
REVISIONS Dates	Descriptions
1-75	Changed all fractions
Bx	to decimals.
10-74 LMF	Changed Index No Up-dated part's shape to current policy
5-77 LMF	Added S.E. chart for e Max 0.05

	Names	Dates
Detailed by	W. L. B.	2-66
Checked by	R. L. O.	12-66
Quantities by		
Checked by		
Traced by	C.D.P	1-67

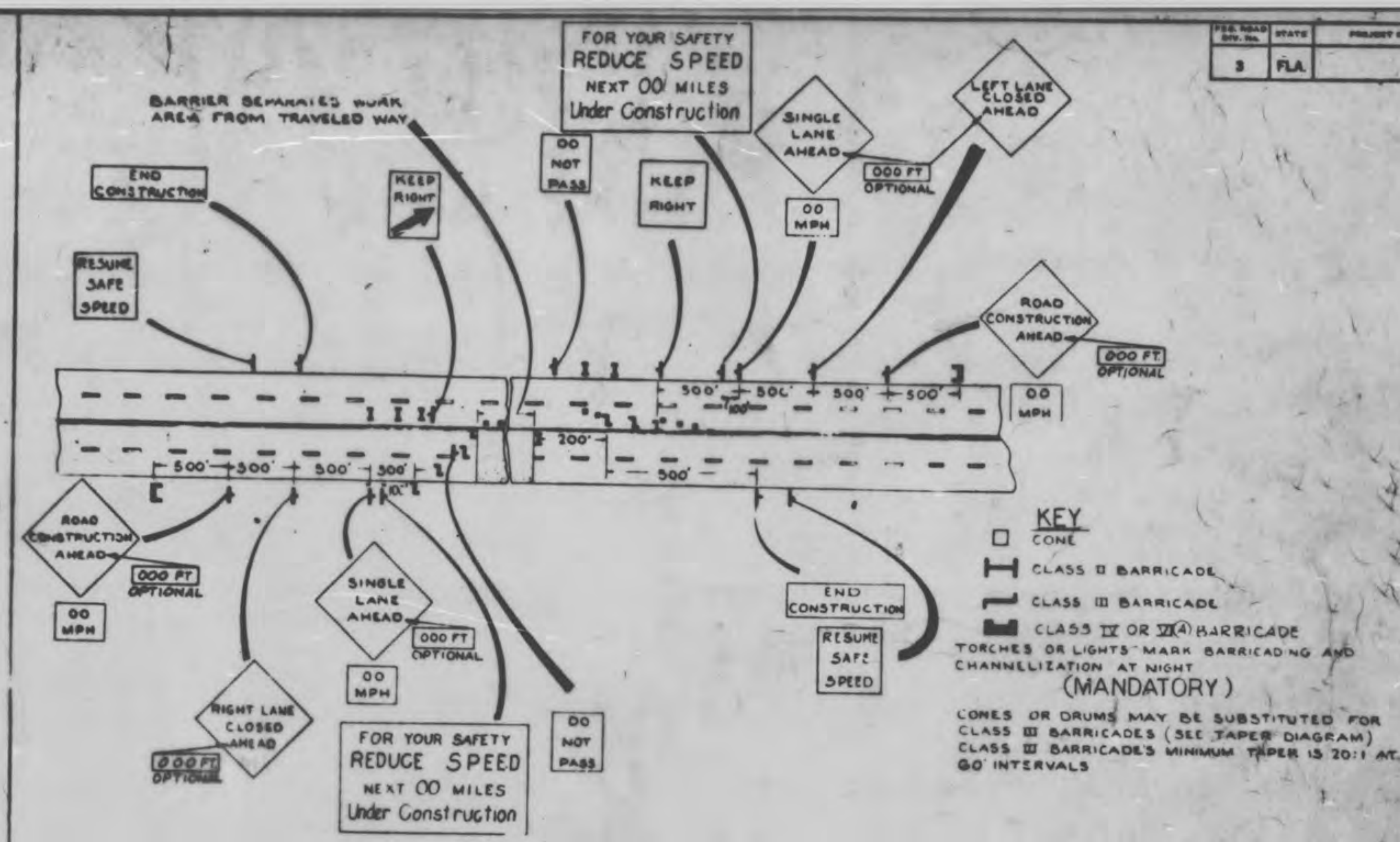
ROAD NO. | COUNTY | PROJECT NO.

Recommended For Approval by: Engineer of Roadways
APPROVED BY: Asst. State Highway Engineer

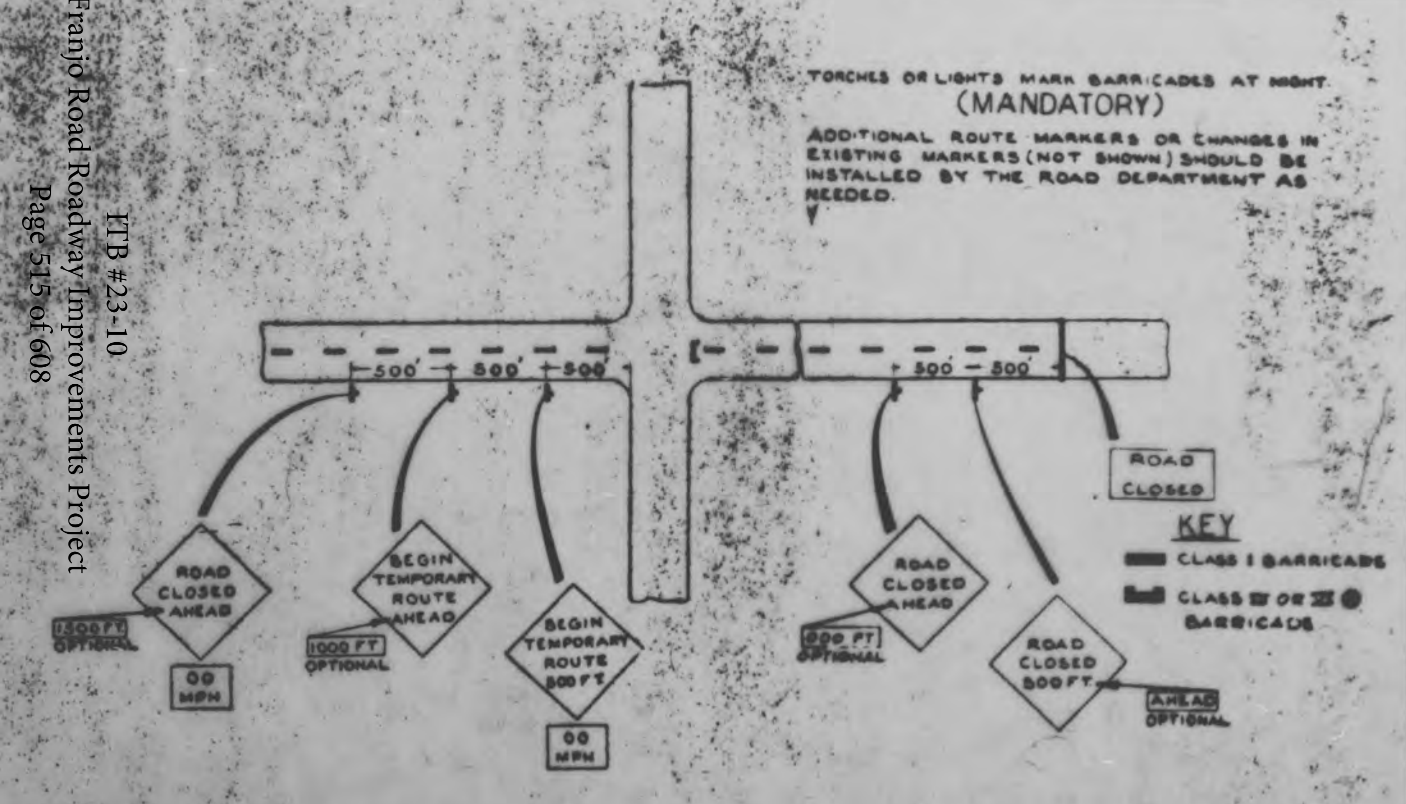
Drawing No. 2 OF 2 | Index No. GSE-02-1



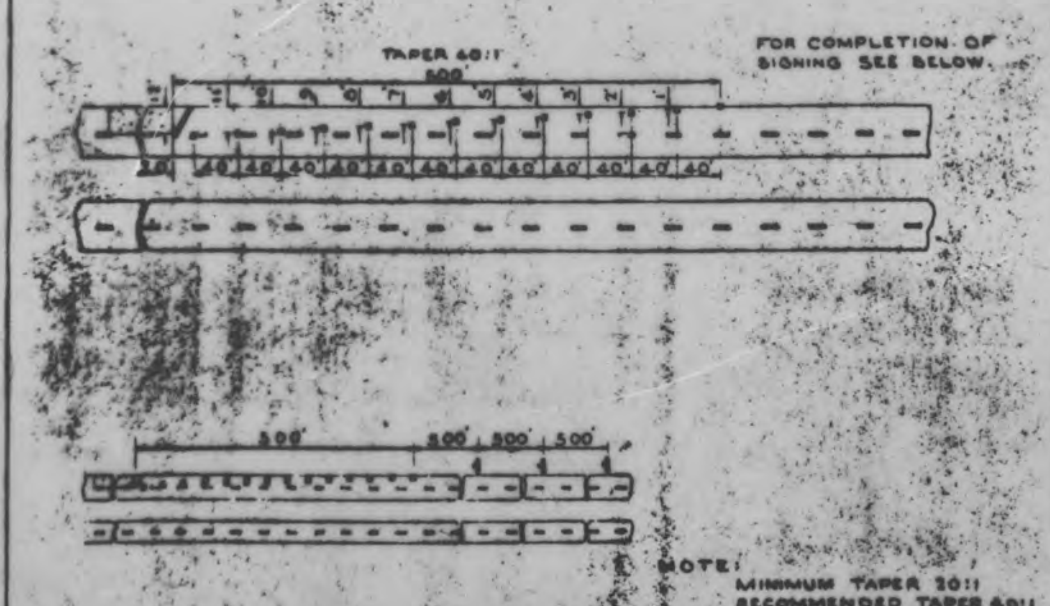
TYPICAL APPLICATION ON DIVIDED FOUR-LANE



TYPICAL APPLICATION ON UNDIVIDED FOUR-LANE



TYPICAL APPLICATION ON TWO-LANE HIGHWAY



TAPER DIAGRAM
CONES AND DRUMS

-GENERAL NOTES-

1. ANY SIGNING REQUIREMENTS NOT COVERED BY THIS INDEX WILL BE IN ACCORDANCE WITH THE UNIFORM TRAFFIC CONTROL DEVICES MANUAL.
2. STATE ROAD DEPARTMENT TO FURNISH SIGNS AND MARKERS
3. OTHER TRAFFIC CONTROL SIGNS AS DETERMINED BY THE PROJECT ENGINEER AND THE CONTRACTORS SUPERINTENDENT SHALL BE FURNISHED BY THE STATE ROAD DEPARTMENT.
4. OTHER SPECIAL SIGNS MAY BE FURNISHED BY THE CONTRACTOR WITH THE APPROVAL OF THE STATE HIGHWAY ENGINEER.
5. SIGNS SHOWN INDICATE LOCATIONS AND TYPES OF SIGN ONLY.
6. EXACT MESSAGE, ARROW DIRECTIONS AND SUPPLEMENTARY SIGNS TO BE DETERMINED BY THE ENGINEER.
7. SPEED SIGNS TO INDICATE 20 OR 30 MPH AS DIRECTED BY THE ENGINEER.
8. DRIVE WITH CAUTION SIGNS TO BE PLACED AT INTERVALS THROUGH CONSTRUCTION AREA AS DIRECTED BY THE ENGINEER.
9. THE CLASS II AND CLASS III BARRICADES ARE INTERCHANGEABLE UNLESS ONE TYPE OR THE OTHER IS SPECIFICALLY CALLED FOR ELSEWHERE IN THE PLANS.
10. THE STRIPES ON THE BARRICADES SHALL POINT DOWNWARDS TOWARDS THE DIRECTION OF FLOW OF TRAFFIC AROUND THE BARRICADE, ON THE SIDE FACING APPROACHING TRAFFIC.

80

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

STANDARD WARNING SIGN DETAILS

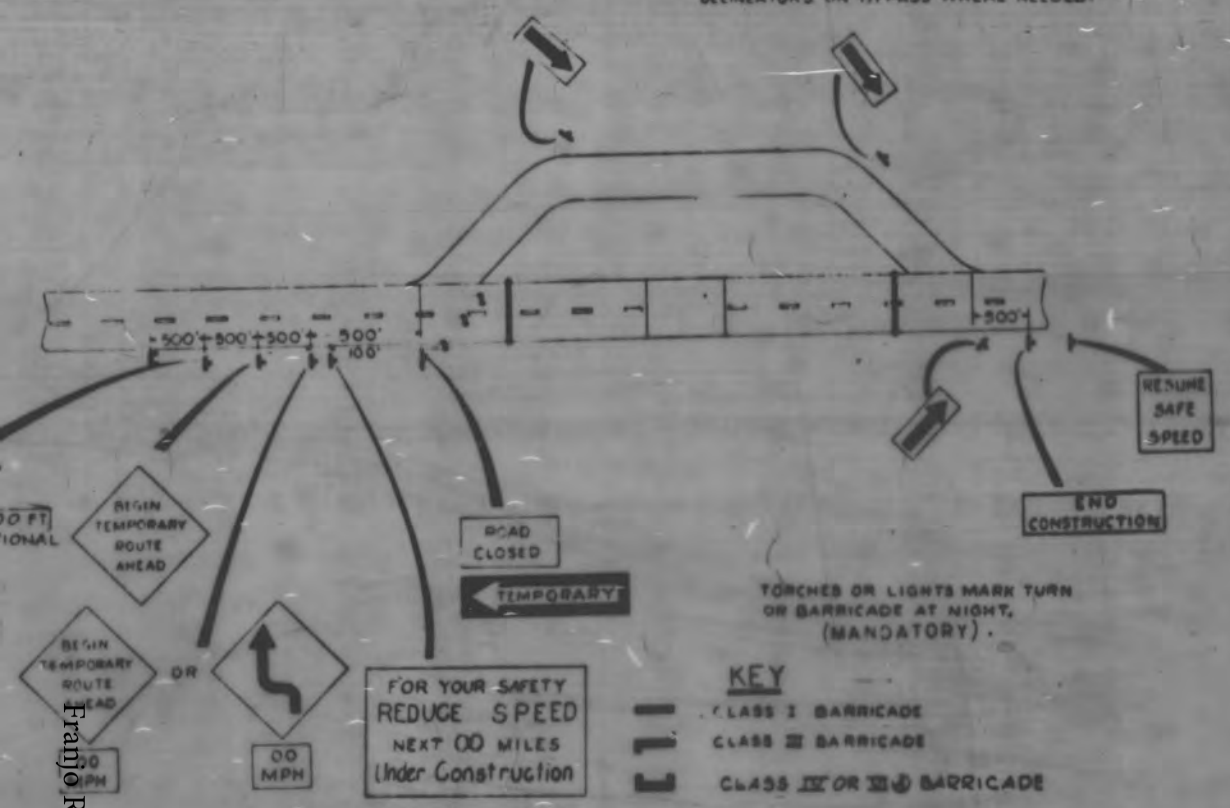
Date	Revisions
3-65	ADDITIONAL SIGNS & NOTES ADDED SHEET 1 & 2
12-65	ROAD...
5-4-66	NOTES 7 & 8 HAVE BEEN ADDED

Sheet 1 of 2 — 2615-M — 3-65

FED. ROAD DIV. No.	STATE	PROJECT NO.	FISCAL YEAR	SHEET No.
3	FLA.			

WARNING SIGN SEQUENCE IN OPPOSITE DIRECTION, SAME AS BELOW.

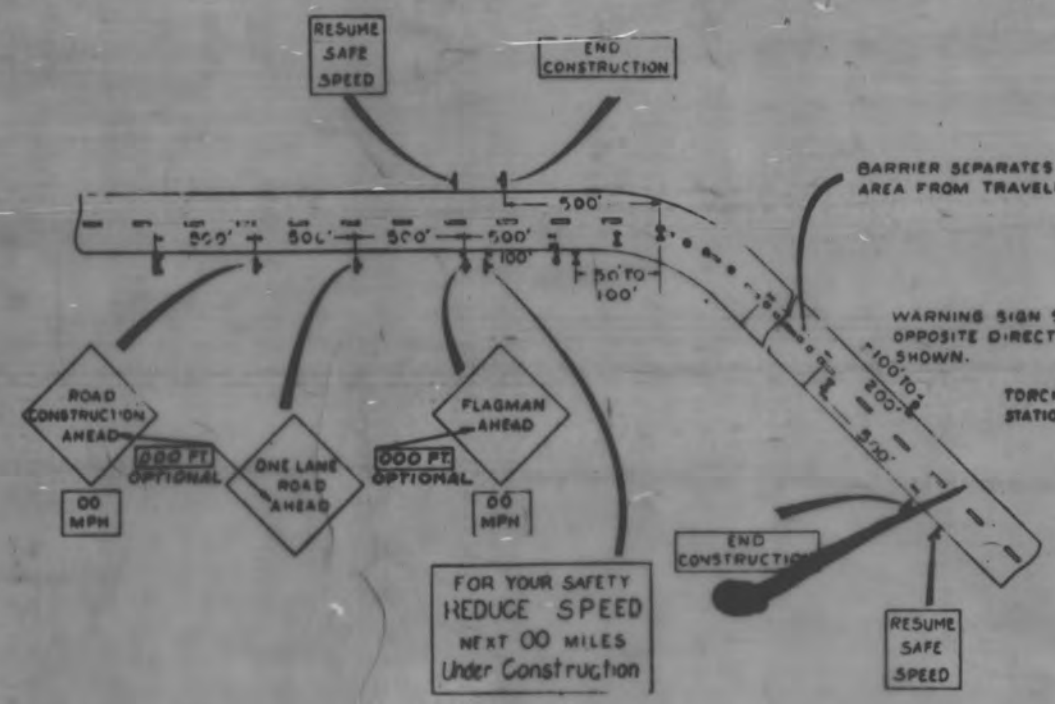
DELINEATORS ON BYPASS WHERE NEEDED.



TORCHES OR LIGHTS MARK TURN OR BARRICADE AT NIGHT, (MANDATORY).

KEY
- CLASS I BARRICADE
- CLASS II BARRICADE
- CLASS III OR IV (A) BARRICADE

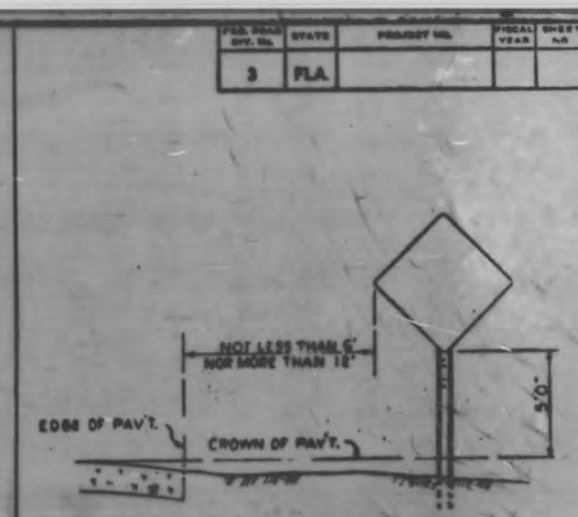
TYPICAL APPLICATION ON TWO-LANE HIGHWAY



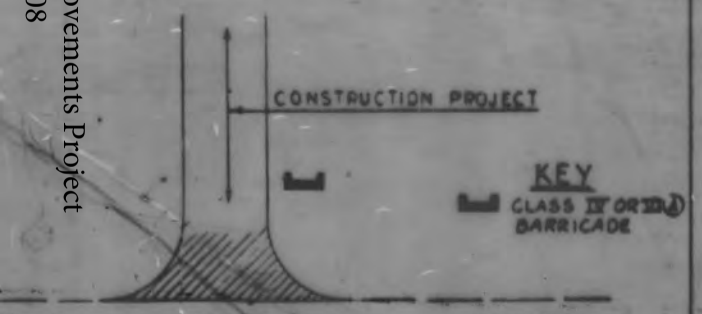
TYPICAL APPLICATION ON TWO LANE HIGHWAY

TORCHES OR LIGHTS MARK FLAGMAN STATIONS AND BARRICADING AT NIGHT. (MANDATORY)

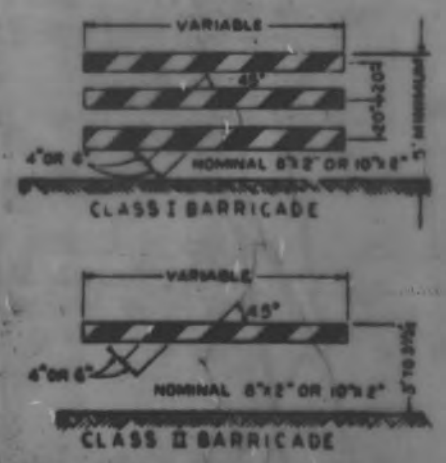
KEY
- FLAGMAN
- CLASS II
- DRUM
- CONE
- CLASS II OR III (A) BARRICADE



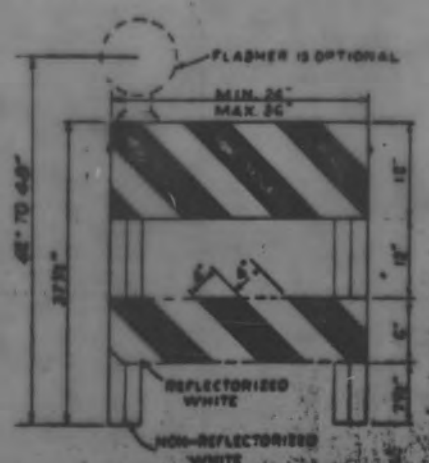
TYPICAL PLACEMENT OF SIGNS



...AT THE JUNCTION OF A CONSTRUCTION PROJECT AND A PAVED ...TATE HIGHWAY, APPROPRIATE SIGNS AND MARKERS SHALL ...E PLACED ALONG THE STATE HIGHWAY ONLY DURING THE ...IMES WHEN CONSTRUCTION IS IMMEDIATELY ADJACENT TO, ...R WHEN CONSTRUCTION EQUIPMENT IS BEING OPERATED ...ON THE STATE HIGHWAY.



CLASS I AND II

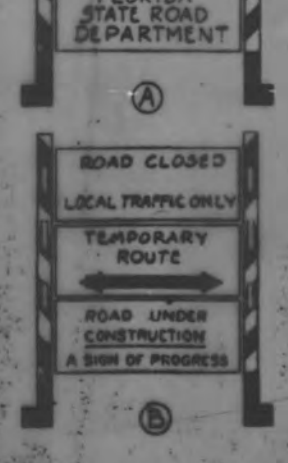


CLASS III

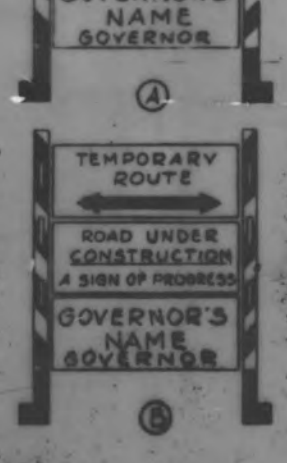
CLASS II AND III INTERCHANGEABLE UNLESS OTHERWISE

NOTE (1) THE NO... CLASS I & II BARRICADE IS OPT...
(2) BOTTOM PANEL ON CLASS II BARRICADE IS OPTIO...

...ARRICADE ...AILS

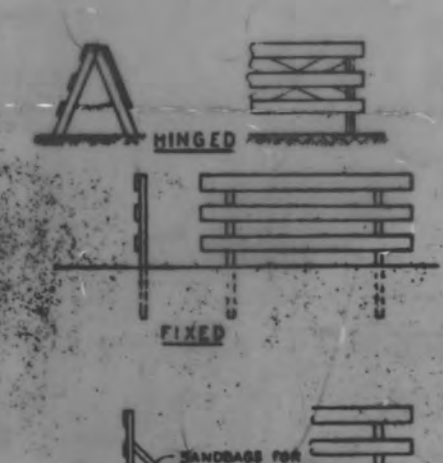


CLASS IV



CLASS VI

NOTE: SIGNS FOR CL... TO BE FURNISHED ... ROAD DEPARTMENT
(2) CLASS III & IV BARRI... USED ON STATE JOBS



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STATE ROAD DEPARTMENT OF FLORIDA
ROADWAY PLANS DEPARTMENT 81

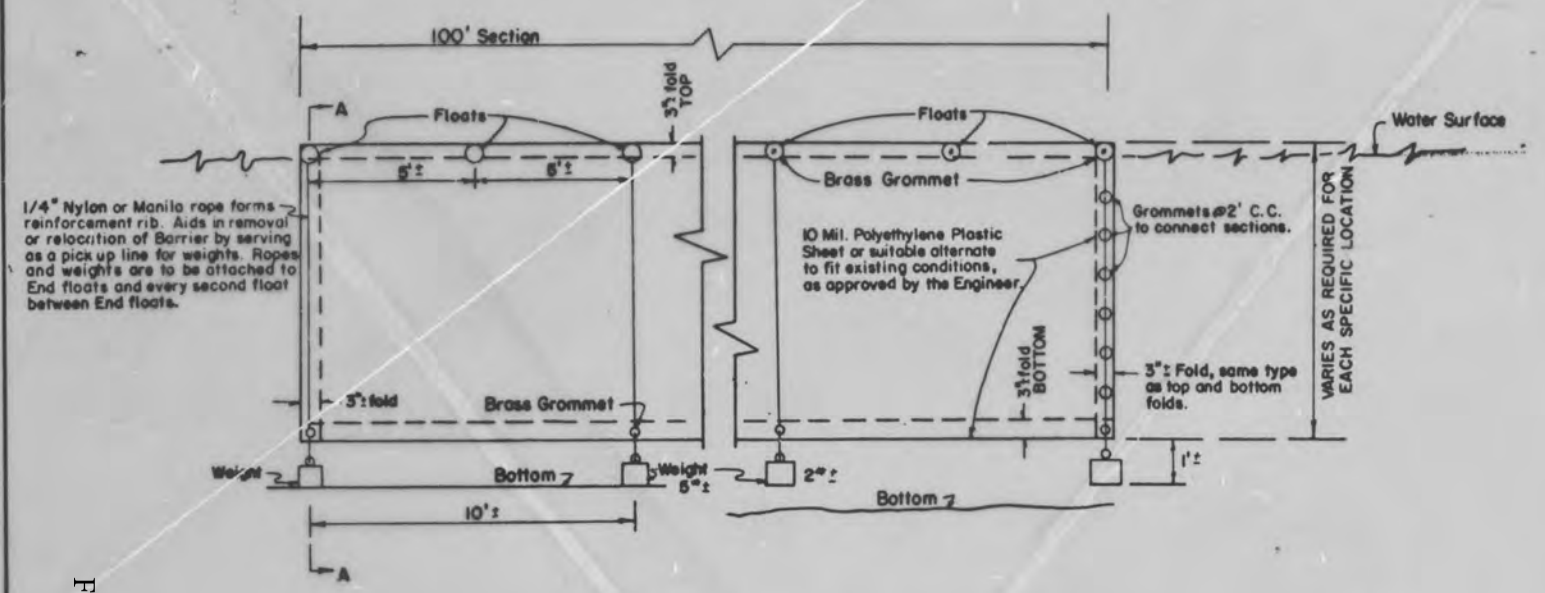
STANDARD WARNING SIGN DETAILS

NO.	DATE	BY	DESCRIPTION
4-67	R.H.C.		ADDED CLASS III BARRICADE
3-67	R.H.C.		4-LANE DIVIDED SIGN SPACING
3-68	R.H.C.		CHANGED NOTES TO TRAFFIC ENGINEER
C.S.	3-69		

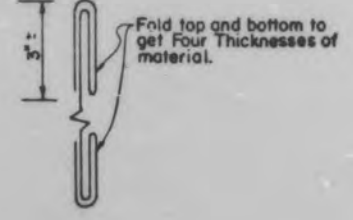
Recommended For Approval: [illegible] Engineer of Road Design
APPROVED BY: [illegible] State Road Engineer
DATE: 2 of 2
PROJECT NO. 2613-M

15-11-6

103

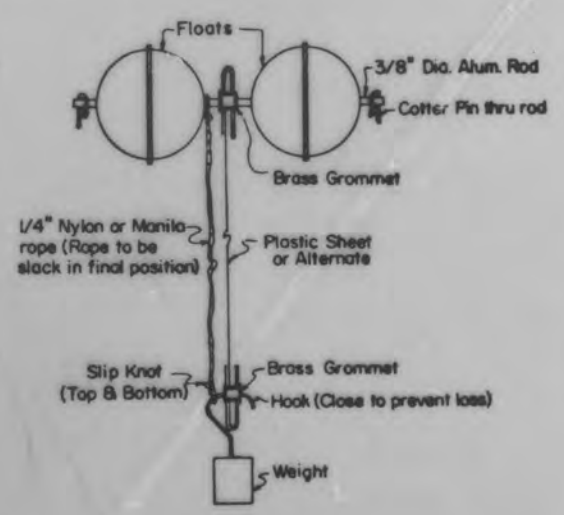


FRONT VIEW



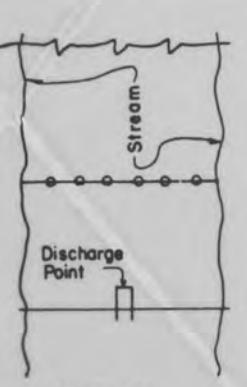
SIDE VIEW

FOLDING DETAIL

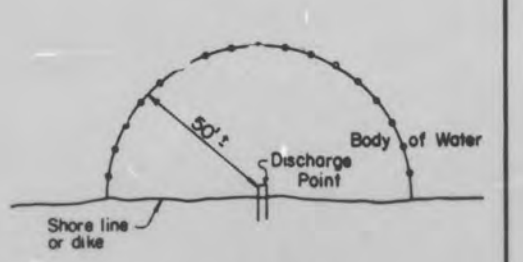


SECTION A-A

NOTE: At shallow water locations the plastic sheet or suitable alternate may be fastened to stakes driven into the bottom in lieu of floats and weights.



TYPICAL APPLICATION



TYPICAL APPLICATION

GENERAL NOTES

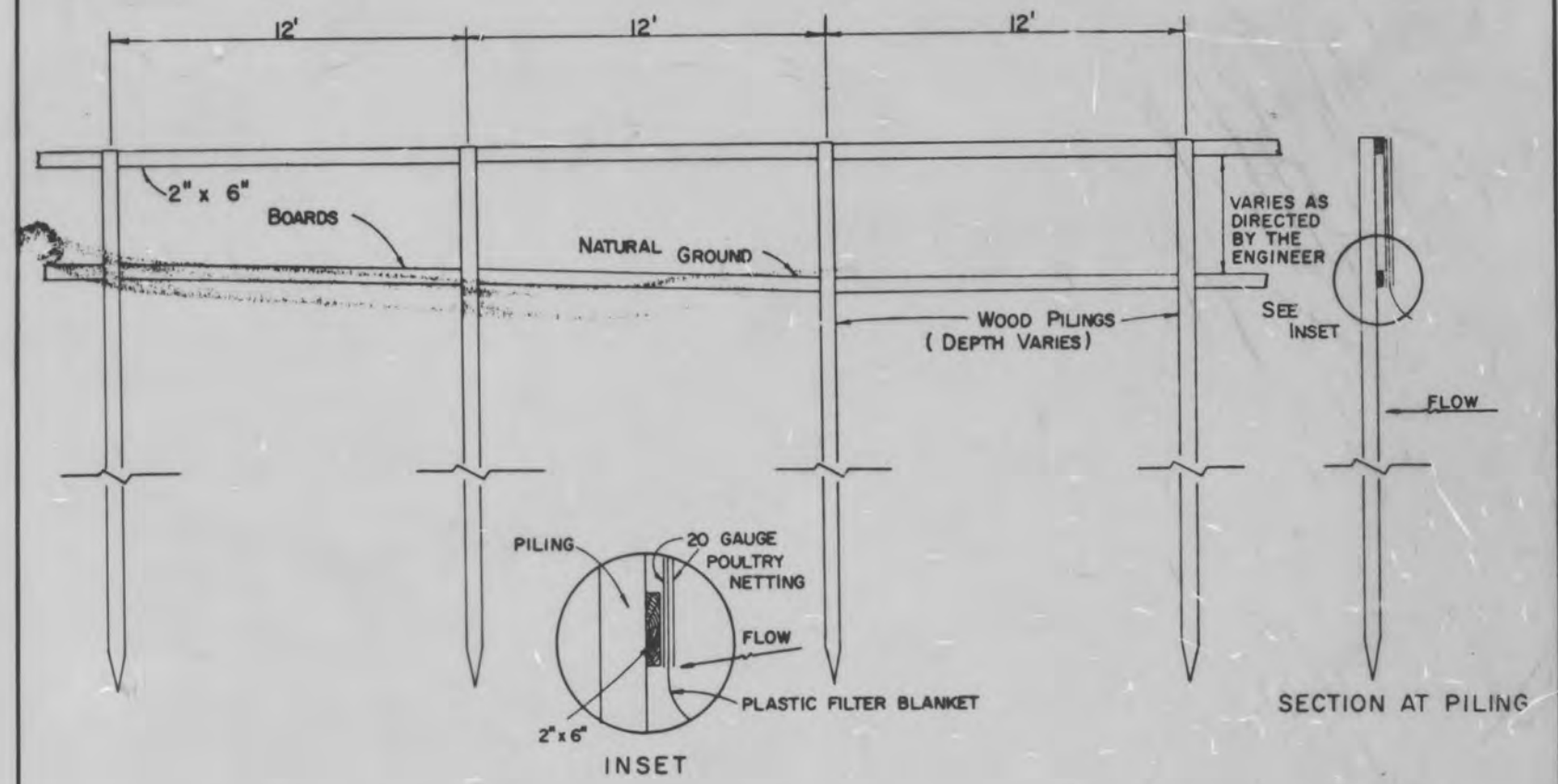
Silt Barrier to Prevent drifting of Silt caused by discharge of Storm Sewers during Construction, dredging or filling Operations.

Exact placement of silt barrier shall be so as to effectively control silt dispersion under the conditions present on a particular project.

The details shown on this sheet are suggested methods only. Alternate solutions and usage of materials may be used as approved by the Engineer.

DETAIL OF FLOATING SILT BARRIER

STATE PROJ. NO.	SHEET NO.



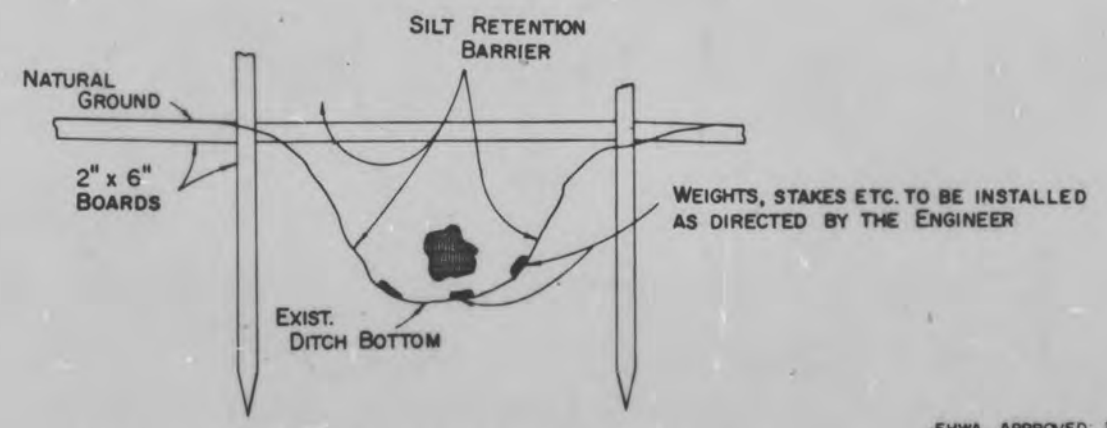
INSET

SECTION AT PILING

DETAIL OF STAKED SILT BARRIER

NOTES

THE FRAME WILL BE CONSTRUCTED WITH 2" x 6" BOARDS. PILINGS WILL BE A MINIMUM OF 6" IN DIAMETER AT THE BUTT END. THE DEPTH OF PILINGS WILL BE AT THE DISCRETION OF THE PROJECT ENGINEER. ATTACHED TO THE FRAME WILL BE 20 GAUGE POULTRY NETTING WITH 1" NET. THE SILT RETAINER WILL BE PLASTIC FILTER BLANKET, EXTENDING FROM THE TOP 2" X 6" BOARD TO 4' BEYOND THE BOTTOM 2" X 6" BOARD. IN THE DITCH BOTTOM, THE BLANKET AND POULTRY NETTING SHOULD EXTEND TO THE DITCH BOTTOM AND BE ANCHORED IN PLACE BY MEANS AVAILABLE TO THE CONTRACTOR TO EFFECTIVELY PREVENT SILT FROM ESCAPING FROM UNDER THE BOTTOM OF THE BARRIER. (SEE DETAIL BELOW)



DETAIL SHOWING PLACEMENT OF STAKED SILT BARRIER AT EXISTING DITCH LOCATIONS

FHWA APPROVED: 3-13-75

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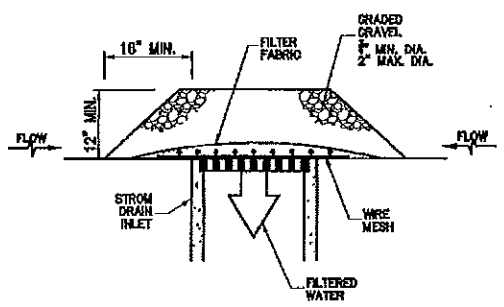
FLORIDA DEPARTMENT OF TRANSPORTATION
Road Design Section

EROSION CONTROL DEVICES
SILT BARRIERS

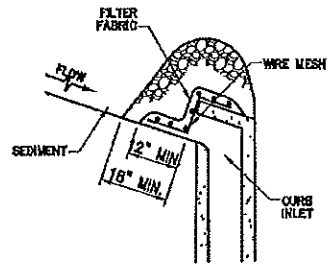
REVISIONS			INITIALS	DATES
Dates	Descriptions	Designed by	WJR	5/74
		Checked by	HLB	6/74
		Quantities by		
		Checked by		
		Supervised by	DCB	

Recommended for approval
by _____
Deputy Design Engineer - Roadways
Approved
by _____
State Design Engineer

DRAWING NO. 1 OF 1
INDEX NO. GEC-04



DROP INLET PROTECTION-GRAVEL



CURB INLET PROTECTION-GRAVEL

GRAVEL APPLICATIONS (TYP.) OR APPROVED ALTERNATIVE

NOTES FOR INLET PROTECTION GRAVEL:

1- INSTALLATION/APPLICATION CRITERIA:

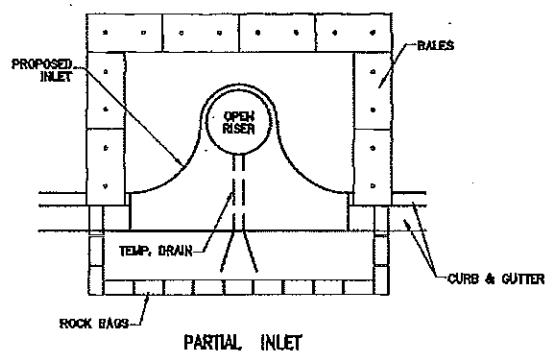
- PLACE WIRE MESH (WITH ½ INCH OPENINGS) OVER THE INLET GRATE EXTENDING ONE FOOT PAST THE GRATE IN ALL DIRECTIONS.
- PLACE FILTER FABRIC OVER THE MESH. FILTER FABRIC SHOULD BE SELECTED BASED ON SOIL TYPE.
- PLACE GRADED GRAVEL, TO A MINIMUM DEPTH OF 12 INCHES, OVER THE FILTER FABRIC AND EXTENDING 18 INCHES PAST THE GRATE IN ALL DIRECTIONS.

2- MAINTENANCE:

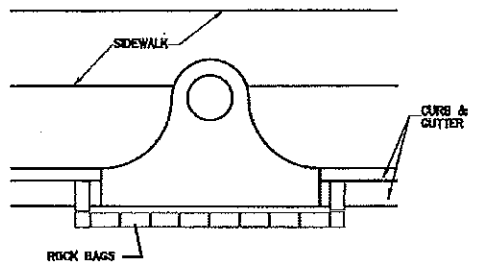
- INSPECT INLET PROTECTION AFTER EVERY LARGE STORM EVENT AND AT A MINIMUM OF ONCE MONTHLY.
- REMOVE SEDIMENT ACCUMULATED WHEN IT REACHES 4 INCHES IN DEPTH.
- REPLACE FILTER FABRIC AND CLEAN OR REPLACE GRAVEL IF CLOGGING IS APPARENT.

3- LIMITATIONS:

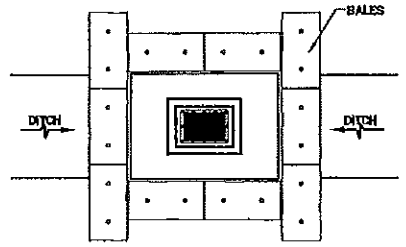
- RECOMMENDED FOR MAXIMUM DRAINAGE AREA OF ONE ACRE.
- EXCESS FLOWS MAY BYPASS THE INLET REQUIRING DOWN GRADIENT CONTROLS.
- PONDING WILL OCCUR AT INLET.



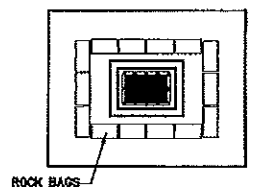
PARTIAL INLET



COMPLETED INLET



DITCH BOTTOM INLET



SWALE INLET

PROTECTION ALONG INLETS WITH ROCK BAGS BALES OR APPROVED ALTERNATIVES

NOTES FOR SYNTHETIC BALES OR BALE TYPE BARRIERS:

1-TYPE I AND II SYNTHETIC BARRIER SHOULD BE SPACED IN ACCORDANCE WITH CHART 1, SHEET 1 OF 2010 FDOT DESIGN STANDARDS INDEX 102.

2-BALES SHALL BE ANCHORED WITH TWO (2) 1"x2" (or 1" dia.) x 4' WOOD STAKES. STAKES OF OTHER MATERIAL OR SHAPE PROVIDING EQUIVALENT STRENGTH MAY BE USED IF APPROVED BY THE ENGINEER. STAKES OTHER THAN WOOD SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.

3-RAILS AND POSTS SHALL BE 2"x4" WOOD. OTHER MATERIALS PROVIDING EQUIVALENT STRENGTH MAYBE USED IF APPROVED BY THE ENGINEER.

4-ADJACENT BALES SHALL BE BUTTED FIRMLY TOGETHER.

6-WHERE USED IN CONJUNCTION WITH SILT FENCE, BALES SHALL BE PLACED ON THE UPSTREAM SIDE OF THE FENCE.

INLET PROTECTION SYSTEM (TYP.) OR APPROVED ALTERNATIVE

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

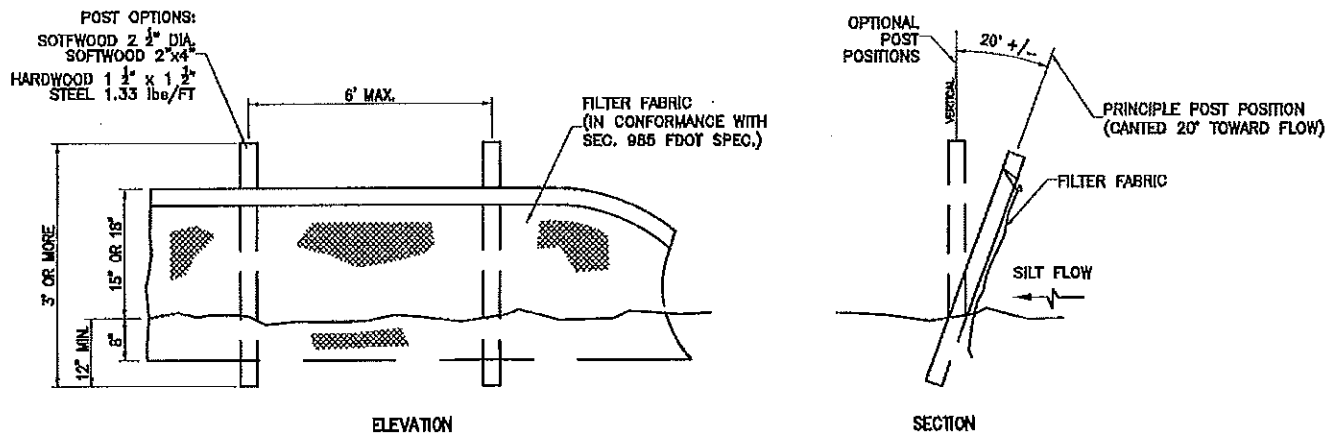
	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

MIAMI-DADE COUNTY

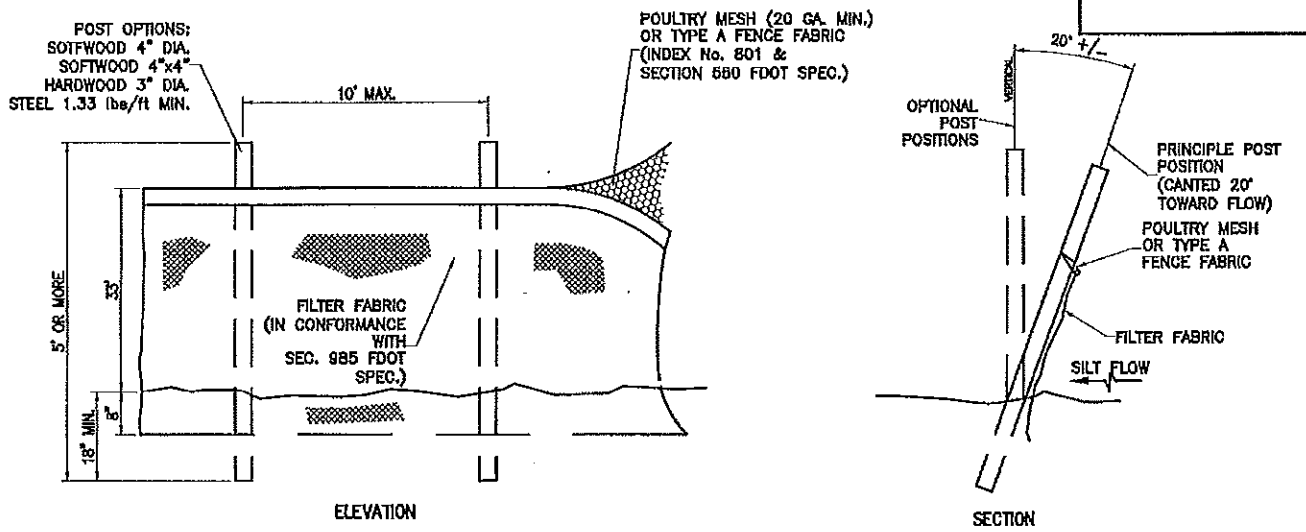
PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

INLET PROTECTION SYSTEMS DETAILS

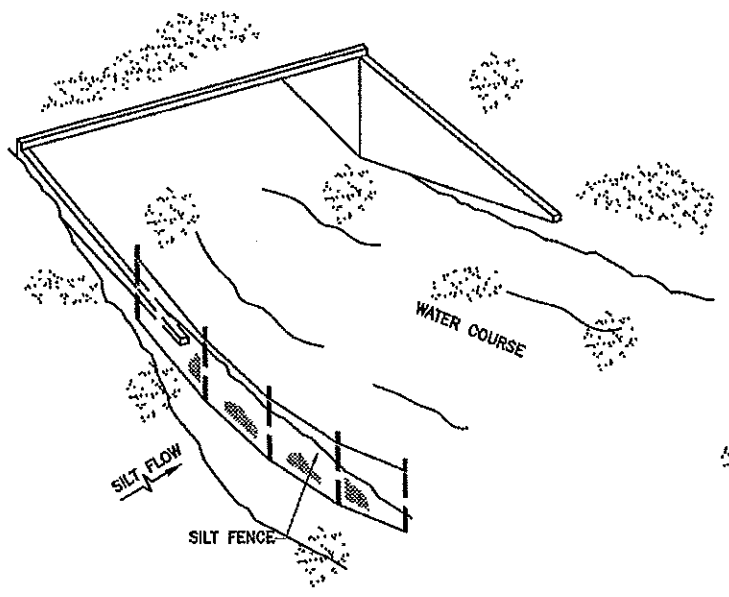
MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT DEPT.
HIGHWAY DIVISION

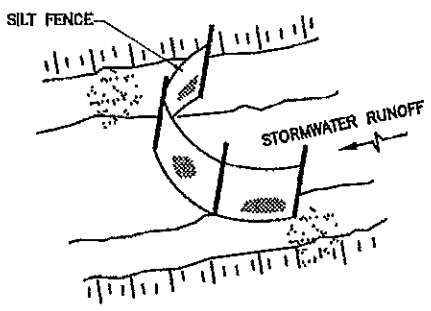


TYPE III SILT FENCE (TYP.)

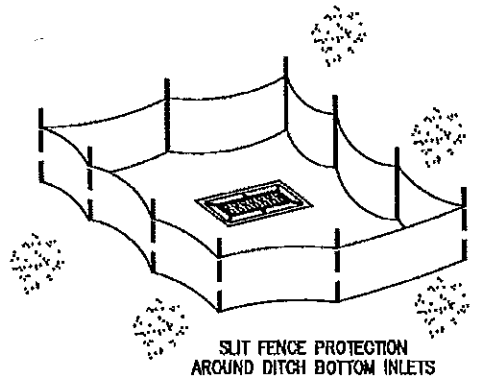


TYPE IV SILT FENCE (TYP.)



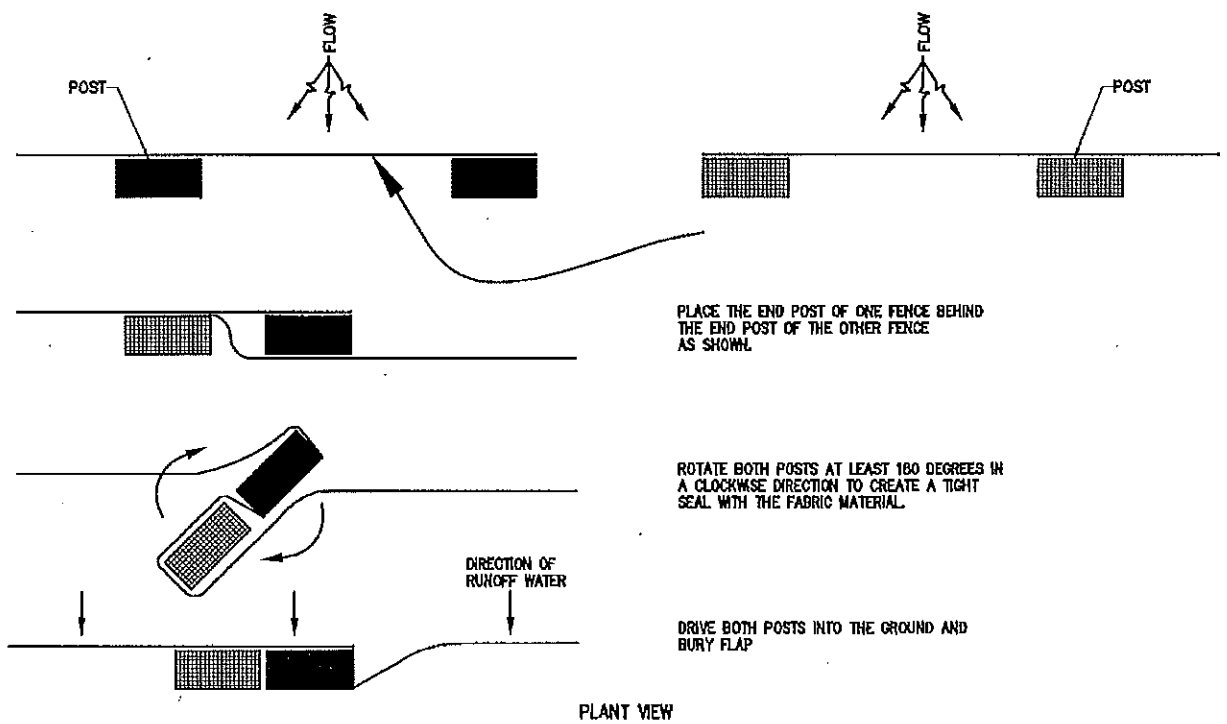


SILT FENCE PROTECTION IN
DITCHES WITH INTERMITTENT FLOW



SILT FENCE PROTECTION
AROUND DITCH BOTTOM INLETS

SILT FENCE APPLICATIONS (TYP.)



PLANT VIEW

JOINING TWO SILT FENCES (TYP.)

NOTES FOR SILT FENCES:

1- TYPE III SILT FENCE TO BE USED AT MOST LOCATIONS. WHERE USED IN DITCHES, THE SPACING FOR TYPE III SILT FENCE SHALL BE IN ACCORDANCE WITH CHART 1, SHEET 1 OF 2010 FDOT DESIGN STANDARDS INDEX 102.

2- TYPE IV SILT FENCE TO BE USED WHERE LARGE SEDIMENT LOADS ARE ANTICIPATED. SUGGESTED USE IS WHERE FILL SLOPE IS 1:2 OR STEEPER AND LENGTH OF SLOPE EXCEEDS 25 FEET. AVOID USE WHERE THE DETAINED WATER MAY BACK INTO TRAVEL LANES OR OFF THE RIGHT OF WAY.

3- DO NOT CONSTRUCT SILT FENCES ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

4- WHERE USED AS SLOPE PROTECTION, SILT FENCE IS TO BE CONSTRUCTED ON 0% LONGITUDINAL GRADE TO AVOID CHANNELIZING RUNOFF ALONG THE LENGTH OF THE FENCE.

SEDIMENT BARRIERS (TYP.)
OR APPROVED ALTERNATIVE

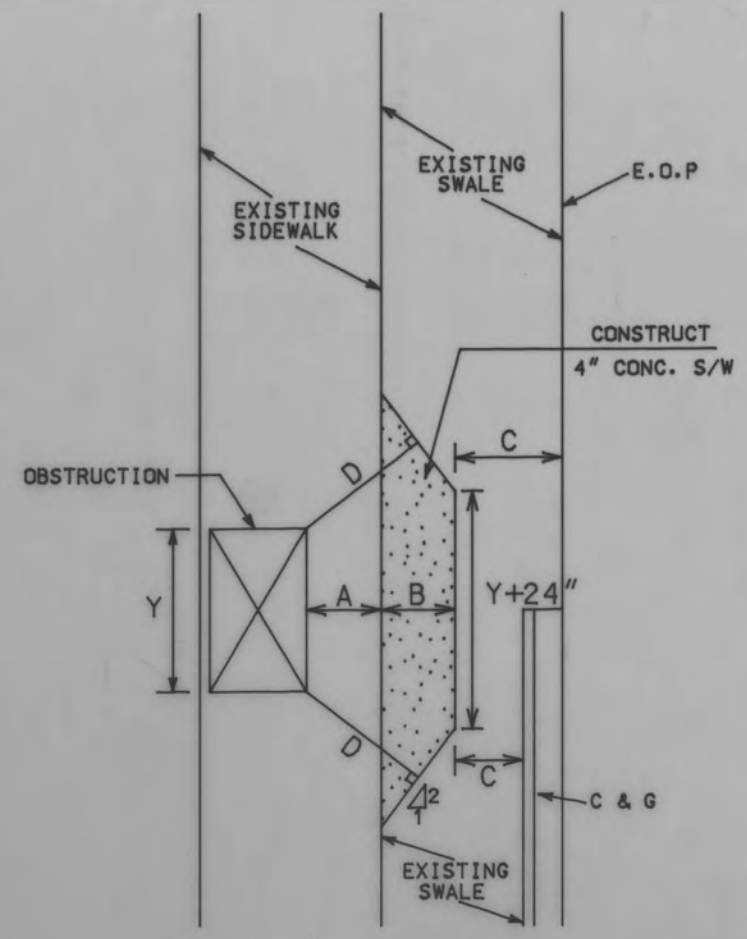
REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

MIAMI-DADE COUNTY

PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT
HIGHWAY DIVISION
STEPHEN P. CLARK CENTER
111 NW 1 ST
MIAMI, FLORIDA 33128

SEDIMENT BARRIERS DETAILS



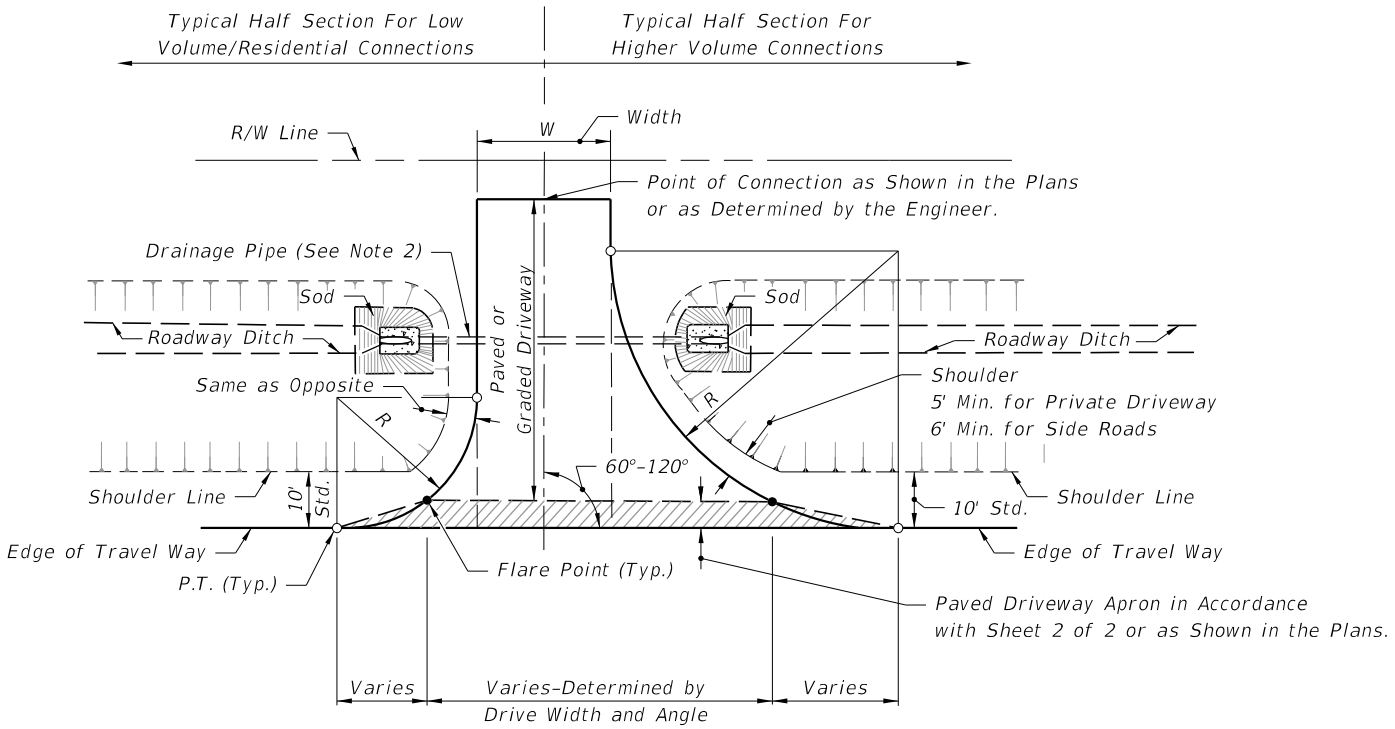
SIDEWALK WIDENING DETAIL

CRITERIA TO BE USED TO AVOID RELOCATING
EXISTING OBSTRUCTIONS WHERE
SWALE AREA IS AVAILABLE:

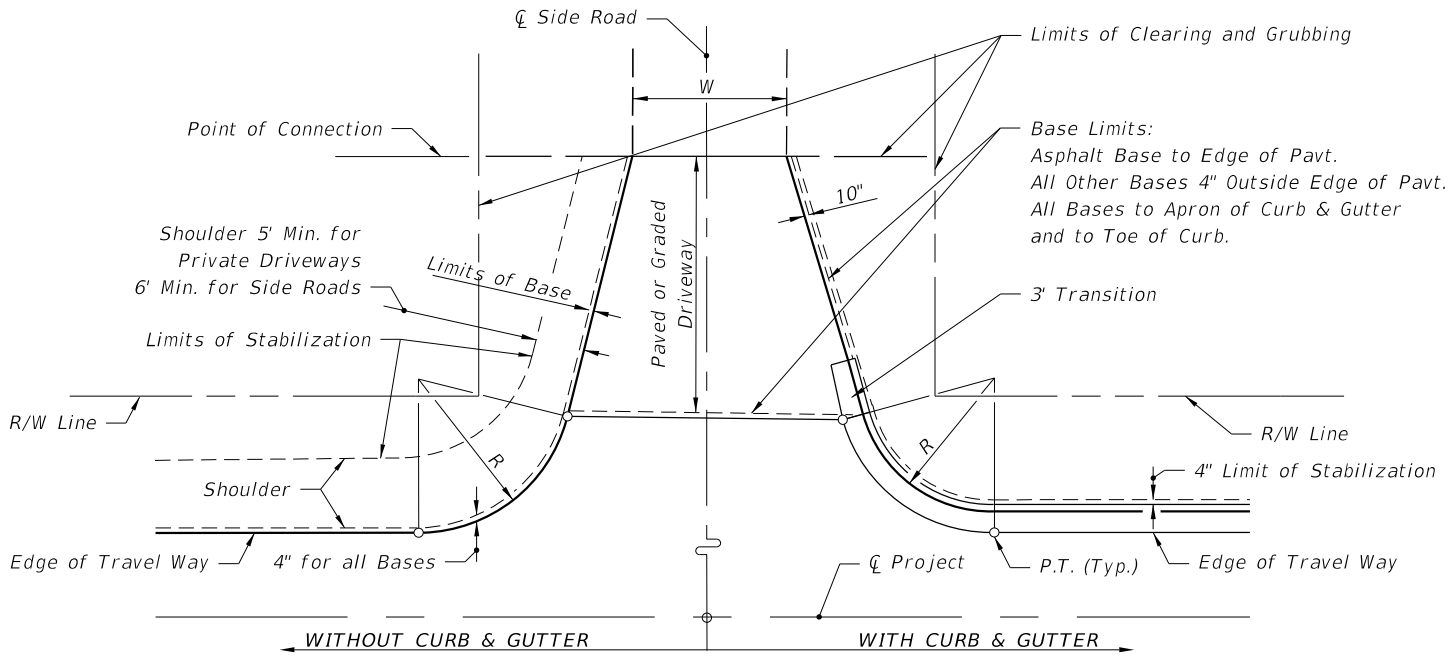
$Y \leqslant 24"$ AND $A < 32"$ OR $Y > 24"$ AND $A < 36"$

THEN: $A+B = 36"$ MIN.
$B = 24"$ MIN.
FOR C&G SECTIONS, IF $C \leqslant 24"$ THEN "B" SHALL EXTEND TO BACK OF CURB.
$C \geqslant 4'$ FOR SECTIONS WITHOUT CURB & GUTTER
$D = 36"$ MIN.

DADE COUNTY PUBLIC WORKS DEPT. HIGHWAY DIVISION		
DESIGN DM DRAWN DM CHECK M-T PROPOSED M-T	SIDEWALK WIDENING DETAIL I-PR-A	
SUBMITTED HIGHWAY ENGINEER DATE	RECOMMENDED CHIEF ENGINEER PROJ.	APPROVED DIRECTOR SHEET 1 OF 1

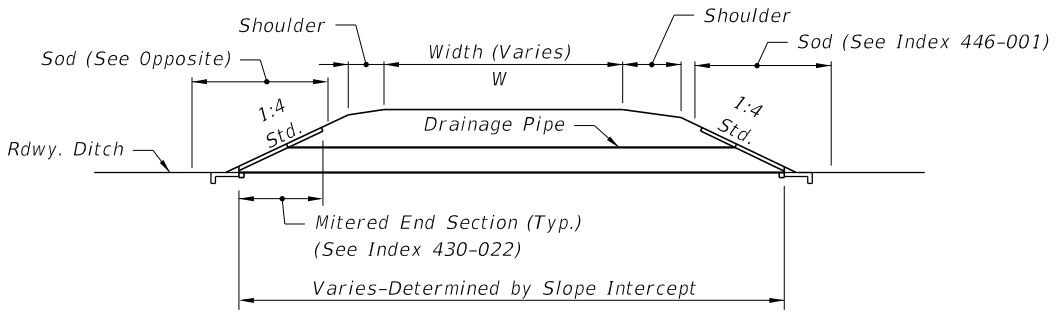


PLAN

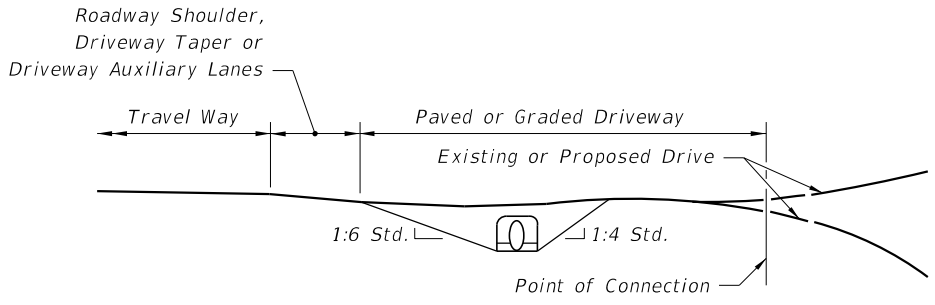


PLAN

LIMITS OF CLEARING & GRUBBING, STABILIZING AND BASE AT DRIVEWAYS



DRAINAGE SECTION



DRIVEWAY PROFILE AND END VIEW

FLUSH SHOULDER ROADWAY - DRIVEWAY CONSTRUCTION

DRIVEWAY ENTRANCES NOTES:

1. See Plans for Driveway Width (W) and Return Radius (R).

2. See the Plans for drainage pipe size and length or as determined by the Engineer. The size will be no less than 15" diameter or equivalent.

3. Stable material may be required for graded driveways to private property as directed by the Engineer in accordance with Specification 102-8.

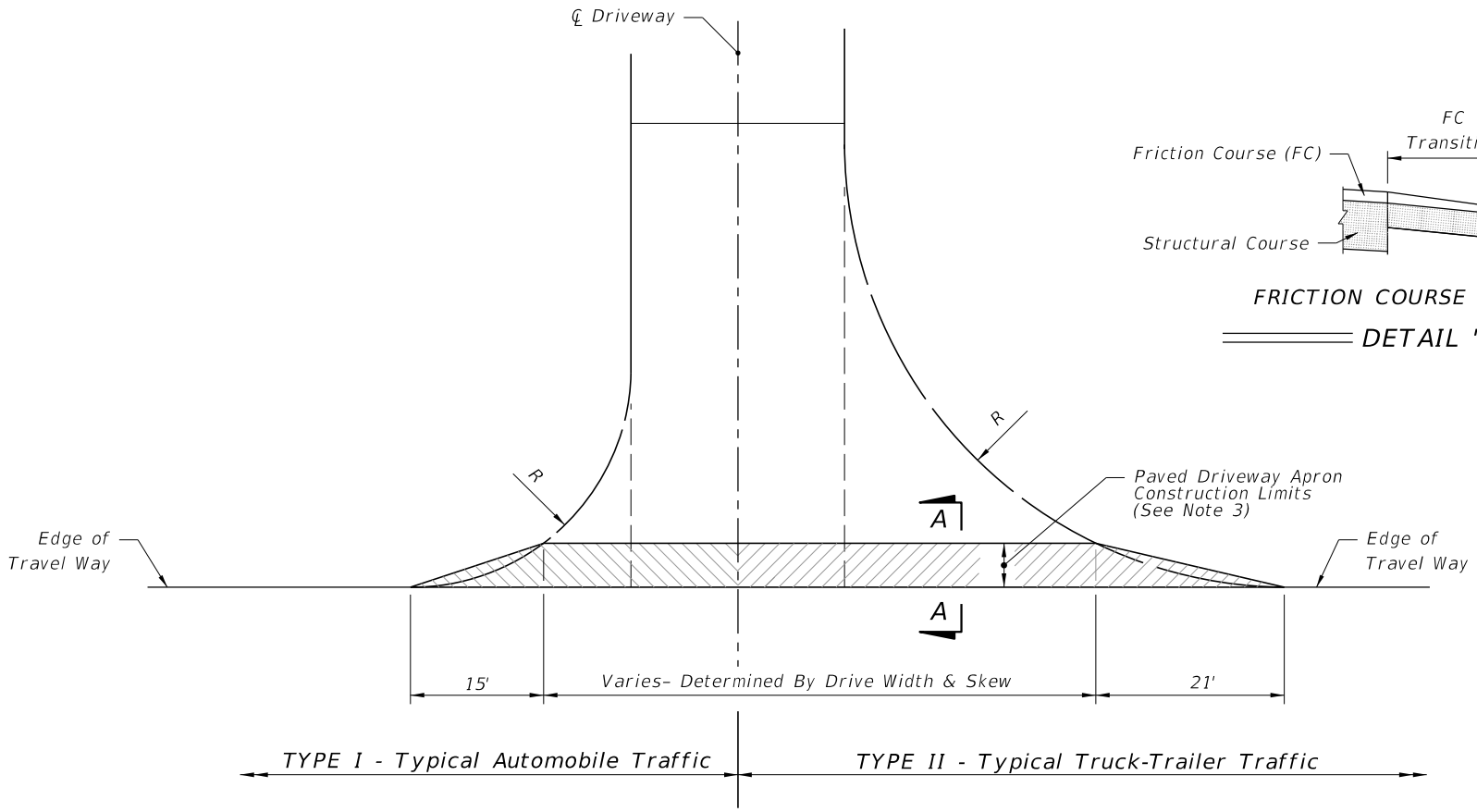
4. The driveway pavement requirement at graded connections may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by the Engineer, or when not shown in the Plans.

5. Point of Connection:

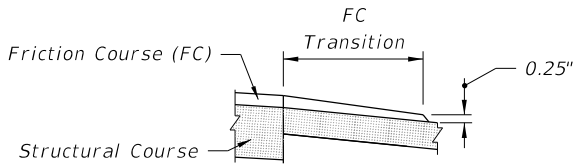
   a. Construct paved driveways for all paved connecting facilities. The connecting point will be determined by the Engineer.

   b. Construct paved driveways for all business, commercial, industrial or high volume residential graded connecting facilities. Construct the connecting point 30'-0' from edge of travel way or at R/W line, whichever is less.

   c. Construct paved driveways for all side road connections. The R/W is the connecting point.

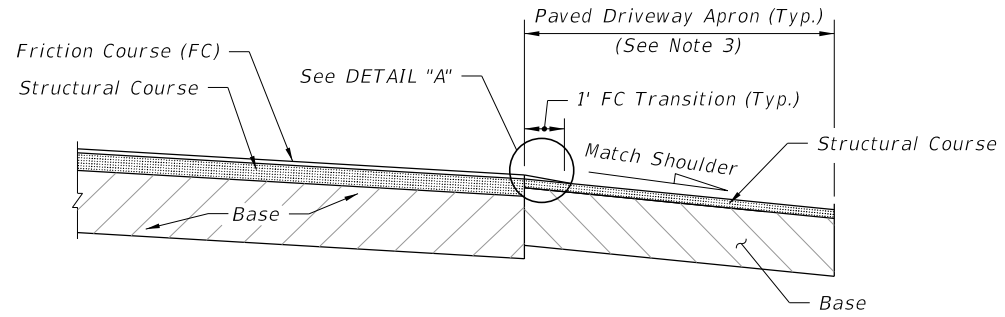


DRIVEWAY TYPES

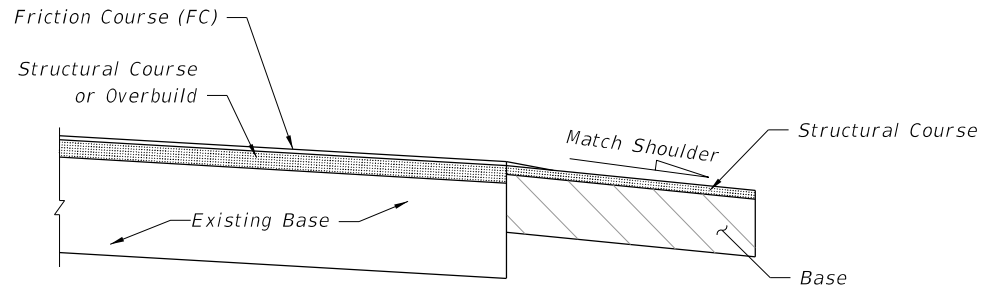


FRICTION COURSE TRANSITION

DETAIL "A"

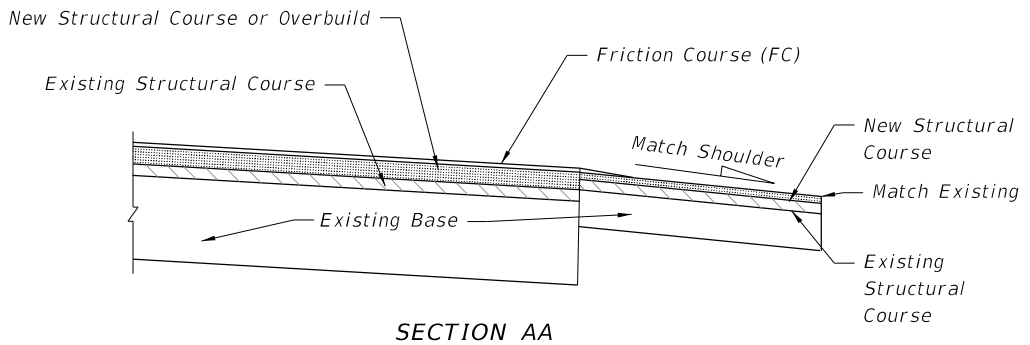


SECTION AA - NEW CONSTRUCTION



SECTION AA - RESURFACING

NEW DRIVEWAY



SECTION AA

RESURFACING EXISTING DRIVEWAY

AREAS FOR ONE 5' DEEP DRIVEWAY APRON (SY)

Drive Width (Ft.)	Intersection			
	Normal		Skewed	
	Type I	Type II	Type I	Type II
12	26	51	31	60
14	27	52	33	61
16	28	53	34	63
18	29	54	35	64
20	31	55	37	65
22	32	56	38	67
24	33	57	39	68
26	34	58	40	69
28	35	59	42	70
30	36	61	43	72
32	37	62	44	73
34	38	63	46	74
36	39	64	47	76
38	41	65	48	77
40	42	66	49	78
42	43	67	51	79
44	44	68	52	81
46	45	69	53	82
48	46	71	55	83
50	47	72	56	85
52	48	73	57	86
54	49	74	58	87
56	51	75	60	88
58	52	76	61	90
60	53	77	62	91

MATERIAL TYPES AND THICKNESSES FOR PAVED CONNECTIONS

Course	Materials	Minimum Thickness (in.)	
		Connections	Roadway*
Structural	Asphaltic Concrete	1½"	1½"
Bases	Optional Base (See Specification 285)	O.B.G. 2	O.B.G. 3

* Travel way flares (bypass lanes), auxiliary lanes serving more than a single connection, and all median crossovers including their auxiliary lanes and/or transition tapers.

NOTES

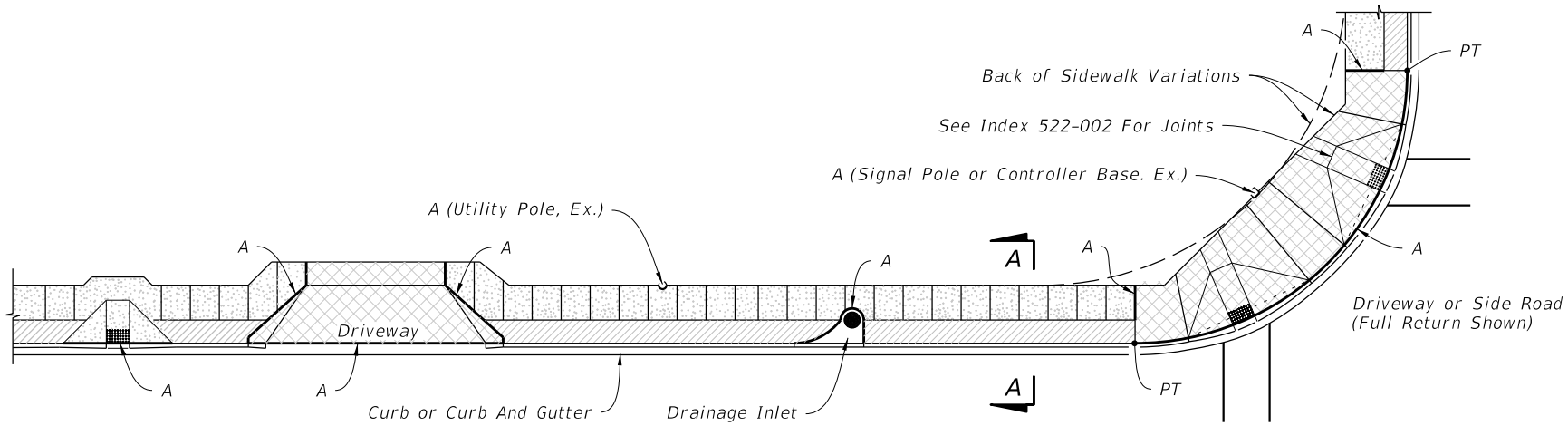
1. Use same material for driveway structural course and roadway overbuild or structural course, except as approved by the Engineer for graded connections. Other Department-approved equivalent pavements may be used at the discretion of the Engineer.
2. Auxiliary lanes and their transition tapers shall be the same structure as the abutting travel way pavement thickness or any of the roadway structures tabulated above, whichever is thicker.
3. If an asphalt base course is used for a driveway, its thickness may be increased to match the edge of travel way pavement thickness in lieu of a separate structural course. 6" of Portland cement concrete will be acceptable in lieu of the asphalt base and structural courses. See Notes 4 and 5 below.
4. A structural course is required for flexible pavements when they are used for auxiliary lanes serving more than a single connection.
5. Use Class NS concrete at least 6" thick for driveways paved with Portland Cement Concrete. Construct in accordance with Specifications 347, 350, and 522.
6. The Department may require other pavement criteria where local conditions warrant.

GENERAL NOTES:

1. Driveways are to be constructed or resurfaced for low volume (single family, duplex, farm, etc.) residential connections as directed by the Engineer.
2. Driveways construction is not required for low volume residential connections where roadway shoulders are paved.
3. Match existing paved shoulder widths ≥ 4'. For all other shoulders conditions, construct at 5' wide.
4. Connections beyond the shoulder width are to be constructed as directed by the Engineer.
5. Construct Driveway Base in accordance with Specification 286.
6. Payment for structural course and friction course is to be included in roadway pavement pay item.

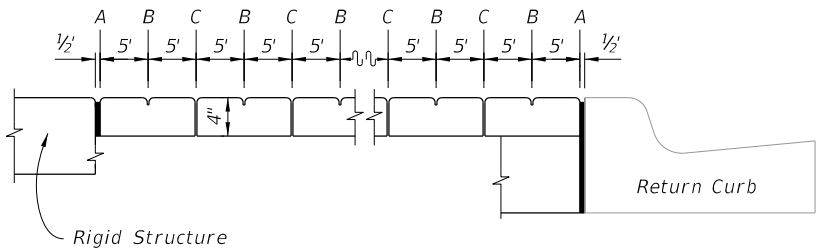
GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than ½".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)

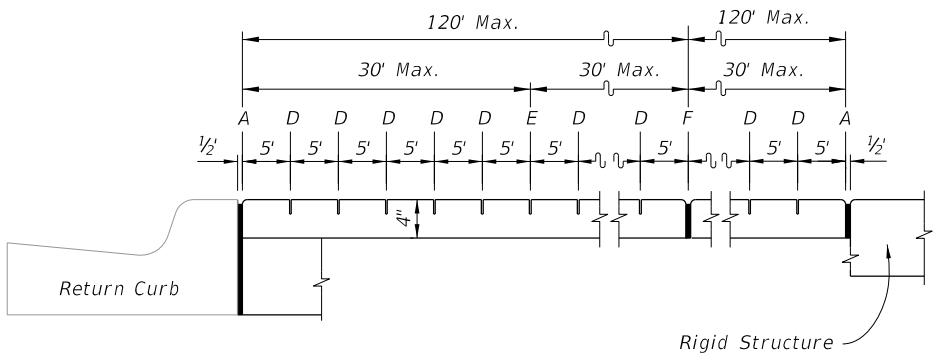


PLAN

SIDEWALK WITH UTILITY STRIP



OPEN JOINTS



SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and; driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ⅛" Dummy Joints, Tooled

C- ⅛" Formed Open Joints

D- 3/16" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- 3/16" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

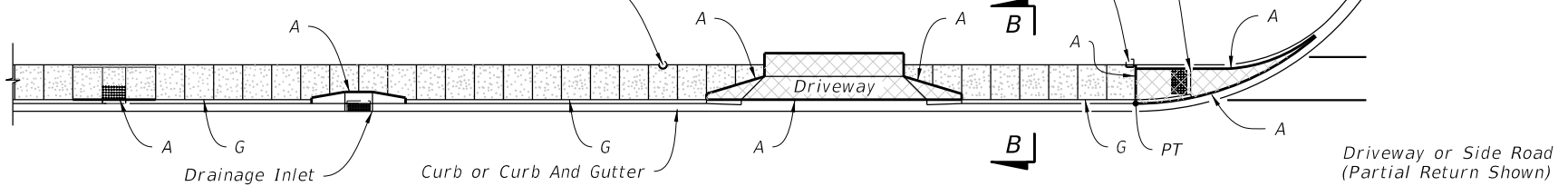
F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

G- Cold Joint With Bond Breaker, Tooled

SIDEWALK JOINTS

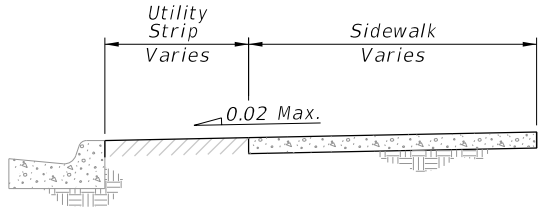
LEGEND:

- 4" Thick Sidewalk
- 6" Thick Sidewalk
- Utility Strip

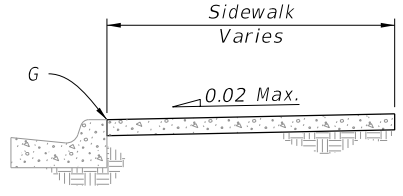


PLAN

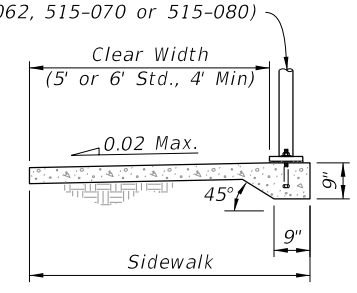
SIDEWALK WITHOUT UTILITY STRIP



SECTION A-A



SECTION B-B

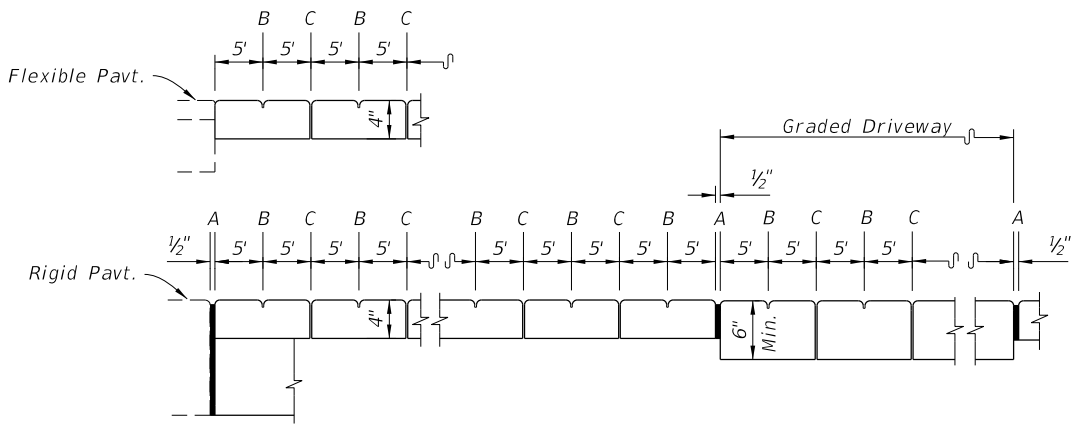


Varies Based on Railing Used

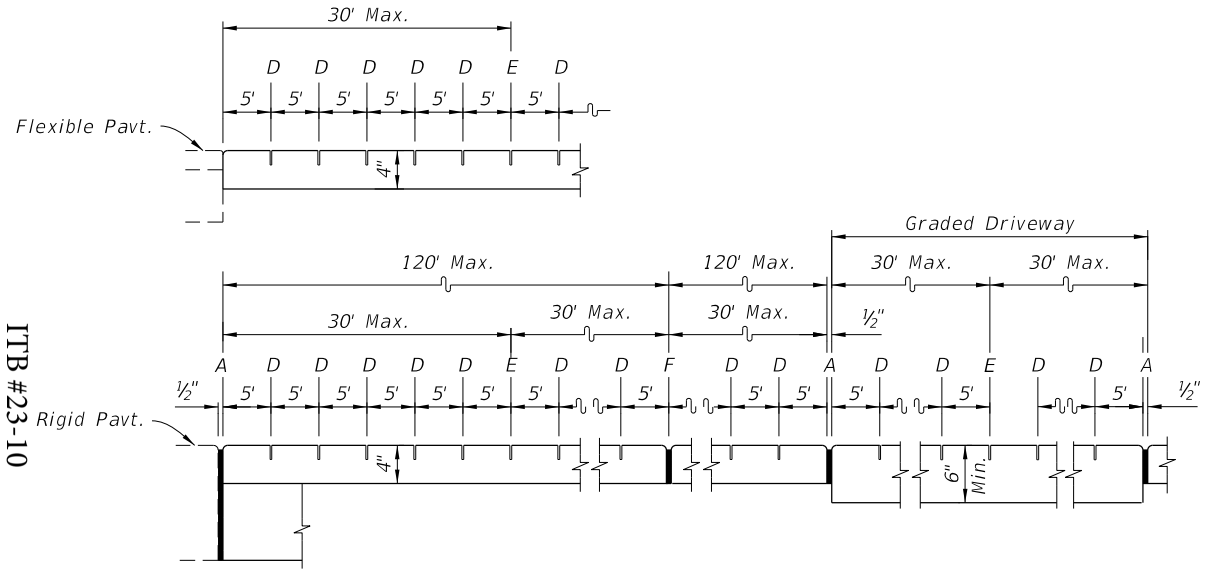
RAILING DETAIL

GENERAL NOTES AND CONCRETE SIDEWALK ON CURBED ROADWAYS

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18			FY 2022-23 STANDARD PLANS	CONCRETE SIDEWALK	522-001	1 of 2



OPEN JOINTS



SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

A– ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B– ⅛" Dummy Joints, Tooled

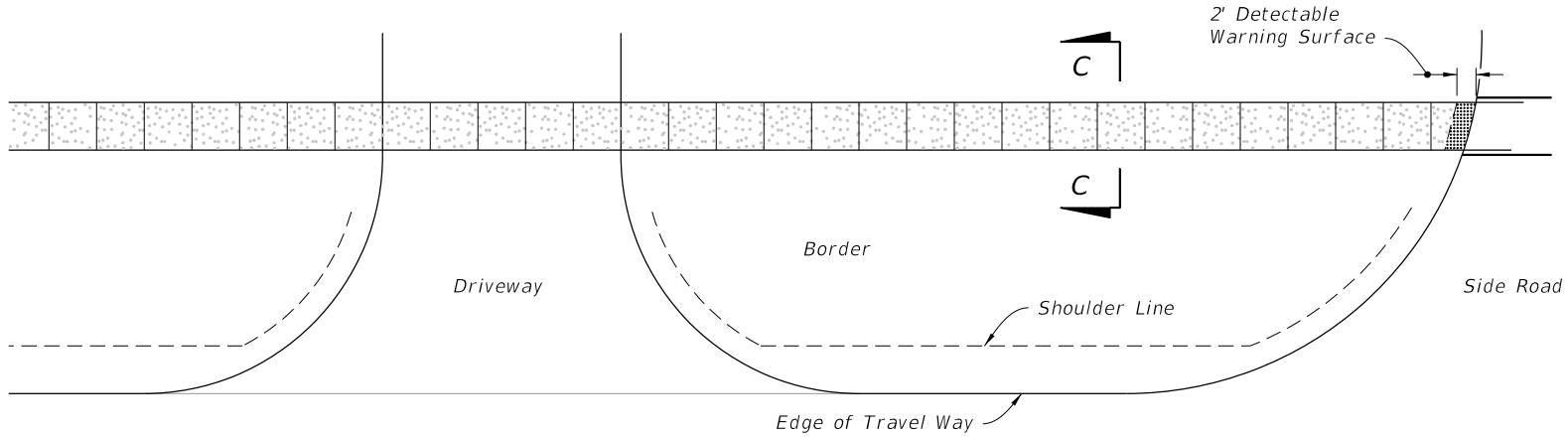
C– ⅛" Formed Open Joints

D– 3/16" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E– 3/16" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F– ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

SIDEWALK JOINTS

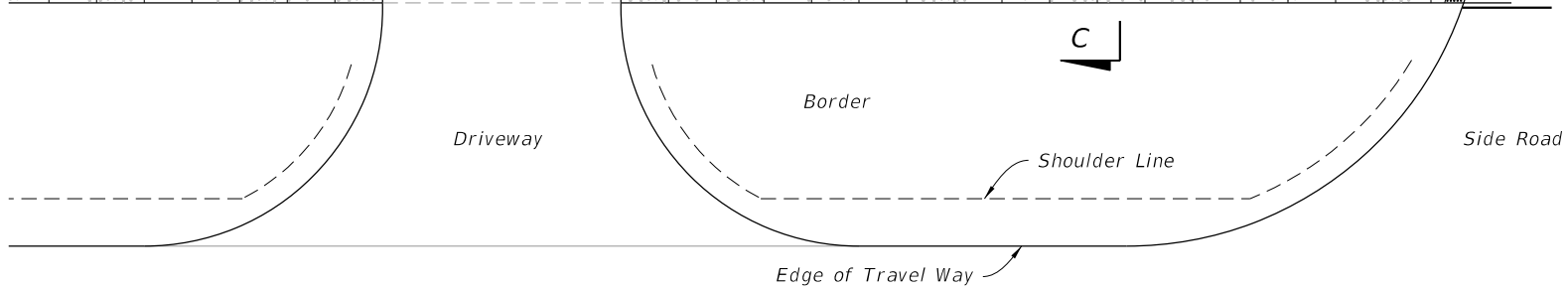


PLAN

CONTINUOUS SIDEWALK

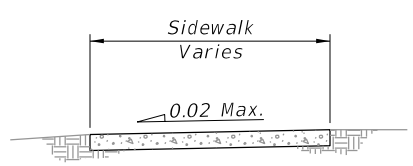
LEGEND:

4" Thick Sidewalk



PLAN

DISCONTINUOUS SIDEWALK



SECTION C-C

CONCRETE SIDEWALK ON FLUSH SHOULDER ROADWAYS

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18			FDOT FY 2022-23 STANDARD PLANS	CONCRETE SIDEWALK	522-001	2 of 2

GENERAL NOTES:

1. Cross Slopes and Grades:

   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.

   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.

   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.

   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter and/or Sidewalk:

   A. Refer to Index 522-001 for concrete thickness and sidewalk details.

   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

   C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

   A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.

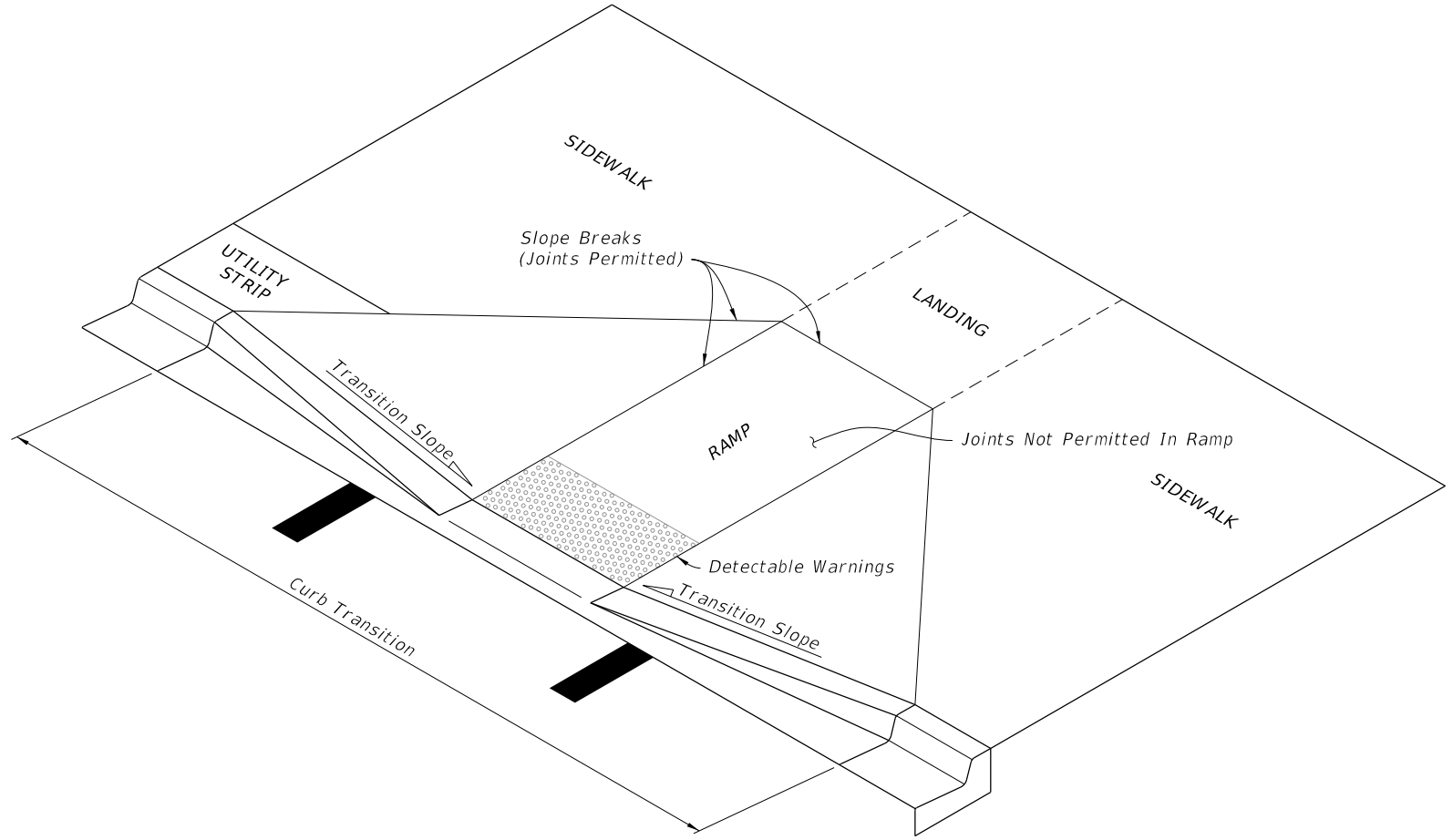
   B. Alpha-identifications CR-I and CR-J are intentionally omitted.

4. Detectable Warnings:

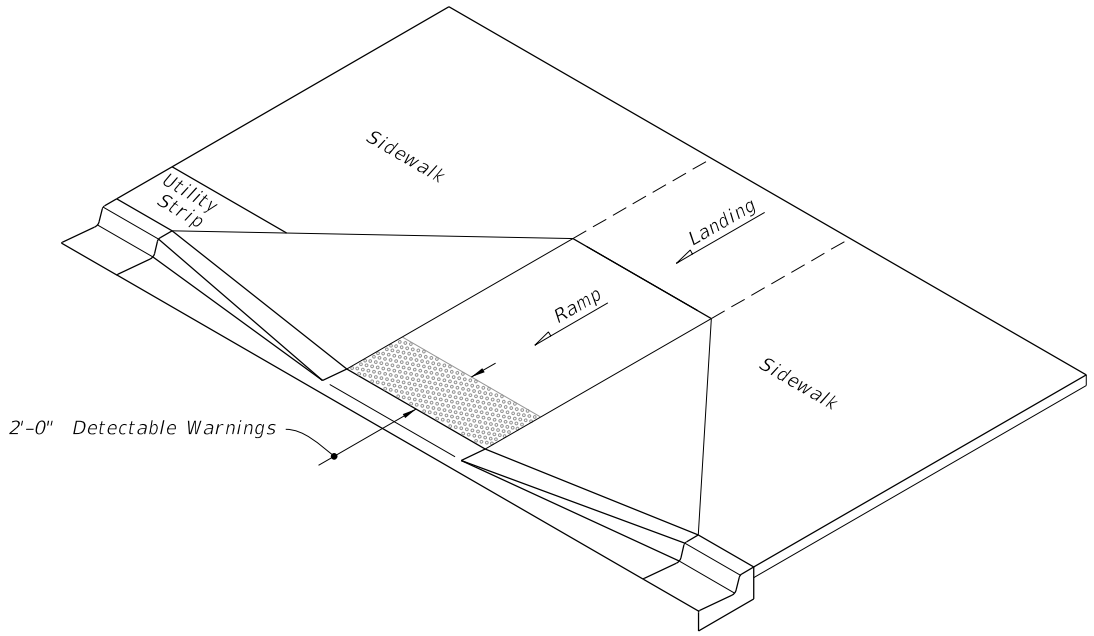
   A. Install detectable warnings in accordance with Specification 527.

   B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.

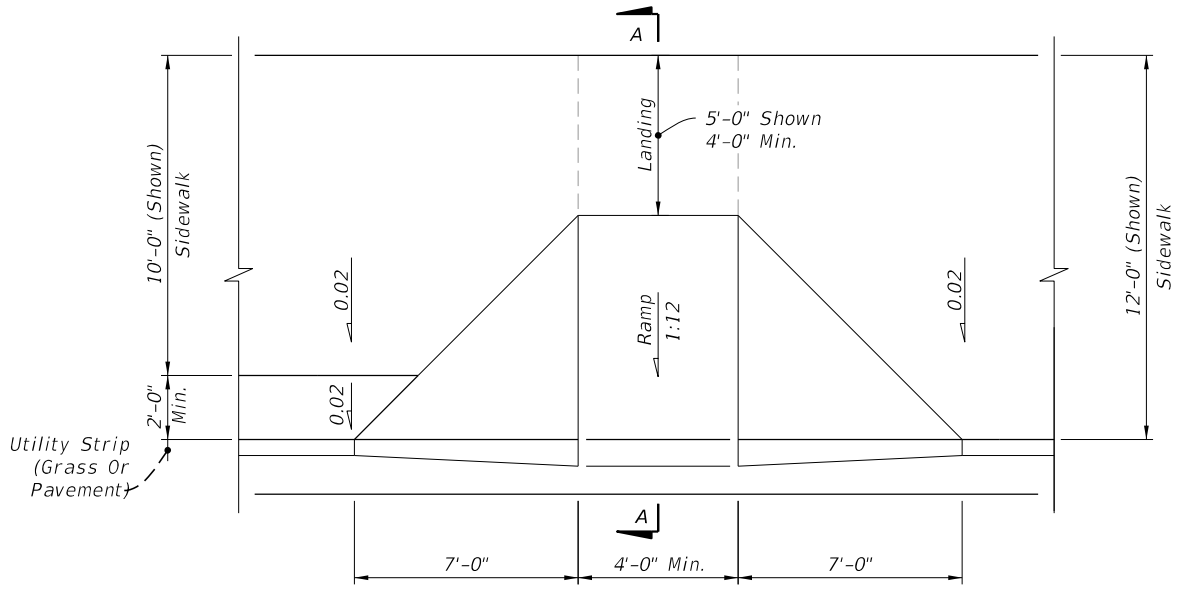
   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



CURB RAMP NOMENCLATURE



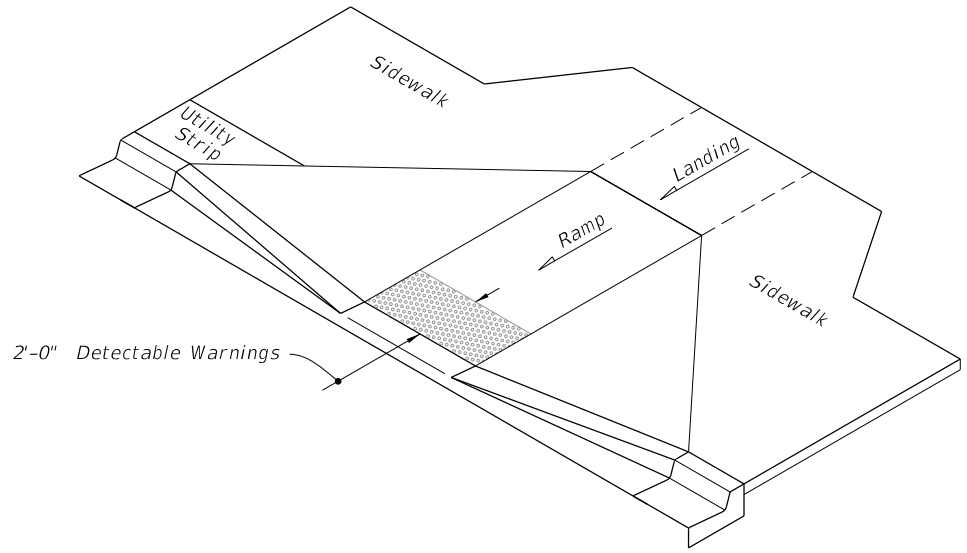
ISOMETRIC VIEW



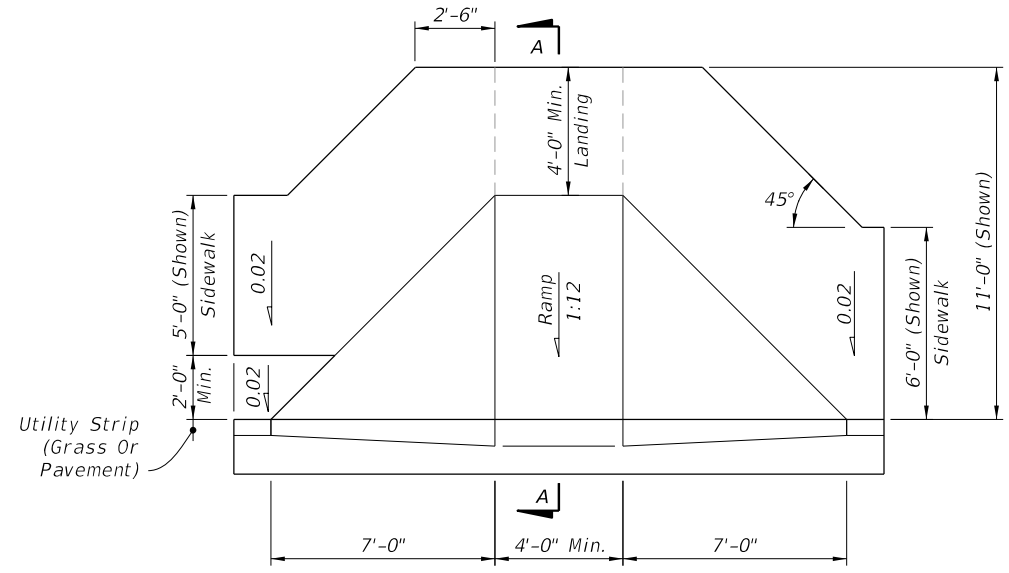
PLAN VIEW

NOTE: For Example of CR-A used in Radial Curb Returns, See Sheet 8.

CR-A

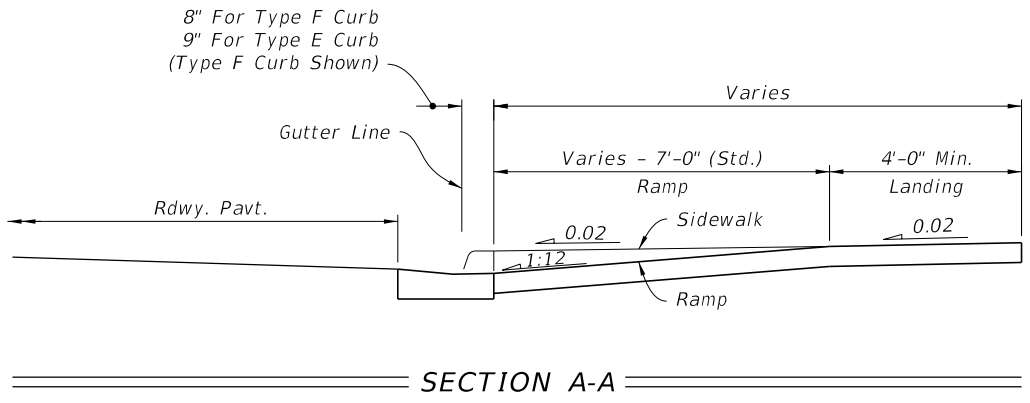


ISOMETRIC VIEW



PLAN VIEW

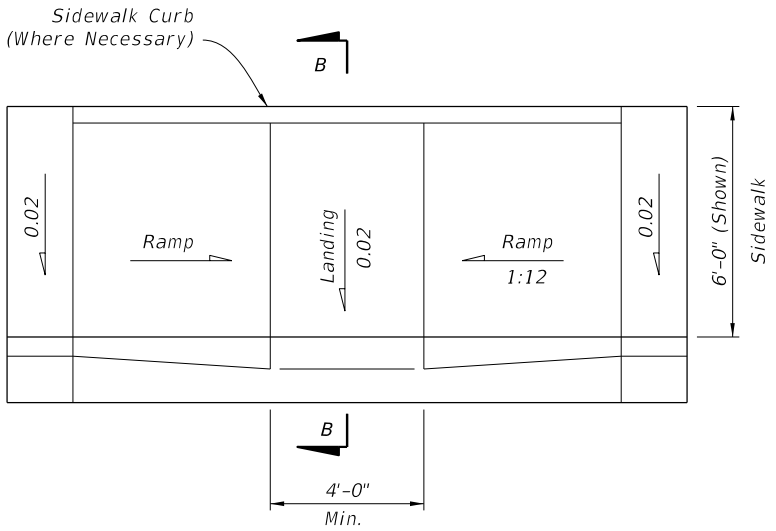
CR-B



SECTION A-A

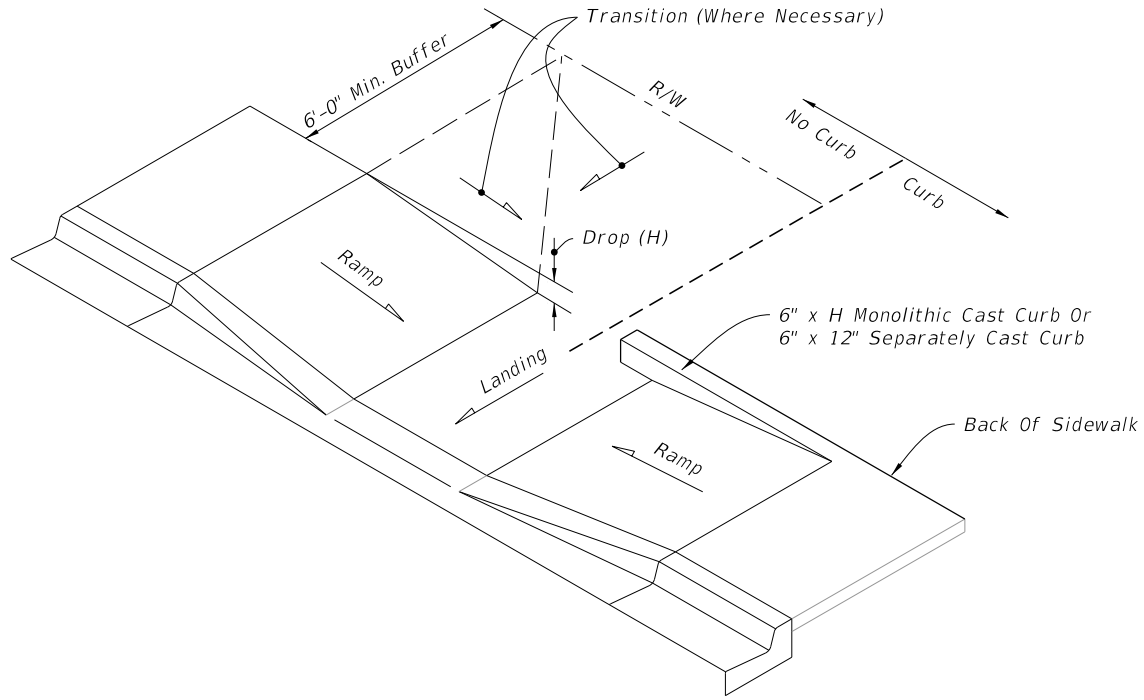
SIDEWALK CURB RAMPS CR-A AND CR-B

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/20			FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	522-002	2 of 7

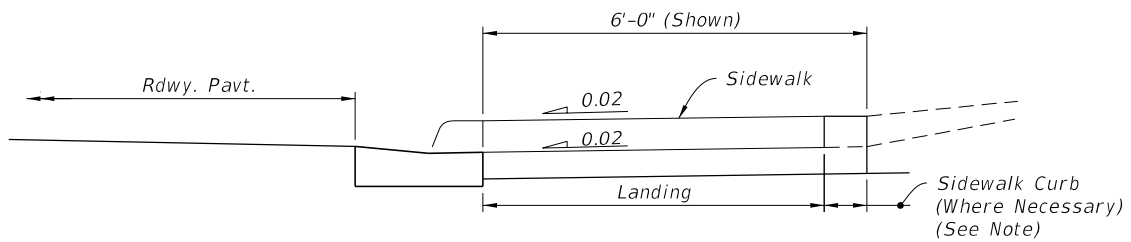


PLAN VIEW

CR-C

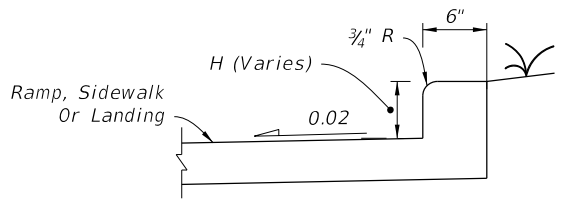


CONSTRUCTION OF SIDEWALK CURB IN CUT SECTIONS

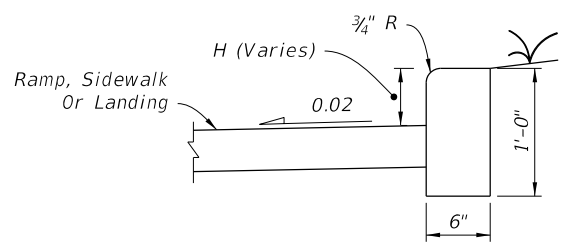


NOTE: For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details.

SECTION B-B



MONOLITHIC CAST CURB

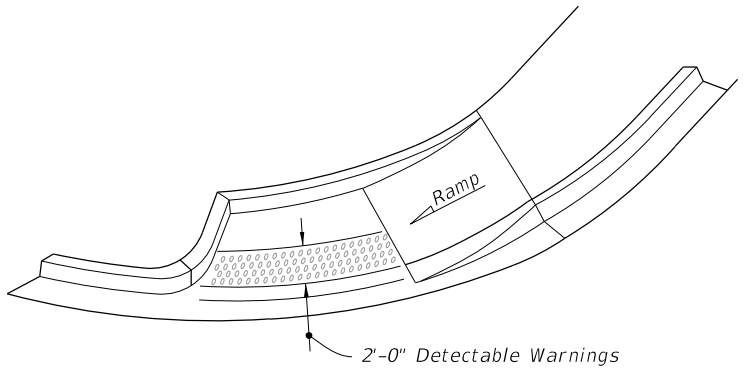


SEPARATELY CAST CURB

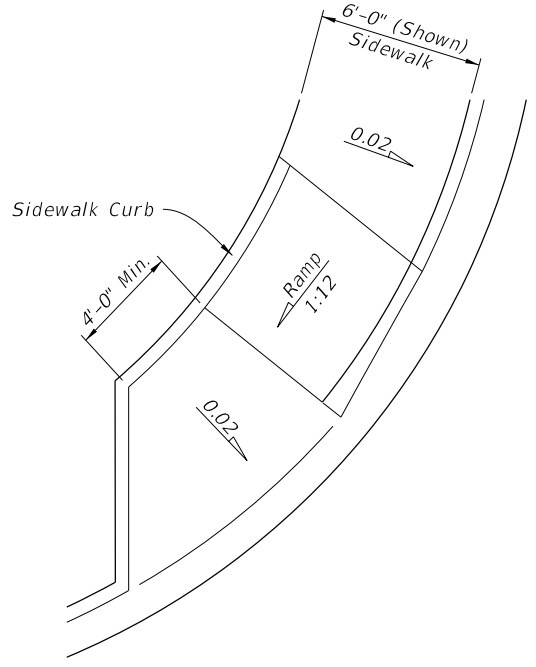
SIDEWALK CURB OPTIONS

SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
11/01/20						522-002	3 of 7

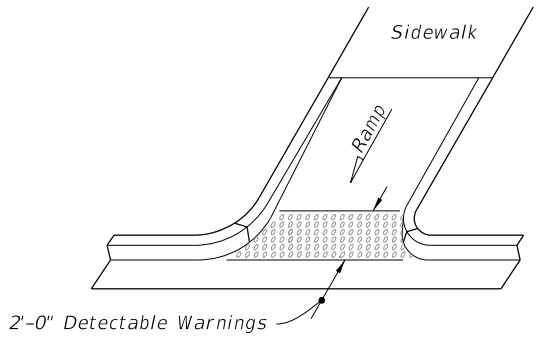


ISOMETRIC VIEW



PLAN VIEW

CR-D



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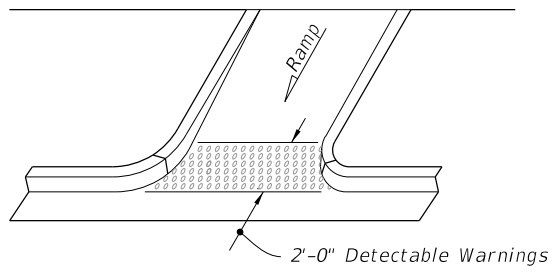
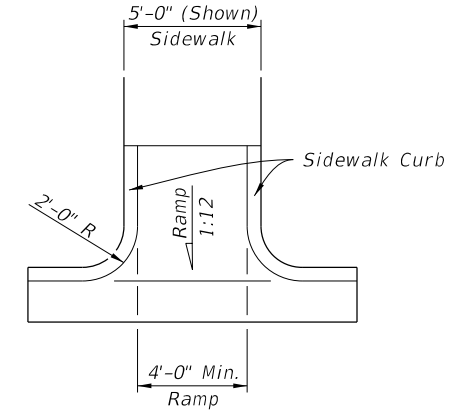


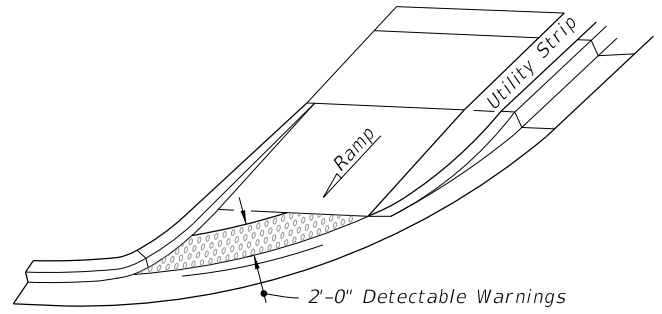
OPTION B

ISOMETRIC VIEW



PLAN VIEW

CR-E



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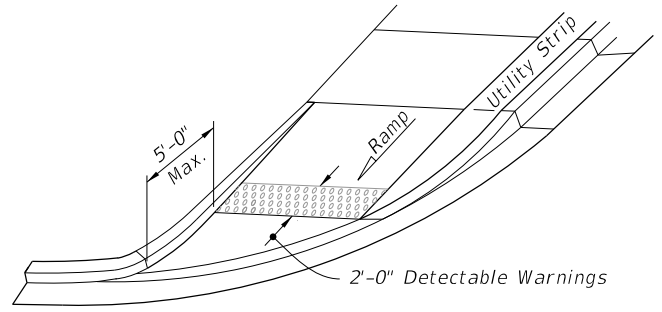

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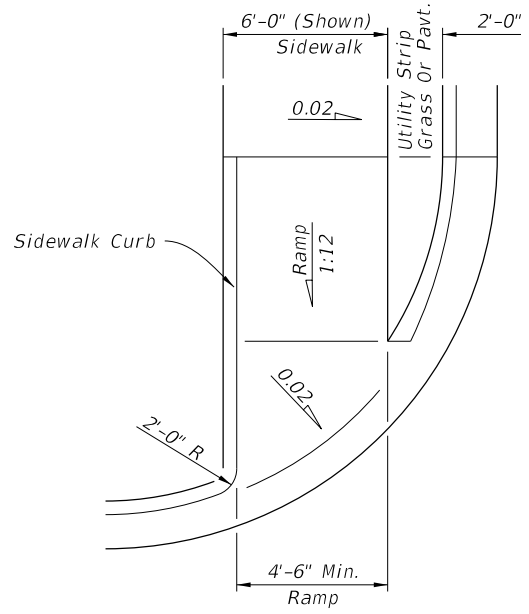
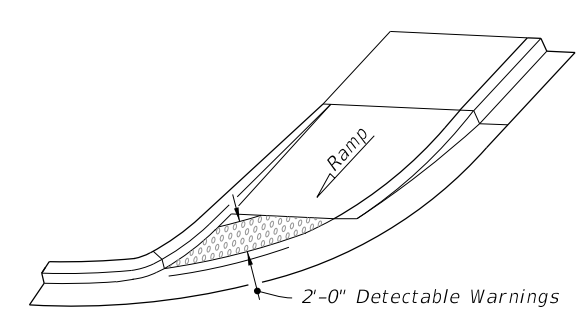


PLAN VIEW

CR-F



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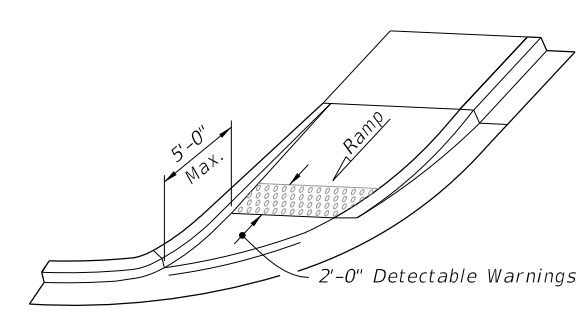

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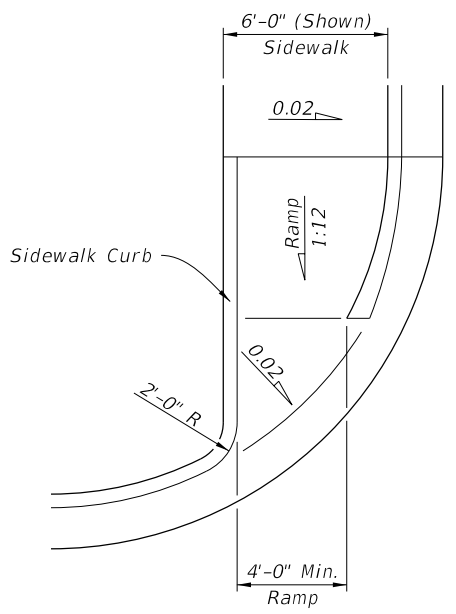

PLAN VIEW

CR-G

SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

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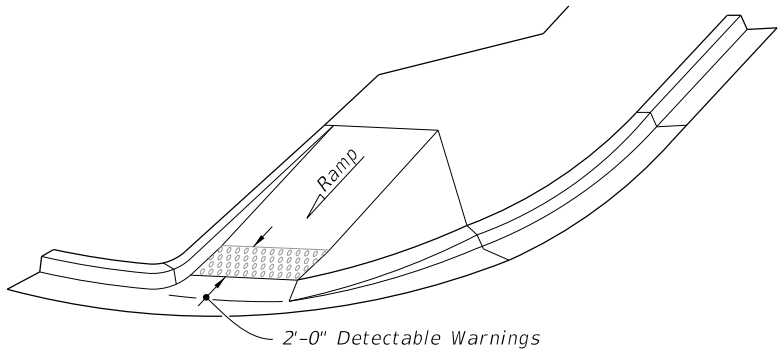

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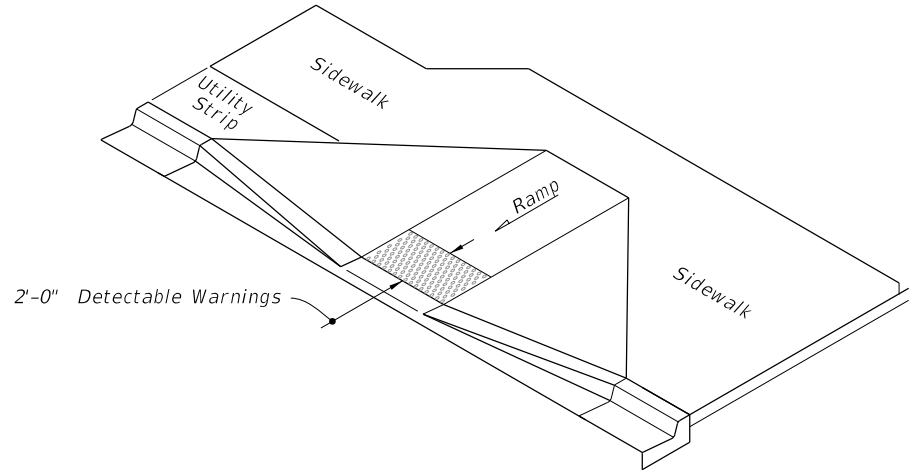

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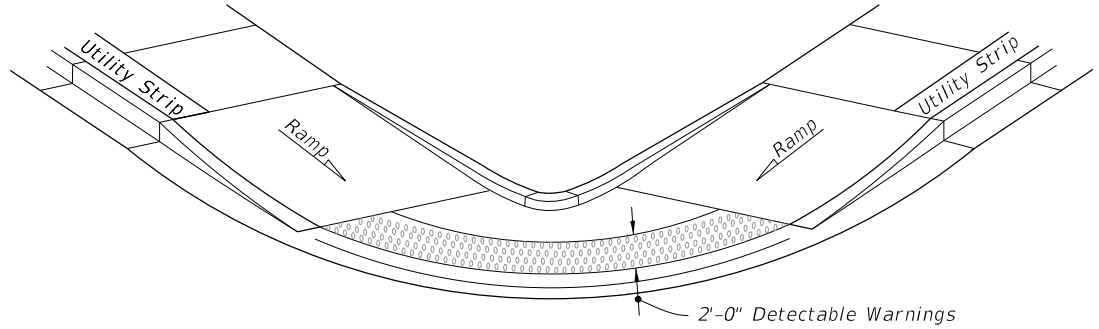

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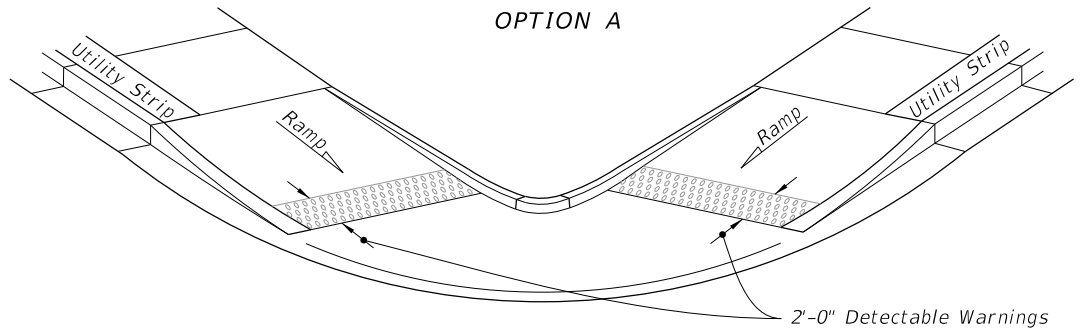

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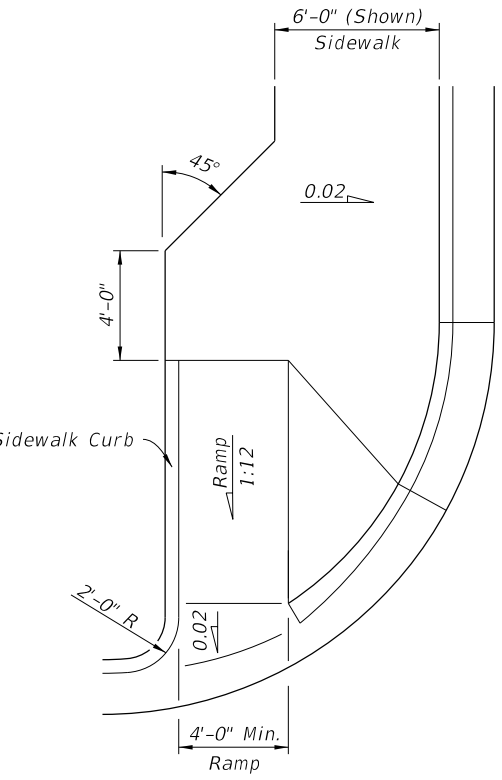
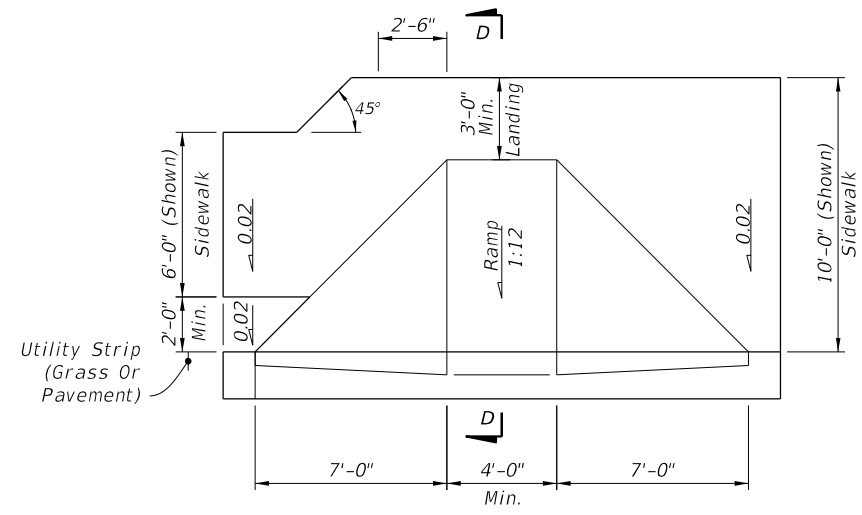


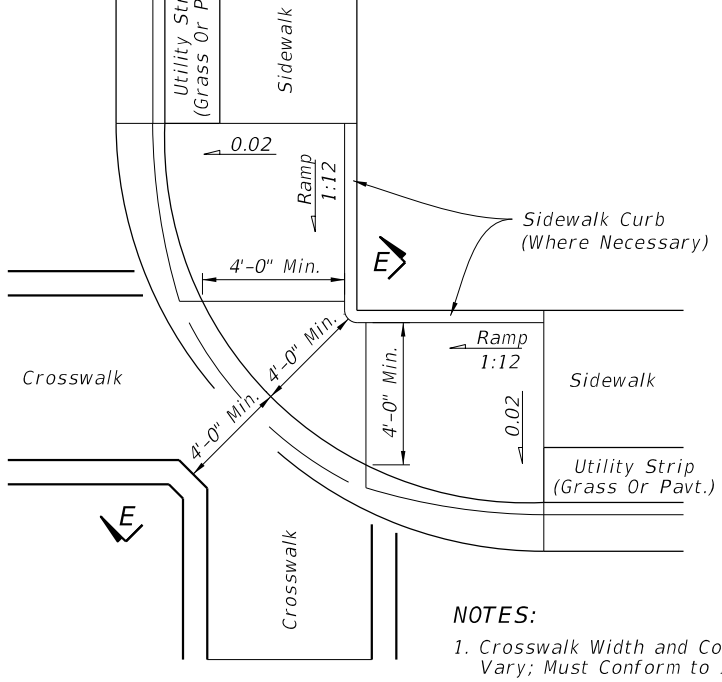
PLAN VIEW

CR-H



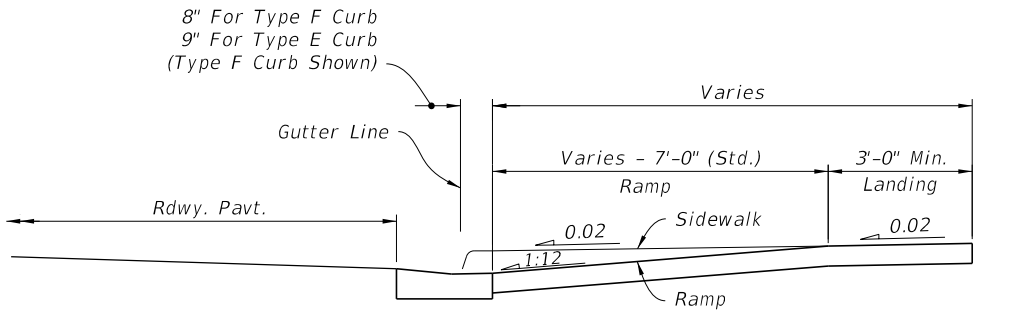
PLAN VIEW

CR-K

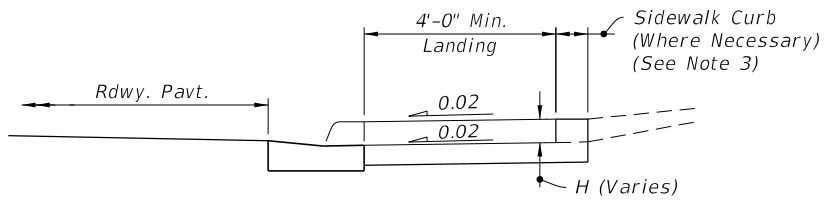


PLAN VIEW

CR-L



SECTION D-D



SECTION E-E

NOTES:

1. Crosswalk Width and Configuration Vary; Must Conform to Index 711-001.
2. 15' Radius Curve Shown for CR-L.
3. For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details, on Sheet 3.

SIDEWALK CURB RAMPS CR-H, CR-K & CR-L

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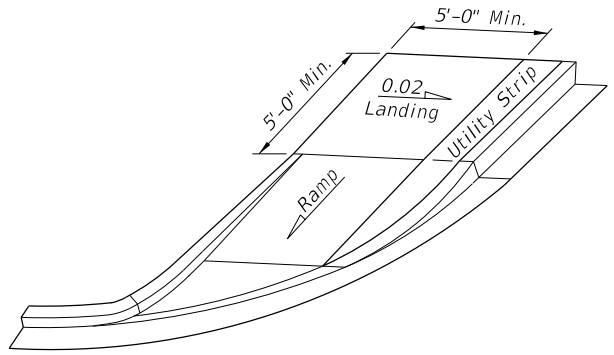
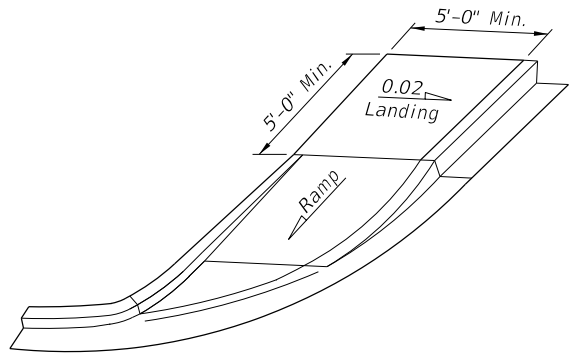
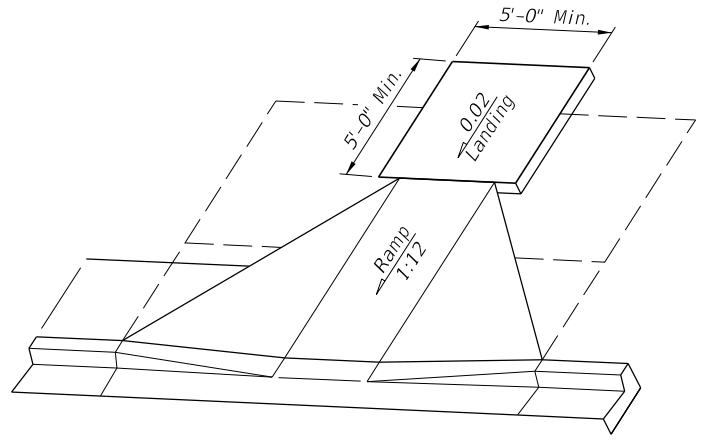
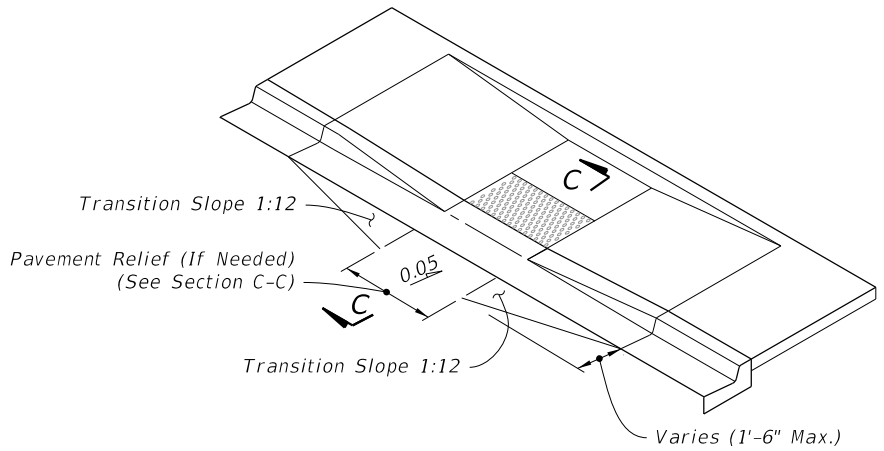






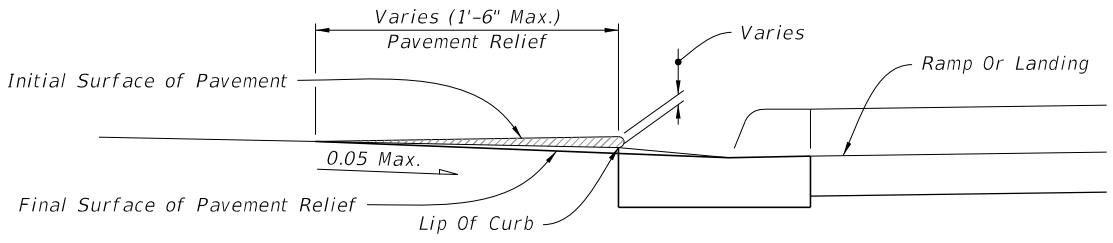
LANDINGS FOR CURB RAMPS WITHOUT SIDEWALKS

(See CR-F, CR-G & CR-K Respectively For Detectable Warning Details/Options)



ISOMETRIC VIEW

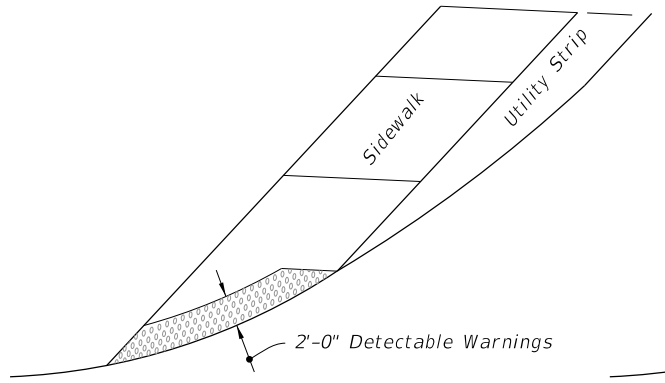
(CR-C Shown, Other Similar)



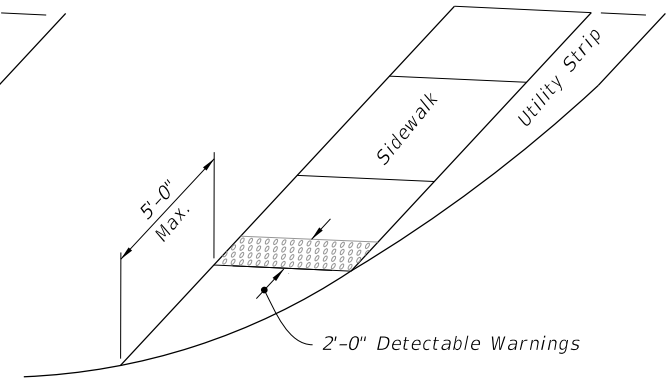
NOTE: Remove Elevated Pavement By Spading And Rolling, Smooth Milling, or Grinding.

SECTION C-C

PAVEMENT RELIEF DETAILS



OPTION A



OPTION B

DETECTABLE WARNING ON FLUSH SHOULDER SIDEWALKS

CURB RAMPS WITHOUT SIDEWALKS AND FLUSH SHOULDER SIDEWALKS

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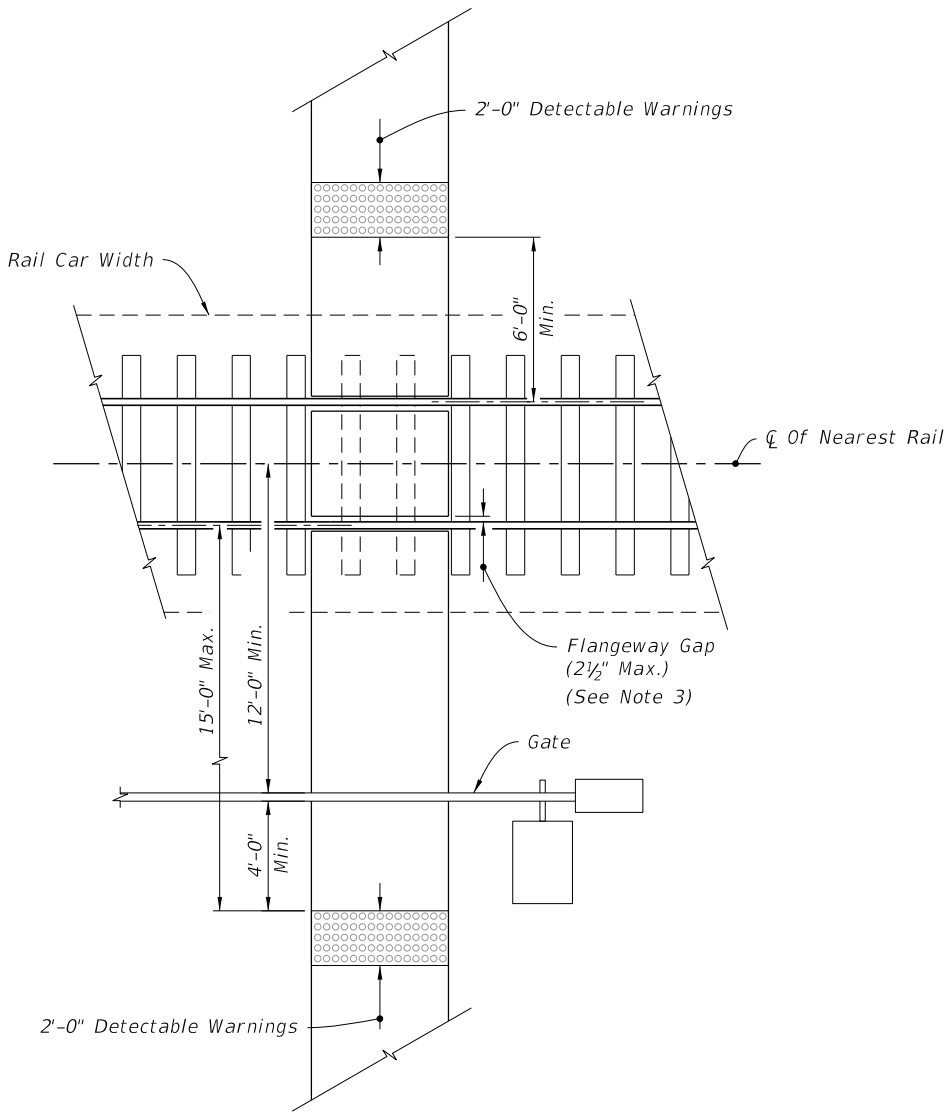
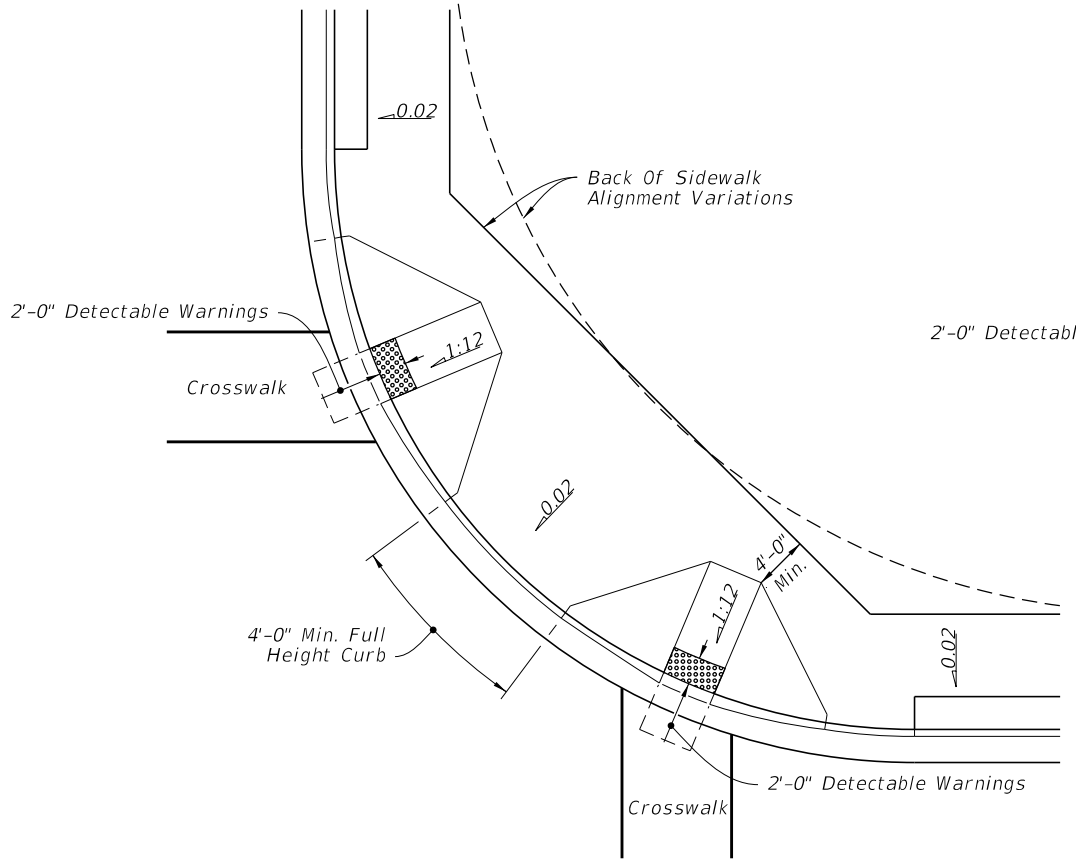
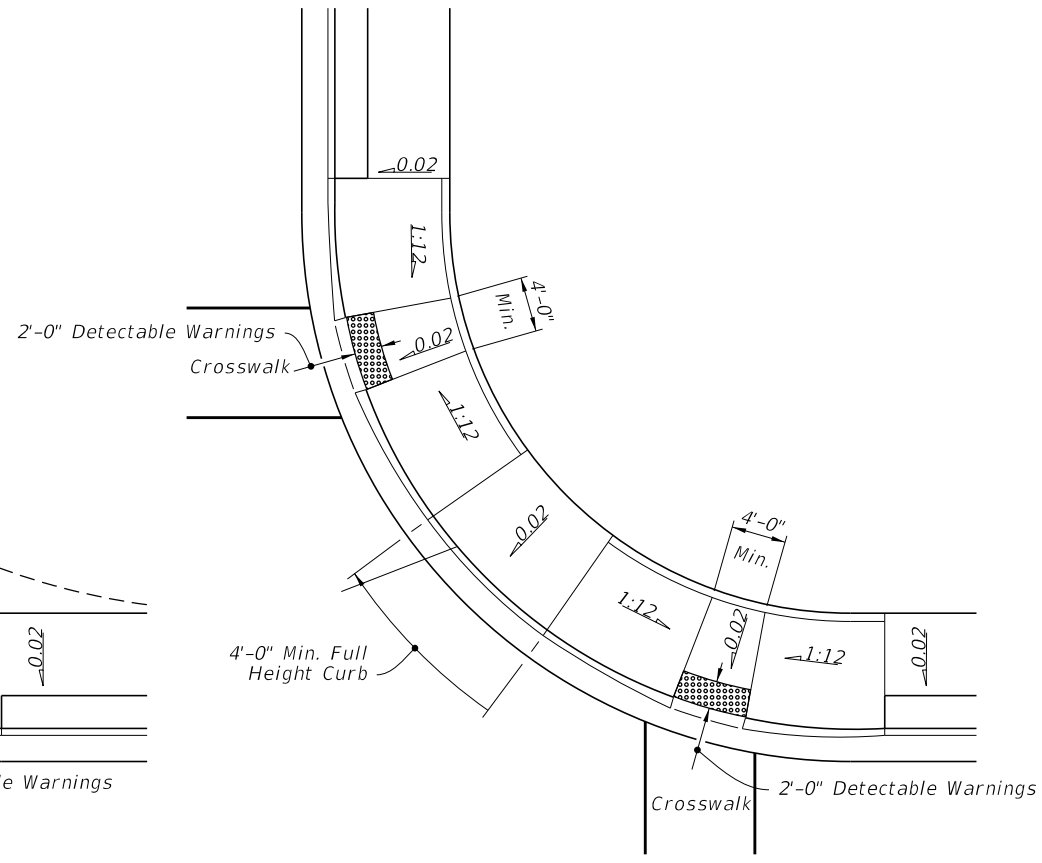
NOTES:

1. Where crosswalk markings are used, ramps must fall within the crosswalk limits. A clear space of 48" minimum is required at the bottom of the ramp within a marked crosswalk. If crosswalk markings are not present, a clear space of 48" minimum is required at the bottom of the ramp outside of active travel lanes.
2. Crosswalk widths and configurations vary; must conform to Index 711-001.
3. Flangeway Gap may be up to 3" for Freight-only Railways.

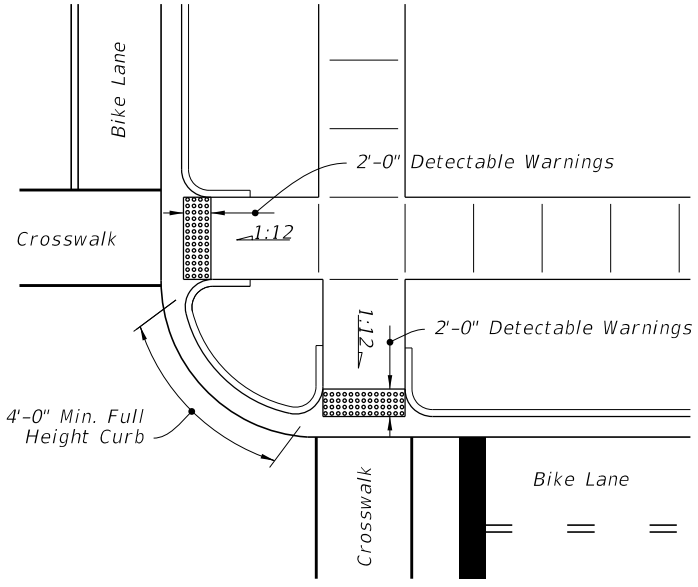


RAILROAD CROSSING

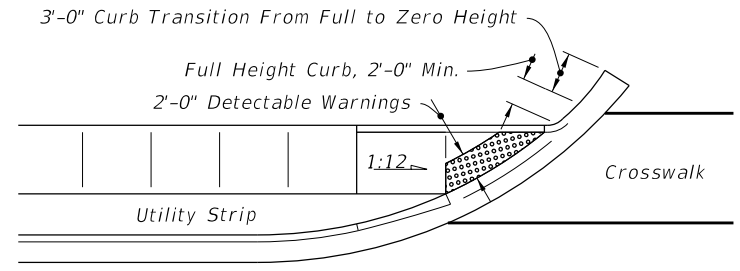




CURB RAMPS WITHIN RADIAL RETURN



CURB RAMPS OUTSIDE RADIAL RETURN



LINEAR SIDEWALK RAMPS

PLACEMENT OF SIDEWALK CURB RAMPS AT CURBED RETURNS (TYP.)

RAILROAD CROSSING AND CURB RAMPS AT CURBED RETURNS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
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January 29, 2021

Carlos M Herdocia, PE
Project Manager
Stantec Inc.
901 Ponce de Leon Boulevard,
Suite 900 Coral Gables FL 33134-3070

Subject: Report of a Geotechnical Exploration – Roadway Soils Survey
Franjo Road, from Old Cutler Road to SW 184th Street
Town of Cutler Bay
Department of Public Works
Miami-Dade County, Florida
HRES Project No. HR19-1573R

Dear Carlos:

HR Engineering Services, Inc. (HRES) is pleased to provide this Report of a Geotechnical Exploration - Roadway Soils Survey for the subject project. This report presents our understanding of the project, outlines our exploratory procedures, and documents the field test data.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please call our office at (305) 888-8880.

Sincerely,

HR ENGINEERING SERVICES, INC.
(Certificate of Authorization No. 7991)

HERNANDO R. RAMOS
LICENSE
No 42045
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY
Hernando R Ramos
2021.02.09 14:05:11 -05'00'
ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

Chollada Soonyakanit (for)
Chollada Soonyakanit, E.I.
MAT Staff Geotechnical Engineer

Hernando R. Ramos, P.E.
MAT Chief Geotechnical Engineer
Florida Registration 42045

Distribution: Addressee (1)
File (1)

Table of Contents

APPENDIX A:

APPENDIX B:

1.0 INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions along the proposed project. The project consists of the construction of the roadway widening of Franjo Road. This report discusses our exploratory and testing procedures, presents our findings and includes the following items:

Field Services - HRES

- Performed two (2) auger borings for the proposed roadway widening, each to a depth of 10.0 feet, measured from the existing ground surface. The borings subsurface information is presented on the Report of Core Borings and Soils Information Table in Appendix A.
- Forty-two (42) SPT borings performed along the proposed roadway widening, each to a depth of 10 feet. The test borings subsurface information is presented on the Report of Core Borings and Soils Information Table in Appendix A.
- Performed a total of nine (9) SFWMD usual open-hole constant head percolation tests. The tests were conducted at one depth interval, from 0 to 15 feet. The percolation test results are presented in Appendix A. The subsurface information is presented on the Soils Information Table in Appendix A.
- A brief description of our field testing procedures.

Evaluation

- Review of Miami-Dade County USDA Soil Survey Maps.
- Review of Miami-Dade County USGS Water Level Maps.
- Review of USGS Quadrangle Map.
- A general review of existing surface features and site conditions.
- Report of Core Borings and Soils Information Table.
- Roadway Soils Survey.
- Roadway construction recommendations.

Laboratory Testing

- The results of laboratory tests performed on selected soil samples obtained from the test borings.
- A brief description of our laboratory testing procedures.

2.0 PROJECT INFORMATION

2.1 GENERAL

Project information for this subsurface exploration has been provided to us by various members of the design team. Additional information has been provided during telephone conversations.

During our geotechnical study, we have been furnished with the following project-related plans and information:

- Plans: Franjo Road, from Old Cutler Road to SW184 Street– Map of Topographic Survey
  Prepared by: N/A
  Dated: 11/03/2020

2.2 PROJECT DESCRIPTION

The project consists of the roadway widening along Franjo Road, from Old Cutler Road to SW 184th Street. The project is located in Miami-Dade County Florida. This report provides recommendations for the construction of the roadway widening.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

The field exploration was conducted by HRES. The locations of the test borings are provided in the Summary of Test Boring Locations in Appendix A. The Report of Core Borings and the Soils Information Table in Appendix A summarize the approximate boundary between soil types. In some instances, the transition between material types may be gradual. A brief description of the exploratory sampling techniques used is presented in the Field Testing Procedures section in Appendix A. A discussion of the subsurface conditions encountered along the project alignment is provided in Section 4.2 of this report.

3.2 PERCOLATION TESTING

HRES completed nine (9) South Florida Water Management District (SFWMD) usual open-hole constant head percolation tests for the subject project. The percolation tests were conducted at one depth interval: from 0 to 15 feet. The hydraulic conductivity values were then calculated and reported in units of cubic feet per second, per square foot, per foot of head (cfs/ft^2-ft of head). The calculated hydraulic conductivity values ranged as follows:

- From 0 to 15 ft.: 1.4E-04 cfs/ft^2-ft to 8.2E-04 cfs/ft^2-ft of head

The conductivity values are ultimate values. An appropriate factor of safety should be employed in any storm water or other subsurface drainage design computations. The percolation test results are presented in Appendix A.

3.3 LABORATORY TESTING

3.3.1 Soil Testing

In order to aid in classifying and estimate engineering characteristics of the subsurface materials encountered, laboratory classification tests were performed on representative soil samples obtained from the test borings. The laboratory testing program included the following:

- 6 Sieve Analyses
- 17 Fines Content Tests
- 2 Organic Content Tests
- 24 Moisture Content Tests

The soil laboratory test results were classified following the AASHTO Classification System. The test results are presented in Appendix B.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The site conditions were observed by a Geotechnical Engineer during the months of November and December, 2020.

4.2 SUBSURFACE CONDITIONS

4.2.1 Miami-Dade County Soil Survey Map

The Soil Map of Miami-Dade County Area, Florida, published by the United States Department of Agriculture (USDA) was reviewed for general near-surface soil information within the general project vicinity. This information indicates that there is four (4) mapping unit in the vicinity of the project. The map soil unit encountered is:

Table 4.2.1 Miami-Dade Soil Survey

Map Unit Symbol	Map Unit Name	Typical Profile
7	Krome very gravelly loam (4.7% of AOI)	Ap - 0 to 7 inches: very gravelly loam R - 7 to 11 inches: unweathered bedrock
10	Udorthents, limestone (65.5% of AOI)	C - 0 to 55 inches: extremely gravelly loam 2R - 55 to 59 inches: unweathered bedrock
11	Udorthents, marl substratum-Urban land complex (29.5% of AOI)	C1 - 0 to 12 inches: very gravelly loam C2 - 12 to 41 inches: gravelly sandy loam Cg - 41 to 80 inches: marly silt loam 2R - 80 to 90 inches: unweathered bedrock
99	Water (0.4% of AOI)	Water: 100 percent

A reproduction of the USDA map for the project area is included in Appendix A.

4.2.2 USGS Quadrangle Map

The Perrine Quadrangle, Florida-Miami-Dade Topographic Map (1999 published by the United States Geological Survey (USGS was reviewed for general existing ground surface elevations in

the project area. Based on the map, the existing ground elevations in the project vicinity is 10.0 feet, NGVD29. A reproduction of the USGS Quadrangle Map for the project area is included in Appendix A.

4.2.3 Generalized Subsurface Conditions Encountered Along the Alignment

A total of seven different layers of materials were observed during the performance of the boreholes. Stratum 1a is asphalt. Stratum 1b is topsoil. Stratum 2 consists of limerock with silty fine sand. Stratum 3 consists of silty fine sand with traces limerock fragments. Stratum 4 consists of sandy silt/ slightly organic sandy silt with traces of limerock fragments. Stratum 5 consists of fine sand with traces limerock fragments. Stratum 6 consists of the natural limestone. For a detailed subsurface condition at a particular borehole location, please refer to the Report of Core Borings and the Soils Information Table in Appendix A.

4.2.4 Groundwater Conditions

The groundwater levels in the borings were measured at the time of drilling. Groundwater levels were encountered at depths ranging from 4.0 to 10.8 feet.

The average October Water Level was 3.0 feet, NGVD29 (1.5 feet, NAVD88 and the Seasonal High Ground Water Table is about 4.0 feet, NGVD29 (2.5 feet, NAVD88 were found for the project area based on U.S. Geological Survey (2002, "Average Altitude of the Water Table (1990-99 and Frequency Analysis of Water Levels (1974-99 in Biscayne Aquifer, Miami-Dade County, Florida" included in Appendix A.

Fluctuation in the observed groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, a storm surge, surface water runoff and water level variations in the nearby lakes. Since groundwater level variations are anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

5.0 ROADWAY CONSTRUCTION RECOMMENDATIONS

5.1 BASIS FOR RECOMMENDATIONS

The following construction recommendations are based upon our understanding of the conceptual design information available at the writing of this report and the data gathered during our subsurface exploration. The stratification of the subsurface materials underlying the site may vary within even short lateral distances; therefore, any subsurface condition encountered which differs from those documented in this study should be reported to us so that our recommendations can be reviewed.

5.2 SUITABILITY OF IN-SITU MATERIALS

The following is a summary of the subsurface information provided by the borings and their suitability.

Stratum 1a – This Stratum consists of asphalt.

Stratum 1b – This Stratum consists of dark brown organic silty fine sand (topsoil, A-8. No laboratory testing was conducted on this material. This material is unsuitable for use as stabilized subgrade or fill material and should be removed.

Stratum 2 – This Stratum consists of brown to light brown limerock fragments with silty fine sand (fill, A-1-b. Laboratory testing on this material consisted of 3 sieve analyses and 3 moisture content tests. The fines content ranged from 15 to 21 percent and the moisture content ranged from 11 to 18 percent. This material appears suitable for use as a general fill when utilized in accordance with FDOT Index 120-001. It cannot be used as base material.

Stratum 3 – This stratum consists of brown silty fine sand with traces of limerock fragments (A-2-4. Laboratory testing on this material consisted of 3 sieve analyses, 3 fines content tests and 6 moisture content tests. The fines content ranged from 23 to 35 percent and the moisture content ranged from 11 to 36 percent. This material appears suitable for use in the embankment when utilized in accordance with FDOT Standard Plan Index 120-001. However, this material is likely to retain excess moisture and be difficult to dry and compact. It should be used in the embankment above the water level existing at the time of construction. It cannot be used as stabilized subgrade or base material.

Stratum 4 – This Stratum consists of brown sandy silt or slightly organic sandy silt with traces of limerock fragments (A-4. Laboratory testing on this material consisted of 2 organic content tests, 13 fines content tests and 14 moisture content tests. The organic content ranged from 4 to 5, the fines content ranged from 50 to 98 percent and the moisture content ranged from 32 to 75 percent. This material is unsuitable for use in the embankment and as stabilized subgrade and shall be removed in accordance with FDOT Standard Plan Index 120-002. It should be removed if encountered within 2 feet below the bottom of the base.

This material was encountered within 2 feet below the bottom of the base at the following borehole locations: RB-28, RB-32, RB-36, RB-39, RB-40 and Percolations Tests P-7, P-8 and P-9.

Stratum 5 – This Stratum consists of brown fine sand with traces of limerock fragments (A-3. Laboratory testing on this material consisted of 1 fines content test and 1 moisture content test. The fines content was 8 percent and the moisture content was 25 percent. This material appears suitable for use in the embankment when utilized in accordance with FDOT Standard Index 120-001. It cannot be used as stabilized subgrade or base material.

Stratum 6 – This stratum consists of the natural limestone. This material appears suitable for use as general fill when utilized in accordance with FDOT Standard Plan Index 120-001. This material typically offers a high resistance to excavation. Special equipment and breaking tools may be required to excavate it. This material is also difficult to dewater due to its high porosity and permeability.

5.3 CONSTRUCTION PLANS AND SPECIFICATIONS REVIEW

It is recommended that this office be provided the opportunity to make a general review of the earthwork plans and special provisions prepared from the recommendations presented in this report. We would then suggest any modifications so that our recommendations are properly interpreted and implemented.

5.4 SETTLEMENT AND VIBRATION MONITORING

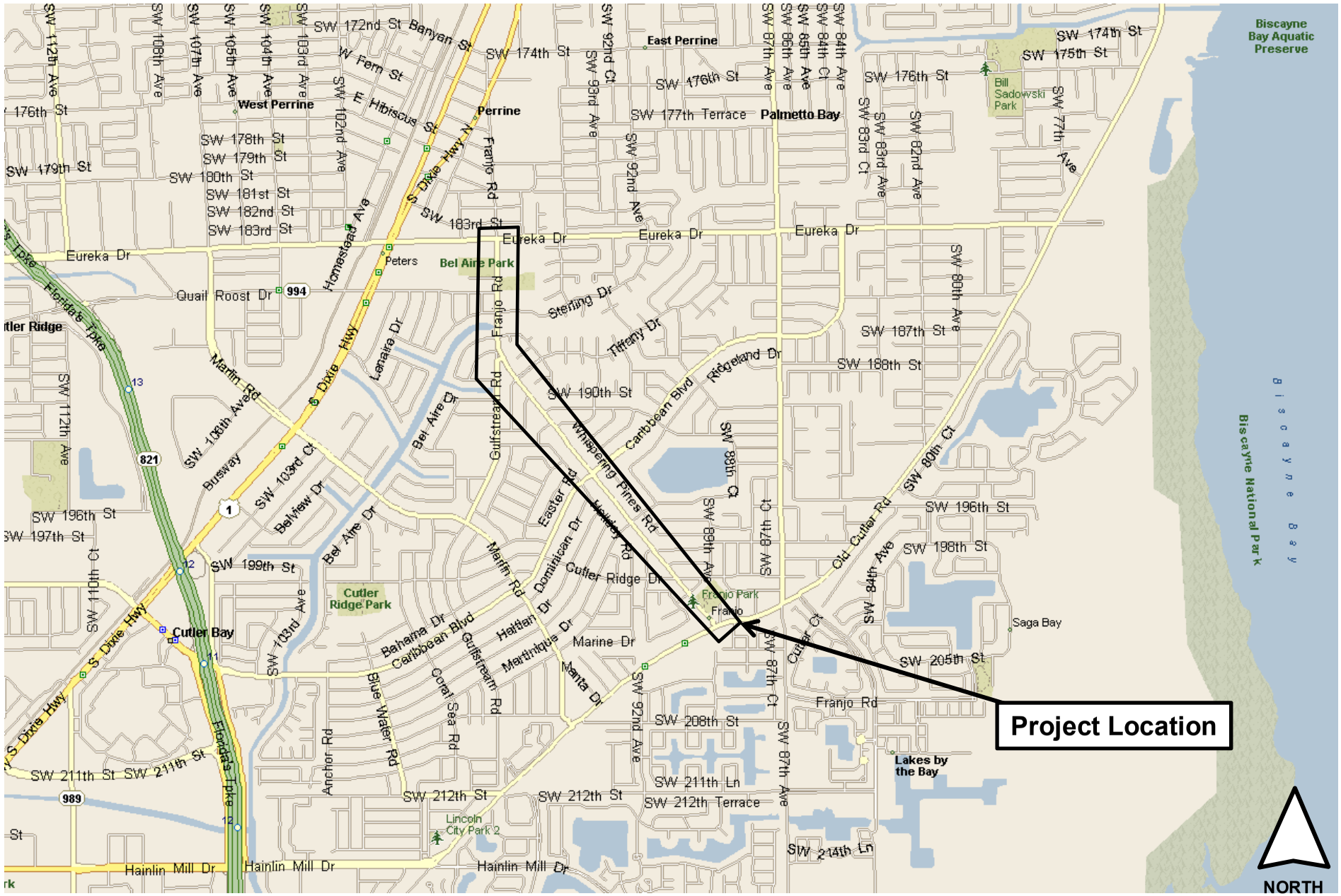
Construction vibrations associated compaction equipment may occur. Settlement and vibration monitoring should be performed in accordance with Section 108 of FDOT Standard Specifications.

6.0 REPORT LIMITATIONS

The scope of the investigation was intended to evaluate the subsurface conditions along the proposed roadway improvements. The analyses and recommendations submitted in this report are based upon the data obtained from the test borings performed at the locations indicated. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature or location of the proposed improvement.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic material in the soil, groundwater, or surface water within or beyond the site studied.

APPENDIX A



FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN CUTLER BAY, MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF PUBLIC WORKS

HRES
HR Engineering Services, Inc.

SITE LOCATION PLAN **A-1**

DRAWN BY: CS	DATE: 01/29/21
PROJECT No: HR19-1573R	SCALE: NTS

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 2 OF 15

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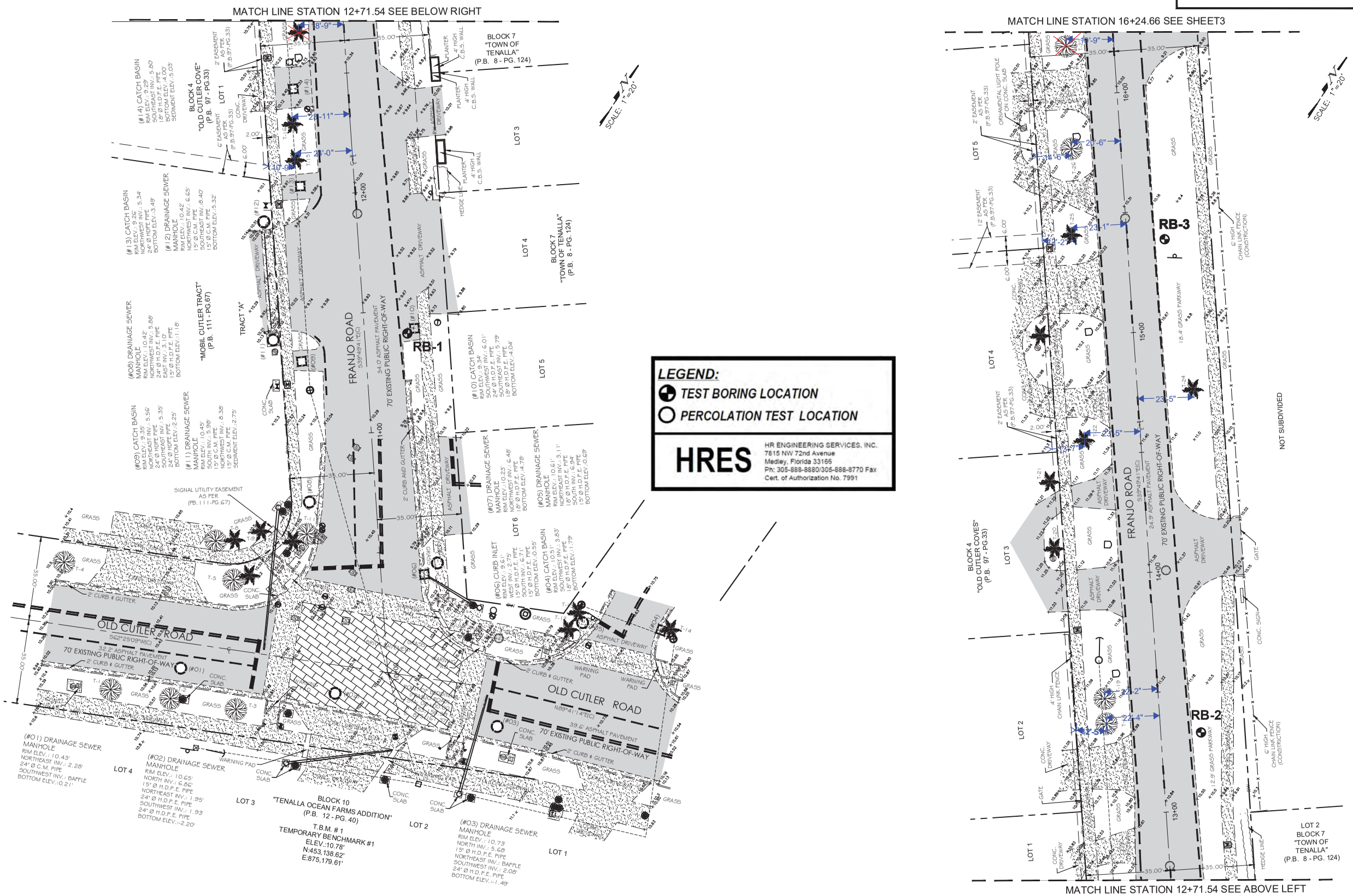

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Ph: 305-889-8880/305-888-8770 Fax
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REVISIONS

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TOPOGRAPHIC SURVEY

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CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

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MAP OF TOPOGRAPHIC SURVEY

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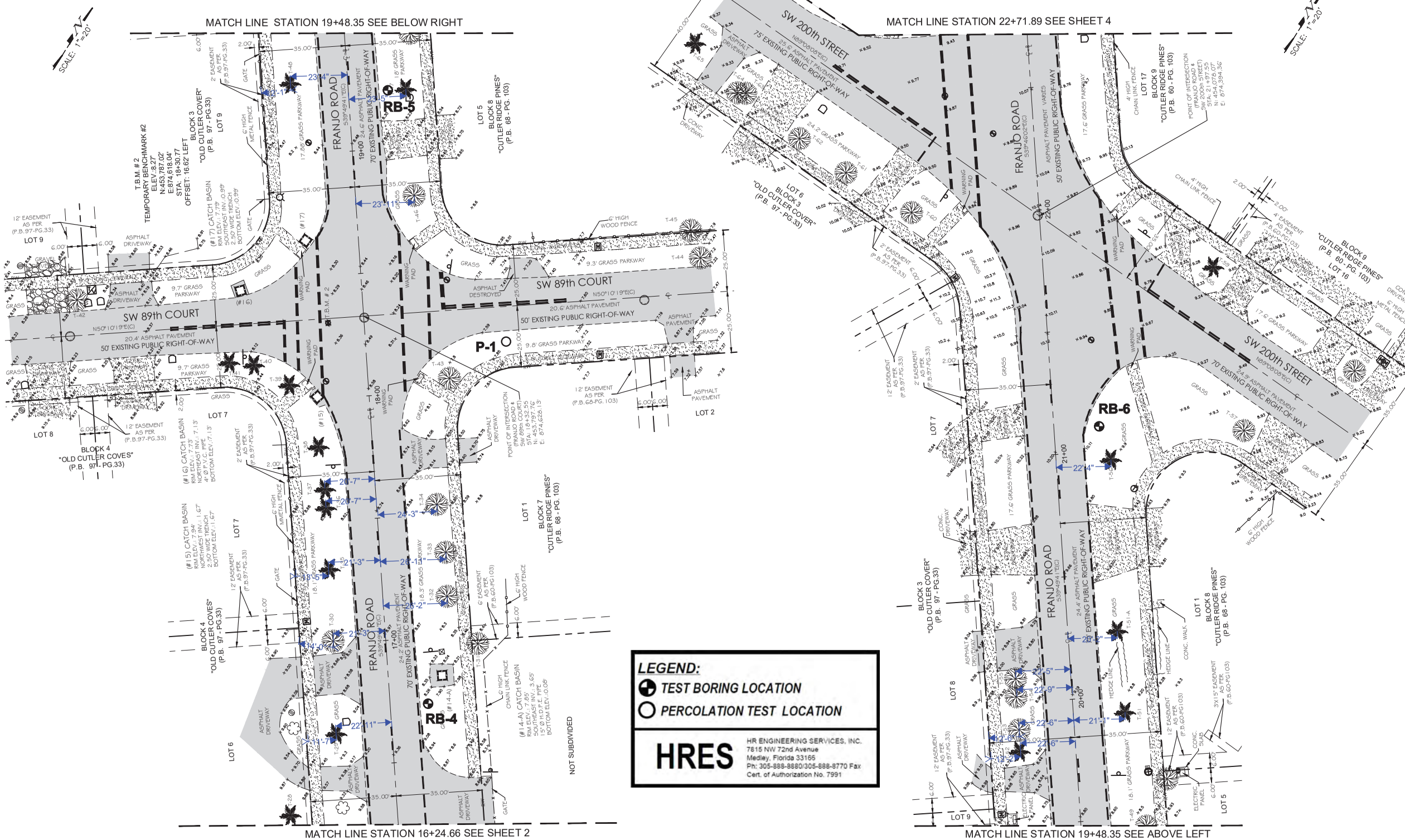

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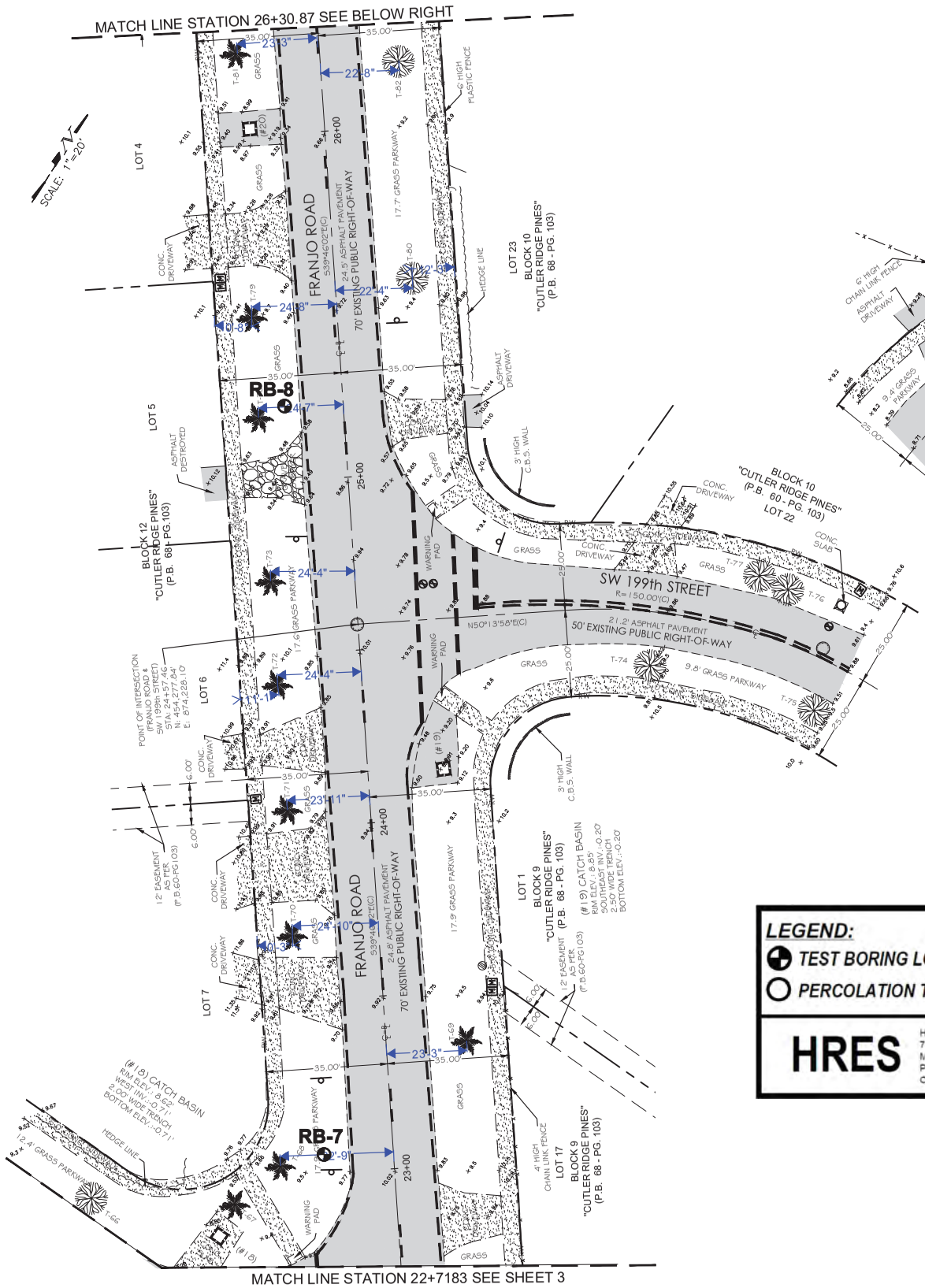

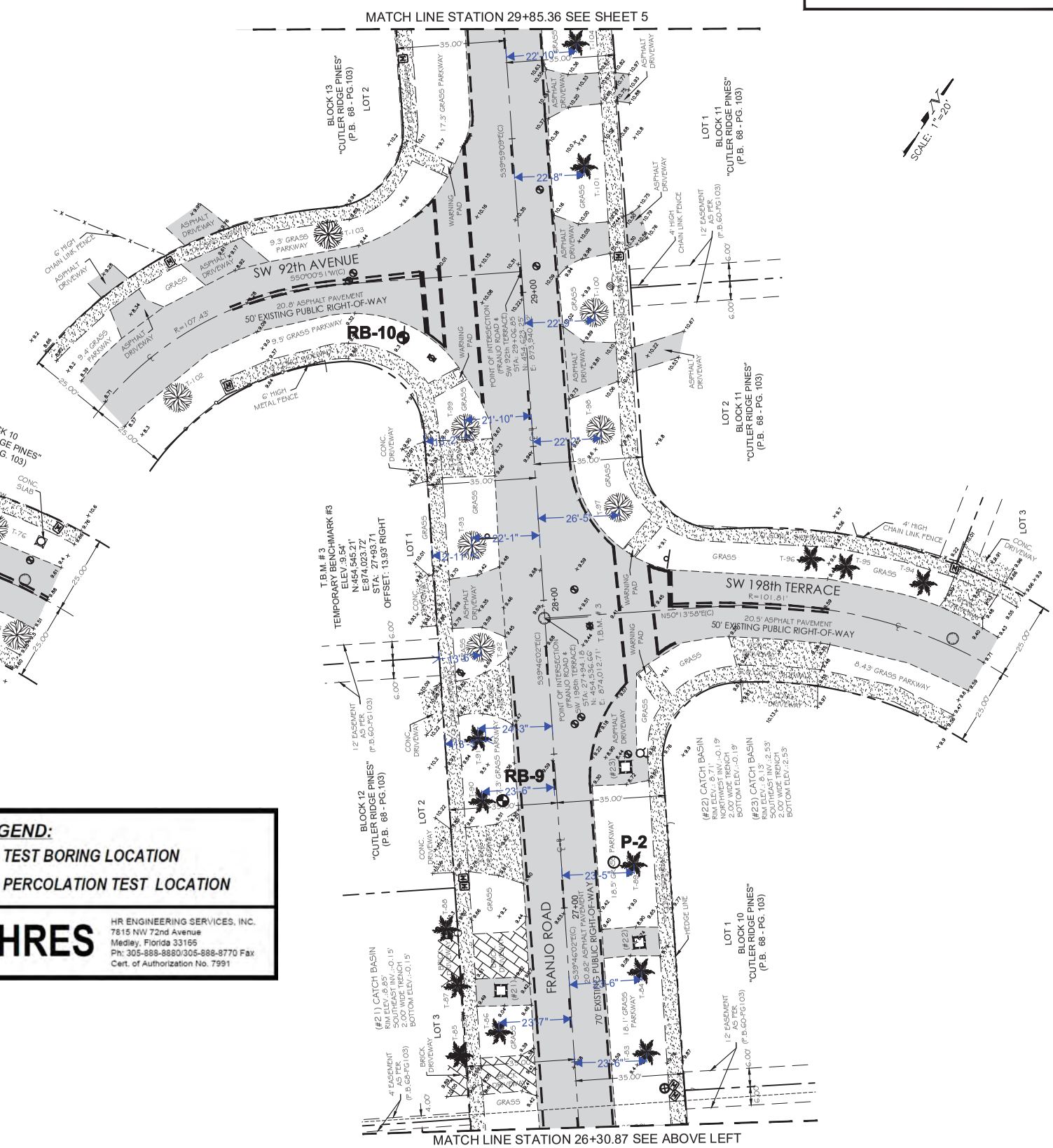

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PROJECT NO.

SHEET 5 OF 15

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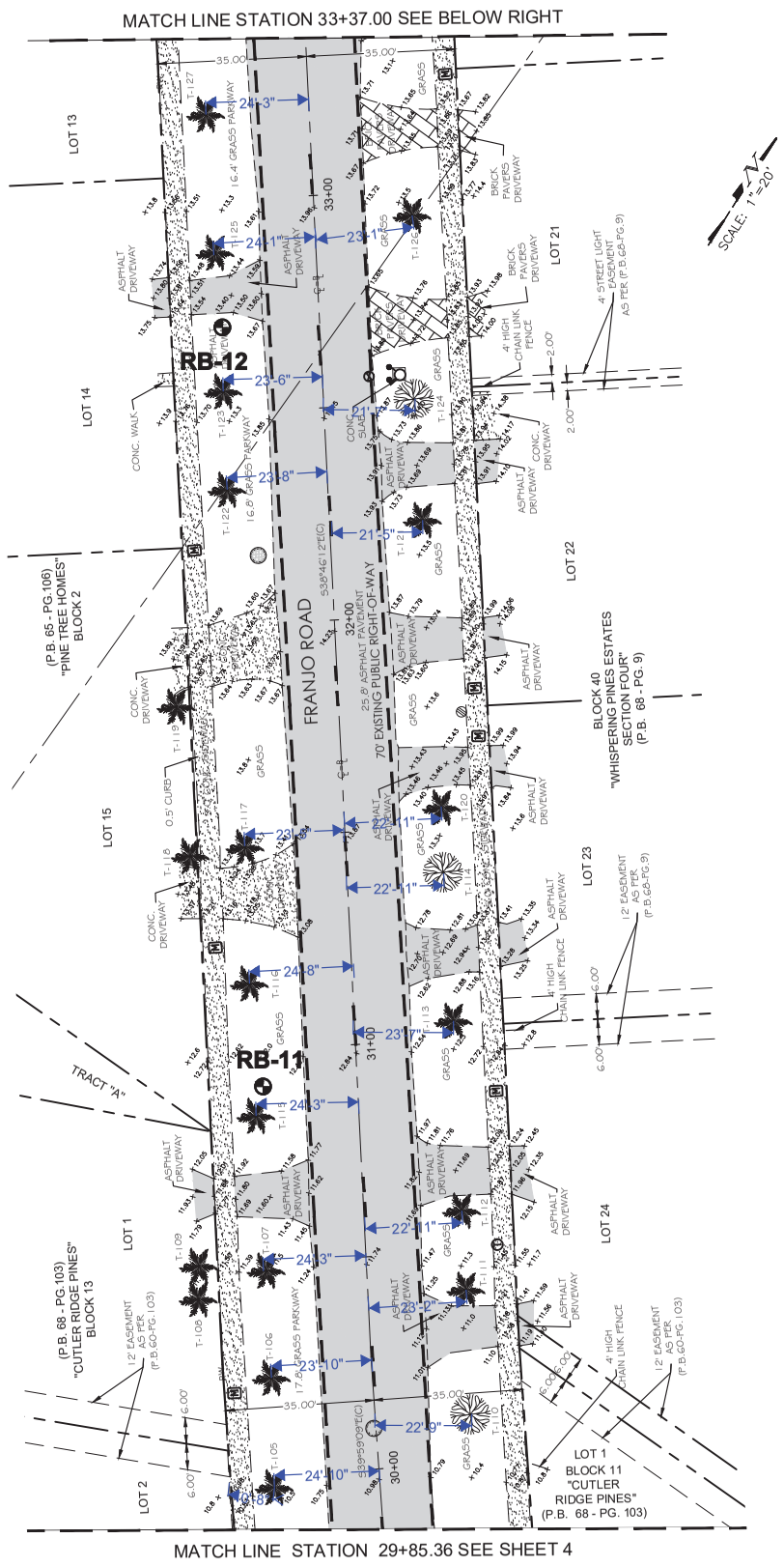

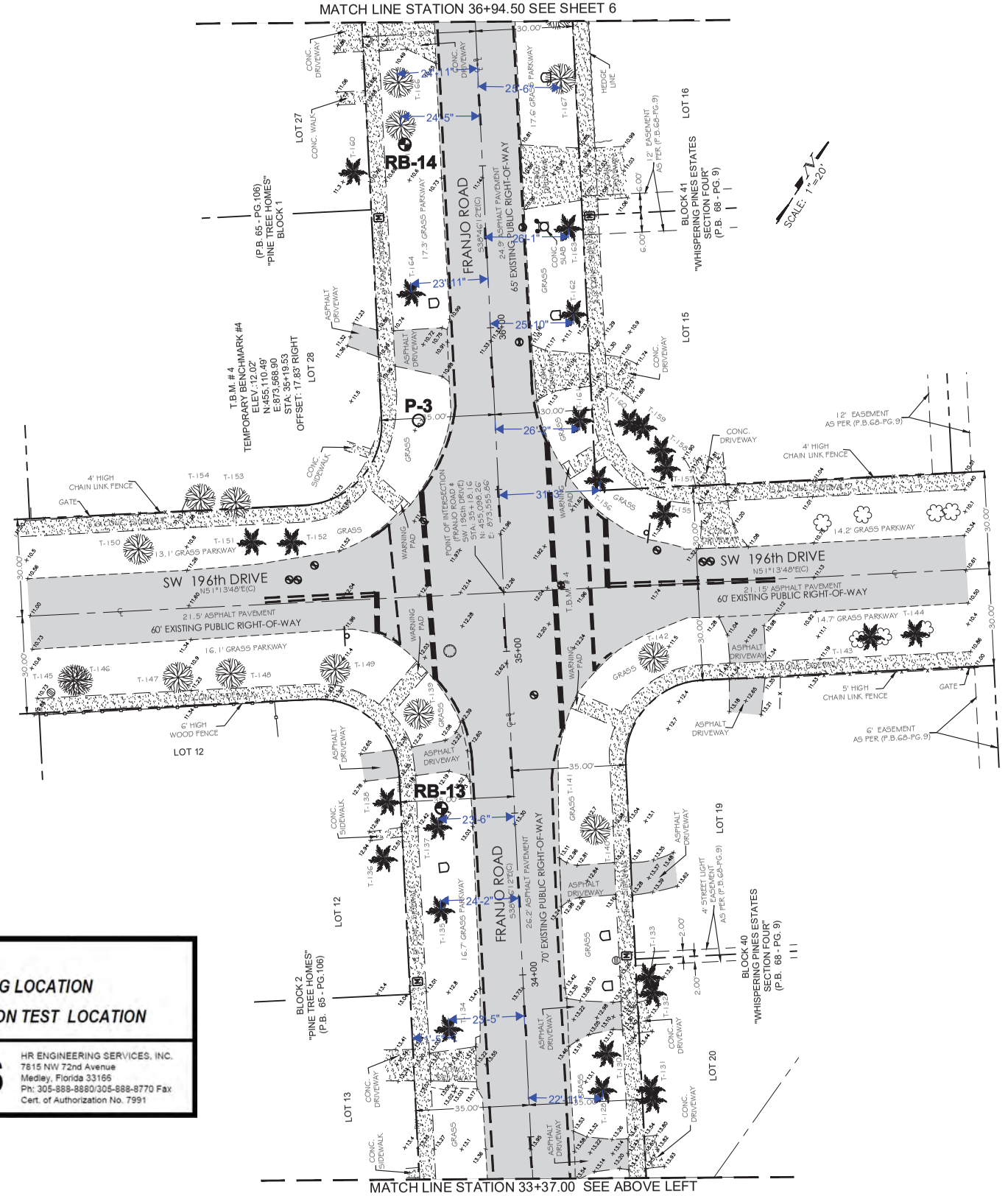

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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

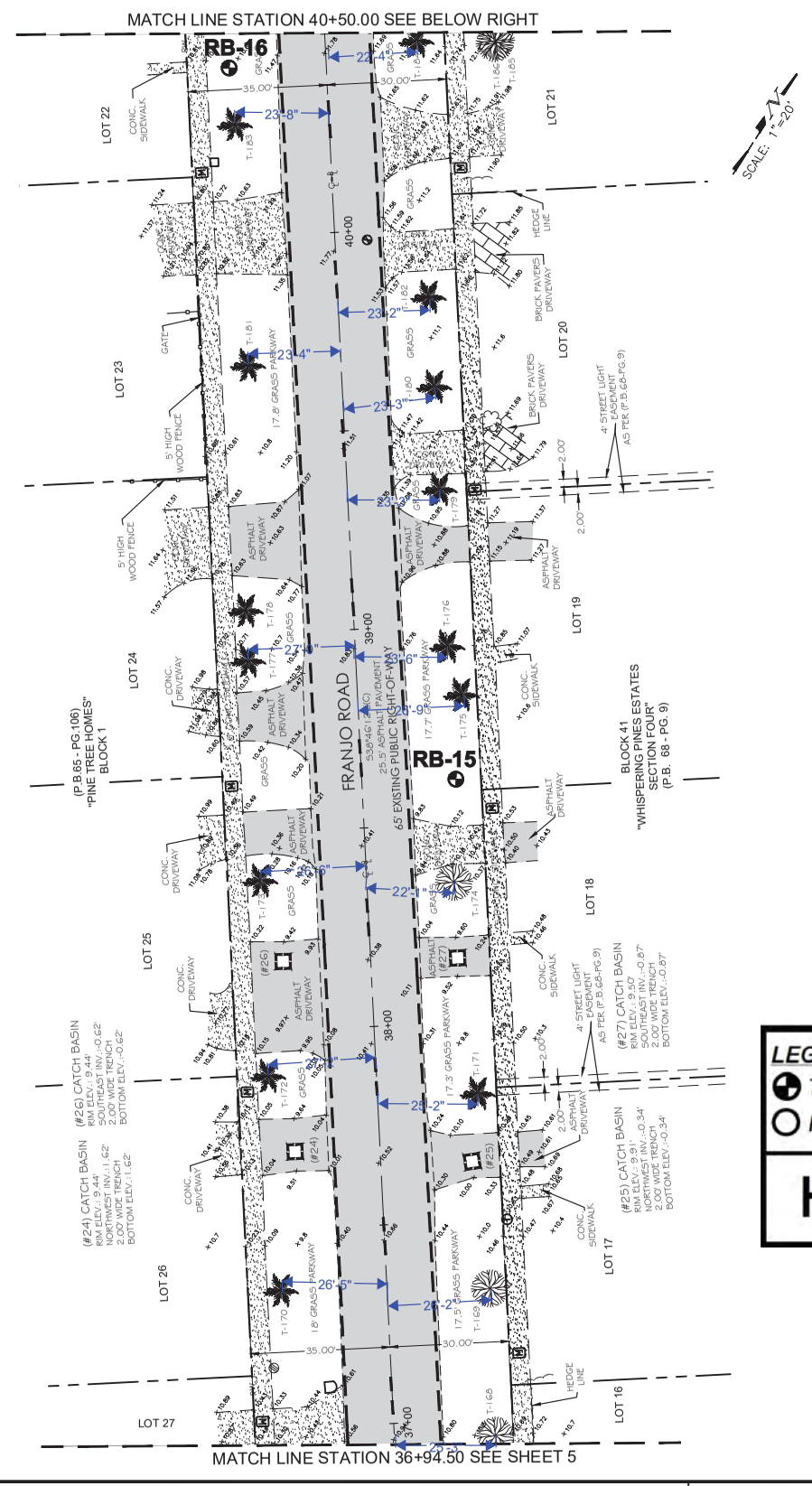
LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

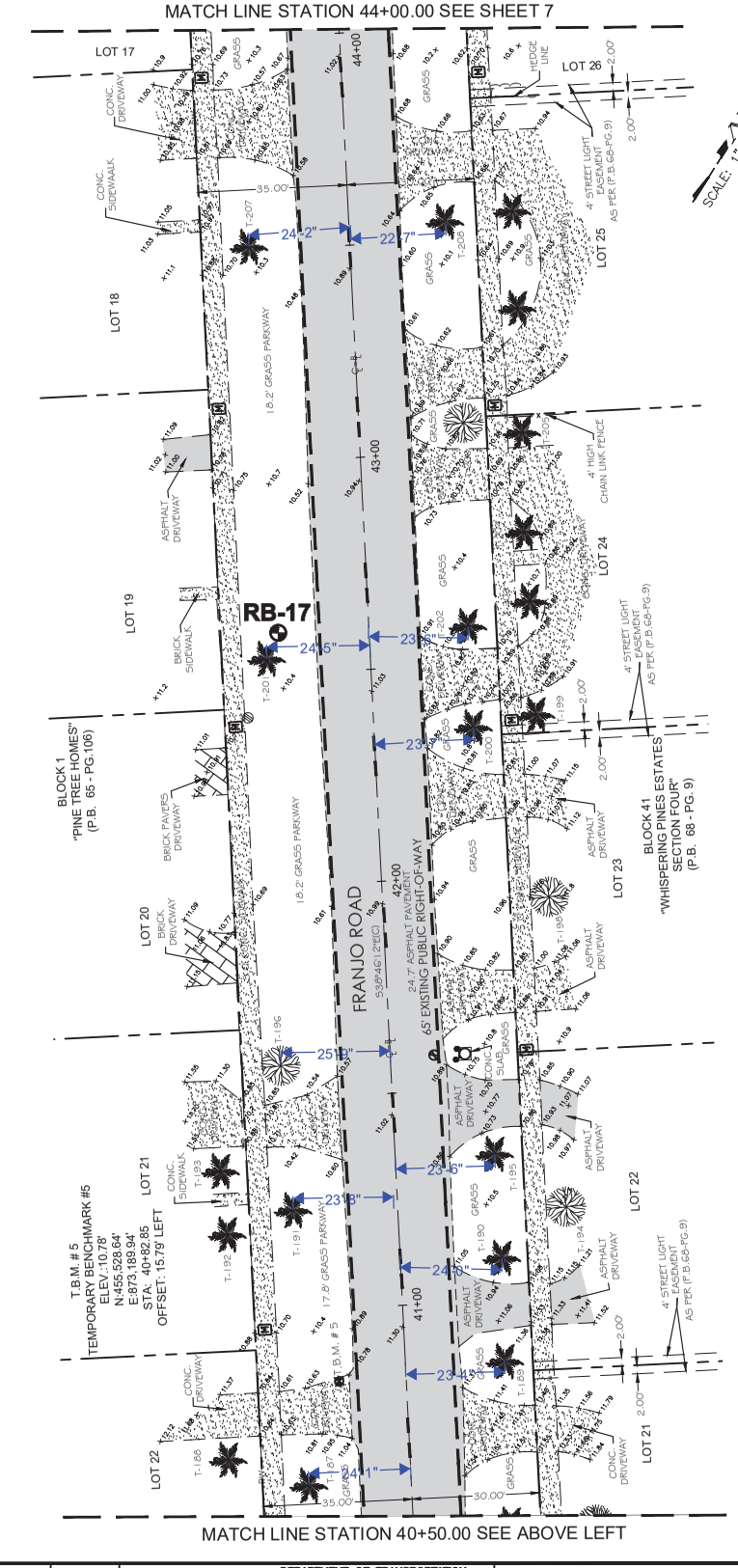
LEGEND AND ABBREVIATIONS:

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 6 OF 15

ELEV = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(P.C.) = PAGE
(P.B.)= PLAT BOOK
(M) = MEASURED
(P) = By PLAT
F. / F/ = FOUND
CND = CONCRETE NAIL & DISK
PKF = PK NAIL FOUND
CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
V/G = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
PLS = PROFESSIONAL LAND SURVEYOR
= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
= METAL TRAFFIC LIGHT POLE
= METAL POWER POLE
= CONCRETE LIGHT POLE
= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
= PROPERTY LINE
SEC. = SECTION
= MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
(PI) = POINT OF INTERSECTION
(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
= F.P.L. OVERHEAD
= F.P.L. UNDERGROUND
= WATER LINE MAIN
= GAS MAIN
= FORCE MAIN
= CABLE TV
= BELL SOUTH TELEPHONE CONDUI
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGROUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE





LEGEND:
TEST BORING LOCATION
PERCOLATION TEST LOCATION

HRES
HR ENGINEERING SERVICES, INC.
7615 NW 72nd Avenue
Medley, Florida 33166
Ph: 305-889-8880/305-888-8770 Fax
Cert. of Authorization No. 7991

REVISIONS

DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 7 OF 15

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= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
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= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
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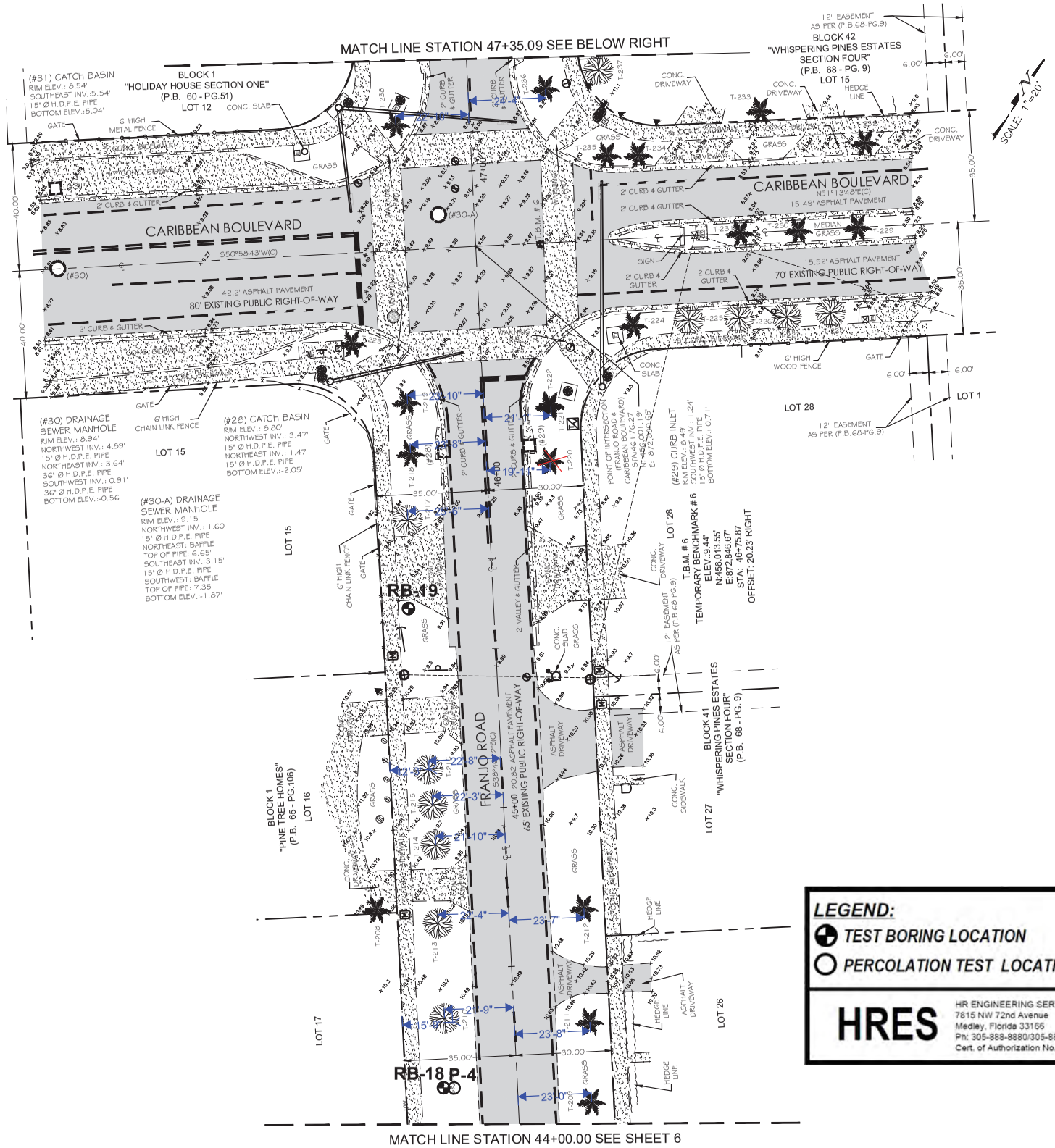
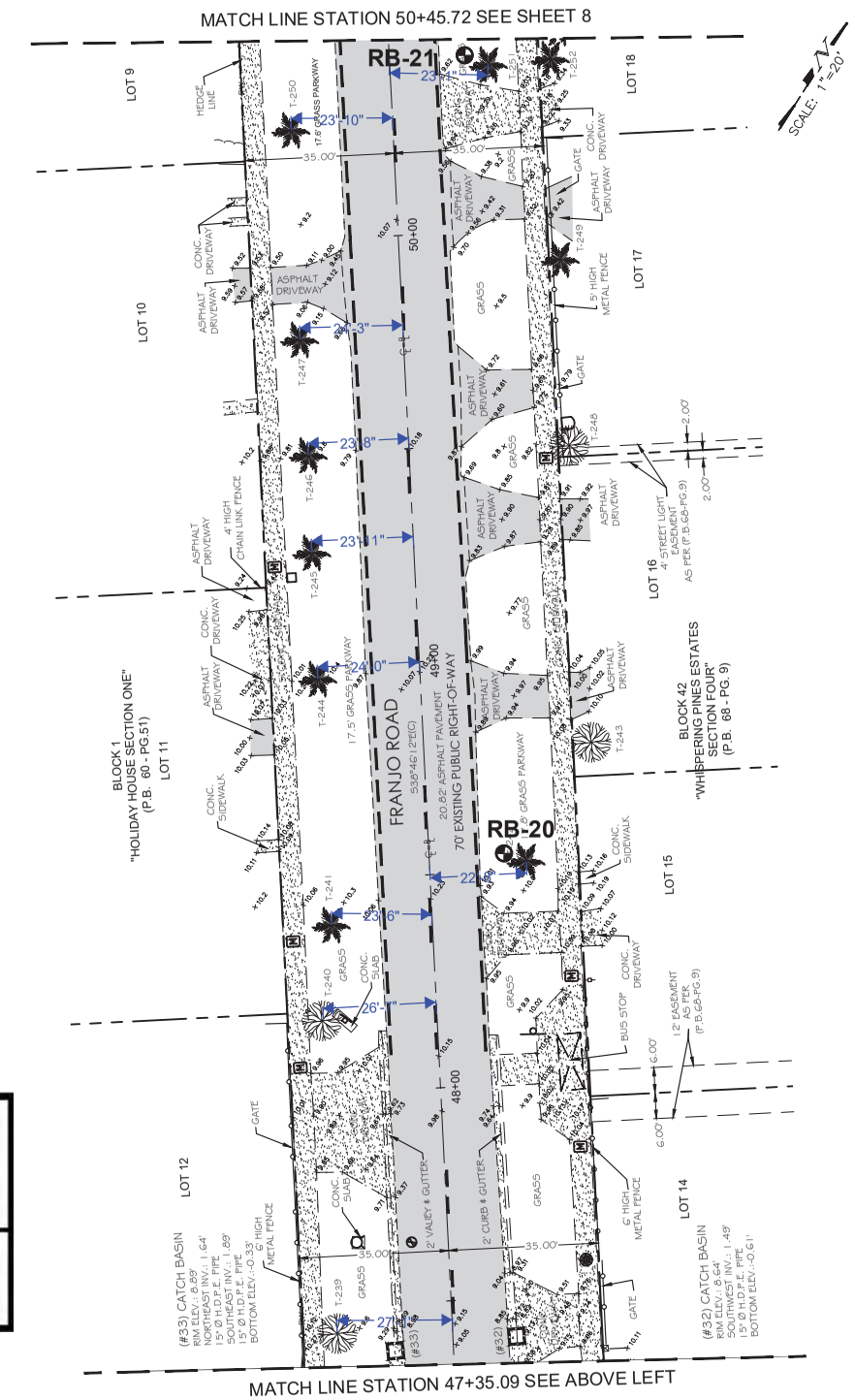


MATCH LINE STATION 44+00.00 SEE SHEET 6



MATCH LINE STATION 47+35.09 SEE ABOVE LEFT

LEGEND:

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HRES

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MIAMI-DADE COUNTY

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ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. | SHEET 8 OF 15

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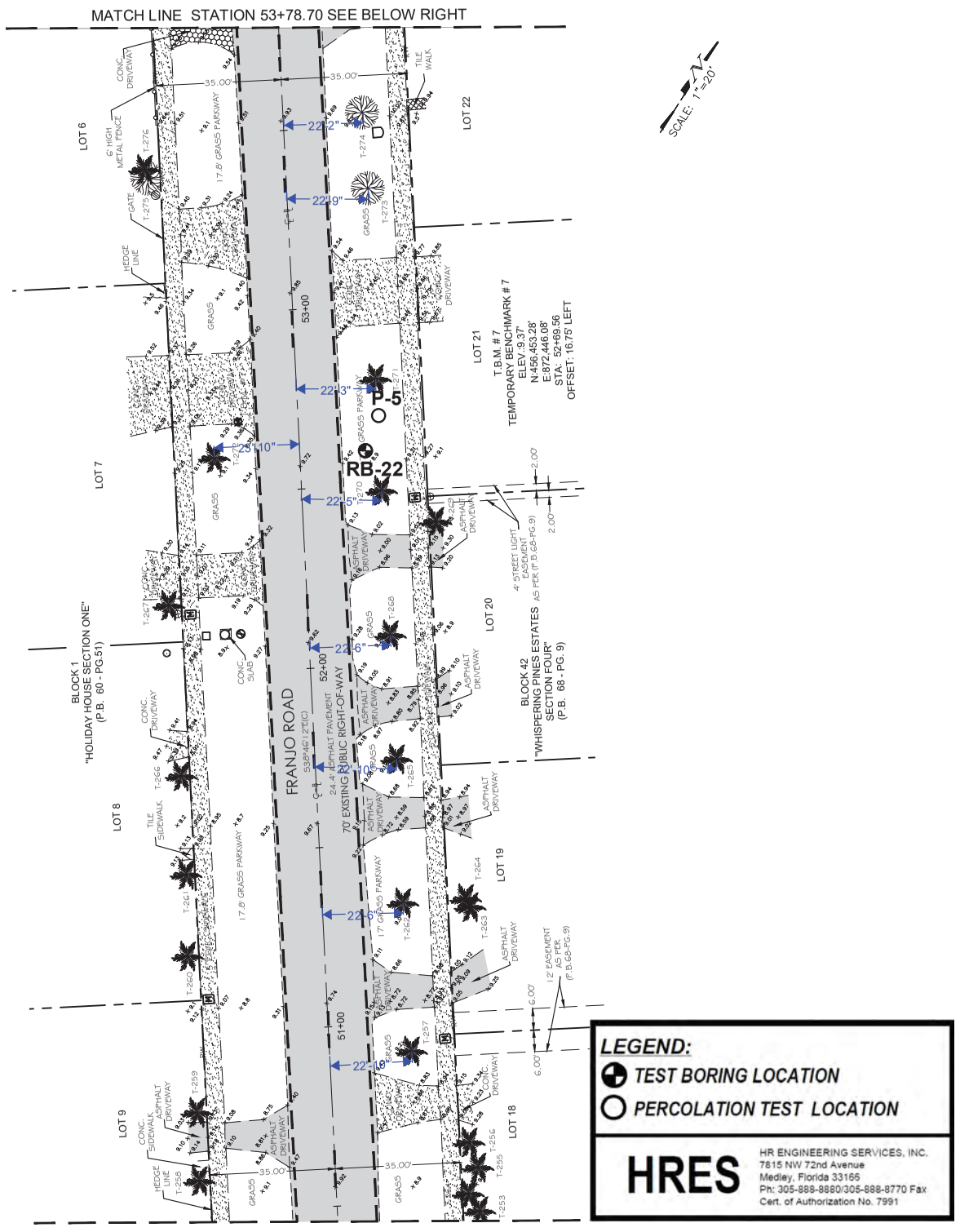
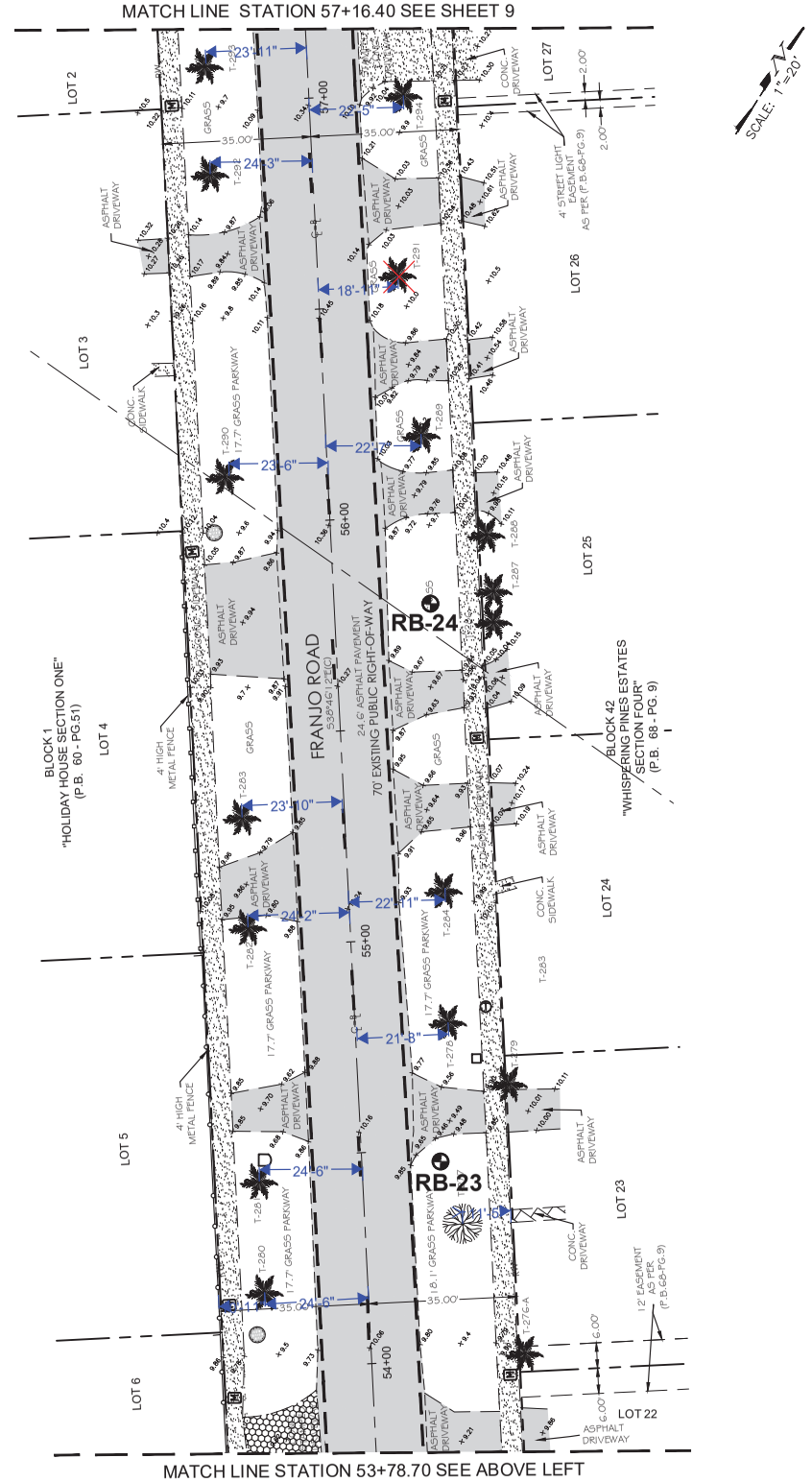
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
DIP = DUCTILE IRON PIPE
= PALM
= TREE
= ORNAMENTAL TREE





LEGEND:
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TOPOGRAPHIC SURVEY

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DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. SHEET 9 OF 15

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= EXISTING SIDEWALK
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U.G.T = F.P.L. UNDERGROUND
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CATV = CABLE TV
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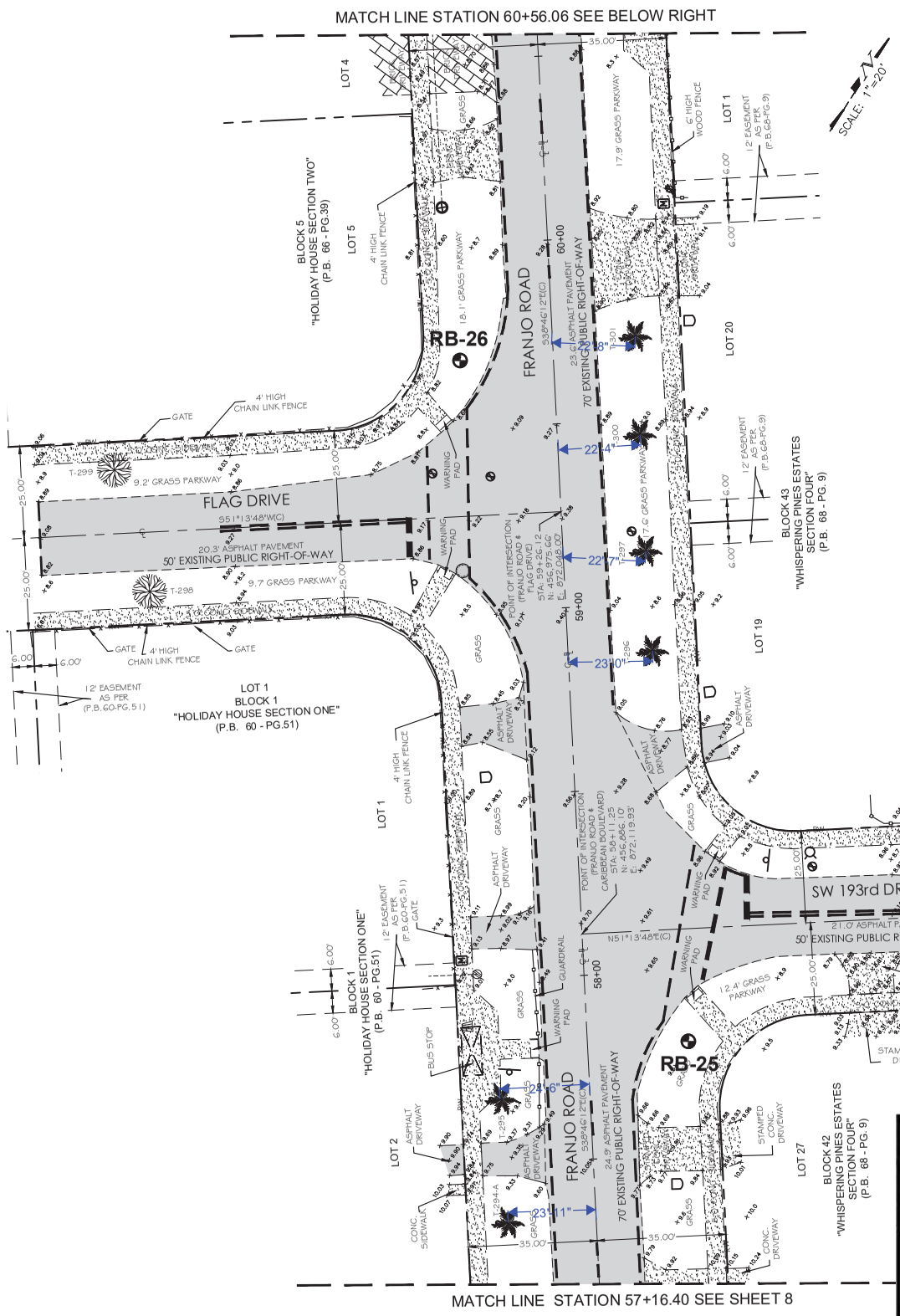

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LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

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PROJECT NO.

SHEET 10 OF 15

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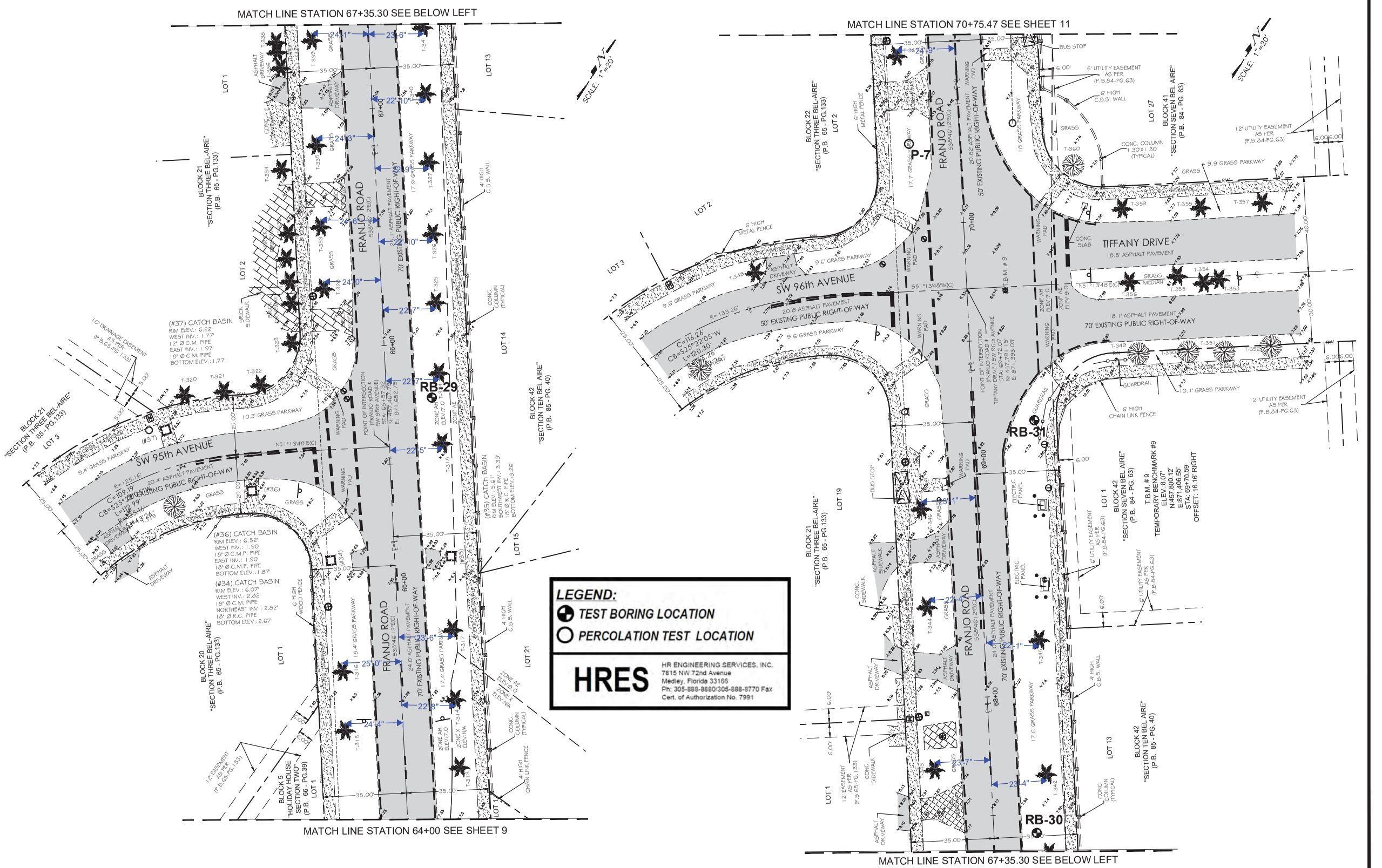
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
= PROPERTY LINE
SEC. = SECTION
= MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(Δ) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
(PI) = POINT OF INTERSECTION
(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
F.P.L. = F.P.L. OVERHEAD
U.G.T. = F.P.L. UNDERGROUND
= WATER LINE MAIN
= GAS MAIN
= FORCE MAIN
= CABLE TV
= BELL SOUTH TELEPHONE CONDUIT
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGROUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
D.I.P. = DUCTILE IRON PIPE
= PALM
= TREE
= ORNAMENTAL TREE



REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

ITB #23-10
Franjo Road Roadway Improvements Project
Page 553 of 608

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. SHEET 11 OF 15

LEGEND AND ABBREVIATIONS:

ELEV = ELEVATION
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CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
C&G = CURB & GUTTER
VG = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
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= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
= METAL TRAFFIC LIGHT POLE
= METAL POWER POLE
= CONCRETE LIGHT POLE
= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
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= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
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= TRASH
= ROCK
= BENCH
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DIP = DUCTILE IRON PIPE
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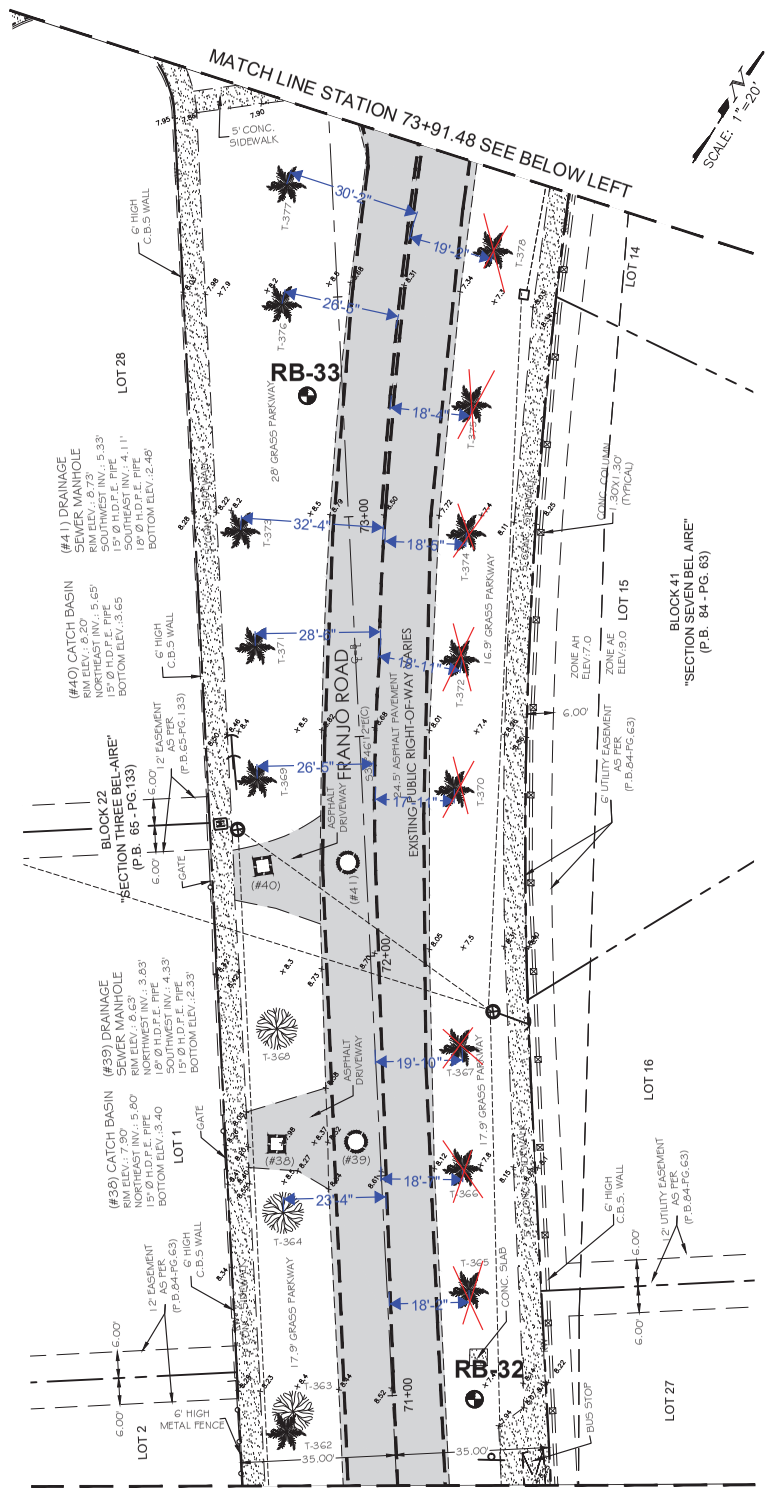

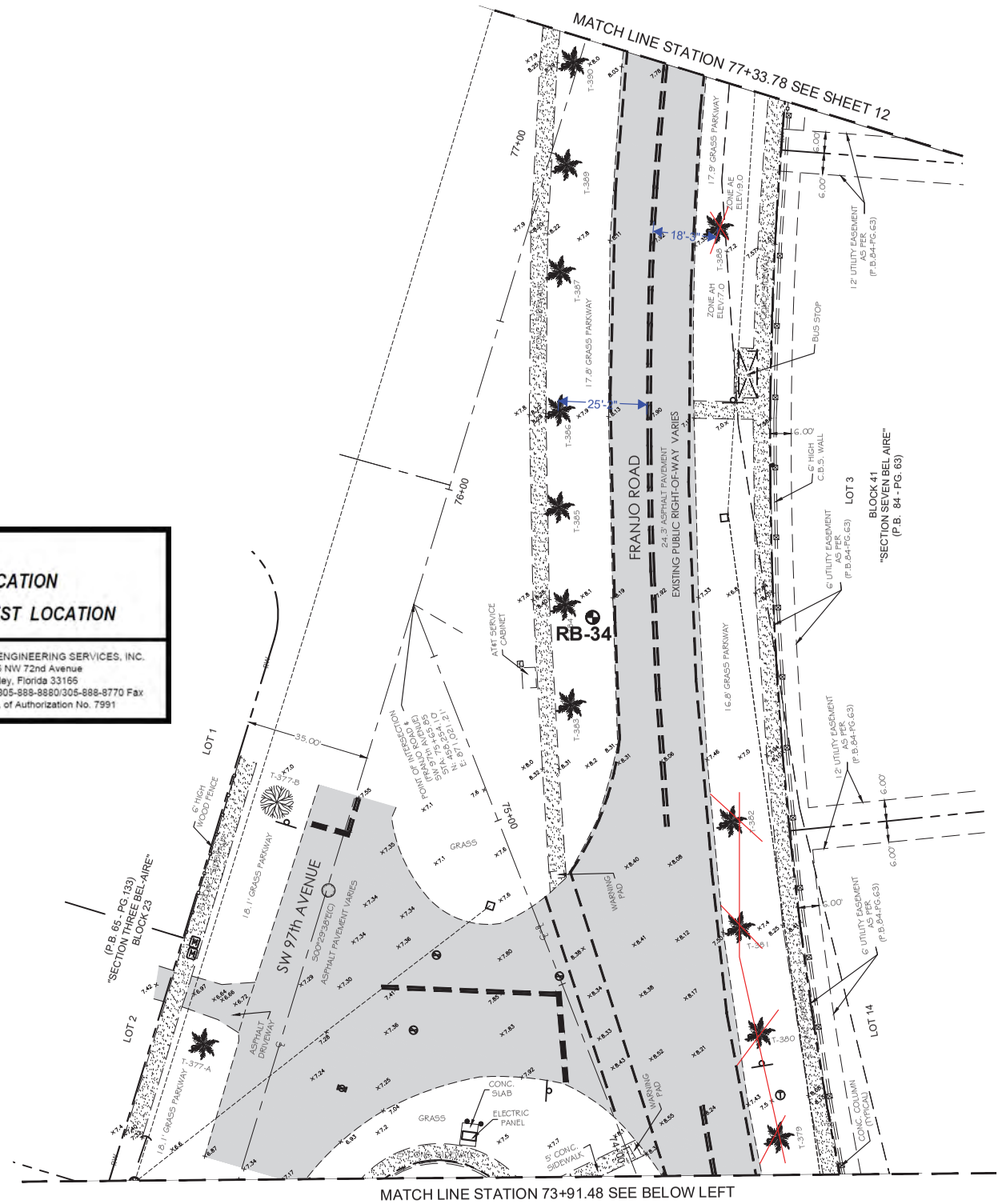

LEGEND:

- TEST BORING LOCATION
- PERCOLATION TEST LOCATION

HRES
HR ENGINEERING SERVICES, INC.
7815 NW 72nd Avenue
Medley, Florida 33166
Ph: 305-888-8880/305-888-8770 Fax
Cert. of Authorization No. 7991

REVISIONS						
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TOPOGRAPHIC SURVEY

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MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO.

SHEET 12 OF 15

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= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
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= GUY WIRE
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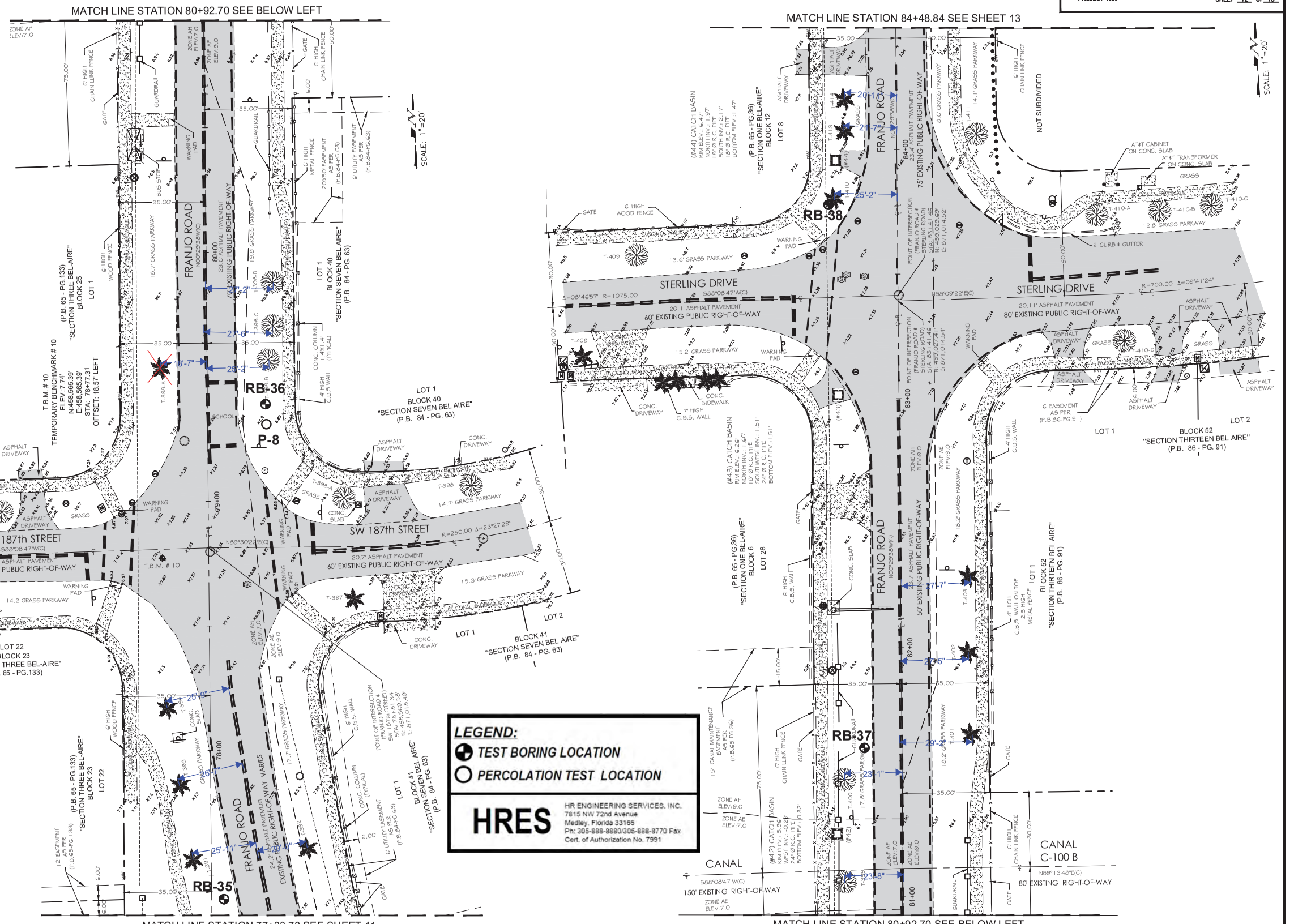

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	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	DH-GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD
PROJECT NO. SHEET 13 OF 15

LEGEND AND ABBREVIATIONS:

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= STREET SIGN
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= MAILBOX
= DECORATIVE LIGHT POLE
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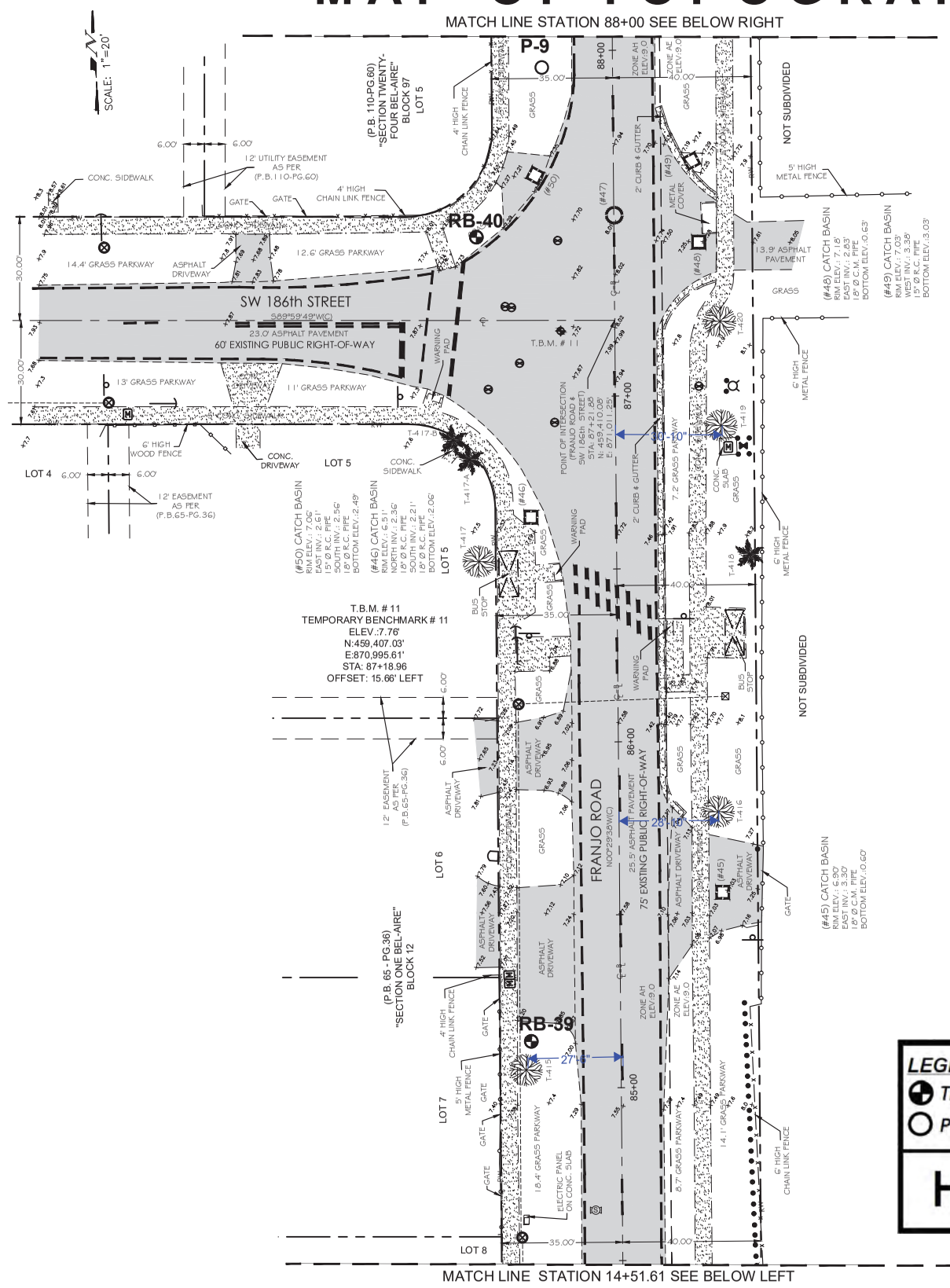

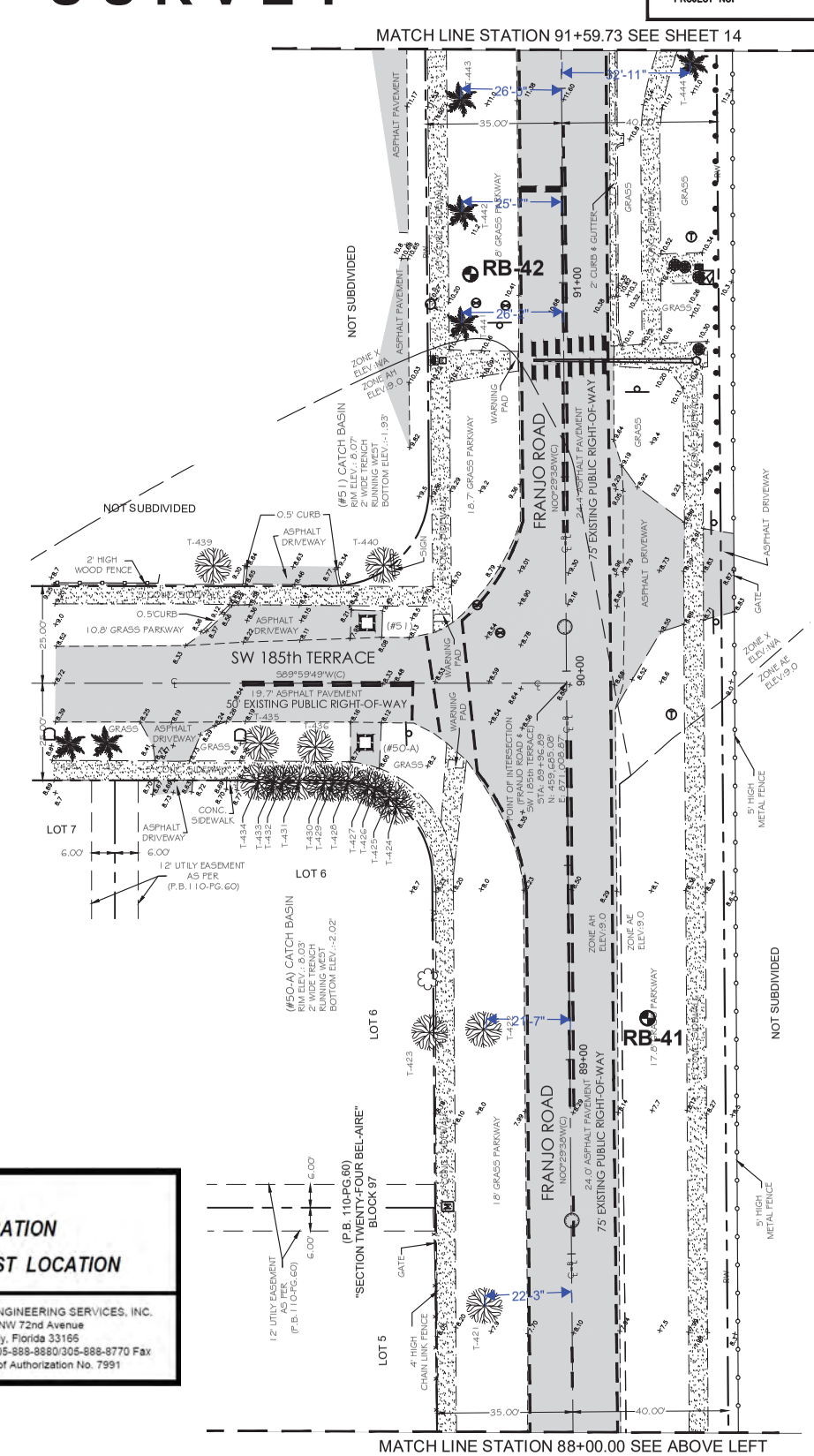

LEGEND:
TEST BORING LOCATION
PERCOLATION TEST LOCATION

HRES
HR ENGINEERING SERVICES, INC.
7815 NW 72nd Avenue
Medley, Florida 33166
PH: 305-888-8880/305-888-8770 Fax
Cert. of Authorization No. 7991

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MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

MAP OF TOPOGRAPHIC SURVEY

FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. | SHEET 14 OF 15

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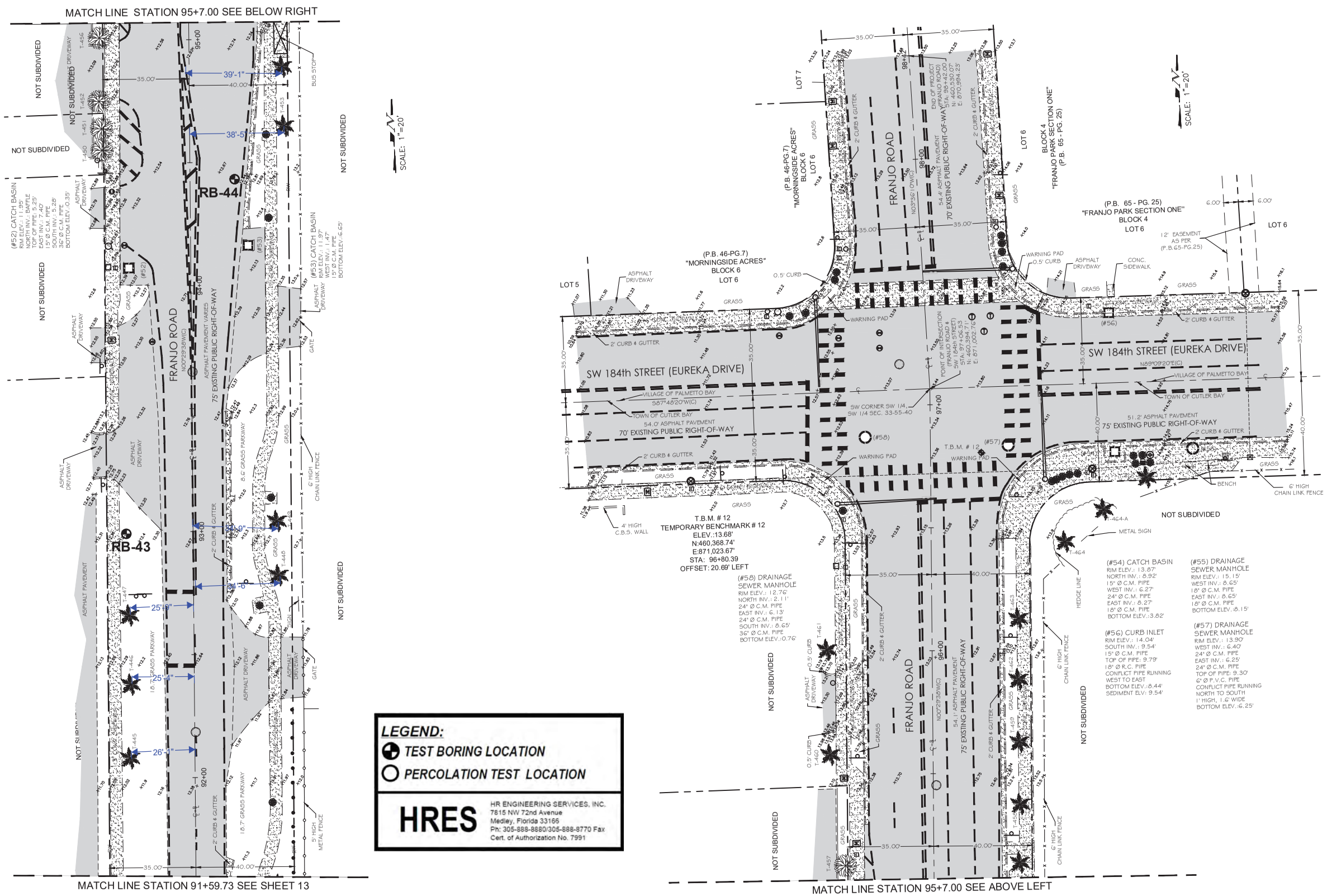

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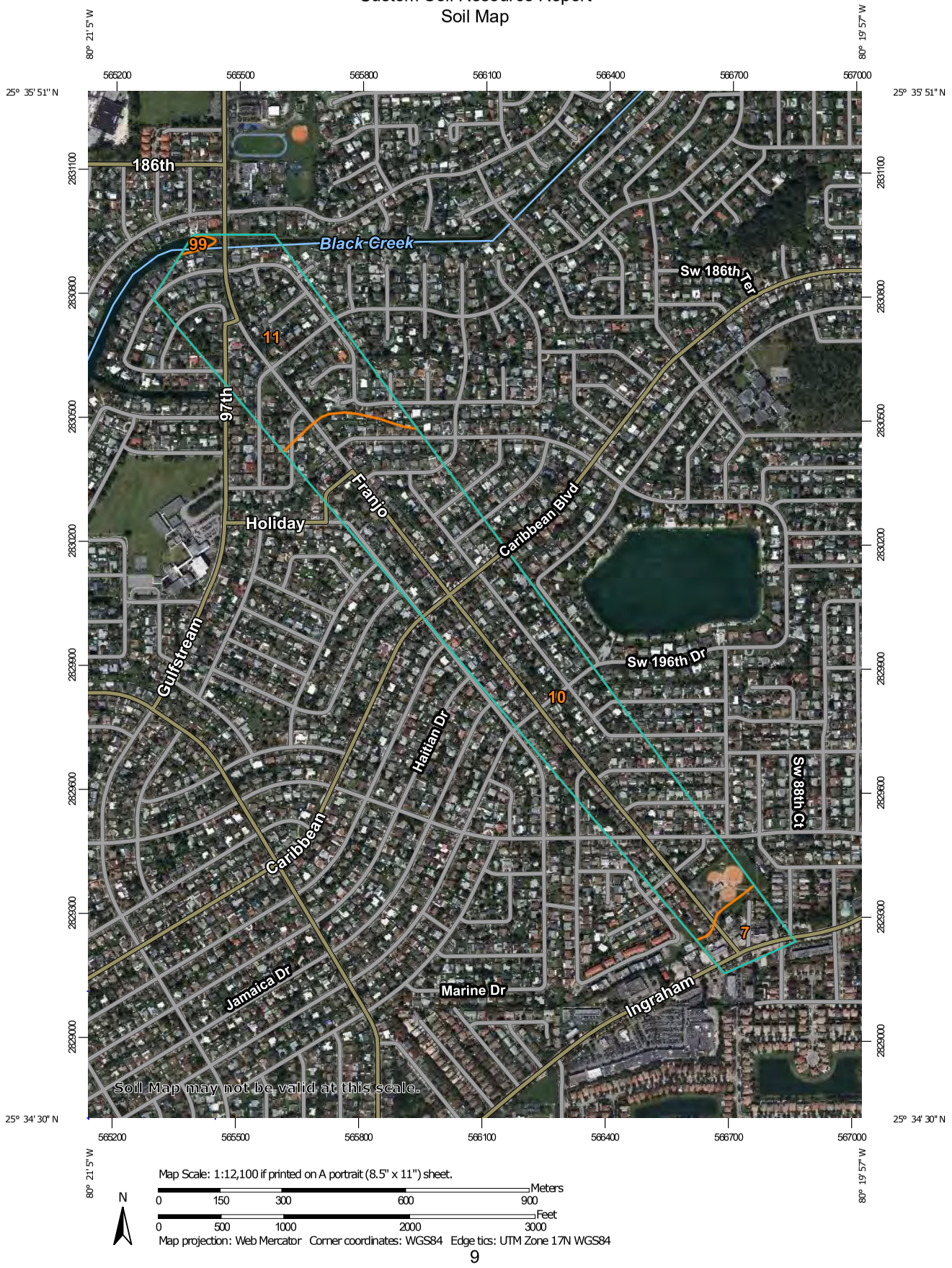
MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

Custom Soil Resource Report
Soil Map



Map Scale: 1:12,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY:	CS 01-21
CHECKED BY:	HRR 01-21
DESIGNED BY:	CS 01-21
CHECKED BY:	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

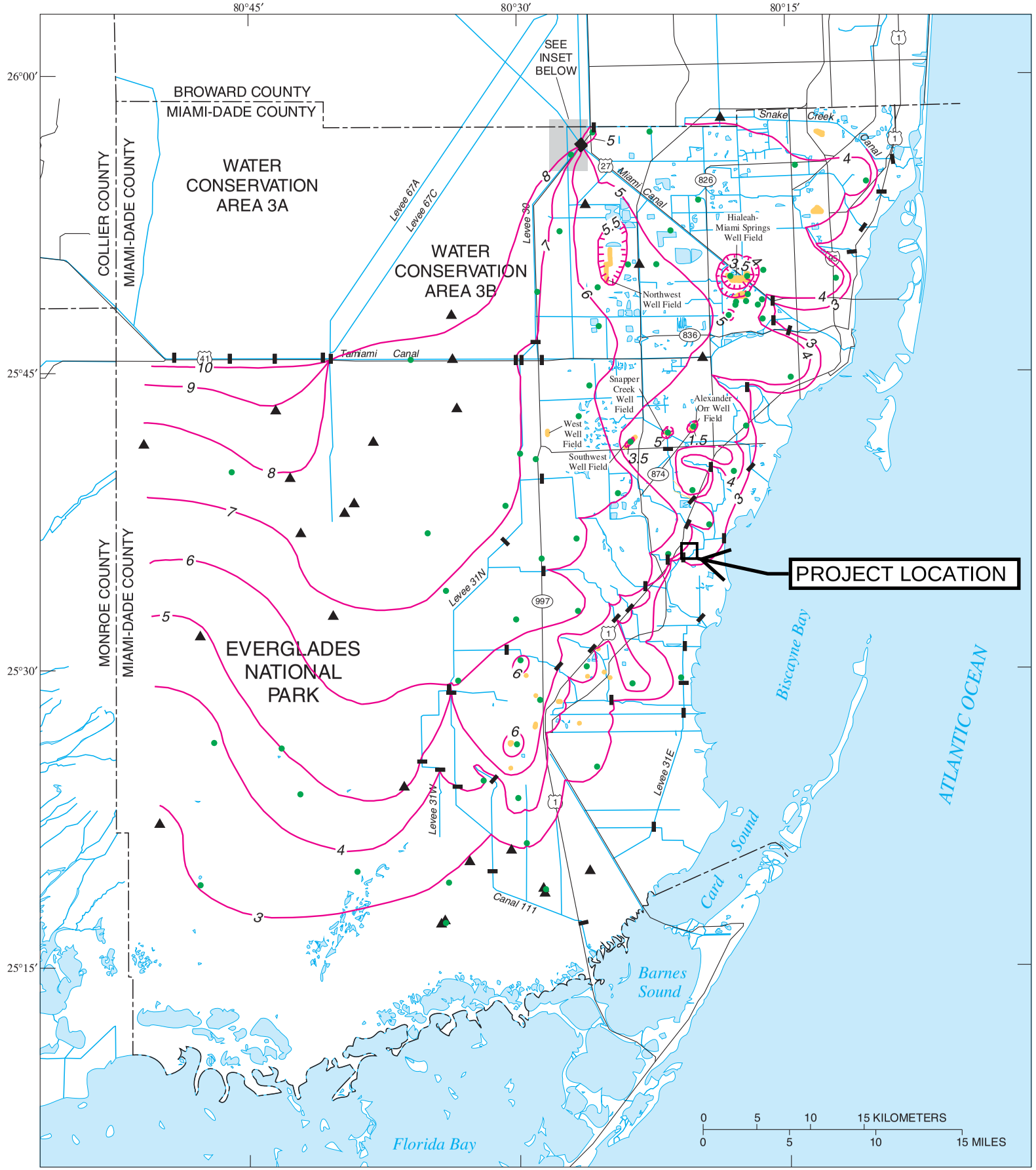
SHEET TITLE: MIAMI DADE COUNTY AREA SOIL SURVEY MAP

REF. DWG. NO.

PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



AVERAGE YEARLY HIGH WATER LEVELS 1990-99

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

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CS 01-21	HRR 01-21	CS 01-21	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

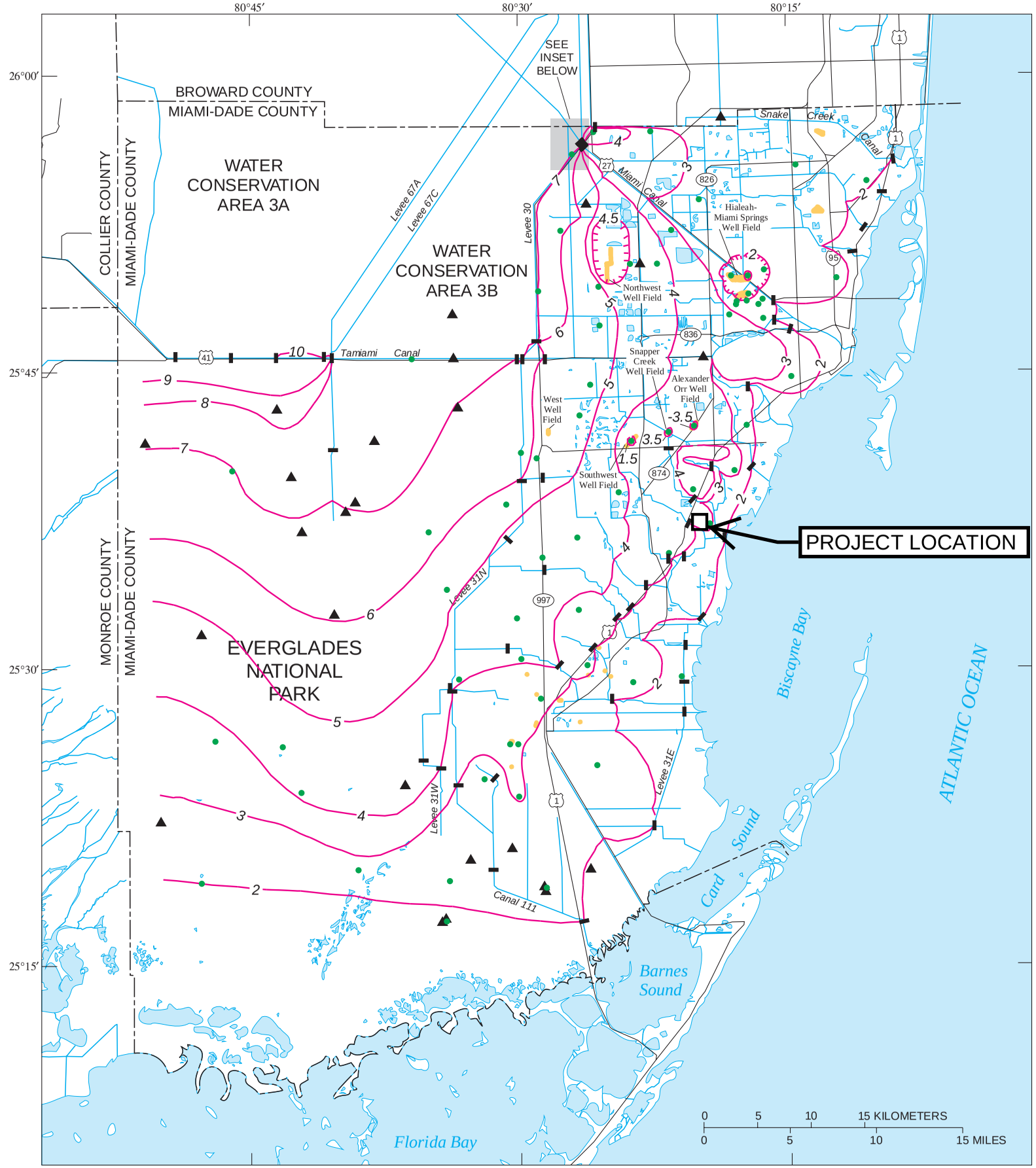
SHEET TITLE: USGS AVERAGE YEARLY HIGH WATER LEVELS (1990-1999)

REF. DWG. NO.

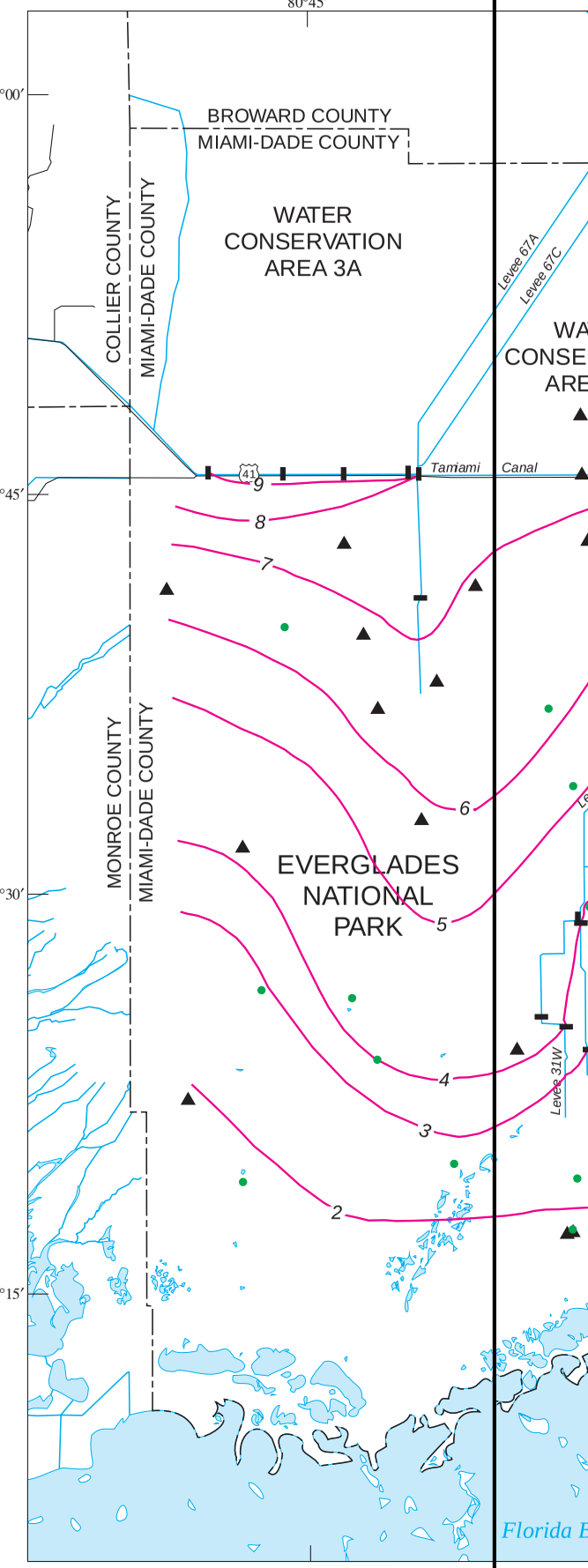
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



AVERAGE OCTOBER WATER LEVELS 1990-99



AVERAGE OCTO

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
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MEDLEY, FLORIDA 33166

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TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: USGS AVERAGE OCTOBER WATER LEVELS (1990-1999)

PROJECT NAME: FRANJO ROAD FROM OLD CUTLER ROAD TO SW 184 STREET

REF. DWG. NO.

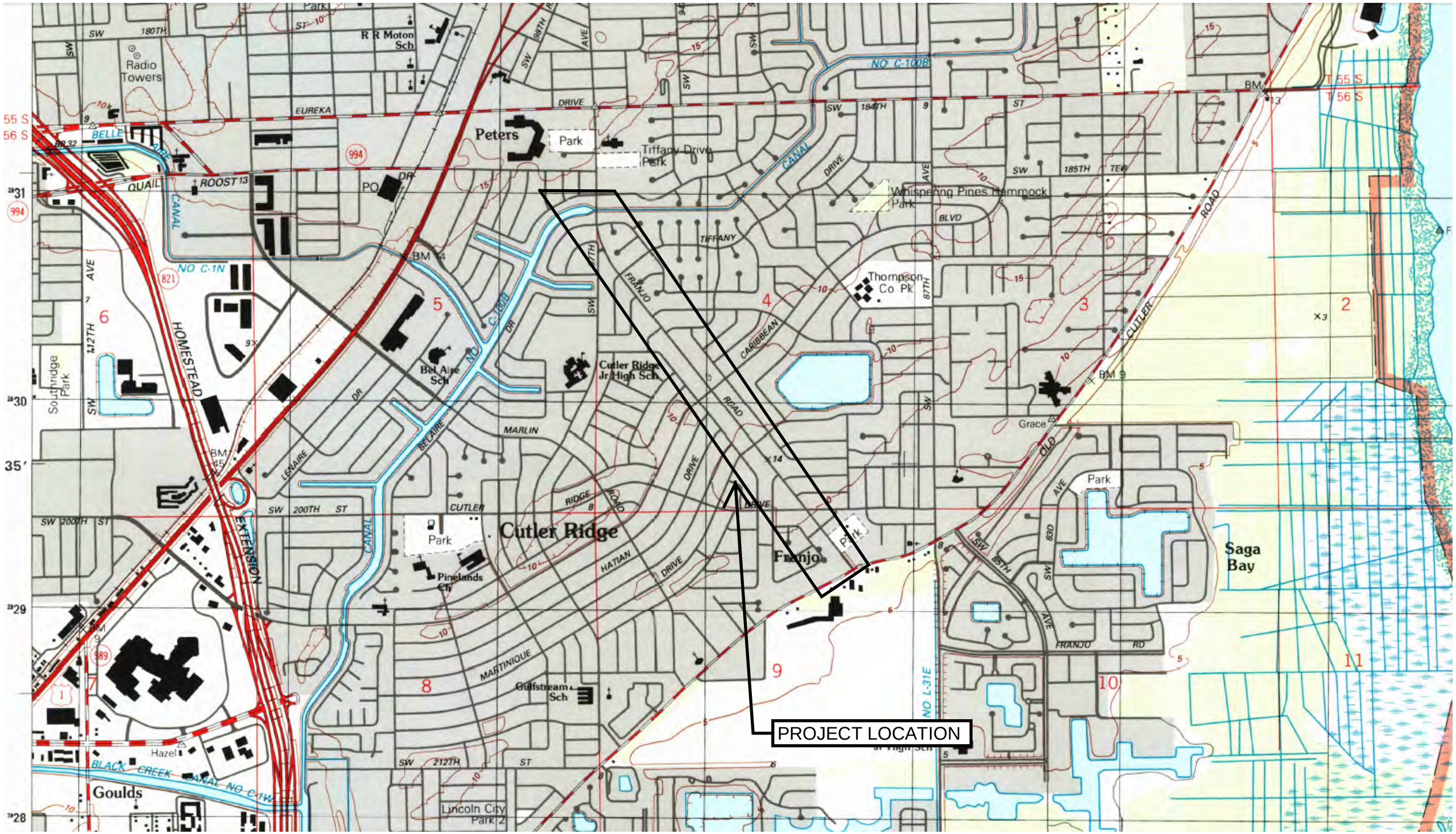
SHEET NO.

WELL FIELD

WATER TABLE CONTOUR--Shows al
table. Hachures indicate depression.
approximately located. Contour inter

Study area

$USERS $FILES $FILES



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
CS 01-21	HRR 01-21	CS 01-21	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: USGS QUADRANGLE ELEVATION MAP

REF. DWG. NO.

PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

SUMMARY OF BORINGS LOCATIONS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184^{IH} STREET
TOWN OF CUTLER BAY
MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF PUBLIC WORKS
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Boring No.	Plane coordinates		Station	Offset ft.
	Latitude	Longitude		
RB-1	25.57913	-80.33584	11+40	18.0 R
RB-2	25.57955	-80.33621	13+30	17.0 R
RB-3	25.57999	-80.33663	15+40	15.0 R
RB-4	25.58028	-80.33689	16+75	15.0 R
P-1	25.58065	-80.33706	18+17	58.0 R
RB-5	25.58080	-80.33736	19+24	16.0 R
RB-6	25.58120	-80.33771	21+10	18.0 R
RB-7	25.58155	-80.33818	23+05	21.0 L
RB-8	25.58202	-80.33860	25+22	18.0 L
P-2	25.58248	-80.33888	27+15	18.0 L
RB-9	25.58246	-80.33900	27+35	18.0 L
RB-10	25.58276	-80.33935	28+88	43.0 L
RB-11	25.58321	-80.33970	30+90	22.0 L
RB-12	25.58361	-80.34004	32+70	22.0 L
RB-13	25.58400	-80.34038	34+53	22.0 L
P-3	25.58425	-80.34061	35+71	23.0 L
RB-14	25.58443	-80.34077	36+56	24.0 L
RB-15	25.58495	-80.34104	38+62	23.0 R
RB-16	25.58527	-80.34150	40+42	24.0 L
RB-17	25.58573	-80.34191	42+59	23.0 L
RB-18	25.58606	-80.34220	44+13	26.0 L
P-4	25.58607	-80.34221	44+16	26.0 L
RB-19	25.58638	-80.34248	45+61	26.0 L
RB-20	25.58708	-80.34293	48+54	18.0 R
RB-21	25.58748	-80.34329	50+41	17.0 R
RB-22	25.58795	-80.34369	52+58	18.0 R
P-5	25.58797	-80.34371	52+68	18.0 R
RB-23	25.58836	-80.34405	54+59	19.0 R

SUMMARY OF BORINGS LOCATIONS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184^{IH} STREET
TOWN OF CUTLER BAY
MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF PUBLIC WORKS
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Boring No.	Plane coordinates		Station	Offset ft.
	Latitude	Longitude		
RB-24	25.58865	-80.34430	55+79	23.0 R
RB-25	25.58909	-80.34466	57+80	28.0 R
RB-26	25.58940	-80.34514	59+68	25.0 L
P-6	25.58998	-80.34531	61+65	64.0 R
RB-27	25.58996	-80.34560	62+21	18.0 L
RB-28	25.59031	-80.34589	63+78	17.0 L
RB-29	25.59079	-80.34619	65+77	19.0 R
RB-30	25.59115	-80.34651	67+42	19.0 R
RB-31	25.59154	-80.34682	69+14	24.0 R
P-7	25.59171	-80.34715	70+34	23.0 L
RB-32	25.59191	-80.34717	70+99	18.0 R
RB-33	25.59236	-80.34766	73+27	8.0 L
RB-34	25.59292	-80.34795	75+80	50.0 R
RB-35	25.59337	-80.34808	77+40	4.0 R
P-8	25.59390	-80.34804	79+30	23.0 R
RB-36	25.59392	-80.34804	79+38	23.0 R
RB-37	25.59453	-80.34815	81+59	15.0 L
RB-38	25.59591	-80.34819	83+77	28.0 L
RB-39	25.59556	-80.34818	85+12	26.0 L
RB-40	25.59616	-80.34822	87+45	38.0 L
P-9	25.59627	-80.34817	87+95	20.0 L
RB-41	25.59659	-80.34805	89+10	20.0 R
RB-42	25.59712	-80.34818	91+02	23.0 L
RB-43	25.59766	-80.34820	93+00	25.0 L
RB-44	25.59805	-80.34807	94+42	19.0 R

Notes:

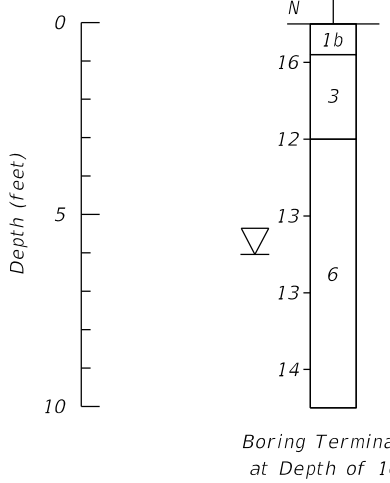
Plane coordinates were taken using a hand-held GPS and are approximate within 10 feet.

SUMMARY OF PERCOLATION TEST RESULTS
USUAL-OPEN HOLE PERCOLATION RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY, DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT NO. HR19-1573R
JANUARY 29, 2021

TEST No.	TEST DATE	LATITUDE	LONGITUDE	DEPTH TO WATER BEFORE TEST, H ft.	DEPTH TO WATER DURING TEST, ft.	HEAD, Du ft.	HOLE DEPTH, ft.	HOLE DIAMETER, d inches	RATE OF FLOW, P		k, HYDRAULIC CONDUCTIVITY cfs/ft^2-ft. Head
									gpm	cfs	
P-1	12/01/20	25.58065	-80.33706	5.8	0.0	5.8	15.0	6.0	35.0	0.07799	**7.1E-04**
P-2	12/01/20	25.58248	-80.33888	7.5	0.0	7.5	15.0	6.0	33.2	0.07398	**5.6E-04**
P-3	12/01/20	25.58425	-80.34061	9.2	0.0	9.2	15.0	6.0	2.0	0.00446	**3.0E-05**
P-4	12/02/20	25.58607	-80.34219	10.8	0.0	10.8	15.0	6.0	1.0	0.00223	**1.4E-05**
P-5	12/02/20	25.58797	-80.34371	7.5	0.0	7.5	15.0	6.0	1.0	0.00223	**1.7E-05**
P-6	12/02/20	25.58998	-80.34531	5.7	0.0	5.7	15.0	6.0	34.0	0.07576	**7.0E-04**
P-7	12/02/20	25.59171	-80.34715	6.2	0.0	6.2	15.0	6.0	19.3	0.04300	**3.7E-04**
P-8	12/03/20	25.59390	-80.34804	4.8	0.0	4.8	15.0	6.0	34.9	0.07776	**8.2E-04**
P-9	12/03/20	25.59627	-80.34817	5.8	0.0	5.8	15.0	6.0	20.0	0.04456	**4.0E-04**

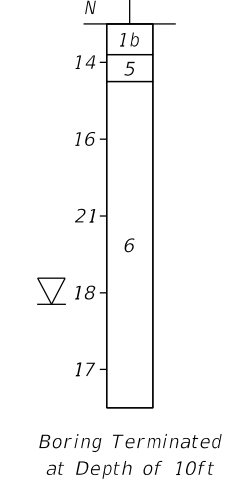
for 0 to 15 ft., $K_{15} = P / 3.1416 * d * Du \{ Du/2 + Ds \}$, where Ds = Hole Depth - H

BOR # RB-1
STA. 11+40
OFF. 18.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57913
LONGITUDE -80.33584



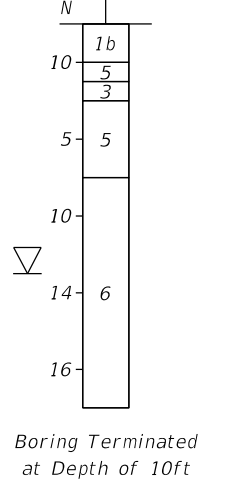
Boring Terminated at Depth of 10ft

BOR # RB-2
STA. 13+30
OFF. 17.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57955
LONGITUDE -80.33621



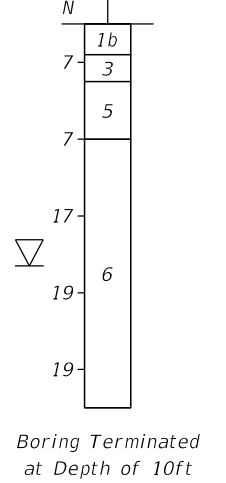
Boring Terminated at Depth of 10ft

BOR # RB-3
STA. 15+40
OFF. 15.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57999
LONGITUDE -80.33663



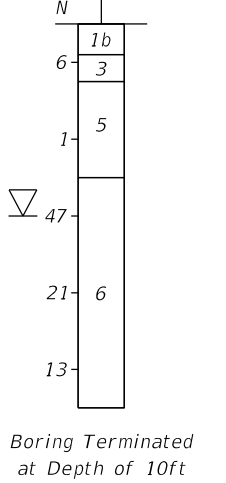
Boring Terminated at Depth of 10ft

BOR # RB-4
STA. 16+75
OFF. 15.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58028
LONGITUDE -80.33689



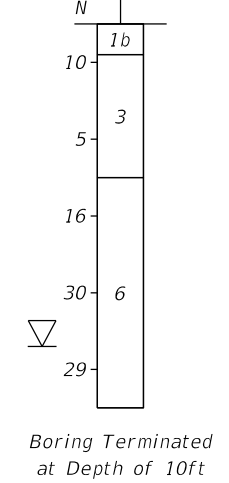
Boring Terminated at Depth of 10ft

BOR # RB-5
STA. 19+24
OFF. 16.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58080
LONGITUDE -80.33736



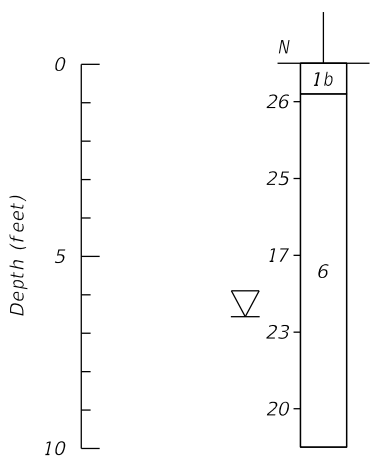
Boring Terminated at Depth of 10ft

BOR # RB-6
STA. 21+10
OFF. 18.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58120
LONGITUDE -80.33771



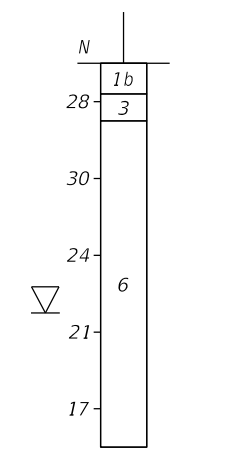
Boring Terminated at Depth of 10ft

BOR # RB-7
STA. 23+05
OFF. 21.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58155
LONGITUDE -80.33818



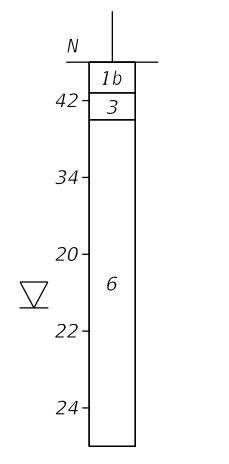
Boring Terminated at Depth of 10ft

BOR # RB-8
STA. 25+22
OFF. 18.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58202
LONGITUDE -80.33860



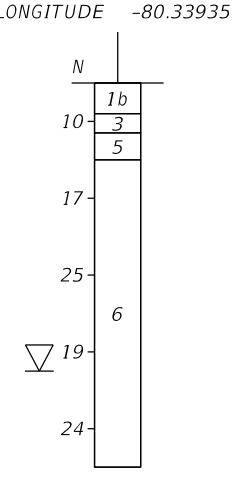
Boring Terminated at Depth of 10ft

BOR # RB-9
STA. 27+35
OFF. 18.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58246
LONGITUDE -80.33900



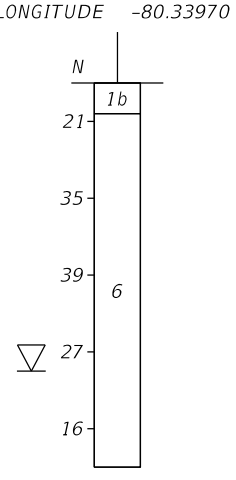
Boring Terminated at Depth of 10ft

BOR # RB-10
STA. 28+88
OFF. 43.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58276
LONGITUDE -80.33935



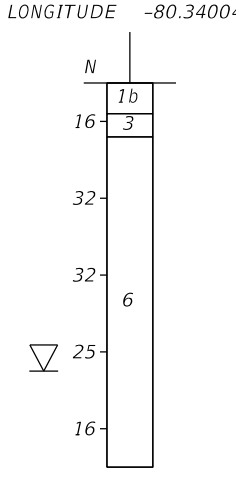
Boring Terminated at Depth of 10ft

BOR # RB-11
STA. 30+90
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58321
LONGITUDE -80.33970



Boring Terminated at Depth of 10ft

BOR # RB-12
STA. 32+70
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58361
LONGITUDE -80.34004



Boring Terminated at Depth of 10ft

LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

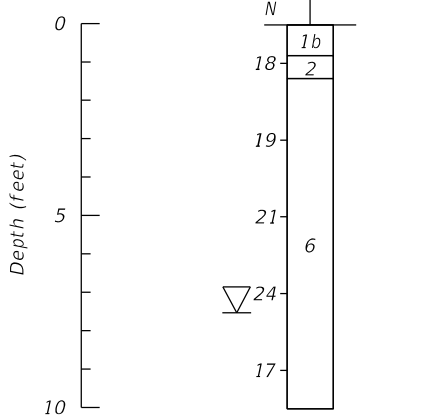
DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

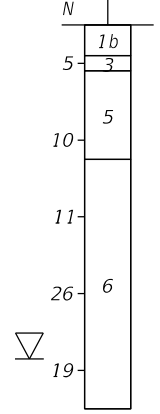
SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

BOR # RB-13
STA. 34+53
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58400
LONGITUDE -80.34038



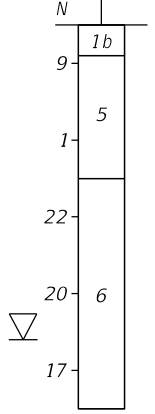
Boring Terminated at Depth of 10ft

BOR # RB-14
STA. 36+56
OFF. 24.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58443
LONGITUDE -80.34077



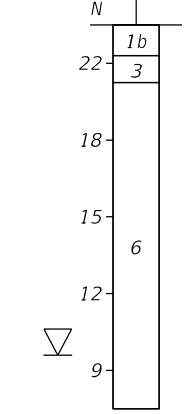
Boring Terminated at Depth of 10ft

BOR # RB-15
STA. 38+62
OFF. 23.0 RT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58495
LONGITUDE -80.34104



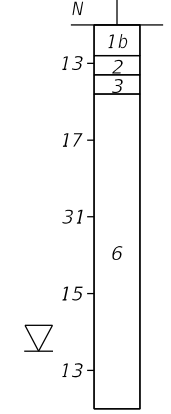
Boring Terminated at Depth of 10ft

BOR # RB-16
STA. 40+42
OFF. 24.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58527
LONGITUDE -80.34150



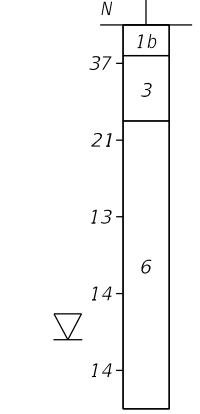
Boring Terminated at Depth of 10ft

BOR # RB-17
STA. 42+59
OFF. 23.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58573
LONGITUDE -80.34191



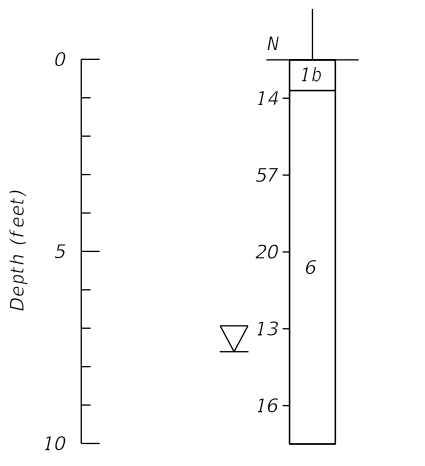
Boring Terminated at Depth of 10ft

BOR # RB-18
STA. 44+13
OFF. 26.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58606
LONGITUDE -80.34220



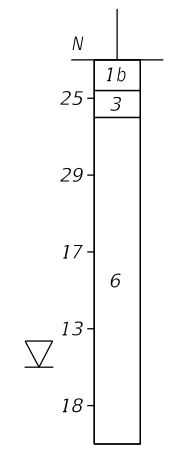
Boring Terminated at Depth of 10ft

BOR # RB-19
STA. 45+61
OFF. 26.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58638
LONGITUDE -80.34248



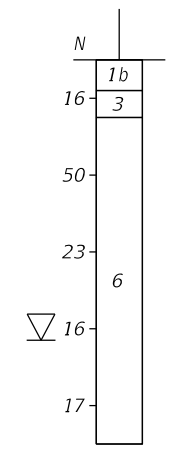
Boring Terminated at Depth of 10ft

BOR # RB-20
STA. 48+54
OFF. 18.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58708
LONGITUDE -80.34293



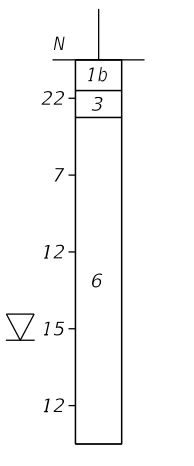
Boring Terminated at Depth of 10ft

BOR # RB-21
STA. 50+41
OFF. 17.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58748
LONGITUDE -80.34329



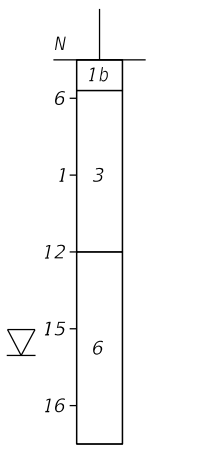
Boring Terminated at Depth of 10ft

BOR # RB-22
STA. 52+58
OFF. 18.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58795
LONGITUDE -80.34369



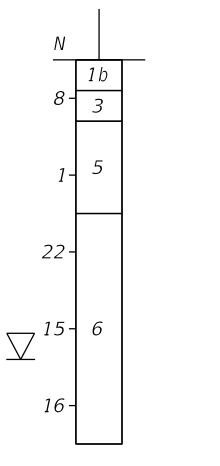
Boring Terminated at Depth of 10ft

BOR # RB-23
STA. 54+59
OFF. 19.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58836
LONGITUDE -80.34405



Boring Terminated at Depth of 10ft

BOR # RB-24
STA. 55+79
OFF. 23.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58865
LONGITUDE -80.34430



Boring Terminated at Depth of 10ft

LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

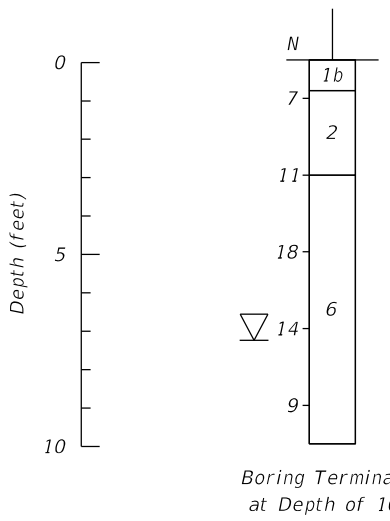
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

HRESUser 2/4/2021 11:11:07 AM Y:\HR19-1573_Franjo Road, from Cutler Road to SW 184 Street - D6 - RB - Working\Boring

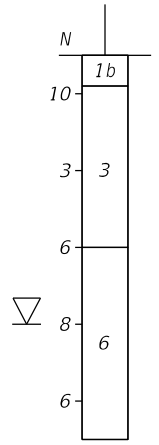
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

BOR # RB-25
STA. 57+80
OFF. 28.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58909
LONGITUDE -80.34466



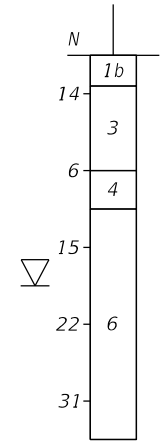
Boring Terminated at Depth of 10ft

BOR # RB-26
STA. 59+68
OFF. 25.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58940
LONGITUDE -80.34514



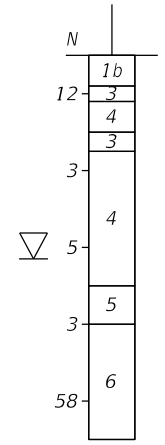
Boring Terminated at Depth of 10ft

BOR # RB-27
STA. 62+21
OFF. 18.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58996
LONGITUDE -80.34560



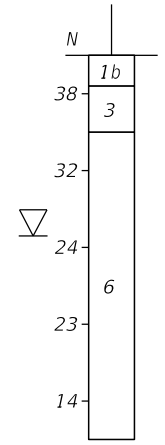
Boring Terminated at Depth of 10ft

BOR # RB-28
STA. 63+78
OFF. 17.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59031
LONGITUDE -80.34589



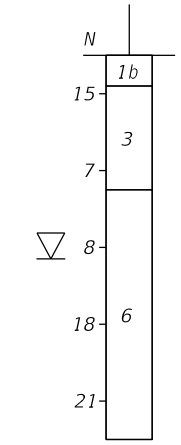
Boring Terminated at Depth of 10ft

BOR # RB-29
STA. 65+77
OFF. 19.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59079
LONGITUDE -80.34619

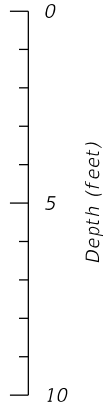


Boring Terminated at Depth of 10ft

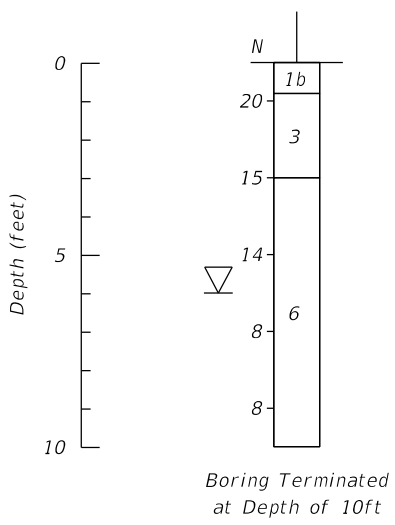
BOR # RB-30
STA. 67+42
OFF. 19.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59115
LONGITUDE -80.34651



Boring Terminated at Depth of 10ft

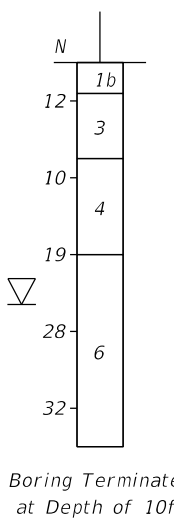


BOR # RB-31
STA. 69+14
OFF. 24.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59154
LONGITUDE -80.34682



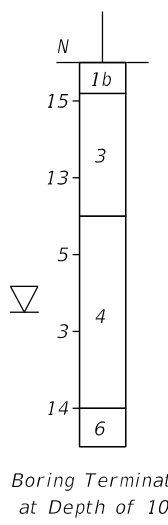
Boring Terminated at Depth of 10ft

BOR # RB-32
STA. 70+99
OFF. 18.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59191
LONGITUDE -80.34717



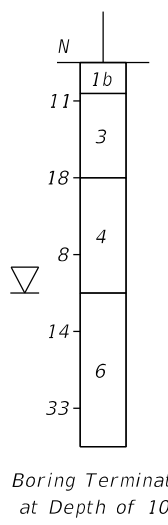
Boring Terminated at Depth of 10ft

BOR # RB-33
STA. 73+27
OFF. 8.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59236
LONGITUDE -80.34766



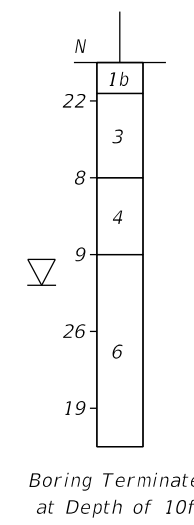
Boring Terminated at Depth of 10ft

BOR # RB-34
STA. 75+80
OFF. 50.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59292
LONGITUDE -80.34795



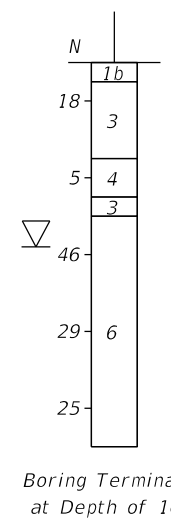
Boring Terminated at Depth of 10ft

BOR # RB-35
STA. 77+40
OFF. 4.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59337
LONGITUDE -80.34808

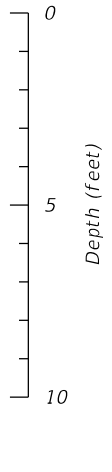


Boring Terminated at Depth of 10ft

BOR # RB-36
STA. 79+38
OFF. 23.0 RT
DATE 12/3/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59392
LONGITUDE -80.34804



Boring Terminated at Depth of 10ft



LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

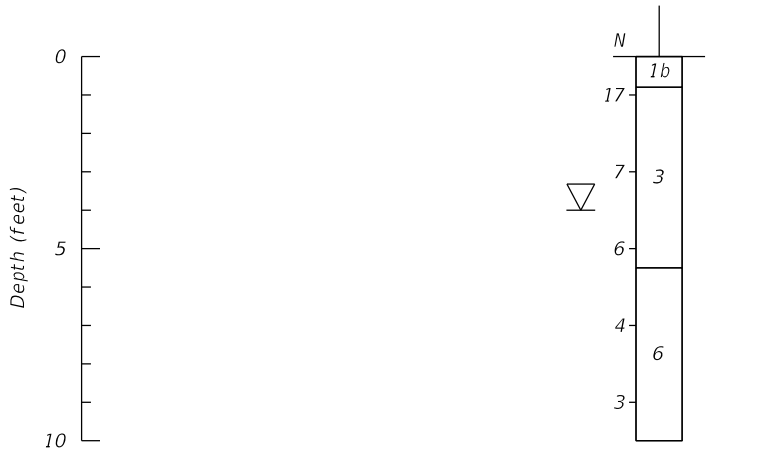
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.

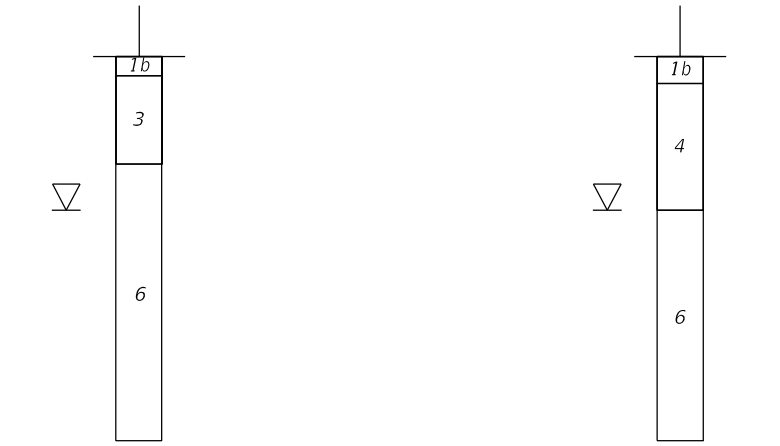
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

BOR # RB-37
STA. 81+59
OFF. 15.0 LT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59453
LONGITUDE -80.34815



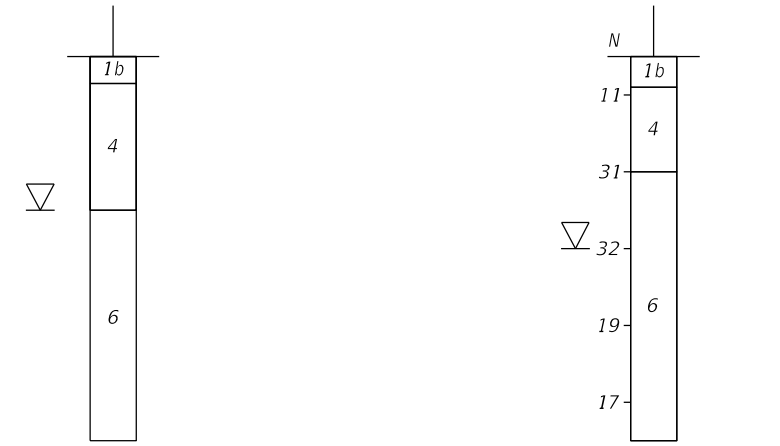
Boring Terminated at Depth of 10ft

BOR # RB-38
STA. 83+77
OFF. 28.0 LT
DATE 11/30/2020
DRILLER O. Mejias
LATITUDE 25.595912
LONGITUDE -80.34819



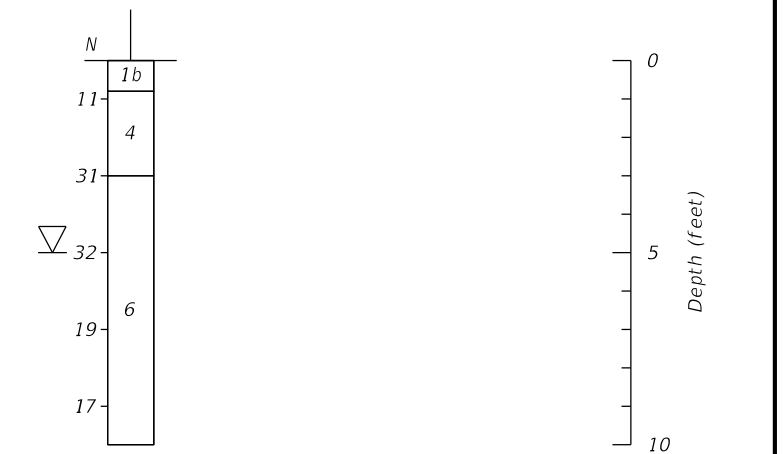
Boring Terminated at Depth of 10ft

BOR # RB-39
STA. 85+12
OFF. 26.0 LT
DATE 11/30/2020
DRILLER O. Mejias
LATITUDE 25.59556
LONGITUDE -80.34818



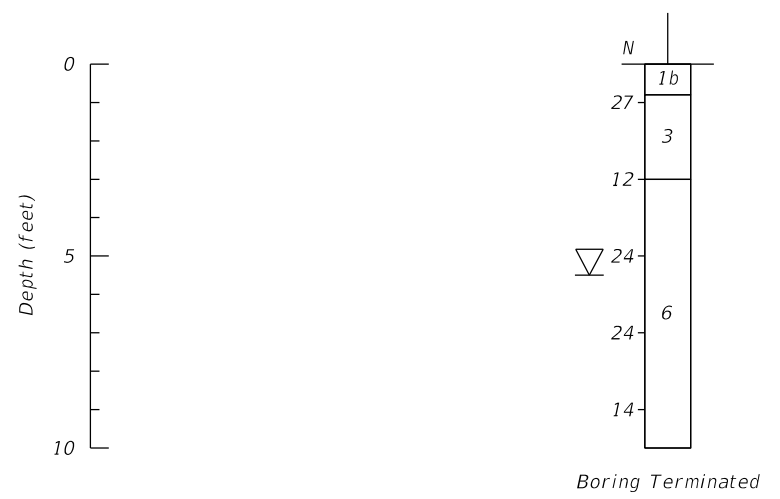
Boring Terminated at Depth of 10ft

BOR # RB-40
STA. 87+45
OFF. 38.0 LT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59616
LONGITUDE -80.34822



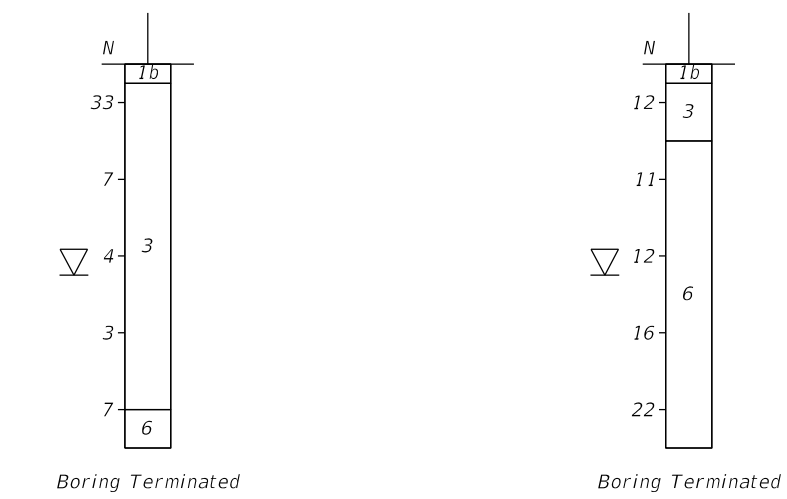
Boring Terminated at Depth of 10ft

BOR # RB-41
STA. 89+10
OFF. 20.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59659
LONGITUDE -80.34805



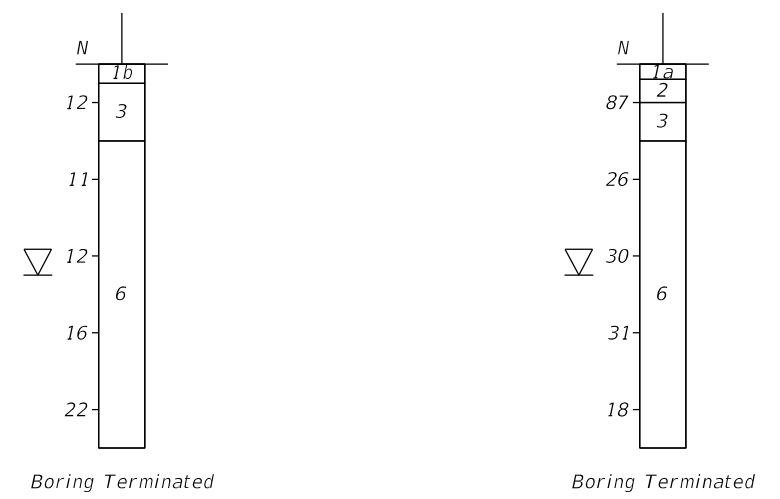
Boring Terminated at Depth of 10ft

BOR # RB-42
STA. 91+02
OFF. 23.0 LT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59712
LONGITUDE -80.34818



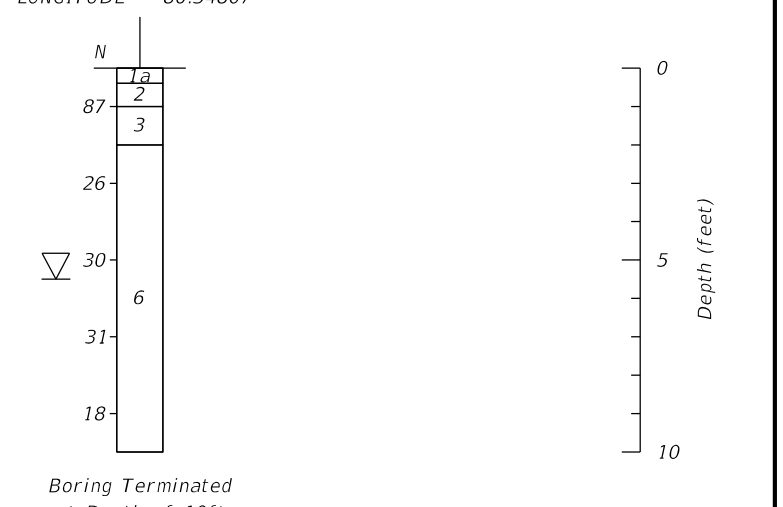
Boring Terminated at Depth of 10ft

BOR # RB-43
STA. 93+00
OFF. 25.0 LT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59766
LONGITUDE -80.34820



Boring Terminated at Depth of 10ft

BOR # RB-44
STA. 94+42
OFF. 19.0 RT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59805
LONGITUDE -80.34807



Boring Terminated at Depth of 10ft

LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-1	11+40	18.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-10.0	6	
RB-2	13+30	17.0 R	0.0-0.8	1b	7.3
			0.8-1.5	5	
			1.5-10.0	6	
RB-3	15+40	15.0 R	0.0-1.0	1b	6.5
			1.0-1.5	5	
			1.5-2.0	3	
			2.0-4.0	5	
			4.0-10.0	6	
RB-4	16+75	15.0 R	0.0-0.8	1b	6.3
			0.8-1.5	3	
			1.5-3.0	5	
			3.0-10.0	6	
P-1	18+17	58.0 R	0.0-0.5	1b	5.7
			0.5-3.0	3	
			3.0-15.0	6	
RB-5	19+24	16.0 R	0.0-0.8	1b	5.0
			0.8-1.5	3	
			1.5-4.0	5	
			4.0-10.0	6	
RB-6	21+10	18.0 R	0.0-0.8	1b	8.4
			0.8-4.0	3	
			4.0-10.0	6	
RB-7	23+05	21.0 L	0.0-0.8	1b	6.6
			0.8-10.0	6	
RB-8	25+22	18.0 L	0.0-0.8	1b	6.5
			0.8-1.5	3	
			1.5-10.0	6	
P-2	27+15	18.0 L	0.0-0.5	1b	7.5
			0.5-1.5	3	
			1.5-15.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-9	27+35	18.0 L	0.0-0.8	1b	6.4
			0.8-1.5	3	
			1.5-10.0	6	
RB-10	28+88	43.0 L	0.0-0.8	1b	7.5
			0.8-1.3	3	
			1.3-2.0	5	
			2.0-10.0	6	
RB-11	30+90	22.0 L	0.0-1.0	1b	7.5
			1.0-1.5	6	
RB-12	32+70	22.0 L	0.0-0.8	1b	7.5
			0.8-1.4	3	
			1.4-10.0	6	
RB-13	34+53	22.0 L	0.0-0.8	1b	7.5
			0.8-1.4	2	
			1.4-10.0	6	
P-3	35+71	23.0 L	0.0-0.5	1b	7.5
			0.5-2.5	3	
			2.5-15.0	6	
RB-14	36+56	24.0 L	0.0-0.8	1b	8.7
			0.5-1.2	3	
			1.2-3.5	5	
			3.5-10.0	6	
RB-15	38+62	23.0 R	0.0-0.8	1b	8.2
			0.8-4.0	5	
			4.0-10.0	6	
RB-16	40+42	24.0 L	0.0-0.8	1b	8.6
			0.8-1.5	3	
			1.5-10.0	6	
RB-17	42+59	23.0 L	0.0-0.8	1b	8.5
			0.8-1.3	2	
			1.3-1.8	3	
			1.8-10.0	6	
RB-18	44+13	26.0 L	0.0-0.8	1b	8.2
			0.8-2.5	3	
			2.5-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
P-4	44+16	26.0 L	0.0-0.5	1b	10.8
			0.5-2.5	3	
			2.5-15.0	6	
RB-19	45+61	26.0 L	0.0-0.8	1b	7.6
			0.8-10.0	6	
RB-20	48+54	18.0 R	0.0-0.8	1b	8.0
			0.8-1.5	3	
			1.5-10.0	6	
RB-21	50+41	17.0 R	0.0-0.8	1b	7.3
			0.8-1.5	3	
			1.5-10.0	6	
RB-22	52+58	18.0 R	0.0-0.8	1b	7.3
			0.8-1.5	3	
			1.5-10.0	6	
P-5	52+68	18.0 R	0.0-0.5	1b	7.5
			0.5-4.0	3	
			4.0-6.0	5	
			6.0-15.0	6	
RB-23	54+59	19.0 R	0.0-0.8	1b	7.7
			0.8-2.0	3	
			2.0-5.0	3	
			5.0-10.0	6	
RB-24	55+79	23.0 R	0.0-0.8	1b	7.8
			0.8-1.6	3	
			1.6-4.0	5	
			4.0-10.0	6	
RB-25	57+80	28.0 R	0.0-0.8	1b	7.3
			0.8-3.0	2	
			3.0-10.0	6	
RB-26	59+68	25.0 L	0.0-0.8	1b	7.0
			0.8-5.0	3	
			5.0-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
P-6	61+65	64.0 R	0.0-0.5	1b	5.7
			0.5-5.5	3	
			5.5-15.0	6	
RB-27	65+21	18.0 L	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-4.0	4	
			4.0-10.0	6	
RB-28	63+78	17.0 L	0.0-0.8	1b	5.3
			0.8-1.2	3	
			1.2-2.0	4	
			2.0-2.5	3	
			2.5-6.0	4	
			6.0-7.0	5	
			7.0-10.0	6	
RB-29	65+77	19.0 R	0.0-0.8	1b	4.7
			0.8-2.0	3	
			2.0-10.0	6	
RB-30	67+42	19.0 R	0.0-0.8	1b	5.3
			0.8-3.5	3	
			3.5-10.0	6	
RB-31	69+14	24.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-10.0	6	
P-7	70+34	23.0 L	0.0-0.5	1b	6.2
			0.5-3.5	4	
			3.5-15.0	6	
RB-32	70+99	18.0 R	0.0-0.8	1b	6.3
			0.8-2.5	3	
			2.5-5.0	4	
			5.0-10.0	6	
RB-33	73+27	8.0 L	0.0-0.8	1b	6.5
			0.8-4.0	3	
			4.0-9.0	4	
			9.0-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-34	75+80	50.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-6.0	4	
			6.0-10.0	6	
RB-35	77+40	4.0 R	0.0-0.8	1b	5.8
			0.8-3.0	3	
			3.0-5.0	4	
			5.0-10.0	6	
P-8	79+30	23.0 R	0.0-0.5	1b	4.8
			0.5-2.5	3	
			2.5-3.5	4	
			3.5-4.0	3	
			4.0-15.0	6	
RB-36	79+38	23.0 R	0.0-0.5	1b	4.8
			0.5-2.5	3	
			2.5-3.5	4	
			3.5-4.0	3	
			4.0-10.0	6	
RB-37	81+59	15.0 L	0.0-0.8	1b	4.0
			0.8-5.5	3	
			5.5-10.0	6	
RB-38	83+77	28.0 L	0.0-0.5	1b	4.0
			0.5-2.8	3	
			2.8-10.0	6	
RB-39	85+12	26.0 L	0.0-0.7	1b	4.0
			0.7-4.0	4	
			4.0-10.0	6	
RB-40	87+45	38.0 L	0.0-0.8	1b	5.0
			0.8-3.0	4	
			3.0-10.0	6	
P-9	87+95	20.0 L	0.0-0.7	1b	5.8
			0.7-2.5	3	
			2.5-3.7	4	
			3.7-15.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-41	89+10	20.0 R	0.0-0.8	1b	5.5
			0.8-3.0	3	
			3.0-10.0	6	
RB-42	91+02	23.0 L	0.0-0.5	1b	5.5
			0.5-9.0	3	
			9.0-10.0	6	
RB-43	93+00	25.0 L	0.0-0.5	1b	5.5
			0.5-2.0	3	
			2.0-10.0	6	
RB-44	94+42	19.0 R	0.0-0.4	1a	5.5
			0.4-1.0	2	
			1.0-2.0	3	
			2.0-10.0	6	

SOILS INFORMATION LEGEND

STRATUM : 1a	Asphalt
STRATUM : 1b	Organic silty fine sand (topsoil), A-8
STRATUM : 2	Limerock with silty fine sand, A-1-b
STRATUM : 3	Silty fine Sand, A-2-4
STRATUM : 4	Sandy Silt/ Slightly organic sandy Silt, A-4
STRATUM : 5	Fine Sand, A-3
STRATUM : 6	Porous sandy Limestone and calcareous fine sand

FIELD TESTING PROCEDURES

Test Borings - The test borings were made in general accordance with ASTM-D-1586, "Penetration Test and Split-Barrel Sampling of Soils." The borings were advanced using a 3-inch ID casing and a rotary drilling process. At regular intervals, the drilling tools were removed and soil samples were obtained with a standard 1.4-inch I.D., 2-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-lb hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". The penetration resistance, when properly interpreted, is an index to the soil strength and density.

Representative portions of the soil samples, obtained from the sampler, were placed in glass jars and transported to our laboratory. An engineer then examined the samples in order to confirm the field classifications.

Auger Borings – Auger borings were mechanically advanced. The soils encountered were identified in the field from cuttings brought to the surface by the augering process.

Percolation Testing - The percolation tests were performed in order to estimate the hydraulic conductivity of the materials encountered. The usual open-hole Constant Head method was used. The general procedures outlined in the South Florida Water Management District (SFWD were followed. Each test was performed in a 6.0-inch outside diameter hole initially pre-drilled to a depth of 15 feet below the existing ground surface, using an hollow stem auger. Each borehole was then filled with water and the water level maintained as close as possible to the ground surface. Once the inflow stabilized or came into equilibrium with the outflow rate or seepage, the amount of water added for a period of 10 minutes was recorded and the percolation rate calculated and reported in units of cfs/ft.^{2}-ft. of head.

APPENDIX B

SUMMARY OF LABORATORY TEST RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing									Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				1"	3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-1	A-2-4	3	0.8-1.5	100	93	75	62	53	43	38	31	27	-	12	38	35	27
RB-9	A-2-4	3	0.8-1.5	100	100	90	74	65	56	47	32	28	-	16	26	46	28
RB-13	A-1-b	2	0.8-1.4	100	100	76	62	54	45	36	22	18	-	18	38	44	18
RB-17	A-1-b	2	0.8-1.3	100	77	71	60	53	44	35	25	21	-	11	40	39	21
RB-20	A-2-4	3	0.8-1.5	100	100	92	77	67	53	41	27	23	-	11	23	54	23
RB-25	A-1-b	2	0.8-2.0	100	91	77	68	61	50	36	19	15	-	14	32	53	15
RB-26	A-2-4	3	2.0-3.0	-	-	-	-	-	-	-	-	23	-	20	-	-	23
RB-26	A-2-4	3	3.0-4.0	-	-	-	-	-	-	-	-	30	-	36	-	-	30
RB-26	A-2-4	3	4.0-5.0	-	-	-	-	-	-	-	-	35	-	33	-	-	35
RB-27	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	60	-	42	-	-	60
RB-28	A-4	4	1.2-2.0	-	-	-	-	-	-	-	-	64	-	38	-	-	64
RB-28	A-4	4	2.5-4.0	-	-	-	-	-	-	-	-	87	-	53	-	-	87
RB-28	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	94	-	53	-	-	94
RB-28	A-3	5	6.0-7.0	-	-	-	-	-	-	-	-	8	-	25	-	-	8

SUMMARY OF LABORATORY TEST RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing									Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				1"	3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-32	A-4	4	2.5-4.0	-	-	-	-	-	-	-	-	95	-	42	-	-	95
RB-32	A-4	4	4.0-5.0	-	-	-	-	-	-	-	-	94	-	38	-	-	94
RB-33	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	98	-	54	-	-	98
RB-33	A-4	4	6.0-8.0	-	-	-	-	-	-	-	-	95	-	63	-	-	95
RB-33	A-4	4	8.0-9.0	-	-	-	-	-	-	-	-	50	5	75	-	-	50
RB-34	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	98	-	39	-	-	98
RB-34	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	94	-	41	-	-	94
RB-35	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	95	-	38	-	-	95
RB-35	A-4	4	4.0-5.0	-	-	-	-	-	-	-	-	92	-	38	-	-	92
RB-40	A-4	4	0.8-2.0	-	-	-	-	-	-	-	-	-	4	32	-	-	-

DATE OF SURVEY: NOVEMBER AND DECEMBER, 2020
SURVEY MADE BY: HR Engineering Services, Inc.
SUBMITTED BY: HERNANDO RAMOS, P.E.

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

DISTRICT: --
ROAD NO.: --
COUNTY: MIAMI-DADE

PROJECT NO. : --
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA. : 12+71.54 SURVEY ENDS STA. : 95+7.00

REFERENCE: FRANJO ROAD

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS PERCENT PASS (%)						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDE ppm	SULFATES ppm	pH
1a	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ASPHALTIC CONCRETE					
1b	--	--	--	--	--	--	--	--	--	--	--	--	--	A-8	ORGANIC SILTY FINE SAND (TOPSOIL)					
2	--	--	3	18-11	3	61-53	50-44	36-35	25-19	21-15	--	--	--	A-1-b	LIMEROCK WITH SILTY FINE SAND (FILL)					
3	--	--	6	36-11	6	67-53	56-43	47-38	32-27	35-23	--	--	--	A-2-4	SILTY FINE SAND WITH TRACES OF LIMEROCK FRAGMENTS					
4	2	5-4	14	75-32	13	--	--	--	--	98-50	--	--	--	A-4	SANDY SILT/ SLIGHTLY ORGANIC SANDY SILT					
5	--	--	1	25	1	--	--	--	--	8	--	--	--	A-3	FINE SAND WITH TRACES OF LIMEROCK FRAGMENTS					
6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND					
																--	--	--	--	--

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE. MAKE FINAL CHECK AFTER GRADING.

∇ - WATER TABLE ENCOUNTERED

GNE - GROUNDWATER NOT ENCOUNTERED

THE MATERIAL FROM STRATUM NUMBER 1a IS ASPHALTIC CONCRETE.

THE MATERIAL FROM STRATUM NUMBER 1b A-8 MATERIAL (TOPSOIL) AND IS UNSUITABLE FOR USE AS STABILIZED SUBGRADE OR FILL MATERIAL AND SHALL BE REMOVED.

THE MATERIAL FROM STRATUM NUMBER 2 IS A-1-b MATERIAL AND IS SUITABLE FOR USE AS GENERAL FILL WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001. IT CANNOT BE USED AS BASE MATERIAL.

THE MATERIAL FROM STRATUM NUMBER 3 IS A-2-4 MATERIAL AND IS SUITABLE FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001. HOWEVER, THIS MATERIAL IS LIKELY TO RETAIN EXCESS MOISTURE AND BE DIFFICULT TO DRY AND COMPACT. IT SHALL BE USED IN THE EMBANKMENT ABOVE THE WATER LEVEL EXISTING AT THE TIME OF CONSTRUCTION.

THE MATERIAL FROM STRATUM NUMBER 4 IS A-4 MATERIAL. THIS MATERIAL IS UNSUITABLE FOR USE IN THE EMBANKMENT AND AS STABILIZED SUBGRADE AND SHALL BE REMOVED IN ACCORDANCE WITH STANDARD PLAN INDEX 120-002, IT SHALL BE REMOVED IF ENCOUNTERED WITHIN 2 FEET BELOW THE BOTTOM OF THE BASE. THIS MATERIAL WAS FOUND BY BORINGS RB-28, RB-32, RB-36, RB-39, RB-40 AND PERCOLATION TESTS P-7, P-8 AND P-9 AT DEPTHS WITHIN 2 FEET BELOW THE BOTTOM OF THE NEW BASE.

THE MATERIAL FROM STRATUM NUMBER 5 IS A-3 MATERIAL AND APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001.

THE MATERIAL FROM STRATUM NUMBER 6 IS THE NATURAL LIMESTONE. THIS MATERIAL APPEARS SUITABLE FOR USE AS GENERAL FILL AND AS STABILIZED SUBGRADE WHEN UTILIZED IN ACCORDANCE WITH FDOT INDEX 120-001. THIS MATERIAL TYPICALLY OFFERS A HIGH RESISTANCE TO EXCAVATION. SPECIAL EQUIPMENT AND BREAKING TOOLS MAY BE REQUIRED TO EXCAVATE IT. THIS MATERIAL IS ALSO DIFFICULT TO DEWATER DUE TO ITS HIGH POROSITY AND PERMEABILITY.

THE SYMBOL "--" REPRESENTS NO TESTING PERFORMED.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

TOWN OF MIAMI LAKES

ROAD NO.	COUNTY	PROJECT NO
--	MIAMI-DADE	--

ROADWAY SOILS SURVEY

SHEET NO. B-3

HRESUser 2/4/2021 11:28:21 AM Y:\HR19-1573_Franjo Road, from Cutler Road to SW 184 Street - D6 - RB - Working\RDS

LABORATORY TESTING PROCEDURES

Organic Content (Organic Loss on Ignition – The amount of organic material in the sample was determined in this test, by measuring the loss due to ignition. The sample was first dried and weighed, then ignited and reweighed. The amount of organic material is expressed as a percentage of the soil weight. The test was conducted in general accordance with ASTM D-2974.

Percent Fines Content – In this test, the sample was dried and then washed over a # 200 mesh sieve. The percentage of soil by weight passing the sieve is the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D-1140.

Moisture Content – The moisture content (water content is the ratio, expressed as a percentage of the weight of water in a given mass of soil to the weight of the soil particles. This test was conducted in general accordance with ASTM D-2216.

Sieve Analysis – The sieve analyses were performed to determine the particle size and distribution of sample tested. Each sample was dried, weighed, and washed over a # 200 mesh sieve. The dried sample was then passed through a standard set nested sieves to determine the grain size distribution of the soil particles coarser than the # 200 sieves. This test was conducted in general accordance with ASTM C-136.

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-1 Sample No.: 1B Depth: 0.8-1.5
Date: 11/18/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	24.20	24.20	7	93	
3/8"	9.51	64.30	88.50	25	75	
4	4.76	46.80	135.30	38	62	AASHTO Classification:
10	2.00	32.20	167.50	47	53	
40	0.420	33.70	201.20	57	43	A-2-4
60	0.250	19.30	220.50	62	38	
100	0.149	25.50	246.00	69	31	
200	0.074	13.80	259.80	73	27	
PAN						

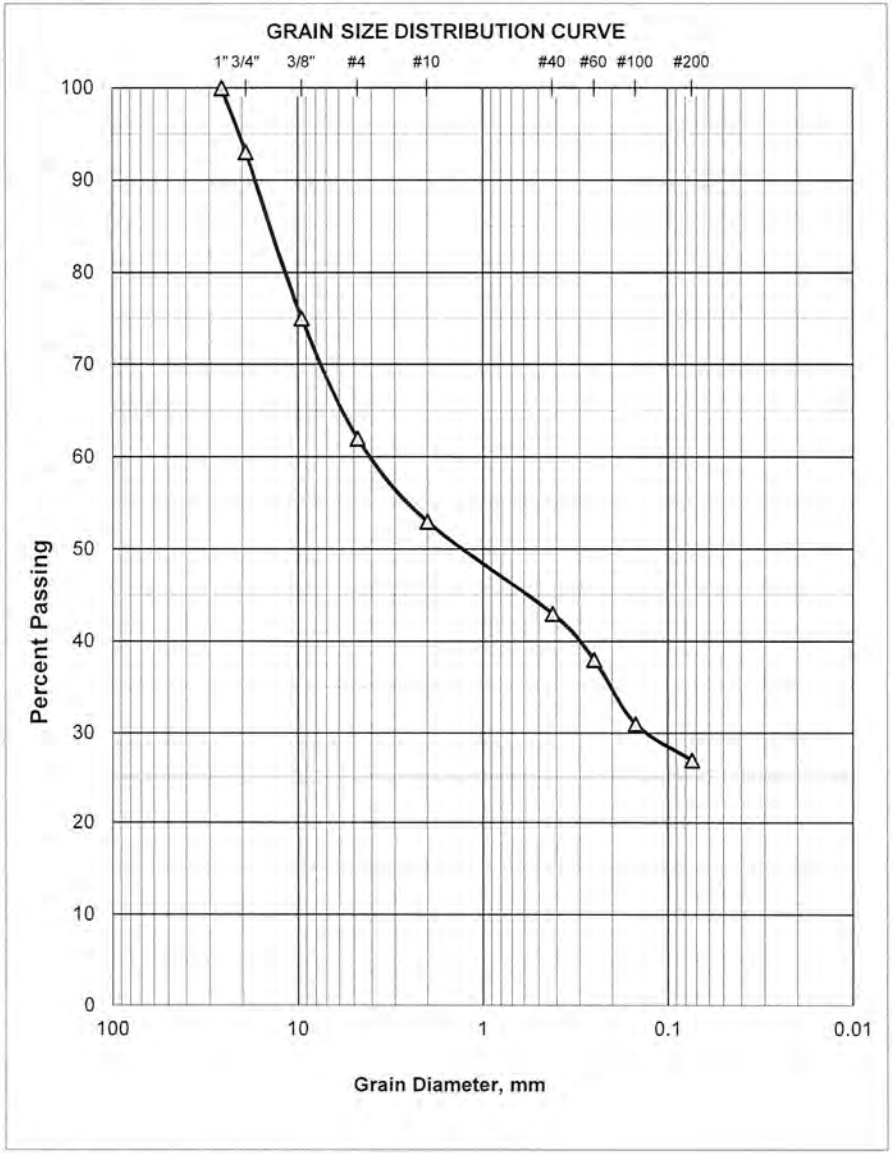
Total Dry Weight Before Wash, (gr) =	354.10
Percent Finer than No. 200 Sieve by Wash Method=	27%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	38
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	16
Silt and Clays	>No. 200	27
Water Content		12%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

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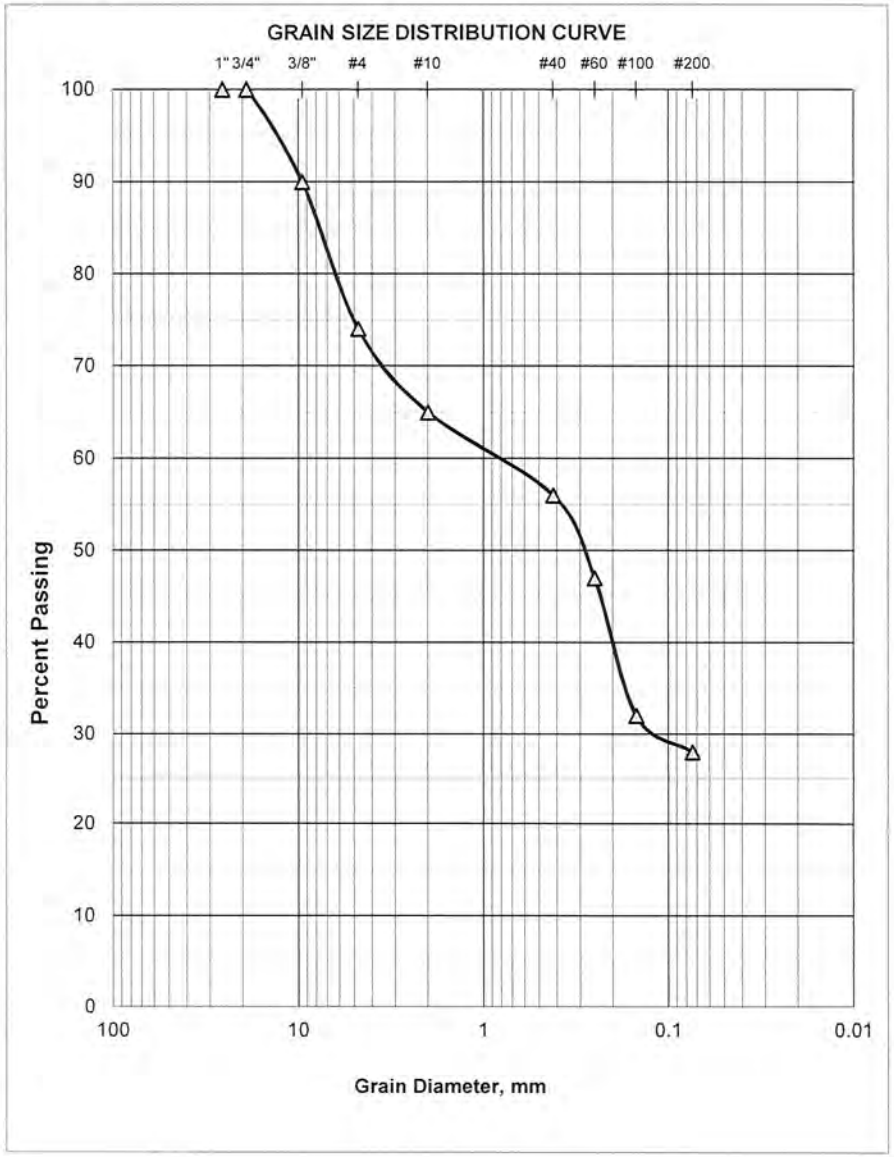
Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-9 Sample No.: 1B Depth: 0.8-1.5
Date: 11/18/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	16.40	16.40	10	90	
4	4.76	27.70	44.10	26	74	AASHTO Classification:
10	2.00	15.30	59.40	35	65	
40	0.420	14.90	74.30	44	56	A-2-4
60	0.250	14.80	89.10	53	47	
100	0.149	26.40	115.50	68	32	
200	0.074	7.20	122.70	72	28	
PAN						



Total Dry Weight Before Wash, (gr) =	169.40
Percent Finer than No. 200 Sieve by Wash Method=	28%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	26
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	28
Silt and Clays	>No. 200	28
Water Content		16%

Respectfully Submitted,
HR Engineering Services, Inc.

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Florida Registration No. 42045

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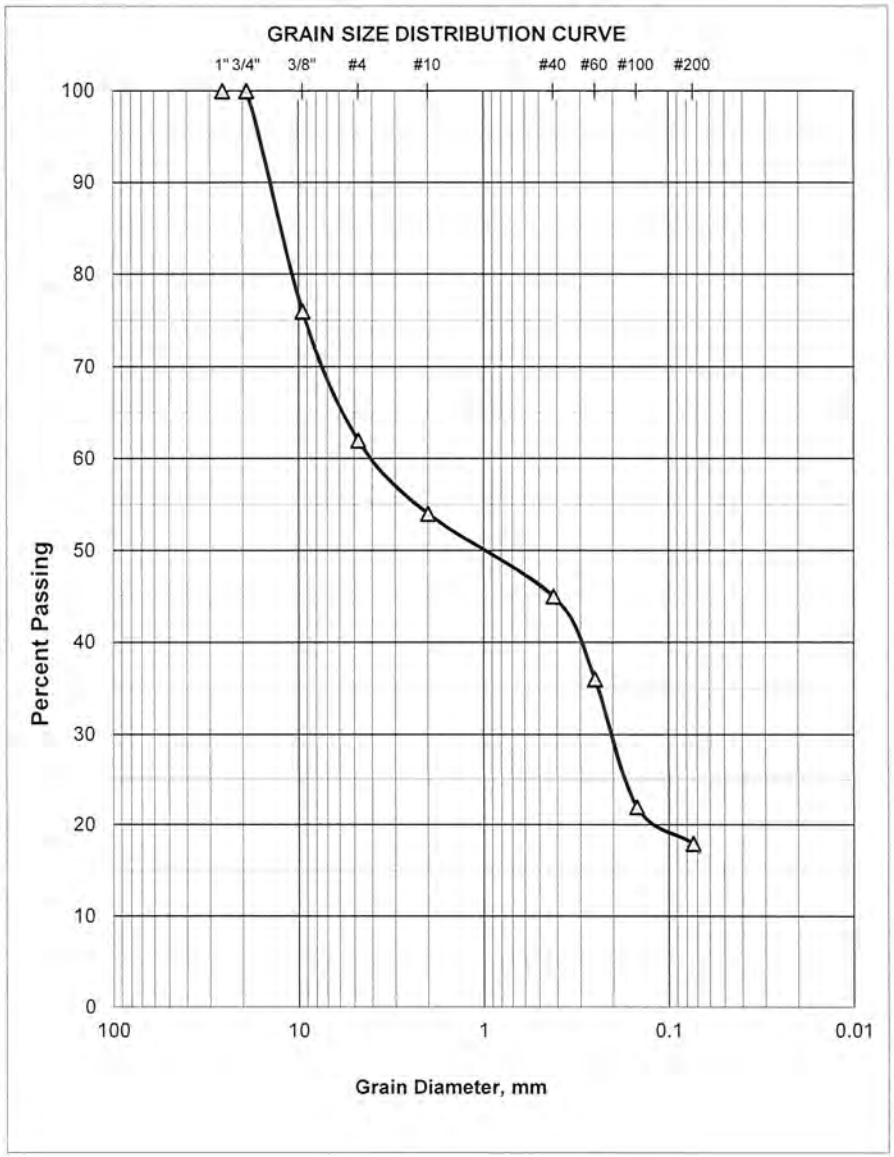
Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-13 Sample No.: 1B Depth: 0.8-1.4
Date: 11/18/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	23.30	23.30	24	76	
4	4.76	14.50	37.80	38	62	AASHTO Classification:
10	2.00	7.70	45.50	46	54	
40	0.420	8.40	53.90	55	45	A-1-b
60	0.250	8.90	62.80	64	36	
100	0.149	14.60	77.40	78	22	
200	0.074	3.90	81.30	82	18	
PAN						



Total Dry Weight Before Wash, (gr) =	98.70
Percent Finer than No. 200 Sieve by Wash Method=	18%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	38
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	27
Silt and Clays	>No. 200	18
Water Content		18%

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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-17 Sample No.: 1B Depth: 0.8-1.3
Date: 11/27/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	52.90	52.90	23	77	
3/8"	9.51	14.40	67.30	29	71	
4	4.76	25.20	92.50	40	60	AASHTO Classification:
10	2.00	14.70	107.20	47	53	
40	0.420	20.20	127.40	56	44	A-1-b
60	0.250	21.20	148.60	65	35	
100	0.149	23.90	172.50	75	25	
200	0.074	7.50	180.00	79	21	
PAN						

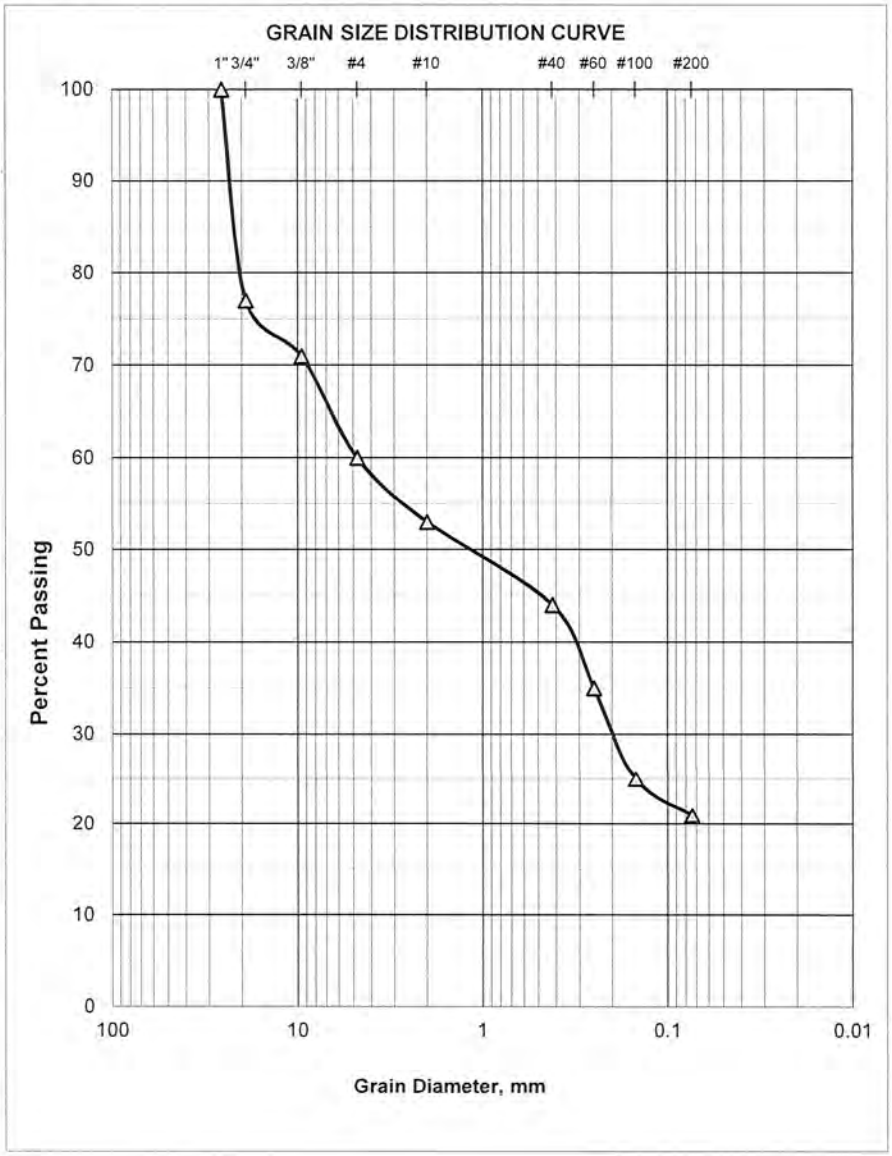
Total Dry Weight Before Wash, (gr) =	229.00
Percent Finer than No. 200 Sieve by Wash Method=	21%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	40
Coarse Sand	>No. 4-≤ No. 40	16
Fine Sand	>No. 40-≤ No. 200	23
Silt and Clays	>No. 200	21
Water Content		11%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-20 Sample No.: 1B Depth: 0.8-1.5
Date: 12/3/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	17.20	17.20	8	92	
4	4.76	31.90	49.10	23	77	AASHTO Classification:
10	2.00	21.70	70.80	33	67	
40	0.420	30.40	101.20	47	53	A-2-4
60	0.250	25.70	126.90	59	41	
100	0.149	30.70	157.60	73	27	
200	0.074	10.20	167.80	77	23	
PAN						

Total Dry Weight Before Wash, (gr) =	216.90
Percent Finer than No. 200 Sieve by Wash Method=	23%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	23
Coarse Sand	>No. 4-≤ No. 40	24
Fine Sand	>No. 40-≤ No. 200	30
Silt and Clays	>No. 200	23
Water Content		11%

Respectfully Submitted,
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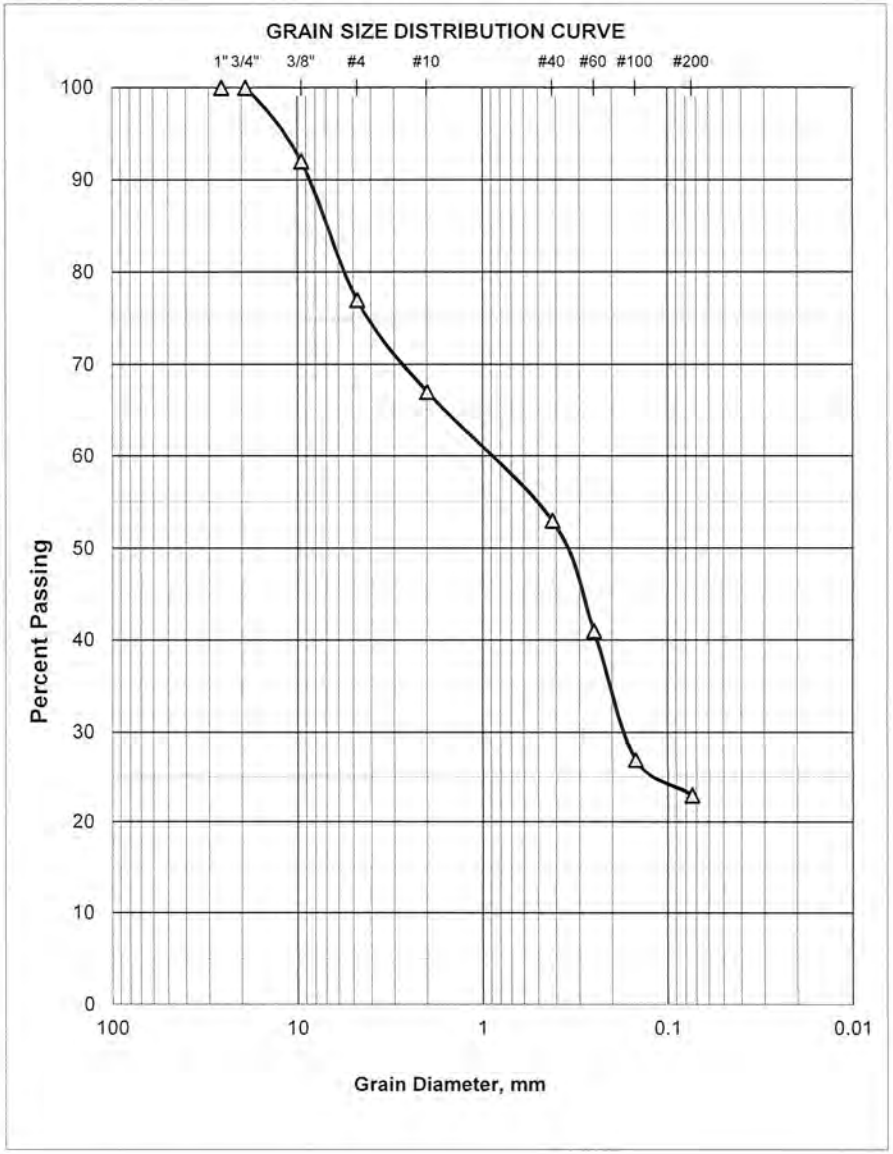

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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-25 Sample No.: 1B Depth: 0.8-2.0
Date: 12/3/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	27.20	27.20	9	91	
3/8"	9.51	42.40	69.60	23	77	
4	4.76	24.90	94.50	32	68	AASHTO Classification:
10	2.00	22.30	116.80	39	61	
40	0.420	33.20	150.00	50	50	A-1-b
60	0.250	41.30	191.30	64	36	
100	0.149	49.60	240.90	81	19	
200	0.074	11.40	252.30	85	15	
PAN						

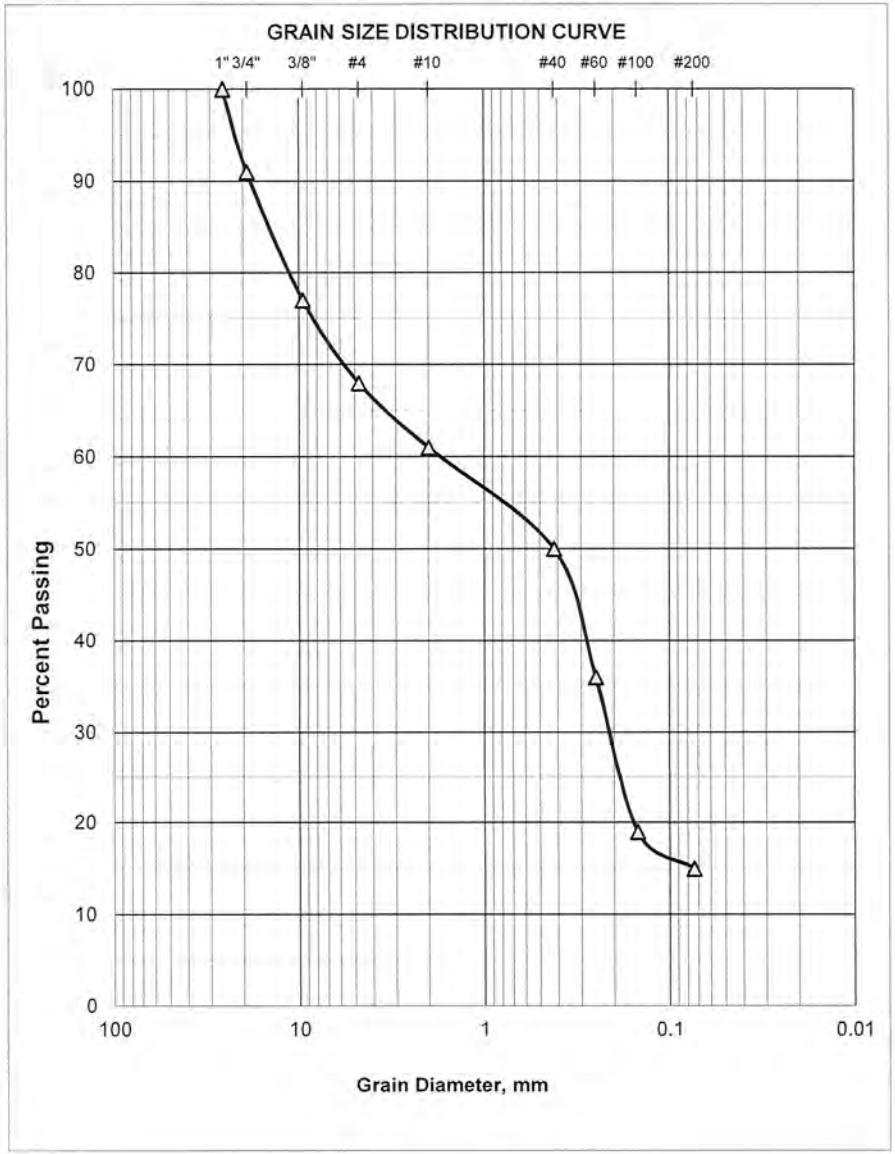
Total Dry Weight Before Wash, (gr) =	297.10
Percent Finer than No. 200 Sieve by Wash Method=	15%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	32
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	35
Silt and Clays	>No. 200	15
Water Content		14%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-26 **Sample No.:** 2A **Depth:** 2.0-3.0

Date: 11/30/20

Technician:	E.M				
Date Sample Placed in Oven:	11/30/2020				
Time in / Out of Oven :	11/30/20	9:00 AM	TO	12/01/20	9:00 AM
Wt. of Wet Soil + Can, grams	247.10				
Wt. of Dry Soil + Can, grams	208.00				
Wt. of Can, grams No. 503	8.80				
Wt. of Dry Soil, grams	199.20				
Wt. of Moisture, grams	39.10				
Water Content, w%	20%				
Wt. of Dry Soil + Can Before Wash, grams	208.00				
Wt. of Can, grams No. 503	8.80				
Wt. of Dry Soil Before Wash, grams	199.20				
Time in / Out of Oven :	12/02/20	9:30 AM	TO	12/03/20	9:30 AM
Wt. of Dry Soil + Can After Wash, grams	161.30				
Wt. of Dry Soil After Wash, grams	152.50				
Total Loss, grams	46.70				
Percent Finer Than No. 200 Sieve	23%				

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-2-4

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-26 **Sample No.:** 2B **Depth:** 3.0-4.0

Date: 11/30/20

Technician:	E.M				
Date Sample Placed in Oven:	11/30/2020				
Time in / Out of Oven :	11/30/20	9:00 AM	TO	12/01/20	9:00 AM
Wt. of Wet Soil + Can, grams	149.40				
Wt. of Dry Soil + Can, grams	112.00				
Wt. of Can, grams No. 504	8.80				
Wt. of Dry Soil, grams	103.20				
Wt. of Moisture, grams	37.40				
Water Content, w%	36%				
Wt. of Dry Soil + Can Before Wash, grams	112.00				
Wt. of Can, grams No. 504	8.80				
Wt. of Dry Soil Before Wash, grams	103.20				
Time in / Out of Oven :	12/02/20	9:30 AM	TO	12/03/20	9:30 AM
Wt. of Dry Soil + Can After Wash, grams	81.50				
Wt. of Dry Soil After Wash, grams	72.70				
Total Loss, grams	30.50				
Percent Finer Than No. 200 Sieve	30%				

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-2-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-26 **Sample No.:** 3A **Depth:** 4.0-5.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 9:00 AM TO 12/01/20 9:00 AM
Wt. of Wet Soil + Can, grams	158.60
Wt. of Dry Soil + Can, grams	121.20
Wt. of Can, grams No. 505	8.80
Wt. of Dry Soil, grams	112.40
Wt. of Moisture, grams	37.40
Water Content, w%	33%
Wt. of Dry Soil + Can Before Wash, grams	121.20
Wt. of Can, grams No. 505	8.80
Wt. of Dry Soil Before Wash, grams	112.40
Time in / Out of Oven :	12/02/20 9:30 AM TO 12/03/20 9:30 AM
Wt. of Dry Soil + Can After Wash, grams	81.70
Wt. of Dry Soil After Wash, grams	72.90
Total Loss, grams	39.50
Percent Finer Than No. 200 Sieve	35%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-2-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-27 Sample No.: 2B Depth: 3.0-4.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	9:00 AM	TO	12/01/20	9:00 AM	
Wt. of Wet Soil + Can, grams	147.60					
Wt. of Dry Soil + Can, grams	106.70					
Wt. of Can, grams No. 506	8.80					
Wt. of Dry Soil, grams	97.90					
Wt. of Moisture, grams	40.90					
Water Content, w%	42%					
Wt. of Dry Soil + Can Before Wash, grams	106.70					
Wt. of Can, grams No. 506	8.80					
Wt. of Dry Soil Before Wash, grams	97.90					
Time in / Out of Oven :	12/02/20	9:30 AM	TO	12/03/20	9:30 AM	
Wt. of Dry Soil + Can After Wash, grams	47.90					
Wt. of Dry Soil After Wash, grams	39.10					
Total Loss, grams	58.80					
Percent Finer Than No. 200 Sieve	60%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-28 Sample No.: 1C Depth: 1.2-2.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	2:00 AM	TO	12/01/20	2:00 AM	
Wt. of Wet Soil + Can, grams	118.90					
Wt. of Dry Soil + Can, grams	88.70					
Wt. of Can, grams No. 401	8.80					
Wt. of Dry Soil, grams	79.90					
Wt. of Moisture, grams	30.20					
Water Content, w%	38%					
Wt. of Dry Soil + Can Before Wash, grams	88.70					
Wt. of Can, grams No. 401	8.80					
Wt. of Dry Soil Before Wash, grams	79.90					
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM	
Wt. of Dry Soil + Can After Wash, grams	37.70					
Wt. of Dry Soil After Wash, grams	28.90					
Total Loss, grams	51.00					
Percent Finer Than No. 200 Sieve	64%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-28 Sample No.: 2B Depth: 2.5-4.0

Date: 11/30/20

Technician:	E.M				
Date Sample Placed in Oven:	11/30/2020				
Time in / Out of Oven :	11/30/20	2:00 AM	TO	12/01/20	2:00 AM
Wt. of Wet Soil + Can, grams	406.80				
Wt. of Dry Soil + Can, grams	268.10				
Wt. of Can, grams No. 402	8.80				
Wt. of Dry Soil, grams	259.30				
Wt. of Moisture, grams	138.70				
Water Content, w%	53%				
Wt. of Dry Soil + Can Before Wash, grams	268.10				
Wt. of Can, grams No. 402	8.80				
Wt. of Dry Soil Before Wash, grams	259.30				
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM
Wt. of Dry Soil + Can After Wash, grams	43.60				
Wt. of Dry Soil After Wash, grams	34.80				
Total Loss, grams	224.50				
Percent Finer Than No. 200 Sieve	87%				

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-28 Sample No.: 3 Depth: 4.0-6.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	517.70
Wt. of Dry Soil + Can, grams	341.10
Wt. of Can, grams No. 403	9.00
Wt. of Dry Soil, grams	332.10
Wt. of Moisture, grams	176.60
Water Content, w%	53%
Wt. of Dry Soil + Can Before Wash, grams	341.10
Wt. of Can, grams No. 403	9.00
Wt. of Dry Soil Before Wash, grams	332.10
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	28.40
Wt. of Dry Soil After Wash, grams	19.40
Total Loss, grams	312.70
Percent Finer Than No. 200 Sieve	94%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-28 **Sample No.:** 4A **Depth:** 6.0-7.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	450.30
Wt. of Dry Soil + Can, grams	360.80
Wt. of Can, grams No. 404	8.80
Wt. of Dry Soil, grams	352.00
Wt. of Moisture, grams	89.50
Water Content, w%	25%
Wt. of Dry Soil + Can Before Wash, grams	360.80
Wt. of Can, grams No. 404	8.80
Wt. of Dry Soil Before Wash, grams	352.00
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	334.40
Wt. of Dry Soil After Wash, grams	325.60
Total Loss, grams	26.40
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-32 Sample No.: 2B Depth: 2.5-4.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	2:00 AM	TO	12/01/20	2:00 AM	
Wt. of Wet Soil + Can, grams	599.50					
Wt. of Dry Soil + Can, grams	426.00					
Wt. of Can, grams No. 407	9.00					
Wt. of Dry Soil, grams	417.00					
Wt. of Moisture, grams	173.50					
Water Content, w%	42%					
Wt. of Dry Soil + Can Before Wash, grams	426.00					
Wt. of Can, grams No. 407	9.00					
Wt. of Dry Soil Before Wash, grams	417.00					
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM	
Wt. of Dry Soil + Can After Wash, grams	29.50					
Wt. of Dry Soil After Wash, grams	20.50					
Total Loss, grams	396.50					
Percent Finer Than No. 200 Sieve	95%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
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HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-32 **Sample No.:** 3A **Depth:** 4.0-5.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	343.50
Wt. of Dry Soil + Can, grams	251.10
Wt. of Can, grams No. 408	9.00
Wt. of Dry Soil, grams	242.10
Wt. of Moisture, grams	92.40
Water Content, w%	38%
Wt. of Dry Soil + Can Before Wash, grams	251.10
Wt. of Can, grams No. 408	9.00
Wt. of Dry Soil Before Wash, grams	242.10
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	22.50
Wt. of Dry Soil After Wash, grams	13.50
Total Loss, grams	228.60
Percent Finer Than No. 200 Sieve	94%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-33 Sample No.: 3 Depth: 4.0-6.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	565.30
Wt. of Dry Soil + Can, grams	370.50
Wt. of Can, grams No. 409	9.00
Wt. of Dry Soil, grams	361.50
Wt. of Moisture, grams	194.80
Water Content, w%	54%
Wt. of Dry Soil + Can Before Wash, grams	370.50
Wt. of Can, grams No. 409	9.00
Wt. of Dry Soil Before Wash, grams	361.50
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	14.60
Wt. of Dry Soil After Wash, grams	5.60
Total Loss, grams	355.90
Percent Finer Than No. 200 Sieve	98%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-33 Sample No.: 4 Depth: 6.0-8.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	480.10
Wt. of Dry Soil + Can, grams	297.20
Wt. of Can, grams No. 410	9.00
Wt. of Dry Soil, grams	288.20
Wt. of Moisture, grams	182.90
Water Content, w%	63%
Wt. of Dry Soil + Can Before Wash, grams	297.20
Wt. of Can, grams No. 410	9.00
Wt. of Dry Soil Before Wash, grams	288.20
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	22.40
Wt. of Dry Soil After Wash, grams	13.40
Total Loss, grams	274.80
Percent Finer Than No. 200 Sieve	95%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

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Florida Registration No. 42045

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7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-33 Sample No.: 5A Depth: 8.0-9.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	401.90
Wt. of Dry Soil + Can, grams	233.70
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil, grams	224.80
Wt. of Moisture, grams	168.20
Water Content, w%	75%
Date Sample Placed in Furnace:	12/02/20
Time in / out of furnace (minimum 6 hrs):	12/02/20 9:30 AM TO 12/02/20 3:30 PM
Weight of Crucible & Oven-Dried Sample:	27.40
Weight of Crucible and Sample After Ignition:	26.80
Weight of Crucible: No. 227	16.00
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.60
Percent Organics:	5%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Organic Content Test was performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-33 Sample No.: 5A Depth: 8.0-9.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	401.90
Wt. of Dry Soil + Can, grams	233.70
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil, grams	224.80
Wt. of Moisture, grams	168.20
Water Content, w%	75%
Wt. of Dry Soil + Can Before Wash, grams	222.10
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil Before Wash, grams	213.20
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	114.60
Wt. of Dry Soil After Wash, grams	105.70
Total Loss, grams	107.50
Percent Finer Than No. 200 Sieve	50%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-34 **Sample No.:** 2B **Depth:** 3.0-4.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	279.50
Wt. of Dry Soil + Can, grams	202.90
Wt. of Can, grams No. 508	8.90
Wt. of Dry Soil, grams	194.00
Wt. of Moisture, grams	76.60
Water Content, w%	39%
Wt. of Dry Soil + Can Before Wash, grams	202.90
Wt. of Can, grams No. 508	8.90
Wt. of Dry Soil Before Wash, grams	194.00
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	13.70
Wt. of Dry Soil After Wash, grams	4.80
Total Loss, grams	189.20
Percent Finer Than No. 200 Sieve	98%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-34 Sample No.: 3 Depth: 4.0-6.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	2:00 PM	TO	12/01/20	2:00 PM	
Wt. of Wet Soil + Can, grams	867.60					
Wt. of Dry Soil + Can, grams	617.80					
Wt. of Can, grams No. 509	8.90					
Wt. of Dry Soil, grams	608.90					
Wt. of Moisture, grams	249.80					
Water Content, w%	41%					
Wt. of Dry Soil + Can Before Wash, grams	617.80					
Wt. of Can, grams No. 509	8.90					
Wt. of Dry Soil Before Wash, grams	608.90					
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM	
Wt. of Dry Soil + Can After Wash, grams	43.80					
Wt. of Dry Soil After Wash, grams	34.90					
Total Loss, grams	574.00					
Percent Finer Than No. 200 Sieve	94%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-35 **Sample No.:** 2B **Depth:** 3.0-4.0

Date: 12/02/20

Technician:	E.M				
Date Sample Placed in Oven:	12/02/2020				
Time in / Out of Oven :	12/02/20	10:30 AM	TO	12/03/20	10:30 AM
Wt. of Wet Soil + Can, grams	194.20				
Wt. of Dry Soil + Can, grams	143.10				
Wt. of Can, grams No. 510	8.80				
Wt. of Dry Soil, grams	134.30				
Wt. of Moisture, grams	51.10				
Water Content, w%	38%				
Wt. of Dry Soil + Can Before Wash, grams	143.10				
Wt. of Can, grams No. 510	8.80				
Wt. of Dry Soil Before Wash, grams	134.30				
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM
Wt. of Dry Soil + Can After Wash, grams	15.80				
Wt. of Dry Soil After Wash, grams	7.00				
Total Loss, grams	127.30				
Percent Finer Than No. 200 Sieve	95%				

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-35 Sample No.: 3A Depth: 4.0-5.0

Date: 12/02/20

Technician:	E.M				
Date Sample Placed in Oven:	12/02/2020				
Time in / Out of Oven :	12/02/20	10:30 AM	TO	12/03/20	10:30 AM
Wt. of Wet Soil + Can, grams	430.30				
Wt. of Dry Soil + Can, grams	315.30				
Wt. of Can, grams No. 611	8.80				
Wt. of Dry Soil, grams	306.50				
Wt. of Moisture, grams	115.00				
Water Content, w%	38%				
Wt. of Dry Soil + Can Before Wash, grams	315.30				
Wt. of Can, grams No. 611	8.80				
Wt. of Dry Soil Before Wash, grams	306.50				
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM
Wt. of Dry Soil + Can After Wash, grams	32.80				
Wt. of Dry Soil After Wash, grams	24.00				
Total Loss, grams	282.50				
Percent Finer Than No. 200 Sieve	92%				

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-40 Sample No.: 1B Depth: 0.8-2.0

Date: 12/02/20

Technician:	E.M
Date Sample Placed in Oven:	12/02/2020
Time in / Out of Oven :	12/02/20 10:30 AM TO 12/03/20 10:30 AM
Wt. of Wet Soil + Can, grams	412.40
Wt. of Dry Soil + Can, grams	313.70
Wt. of Can, grams No. 612	8.90
Wt. of Dry Soil, grams	304.80
Wt. of Moisture, grams	98.70
Water Content, w%	32%
Date Sample Placed in Furnace:	12/03/20
Time in / out of furnace (minimum 6 hrs):	12/03/20 11:00 AM TO 12/03/20 5:00 PM
Weight of Crucible & Oven-Dried Sample:	26.20
Weight of Crucible and Sample After Ignition:	25.80
Weight of Crucible: No. 54	15.00
Weight of Oven-Dried Soil:	11.20
Weight Loss due to Ignition:	0.40
Percent Organics:	4%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Organic Content Test was performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

APPENDIX C

GTR REVIEW CHECKLIST **C-1 AND C-2**

GTR REVIEW CHECKLIST FOR SITE INVESTIGATION

A. Site Investigation Information

Since the most important step in the geotechnical design process is to conduct an adequate site investigation, presentation of the subsurface information in the geotechnical report and on the plans deserves careful attention.

Geotechnical Report Text (Introduction) (Pgs. 10-1 to 10-4)	Yes	No	Unknown or N/A
1. Is the general location of the investigation described and/or a vicinity map included?	✓		
2. Is scope and purpose of the investigation summarized?	✓		
3. Is concise description given of geologic setting and topography of area?	✓		
4. Are the field explorations and laboratory tests on which the report is based listed?	✓		
5. Is the general description of subsurface soil, rock, and groundwater conditions given?	✓		
*6. Is the following information included with the geotechnical report (typically included in the report appendices):			
a. Test hole logs? (Pgs. 2-24 to 2-32)	✓		
b. Field test data?	✓		
c. Laboratory test data? (Pgs. 4-22 to 4-23)	✓		
d. Photographs (if pertinent)?			✓
Plan and Subsurface Profile (Pgs. 2-19, 3-9 to 3-12, 10-13)			
*7. Is a plan and subsurface profile of the investigation site provided?	✓		
8. Are the field explorations located on the plan view?	✓		

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

A. Site Investigation Information (Cont.)	Yes	No	Unknown or N/A
*9. Does the conducted site investigation meet minimum criteria outlined in Table 2?	✓		
10. Are the explorations plotted and correctly numbered on the profile at their true elevation and location?	✓		
11. Does the subsurface profile contain a word description and/or graphic depiction of soil and rock types?	✓		
12. Are groundwater levels and date measured shown on the subsurface profile?	✓		
Subsurface Profile or Field Boring Log (Pgs. 2-14, 2-15, 2-24 to 2-31)			
13. Are sample types and depths recorded?	✓		
*14. Are SPT blow count, percent core recovery, and RQD values shown?	✓		
15. If cone penetration tests were made, are plots of cone resistance and friction ratio shown with depth?			
Laboratory Test Data (Pgs. 4-6, 4-22, 4-23)			
*16. Were lab soil classification tests such as natural moisture content, gradation, Atterberg limits, performed on selected representative samples to verify field visual soil identification?			✓
17. Are laboratory test results such as shear strength (Pg. 4-14), consolidation (Pg. 4-9), etc., included and/or summarized?			✓

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.