

# TOWN OF CUTLER BAY BEL-AIRE FIELD LIGHTING IMPROVEMENTS

18500 FRANJO Rd  
CUTLER BAY, FLORIDA 33189-1816



DEVELOPED FOR:

**TOWN OF CUTLER BAY**

**TOWN COUNCIL:**

TIM MEERBOTT, MAYOR  
MICHAEL P. CALLAHAN, VICE MAYOR  
ROBERT DUNCAN, COUNCIL MEMBER 1  
SUZY LORD, COUNCIL MEMBER 2  
RICHARD RAMIREZ, COUNCIL MEMBER 3

**PROJECT No. 215618048**

**DECEMBER 2022**

**PERMIT SET**

APPROVED BY:

BRAD BUCHANAN, P.E.  
REGISTERED ENGINEER NO. 86225  
STATE OF FLORIDA

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.....APPROVALS.....			
AGENCY	SUBMITTAL DATE	APPROVAL DATE	PERMIT NUMBER



PROJECT LOCATION

LOCATION SKETCH

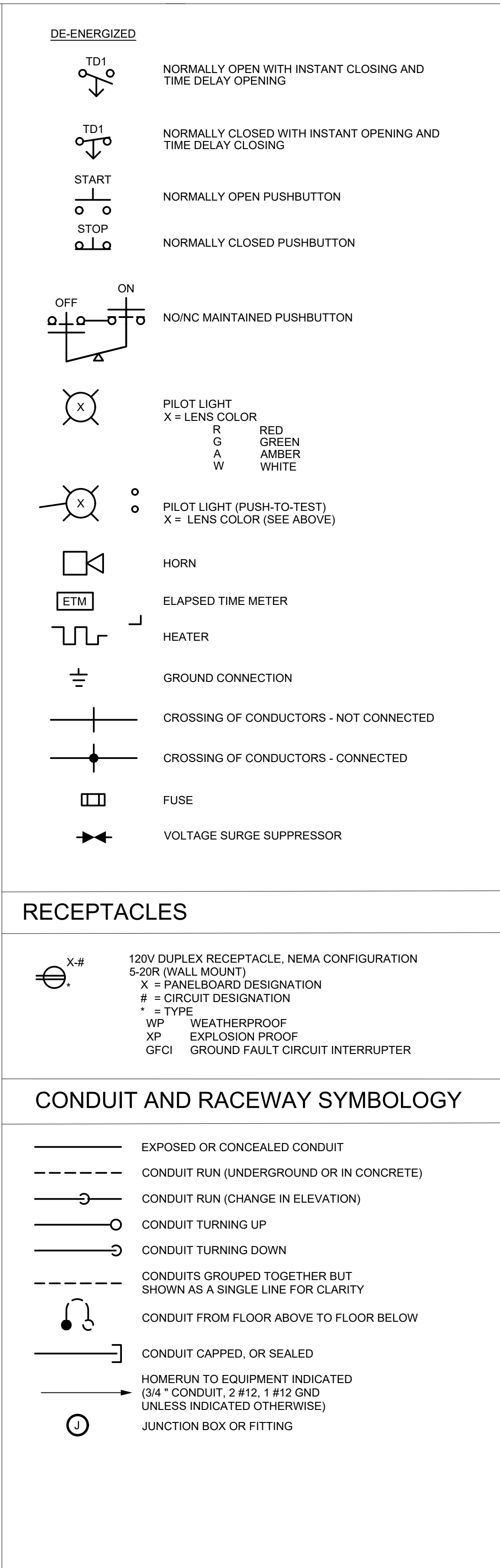
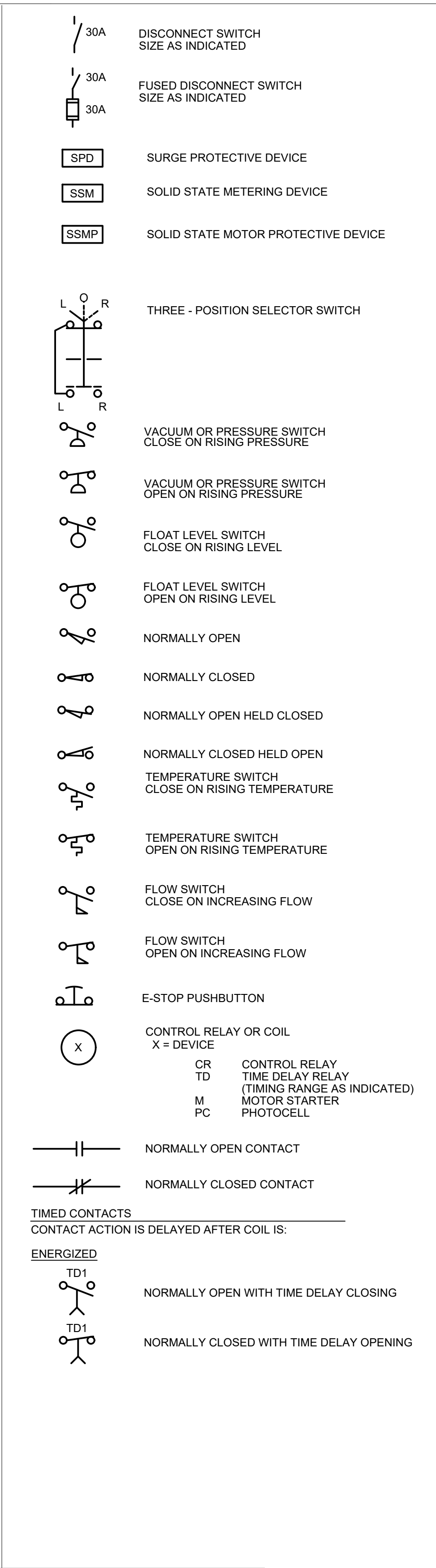
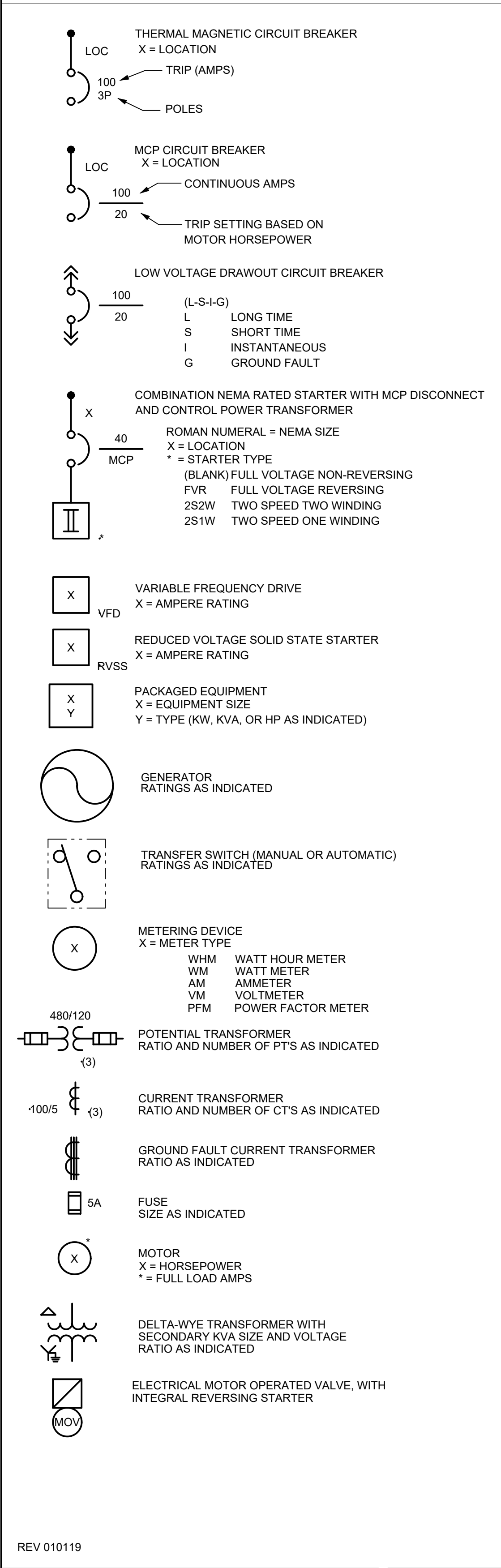
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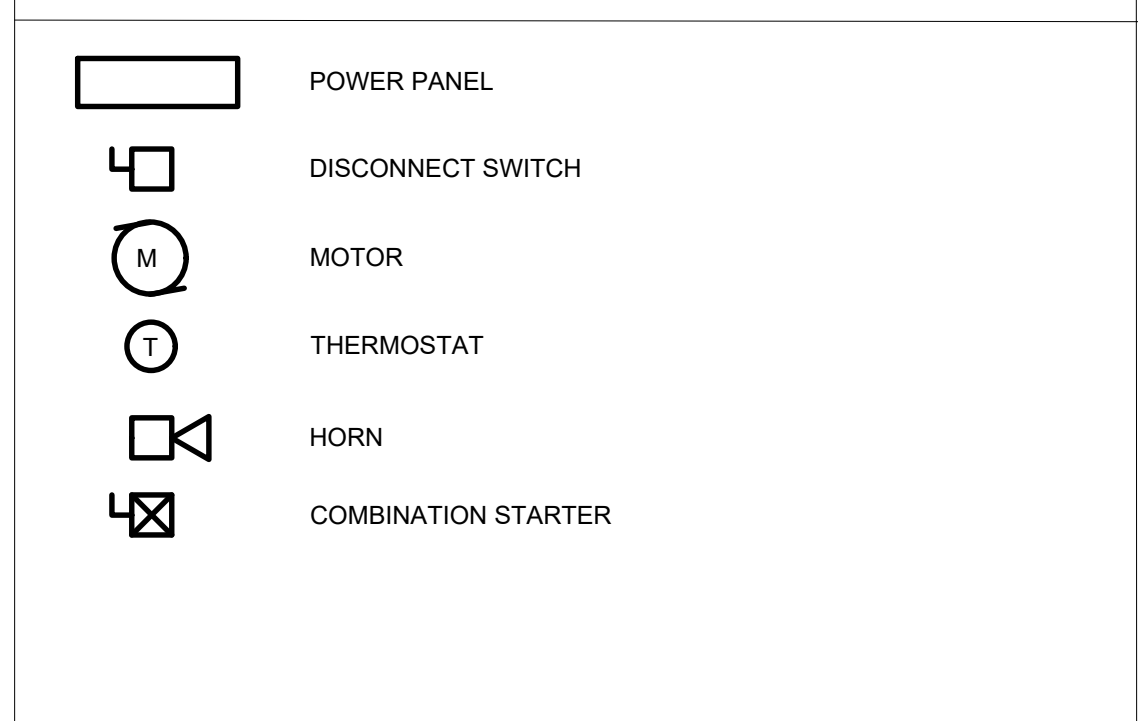
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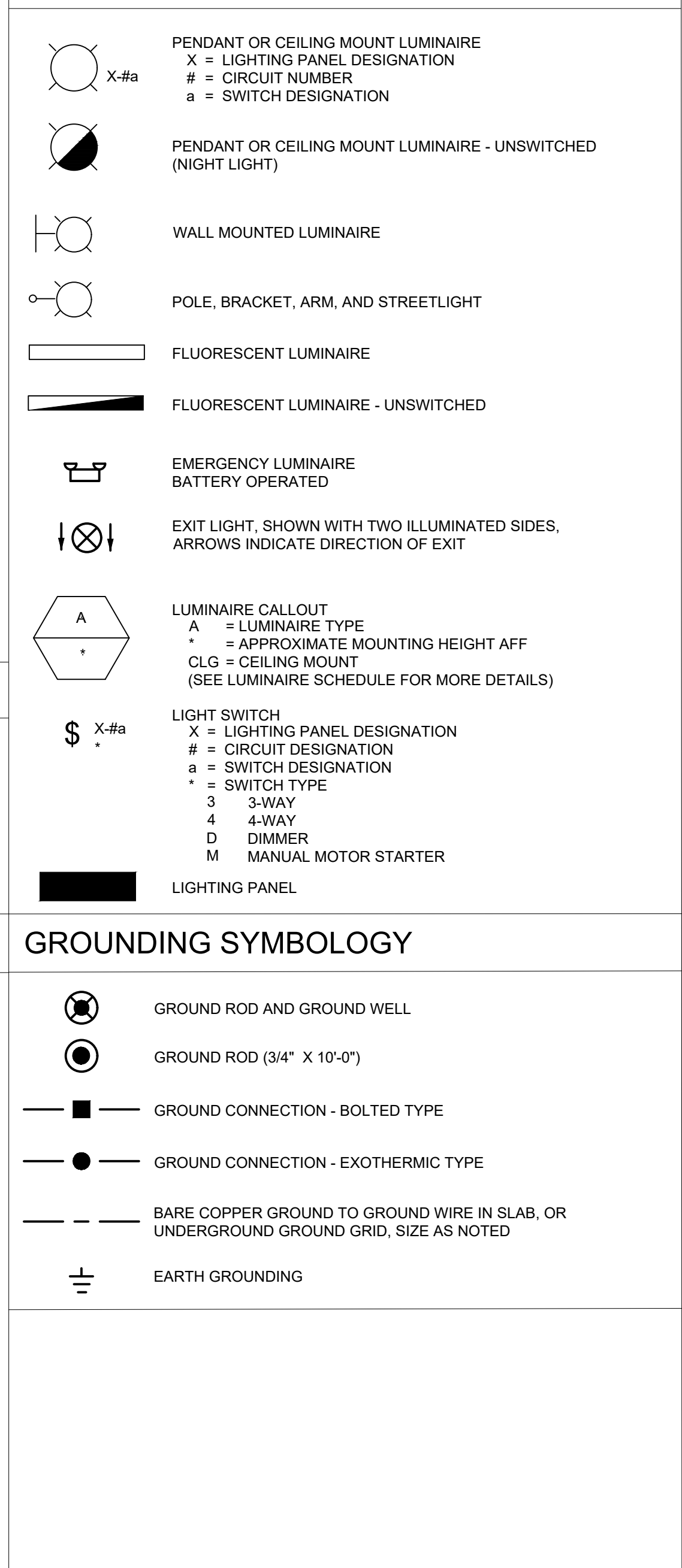
SINGLE LINE DIAGRAM, SCHEMATIC DIAGRAM SYMBOLOLOGY AND PLAN SYMBOLOLOGY



## MISCELLANEOUS ELECTRICAL SYMBOLOGY



## LIGHTING SYMBOLOGY



## GENERAL ELECTRICAL NOTES

1. ALL RACEWAYS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST APPROVED SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
3. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT OR STRUCTURAL CONDITIONS. EXPOSED CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS.
4. CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6 INCHES FROM THE CENTERLINE OF TERMINAL BOXES.
5. IN THE EVENT OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND THE ENGINEER SHALL APPROVE PROPOSED CHANGES BEFORE THEY ARE MADE.
6. ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INTERIOR OF EXTERIOR WALLS ABOVE GRADE OR IN OTHER LOCATIONS CONSIDERED DAMP OR WET SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4 INCH (MINIMUM) AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
7. LOCATION OF PULLBOXES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS AND SHALL BE 6 INCHES (MINIMUM) AWAY FROM MECHANICAL PIPING FLOW LINES.
8. ONLY MAJOR PULLBOXES ARE SHOWN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL PULLBOXES WHERE REQUIRED TO MAKE A WORKABLE INSTALLATION.
9. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS WHETHER OR NOT THEY ARE REFERENCED ON THE DRAWINGS.
10. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS. FOR LOCATIONS OF EXPANSION JOINTS.
11. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE CENTERLINE OF THE TOP CIRCUIT BREAKER OPERATING HANDLE IN THE UPPERMOST POSITION TO THE FINISHED FLOOR SHALL NOT EXCEED 6'-7".
12. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF INSTALLATION MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
13. CONNECTIONS BETWEEN RIGID CONDUIT AND MOTOR TERMINAL BOXES OR SIMILAR EQUIPMENT SUBJECT TO VIBRATION SHALL BE FLEXIBLE LIQUID-TIGHT CONDUIT. LIMIT LENGTH OF FLEXIBLE CONDUIT TO 2.5' MAX.
14. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTION TO MOTORS AND OTHER EQUIPMENT.
15. CONDUITS FOR FUTURE EQUIPMENT OR EXTENSIONS SHALL BE TERMINATED AS SHOWN IN DETAIL OR AS SPECIFIED.
16. ALL RECEPTACLES IN OUTDOOR AND ANTICIPATED WET AREAS SHALL BE GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES WITH CAST, EXTRA DUTY WEATHERPROOF WHILE-IN-USE COVERS.
17. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO VERIFY THE SCOPE OF WORK WITH FIELD CONDITIONS. PARTICULAR ATTENTION SHOULD BE GIVEN TO NEW CONDUIT RUNS IN EXISTING BUILDINGS.
18. EQUIPMENT LOCKOUTS SHALL BE IN STRICT ACCORDANCE WITH OWNER'S REQUIREMENTS.
19. FOR LIGHTING AND RECEPTACLE SYSTEMS, ONLY CIRCUIT NUMBERS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUITS, WIRES, FITTINGS, JUNCTION BOXES AND ALL NECESSARY COMPONENTS SHOWN OR NOT SHOWN ON THE DRAWINGS, TO MAKE THE ELECTRICAL INSTALLATION COMPLETE AND OPERATIONAL. ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS INDICATED OTHERWISE. CIRCUIT LOADING SHALL BE AS INDICATED IN THE PANEL SCHEDULES. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL INCLUDE GROUND WIRE.
20. ALL EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW.
21. COMPLETE ALL WORK IN A NEAT AND COMPETENT MANNER. ANY WORK THAT FAILS TO MEET THIS STANDARD SHALL BE REDONE AT THE CONTRACTOR'S EXPENSE WHERE DIRECTED BY THE ENGINEER OR OWNER.
22. COMPLETE THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS TO THE GREATEST EXTENT POSSIBLE. ALTERNATIVE INSTALLATIONS MAY BE ACCEPTED PENDING ENGINEER APPROVAL.
23. TAKE ALL MEASUREMENTS NECESSARY TO AVOID DAMAGE TO THE PROPERTY AT THE CONSTRUCTION SITE. ANY INCIDENTAL DAMAGE TO EXISTING FACILITIES AND UNDERGROUND UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S OWN COST.
24. MATERIALS AND EQUIPMENT ARRIVING ON THE JOB SITE SHALL BE STORED IN A MANNER THAT KEEPS MATERIAL FREE OF DUST, PROTECTED FROM WEATHER, AND PROPERLY ALIGNED AND TRUE TO SHAPE. RUSTY DIRTY, MISALIGNED OR OTHERWISE DAMAGE MATERIAL SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

## ABBREVIATIONS

2P	2-POLE
3P	3-POLE
3W	3-WIRE
4W	4-WIRE
A	AMPERES
AIC	AMPERE INTERRUPTING CAPACITY
AMPS	AMPERES
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT, CELSIUS
G	GROUND
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
FBC	FLORIDA BUILDING CODE
KA	KILOAMPERES
KHZ	KILOHERTZ
KV	KILOVOLTS
KVA	KILOVOLT-AMPERES
MCB	MAIN CIRCUIT BREAKER
MHZ	MEGAHERTZ
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL EQUIPMENT
	MANUFACTURERS ASSOCIATION
NEU	NEUTRAL
NFPA	NATIONAL FIRE
	PROTECTION AGENCY
PVC	POLYVINYL CHLORIDE
RMS	ROOT MEAN SQUARE
SCCR	SHORT CIRCUIT CURRENT RATING
SPD	SURGE PROTECTIVE DEVICE
SST	STAINLESS STEEL
UL	UNDERWRITERS LABORATORY
V	VOLT
VAC	VOLTS, ALTERNATING CRRENT
XFMR	TRANSFORMER



1. INCLUDE ALL AUXILIARIES AND ACCESSORIES FOR COMPLETE AND PROPERLY OPERATING SYSTEM.

2. B. ALL MATERIALS SHALL BE NEW AND FREE OF DEFECTS, AND SHALL BE UL LISTED, GEAR THE UL LABEL OR BE LABELED OR LISTED WITH AN APPROVED, NATIONALLY RECOGNIZED ELECTRICAL TESTING AGENCY. WHERE NO LABELING OR LISTING SERVICE IS AVAILABLE FOR CERTAIN TYPES OF EQUIPMENT, TEST DATA SHALL BE SUBMITTED TO PROVE TO THE ENGINEER THAT EQUIPMENT MEET OR EXCEEDS AVAILABLE STANDARDS.

3. C. PROVIDE AND INSTALL ALL ELECTRICAL SYSTEMS AND ANY NECESSARY ACCESSORIES AS PER THE NATIONAL ELECTRICAL CODE (NEC) EDITION AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION AND LOCAL CODES WHETHER OR NOT SPECIFIED HEREIN. THE CONTENT OF THESE SPECIFICATIONS (DIVISION 26) AND CONTRACT DOCUMENTS IN GENERAL ONLY REFERS TO WORK REQUIRED ABOVE AND BEYOND THE REQUIREMENTS OF THE NEC AND APPLICABLE LOCAL CODES.

4. D. ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS IN FORCE AT THE TIME OF CONSTRUCTION.

5. 1. FLORIDA BUILDING CODE

6. 2. NATIONAL ELECTRICAL CODE (NEC)

7. 3. REQUIREMENTS OF LOCAL POWER COMPANY

10.2 LAYOUT OF WORK

11. A. DRAWINGS ARE DIAGRAMMATIC, CORRELATE FINAL EQUIPMENT LOCATIONS WITH GOVERNING ARCHITECTURAL AND STRUCTURAL DRAWINGS. LAY OUT BEFORE INSTALLATION SO THAT ALL TRADES MAY INSTALL EQUIPMENT IN SPACES AVAILABLE. PROVIDE COORDINATION AS REQUIRED FOR INSTALLATION IN A NEAT AND WORKMANLIKE MANNER.

10.3 INVESTIGATION OF SITE

12. A. CHECK SITE AND EXISTING CONDITIONS THOROUGHLY BEFORE BIDDING. ADVISE ENGINEER OF DISCREPANCIES OR QUESTIONS NOTED.

10.4 SUPERVISION OF THE WORK

13. A. PROVIDE FIELD SUPERINTENDENT WHO HAS HAD A MINIMUM OF FOUR (4) YEARS PREVIOUS SUCCESSFUL EXPERIENCE ON PROJECTS OF COMPARABLE SIZE AND COMPLEXITY. SUPERINTENDENT SHALL BE PRESENT AT ALL TIMES THAT WORK UNDER THIS DIVISION IS BEING INSTALLED OR AFFECTED. SUPERINTENDENT SHALL HAVE PASSED A PROCTORED H.H. BEING JOURNEYMAN EXAM AND SHALL BE A LICENSED JOURNEYMAN. AT LEAST ONE MEMBER OF THE ELECTRICAL CONTRACTING FIRM SHALL HOLD A STATE MASTER CERTIFICATE OF COMPETENCY.

10.5 COORDINATION

14. A. PROVIDE ALL REQUIRED COORDINATION AND SUPERVISION WHERE WORK CONNECTS TO OR IS AFFECTED BY WORK OF OTHERS, AND COMPLY WITH ALL REQUIREMENTS AFFECTING THIS DIVISION WORK REQUIRED UNDER OTHER DIVISIONS, SPECIFICATIONS OR DRAWINGS TO BE PERFORMED BY THIS DIVISION SHALL BE COORDINATED WITH THE CONTRACTOR AND SUCH WORK PERFORMED AT NO ADDITIONAL COST TO OWNER.

10.6 BASIS FOR WIRING DESIGN

15. A. THE DRAWINGS AND SPECIFICATIONS DESCRIBE SPECIFIC SIZES OF SWITCHES, BREAKERS, CONDUITS, CONDUCTORS, AND OTHER ITEMS OF WIRING EQUIPMENT. THESE SIZES ARE BASED ON SPECIFIC ITEMS OF POWER CONSUMING EQUIPMENT. WHEREVER THE CONTRACTOR PROVIDES POWER CONSUMING EQUIPMENT WHICH DIFFERS FROM DRAWINGS AND SPECIFICATIONS, THE WIRING AND ASSOCIATED CIRCUIT COMPONENTS FOR SUCH EQUIPMENT SHALL BE CHANGED TO MATCH AT NO ADDITIONAL EXPENSE TO THE OWNER.

10.7 PROTECTION AND CLEAN UP

16. A. SUITABLY PROTECT ALL EQUIPMENT FURNISHED UNDER THIS DIVISION DURING CONSTRUCTION. RESTORE ALL DAMAGED SURFACES AND ITEMS TO "LIKE NEW" CONDITION BEFORE A REQUEST FOR SUBSTANTIAL COMPLETION INSPECTION.

10.8 MATERIALS

17. A. REFERENCE: "GENERAL CONDITIONS OF THE CONTRACT".

18. B. WHERE A MANUFACTURER'S MODEL NUMBER IS LISTED, THIS MODEL SHALL SET THE STANDARD OF QUALITY AND PERFORMANCE REQUIRED. WHERE NO BRAND NAME IS SPECIFIED, THE SOURCE AND QUALITY SHALL BE SUBJECT TO ENGINEER'S REVIEW AND ACCEPTANCE.

10.9 SUBSTITUTIONS

19. A. EACH BIDDER REPRESENTS THAT HIS BID IS BASED UPON THE EQUIPMENT AND MATERIALS DESCRIBED IN DIVISION 26 OF THE SPECIFICATIONS.

20. B. SUBSTITUTION SUBMITTALS SHALL INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED, DRAWINGS, CUTS, PERFORMANCE AND TEST DATA AND ANY OTHER INFORMATION NECESSARY FOR THE ENGINEER TO DETERMINE THAT THE EQUIPMENT MEETS ALL SPECIFICATIONS AND REQUIREMENTS. PRE-APPROVAL OF PROPOSED SUBSTITUTION IS REQUIRED FOR EQUIPMENT SUPPLIED UNDER THIS DIVISION AND MUST BE SUBMITTED 10 DAYS PRIOR TO BID OPENING.

21. C. SUBSTITUTED EQUIPMENT OR OPTIONAL EQUIPMENT WHERE PERMITTED AND APPROVED, MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY MODIFICATIONS OF RELATED SYSTEMS AS A RESULT OF SUBSTITUTIONS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

10.10 TECHNICAL INFORMATION BROCHURES AND SUBMITTALS

22. A. SUBMIT TECHNICAL INFORMATION BROCHURES AT START OF CONSTRUCTION OR WITHIN 30 DAYS AFTER AWARD OF THE CONTRACT. PROVIDE CORRECT DESIGNATION ON COVER AND ON END OF BROCHURE.

23. B. THE FIRST SHEET IN THE BROCHURE SHALL BE AN INDEX PAGE LISTING ALL EQUIPMENT CONTAINED IN THE BROCHURE WHICH PERTAINS TO THE PROJECT. THE SECOND SHEET SHALL BE PREPARED BY THE CONTRACTOR, AND SHALL LIST MANUFACTURER'S AUTHORIZED REPRESENTATIVE FOR THIS PROJECT. THE THIRD SHEET SHALL LIST MANUFACTURER'S AUTHORIZED MAINTENANCE COMPANY ADDRESSES FOR EQUIPMENT ON THIS PROJECT.

24. C. PROVIDE REINFORCED SEPARATION SHEETS TABBED WITH THE APPROPRIATE SPECIFICATION REFERENCE NUMBER AND TYPED INDEX FOR EACH SECTION.

25. D. TECHNICAL INFORMATION CONSISTING OF MARKED CATALOG SHEETS OR SHOP DRAWINGS SHALL BE INSERTED IN THE BROCHURE IN PROPER ORDER ON ALL ITEMS HEREIN SPECIFIED OR SHOWN ON DRAWINGS.

26. E. THE GENERAL CONTRACTOR SHALL REVIEW THE BROCHURES BEFORE SUBMITTING TO THE

DRAWINGS SHALL INCLUDE IDENTIFICATION OF PROJECT AND NAMES OF ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUBCONTRACTOR AND/OR SUPPLIER AS APPLICABLE. DATA SHALL BE NUMBERED SEQUENTIALLY AND INDICATE IN GENERAL.

- a. FABRICATION AND ERECTION DIMENSIONS.
- b. ARRANGEMENTS AND SECTIONAL VIEWS.
- c. NECESSARY DETAILS, INCLUDING COMPLETE INFORMATION FOR MAKING CONNECTIONS WITH OTHER WORK.
- d. KINDS OF MATERIAL AND FINISHES.
- e. DESCRIPTIVE NAMES OF EQUIPMENT.
- f. MODIFICATIONS AND OPTIONS TO STANDARD EQUIPMENT REQUIRED BY THE CONTRACT.
- g. LEAVE BLANK AREA, SIZE APPROXIMATELY 4 BY 2-1/2 INCHES, NEAR TITLE BLOCK (FOR ENGINEER'S STAMP IMPRINT).
- h. IN ORDER TO FACILITATE REVIEW OF DRAWINGS, INsofar AS PRACTICABLE, THEY SHALL BE NOTED, INDICATING BY CROSS REFERENCE THE CONTRACT DRAWINGS, NOTE, AND/OR SPECIFICATIONS PARAGRAPH NUMBERS WHERE ITEM(S) OCCUR IN THE CONTRACT DOCUMENTS.
- i. SEE SPECIFIC SECTIONS OF SPECIFICATIONS FOR FURTHER REQUIREMENTS.
- j. PRODUCT DATA

2. SUBMIT TECHNICAL DATA VERIFYING THAT THE ITEM SUBMITTED COMPLIES WITH THE REQUIREMENTS OF THE SPECIFICATIONS. TECHNICAL DATA SHALL INCLUDE MANUFACTURER'S NAME AND MODEL NUMBER, DIMENSIONS, WEIGHTS, ELECTRICAL CHARACTERISTICS, AND CLEARANCES REQUIRED. INDICATE ALL OPTIONAL EQUIPMENT AND CHANGES FROM THE STANDARD ITEM AS CALLED FOR IN THE SPECIFICATIONS. FURNISH DRAWINGS, OR DIAGRAMS, DIMENSIONED AND IN CORRECT SCALE, COVERING EQUIPMENT, SHOWING ARRANGEMENT OF COMPONENTS AND OVERALL COORDINATION.

3. IN ORDER TO FACILITATE REVIEW OF PRODUCT DATA, INsofar AS PRACTICABLE, THEY SHALL BE NOTED, INDICATING BY CROSS REFERENCE THE CONTRACT DRAWINGS, NOTE, AND/OR SPECIFICATION PARAGRAPH NUMBERS WHERE ITEM(S) OCCUR IN THE CONTRACT DOCUMENTS.

4. SEE SPECIFIC SECTIONS OF SPECIFICATIONS FOR FURTHER REQUIREMENTS.

PROCESSING SUBMITTALS

1. PRODUCT DATA: FOR STANDARD MANUFACTURED MATERIAL, PRODUCTS AND ITEMS SUBMIT COPIES AS REQUIRED UNDER DIVISION 1 SPECIFICATIONS. IF SUBMITTAL IS REJECTED, RESUBMIT COPIES OF NEW DATA.
2. REFERENCE: "GENERAL CONDITIONS OF THE CONTRACT".
3. NOTE THAT THE REVIEW OF SHOP DRAWINGS, OR OTHER INFORMATION SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS HEREINBEFORE SPECIFIED, DOES NOT ASSURE THAT THE ENGINEER, ARCHITECT, OR ANY OTHER OWNER'S REPRESENTATIVE, ATTESTS TO THE DIMENSIONAL ACCURACY OR DIMENSIONAL SUITABILITY OF THE MATERIAL OR EQUIPMENT INVOLVED. THE LIABILITY TO THE MATERIAL OR EQUIPMENT INVOLVED OF THE MECHANICAL/ELECTRICAL PERFORMANCE OF EQUIPMENT. REVIEW OF SHOP DRAWINGS DOES NOT INVALIDATE THE PLANS AND SPECIFICATIONS IF IN CONFLICT, UNLESS A LETTER REQUESTING SUCH CHANGE IS SUBMITTED AND APPROVED ON THE ENGINEER'S LETTERHEAD.

DELAYS

1. CONTRACTOR IS RESPONSIBLE FOR ANY DELAYS IN JOB PROGRESS ACCRUING DIRECTLY OR INDIRECTLY FROM LATE SUBMISSIONS OR RE-SUBMISSIONS OF SHOP DRAWINGS, PRODUCT DATA OR SAMPLES.

PROGRESS AND RECORD DRAWINGS

KEEP TWO SETS OF BLACK OR BLUE ON WHITE PRINTS AT THE JOB SITE. NEATLY MARKUP DESIGN DRAWINGS EACH DAY AS COMPONENTS ARE INSTALLED TAKING CARE TO REFLECT ANY VARIATIONS. DIFFERENT COLORED PENCILS SHALL BE USED FOR DIFFERENT SYSTEMS. ALL ITEMS ON PROGRESS DRAWING SHALL BE SHOWN IN ACTUAL LOCATION INSTALLED. CHANGE ANY EQUIPMENT SCHEDULE TO AGREE WITH ITEMS ACTUALLY FURNISHED.

PRIOR TO REQUEST FOR FINAL PAYMENT FURNISH A SET OF "AS-BUILT" DRAWINGS IN PDF FORMAT AND TWO SETS OF PRINTS TO THE ENGINEER, UNLESS OTHERWISE SPECIFIED.

OPERATING INSTRUCTIONS

SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRE INSTRUCTIONS TO OPERATE. AFTER APPROVAL, PROVIDE ONE COPY FOR INSERTION IN EACH TECHNICAL INFORMATION BROCHURE.

MAINTENANCE INSTRUCTIONS

SUBMIT FOR APPROVAL MAINTENANCE INFORMATION CONSISTING OF MANUFACTURER'S PRINTED INSTRUCTIONS AND PARTS LISTS FOR EACH MAJOR ITEM OR EQUIPMENT. AFTER APPROVAL, INSERT INFORMATION IN EACH TECHNICAL INFORMATION BROCHURE.

SYSTEMS GUARANTEE

THE WORK REQUIRED UNDER THIS DIVISION SHALL INCLUDE A ONE-YEAR GUARANTEE. THIS GUARANTEE SHALL BE BY THE CONTRACTOR TO THE OWNER FOR ANY DEFECTIVE WORKMANSHIP OR MATERIAL WHICH HAS BEEN FURNISHED UNDER THIS CONTRACT AT NO COST TO THE OWNER FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. THIS GUARANTEE SHALL NOT INCLUDE LIGHT BULBS IN SERVICE AFTER ONE MONTH FROM DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. EXPLAIN THE PROVISIONS OF GUARANTEE TO THE OWNER AT THE "DEMONSTRATION OF COMPLETED SYSTEM". SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRE INSTRUCTIONS TO OPERATE. AFTER APPROVAL, PROVIDE ONE COPY FOR INSERTION IN EACH TECHNICAL INFORMATION BROCHURE.

FINAL INSPECTION

ALL WORK ON THE PROJECT SHALL BE COMPLETED, AND ALL FORMS AND OTHER INFORMATION SHALL BE SUBMITTED FOR APPROVAL ONE WEEK BEFORE THE REQUEST FOR FINAL INSPECTION.

EQUIPMENT TO BE OF SINGLE MANUFACTURER

IN GENERAL, ALL LIKE EQUIPMENT SHALL BE SUPPLIED AND MANUFACTURED BY SAME MANUFACTURER.

GENERAL

WHERE THE REQUIREMENTS OF ANOTHER DIVISION, SECTION OR PART OF THESE SPECIFICATIONS EXCEED THE REQUIREMENTS OF THIS DIVISION, THOSE REQUIREMENTS SHALL GOVERN.

UTILITY COMPANY FEES, CHARGES, COSTS

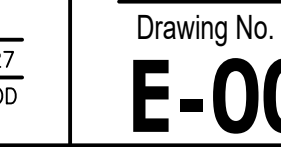
B. WIRING FOR 600 VOLT CLASS POWER AND LIGHTING SHALL BE AS MANUFACTURED BY OKONITE.

a. 07 GEDNEY

## DART 3: EXECUTION

[illegible]

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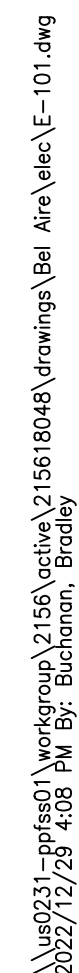




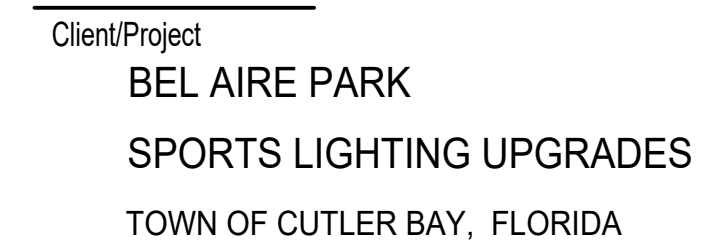
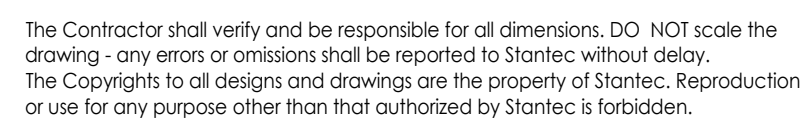




- A. THE AS-BUILT DRAWING ON THIS SHEET IS PROVIDED FOR REFERENCE ONLY. ALL RELEVANT INFORMATION MAY NOT BE SHOWN ON THE DRAWINGS. CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY ASSESS EXISTING CONDITIONS PRIOR TO PLACING BID.
- B. THE CONTRACTOR IS REPOSIBLE FOR REPLACING ALL SPORTS LIGHTING FIXTURES WITH NEW LED FIXTURES AS WELL AS UPGRADES TO THE EXISTING POLES, ELECTRICAL DISTRIBUTION SYSTEM, AND LIGHTING CONTROLS AS SHOWN AND SPECIFIED HEREIN.
- C. COORDINATE WITH THE ELECTRIC UTILITY, FLORIDA POWER AND LIGHT (FPL), FOR DISCONNECTION AND RE-CONNECTION OF EXISTING UTILITY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL ELECTRICAL FROM THE TRANSFORMER SECONDARY. FPL IS RESPONSIBLE FOR TERMINATING SECONDARY CABLES TO THE POLE MOUNTED TRANSFORMER.



PERMIT SET  
NOT TO BE USED FOR CONSTRUCTION



Title  
ELECTRICAL SITE PLAN (AS-BUILT)

Project No. 215618048	Scale NO SCALE
Drawing No. <b>E-101</b>	Sheet 7 of 19
	Revision 0





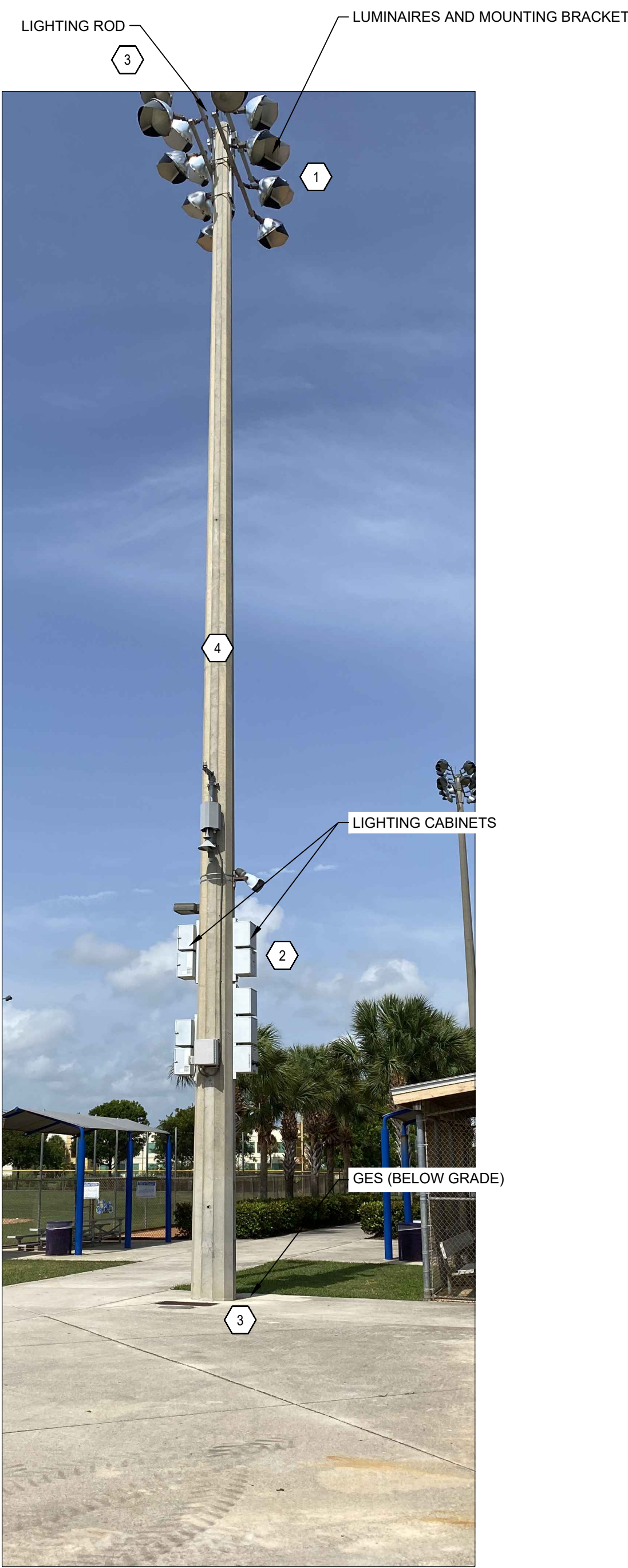
EXISTING ELECTRICAL SPACE

NO SCALE



EXISTING ELECTRICAL EQUIPMENT

NO SCALE



TYPICAL LIGHT POLE WORK

NO SCALE

GENERAL NOTES

- A. COORDINATE WITH THE ELECTRIC UTILITY, FLORIDA POWER AND LIGHT (FPL), FOR DISCONNECTION AND RE-CONNECTION OF EXISTING UTILITY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL ELECTRICAL FROM THE TRANSFORMER SECONDARY. FP&L IS RESPONSIBLE FOR TERMINATING SECONDARY CABLES TO THE POLE MOUNTED TRANSFORMER.

KEY NOTES

1. FURNISH AND INSTALL NEW LED LIGHT FIXTURES AND MOUNTING ARM BRACKETS.
2. FURNISH AND INSTALL NEW LIGHTING CONTROL CABINETS.
3. FURNISH AND INSTALL NEW GROUND ROD, DOWN CONDUCTOR AND LIGHTING ROD TERMINAL.
4. FURNISH AND INSTALL NEW LUMINAIRE CABLES PER MANUFACTURER RECOMMENDATIONS. RUN CONDUCTORS INSIDE POLE. IF INSUFFICIENT SPACE IS AVAILABLE, CONDUCTORS MAY BE RUN OUTSIDE OF POLE IN RIGID ALUMINUM CONDUIT.
5. DEMOLISH AND REPLACE THE EXISTING EQUIPMENT RACK AND ALL ELECTRICAL PANELS. THE EQUIPMENT RACK AND PANELS WILL BE REPLACED WITH NEW PER SPECIFICATIONS. RE-CONNECT TO EXISTING POLES USING EXISTING WIRING. REFER TO SHEET E-601 FOR CONNECTION DIAGRAM.
6. FURNISH AND INSTALL NEW MIN 24"x14"x18" PULLBOX. INTERCEPT CONDUITS TO EXISTING LIGHT POLES UNDERGROUND, AND EXTEND TO THE NEW PULLBOX, AND FROM THE NEW PULLBOX TO THE NEW CONTACTOR PANEL. THE PULLBOX SHALL BE LOCATED WITHIN 10' OF THE CONTACTOR PANEL. IN THE EVENT THE EXISTING CABLES ARE NOT OF SUFFICIENT LENGTH TO REACH THE NEW CONTACTOR PANEL, THE CONTRACTOR SHALL FURNISH AND INSTALL NEW WIRE OF EQUAL SIZE AND TYPE BETWEEN THE PULLBOX AND THE CONTACTOR PANEL AND SPLICE WITHIN THE PULLBOX USING SUBMERGENCE RATED SPLICES. THE BID PRICE SHALL INCLUDE THE COST OF THE THE PULLBOX AND SPLICES.

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2022/12/25 10:59 AM By: [redacted]

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TOWN OF CUTLER BAY, FLORIDA

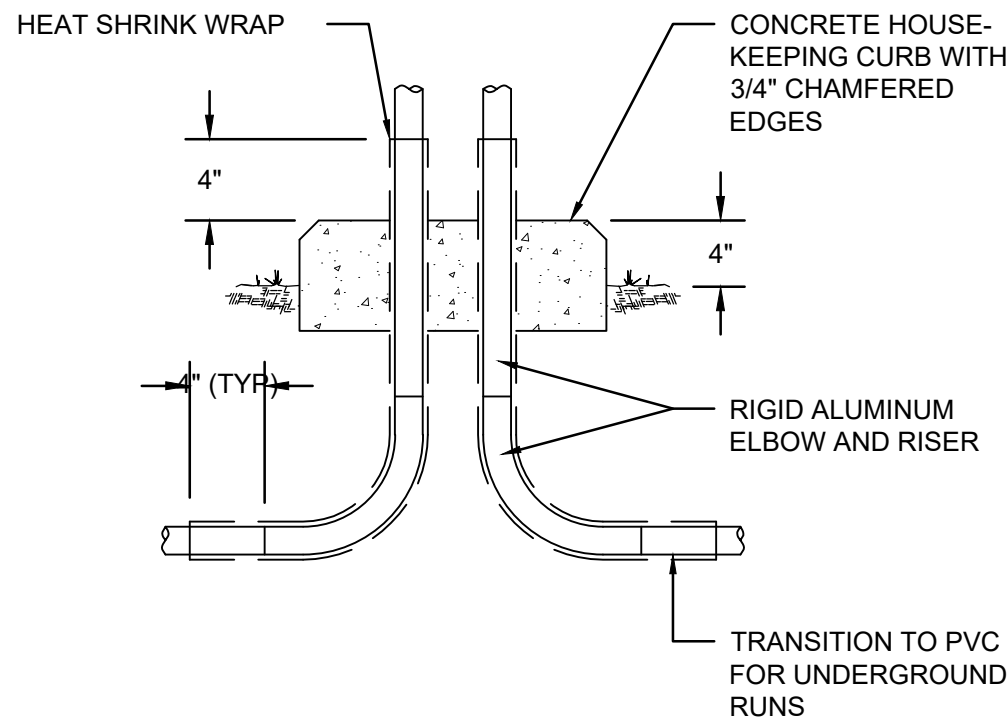
File Name: E-501.DWG	DS Dwn.	BB Chkd.	NE Dsgn.	22.09.27 YY.MM.DD
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Title  
ELECTRICAL DETAILS

Project No. 215618048	Scale NO SCALE
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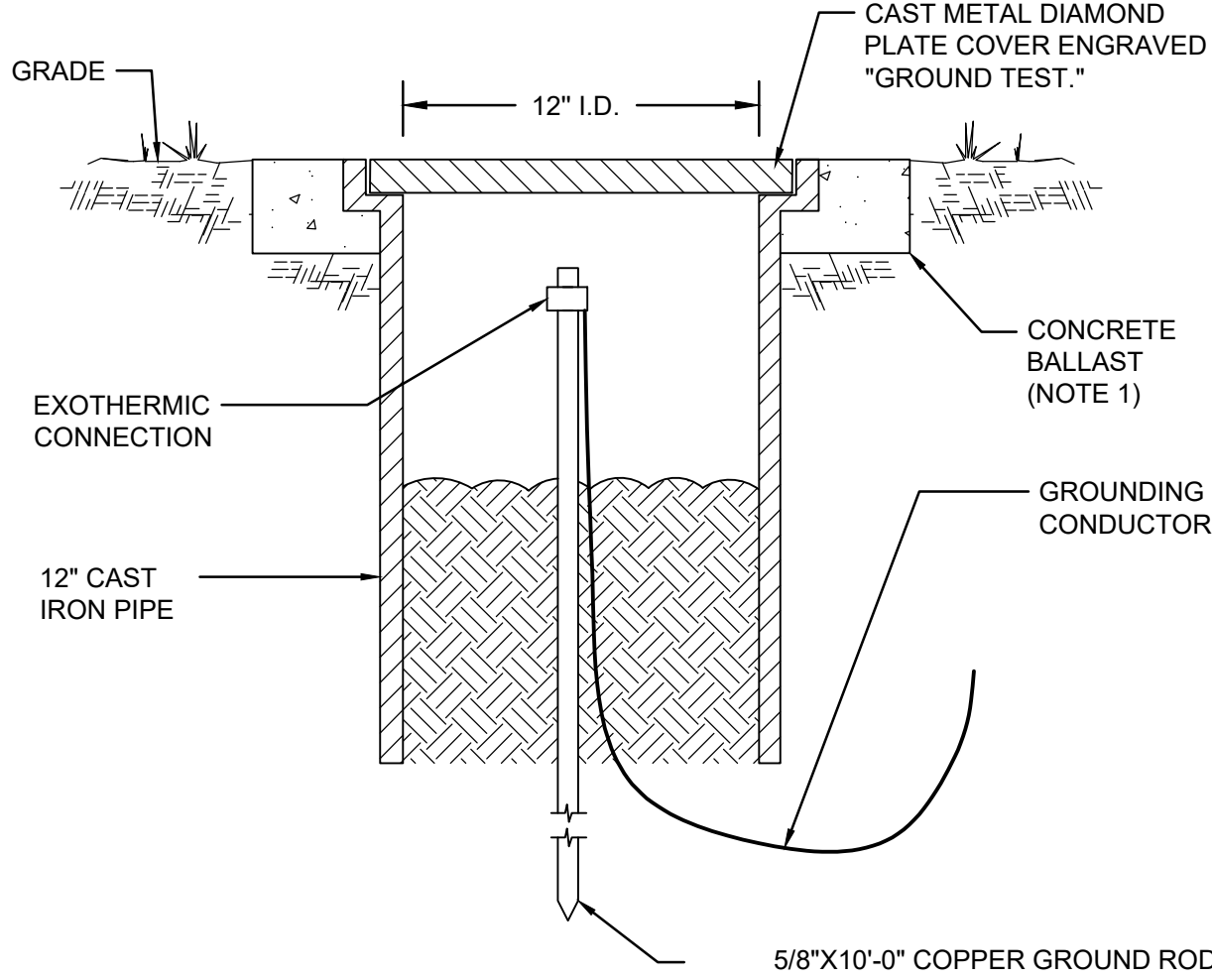
Drawing No. <b>E-501</b>	Sheet 8 of 19	Revision 0
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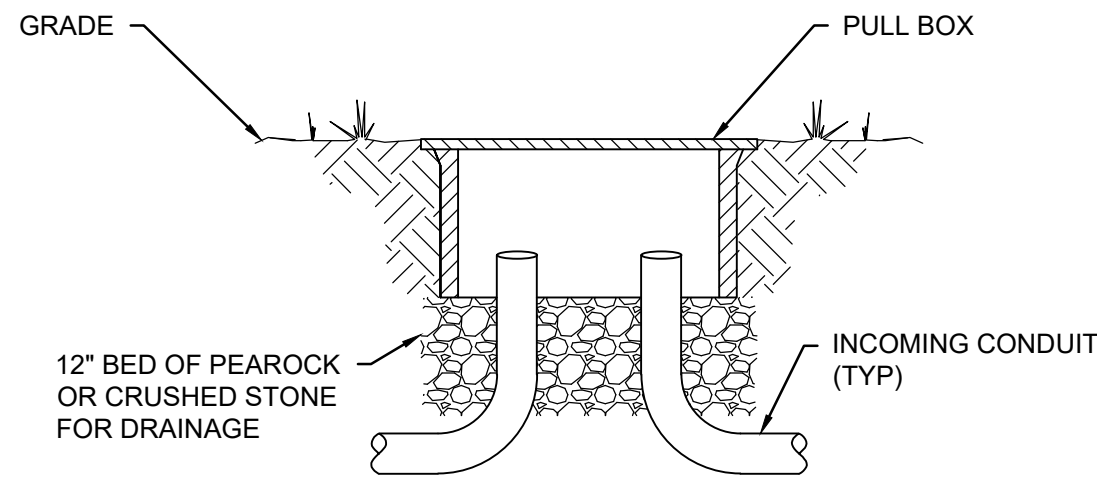
- NOTES:
1. ALL CONDUIT STUB UPS IN UNPAVED AREAS SHALL BE IN ACCORDANCE WITH THIS DETAIL

1 CONDUIT STUB UP DETAIL  
Scale: NO SCALE



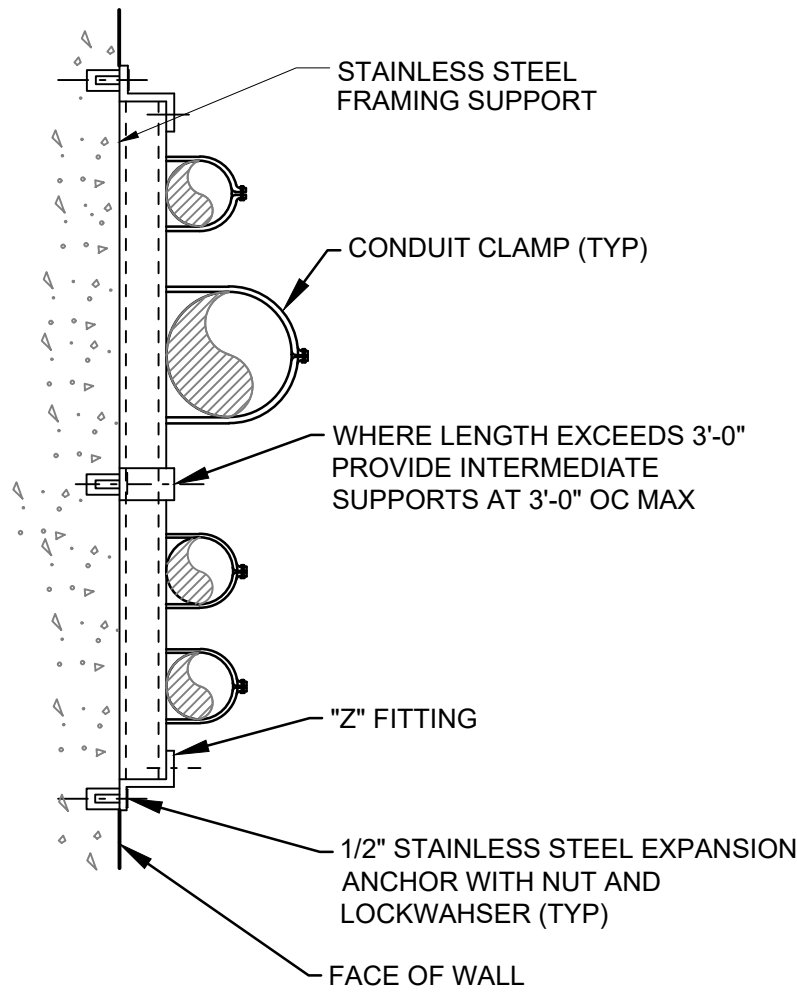
- NOTES:
1. FOR INSTALLATIONS IN CONCRETE PAVEMENTS, CONCRETE BALLAST MAY BE REMOVED FROM THE INSTALLATION. INSTALL FLUSH WITH SURFACE.

2 GROUND TEST WELL DETAIL  
Scale: NO SCALE



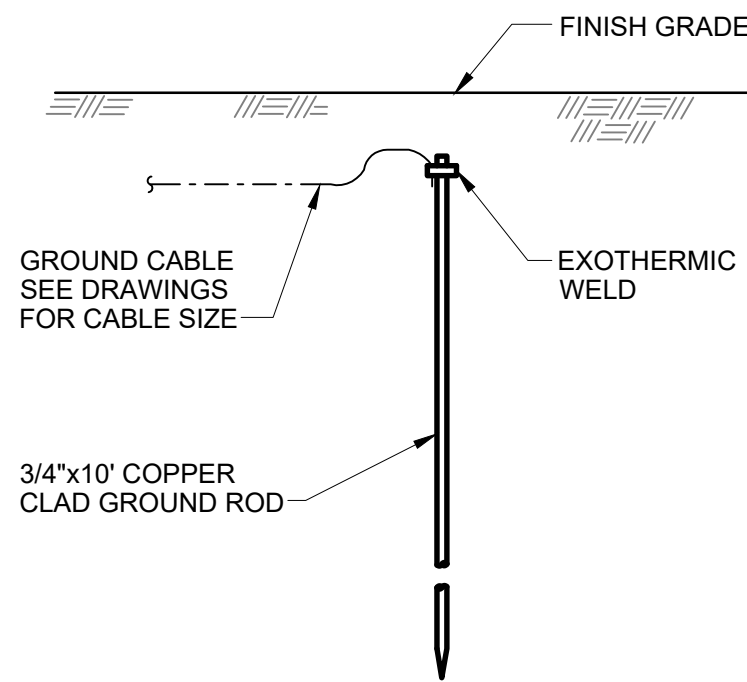
- NOTES:
1. THE PULL BOX AND COVER SHALL BE RATED TIER 15 OR TIER 22, BE SECURED TO BOX WITH STAINLESS STEEL BOLTS AND BE LABELED "ELECTRIC".
  2. UNLESS OTHERWISE INDICATED ON PLAN OR REQUIRED PER NEC, THE STANDARD PULLBOX SIZE IS 13x24, QUAZITE PG1324BA12 AND COVER PG1324HH0026 OR EQUAL.

3 PULL BOX / HANDHOLE DETAIL  
Scale: NO SCALE

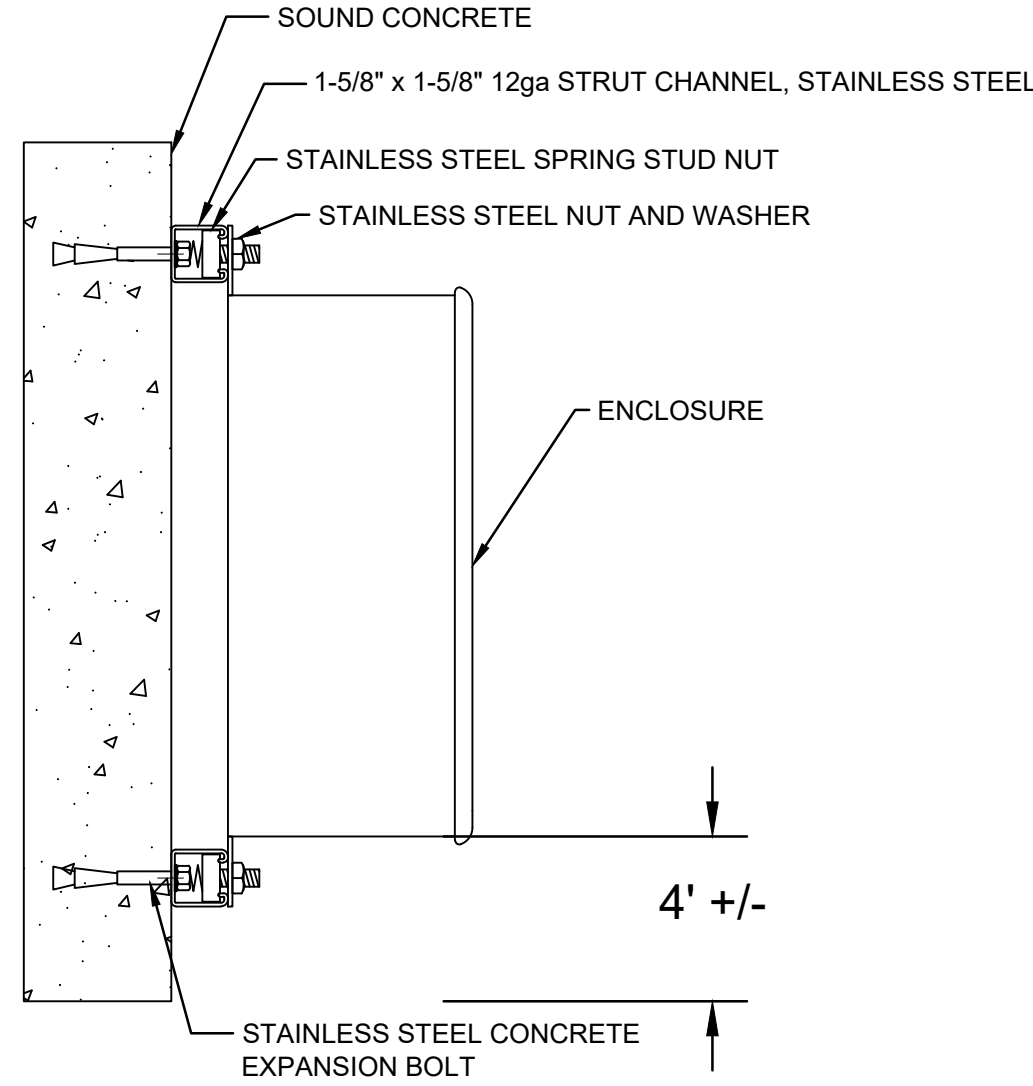


- NOTES:
1. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL

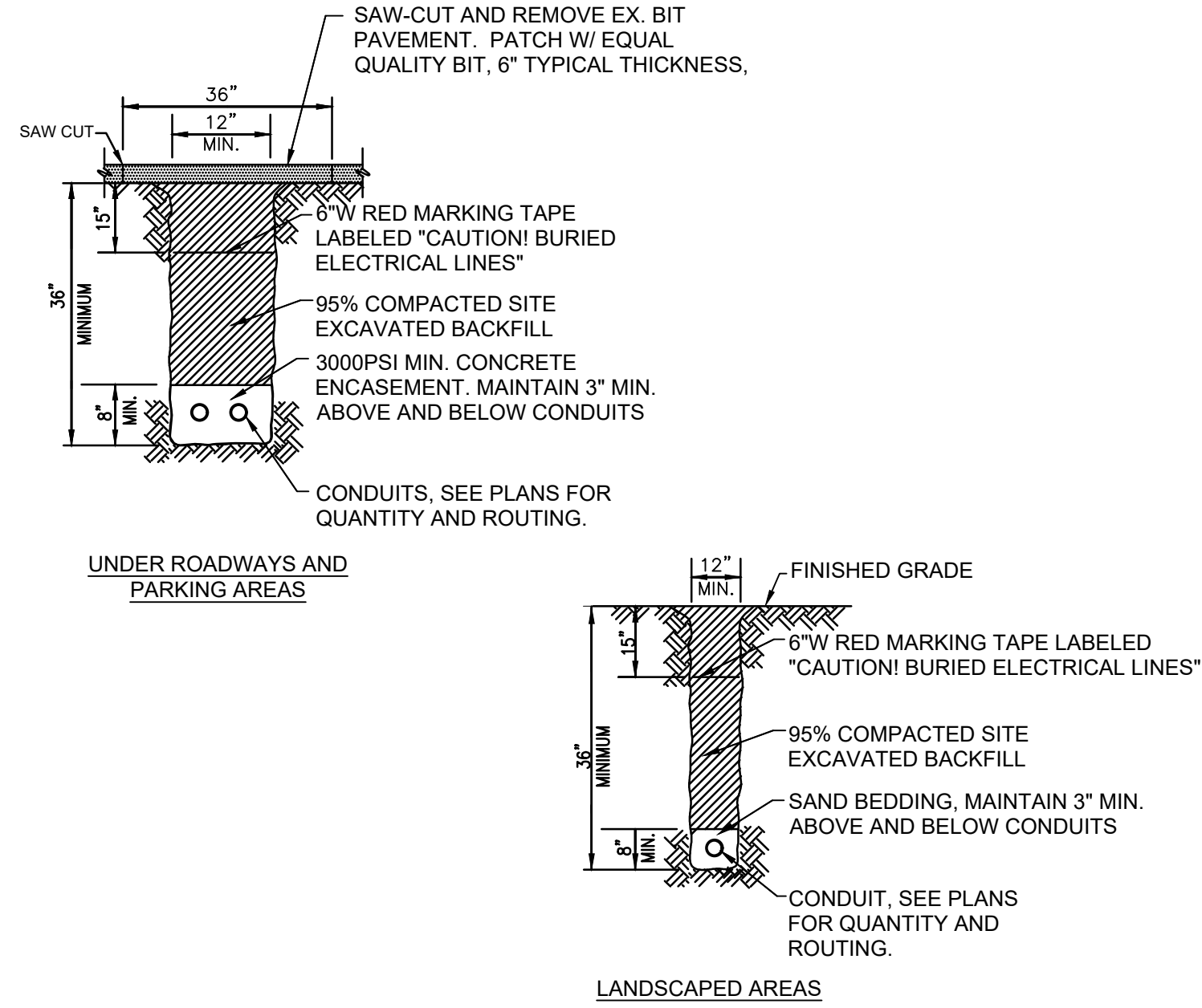
4 CONDUIT SUPPORT FLUSH MOUNT  
Scale: NO SCALE



5 GROUND ROD DETAIL  
Scale: NO SCALE



6 BOX MOUNTING DETAIL  
Scale: NO SCALE



- NOTES:
1. 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.
  2. USE CONDUIT SPACERS MINIMUM EVERY 8 FEET WHERE MULTIPLE CONDUITS ARE RUN IN SAME TRENCH.

7 TYPICAL CONDUIT TRENCH DETAILS  
Scale: NO SCALE

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2022/12/25 10:59 AM By: Stanecan, Stanley

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TOWN OF CUTLER BAY, FLORIDA

File Name: E-502.DWG	DS	BB	NE	22.09.27
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title ELECTRICAL DETAILS		
Project No. 215618048	Scale NO SCALE	
Drawing No. <b>E-502</b>	Sheet 9 of 19	Revision 0

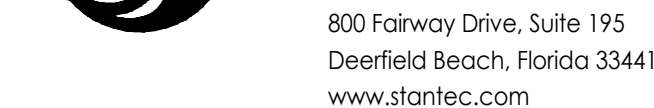




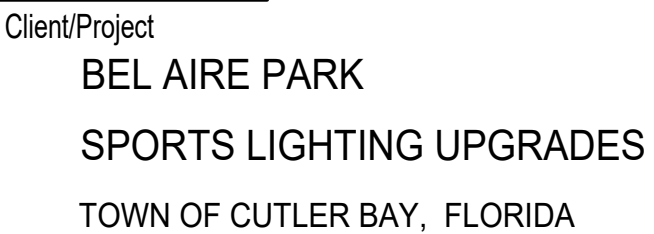
## Scale: N.T.S.

1. INSTALL RACK-MOUNTED EQUIPMENT SO THE BOTTOM OF THE ELECTRICAL EQUIPMENT IS ABOVE DESIGN FLOOD ELEVATION AND NO LESS THAN 18 INCHES ABOVE GRADE.
2. THE ARRANGEMENT SHOWN IS GENERAL. THE CONTRACTOR SHALL REVISE AS NECESSARY TO MEET THE CONDITIONS OF THE SITE AND THE FINAL FURNISHED EQUIPMENT DIMENSIONS
3. TOP OF PANELS SHALL NOT EXCEED 6'-0" ABOVE GRADE.

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**Cutler Bay,FL**

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
P1	60'	60'	4	TLC-LED-1200	4.68 kW	A
		15'	1	TLC-BT-575	0.58 kW	A
P2	60'	60'	5	TLC-LED-1200	5.85 kW	A
		15'	2	TLC-BT-575	1.15 kW	A
P3	60'	60'	5	TLC-LED-1200	5.85 kW	A
		15'	1	TLC-BT-575	0.58 kW	A
P4, P6	80'	80'	6	TLC-LED-1200	7.02 kW	A
		15'	1	TLC-BT-575	0.58 kW	A
P5	80'	80'	6	TLC-LED-1200	7.02 kW	A
		15'	2	TLC-BT-575	1.15 kW	A
6			40		42.04 kW	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Field	42.04 kW	40

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	32
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Football Spill	Horizontal Illuminance	0.02	0	0.08	111.54		A	40
Football Spill	Max Candela Metric	2827	288	6778	23.51	9.80	A	40
Football Spill	Max Vertical Illuminance Metric	0.07	0	0.23	60.96		A	40
Football	Horizontal Illuminance	31.4	20	47	2.28	1.57	A	40



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Drawing No.	Sheet	Revision
<b>E-701</b>	13 of 19	0



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2022/12/25 4:11 PM By: Stanman, S

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	P1	60'	-	15'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	P2	60'	-	15'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	5	5	0
1	P3	60'	-	15'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	5	5	0
2	P4, P6	80'	-	15'	TLC-BT-575	1	1	0
				80'	TLC-LED-1200	6	6	0
1	P5	80'	-	15'	TLC-BT-575	2	2	0
				80'	TLC-LED-1200	6	6	0
6	TOTALS					40	40	0



ENGINEERED DESIGN By: Noah Bix · File #188368B · 13-Jun-22

Pole location(s) ⚓ dimensions are relative to 0,0 reference point(s) ⊗

## Bel Aire Park Football Retrofit

Cutler Bay,FL

### GRID SUMMARY

**Name:** Football  
**Size:** 450' x 230'  
**Spacing:** 30.0' x 30.0'  
**Height:** 3.0' above grade

### ILLUMINATION SUMMARY

#### MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
<b>Guaranteed Average:</b>	<b>30</b>
Scan Average:	31.37
Maximum:	47
Minimum:	20
Avg / Min:	1.54
<b>Guaranteed Max / Min:</b>	<b>2.5</b>
Max / Min:	2.28
UG (adjacent pts):	1.55
CU:	0.78
No. of Points:	128

#### LUMINAIRE INFORMATION

**Applied Circuits:** A  
**No. of Luminaires:** 40  
**Total Load:** 42.04 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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File Name: E-701.DWG  
DS Dwn. BB Chkd. NE Dsgn. 22.09.27 YY.MM.DD

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MUSCO ILLUMINATION SUMMARY

Project No.  
215618048

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Drawing No.  
**E-702**

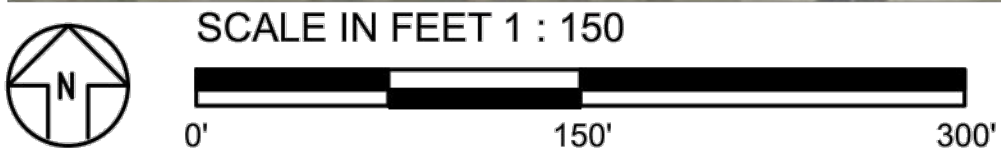
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2022/12/25 4:11 PM By: Stanman, S

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	P1	60'	-	15'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	P2	60'	-	15'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	5	5	0
1	P3	60'	-	15'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	5	5	0
2	P4, P6	80'	-	15'	TLC-BT-575	1	1	0
				80'	TLC-LED-1200	6	6	0
1	P5	80'	-	15'	TLC-BT-575	2	2	0
				80'	TLC-LED-1200	6	6	0
6	TOTALS					40	40	0



ENGINEERED DESIGN By: Noah Bix · File #188368B · 13-Jun-22

## Bel Aire Park Football Retrofit

Cutler Bay,FL

GRID SUMMARY	
Name:	Football Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average:	0.0218
Maximum:	0.08
Minimum:	0.00
No. of Points:	77
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	40
Total Load:	42.04 kW

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "**Musco Control System Summary**" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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SPORTS LIGHTING UPGRADES  
TOWN OF CUTLER BAY, FLORIDA

File Name: E-701.DWG  
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NE Dsgn.  
22.09.27  
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Title  
MUSCO ILLUMINATION SUMMARY

Project No.  
215618048

Scale  
NO SCALE

Drawing No.  
**E-703**

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Datasheet: Sportscluster Grounding Requirements

Installation Requirements

- 1


Installer to ensure grounding meets minimum standards required by code.
- 2

All existing poles are required to be supplied with a new lightning grounding conductor from poletop to grounding electrode for lightning protection. See *Lightning Grounding Conductor Sizing* below.
- 3

Support external grounding conductor every 4 ft (1.2 m) max.  
  
Protect from damage 8 ft (2.4 m) from grade. PVC conduit recommended.  
  
When routing below grade, do not allow conductor to dip below top of grounding electrode.
- 4

If concrete pole, bond existing internal ground to new ground conductor at all available locations (per code requirements.)
- 5

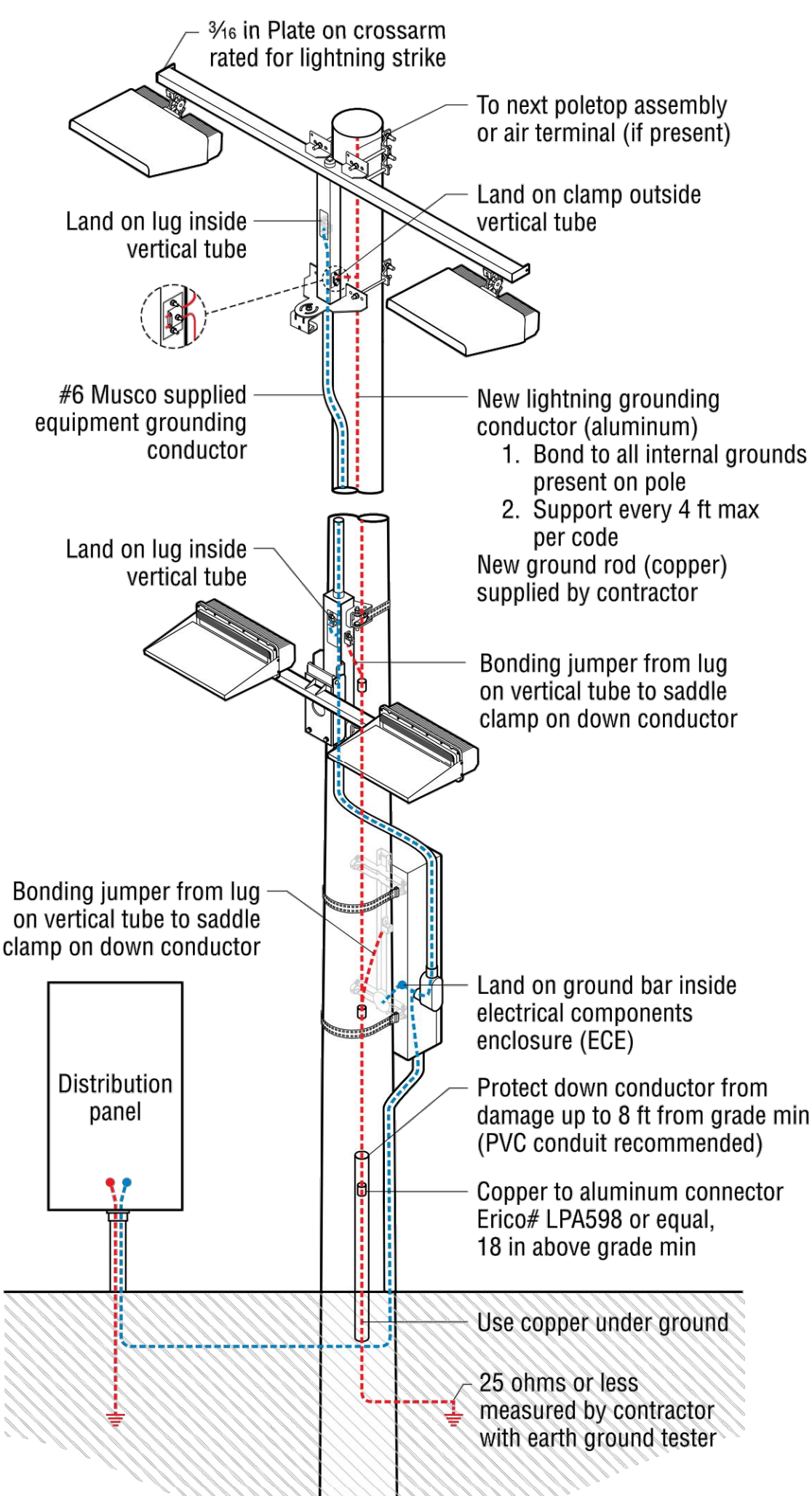
Ensure all components of the lighting system are bonded to **both** the lightning ground (shown in red) and the equipment grounding conductor (shown in blue). See *Bonding Jumper Sizing* below.
- 6

Excavate location near pole to depth of at least 2 ft (0.6 m). Drive grounding electrode into ground. In case of shallow bedrock or obstruction, you may drive electrode at 45° or shallower angle.
- 

Use driving sleeve to prevent deforming end of electrode. Trim any deformed portion for proper exothermic fusion-welding.
- 7

Bond conductor to electrode using exothermic fusion-welding kit with ignitor and brush. Follow instructions inside kit.
- 8

Ground resistance must be 25 ohms or less and verified by a 3-point test with an earth ground tester.



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Datasheet: Sportscluster Grounding Requirements

Lightning Grounding Conductor Sizing

Attach to external lightning grounding lug (rated for aluminum only) or to internal lightning grounding lug (dual-rated).

Mounting Height	Bare Stranded Aluminum <sup>1</sup>	Bare Stranded Copper <sup>2</sup>
Up to 75 ft (23 m)	1/0 AWG (cross-sectional area of 53.5 mm <sup>2</sup> )	2 AWG (cross-sectional area of 33.6 mm <sup>2</sup> )
Over 75 ft (23 m)	4/0 AWG (cross-sectional area of 107.2 mm <sup>2</sup> )	2/0 AWG (cross-sectional area of 67.4 mm <sup>2</sup> )

1. Copper grounding conductor required for underground connection to grounding electrode. Use properly rated AL to CU connector.
2. If using copper for lightning, supply copper to aluminum adapters for clamps (rated for aluminum only).

Bonding Jumper Sizing

Length	Bare Aluminum	Bare Copper
< 6 ft (1.8m)	4 AWG (cross-sectional area of 21.2 mm <sup>2</sup> )	6 AWG (cross-sectional area of 13.2 mm <sup>2</sup> )



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TOWN OF CUTLER BAY, FLORIDA

File Name: E-707.DWG	DS	BB	NE	22.09.27
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Title  
MUSCO DATA SHEETS

Project No.  
215618048

Scale  
NO SCALE

Drawing No.  
**E-707**

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