



CITY OF DELRAY BEACH
100 N.W. 1ST AVENUE, DELRAY BEACH, FL 33444

Solicitation Addendum

Addendum No.: 1

Solicitation No.: 2017- 058

Project No.: 17-062

Solicitation Title: Christmas Tree and North Pole Village Assembly and Storage

Addendum Date: July 10, 2017

Purchasing Contact: Jose Hidalgo – hidalgoj@mydelraybeach.com

THE FOLLOWING ITEMS ARE MADE AND HEREBY BECOME A PART OF THIS SOLICITATION:

Change to:

LEGAL ADVERTISEMENT Good approach to PM

The City of Delray Beach is seeking Bids from qualified contractors to assemble, dis-assemble and store the City one-hundred foot aluminum Christmas Tree and ~~nine~~ seven North Pole Village Structures, in accordance with the terms, conditions, and specifications contained in this Invitation to Bid.

Change to:

SECTION 2, SPECIAL TERMS AND CONDITIONS, ITEM 2.1

2.1 PURPOSE

The purpose of this Solicitation is to obtain bids for a five-year agreement for the assembly, dis-assembly, maintenance, repair, storage, and transportation for the City's 100 Foot Aluminum Christmas Tree as well as the ~~nine~~ seven North Pole Village Structures

Change to:

SECTION 3, SCOPE OF WORK, ITEM 3.1

3.1 PROJECT SCOPE

Sealed Bid to provide the following services for a five-year term for assembly, disassembly, maintenance, repair, bonded storage, and transportation for the City's one

hundred foot aluminum Christmas tree (Christmas Tree) as well as the ~~nine~~ seven North Pole Village Structures (Village). The awarded Bidder (hereinafter in this Scope of Work referred to as Contractor) shall provide all labor, materials, facilities, equipment, supplies, transportation, and travel for the work.

Add:

EXHIBIT 12, Drawings & Photos

Exhibit 12, Drawings & Photos, that includes electrical drawings, is hereby incorporated into the solicitation and part a part hereof.

NOTE: Items that are ~~struck through~~ are deleted. Items that are underlined have been added. All other terms and conditions remain as stated in the RFP.

QUESTIONS AND RESPONSES:

Q1. How many ornaments go on the Christmas tree?

R1. The number of ornaments is approximately 10,000.

Q2. What sizes are the ornaments?

R2. The ornaments are similar in size to those used for large residential Christmas trees.

Q3. Provide the exact specifications on the tree; the number of frame pieces, the number of branches; how many branches will need 'fluffing' after assembly; type of lights on the tree; the power draw of the tree.

R3. For information that is currently available on the tree specifications, frame pieces branches and electrical components of the tree, refer to the attached Exhibit 12, Drawings & Photos.

Q4. Can we obtain pictures of the tree frame and branches?

R4. For information that is currently available on the tree frame and branches, refer to the attached Exhibit 12, Drawings & Photos.

Q5. Is employer's liability insurance and professional liability insurance required?

R5. Yes, they are required. Refer to the Solicitation, Section 2.12, Item ii. Employer's Liability and Item iii. Professional Liability.

Q6. Why would the warehouse that the tree is to be stored in need to be bonded? Here is the definition I found of a bonded warehouse: *A bonded warehouse is a secured warehouse facility that is covered by customs rules. Companies that export products, materials and items abroad commonly use bonded warehousing facilities to store their products.*

R6. Due to the value of the tree that will be store, a bonded warehouse is required.

Q7. How many North Pole Village Structures are part of the scope?

R7. Per this addendum the number of North Pole Village Structures has been updated to seven.

Q8. Who are the companies that have worked on the City Christmas tree in the past?

R8. The following are some of the firms that worked on the assembly and disassembly of the steel Christmas tree in the past. However, the new tree is aluminum and all of the services previously required may not be applicable to the contract resulting from this solicitation.

- a. Iron workers – Eagle Metal
- b. Electricians – Meisner Electric
- c. Towing for containers – Sisters Towing
- d. Flatbeds – Hard Drives
- e. Cranes – Allegiance Crane, Hunter Merchant Crane

Q9. How does the tree get put together?

R9. The previous steel Christmas tree was put together by City staff with the assistance of City contractors and volunteers. This process does not apply to the contract resulting from this solicitation. The awarded Contractor will be solely responsible for all aspects of assembly and disassembly. The details and instructions for the new aluminum Christmas tree assembly and disassembly will be as specified by the manufacturer of the tree and will be provided to the awarded Contractor. Assembly of the Christmas tree must be completed in time for the tree lighting ceremony which is generally the week following Thanksgiving.

The previous process for assembly was a follows. In mid-October, the tree and village structures were transported to the assembly site. Then several of the largest rings were brought out and put into place on the ground and some of the village structures were placed inside the rings. Assembly of the rings continued at ground level along with the addition of branches, lights and ornaments until the tree was ready to stack, usually about mid-November. The tree was then stacked and the remaining rings, branches, lights and ornaments were added. Once the tree was assembled the remaining village structures and model train were put into place.

End of Addendum

INSTRUCTIONS:

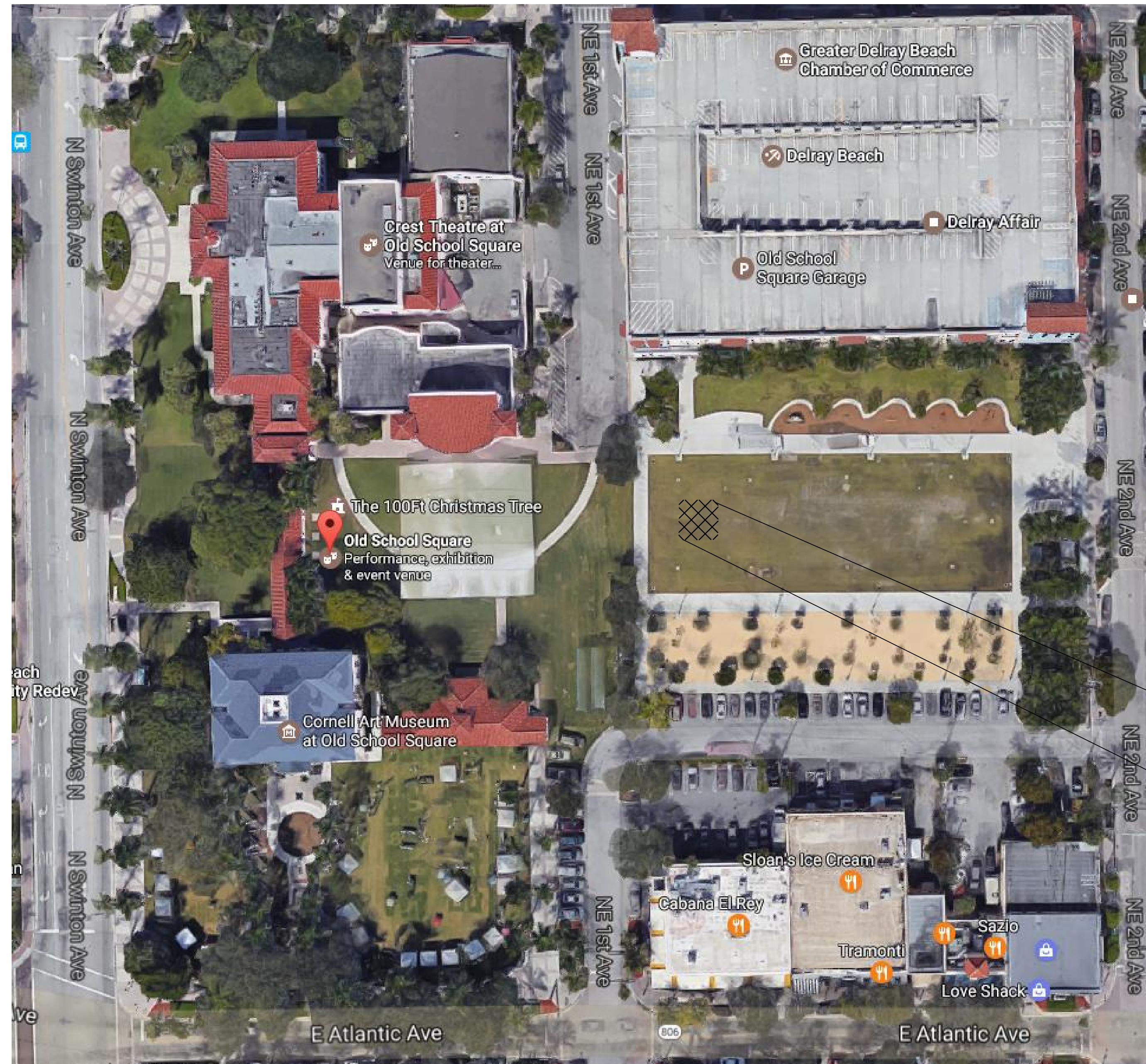
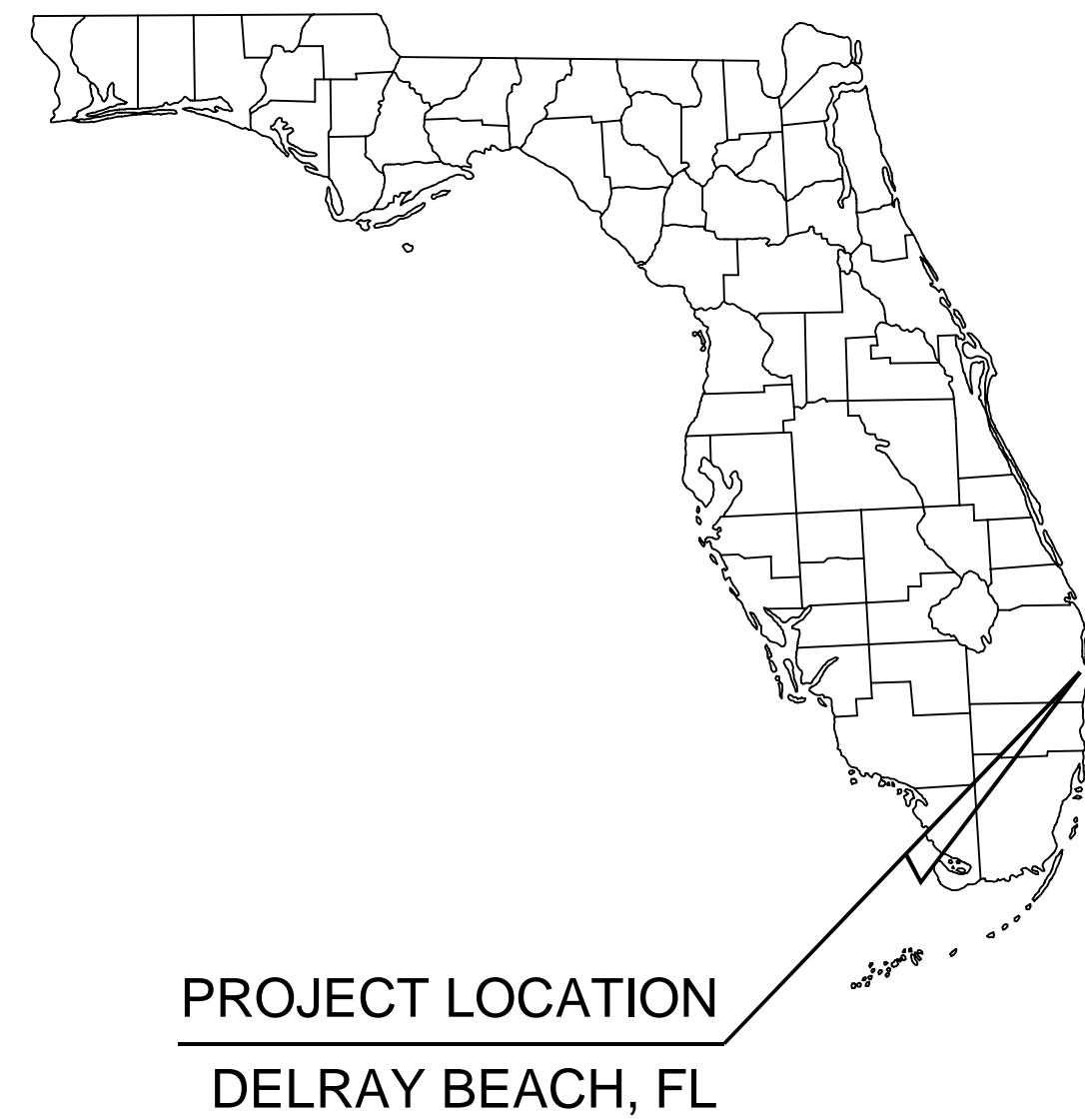
Receipt of this addendum must be acknowledged as instructed in the solicitation document. Failure to acknowledge receipt of this Addendum may result in the disqualification of Respondent's response.

EXHIBIT 12

DELRAY CHRISTMAS TREE FOUNDATION

CONSTRUCTION SITE PLANS

CITY OF DELRAY BEACH
DELRAY BEACH, FLORIDA



VICINITY MAP

INDEX OF SHEETS

- C-1 COVER SHEET
- C-2 GENERAL NOTES
- C-3 OVERALL SITE PLAN
- C-4 EXISTING SITE PLAN AND DEMOLITION
- C-5 PROPOSED PLAN
- C-6 DETAILS
- E-1.0 CHRISTMAS TREE ELECTRICAL RELOCATION PLAN
- E-2.0 PARTIAL ELECTRICAL RISER DIAGRAM
- E-3.0 PANEL SCHEDULES AND DETAILS

PROJECT LOCATION

Plotted By: Marjoh, Chelsea (Knox) Sheet Set: Delray Christmas Tree Foundation Layout: C-1 Cover Page July 05, 2017 03:01:25pm K:\WPB_Forensics\2017_START_DATE\BUILDING_FORENSICS\044300050 (AGF) Delray - Xmas Tree Foundation\CAD\PlanSheets\C-1_Cover_Page.dwg
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1920 WEKIVA WAY SUITE 200, WEST PALM BEACH, FL 33411
PHONE: 561-845-0665 FAX: 561-863-8175
WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT 044300050
DATE JUNE 2017
SCALE AS SHOWN
DESIGNED BY CMM
DRAWN BY KHA
CHECKED BY AGF

DELRAY CHRISTMAS TREE FOUNDATION

PREPARED FOR
CITY OF DELRAY BEACH

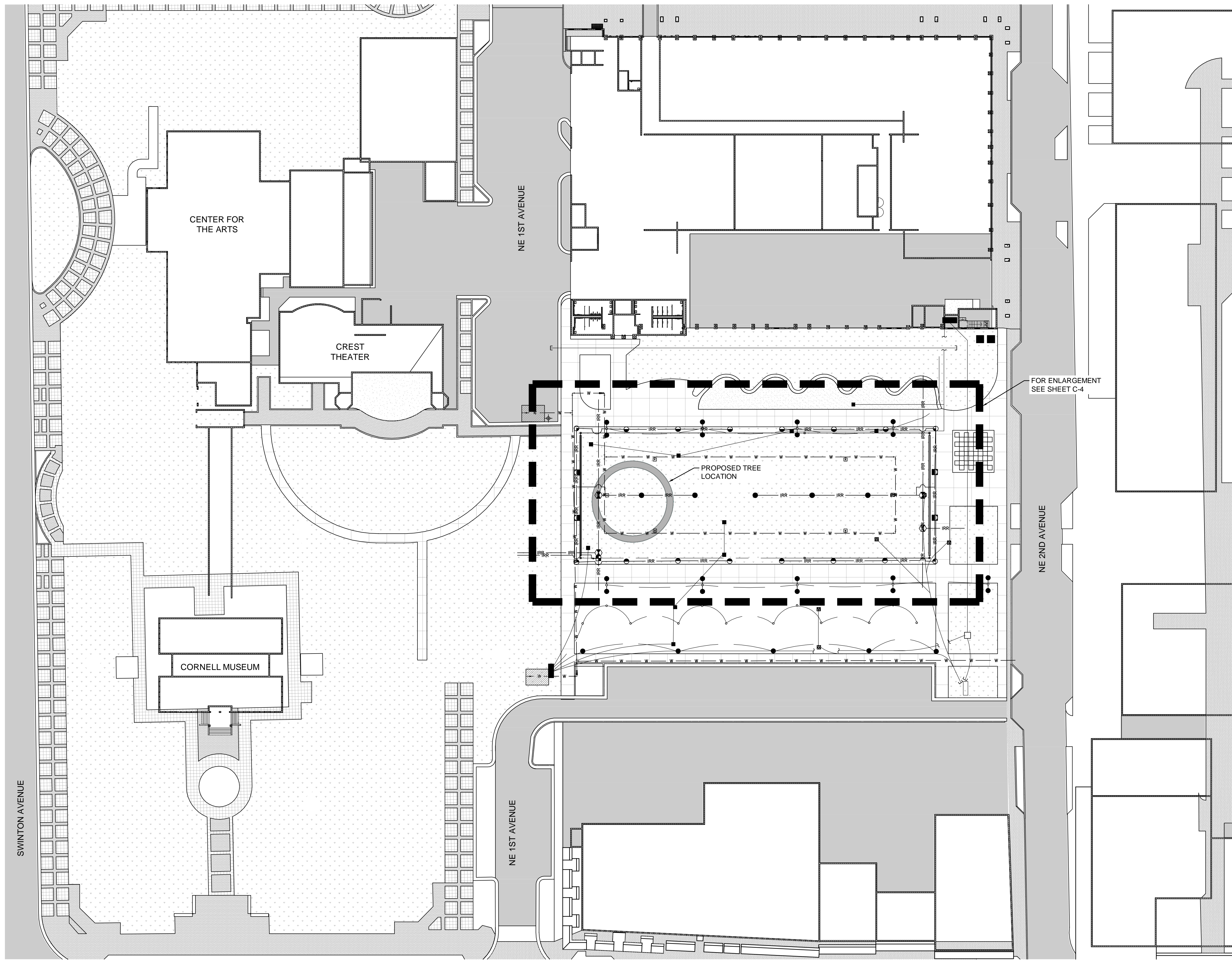
CITY OF DELRAY BEACH
FLORIDA

LICENSED PROFESSIONAL
ANGELINA G. FAIRCHILD
FLORIDA LICENSE NUMBER #43958
DATE: _____

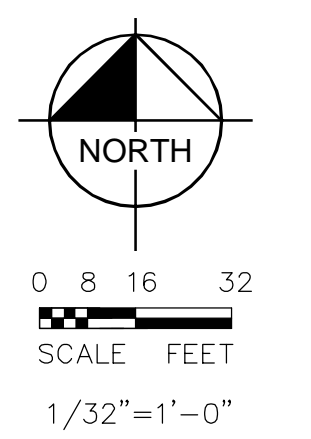
COVER PAGE

SHEET NUMBER
C-1

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- NOTES:
1. APPROXIMATE LOCATIONS OF UTILITIES SHOWN WITHIN WORK AREA. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION AND DEMOLITION.
 2. CONTRACTOR TO COORDINATE LIMITS OF DEMOLITION WITH CITY. REMOVE OR RELOCATE ALL UTILITIES WITHIN PROPOSED FOUNDATION FOOTPRINT.



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KHA PROJECT	044300050
DATE	JUNE 2017
SCALE	AS SHOWN
DESIGNED BY	CMM
DRAWN BY	KHA
CHECKED BY	AGF

DELRAY CHRISTMAS TREE FOUNDATION

PREPARED FOR
CITY OF DELRAY BEACH

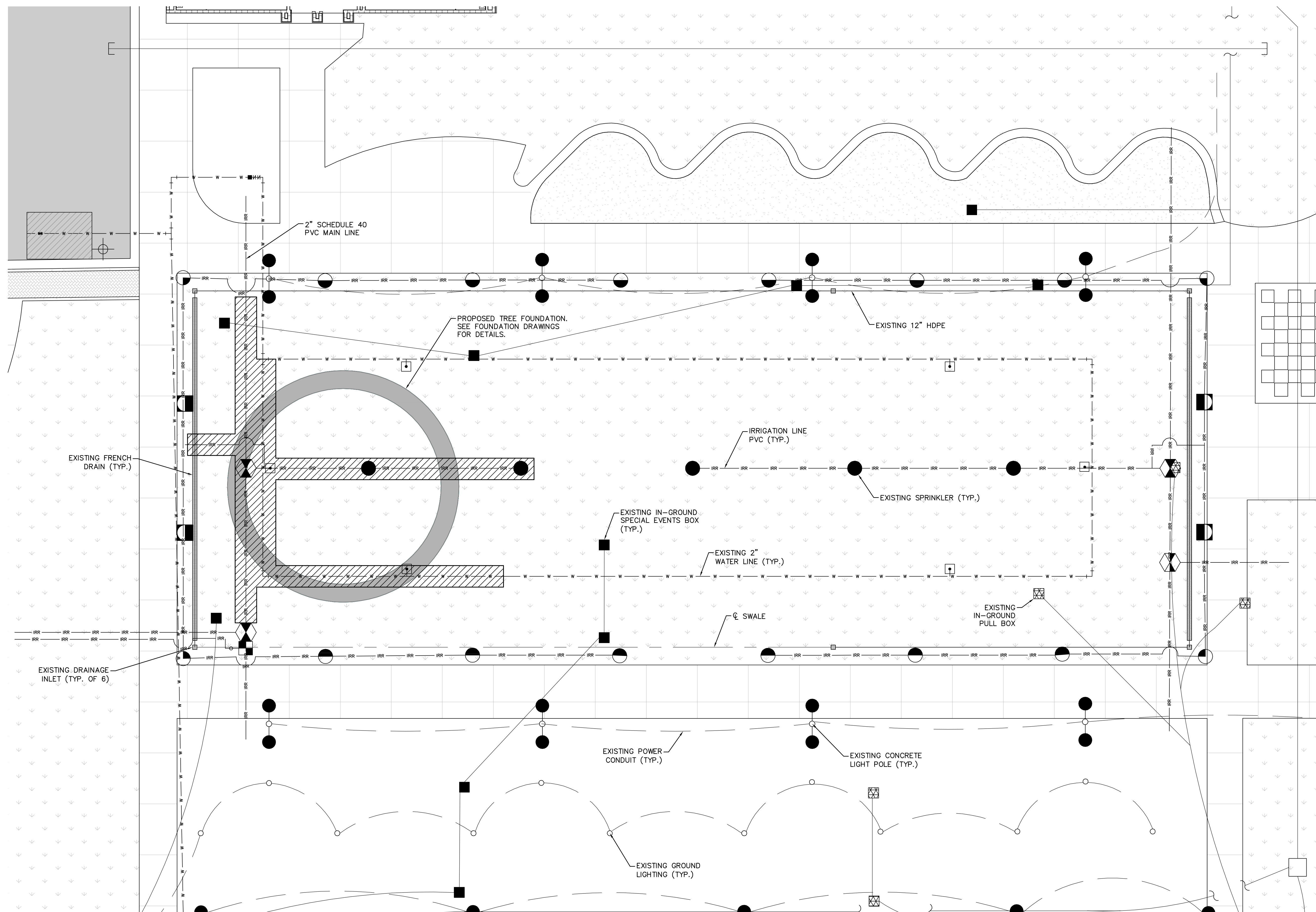
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OVERALL SITE PLAN

SHEET NUMBER	C-3
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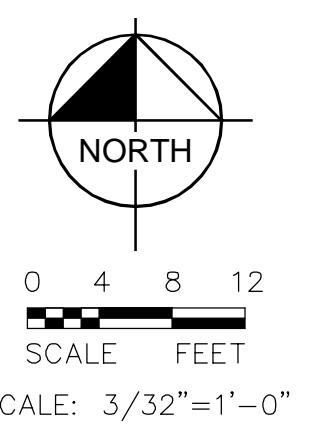


LEGEND

LIMITS OF DEMOLITION (WATER AND IRRIGATION LINES)

NOTES:

- APPROXIMATE LOCATIONS SHOWN. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION AND DEMOLITION.
- CONTRACTOR TO COORDINATE LIMITS OF DEMOLITION WITH CITY. REMOVE OR RELOCATE ALL UTILITIES WITHIN PROPOSED FOUNDATION FOOTPRINT.



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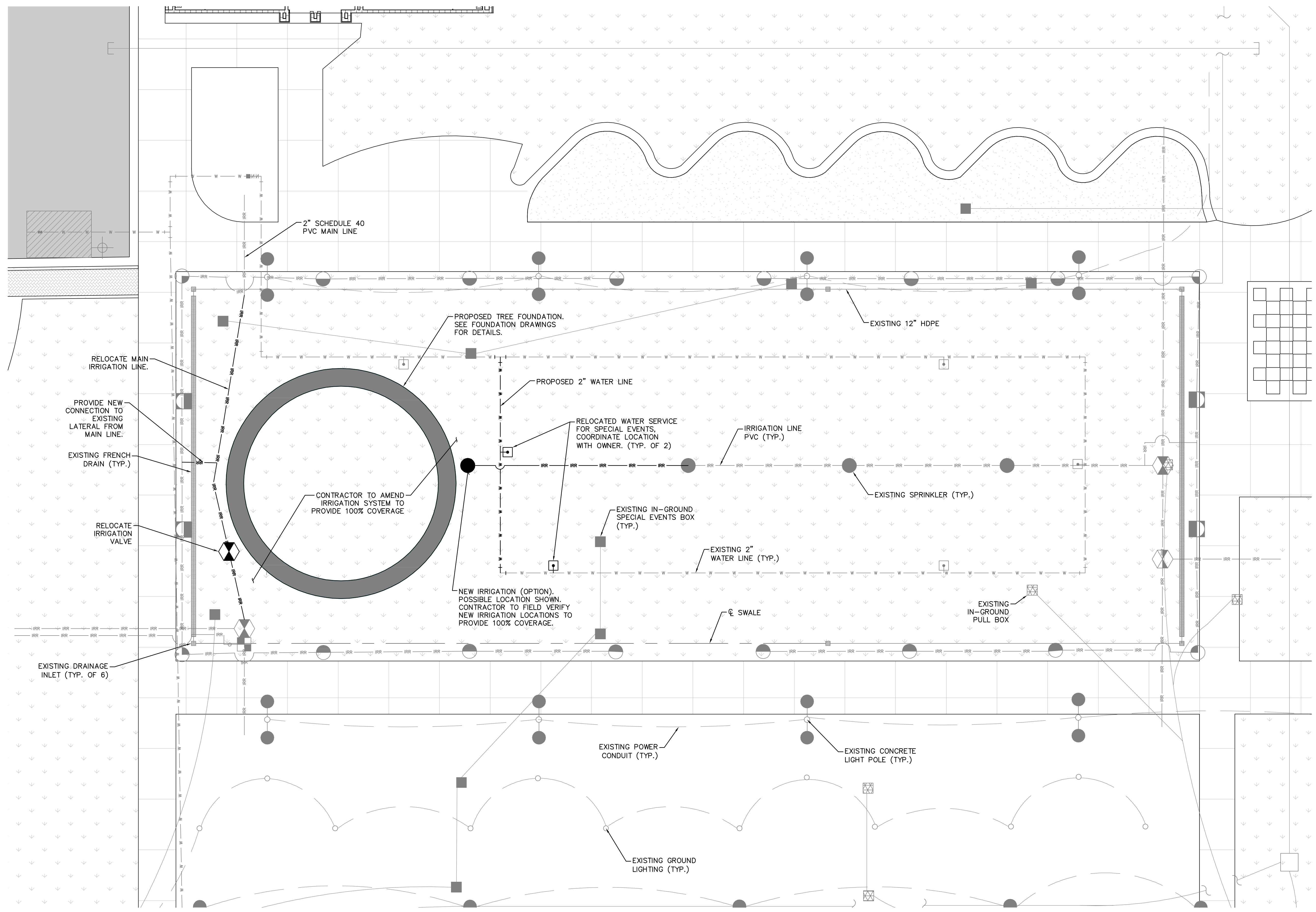
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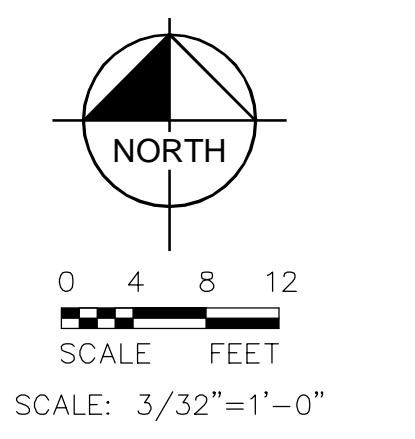
EXISTING SITE PLAN AND DEMOLITION

SHEET NUMBER	C-4
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- NOTES:
1. PROPOSED ELECTRICAL NOT SHOWN. SEE SHEET E-1.0 FOR LOCATIONS AND DETAILS.
 2. CONTRACTOR TO AMEND IRRIGATION TO PROVIDE 100% COVERAGE. COORDINATE LOCATION OF SPRINKLERS WITH CITY. PROVIDE ABILITY TO SHUT OFF OR REDIRECT SPRAY DURING EVENTS.
 3. APPROXIMATE LOCATIONS SHOWN. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION AND DEMOLITION.



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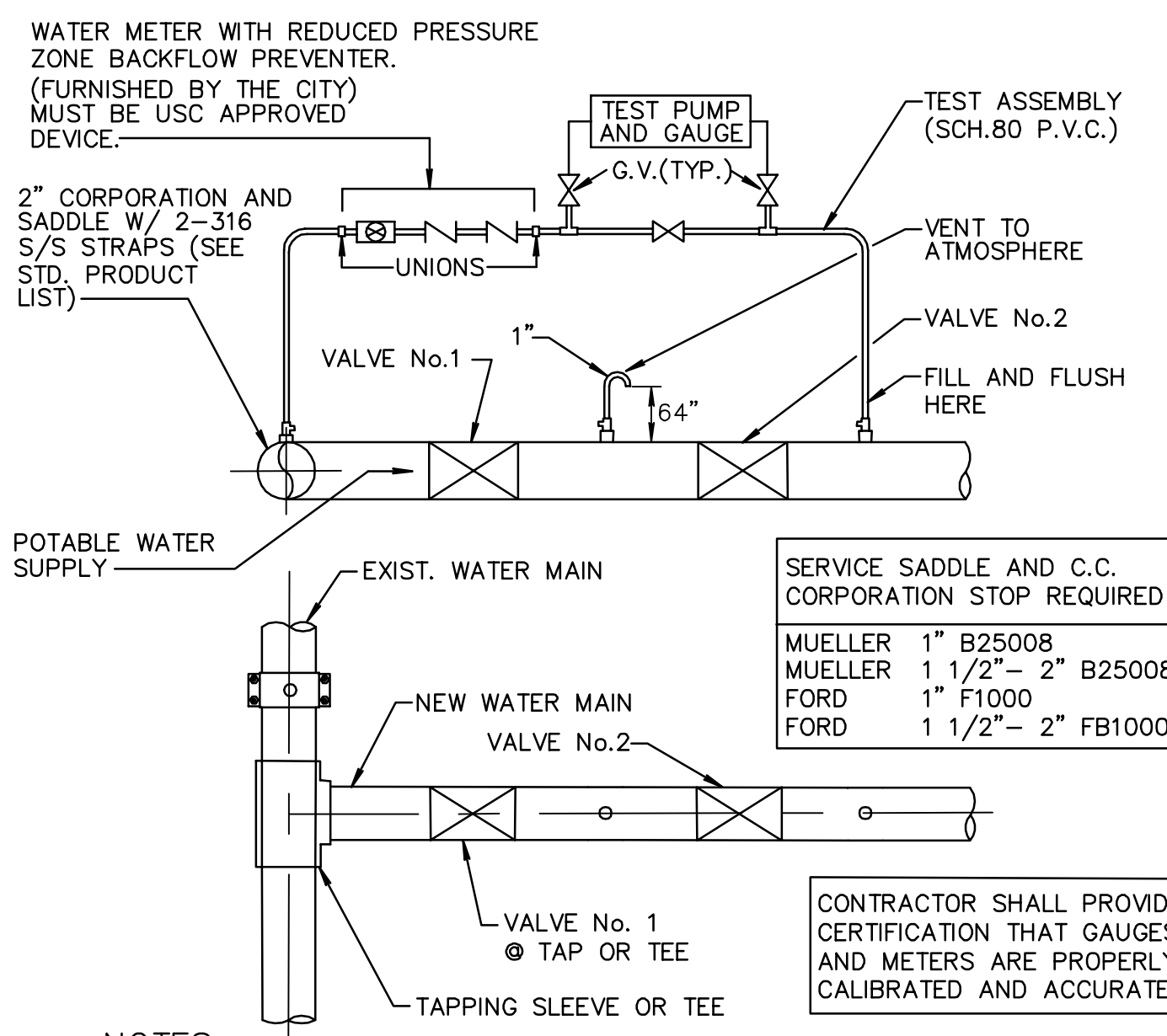
KHA PROJECT	044300050
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 CITY OF DELRAY BEACH
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DATE:	---

FINAL SITE PLAN
 SHEET NUMBER
C-5

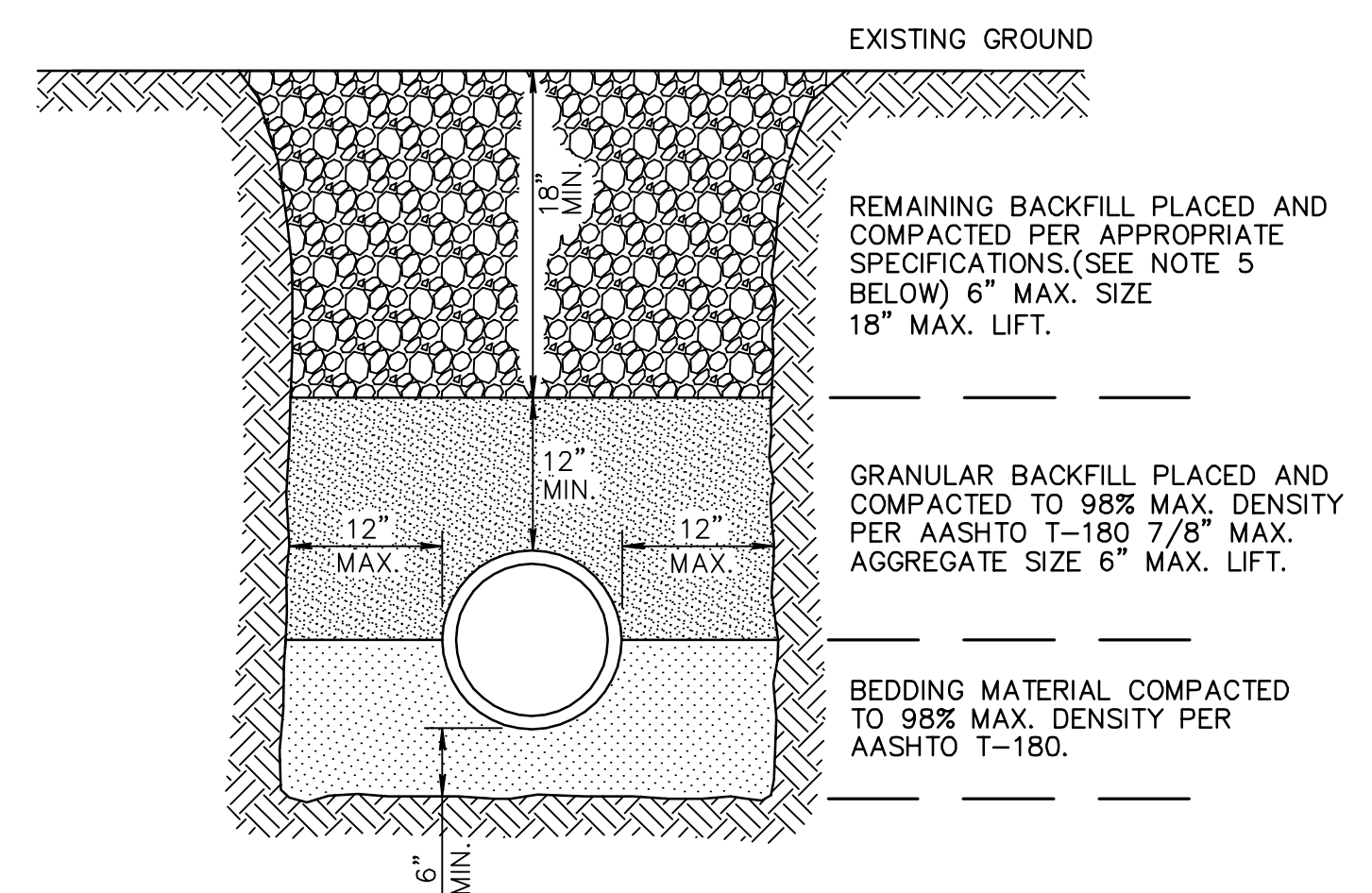
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SERVICE SADDLE AND C.C. CORPORATION STOP REQUIRED	
MUELLER	1" B25008
MUELLER	1 1/2" - 2" B25008
FORD	1" F1000
FORD	1 1/2" - 2" FB1000

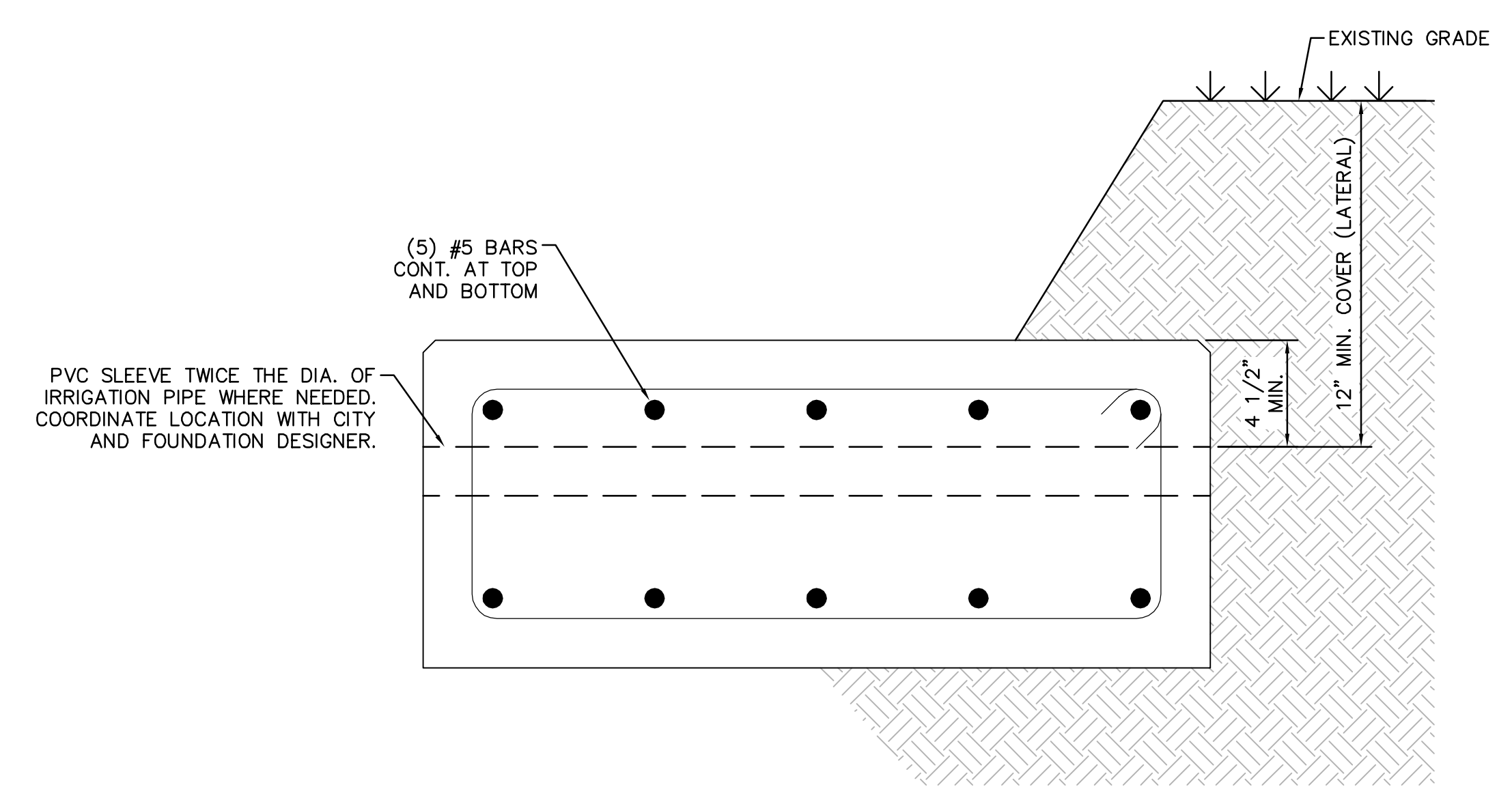
CONTRACTOR SHALL PROVIDE CERTIFICATION THAT GAUGES AND METERS ARE PROPERLY CALIBRATED AND ACCURATE.

- NOTES:**
- BOTH VALVES SHALL BE KEPT CLOSED UNTIL FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING IS COMPLETED AND APPROVED.
 - GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST.
 - CITY SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
 - AFTER RELEASE FROM THE HEALTH DEPARTMENT, BOTH VALVES TO BE LEFT OPEN WITH VALVE BOX INSTALLED ON BOTH VALVES.
 - PRESSURE TEST PUMP MAY CONNECT TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED SOLELY FOR TESTING PURPOSES UNLESS PRECEDING ARE NOT PRESENT IN TEST SECTION.
 - TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED ON EXISTING MAIN.
 - SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS AS SHOWN ABOVE.
 - OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING GRADE.
- FILL & FLUSH DETAIL PW 1.1



- NOTES:**
- UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGE ROCKS SHALL BE REMOVED; BEDDING MATERIAL AND BACKFILL CONSISTING OF WASHED AND GRADED LIMEROCK 3/8" - 7/8" SIZING.
 - THE PIPE AND/OR STRUCTURE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
 - THE PIPE AND/OR STRUCTURE SHALL BE PLACED IN A DRY TRENCH.
 - BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, AND DEBRIS.
 - COMPACT BACKFILL TO 98% DENSITY UNDER PAVEMENT AND TO 95% DENSITY ELSEWHERE (AASHTO T-180)
 - COMPACTION AND DENSITY TESTS SHALL BE COMPLETED DURING BACKFILL OPERATIONS. CONTRACTORS NOT FOLLOWING THIS PROCEDURE, FOR WHATEVER REASONS, SHALL BE REQUIRED TO RE-EXCAVATE THE AREA IN QUESTION, DOWN TO THE BEDDING MATERIAL, THEN BACKFILL FOLLOWING THE ABOVE PROCEDURES.

TYPICAL BACKFILL DETAIL GU 2.1



- NOTE:**
- POSITION SLEEVE TO MISS REINFORCING
 - CONTRACTOR TO COORDINATE SLEEVE LOCATION WITH FOUNDATION DESIGNER.

FOUNDATION SLEEVE DETAIL

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KHA PROJECT	044300050
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DELRAY CHRISTMAS TREE FOUNDATION

PREPARED FOR
CITY OF DELRAY BEACH

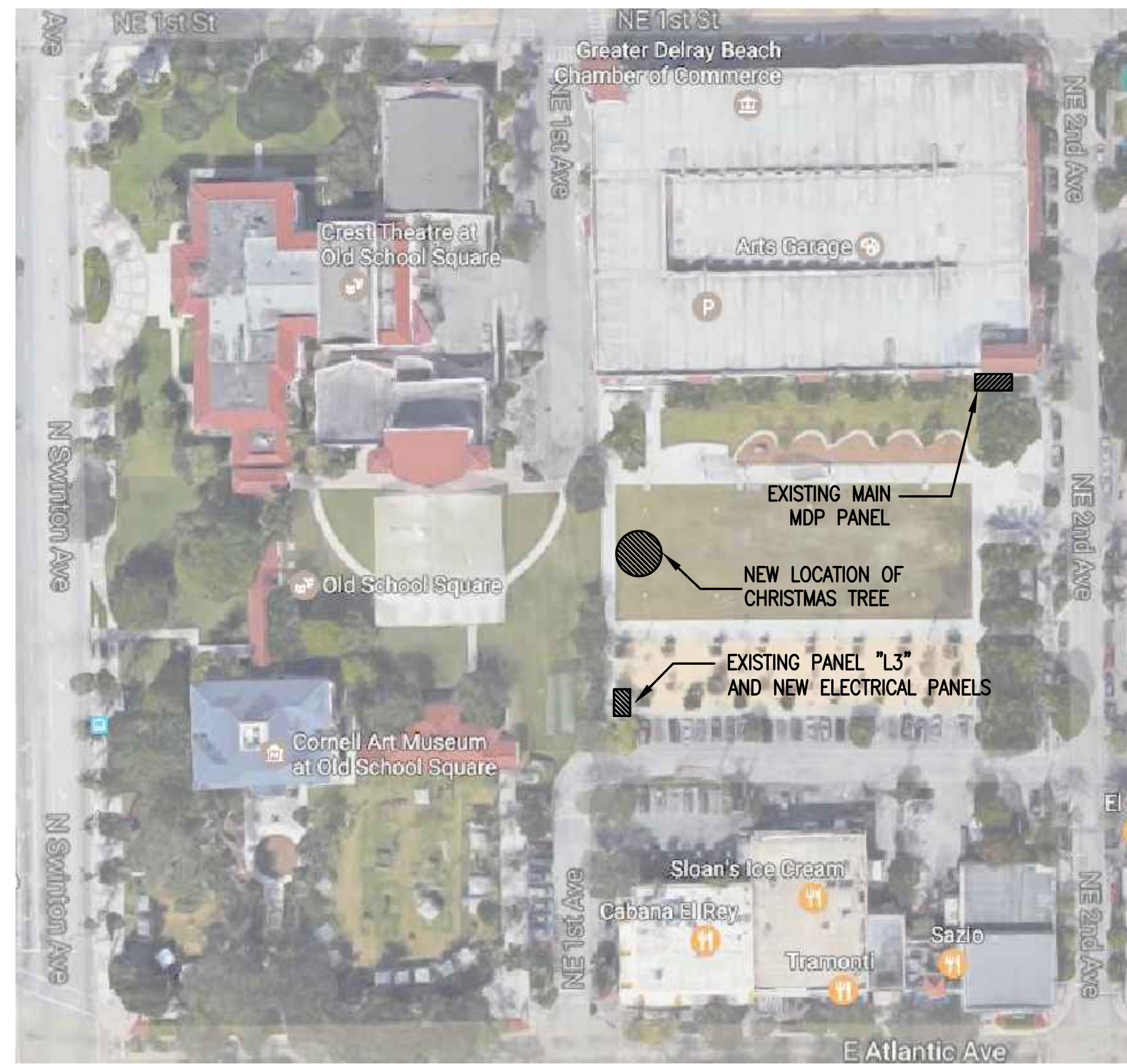
CITY OF DELRAY BEACH
 FLORIDA

LICENSED PROFESSIONAL	ANGELINA G. FAIRCHILD
FLORIDA LICENSE NUMBER	#43958
DATE:	----

DETAILS

SHEET NUMBER
C-6

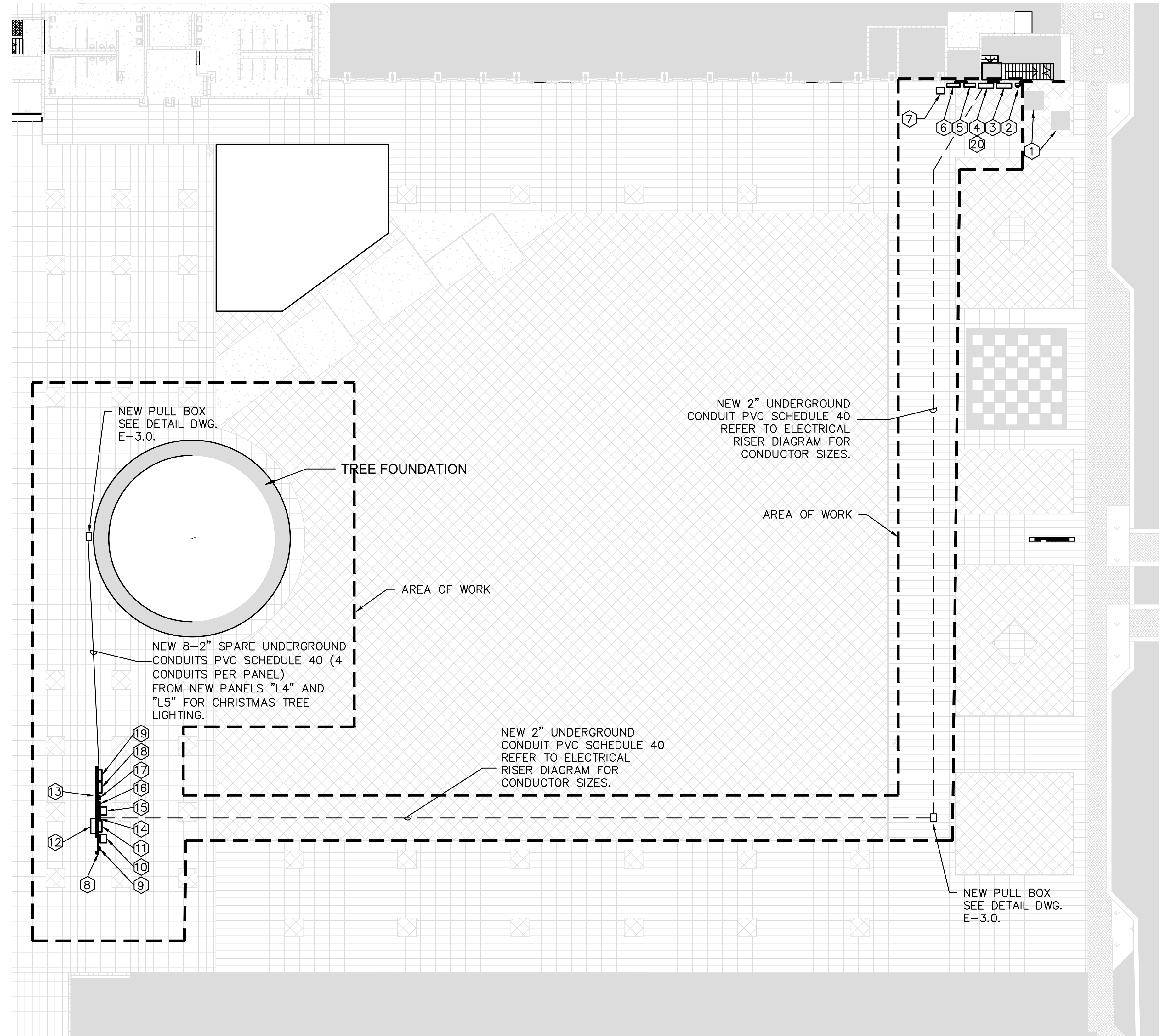
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 Layout Name: E-1.0
 Plotted on: Jun 29, 2017 - 1:49pm



CHRISTMAS TREE LOCATION KEY PLAN
SCALE: N.T.S.

KEYED NOTES:

- 1 EXISTING FPL PAD MOUNTED TRANSFORMERS.
- 2 EXISTING FPL METER FOR 480/277VAC, 3 PHASE SERVICE.
- 3 EXISTING CT CAN.
- 4 EXISTING MDP 480/277VAC, 3 PHASE, 4W 800AMPS MCB, SERVING AREA OF WORK FOR THIS PROJECT.
- 5 EXISTING PANEL "L1" 120/240VAC, 1 PHASE, 3W 400AMPS MCB.
- 6 EXISTING TIME CLOCKS, POLE LIGHTS AND POLE RECEPTACLES BREAKERS.
- 7 EXISTING 75KVA STEP DOWN TRANSFORMER 480/277V-120/240V FEEDING EXISTING PANEL "L1".
- 8 EXISTING UNISTRUT MOUNTED ELECTRICAL SWITCHGEAR.
- 9 EXISTING 200AMP, 480/277VAC, 1 PHASE DISCONNECT TO TRANSFORMER.
- 10 EXISTING PAD MOUNTED 75KVA STEP DOWN TRANSFORMER 480/277V-120/240V 1 PHASE FEEDING EXISTING PANEL "L3".
- 11 EXISTING PANEL "L3" 120/240VAC, 1 PHASE, 3W 400AMPS MCB.
- 12 EXISTING TIME CLOCKS, POLE LIGHTS AND POLE RECEPTACLES BREAKERS.
- 13 EXTEND EXISTING UNISTRUT TO ACCOMMODATE NEW ELECTRICAL SWITCHGEAR AS NEEDED.
- 14 NEW 125AMP, 480/277VAC, 3 PHASE, DISCONNECT, NEMA 4X LOCKABLE ON UNISTRUT.
- 15 NEW 75KVA, 480/277-120/240VAC, 3 PHASE, STEP DOWN TRANSFORMER NEMA 3R FOR NEW PANELS "L4" AND "L5".
- 16 NEW 225AMP, 120/208VAC, 3 PHASE, DISCONNECT, NEMA 4X LOCKABLE ON UNISTRUT.
- 17 NEW 3 POLE 225AMP, 120VAC LIGHTING CONTACTOR NEMA 3R AND REMOTE WEATHER RESISTANT SWITCH.
- 18 NEW PANEL "L4" 120/208VAC, 3 PHASE, 225AMPS NEMA 4X LOCKABLE.
- 19 NEW PANEL "L5" 120/208VAC, 3 PHASE, 225AMPS NEMA 4X LOCKABLE.
- 20 REPLACE EXISTING SPARE 2 POLE BREAKER SPACE #5, (100AMPS, 480/277VAC) IN EXISTING PANEL MDP WITH NEW 125AMP, 3 POLE, 480/277V BREAKER. ROUTE CONDUIT AND CONDUCTORS AS SHOWN ON SITE PLAN TO NEW 125AMP, 480/277VAC, 3 PHASE DISCONNECT AT EXISTING UNISTRUT.



CHRISTMAS TREE NEW LOCATION ELECTRICAL PLAN
SCALE: 1/16"=1'-0"



100% SUBMITTAL
 JUNE 2017

NO.	DATE	BY	REVISION

WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DATE: 6-10-17
	DESIGNED: FR
	DRAWN: FR
	CHECKED: LMS

APPROVED: LARRY M. SMITH, P.E.
NO. 45997
SEAL

SEC Smith Engineering Consultants, Inc.
 State Auth. #8228
 2181 Palm Beach Lakes Blvd., Suite 312
 West Palm Beach, Florida 33409
 (561) 616-3911 fax (561) 616-3912
 www.smithengineeringconsultants.com



CITY OF DELRAY BEACH
 ENVIRONMENTAL SERVICES
 DEPARTMENT

CHRISTMAS ALUMINUM TREE
 RELOCATION PROJECT

PROJECT NO. 17015

CHRISTMAS TREE ELECTRICAL
 RELOCATION PLAN

DRAWING NO.
 E-1.0

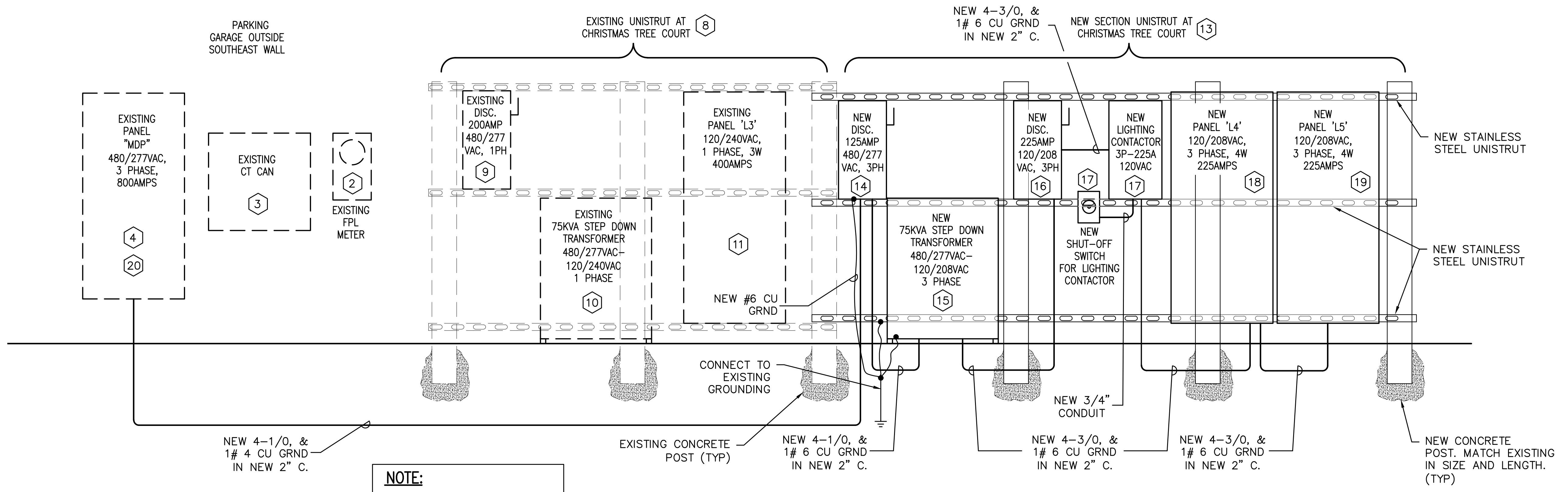
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GENERAL NOTES AND SPECIFICATIONS:

1. THE SCOPE OF WORK IS DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS, PRIMARILY CONSIST OF THE FOLLOWING:
 - 1.A. PROVIDE AND INSTALL ALL ELECTRICAL ASSOCIATED WITH NEW CHRISTMAS TREE RELOCATION LIGHTING CIRCUIT ELECTRICAL PANELS COMPLETE IN PLACE.
 - 1.B. PROVIDE AND INSTALL NEW CONDUIT, PULL BOXES AND WIRING COMPLETE IN PLACE.
2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
3. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LOCAL CODES, CITY CODES, PALM BEACH COUNTY CODES AND THE FLORIDA BUILDING CODE. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS AND SHALL COORDINATE HIS WORK WITH THE ENGINEER AND OWNER.
4. THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
5. GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH NEC, ARTICLE 250. THE GROUNDING SYSTEM TEST SHALL NOT EXCEED A 48 HOUR SPAN DRY RESISTANCE OF 10 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON THE PLANS.
6. ALL EQUIPMENT AND MATERIAL SHALL BE UNUSED AND U.L. LISTED.
7. THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
8. ALL EQUIPMENT FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL ACCEPTANCE.
9. COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS AND VERIFY ALL OBSTRUCTIONS WITH ALL SUBCONTRACTORS AND EQUIPMENT SUPPLIERS PRIOR TO ANY INSTALLATION. THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF CONDUIT RUNS. THESE ARE TO BE COORDINATED WITH THE OTHER TRADES SO THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATIONS.
10. ALL CONDUCTORS SHALL BE 600V, U.L. LISTED. POWER CABLES SHALL BE TYPE THHW/THWN. ALL CONDUCTING MEDIA SHALL BE COPPER. NO ALUMINUM ALLOWED.
11. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40. ALL ABOVE GRADE CONDUIT SHALL BE PVC SCHEDULE 80.
12. ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, CONTROLLERS AND PANELBOARDS. IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES. EXPOSED RUNS OF CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS. BENDS AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE.
13. ALL REFERENCES TO A PARTICULAR MANUFACTURER ARE GIVEN ON AN "APPROVED EQUAL" BASIS.

14. ALL EXCAVATIONS FOR CONDUITS AND HANDHOLES SHALL BE HAND EXCAVATED AND COORDINATED WITH ENGINEER. MINIMUM DEPTH FROM TOP OF DUCTBANKS OR CONDUITS TO FINISHED GRADE SHALL BE 24" UNLESS OTHERWISE NOTED.
15. CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS.
16. MINIMUM DISTANCE ALLOWED BETWEEN POWER CONDUITS AND INSTRUMENTATION CONDUITS SHALL BE:

VOLTAGE	DISTANCE
480V	2 FT
120V	1 FT
17. ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY EXACT LOCATION AND SIZE AND INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT AND WIRING INSTALLATION FOR ALL VENDOR PROVIDED EQUIPMENT (PACKAGE SYSTEMS) INCLUDING OWNER SUPPLIED AND USER-CHOICE PANELS. IF THE SHOP DRAWINGS DIFFER FROM THE DESIGNED FACILITIES, THE CONTRACTOR SHALL REDESIGN THE FACILITIES AND SUBMIT THE REVISED DESIGN FOR THE ENGINEER'S APPROVAL ALONG WITH THE SHOP DRAWINGS. THERE SHALL BE NO ADDITIONAL COST TO THE OWNER FOR THE REDESIGN NOR FOR ANY ADDITIONAL CONDUITS AND WIRING.
19. PROVIDE DUCT SEAL IN ALL EXISTING AND NEW CONDUITS INSIDE SWITCHGEAR AND JUNCTION BOX.
20. DEMOLISH ALL ITEMS AS INDICATED ON DRAWINGS. TURN OVER TO THE OWNER AT THE OWNER'S DISCRETION AND PROPERLY DISPOSE OF ALL DEMOLITION ITEMS NOT WANTED BY THE OWNER.
21. ALL INSTALLATION AND EQUIPMENT SHALL COMPLY WITH N.E.C. STANDARD, EXCEPT IF OTHERWISE SHOWN IN DRAWINGS.
22. ALL CONDUIT PENETRATIONS SHALL BE AT THE BOTTOM OF ANY ENCLOSURE. SIDE PENETRATION IS ONLY ALLOWED WHEN CONNECTING SURGE PROTECTIVE DEVICE (SPD) AND PANEL AND AS INDICATED ON DRAWINGS.
23. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.
24. CONTRACTOR SHALL, WITHIN 30 DAYS AFTER THE DATE OF THE SYSTEM ACCEPTANCE, PROVIDE TO THE BUILDING OWNER RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING A SINGLE LINE DIAGRAM OF THE ELECTRICAL DISTRIBUTION SYSTEM AND RELATED FLOOR PLANS INDICATING THE LOCATION AND AREA SERVED FOR THE DISTRIBUTION.
25. CONTRACTOR SHALL PROVIDE TO THE BUILDING OWNER AN OPERATING AND MAINTENANCE MANUAL IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION C405.7.4.2 OF THE 2014 FLORIDA BUILDING CODE - ENERGY CONSERVATION, INCLUDING ANY AMENDMENTS THERETO.
26. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL PANELS, WIRE, CONDUIT, TRANSFORMER, CIRCUIT BREAKERS EQUIPMENT AND MATERIAL.
27. ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, PULL BOXES, CONTROL PANELS, PANELBOARDS, CONTROLLERS AND SERVICE POINTS IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES.



NOTE:
SEE DRAWING E-1.0 FOR KEY NOTES

ELECTRICAL RISER DIAGRAM 480/277VAC, 3PH - 120/208VAC, 3PH
SCALE: N.T.S.

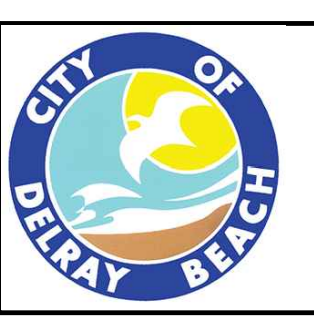
Drawing name: T:\Projects\SEC_2017\17015 Christmas tree Relocation\Electrical Drawings\E-1.0.dwg
 Layout Name: E-2.0
 Plotted on: Jun 29, 2017 - 1:48pm

NO.	DATE	BY	REVISION

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DATE: 6-10-17 DESIGNED: FR DRAWN: FR CHECKED: LMS APPROVED:
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LARRY M. SMITH, P.E.
NO. 45997
SEAL

SEC Smith Engineering Consultants, Inc.
 State Auth. #8228
 2181 Palm Beach Lakes Blvd., Suite 312
 West Palm Beach, Florida 33409
 (561) 616-3911 fax (561) 616-3912
 www.smithengineeringconsultants.com



CITY OF DELRAY BEACH
 ENVIRONMENTAL SERVICES
 DEPARTMENT

CHRISTMAS ALUMINUM TREE RELOCATION PROJECT
 PROJECT NO. 17015

PARTIAL ELECTRICAL RISER DIAGRAM

DRAWING NO.
E-2.0

100% SUBMITTAL
 JUNE 2017

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SERVICE LOAD CALCULATIONS:

NEC 220.87:
 PER F.P.L. MAX. 12 MO. KVA = 133
 = 159A @ 480V (0.85 P.F. ASSUMED)
 X1.25
 = 198.8A
 = 100.0A PANELS 'L4' & 'L5'
 = 298.8A

THEREFORE THE EXISTING 800AMP SERVICE IS ADEQUATE.

Input Wire Size		Voltage Drop Calculation Three Phase		
Length (L)	Amps (I)	Constant (K)	CM (D)	Volts Dropped
430	125	12.90	105600	11.37
Input Volts # of Sets (S)				468.63 Adjusted Voltage
480	1	2.37% %Volts Dropped		

EXISTING PANEL "MDP" (1)(2)(3)(4)

MOUNTING: SURFACE VOLT: 480/277V, 3Ø, 4W
 SHORT CIRCUIT RATING: 65K AIC MAIN BUS AMPS: 800 A
 POLES: 42 MAIN BREAKER AMPS: 800
 FED FROM PANEL: FPL MANUFACTURER/TYPE: CUTLER HAMMER

CKT	LOAD SERVED	POLE	TRIP	WIRE	COND	AMPS 'A'	AMPS 'B'	AMPS 'C'	AMPS 'A'	AMPS 'B'	AMPS 'C'	COND	WIRE	TRIP	POLE	LOAD SERVED	CKT
1	EXIST PANEL L1	2	200	3/0	1 1/2"	120.0			120.0			1 1/2"	250	200	2	EXIST PANEL L3	2
3																	4
5	SPARE	2	200										100	2	SPARE	6	
7																	8
9	PANELS 'L4' & 'L5' VIA TRANSF.	3	125	10	3/4"				100.0			3/4"	10	60	3	EXIST SURGE PROT	10
11																	12
13						100.0				40.0							14
15	SPACE															SPACE	16
17	SPACE															SPACE	18
19	SPACE															SPACE	20
21	SPACE															SPACE	22
23	SPACE															SPACE	24
25	SPACE															SPACE	26
27	SPACE															SPACE	28
29	SPACE															SPACE	30
31	SPACE															SPACE	32
33	SPACE															SPACE	34
35	SPACE															SPACE	36
37	SPACE															SPACE	38
39	SPACE															SPACE	40
41	SPACE															SPACE	42

CONNECTED AMPS = 220.0 220.0 100.0 160.0 160.0 40.0
 TOTAL CONNECTED AMPS = 380.0 380.0 140.0 249.30 KVA

Note: (1) MAX 3% VD ON BRANCH CIRCUITS AS PER FBC
 (2) NEMA 4X ENCLOSURE
 (3) SERVICE ENTRANCE RATED
 (4) SEE DWG. E-1.0 FOR KEY NOTE #20

PANEL "L4" (1)(2)

MOUNTING: SURFACE VOLT: 208/120V, 3Ø, 4W
 SHORT CIRCUIT RATING: 42K AIC MAIN BUS AMPS: 225 A
 POLES: 42 MAIN BREAKER AMPS: MLO A
 FED FROM PANEL: PANEL MDP VIA TRANSFORMER MANUFACTURER/TYPE: CUTLER-HAMMER, SQ-D, GE

CKT	LOAD SERVED	POLE	TRIP	WIRE	COND	AMPS 'A'	AMPS 'B'	AMPS 'C'	AMPS 'A'	AMPS 'B'	AMPS 'C'	COND	WIRE	TRIP	POLE	LOAD SERVED	CKT
1	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0			6.0			2"	12	20	1	CHRISTMAS TREE LIGHTS	2
3	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0			6.0		2"	12	20	1	CHRISTMAS TREE LIGHTS	4
5	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	6
7	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0						2"	12	20	1	CHRISTMAS TREE LIGHTS	8
9	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	10
11	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	12
13	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	14
15	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	16
17	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	18
19	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	20
21	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	22
23	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	24
25	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	26
27	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	28
29	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	30
31	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	32
33	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	34
35	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	36
37	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	38
39	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	40
41	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	42

CONNECTED AMPS = 42.0 42.0 42.0 42.0 42.0 42.0
 TOTAL CONNECTED AMPS = 84.0 84.0 84.0 30.24 KVA
 CONNECTED AMPS PNL L4' = 84.0 84.0 84.0
 CONNECTED AMPS PNL L5' = 85.0 84.0 84.0
 TOTAL CONNECTED AMPS = 169.0 168.0 168.0

Note: (1) MAX 3% VD ON BRANCH CIRCUITS AS PER FBC
 (2) NEMA 4X ENCLOSURE LOCKABLE

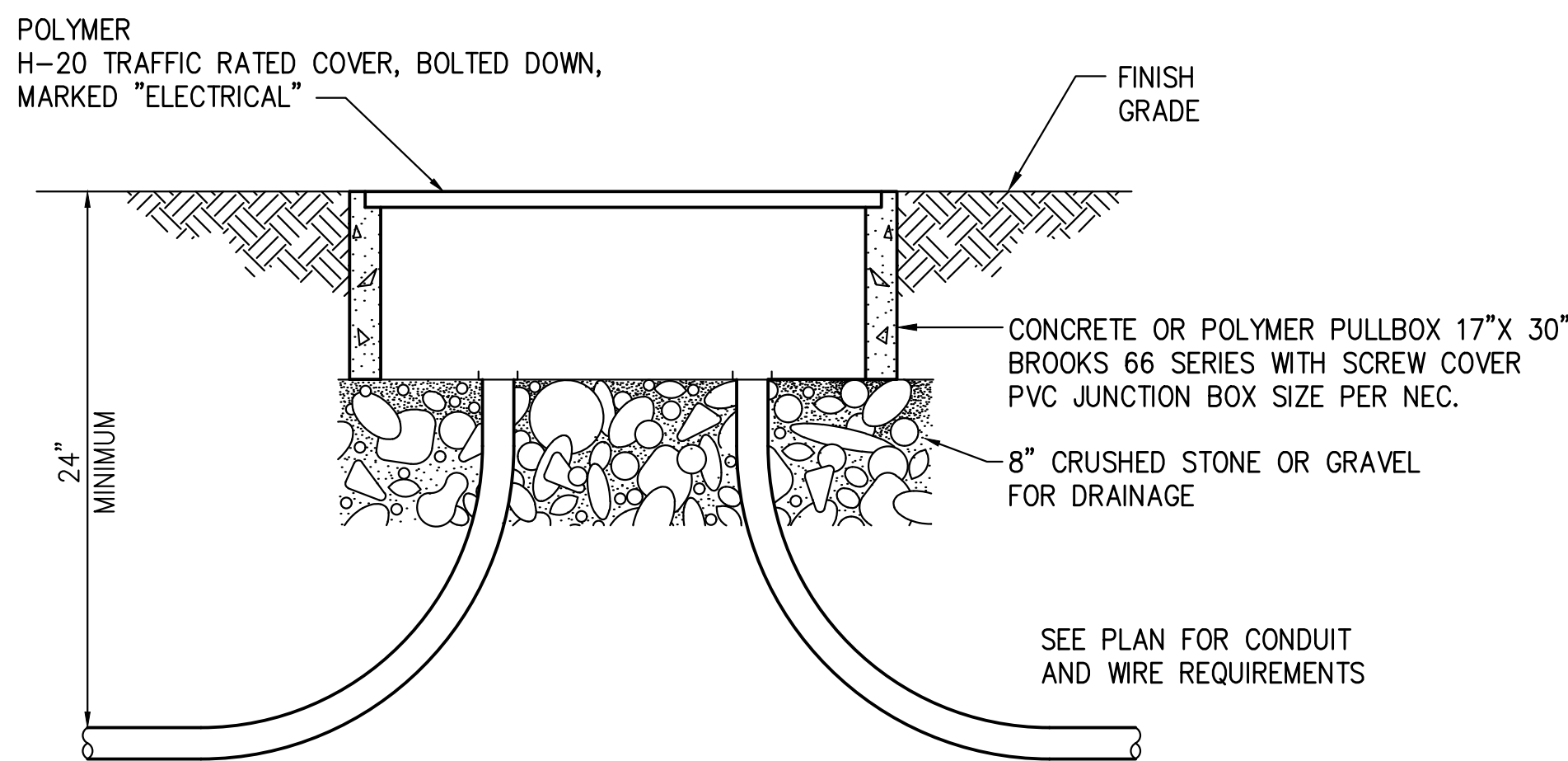
PANEL "L5" (1)(2)

MOUNTING: SURFACE VOLT: 208/120V, 3Ø, 4W
 SHORT CIRCUIT RATING: 42K AIC MAIN BUS AMPS: 225 A
 POLES: 42 MAIN BREAKER AMPS: MLO A
 FED FROM PANEL: PANEL 'L4' MANUFACTURER/TYPE: CUTLER-HAMMER, SQ-D, GE

CKT	LOAD SERVED	POLE	TRIP	WIRE	COND	AMPS 'A'	AMPS 'B'	AMPS 'C'	AMPS 'A'	AMPS 'B'	AMPS 'C'	COND	WIRE	TRIP	POLE	LOAD SERVED	CKT
1	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0			6.0			2"	12	20	1	CHRISTMAS TREE LIGHTS	2
3	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0			6.0		2"	12	20	1	CHRISTMAS TREE LIGHTS	4
5	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	6
7	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	8
9	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	10
11	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	12
13	CHRISTMAS TREE LIGHTS	1	20	12	2"	7.0					6	2"	12	20	1	CHRISTMAS TREE LIGHTS	14
15	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	16
17	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	18
19	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	20
21	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	22
23	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	24
25	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	26
27	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	28
29	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	30
31	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	32
33	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	34
35	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	36
37	CHRISTMAS TREE LIGHTS	1	20	12	2"	6.0					6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	38
39	CHRISTMAS TREE LIGHTS	1	20	12	2"		6.0				6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	40
41	CHRISTMAS TREE LIGHTS	1	20	12	2"			6.0			6.0	2"	12	20	1	CHRISTMAS TREE LIGHTS	42

CONNECTED AMPS = 43.0 42.0 42.0 42.0 42.0 42.0
 TOTAL CONNECTED AMPS = 85.0 84.0 84.0 30.36 KVA

Note: (1) MAX 3% VD ON BRANCH CIRCUITS AS PER FBC
 (2) NEMA 4X ENCLOSURE LOCKABLE



PULL BOX DETAIL
 NOT TO SCALE

ELECTRICAL PANEL SCHEDULES
 SCALE: N.T.S.

Drawing name: I:\Projects\SEC_2017\17015 Christmas tree Relocation\Electrical_Dwg\E-1.0.dwg
 Layout Name: E-3.0
 Plotted on: Jun 29, 2017 1:49pm

100% SUBMITTAL
 JUNE 2017

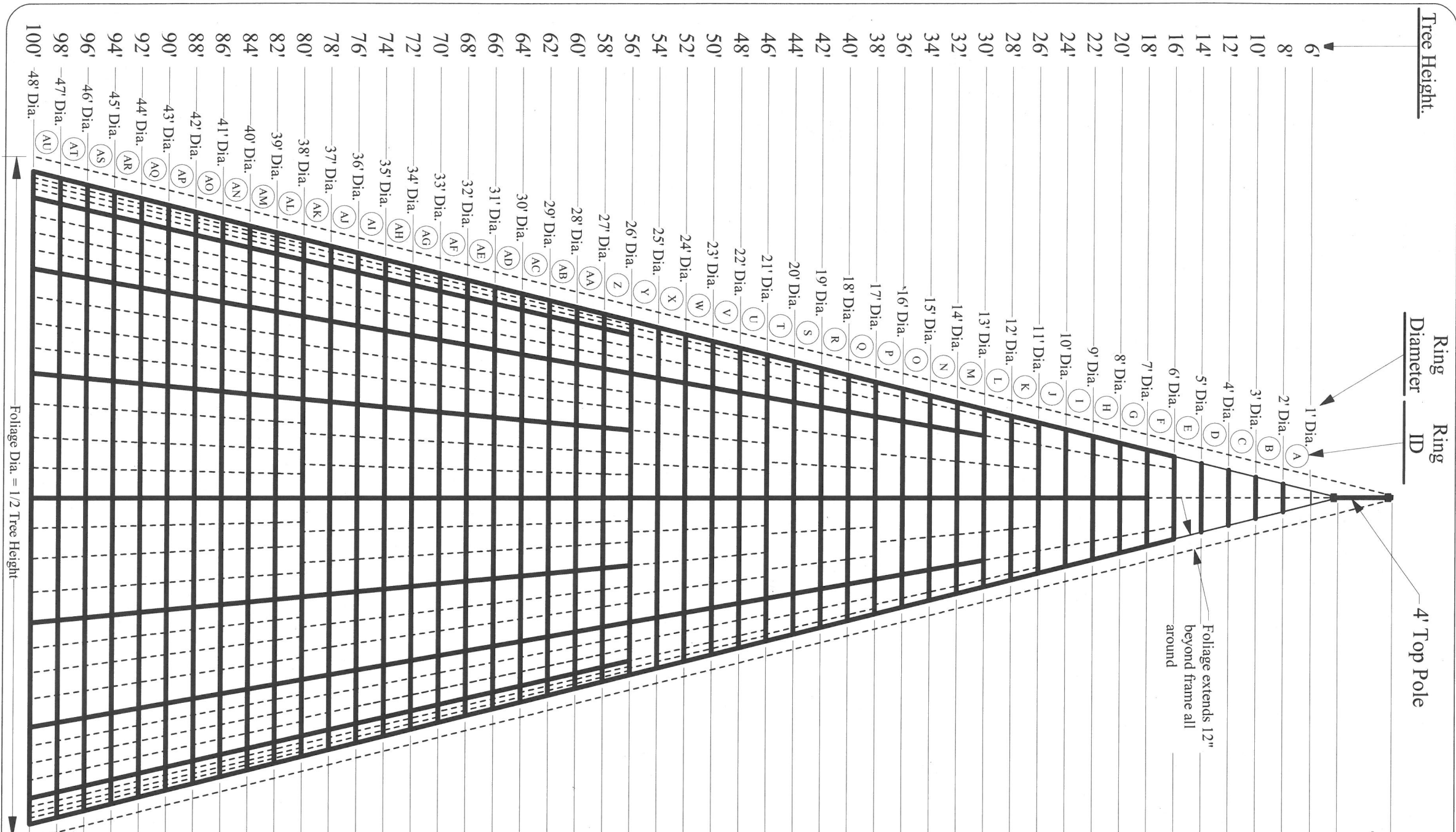
WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE			DATE: 6-10-17 DESIGNED: FR DRAWN: FR CHECKED: LMS APPROVED:	 2181 Palm Beach Lakes Blvd., Suite 312 West Palm Beach, Florida 33409 (561) 616-3911 fax (561) 616-3912 www.smithengineeringconsultants.com	 CITY OF DELRAY BEACH ENVIRONMENTAL SERVICES DEPARTMENT	CHRISTMAS ALUMINUM TREE RELOCATION PROJECT PROJECT NO. 17015	PANEL SCHEDULES AND DETAILS	DRAWING NO. E-3.0
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BRANCHES

Tree Height	Ring ID	Branches		Branch Spacing-ARC Dim.		Weight of Branches		Total Tree Weight	Load Per Spar
		Per Ring	Total	Per Ring	Total	Per Ring	Total		
4' Top Pole									
			4	Top Branches		28	28		
	6'		4			28	56		
	8'	A	5	9	7.54	35	91	125	
10'	B	7	16	10.77	49	140	196	31	
12'	C	9	25	12.57	63	203	288	49	
14'	D	11	36	13.71	77	280	399	72	
16'	E	14	50	13.46	98	378	537	100	
18'	F	17	67	13.31	119	497	713	54	
20'	G	20	87	13.19	140	637	919	59	
22'	H	22	109	13.71	154	791	1145	77	
24'	I	25	134	13.57	175	966	1398	95	
26'	J	28	162	13.46	196	1162	1679	117	
28'	K	32	194	12.96	224	1386	2008	84	
30'	L	33	227	13.71	231	1617	2349	100	
32'	M	36	263	13.61	252	1869	2830	98	
34'	N	40	303	13.19	280	2149	3349	118	
36'	O	41	344	13.79	287	2436	3885	140	
38'	P	44	388	13.71	308	2744	4454	162	
40'	Q	48	436	13.35	336	3080	5091	139	
42'	R	50	486	13.57	350	3430	5753	159	
44'	S	53	539	13.51	371	3801	6447	180	
46'	T	56	595	13.46	392	4193	7173	201	
48'	U	58	653	13.65	406	4599	7948	179	
50'	V	60	713	13.82	420	5019	8748	199	
52'	W	64	777	13.55	448	5467	9587	219	
54'	X	66	843	13.71	462	5929	10450	240	
56'	Y	68	911	13.86	476	6405	11338	261	
58'	Z	72	983	13.61	504	6909	12345	177	
60'	AA	74	1057	13.76	518	7427	13377	193	
62'	AB	76	1133	13.89	532	7959	14905	209	
64'	AC	80	1213	13.67	560	8519	16482	233	
66'	AD	83	1296	13.63	581	9100	18101	258	
68'	AE	86	1382	13.59	602	9702	19760	283	
70'	AF	88	1470	13.71	616	10318	21454	309	
72'	AG	90	1560	13.82	630	10948	23194	335	
74'	AH	93	1653	13.78	651	11599	24976	362	
76'	AI	96	1749	13.74	672	12271	26798	390	
78'	AJ	99	1848	13.71	693	12964	28662	419	
80'	AK	101	1949	13.81	707	13671	30560	448	
82'	AL	104	2053	13.77	728	14399	32927	382	
84'	AM	107	2160	13.74	749	15148	35340	412	
86'	AN	110	2270	13.71	770	15918	37800	442	
88'	AO	112	2382	13.80	784	16702	40298	472	
90'	AP	115	2497	13.77	805	17507	42842	504	
92'	AQ	118	2615	13.74	826	18333	45819	536	
94'	AR	121	2736	13.71	847	19180	48847	573	
96'	AS	123	2859	13.79	861	20041	51919	611	
98'	AT	126	2985	13.76	882	20923	55043	649	
100'	AU	129	3114	13.74	903	21826	58218	688	

Crystal Valley Decorating
100' FRAME ALUMINUM



Tree Height	Ring Diameter	Ring ID	ALUMINUM	Ring Sections	Ring Branch Panels	Total Branch Panels	Spans Per Section
6'	1" Dia.	A	N/A	N/A	4	4	
8'	2' Dia.	B	1	1	5	9	4
10'	3' Dia.	C	1	1	7	16	4
12'	4' Dia.	D	1	1	9	25	4
14'	5' Dia.	E	1	1	11	36	4
16'	6' Dia.	F	1	1	14	50	4
18'	7' Dia.	G	2	2	17	67	5
20'	8' Dia.	H	4	4	20	87	3
22'	9' Dia.	I	4	4	22	109	3
24'	10' Dia.	J	4	4	25	134	3
26'	11' Dia.	K	4	4	28	162	3
28'	12' Dia.	L	4	4	32	194	5
30'	13' Dia.	M	4	4	33	227	5
32'	14' Dia.	N	8	8	36	263	3
34'	15' Dia.	O	8	8	40	303	3
36'	16' Dia.	P	8	8	41	344	3
38'	17' Dia.	Q	8	8	44	388	3
40'	18' Dia.	R	8	8	48	436	4
42'	19' Dia.	S	8	8	50	486	4
44'	20' Dia.	T	8	8	53	539	4
46'	21' Dia.	U	8	8	56	595	4
48'	22' Dia.	V	8	8	58	653	5
50'	23' Dia.	W	8	8	60	713	5
52'	24' Dia.	X	8	8	64	777	5
54'	25' Dia.	Y	8	8	66	843	5
56'	26' Dia.	Z	16	16	72	983	4
58'	27' Dia.	AA	16	16	74	1057	4
60'	28' Dia.	AB	16	16	76	1133	4
62'	29' Dia.	AC	16	16	80	1213	4
64'	30' Dia.	AD	16	16	83	1296	4
66'	31' Dia.	AE	16	16	86	1382	4
68'	32' Dia.	AF	16	16	88	1470	4
70'	33' Dia.	AG	16	16	90	1560	4
72'	34' Dia.	AH	16	16	93	1653	4
74'	35' Dia.	AI	16	16	96	1749	4
76'	36' Dia.	AJ	16	16	99	1848	4
78'	37' Dia.	AK	16	16	101	1949	4
80'	38' Dia.	AL	16	16	104	2053	5
82'	39' Dia.	AM	16	16	107	2160	5
84'	40' Dia.	AN	16	16	110	2270	5
86'	41' Dia.	AO	16	16	112	2382	5
88'	42' Dia.	AP	16	16	115	2497	5
90'	43' Dia.	AQ	16	16	118	2615	5
92'	44' Dia.	AR	16	16	121	2736	5
94'	45' Dia.	AS	16	16	123	2859	5
96'	46' Dia.	AT	16	16	126	2985	5
98'	47' Dia.	AU	16	16	129	3114	5
100'	48' Dia.						

3" x .250 w Sq. Tube
 Frame: 3/4-10 x 7-1/2" Bolts
 Clamps: 5/16-18 x 7-1/2" Bolts

2-1/2" x .188 w Sq. Tube
 Frame: 5/8-11 x 6-1/2" Bolts
 Clamps: 5/16-18 x 6-1/2" Bolts

2" x .188 w Sq. Tube
 Frame: 1/2-13 x 5" Bolts
 Clamps: 5/16-18 x 5-1/2" Bolts

1-1/2" x .125 w Sq. Tube
 Frame: 1/2-13 x 4" Bolts
 Clamps: 5/16-18 x 4-1/2" Bolts

1" x .125 w Sq. Tube
 Frame: 3/8-16 x 3" Bolts
 Clamps: 5/16-18 x 3-1/2" Bolts

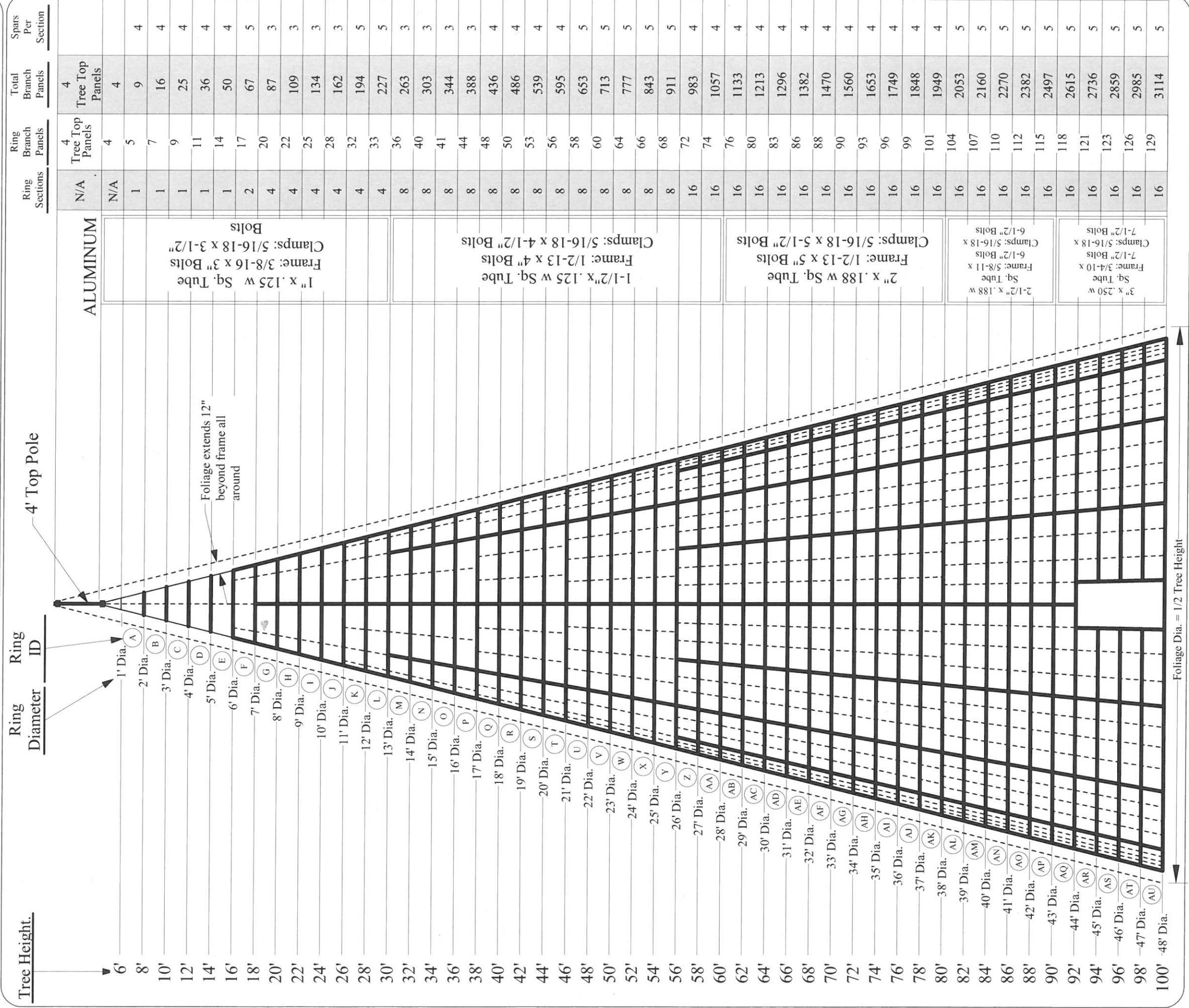
Foliage Dia. = 1/2 Tree Height

Foliage extends 12" beyond frame all around

4' Top Pole

Crystal Valley Decorating

100' FRAME ALUMINUM WALK THRU







Burchett



410#

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