Underground Distribution Manhole and Duct Bank System

1. SCOPE

It is the intent of these Contract Documents to provide contractor services for the installation of a duct bank and manhole system for the extension of JEA's Imeson circuit 492. The Contractor shall provide all labor, supervision, equipment, and materials (except as otherwise noted) which are necessary to complete the Work within the time stipulated, and to comply with the plans furnished and with the requirements of these specifications.

The Work specified within these Contract Documents include the installation of pre-cast manholes, conduit, and other associated material within the project limits.

2. GENERAL INTENT

2.1. All Work shall be done in a safe and professional manner, so as to render a neat and uniform appearance. All material shall be handled in such a way as to preserve its finish and protective coatings. General arrangement shall be in accordance with JEA Underground Distribution Construction Standards and Street Light Standards and satisfactory to the Contract Administrator. The JEA Underground Distribution Standards are located at https://www.jea.com/Engineering_and_Construction/Electric_Reference_Materials/.

3. CONSTRUCTION DRAWINGS

3.1. The Construction Drawings consist of plan views of the entire project showing the manhole and conduit system locations with the expected size and number noted. See Exhibit B.

4. JEA UNDERGROUND DISTRIBUTION CONSTRUCTION STANDARDS

4.1. This publication provides standard engineering, design and construction practices for JEA. It contains Standard Construction Plates which illustrate the various Standards as well as providing written specifications, construction notes and a list of required materials. The JEA Underground Distribution Standards are located at https://www.jea.com/Engineering_and_Construction/Electric_Reference_Materials/.

4.2. Where applicable, all work will be performed as specified by the JEA Underground Electric Distribution Construction Standards which shall be considered as part of the specifications.

4.3. Revisions to these Standards shall also be considered as part of these specifications. If such revisions substantially change the cost of installation of a unit, the price for such unit shall be handled in accordance with the terms and conditions of the contract.

5. CONTRACTOR LOCATING EQUIPMENT

5.1. The Contractor is responsible for calling in utility locates per state law.

6. EXCAVATIONS

6.1. All excavations shall be made in compliance with Occupational Safety and Health Administration (OSHA) Regulations.

6.2. De-watering, sheeting and shoring shall be at the discretion of the Contractor and the allowance for the cost of same shall be included in the Bid.

6.3. All excavations are to be backfilled and compacted to the original degree of compaction, unless otherwise indicated. In addition, those excavations on City, County or State right-of-ways are to be compacted by the procedures and to the densities required by the governing authority. Refer to JEA Underground Electric Distribution Construction Standards at Section III Earthwork.

6.4. Storage of excavated material shall be the responsibility of the Contractor. Material unsuitable for backfill or excess backfill material shall be disposed of by the Contractor.

7. AS-BUILT DRAWINGS

7.1. The Contractor shall provide to the JEA Representative one complete color coded set of "As-built" Drawings, and one Xerox black & white copy set of the color coded set to the JEA Representative after completion of the Work and within ten business days. The "As-Built" Drawings shall be dimensioned and abbreviated in accordance with the JEA "Detailed Underground Electric As-Built Standards". The dimension markings and color codes shall be as follows:

Red – primary distribution conduit (2")
Purple – primary distribution conduit (4")
Orange – primary feeder conduit (6")
Green – secondary street light conduit (1")
Navy – other secondary conduit (3")

7.2. The Contractor shall be responsible for keeping all project construction as-built records and prints for a period of 24 months (2 years) from completion of the project in the event JEA requires additional prints provided by the Contractor, and shall include this in the Bid Price.

8. SITE RESTORATION

8.1. It is the policy of the JEA to restore all property, both public and private, to as good or better condition than when the construction began. Area shall be restored to the satisfaction of the JEA Representative, adjacent property owners and, if in the right-of-way, meet the requirements of the agency having jurisdiction.

8.2. Streets, sidewalks and other paved areas are to be replaced in accordance with JEA Underground Distribution Construction Standards, Section VIII - Surface Work, and/or the "City Standard Specifications for the City of Jacksonville" and/or the Florida DOT "Standard Specifications for Road and Bridge Construction/Plans & Preparation Manual (PPM)/Florida DOT Roadway & Traffic Design Standards", where applicable. It should be noted that saw cutting of pavement to clean straight lines is required as well as replacement of sidewalks to construction joints.

9. AREAS OF CONSTRUCTION

The area of work will be within the Zoo Parkway Right-of-Way and JEA Utility easement as shown in the contract drawings. Any FDOT Permit requirements for MOT and Work Hours must be adhered to.

10. EXPLANATION OF BID WORK

10.1. Directional Bore

10.1.1. Contractor will install conduits using directional boring equipment under existing street, roadway or any other surface without disturbing said surface. Conduits shall be installed at the minimum depth, within the limits specified in the Contract Documents and in accordance with JEA Underground Distribution Construction Standards; and these conduits shall include pull rope/flat strap as a means to pull back cables. This item shall include the digging and restoration of all pits necessary to complete the installation. De-watering, sheeting and shoring, if required, shall be included in the Bid Item. Backfill and compaction shall be such as to attain the original degree of consolidation. All conduits will be tied in within three (3) working days of installation. Area shall be restored to the satisfaction of the JEA Representative, adjacent property owners and, if in the right-of-way, meet the requirements of the agency having jurisdiction.

10.1.2. The JEA may elect to supply the conduit on a reel and the associated fittings. Should the JEA elect to have the Contractor supply the conduit and fittings, the costs shall be reimbursed on an L.E.M. basis. The conduit and fittings shall meet the JEA specifications as referenced in this Appendix A.

10.2. Trench

10.2.1. This item includes the cost of excavating trench of every description of whatever substance encountered, all in accordance with JEA Underground Distribution Construction Standards (See Section III - EARTHWORK) and Project Documents.

10.2.2. The Contractor shall provide such dewatering, well-pointing, sheeting and shoring, as may be required to support the sides of any excavation. Labor, equipment and material to provide such support, and to hold any pole to prevent its falling due to excavation, as well as the cost of required compaction tests shall be paid by the Contractor and included in the Bid.

10.2.3. In the event the Contractor excavates below the grade required, the Contractor shall at its own expense backfill and compact material as specified by the Project Engineer.

10.2.4. In the event that unsuitable base material is encountered and is designated to be replaced or unsuitable backfill is designated to be replaced, measurement and payment will be made on the basis of the appropriate item as set forth in the contract.

10.3. Manholes

10.3.1. The item shall consist of a complete "package" which shall include excavation, installation and backfilling, all in accordance with JEA Underground Distribution Construction Standards, (See Section IV, CONCRETE).

10.3.2. Dimensions of structure sizes indicated in the JEA description column are nominal inside dimensions. The dimensions of the excavation required to set the various sized structures shall be based on the limits of excavation for these items.

10.3.3. The Contractor shall do all the excavating of every description of whatever substance encountered, backfill, and compact the excavation to the required densities. The Contractor shall provide such dewatering, well-pointing, sheeting and shoring as may be required to support the sides of the excavation. Labor, equipment and material to provide such support, and hold any pole to prevent its falling due to excavation, as well as the cost of required compaction tests shall be paid by the Contractor and included in the Unit Price.

10.3.4. In the event the Contractor excavates below the grade required, the Contractor shall at its own expense backfill and compact material as specified by the Project Engineer.

10.3.5. In the event that unsuitable base material is encountered and is designated to be replaced or unsuitable backfill is designated to be replaced, measurement and payment will be made on the basis of the appropriate item as set forth in the contract.

10.3.6. Pre-cast concrete structures will be furnished by the JEA and will be delivered. The Contractor shall give the manufacturer 48 hours' notice as to the desired delivery, time and date. The Contractor will be required to unload, stage, and set the pre-cast structure. Such operations shall be at the Contractor's expense.

10.4. PVC Manholes

10.4.1. Install items include the cost of excavation, installation of manhole to proper grade, cutting holes in floor or wall for up to six (6) elbow or conduit entrance, base course, backfill, and compaction. All in accordance with JEA Underground Distribution Construction Standards (See Section IV - CONCRETE) and Project Documents.

10.5. Direct Buried Conduit

10.5.1. Contractor will install conduits, couplings, plugs, markers, pull cord and marking tape, all in accordance with the JEA Underground Distribution Construction Standards. The ducts, so installed, shall furnish a continuous path for the installation of cable between manholes, riser poles, transformers, equipment cabinets or any combination thereof.

10.5.2. All ducts shall be proven with a mandrel which has been approved by the JEA Standards Committee and which is no more than 1/2" smaller than the duct diameter before it is accepted. A pull string shall be installed in any conduit which is so designated. Duct failing to pass the proper mandrel shall be replaced/repaired at the expense of the Contractor.

10.6. Pads & Pits

10.6.1. Pads - Contractor shall set precast concrete pads in accordance with JEA Underground Distribution Construction Standards. Pad shall be level and set so that no part of the pad is lower than "finish" grade. Prior to setting of pad, ells are to be installed as per the Conduit Plate, and soil shall be compacted to original degree of consolidation. Additional backfill material, if required, shall be included in the Bid Item.

10.6.2. Pits - Contractor shall set precast concrete pits in accordance with JEA Underground Distribution Construction Standards. Prior to setting of pit, ells are to be installed as per Conduit Plate and soil shall be compacted in 12 inch lifts to achieve 95% compaction. Storage and/or disposal of excavated material shall be included in the Bid Item. Contractor shall furnish and install granular fill material in the splay opening around the conduit ells in the bottom of the pit.

10.7. Grounding

10.7.1. This item includes the cost to install a minimum of three ground rods and up to a maximum of eight (8) ground rods in an effort to achieve a reading of 25 ohms or less. If the 25 ohm reading is not reached with eight (8) rods, Contractor will record the ground resistance achieved. Reading will be recorded on the inside of the transformer/cabinet with an indelible marker.

10.7.2. Ground rods, couplings, wire and connections will be installed in accordance with JEA Underground Distribution Construction Standards (See Section VII - Secondary Systems) and Project Documents.

10.8. Sidewalk

10.8.1. Concrete Sidewalk Removal - This item includes the cost to remove concrete as required, all in accordance with JEA Underground Distribution Construction Standards (See Section VIII - SURFACE WORK) and Project Documents.

10.8.2. Concrete Sidewalk Installation - This item includes the cost of all required form work and the furnishing, pouring and finishing of concrete, all in accordance with JEA Underground Distribution Construction Standards (See Section IV - CONCRETE) and Project Documents.

11. Items Supplied by Owner

11.1. See Exhibit C

Exhibit A

SPECIFICATION FOR HIGH DENSITY POLYETHYLENE, SMOOTH WALL, COILABLE CONDUIT

1. GENERAL

(REGRIND MATERIAL IS NOT ACCEPTABLE) SMOOTH WALL DUCT MADE FROM VIRGIN HIGH-DENSITY POLYETHYLENE RESIN IS REQUIRED. THE POLYETHYLENE SHALL BE TYPE III, CATEGORY 3, CLASS C, GRADE P34 MEETING THE LATEST REQUIREMENTS OF ASTM D1248. CONSISTENT WITH THE CELL CLASSIFICATION 334420C, AS DESCRIBED IN ASTM D3350. THE FINISHED PRODUCT SHALL BE IN COMPLIANCE WITH THE DIMENSIONAL, MATERIAL, AND TESTING REQUIREMENTS OF NEMA TC-7 (SDR 13.5), ASTM F714, ASTM D3035, AND ASTM D2447.

2. MINIMUM DRUM SIZE AND BENDING RADIUS, MAXIMUM REEL SIZE

DUCT SIZE	MINIMUM DRUM DIAMETER	UNSUPPORTED BEND RADIUS
1"	24"	14"
11/4”	24”	14”
2"	42"	26"
3"	64"	48"
4"	84"	60"
6”	N/A	N/A

RETURNABLE STEEL REELS WITH STANDARD DUCT LENGTHS.

3. PARALLELED ITEMS

PARALLELED CONDUIT SHALL BE PACKAGED IN **2,000** CIRCUIT FOOT REEL LENGTHS OF THE FOLLOWING COLOR PATTERNS (AS STATED ON THE JEA BID PROPOSAL FORM):

A. YELLOW, PURPLE AND ORANGE
B. GREEN, BROWN AND GRAY

4. COLOR/UV PROTECTION

CONDUIT COLOR SHALL BE UNIFORM SOLID COLOR AS STATED ON THE JEA BID PROPOSAL FORM. ULTRAVIOLET PROTECTION SHALL BE IN ACCORDANCE WITH ASTM D3895.

5. ENVIRONMENTAL STRESS CRACK RESISTANCE

CONDUIT SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM D1693-80 (VALUE - F20>96 HRS).

6. OVALITY

THE MAXIMUM OVALITY (OUT OF ROUNDNESS) ALLOWED AFTER REMOVAL FROM REEL SHALL BE 10% OF THE DIMENSIONAL LIMITS SET FORTH IN NEMA TC-7.

7. CONNECTION FITTINGS

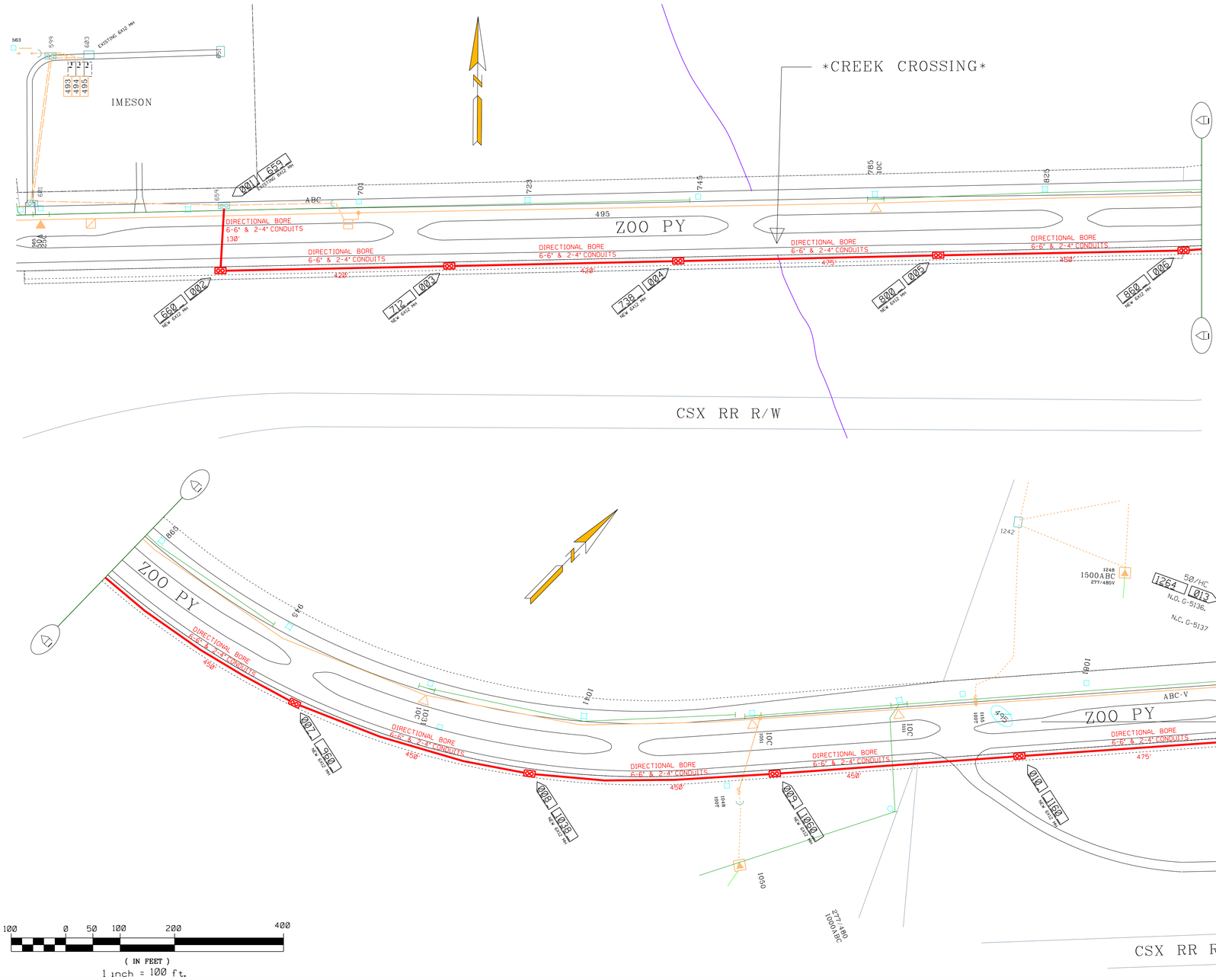
COUPLINGS SHALL BE CORROSION RESISTANT ALUMINUM, THREADED TYPE WHICH HAVE A HIGH PULL OUT STRENGTH. COUPLINGS SHALL BE COVERED AFTER INSTALLATION WITH HEAT SHRINK, COLD SHRINK OR WATER RESISTANT SILICONE TAPE.

8. FINAL DUCT ASSEMBLY

CONDUIT SHALL BE PRE-LUBRICATED AND HAVE A 500# MIN. STRENGTH PULL STRING INSTALLED. (JEA USE) LUBRICANT SHALL BE COMPATIBLE WITH ALL CABLE INSULATION AND JACKET MATERIAL.

NOTE: IF THERE ARE ANY CONTRADICTIONS OR CONFLICTS BETWEEN SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY.

Exhibit B – Construction Drawings



CONSTRUCTION NOTES:

1) SET NEW 6'X12' MANHOLES AT STA 002-012
2) CORE BORE 6-6" & 2-4" INTO THE SOUTH WALL OF MH 659 ZOO PY AT STA 001 (SEE MH DETAL SHEET)
3) DIRECTIONAL BORE/ TRENCH 6-6" & 2-4" FROM STA 001 TO 002
4) DIRECTIONAL BORE 6-6" & 2-4" FROM STA 002 TO 011
5) DIRECTIONAL BORE/ TRENCH 6-6" & 2-4" FROM STA 011 TO 012
6) DIRECTIONAL BORE 2-6" FROM STA 012 TO RISER POLE AT STA 013

SUBSTATION/CIRCUIT	
SUBSTATION NAME	IMESON RD
CIRCUIT NUMBER/S	495
SWITCH MAP NUMBER/S	52.3
PRIMARY VOLTAGE	26.4KV

ENGINEER/PROJECT MANAGER

ENGINEER : PIERSON DELCAMBRE
PHONE : (904) 665-7332
CELL : (904) 404-6750
EMAIL : DelcPW@jea.com
EMAIL :

AS - BUILT
ELECTRIC UTILITY CONDUIT SYSTEM

DATE
COMPANY NAME
ADDRESS
PHONE NO.

I HEARBY CERTIFY THAT THIS "AS - BUILT" DRAWING REPRESENTS THE ACTUAL HORIZONTAL AND VERTICAL FIELD LOCATIONS AND THAT THE MATERIALS USED ARE IN ACCORDANCE WITH THE APPROVED JEA SPECIFICATIONS.

AUTHORIZED NAME
AUTHORIZED SIGNATURE
CONTRACTOR'S LICENSSE No.
JEA CONTRACT ADMIN

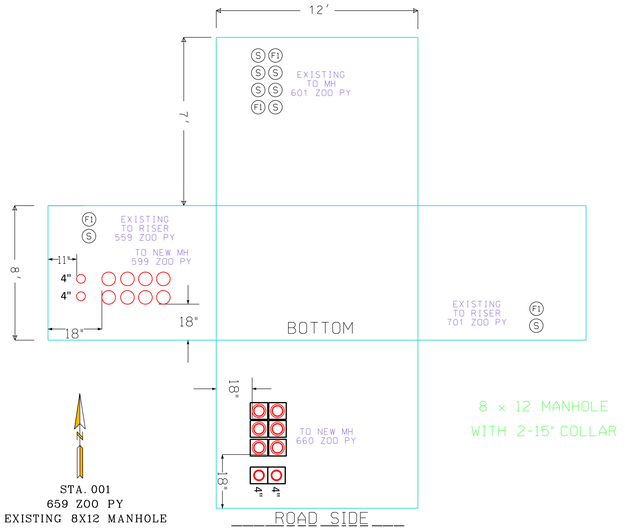
ENGINEERING RECORD

	BY	DATE
DESIGNED :	PWD	9/21/23
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		0/0/00

JEA
BUILDING COMMUNITY
21 WEST CHURCH ST
JACKSONVILLE, FLORIDA 32202-3139

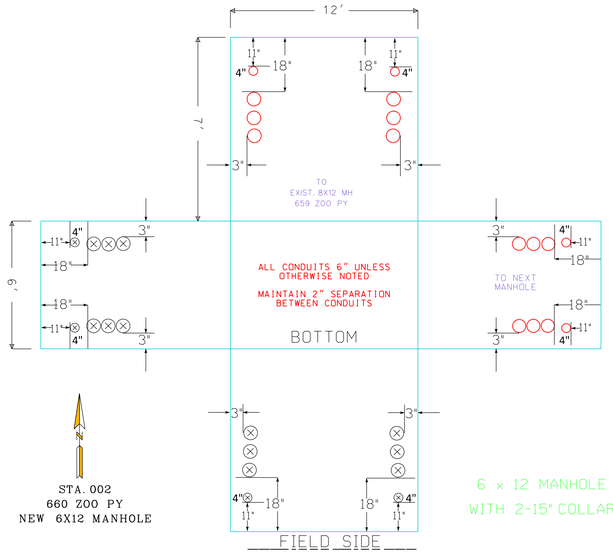
IMESON T2
CIR 492 ADDITION

DRAWING NO.: 00000001
OPN : 8008444
MWO : 312392226
SHEET NO. 01 OF 03



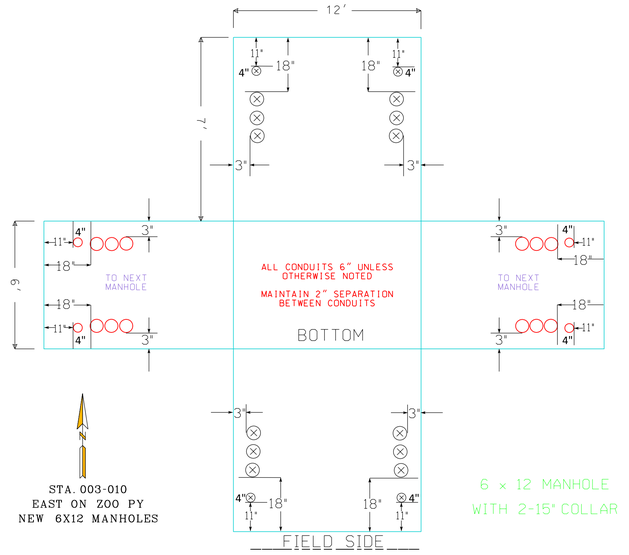
STA. 001
659 ZOO PY
EXISTING 8X12 MANHOLE

8 x 12 MANHOLE
WITH 2-15" COLLAR



STA. 002
660 ZOO PY
NEW 6X12 MANHOLE

6 x 12 MANHOLE
WITH 2-15" COLLAR

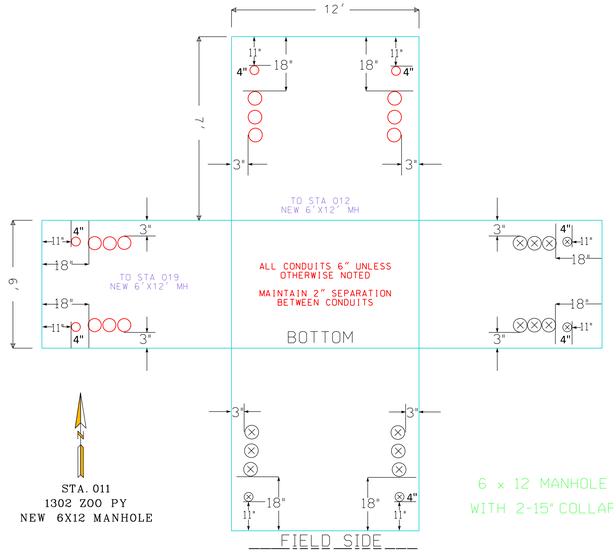


STA. 003-010
EAST ON ZOO PY
NEW 6X12 MANHOLES

6 x 12 MANHOLE
WITH 2-15" COLLAR

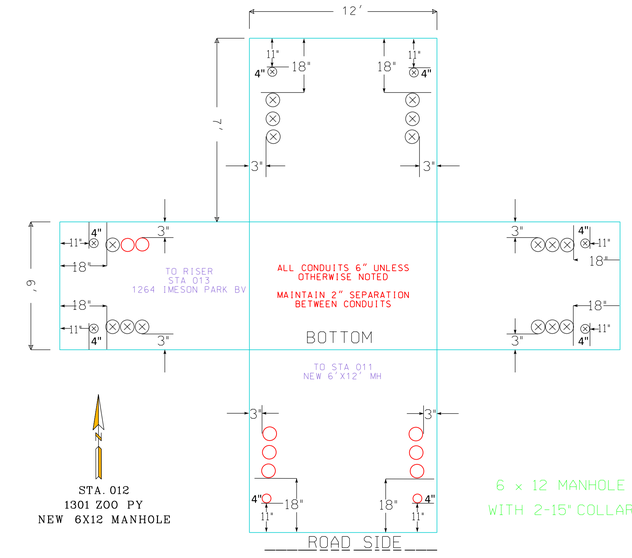
Manhole Detail Legend

- EXISTING KNOCK OUT
- EXISTING SPARE CONDUIT
- INSTALL NEW CONDUIT
- INSTALL NEW CONDUIT BY CORE BORE
- (F1) EXISTING CONDUIT WITH FEEDER
- (3 1/0) EXISTING CONDUIT WITH 3 PH 1/0
- (SE) EXISTING CONDUIT WITH SECONDARY



STA. 011
1302 ZOO PY
NEW 6X12 MANHOLE

6 x 12 MANHOLE
WITH 2-15" COLLAR



STA. 012
1301 ZOO PY
NEW 6X12 MANHOLE

6 x 12 MANHOLE
WITH 2-15" COLLAR

SUBSTATION/CIRCUIT		ENGINEER/PROJECT MANAGER		AS - BUILT (ELECTRIC UTILITY CONDUIT SYSTEM)	ENGINEERING RECORD		
SUBSTATION NAME	IMESON RD	ENGINEER :	PIERSON DELCAMBRE	DATE		BY	DATE
CIRCUIT NUMBER/S	494&495	PHONE :	(904) 665-7332	COMPANY NAME	DESIGNED :	PWD	03/20/23
SWITCH MAP NUMBER/S	52,3	CELL :	(904) 404-6750	ADDRESS	CHECKED :		
PRIMARY VOLTAGE	26.4KV	EMAIL :	DelcPW@jea.com	PHONE NO.	APPROVED :		
		EMAIL :		I HEARBY CERTIFY THAT THIS "AS - BUILT" DRAWING REPRESENTS THE ACTUAL HORIZONTAL AND VERTICAL FIELD LOCATIONS AND THAT THE MATERIALS USED ARE IN ACCORDANCE WITH THE APPROVED JEA SPECIFICATIONS.	APPROVED FOR CONSTRUCTION :		--------
				AUTHORIZED NAME			
				AUTHORIZED SIGNATURE			
				CONTRACTOR'S LICENSEE No.			
				JEA CONTRACT ADMIN:			

JEA
BUILDING COMMUNITY
21 WEST CHURCH ST
JACKSONVILLE, FLORIDA 32202-3139

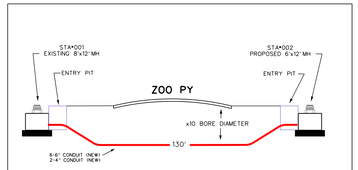
IMESON T2 - CIR 492
100% CONDUIT
MANHOLE DETAILS

DRAWING NO.: 00000001
OPN : 8008444
MWO : 31239226
SHEET NO. 02 OF 03

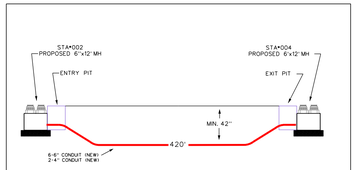
UNDERGROUND LEGEND

- PROPOSED PHASE PADMOUNTED TRANSFORMER
- SINGLE PHASE PADMOUNTED TRANSFORMER
- PROPOSED THREE PHASE PADMOUNTED TRANSFORMER
- THREE PHASE PADMOUNTED TRANSFORMER
- TWO PHASE PADMOUNTED TRANSFORMER - OPEN DELTA
- "F" FUSE CABINET PROPOSED
- "S" SWITCH CABINET PROPOSED
- "FF" OR "SF" FAULT FITER CABINET PROPOSED
- "F" FUSE CABINET
- "S" SWITCH CABINET
- "FF" OR "SF" FAULT FITER CABINET
- LIGHTNING ARRESTER CABINET
- UNDERGROUND RISER, SECONDARY OR PRIMARY
- FUSE - SIZE AND TYPE AS INDICATED
- NEW PRIMARY CONDUIT AS INDICATED
- EXISTING DIRECT BURIED PRIMARY
- EXISTING PRIMARY CONDUIT
- NEW SECONDARY CONDUIT AS INDICATED
- EXISTING SECONDARY CONDUIT
- STREET LIGHT
- AREA LIGHT
- EQUIPMENT ADDRESS
- STATION NUMBER
- EXISTING CONCRETE CABLE RISER POLE
- EXISTING WOOD CABLE RISER POLE
- SECONDARY HAND HOLE OR PULL BOX
- SECONDARY SERVICE PEDESTAL
- NORMALLY OPEN POINT
- NEW ELECTRONIC MARKER
- EXISTING ELECTRONIC MARKER
- PVC MANHOLE
- 4' x 6' CONCRETE MANHOLE
- 6' x 12' CONCRETE MANHOLE

NOTE: SYMBOLS IN RED ARE PROPOSED AND ALL OTHERS ARE EXSITING



UG HDD ZOO PY
(LOOKING WEST)
FROM STA 001 TO STA 002
N.T.S.



UG HDD ZOO PY
(LOOKING NORTH)
FROM STA 002 TO STA 004
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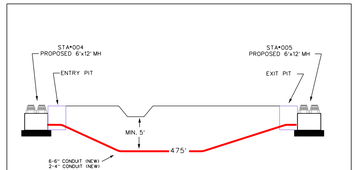
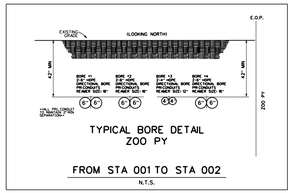
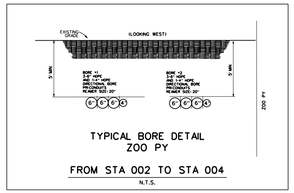


UG HDD ZOO PY
(LOOKING WEST)
FROM STA 004 TO STA 005
N.T.S.



TYPICAL BORE DETAIL
ZOO PY
FROM STA 001 TO STA 002
N.T.S.



TYPICAL BORE DETAIL
ZOO PY
FROM STA 002 TO STA 004
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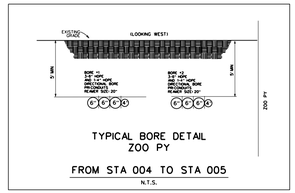

TYPICAL BORE DETAIL
ZOO PY
FROM STA 004 TO STA 005
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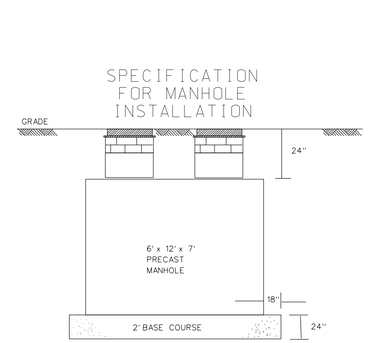
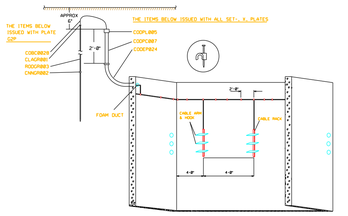
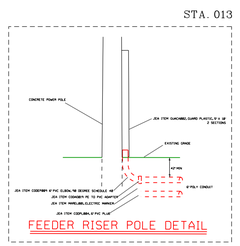
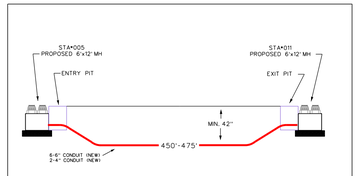




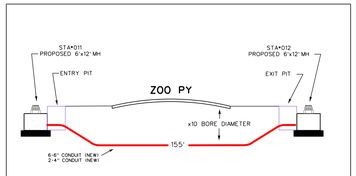
DETAIL "A"
TYPICAL MANHOLE CABLE ARM
HOOK, RACK & GROUNDING DETAIL



FEEDER RISER POLE DETAIL



UG HDD ZOO PY
(LOOKING WEST)
FROM STA 005 TO STA 011
N.T.S.



UG HDD ZOO PY
(LOOKING SOUTH)
FROM STA 011 TO STA 012
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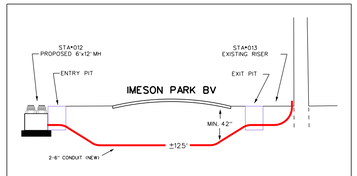
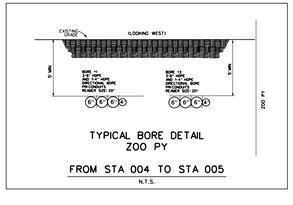
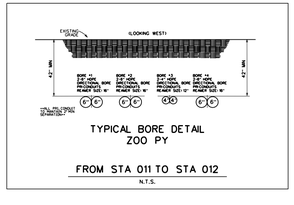


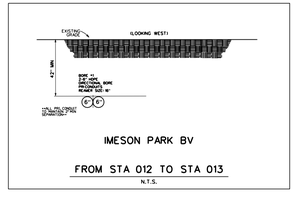
UG HDD IMESON PARK BV
(LOOKING SOUTH)
FROM STA 012 TO STA 013
N.T.S.



TYPICAL BORE DETAIL
ZOO PY
FROM STA 004 TO STA 005
N.T.S.



TYPICAL BORE DETAIL
ZOO PY
FROM STA 011 TO STA 012
N.T.S.



IMESON PARK BV
FROM STA 012 TO STA 013
N.T.S.

SUBSTATION/CIRCUIT	
SUBSTATION NAME	IMESON RD
CIRCUIT NUMBER/S	494&495
SWITCH MAP NUMBER/S	52,3
PRIMARY VOLTAGE	26.4KV

ENGINEER/PROJECT MANAGER

ENGINEER : PIERSON DELCAMBRE
PHONE : (904) 665-7332
CELL : (904) 404-6750
EMAIL : DelcPW@jea.com
EMAIL :

AS - BUILT
ELECTRIC UTILITY CONDUIT SYSTEM

DATE
COMPANY NAME
ADDRESS
PHONE NO.

I HEARBY CERTIFY THAT THIS "AS - BUILT" DRAWING REPRESENTS THE ACTUAL HORIZONTAL AND VERTICAL FIELD LOCATIONS AND THAT THE MATERIALS USED ARE IN ACCORDANCE WITH THE APPROVED JEA SPECIFICATIONS.

AUTHORIZED NAME
AUTHORIZED SIGNATURE
CONTRACTOR'S LICENSE No.
JEA CONTRACT ADMIN:

ENGINEERING RECORD

	BY	DATE
DESIGNED :	PWD	03/20/23
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		--------

JEA
BUILDING COMMUNITY
21 WEST CHURCH ST
JACKSONVILLE, FLORIDA 32202-3139

IMESON T2 - CIR 492
100% CONDUIT
MANHOLE DETAILS

DRAWING NO.: 00000001
OPN : 8008444
MWO : 31239226
SHEET NO. 03 OF 03

Exhibit C – Materials Furnished by Owner

Material Summary

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

Item Quantity	Item Number	Item Description
10	ADCMI002	CEMENT, CLEAR, QUICK-SET, ONE-QUART CANS
11	CLAGR001	CLAMP, GROUND ROD, 5/8" - 4SOL "HAMMERLOCK"
22	CNNGR002	COUPLING, GROUND ROD, "THREADLESS" REMARKS: FOR THREADLESS GROUND RODS
22	CNNVG003	CONNECTOR, 6-2 SOL/10-2 SOL, VISE GRIP PARALLEL, BRONZE
440	COBCO028	CONDUCTOR, #4 SOLID, SOFT DRAWN, BARE COPPER, 200', 25#, ON PLASTIC REEL, 4" X 11.5" W/ 2" HOLE
44	CODAD018	ADAPTER, CONDUIT, POLYVINYL CHLORIDE PVC TO POLYETHYLENE (PE, COILABLE CONDUIT) 4" COUPLER PVC MATERIAL
136	CODAD019	ADAPTER, CONDUIT, POLYVINYL CHLORIDE PVC TO POLYETHYLENE (PE, COILABLE CONDUIT) 6" COUPLER PVC MATERIAL
44	CODCO005	COUPLING, CONDUIT, PVC, 4", SCH-40
124	CODCO006	COUPLING, CONDUIT, PVC, 6", TYPE SCH-40
1	CODEP009	ELBOW, PVC, CONDUIT, 6", 90-DEGREE 48" SWEEP-RADIUS, SCH-40, WITH INTEGRAL BELLED END
22	CODEP024	ELBOW, 1" PVC 90-DEGREE, 18" RADIUS SCH-40
220	CODPC003	CONDUIT, PVC, 4", SCH-40, W/COUPLING ATTACHED OR ONE BELLED END, 20' SECTIONS END WITHOUT COUPLING MUST BE CHAMFERED 40-DEGREES SHIPPED ON OPEN FLAT BED TRUCK - STANDARD PALLET SIZE 1140 FT
680	CODPC005	CONDUIT, PVC, 6", SCH-40, W/COUPLING ATTACHED OR ONE BELLED END, 20' SECTIONS END WITHOUT COUPLING MUST BE CHAMFERED 40-DEGREES SHIPPED ON OPEN FLAT BED TRUCK
44	CODPC016	CONDUIT, PVC, 1" SCHEDULE-40, 10' LONG PACKAGED 10-UNITS PER BUNDLE
8800	CODPE004	CONDUIT, COILABLE, 4-INCH POLYETHYLENE COILABLE, GRAY SDR 13.5 POWER CONDUIT, SMOOTH WALL VIRGIN HIGH-DENSITY POLY RESIN. TYPE III, CLASS C, CATEGORY 3, UV PROTECTED, GRADE P34 POLY, (SHIP TO 2325 EMERSON-OPEN FLATBED TRUCK) REEL SZ 750FT
26700	CODPE006	CONDUIT, COILABLE, 6-INCH POLYETHYLENE GRAY SDR 13.5 POWER CONDUIT, SMOOTH WALL FROM VIRGIN HIGH-DENSITY POLY RESIN. TYPE III, CLASS C, CATEGORY 3, UV PROTECTED, GRADE P34 POLY, SHIP TO 2325 EMERSON ST. JAX. FL 32207 ON OPEN FLATBED TRUCK
2	CODPL004	PLUG, CONDUIT, PVC, 6" ID, TYPE EB
22	CODPL005	PLUG, PVC CONDUIT, 1" I.D., CAP-TYPE
11	MANHO002	MANHOLE, 12' X 6' X 7' RECTANGULAR PRECAST CONCRETE, REINFORCED FOR HS-20 BRIDGE LOAD. TO INCLUDE 2 EA MANHOLE FRAMES, 2 EA COVERS AND 2 EA 15" EXT RINGS. WT OF MANHOLE IS 30000 LB. REQUIRES A CURRENT NPCA CERTIFICATION FOR THE LAST 5 YR
11	MARCC001	MARKER, CONDUIT/CABLE 2' X 36" PVC WITH CAP, FLARED END OR BASE .
33	RODGR003	ROD, GROUND, THREADLESS, 5/8" X 8', SHIP ON OPEN FLATBED ONLY!
22	WASRD001	WASHER, ROUND, 1/2" BOLT SIZE, BRONZE - TIN PLATED, 1-1/4" OD

Exhibit D – CU Station Details

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 001

Build		Transfer	Remain in Place	Remove
BLD-ASPH	15			
BLD-CURB	15			
DIR-BORE*2-4	120			
DIR-BORE*2-6	360			
I.ADCMI002	1			
I.CODAD018	2			
I.CODAD019	6			
I.CODCO005	2			
I.CODCO006	6			
I.CODPE004	8800			
I.CODPE006	26700			
REM-CURB	15			
SAW-ASPH	15			
STUB-OUT	8			
UC*4	20			
UC*6	60			

STA 002 660 ZOO PY

Build		Transfer	Remain in Place	Remove
CONC-5	1			
DIR-BORE*2-4	421			
DIR-BORE*2-6	1260			
G2P	1			
G2P-C	1			
G3P	1			
I.CODAD018	4			
I.CODAD019	12			
I.CODCO005	4			
I.CODCO006	12			
SET-6X12*D	1			
UC*4	20			
UC*6	60			

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 003 712 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
DIR-BORE*2-4	421						
DIR-BORE*2-6	1260						
G2P	1						
G2P-C	1						
G3P	1						
I.ADCMI002	2						
I.CODAD018	4						
I.CODAD019	12						
I.CODCO005	4						
I.CODCO006	12						
SET-6X12*D	1						
UC*4	20						
UC*6	60						

STA 004 738 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
DIR-BORE*2-4	475						
DIR-BORE*2-6	1450						
G2P	1						
G2P-C	1						
G3P	1						
I.CODAD018	4						
I.CODAD019	12						
I.CODCO005	4						
I.CODCO006	12						
SET-6X12*D	1						
UC*4	20						
UC*6	60						

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 005 800 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
DIR-BORE*2-4	451						
DIR-BORE*2-6	1350						
G2P	1						
G2P-C	1						
G3P	1						
I.ADCMI002	1						
I.CODAD018	4						
I.CODAD019	12						
I.CODCO005	4						
SET-6X12*D	1						
UC*4	20						
UC*6	60						

STA 006 860 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
DIR-BORE*2-4	451						
DIR-BORE*2-6	1350						
G2P	1						
G2P-C	1						
G3P	1						
I.CODAD018	4						
I.CODAD019	12						
I.CODCO005	4						
I.CODCO006	12						
SET-6X12*D	1						
UC*4	20						
UC*6	60						

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 007 960 ZOO PY

Build		Transfer	Remain in Place	Remove
CONC-5	1			
DIR-BORE*2-4	451			
DIR-BORE*2-6	1350			
G2P	1			
G2P-C	1			
G3P	1			
I.ADCMI002	1			
I.CODAD018	4			
I.CODAD019	12			
I.CODCO005	4			
I.CODCO006	12			
SET-6X12*D	1			
UC*4	20			
UC*6	60			

STA 008 1038 ZOO PY

Build		Transfer	Remain in Place	Remove
CONC-5	1			
DIR-BORE*2-4	451			
DIR-BORE*2-6	1350			
G2P	1			
G2P-C	1			
G3P	1			
I.ADCMI002	1			
I.CODAD018	4			
I.CODAD019	12			
I.CODCO005	4			
I.CODCO006	12			
SET-6X12*D	1			
UC*4	20			
UC*6	60			

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 009 1060 ZOO PY

Build		Transfer	Remain in Place	Remove
CONC-5	1			
DIR-BORE*2-4	451			
DIR-BORE*2-6	1350			
G2P	1			
G2P-C	1			
G3P	1			
I.ADCMI002	1			
I.CODAD018	4			
I.CODAD019	12			
I.CODCO005	4			
I.CODCO006	12			
SET-6X12*D	1			
UC*4	20			
UC*6	60			

STA 010 1160 ZOO PY

Build		Transfer	Remain in Place	Remove
CONC-5	1			
DIR-BORE*2-4	475			
DIR-BORE*2-6	1450			
G2P	1			
G2P-C	1			
G3P	1			
I.ADCMI002	1			
I.CODAD018	4			
I.CODAD019	12			
I.CODCO005	4			
I.CODCO006	12			
SET-6X12*D	1			
UC*4	20			
UC*6	60			

Station Compatible Unit Detail

Estimate Number: 31239226E IMESON T2/ 492 ZOO PY CONDUIT Estimate Type: CP Contract: 069-19-HRT UG FY24

Estimate Version:
MWO#/Task: 31239226
Oracle Project #: 8008444

By: DELCPW
Required Date: 05/01/2024
Estimated On: 02/05/2024

STA 011 1302 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
DIR-BORE*2-4	151						
DIR-BORE*2-6	450						
G2P	1						
G2P-C	1						
G3P	1						
I.ADCMI002	1						
I.CODAD018	4						
I.CODAD019	12						
I.CODCO005	4						
I.CODCO006	12						
SET-6X12*D	1						
UC*4	20						
UC*6	60						

STA 012 1301 ZOO PY

Build		Transfer		Remain in Place		Remove	
CONC-5	1						
G2P	1						
G2P-C	1						
G3P	1						
I.ADCMI002	1						
I.CODAD018	2						
I.CODAD019	8						
I.CODCO005	2						
I.CODCO006	8						
SET-6X12*D	1						
UC*6	20						

STA 013 1264 IMESON PARK BV

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	175						
I.CODAD019	2						
I.CODCO006	2						
PLUG-DUCT6	2						
UCL9*6	1						