

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 CCCN circuit 372. 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 POW-MIA Memorial 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"
1 1/4"	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.

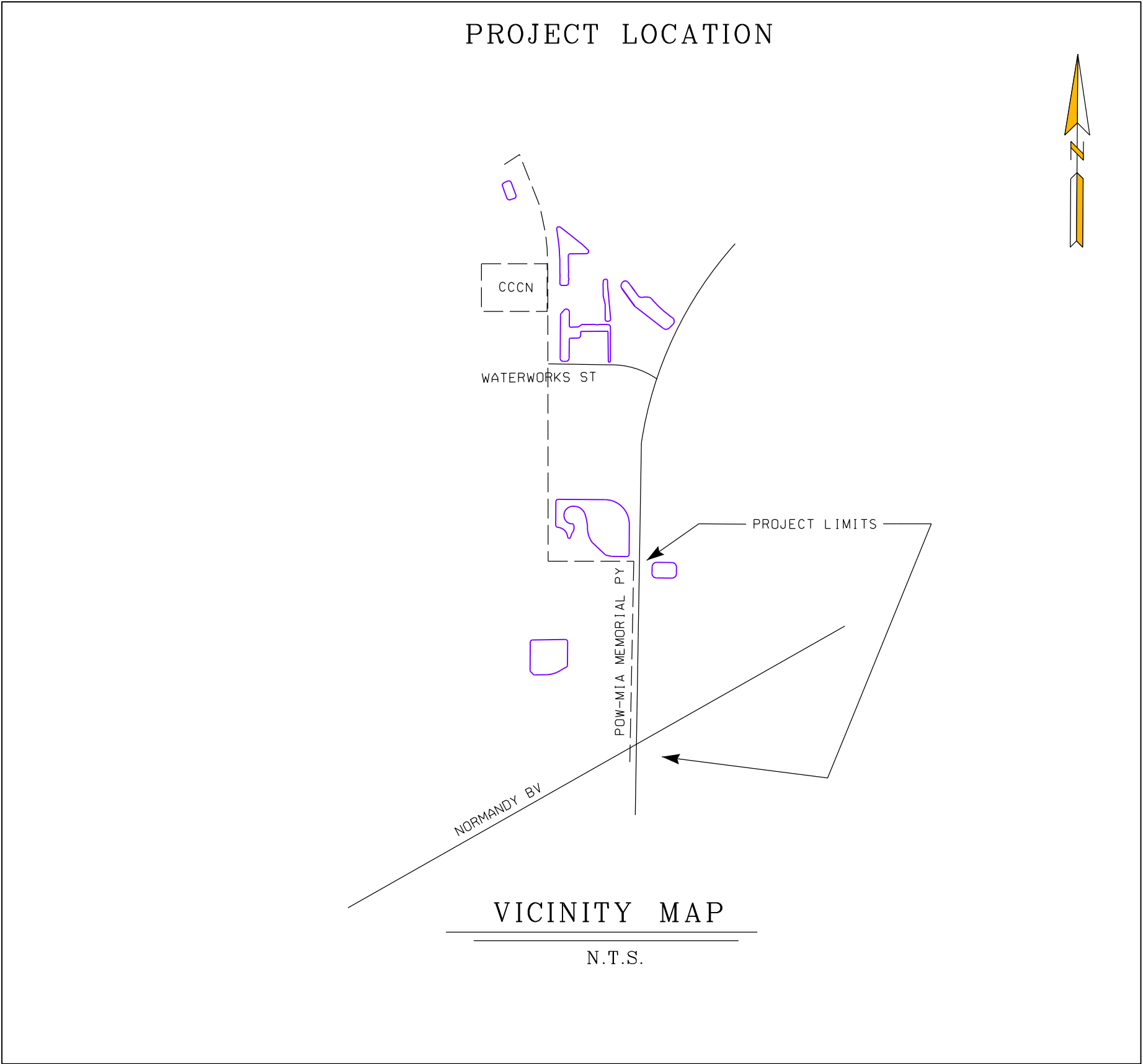
8. FINAL DUCT ASSEMBLY

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 DRAWINGS FOR



CECIL COMMERCE CENTER NORTH 26KV UNDERGROUND FEEDERS CKTS 372

U/G CONDUIT WO: 31315040

		 <p><i>BUILDING COMMUNITY</i></p> <p>225 N. PEARL ST. JACKSONVILLE, FLORIDA 32202-3139</p>	ENGINEER/PROJECT MANAGER	OPN : 8009354
			<p>ENGINEER : P. DELCAMBRE</p> <p>PHONE : (904) 665-7332</p> <p>CELL : (904) 404-6750</p> <p>EMAIL : DelcPW @jea.com</p> <p>WEBSITE : https://www.jea.com</p>	MWO : SEE ABOVE
				DRAWING NO. :
				SHEET NO. 01 OF 06
				GRAPHIC SCALE
				 <p>(IN FEET) 1 inch = 50 ft.</p>

NOTES:

1. FIELD CONTRACTOR SHALL PERFORM THE FOLLOWING WORK AT THE STATIONS AS INDICATED ON THE DRAWINGS PER "JEA PROCEDURES, STANDARDS AND SPECIFICATIONS".

2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE DIGGING IN THAT AREA. ALL DAMAGE RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

3. THE CONTRACTOR SHALL RESTORE ALL LANDSCAPING, DITCHES, SWALES, CULVERTS, HEADWALLS, STORM DRAIN INLETS, AND OTHER DRAINAGE FACILITIES REMOVED OR DISTURBED BY THE CONSTRUCTION OPERATION. THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE UNIT PRICE.

4. ALL RESTORATION WORK IN DUVAL COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE LATEST DUVAL COUNTY STANDARDS.

5. FIELD CONTRACTOR SHALL INCLUDE IN HIS UNIT PRICE ALL TIME AND MATERIAL FOR EXISTING SITE CONDITIONS AND TEMP WORK ASSOCIATED WITH OVERHEAD AND UNDERGROUND CONSTRUCTION WORK.

6. FIELD VERIFY TRANSFORMER SIZES BEFORE LOADING NEW ONES AT THE SERVICE CENTER. EXISTING ADDRESS MATERIAL IN GOOD SHAPE AND TO CURRENT JEA'S STANDARDS SHALL BE REUSED.

7. ONCE POLES ARE PEGGED AND UTILITIES LOCATED, THE JEA CREWS ARE REQUIRED TO HAND DIG A PILOT HOLE 4 FEET DEEP AT ALL EQUIPMENT LOCATIONS BEFORE BEGINNING INSTALLATION. THE JEA CREWS SHALL DETERMINE IF CONFLICTS EXIST WHICH WOULD PREVENT SETTING THE EQUIPMENT AS DESIGNED.

8. CONTRACTOR SHALL INCLUDE IN HIS UNIT PRICE TIME AND MATERIAL TO RELOCATE / ENERGIZE ALL PRIMARY/SECONDARY DEVICES, AND THE SPLICING OF ALL PRIMARY / SECONDARY CONDUCTORS / CABLES.

9. CONTRACTOR SHALL MAINTAIN THE EXISTING PHASE ROTATIONS ON ALL TRANSFORMERS AND SWITCH CABINETS

10. CONTRACTOR TO PATCH AND REPAIR CONCRETE AND ASPHALT SURFACES AS REQUIRED PER DUVAL COUNTY LAND DEVELOPMENT CODE AND ADA STANDARDS

11. THESE PLANS DO NOT STAND BY THEMSELVES. OH AND UG ELECTRIC DISTRIBUTION CONSTRUCTION STANDARDS, DETAILS, MATERIALS MANUALS, AND ANY OTHER STANDARDS LISTED OR REFERENCED, ARE INCLUDED IN THE PROJECT DOCUMENTS

12. IF ANY TREE REMOVAL IS REQUIRED, PLEASE CONTACT JEA FORESTRY IMMEDIATELY FOR A FIELD REVIEW

13. NO OPEN CUTS ARE ALLOWED ON PAVED DUVAL COUNTY ROADWAYS

14. CONTRACTOR TO USE APPROPRIATE MOT TCP AS REQUIRED WHEN WORKING IN OR NEAR ROADWAY

15. CONTRACTOR TO USE APPROPRIATE "TEMPORARY EROSION AND SEDIMENT CONTROL PLANS" AS REQUIRED WHEN WORKING NEAR DRAINS, DITCHES, CULVERTS, INLETS, SWALES, ETC.

16. CONTRACTOR TO MAINTAIN MINIMUM OF 42 " OF COVER OVER ALL UNDERGROUND FACILITIES

SCOPE OF WORK:

PROJECT DESCRIPTION:

SINCE JEA INSTALLED THE NEW 50 MVA T2 AT THE CCC NORTH SUBSTATION, JEA OPERATIONS HAS BEEN USING THE SPARE 372 CIRCUIT BREAKER, THE 26KV TRANSFER BUS, AND THE 378 FEEDER CONDUCTOR (NOT THE 378 BREAKER) TO SERVE MOST OF THE CECIL 389 OH CIRCUIT WITH EXTENDS WEST AND EAST ALONG NORMANDY BV @ POW-MIA PY. THE CCCN T1 SERVES TWO CIRCUITS, 377 AND 378, WHICH WERE CONSTRUCTED MOSTLY UG TO PROVIDE HIGH RELIABILITY AND EXCELLENT POWER QUALITY.

JEA OPERATIONS HAS DECIDED TO MAKE THIS CHANGE PERMANENT. IN ORDER TO FREE UP THE 26KV TRANSFER BUS AND MAINTAIN THE EXISTING UG 378 BREAKER AND FEEDER, A NEW 372 DISTRIBUTION FEEDER WILL BE EXTENDED FROM THE EXISTING 371 SPARE BREAKER TO THE SOUTH SIDE OF NORMANDY BV. AN ADDITIONAL BENEFIT FOR THIS PROJECT IS THAT EXISTING OH 26KV PRIMARY CONDUCTORS WILL BE REMOVED OFF THE MOSTLY UG 377 CIRCUIT AND ONTO THE NEW 372 CIRCUIT.

PLEASE SEE CIRCUIT LAYOUT BELOW:

CIRCUIT 372:

FROM THE T2 TRANSFORMER, INSTALL 1000 AL IN THE MANHOLE AND CONDUIT SYSTEM.
CONNECT TO EXISTING OVERHEAD LINE AT POLE # 31-08. 1/0T FROM SWITCH CABINET J
WILL BE REMOVE TO RISER 13761 WATER WORKS ST.

INSTALL 1000 AL IN THE MANHOLE AND CONDUIT SYSTEM ALONG POW-MIA MEMORIAL PY.
FROM RISER SWITCH H-5279 CONNECT TO RISER SWITCH H-5277.

HOOK SWITCH H-5279 WILL BE NORMAL CLOSED.

HOOK SWITCH H-5277 WILL BE NORMAL CLOSED.

COND. CONSTRUCTION NOTES:

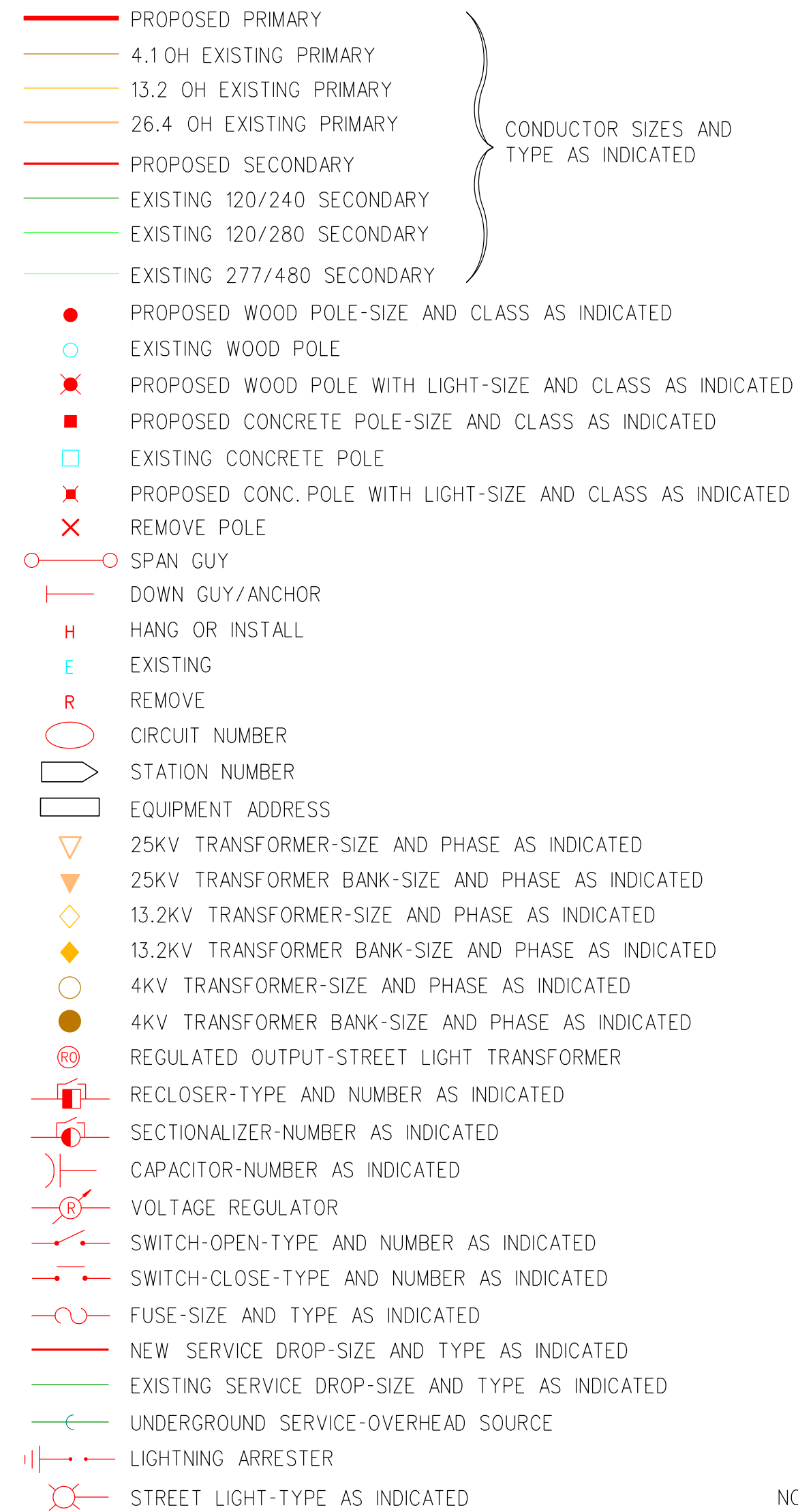
1. INSTALL 90 DEG ELS AT STA 001 & STA 012

2. INSTALL TEN (10) 6'X12 AT STA 002-011

3. DIRECTIONAL BORE/ TRENCH 6-6" & 2-4" CONDUITS FROM
STA 002 TO STA 011

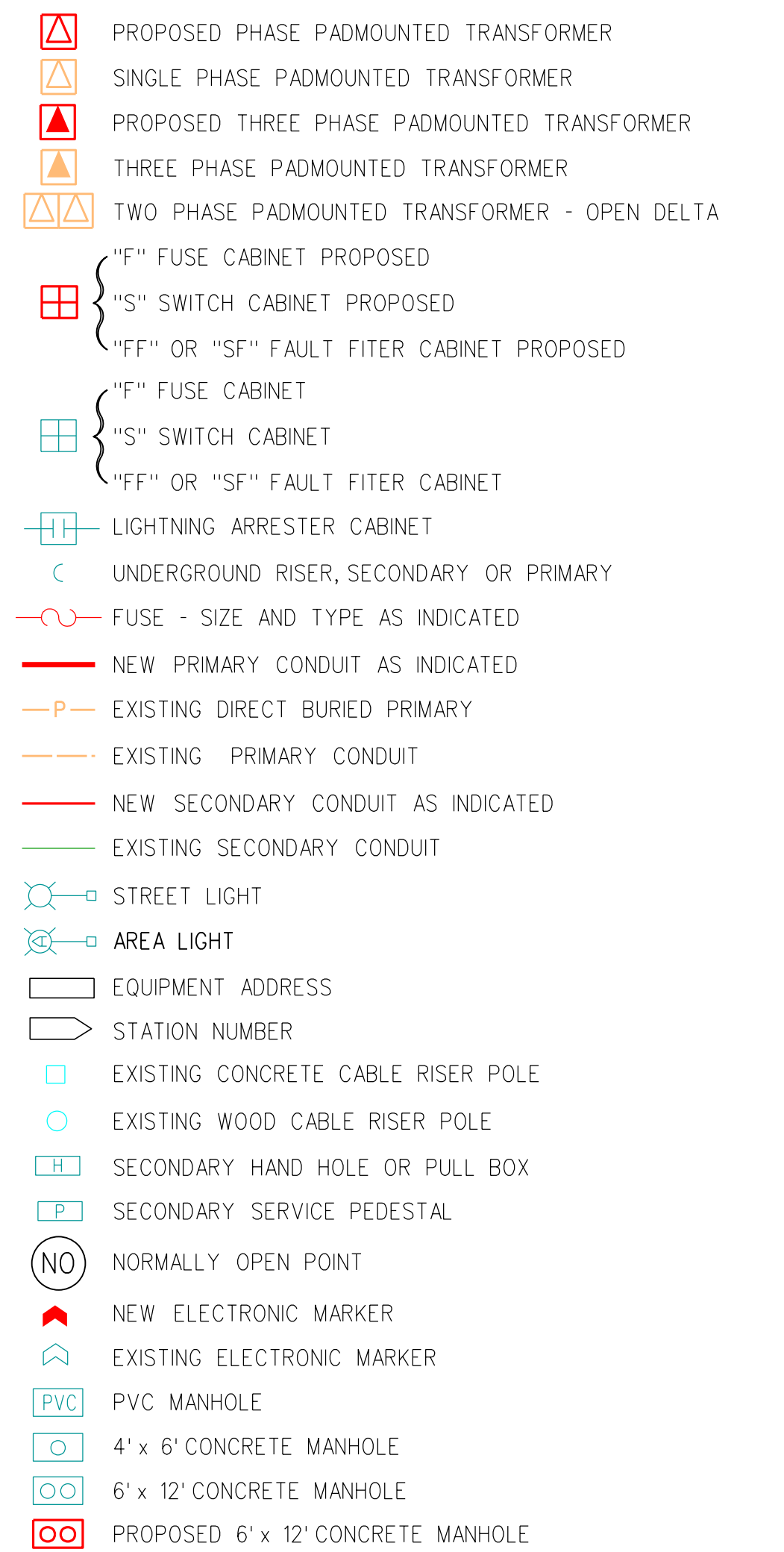
4. DIRECTIONAL BORE/ TRENCH 2-6" CONDUITS FROM STA 001 TO STA 002 & FROM STA 011 TO STA 01

OVERHEAD LEGEND




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

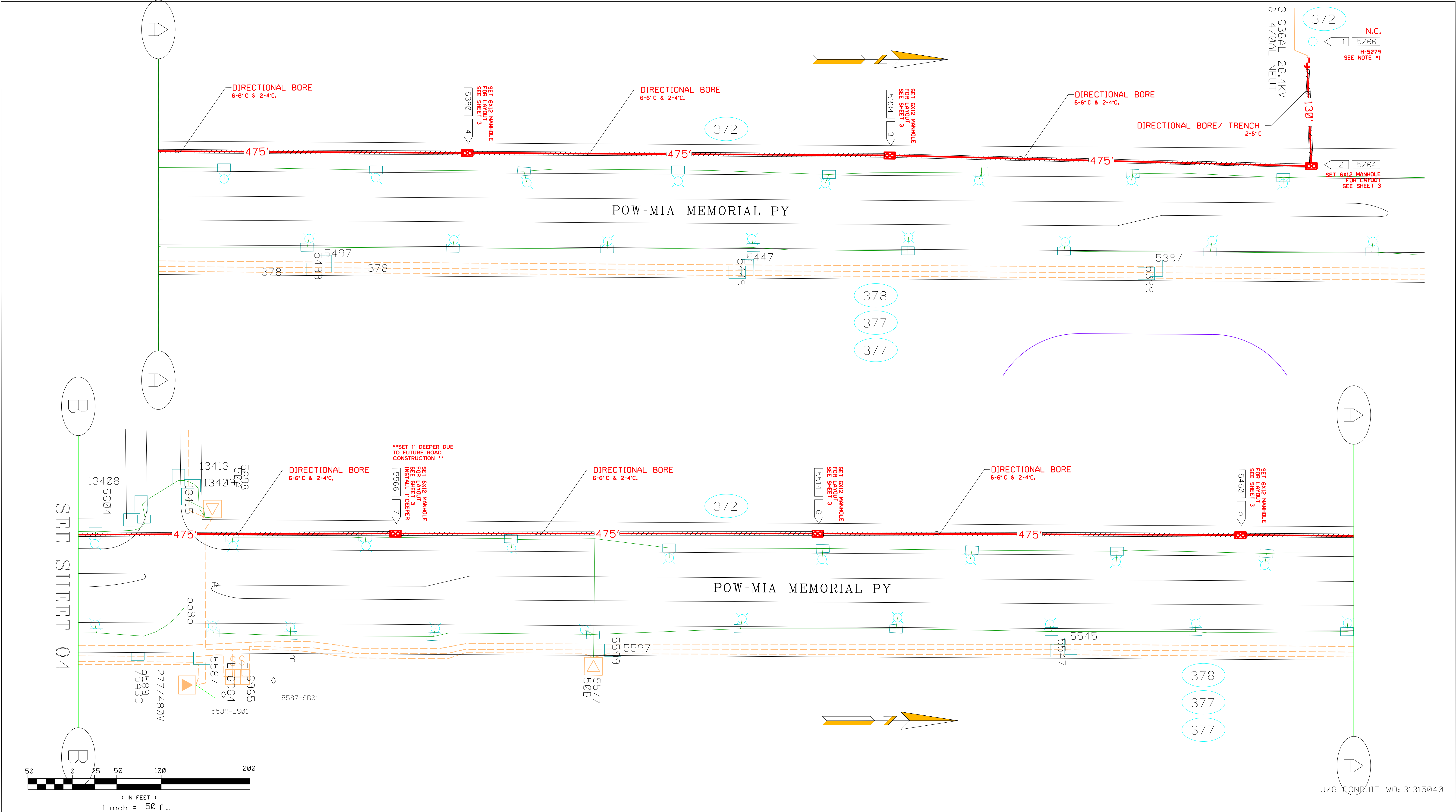
UNDERGROUND LEGEND




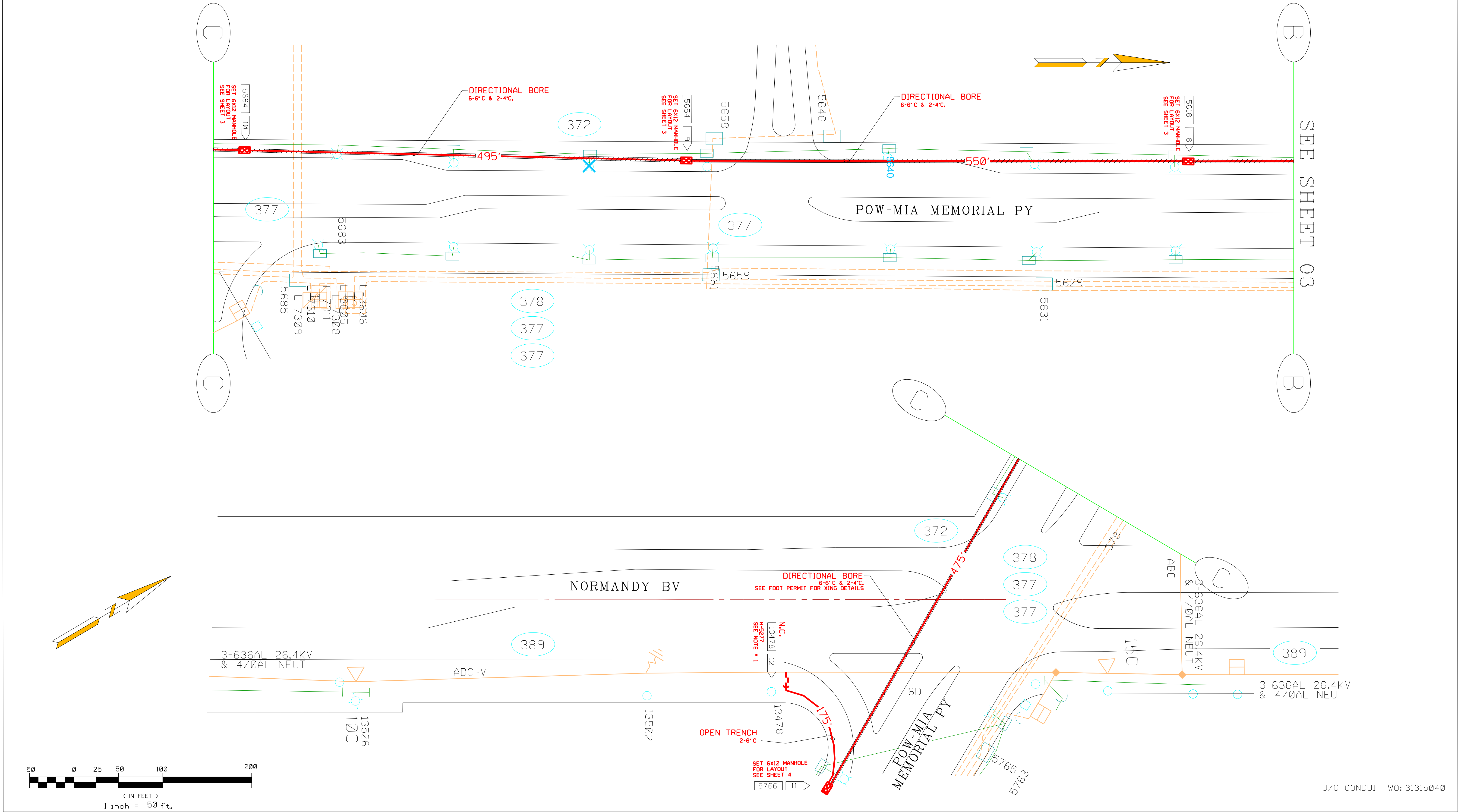
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U/G CONDUIT WO: 31315040

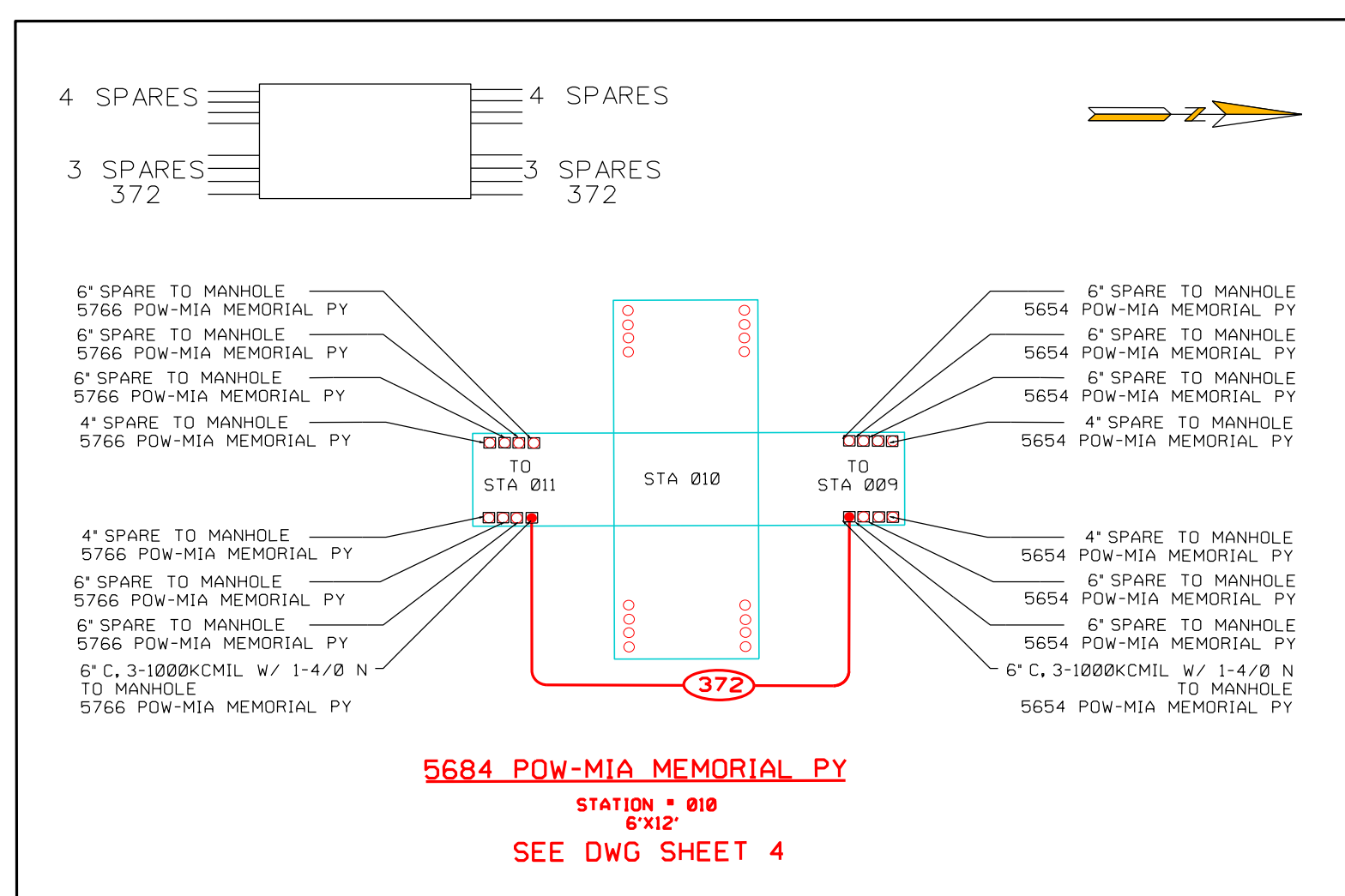
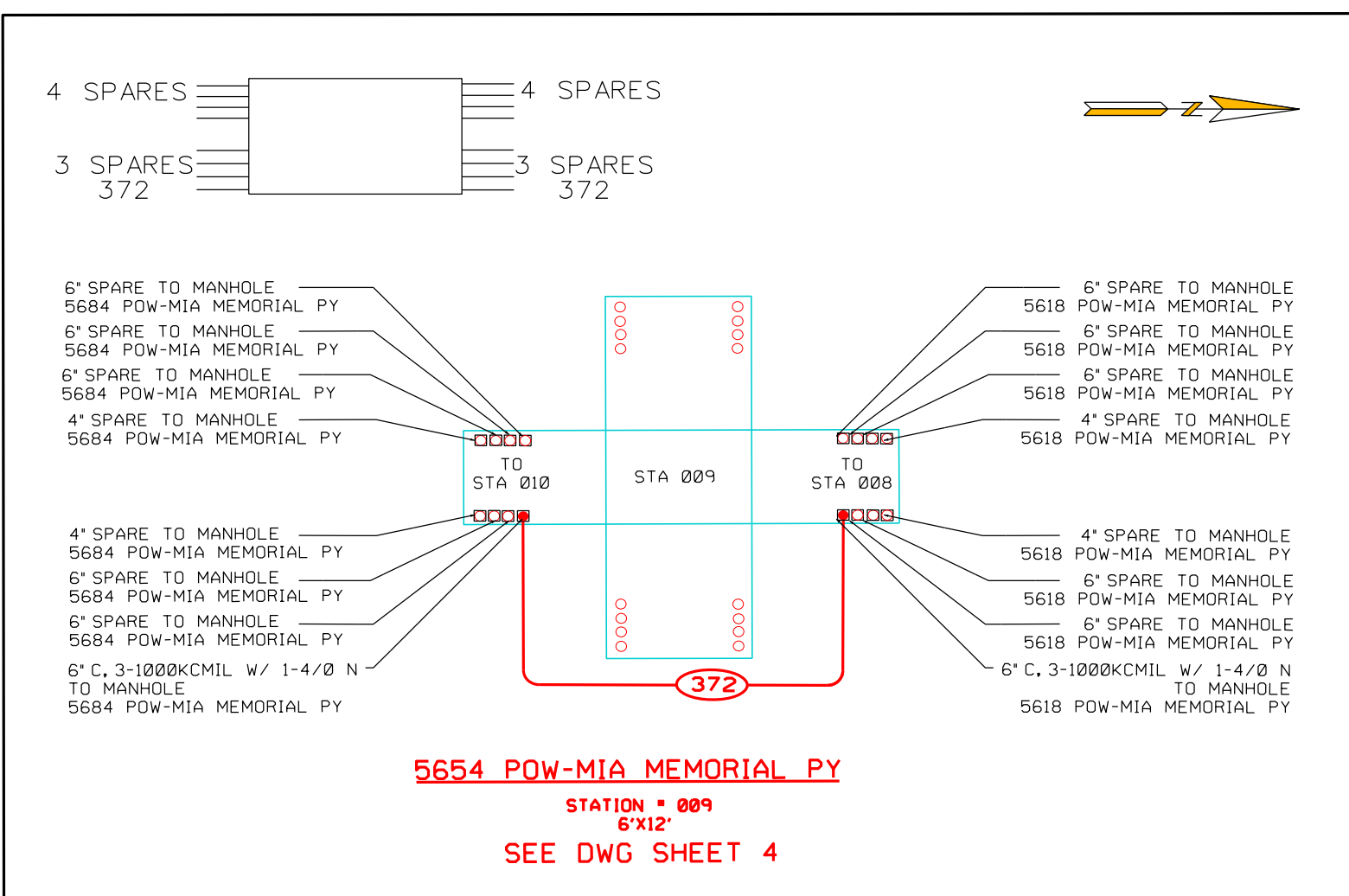
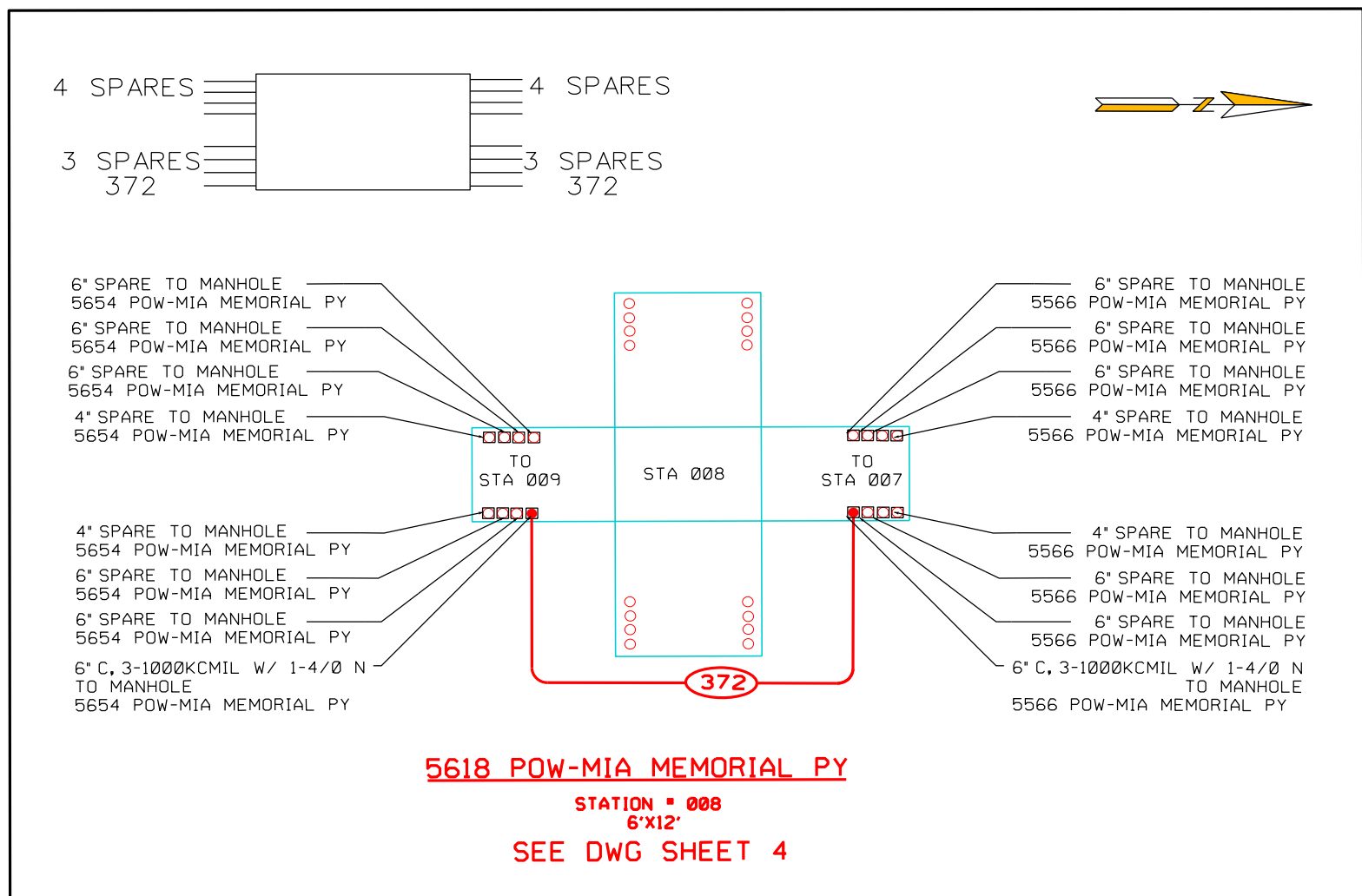
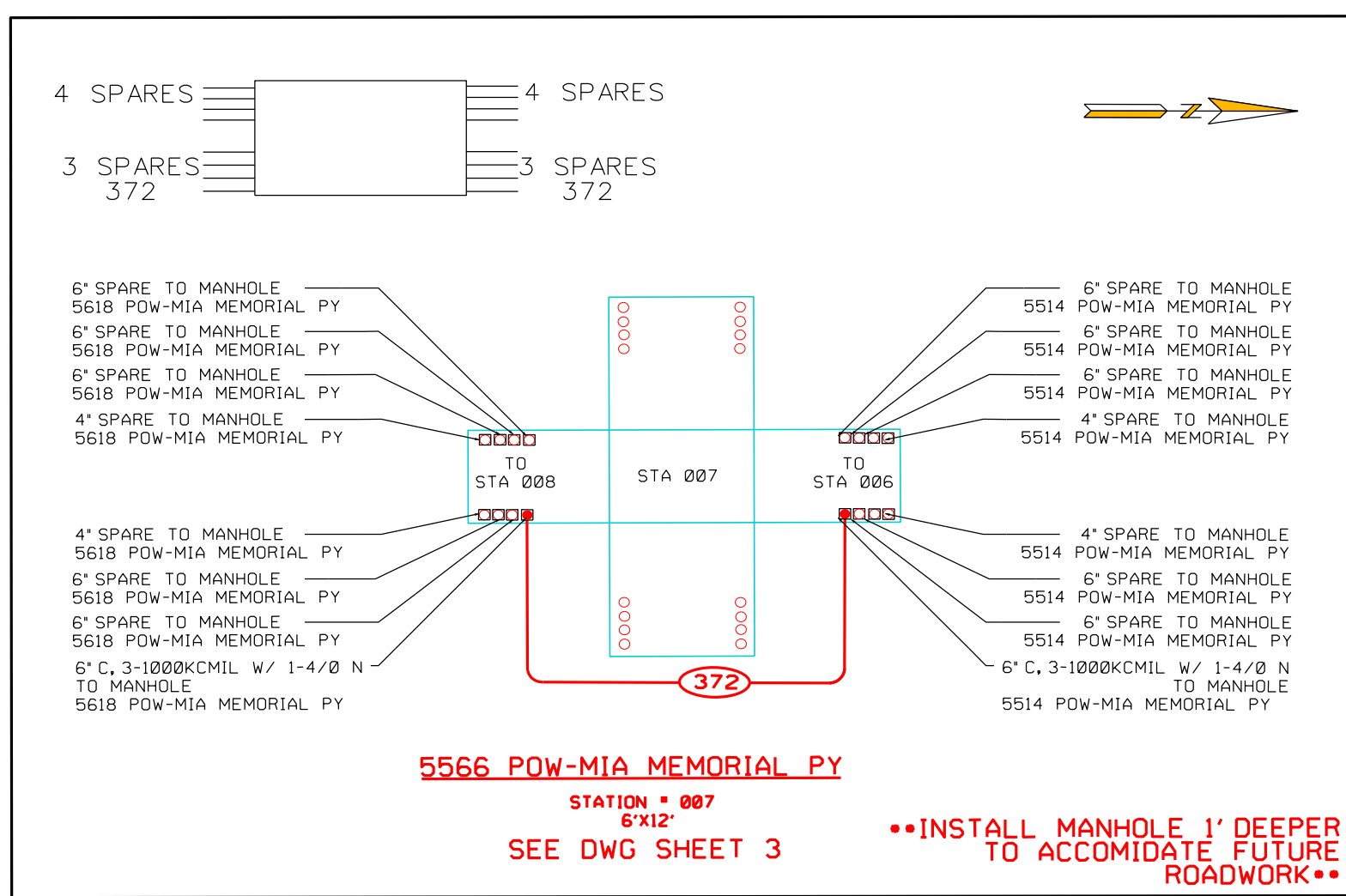
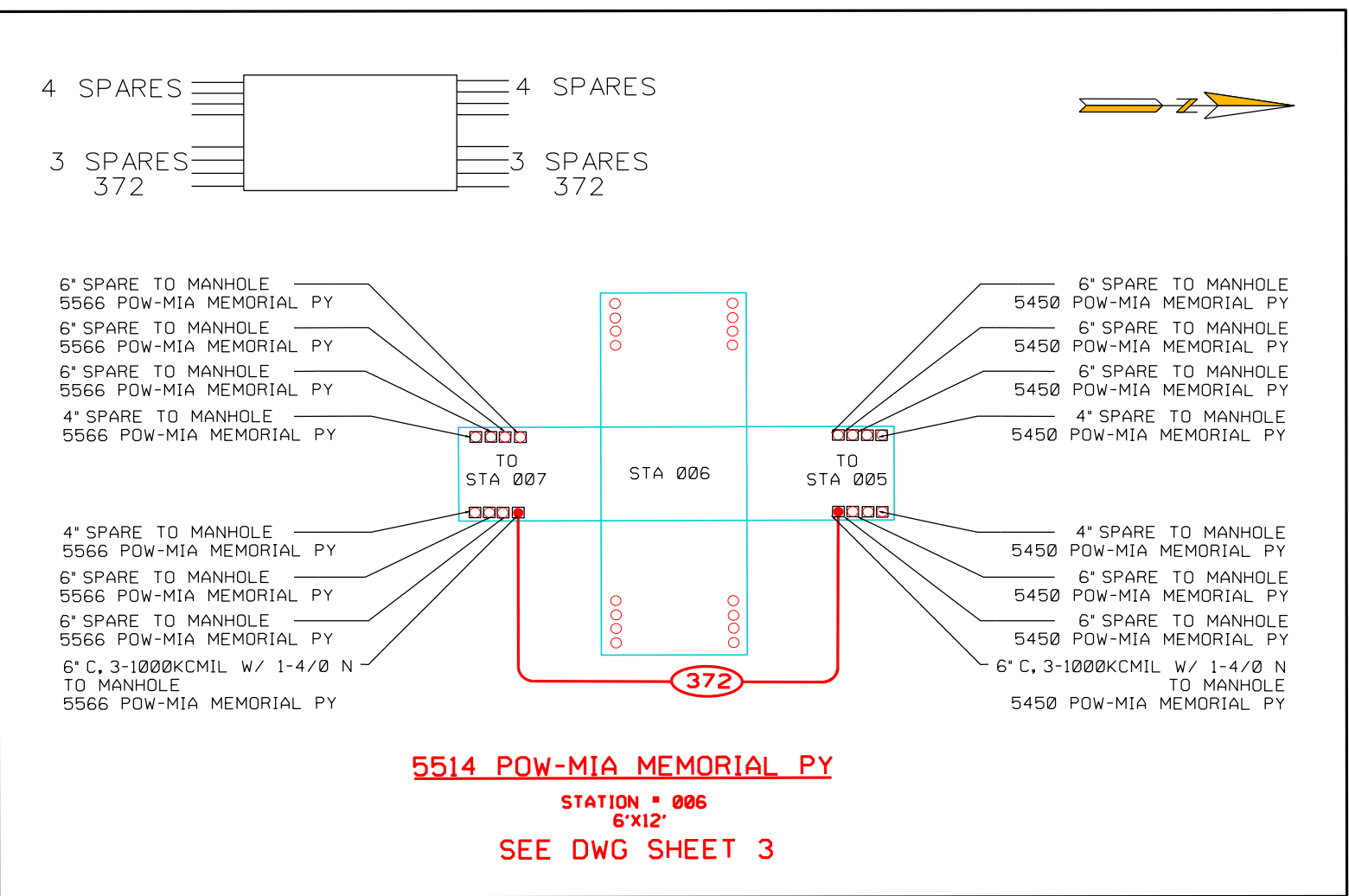
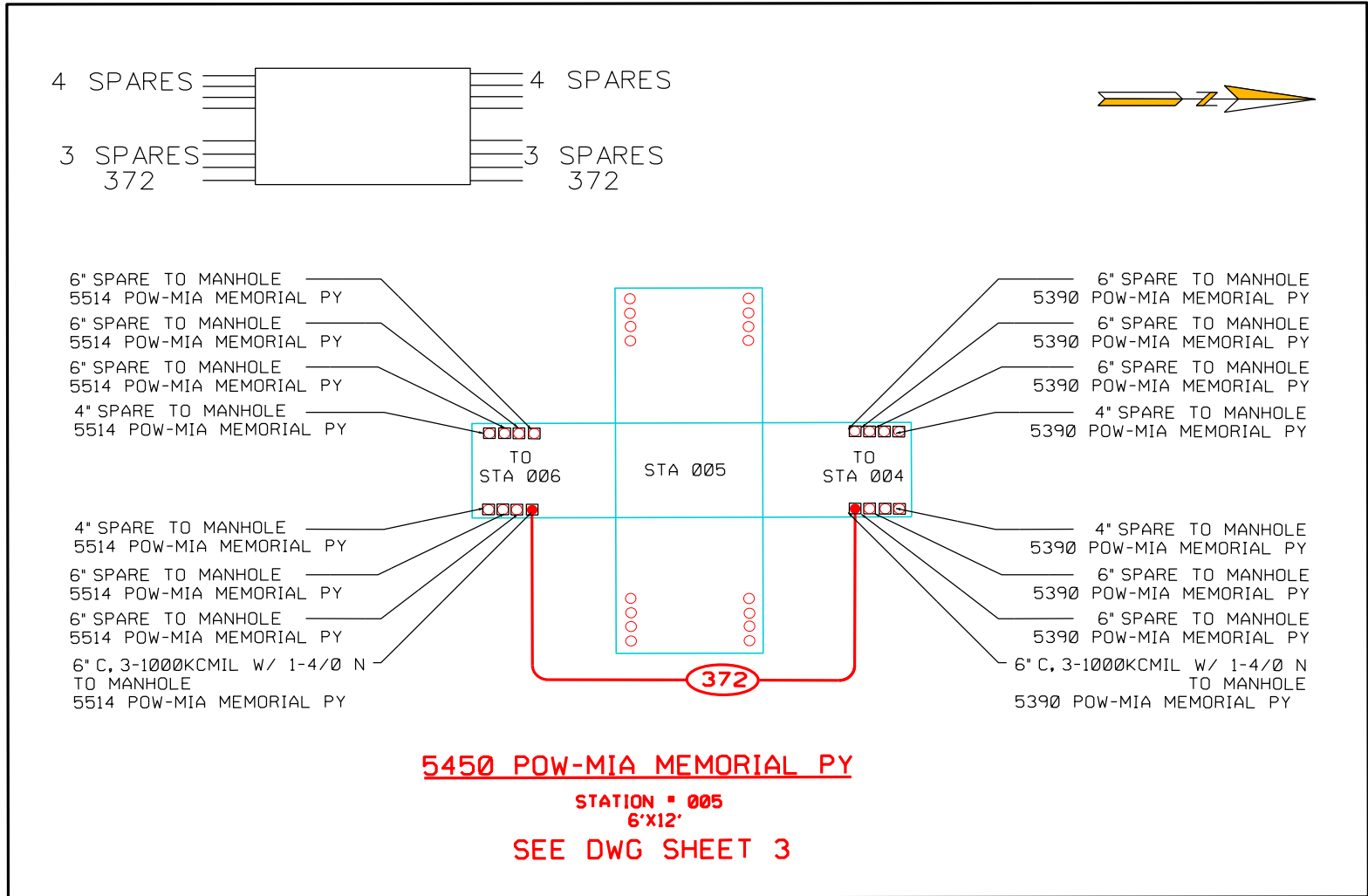
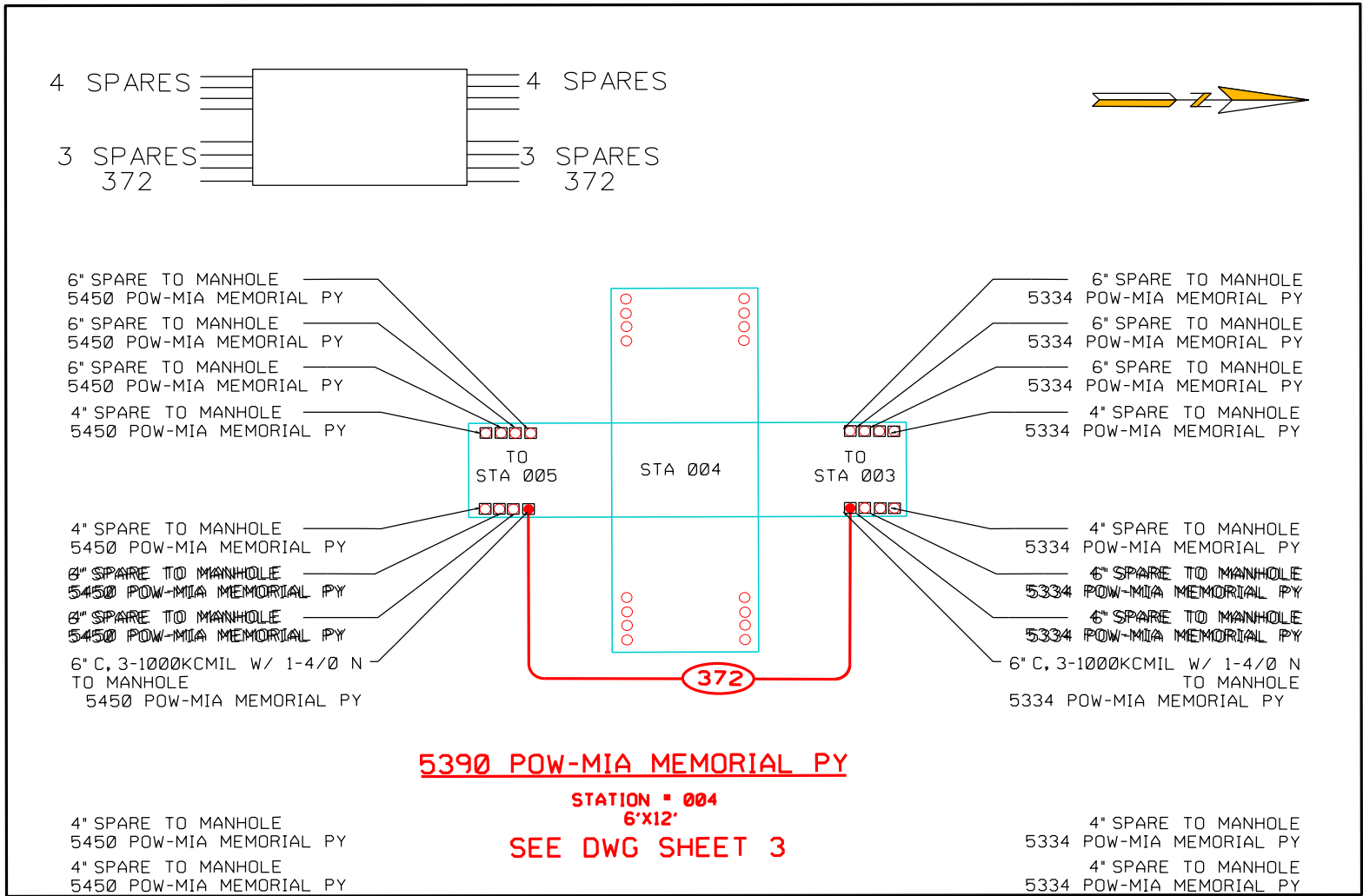
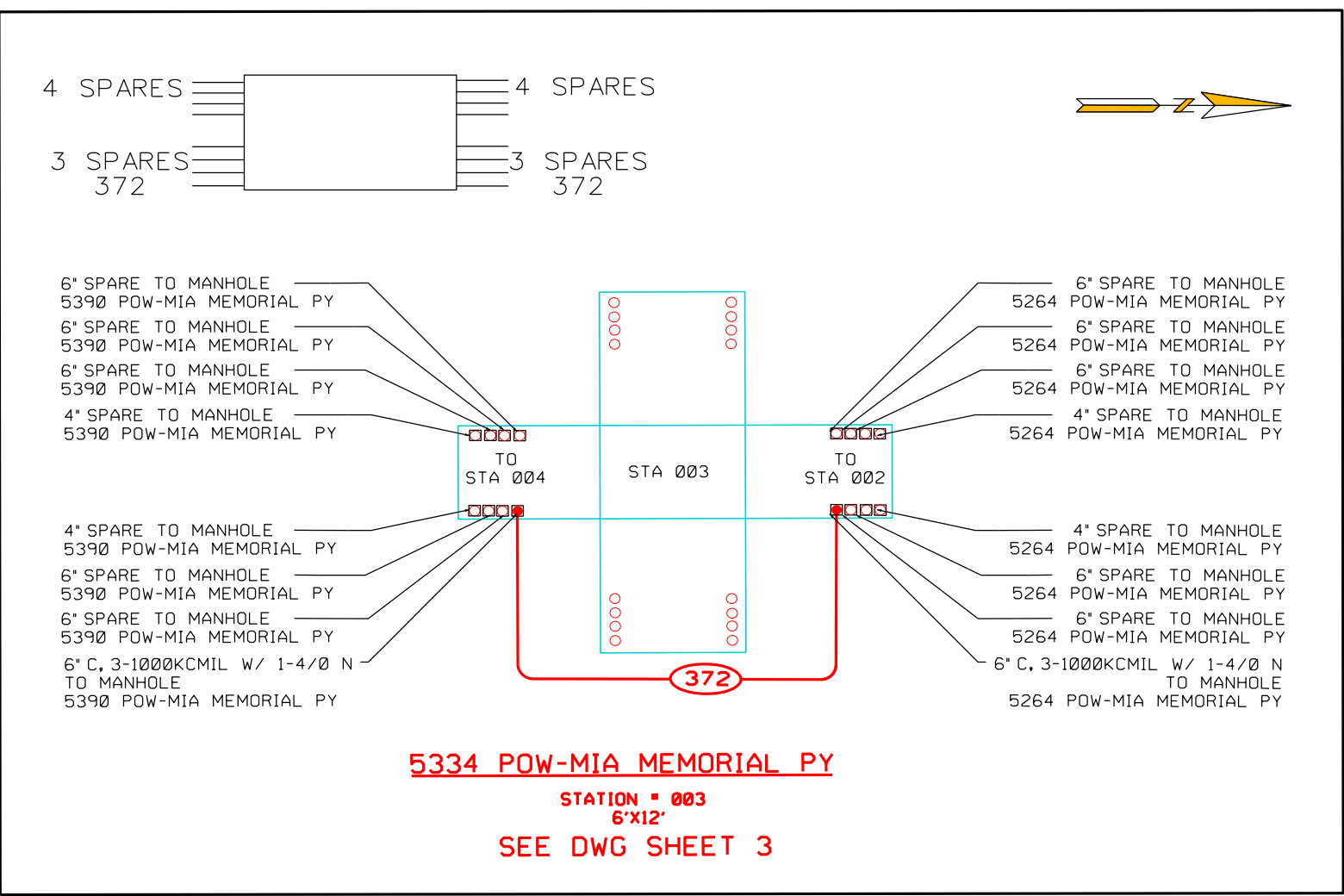
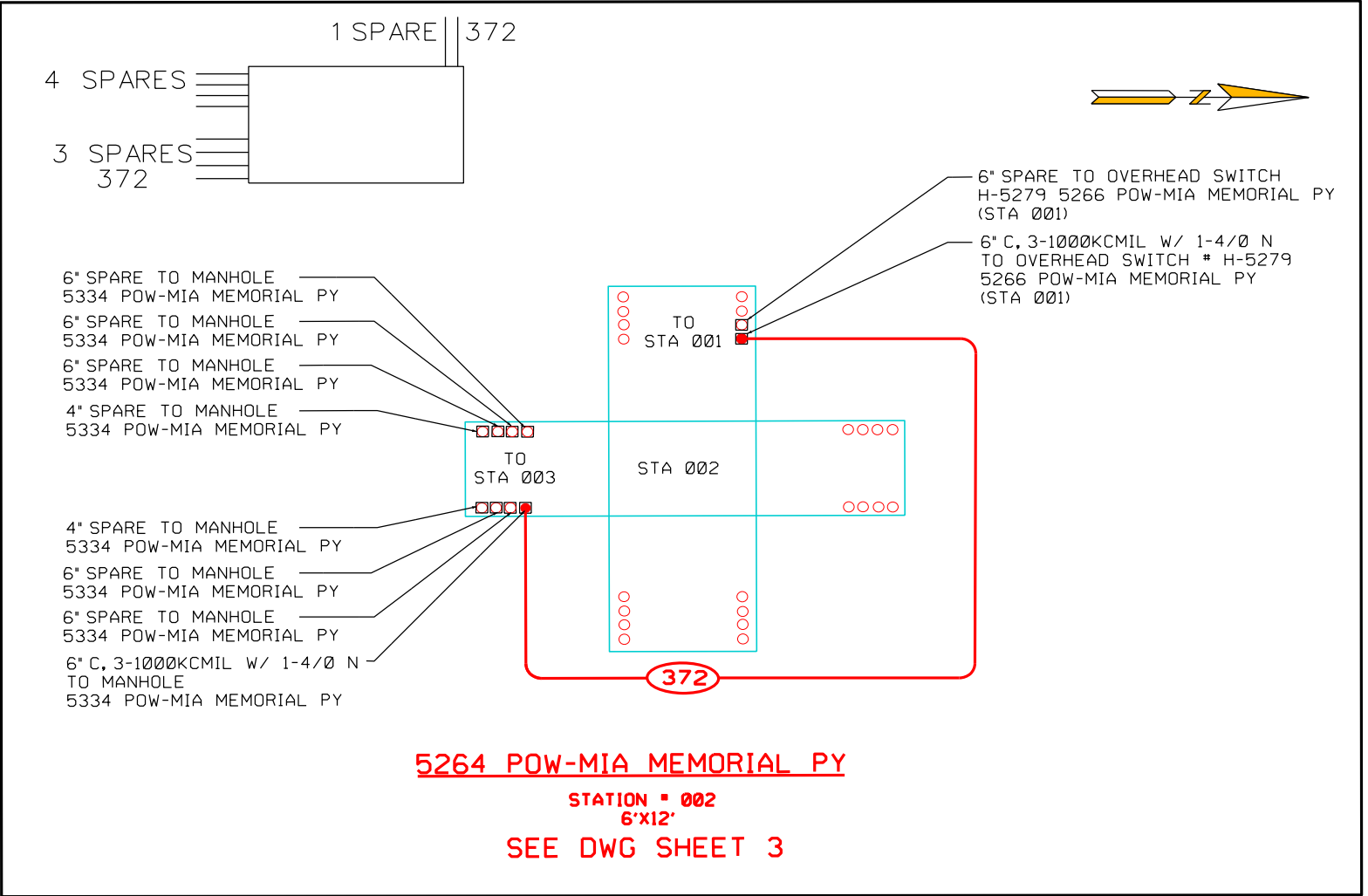
SUBSTATION/CIRCUIT		ENGINEER / PROJECT MANAGER		AS - BUILT <small>ELECTRIC UTILITY CONDUIT SYSTEM</small>		ENGINEERING RECORD			<div><p>CECIL COMMERCE CENTER NORTH</p><p>CIR 372 ADDITION</p><p>100% MANHOLE/ CONDUIT POW-MIA MEMORIAL PY</p><p>100% CABLE POW-MIA MEMORIAL PY</p><p>225 N. PEARL ST. JACKSONVILLE, FLORIDA 32202-3139</p></div>		DRAWING NO. :	
SUBSTATION NAME CECIL COMMERCE CENTER NORTH		ENGINEER : P. DELCAMBRE		DATE _____ COMPANY NAME _____ ADDRESS _____ PHONE NO. _____		BY _____ DATE _____		OPN : 8009354				
CIRCUIT NUMBER/S 372, 377, 378		PHONE : (904) 665-7332		<small>I HEREBY 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.</small> <small>AUTHORIZED NAME _____ AUTHORIZED SIGNATURE _____ CONTRACTOR'S LICENSE No. _____ JEA CONTRACT ADMIN: _____</small>		PWD 3-12-24		MWO : SEE ABOVE				
SWITCH MAP NUMBER/S 8, 49, 56		CELL : (904) 404-6750				DESIGNED :		CHECKED :				
PRIMARY VOLTAGE 26.2KV		EMAIL : DelcPW@jea.com				APPROVED :		APPROVED FOR CONSTRUCTION :				
		EMAIL :										



SUBSTATION/CIRCUIT		ENGINEER / PROJECT MANAGER		AS - BUILT <small>ELECTRIC UTILITY CONDUIT SYSTEM</small>		ENGINEERING RECORD			<div><p>225 N. PEARL ST. JACKSONVILLE, FLORIDA 32202-3139</p></div>		DRAWING NO. :	
SUBSTATION NAME CECIL COMMERCE CENTER NORTH		ENGINEER : P. DELCAMBRE		DATE _____		BY					OPN : 8009354	
CIRCUIT NUMBER/S 372, 377, 378		PHONE : (904) 665-7332		COMPANY NAME _____		PWD					MWO : SEE ABOVE	
SWITCH MAP NUMBER/S 056		CELL : (904) 404-6750		ADDRESS _____		DESIGNED :					SHEET NO.	
PRIMARY VOLTAGE 26.2KV		EMAIL : DelcPW@jea.com		PHONE NO. _____		CHECKED :					03 OF 06	
		EMAIL :		I HERBY 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 :						
				AUTHORIZED NAME _____		APPROVED FOR CONSTRUCTION :						
				AUTHORIZED SIGNATURE _____								
				CONTRACTOR'S LICENSE No. _____								
				JEA CONTRACT ADMIN. _____								

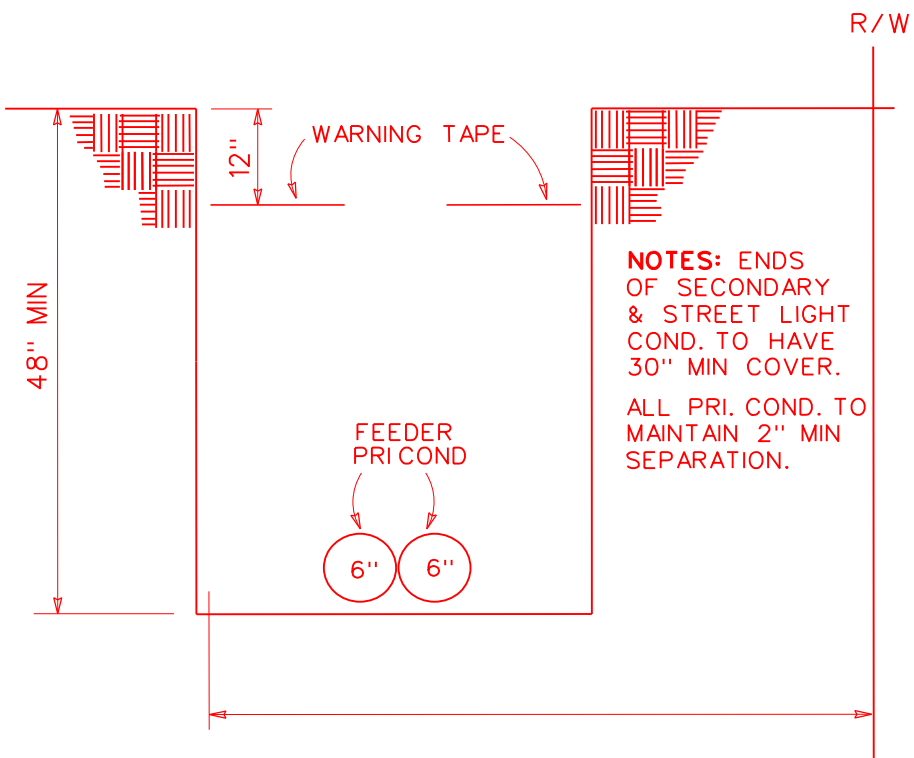
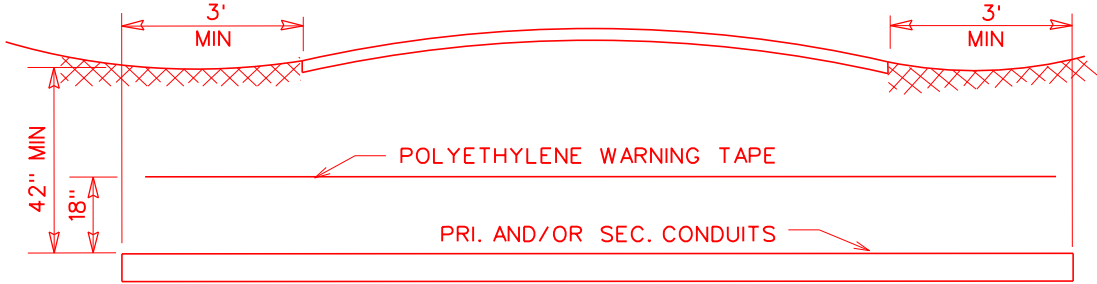
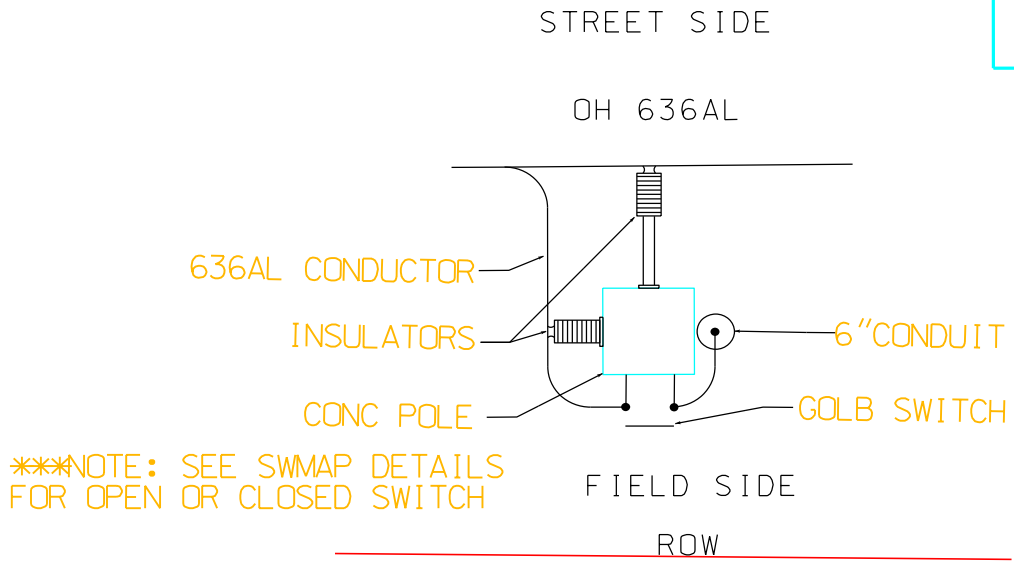
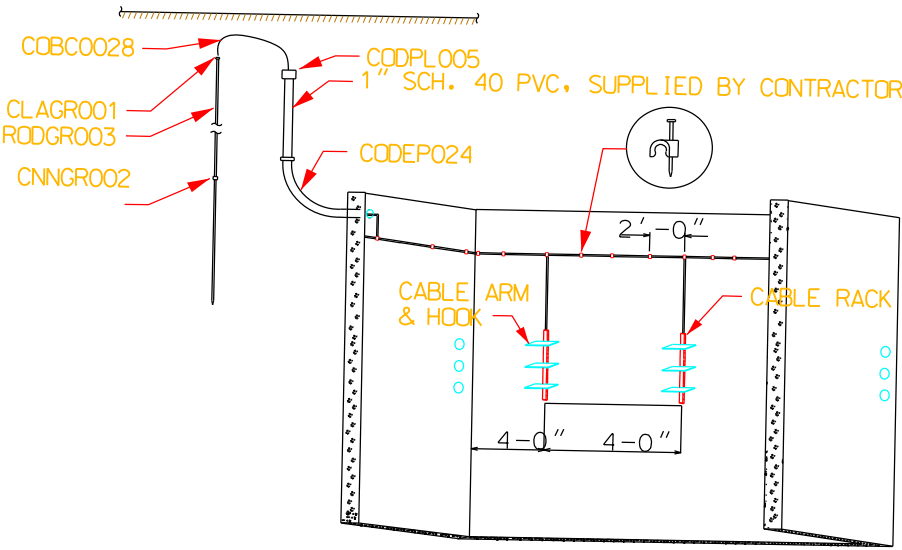
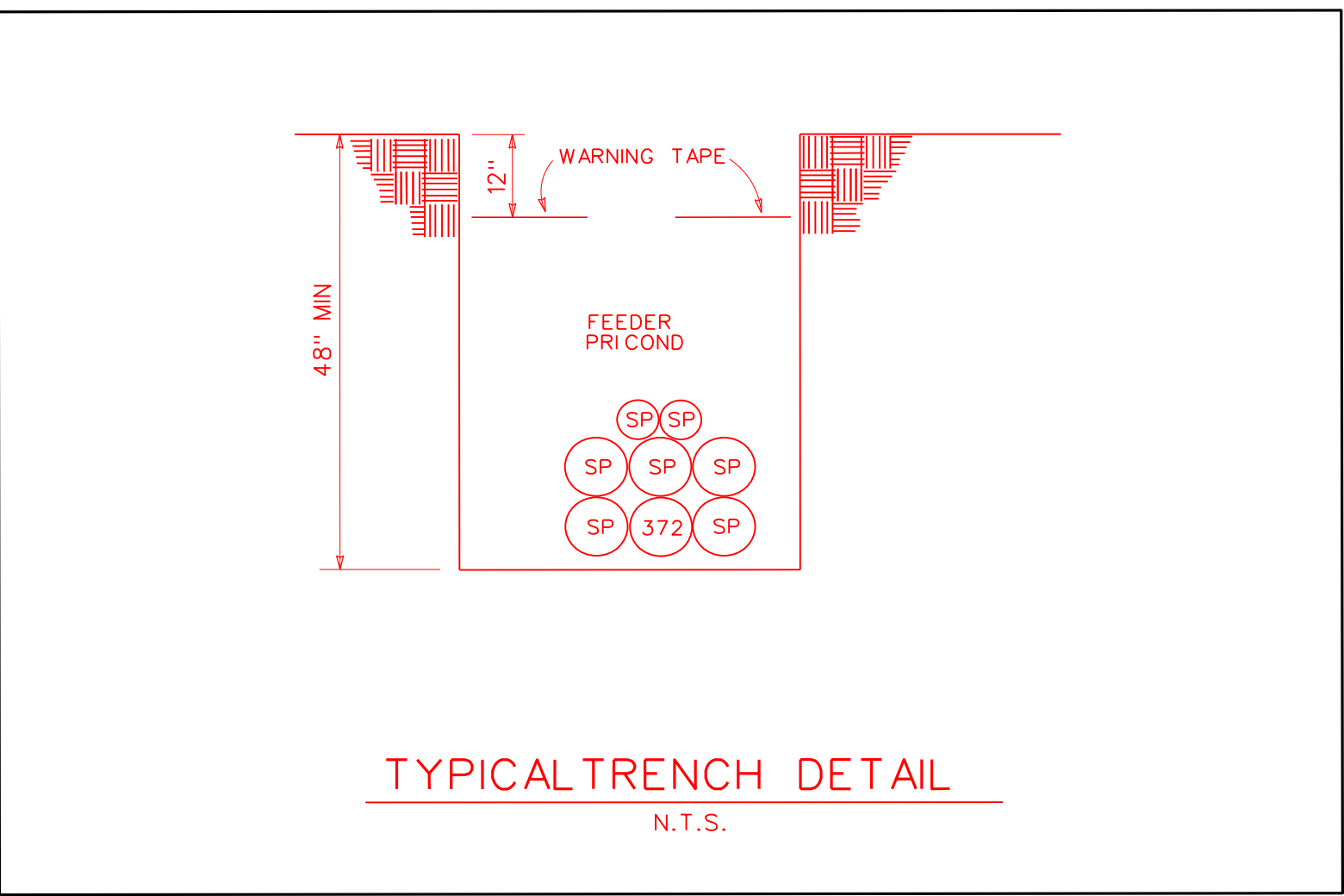
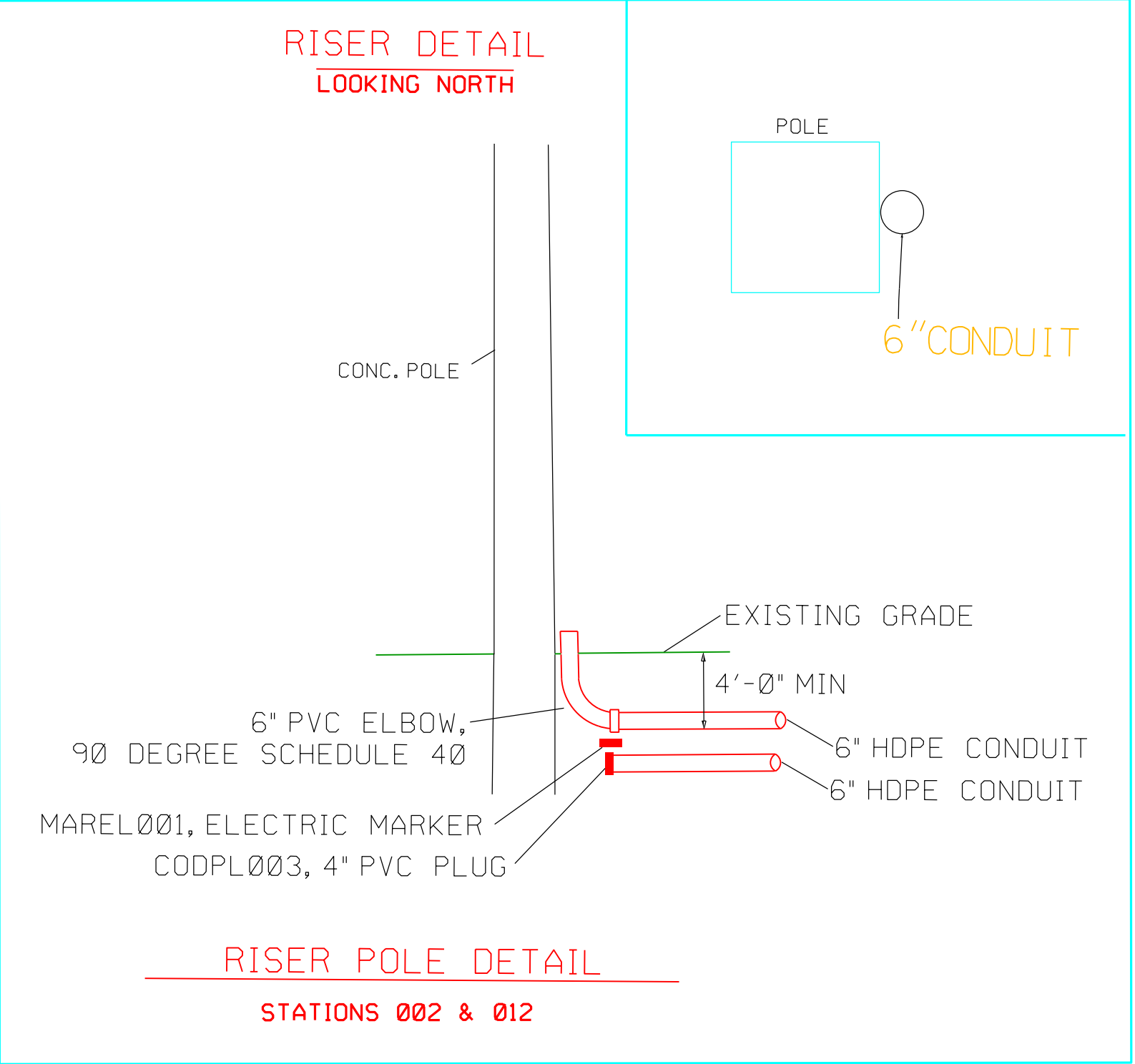
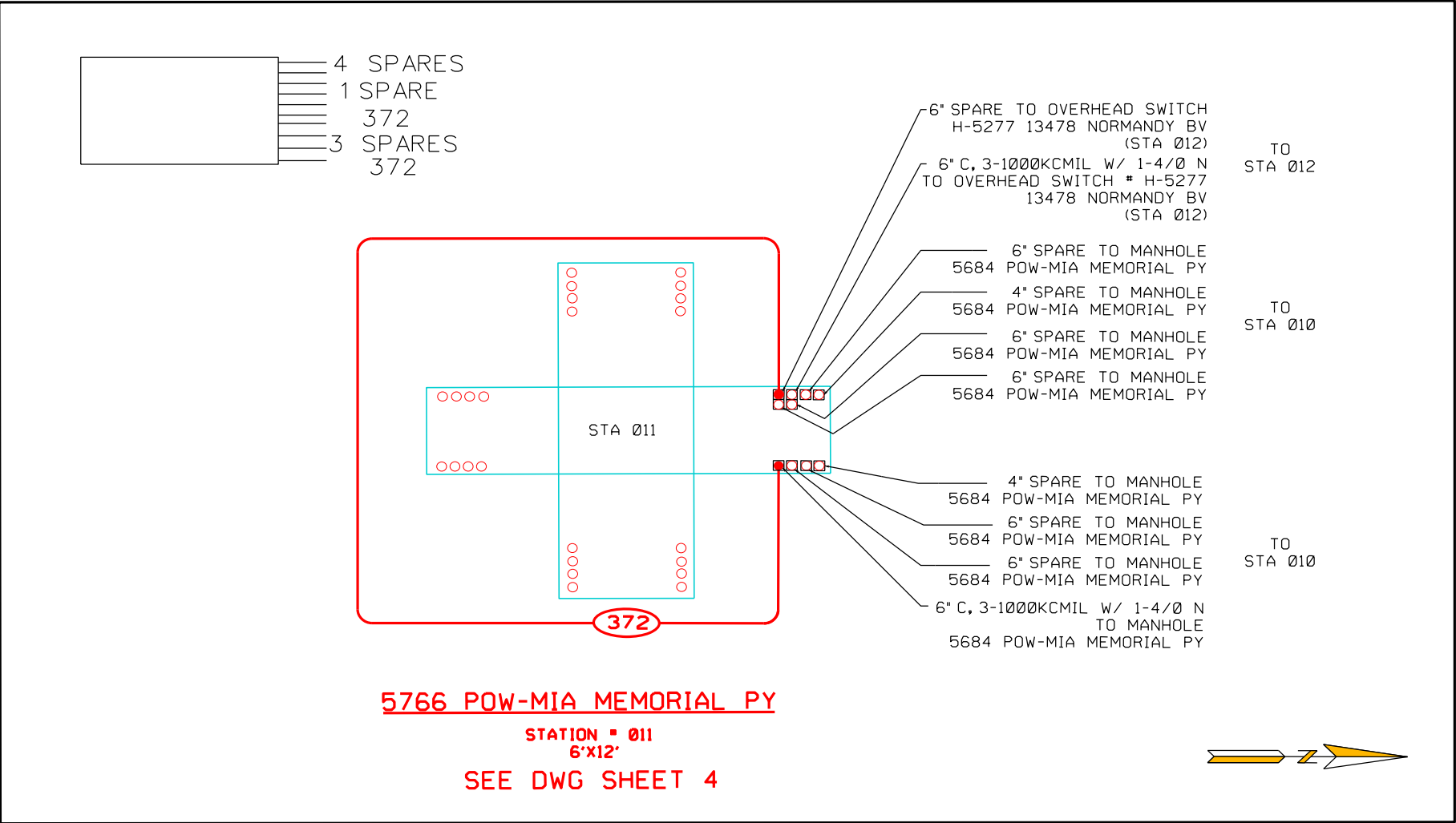


SUBSTATION/CIRCUIT		ENGINEER / PROJECT MANAGER		AS - BUILT <small>ELECTRIC UTILITY CONDUIT SYSTEM</small>		ENGINEERING RECORD			<div> BUILDING COMMUNITY 225 N. PEARL ST. JACKSONVILLE, FLORIDA 32202-3139</div>		DRAWING NO. :	
SUBSTATION NAME CECIL COMMERCE CENTER NORTH		ENGINEER : P. DELCAMBRE		DATE _____ COMPANY NAME _____ ADDRESS _____ PHONE NO. _____ <small>I HERBY 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.</small> AUTHORIZED SIGNATURE _____ CONTRACTOR'S LICENSE No. _____ JEA CONTRACT ADMIN _____		BY _____ DATE 3-12-24		OPN : 8009354				
CIRCUIT NUMBER/S 372, 377, 378		PHONE : (904) 665-7332				DESIGNED : _____		MWO : SEE ABOVE				
SWITCH MAP NUMBER/S 056		CELL : (904) 404-6750				CHECKED : _____		SHEET NO.				
PRIMARY VOLTAGE 26.2KV		EMAIL : DelcPW@jea.com				APPROVED : _____ APPROVED FOR CONSTRUCTION : _____		04 OF 06				



U/G CONDUIT W0: 31315040

SUBSTATION/CIRCUIT		ENGINEER / PROJECT MANAGER		AS - BUILT		ENGINEERING RECORD		DRAWING NO. :	
SUBSTATION NAME		ENGINEER :		DATE		BY		OPN :	
CECIL COMMERCE CENTER NORTH		P. DELCAMBRE		COMPANY NAME		PWD		8009354	
CIRCUIT NUMBER/S		PHONE :		ADDRESS		3-12-24		MWO :	
372, 377, 378		(904) 665-7332		PHONE NO.				SEE ABOVE	
SWITCH MAP NUMBER/S		CELL :		I HERBY 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.				SHEET NO.	
056		EMAIL :		AUTHORIZED NAME				05 OF 06	
PRIMARY VOLTAGE		EMAIL :		AUTHORIZED SIGNATURE					
26.2KV				CONTRACTOR'S LICENSE NO.					
				JEA CONTRACT ADMIN					

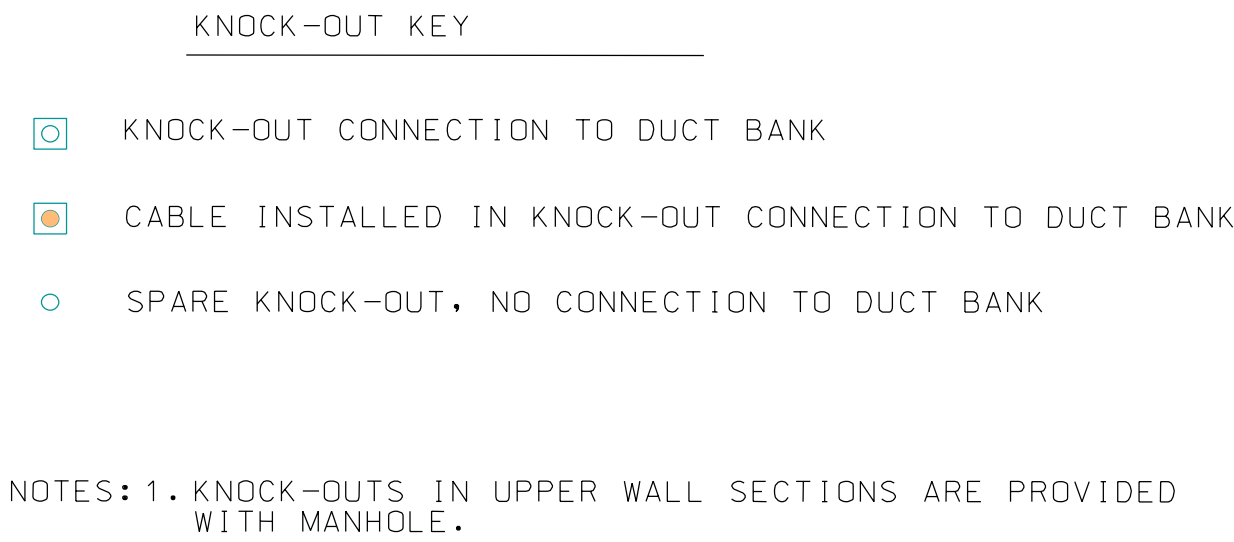
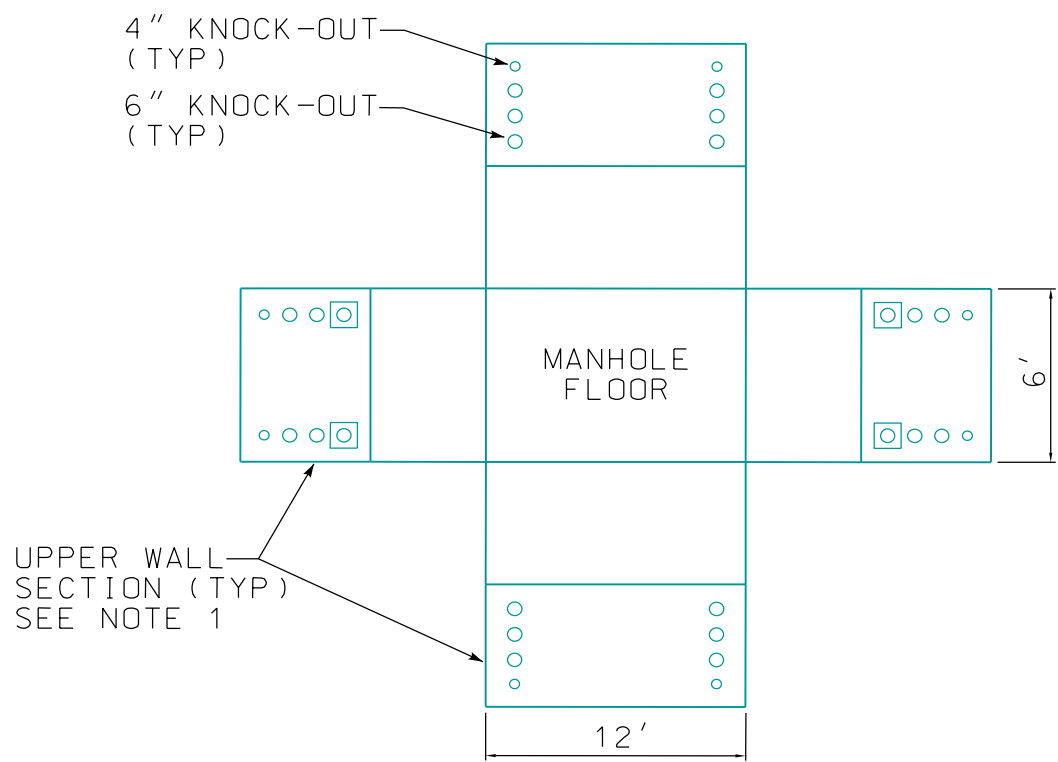
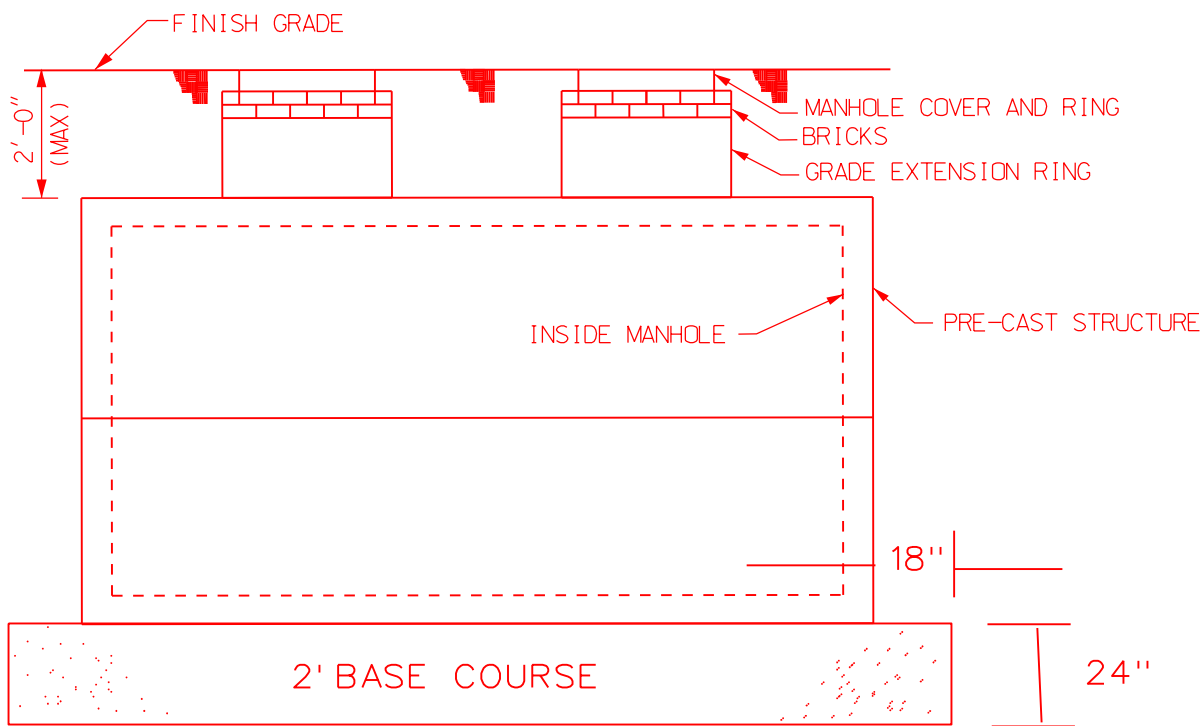


TYPICAL MANHOLE CABLE ARM
HOOK, RACK & GROUNDING DETAIL
N.T.S.

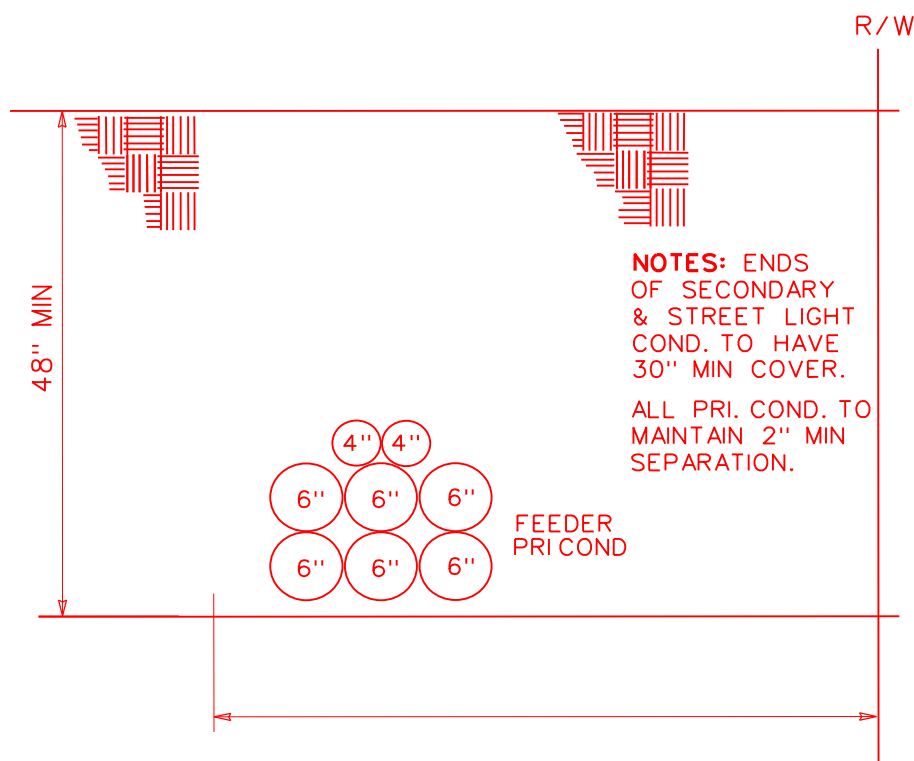
UG FEEDER RISER DETAIL
N.T.S.

STREET CROSSING DETAIL
N.T.S.

TYPICAL TRENCH DETAIL
N.T.S.



TYPICAL MANHOLE DETAIL
N.T.S.



TYPICAL DIRECTIONAL BORE DETAIL
N.T.S.


SUBSTATION/CIRCUIT		ENGINEER / PROJECT MANAGER		AS - BUILT <small>ELECTRIC UTILITY CONDUIT SYSTEM</small>		ENGINEERING RECORD			<div> 225 N. PEARL ST. JACKSONVILLE, FLORIDA 32202-3139</div>		DRAWING NO. :	
SUBSTATION NAME CECIL COMMERCE CENTER NORTH		ENGINEER : P. DELCAMBRE		DATE _____ COMPANY NAME _____ ADDRESS _____				BY			DATE	OPN : 8009354
CIRCUIT NUMBER/S 372, 377, 378		PHONE : (904) 665-7332		PHONE NO. _____		DESIGNED :		PWD			3-12-24	MWO : SEE ABOVE
SWITCH MAP NUMBER/S 056		CELL : (904) 404-6750		I HEREBY 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.		CHECKED :						SHEET NO.
PRIMARY VOLTAGE 26.2KV		EMAIL : DelcPW@jea.com		AUTHORIZED NAME _____ AUTHORIZED SIGNATURE _____ CONTRACTOR'S LICENSE No. _____ JEA CONTRACT ADMIN _____		APPROVED :						06 OF 06

Exhibit C – Materials Furnished by Owner



Material Summary

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

Item Quantity	Item Number	Item Description
11	ADCMI002	CEMENT, CLEAR, QUICK-SET, ONE-QUART CANS
10	CLAGR001	CLAMP, GROUND ROD, 5/8" - 4SOL "HAMMERLOCK"
20	CNNGR002	COUPLING, GROUND ROD, "THREADLESS" REMARKS: FOR THREADLESS GROUND RODS
20	CNNVG003	CONNECTOR, 6-2 SOL/10-2 SOL, VISE GRIP PARALLEL, BRONZE
400	COBCO028	CONDUCTOR, #4 SOLID, SOFT DRAWN, BARE COPPER, 200', 25#, ON PLASTIC REEL, 4" X 11.5" W/ 2" HOLE
36	CODAD018	ADAPTER, CONDUIT, POLYVINYL CHLORIDE PVC TO POLYETHYLENE (PE, COILABLE CONDUIT) 4" COUPLER PVC MATERIAL
108	CODAD019	ADAPTER, CONDUIT, POLYVINYL CHLORIDE PVC TO POLYETHYLENE (PE, COILABLE CONDUIT) 6" COUPLER PVC MATERIAL
36	CODCO005	COUPLING, CONDUIT, PVC, 4", SCH-40
114	CODCO006	COUPLING, CONDUIT, PVC, 6", TYPE SCH-40
4	CODEP009	ELBOW, PVC, CONDUIT, 6", 90-DEGREE 48" SWEEP-RADIUS, SCH-40, WITH INTEGRAL BELLED END
20	CODEP024	ELBOW, 1" PVC 90-DEGREE, 18" RADIUS SCH-40
360	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
1274	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
40	CODPC016	CONDUIT, PVC, 1" SCHEDULE-40, 10' LONG PACKAGED 10-UNITS PER BUNDLE
10000	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
30000	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
20	CODPL005	PLUG, PVC CONDUIT, 1" I.D., CAP-TYPE
10	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
10	MARCC001	MARKER, CONDUIT/CABLE 2' X 36" PVC WITH CAP, FLARED END OR BASE .
30	RODGR003	ROD, GROUND, THREADLESS, 5/8" X 8', SHIP ON OPEN FLATBED ONLY!
20	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: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 001

Build

Transfer

Remain in Place

Remove

DIR-BORE*2-6

150

I.CODCO006

1

I.CODPE006

30000

PLUG-DUCT6

1

UC*6

20

UCL9*6

1

UCTC36*D

500

STA 002

Build

Transfer

Remain in Place

Remove

DIR-BORE*2-4

490

DIR-BORE*2-6

1450

G2P

1

G2P-C

1

G3P

1

I.ADCMI002

1

I.CODAD018

2

I.CODAD019

8

I.CODCO005

2

I.CODCO006

8

I.CODPE004

10000

SET-6X12*D

1

UC*4

40

UC*6

120



Station Compatible Unit Detail

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 003					
Build		Transfer		Remain in Place	
DIR-BORE*2-4	490				
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	40				
UC*6	120				

STA 004					
Build		Transfer		Remain in Place	
DIR-BORE*2-4	490				
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	40				
UC*6	120				



Station Compatible Unit Detail

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 005					
Build		Transfer		Remain in Place	
DIR-BORE*2-4	490				
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	40				
UC*6	120				

STA 006					
Build		Transfer		Remain in Place	
DIR-BORE*2-4	490				
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	40				
UC*6	120				



Station Compatible Unit Detail

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 007					
Build		Transfer		Remain in Place	
DIR-BORE*2-4		490			
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		40			
UC*6		120			
STA 008					
Build		Transfer		Remain in Place	
G2P		1			
G2P-C		1			
G3P		1			
I.ADCMI002		1			
I.CODAD018		4			
I.CODAD019		12			
I.CODCO005		4			
I.CODCO006		12			
I.CODEP009		1			
SET-6X12*D		1			



Station Compatible Unit Detail

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 009					
Build		Transfer	Remain in Place		Remove
DIR-BORE*2-4	565				
DIR-BORE*2-6	1690				
G2P	1				
G2P-C	1				
G3P	1				
I.ADCMI002	1				
I.CODAD018	4				
I.CODAD019	12				
I.CODCO005	4				
I.CODCO006	12				
I.CODEP009	1				
SET-6X12*D	1				
UC*4	40				
UC*6	120				

STA 010					
Build		Transfer	Remain in Place		Remove
DIR-BORE*2-4	1385				
DIR-BORE*2-6	4090				
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	80				
UC*6	240				



Station Compatible Unit Detail

Estimate Number: UG 003

CCCN 372 -UG- NEW UG COND. ON
POWMIA TO NORMANDY

Estimate Type: CP

Contract: 069-19-HRT UG FY24

Estimate Version:

By: DELCPW

MWO#/Task: 31315040

Required Date: 10/28/2024

Oracle Project #: 8009354

Estimated On: 03/14/2024

STA 011					
Build		Transfer		Remain in Place	
G2P	1				
G2P-C	1				
G3P	1				
I.ADCMI002	1				
I.CODAD018	2				
I.CODAD019	4				
I.CODCO005	2				
I.CODCO006	8				
SET-6X12*D	1				
UC*6	174				

STA 013 13478 NORMANDY BV					
Build		Transfer		Remain in Place	
I.ADCMI002	1				
I.CODCO006	1				
PLUG-DUCT6	1				
UCL9*6	1				
				C.4/0	297
				C.636	891
				DS1RT-5*636	1
				P.55/1W	1
				UVT4W*1000	1