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 Dinsmore Circuits 423 and 424. 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 COJ Plummer Road Right-of-Way. Any 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

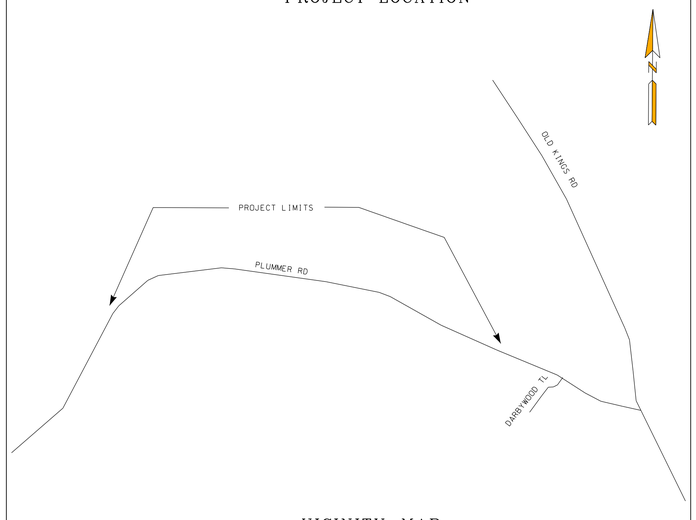
CONDUIT SHALL BE PRE-LUBRICATED AND HAVE A 500# MIN. STRENGTH PULL STRING INSTALLED. (JEA USE) LUBRICANT SHALL BE COMPATIBLE WITH ALL CABLE INSULATION AND JACKET MATERIAL.

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

Exhibit B – Construction Drawings

CONSTRUCTION DRAWINGS FOR

PROJECT LOCATION



VICINITY MAP

N.T.S.

PROJECT COVER SHEET	UG DWGS UMP0294
COVER SHEET	SHEET 1 OF 6
CONSTRUCTION NOTES	SHEET 2 OF 6
PLAN VIEW	SHEET 3 OF 6
PLAN VIEW	SHEET 4 OF 6
PLAN VIEW	SHEET 5 OF 6
ENLARGED PLANS & MANHOLE DETAILS	SHEET 6 OF 6

Dinsmore
26kV Underground Feeders
CKTS 423 & 424

U/G CONDUIT WO: 31657165

BUILDING COMMUNITY

225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

ENGINEER/PROJECT MANAGER

ENGINEER : Michael O'Neal
PHONE : (904) 665-6518
CELL : (904) 607-3279
EMAIL : OneaMD @jea.com
WEBSITE : *https://www.jea.com*

OPN : 8009403

MWO : SEE ABOVE

DRAWING NO.:

SHEET NO. 01 OF 06

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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.

6. 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.

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

8. 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

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

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

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

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

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

SCOPE OF WORK:

PROJECT DESCRIPTION:
THE PURPOSE OF THIS PROJECT IS TO INSTALL A MANHOLE AND DUCT BANK SYSTEM FROM THE JEA'S TRANSMISSION CORRIDOR TO JEA'S FOREST TRAIL SOLAR SITE. THE DUCT BANK SHALL CONSIST OF A TOTAL OF 4-6" CONDUITS WITH 6'X12' MANHOLES ON THE NORTH SIDE OF PLUMMER RD. THERE IS ONE RAIL ROAD CROSSING THAT PERMIT REQUIREMENTS WILL BE ADHERED TO.

COND. CONSTRUCTION NOTES:

1. INSTALL 90 DEG ELS AT STA 01 & STA 02
2. INSTALL 13 - 6'X12 AT STA 03-15
3. DIRECTIONAL BORE/ TRENCH 4-6" CONDUITS FROM STA 03 TO STA 015
4. DIRECTIONAL BORE/ TRENCH 2-6" CONDUITS FROM STA 01 TO STA 03 & FROM STA 02 TO STA 03

OVERHEAD LEGEND

- PROPOSED PRIMARY
- 4.1 OH EXISTING PRIMARY
- 13.2 OH EXISTING PRIMARY
- 26.4 OH EXISTING PRIMARY
- PROPOSED SECONDARY
- EXISTING 120/240 SECONDARY
- EXISTING 120/280 SECONDARY
- EXISTING 277/480 SECONDARY

CONDUCTOR SIZES AND TYPE AS INDICATED

- PROPOSED WOOD POLE-SIZE AND CLASS AS INDICATED
- EXISTING WOOD POLE
- PROPOSED WOOD POLE WITH LIGHT-SIZE AND CLASS AS INDICATED
- PROPOSED CONCRETE POLE-SIZE AND CLASS AS INDICATED
- EXISTING CONCRETE POLE
- PROPOSED CONC. POLE WITH LIGHT-SIZE AND CLASS AS INDICATED
- REMOVE POLE
- SPAN GUY
- DOWN GUY/ANCHOR
- H HANG OR INSTALL
- E EXISTING
- R REMOVE
- CIRCUIT NUMBER
- STATION NUMBER
- EQUIPMENT ADDRESS
- 25KV TRANSFORMER-SIZE AND PHASE AS INDICATED
- 25KV TRANSFORMER BANK-SIZE AND PHASE AS INDICATED
- 13.2KV TRANSFORMER-SIZE AND PHASE AS INDICATED
- 13.2KV TRANSFORMER BANK-SIZE AND PHASE AS INDICATED
- 4KV TRANSFORMER-SIZE AND PHASE AS INDICATED
- 4KV TRANSFORMER BANK-SIZE AND PHASE AS INDICATED
- RG REGULATED OUTPUT-STREET LIGHT TRANSFORMER
- RECLOSER-TYPE AND NUMBER AS INDICATED
- SECTIONALIZER-NUMBER AS INDICATED
- CAPACITOR-NUMBER AS INDICATED
- VOLTAGE REGULATOR
- SWITCH-OPEN-TYPE AND NUMBER AS INDICATED
- SWITCH-CLOSE-TYPE AND NUMBER AS INDICATED
- FUSE-SIZE AND TYPE AS INDICATED
- NEW SERVICE DROP-SIZE AND TYPE AS INDICATED
- EXISTING SERVICE DROP-SIZE AND TYPE AS INDICATED
- UNDERGROUND SERVICE-OVERHEAD SOURCE
- LIGHTNING ARRESTER
- STREET LIGHT-TYPE AS INDICATED

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

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
- P 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
- H SECONDARY HAND HOLE OR PULL BOX
- P SECONDARY SERVICE PEDESTAL
- NO NORMALLY OPEN POINT
- NEW ELECTRONIC MARKER
- EXISTING ELECTRONIC MARKER
- PVC PVC MANHOLE
- 4' x 6' CONCRETE MANHOLE
- 6' x 12' CONCRETE MANHOLE
- PROPOSED 6' x 12' CONCRETE MANHOLE

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

U/G CONDUIT WO: 31657165

SUBSTATION/CIRCUIT

SUBSTATION NAME	DINSMORE
CIRCUIT NUMBER/S	423, 424
SWITCH MAP NUMBER/S	57
PRIMARY VOLTAGE	26KV

ENGINEER/PROJECT MANAGER

ENGINEER : MICHAEL O'NEAL
PHONE : (904) 665-6518
CELL : (904)
EMAIL : oneamd@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 :	MDO	08-06-25
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		

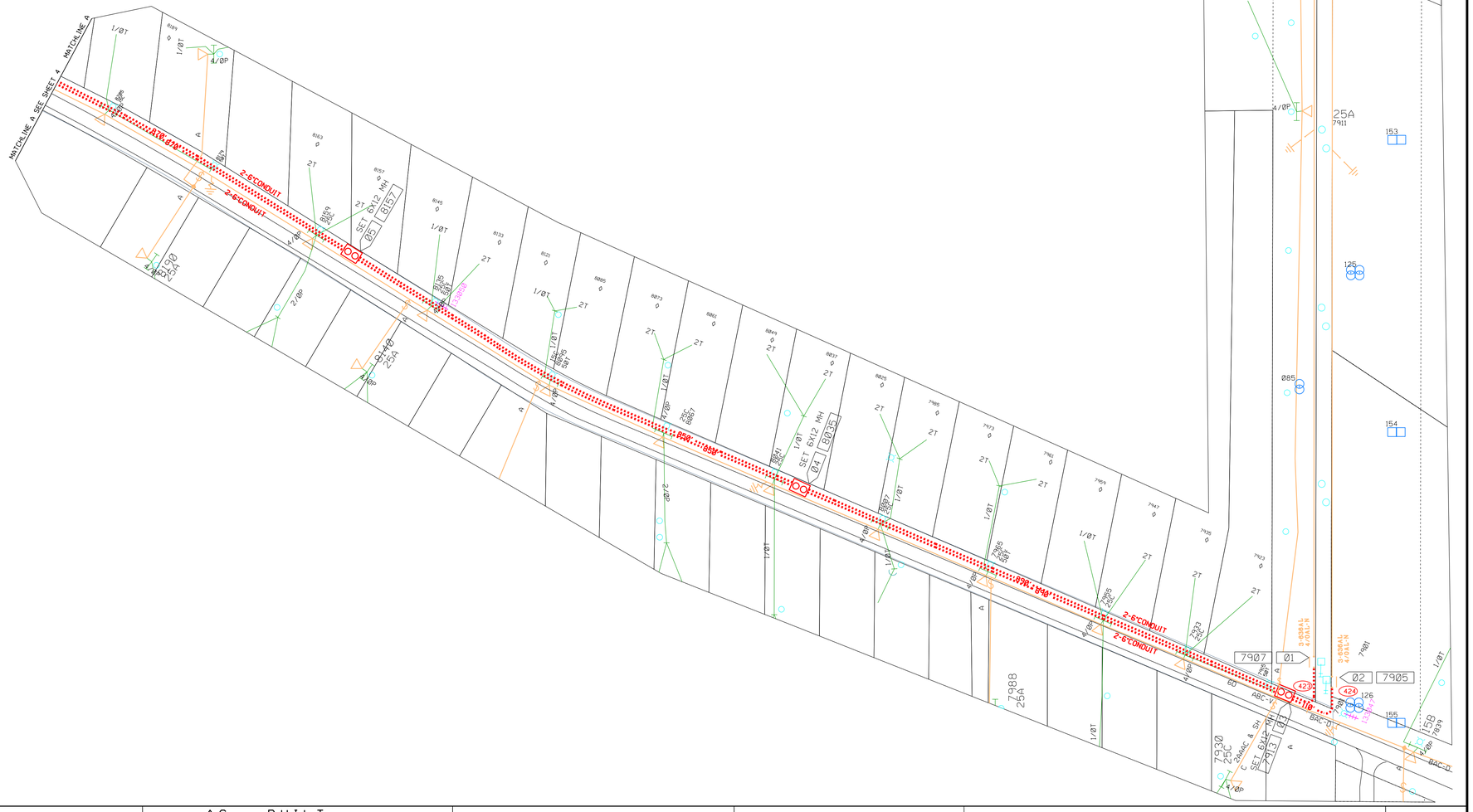
JEA
BUILDING COMMUNITY
225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

DINSMORE SOLAR FEEDERS
CKTS 423, 424 - PHASE 2

DRAWING NO.: ump0294
OPN : 8009403
MWO :
SHEET NO. 2 OF 6

UNDERGROUND LEGEND

- SINGLE PHASE PADMOUNTED TRANSFORMER
- THREE PHASE PADMOUNTED TRANSFORMER
- TWO PHASE PADMOUNTED TRANSFORMER - OPEN DELTA
- "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
- NO — NORMALLY OPEN POINT
- NEW ELECTRONIC MARKER
- EXISTING ELECTRONIC MARKER
- PVC MANHOLE
- 4' x 6' CONCRETE MANHOLE
- 6' x 12' CONCRETE MANHOLE



100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

SUBSTATION/CIRCUIT	
SUBSTATION NAME	DINSMORE
CIRCUIT NUMBER/S	423, 424
SWITCH MAP NUMBER/S	57
PRIMARY VOLTAGE	26KV

ENGINEER/PROJECT MANAGER

ENGINEER : MICHAEL O'NEAL
PHONE : (904) 665-6518
CELL : (904)
EMAIL : oneamd@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

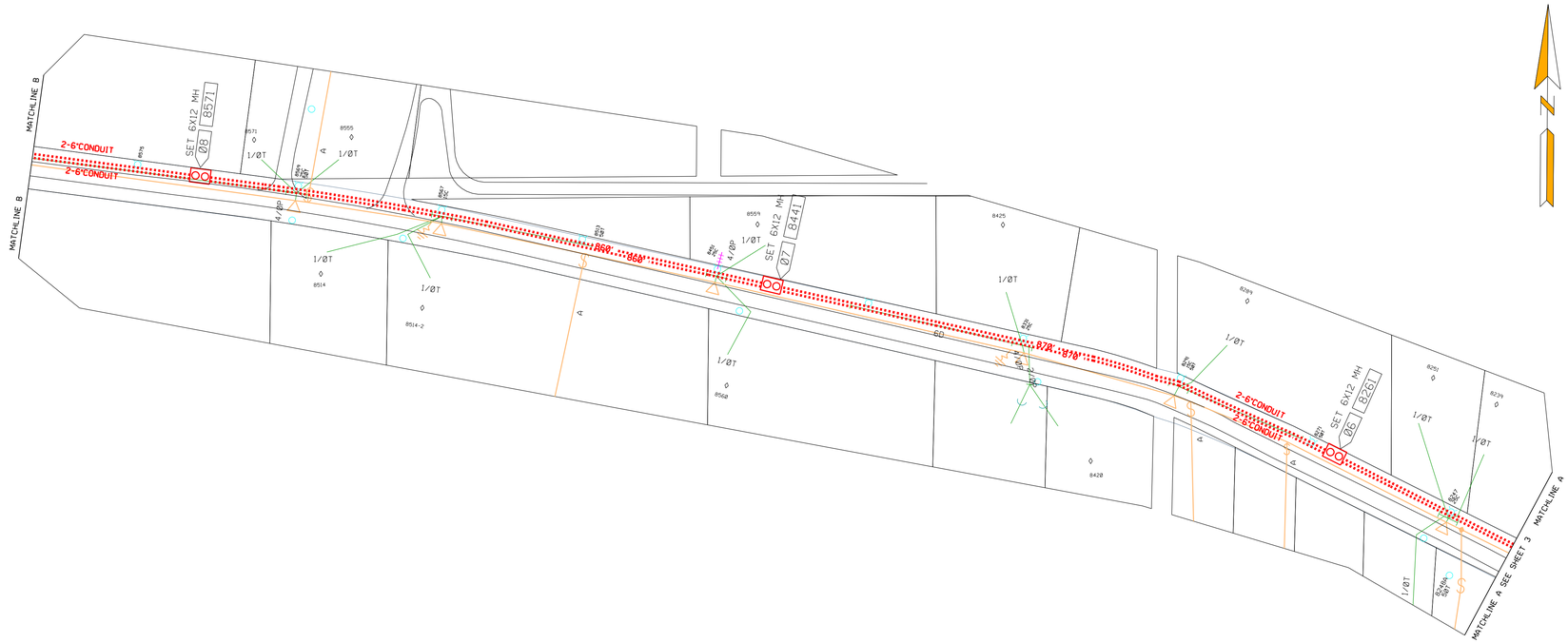
	BY	DATE
DESIGNED :	MDO	08-06-25
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		

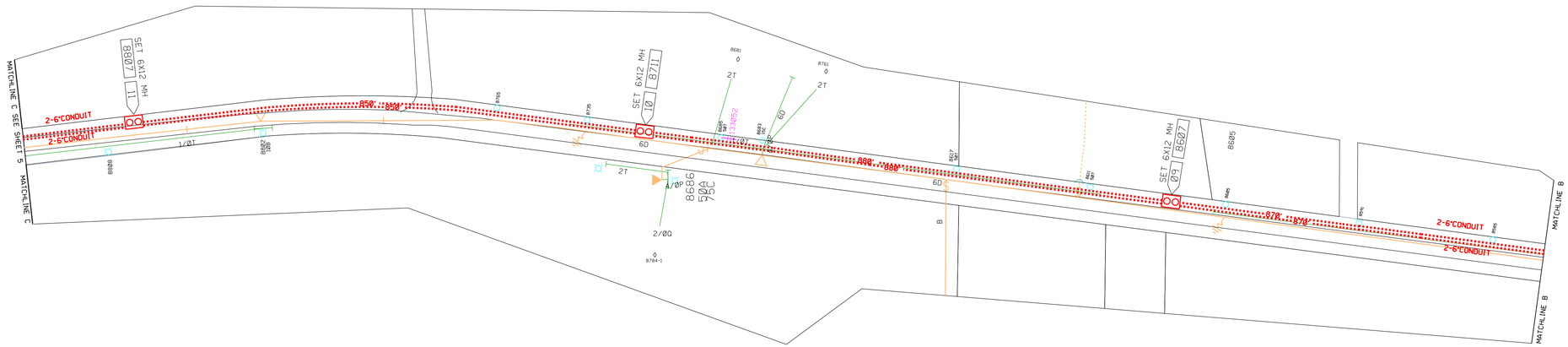
JEA
BUILDING COMMUNITY
225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

DINSMORE SOLAR FEEDERS

CKTS 423, 424 - PHASE 2

DRAWING NO. : ump0294
OPN : 8009403
MWO :
SHEET NO. 3 OF 6





UNDERGROUND LEGEND

- SINGLE PHASE PADMOUNTED TRANSFORMER
- THREE PHASE PADMOUNTED TRANSFORMER
- TWO PHASE PADMOUNTED TRANSFORMER - OPEN DELTA
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- "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

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

SUBSTATION/CIRCUIT	
SUBSTATION NAME	DINSMORE
CIRCUIT NUMBER/S	423, 424
SWITCH MAP NUMBER/S	57
PRIMARY VOLTAGE	26KV

ENGINEER/PROJECT MANAGER

ENGINEER : MICHAEL O'NEAL
PHONE : (904) 665-6518
CELL : (904)
EMAIL : oneamd@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 :	MDO	08-06-25
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		

JEA
BUILDING COMMUNITY
225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

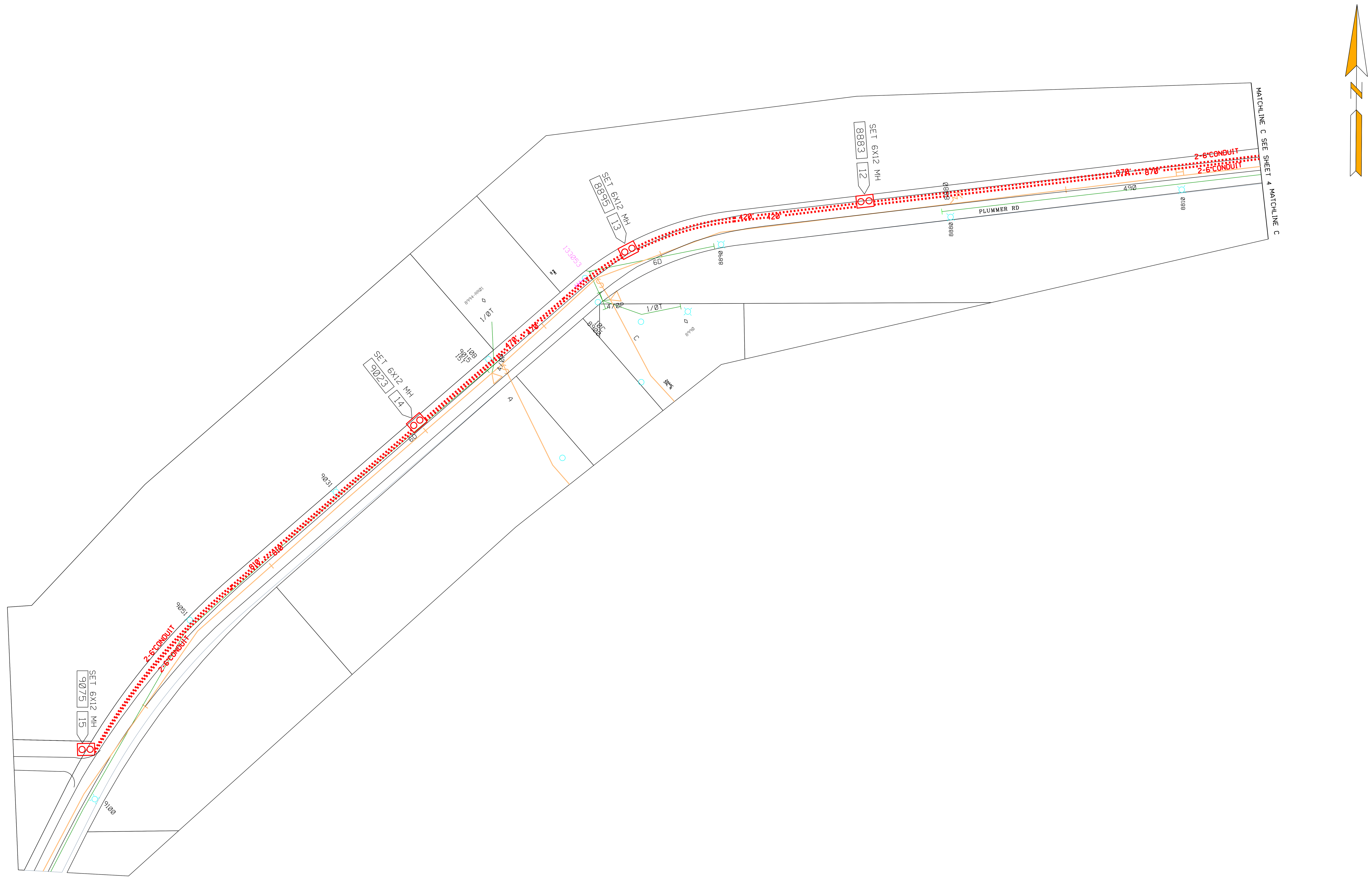
DINSMORE SOLAR FEEDERS

CKTS 423, 424 - PHASE 2

DRAWING NO.: ump0294
OPN : 8009403
MWO :
SHEET NO. 4 OF 6

UNDERGROUND LEGEND

- SINGLE PHASE PADMOUNTED TRANSFORMER
- THREE PHASE PADMOUNTED TRANSFORMER
- TWO PHASE PADMOUNTED TRANSFORMER - OPEN DELTA
- "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
- NO NORMALLY OPEN POINT
- NEW ELECTRONIC MARKER
- EXISTING ELECTRONIC MARKER
- PVC MANHOLE
- 4' x 6' CONCRETE MANHOLE
- 6' x 12' CONCRETE MANHOLE



100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

SUBSTATION/CIRCUIT

SUBSTATION NAME: DINSMORE

CIRCUIT NUMBER/S: 423, 424

SWITCH MAP NUMBER/S: 57

PRIMARY VOLTAGE: 26KV

ENGINEER/PROJECT MANAGER

ENGINEER : MICHAEL O'NEAL

PHONE : (904) 665-6518

CELL : (904)

EMAIL : oneamd@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 :	MDO	08-06-25
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		

JEA BUILDING COMMUNITY

225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

DINSMORE SOLAR FEEDERS

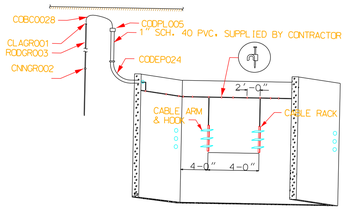
CKTS 423, 424 - PHASE 2

DRAWING NO.: ump0294

OPN : 8009403

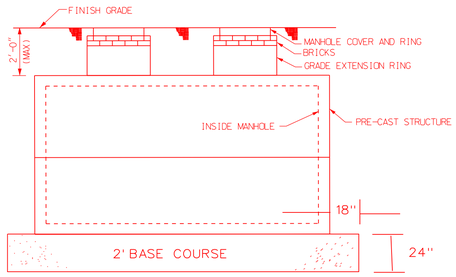
MWO :

SHEET NO. 5 OF 6



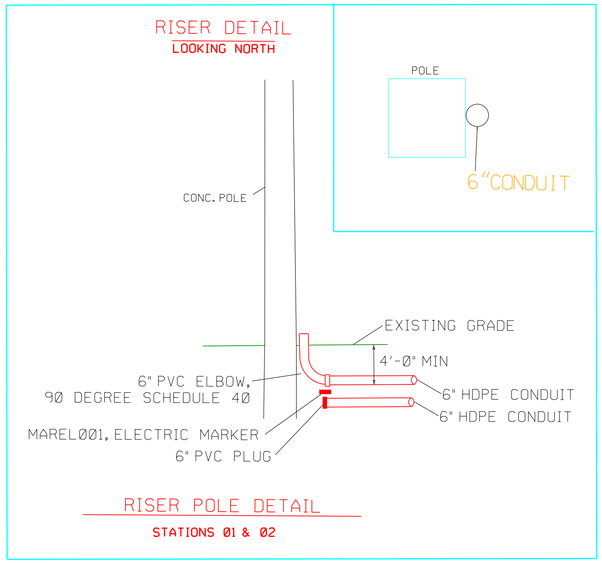
TYPICAL MANHOLE CABLE ARM HOOK, RACK & GROUNDING DETAIL

N.T.S.



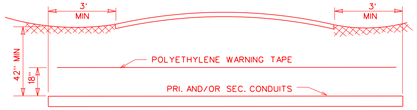
TYPICAL MANHOLE SETTING DETAIL

N.T.S.



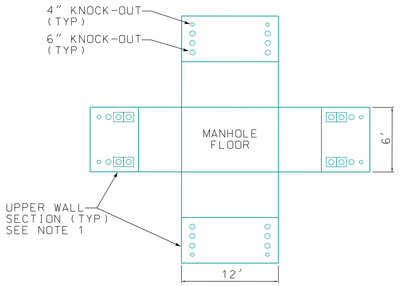
RISER POLE DETAIL

STATIONS 01 & 02



STREET CROSSING DETAIL

N.T.S.



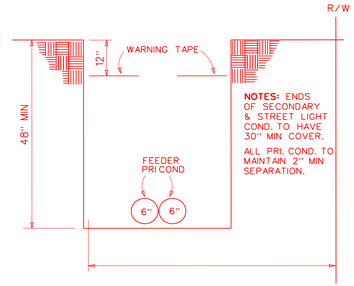
TYPICAL MANHOLE DETAIL

N.T.S.

KNOCK-OUT KEY

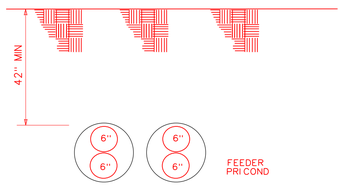
- KNOCK-OUT CONNECTION TO DUCT BANK
- CABLE INSTALLED IN KNOCK-OUT CONNECTION TO DUCT BANK
- SPARE KNOCK-OUT. NO CONNECTION TO DUCT BANK

NOTES: 1. KNOCK-OUTS IN UPPER WALL SECTIONS ARE PROVIDED WITH MANHOLE.



TYPICAL TRENCH DETAIL

N.T.S.



TYPICAL DIRECTIONAL BORE DETAIL

N.T.S.

MANHOLE & CONDUIT INSTALLATION REQUIREMENTS

1. REFERENCE https://www.jea.com/engineering_and_construction/electric_reference_materials/undeground electric distribution standards FOR JEA's STANDARDS & REQUIREMENTS REGARDING MANHOLES, CONDUIT, TRENCH, HORIZONTAL BORING, ETC. ALL MATERIALS AND INSTALLATIONS MUST MEET JEA SPECIFICATIONS.

2. CONDUIT MATERIAL MUST BE APPROVED BY JEA INSPECTOR BEFORE BEING INSTALLED. REFERENCE https://www.jea.com/engineering_and_construction/electric_reference_materials "ELECTRIC MASTER MATERIAL CATALOG" FOR FOR OTHER JEA REQUIREMENTS REGARDING "CONDUIT" MATERIAL AND SUPPLIERS. CHAMFERED CODPC005 (STICK) AND CODPE006 (DRILLED) MAY BE USED WITH ASSOCIATED COMPONENTS.

3. ALL INSTALLED CONDUITS MUST BE CLEAN & HAVE PULL STRINGS BLOWN IN, THEREBY PROVING CONDUITS.

4. TRAFFIC BEARING COLLARS TO BE PLACED AT ALL MANHOLE LIDS (SEE UG STANDARDS).

5. ALL INSTALLED CONDUITS ARE 6" EXCEPT WHERE OTHERWISE NOTED.

LINDSAY PRECAST (MANHOLES)
CONTACT: TONY AQUILAR, SHIPPING MANAGER FOR FLORIDA
taguilar@lindsayprecast.com , www.lindsayprecast.com
Phone: (386)462-7795 ext 208; Fax: (386)462-5701

U/G CONDUIT WO: 31657165

SUBSTATION/CIRCUIT

SUBSTATION NAME	DINSMORE
CIRCUIT NUMBER/S	423, 424
SWITCH MAP NUMBER/S	57
PRIMARY VOLTAGE	26KV

ENGINEER/PROJECT MANAGER

ENGINEER : MICHAEL O'NEAL
PHONE : (904) 665-6518
CELL : (904)
EMAIL : oneamd@jea.com
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JEA CONTRACT ADMIN.

ENGINEERING RECORD

	BY	DATE
DESIGNED :	MDO	08-06-25
CHECKED :		
APPROVED :		
APPROVED FOR CONSTRUCTION :		

JEA
BUILDING COMMUNITY
225 N. PEARL ST.
JACKSONVILLE, FLORIDA 32202-3139

DINSMORE SOLAR FEEDERS

CKTS 423, 424 - PHASE 2

DRAWING NO.: ump0294
OPN : 8009403
MWO :
SHEET NO. 6 OF 6

Exhibit C – Materials Furnished by Owner

CUE Reports

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

Material Summary

Item Quantity	Item Number	Item Description
144	ADCMI002	CEMENT, CLEAR, QUICK-SET, ONE-QUART CANS
13	CLAGR001	CLAMP, GROUND ROD, 5/8" - 4SOL "HAMMERLOCK"
26	CNNGR002	COUPLING, GROUND ROD, "THREADLESS" REMARKS: FOR THREADLESS GROUND RODS
260	COBCO028	CONDUCTOR, #4 SOLID, SOFT DRAWN, BARE COPPER, 200', 25#, ON PLASTIC REEL, 4" X 11.5" W/ 2" HOLE
2	CODEP009	ELBOW, PVC, CONDUIT, 6", 90-DEGREE 48" SWEEP-RADIUS, SCH-40, WITH INTEGRAL BELLED END
26	CODEP024	ELBOW, 1" PVC 90-DEGREE, 18" RADIUS SCH-40
52	CODPC016	CONDUIT, PVC, 1" SCHEDULE-40, 10' LONG PACKAGED 10-UNITS PER BUNDLE
39660	CODPE006	CONDUIT, COILABLE, 6-INCH POLYETHYLENE GRAY SDR 13.5 POWER CONDUIT, SMOOTH WALL FROM VIRGIN HDPE. TYPE III, CLASS C, CATEGORY 3, UV PROTECTED, GRADE P34 POLY, 450 FT REEL (SHIP TO 11201 NEW BERLIN RD, JAX, 32226 - OPEN FLATBED TRUCK)
48	CODPL003	PLUG, CONDUIT, PVC, 4" ID, TYPE EB
104	CODPL004	PLUG, CONDUIT, PVC, 6" ID, TYPE EB
26	CODPL005	PLUG, PVC CONDUIT, 1" I.D., CAP-TYPE
13	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
13	MARCC001	MARKER, CONDUIT/CABLE 2' X 36" PVC WITH CAP, FLARED END OR BASE .
4	MAREL002	MARKER, BALL, ELECTRONIC SIX FOOT RANGE, RED PASSIVE-TUNED COIL ANTENNA ENCASED IN A WATERPROOF DURABLE POLYETHYLENE SHELL
39	RODGR003	ROD, GROUND, THREADLESS, 5/8" X 8', SHIP ON OPEN FLATBED ONLY!

Exhibit D – CU Station Details

CUE Reports

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

CU Detail

Station: 01 7907 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	140						
I.CODPE006	280						
I.CODPL004	2						
PLUG-DUCT6	2						
UCL9*6	1						
UCMD-S	2						

Station: 02 7905 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	140						
I.CODPE006	280						
I.CODPL004	2						
PLUG-DUCT6	2						
UCL9*6	1						
UCMD-S	2						

Station: 03 7913 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1800						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3600						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 04 8035 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1750						
G2P	1						
G2P-C	1						
I.ADCMI002	12						

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

I.CODPE006	3500						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 05 8157 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1750						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3500						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 06 8261 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1800						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3600						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 07 8441 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1750						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3500						
I.CODPL003	4						

CUE Reports

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 08 8571 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1800						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3600						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 09 8607 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1800						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3600						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 10 8711 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1750						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3500						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						

CUE Reports

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

UCT24*D	40						

Station: 11 8807 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1800						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3600						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 12 8883 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	900						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	1800						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 13 8895 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1000						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	2000						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

CUE Reports

Estimate Number: 65805 | Dinsmore Circuits 423 and 424 Conduit on Plummer Rd | Estimate Type: CP | Contract: 069-19-HRT UG FY25

Estimate Version:
MWO#/Task: 31657165
Oracle Project #: 8009403

By: SHORML
Required Date:
Estimated On: 09/10/2025

Station: 14 9023 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
DIR-BORE*2-6	1650						
G2P	1						
G2P-C	1						
I.ADCMI002	12						
I.CODPE006	3300						
I.CODPL003	4						
I.CODPL004	8						
SET-6X12*D	1						
UCT24*D	40						

Station: 15 9075 PLUMMER RD

Build		Transfer		Remain in Place		Remove	
G2P	1						
G2P-C	1						
SET-6X12*D	1						
UCT24*D	20						