120V SINGLE PHASE CIRCUIT; TAPPED IN WIRE TROUGH TO SERVICE CONDUCTORS; 1-#6 AWG UNGROUNDED CONDUCTOR AND 1-#6 AWG GROUNDED CONDUCTOR (NEUTRAL)

(3) METER SOCKET BY CONTRACTOR, METER BY POWER UTILITY COMPANY: CONTRACTOR TO COORDINATE WITH POWER UTILITY COMPANY TO FURNISH APPROVED METER SOCKET

 $\langle 4 \rangle$ parallel connected surge protective device (lighting arrestor)

ITS SERVICE MAIN DISCONNECT: GENERAL DUTY, TWO-POLE S/N, FUSIBLE, SINGLE THROW SAFETY SWITCH; FUSED AT 40 AMPS; SERVICE ENTRANCE RATED; 240V RATED; 100 AMP RATED; 100K AIC RATED; NEMA 3R PADLOCKABLE ENCLOSURE; BOND ENCLOSURE TO GROUNDED CONDUCTOR (NEUTRAL) WITH #6 AWG MAIN BONDING JUMPER

DOLE MOUNTED SAFETY SWITCH: GENERAL DUTY, TWO-POLE, NON-FUSIBLE, SINGLE THROW SAFETY SWITCH; 240V RATED; 100 AMP RATED; 10K SSCR MIN.; NEMA 3R PADLOCKABLE ENCLOSURE

(5B) LIGHTING SERVICE MAIN DISCONNECT: SEE LIGHTING PLANS FOR FURTHER DETAIL

#2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (COMMON). BOND THE SERVICE GROUNDED CONDUCTOR (NEUTRAL) TO GROUND IN WIRE TROUGH AT NEUTRAL BUSS.

 $\langle 6A \rangle$ #2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR

%" X 20' MIN. GROUNDING ELECTRODE (EXTEND OR ADD ADDITIONAL BONDED WITH #2 AWG angle Tin plated bare copper ground wire to achieve 5 ohms or less resistance to

 $\langle 7A \rangle$ grounding electrode array; refer to typical installation details

 \langle 8 angle 120V SINGLE PHASE CIRCUIT: CONDUCTOR SIZE AS SHOWN ON PLAN SHEETS

(8A) 120V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

 $\langle 9 \rangle$ CABINET POWER PANEL

31.9

140

3.5

(10) CABINET MAIN CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS (10K AIC MIN. RATED)

(11) CABINET BRANCH CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS (10K AIC MIN. RATED)

 $\langle 12 \rangle$ POLE MOUNTED TYPE 336S CABINET

 $\langle 13
angle$ 48VDC POWER SUPPLY: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

 $\langle 14 \rangle$ 48VDC CIRCUIT: 2/C #12 AWG TYPE TC CABLE

(15) DC CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

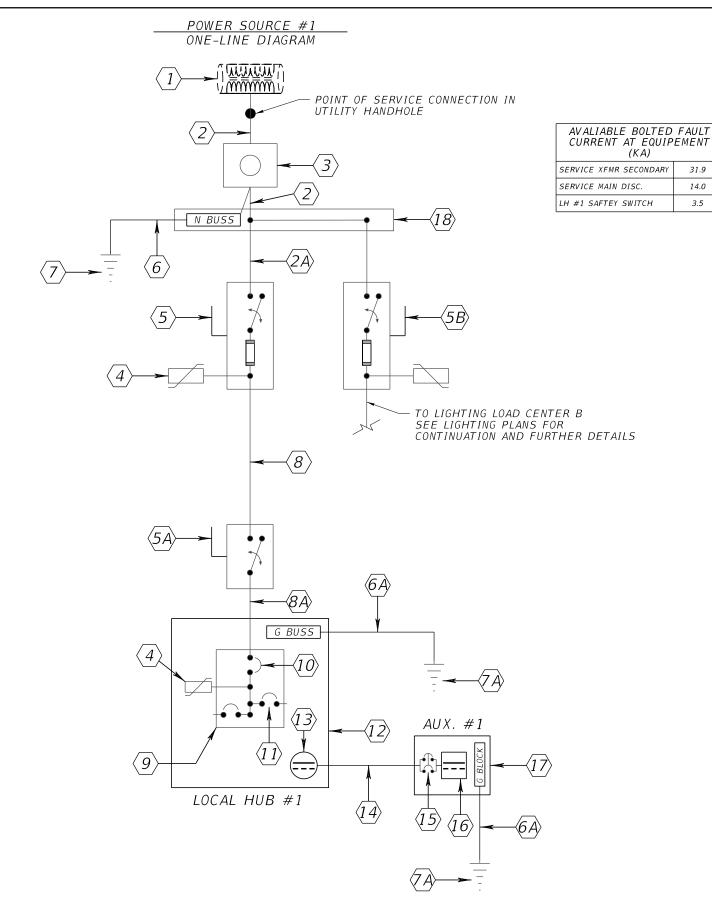
 $\langle 16 \rangle$ DC-DC CONVERTER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

(17) POLE MOUNTED AUXILIARY CABINET

18 NEMA 3R WIRE TROUGH SIZED PER NEC FILL REQUIREMENTS; CONTAINING 1/4" THICK X 2" WIDE (MIN.) COPPER GROUNDING BUSS TO SERVE AS COMMON GROUNDING ELECTRODE CONDUCTOR

NOTES:

- 1. SEE PLANS FOR CONDUCTOR SIZES NOT INDICATED ON THIS SHEET.
- 2. SEE PLAN SHEETS FOR APPROXIMATE LOCATION OF THE SERVICE CONNECTION POINT. COORDINATE WITH POWER UTILITY COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTION EXACT LOCATIONS.
- 3. REFER TO TYPICAL RISER DIAGRAM, AND TYPICAL INSTALLATION DETAILS, FOR FURTHER INFORMATION.



REVISIONS DESCRIPTION DATE DATE DESCRIPTION

ALEXANDER TEAL MIMS, P.E. PE No. 77095 Traffic Engineering Data Solutions, Inc. 80 Spring Vista Drive Phone: 386.753.0558 DeBary, FL 32713 Fax: 386.753.0778 CERTIFICATION OF AUTHORIZATION # 27392

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID ROAD NO. COUNTY

SEMINOLE

SR 429

POWER SERVICE DETAILS

SHEET NO.

IT-63

2A) 240V SINGLE PHASE CIRCUIT; TAPPED IN WIRE TROUGH TO SERVICE CONDUCTORS; 2-#6 AWG UNGROUNDED CONDUCTORS AND 1-#6 AWG GROUNDED CONDUCTOR (NEUTRAL)

METER SOCKET BY CONTRACTOR, METER BY POWER UILLIY CUMPANT: CUNTRACTOR TO FURNISH APPROVED METER SOCKET METER SOCKET BY CONTRACTOR, METER BY POWER UTILITY COMPANY: CONTRACTOR TO

 $\langle 4 \rangle$ parallel connected surge protective device (lighting arrestor)

TIS SERVICE MAIN DISCONNECT: GENERAL DUTY, TWO-POLE S/N, FUSIBLE, SINGLE THROW SAFETY SWITCH; FUSED AT 40 AMPS; SERVICE ENTRANCE RATED; 240V RATED; 100 AMP RATED; 100K AIC RATED; NEMA 3R PADLOCKABLE ENCLOSURE; BOND ENCLOSURE TO GROUNDED CONDUCTOR (NEUTRAL) WITH #6 AWG MAIN BONDING JUMPER

POLE MOUNTED SAFTEY SWITCH: GENERAL DUTY, TWO-POLE, FUSIBLE, SINGLE THROW; FUSED AT 20 AMPS; 240V RATED; 100 AMP RATED; 10K AIC MIN. RATED; NEMA 3R PADLOCKABLE ENCLOSURE

 $\langle 5B
angle$ lighting service main disconnect: SEE lighting plans for further detail

#2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (COMMON). BOND THE SERVICE GROUNDED 6 #2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (COMMON, DOIND , CONDUCTOR (NEUTRAL) TO GROUND IN WIRE TROUGH AT NEUTRAL BUSS.

 $\langle 6A \rangle$ #2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR

7) %" X 20" MIN. GROUNDING ELECTRODE (EXTEND OR ADD ADDITIONAL BONDED WITH #2 AWG TIN PLATED BARE COPPER GROUND WIRE TO ACHIEVE 5 OHMS OR LESS RESISTANCE TO GROUND)

 $\langle 7A \rangle$ grounding electrode array; refer to typical installation details

 \langle 8 \rangle 240V SINGLE PHASE CIRCUIT: CONDUCTOR SIZE AS SHOWN ON PLAN SHEETS

(8A) 240V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

(8B) 120V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

 $\langle 9 \rangle$ CABINET POWER PANEL

CABINET MAIN CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS (10) FOR DETAILS (10K AIC MIN. RATED)

(11) CABINET BRANCH CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS (10K AIC MIN. RATED)

 $\langle 12 \rangle$ POLE MOUNTED TYPE 336S CABINET

 $\langle 13 \rangle$ 48VDC POWER SUPPLY: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

 $\langle 14 \rangle$ 48VDC CIRCUIT: 2/C #12 AWG TYPE TC CABLE

 $\langle 15 \rangle$ DC CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

 $\langle 16 \rangle$ DC-DC CONVERTER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

(17) POLE MOUNTED AUXILIARY CABINET

3 KVA POLE MOUNTED DRY TYPE OUTDOOR TRANSFORMER: 240×480V PRIMARY AND 120/240V
SECONDARY; NEMA 3R ENCLOSURE; BOND TRANSFORMER SECONDARY TO EFFECTIVE GROUND-FAULT CURRENT PATH PER NEC REQUIREMENTS; REFER TO WIRING DIAGRAMS FOR FURTHER DETAIL

NEMA 3R WIRE TROUGH SIZED PER NEC FILL REQUIREMENTS; CONTAINING 1/4" THICK X 2" WIDE (MIN.) COPPER GROUNDING BUSS TO SERVE AS COMMON GROUNDING ELECTRODE CONDUCTOR

NOTES:

- 1. SEE PLANS FOR CONDUCTOR SIZES NOT INDICATED ON THIS SHEET.
- 2. SEE PLAN SHEETS FOR APPROXIMATE LOCATION OF THE SERVICE CONNECTION POINT, COORDINATE WITH POWER UTILITY COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTION EXACT LOCATIONS.
- 3. REFER TO TYPICAL RISER DIAGRAM, AND TYPICAL INSTALLATION DETAILS, FOR FURTHER INFORMATION.

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AVALIABLE BOLTED FAULT CURRENT AT EQUIPEMENT

31.9

123

0.25

0.30

SERVICE XFMR SECONDARY

SERVICE MAIN DISC

TO LIGHTING LOAD CENTER D

CONTINUATION AND FURTHER DETAILS

SEE LIGHTING PLANS FOR

AUX. #2

LH #2 SAFTEY SWITCH

LH #2 XFMR SECONDARY

POWER SOURCE #2

ONE-LINE DIAGRAM

(8

G BUSS

DESCRIPTION

LOCAL HUB #2

 $\langle 4 \rangle$

REVISIONS

DATE

DESCRIPTION

DATE

N BUSS

POINT OF SERVICE CONNECTION IN

UTILITY HANDHOLE

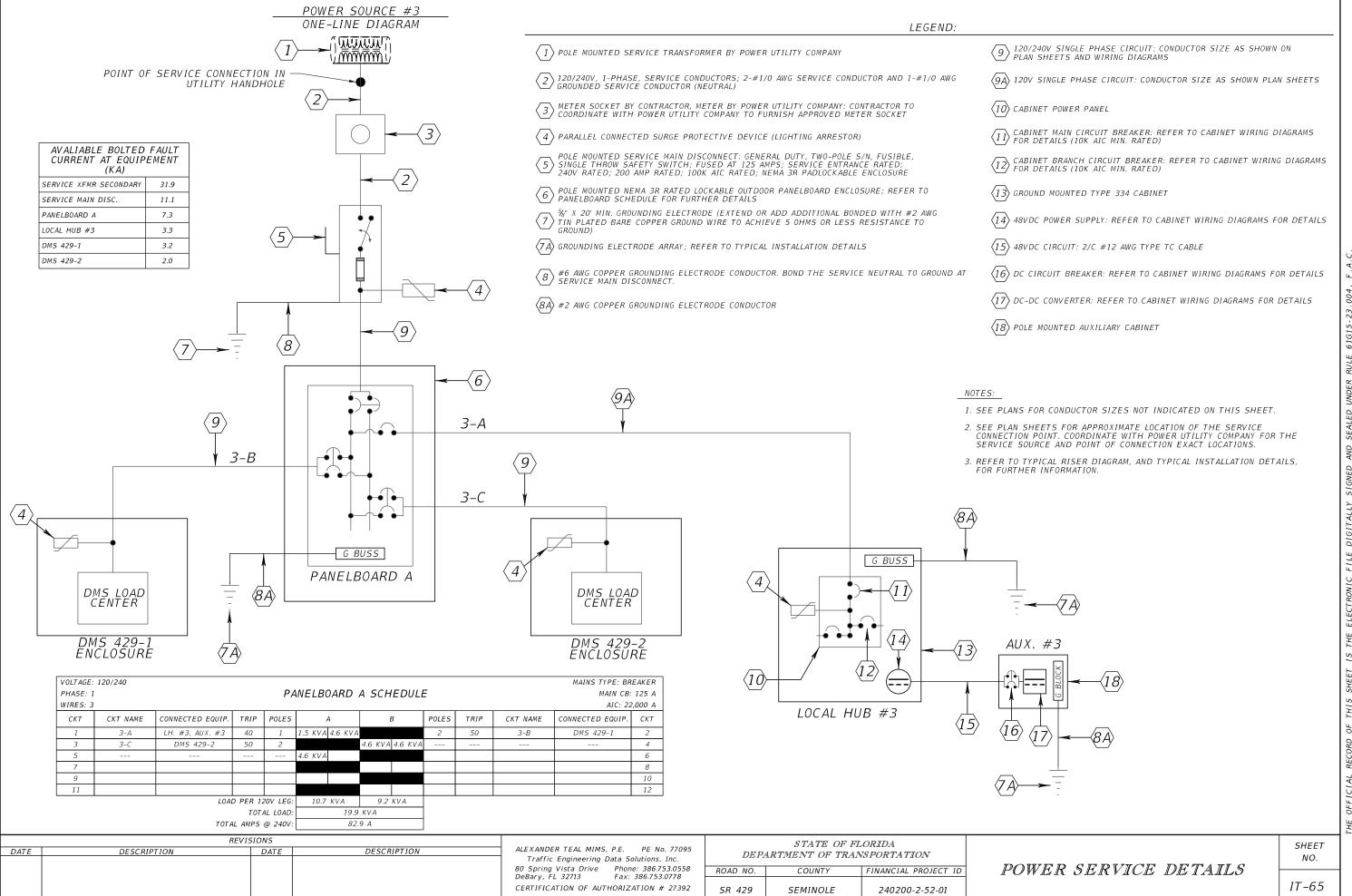
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO. COUNTY FINANCIAL PROJECT ID

POWER SERVICE DETAILS

SHEET NO.

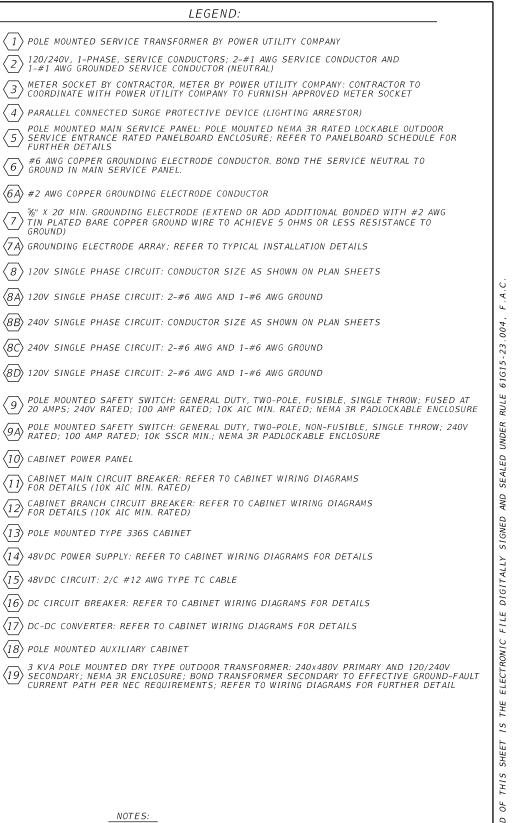
IT-64

SEMINOLE



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- 2. SEE PLAN SHEETS FOR APPROXIMATE LOCATION OF THE SERVICE CONNECTION POINT. COORDINATE WITH POWER UTILITY COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTION EXACT LOCATIONS.
- 3. REFER TO TYPICAL RISER DIAGRAM, AND TYPICAL INSTALLATION DETAILS, FOR FURTHER INFORMATION.

 $4-\Delta$ IH #4 1.5 KVA 0.75 KV LH. #5. AUX. #4 SPD SPD 0.75 KVA 4-C 30 SPD 8 10 11 12 LOAD PER 120V LEG TOTAL LOAD TOTAL AMPS @ 240V 125 A REVISIONS DATE DESCRIPTION DATE DESCRIPTION DeBary, FL 32713 CERTIFICATION OF AUTHORIZATION # 27392

PANELBOARD B SCHEDULE

 $\langle 8 \rangle$

G BUSS

VOLTAGE: 120/240

CKT NAME

CONNECTED EQUIP

PHASE: 1

WIRES: 3

CKT

LOCAL HUB #4

TRIP

POLES

4-A

(6)

POWER SOURCE #4 ONE-LINE DIAGRAM

i MMMMM L

G BUSS

PANELBOARD B

 $\langle 10 \rangle$

TRIP

CKT NAME

POLES

POINT OF SERVICE CONNECTION IN

AVALIABLE BOLTED FAULT CURRENT AT EQUIPEMENT

31.9

12.3 1.6

0.20

0.24

SERVICE XFMR SECONDARY

LH #4 SAFTEY SWITCH

LH #5 SAFTEY SWITCH

LH #5 XFMR SECONDARY

AUX. #4

SR 429

(16)

PANELBOARD B

UTILITY HANDHOLE

(5)

4-B

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G BUSS

 $\langle 12 \rangle$

MAINS TYPE: BREAKER

MAIN CB: 100 A

AIC: 22,000 A

CKT

LOCAL HUB #5

CONNECTED EQUIP

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID ROAD NO. COUNTY

SEMINOLE

POWER SERVICE DETAILS

SHEET NO.

IT-66

METER SOCKET BY CONTRACTOR, METER BY POWER UTILITY COMPANY: CONTRACTOR TO

 \langle 4
angle parallel connected surge protective device (lighting arrestor)

5) SERVICE ENTRANCE RATED PANELBOARD ENCLOSURE; REFER TO PANELBOARD SCHEDULE FOR

6 #6 AWG COPPER GROUNDING ELECTRODE CONDUCTOR. BOND THE SERVICE NEUTRAL TO GROUND IN MAIN SERVICE PANEL.

 $\langle 6A \rangle$ #2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR

₹%" X 20' MIN. GROUNDING ELECTRODE (EXTEND OR ADD ADDITIONAL BONDED WITH #2 AWG 7) TIN PLATED BARE COPPER GROUND WIRE TO ACHIEVE 5 OHMS OR LESS RESISTANCE TO

 $\langle 7A \rangle$ grounding electrode array; refer to typical installation details

 \langle 8 angle 120V SINGLE PHASE CIRCUIT: CONDUCTOR SIZE AS SHOWN ON PLAN SHEETS

(8A) 120V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

(8B) 240V SINGLE PHASE CIRCUIT: CONDUCTOR SIZE AS SHOWN ON PLAN SHEETS

 $\langle 8
angle
angle$ 240V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

(8D) 120V SINGLE PHASE CIRCUIT: 2-#6 AWG AND 1-#6 AWG GROUND

POLE MOUNTED SAFETY SWITCH: GENERAL DUTY, TWO-POLE, FUSIBLE, SINGLE THROW; FUSED AT (9) 20 AMPS; 240V RATED; 100 AMP RATED; 10K AIC MIN. RATED; NEMA 3R PADLOCKABLE ENCLOSURE

POLE MOUNTED SAFETY SWITCH: GENERAL DUTY, TWO-POLE, NON-FUSIBLE, SINGLE THROW; 240V RATED; 100 AMP RATED; 10K SSCR MIN.; NEMA 3R PADLOCKABLE ENCLOSURE

 $\langle 10 \rangle$ CABINET POWER PANEL

CABINET MAIN CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS

(12) CABINET BRANCH CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS (10K AIC MIN. RATED)

(13) POLE MOUNTED TYPE 336S CABINET

 $\langle 14 \rangle$ 48VDC POWER SUPPLY: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

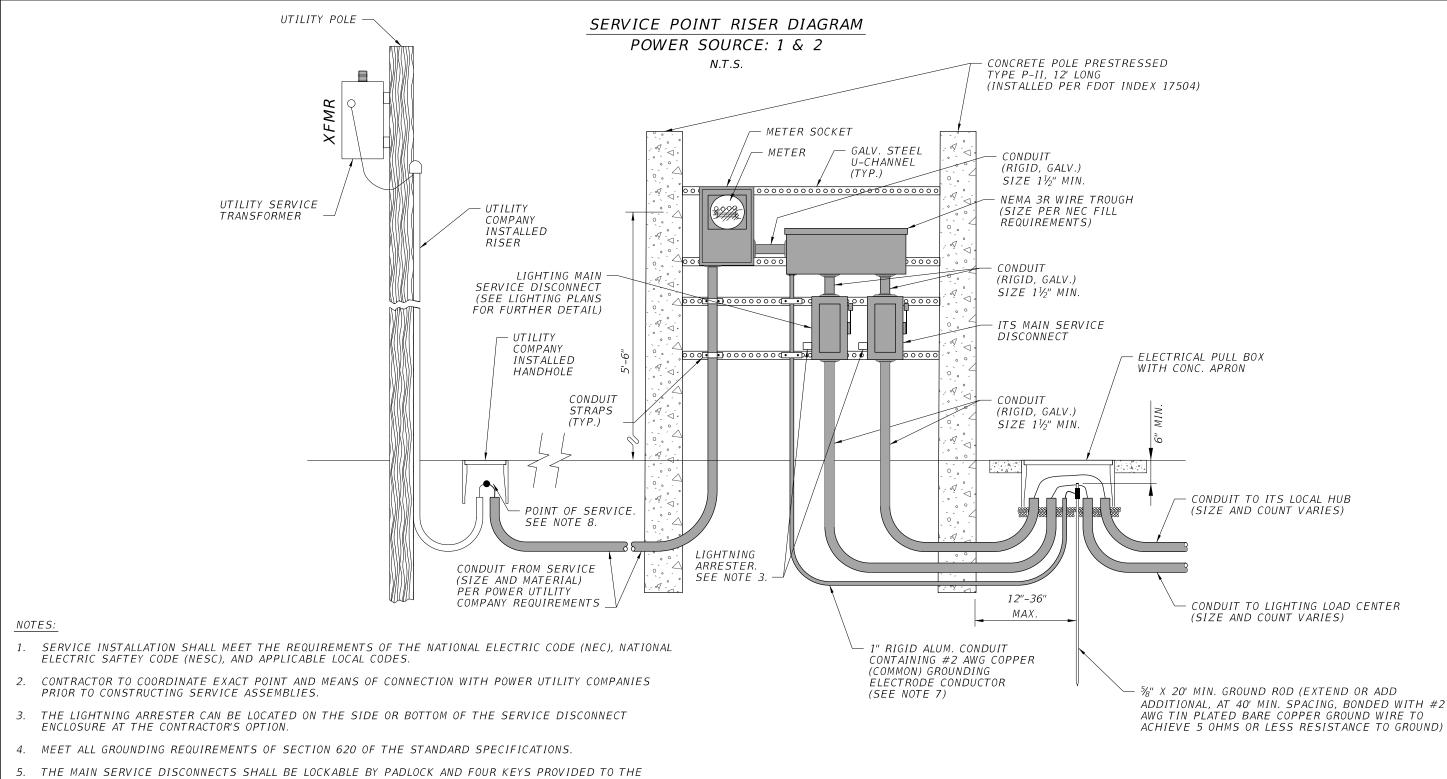
 $\langle 15
angle$ 48VDC CIRCUIT: 2/C #12 AWG TYPE TC CABLE

 $\langle 16
angle$ DC CIRCUIT BREAKER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

 $\langle 17
angle$ DC-DC CONVERTER: REFER TO CABINET WIRING DIAGRAMS FOR DETAILS

 $\langle 18
angle$ pole mounted auxiliary cabinet

1. SEE PLANS FOR CONDUCTOR SIZES NOT INDICATED ON THIS SHEET.



- MAINTAINING AGENCY. THE DOOR SHALL HAVE A MINIMUM OF THREE HINGES AND BE LOCKABLE. NO SCREWS TO BE USED TO ATTACH DOOR.
- ALL SERVICE EQUIPMENT ENCLOSURES SHALL BE NEMA 3R OR BETTER RATED. WEATHER TIGHT HUBS SHALL BE USED AT LOCATIONS WHERE CONDUITS ATTACH TO ENCLOSURES.
- CONDUIT CONTAINING GROUNDING ELECTRODE CONDUCTORS SHALL BE EITHER RIGID GALVANIZED STEEL OR RIGID ALUMINUM CONDUIT. IF STEEL CONDUIT (FERROUS) IS USED ENSURE CONDUIT IS BONDED TO GROUNDING ELECTRODE CONDUCTOR AT BOTH ENDS IN ACCORDANCE WITH THE NEC.
- CONTRACTOR TO PROVIDE 10' OF SLACK SERVICE CONDUCTOR WITHIN HANDHOLE FOR CONNECTION BY POWER UTILITY COMPANY.

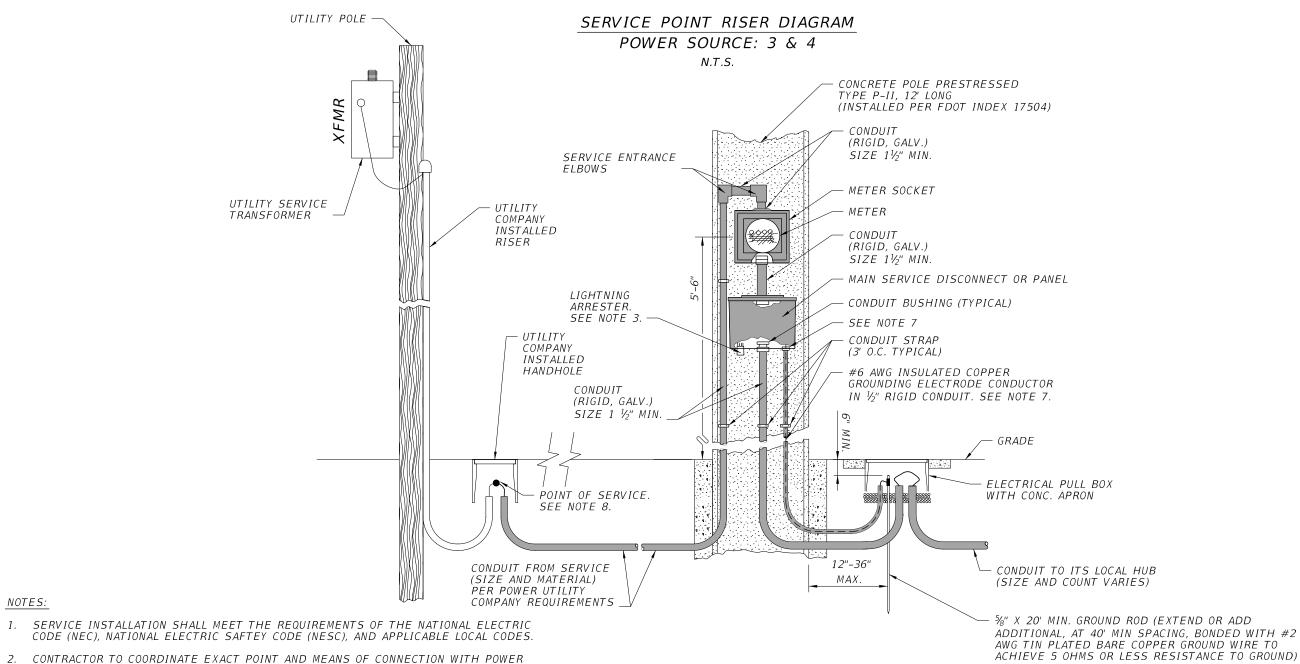
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DATE	DESCRIPTION	DATE	DESCRIPTION	ALEXANDER TEAL MIMS, P.E. PE No. 77095 Traffic Engineering Data Solutions, Inc.
				80 Spring Vista Drive Phone: 386.753.0558 DeBary, FL 32713 Fax: 386.753.0778
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POWER SERVICE DETAILS

SHEET NO.

IT-67



- UTILITY COMPANIES PRIOR TO CONSTRUCTING SERVICE ASSEMBLIES.
- THE LIGHTNING ARRESTER CAN BE LOCATED ON THE SIDE OR BOTTOM OF THE SERVICE DISCONNECT ENCLOSURE AT THE CONTRACTOR'S OPTION.
- MEET ALL GROUNDING REQUIREMENTS OF SECTION 620 OF THE STANDARD SPECIFICATIONS.
- THE MAIN SERVICE DISCONNECT OR PANEL SHALL BE LOCKABLE BY PADLOCK AND FOUR KEYS PROVIDED TO THE MAINTAINING AGENCY. THE DOOR SHALL HAVE A MINIMUM OF THREE HINGES AND BE LOCKABLE. NO SCREWS TO BE USED TO ATTACH DOOR.
- ALL SERVICE EQUIPMENT ENCLOSURES SHALL BE NEMA 3R OR BETTER RATED. WEATHER TIGHT HUBS SHALL BE USED AT LOCATIONS WHERE CONDUITS ATTACH TO ENCLOSURES.
- CONDUIT CONTAINING GROUNDING ELECTRODE CONDUCTORS SHALL BE EITHER RIGID GALVANIZED STEEL OR RIGID ALUMINUM CONDUIT. IF STEEL CONDUIT (FERROUS) IS USED ENSURE CONDUIT IS BONDED TO GROUNDING ELECTRODE CONDUCTOR AT BOTH ENDS IN ACCORDANCE WITH THE NEC.
- CONTRACTOR TO PROVIDE 10' OF SLACK SERVICE CONDUCTOR WITHIN HANDHOLE FOR CONNECTION BY POWER UTILITY COMPANY.

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POWER SERVICE DETAILS

SHEET NO.

IT-68