FAYETTEVILLE PUBLIC WORKS COMMISSION

PROCUREMENT DEPARTMENT

https://www.faypwc.com/bids/

Bid Addendum

PWC Number:	PWC2324040
Bid Title :	P.O. Hoffer Substation Installation Labor Contract
Bid Opening Date and Time:	Thursday, January 25, 2024 at 1:00 P.M. E.T
Addendum Number:	II
Addendum Date:	January 18, 2024
Procurement Advisor:	*Victoria McAllister, Procurement Manager* *procurement@faypwc.com*

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1. Acknowledgement of this Addendum must be done within Bid Summary section listed within the Bid Documents.
2. The solicitation is hereby modified as follows:

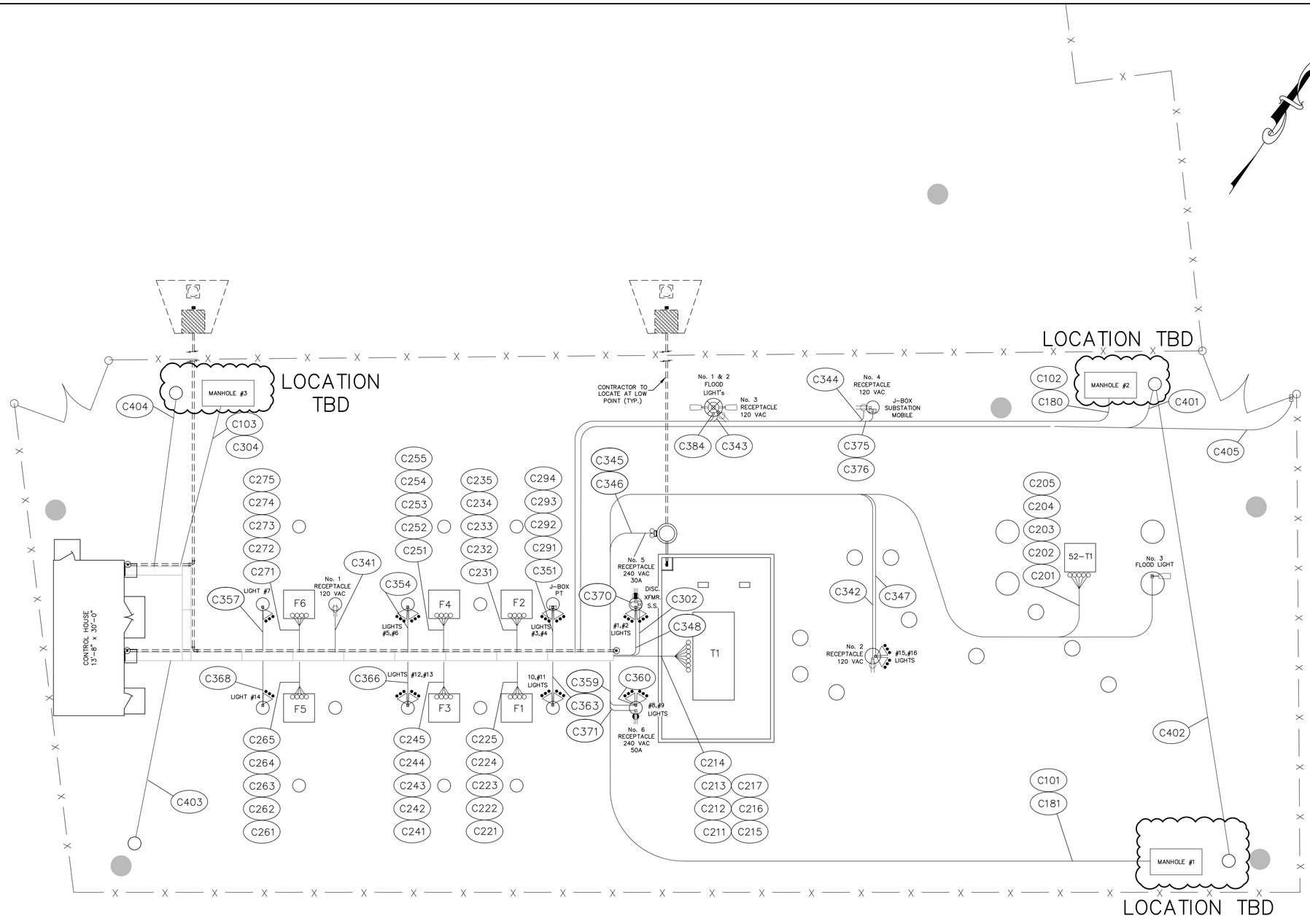
   M1. APPENDICES, 1. BOOTH & ASSOCIATES, LLC- DRAWING LIST & DRAWINGS
   The correct drawings have been attached to this addendum.

3. Following are questions received about the solicitation and the SME's answers to the questions.

   Q1. Do you have any recommendations for MWDBE foundation or fence subcontractors?
   A1. Please reach out to or Economic Inclusion Programs Department for more information.

   Q2. At the on-site meeting for PO Hoffer, one side of the fence was said to be moved out some. In the contract it states that it stays. If it moves out what are the new dimensions for the fence. Does this fence get the gray privacy slate installed?

   A2. We are using the existing fence, and it will not need slates installed.



CONDUIT PLAN

SCALE: 3/32"=1'-0"

CONDUIT SYSTEM NOTES:

1. ALL CONDUIT SHALL BE 2" PVC SCHEDULE 40 UNLESS SPECIFIED OTHERWISE.
2. ALL CONDUITS, FITTINGS, JUNCTION BOXES, ENCLOSURES, COUPLINGS AND MISCELLANEOUS CONDUIT MATERIALS SHALL BE FURNISHED BY THE SUBSTATION CONTRACTOR, EXCEPT WHERE NOTED OTHERWISE.
3. INSTALLATION OF CONDUIT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ELECTRICAL DEVICES (LIGHTS, RECEPTACLES, WIRE, LUGS, WIRE NUTS, ETC.) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL OPEN CONDUIT STUBS EXPOSED TO WEATHER SHALL BE CAPPED UNTIL TERMINATION IS COMPLETED.
6. CONDUITS FOR FUTURE CABLE INSTALLATION SHALL HAVE A PULL STRING INSTALLED AND SHALL BE CAPPED AT BOTH ENDS BY CONTRACTOR.
7. AC POWER SUPPLY AND CONTROL CABLES SHOULD NOT TO BE INCLUDED IN THE SAME CONDUIT.
8. ALL METALLIC JUNCTION BOXES, RACEWAYS, CABLE TRAYS, PANELS, AND ENCLOSURES SHALL BE BONDED TO THE SUBSTATION GROUND GRID.
9. ALL AC SERVICE NEUTRALS SHALL BE BONDED TO GROUND AT THE SERVICE PANEL AND AT THE POINT OF TERMINATION.
10. CONTROL HOUSE INTERIOR ELECTRICAL DEVICES (LIGHTS, RECEPTACLES, WIRE, WIRE NUTS, ETC.) BE SUPPLIED AND INSTALLED BY CONTROL HOUSE CONTRACTOR.
11. OUTDOOR RECEPTACLES, J-BOXES, CONDUIT, FITTINGS, WIRE TERMINALS, CABLE CABLE TRENCH, PULL-BOXES, VT JUNCTION BOXES, AND OUTDOOR LIGHTING SHALL BE PROVIDED BY CONTRACTOR.
12. FIBER NETWORK ACCESS POINTS FROM CLIENT.

LEGEND

- (CXXX) CONDUITS
- PIERS AND FOUNDATIONS
- FENCE
- CABLE TRENCH
- INDICATES 2" PVC SCH. 40 CONDUIT TO BE INSTALLED 24" BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED.
- STATIC POLE WITH LIGHT FIXTURES
- SECURITY LED LIGHT FIXTURES
- CABLE TRENCH DRAIN CLEAN OUT
- OIL CONTAINMENT
- MANHOLE

NOTES:

1. CONDUITS ARE SHOWN WITH AN OVAL ⬭ SYMBOL.
2. REFER TO CONDUIT & CABLE SCHEDULE FOR CONDUIT SIZE, CABLE INSTALLATION NOTES.

ELECTRICAL LEGEND

- 240 VAC 30A RECEPTACLE
- 240 VAC 50A RECEPTACLE
- 120 VAC RECEPTACLE
- 120 VAC LED LIGHT FIXTURE

REFERENCE

CONDUIT DETAILS _____ 12513 C2
FOUNDATION PLAN _____ 12513 FP1

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
NC F-0221

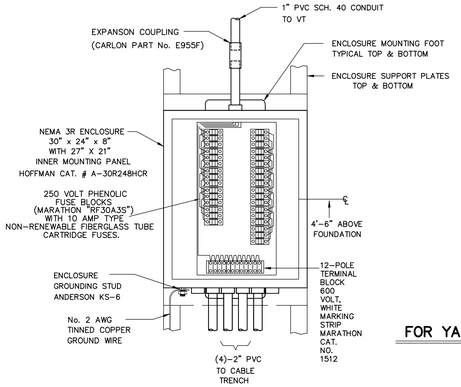
PRELIMINARY – DO NOT USE FOR CONSTRUCTION

NO.	REVISIONS	ENG.	DATE
A	ISSUED FOR BID	BWJ	05/05/23
B	ISSUED FOR BID	BWJ	01/10/24

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

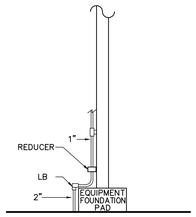
DRAWING TITLE: CONDUIT AND CABLE PLAN

DRAWN BY:	AVS
CHECKED BY:	JG
APPROVED BY:	MJW
DATE:	01/05/2024
SCALE:	1/16"=1'-0"
FILE NUMBER:	12513
SHEET:	C1



PWC V.T. JUNCTION BOX

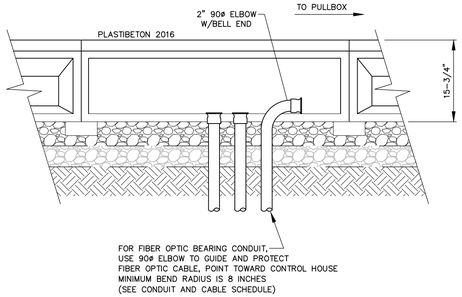
(1 REQUIRED)
(N.T.S.)



(USING LB'S)

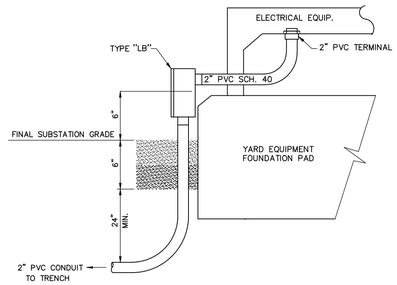
TYPICAL CONDUIT ENTRY FOR YARD RECEPTACLES & YARD LIGHTS

(N.T.S.)



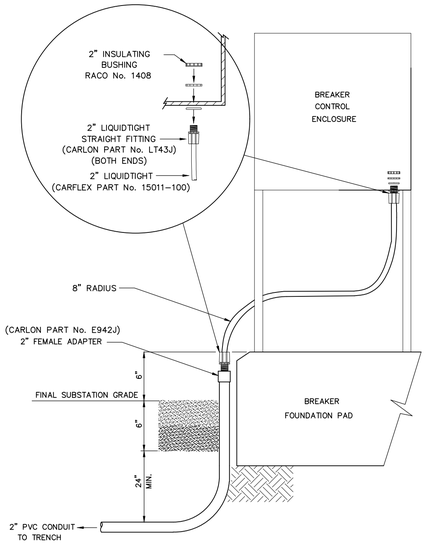
FIBER OPTIC CONDUIT DETAIL

(TYPICAL)
(N.T.S)



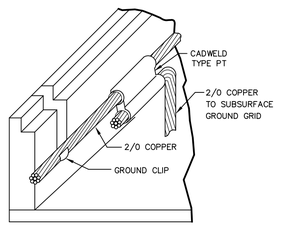
TYPICAL CONDUIT ENTRY FOR SUBSTATION EQUIPMENT

(N.T.S.)



FIBER CABLE CONDUIT ENTRY

FOR RECLOSERS
(N.T.S)

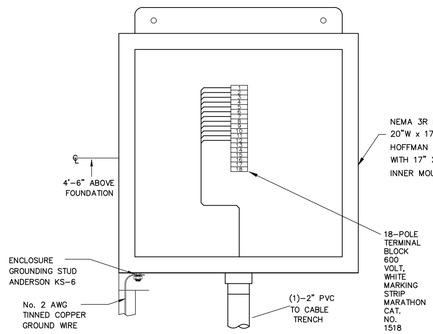


GROUND CLIP DETAIL

(N.T.S)

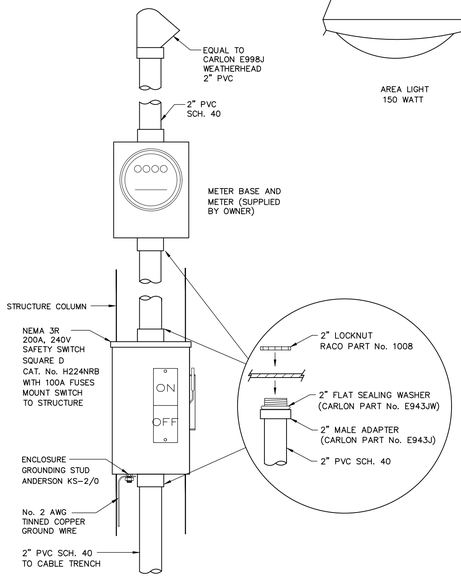
INSTALL 2/0 GROUND ALONG LENGTH OF ALL TRENCH SUPPORTED BY GROUND CLIPS

BOND 2/0 TO GROUND GRID AT EACH CROSSING OF 4/0 GRID



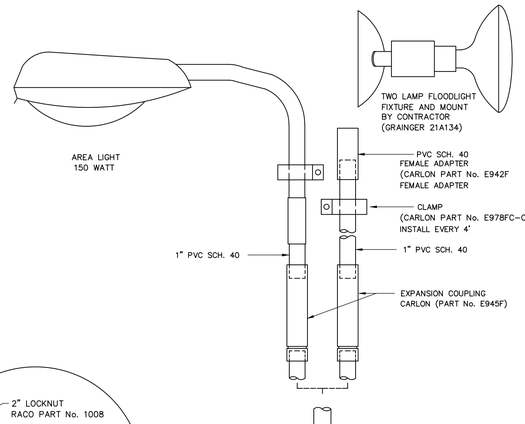
MOBILE SUBSTATION JUNCTION BOX

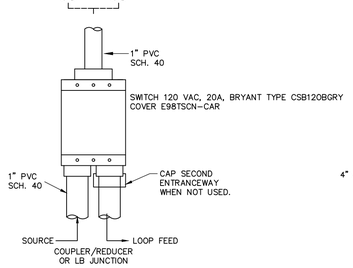
(1 REQUIRED)
(N.T.S.)



STATION SERVICE

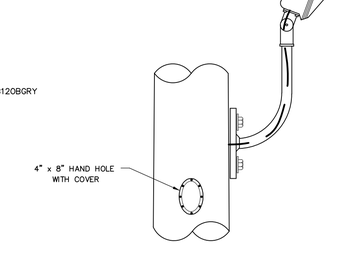
N.T.S.





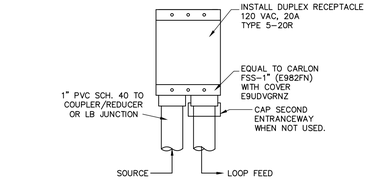
PVC SWITCH BODY FOR SECURITY LIGHTS

(N.T.S.)



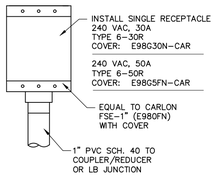
STATIC POLE FLOOD LIGHT DETAIL

(1 POLE W/2 LIGHTS)
N.T.S.



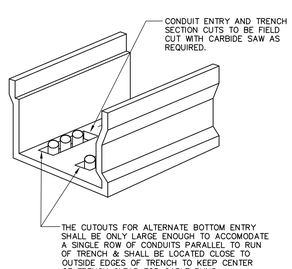
PVC OUTLET BODY FOR 120V YARD OUTLETS

(N.T.S.)



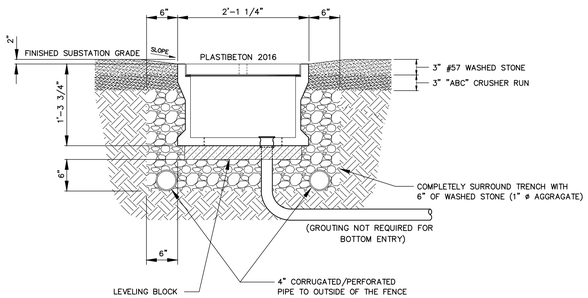
PVC OUTLET BODY FOR 240 VAC YARD OUTLETS

(N.T.S.)



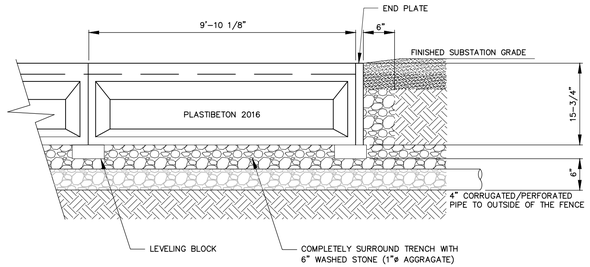
CONDUIT ENTRY

N.T.S.



CABLE TRENCH DETAIL

(N.T.S)



REFERENCE

CONDUIT PLAN _____ 12513 C1
FOUNDATION PLAN _____ 12513 FP1

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
NC F-0221

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

NO.	REVISIONS	ENG.	DATE
A.	ISSUED FOR BID	BWJ	05/05/23
B	ISSUED FOR BID	BWJ	01/10/24

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: CONDUIT DETAILS

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12513
SHEET:	C2

PO Hoffer 69kV to 15kV Substation

Conduit & Cable Schedules

12510C3.xlsx

for the
Public Works Commission of Fayetteville, NC

January 10, 2024

Booth & Associates
2300 Rexwoods Drive, Raleigh NC 27607
NC F-0221

Rev.	Description	Date	By	Appr.
0	ISSUED FOR BIDS		BWJ	BWJ

DRAWING: 12513C3

LEGEND AND NOTES

CONDUIT INSTALLATION:

NOTE:

1	ALL METALLIC JUNCTION BOXES, RACEWAYS, CABLE TRAYS, PANELS, AND ENCLOSURES SHALL BE BONDED TO THE SUBSTATION GROUND GRID.
2	ALL CONDUIT IS 2" SCHEDULE 40 PVC UNLESS OTHERWISE NOTED ON DRAWING.
3	FUTURE EQUIPMENT. CONDUIT TO BE INSTALLED BUT CAPPED AT LOCATION OF FUTURE EQUIPMENT.
4	FUTURE CONDUIT. SHOWN FADED ON CONDUIT PLAN.
	FOR CONDUIT BEARING FIBER OPTIC CABLES (FOC): 1) HAVE NO LESS THAN 8.0 INCH BEND RADIUS. 2) USE OF "LB" FITTINGS SHALL NOT BE PERMITTED. 3) SLOW BENDS AND COMBINATIONS OF 45 DEGREE BENDS OF MINIMUM 8.0 INCH RADIUS ARE PREFERRED. 4) ENSURE BENDS OTHER THAN 90 DEGREES ALSO ENFORCE MINIMUM BEND RADIUS.

CABLE INSTALLATION:

NOTE:

	ALL AC SERVICE NEUTRALS SHALL BE BONDED TO GROUND AT THE SERVICE PANEL AND AT THE POINT OF TERMINATION.
13	**THESE COPPER OR FIBER JUMPERS SUPPLIED WITH SWITCHBOARDS FROM THE SWITCHBOARD VENDOR.** USE AVAILABLE HORIZONTAL AND VERTICAL CABLE MANAGERS TO ROUTE FIBER AND COPPER JUMPERS. USE VELCRO TO SECURE JUMPERS TO ONE ANOTHER AND ELSEWHERE AS NEEDED. WIRE TIES NOT ALLOWED.
14	ALL **AC BRANCH FEEDERS** SHALL OBSERVE THE FOLLOWING COLOR CODE ACCORDING TO ICEA METHOD E1 CABLE: **X - BLACK Y - RED N - WHITE G - GREEN**
15	ALL **DC BRANCH FEEDERS** SHALL OBSERVE THE FOLLOWING COLOR CODE: **POSITIVE (+) - RED NEGATIVE (-) - BLACK**
16	SECONDARYS FOR CURRENT TRANSFORMERS AND VOLTAGE TRANSFORMERS SHALL HAVE CONDUCTORS COLOR CODED ACCORDING TO ICEA METHOD E1 (i.e. RD, GN, BK, WH) UNLESS OTHERWISE NOTED. **A - RED B - GREEN C - BLACK N - WHITE**
17	TERMINATE GENERAL CONTROL CABLE CONDUCTOR COLORS AT RELAY PANEL TERMINAL BLOCKS IN ORDER OF CONDUCTOR NUMBER (ICEA METHOD E2): **BK, RD, BL, OR, YL, BR, RD/BK, BL/BK, OR/BK, YL/BK, BR/BK, BK/RD**. TERMINATE EQUIPMENT END AS NECESSARY TO MATCH FUNCTION.
18	COIL 30 FEET OF CABLE INSIDE SWBD #4 FOR FUTURE USE. TAPE OFF INDIVIDUAL WIRES IN EACH PAIR. TAPE OFF FOIL AND DRAIN WIRE AT BOTH ENDS.

DRAWING: 12513C3

LEGEND AND NOTES

19	**CONTROL HOUSE MANUFACTURER TO INSTALL AND TERMINATE THESE CABLES AND JUMPERS. APPLY LABELS TO ENDS OF CABLES AND JUMPERS PER CABLE AND CONDUIT SCHEDULE (12502C3, THIS DOCUMENT).**

FIBER OPTIC CABLE / CONDUIT INSTALLATION:

NOTE:

20	1) OUTSIDE PLANT (OSP) FIBER OPTIC CABLES (FOC) SHALL HAVE **NO LESS THAN 8 (EIGHT) INCH BEND RADIUS** DURING INSTALLATION AND **NO LESS THAN 4 (FOUR) INCH BEND RADIUS IN PLACE AFTER INSTALLATION**. 2) **PULLING TENSION NOT TO EXCEED MAXIMUM** PER MANUFACTURER'S SPECIFICATION. 3) NEED 10 FEET OF CABLE IN EQUIPMENT
21	1) FIBER OPTIC CABLE (FOC) **DUPLEX JUMPERS SHALL HAVE NO LESS THAN 1.5 INCH BEND RADIUS**. 2) **PULLING TENSION NOT TO EXCEED MAXIMUM** PER MANUFACTURER'S SPECIFICATION. 3) USE PANDUIT GUIDES IN SWBD #4 TO PROTECT SLACK. 4) "SM" JUMPERS ARE YELLOW IN COLOR. 5) MAKE AND PLACE CABLE NUMBER LABELS AND "DESTINATION" LABELS ON DUPLEX JUMPERS BEFORE INSTALLATION, SEE PRINTS. 6) USE VELCRO STRAPS (BELDEN PN AX100783 OR EQUIVALENT) TO DRESS DUPLEX JUMPERS IN LOOPS TO TAKE UP SLACK IF NEEDED, RESPECTING BEND RADIUS. WIRE TIES ARE NOT PERMITTED AT ANY TIME.
22	**MEASURING AND INSTALLING PRE-TERMINATED FIBER CABLE**: WIREMAN MUST OBTAIN FIBER CABLE PULLING SPECIFICATIONS WELL AHEAD OF INSTALLATION STEPS. WIREMAN MUST KNOW MINIMUM BEND RADIUS FOR THE CABLE BOTH DURING PULL AND WHEN CABLE IN PLACE, MBR DURING PULL IS LARGER THAN THAT WHEN CABLE IS RESTING IN PLACE. WIREMAN MUST KNOW MAXIMUM PULL TENSION FOR THE CABLE BOTH DURING PULL AND WHEN CABLE IN PLACE, MAXIMUM PULL TENSION DURING PULL IS LARGER THAN THAT WHEN CABLE IS IN PLACE. WIREMAN MUST BE FAMILIAR WITH RADIUS GUIDES, ROLLERS, PULLEYS AND TENSION MEASUREMENT EQUIPMENT BEFORE PERFORMING INSTALL.. **1) WIREMAN TO DETERMINE REQUIRED LENGTH OF FIBER OPTIC CABLES** FROM YARD BREAKERS AND TRANSFORMER TO APPROPRIATE PATCH PANEL MOUNTED IN SWITCHBOARD S4 BEFORE PLACING ORDER FROM DISTRIBUTOR. SEE PRINTS FOR FIBER ROUTING IN SWITCHBOARD AND CABLE & CONDUIT SCHEDULE FOR DIRECTION TO DETERMINE ORDER LENGTH. **2**) **AFTER CONDUIT, TRENCH, WIRE TRAY AND SWITCHBOARDS ARE INSTALLED, MEASURE LENGTH** FOR EACH PRE-TERMINATED FIBER CABLE. MEASURE FROM CONDUIT IN YARD CABINET TO CABLE BRACKET MOUNTED ON EACH PATCH PANEL, SEE CABLE AND CONDUIT SCHEDULE AND SWITCHBOARD PRINTS FOR DETAILS. USE TABLE IN PRINTS TO ADD REQUIRED SLACK.

DRAWING: 12513C3

LEGEND AND NOTES

22 **CONTINUED**	**3)** ORDER CABLE FROM ANIXTER, MORRISILLE, NC. SEE LABOR SPECIFICATION FOR DETAILS TO ORDER. **3A-** PART NUMBER FOR PRE-TERMINATED CABLE IS: **D18-0710-1**. SPECIFY LENGTH OF CABLE, AS DETERMINED FOR EACH CABLE NUMBER, SPECIFY CABLE NUMBER FOR EACH CABLE FROM THIS DRAWING. **4)** M**AKE AND PLACE CABLE NUMBER LABELS AND "DESTINATION" LABELS** ON BOTH ENDS OF CABLE BEFORE INSTALLATION, SEE CABLE AND CONDUIT SCHEDULE FOR "FROM" AND "TO" DESTINATION TEXT . REPLACE LABELS IF DAMAGED DURING PULL. **5) PULL CABLE OFF SHIPPING BOX USING PULL ROPE WITH SWIVEL ATTACHED TO PULLING EYE FITTING** ON END OF CABLE. -RESPECT MINIMUM BEND RADIUS (INSTALL) AND MAXIMUM PULL TENSION (INSTALL). -DO NOT ALLOW CABLE TO BEND LESS THAN MBR WHILE WAITING FOR NEXT PORTION OF PULL OR AT END POINTS DURING AND AFTER PULL. -PULL BY ROPE OR TAPE ATTACHED TO SWIVEL. -ROUTE CABLES WITH CARE. -MULTIPLE CABLES MAY BE PULLED BUNDLED TOGETHER THRU TRAY AND TRENCH SEPARATING THEM AS NEEDED TO PULL IN CONDUIT. -USE RADIUS GUIDES, ROLLERS OVER EDGES, PULLEYS AND ASSISTANTS AS NEEDED TO FACILITATE INSTALL.
22	**7) IF NECESSARY, COIL CABLE ON ITSELF INSIDE SWITCHBOARD**, RESPECTING MINIMUM BEND RADIUS AND SECURE COIL WITH WIRE TIES. ALLOW COILS TO BE DIFFERENT LENGTHS AS NEEDED. CABLE JACKET MAY NOT BE DEFORMED BY WIRE TIES. **8) TO CONTAIN CABLE SLACK, CABLE MAY LAY IN OVERHEAD TRAY**, IN AN AREA PAST THE SWITCHBOARDS AND LOOPING BACK TO ENTER SWBD #4. IF CABLE MUST BE COILED IN OVERHEAD TRAY, ENSURE COIL OCCURS FAR DOWN LENGTH OF TRAY IN A CLEAR AREA SO OTHER CABLES ARE NOT OBSCURED BY THE COILS. **9) AFTER INSTALLATION, GROUP CABLES** WHICH ENTER SAME PLACE ON THE PATCH PANEL TOGETHER WITH WIRE TIES. CABLE JACKET MAY NOT BE DEFORMED BY WIRE TIES. **10) MINIMUM BEND RADIUS FOR FIBER CABLE DURING INSTALL IS: 8 (EIGHT) INCHES**. **MAXIMUM PULL TENSION FOR FIBER CABLE DURING INSTALL IS: 100 POUNDS.** **MINIMUM BEND RADIUS FOR FIBER CABLE WHEN IN PLACE IS: 4 (FOUR) INCHES.** **MAXIMUM PULL TENSION FOR FIBER CABLE WHEN IN PLACE IS: 90 POUNDS.** OTHER FIBER OPTIC CABLE ON SITE MAY HAVE DIFFERENT SPECIFICATIONS.

DRAWING: 12513C3

LEGEND AND NOTES

23	CONDUIT BEARING FIBER OPTIC CABLES (FOC): 1) SHALL HAVE NO LESS THAN 8.0 INCH BEND RADIUS. 2) USE OF "LB" FITTINGS SHALL NOT BE PERMITTED. 3) SLOW BENDS AND COMBINATIONS OF 45 DEGREE BENDS OF MINIMUM 8.0 INCH RADIUS ARE PREFERRED. 4) ENSURE BENDS OTHER THAN 90 DEGREES ALSO ENFORCE MINIMUM BEND RADIUS.
24	1) **OUTSIDE PLANT (OSP) FIBER OPTIC CABLE (FOC) FROM BUILDING TO FEEDER BREAKERS AND OTHER YARD DEVICES** TO BE PULLED BY WIREMAN. 2) **FIBER PATCH PANEL AND FIBER SPLICE PANEL (AS NEEDED)** AT THE BREAKER CABINETS AND SCADA SWITCHBOARD TO BE INSTALLED BY CONTRACTOR. 3) **FIBER "JUMPER" CABLES (CABLE NOS. J24 THRU J52 AND J103 THRU J228)** SUPPLIED FROM SWITCHBOARD MANUFACTURER WITH SWITCHBOARD.
25	COAXIAL CABLES (FOR CABLE SEL-C961-025, C961-050) SHALL HAVE NO LESS THAN 6 1/2 INCH BEND RADIUS (13 INCH CIRCLE) DURING INSTALLATION.
ZLC2M	**Corning** 2 fiber Zipcord Jumper, 2.0mm subunit, multimode, **62.5 micron, OM1,** LC duplex to LC duplex connectors. Minimum Bend Radius during install is 2.0 inches, during operation 0.4 inches. Maximum tensile strength during install is 50 lbf. Length 7 feet. No substitutions. PN: **050502K51200tF**
ZLC3M	**Corning** 2 fiber Zipcord Jumper, 2.0mm subunit, multimode, **62.5 micron, OM1,** LC duplex to LC duplex connectors. Minimum Bend Radius during install is 2.0 inches, during operation 0.4 inches. Maximum tensile strength during install is 50 lbf. Length 3 meters. No substitutions. PN: **050502K5120003M**
ZLC3S	**Corning** 2 fiber Zipcord Jumper, 2.0mm subunit, multimode, **9 micron, OS1,** LC duplex to LC duplex connectors. Minimum Bend Radius during install is 2.0 inches, during operation 0.4 inches. Maximum tensile strength during install is 50 lbf. Length 3 meters. No substitutions. PN: **040402G512000003M**
CA605C-xxx	**SEL CAT5E Shielded Patch Cord**, STP, RJ-45 connectors both ends, jacket color Blue. Length is xxx feet as indicated in part number. PN: **CA605CBXxxx. CAT5-04, CAT5-08**
C605A-xxx	**SEL EIA-232**, DB9 connectors both ends. Length is xxx feet as indicated in part number. PN: **C605Axxx. C605A-36, C605A-25**
C961-xxx	**SEL Coaxial cable**, LMR400 cable, TNC connectors both ends. Length is xxx feet as indicated in part number. PN: **C961-xxx. C961-25, C961-50**
C953-xxx	**SEL Coaxial cable**, IRIG, RG58 cable, BNC connectors both ends. Length is xxx feet as indicated in part number. PN: **C953-xxx. C953-6, C953-15, C953-25**

DRAWING: 12510C3

Conduit Schedule

CONDUIT NO.	CONDUIT SCHEDULE		CONDUIT SIZE/TYPE	REMARKS
	FROM	TO		
C101	MANHOLE #1	TRENCH	2" PVC	
C102	MANHOLE #2	TRENCH	2" PVC	
C103	MANHOLE #3	TRENCH	2" PVC	
C111	CIRCUIT EXIT	MANHOLE #1	6" PVC	
C112	CIRCUIT EXIT	MANHOLE #2	6" PVC	
C113	CIRCUIT EXIT	MANHOLE #1	6" PVC	
C114	CIRCUIT EXIT	MANHOLE #2	6" PVC	
C115	CIRCUIT EXIT	MANHOLE #3	6" PVC	
C116	CIRCUIT EXIT	MANHOLE #3	6" PVC	
C180	FIBER HAND BOX	TRENCH	2" PVC	
C181	FIBER HAND BOX	TRENCH	2" PVC	
C201	69KV LINE BKR 52-T1	TRENCH	2" PVC	
C202	69KV LINE BKR 52-T1	TRENCH	2" PVC	
C203	69KV LINE BKR 52-T1	TRENCH	2" PVC	
C204	69KV LINE BKR 52-T1	TRENCH	2" PVC	
C205	69KV LINE BKR 52-T1	TRENCH	2" PVC	
C211	No.1 TRANSFORMER	TRENCH	2" PVC	
C212	No.1 TRANSFORMER	TRENCH	2" PVC	
C213	No.1 TRANSFORMER	TRENCH	2" PVC	
C214	No.1 TRANSFORMER	TRENCH	2" PVC	
C215	No.1 TRANSFORMER	TRENCH	2" PVC	
C216	No.1 TRANSFORMER	TRENCH	2" PVC	NOTE 23
C217	No.1 TRANSFORMER	TRENCH	2" PVC	
C221	FEEDER BREAKER No. 52-1	TRENCH	2" PVC	
C222	FEEDER BREAKER No. 52-1	TRENCH	2" PVC	
C223	FEEDER BREAKER No. 52-1	TRENCH	2" PVC	NOTE 23
C224	FEEDER BREAKER No. 52-1	TRENCH	2" PVC	
C225	FEEDER BREAKER No. 52-1	TRENCH	2" PVC	
C231	FEEDER BREAKER No. 52-2	TRENCH	2" PVC	
C232	FEEDER BREAKER No. 52-2	TRENCH	2" PVC	
C233	FEEDER BREAKER No. 52-2	TRENCH	2" PVC	NOTE 23
C234	FEEDER BREAKER No. 52-2	TRENCH	2" PVC	
C235	FEEDER BREAKER No. 52-2	TRENCH	2" PVC	
C241	FEEDER BREAKER No. 52-3	TRENCH	2" PVC	
C242	FEEDER BREAKER No. 52-3	TRENCH	2" PVC	
C243	FEEDER BREAKER No. 52-3	TRENCH	2" PVC	NOTE 23
C244	FEEDER BREAKER No. 52-3	TRENCH	2" PVC	
C245	FEEDER BREAKER No. 52-3	TRENCH	2" PVC	
C251	FEEDER BREAKER No. 52-4	TRENCH	2" PVC	
C252	FEEDER BREAKER No. 52-4	TRENCH	2" PVC	
C253	FEEDER BREAKER No. 52-4	TRENCH	2" PVC	NOTE 23
C254	FEEDER BREAKER No. 52-4	TRENCH	2" PVC	
C255	FEEDER BREAKER No. 52-4	TRENCH	2" PVC	
C261	FEEDER BREAKER No. 52-5	TRENCH	2" PVC	

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Conduit Schedule

CONDUIT NO.	CONDUIT SCHEDULE		CONDUIT SIZE/TYPE	REMARKS
	FROM	TO		
C262	FEEDER BREAKER No. 52-5	TRENCH	2" PVC	
C263	FEEDER BREAKER No. 52-5	TRENCH	2" PVC	NOTE 23
C264	FEEDER BREAKER No. 52-5	TRENCH	2" PVC	
C265	FEEDER BREAKER No. 52-5	TRENCH	2" PVC	
C271	FEEDER BREAKER No. 52-6	TRENCH	2" PVC	
C272	FEEDER BREAKER No. 52-6	TRENCH	2" PVC	
C273	FEEDER BREAKER No. 52-6	TRENCH	2" PVC	NOTE 23
C274	FEEDER BREAKER No. 52-6	TRENCH	2" PVC	
C275	FEEDER BREAKER No. 52-6	TRENCH	2" PVC	
C290	15kV BUS NO. 1 VT JUNCTION BOX	VOLTAGE TRANSFORMERS	1" PVC	ABOVE GROUND
C291	15kV BUS NO. 1 VT JUNCTION BOX	TRENCH	2" PVC	
C292	15kV BUS NO. 1 VT JUNCTION BOX	TRENCH	2" PVC	
C293	15kV BUS NO. 1 VT JUNCTION BOX	TRENCH	2" PVC	
C294	15kV BUS NO. 1 VT JUNCTION BOX	TRENCH	2" PVC	
C300	STATION SERVICE TRANSF. No.1	STA. SERVICE METER BODY	2" PVC	ABOVE GROUND
C301	STA. SERVICE METER BODY	STA. SERVICE NO.1 DISCONNECT	2" PVC	ABOVE GROUND
C302	STA. SERVICE No.1 DISCONNECT	TRENCH	2" PVC	
C303				
C304	STATION SERIVCE FEED FROM STREET	TRENCH	2" PVC	
C341	YARD RECEPTACLE No. 1	TRENCH	1" PVC	
C342	YARD RECEPTACLE No. 2	TRENCH	1" PVC	
C343	YARD RECEPTACLE No. 3	TRENCH	1" PVC	
C344	YARD RECEPTACLE No. 4	TRENCH	1" PVC	
C345	SUMP PUMP NO. 1	TRENCH	2" PVC	
C346	SUMP PUMP NO. 1 CONTROL	TRENCH	1" PVC	
C347	SWITCH BOX #15,16	TRENCH	2" PVC	
C347A	SWITCH BOX #15,16	LIGHT #15,16	1" PVC	ABOVE GROUND
C348	SWITCH BOX #1,2	TRENCH	2" PVC	
C350	SWITCH BOX #1,2	LIGHT #1,2	1" PVC	ABOVE GROUND
C351	LIGHT JUNCTION #3,4	TRENCH	2" PVC	
C353	LIGHT JUNCTION #3,4	LIGHT #3,4	1" PVC	ABOVE GROUND
C354	LIGHT JUNCTION #5,6	TRENCH	2" PVC	
C355	LIGHT JUNCTION #5,6	LIGHT #5,6	1" PVC	ABOVE GROUND
C357	SWITCH BOX #7	TRENCH	2" PVC	
C358	SWITCH BOX #7	LIGHT #7	1" PVC	ABOVE GROUND
C359	SWITCH BOX #8,9	TRENCH	2" PVC	
C360	SWITCH BOX #8,9	LIGHT #8,9	1" PVC	ABOVE GROUND
C363	SWITCH BOX #10,11	TRENCH	2" PVC	
C364	SWITCH BOX #10,11	LIGHT #10,11	1" PVC	ABOVE GROUND
C366	SWITCH BOX #12,13	TRENCH	2" PVC	
C367	SWITCH BOX #12,13	LIGHT #12,13	1" PVC	ABOVE GROUND

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Conduit Schedule

CONDUIT NO.	CONDUIT SCHEDULE		CONDUIT SIZE/TYPE	REMARKS
	FROM	TO		
C368	SWITCH BOX #14	TRENCH	2" PVC	
C369	SWITCH BOX #14	LIGHT #14	1" PVC	ABOVE GROUND
C370	240VAC 30A, RECEPTACLE No. 5	TRENCH	2" PVC	
C371	240VAC 50A, RECEPTACLE No. 6	TRENCH	2" PVC	
C375	MOBILE SUBSTATION JUNCTION BOX	TRENCH	2" PVC	
C376	MOBILE SUBSTATION JUNCTION BOX	TRENCH	2" PVC	
C384	FLOOD LIGHT SWITCH BOX #1	TRENCH	2" PVC	
C385	FLOOD LIGHT SWITCH BOX #1	FLOOD LIGHT #1,#2	1" PVC	ABOVE GROUND
C386	FLOOD LIGHT SWITCH BOX #3	TRENCH	2" PVC	
C387	FLOOD LIGHT SWITCH BOX #3	FLOOD LIGHT #3	1" PVC	ABOVE GROUND
C401	SECRUITY CAMERA SYSTEM POLE	TRENCH	2" PVC	
C402	SECRUITY CAMERA SYSTEM POLE	SECRUITY CAMERA SYSTEM POLE	2" PVC	
C403	SECRUITY CAMERA SYSTEM POLE	TRENCH	2" PVC	
C404	SECRUITY CAMERA SYSTEM POLE	SECRUITY CAMERA SYSTEM POLE	2" PVC	
C405	SECRUITY CARD READER	TRENCH	2" PVC	

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Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
221	**C101**	SUMP PUMP #1 AC POWER	SUMP PUMP #1 AC IN (MANHOLE #1)	AC PANEL No. 2	4/C, #10	
222	**C102**	SUMP PUMP #2 AC POWER	SUMP PUMP #2 AC IN (MANHOLE #2)	AC PANEL No. 2	4/C, #10	
223	**C103**	SUMP PUMP #3 AC POWER	SUMP PUMP #3 AC IN (MANHOLE #3)	AC PANEL No. 2	4/C, #10	
232	**C300**	240VAC STA. SERVICE NO. 1	STA. SERVICE TRANSFORMER No. 1	METER BASE No. 1	3-1/C,#4/0	
232A	**C301**	240VAC STA. SERVICE NO. 1	METER BASE No. 1	STA. SERVICE No.1 DISCONNECT	3-1/C,#4/0	
233	**C302**	240VAC STA. SERVICE NO. 1	STA. SERVICE No.1 DISCONNECT	AUTO TRANSFER SWITCH	3-1/C,#4/0	
234A	**C105**	240VAC SUPPLY	OFFSITE STA. SERVICE DISCONNECT	AUTO TRANSFER SWITCH	3-1/C,#4/0	
235	N/A	240VAC SUPPLY DUCT	AUTO TRANSFER SWITCH	240VAC SPLICE IN DUCT	3-1/C,#4/0	NOTE 19
235	N/A	240VAC SUPPLY DUCT	AC PANEL No.1, MAIN	240VAC SPLICE IN DUCT	3-1/C,#4/0	NOTE 19
235	N/A	240VAC SUPPLY DUCT	AC PANEL No.2, MAIN	240VAC SPLICE IN DUCT	3-1/C,#4/0	NOTE 19
241	N/A	120VAC- BUILDING LIGHTS	AC PANEL No. 2	BUILDING LIGHTS	3-1/C, #12	NOTE 19
242	N/A	120VAC- BLDG EMERGENCY LIGHT	AC PANEL No. 2	BUILDING EMERGENCY LIGHTS	3-1/C, #12	NOTE 19
243	N/A	120VAC- BATTERY ROOM LIGHTS	AC PANEL No. 2	BATTERY ROOM LIGHTS	3-1/C, #12	NOTE 19
244	N/A	120VAC- BUILDING RECEPTACLES	AC PANEL No. 2	BUILDING RECEPTACLES No.2	3-1/C, #12	NOTE 19
245	N/A	120VAC- BUILDING RECEPTACLES	AC PANEL No. 2	BUILDING RECEPTACLES No.1	3-1/C, #12	NOTE 19
246	N/A	240VAC- BATTERY ROOM HEATER	AC PANEL No. 1	BATTERY ROOM HVAC	3-1/C, #12	NOTE 19
247	N/A	120VAC- BATTERY ROOM FAN	AC PANEL No. 2	BATTERY ROOM FAN	3-1/C, #12	NOTE 19
248	N/A	240VAC- BUILDING HVAC	AC PANEL No. 1	BUILDING HVAC	3-1/C, #8	NOTE 19
249	N/A	120VAC- SWITCHBOARD No. S1	AC PANEL No. 1	SWBD #1	4/C, #10	NOTE 19
250	N/A	120VAC- SWITCHBOARD No. S2	AC PANEL No. 1	SWBD #2	4/C, #10	NOTE 19
251	N/A	120VAC- BLDG FLOOD LIGHTS	AC PANEL No. 2	BUILDING FLOOD LIGHTS	4/C, #10	NOTE 19
252	N/A	120VAC- BLDG EMERGENCY LIGHT	AC PANEL No. 2	BATTERY ROOM EMERGENCY LTS	3-1/C, #12	NOTE 19
265	**C345**	120VAC- SUMP PUMP AC POWER	AC PANEL No. 1	SUMP PUMP No. 1 AC IN	4/C,#10	NOTE 14
266	**C345**	120VAC- SUMP CONTROLLER AC	AC PANEL No. 1	SUMP PUMP No. 1 CONTROLLER AC IN	4/C,#10	NOTE 14
287	N/A	120VAC- SWITCHBOARD No. S3	AC PANEL No. 1	SWBD #3	4/C, #10	NOTE 14
288	N/A	120VAC- SWITCHBOARD No. S4	AC PANEL No. 1	SWBD #4	4/C, #10	NOTE 19
301	N/A	120VAC- BATTERY CHARGER	AC PANEL No. 1	BATTERY CHARGER No. 1 AC INPUT	4/C, #10	NOTE 19
302	N/A	48VDC SUPPLY	BATTERY CHARGER No. 1 DC OUT	BATTERY BANK No. 1 TERMINALS	2/C, #10	NOTE 19
303	N/A	48VDC SUPPLY	BATTERY BANK No. 1 TERMINALS	DC PANEL No.1	2-1/C, #4/0	NOTE 19
304	N/A	48VDC SUPPLY	DC PANEL No.1	SWBD #1	2/C, #10	NOTE 15
305	N/A	48VDC SUPPLY	DC PANEL No.1	SWBD #2	2/C, #10	NOTE 15
306	N/A	BATTERY CHARGER ALARMS	BATTERY CHARGER	SWBD #4	4/C, #16	NOTE 19, 17
308	N/A	48VDC SUPPLY	DC PANEL No.1	SWBD #3	2/C, #10	NOTE 15
309	N/A	48VDC SUPPLY	DC PANEL No.1	SWBD #4	2/C, #10	NOTE 15
340	TRAY	STATION SERV. TRANSFER ALARM	STA. SERVICE TRANSFER SWITCH	SWBD #4	4/C, #16	NOTE 19
341	TRAY	DOOR ALARMS	DOOR SWITCH JUNCTION BOX	SWBD #4	4/C, #16	NOTE 19
351	**C180**	PWC-F SITE1, UPSTREAM	OUTSIDE FIBER JUNCTION BOX	SWBD #4, PATCH PANEL No. PP1	SM OSP CABLE	NOTE 20,23,24
352	**C180**	PWC-F SITE2, DOWNSTREAM	OUTSIDE FIBER JUNCTION BOX	SWBD #4, PATCH PANEL No. PP1	SM OSP CABLE	NOTE 20,23,24
1100	**C201**	AC POWER SUPPLY	69KV LINE BKR 52-T1	AC PANEL No.1	4/C #10	NOTE 14
1101	**C201**	DC POWER SUPPLY	69KV LINE BKR 52-T1	DC PANEL No.1	2- 1/C #6	NOTE 15
1103	**C202**	CONTROL	69KV LINE BKR 52-T1	TERMINATION CABINET	12/C #10	NOTE 17
1103A	N/A	CONTROL	TERMINATION CABINET	SWBD #1	12/C #10	NOTE 17

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Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
1104	**C203**	LINE PRI RELAY CT'S	69KV LINE BKR 52-T1	TERMINATION CABINET	4/C #10	NOTE 16
1104A	N/A	LINE PRI RELAY CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1105	**C203**	CONTROL/ INDICATION	69KV LINE BKR 52-T1	TERMINATION CABINET	12/C #10	NOTE 17
1105A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #1	12/C #10	NOTE 17
1106	**C204**	INDICATION	69KV LINE BKR 52-T1	TERMINATION CABINET	12/C #14	NOTE 17
1106A	N/A	INDICATION	TERMINATION CABINET	SWBD #1	12/C #14	NOTE 17
1107	**C204**	INDICATION	69KV LINE BKR 52-T1	TERMINATION CABINET	12/C #14	NOTE 17
1107A	N/A	INDICATION	TERMINATION CABINET	SWBD #1	12/C #14	NOTE 17
	C205	SPARE	69KV LINE BKR 52-T1	TRENCH		
1120	**C211**	AC POWER SUPPLY	No.1 TRANSFORMER	AC PANEL No.1	3/C, #6	NOTE 14
1121	**C211**	DC POWER SUPPLY	No.1 TRANSFORMER	DC PANEL No.1	4/C #10	NOTE 15
1122	**C212**	L.V. BANK RELAY CT'S	No.1 TRANSFORMER	TERMINATION CABINET	4/C #10	NOTE 16
1122A	N/A	L.V. BANK RELAY CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1123	**C212**	L.V. METERING CT's	No.1 TRANSFORMER	TERMINATION CABINET	4/C #10	NOTE 16
1123A	N/A	L.V. METERING CT's	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1124	**C213**	H.V. BANK RELAY CT'S	No.1 TRANSFORMER	TERMINATION CABINET	4/C #10	NOTE 16
1124A	N/A	H.V. BANK RELAY CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1125	**C213**	X0 RELAY CT	No.1 TRANSFORMER	TERMINATION CABINET	2/C #10	NOTE 16
1125A	N/A	X0 RELAY CT	TERMINATION CABINET	SWBD #1	2/C #10	NOTE 16
1126	**C214**	SPARE	No.1 TRANSFORMER	TERMINATION CABINET	12/C #14	NOTE 17
1126A	N/A	SPARE	TERMINATION CABINET	SWBD #1	12/C #14	NOTE 17
1127	**C214**	LTC VOLTAGE REDUCTION	No.1 TRANSFORMER	TERMINATION CABINET	12/C #10	NOTE 17
1127A	N/A	LTC VOLTAGE REDUCTION	TERMINATION CABINET	SWBD #1	12/C #10	NOTE 17
1128	**C215,C293**	LTC CONTROL POTENTIAL	No.1 TRANSFORMER	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1129	**C215**	CONTROL/ INDICATION	No.1 TRANSFORMER	TERMINATION CABINET	12/C, #14	NOTE 17
1129A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #1	12/C, #14	NOTE 17
1130	**C216**	SCADA, ETM2, ATC2	No.1 TRANSFORMER	SWBD #4, PP3, A1-A6	FIBER-PT	NOTE 20,22,23
1131	**C216**	TRIP	No.1 TRANSFORMER	TERMINATION CABINET	12/C, #10	NOTE 17
1131A	N/A	TRIP	TERMINATION CABINET	SWBD #1	12/C, #10	NOTE 17
	C217	SPARE	No.1 TRANSFORMER	TRENCH		
1141	**C221**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F1	AC PANEL No.1	4/C #10	NOTE 14
1142	**C221**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F1	DC PANEL No.1	2- 1/C #6	NOTE 15
1143	**C222**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F1	TERMINATION CABINET	12/C #10	NOTE 17
1143A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #10	NOTE 17
1144	**C222,C291**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F1	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1145	**C223**	SCADA, PM	FEEDER BREAKER No. 52-F1	SWBD #4, PP3, B1-B6	FIBER-PT	NOTE 20,22,23
1146	**C223**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F1	TERMINATION CABINET	12/C #14	NOTE 17
1146A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #14	NOTE 17
1147	**C224**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F1	TERMINATION CABINET	4/C #10	NOTE 16
1147A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1148	**C224**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F1	TERMINATION CABINET	4/C #10	NOTE 16
1148A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #2	4/C #10	NOTE 16
	C225	SPARE	FEEDER BREAKER No. 52-F1	TRENCH		
1151	**C231**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F2	AC PANEL No.1	4/C #10	NOTE 14
1152	**C231**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F2	DC PANEL No.1	2- 1/C #6	NOTE 15
1153	**C232**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F2	TERMINATION CABINET	12/C #10	NOTE 17
1153A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #10	NOTE 17
1154	**C232,C291**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F2	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1155	**C233**	SCADA, PM	FEEDER BREAKER No. 52-F2	SWBD #4, PP3, B7-B12	FIBER-PT	NOTE 20,22,23
1156	**C233**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F2	TERMINATION CABINET	12/C #14	NOTE 17
1156A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #14	NOTE 17
1157	**C234**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F2	TERMINATION CABINET	4/C #10	NOTE 16
1157A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1158	**C234**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F2	TERMINATION CABINET	4/C #10	NOTE 16
1158A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #3	4/C #10	NOTE 16
	C235	SPARE	FEEDER BREAKER No. 52-F2	TRENCH		
1161	**C241**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F3	AC PANEL No.1	4/C #10	NOTE 14
1162	**C241**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F3	DC PANEL No.1	2- 1/C #6	NOTE 15
1163	**C242**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F3	TERMINATION CABINET	12/C #10	NOTE 17

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Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
1163A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #10	NOTE 17
1164	**C242,C291**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F3	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1165	**C243**	SCADA, PM	FEEDER BREAKER No. 52-F3	SWBD #4, PP3,C1-C6	FIBER-PT	NOTE 20,22,23
1166	**C243**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F3	TERMINATION CABINET	12/C #14	NOTE 17
1166A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #14	NOTE 17
1167	**C244**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F3	TERMINATION CABINET	4/C #10	NOTE 16
1167A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1168	**C244**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F3	TERMINATION CABINET	4/C #10	NOTE 16
1168A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #2	4/C #10	NOTE 16
	C245	SPARE	FEEDER BREAKER No. 52-F3	TRENCH		
1171	**C251**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F4	AC PANEL No.1	4/C #10	NOTE 14
1172	**C251**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F4	DC PANEL No.1	2- 1/C #6	NOTE 15
1173	**C252**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F4	TERMINATION CABINET	12/C #10	NOTE 17
1173A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #10	NOTE 17
1174	**C252,C292**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F4	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1175	**C253**	SCADA, PM	FEEDER BREAKER No. 52-F4	SWBD #4, PP3, C7-C12	FIBER-PT	NOTE 20,22,23
1176	**C253**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F4	TERMINATION CABINET	12/C #14	NOTE 17
1176A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #14	NOTE 17
1177	**C254**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F4	TERMINATION CABINET	4/C #10	NOTE 16
1177A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1178	**C254**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F4	TERMINATION CABINET	4/C #10	NOTE 16
1178A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #3	4/C #10	NOTE 16
	C255	SPARE	FEEDER BREAKER No. 52-F4	TRENCH		
1181	**C261**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F5	AC PANEL No.1	4/C #10	NOTE 14
1182	**C261**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F5	DC PANEL No.1	2- 1/C #6	NOTE 15
1183	**C262**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F5	TERMINATION CABINET	12/C #10	NOTE 17
1183A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #10	NOTE 17
1184	**C262,C292**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F5	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1185	**C263**	SCADA, PM	FEEDER BREAKER No. 52-F5	SWBD #4, PP3, D1-D6	FIBER-PT	NOTE 20,22,23
1186	**C263**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F5	TERMINATION CABINET	12/C #14	NOTE 17
1186A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #2	12/C #14	NOTE 17
1187	**C264**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F5	TERMINATION CABINET	4/C #10	NOTE 16
1187A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1188	**C264**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F5	TERMINATION CABINET	4/C #10	NOTE 16
1188A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #2	4/C #10	NOTE 16
	C265	SPARE	FEEDER BREAKER No. 52-F5	TRENCH		
1191	**C271**	AC POWER SUPPLY	FEEDER BREAKER No. 52-F6	AC PANEL No.1	4/C #10	NOTE 14
1192	**C271**	DC POWER SUPPLY	FEEDER BREAKER No. 52-F6	DC PANEL No.1	2- 1/C #6	NOTE 15
1193	**C272**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F6	TERMINATION CABINET	12/C #10	NOTE 17
1193A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #10	NOTE 17
1194	**C272,C292**	RELAY/ METERING POTENTIAL	FEEDER BREAKER No. 52-F6	15KV BUS No. 1 VT JCT BOX	4/C #10	NOTE 16
1195	**C273**	SCADA, PM	FEEDER BREAKER No. 52-F6	SWBD #4, PP3, D7-D12	FIBER-PT	NOTE 20,22,23
1196	**C273**	CONTROL/ INDICATION	FEEDER BREAKER No. 52-F6	TERMINATION CABINET	12/C #14	NOTE 17
1196A	N/A	CONTROL/ INDICATION	TERMINATION CABINET	SWBD #3	12/C #14	NOTE 17
1197	**C274**	DIFFERENTIAL CT'S	FEEDER BREAKER No. 52-F6	TERMINATION CABINET	4/C #10	NOTE 16
1197A	N/A	DIFFERENTIAL CT'S	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1198	**C274**	OVERCURRENT CT'S	FEEDER BREAKER No. 52-F6	TERMINATION CABINET	4/C #10	NOTE 16
1198A	N/A	OVERCURRENT CT'S	TERMINATION CABINET	SWBD #3	4/C #10	NOTE 16
	C275	SPARE	FEEDER BREAKER No. 52-F6	TRENCH		
1210	**C290**	15KV BUS POTENTIAL FROM VT	15KV BUS No. 1 VT JCT BOX	15KV BUS VT- VA, VB, VC, VN	4/C #10	NOTE 16
1211	**C293**	15KV BUS POTENTIAL TO DEVICES	15KV BUS No. 1 VT JCT BOX	TERMINATION CABINET	4/C #10	NOTE 16
1211A	N/A	15KV BUS POTENTIAL TO DEVICES	TERMINATION CABINET	SWBD #1	4/C #10	NOTE 16
1212	**C293**	15KV BUS POTENTIAL TO DEVICES	15KV BUS No. 1 VT JCT BOX	TERMINATION CABINET	4/C #10	NOTE 16

DRAWING: 12510C3

Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
1212A	N/A	15KV BUS POTENTIAL TO DEVICES	TERMINATION CABINET	SWBD #2	4/C #10	NOTE 16
1213	**C293**	15KV BUS POTENTIAL TO DEVICES	15KV BUS No. 1 VT JCT BOX	TERMINATION CABINET	4/C #10	NOTE 16
1213A	N/A	15KV BUS POTENTIAL TO DEVICES	TERMINATION CABINET	SWBD #3	4/C #10	NOTE 16
1221	**C346**	SUMP PUMP NO. 1 ALARMS (OIL CONTAINMENT)	SUMP PUMP No. 1 ALARMS OUT	TERMINATION CABINET	4/C, #16	
1221A	N/A	SUMP PUMP NO. 1 ALARMS (OIL CONTAINMENT)	TERMINATION CABINET	SWBD #4	4/C, #16	
1261	**C341**	120VAC- YARD RECEPTACLE No.1	AC PANEL No. 2	YARD RECEPTACLE No. 1	4/C,#10	NOTE 14
1262	**C342**	120VAC- YARD RECEPTACLE No.2	AC PANEL No. 2	YARD RECEPTACLE No. 2	4/C,#10	NOTE 14
1263	**C343**	120VAC- YARD RECEPTACLE No.3	AC PANEL No. 2	YARD RECEPTACLE No. 3	4/C,#10	NOTE 14
1264	**C344**	120VAC- YARD RECEPTACLE No.4	AC PANEL No. 2	YARD RECEPTACLE No. 4	4/C,#10	NOTE 14
1267A	**C386**	120VAC- FLOOD LIGHTS #3	AC PANEL No. 1	FLOOD LIGHT SWITCH BOX No. 3	4/C,#10	NOTE 14
1267B	**C386**	120VAC- FLOOD LIGHTS #3	FLOOD LIGHT SWITCH BOX No. 3	FLOOD LIGHT No. 3	4/C,#10	NOTE 14
1267C	**C384**	120VAC- FLOOD LIGHTS #1,2	FLOOD LIGHT SWITCH BOX No. 3	FLOOD LIGHT SWITCH BOX No. 1,2	4/C,#10	NOTE 14
1267D	**C385**	120VAC- FLOOD LIGHTS #1,2	FLOOD LIGHT SWITCH BOX No. 1,2	FLOOD LIGHT No. 1,2	4/C,#10	NOTE 14
1268	**C348**	120VAC- BAY 1- LIGHTS #1,2	AC PANEL No. 1	SWITCH BOX No. 1,2	4/C,#10	NOTE 14
1269	**C350**	120VAC- BAY 1- LIGHTS #1,2	SWITCH BOX No. 1,2	LIGHT No. 1,2	4/C,#10	NOTE 14
1270	**C348, C351**	120VAC- BAY 1- LIGHTS #3,4	SWITCH BOX No. 1,2	SWITCH BOX No. 3,4	4/C,#10	NOTE 14
1271	**C353**	120VAC- BAY 1- LIGHTS #3,4	SWITCH BOX No. 3,4	LIGHT No. 3,4	4/C,#10	NOTE 14
1272	**C351,C354**	120VAC- BAY 1- LIGHTS #5,6	SWITCH BOX No. 3,4	SWITCH BOX No. 5,6	4/C,#10	NOTE 14
1273	**C355**	120VAC- BAY 1- LIGHTS #5,6	SWITCH BOX No. 5,6	LIGHTS No. 5,6	4/C,#10	NOTE 14
1274	**C354,C357**	120VAC- BAY 2- LIGHT #7	SWITCH BOX No. 5,6	SWITCH BOX No. 7	4/C,#10	NOTE 14
1275	**C358**	120VAC- BAY 2- LIGHT #7	SWITCH BOX No. 7	LIGHT No. 7	4/C,#10	NOTE 14
1276	**C359**	120VAC- BAY 1- LIGHT #8-9	AC PANEL No. 1	SWITCH BOX No. 8,9	4/C,#10	NOTE 14
1277	**C360**	120VAC- BAY 1- LIGHT #8-9	SWITCH BOX No. 8,9	LIGHT No. 8,9	4/C,#10	NOTE 14
1278	**C359,C363**	120VAC- BAY 2- LIGHTS #10,11	SWITCH BOX No. 8,9	SWITCH BOX No. 10,11	4/C,#10	NOTE 14
1279	**C364**	120VAC- BAY 2- LIGHTS #10,11	SWITCH BOX No. 10,11	LIGHT No. 10,11	4/C,#10	NOTE 14
1280	**C363,C366**	120VAC- BAY 3- LIGHTS #12,13	SWITCH BOX No. 10,11	SWITCH BOX No. 12,13	4/C,#10	NOTE 14
1281	**C367**	120VAC- BAY 3- LIGHTS #12,13	SWITCH BOX No. 12,13	LIGHTS No. 12,13	4/C,#10	NOTE 14
1282	**C366,C368**	120VAC -BAY 3- LIGHT #14	SWITCH BOX No. 12,13	SWITCH BOX No. 14	4/C,#10	NOTE 14
1283	**C369**	120VAC- BAY 3- LIGHT #14	SWITCH BOX No. 14	LIGHT No. 14	4/C,#10	NOTE 14
1284	**C347, C347A**	120VAC- HIGH SIDE LIGHTS #15,16	AC PANEL No. 1	LIGHTS No. 15,16	4/C,#10	NOTE 14
1285	**C370**	240VAC SUPPLY	AC PANEL No. 2	240VAC 30A, RECEPTACLE No. 5	4/C, #10	NOTE 14
1286	**C371**	240VAC SUPPLY	AC PANEL No. 2	240VAC 50A, RECEPTACLE No. 6	4/C, #8	NOTE 14
1289	**C376**	MOBILE SUB, SCADA	MOBILE SUBSTATION J-BOX	SWBD #4, PP3, A11-A12	FIBER-PT	NOTE 20,22,23
1290	**C375**	MOBILE SUB, CONTROL & ALARM	MOBILE SUBSTATION J-BOX	TERMINATION CABINET	12/C, #10	NOTE 17
1290A	N/A	MOBILE SUB, CONTROL & ALARM	TERMINATION CABINET	SWBD #1	12/C, #10	NOTE 17
1291	**C375**	DC POWER SUPPLY	MOBILE SUBSTATION J-BOX	DC PANEL No.1	4/C #10	NOTE 15

DRAWING: 12510C3

Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
1310	N/A	CNTL/ IND S1 TO S2	SWBD #1	SWBD #2	12/C #14	NOTE 17
1311	N/A	CNTL/ IND S1 TO S3	SWBD #1	SWBD #3	12/C #14	NOTE 17
1312	N/A	CNTL/ IND S1 TO S4	SWBD #1	SWBD #4	12/C #14	NOTE 17
1313	N/A	CNTL/ IND S2 TO S4	SWBD #2	SWBD #4	12/C #14	NOTE 17
1314	N/A	CNTL/ IND S3 TO S4	SWBD #3	SWBD #4	12/C #14	NOTE 17
J24	N/A	IRIG TO 351S, 2,4,6	SWBD #4-CLK, IRIG T05	SWBD #2- F2-2, TEE	C953-25	NOTE 13
J25	N/A	IRIG TO 351S, 2,4,6	SWBD #2- F2-2, TEE	SWBD #2- F4-2, TEE	C953-6	NOTE 13
J26	N/A	IRIG TO 351S, 2,4,6	SWBD #2- F4-2, TEE	SWBD #2- F6-2, TEE	C953-6	NOTE 13
J27	N/A	IRIG TO 351S, 1,3,5	SWBD #2- F6-2, TEE	SWBD #3- F1-2, TEE	C953-15	NOTE 13
J28	N/A	IRIG TO 351S, 1,3,5	SWBD #3- F1-2, TEE	SWBD #3- F3-2, TEE	C953-6	NOTE 13
J29	N/A	IRIG TO 351S, 1,3,5	SWBD #3- F3-2, TEE	SWBD #3- F5-2	C953-6	NOTE 13
J30	N/A	IRIG TO T1P, T1BU, T1M	SWBD #4-CLK, IRIG T06	SWBD #1- T1-P TEE	C953-25	NOTE 13
J31	N/A	IRIG TO T1P TO T1BU	SWBD #1- T1-P TEE	SWBD #1- T1-BU TEE	C953-6	NOTE 13
J32	N/A	IRIG TO T1BU TO T1M	SWBD #1- T1-BU TEE	SWBD #1- T1-M IRIG IN	C953-6	NOTE 13
J33		CLK ANTENNA IN	SEL ANTENNA	SEL SURGE PROTECTOR	C961-025	NOTE 25
J34	TRAY	CLK ANTENNA IN	SEL SURGE PROTECTOR	SCADA SWBD #4- CLK, ANT	C961-050	NOTE 25
J35	N/A	IRIG TO RTAC	SWBD #4-CLK, IRIG T08	SCADA SWBD #4- RTAC, IRIG-B IN	C953-6	NOTE 13
J36	N/A	IRIG TO ICON1	SWBD #4-CLK, IRIG T07	SCADA SWBD #4- ICON1, IRIG-B	C953-6	NOTE 13
J37	N/A	IRIG TO DPAC	SWBD #4-CLK, IRIG T03	SCADA SWBD #4-DPAC, IRIG-B IN	C953-6	NOTE 13
J38	N/A	IRIG TO GW1	SWBD #4-CLK, IRIG T04	SCADA SWBD #4- GW1, IRIG-B IN	C953-6	NOTE 13
J41	N/A	FIBER JUMPER, PWC-F SITE1, UP	SWBD #4-ICON1, #1-AB	SWBD #4-PP1-A1/A2, SITE1	ZLC3S	NOTE 13
J42	N/A	FIBER JUMPER, PWC-F SITE2, DOWN	SWBD #4-ICON1, #2-AB	SWBD #4-PP1-B1/B2, SITE2	ZLC3S	NOTE 13
J43	N/A	SCADA, ETSW1 TO RTAC	SWBD #4-ETSW1, PORT8	SWBD #4-RTAC, ETH1	CA605C-008	NOTE 13
J44	N/A	SITE COMM, ICON1 TO GW1	SWBD #4-ICON1, #4-5	SWBD #4-GW1, ETH1	CA605C-008	NOTE 13
J45	N/A	SCADA, BATTERY CHARGER NO. 1	BATTERY CHARGER No. 1	SWBD #4, RTAC, PCI2-2	C605A-36	NOTE 13
J47	N/A	SCADA, TRANSFER SWITCH- 485	AUTOMATIC TRANSFER SWITCH	SWBD #4, RTAC, PCI2-4	C605A-50	NOTE 13
J48	N/A	SITE COMM, GW1 TO SWITCH	SWBD #4-ETSW3, PORT7	SWBD #4-GW1, ETH2	CA605C-008	NOTE 13
J49	N/A	NTP TIME, SYSTEM (ETHERNET)	SWBD #4-ETSW2, PORT 7	SWBD #4-CLK, ETH1	CA605C-004	NOTE 13
J50	N/A	SWITCH NETWORK (ETHERNET)	SWBD #4-ETSW1, PORT 7	SWBD #4-ETSW3, PORT 7	CA605C-008	NOTE 13
J51	N/A	SCADA, DPAC (ETHERNET)	SWBD #4-ETSW1, PORT 6	SWBD #4-DPAC-ETH1	CA605C-008	NOTE 13
J52	N/A	SWITCH NETWORK (ETHERNET)	SWBD #4-ETSW1, PORT 5	SWBD #4-ETSW2, PORT 5	CA605C-004	NOTE 13
J103	N/A	SCADA, IO_F1_2	SWBD #4, ETSW1, 19	SWBD #4, PP3, B3B4	ZLC2M	NOTE 13,19
J104	N/A	SCADA, IO_F2_2	SWBD #4, ETSW1, 20	SWBD #4, PP3, B9B10	ZLC2M	NOTE 13,19
J105	N/A	SCADA, IO_F3_2	SWBD #4, ETSW1, 21	SWBD #4, PP3, C3C4	ZLC2M	NOTE 13,19
J106	N/A	SCADA, IO_F4_2	SWBD #4, ETSW1, 22	SWBD #4, PP3, C9C10	ZLC2M	NOTE 13,19
J107	N/A	SCADA, IO_F5_2	SWBD #4, ETSW1, 23	SWBD #4, PP3, D3D4	ZLC2M	NOTE 13,19
J108	N/A	SCADA, IO_F6_2	SWBD #4, ETSW1, 24	SWBD #4, PP3, D9D10	ZLC2M	NOTE 13,19
J123	N/A	SCADA, 2411 BREAKER No. 52F1_2	52F1_2 PATCH PANEL (SPH01P)	IO_F1_2-PORT 1A	ZLC3M	NOTE 13,19
J124	N/A	SCADA, 2411 BREAKER No. 52F2_2	52F2_2 PATCH PANEL (SPH01P)	IO_F2_2-PORT 1A	ZLC3M	NOTE 13,19
J125	N/A	SCADA, 2411 BREAKER No. 52F3_2	52F3_2 PATCH PANEL (SPH01P)	IO_F3_2-PORT 1A	ZLC3M	NOTE 13,19
J126	N/A	SCADA, 2411 BREAKER No. 52F4_2	52F4_2 PATCH PANEL (SPH01P)	IO_F4_2-PORT 1A	ZLC3M	NOTE 13,19
J127	N/A	SCADA, 2411 BREAKER No. 52F5_2	52F5_2 PATCH PANEL (SPH01P)	IO_F5_2-PORT 1A	ZLC3M	NOTE 13,19
J128	N/A	SCADA, 2411 BREAKER No. 52F6_2	52F6_2 PATCH PANEL (SPH01P)	IO_F6_2-PORT 1A	ZLC3M	NOTE 13,19
J201	N/A	SCADA, ETM1_2	SWBD #4, ETSW1, 9	SWBD #4, PP3, A1A2	ZLC2M	NOTE 13,19
J202	N/A	SCADA, LTC1_2	SWBD #4, ETSW1, 10	SWBD #4, PP3, A3A4	ZLC2M	NOTE 13,19
J203	N/A	SCADA, PMF1_2	SWBD #4, ETSW1, 11	SWBD #4, PP3, B1B2	ZLC2M	NOTE 13,19

DRAWING: 12510C3

Cable Schedule

CABLE NO.	CONDUIT NO.	FUNCTION	CABLE SCHEDULE		CABLE WIRE NO. & SIZE	REMARKS
			FROM	TO		
J204	N/A	SCADA, PMF2_2	SWBD #4, ETSW1, 12	SWBD #4, PP3, B7B8	ZLC2M	NOTE 13,19
J205	N/A	SCADA, PMF3_2	SWBD #4, ETSW1, 13	SWBD #4, PP3, C1C2	ZLC2M	NOTE 13,19
J206	N/A	SCADA, PMF4_2	SWBD #4, ETSW1, 14	SWBD #4, PP3, C7C8	ZLC2M	NOTE 13,19
J207	N/A	SCADA, PMF5_2	SWBD #4, ETSW1, 15	SWBD #4, PP3, D1D2	ZLC2M	NOTE 13,19
J208	N/A	SCADA, PMF6_2	SWBD #4, ETSW1, 16	SWBD #4, PP3, D7D8	ZLC2M	NOTE 13,19
J209	N/A	SCADA, MOBILE	SWBD #4, ETSW1, 18	SWBD #4, PP3, A11A12	ZLC2M	NOTE 13,19
J211	N/A	SCADA, T1P	SWBD #4, ETSW2, 6	SWBD #1, T1P, PORT5	CA605C-19	NOTE 13,19
J212	N/A	SCADA, T1BU	SWBD #4, ETSW2, 9	SWBD #1, T1BU, PORT5	CA605C-19	NOTE 13,19
J213	N/A	SCADA, T1PM	SWBD #4, ETSW2, 10	SWBD #1, T1PM, PORT1	CA605C-19	NOTE 13,19
J214	N/A	SCADA, RELAY 52-1_2	SWBD #4, ETSW2, 11	SWBD #2, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J215	N/A	SCADA, RELAY 52-2_2	SWBD #4, ETSW2, 12	SWBD #3, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J216	N/A	SCADA, RELAY 52-3_2	SWBD #4, ETSW2, 13	SWBD #2, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J217	N/A	SCADA, RELAY 52-4_2	SWBD #4, ETSW2, 14	SWBD #3, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J218	N/A	SCADA, RELAY 52-5_2	SWBD #4, ETSW2, 15	SWBD #2, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J219	N/A	SCADA, RELAY 52-6_2	SWBD #4, ETSW2, 16	SWBD #3, 351S RELAY PORT5	CA605C-19	NOTE 13,19
J221	N/A	SCADA, TRANSFORMER T1 ETM	T1 PATCH PANEL (SPH01P)	ETM1_1,SEL-2414, PORT 5A	ZLC3M	NOTE 13,19
J222	N/A	SCADA, TRANSFORMER T1 LTC	T1 PATCH PANEL (SPH01P)	LTC1, PORT 5A	ZLC3M	NOTE 13,19
J223	N/A	SCADA, PM BREAKER No. 52F1_2	52F1_2 PATCH PANEL (SPH01P)	PMF1_2-PORT 5A	ZLC3M	NOTE 13,19
J224	N/A	SCADA, PM BREAKER No. 52F2_2	52F2_2 PATCH PANEL (SPH01P)	PMF2_2-PORT 5A	ZLC3M	NOTE 13,19
J225	N/A	SCADA, PM BREAKER No. 52F3_2	52F3_2 PATCH PANEL (SPH01P)	PMF3_2-PORT 5A	ZLC3M	NOTE 13,19
J226	N/A	SCADA, PM BREAKER No. 52F4_2	52F4_2 PATCH PANEL (SPH01P)	PMF4_2-PORT 5A	ZLC3M	NOTE 13,19
J227	N/A	SCADA, PM BREAKER No. 52F5_2	52F5_2 PATCH PANEL (SPH01P)	PMF5_2-PORT 5A	ZLC3M	NOTE 13,19
J228	N/A	SCADA, PM BREAKER No. 52F6_0	52F6_2 PATCH PANEL (SPH01P)	PMF6_2-PORT 5A	ZLC3M	NOTE 13,17
J229	N/A	SCADA, MOBILE XFRM	PATCH PANEL (SPH01P)	PMF5_2-PORT 5A	ZLC3M	NOTE 13,19
		END OF CABLE SCHEDULE	END OF CABLE SCHEDULE	END OF CABLE SCHEDULE		

DRAWING: 12510C3

FIBER PRE-TERM ORDER

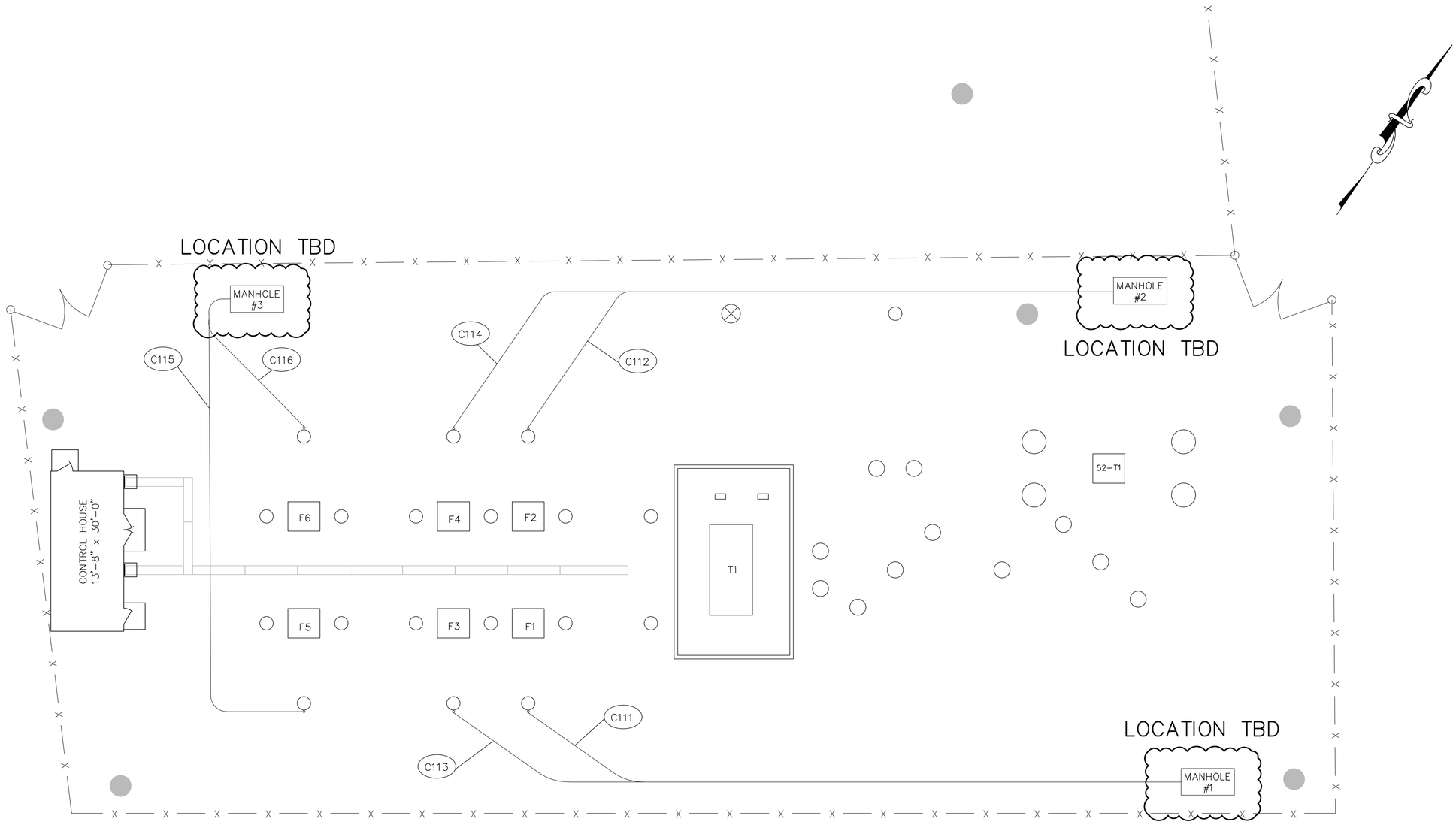
DETERMINING PRE-TERMINATED ASSEMBLY LENGTHS FOR ORDER:

1) SEE PRINTS FOR DETAILED CONNECTIONS. VERIFY "**CABLE NUMBER**" AND "**TO DEVICE**".
2) WRITE IN "**B- MEASURED PATH LENGTH**" AS ACTUALLY MEASURED.
3) CALCULATE "**E- ORDER LENGTH**" AS SHOWN.
4) ORDER ALL CABLES TOGETHER, TO ENSURE BULK CABLE AVAILABLE IN NEEDED QUANTITY.
5) SPECIFY LENGTH NEEDED PER ITEM ORDERED.
6) SPECIFY CABLE NUMBER (CABLE NUMBER IN THIS TABLE) FOR LABELS PER ITEM ORDERED.

Bank No. 1… **FIBER-PT**

CABLE NUMBER (SPECIFY IN ORDER)	TO DEVICE	A - LENGTH IN YARD CABINET	B - MEASURED PATH LENGTH (SEE NOTE BELOW)	C - TURN LOOP LENGTH	D - JUST-IN-CASE LENGTH	E - ORDER LENGTH: ADD A+B+C+D	ORDER PART NUMBER with 4 digit Length, Feet, and 4 digit Cable No. (SPECIFY IN ORDER)
1130	**TRANSFORMER**	**10 FEET**		**2 FEET**	**10 FEET**		
1145	**FEEDER No. 1 52F1**	**10 FEET**		**2 FEET**	**10 FEET**		
1155	**FEEDER No. 2 52F2**	**10 FEET**		**2 FEET**	**10 FEET**		
1165	**FEEDER No. 3 52F3**	**10 FEET**		**2 FEET**	**10 FEET**		
1175	**FEEDER No. 4 52F4**	**10 FEET**		**2 FEET**	**10 FEET**		
1185	**FEEDER No. 5 52F5**	**10 FEET**		**2 FEET**	**10 FEET**		
1195	**FEEDER No. 6 52F6**	**10 FEET**		**2 FEET**	**10 FEET**		
1289	**MOBILE TRANSFOMRER**	**5 FEET**		**2 FEET**	**10 FEET**		

NOTE: **B-MEASURED PATH LENGTH** - MEASURE FROM MOUTH OF CONDUIT INSIDE YARD CABINET THRU CONDUIT, TRENCH, TRAY, DROP INTO SWBD #4 THRU LEFT OR RIGHT CABLE OPENING, TO EDGE OF DESIGNATED PATCH PANEL. TAKE CARE TO ROUND CORNERS USING FIBER MINIMUM BEND RADIUS, NOT WITH SHARP BENDS.



CIRCUIT EXIT PLAN

SCALE: 3/32"=1'-0"

LEGEND

- (CXXX) CONDUITS
- PIERS AND FOUNDATIONS
- FENCE
- CABLE TRENCH
- INDICATES 2" PVC SCH. 40 CONDUIT TO BE INSTALLED 24" BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED.
- STATIC POLE WITH LIGHT FIXTURES
- SECURITY LED LIGHT FIXTURES
- CABLE TRENCH DRAIN CLEAN OUT
- OIL CONTAINMENT
- 5'-0" X 10'-0" MANHOLE

NOTES:

1. CONDUITS ARE SHOWN WITH AN OVAL SYMBOL AND A DESIGNATED CABLE NUMBER.
2. REFER TO CONDUIT & CABLE SCHEDULE FOR CONDUIT SIZE, CABLE INSTALLATION NOTES & CABLE COLOR CODES.

INSTALLATION INSTRUCTIONS:

1. INSTALL: (3) 5'-0" X 10'-0" MANHOLES, PWC TO SUPPLY. CONTRACTOR TO PICK UP AT PWC WAREHOUSE.

REFERENCE

CONDUIT DETAILS _____ 12513C2
FOUNDATION PLAN _____ 12513FP1

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
NC F-0221

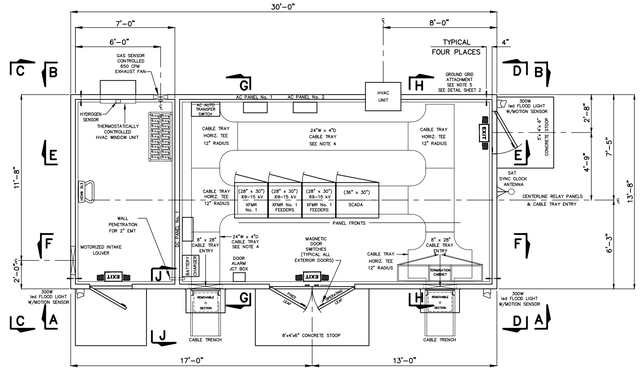
PRELIMINARY – DO NOT USE FOR CONSTRUCTION

NO.	REVISIONS	ENG.	DATE
A	ISSUED FOR BID	BWJ	05/05/23
B	ISSUED FOR BID	BWJ	01/10/24

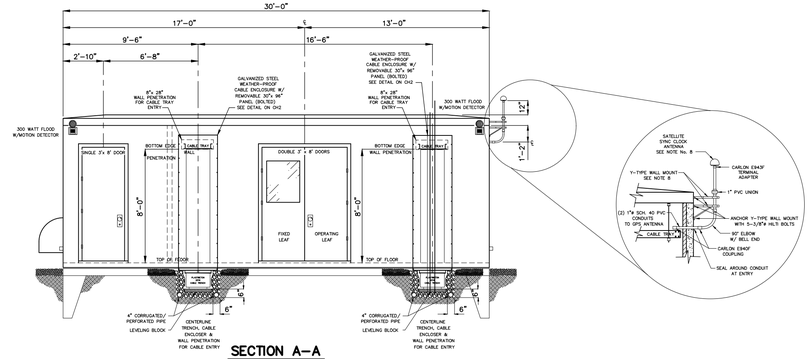
PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: CIRCUIT EXIT PLAN

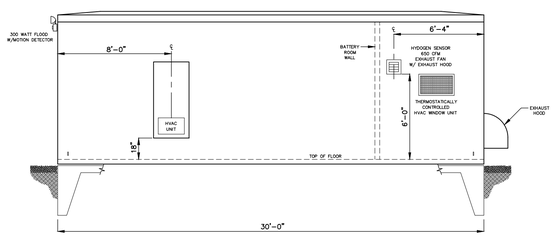
DRAWN BY:	AVS
CHECKED BY:	JG
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	3/32"=1'-0"
FILE NUMBER:	12513
SHEET:	CE1



PLAN VIEW
SCALE: 1/4"=1'-0"



SECTION A–A
SCALE: 1/4"=1'-0"



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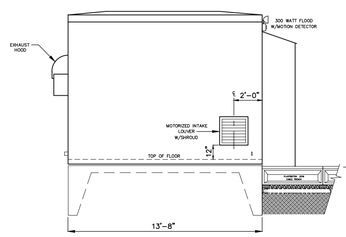

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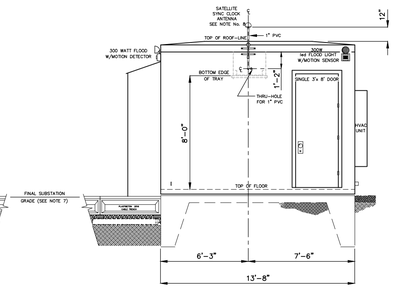
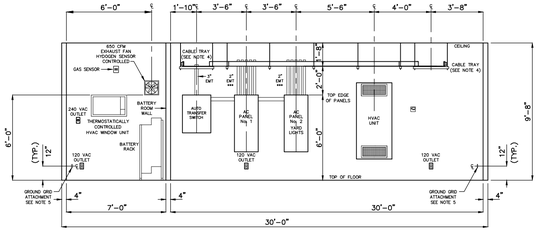


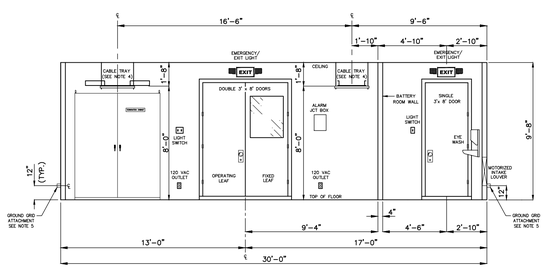
SECTION D–D
SCALE: 1/4"=1'-0"



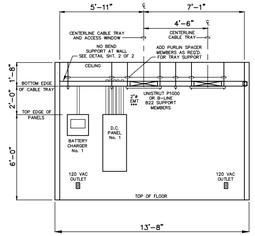
SECTION E–E
SCALE: 1/4"=1'-0"

*** BUILDING CONTRACTOR TO INSTALL AS MANY 2"ø EMT CONDUITS AS WILL PRACTICALLY FIT FROM TOP OF PANELS TO CABLE TRAY. SEE EMT TERMINATION DETAIL AT CABLE TRAY SHEET CH2 OF 2

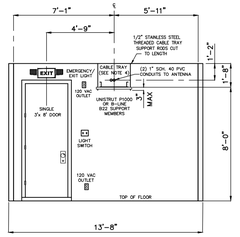
SUBSTATION CABLING TO BE RUN BY OTHERS



SECTION F–F
SCALE: 1/4"=1'-0"



SECTION G–G
SCALE: 1/4"=1'-0"



SECTION H–H
SCALE: 1/4"=1'-0"

LEGEND

- EXIT — led EMERGENCY EXIT LIGHTING UNIT WITH SELF-CONTAINED BATTERY AND CHARGING CIRCUIT.
- SINGLE RECEPTACLE 240V, GROUNDED.
- DUPLEX RECEPTACLE 120V, 20AMP, GROUNDED.

NOTES:

1. PANELS TO BE GROUNDED (VIA CABLE TRAY) TO SUBSTATION GRID AT TWO SEPARATE LOCATIONS ON DIAGONALLY OPPOSITE CORNERS. BONDING CONDUCTOR SHALL BE 2/0 AWG STRANDED COPPER.
2. ALL ENTRANCES TO BUILDING SHALL BEAR "NO SMOKING OR OPEN FLAME" WARNING SIGNS ON EXTERIOR.
3. BUILDING CONTRACTOR SHALL FURNISH AND INSTALL CONTROL HOUSE, CABLE TRAY, SUPPORT RODS, HVAC UNITS, AND COMPLETE ELECTRICAL WIRING FOR BUILDING OUTLETS, SWITCHES, RECEPTACLES, VENTILATION AND LIGHT FIXTURES.
4. CABLE TRAY STRAIGHT SECTIONS AND FITTINGS TO BE NEMA LOAD/SPAN RATING 12C, ALUMINUM LADDER-TYPE 24" WIDE, 3" DEEP W/4" RUNG SPACING, CHALFANT SYSTEM No "2A" OR APPROVED EQUAL.
5. HOUSE TO BE ATTACHED TO STATION GROUND GRID AT INDICATED CORNERS BY USE OF 1/4" x 3" COPPER BUS BAR, INSTALLED THROUGH WALL 12" ABOVE FLOOR LEVEL, 4-HOLE NEMA SPACING, INSIDE & OUT. SEE GROUNDING PAD DETAIL ON SHEET 2 OF 2.
6. ALL LIGHTING FOR CONTROL HOUSE SHALL BE led FIXTURES. THIS INCLUDES EXIT, EMERGENCY AND OUTDOOR FLOOD LIGHTING.
7. WHERE THE FINAL SUBSTATION GRADE IS DISTURBED DURING CONSTRUCTION, A TOTAL OF AT LEAST 6" OF STONE (3" OF WASHED STONE PLUS 3" OF CRUSHER RUN) IS TO BE ADDED BACK TO ACHIEVE FINAL SUBSTATION GRADE.
8. HOUSE FABRICATOR TO PROVIDE Y-TYPE STANDOFF BRACKET WITH MOUNTING BOLTS FOR ATTACHMENT OF THE SATELLITE SYNC CLOCK ANTENNA. THE ANTENNA AND COAX CABLE TO BE PROVIDED BY THE OWNER.

EARTHQUAKE DESIGN DATA FOR CONCRETE SHELTERS:

DESIGN OF THE BUILDING SHALL USE THE SEISMIC PROVISIONS OF ONE OF THE FOLLOWING CODES/STANDARDS:

- 2003 NFPA 5000 BUILDING CONSTRUCTION AND SAFETY CODE.
- 2002 AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7, *MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.*
- 2003 INTERNATIONAL CODE COUNCIL (ICC) *INTERNATIONAL BUILDING CODE.*

1. SEISMIC, IMPORTANCE FACTOR = 1.0 & OCCUPANCY CATEGORY = 1
2. MAPPED SPECTRAL RESPONSE ACCELERATIONS, SS = 1.85, S1 = 0.10
3. SITE CLASS = "D"
4. SPECTRAL RESPONSE COEFFICIENTS SDS = 1.24, SD1 = 0.19
5. SEISMIC DESIGN CATEGORY = D
6. ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE

THE MANUFACTURER OF THE BUILDING SHALL FURNISH DESIGN CERTIFICATIONS REQUIRED BY 7 CFR 1792.104 SEISMIC ACKNOWLEDGEMENTS.

REFERENCE:

PLAN VIEW	12513	GA1
FOUNDATION PLAN	12513	FP1, FP2
CONTROL HOUSE DETAILS	12513	CH2

PWC Fayetteville's HOME/TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
N.C.F.-0221

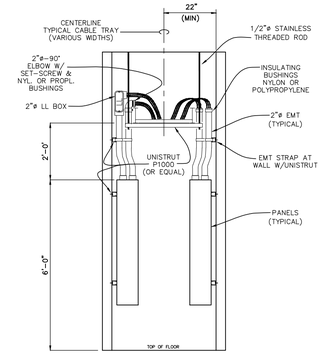
PRELIMINARY – DO NOT USE FOR CONSTRUCTION

NO.	REVISIONS	DATE	ENG.
A	ISSUED FOR BID	05/05/23	BWJ
B	ISSUED FOR BID	01/10/24	BWJ

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

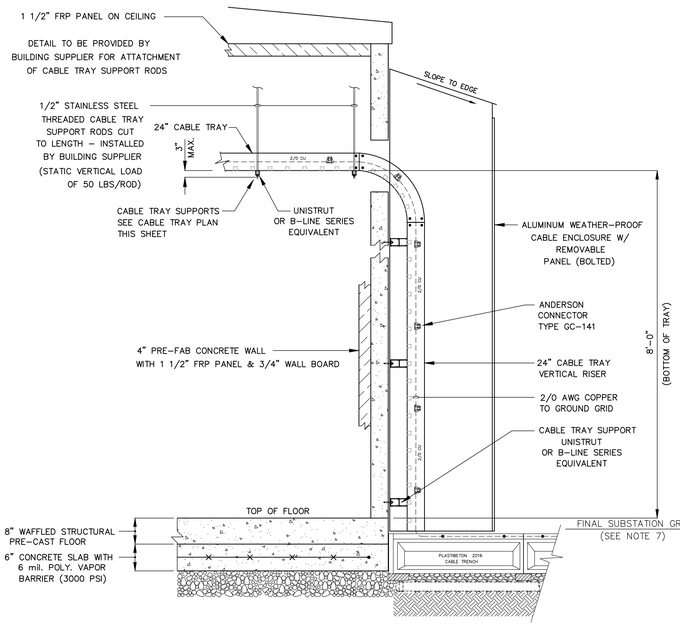
DRAWING TITLE: CONTROL HOUSE PLAN AND SECTIONS

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	3/16"=1'-0"
FILE NUMBER:	12513
SHEET:	CH1



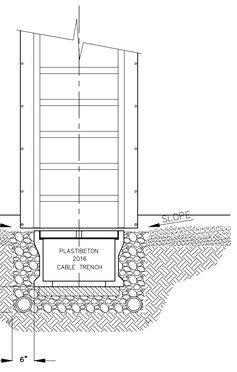
EMT TERMINATION DETAIL AT CABLE TRAY

SHOWING VARIOUS TERMINATION OPTIONS
SCALE: NONE



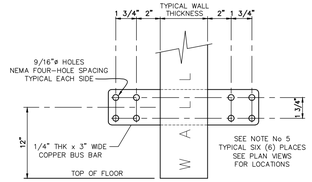
SECTION J–J

SCALE: NONE



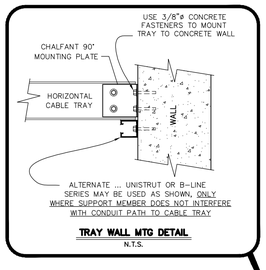
TRAY AT TRENCH

SCALE: NONE



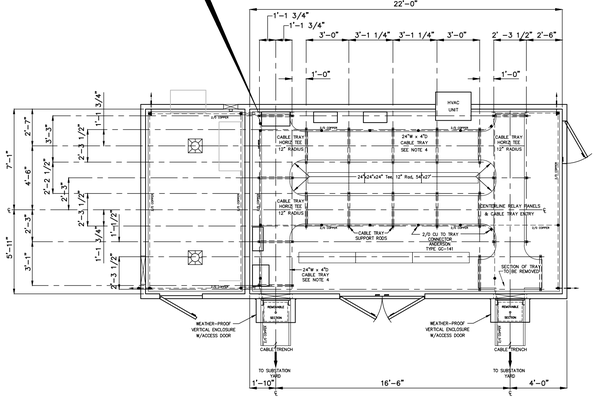
GROUNDING PAD DETAIL

SCALE: NONE



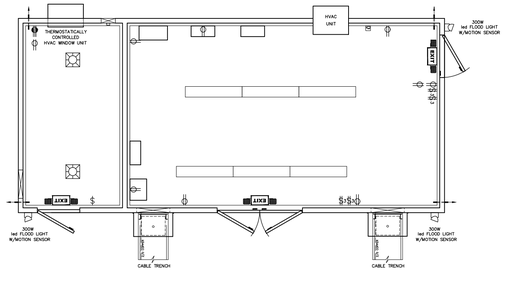
TRAY WALL MTG DETAIL

N.T.S.



CABLE TRAY PLAN

SCALE: 1/4"=1'-0"



ELECTRICAL PLAN

SCALE: 1/4"=1'-0"

ELECTRICAL LEGEND

$	SINGLE POLE TOGGLE SWITCH 20AMP, 120V.
$3	SINGLE POLE DOUBLE THROW 3–WAY TOGGLE SWITCH 20AMP, 120V.
	DUPLEX RECEPTACLE 120V, 20AMP
	SINGLE RECEPTACLE 240V, GROUNDED.
	TWO TUBE led FIXTURE 120V.
EXIT	led EMERGENCY EXIT LIGHTING UNIT WITH SELF–CONTAINED BATTERY AND CHARGING CIRCUIT.
T	THERMOSTAT
	120 V.A.C. 100 WATT EQUIVALENT led FIXTURE (EXPLOSION PROOF).
	120 V.A.C. 300 WATT EQUIVALENT led FLOOD LIGHT W/ MOTION SENSOR.
	THERMOSTAT
	MAGNETIC DOOR SWITCH

REFERENCE:

CONTROL HOUSE PLAN & SECTIONS. 12513 CH1
GROUNDING PLAN & DETAILS. 12513 G1, G2

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
NC F-0221

PRELIMINARY – DO NOT USE FOR CONSTRUCTION

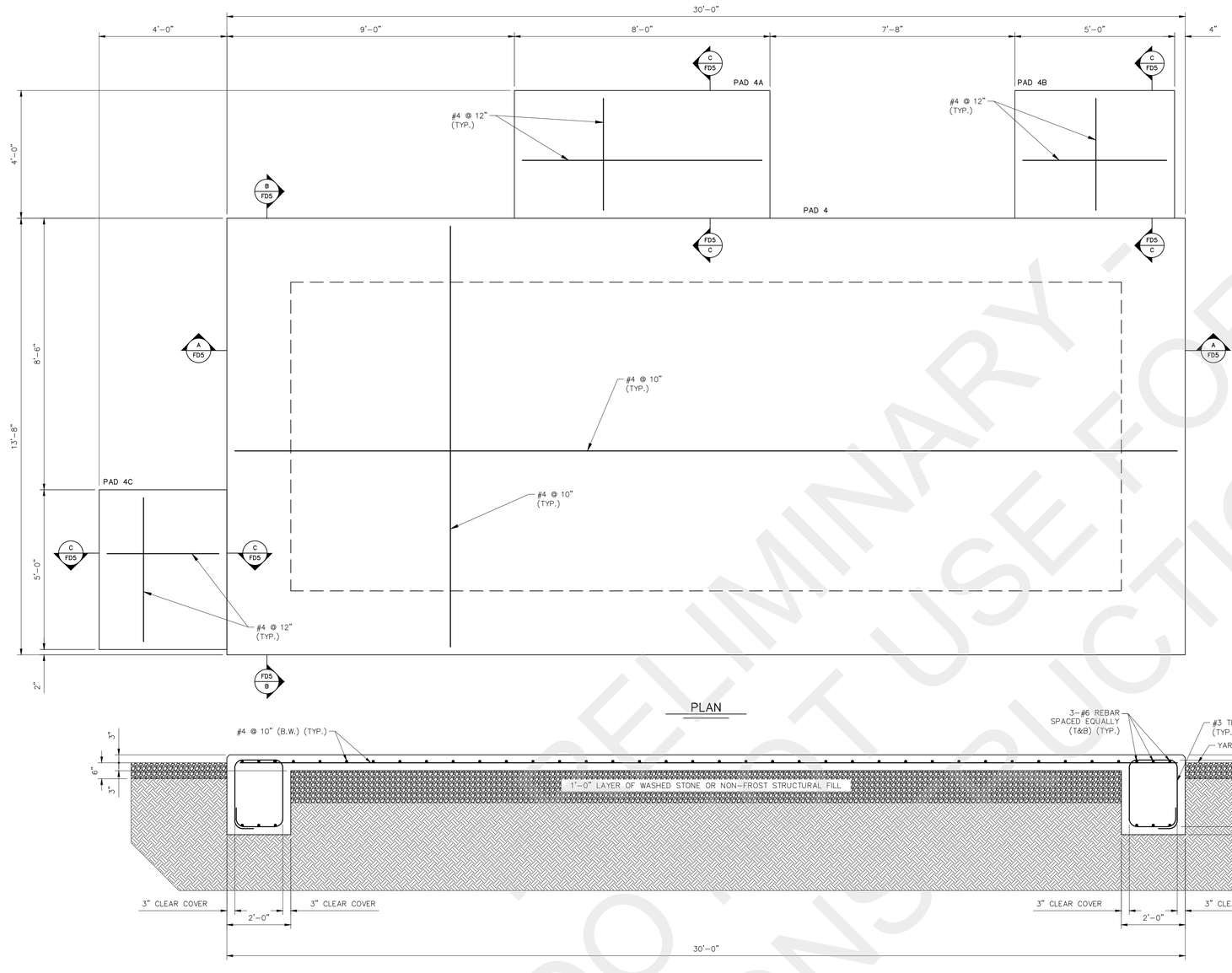
NO.	REVISIONS	ENG.	DATE
A	ISSUED FOR BID	BWJ	05/05/23
B	ISSUED FOR BID	BWJ	01/10/24

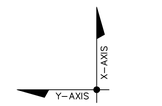
PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: CONTROL HOUSE PLAN AND DETAILS

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12513

SHEET: CH2



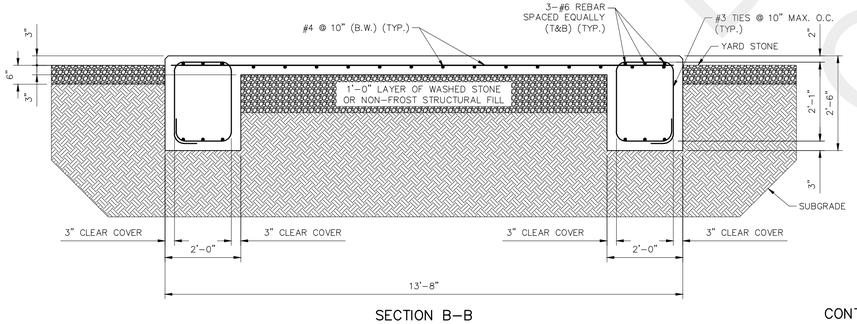


PAD 4 ORIENTATION

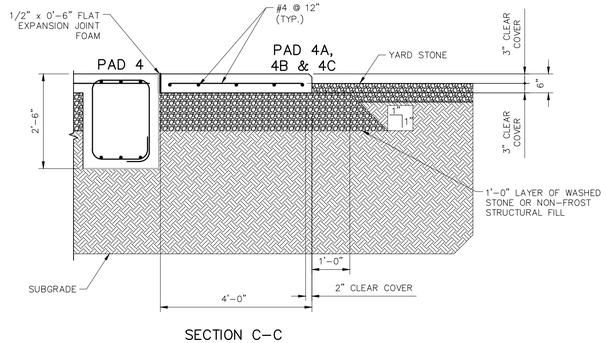
(SEE NOTES 12, 13 & 14)

PLAN

SECTION A-A



SECTION B-B



SECTION C-C

PAD 4
CONTROL HOUSE

SCALE: 1/2"=1'-0"

NOTES

1. THE FOUNDATION CONTRACTOR SHALL AT ALL TIMES FULLY COMPLY WITH ALL OSHA STANDARDS AS A MINIMUM, ESPECIALLY WITH REGARD TO SHORING OF ALL EXCAVATIONS. FAILURE TO COMPLY AT ALL TIMES WITH THESE STANDARDS WILL RESULT IN DISMISSAL FROM THE PROJECT.
2. THE FOUNDATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF OSHA STANDARDS. COPIES SHALL BE AVAILABLE ON SITE AT ALL TIMES DURING CONSTRUCTION.
3. BRACE EXCAVATIONS AS REQUIRED TO PREVENT SETTLEMENT OF EXISTING OR ADJACENT STRUCTURES.
4. ALL FOUNDATIONS TO BE CARRIED TO FIRM UNDISTURBED EARTH OR COMPACTED FILL.
5. WASHED STONE AND STRUCTURAL FILL SHALL BE COMPACTED AS SPECIFIED IN THE FOUNDATION SPECIFICATIONS.
6. REINFORCING STEEL SHALL BE GRADE 60 ASTM A615 OR ASTM A706.
7. CONCRETE SHALL BE 4500 P.S.I. @ 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED WITH AN AIR CONTENT BETWEEN FIVE AND SEVEN PERCENT (5%-7%).
8. CONCRETE SLUMP SHALL MEET REQUIREMENTS OF CONCRETE SPECIFICATIONS. THE CONTRACTOR SHALL MAKE OR HAVE MADE A MINIMUM OF ONE (1) SLUMP TEST IN ACCORDANCE WITH ASTM C 143 FOR EACH TRUCKLOAD OF CONCRETE DELIVERED.
9. CONCRETE CLEAR COVER TO REINFORCING STEEL SHALL BE TWO INCHES (2") MINIMUM UNLESS OTHERWISE NOTED.
10. ALL CONCRETE TO BE THOROUGHLY VIBRATED DURING PLACEMENT INTO FORMS TO ENSURE ALL VOIDS ARE FILLED.
11. ALL FOUNDATIONS SHALL BE CHAMFERED THREE QUARTERS OF AN INCH (3/4") AROUND ALL TOP EDGES, UNLESS SHOWN OTHERWISE.
12. TO DETERMINE ANCHOR BOLT SPACING, SEE ANCHOR BOLT PATTERN INDICATED. SEE FOUNDATION ANCHOR BOLT SUMMARY FOR DIAMETER, EMBEDMENT LENGTH, THREAD & HOOK REQUIREMENTS.
13. CAREFUL EXAMINATION OF ANCHOR BOLT ORIENTATION MUST BE MADE IN THAT AN X-AXIS & Y-AXIS SYSTEM HAS BEEN INDICATED ON BOTH FOUNDATION PLAN & DETAIL DRAWINGS TO ENSURE PROPER ORIENTATION.
14. ANCHOR BOLT SPACING & EQUIPMENT BASE PLATES SHALL BE VERIFIED TO BE CORRECT PRIOR TO POURING CONCRETE.
15. AFTER FABRICATION ALL BOLTS ARE TO BE HOT DIP GALVANIZED A MINIMUM OF TWO INCHES (2") PAST NOTED THREAD LENGTH.
16. SEE DRAWING FP1 FOR TOP OF FOUNDATION ELEVATIONS.
17. CONTRACTOR IS RESPONSIBLE TO COORDINATE INSTALLATION OF ANY CONDUITS LOCATED UNDERNEATH OR PROTRUDING THROUGH FOUNDATIONS. SEE CONDUIT PLAN AND DETAILS FOR CONDUIT LOCATIONS.
18. ALL CONDUITS, WHEN REQUIRED, ARE TO BE PLUGGED OR CAPPED DURING INITIAL CONSTRUCTION TO PREVENT CONTAMINATION.
19. A CONCRETE BONDING AGENT CONFORMING TO ASTM C1059, TYPE II, SHALL BE APPLIED TO ALL ROUGHENED SURFACES PRIOR TO PLACING FRESH CONCRETE.
20. BEFORE PLACING NEW CONCRETE AGAINST EXISTING CONCRETE THAT HAS SET, THE EXISTING CONCRETE SURFACE SHALL BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH.
21. THE CONTRACTOR SHALL PREPARE, OR HAVE PREPARED, IN ACCORDANCE WITH ASTM C-31, FIVE (5) TEST CYLINDERS FROM EACH TRUCKLOAD OF CONCRETE DELIVERED TO THE SITE. WITHIN 20-24 HOURS AFTER BEING PREPARED, THE CYLINDERS SHALL BE DELIVERED TO A QUALIFIED TESTING LABORATORY AND TESTED IN ACCORDANCE WITH THE CONCRETE SPECIFICATIONS AND ASTM C-39. TEST RESULTS ARE TO BE PROVIDED TO THE ENGINEER FOR EVALUATION AND DIRECTION OF CORRECTIVE ACTION IF NEEDED.
22. THE CONTRACTOR SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE CONCRETE SPECIFICATIONS.
23. REBAR SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL ENSURE SPACING AS NOTED.
24. ALL MAIN BAR HOOKS ARE STANDARD ACI 318 HOOKS UNLESS SHOWN OTHERWISE. ALL TIES HOOKS ARE STANDARD ACI 318 TIE HOOKS UNLESS SHOWN OTHERWISE.
25. CHAIRS, SUPPORTS, WIRE TIES, SPACERS, AND ALL HARDWARE REQUIRED TO TIE AND SUPPORT REINFORCEMENT CAGES AND ASSEMBLIES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
26. BACKFILL SHALL BE SELECT STONE (AASHTO No. 57 WASHED STONE) OR SELECT SAND (CLEAN SAND FREE OF ORGANIC DEBRIS).
27. BACKFILL MATERIAL SHALL BE PNEUMATICALLY TAMPED IN 6-INCH LIFTS.

REFERENCES

FOUNDATION PLAN 12513 FP1

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
2300 Rexwoods Drive, Suite 300, Raleigh NC 27607
NC F-1321

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

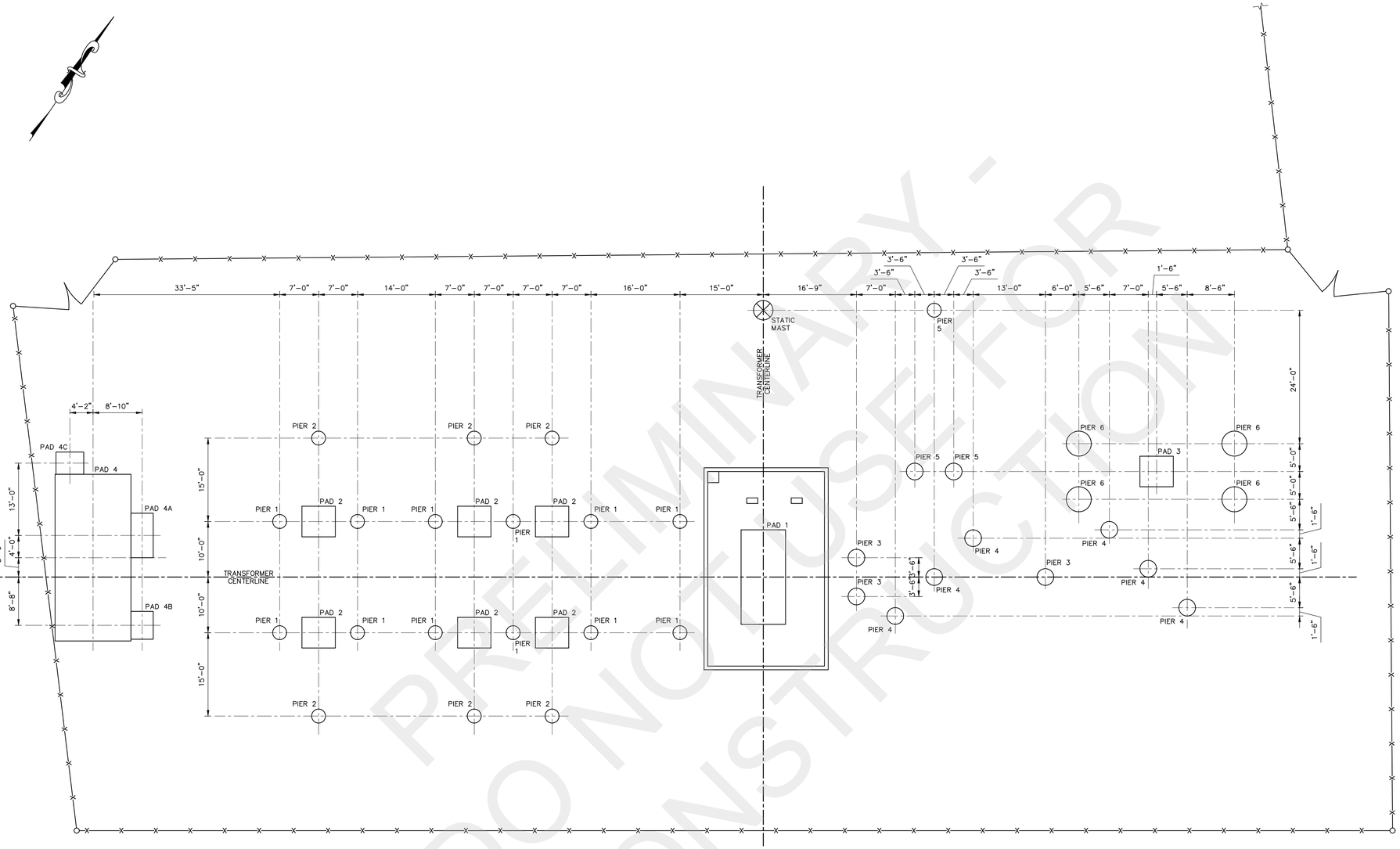
NO.	REVISIONS	ENG.	DATE
A	ISSUED FOR BID	RSD	10/11/2023
B	ISSUED FOR BID	RSD	01/10/2024

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: FOUNDATION DETAILS

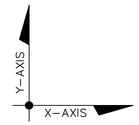
DRAWN BY:	DJD
CHECKED BY:	RSD
APPROVED BY:	RSD
DATE:	10/11/2023
SCALE:	1/2"=1'-0"
FILE NUMBER:	12513FD

SHEET: FD5



FOUNDATION PLAN

SCALE: 3/32" = 1'-0"



FOUNDATION ORIENTATION

NOTES

1. THE FOUNDATION CONTRACTOR SHALL AT ALL TIMES FULLY COMPLY WITH ALL OSHA STANDARDS AS A MINIMUM, ESPECIALLY WITH REGARD TO SHORING OF ALL EXCAVATIONS. FAILURE TO COMPLY AT ALL TIMES WITH THESE STANDARDS WILL RESULT IN DISMISSAL FROM THE PROJECT.
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4. ALL FOUNDATIONS TO BE CARRIED TO FIRM UNDISTURBED EARTH OR COMPACTED FILL.
5. WASHED STONE AND STRUCTURAL FILL SHALL BE COMPACTED AS SPECIFIED IN THE FOUNDATION SPECIFICATIONS.
6. REINFORCING STEEL SHALL BE GRADE 60 ASTM A615 OR ASTM A706.
7. CONCRETE SHALL BE 4500 P.S.I. @ 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED WITH AN AIR CONTENT BETWEEN FIVE AND SEVEN PERCENT (5%–7%).
8. CONCRETE SLUMP SHALL MEET REQUIREMENTS OF CONCRETE SPECIFICATIONS. THE CONTRACTOR SHALL MAKE OR HAVE MADE A MINIMUM OF ONE (1) SLUMP TEST IN ACCORDANCE WITH ASTM C 143 FOR EACH TRUCKLOAD OF CONCRETE DELIVERED.
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14. ANCHOR BOLT SPACING & EQUIPMENT BASE PLATES SHALL BE VERIFIED TO BE CORRECT PRIOR TO POURING CONCRETE.
15. AFTER FABRICATION ALL BOLTS ARE TO BE HOT DIP GALVANIZED A MINIMUM OF TWO INCHES (2") PAST NOTED THREAD LENGTH.
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REFERENCES

PLAN VIEW	12513 GA1
SECTIONS	12513 GA2–GA5
FOUNDATION DETAILS	12513 FD1–FD6
GROUNDING PLAN & DETAILS	12513 G1–G2
OIL CONTAINMENT PLAN & DETAILS	12513 OC1–OC3

LEGEND

NEW PIER TO BE INSTALLED

NEW PAD TO BE INSTALLED

FENCE

PWC Fayetteville's HOME/TOWN UTILITY

Booth & Associates
501 Glenwood Avenue, Raleigh NC 27612
NC F-0221

PRELIMINARY – DO NOT USE FOR CONSTRUCTION

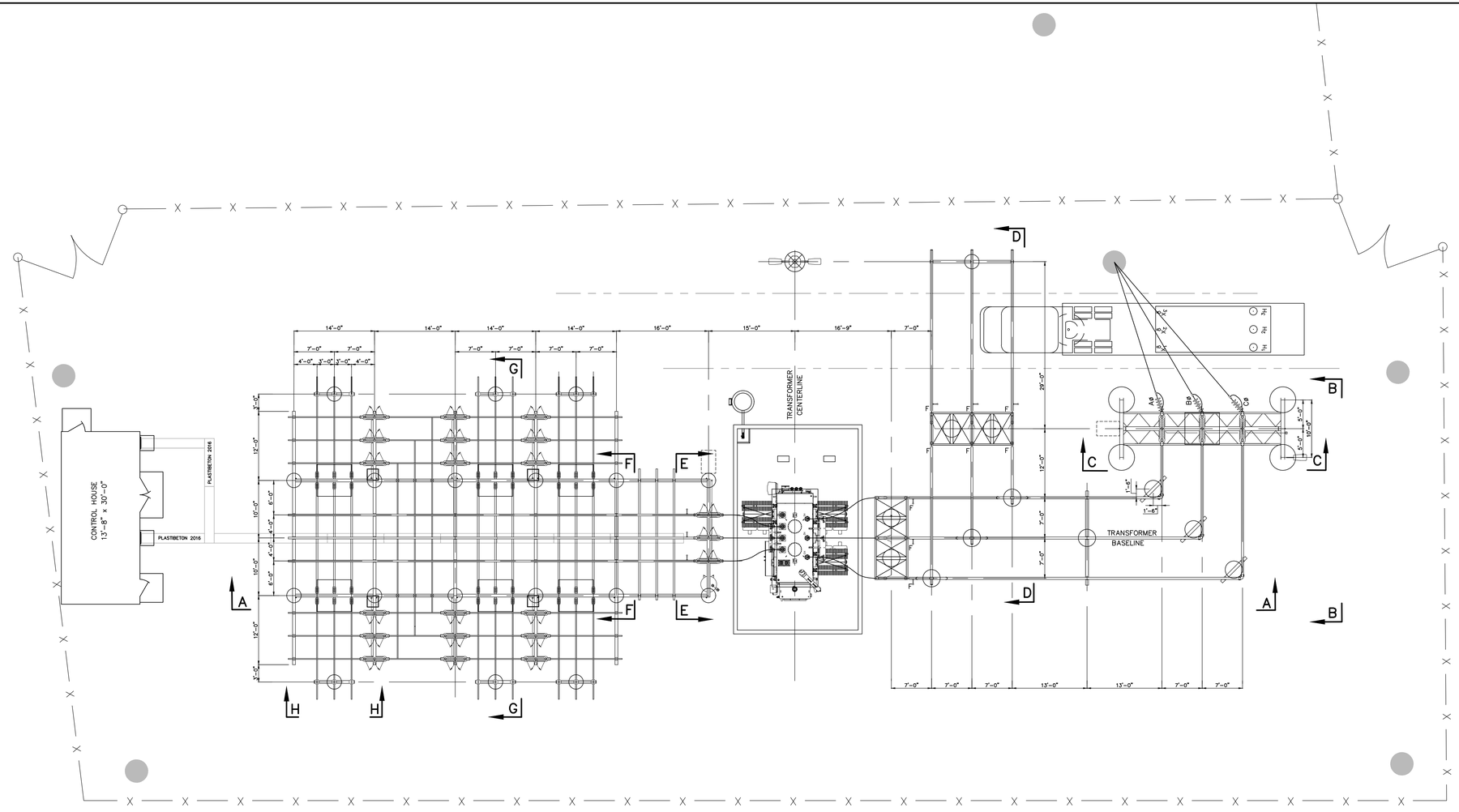
NO.	REVISIONS	ENG.	DATE
A	ISSUED FOR BID	RSD	10/11/2023
B	ISSUED FOR BID	RSD	01/10/2024

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: FOUNDATION PLAN

DRAWN BY:	DJD
CHECKED BY:	RSD
APPROVED BY:	RSD
DATE:	10/11/2023
SCALE:	3/32"=1'-0"
FILE NUMBER:	12513FP

SHEET: FP1



PLAN VIEW

SCALE: 3/32" = 1'-0"

STATION DESIGN DATA

STRUCTURE, APPARATUS AND LIGHTNING ARRESTERS ARE ALL GROUNDED TO THE SAME GROUNDING SYSTEM.
STATION DESIGNED FOR THE FOLLOWING ELECTRICAL CLEARANCES/SPACINGS:

RATED KV	BIL KV	RIGID BUS CONDUCTORS (IEEE, NEMA, NESC) CLEARANCE (1)				VERTICAL CLEARANCE OF UNGUARDED PARTS	GROUP-OPERATED SWITCHES (NEMA) ℄ TO ℄ SPACING (2)		
		PHASE TO PHASE ℄ TO ℄ (3)	METAL TO METAL (4)	PHASE TO GROUND (5)	CLEARANCE ABOVE GRADE (6)		HORN GAP VERT./HOR. BREAK	DISCONNECT VERTICAL BREAK	DISCONNECT HORIZONTAL BREAK
69	350	5'-0"	2'-7"	2'-6"	11'-0"	10'-5"	7'-0"	5'-0"	6'-0"
15	110	2'-0"	0'-12"	0'-10"	9'-0"	9'-0"	3'-0"	2'-0"	2'-6"

NOTES:
1. "CLEARANCE" IS DEFINED AS A SURFACE-TO-SURFACE MEASUREMENT.
2. "SPACING" IS DEFINED AS A ℄ TO ℄ MEASUREMENT.
3. INTENDED FOR PHASES ORIENTED IN PARALLEL RUNS.
4. INTENDED FOR NON-PARALLEL POINTS OF CROSSING.
5. EXCEEDS MIMIMUM CLEARANCES TO MATCH NEMA STANDARD POST INSULATOR DIMENSIONS.
6. ROUNDED UP TO THE NEAREST EVEN FOOT, PER NESC (2002). MEASURED FROM TOP OF EQUIPMENT FOUNDATIONS, IF SUITABLE FOR PEDESTRIAN ACCESS.

DEADEND STRUCTURE(S) SHALL WITHSTAND 0° TO 15° LINE TAKE-OFF IN ANY DIRECTION WITH A DESIGN LINE TENSION OF _____ POUNDS PER CONDUCTOR.
*A MINIMUM VERTICAL CLEARANCE OF 8'-6" SHALL BE MAINTAINED FOR ANY SURFACE OF INDETERMINATE POTENTIAL SUCH AS LIGHTNING ARRESTERS, UNGROUNDED SURFACES, BUSHINGS, AS PER NESC RULE 124.A.3.

CONDUCTOR/BUS AMPACITIES

CONDUCTOR	APPROX. CURRENT CARRYING CAPACITY*
TUBING, 4" NPS SCH. 80 AL.	3720 AMPS.
TUBING, 3" NPS SCH. 80 AL.	2760
TUBING, 2" NPS SCH. 80 AL.	1700
TUBING, 4" NPS SCH. 40 AL.	3165
TUBING, 3" NPS SCH. 40 AL.	2425
TUBING, 2" NPS SCH. 40 AL.	1465
ACSR, 1272 MCM, 26/7	1200
ACSR, 954 MCM, 26/7	1010
ACSR, 795 MCM, 26/7	900
ACSR, 336.4 MCM, 18/1	530
ACSR, 2/0 AWG, 6/1	340
ACSR, 1/0 AWG, 6/1	230
COPPER, 1000 MCM, 61 STD.	1285
COPPER, 750 MCM, 61 STD.	1075
COPPER, 500 MCM, 37 STD.	830
COPPER, 4/0 AWG, 7 STD.	480
COPPER, 2/0 AWG, 7 STD.	355
COPPER, #2 AWG, SOLID	231
UABC, 4" x 4" x 3/8"	3125
UABC, 4" x 4" x 1/4"	2625
AL, BAR 3" x 1/2"	1350
AL, BAR 3" x 1/4"	938
INSUL. 1/0 34.5KV J.C.N.	235

* AC. 60 HZ, 40° C AMBIENT, 50° C RISE HORIZONTAL ORIENTATION, OUTDOORS, WIND = 2 FPS

EQUIPMENT BOLT TORQUING TABLE

DIAMETER BOLT (INCHES)	RECOMMENDED TORQUE NON-LUBRICATED STEEL & SILICON BRONZE HARDWARE (FOOT*LBS)	RECOMMENDED TORQUE LUBRICATED HARDWARE & ALUMINUM HARDWARE (FOOT*LBS)
1/2"	40	25
5/8"	55	40
3/4"	70	60

INSTALLATION NOTES:

1. MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
2. EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.
3. CONTRACTOR TO BRING GRADE AROUND NEW A-FRAME UP TO MATCH FOUNDATION REVEALS TO ALLOW ACCESS TO BREAKER AND SWITCH OPERATORS.
4. MINOR GRADING TO BE DISCUSSED AT PRE-BID MEETING

LEGEND:

- STATIC POLE
- AREA LIGHTS
- F FIXED CONNECTION
- S SLIP FIT

REFERENCES

SITE PLAN _____ 12513 S1
SECTION VIEWS _____ 12513 GA2-GA4
DETAILS _____ 12513 GA5
FOUNDATION PLAN _____ 12513 FD1

PWC Fayetteville's HOME TOWN UTILITY

Booth & Associates
5811 Glenwood Avenue, Raleigh NC 27612
NC F-0221

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

NO.	REVISIONS	DATE	ENG.
A	ISSUED FOR BID	05/05/23	BWJ
B	ISSUED FOR BID	01/10/24	BWJ

PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: PLAN VIEW

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	3/32"=1'-0"
FILE NUMBER:	12513

SHEET: GA1