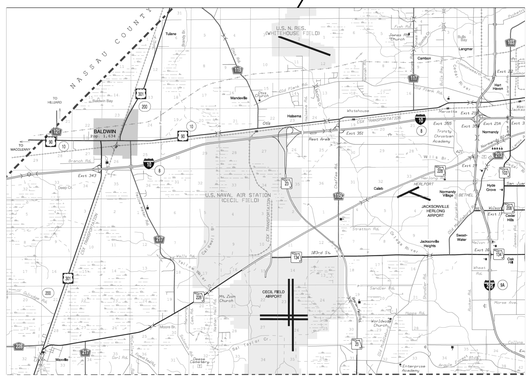
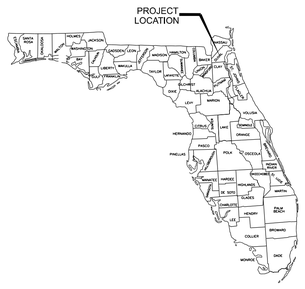
PROJECT LOCATION:
9801 CRYSTAL SPRINGS ROAD
JACKSONVILLE, FL 32221



VICINITY MAP N.T.S.



ISSUE FOR BID DRAWINGS

FOR THE

INSTALLATION OF

NORMANDY
NEW CONTROL HOUSE

BUILDING COMMUNITY

PROJECT DESIGN SEGMENT HE20410

SUBSTATION

ENGINEERING

PROJECT #8007704

JEA AVAILABILITY NUMBER - 2023-0167

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma
chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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ENGINEERING	
DATE	3/12/24
BY	JPF
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	TRG
REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

COVER SHEET

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: CV1.dgn

DRAWING SET: NM2023

DRAWING ID: CV1

SHEET #: 1 OF 61

JEA ARCH D 24"X36" - V:\Projects\2023\23-0051.000\05 - Normandy Substation New Control House\Design\CIVIL\NM2023\dgn\CV1.dgn - PRINTED 2024-3-22 AT 15:42 MODEL: COVER

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CHEN MOORE & ASSOCIATES
501 RIVERSIDE AVENUE, SUITE 501
JACKSONVILLE, FL 32207



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ELECTRICAL PLANS

CV1	COVER SHEET AND VICINITY MAP
SS	SIGNATURE SHEET
DI1	DRAWING INDEX
GN1	GENERAL NOTES
GA	GENERAL ARRANGEMENT
CP1 - CP6	CONDUIT AND LIGHTING PLANS
CD1	CONDUIT DETAILS
TP1 - TP2	TRENCH LAYOUT PLASN
GP1 - GP4	GROUNDING PLAN
GD1	GROUNDING DETAILS
CE1	CONTROL BUILDING ELECTRICAL PLANS
CE2	CONTROL BUILDING LIGHTING & POWER
CE3	CONTROL BUILDING CABLE TRAY & GROUNDING
CE4	CONTROL BUILDING DETAILS
CE5	CONTROL BUILDING DETAILS
CS1	CONDUIT SCHEDULE
CT1	CABLE SCHEDULE
LV1	LOW VOLTAGE AC AND DC DIAGRAM
LV2	LOW VOLTAGE AC PANEL SEII
LV3	LOW VOLTAGE AC AND DC DIAGRAM - NEW CONTROL HOUSE
LV4	LOW VOLTAGE AC AND DC DIAGRAM - 26kV YARD

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CHEN MOORE & ASSOCIATES
500 WEST CYPRESS CREEK ROAD, SUITE 630
FT. LAUDERDALE, FL 33309



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WATER SEWER PLANS

SS	SIGNATURE SHEET
DM1 - DM4	EXISTING CONDITIONS AND DEMOLITION
PGD1 - PGD4	PAVING, GRADING AND DRAINAGE PLANS
PGD5	PAVING, GRADING AND DRAINAGE DETAILS
WS1 - WS3	WATER SEWER PLANS
WS4 - WS6	WATER AND SEWER DETAILS
EC1 - EC3	EROSION CONTROL

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POWELL & HINKLE ENGINEERING
1409 KINGSLEY AVENUE, BLDG. 12A
ORANGE PARK, FL 32073



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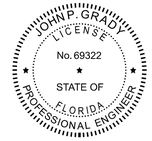
MECHANICAL AND PLUMBING PLANS

SS	SIGNATURE SHEET
M1	HVAC FLOOR PLAN
M2	HVAC SCHEDULES & DETAILS
M3	HVAC SPECIFICATION
P1	PLUMBING NOTES & SPECIFICATIONS
P2	PLUMBING FLOOR PLAN & RISER DIAGRAM

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STRUCTURES INTERNATIONAL, LLC
7563 PHILIPS HIGHWAY, BLDG. 600
JACKSONVILLE, FL 32256



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STRUCTURAL PLANS

SS	SIGNATURE SHEET
CB0	GENERAL NOTES AND DESIGN CRITERIA
CB1 - CB2	CONTROL BUILDING PLAN VIEWS
CB3	CONTROL BUILDING ELEVATIONS
CB4 - CB7	CONTROL BUILDING DETAILS

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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CONSULTANT INFORMATION

cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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		-	-	-	-	BY	TRG
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		-	-	-	-	DATE	3/12/24
		-	-	-	-	BY	JLC
		-	-	-	-	REVIEW	TRG

NEW NORMANDY CONTROL HOUSE

SIGNATURE SHEET

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN
PROJ #: 8007704

DRAWING NAME: SS.dgn
DRAWING SET: NM2023
DRAWING ID: SS
SHEET #: 2 OF 61

JEA ARCH D (24"X36" - V:\Projects\2022\23-0051.1.00005 - Normandy Substation- New Control House\Design\CAD\NM0022\dgn\SS.dgn PRINTED: 2024/03/25 AT 07:41 MODEL: SIGNATURE

CIVIL SITE DRAWINGS

SHEET NO	REV.	TITLE	FILE NAME	MODEL NAME
1 OF 61	0	COVER SHEET AND VICINITY MAP	CV1.DGN	COVER
2 OF 61	0	SIGNATURE SHEET	SS.DGN	SIGNATURE
3 OF 61	0	DRAWING INDEX	DI1.DGN	INDEX
4 OF 61	0	GENERAL NOTES	GN1.DGN	SHEET 1
5 OF 61	0	GENERAL ARRANGEMENT	GA.DGN	SHEET 1
6 OF 61	0	EXISTING CONDITIONS AND DEMOLITION SHEET 1 OF 4	DM1.DGN	SHEET 1
7 OF 61	0	EXISTING CONDITIONS AND DEMOLITION SHEET 2 OF 4	DM2.DGN	SHEET 1
8 OF 61	0	EXISTING CONDITIONS AND DEMOLITION SHEET 3 OF 4	DM3.DGN	SHEET 1
9 OF 61	0	EXISTING CONDITIONS AND DEMOLITION SHEET 4 OF 4	DM4.DGN	SHEET 1
10 OF 61	0	PAVING, GRADING AND DRAINAGE PLAN SHEET 1 OF 4	PGD1.DGN	SHEET 1
11 OF 61	0	PAVING, GRADING AND DRAINAGE PLAN SHEET 2 OF 4	PGD2.DGN	SHEET 1
12 OF 61	0	PAVING, GRADING AND DRAINAGE PLAN SHEET 3 OF 4	PGD3.DGN	SHEET 1
13 OF 61	0	PAVING, GRADING AND DRAINAGE PLAN SHEET 4 OF 4	PGD4.DGN	SHEET 1
14 OF 61	0	PAVING, GRADING AND DRAINAGE DETAILS	PGD5.DGN	SHEET 1
15 OF 61	0	WATER AND SEWER PLAN SHEET 1 OF 3	WS1.DGN	SHEET 1
16 OF 61	0	WATER AND SEWER PLAN SHEET 2 OF 3	WS2.DGN	SHEET 1
17 OF 61	0	WATER AND SEWER PLAN SHEET 3 OF 3	WS3.DGN	SHEET 1
18 OF 61	0	WATER AND SEWER DETAILS SHEET 1 OF 3	WS4.DGN	SHEET WS4
19 OF 61	0	WATER AND SEWER DETAILS SHEET 2 OF 3	WS5.DGN	SHEET WS5
20 OF 61	0	WATER AND SEWER DETAILS SHEET 3 OF 3	WS5.DGN	SHEET WS5
21 OF 61	0	EROSION CONTROL DETAILS SHEET 1 OF 3	EC1.DGN	EROSION CONTROL 1
22 OF 61	0	EROSION CONTROL DETAILS SHEET 2 OF 3	EC2.DGN	EROSION CONTROL 2
23 OF 61	0	EROSION CONTROL DETAILS SHEET 3 OF 3	EC3.DGN	EROSION CONTROL 3

ELECTRICAL DRAWINGS

SHEET NO	REV.	TITLE	FILE NAME	MODEL NAME
24 OF 61	0	CONDUIT PLAN SHEET 1 OF 6	CP1.DGN	CP1
25 OF 61	0	CONDUIT PLAN SHEET 2 OF 6	CP2.DGN	CP2
26 OF 61	0	CONDUIT PLAN SHEET 3 OF 6	CP3.DGN	CP3
27 OF 61	0	CONDUIT PLAN SHEET 4 OF 6	CP4.DGN	CP4
28 OF 61	0	CONDUIT PLAN SHEET 5 OF 6	CP5.DGN	CP5
29 OF 61	0	CONDUIT PLAN SHEET 6 OF 6	CP6.DGN	CP6
30 OF 61	0	CONDUIT DETAILS	CD1.DGN	CD1
31 OF 61	0	TRENCH LAYOUT PLAN SHEET 1 OF 2	TP1.DGN	TP1
32 OF 61	0	TRENCH LAYOUT PLAN SHEET 2 OF 2	TP2.DGN	TP2
33 OF 61	0	GROUNDING PLAN SHEET 1 OF 4	GP1.DGN	GP1
34 OF 61	0	GROUNDING PLAN SHEET 2 OF 4	GP2.DGN	GP2
35 OF 61	0	GROUNDING PLAN SHEET 3 OF 4	GP3.DGN	GP3
36 OF 61	0	GROUNDING PLAN SHEET 4 OF 4	GP4.DGN	GP4
37 OF 61	0	GROUNDING DETAILS	GD1.DGN	GD1
38 OF 61	0	CONTROL BUILDING ELECTRICAL PLAN	CE1.DGN	CE1
39 OF 61	0	CONTROL BUILDING LIGHTING & POWER	CE2.DGN	CE2
40 OF 61	0	CONTROL BUILDING CABLE TRAY & GROUNDING	CE3.DGN	CE3
41 OF 61	0	CONTROL BUILDING DETAILS SHEET 1 OF 2	CE4.DGN	SHEET 1
42 OF 61	0	CONTROL BUILDING DETAILS SHEET 2 OF 2	CE5.DGN	SHEET 2
43 OF 61	0	CONDUIT SCHEDULE	CS1.DGN	CS1
44 OF 61	0	CABLE SCHEDULE	CT1.DGN	CT1
45 OF 61	0	LOW VOLTAGE AC AND DC DIAGRAM	LV1.DGN	LV1
46 OF 61	0	LOW VOLTAGE AC PANEL SEII	LV2.DGN	LV2
47 OF 61	0	LOW VOLTAGE AC AND DC DIAGRAM - NEW CONTROL HOUSE	LV3.DGN	LV2
48 OF 61	0	LOW VOLTAGE AC AND DC DIAGRAM - 26kV YARD	LV4.DGN	LV3

STRUCTURAL DRAWINGS

SHEET NO	REV.	TITLE	FILE NAME	MODEL NAME
49 OF 61	0	CONTROL BUILDING PLAN VIEWS	CB0.DGN	CD1
50 OF 61	0	CONTROL BUILDING PLAN VIEWS	CB1.DGN	CD1
51 OF 61	0	CONTROL BUILDING ELEVATIONS	CB2.DGN	CD1
52 OF 61	0	CONTROL BUILDING DETAILS	CB3.DGN	CD1
53 OF 61	0	CONTROL BUILDING DETAILS	CB4.DGN	CD1
54 OF 61	0	CONTROL BUILDING DETAILS	CB5.DGN	CD1
55 OF 61	0	CONTROL BUILDING DETAILS	CB6.DGN	CD1
56 OF 61	0	CONTROL BUILDING DETAILS	CB7.DGN	CD1

MECHANICAL DRAWINGS

SHEET NO	REV.	TITLE	FILE NAME	MODEL NAME
57 OF 61	0	HVAC FLOOR PLAN	M1.DGN	N/A
58 OF 61	0	HVAC SCHEDULES & DETAILS	M2.DGN	N/A
59 OF 61	0	HVAC SPECIFICATIONS	M3.DGN	N/A

PLUMBING DRAWINGS

SHEET NO	REV.	TITLE	FILE NAME	MODEL NAME
60 OF 61	0	PLUMBING NOTES & SPECIFICATIONS	P1.DGN	N/A
61 OF 61	0	PLUMBING FLOOR PLAN & RISER DIAGRAM	P2.DGN	N/A

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

CONSULTANT INFORMATION
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Jacksonville, FL 32202
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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW
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ENGINEERING	
DATE	3/12/24
BY	JLC
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	TRG

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NEW NORMANDY CONTROL HOUSE

DRAWING INDEX

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: DI1.dgn
DRAWING SET: NM2023
DRAWING ID: DI1
SHEET #: 3 OF 61

DI1.dgn 22x34.2x25; -17.4DWG/EX
JEA ARCH E 24"X36" V:\Projects\2023\23-0051.000\05 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\DI1.dgn PRINTED 2024/03/25 AT 07:43 MODEL: INDEX

GENERAL CONSTRUCTION NOTES

1. ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS REFLECT PREVAILING CONDITIONS AT THE TIME OF THE SURVEY. SURVEY WAS CONDUCTED BY BRENDA D. CATONE, P.S.M. FLORIDA CERTIFICATION NO. 54447 OF DEGROVE SURVEYORS, INC.

2. ELEVATIONS SHOWN HEREON REFER TO NORTH AMERICAN VERTICAL DATUM 1988, (NAVD 88). BENCHMARKS USED WERE NATIONAL GEODETIC SURVEY BENCHMARKS 872 0305 C TIDAL (PID BC1530), WITH AN ELEVATION OF 10.44' (NAVD 88) AND Q566 (PID DM4014), WITH AN ELEVATION OF 10.55' (NAVD 88).

3. LIMITS OF CONSTRUCTION HAVE BEEN IDENTIFIED ON THE PLAN.

4. ALL EXISTING UTILITIES & STRUCTURES, BOTH ABOVE AND BELOW GRADE, HAVE BEEN SHOWN ON THESE DRAWINGS INSOFAR AS INFORMATION IS REASONABLY AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THEIR LOCATION AND PROTECTING ALL UTILITIES & STRUCTURES, WHETHER OR NOT THEY ARE SHOWN ON THESE DRAWINGS. DURING THE DURATION OF THE CONSTRUCTION ANY AND ALL DAMAGE RESULTING FROM THE CONSTRUCTION OPERATION SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO JEA.

5. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS AND PERMITS SET FORTH BY THE APPLICABLE AGENCIES, FLORIDA DEPT. OF TRANSPORTATION, WATER MANAGEMENT DISTRICT, CITY OF JACKSONVILLE, FL DEP, AND JEA.

6. SHOULD A CONFLICT ARISE BETWEEN THE DETAILS SHOWN IN THESE DRAWINGS AND THE STANDARDS OR PERMITS ISSUED BY THE AGENCIES LISTED IN NOTE (5), THE STANDARDS OR PERMITS ISSUED BY THE CONTROLLING AGENCY WILL GOVERN.

7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL STRUCTURES AND MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION.

8. NO ADDITIONAL COMPENSATION BASED UPON A COMPARISON BETWEEN THE CONTRACTORS ASSUMED QUANTITIES AND FINAL " IN PLACE" QUANTITIES SHALL BE ALLOWED. THE EXCEPTION SHALL BE THE AUTHORIZED CHANGES IN THE SCOPE OF WORK TO BE PERFORMED.

9. ALL DISTURBED AREAS OFF SITE SHALL BE RESTORED AS FOLLOWS: PAVEMENT AND CONCRETE SHALL BE REPLACED MATCHING THE EXISTING. NON-PAVED AREAS SHALL BE SODDED.

10. ALL DISTURBED AREAS NOT COVERED IN ASPHALT, CONCRETE OR GRAVEL SHALL BE SODDED WITH ARGENTINE BAHIA SOD AND WILL BE REQUIRED TO BE ESTABLISHED PRIOR TO PROJECT COMPLETION.

11. SEDIMENT AND EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. AREAS OF OFF-SITE DISCHARGE DURING CONSTRUCTION SHALL BE PROTECTED WITH SEDIMENT BARRIERS OF BEST MANAGEMENT PRACTICES TO PREVENT OFF-SITE DISCHARGE OF SEDIMENTS. SEED AND MULCH SHALL BE USED TO CONTROL ON-SITE EROSION WHEN IT IS NOT PRACTICAL TO ESTABLISH PERMANENT VEGETATION. PERMANENT VEGETATION SHALL BE PLACED AS EARLY AS FEASIBLE ON ALL SLOPES STEEPER THAN 7:1. SOD SHALL BE PINNED ON SLOPES STEEPER THAN 4:1. STAGGER PIECES OF SOD ON ALL SLOPES TO AVOID SEEMS BETWEEN PIECES CREATING FLOW CHANNELS DOWN THE SLOPE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED IN WORKING ORDER THROUGHOUT THE CONSTRUCTION PHASE.

12. DRAINAGE SWALES SHALL BE MAINTAINED IN OPERATING CONDITION AND ALL EROSION DAMAGE SHALL BE REPAIRED AS IT OCCURS.

13. THE CONTRACTOR SHALL IDENTIFY AND PROTECT TREES AND VEGETATION THAT ARE TO REMAIN UNDISTURBED. THE CONSTRUCTION AREA SHALL BE CLEARED AND GRUBBED TO REMOVE ALL ROOTS AND MISCELLANEOUS VEGETATION.

14. THE CONTRACTOR SHALL USE NECESSARY MEANS AND METHODS TO CONTROL SURFACE AND GROUNDWATER FLOWS DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, SURFACE GRADING, DEWATERING TRENCHES WITH SUMP PUMPS, WELL POINTING, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL AND LIKELY DEPTHS TO GROUNDWATER AND THE WATER CONTROL NECESSARY TO MEET MOISTURE AND DENSITY REQUIREMENTS OF THE SPECIFICATION FOR THE NATIVE OR IMPORTED SOILS.

15. ALL SUITABLE MATERIAL EXCAVATED SHALL BE USED AS FILL OVER THE SITE AS NEEDED AND AS APPROVED BY THE ENGINEER. ANY UNSUITABLE MATERIAL AND OTHER DEBRIS RESULTING FROM THE CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF LEGALLY OFF-SITE IN AN APPROVED AREA AND MANNER BY THE CONTRACTOR.

16. THE CONTRACTOR IS REQUIRED TO PROVIDE A REGISTERED LAND SURVEYOR TO ESTABLISH BASELINES AND PROVIDE HORIZONTAL AND VERTICAL CONTROL BEFORE AND DURING CONSTRUCTION.

17. THE BURNING OF TREES, BRUSH OR OTHER MATERIAL IS NOT PERMITTED.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITTING IN CONNECTION WITH THIS PROJECT NOT PROVIDED BY JEA.

19. THE CONTRACTOR SHALL VISIT THE WORK SITE AND FAMILIARIZE HIMSELF WITH THE NATURE AND EXTENT OF THE CONTRACT DOCUMENTS, WORK, LOCALITY, AND ALL LOCAL CONDITIONS AND FEDERAL AND STATE LAWS, ORDNANCES, RULES AND REGULATIONS THAT IN ANY MANNER MAY AFFECT COST, PROGRESS OR PERFORMANCE OF THE WORK.

20. THE CONTRACTOR SHALL STUDY, CAREFULLY, ALL PHYSICAL CONDITIONS AT THE SITE, AFFECTING COST, PROGRESS OR PERFORMANCE OF THE WORK WHICH WERE RELIED UPON BY THE ENGINEER IN PREPARATION OF THE CONTRACT DOCUMENTS.

21. THE CONTRACTOR SHALL CORRELATE THE RESULTS OF ALL SUCH OBSERVATIONS, EXAMINATION AND INVESTIGATIONS WITH THE TERMS OF THE CONTRACT DOCUMENTS.

22. THE CONTRACTOR SHALL CALL TO THE ENGINEER'S ATTENTION, IN WRITING, ANY CONFLICT, ERROR OR DISCREPANCY IN THE CONTRACT DOCUMENTS HE MAY FIND BEFORE PROCEEDING WITH THE WORK AFFECTED THEREBY.

WATER AND SEWER NOTES

1. ALL WATER AND SEWER CONSTRUCTION WITHIN THE CITY OF JACKSONVILLE, FL SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER PROVISIONS OF CHAPTER 489 OF THE FLORIDA STATUES.

2. ALL WATER AND SEWER WORK PERFORMED WITHIN AN EASEMENT OR PUBLIC RIGHT-OF-WAY REQUIRES A SEPARATE PERMIT ISSUED BY THE CITY ENGINEER.

3. WATER AND FORCE MAINS ARE TO BE PRESSURE TESTED IN ACCORDANCE WITH APPLICABLE AGENCY STANDARDS AND SPECIFICATIONS.

4. MECHANICAL JOINT RESTRAINER GLANDS SHALL BE INSTALLED AT ALL BENDS, TEES, VALVES AND WHERE WATER AND FORCE MAINS ARE TERMINATED. CONCRETE THRUST BLOCKS SHALL NOT BE USED.

5. UNSUITABLE MATERIALS UNDER WATER AND SEWER PIPES OR STRUCTURES SHALL BE REMOVED AND REPLACED WITH PROPERLY COMPACTED SELECT A-3 SAND BACKFILL.

6. CLASS B, TYPE 1 BEDDING SHALL BE PROVIDED BY THE CONTRACTOR. BACKFILL SHALL BE PLACED IN 12" LOOSE LIFTS (MAX.), COMPACTED TO A MIN. 95% OF MODIFIED PROCTOR (WITHIN 5% OF OPTIMUM MOISTURE CONTENT). PROVIDE AT LEAST ONE DENSITY TEST FOR EACH LIFT AND FOR EACH 150LF OF PIPE TRENCH. CONTRACTOR SHALL REFER TO UTILITY AGENCY SPECIFICATIONS FOR THE LATEST REQUIREMENTS FOR DENSITY TESTING.

7. WHERE PARALLEL WATER AND SEWER LINES HAVE LESS THAN 10 FT. HORIZONTAL SEPARATION, FULL UN-CUT LENGTHS OF PIPE SHALL BE USED WITH JOINTS STAGGERED AT 10 FT. INTERVALS OR IN A SEPARATE TRENCH WITH A MIN. VERTICAL SEPARATION OF 18 INCHES. IT IS PREFERABLE TO HAVE WATER MAINS LOCATED ABOVE THE SEWER WITH 10 FT. OF SEPARATION.

8. WHERE IT IS NOT POSSIBLE FOR 18 INCHES OF VERTICAL SEPARATION AT PIPE CROSSINGS, A FULL UN-CUT LENGTH OF PIPE USUALLY 20 LF LONG SHALL BE CENTERED ON THE POINT OF CROSSING. THE MIN. VERTICAL SEPARATION SHALL BE 6 INCHES (O.D. TO O.D.).

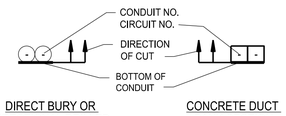
9. WHERE SOLVENT CONTAMINATION IS FOUND IN TRENCH, WORK SHALL CEASE AND THE PROPER AUTHORITIES NOTIFIED. DUCTILE IRON PIPE AND FITTINGS AND APPROVED SOLVENT RESISTANT GASKET MATERIALS SHALL BE USED. THE DUCTILE IRON WILL EXTEND A MIN. OF 100 FT. BEYOND ANY CONTAMINATED AREA.

10. THE MAXIMUM DEFLECTION AT ANY JOINT SHALL NOT EXCEED 50% OF THE MANUFACTURER'S MAXIMUM RECOMMENDED DEFLECTION FOR THE PIPE FURNISHED.

11. ALL PIPE SHALL BE INSTALLED WITH A MIN. OF 36 INCHES OF COVER MEASURED FROM THE TOP OF THE PIPE TO GROUND SURFACE. EXCEPTIONS TO THIS DEPTH WILL BE ALLOWED TO MEET ADVERSE FIELD CONDITIONS UPON THE APPROVAL OF THE ENGINEER.

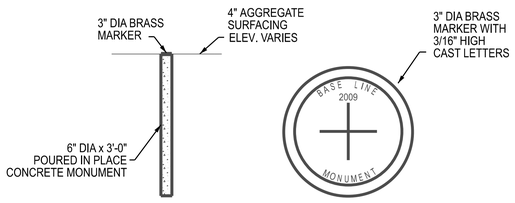
12. ALL WATER MAINS SHALL BE DISINFECTED AND BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH REGULATORY AGENCY REQUIREMENTS.

13. ALL 2 INCH AND SMALLER WATER LINES SHALL BE SCHEDULE 80 PVC NSF. 4 INCH AND LARGER SHALL BE DR25 PVC UNLESS OTHERWISE NOTED ON THE DRAWINGS.



DIRECT BURY OR DIRECTIONAL DRILLED CONDUIT SECTION

CONCRETE DUCT BANK SECTION



PROFILE

PLAN

CONCRETE SURVEY MARKER DETAIL

ELECTRICAL CLEARANCE NOTES

1. SUBSTATION CONDUITS SHALL BE PLACED 22 INCHES BELOW FINISHED, ROCKED GRADE, OR 18 INCHES BELOW STABILIZED AND COMPACTED EARTH GRADE. GROUND GRID SHALL BE PLACED 28 INCHES BELOW FINISHED ROCKED GRADE, OR 24 INCHES BELOW STABILIZED AND COMPACTED EARTH GRADE. DISTRIBUTION FEEDER CONDUITS SHALL BE PLACED 48" BELOW FINAL EARTH GRADE.
2. THE FOLLOWING ARE ELECTRICAL CLEARANCES FOR JEA SUBSTATION PROJECTS. THE CONTRACTOR SHOULD CONSTRUCT THE SUBSTATION AS DEPICTED IN THE DRAWINGS AND REFER TO THESE AS A REFERENCE. NOTE THAT "PHASE SPACING" IS TYPICAL, NOT MINIMUM.

Voltage (kV)	BIL (kV)	Min. Phase-Phase (in)	Min. Phase-Phase (ft-in)	Min. Phase-Ground (in)	Min. Phase-Ground (ft-in)	Phase Spacing (ft-in)	Min. Above Grade Personnel (ft-in)	Min. Above Grade Roadway (ft)	Min. to Fence Horizontal (ft)
13.2	110	12"	1'-0"	7"	0'-7"	2'-0"	9'-0"	21'	10'
34.5	200	18"	1'-6"	13"	1'-1"	3'-0"	9'-6"	22'	10'
69	350	31"	2'-7"	25"	2'-1"	5'-0"	10'-5"	23'	12'
138	650	63"	5'-3"	50"	4'-2"	8'-0"	12'-2"	25'	14'
230	900	89"	7'-5"	71"	5'-11"	11'-0"	14'-10"	27'	16'

Reference RUS Bulletin 1724E-300 (2001), & NESC (2007)

PAVING AND DRAINAGE NOTES

1. RIGHTS-OF-WAY WIDTHS AND INTERSECTION RADII (IF APPLICABLE) ARE AS SHOWN ON THE DRAWINGS.
2. ROADWAY WIDTH SHALL BE MEASURED FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT AND COMPLY WITH THE STANDARDS SET FORTH BY THE CITY OF JACKSONVILLE, FL.
3. ALL UNDERGROUND UTILITY CONSTRUCTION, BUILDINGS AND STRUCTURE FOUNDATIONS MUST BE INSTALLED PRIOR TO THE PREPARATION OF THE SUBGRADE.
4. ROCK ROADWAY SUBGRADE SHALL HAVE ALL UNSUITABLE MATERIAL REMOVED TO A DEPTH OF 2.5' BELOW CENTERLINE GRADE AND 2.5' BEYOND EDGE OF THE GEOGRID REINFORCED GRAVEL ROADWAYS. BACKFILL THIS AREA WITH A-3 SAND CONTAINING LESS THAN 5% FINES.
5. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC, METHOD OF CONSTRUCTION AND REPAIR.
6. THE CONTRACTOR SHALL COORDINATE THE ROCK PLACEMENT, LANDSCAPING AND DRAINAGE CONSTRUCTION WITH ALL OTHER SITE AND UTILITY WORK.
7. ALL DRAINAGE INLETS WITH GRATES IN THE TOP, PLACED IN PAVED VEHICULAR TRAFFIC AREAS, AND ANY INLETS SUBJECT TO VEHICULAR TRAFFIC, SHALL HAVE TRAFFIC RATED GRATES. TYPICAL DRAINAGE SECTIONS AND DETAILS CAN BE FOUND ONLINE AT COJ.NET: http://www.coj.net/departments/planning-and-development/development-services-division/city-standard-details-(dwg—pdf-formats).aspx#drainage
OR UNDER THE HEADING OF STRUCTURES AT:
http://www.fdot.gov/design/standardplans/current/default.shtm.

TYPICAL ABBREVIATIONS

A.G.	ALLEY GRADE
BL	BASE LINE
BATT	BATTERY
BM	BENCH MARK
BC	BOTTOM OF CURVE
C.B.	CATCH BASIN
C.I.	CAST IRON
CL	CENTER LINE
C.L.	CHAIN LINK
CHGR	CHARGER
C.E.P.	CITY ELECTRIC POLE
CKT	CIRCUIT
C.O.	CLEAN OUT
CONC.	CONCRETE
CONST.	CONSTRUCTION
C.M.P.	CORRUGATED METAL PIPE
C.M.P.A.	CORRUGATED METAL PIPE ARCH
CULV.	CULVERT
C&G	CURB & GUTTER
C	CUT
D.B.I.	DITCH BOTTOM INLET
D.P.I.	DITCH BOTTOM GRADE POINT OF INTERSECTION
D.W.	DRIVEWAY
D.I.	DUCTILE IRON
DIA	DIAMETER
EMT	ELECTRICAL METALLIC TUBING
E.O.P.	EDGE OF PAVEMENT
ERCP	ELLIPTICAL REINFORCED CONC. PIPE
EXP. JT.	EXPANSION JOINT
F	FILL
F.H.	FIRE HYDRANT
FIB	FIBER OPTIC
FL	FLOW LINE
FT.	FEET
GALV	GALVANIZED
G	GAS LINE
G.V.	GAS VALVE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HDPE	HIGH DENSITY POLYETHYLENE PIPE
H.W.	HEAD WALL
H.C.	HIGH CURB
INT.	INTERSECTION
INV.	INVERT
I.P.	IRON PIPE
JEA	JACKSONVILLE ELECTRIC AUTHORITY
J.W.W.	JACKSONVILLE WATER WORKS
LT.	LEFT
MAX.	MAXIMUM
M.H.	MANHOLE
MIN.	MINIMUM
NSF	NORTH AMERICAN VERTICAL DATUM
N.T.S.	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
OHU	OVERHEAD ELECTRIC UTILITY
O.E.	OVERHEAD ELECTRIC
O.T.	OVERHEAD TELEPHONE
P.R.M.	PERMANENT REFERENCE MONUMENT
PVC	POLYVINYL CHLORIDE
P.C.	POINT OF CURVE & END OF TANGENT
P.I.	POINT OF INTERSECTION OF TANGENTS
PID	PRELIMINARY INDEX DIAGRAMS
P.T.	POINT OF TANGENT & END OF CURVE
r	RADIUS
R	RATE
R.C.P.	REINFORCED CONCRETE PIPE
RECPT.	RECEPTACLE
RT	RIGHT
R/W	RIGHT OF WAY
SCHED.	SCHEDULE
S/W	SIDEWALK
STA	STATION
TC	TANGENT TO CURVE
TYP	TYPICAL
U.G.E.	UNDERGROUND ELECTRIC
U.S.C.&G.S.	UNITED STATES COASTAL & GEODETIC SURVEY
V.C.	VITRIFIED CLAY
W/	WITH
WM	WATER METER
WP	WATERPROOF
W.V.	WATER VALVE
WPF	WOOD PRIVACY FENCE
WRF	WOOD RAIL FENCE

AS-BUILT NOTES

1. AS-BUILT DRAWINGS SHALL BE PREPARED IN AUTOCAD 2018 OR MICROSTATION CONNECT, BY A REGISTERED LAND SURVEYOR, AND SHALL BE IN ACCORDANCE WITH ALL THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. ONE COMPLETE SET OF SIGNED PRINTS AND A COMPLETE SET OF ELECTRONIC FILES ON COMPUTER DISK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
2. AS-BUILTS SHALL SHOW HORIZONTAL LOCATION OF ALL STRUCTURES TIED DOWN IN TWO DIRECTIONS, FINISHED FLOOR ELEVATIONS, ROCK DRIVE GRADES, ALL UNDERGROUND FACILITIES (HORIZONTAL AND VERTICAL).
3. AS-BUILTS SHALL SHOW PERIMETER DIMENSIONS AT THE TOP OF BANK AND BOTTOM OF BANK ALONG WITH ELEVATIONS OF BOTH FOR ALL ON SITE PONDS, DITCHES AND SWALES.
4. AS-BUILTS SHALL PROVIDE DETAILED DRAWINGS WHERE FIELD CONDITIONS REQUIRED A CHANGE FROM THAT SHOWN ON THE CONTRACT DRAWINGS.
5. AS-BUILTS SHALL SHOW LOCATION, DESCRIPTION AND ELEVATION OF SITE BENCHMARKS.

GENERAL LEGEND

	EXISTING	PROPOSED
BASE LINE		
RIGHT-OF-WAY		
PROPERTY LINE		
EASEMENT LINE		
LIMITS OF CONSTRUCTION		
LIMITS OF CLEARING & GRUBBING		SILT FENCE
WETLAND BOUNDARY	WF #	
MARSH		
HORIZONTAL DIRECTIONAL DRILL		DD
UNDERGROUND ELECTRIC DUCT BANK - NEW		UEN
FENCE LINE	X	X
SILT FENCE		SILT FENCE
CONTOUR LINE	89	87.7
SEWER	S	S
WATER	W	W
BOLLARD		
CAPPED PVC PIPE	CO	
CONCRETE POWER POLE		
CONCRETE POST		
STORM DRAINAGE MANHOLE	D	
ELECTRIC HANDHOLE	E	
ELECTRIC MANHOLE	E	
GUY ANCHOR		
SANITARY SEWER MANHOLE	SS	
SENSOR	S	S
TELEPHONE RISER	T	
OVERHEAD UTILITY LINE	OHU	
UNDERGROUND ELECTRIC LINE/DUCT BANK	UGE	
FIBER OPTIC LINE	FIB	

NOTE TO BIDDERS

A BRIEF SUB-SURFACE INVESTIGATION HAS BEEN CONDUCTED ON THIS SITE AND IS APPENDED TO THESE SPECIFICATIONS AND DRAWINGS. JEA DOES NOT MAKE ANY REPRESENTATION REGARDING THE ACTUAL SITE CONDITIONS. A JEA RBL (SB-1) PRE-QUALIFIED CONTRACTOR MAY AT HIS OWN EXPENSE, PERFORM ADDITIONAL FIELD INVESTIGATIONS.

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

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Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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		-	-	-	-

ENGINEERING	
DATE	3/12/24
BY	JLC
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	TRG

NEW NORMANDY CONTROL HOUSE

GENERAL NOTES

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: GN1.dgn

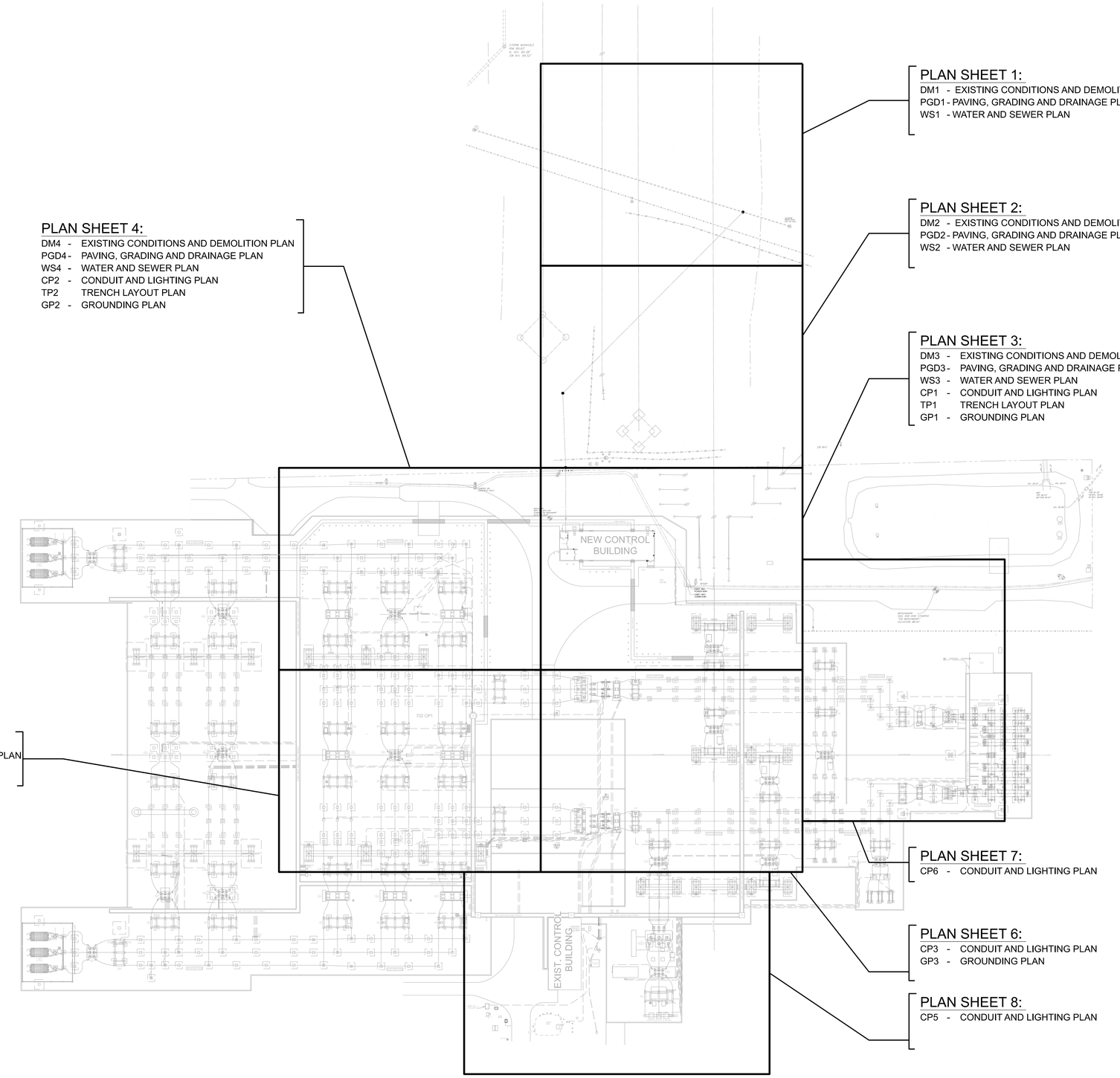
DRAWING SET: NM2023

DRAWING ID: GN1

SHEET #: 4 OF 61

JEA ARCH-D (24"X36") V:\Projects\2023\23-0001 (0005 - Normandy Substation New Control House\Design\CAD\NM2023.dgn GN1.dgn 2024/03/21 - 15:46

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.



PLAN SHEET 1:
DM1 - EXISTING CONDITIONS AND DEMOLITION PLAN
PGD1 - PAVING, GRADING AND DRAINAGE PLAN
WS1 - WATER AND SEWER PLAN

PLAN SHEET 2:
DM2 - EXISTING CONDITIONS AND DEMOLITION PLAN
PGD2 - PAVING, GRADING AND DRAINAGE PLAN
WS2 - WATER AND SEWER PLAN

PLAN SHEET 3:
DM3 - EXISTING CONDITIONS AND DEMOLITION PLAN
PGD3 - PAVING, GRADING AND DRAINAGE PLAN
WS3 - WATER AND SEWER PLAN
CP1 - CONDUIT AND LIGHTING PLAN
TP1 TRENCH LAYOUT PLAN
GP1 - GROUNDING PLAN

PLAN SHEET 4:
DM4 - EXISTING CONDITIONS AND DEMOLITION PLAN
PGD4 - PAVING, GRADING AND DRAINAGE PLAN
WS4 - WATER AND SEWER PLAN
CP2 - CONDUIT AND LIGHTING PLAN
TP2 TRENCH LAYOUT PLAN
GP2 - GROUNDING PLAN

PLAN SHEET 5:
CP4 - CONDUIT AND LIGHTING PLAN
GP4 - GROUNDING PLAN

PLAN SHEET 6:
CP3 - CONDUIT AND LIGHTING PLAN
GP3 - GROUNDING PLAN

PLAN SHEET 7:
CP6 - CONDUIT AND LIGHTING PLAN

PLAN SHEET 8:
CP5 - CONDUIT AND LIGHTING PLAN

N

SCALE: 1"= 600'

600' 0 600' 1200' 1800'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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		-	-	-	-	BY	JPF
		-	-	-	-	REVIEW	TRG
		-	-	-	-	DRAFTING	
		-	-	-	-	DATE	10/6/2022
		-	-	-	-	BY	JPF
		-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

GENERAL ARRANGEMENT

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: GA.dgn

DRAWING SET: NM2023

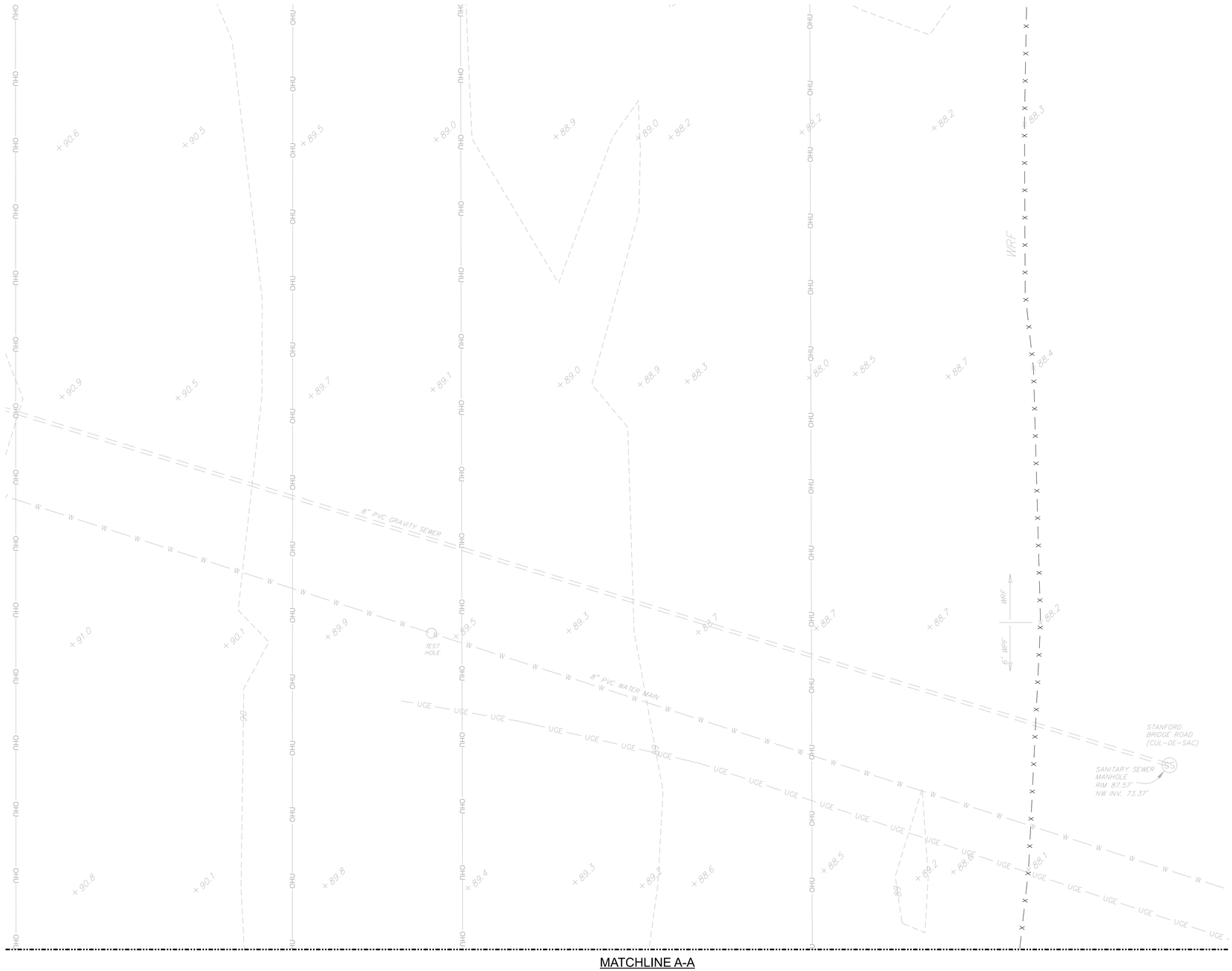
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SHEET #: 5 OF 61

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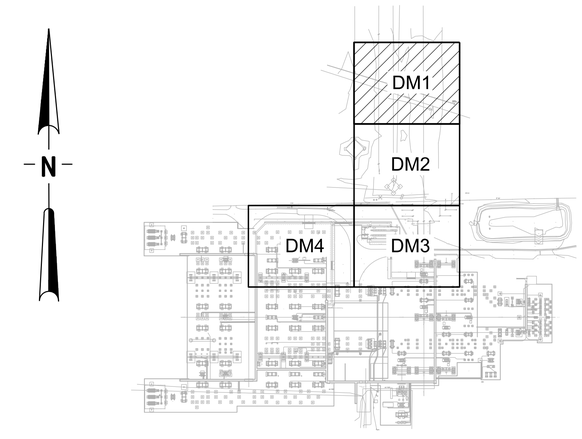
NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.



MATCHLINE A-A

SEE SHEET DM2 FOR CONTINUATION



KEY PLAN

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

16' 8' 0 16' 32'

GRAPHIC SCALE

E:\A.MRCH\2.2*.XXP V:\Projects\2023\23-0051.000000 - Normandy Substation New Control House\Design\CIVIL\NN\2023\dgn\DM1.dgn PRINTED 2024-3-25 AT 07:46

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ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EXISTING CONDITIONS AND DEMOLITION SHEET 1 of 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: DM1.dgn

DRAWING SET: NM2023

DRAWING ID: DM1

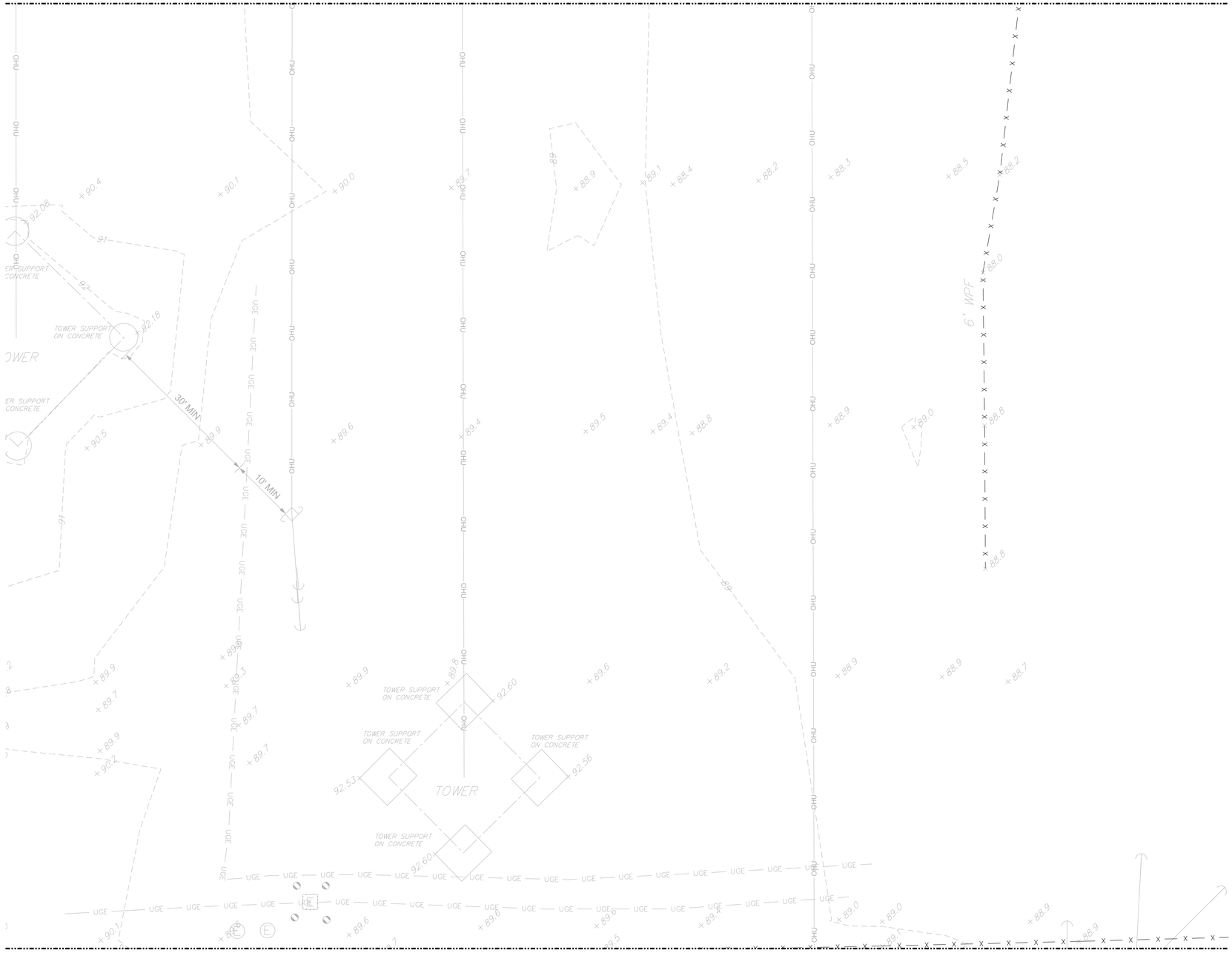
SHEET #: 6 OF 61

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

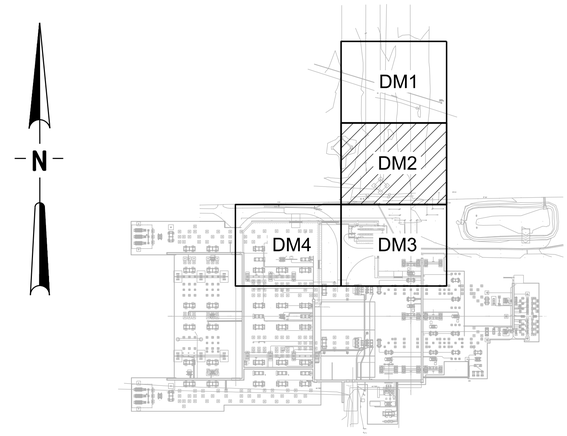
MATCHLINE A-A

SEE SHEET DM1 FOR CONTINUATION



MATCHLINE B-B

SEE SHEET DM3 FOR CONTINUATION



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA

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ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EXISTING CONDITIONS AND DEMOLITION SHEET 2 of 4

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: DM2.dgn

DRAWING SET: NM2023

DRAWING ID: DM2

SHEET #: 7 OF 61

JEA ARCH D (24"X36" V:\Projects\2022\23-0001.00\05 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\DM2.dgn PRINTED 2024-3-25 AT 07:46

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

MATCHLINE B-B
SEE SHEET DM2 FOR CONTINUATION

MATCHLINE C-C
SEE SHEET DM4 FOR CONTINUATION

SEWER TRENCH GOES UNDER EXISTING FENCE. SUBSTATION IS A HIGH SECURITY FACILITY. CONTRACTOR SHALL ENSURE THAT FENCE IS OPEN ONLY FOR TIME REQUIIRED TO INSTALL SECTION OF PIPE AND SECURED DAILY.

REMOVE APPROX. 1800 SF OF EXIST. ASPHALT PVMT

NORTH-SOUTH BASELINE

SAWCUT ASPHALT

REMOVE APPROX. 100 LF OF 8" CONCRETE CURB

REMOVE APPROX. 120 SF OF EXIST. CONCRETE

EXISTING GRAVEL

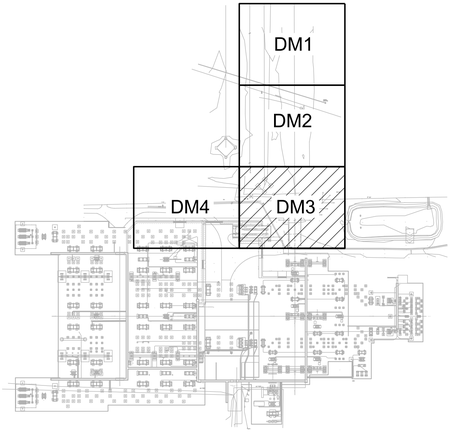
REMOVE APPROX. 243 SF OF EXIST. ASPHALT PVMT

REMOVE APPROX. 180 LF OF 8" CONCRETE CURB

EXISTING DRAINAGE POND

EXIST. EAST 138kV CABLE TRENCH

KEY PLAN



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

16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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CONSULTANT INFORMATION

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	-	-	-	-	-
	-	-	-	-	-

ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EXISTING CONDITIONS AND DEMOLITION SHEET 3 of 4

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: DM3.dgn

DRAWING SET: NM2023

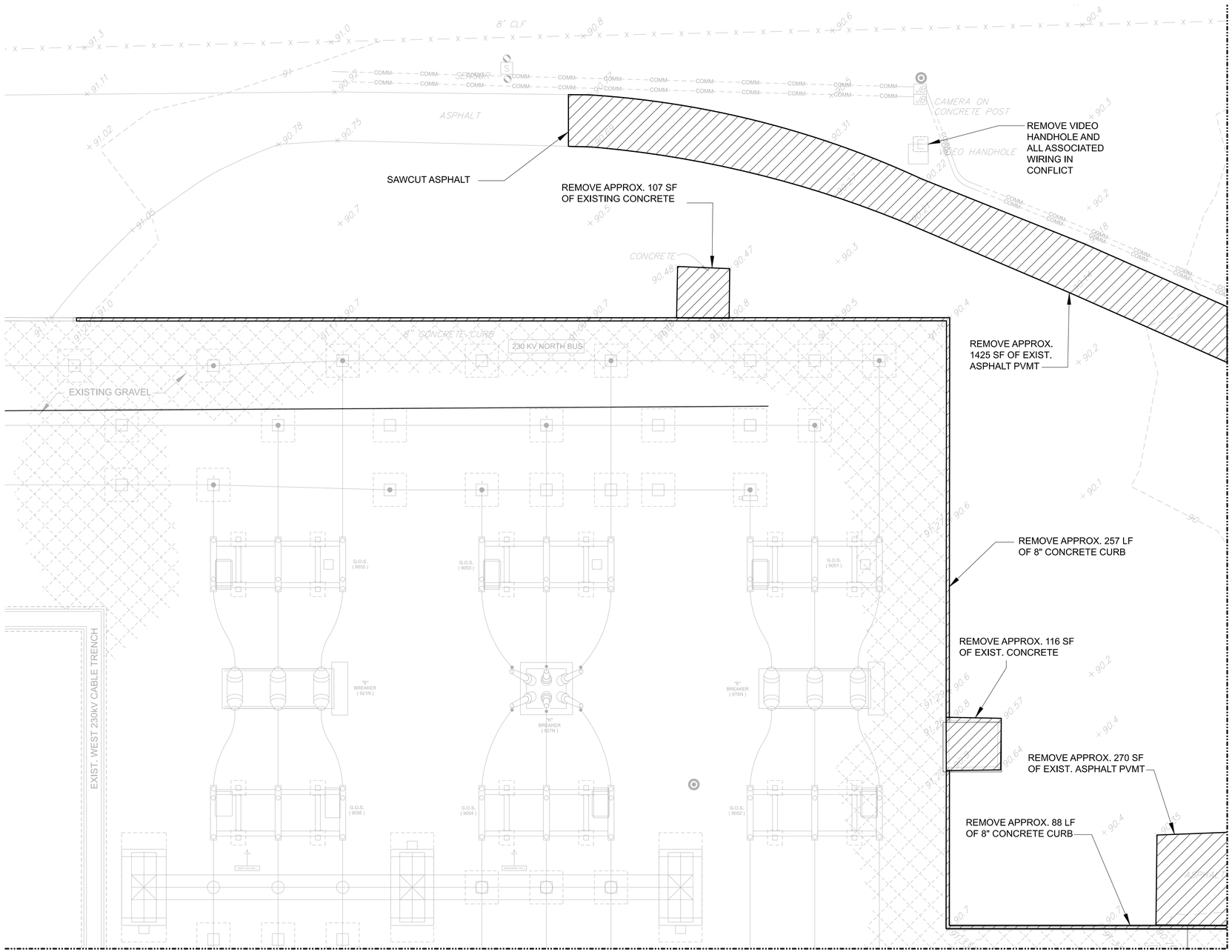
DRAWING ID: DM3

SHEET #: 8 OF 61

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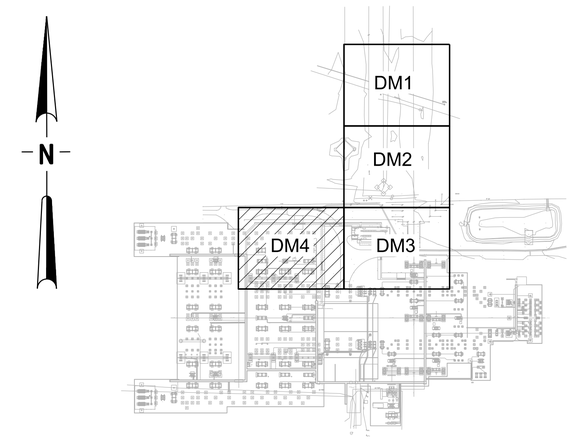
NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.



MATCHLINE C-C
SEE SHEET DM3 FOR CONTINUATION

MATCHLINE D-D
SEE SHEET DM5 FOR CONTINUATION



KEY PLAN

SCALE: 3/32"= 1'- 0"
16' 8' 0 16' 32'
GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

PROFESSIONAL ENGINEER'S SEAL

FOR PROFESSIONAL'S SEAL SEE SIGNATURE SHEET
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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW
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	-	-	-	-	-
	-	-	-	-	-

ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EXISTING CONDITIONS AND DEMOLITION SHEET 4 of 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: DM4.dgn
DRAWING SET: NM2023
DRAWING ID: DM4
SHEET #: 9 OF 61

JEA ARCH D (24"X36" V:\Projects\2022\23-0051\100000 - Normandy Substation New Control House\Design\CAD\MMS\0023\dgn\DM4.dgn PRINTED 2024/03/25 AT 07:47

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

LEGEND

- SOD REPLACEMENT
- SINGLE LAYER GEOGRID REINFORCED GRAVEL SUBSTATION YARD. SEE SUBSTATION GRAVEL YARD TYPICAL SECTION DETAIL, SHEET PGD-5.
- DOUBLE LAYER GEOGRID REINFORCED GRAVEL ROAD. SEE GRAVEL ROAD TYPICAL SECTION DETAIL, SHEET PGD-5.
- EXISTING GRAVEL YARD
- PROPOSED CONCRETE

8" PVC GRAVITY SEWER

8" PVC WATER MAIN

TEST HOLE

REPLACE 10' WIDE SOD ALONG DISTURBED GRADE

STANIFORD BRIDGE ROAD (CUL-DE-SAC)

SANITARY SEWER MANHOLE RIM 87.57' NW INV. 73.37'

WRF

6" WFF

W

OHU

UGE

+90.6 +90.5 +89.5 +89.0 +88.9 +89.0 +88.2 +88.2 +88.2 +88.3

+90.9 +90.5 +89.7 +89.1 +89.0 +88.9 +88.3 +88.0 +88.5 +88.7 +88.4

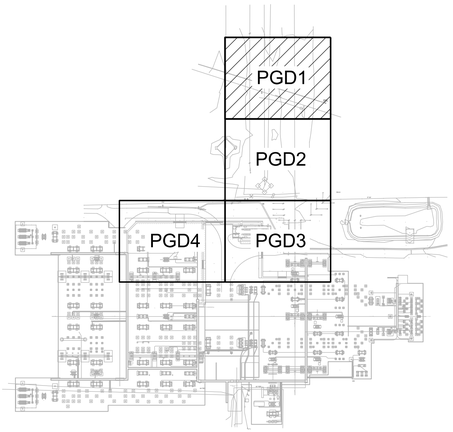
+91.0 +90.1 +89.9 +89.5 +89.3 +88.7 +88.7 +88.7 +88.2

+90.8 +90.1 +89.8 +89.4 +89.3 +89.2 +88.6 +88.5 +89.2 +88.6 +88.1

MATCHLINE A-A

SEE SHEET PGD2 FOR CONTINUATION

N



KEY PLAN

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

16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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		-	-	-	-	BY	JS
		-	-	-	-	REVIEW	TRG
		-	-	-	-	DRAFTING	
		-	-	-	-	DATE	3/12/24
		-	-	-	-	BY	JLC
		-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

PAVING, GRADING AND DRAINAGE PLAN SHEET 1 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: PGD1.dgn

DRAWING SET: NM2023

DRAWING ID: PGD1

SHEET #: 10 OF 61

JEA ARCH D 24"X36" V:\Projects\2023\23-0051.000000 - Normandy Substation New Control House\Design\CIVIL\NM2023\dgn\PGD1.dgn PRINTED 2024/03/25 AT 07:47

MATCHLINE A-A

SEE SHEET PGD1 FOR CONTINUATION

REPLACE 10' WIDE SOD ALONG DISTURBED GRADE

30' MIN

10' MIN

TOWER

MATCHLINE B-B

SEE SHEET PGD3 FOR CONTINUATION

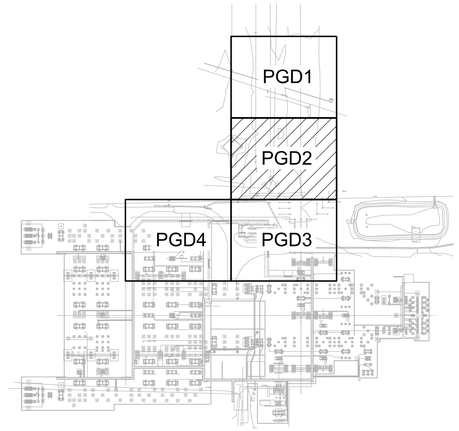
NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

LEGEND

- SOD REPLACEMENT
- SINGLE LAYER GEOGRID REINFORCED GRAVEL SUBSTATION YARD. SEE SUBSTATION GRAVEL YARD TYPICAL SECTION DETAIL, SHEET PGD-5.
- DOUBLE LAYER GEOGRID REINFORCED GRAVEL ROAD. SEE GRAVEL ROAD TYPICAL SECTION DETAIL, SHEET PGD-5.
- EXISTING GRAVEL YARD
- PROPOSED CONCRETE

N



KEY PLAN

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

16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
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21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
				-	-	DATE	3/12/24
				-	-	BY	JS
				-	-	REVIEW	TRG
				-	-	DRAFTING	
				-	-	DATE	3/12/24
				-	-	BY	JLC
				-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

PAVING, GRADING AND DRAINAGE PLAN SHEET 2 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: PGD2.dgn

DRAWING SET: NM2023

DRAWING ID: PGD2

SHEET #: 11 OF 61

JEA ARCH D 24"X36" V:\Projects\2023\23-0051.000\05 - Normandy Substation New Control House\Design\CADD\NM2023\dgn\PGD2.dgn PRINTED 2024/03/25 AT 07:47

MATCHLINE B-B
SEE SHEET PGD2 FOR CONTINUATION

MATCHLINE C-C
SEE SHEET PGD4 FOR CONTINUATION

RETENTION BASIN

REPLACE SOD IN DISTURBED AREAS

SUBSTATION GRAVEL YARD. SEE TYPICAL SECTION THIS SHEET PGD5

INSTALL APPROX. 212 LF TYPE "D" CONC. CURB.

PROVIDE WHEEL STOPS (4)

PROVIDE WHEEL STOP

CONTROL BUILDING
FF ELEV 92.71

ACCESS CONTROL PANEL

ALCOVE ENTRANCE

CABLE TRENCH

EV

EVC2

SEE 4 SPACE PARKING AREA

TRANSITION TO EXISTING PVMT WIDTH

REPLACE 10' WIDE SOD ALONG DISTURBED GRADE

INSTALL APPROX. 112 LF TYPE "D" CONC. CURB.

EXIST. SEC. POWER HH#1

EXIST. SEC. COMM HH#1

CONRETE RAMP DOWN TO EXISTING PAVEMENT ELEVATION. MATCH EXISTING ASPHALT

INSTALL APPROX. 6023 SF OF GEOREINFORCED GRAVEL ROAD (SEE TYP SECTION DETAIL, SHEET PGD-5)

TRANSITION TO EXISTING PVMT WIDTH

TIE PROP CURB TO EXISTING CURB

EXISTING GRAVEL

SLOPE FLAT AT 91.2

SUBSTATION GRAVEL YARD. SEE TYPICAL SECTION THIS SHEET PGD4

TRANSITION TO EXISTING ROAD WIDTH.

REPLACE 10' WIDE SOD ALONG DISTURBED GRADE

EXIST. EAST 138kV CABLE TRENCH

SENSOR

BASELINE

R-99.0'

R-80.0'

R-10'-0"

91.2 (TOC)
90.7 (BOC)

91.1 (TOC)
90.6 (BOC)

91.0 (TOC)
90.5 (BOC)

91.2

89.7

88.7

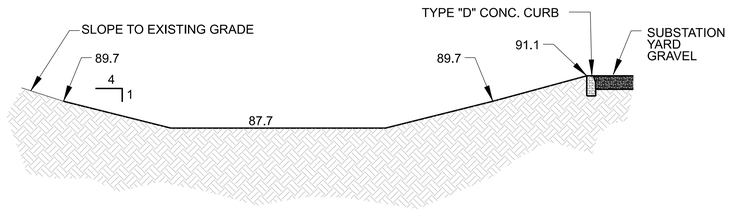
87.7

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

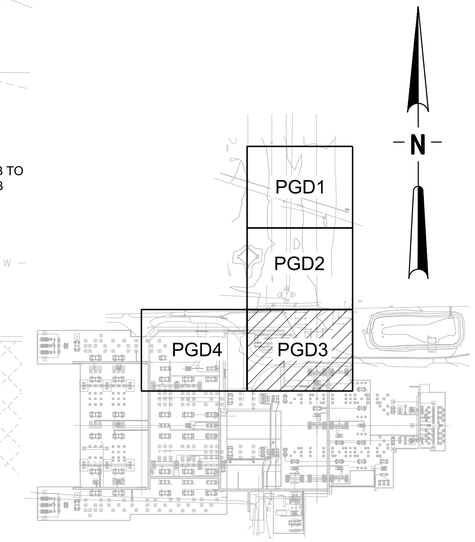
LEGEND

- SOD REPLACEMENT
- SINGLE LAYER GEOGRID REINFORCED GRAVEL SUBSTATION YARD. SEE SUBSTATION GRAVEL YARD TYPICAL SECTION DETAIL, SHEET PGD-5.
- DOUBLE LAYER GEOGRID REINFORCED GRAVEL ROAD. SEE GRAVEL ROAD TYPICAL SECTION DETAIL, SHEET PGD-5.
- EXISTING GRAVEL YARD
- PROPOSED CONCRETE



SWALE SECTION "A-A"

SCALE : 3/16" = 1"-0"



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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	-	-	-	-	-

ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

PAVING, GRADING AND DRAINAGE PLAN SHEET 3 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

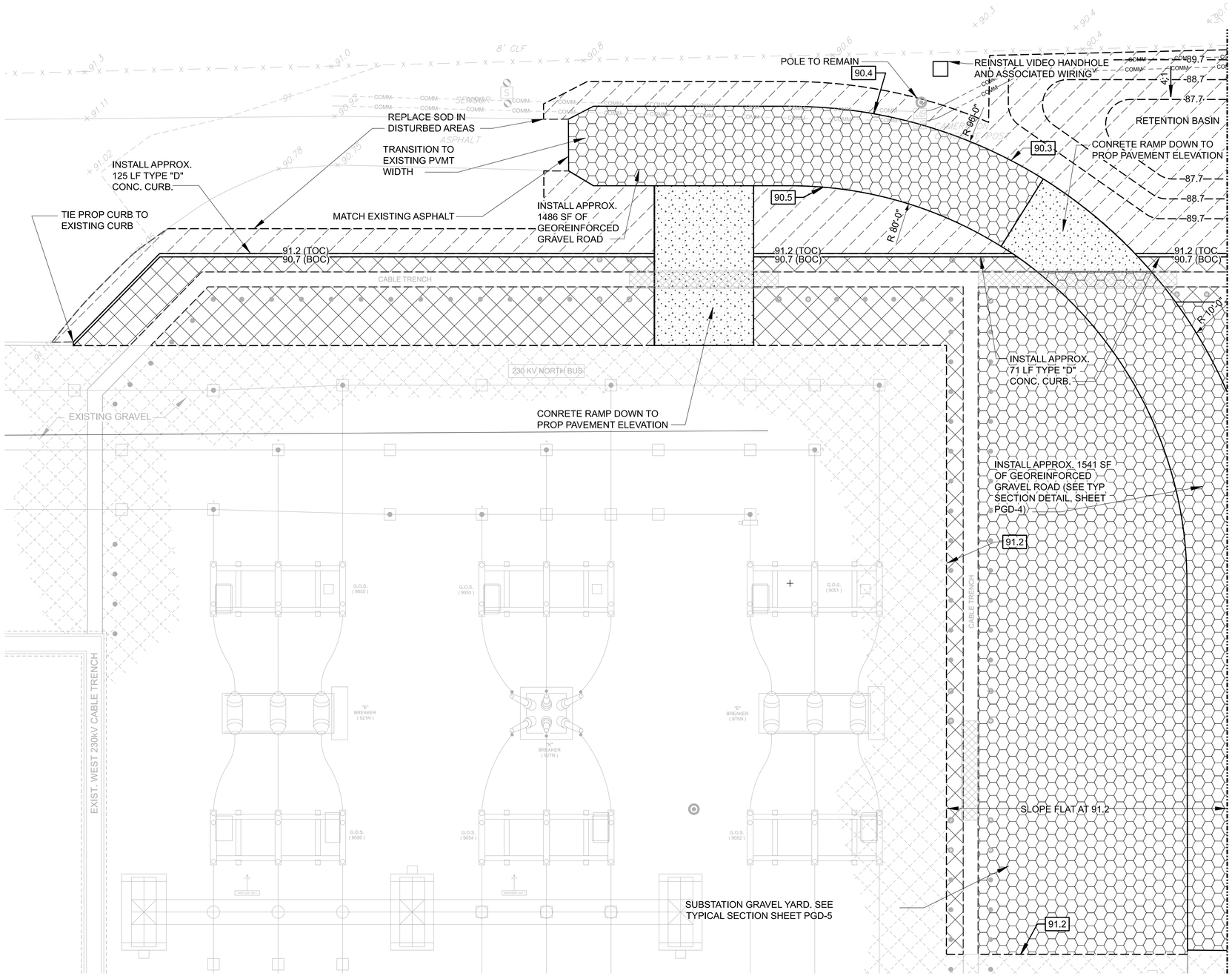
DRAWING NAME: PGD3.dgn

DRAWING SET: NM2023

DRAWING ID: PGD3

SHEET #: 12 OF 61

JEA_ARCH-D (24"X36" - V:\Projects\2023\23-0001\10000 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\PGD3.dgn PRINTED 2024/03/25 AT 07:48

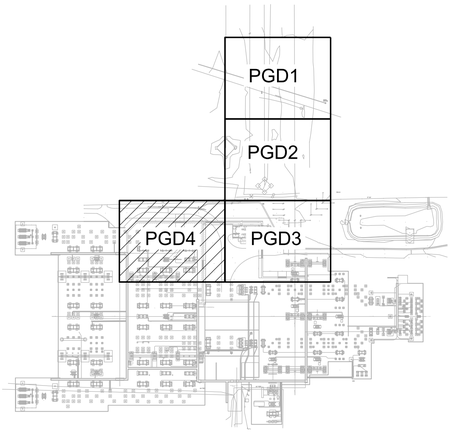


NOTES

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LEGEND

- SOD REPLACEMENT
- SINGLE LAYER GEOGRID REINFORCED GRAVEL SUBSTATION YARD. SEE SUBSTATION GRAVEL YARD TYPICAL SECTION DETAIL, SHEET PGD-5.
- DOUBLE LAYER GEOGRID REINFORCED GRAVEL ROAD. SEE GRAVEL ROAD TYPICAL SECTION DETAIL, SHEET PGD-5.
- EXISTING GRAVEL YARD
- PROPOSED CONCRETE



16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA

BUILDING COMMUNITY

21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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			-	-	-

ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

PAVING, GRADING AND DRAINAGE PLAN SHEET 4 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: PGD4.dgn

DRAWING SET: NM2023

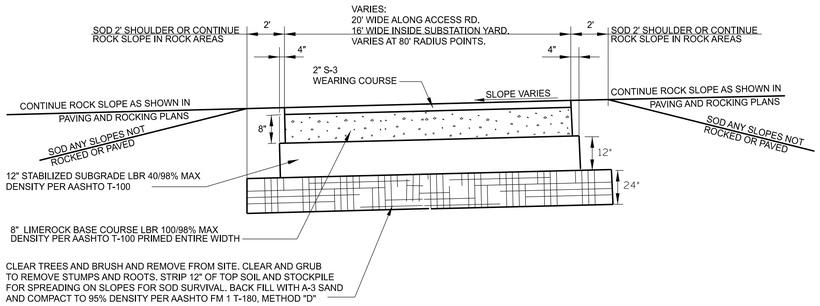
DRAWING ID: PGD4

SHEET #: 13 OF 61

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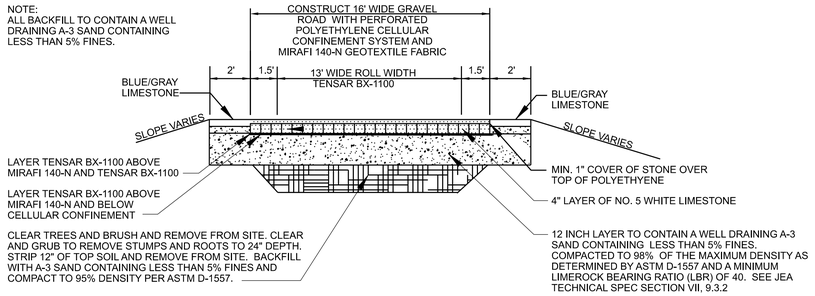
NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.



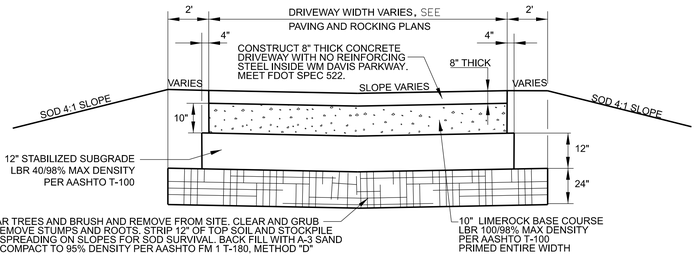
SECTION FOR FULL WIDTH SLOPED PAVEMENT

N.T.S.



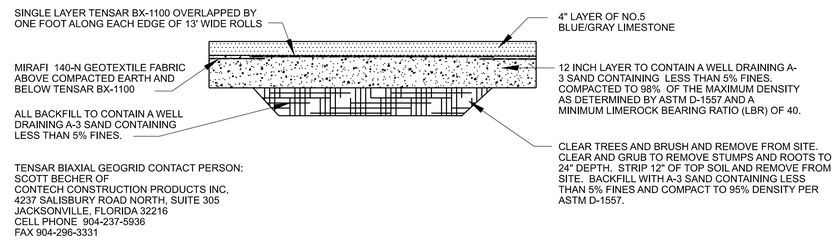
GRAVEL ROAD TYPICAL SECTION

N.T.S.



TYPICAL SECTION FOR CONCRETE DRIVEWAY

NOT TO SCALE



SUBSTATION GRAVEL YARD TYPICAL SECTION

N.T.S.

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BUILDING COMMUNITY
21 W CHURCH ST.
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	-	-	-	-	-	BY	JS
	-	-	-	-	-	REVIEW	TRG
	-	-	-	-	-	DRAFTING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JLC
	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

PAVING, GRADING AND DRAINAGE DETAILS

NORMANDY SUBSTATION

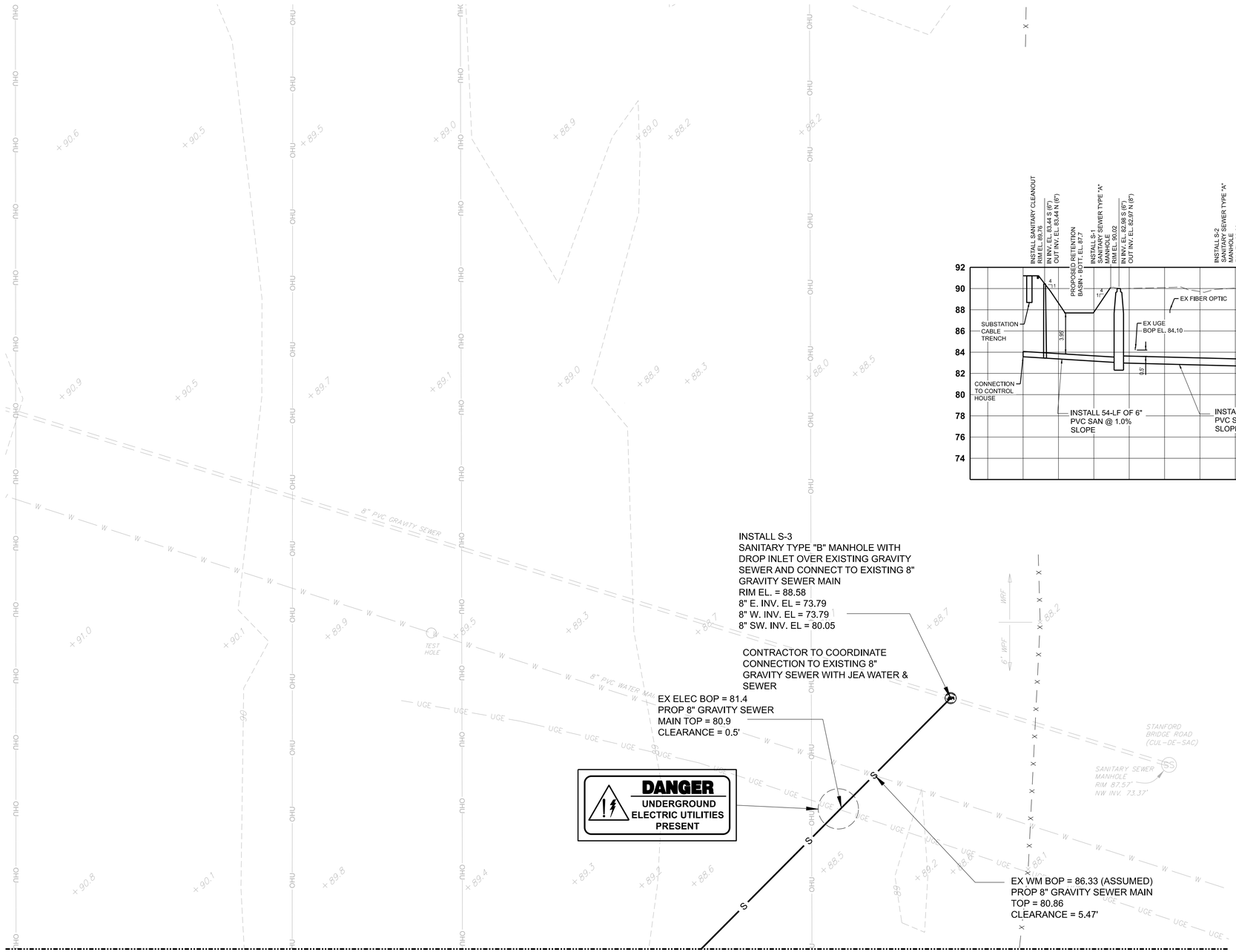
SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: PGD5.dgn
DRAWING SET: NM2023
DRAWING ID: PGD5
SHEET #: 14 OF 61

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MATCHLINE A-A

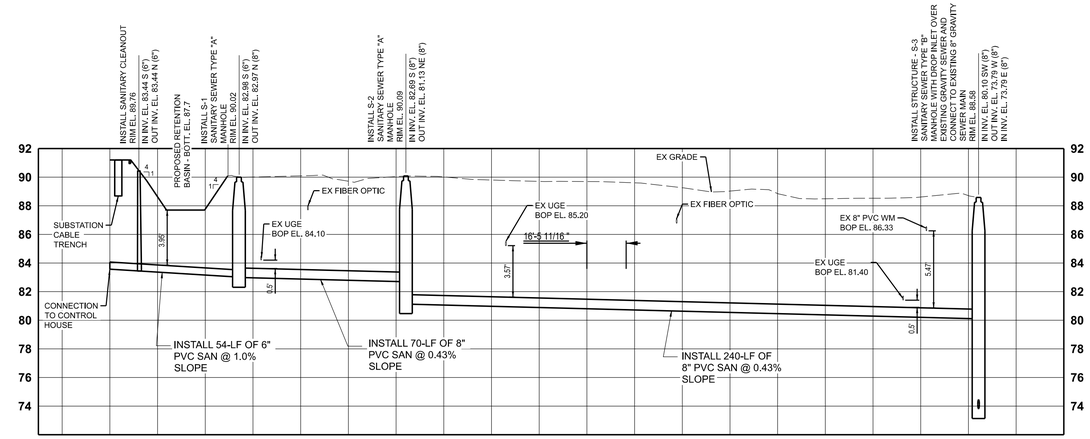
SEE SHEET WS2 FOR CONTINUATION

NOTES

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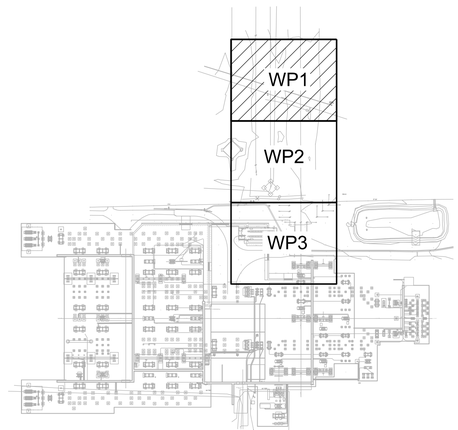
LEGEND

- PROPOSED POTABLE WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED BEND
- PROPOSED SANITARY BEND WITH CLEAN OUT
- PROPOSED SANITARY SEWER MANHOLE



SANITARY SEWER PROFILE

SCALE: 1"=30' HORZ | 1"=5' VERT



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

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		-	-	-	-	REVIEW	TRG
		-	-	-	-	DRAFTING	
		-	-	-	-	DATE	3/12/24
		-	-	-	-	BY	JLC
		-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

WATER AND SEWER PLAN SHEET 1 OF 3

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: WS1.dgn

DRAWING SET: NM2023

DRAWING ID: WS1

SHEET #: 15 OF 61

JEA\ARCH24\2"x36" V:\Projects\2023\23-0501.00000 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\WS1.dgn PRINTED 2024-1-29 AT 07:48

MATCHLINE A-A

SEE SHEET WS1 FOR CONTINUATION

INSTALL 240 LF OF 8" PVC GRAVITY SEWER MAIN @ 0.43% SLOPE (MIN).

EX ELEC BOP = 85.2
PROP 8" GRAVITY SEWER MAIN
TOP = 81.63
CLEARANCE = 3.57'

30' MIN

110' MIN

DANGER
UNDERGROUND ELECTRIC UTILITIES PRESENT

INSTALL S-2
SANITARY SEWER TYPE "A" MANHOLE
RIM EL. = 90.09
8"NE. INV. EL = 81.13
8" S. INV. EL = 82.69

INSTALL 70 LF OF 8" PVC GRAVITY SEWER MAIN @ 0.43% SLOPE (MIN).

DANGER
UNDERGROUND ELECTRIC UTILITIES PRESENT

EX ELEC BOP = 84.1
PROP 8" GRAVITY SEWER MAIN
TOP = 83.6
CLEARANCE = 0.5'

MATCHLINE B-B

SEE SHEET WS3 FOR CONTINUATION

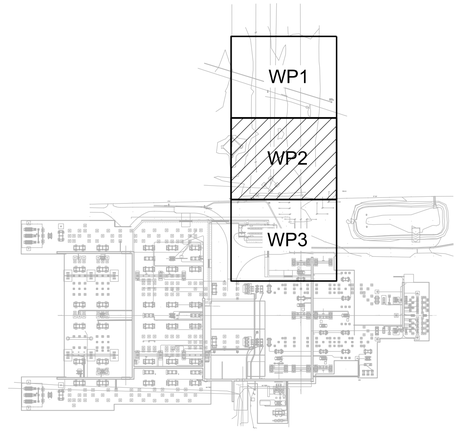
NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

LEGEND

- PROPOSED POTABLE WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED BEND
- PROPOSED SANITARY BEND WITH CLEAN OUT
- PROPOSED SANITARY SEWER MANHOLE

N



KEY PLAN

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

16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma
chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

PROFESSIONAL ENGINEER'S SEAL

FOR PROFESSIONAL'S SEAL SEE SIGNATURE SHEET
DWG. NAME: SS.DGN
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JS
	-	-	-	-	-	REVIEW	TRG
	-	-	-	-	-	DRAFTING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JLC
	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

WATER AND SEWER PLAN SHEET 2 OF 3

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: WS2.dgn

DRAWING SET: NM2023

DRAWING ID: WS2

SHEET #: 16 OF 61

JEA ARCH D (24"X36") V:\Projects\2025\2123-001.100000 - Normandy Substation New Control House\Design\CIVIL\WS02\Dgn\WS2.dgn PRINTED 2026-2-25 AT 07:49

MATCHLINE B-B

SEE SHEET WS2 FOR CONTINUATION

INSTALL S-1
SANITARY SEWER TYPE "A" MANHOLE
RIM EL. = 90.00
8"N. INV. EL = 82.97
8" S. INV. EL = 82.97

RETENTION BASIN

SUBSTATION IS A HIGH SECURITY FACILITY
SEWER TRENCH GOES UNDER EXISTING FENCE. CONTRACTOR SHALL ENSURE THAT FENCE IS OPEN ONLY FOR TIME REQUIIRED TO INSTALL SECTION OF PIPE AND SECURED DAILY.

INSTALL 54 LF OF 6" PVC GRAVITY SEWER LATERAL @ 1% SLOPE (MIN).

INSTALL CLEANOUT
INV ELEV = 83.44

PROP ELEC TRENCH BOP = 88.3
PROP 6" GRAVITY LATERAL TOP = 83.97
CLEARANCE = 4.33'

CABLE TRENCH

INSTALL 2"
45° BEND

CONTRACTOR TO COORDINATE WATER AND SEWER CONNECTIONS FOR CONTROL HOUSE WITH JEA FIELD ENGINEER

CONTROL BUILDING

ACCESS CONTROL PANEL

INSTALL 3" CASING FOR WATER SERVICE CROSSING ROADWAY AND PARKING AREA

CABLE TRENCH

EV1

EV2

SEE DETAIL

EXIST. SEC, POWER HH#1

EXIST. SEC, COMM HH#1

INSTALL 325 LF OF 2" SCHED 80 PVC WATER MAIN

INSTALL 2" 45° BEND

INSTALL 2" 45° BEND

INSTALL 6" 90° BEND

INSTALL 2 " WATER METER

INSTALL 2" SERVICE SADDLE FOR WATER SERVICE CONNECTION

EXISTING 6" PVC WATER MAIN

CONTRACTOR TO COORDINATE CONNECTION TO EXISTING WATER MAIN WITH JEA WATER & SEWER

CABLE TRENCH

EXIST. EAST 138kV CABLE TRENCH

RIP-RAP

NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

LEGEND

- PROPOSED POTABLE WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED BEND
- PROPOSED SANITARY BEND WITH CLEAN OUT
- PROPOSED SANITARY SEWER MANHOLE

WP1

WP2

WP3

N

KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA

BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

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	-	-	-	-	-	DATE	3/12/24
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	-	-	-	-	-	REVIEW	TRG
	-	-	-	-	-	DRAFTING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JLC
	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

WATER AND SEWER PLAN SHEET 3 OF 3

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

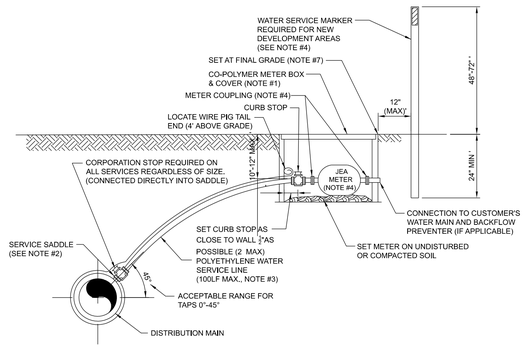
DRAWING NAME: WS3.dgn

DRAWING SET: NM2023

DRAWING ID: WS3

SHEET #: 17 OF 61

JEA_ARCH-D (24"X36" V:\Projects\2023\23-001\10005 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\WS3.dgn PRINTED 2024-3-25 AT 07:49

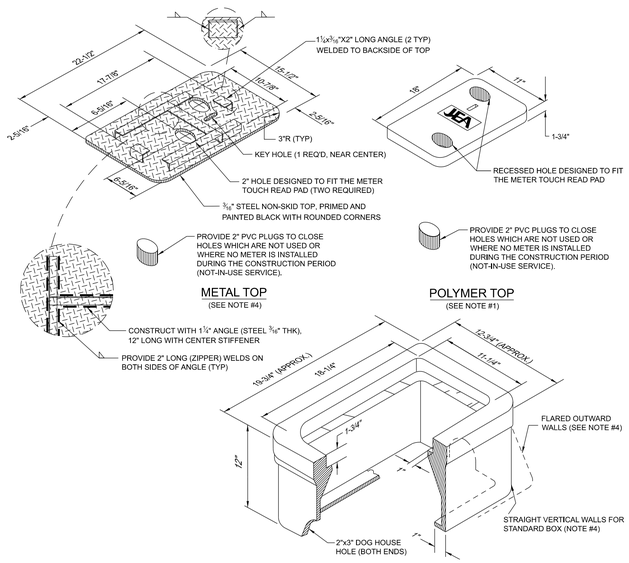


NOTES:

1. SEE PLATE W-1 FOR METER LOCATION REQUIREMENTS.
2. SINGLE BAND SADDLES SHALL BE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED. BRASS SADDLES MAY BE UTILIZED ON NEW 1 INCH AND SMALLER WATER SERVICES WHICH ARE INSTALLED ON A DRY 10 INCH OR SMALLER PVC WATER MAIN.
3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY J.E.A. CONSTRUCT POLY LINE WITH 24" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (1" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS APPROVED OTHERWISE BY JEA.
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E., IF NO METER IS INSTALLED). WATER SERVICES SERVING VACANT LOTS (SERVICE NOT IN USE), SHALL INCLUDE A "N" CUT INTO THE CURB (CLOSEST TO THE METER BOX), AND PAINTED BLUE (PAINTED PURPLE FOR RECLAIMED WATER). IN ADDITION, FOR NEW DEVELOPMENT AREAS WHERE THE WATER SERVICE IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED BLUE OR PURPLE FOR RECLAIMED WATER). THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).
5. NO 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.
7. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (i.e. NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).
8. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH, SEE PLATE W-44.

WATER SERVICE DETAIL- 2" AND SMALLER METER

JANUARY 2022 PLATE W-2



POLYMER BOX

NOTES:

1. THE STANDARD BOX (A-8 (ASTM C857) LOAD RATING WITH STRAIGHT VERTICAL WALLS) & TOP (A-8 (ASTM C857) RATING WITH 2 HOLES) SHALL BE MADE OF POLYMER CONCRETE. (SIMILAR TO OLD BROOKS SERIES 37 BOX). BOX WALLS SHALL BE FIBERGLASS. THE INSIDE LIP OF THE BOX SHALL BE RATED SAME AS THE BOX. THE ONE HOLE LIDS ARE FOR SPECIAL ORDERS ONLY AND REQUIRE JEA'S APPROVAL PRIOR TO USE.
2. ALL SIZES SHOWN ARE IN INCHES AND ARE APPROXIMATE SIZES.
3. POLYMER BOX APPROXIMATE WEIGHT 25lbs. POLYMER TOP APPROXIMATE WEIGHT 20lbs. SEE CONSTRUCTION DETAILS W-3A (TWO HOLE) AND W-3B (ONE HOLE) FOR MANUFACTURING DETAILS FOR COVERS.
4. UNLESS APPROVED OTHERWISE IN WRITING BY JEA, ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN THE ROADWAY, DRIVEWAYS OR SIDEWALKS). IF AN EXCEPTION TO THIS RULE IS APPROVED BY JEA, THEN THE FOLLOWING SHALL BE PROVIDED:
   A) UNDER NO CIRCUMSTANCE SHALL A METER BOX BE LOCATED IN A COMMERCIAL TRAFFIC AREA.
   B) IF AN EXCEPTION IS APPROVED IN WRITING THE METER BOX LOCATED IN A SIDEWALK OR RESIDENTIAL DRIVEWAY SHALL INCLUDE A POLYMER BOX WITH FLARED OUTWARD WALLS (NOT STRAIGHT WALLS) AND A POLYMER TOP. BOX AND TOP SHALL COMPLY WITH A-8 (ASTM C857), LOAD RATING.
   C) METAL TOPS MAY BE UTILIZED IF SPECIFICALLY APPROVED BY JEA MANAGER OR JEA METER O&M STAFF.

WATER METER BOX & COVER FOR 1" AND SMALLER METERS

JANUARY 2022 PLATE W-3

WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES

1. IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C. AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE "RECLAIMED WATER" REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
2. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER.
3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).
4. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLE TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
5. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
6. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 4 AND 5 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINE CONVEYING RECLAIMED WATER.
7. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.
8. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS, PRIOR TO CONSTRUCTION.

NOTES ON UTILITY SEPARATION REQUIREMENTS

JANUARY 2022 PLATE W-11

LENGTH (L) TO BE RESTRAINED (SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS			VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	L (FT.)
4	21	9	5	3	17	3	47
6	30	13	6	3	23	4	66
8	38	16	8	4	30	6	86
10	45	19	9	5	36	7	103
12	53	22	11	6	43	8	121
14	61	26	13	6	50	9	140
16	66	28	14	7	55	10	154
18	73	30	15	8	60	11	170
20	79	33	16	8	66	12	186
24	79	33	16	8	77	15	185
30	93	39	19	10	97	17	222
36	106	39	21	11	107	20	257
42	117	49	24	12	120	24	289
48	144	53	26	13	133	26	321

REDUCERS	
SIZE (IN.)	L (FT.)
6x4	34
8x6	36
8x4	62
10x8	35
10x6	63
12x10	36
12x8	64
16x12	66
16x10	92
20x18	35
20x16	66
20x12	117
24x20	56
24x18	80
24x16	101
30x24	78
30x20	121
36x30	78
36x24	141
42x36	75
42x30	140
48x42	75
48x36	139

TEES SEE NOTE 5		
RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6 4 < LESS	10 F.O.
8	8 6 < LESS	29 F.O.
10	10 8 6 < LESS	45 13 F.O.
12	12 10 8 < LESS	62 32 F.O.
16	16 12 10 10 < LESS	94 39 5 F.O.
20	20 16 12 10 < LESS	125 76 14 F.O.
24	24 20 16 12 < LESS	124 84 36 F.O.
30	30 24 20 16 16 < LESS	159 104 60 5 F.O.
36	36 30 24 20 16 < LESS	192 142 83 33 F.O.
42	42 36 30 24 20 16 < LESS	223 178 124 59 5 F.O.
48	48 42 36 30 24 20 < LESS	253 209 162 104 34 F.O.

F.O. = FITTING ONLY

PVC PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS.
2. ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM, PER THE DETAILS, L= IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L=IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL, ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
7. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

PVC PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2022

HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY

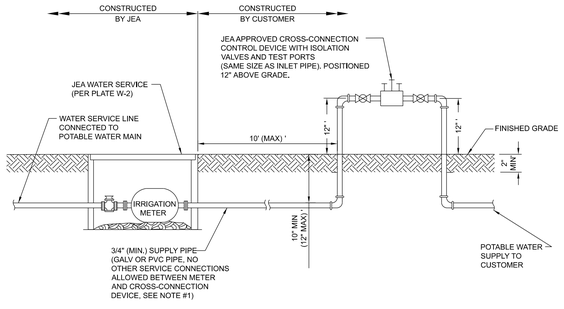
CONFLICTING UTILITY	POTABLE WATER			WASTEWATER GRAVITY AND FORCE MAIN			RECLAIMED WATER			VACUUM SEWERS		
	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*
POTABLE WATER	3' NOTE 1	12"	3' NOTE 2	6' to 10'	12" NOTE 5	6' NOTE 2	3'	12"	6' NOTE 2	3' to 10'	12"	3' NOTE 2
RECLAIMED WATER	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2
WASTEWATER (GRAVITY AND FORCE MAIN)	6' to 10'	12"	6' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
VACUUM SEWERS	3' to 10'	12"	3' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
RIGHT OF WAYS	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
PERMANENT STRUCTURES (BUILDINGS, SIGNS, POLES, ETC.)	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A
STORM SEWERS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
GAS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
TREES	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A
ALL OTHER UTILITIES	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2

NOTES:

1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTH, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
2. THE MINIMUM JOINT SPACING REQUIRED FROM CROSSING FROM OTHER UTILITIES WHILE STILL MAINTAINING MINIMUM VERTICAL SEPARATION.
3. DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
4. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURES.
5. WATER MAIN SHOULD CROSS ABOVE OTHER PIPES WHENEVER POSSIBLE. WHEN WATER MAIN MUST BE BELOW OTHER UTILITY PIPING, THE MINIMUM SEPARATION SHALL BE 12 INCHES.
6. REFER TO POTABLE WATER PIPING- SECTION 350, III.4.11.
7. SEE SECTION 350, III.4.10 FOR MINIMUM SEPARATION REQUIREMENTS FROM PIPE TO STRUCTURES.

SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS

JANUARY 2022 PLATE W-10

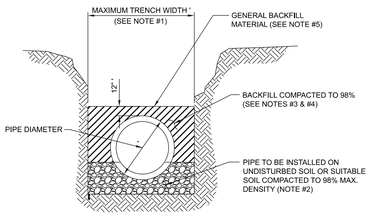


NOTES:

1. WATER SERVICE CONNECTIONS REQUIRE ABOVE GRADE REDUCED PRESSURE BACKFLOW PREVENTERS. (SEE PLATE W-15)
2. BACKFLOW PREVENTION DEVICES REQUIRED WHEN:
   IRRIGATION SYSTEMS - REQUIRED ON IRRIGATION SYSTEMS AT THE CONNECTION TO POTABLE SYSTEM
   RESIDENTIAL SYSTEMS - REQUIRED ON WATER SERVICE IF RECLAIMED SERVICE WATER AVAILABLE TO SITE
   COMMERCIAL SITES - REQUIRED ON ALL WATER SERVICES
   INDUSTRIAL SITES - REQUIRED ON BOTH WATER AND RECLAIMED SERVICE CONNECTIONS.
3. RESIDENTIAL IRRIGATION SERVICES MAY UTILIZE AN ALTERNATE BACKFLOW PREVENTER LOCATION IF THE FOLLOWING CONDITIONS EXITS:
   3.a. CUSTOMER HAS SUBMITTED A COMPLETED "CUSTOMER AFFIDAVIT" FORM AND
   3.b. THERE ARE NO ADDITIONAL CONNECTIONS BETWEEN THE METER AND THE BACKFLOW PREVENTER, AND
   3.c. THE ALTERNATE BACKFLOW LOCATION IS EASILY ACCESSIBLE TO JEA AND BACKFLOW TESTERS.

CROSS CONNECTION CONTROL DEVICE

JANUARY 2022 JEA IRRIGATION SERVICE CONNECTIONS PLATE W-15A



TYPICAL TRENCH

NOTES:

1. TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE; OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #901, PARAGRAPH #4c) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
2. BELL HOLE SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE UNDISTURBED TRENCH BOTTOM. BOULDERS OR LOOSE ROCKS LARGER THAN 3/4 INCH IN SIZE WILL NOT BE PERMITTED IN BACKFILL UP TO 1 FOOT ABOVE THE TOP OF THE PIPE.
3. BACK FILL MATERIAL UP TO A LEVEL OF 1 FOOT OVER THE PIPE SHALL CONSIST OF AASHTO CLASS A-3 SOIL (SUITABLE SOIL) AND SHALL EXCLUDE CLAY MATERIALS AND LOOSE ROCKS LARGER THAN 3/4 INCH SIZE.
4. BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE OR BOTTOM OF STRUCTURES SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% OF IT'S MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.
5. SEE " EXCAVATION AND EARTHWORK", SECTION 408 FOR ADDITIONAL REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

OPEN CUT TRENCH FOR PRESSURE PIPE

JANUARY 2022 IN CITY RIGHT-OF-WAY PLATE W-42

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA BUILDING COMMUNITY
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PROFESSIONAL ENGINEER'S SEAL

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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
-	-	-	-	-	-	DATE	3/12/24
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-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JLC
-	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

WATER AND SEWER DETAILS SHEET 1 OF 3

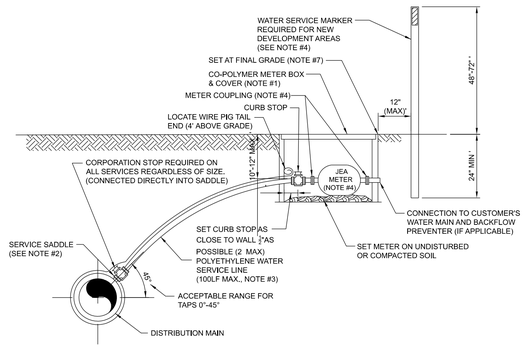
NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN PROJ #: 8007704

DRAWING NAME: WS4.dgn
DRAWING SET: NM2023
DRAWING ID: WS4
SHEET #: 18 OF 61

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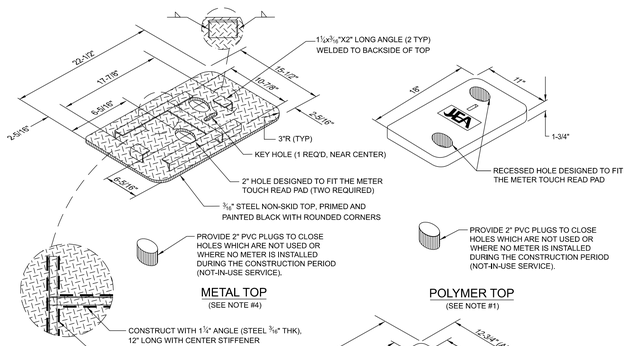


NOTES:

1. SEE PLATE W-1 FOR METER LOCATION REQUIREMENTS.
2. SINGLE BAND SADDLES SHALL BE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED. BRASS SADDLES MAY BE UTILIZED ON NEW 1 INCH AND SMALLER WATER SERVICES WHICH ARE INSTALLED ON A DRY 10 INCH OR SMALLER PVC WATER MAIN.
3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY J.E.A. CONSTRUCT POLY LINE WITH 24" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (1" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS APPROVED OTHERWISE BY JEA.
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E., IF NO METER IS INSTALLED). WATER SERVICES SERVING VACANT LOTS (SERVICE NOT IN USE), SHALL INCLUDE A "N" CUT INTO THE CURB (CLOSEST TO THE METER BOX), AND PAINTED BLUE (PAINTED PURPLE FOR RECLAIMED WATER). IN ADDITION, FOR NEW DEVELOPMENT AREAS WHERE THE WATER SERVICE IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED BLUE OR PURPLE FOR RECLAIMED WATER). THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).
5. NO 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.
7. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (i.e. NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).
8. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH, SEE PLATE W-44.

WATER SERVICE DETAIL- 2" AND SMALLER METER

JANUARY 2022 PLATE W-2



POLYMER BOX

NOTES:

1. THE STANDARD BOX (A-8 (ASTM C857) LOAD RATING WITH STRAIGHT VERTICAL WALLS) & TOP (A-8 (ASTM C857) RATING WITH 2 HOLES) SHALL BE MADE OF POLYMER CONCRETE. (SIMILAR TO OLD BROOKS SERIES 37 BOX). BOX WALLS SHALL BE FIBERGLASS. THE INSIDE LIP OF THE BOX SHALL BE RATED SAME AS THE BOX. THE ONE HOLE LIDS ARE FOR SPECIAL ORDERS ONLY AND REQUIRE JEA'S APPROVAL PRIOR TO USE.
2. ALL SIZES SHOWN ARE IN INCHES AND ARE APPROXIMATE SIZES.
3. POLYMER BOX APPROXIMATE WEIGHT 25lbs. POLYMER TOP APPROXIMATE WEIGHT 20lbs. SEE CONSTRUCTION DETAILS W-3A (TWO HOLE) AND W-3B (ONE HOLE) FOR MANUFACTURING DETAILS FOR COVERS.
4. UNLESS APPROVED OTHERWISE IN WRITING BY JEA, ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN THE ROADWAY, DRIVEWAYS OR SIDEWALKS). IF AN EXCEPTION TO THIS RULE IS APPROVED BY JEA, THEN THE FOLLOWING SHALL BE PROVIDED:
   A) UNDER NO CIRCUMSTANCE SHALL A METER BOX BE LOCATED IN A COMMERCIAL TRAFFIC AREA.
   B) IF AN EXCEPTION IS APPROVED IN WRITING THE METER BOX LOCATED IN A SIDEWALK OR RESIDENTIAL DRIVEWAY SHALL INCLUDE A POLYMER BOX WITH FLARED OUTWARD WALLS (NOT STRAIGHT WALLS) AND A POLYMER TOP. BOX AND TOP SHALL COMPLY WITH A-8 (ASTM C857), LOAD RATING.
   C) METAL TOPS MAY BE UTILIZED IF SPECIFICALLY APPROVED BY JEA MANAGER OR JEA METER O&M STAFF.

WATER METER BOX & COVER FOR 1" AND SMALLER METERS

JANUARY 2022 PLATE W-3

WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES

1. IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C. AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE "RECLAIMED WATER" REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
2. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER.
3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).
4. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLE TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
5. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
6. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 4 AND 5 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINE CONVEYING RECLAIMED WATER.
7. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.
8. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS, PRIOR TO CONSTRUCTION.

NOTES ON UTILITY SEPARATION REQUIREMENTS

JANUARY 2022 PLATE W-11

LENGTH (L) TO BE RESTRAINED (SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS			VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	L (FT.)
4	21	9	5	3	17	3	47
6	30	13	6	3	23	4	66
8	38	16	8	4	30	6	86
10	45	19	9	5	36	7	103
12	53	22	11	6	43	8	121
14	61	26	13	6	50	9	140
16	66	28	14	7	55	10	154
18	73	30	15	8	60	11	170
20	79	33	16	8	66	12	186
24	79	33	16	8	77	15	185
30	93	39	19	10	97	17	222
36	106	39	21	11	107	20	257
42	117	49	24	12	120	24	289
48	144	53	26	13	133	26	321

PVC PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS.
2. ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM, PER THE DETAILS, L= IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L=IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL, ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
7. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

REDUCERS

SIZE (IN.)	L (FT.)
6x4	34
8x6	36
8x4	62
10x8	35
10x6	63
12x10	36
12x8	64
16x12	66
16x10	92
20x18	35
20x16	66
20x12	117
24x20	56
24x18	80
24x16	101
30x24	78
30x20	121
36x30	78
36x24	141
42x36	75
42x30	140
48x42	75
48x36	139

TEES SEE NOTE 5

RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
6	4 < LESS	10 F.O.
8	8	29 F.O.
	6 < LESS	F.O.
10	10	45
	8	13
	6 < LESS	F.O.
12	12	62
	10	32
	8 < LESS	F.O.
16	16	94
	12	39
	10	5
	10 < LESS	F.O.
20	20	125
	16	76
	12	14
	10 < LESS	F.O.
24	24	124
	20	84
	16	36
	12 < LESS	F.O.
30	30	159
	24	104
	20	60
	16	5
	16 < LESS	F.O.
36	36	192
	30	142
	24	83
	20	33
	16 < LESS	F.O.
42	42	223
	36	178
	30	124
	24	59
	20	5
	16 < LESS	F.O.
48	48	253
	42	209
	36	162
	30	104
	24	34
	20 < LESS	F.O.

F.O. = FITTING ONLY

PVC PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2022

HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY

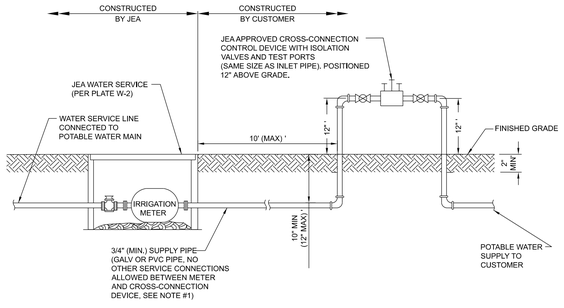
CONFLICTING UTILITY	POTABLE WATER			WASTEWATER GRAVITY AND FORCE MAIN			RECLAIMED WATER			VACUUM SEWERS		
	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*
POTABLE WATER	3' NOTE 1	12"	3' NOTE 2	6' to 10'	12" NOTE 5	6' NOTE 2	3'	12"	6' NOTE 2	3' to 10'	12"	3' NOTE 2
RECLAIMED WATER	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2
WASTEWATER (GRAVITY AND FORCE MAIN)	6' to 10'	12"	6' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
VACUUM SEWERS	3' to 10'	12"	3' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
RIGHT OF WAYS	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
PERMANENT STRUCTURES (BUILDINGS, SIGNS, POLES, ETC.)	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A	SEE NOTE 7	N/A	N/A
STORM SEWERS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
GAS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
TREES	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A
ALL OTHER UTILITIES	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2

NOTES:

1. THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTH, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
2. THE MINIMUM JOINT SPACING REQUIRED FROM CROSSING FROM OTHER UTILITIES WHILE STILL MAINTAINING MINIMUM VERTICAL SEPARATION.
3. DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
4. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURES.
5. WATER MAIN SHOULD CROSS ABOVE OTHER PIPES WHENEVER POSSIBLE. WHEN WATER MAIN MUST BE BELOW OTHER UTILITY PIPING, THE MINIMUM SEPARATION SHALL BE 12 INCHES.
6. REFER TO POTABLE WATER PIPING- SECTION 350, III.4.11.
7. SEE SECTION 350, III.4.10 FOR MINIMUM SEPARATION REQUIREMENTS FROM PIPE TO STRUCTURES.

SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS

JANUARY 2022 PLATE W-10

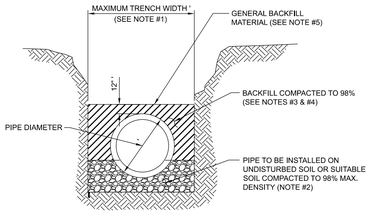


NOTES:

1. WATER SERVICE CONNECTIONS REQUIRE ABOVE GRADE REDUCED PRESSURE BACKFLOW PREVENTERS. (SEE PLATE W-15)
2. BACKFLOW PREVENTION DEVICES REQUIRED WHEN:
   IRRIGATION SYSTEMS - REQUIRED ON IRRIGATION SYSTEMS AT THE CONNECTION TO POTABLE SYSTEM
   RESIDENTIAL SYSTEMS - REQUIRED ON WATER SERVICE IF RECLAIMED SERVICE WATER AVAILABLE TO SITE
   COMMERCIAL SITES - REQUIRED ON ALL WATER SERVICES
   INDUSTRIAL SITES - REQUIRED ON BOTH WATER AND RECLAIMED SERVICE CONNECTIONS.
3. RESIDENTIAL IRRIGATION SERVICES MAY UTILIZE AN ALTERNATE BACKFLOW PREVENTER LOCATION IF THE FOLLOWING CONDITIONS EXITS:
   3.a. CUSTOMER HAS SUBMITTED A COMPLETED "CUSTOMER AFFIDAVIT" FORM AND
   3.b. THERE ARE NO ADDITIONAL CONNECTIONS BETWEEN THE METER AND THE BACKFLOW PREVENTER, AND
   3.c. THE ALTERNATE BACKFLOW LOCATION IS EASILY ACCESSIBLE TO JEA AND BACKFLOW TESTERS.

CROSS CONNECTION CONTROL DEVICE

JANUARY 2022 JEA IRRIGATION SERVICE CONNECTIONS PLATE W-15A



TYPICAL TRENCH

NOTES:

1. TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE; OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #901, PARAGRAPH #4c) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
2. BELL HOLE SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE UNDISTURBED TRENCH BOTTOM. BOULDERS OR LOOSE ROCKS LARGER THAN 3/4 INCH IN SIZE WILL NOT BE PERMITTED IN BACKFILL UP TO 1 FOOT ABOVE THE TOP OF THE PIPE.
3. BACK FILL MATERIAL UP TO A LEVEL OF 1 FOOT OVER THE PIPE SHALL CONSIST OF AASHTO CLASS A-3 SOIL (SUITABLE SOIL) AND SHALL EXCLUDE CLAY MATERIALS AND LOOSE ROCKS LARGER THAN 3/4 INCH SIZE.
4. BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE OR BOTTOM OF STRUCTURES SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% OF IT'S MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.
5. SEE " EXCAVATION AND EARTHWORK", SECTION 408 FOR ADDITIONAL REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

OPEN CUT TRENCH FOR PRESSURE PIPE

JANUARY 2022 IN CITY RIGHT-OF-WAY PLATE W-42

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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NEW NORMANDY CONTROL HOUSE

WATER AND SEWER DETAILS SHEET 2 OF 3

NORMANDY SUBSTATION

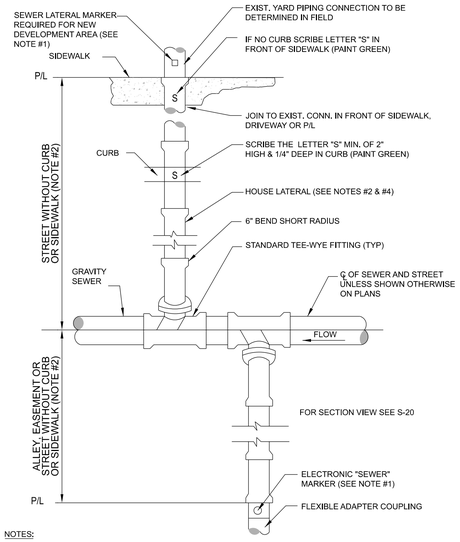
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DRAWING ID: WS5
SHEET #: 19 OF 61

JEA ARCH D-FLD (24"X36" V:\Projects\2021\21-061\1.00\05 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\WS5.dgn PRINTED 2024-3-25 AT 07:49

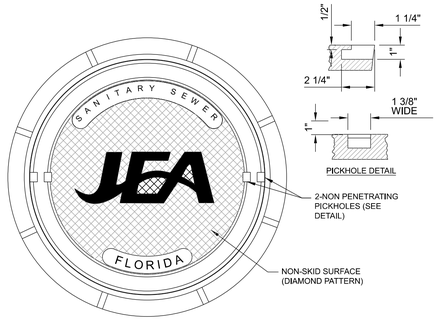


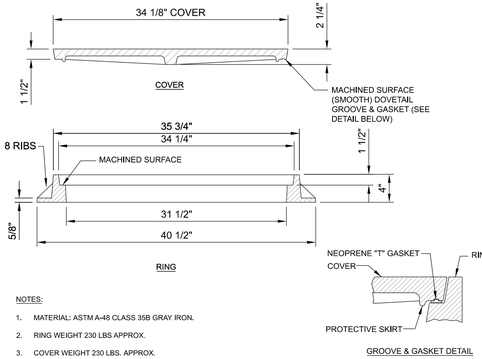
NOTES:

1. TO MARK THE LOCATION OF THE 6" PLUG FOR NEW SERVICE: FOR PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE"NOT" IN USE", FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED. WHERE REQUIRED BY JEA OR NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER SHALL BE INSTALLED TO MARKER SHALL ALSO BE INSTALLED.
2. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
3. NO SEWER SERVICE CONNECTIONS PERMITTED ON GRAVITY SEWER PIPE WHICH ARE 16" AND LARGER.
4. ALL GRAVITY SEWER MAINS AND ASSOCIATED SEWER LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) SHALL BE PVC SDR-26.

HOSE LATERAL - PLAN VIEW

JANUARY 2023 PLATE S-19



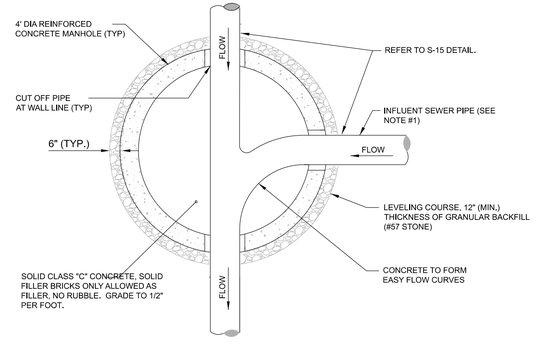


NOTES:

1. MATERIAL: ASTM A-48 CLASS 35B GRAY IRON.
2. RING WEIGHT 230 LBS APPROX.
3. COVER WEIGHT 230 LBS. APPROX.
4. ALL DIMENSIONS ARE SHOWN IN INCHES.
5. FOR MANHOLES WHICH WILL BE MAINTAINED BY JEA (INCLUDING UTILITY DEDICATION PROJECTS), THE COVER SHALL INCLUDE THE "JEA" LOGO AND A NEOPRENE GASKET.
6. FOR MANHOLES WHICH WILL BE MAINTAINED BY PARTIES OTHER THAN JEA (SUCH AS PRIVATE SEWER COLLECTION SYSTEMS, PRIVATE (FORCE MAIN) PUMP OUT BOX AND SYSTEMS NOT MAINTAINED BY JEA), THE COVER SHALL INCLUDE "SANITARY SEWER" GENERIC LETTERING (NO "JEA" LOGO OR NEOPRENE GASKET).

SANITARY SEWER MANHOLE FRAME AND COVER

JANUARY 2023 PLATE S-1

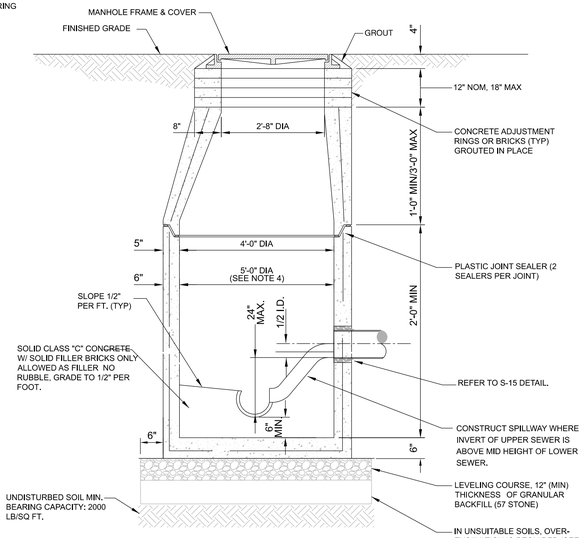


NOTES:

1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE BETWEEN 90° - 180° UNLESS OTHERWISE APPROVED BY JEA.

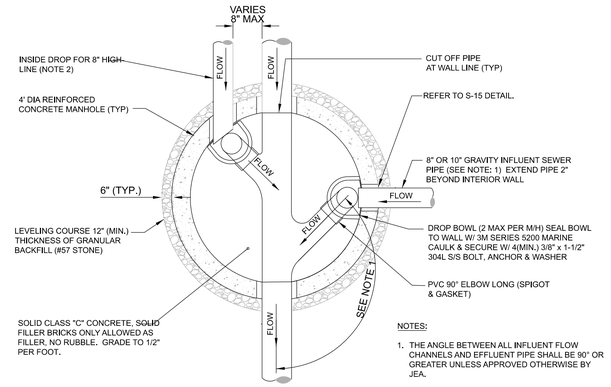
PLAN VIEW (S-3)

(FOR SECTION VIEW SEE S-2)



SECTION VIEW (S-2)

(FOR PLAN VIEW SEE S-3)

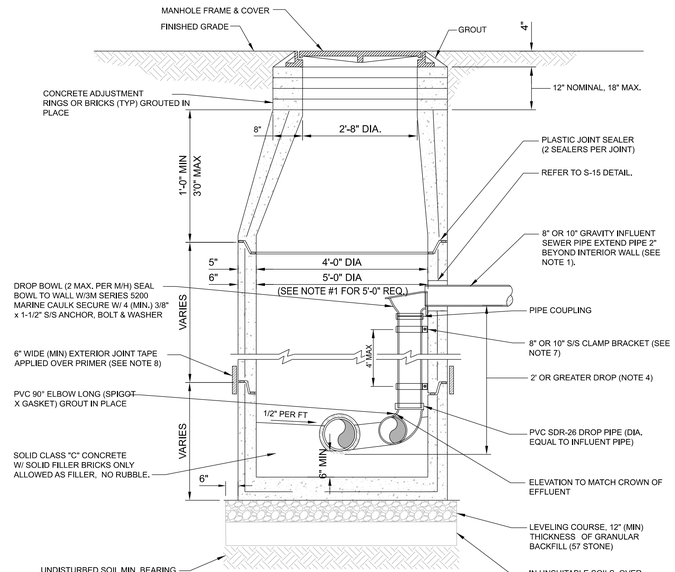


NOTES:

1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE 90° OR GREATER UNLESS APPROVED OTHERWISE BY JEA.
2. THE 8" HIGH-LINE, WHERE UTILIZED, SHALL ENTER THE MANHOLE ON-CENTER OR OFF-CENTER AS SHOWN ABOVE.

PLAN VIEW (S-5)

(FOR SECTION VIEW SEE S-4)



NOTES:

1. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
2. THE INTERIOR AND EXTERIOR OF MANHOLE AND ADJUSTING RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. IF SPECIALTY LINER IS TO BE INSTALLED ON INSIDE SURFACE OF MANHOLE, THE BITUMINOUS WATERPROOFING MATERIAL SHALL BE OMITTED ON THE INSIDE.
4. JUNCTION MANHOLE (CLOSEST TO WETWELL) SHALL BE 5' DIA WITH SPECIALTY LINER.
5. ALL MANHOLE JOINTS BELOW THE TOP COVER SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (WITH PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL. SEE PLATE S-17.
6. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (57 STONE).

SANITARY SEWER TYPE "A" MANHOLE 8"-21" SEWERS

JANUARY 2023 PLATE S-2, S-3

NOTES:

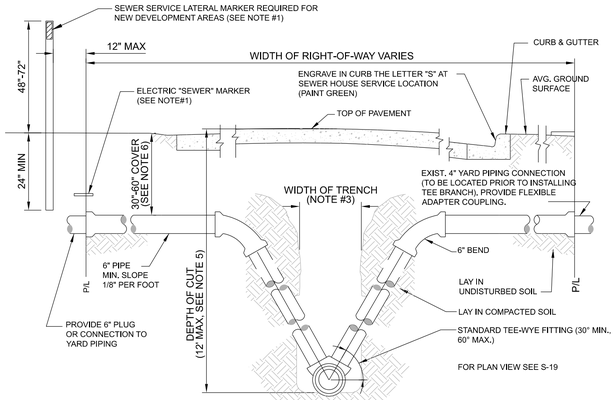
1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'-0" DIA. MANHOLE (6" THICK WALLS) IS REQUIRED IF TWO INSIDE DROPS ARE CONSTRUCTED WITH ONE OR BOTH BEING 10" SIZE. DROP BOWL BY RELINER OR APPROVED EQUAL REQUIRED. THE INSIDE DROP FOR AN 8" HIGH-LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE (SEE PLATE S-5).
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
3. THE INTERIOR AND EXTERIOR OF MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4. TYPE "B" MANHOLE MUST BE USED FOR 2' OR GREATER INFLUENT PIPE DROPS.
5. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
6. A TYPE "D" MANHOLE SHALL BE UTILIZED WHEN THREE OR MORE (2' OR GREATER) DROPS ARE INVOLVED OR WHEN INFLUENT PIPES AREA LARGER THAN 10" IN SIZE.
7. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY.), 1-1/2" WIDE, 11 GA. W/ 3/8" DIA. 18-8 PINCH BOLTS AND NUTS. SECURE TO M/H WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 304 OR 316 STAINLESS STEEL MATERIALS.
8. ALL M/H JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER), TAPE ON THE CONE SECTION IS OPTIONAL.
9. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (57 STONE).

SANITARY SEWER TYPE "B" MANHOLE 8"-10" SEWERS

JANUARY 2023 PLATE S-4, S-5

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

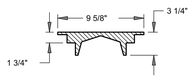


NOTES :

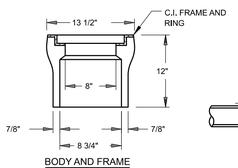
1. TO MARK THE LOCATION OF THE 6" PLUG FOR NEW SERVICE: FOR PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE"NOT" IN USE", FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED. WHERE REQUIRED BY JEA OR NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER SHALL BE INSTALLED TO MARKER SHALL ALSO BE INSTALLED.
2. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES, THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
3. SEE MEASUREMENT AND PAYMENT SECTION FOR MAXIMUM PAYMENT WIDTHS.
4. ALL GRAVITY SEWER MAINS AND ASSOCIATED SEWER LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) SHALL BE PVC SDR-26.
5. UNLESS APPROVED OTHERWISE BY A JEA O&M MANAGER, NO GRAVITY SEWER MAIN WITH SEWER SERVICE LATERALS SHALL BE CONSTRUCTED WITH A "DEPTH OF CUT" GREATER THAN 12 FEET.
6. SEWER SERVICE LATERALS ASSOCIATED WITH GRAVITY SEWER MAINS WHICH ARE DEEPER THAN 12 FEET, MUST BE ROUTED TO A GRAVITY SEWER HIGH-LINE, A MANHOLE OR OTHER JEA APPROVED METHOD.
7. THE SEWER SERVICE LATERAL SHALL BE CONSTRUCTED AT A DEPTH TO ALLOW A GRAVITY CONNECTION BY THE CUSTOMER, WHERE POSSIBLE (CONTINGENT UPON MEETING THE CUSTOMER'S ON-SITE CONDITIONS AND LOCAL CONSTRUCTION STANDARDS), A LATERAL REQUIRING MORE THAN 60" OF COVER MUST BE APPROVED, PRIOR TO CONSTRUCTION, BY JEA.

HOSE LATERAL - SECTION VIEW

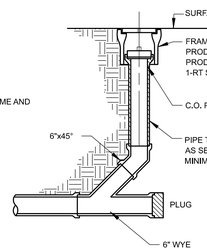
JANUARY 2023 PLATE S-20



C.I. COVER MARKED "SEWER"



BODY AND FRAME



SANITARY SEWER CLEAN-OUT

N.T.S.

UD9

JEA ARCH D (24"X36" - V:\Projects\2023\23-0951.100\05 - Normandy Substation New Control House\Design\CAD\WS\023dgn WS6.dgn PRINTED 2024-2-26 AT 07:50

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW
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ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

WATER AND SEWER DETAILS SHEET 3 OF 3

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

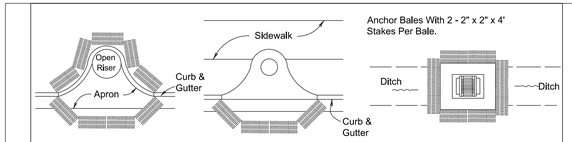
PROJ #: 8007704

DRAWING NAME: WS6.dgn

DRAWING SET: NM2023

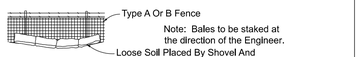
DRAWING ID: WS6

SHEET #: 20 OF 61

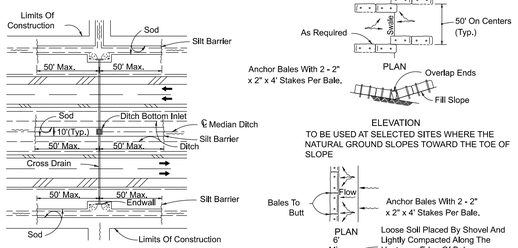


PARTIAL INLET COMPLETED INLET DITCH BOTTOM INLET

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



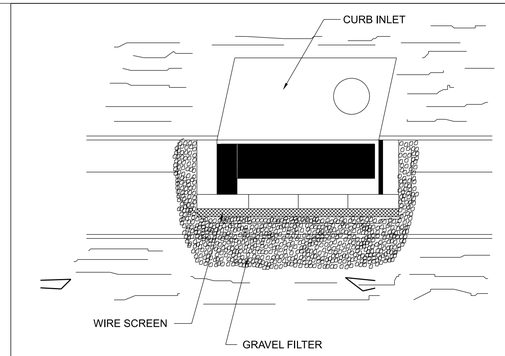
BALES BACKED BY FENCE



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

BARRIERS FOR FILL SLOPES

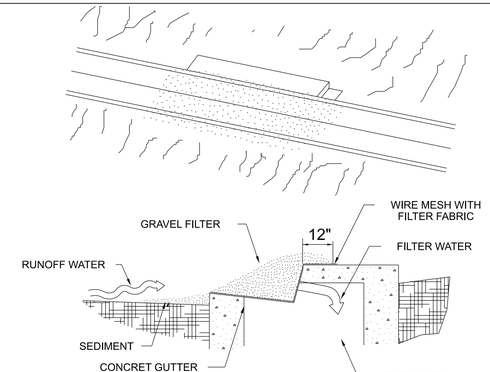
HAY BALE LOCATION	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-901
		DATE DRAWN	2-20-79
		REVISED DATE	5-12-94



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

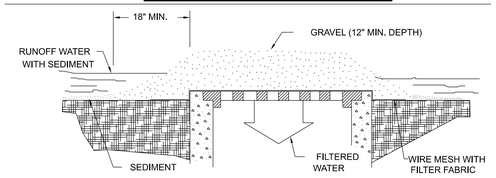
BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-902
		DATE DRAWN	8-4-79
		REVISED DATE	5-12-94



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL CURB INLET SEDIMENT FILTER

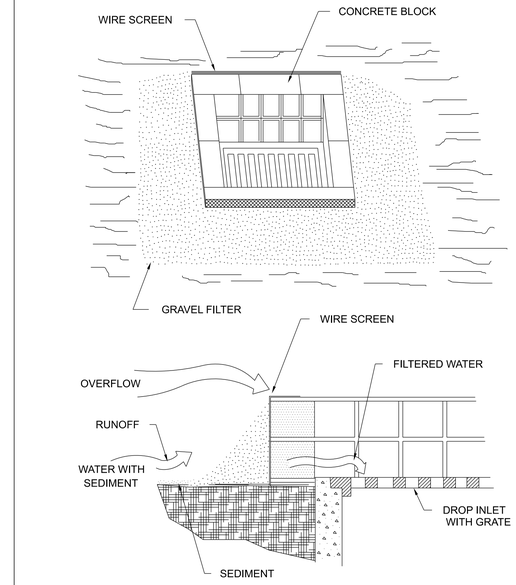


SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

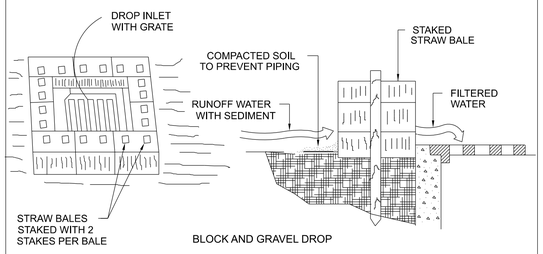
GRAVEL INLET SDEIMENT TRAP	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-903
		DATE DRAWN	8-4-79
		REVISED DATE	5-12-94



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

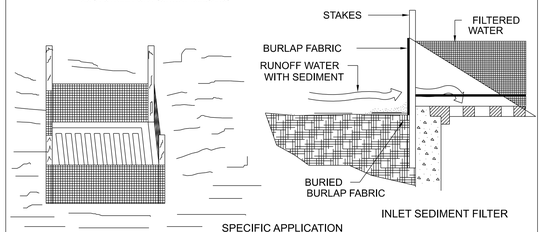
BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-904
		DATE DRAWN	8-4-79
		REVISED DATE	5-12-94



BLOCK AND GRAVEL DROP

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL, THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL, THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-905
		DATE DRAWN	8-9-79
		REVISED DATE	5-12-94

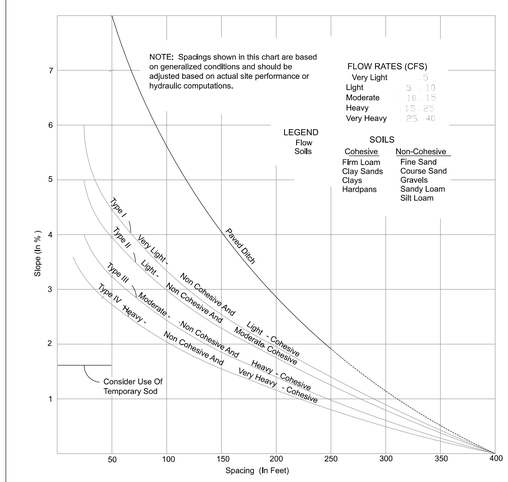
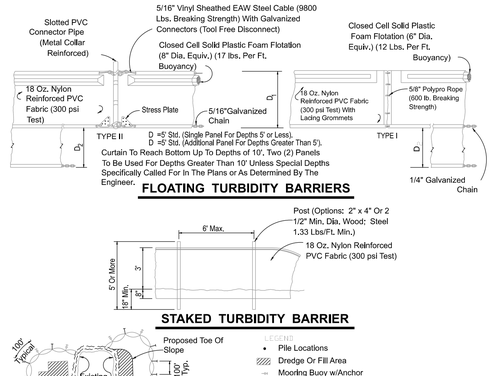


CHART I

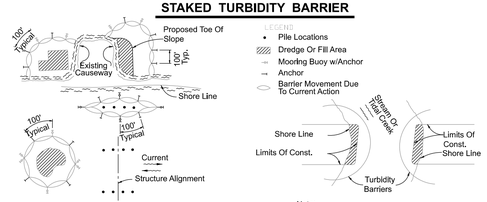
RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH HAY BALE BARRIERS

SPACING RECOMMENDATION FOR SILT FENCES AND HAY BALES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-906
		DATE DRAWN	8-9-79
		REVISED DATE	5-12-94



FLOATING TURBIDITY BARRIERS

STAKED TURBIDITY BARRIER



NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.

Note:
Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the pay item(s) established in the plans for Floating Turbidity Barrier and/or Staked Turbidity Barrier. Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

TURBIDITY BARRIER APPLICATIONS

TURBIDITY BARRIERS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-907
		DATE DRAWN	8-9-93
		REVISED DATE	5-12-94

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
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-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JS
-	-	-	-	-	-	REVIEW	TRG
-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JLC
-	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EROSION CONTROL SHEET 1 OF 3

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

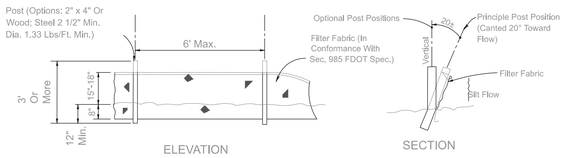
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DRAWING SET: NM2023

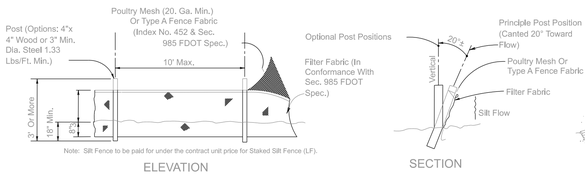
DRAWING ID: EC-1

SHEET #: 21 OF 61

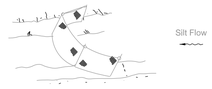
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JEA.MRDH2.24"x36"



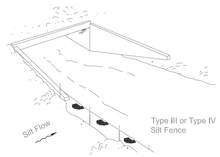
TYPE III SILT FENCE
(NOT TO SCALE)

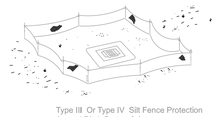


TYPE IV SILT FENCE
(NOT TO SCALE)







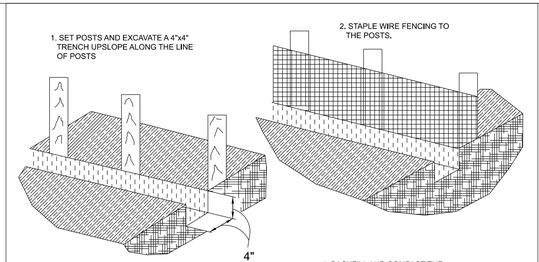


Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

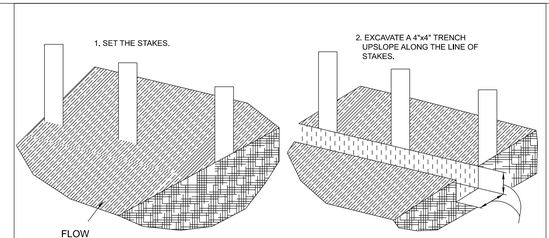
SILT FENCE APPLICATIONS
(NOT TO SCALE)

Note:
Spacing for Type III Fence to be in accordance with Chart I, Plate D-906 and ditch installations at drainage structures above.

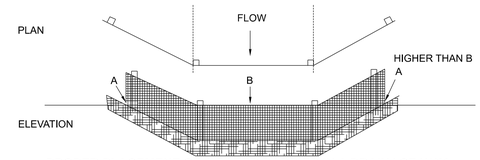
SILT FENCE TYPE III & IV	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-908
		DATE DRAWN	8-9-93
		REVISED DATE	5-12-94



CONSTRUCTION DETAILS FOR SILT FENCES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-909
		DATE DRAWN	8-5-93
		REVISED DATE	5-12-94

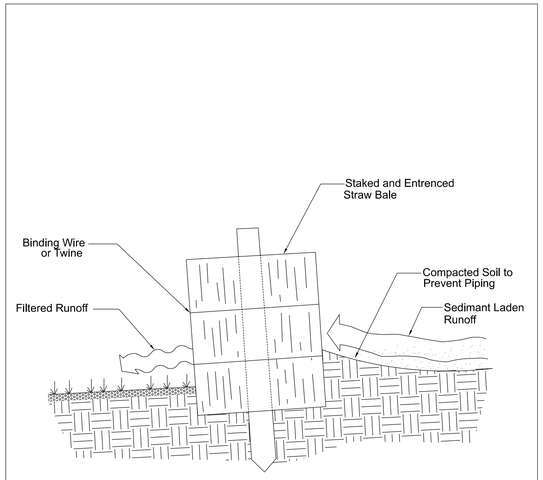


CONSTRUCTION OF A FILTER BARRIER



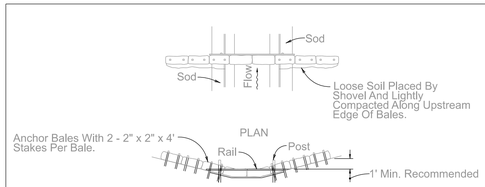
PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

FILTER BARRIER CONSTRUCTION DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-910
		DATE DRAWN	8-5-93
		REVISED DATE	5-12-94



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

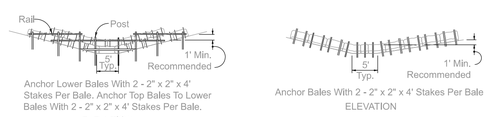
STAKED HAY BALE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-911
		DATE DRAWN	05-07-90
		REVISED DATE	5-12-94



Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart I, Sheet 1 of 3, Index No. 102

BARRIER FOR PAVED DITCH

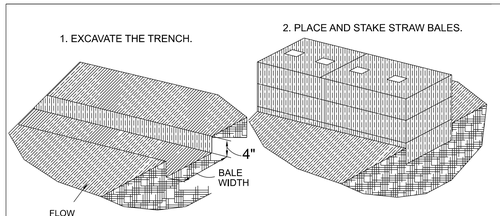




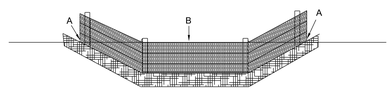
Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart I, Sheet 1 of 3, Index No. 102 (F.D.O.T.)

BARRIER FOR UNPAVED DITCH

HAY BALE BARRIERS TYPE I & II	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-912
		DATE DRAWN	8-9-93
		REVISED DATE	5-12-94



CONSTRUCTION OF A HAY BALE BARRIER



POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF HAY BALE BARRIER IN DRAINAGE WAY

HAY BALE BARRIER CONSTRUCTION DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-913
		DATE DRAWN	8-5-93
		REVISED DATE	5-12-94

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

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ENGINEERING	
DATE	3/12/24
BY	JS
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EROSION CONTROL SHEET 2 OF 3

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: EC2.dgn
DRAWING SET: NM2023
DRAWING ID: EC-2
SHEET #: 22 OF 61

JEA ARCH-D (24.0"X36" EC2.dgn 2024-3-25 - 07:20)

TEMPORARY SEEDING
PLANT MATERIALS

Common Name (Botanical Name)	Seeding Rate Acre	Seeding Rate 1000 ft2	Planting Dates N. FLA.	Comments
OATS (Avena saliva)	3 Bu (125 lbs)	3 lbs	September-February	Will not tolerate flooding, high water table soils.
RYE (Secale cereale)	3 Bu (170 lbs)	4 lbs	September-February	Tolerates cold and drought.
WHEAT (Triticum sp)	3 Bu (120 lbs)	3 lbs	September-February	
ANNUAL RYEGRASS (Lolium multiflorum)	60 lbs	1.5 lbs	September-February	Volunteers may return.
CRIMSON CLOVER (Trifolium incarnatum)	25 lbs	9 oz	September-November	Annual winter legume. Inoculate seed at 5 times recommended rate. Does poorly on deep dry sands, will not tolerate flooding.
RED CLOVER (Trifolium pratense)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 5 times recommended rate. Grows best on moist soils, will not tolerate flooding. Easily hurt by drought.
WHITE CLOVER (Trifolium repens)	6 lbs	2.5 oz	September-December	Annual winter legume. Inoculate seed at 5 times recommended rate. Grows best on moist-wet soils, tolerates some flooding.
ANNUAL SWEETCLOVER (Melilotus altissima)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 3-5 times recommended rate. Grows well on both flatwoods and upland soils. Will not tolerate flooding.
ARROWLEAF CLOVER (Trifolium vesiculosum)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 3-5 times recommended rate. Grows on soil too wet for crimson, tolerates some flooding. Use scarified seed.
LUAINE CLOVER (Lupinus sp.)	60 lbs	1.5 lbs	September-December	Annual winter legume. Inoculate seed at 3 times recommended rate. Susceptible to freeze damage at time of emergence. Use scarified seed.
ALFALFA (Medicago sativa)	22 lbs	8 oz	September-December	Short lived perennial. Some drought resistance. Grows best on well-drained, fertile soils. Will not tolerate wet soils.
AUSTRIAN WINTER PEAS	45 lbs	1 lb	September-December	Grows best on well-drained soils with high clay content.
HAIRY VETCH (Vicia villosa)	25 lbs	9 oz	September-December	Grows best on well-drained, loamy soils.
ALYCECLOVER (Alysicarpus vaginalis)	15 lbs	6 oz	April-July	Warm season annual legume. Grows best on well-drained sandy soils.
COMMON LESPEDEZA (Lespideza striata)	30 lbs	11 oz	March-July	Warm season annual. Needs inoculation on eroded soils. Grows best on sandy loans. Fairly drought resistant.
HAIRY INDIGO (Indigofera hirsuta)	8 lbs (120 ls)	3 oz	March-July	
JOINT VETCH (Aeschynomera americana)	8 lbs	3 oz	March-August	Warm season annual legume. Most suitable of summer legumes for use in low, wet areas.
MILLET (Setaria sp)	30 lbs	11 oz	March-August	Warm season annual. Does not tolerate flooding. Grows best in fertile, moist soils. Pearl and Browntop are good varieties to use.
SESBANIA (Sesban macrocarpa)	30 lbs	11 oz	March-July	Warm season annual legume. Does well under extremely wet conditions.
SORGHAM SUNDANGRASS HYBRID	30 lbs	11 oz	March-July	Warm season annual. Rapid grower. Tolerates dryer soils than millet. Grows best on well-drained soils. Can also use Sudangrass alone.
WEEPING LOVEGRASS (Eragrostis curvula)	5 lbs	2 oz	March-August	Short-lived perennial, 2-3 years. Tolerates hot, dry slopes and acid, infertile soils.

Usually mixtures of the above plant materials are better than a single plant alone. Each of the legumes discussed above can be grown in mixture with annual ryegrass and/or the small grains. In a two-crop mixture cut the seeding rate of each crop to one-half of the recommended planting rate when grown alone. Similarly three plant types in a mixture requires approximately one-third of the normal seeding rate for each plant. In a three plant mixture containing a single legume, the legume should be planted at one-half of the pure stand seeding rate.

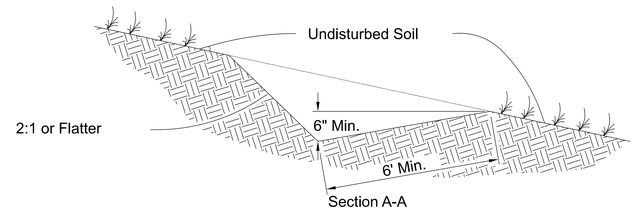
CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE	D-915
	DATE DRAWN	05-08-90	
	REVISED DATE	5-12-94	

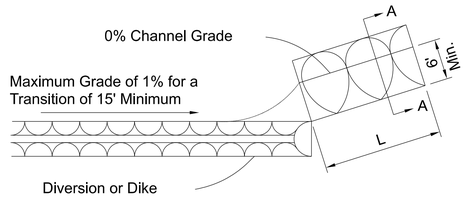
SEEDING MIXTURES, RATES AND DATES

SEEDING MIXTURES, RATES AND DATES

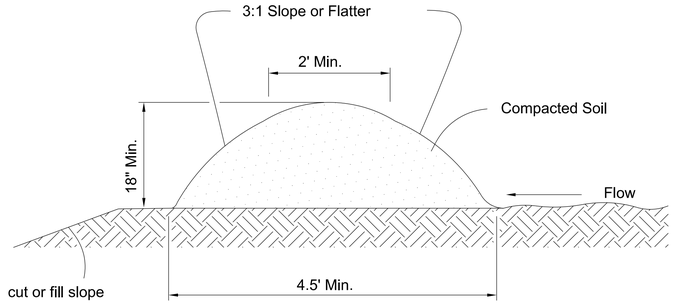
Site Conditions	Seeding Mixtures	Seeding Rate Per Acre	Seeding Rate Per 1000 Ft^2	Seeding Dates N. Fla.	Comments
High Maintenance Lawns					
General Use	1. Bahiagrass	40-60 lbs	1 lb	2/15-8/31	Use 50% scarified seed.
	2. Bahiagrass	40-60 lbs	1 lb	2/15-8/15	Use 50% scarified Bahia seed.
	Bermudagrass (hulled)	8-12 lbs	4 oz		
	3. Bahiagrass with one of the following:	20-30 lbs	.5 lb		Use 50% scarified Bahia seed.
	Southern White Clover	3 lbs	1.2 oz	9/1-1/1	Innoculate legumes.
	Annual White Sweetclover	8 lbs	3 oz	9/1-1/1	
	Crimson Clover	12 lbs	4.5 oz	9/1-1/1	
	Arrowleaf Clover	8 lbs	3 oz	9/1-1/1	
	Alyce Clover	8 lbs	3 oz	2/15-7/15	
	Hairy Indigo	4 lbs	1.5 oz	2/15-7/15	
	Aschynamene	12 lbs	4.5 oz	2/15-7/15	
Slopes	1. Sericea lespedeza	a.40-50 lbs	1.2 lbs	1/1-7/15	For scarified seed.
		b. 75 lbs	1.7 lbs	7/15-1/1	For unhulled seed.
	2. Serica lespedeza with one of the following:				Use seeding rate specified above.
	Bahiagrass	15 lbs	7 oz	2/15-8/15	
	Tall Fescue	20 lbs	8 oz	10/1-11/15	Best adapted to N. Florida
	Weeping Lovegrass	3 lbs	1.2 oz	2/15-8/15	
Droughty Areas	1. Weeping Lovegrass	5 lbs	2 oz	2/15-8/15	Gives quick summer cover.
	2. Weeping Lovegrass with one of the following:				
	a. Bahiagrass (50% scarified seed)	5 lbs	2 oz	2/15-8/15	
	b. Bermudagrass (Hulled)	30-40 lbs	12 oz	2/15-8/15	
	c. Hairy panicum	8-12 lbs	4 oz	2/15-8/15	
	d. Serica lespedeza	8-12 lbs	4 oz	2/15-8/15	Use seeding rate and dates specified above.

CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE	D-916
	DATE DRAWN	05-09-90	
	REVISED DATE	5-12-94	



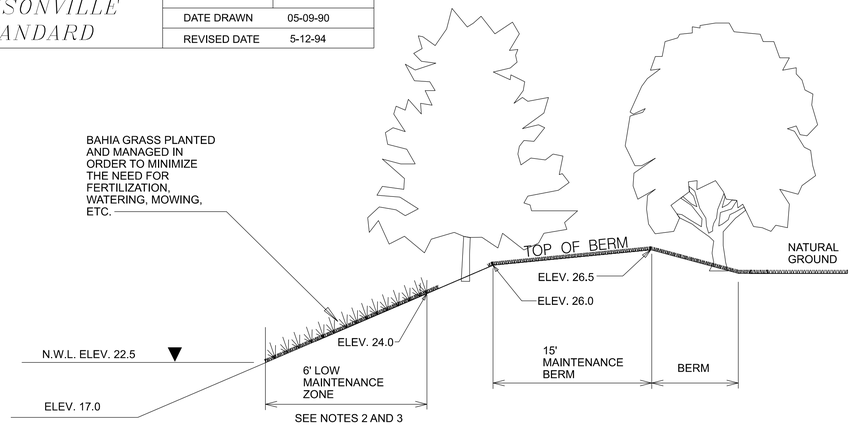


LEVEL SPREADER



TEMPORARY DIVERSION DIKE

DIVERSION DIKE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-914
		DATE DRAWN	05-09-90
		REVISED DATE	5-12-94



POND LOW MAINTENANCE ZONE (TYP.)

(NOT TO SCALE)

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. NO MOWED OR CUT VEGETATIVE MATERIAL SHALL BE DEPOSITED OR REMAINING IN THE LOW MAINTENANCE ZONE OR DEPOSITED IN THE WATER.
3. CARE SHOULD BE TAKEN TO PREVENT THE OVER-SPRAY OF AQUATIC WEED PRODUCTS INTO THE LOW MAINTENANCE ZONE.

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21 W CHURCH ST.
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-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JLC
-	-	-	-	-	-	REVIEW	JS

NEW NORMANDY CONTROL HOUSE

EROSION CONTROL
SHEET 3 OF 3

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

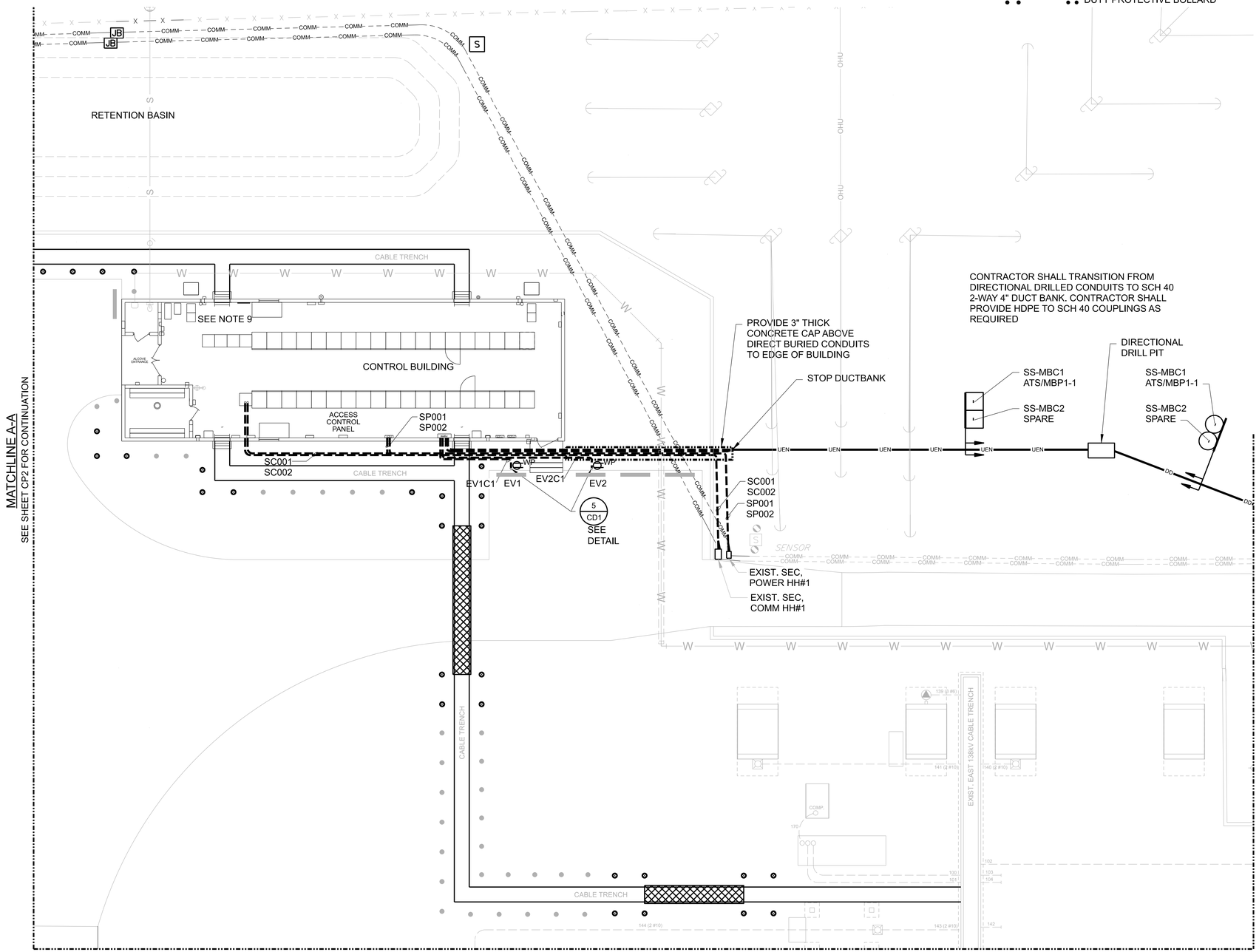
PROJ #: 8007704

DRAWING NAME: EC3.dgn
DRAWING SET: NM2023
DRAWING ID: EC-3
SHEET #: 23 OF 61

JEA/ARCH-D-24"X36" EC3-dgn 2024-03-25 07:17:51

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD

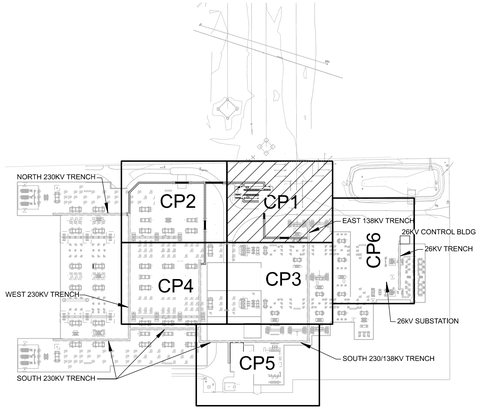


CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. CONDUIT SHALL BE INSTALLED A MINIMUM OF 18: BELOW COMPACTED GRADE.
3. CONTRACTOR SHALL COORDINATE CONDUIT INSTALLATION WITH THE FOUNDATIONS, DRAWINAGE, WATER/SEWER FACILITIES, ETC.
4. AFTER INSTALLATION AND BACKFILLING OF THE UNDERGROUND CONDUITS, THE CONTRACTOR SHALL COMPACT THE AREA TO THE SAME DENSITY, AND WITH SIMILAR MATERIAL AS THE ADJACENT UNDISTURBED MATERIALS.
5. ELBOW RADIUS FOR 2", 3", AND 4" CONDUITS SHALL BE 24" UNLESS OTHERWISE NOTED. ELBOW RADIUS FOR 4" CONDUIT SHALL BE 36". ALL 6" CONDUIT SHALL HAVE AN ELBOW RADIUS OF 48".
6. CONDUIT SHALL BE ROUTED AS MUCH AS PRACTICAL IN ACCORDANCE WITH THE ROUTES SHOWN. ANY CHANGES TO THE ROUTING SHALL BE SHOWN ON THE CONTRACTOR'S AS-BUILT DRAWINGS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL CONDUIT AND CABLE AS LISTED IN THE CABLE AND CONDUIT SCHEDULES UNLESS THE ITEM IS SPECIFICALLY DENOTED AS 'OWNER FURNISHED'. ALL MATERIALS AND PROCEDURE SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS.
8. THE CONDUIT LOCATIONS SHOWN ON THIS DRAWING AND IN THE REFERENCED DETAILS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE FINAL CONDUIT RISER LOCATIONS USING THE EQUIPMENT MANUFACTURER'S FINAL SHOP DRAWINGS.
9. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY STAINLESS STEEL HARDWARE AND SUPPORT CHANNELS/FITTINGS FOR FASTENING ITEMS TO SURFACES AS NEEDED.
10. WIRING DETAIL DRAWINGS FOR THE SUBSTATION ARE FURNISHED BY THE RESPONSIBLE JEA RELAY ENGINEER FOR THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL OF THE CABLE PULLS AND TERMINATIONS FOR ALL SUBSTATION CABLING, UNLESS NOTED OTHERWISE. THE WIRING DETAILS/INTERCONNECT DRAWINGS SHOULD BE ORDERED THROUGH THE PROJECT REPRESENTATIVE TWO WEEKS IN ADVANCE OF NEED.
11. ALL CABLES SHALL BE CLEARLY LABELED AT BOTH ENDS AND AT ALL ENTRANCE AND EXIT POINTS TO CABLE TRENCHES, PULL BOXES OR JUNCTION BOXES. REFER TO SPECIFICATION SECTION IX FOR LABELING DETAILS.
12. ALL CONDUIT ENDS SHALL BE SEALED WITH AN EXPANDING WATERPROOF FOAM SPRAY TO KEEP THE CONDUIT FREE FROM DIRT AND OTHER FOREIGN MATERIAL.

13 A PULL CORD SHALL BE PULLED IN ALL SPARE CONDUITS. ALL SPARE OR FUTURE CONDUITS 4" OR LARGER, AS WELL AS ANY WHICH ARE CAPPED BELOW GRADE, SHALL BE SUPPLIED WITH CONDUIT PLUGS.

14. THE CONTROL HOUSE EXTERIOR LUMINAIRES AND RECEPTACLES ARE NOT SHOWN FOR CLARITY, AND THEIR RACEWAYS ARE INTERNAL TO THE BUILDING.
15. CONTRACTOR SHALL COORDINATE FINAL TRENCH LOCATION WITH BUILDING CABLE TRAY TRANSITION. SEE FINAL CONTROL BUILDING DRAWINGS FOR DEFINITIVE INFORMATION.
16. CONTRACTOR SHALL TRANSITION FROM DIRECTIONAL DRILLED CONDUITS TO SCH 40 2-WAY 4" DUCT BANK. CONTRACTOR SHALL PROVIDE HDPE TO SCH 40 COUPLINGS AS REQUIRED



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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-	-	-	-	-	-	DATE	1/9/2023
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	TRG
-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	10/6/2022
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN
SHEET 1 OF 6

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

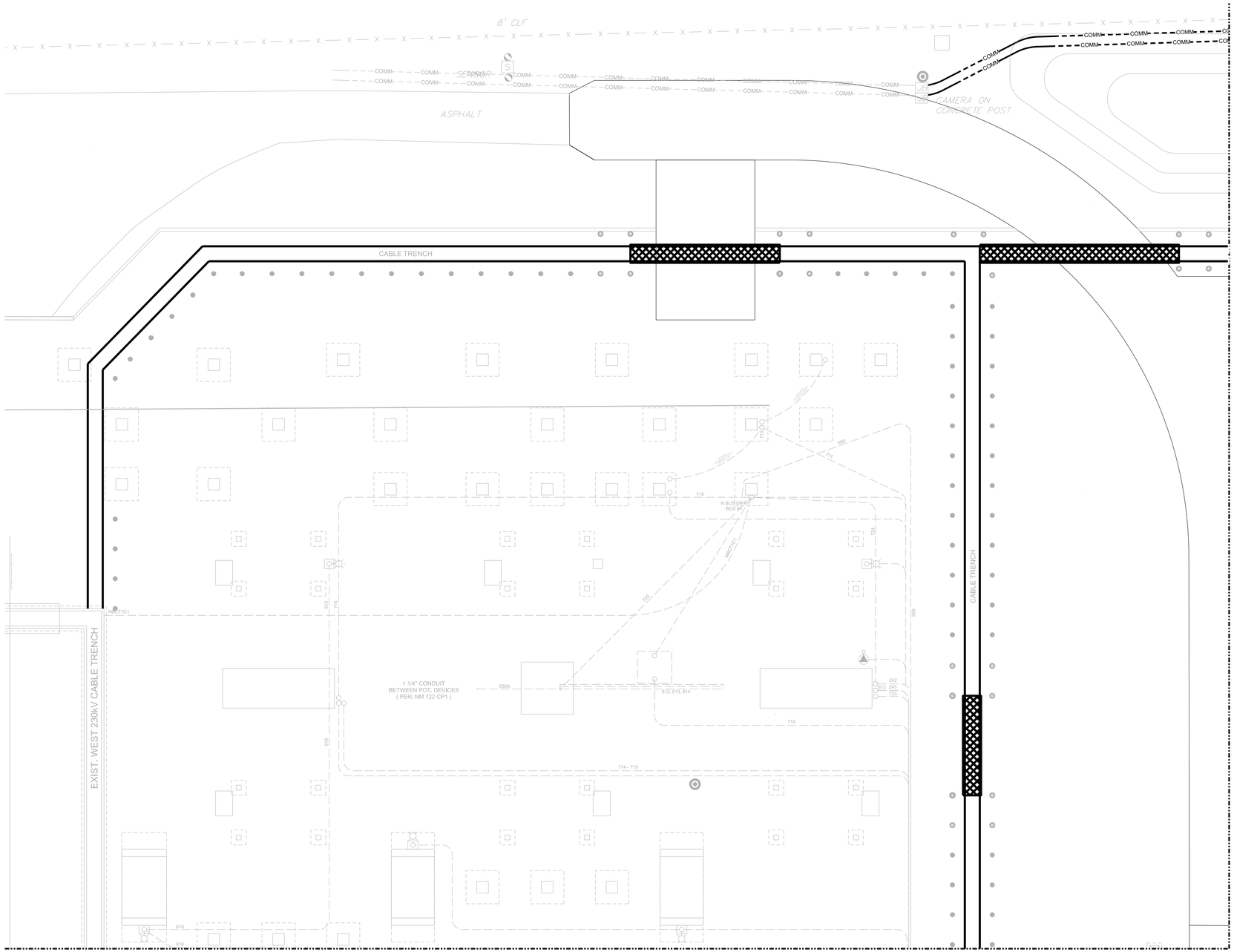
PROJ #: 8007704

DRAWING NAME: CP1.dgn
DRAWING SET: NM2023
DRAWING ID: CP1
SHEET #: 24 OF 61

JEA ARCH D 24"X36" V:\Projects\2022\2240\001 (0005) - Normandy Substation New Control House\Bridge\CAD\NM2023\dgn\CP1.dgn PRINTED 2024-3-25 AT 07:51

CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR CONDUIT NOTES SEE SHEET CP1.



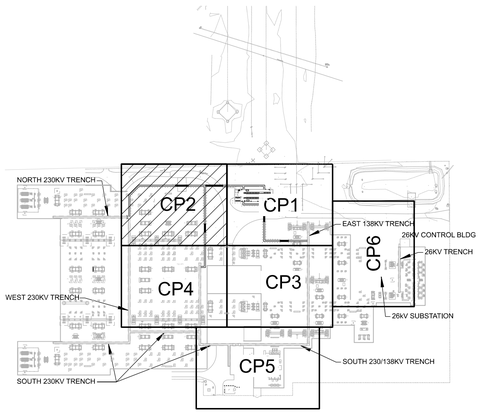
MATCHLINE A-A
SEE SHEET CP1 FOR CONTINUATION

MATCHLINE C-C
SEE SHEET CP4 FOR CONTINUATION

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD

N



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma
chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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-	-	-	-	–	–	DATE	3/12/24
-	-	-	-	–	–	BY	JPF
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NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN SHEET 2 OF 6

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CP2.dgn

DRAWING SET: NM2023

DRAWING ID: CP2

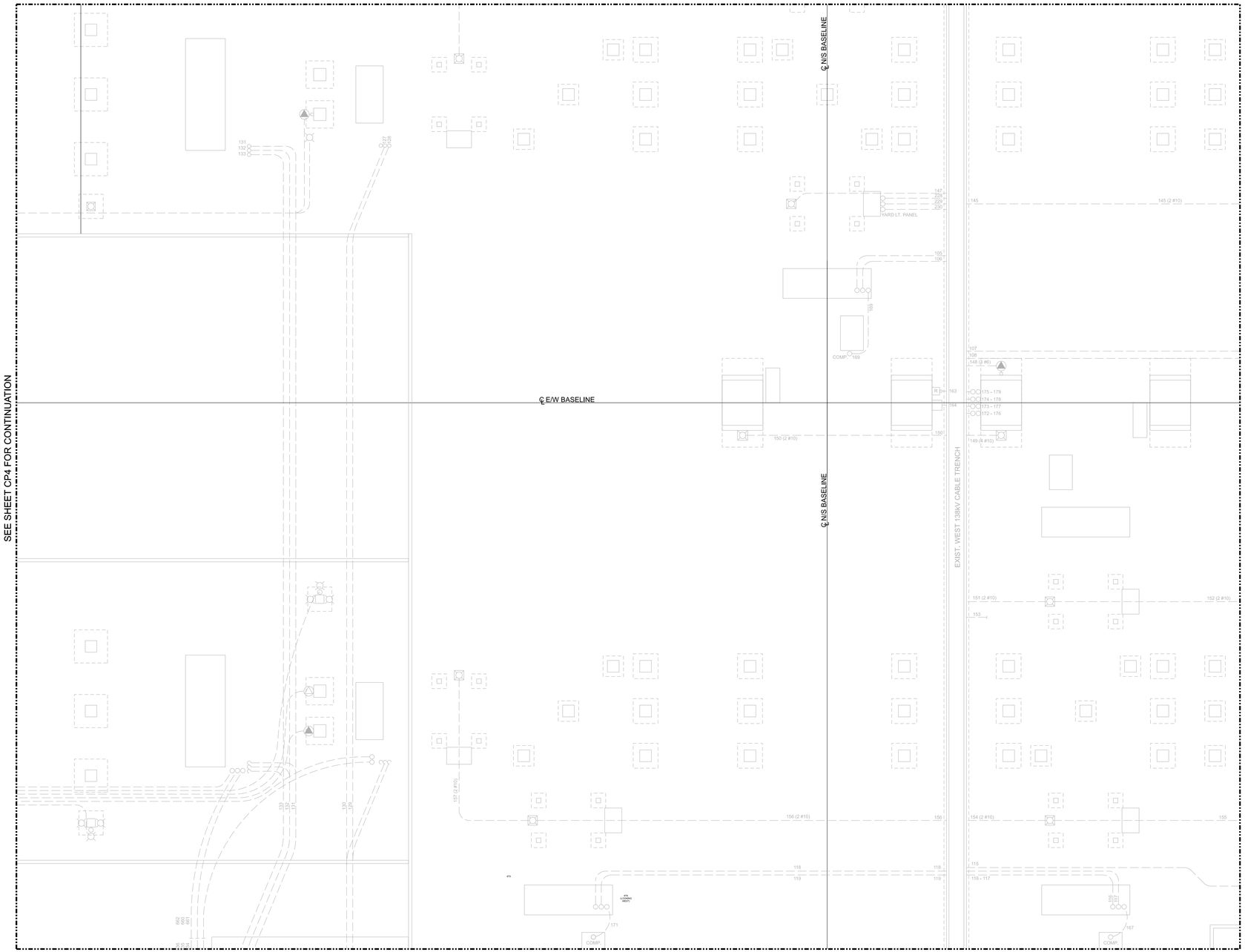
SHEET #: 25 OF 61

JEA_ARCH D 24"X36" - V:\Projects\2023\23-0051.000\05 - Normandy Substation New Control House\Design\CAD\MW2023\dgn\CP2.dgn PRINTED 2024-2-23 AT 07:52

CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR CONDUIT NOTES SEE SHEET CP1.

MATCHLINE B-B
SEE SHEET CP1 FOR CONTINUATION

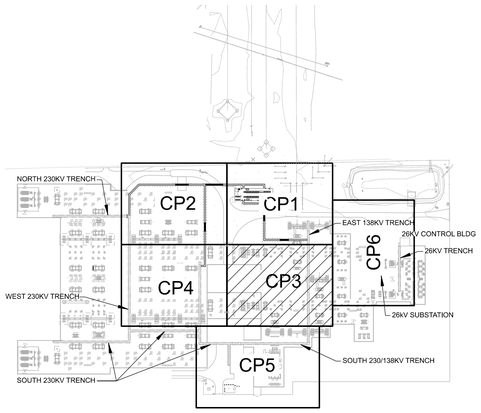


MATCHLINE F-F
SEE SHEET CP5 FOR CONTINUATION

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD

FOR INFORMATION ONLY



KEY PLAN

SCALE: 3/32"= 1'- 0" 16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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CONSULTANT INFORMATION

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-	-	-	-	-	-	REVIEW	TRG
-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN
SHEET 3 OF 6

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CP3.dgn
DRAWING SET: NM2023
DRAWING ID: CP3
SHEET #: 26 OF 61

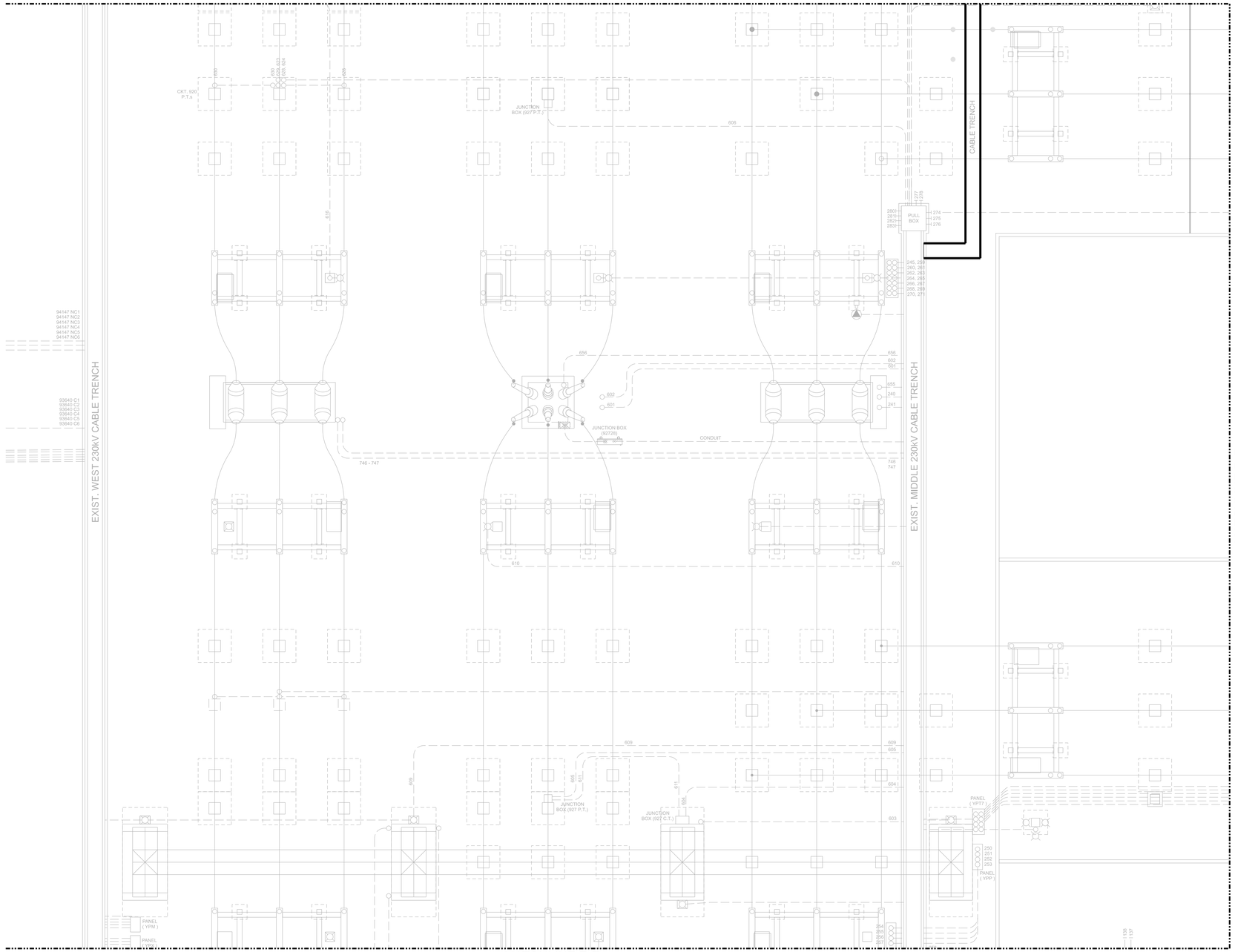
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CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR CONDUIT NOTES SEE SHEET CP1.

MATCHLINE C-C

SEE SHEET CP2 FOR CONTINUATION



MATCHLINE D-D

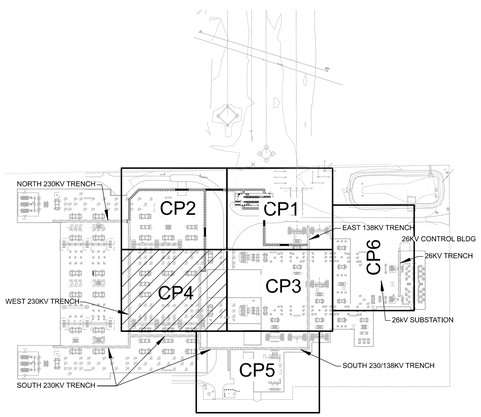
SEE SHEET CP3 FOR CONTINUATION

MATCHLINE E-E

SEE SHEET CP6 FOR CONTINUATION

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
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www.chenmoore.com

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-	-	-	-	–	–	DRAFTING	
-	-	-	-	–	–	DATE	3/12/24
-	-	-	-	–	–	BY	JPF
-	-	-	-	–	–	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CP4.dgn

DRAWING SET: NM2023

DRAWING ID: CP4

SHEET #: 27 OF 61

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CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR CONDUIT NOTES SEE SHEET CP1.

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD

MATCHLINE E-E
SEE SHEET CP4 FOR CONTINUATION

MATCHLINE F-F
SEE SHEET CP3 FOR CONTINUATION

MATCHLINE G-G
SEE SHEET CP6 FOR CONTINUATION

EXIST. MIDDLE 230kV CABLE TRENCH

EXIST. SOUTH 230kV CABLE TRENCH

EXIST. SOUTH 230/138kV CABLE TRENCH

EXIST. WEST 138kV CABLE TRENCH

EXISTING CONTROL BUILDING

REPLACE PANEL SE1. REPAIR INCOMING CONDUITS. SEE SHEET LV1 FOR NEW PANEL INFORMATION.

SEE REFERENCE ELEVATION THIS SHEET

EXISTING 208/120V ATS

CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXCAVATING IN THIS AREA

PROVIDE SECURITY ELECTRIC HANDHOLE. SEE DETAIL 18 / CD1

PROVIDE 2-WAY 2" CONCRETE ENCASED SCH 40 PVC CONDUITS SEE DETAIL 14 / CD1

PROVIDE 2-2" SCH 40 PVC CONDUITS DIRECT BURIED WITH CONCRETE CAP. SEE DETAIL 13 / CD1

PROVIDE 2-2" SCH 40 PVC CONDUITS DIRECT BURIED WITH CONCRETE CAP. SEE DETAIL 13 / CD1

EXISTING UNDERGROUND SECONDARY

EXISTING 150KVA 208/120V PADMOUNTED TRANSFORMER

EXISTING SEC HH

SC003
SC004

SP003
SP004

EXISTING SECURITY COMM. HANDHOLE

EXISTING SEC HH

DRAIN FIELD

SEWER PUMP PIT

10'-0"

FRONT

10'-0"

PROVIDE 2-2" SCH 40 PVC CONDUITS DIRECT BURIED

PROPOSED SECURITY HOFFMAN BOX ON 5'X5' CONC PAD. SEE DETAIL D / -

CARD KEY READER

GATE MOTOR

MOTORIZED SLIDING GATE

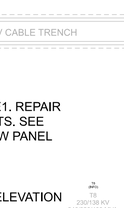
20' DOUBLE GATE

WELL & PUMP HOUSE

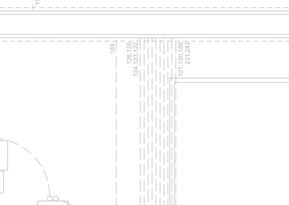
"A" BREAKER (9T8)

G.O.S. (9043)

CAPACITOR COUPLING & POTENTIAL DEV. EQUIPT.

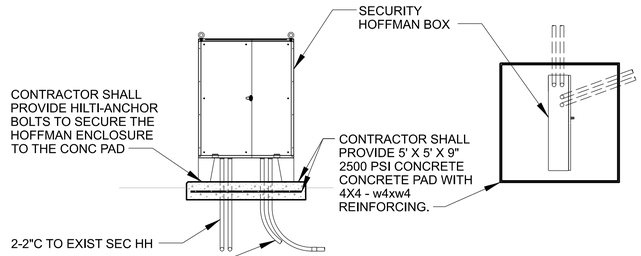


FRONT VIEW



SIDE VIEW

REFERENCE ELEVATION
EXISTING PANEL SEI

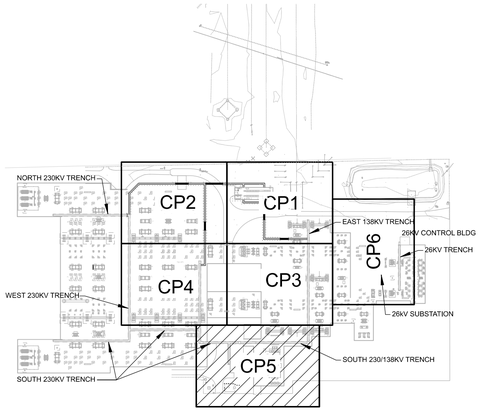


ELEVATION **PLAN**

CONTRACTOR SHALL COORDINATE WITH JEA SECURITY AND INSTALL OWNER FURNISHED HOFFMAN ENCLOSURE.

DETAIL D / SHEET NO. **SECURITY HOFFMAN BOX**

N



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma
chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN SHEET 5 OF 6

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CP5.dgn
DRAWING SET: NM2023
DRAWING ID: CP5
SHEET #: 28 OF 61

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MATCHLINE G-G
SEE SHEET CP3 FOR CONTINUATION

MATCHLINE H-H
SEE SHEET CP1 FOR CONTINUATION

138 KV NORTH BUS

27 KV SOUTH BUS

27 KV NORTH BUS

℄ E/W BASELINE

EXIST. 27kV CABLE TRENCH

ASPHALT

SPEED BUMP

CONCRETE

26kV CONTROL BLDG

REPLACE EXISTING 50kVA POLE XFMR WITH 100kVA XFMR

REPLACE EXISTING 50kVA POLE XFMR WITH 100kVA XFMR

CSS2-2

CATS-4

CSS1-2

PROVIDE 400A FUSED DISCONNECT SEE DETAIL THIS SHEET

SEE NOTE 13

CATS-5

EXISTING CT CAN AND METER

ELECTRICAL PULL BOX SEE DETAIL 11 CD1

SS-MBC2 SPARE

SS-MBC1 SSMBP1

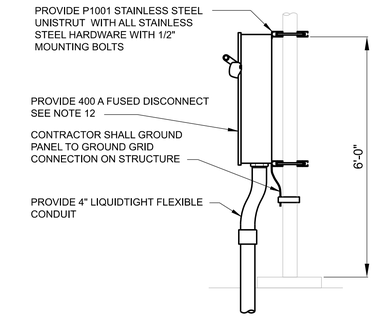
SS-MBC1 SSMBP1

SS-MBC2 SPARE

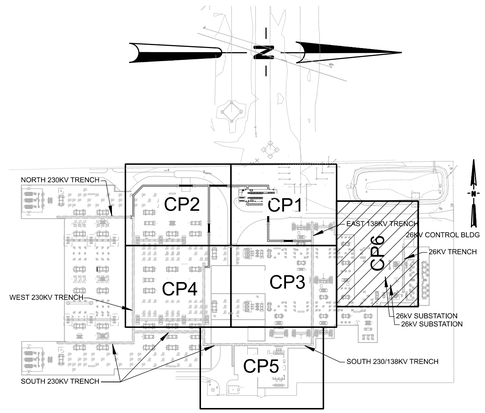
DBC

CONDUIT NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. CONDUIT SHALL BE INSTALLED A MINIMUM OF 24" BELOW COMPACTED GRADE UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL COORDINATE CONDUIT INSTALLATION WITH THE FOUNDATIONS, DRAWINAGE, WATER/SEWER FACILITIES, ETC.
4. AFTER INSTALLATION AND BACKFILLING OF THE UNDERGROUND CONDUITS, THE CONTRACTOR SHALL COMPACT THE AREA TO THE SAME DENSITY, AND WITH SIMILAR MATERIAL AS THE ADJACENT UNDISTURBED MATERIALS.
5. ELBOW RADIUS FOR 2", 3", AND 4" CONDUITS SHALL BE 24" UNLESS OTHERWISE NOTED. ELBOW RADIUS FOR 4" CONDUIT SHALL BE 36". ALL 6" CONDUIT SHALL HAVE AN ELBOW RADIUS OF 48".
6. CONDUIT SHALL BE ROUTED AS MUCH AS PRACTICAL IN ACCORDANCE WITH THE ROUTES SHOWN. ANY CHANGES TO THE ROUTING SHALL BE SHOWN ON THE CONTRACTOR'S AS-BUILT DRAWINGS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL CONDUIT AND CABLE AS LISTED IN THE CABLE AND CONDUIT SCHEDULES UNLESS THE ITEM IS SPECIFICALLY DENOTED AS 'OWNER FURNISHED'. ALL MATERIALS AND PROCEDURE SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS.
8. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY STAINLESS STEEL HARDWARE AND SUPPORT CHANNELS/FITTINGS FOR FASTENING ITEMS TO SURFACES AS NEEDED.
9. ALL CABLES SHALL BE CLEARLY LABELED AT BOTH ENDS AND AT ALL ENTRANCE AND EXIT POINTS TO CABLE TRENCHES, PULL BOXES OR JUNCTION BOXES. REFER TO SPECIFICATION SECTION IX FOR LABELING DETAILS.
10. ALL CONDUIT ENDS SHALL BE SEALED WITH AN EXPANDING WATERPROOF FOAM SPRAY TO KEEP THE CONDUIT FREE FROM DIRT AND OTHER FOREIGN MATERIAL.
11. A PULL CORD SHALL BE PULLED IN ALL SPARE CONDUITS. ALL SPARE OR FUTURE CONDUITS 4" OR LARGER, AS WELL AS ANY WHICH ARE CAPPED BELOW GRADE, SHALL BE SUPPLIED WITH CONDUIT PLUGS.
12. CONTRACTOR SHALL PROVIDE A 400A FUSED DISCONNECT SWITCH, EATON CAT #DH225NWKG OR APPROVED EQUAL. CONTRACTOR SHALL COORDINATE WITH JEA PROJECT MANAGEMENT AND OPERATIONS TO DETERMINE FUSE CLIPS FOR SWITCH.
13. CONTRACTOR SHALL REMOVE EXISTING 2-2" PVC CONDUITS FROM ATS TO CT CAN WITH 4-#3/0 AWG CONDUCTORS THRU CT'S AND PROVIDE 2-3" PVC CONDUITS WITH 4-500KCMIL CONDUCTORS THRU CT'S. COORDINATE WITH JEA PROJECT MANAGEMENT AND METERING GROUP.



DISCONNECT MOUNTING DETAIL



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

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-	-	-	-	–	–	REVIEW	TRG
-	-	-	-	–	–	DRAFTING	
-	-	-	-	–	–	DATE	3/12/24
-	-	-	-	–	–	BY	JPF
-	-	-	-	–	–	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT PLAN SHEET 6 OF 6

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

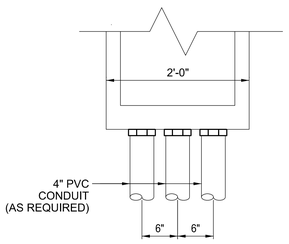
DRAWING NAME: CP6.dgn

DRAWING SET: NM2023

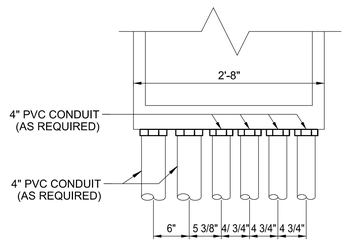
DRAWING ID: CP6

SHEET #: 29 OF 61

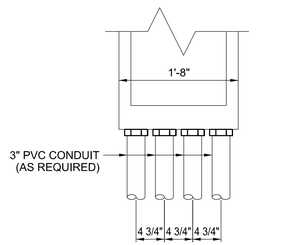
JEA ARCH/2 24"X36" V:\Projects\2023\23-0001 (00000 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\CP6.dgn PRINTED: 2024-3-25 AT 07:54



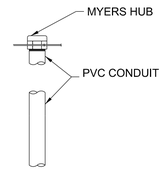
DETAIL 1
AUTOMATIC TRANSFER SWITCH (ASCO 7ATSA3400F5XH)



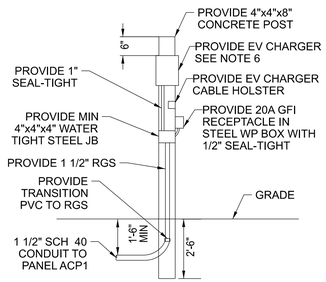
DETAIL 2
MAIN BREAKER PANEL (MBP1-3P) SEE NOTE 4



DETAIL 3
AC POWER DISTRIBUTION PANEL (TYPICAL) SEE NOTE 4



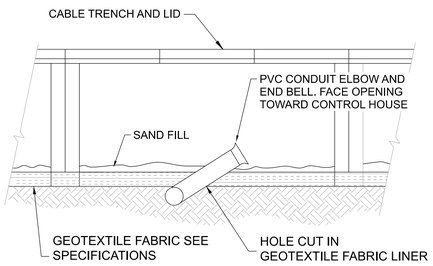
DETAIL 4
CONDUIT FITTINGS AS REQUIRED



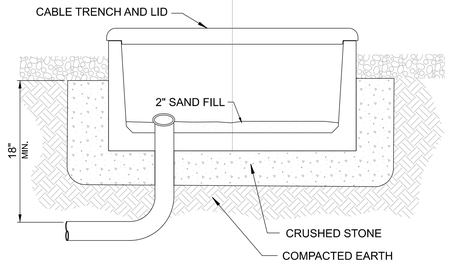
DETAIL 5
TYPICAL EV CHARGING PEDESTAL

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. APPROPRIATE CONDUIT CLAMPS SHALL BE INSTALLED BY CONTRACTOR TO ATTACH CONDUIT TO STEEL STRUCTURES AS NEEDED. THIS SHALL INCLUDE A CLAMP AT EACH BEND WHERE THE CONDUIT RUN DEPARTS FROM THE STRUCTURE AND A MAXIMUM SPACING BETWEEN CLAMPS OF 4'.
3. FLEXIBLE PVC CONDUIT LENGTH SHALL NOT BE MORE THAN 6'.
4. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE POWER DISTRIBUTION PANELS AND CONDUIT AS SHOWN. IN SOME CASES, IT MAY BE NECESSARY TO PROVIDE A SEPARATE "CONDUIT ENTRY CABINET" INTO THE BOTTOW OF PANELS; SHOULD THIS PROVE NECESSARY THE CONTRACTOR SHALL PROVIDE THIS AT NO ADDITIONAL CHARGE.
5. SIZE, TYPE, AND QUANTITY AS INDICATED ON THE CONDUIT PLAN AND CONCONDUIT SCHEDULE.
6. CONTRACTOR SHALL PROVIDE A "NOVA CHARGE" NC7000 SERIES EV CHARGER - 32A (HARDWIRED). PROVIDE ALL ANCILLARY EQUIPMENT FOR A COMPLETE INSTALLATION.

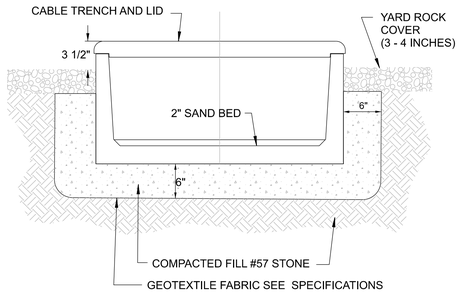


SIDE ELEVATION

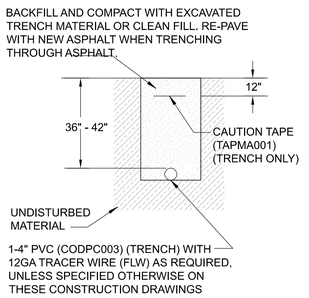


END ELEVATION

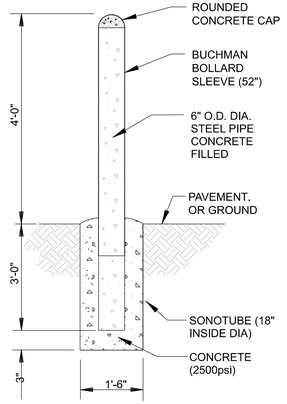
DETAIL 6
CONDUIT RISER IN CABLE TRENCH



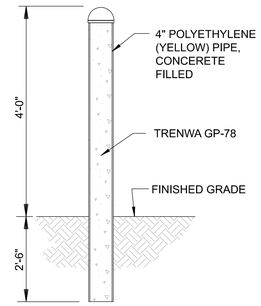
DETAIL 7
TYPICAL CABLE TRENCH



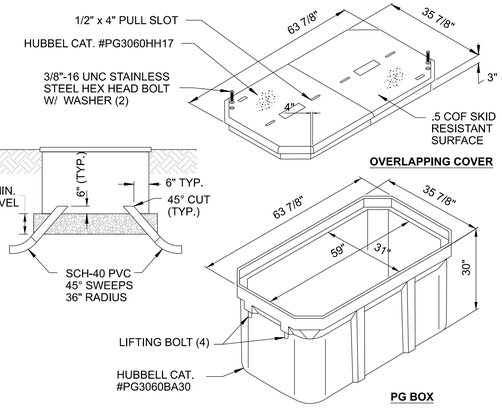
DETAIL 8
FIBER OPTIC CONDUIT DETAIL



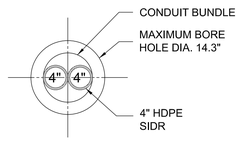
DETAIL 9
HEAVY DUTY BOLLARD DETAIL



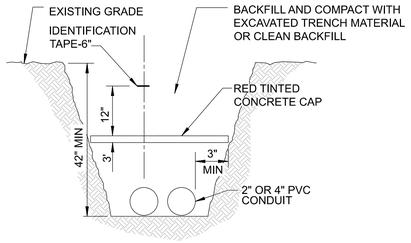
DETAIL 10
LIGHT DUTY BOLLARD DETAIL



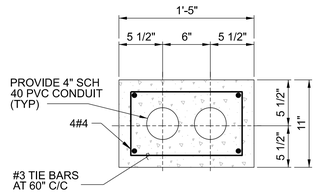
DETAIL 11
TYPICAL LARGE PULL BOX DETAIL



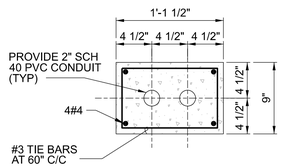
DETAIL 12
2-WAY 4" DIRECTIONAL DRILL



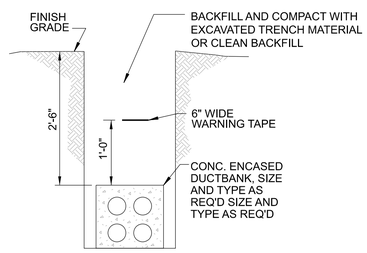
DETAIL 13
DIRECT BURIED CONDUIT DETAIL



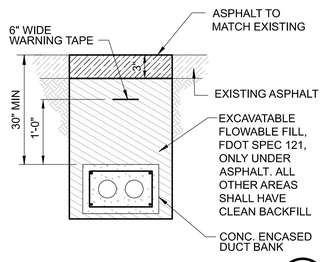
DETAIL 14
2-WAY 4" DUCT BANK



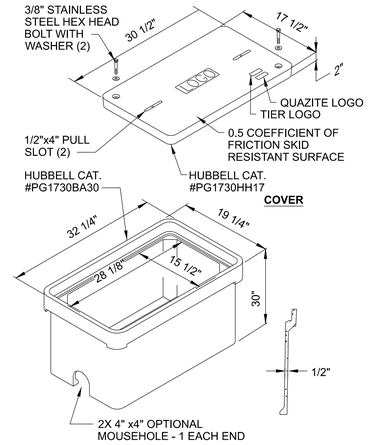
DETAIL 15
2-WAY 2" DUCT BANK



DETAIL 16
TYPICAL DUCT BANK INSTALLATION



DETAIL 17
TYPICAL DUCT BANK UNDER ASPHALT INSTALLATION



BOX

DETAIL 18
TYPICAL SMALL PULL BOX

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

CONSULTANT INFORMATION
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501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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ISSUED FOR DESIGN REVIEW

NEW NORMANDY CONTROL HOUSE

CONDUIT DETAILS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

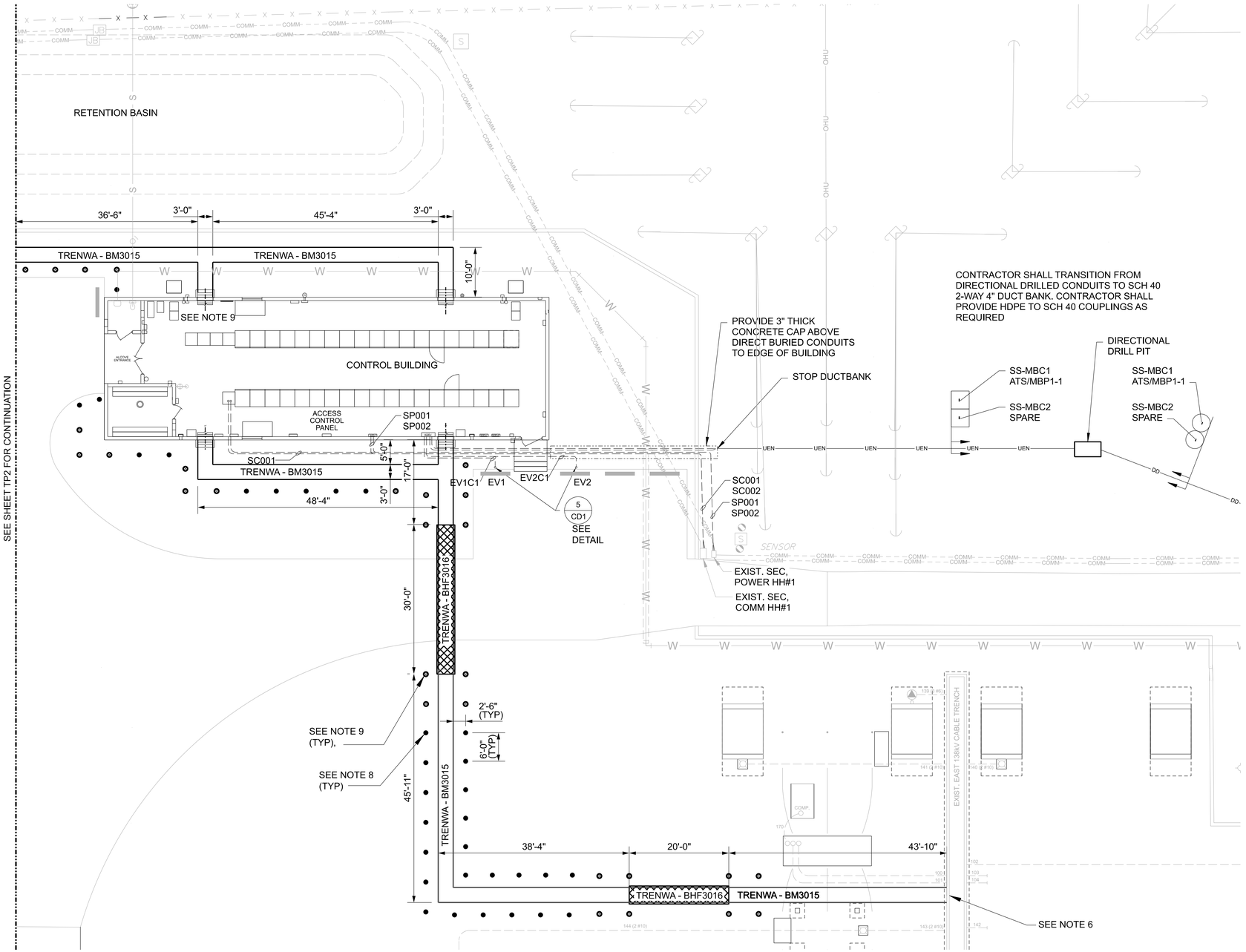
DRAWING NAME: CD1.dgn

DRAWING SET: NM2023

DRAWING ID: CD1

SHEET #: 30 OF 61

JEA.MRCH-D.24"X36" CD1.dgn 2024-03-25 - 07:03 MODEL: CD1



TRENCH NOTES

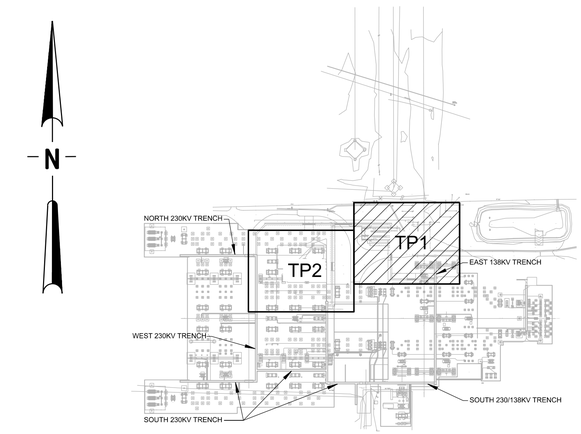
1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. CONTRACTOR SHALL COORDINATE FINAL TRENCH LOCATION WITH BUILDING CABLE TRAY TRANSITION. SEE FINAL CONTROL BUILDING DRAWINGS FOR DEFINITIVE INFORMATION.
3. ALL CABLES SHALL BE CLEARLY LABELED AT BOTH ENDS AND AT ALL ENTRANCE AND EXIT POINTS TO CABLE TRENCHES, PULL BOXES OR JUNCTION BOXES. REFER TO SPECIFICATION SECTION IX FOR LABELING DETAILS.
4. CONTRACTOR SHALL PROVIDE CABLE TRENCH AND REQUIRED ACCESSORIES AS INDICATED ON THE DRAWING AND THE FOLLOWING TABLE:

ITEM	MFGR.	PART NO.
PEDESTRIAN		
ONE-PIECE MULTI-DUTY TRENCH BASE, 10' LENGTH, 30" INTERNAL WIDTH, 15" DEEP	TRENWA	BM3015-120
PEDESTRIAN RATED FIBRELITE LID & SECTION FOR 30" WIDE MULTI-DUTY TRENCH (60"L x 30"W x 2.25' DEEP)	TRENWA	LPF36-60
GROUND CLIPS FOR BM SERIES MULTI-DUTY TRENCH BASE	TRENWA	GC2
ONE-PIECE MULTI-DUTY TRENCH BASE, 10' LENGTH, 30" INTERNAL WIDTH, 16" DEEP, HS20 RATED	TRENWA	BHF3016-120
HS20 RATED FIBRELITE LID & SECTION FOR 30" WIDE MULTI-DUTY TRENCH (60"L x 30"W x 4' DEEP)	TRENWA	LHF36-60
GROUND CLIPS FOR BH SERIES HS20 TRENCH BASE	TRENWA	GC3
CORNER GUARDS AND CABLE PROTECTION AS REQUIRED	TRENWA	

5. CONTRACTOR SHALL PROVIDE ELASTOMERIC SEALANT TO THE TRENCH BASES AT THE JOINTS TO PREVENT SOIL INFILTRATION, FILL IN GAPS AND TO CONNECT AND STABILIZE THE BASES.
6. WHERE NEW TRENCH CONNECTS TO EXISTING TRENCH, THE CONTRACTOR SHALL CAREFULLY CUT INTO THE EXISTING TRENCH (AS RECOMMENDED BY TRENWA) TO THE INTERNAL WIDTH AND HEIGHT OF THE NEW TRENCH. PROVIDE ELASTOMERIC SEALANT TO THE TRENCH BASES AT THE JOINT TO PREVENT SOIL INFILTRATION. PROVIDE CABLE GUARDS AS REQUIRED FROM SIDES AND FLOOR OF THE NEW TRENCH INTO THE EXISTING TRENCH.
7. CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTAL FOR THE CABLE TRENCH SYSTEM. THE SUBMITTAL SHALL BE ENGINEERING LAYOUT DRAWINGS AND WILL INCLUDE DIMENSIONS, IDENTIFICATION AND LOCATION OF EACH TRENCH PART IN THE TRENCH LAYOUT ALONG WITH A BILL OF MATERIAL.
8. CONTRACTOR SHALL PROVIDE 4" LIGHT DUTY PROTECTIVE BOLLARD SEE DETAIL 7/CD1.
9. CONTRACTOR SHALL PROVIDE 6" HEAVY DUTY PROTECTIVE BOLLARD SEE DETAIL 6/CD1

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
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NEW NORMANDY CONTROL HOUSE

TRENCH LAYOUT PLAN SHEET 1 OF 2

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

DRAWING NAME: TP1.dgn

DRAWING SET: NM2023

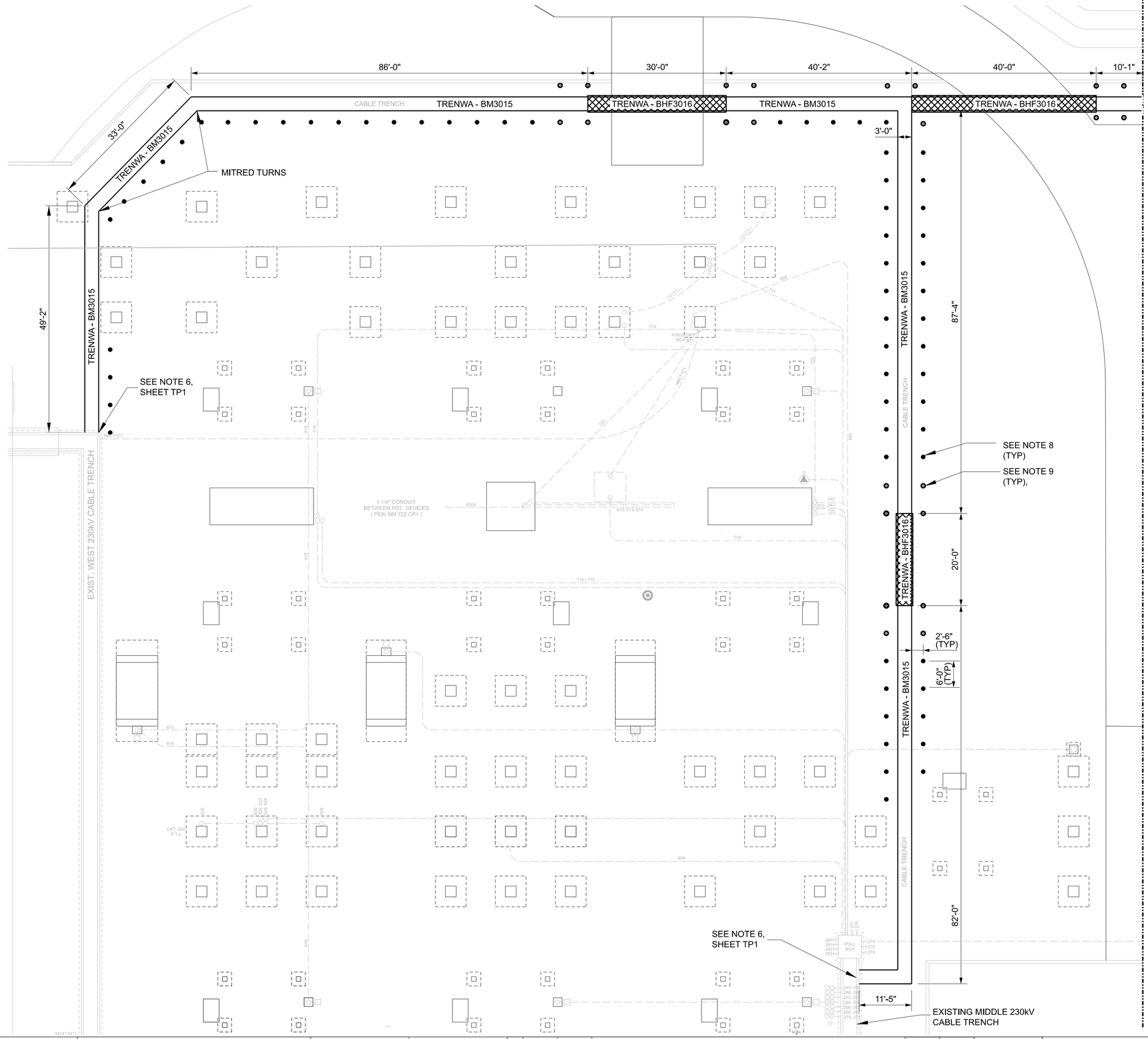
DRAWING ID: TP1

SHEET #: 31 OF 61

JEA/ARCH24_X"x30" TP1.dgn #### 2024-3-26 - 07:56

TRENCH NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. SEE SHEET TP1 FOR NOTES.

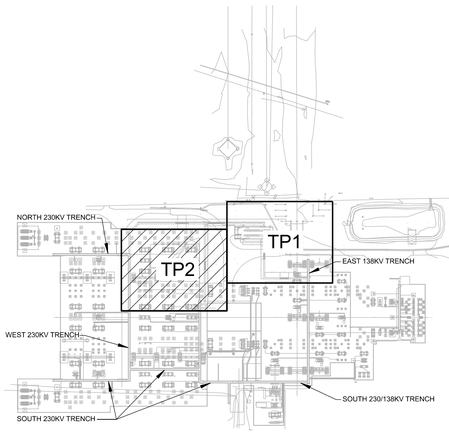


MATCHLINE A-A
SEE SHEET TP1 FOR CONTINUATION

LEGEND:

- 4" LIGHT DUTY PROTECTIVE BOLLARD
- 6" HEAVY DUTY PROTECTIVE BOLLARD
- TRENCH ROAD CROSSING WITH 6" HEAVY DUTY PROTECTIVE BOLLARD

N



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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NEW NORMANDY CONTROL HOUSE

TRENCH LAYOUT PLAN SHEET 2 OF 2

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: TP2.dgn

DRAWING SET: NM2023

DRAWING ID: TP2

SHEET #: 32 OF 61

JEA.MRSH-D 24"X36" TP2.dgn 2024-3-25 - 07:56

LEGEND

- GROUND CONDUCTOR - 19#8 COPPERWELD FOR MAIN GRID, 7#5 COPPERWELD FOR STRUCTURE, GROUND ROD, EQUIPMENT, CABLE TRENCH, CABLE TRAY. CONTRACTOR FURNISHED AND INSTALLED.
- GROUND CONNECTION - CADWELD PLUS EXOTHERMIC MOLD CONNECTION, SIZED AND CONFIGURED AS REQUIRED. CONTRACTOR FURNISHED AND INSTALLED. SEE CONNECTION DETAILS SHEET GD1.
- SWITCH OPERATOR GROUND PLATFORM - FURNISHED BY OWNER, INSTALLED BY CONTRACTOR.
- WHERE CABLE TRENCH CROSSES GROUND GRID CONNECT THE CABLE TRENCH GROUND CONDUCTORS TO THE GROUND GRID. SEE DETAIL 3/GD1
- GROUND ROD - COPPERWELD RODS 5/8" DIAMETER, 10' IN LENGTH, COUPLED AND DRIVEN TO A DEPTH OF THIRTY (30) FEET. CONTRACTOR FURNISHED AND INSTALLED.
- CHAIN LINK SECURITY FENCE. CONTRACTOR FURNISHED AND INSTALLED.
- 6" STEEL PIPE CEMENT-FILLED BOLLARD. CONTRACTOR SHALL PROVIDE GROUND CONNECTIONS TO GROUND GRID. SEE DETAIL 1/GD1.

DESIGN NOTES

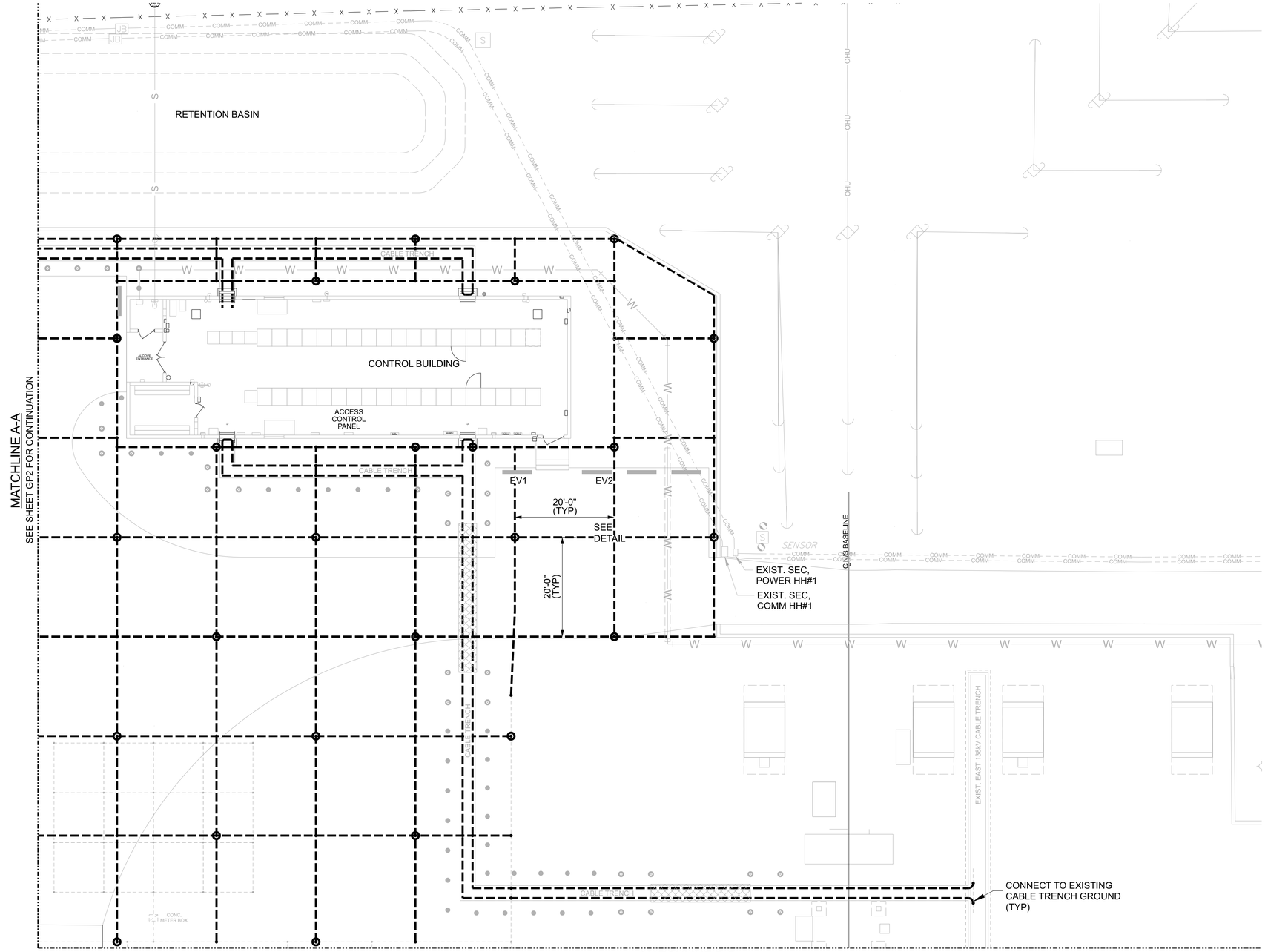
Grid designed for 3" substation rock with a minimum resistivity of 5000 ohm-m. In the rocked areas, permissible touch limits are safe with system ground fault currents up to 30kA.

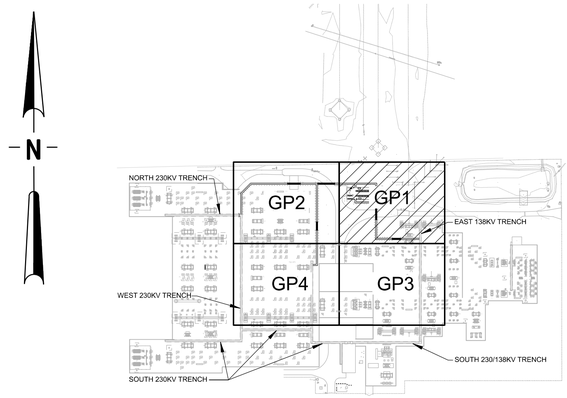
Ground Grid Depth: 18 inches below compacted earth
Length of Main Grid Conductor: 18,000 ft
Ground Rod Depth: 30 ft
Number of Ground Rod Locations: 163
Number of Grid Cadweld X Connections: 300
Total Installation Impedance: 1.61 ohm
Grid Current: 6,300A

Split Factor: 0.21
Upper Layer Thickness: 4.1 ft
Upper Layer Resistivity: 3,178 ohm-m
Lower Layer Resistivity: 451 ohm-m
Surface Layer Thickness: 3 in
Surface Layer Resistivity: 5,000 ohm-m

GROUNDING NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. ALL 19#8 AND 7#5 COPPERWELD CONDUCTORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL GROUND GRID CONDUCTORS AND TAPS SHALL BE CONNECTED USING CADWELD EXOTHERMIC CONNECTIONS AND SHALL BE INSTALLED 24" BELOW GRADE (28" BELOW ROCK SURFACE) EXCEPT WHERE CONNECTION TO STRUCTURES AND EQUIPMENT IS ABOVE GRADE.
3. THE CONTRACTOR SHALL CONSTRUCT THE STATION MAIN GROUND GRID USING 19#8 COPPERWELD CONDUCTORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE MAIN GROUND GRID CONDUCTOR IN THE LOCATIONS SHOWN ON THIS DRAWING. THE GRID CONDUCTORS SHALL BE INSTALLED IN MAXIMUM LENGTH CONTINUOUS RUNS AND CONNECTED AT ALL INTERSECTIONS USING CADWELD PLUS TYPE XB CROSS CONNECTION OR OTHER CADWELD PLUS PARALLEL CONNECTIONS TO AVOID CUTTING THE GRID CONDUCTOR.
4. THIS DRAWING DEPICTS THE INSTALLATION OF THE MAIN SUBSTATION GROUND GRID FOR THE WORK OF THIS PROJECT. THE EXISTING GROUND GRID SHOWN IS TAKEN FROM DRAWINGS AT DIFFERENT TIMES. AT THIS TIME THERE IS NO DRAWING SHOWING THE COMPLETE STATION GROUNDING SYSTEM.
5. EXISTING GROUND GRID CONDUCTORS MAY BE IN THE AREA WHERE NEW GROUND GRID IS BEING INSTALLED. CONTRACTOR SHALL USE CAUTION WHEN INSTALLING NEW GROUND GRID AND PROVIDE CONNECTIONS FROM THE NEW GROUND GRID TO THE EXISTING GRID. CONTRACTOR SHALL ANTICIPATE AND PROVIDE AN ADDITIONAL150 GROUND CONNECTIONS. SEE DETAILS ON SHEET GD1.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL GROUND RODS AS SPECIFIED AND IN THE LOCATIONS SHOWN ON THIS DRAWING. GROUND RODS ARE TO BE INSTALLED TO A DEPTH OF THIRTY FT. (30'). GROUND RODS ARE TO BE COUPLED USING CADWELD HEAVY DUTY GROUND ROD SLICE. SEE DETAIL 4/GD1.
7. GROUND ROD SHALL BE INSTALLED PRIOR TO ITS CONNECTION TO THE GRID. CONNECTION OF THE ROD TO THE STATION GROUND GRID SHALL BE MADE ONLY AFTER OWNER APPROVAL USING CADWELD CABLE-TO-ROD CONNECTIONS. SEE SHEET GD1.
8. THE CONTRACTOR IS REQUIRED TO MEASURE AND REPORT THE RESISTANCE OF EACH GROUND ROD INSTALLED PRIOR TO ITS CONNECTION TO THE GRID. CONNECTION OF THE ROD TO THE STATION GROUND GRID SHALL BE MADE ONLY AFTER OWNER APPROVAL.
9. TWO 7#5 COPPERWELD GROUND CONDUCTORS SHALL BE BROUGHT INTO THE CONTROL BUILDING AND SHALL BE CONNECTED WITHIN 3 FEET OF EACH OTHER TO THE SUBSTATION GROUND GRID BY EXOTHERMIC WELDS. 7#5 COPPERWELD GROUND CONDUCTER SHALL BE ATTACHED TO THE OUTSIDE OF EACH CABLE TRAY SECTION AND AT INTERVALS NOT EXCEEDING 4 FEET, USING BURNDY GB AND GC CONNECTORS (WITH THE HEAD OF THE BOLT ON THE INTERIOR OF THE TRAY).





KEY PLAN

SCALE: 3/32"= 1'- 0" 16' 8' 0 16' 32'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

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ENGINEERING	
DATE	3/12/24
BY	JPF
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JKLC
REVIEW	JPF

NEW NORMANDY CONTROL HOUSE

GROUNDING PLAN SHEET 1 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: GP1.dgn
DRAWING SET: NM2023
DRAWING ID: GP1
SHEET #: 33 OF 61

JEA_ARCH-D (24"X36") V:\Projects\2023\23-0001.00\005 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\GP1.dgn PRINTED: 2024/03/25 AT 07:56

LEGEND

- GROUND CONDUCTOR - 19#8 COPPERWELD FOR MAIN GRID, 7#5 COPPERWELD FOR STRUCTURE, GROUND ROD, EQUIPMENT, CABLE TRENCH, CABLE TRAY. CONTRACTOR FURNISHED AND INSTALLED.
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- CHAIN LINK SECURITY FENCE. CONTRACTOR FURNISHED AND INSTALLED.
- 6" STEEL PIPE CEMENT-FILLED BOLLARD. CONTRACTOR SHALL PROVIDE GROUND CONNECTIONS TO GROUND GRID. SEE DETAIL 1/GD1.

DESIGN NOTES

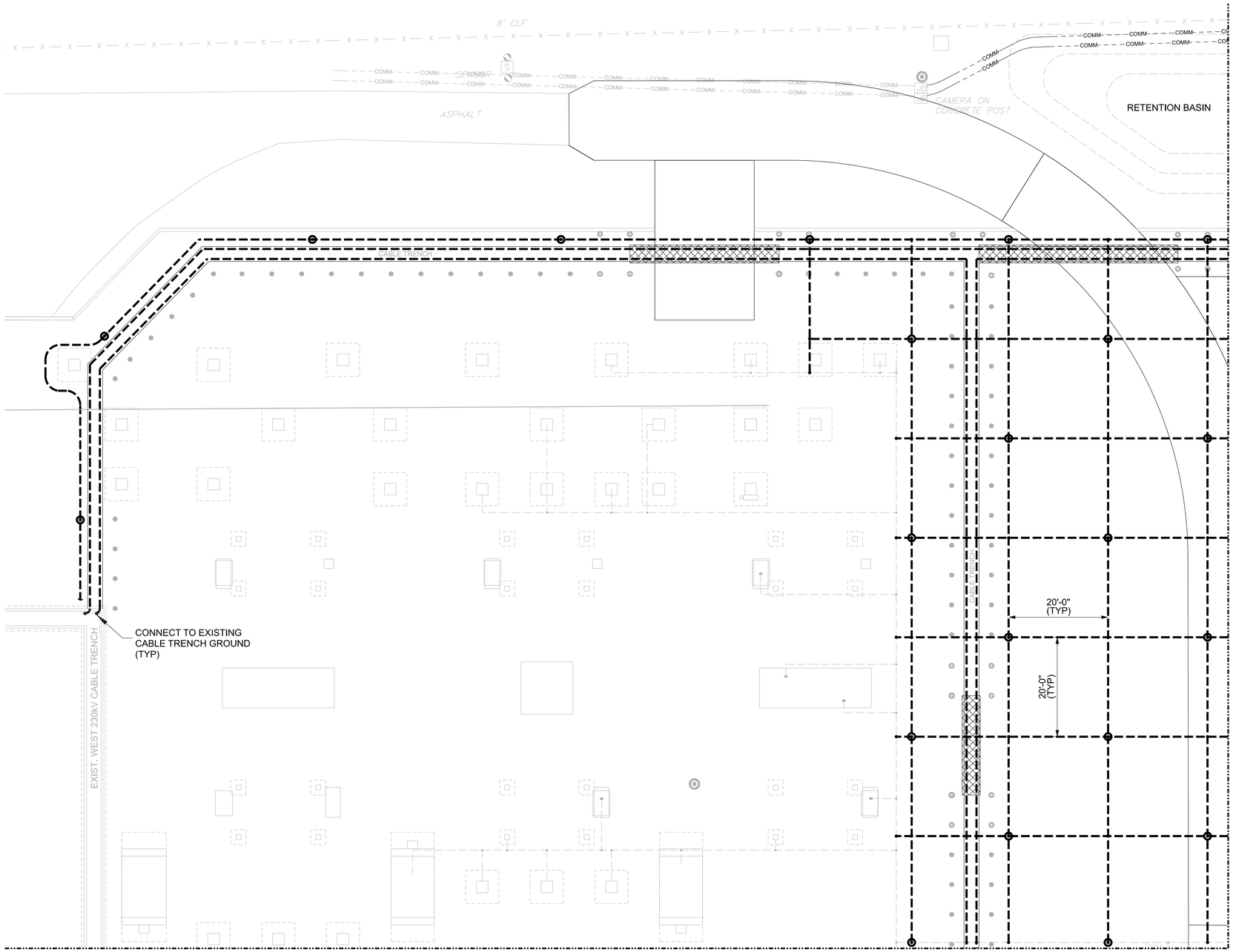
Grid designed for 3" substation rock with a minimum resistivity of 5000 ohm-m. In the rocked areas, permissible touch limts are safe with system ground fault currents up to 30kA.

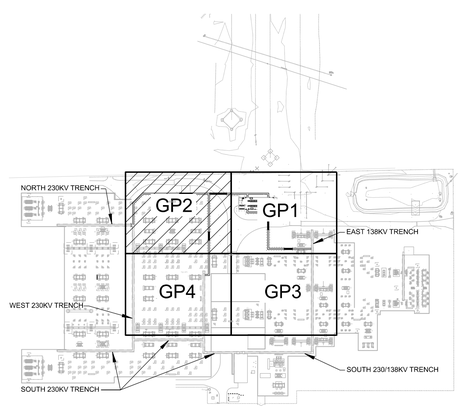
Ground Grid Depth: 18 inches below compacted earth
Length of Main Grid Conductor: 18,000 ft
Ground Rod Depth: 30 ft
Number of Ground Rod Locations: 163
Number of Grid Cadweld X Connections: 300
Total Installation Impedance: 1.61 ohm
Grid Current: 6,300A

Split Factor: 0.21
Upper Layer Thickness: 4.1 ft
Upper Layer Resistivity: 3,178 ohm-m
Lower Layer Resistivity: 451 ohm-m
Surface Layer Thickness: 3 in
Surface Layer Resistivity: 5,000 ohm-m

GROUNDING NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR GROUNDING NOTES SEE SHEET GP1.





KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

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	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JLC
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NEW NORMANDY CONTROL HOUSE

GROUNDING PLAN SHEET 2 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: GP2.dgn
DRAWING SET: NM2023
DRAWING ID: GP2
SHEET #: 34 OF 61

JEA ARCH D (24"X36" - V:\Projects\2022\23-0051.100005 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\GP2.dgn PRINTED: 2024/09/25 AT 07:57

LEGEND

- GROUND CONDUCTOR - 19#8 COPPERWELD FOR MAIN GRID, 7#5 COPPERWELD FOR STRUCTURE, GROUND ROD, EQUIPMENT, CABLE TRENCH, CABLE TRAY. CONTRACTOR FURNISHED AND INSTALLED.
- GROUND CONNECTION - CADWELD PLUS EXOTHERMIC MOLD CONNECTION, SIZED AND CONFIGURED AS REQUIRED. CONTRACTOR FURNISHED AND INSTALLED. SEE CONNECTION DETAILS SHEET GD1.
- SWITCH OPERATOR GROUND PLATFORM - FURNISHED BY OWNER, INSTALLED BY CONTRACTOR.
- WHERE CABLE TRENCH CROSSES GROUND GRID CONNECT THE CABLE TRENCH GROUND CONDUCTORS TO THE GROUND GRID. SEE DETAIL 3/GD1
- GROUND ROD - COPPERWELD RODS 5/8" DIAMETER, 10' IN LENGTH, COUPLED AND DRIVEN TO A DEPTH OF THIRTY (30) FEET. CONTRACTOR FURNISHED AND INSTALLED.
- CHAIN LINK SECURITY FENCE. CONTRACTOR FURNISHED AND INSTALLED.
- 6" STEEL PIPE CEMENT-FILLED BOLLARD. CONTRACTOR SHALL PROVIDE GROUND CONNECTIONS TO GROUND GRID. SEE DETAIL 1/GD1.

DESIGN NOTES

Grid designed for 3" substation rock with a minimum resistivity of 5000 ohm-m. In the rocked areas, permissible touch limts are safe with system ground fault currents up to 30kA.

Ground Grid Depth: 18 inches below compacted earth
Length of Main Grid Conductor: 18,000 ft
Ground Rod Depth: 30 ft
Number of Ground Rod Locations: 163
Number of Grid Cadweld X Connections: 300
Total Installation Impedance: 1.61 ohm
Grid Current: 6,300A

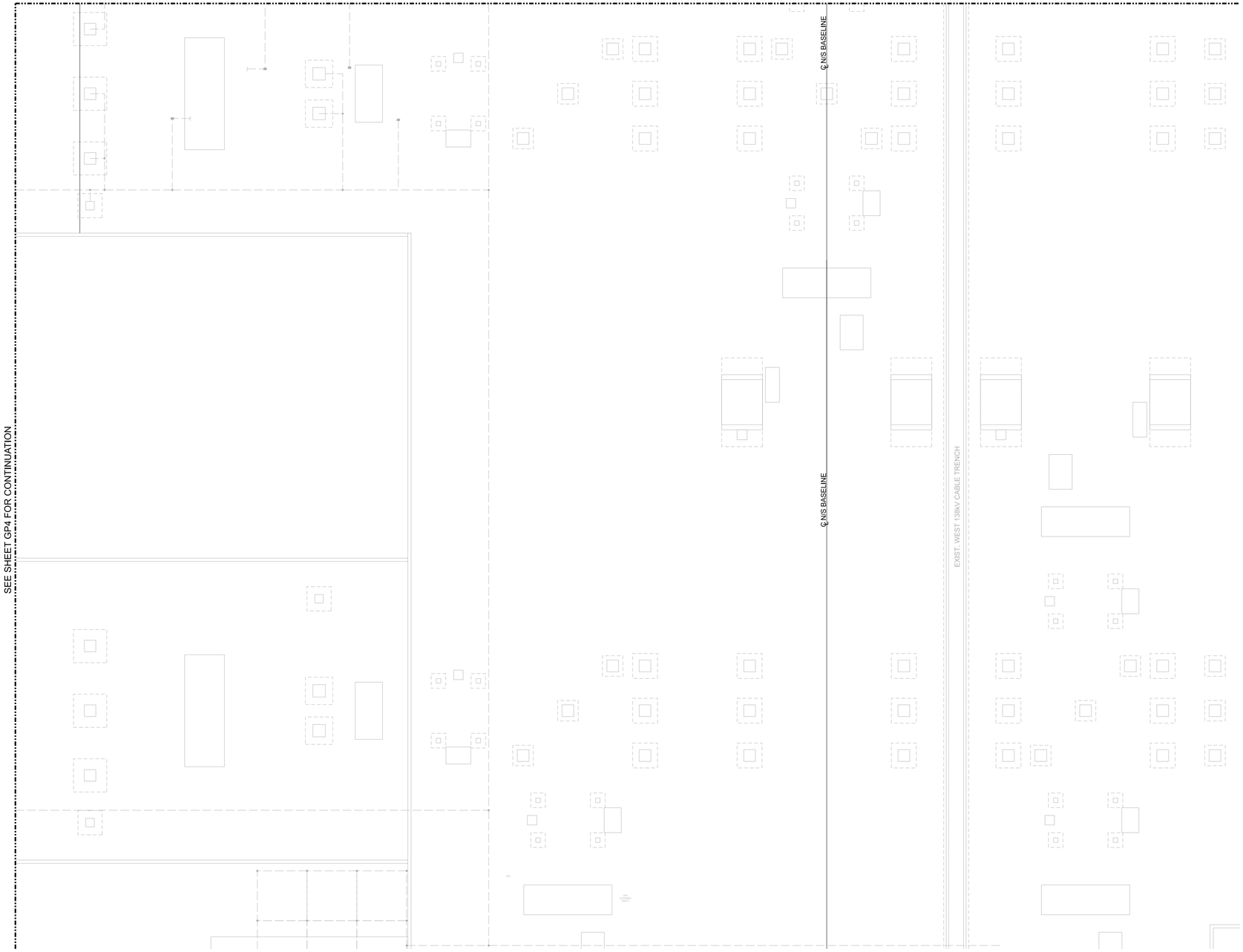
Split Factor: 0.21
Upper Layer Thickness: 4.1 ft
Upper Layer Resistivity: 3,178 ohm-m
Lower Layer Resistivity: 451 ohm-m
Surface Layer Thickness: 3 in
Surface Layer Resistivity: 5,000 ohm-m

GROUNDING NOTES

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2. FOR GROUNDING NOTES SEE SHEET GP1.

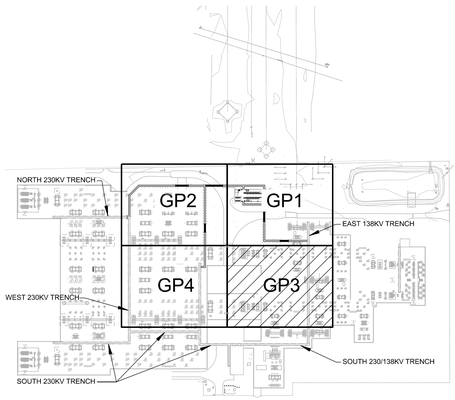
MATCHLINE B-B
SEE SHEET GP1 FOR CONTINUATION

MATCHLINE D-D
SEE SHEET GP4 FOR CONTINUATION



FOR INFORMATION ONLY

N



KEY PLAN

16' 8' 0 16' 32'

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

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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		-	-	-	-	BY	JLC
		-	-	-	-	REVIEW	JPF

NEW NORMANDY CONTROL HOUSE

GROUNDING PLAN
SHEET 3 OF 4

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: GP3.dgn
DRAWING SET: NM2023
DRAWING ID: GP3
SHEET #: 35 OF 61

JEA ARCH D (24"X36") V:\Projects\2022\23-001.00005 - Normandy Substation New Control House\Design\CAD\NM2023\dgn\GP3.dgn PRINTED 2024/03/25 AT 07:37

LEGEND

- GROUND CONDUCTOR - 19#8 COPPERWELD FOR MAIN GRID, 7#5 COPPERWELD FOR STRUCTURE, GROUND ROD, EQUIPMENT, CABLE TRENCH, CABLE TRAY. CONTRACTOR FURNISHED AND INSTALLED.
- GROUND CONNECTION - CADWELD PLUS EXOTHERMIC MOLD CONNECTION, SIZED AND CONFIGURED AS REQUIRED. CONTRACTOR FURNISHED AND INSTALLED. SEE CONNECTION DETAILS SHEET GD1.
- SWITCH OPERATOR GROUND PLATFORM - FURNISHED BY OWNER, INSTALLED BY CONTRACTOR.
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- GROUND ROD - COPPERWELD RODS 5/8" DIAMETER, 10' IN LENGTH, COUPLED AND DRIVEN TO A DEPTH OF THIRTY (30) FEET. CONTRACTOR FURNISHED AND INSTALLED.
- CHAIN LINK SECURITY FENCE. CONTRACTOR FURNISHED AND INSTALLED.
- 6" STEEL PIPE CEMENT-FILLED BOLLARD. CONTRACTOR SHALL PROVIDE GROUND CONNECTIONS TO GROUND GRID. SEE DETAIL 1/GD1.

DESIGN NOTES

Grid designed for 3" substation rock with a minimum resistivity of 5000 ohm-m. In the rocked areas, permissible touch limts are safe with system ground fault currents up to 30kA.

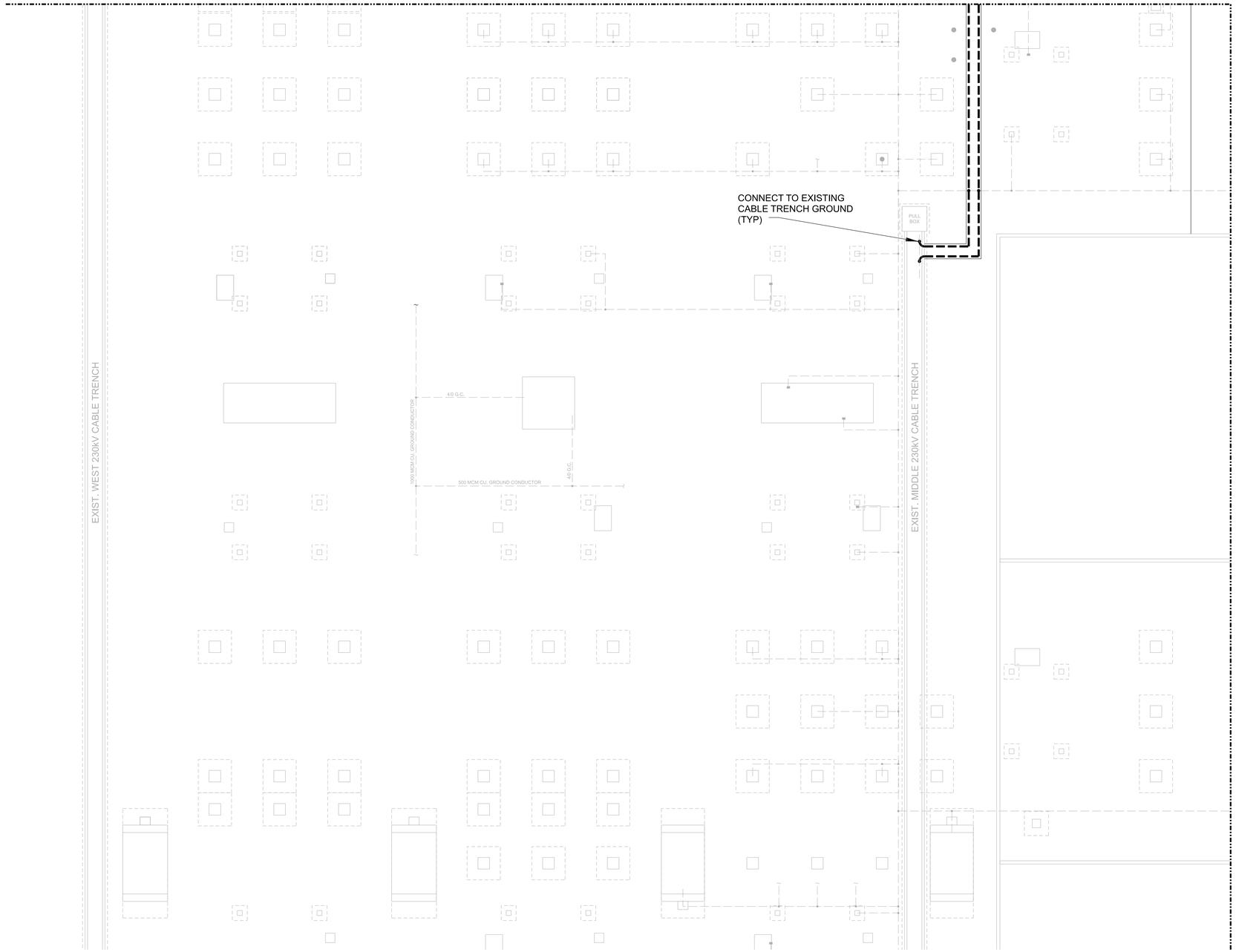
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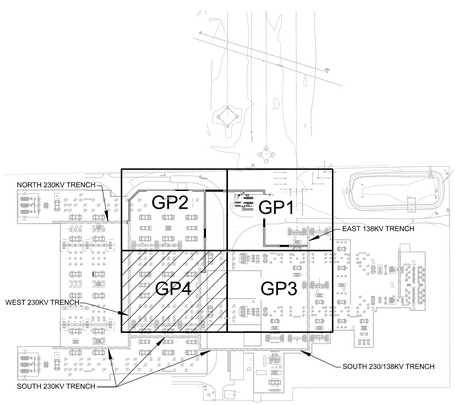
GROUNDING NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. FOR GROUNDING NOTES SEE SHEET GP1.

MATCHLINE C-C
SEE SHEET GP2 FOR CONTINUATION



MATCHLINE D-D
SEE SHEET GP3 FOR CONTINUATION



KEY PLAN

SCALE: 3/32"= 1'- 0"
16' 8' 0 16' 32'
GRAPHIC SCALE

JEA
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21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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		-	-	-	-	DATE	3/12/24
		-	-	-	-	BY	JLC
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NEW NORMANDY CONTROL HOUSE

GROUNDING PLAN
SHEET 4 OF 4

NORMANDY SUBSTATION

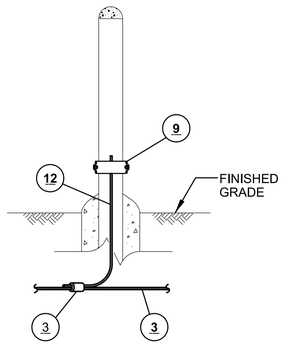
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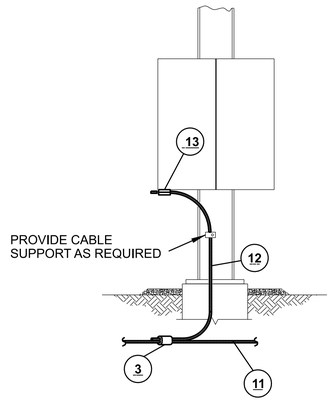
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DRAWING NAME: GP4.dgn
DRAWING SET: NM2023
DRAWING ID: GP4
SHEET #: 36 OF 61

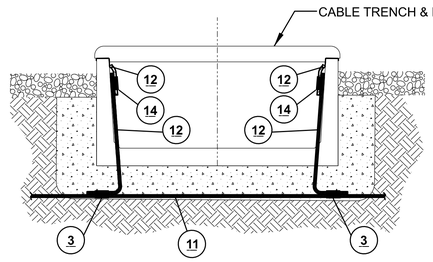
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DETAIL 1
CAST-IRON PIPE BOLLARD GROUNDING



DETAIL 2
TYPICAL YARD & EQUIPMENT PANEL GROUNDING



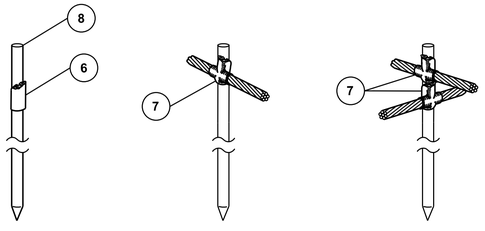
NOTE

7#5 COPPERWELD GROUND CONDUCTOR SHALL BE INSTALLED AT TOP OF THE CABLE TRENCH AND SUPPORTED BY CABLE CLIPS APPROXIMATELY EVERY FIVE FEET (TRENWA TYPE GC-1 OR EQUAL). CONTRACTOR TO INSTALL A CONTINUOUS RUN FROM THE TRENCH, LOOP THROUGH CONTROL BUILDING CABLE TRAY. TAP 7#5 IN CABLE TRAY AND TIE TO CONTROL BUILDING GROUND BUS.

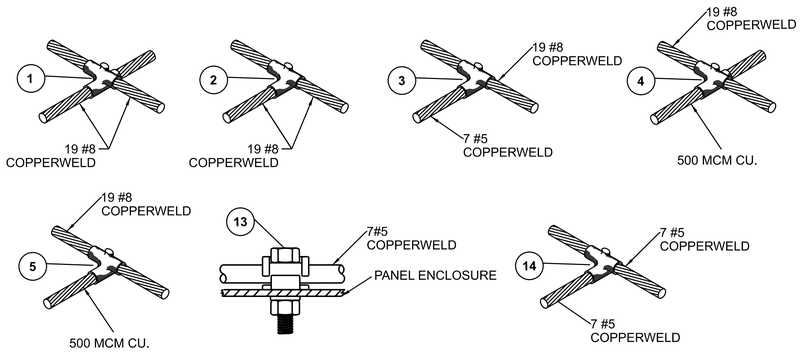
DETAIL 3
TYPICAL CABLE TRENCH GROUNDING CONNECTIONS

ITEM	DESCRIPTION *
1	WELDED GROUND CONNECTION, 19#8 CABLE THROUGH CROSS, CADWELD PLUS MOLD TYPE XBZ9G9G AND (2) #200 WELDING MATERIAL AS REQUIRED.
2	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 19#8 CABLE TAP, CADWELD PLUS MOLD TYPE TAC9G9G AND (1) #200 WELDING MATERIAL AS REQUIRED.
3	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 7#5 CABLE TAP, CADWELD PLUS MOLD TYPE TAC9G9E AND (1) #150 WELDING MATERIAL AS REQUIRED.
4	WELDED GROUND CONNECTION, 500KCM CABLE TO 19#8 CABLE THROUGH CROSS, CADWELD PLUS MOLD TYPE XBZ3Q9G AND (3) #200 WELDING MATERIAL AS REQUIRED.
5	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 500KCM CABLE TAP, CADWELD PLUS MOLD TYPE TAC9G3Q AND (1) #250 WELDING MATERIAL AS REQUIRED.
6	WELDED GROUND CONNECTION, GROUND ROD TO GROUND ROD, CADWELD PLUS MOLD TYPE HDGBD-16 AND #2-150 WELDING MATERIAL AS REQUIRED.
7	WELDED GROUND CONNECTION, GROUND ROD TO CABLE, CADWELD MOLD TYPE GYE-169G AND (1) #200 WELDING MATERIAL AS REQUIRED.
8	COPPER-BONDED GROUND ROD, THREADLESS, 5/8" X 10', 10 MIL PLATING. ERICO CATALOG NO. 615800.
9	GROUND CONNECTOR, BRONZE BOLTED, SINGLE CABLE TO 4-1/2" O.D. PIPE. CONDUCTOR RANGE, #4 SOLID - 300MCM CU. SEFCOR GUR-6414, OR EQUAL
10	GROUND CONNECTOR, BRONZE BOLTED, SINGLE CABLE TO 6-5/8" O.D. PIPE. CONDUCTOR RANGE, #4 SOLID - 300MCM CU. SEFCOR GUR-6914. OR EQUAL
11	19#8 COPPERWELD GROUND CONDUCTOR
12	7#5 COPPERWELD GROUND CONDUCTOR
13	GROUND CONNECTOR, BRONZE SINGLE CABLE TO FLAT TWO-PIECE CLAMP, #2/0 SOLID - 250MCM ANDERSON CATALOG NO. GC-110142C OR EQUAL
14	WELDED GROUND CONNECTION, 7#5 CABLE MAIN TO 500KCM CABLE TAP, CADWELD PLUS MOLD TYPE TAC9E9E AND (1) #150 WELDING MATERIAL AS REQUIRED.

* CONTRACTOR SHALL PROVIDE ALL MATERIAL UNLESS NOTED OTHERWISE.



DETAIL 4
TYPICAL GROUND ROD CONNECTIONS



DETAIL 5
TYPICAL GROUND CONDUCTOR CONNECTIONS

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

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BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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	-	-	-	-	-	REVIEW	TRG

NEW NORMANDY CONTROL HOUSE

GROUNDING DETAILS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: N.T.S.

PROJ #: 8007704

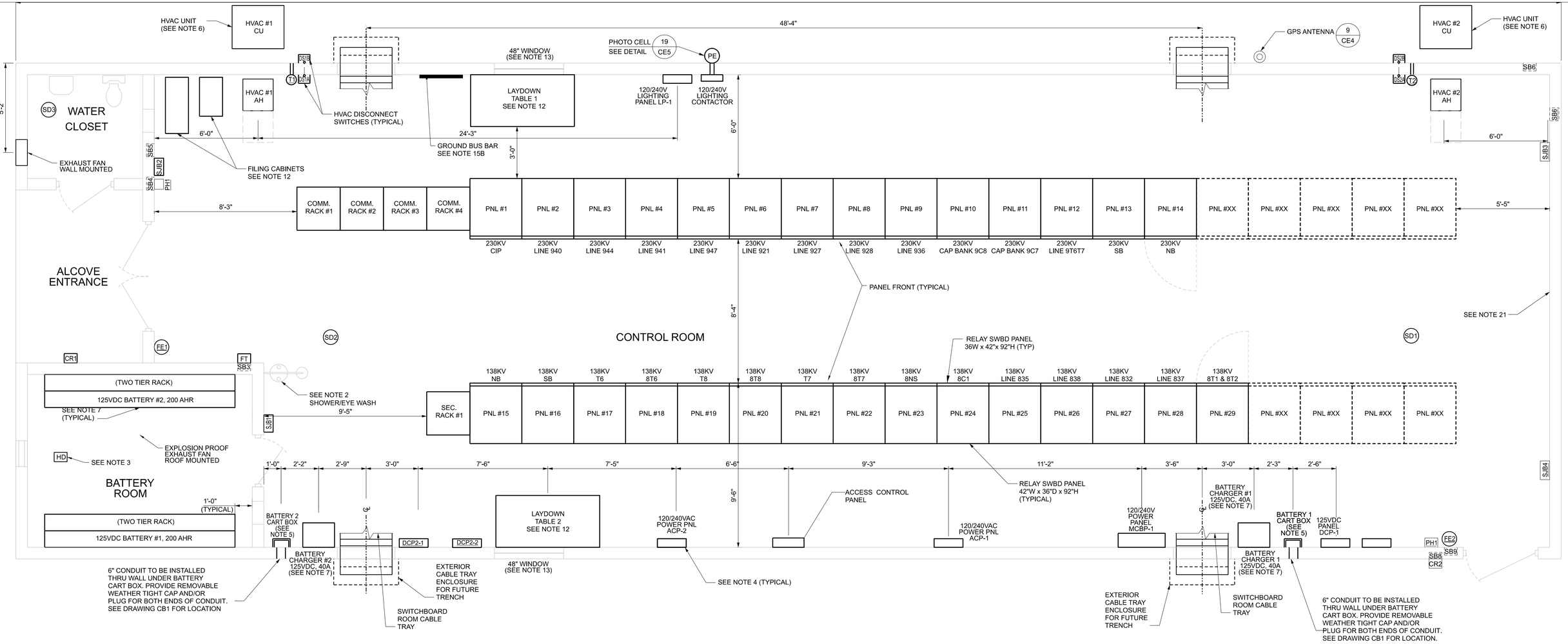
DRAWING NAME: GD1.dgn

DRAWING SET: NM2023

DRAWING ID: GD1

SHEET #: 37 OF 61

JEA ARCH D 24"X36" GD1.dgn 2024-3-25 - 07:09



CONTROL BUILDING NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1,
2. CONTRACTOR SHALL FURNISH AND INSTALL COMBINATION SHOWER WITH EYE/FACE WASH UNIT (WALL MOUNTED), SPEAKMAN MODEL NO. SE-693-SSH. CONTRACTOR SHALL INSTALL FLOOR DRAIN DIRECTLY BELOW SHOWERHEAD.
3. CONTRACTOR SHALL FURNISH AND INSTALL AN EXPLOSION PROOF HEAT DETECTOR, CHEMETRONICS MODEL # EPB 501 OR APPROVED EQUAL. HEAT DETECTOR SHOULD HAVE A N.O. CONTACT WITH RATE-OF-RISE AND FIXEDTEMPERATURE DETECTION OF 136°F (58°C). N.O. CONTACT SHALL BE WIRED IN PARALLEL WITH OTHER FIREDETECTION DEVICES AS DETAILED IN DWG CE4.
4. CONTRACTOR SHALL FURNISH AND INSTALL ALL AC AND DC STATION SERVICE POWER PANELS AT THELOCATIONS SHOWN ON THIS DRAWING. THE TOP OF THE AC AND DC POWER PANELS SHALL BE MOUNTED6'-6" ABOVE FINISHED FLOOR. THE AC AND DC POWER PANELS SHALL BE IN ACCORDANCE WITH DRAWINGLV1 AND THE SPECIFICATIIONS.
5. CONTRACTOR SHALL FURNISH AND INSTALL THE BATTERY CART BOXES (QTY 2) IN ACCORDANCE WITH DETAIL F,DRAWING CE5, THE TOP OF THE BATTERY CART BOX SHALL BE 4'-0" ABOVE FINISHED FLOOR.
6. CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) SPLIT UNIT HVAC UNITS, COMPLETE WITH THERMOSTAT AND DUCT WORK IN THE CONTROL ROOM. THE CONTRACTOR SHALL FURNISH AND INSTALL INTERIOR AND EXTERIOR HVAC DISCONNECT SWITCHES, SEE DETAIL J, DRAWING CE5, THE CONTRACTOR SHALL INSTALL ALL WALL PENETRATIONS REQUIRED FOR THESE AC UNITS, ONE (1) 2" CONDUIT FOR FREON LINE AND ONE (1) 2" CONDUIT FOR A DRAIN LINE, PER A/C UNIT, IN LOCATIONS AS SHOWN ON DWG. CB1, NOTES 2 & 4.
7. THE OWNER WILL FURNISH TWO (2), 125VDC BATTERIES, RACKS AND CHARGERS. PICKUP AND TRANSPORTATION TO THE SITE BY THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL THE BATTERY CHARGERS WITH ASSEMBLY AND INSTALLATION OF BATTERIES AND RACKS BY MANUFACTURER. SEE DWG. CE5, DETAIL "16".
8. THE OWNER WILL FURNISH THE 230kV AND 138kV RELAY PANELS, COMM AND SECURITY RACKS. THE RELAY PANELS SHALL BE DELIVERED TO THE JOB SITE BY THE RELAY PANEL MANUFACTURER. CONTRACTOR SHALL UNLOAD THEM FROM THE TRUCK AND INSTALL THEM PER THESE PLANS AND DRAWINGS. INSTALLATION SHALL INCLUDE ANCHORING THE EQUIPMENT TO THE CONTROL BUILDING FLOOR AND CONNECTING THE PANELS/CABINETS TO THE CABLE TRAY GROUND CONDUCTOR
9. THE CARD READERS, SECURITY CAMERAS AND SECURITY PANELS WILL BE FURNISHED AND INSTALLED BY THE OWNER. CONTRACTOR SHALL COORDINATE WITH JEA SECURITY AND PROVIDE THE CONDUITS AND BOXES REQUIRED FOR DOOR CARD READER SECURITY SYSTEMS.
10. THE COMMUNICATIONS AND NETWORK PANELS WILL BE FURNISHED AND INSTALLED BY THE OWNER.
11. CONTRACTOR SHALL FURNISH AND INSTALL FIRE EXTINGUISHERS IN A LOCATION NOT TO EXCEED 5'-0" ABOVE FINISHED FLOOR, BOTTOM OF FIRE EXTINGUISHERS SHALL NOT BE LOWER THAN 6" ABOVE FINISHED FLOOR.
12. THE CONTRACTOR SHALL FURNISH TWO (2) 3' x 6' LAYDOWN TABLES (HON UTM3672 QQCHR), ONE (1) 4 DRAWER LEGAL FILE CABINET(HON 370), AND TWO (2) VERTICAL DRAWING STORAGE CABINETS WITH HANGING CLAMPS (SAFCO 5041 WITH 50036), OR APPROVED EQUAL.
13. WINDOWS SHALL BE IMPACT RATED PG-50 AT A MINIMUM.
14. SCADA RTU FURNISHED BY JEA FOR TRANSPORTATION TO THE SITE, INSTALLATION AND CONNECTION BY THE CONTRACTOR. INSTALLATION SHALL INCLUDE ANCHORING THE EQUIPMENT TO THE CONTROL HOUSE FLOOR AND CONNECTING TO THE CABLE TRAY GROUND CONDUCTOR.
15. COMMUNICATIONS/SECURITY EQUIPMENT:
    A. COMMUNICATION RACKS, SECURITY RACKS AND UPS FURNISHED AND INSTALLED BY JEA.
    B. THE CONTRACTOR SHALL FURNISH AND INSTALL A GROUND BUS BAR NEAR THE COMMUNICATIONS EQUIPMENT, AS SHOWN. THIS GROUND BUS SHALL BE 4" X 30" X 1/4 " COPPER BAR WITH CONNECTION TO THE CABLE TRAY GROUND AT A SINGLE POINT. GROUND BUS SHALL BE MOUNTED ON INSULATORS AT A HEIGHT OF 8'-0" ABOVE FINISHED FLOOR WITH DRILLING AND TAPPING AS DIRECTED BY JEA.
16. CONTRACTOR SHALL FURNISH AND INSTALL THREE (3) SMOKE DETECTORS, POTTER PAD100-PD WITH PAD100-6B BASE IN THE LOCATIONS SHOWN ON THIS DRAWING. CONTRACTOR SHALL MOUNT SMOKE DECTECTOR ELECTRICAL BOX TO NEAREST UNOBSTRUCTED CEILING JOIST.
17. SEE CONDUIT PLAN AND CONDUIT DETAILS DRAWINGS FOR CONTINUATION OF CONDUIT RUNS.
18. CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MISCELLANEOUS MATERIALS UNLESS SPECIFIED OTHERWISE
19. CONTRACTOR SHALL PROVIDE A MINIMUM OF R-13 WALL INSULATION AND A MINIMUM OF R-38 ROOF/ATTIC INSULATION PER FLORIDA 2017 BUILDING CODE.
20. NO EQUIPMENT AND/OR INSTRUMENTATION SHALL BE INSTALLED ON THE NORTH WALL, EXCEPT WHAT IS SHOWN ON DRAWING CE2.

CONTROL BUILDING LEGEND:

- CR CARD READER (FURNISHED & INSTALLED BY JEA)
- DS HVAC ELECTRICAL DISCONNECT SWITCH
- FE FIRE EXTINGUISHER (SEE NOTE 11)
- SC SECURITY CAMERA (FURNISHED & INSTALLED BY JEA)
- SD SMOKE DETECTOR (FURNISHED & INSTALLED BY CONTRACTOR)
- T HVAC UNIT THERMOSTAT (FURNISHED & INSTALLED BY CONTRACTOR)
- HD EXPLOSION PROOF HEAT DETECTOR (FURNISHED & INSTALLED BY CONTRACTOR)
- CONDUITS PLACED IN SLAB/UNDERGROUND
- FT INTERMATIC FAN TIMER MODEL T1975 (FURNISHED AND INSTALLED BY CONTRACTOR)
- PH TELEPHONE (FURNISHED & INSTALLED BY JEA)
- PE PHOTO CELL FOR BUILDING WALL PACKS AND PERIMETER LIGHTING

N

SCALE: 3/8"=1'-0"

4' 2' 0 4' 8'

GRAPHIC SCALE

JEA

BUILDING COMMUNITY

21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

cma chen moore and associates

501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
www.chenmoore.com

PROFESSIONAL ENGINEER'S SEAL

FOR PROFESSIONAL'S SEAL SEE SIGNATURE SHEET
DWG. NAME: SS.DGN
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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JPF
	-	-	-	-	-	REVIEW	TRG
	-	-	-	-	-	DRAFTING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JPF
	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING ELECTRICAL PLAN

NORMANDY SUBSTATION

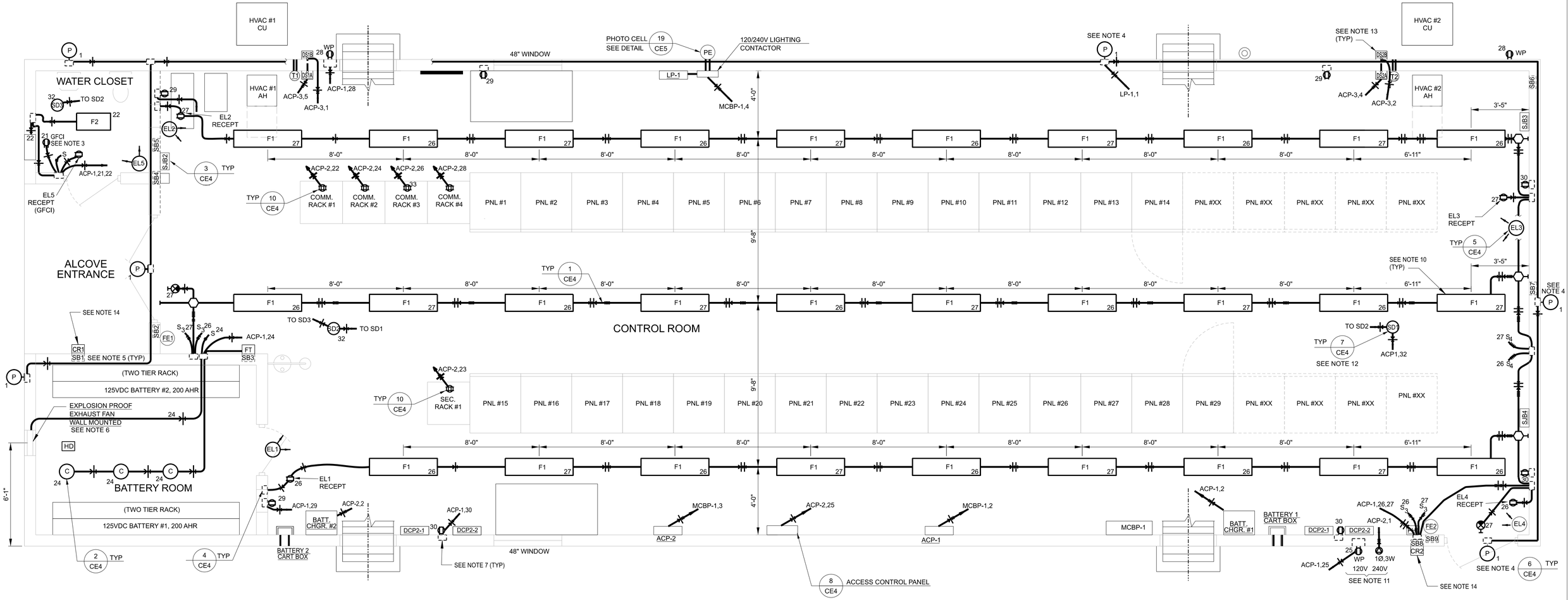
SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CE1.dgn
DRAWING SET: NM2023
DRAWING ID: CE1
SHEET #: 38 OF 61

JEA ARCH/24"X36" CE1.dgn 2024-03-25 - 08:00



LIGHTING AND POWER LEGEND:

ACP-2,2 — HOME RUN - PANEL NAME, CIRCUIT NUMBER (SEE NOTE 9)

CONDUCTOR CODE: SHORT DASH INDICATES PHASE OR SWITCHED CONDUCTOR
LONG DASH INDICATES NEUTRAL CONDUCTOR
ARC INDICATES GROUND CONDUCTOR

- CIRCUIT CONTINUATION
- JUNCTION BOX, 4" x 4" x 2-1/8" (TYP), SURFACE MOUNTED
- JUNCTION BOX, 4" x 4" x 2-1/8" (TYP), FLUSH MOUNTED
- SB — SECURITY OUTLET BOX, 4" x 4" x 2-1/8" (TYP), FLUSH MOUNTED
- CR — CARD READER, TO BE FURNISHED AND INSTALLED BY OWNER
- SC — SECURITY CAMERA, TO BE FURNISHED AND INSTALLED BY OWNER
- SJB — SECURITY JUNCTION BOX, 12" x 12" x 6", SURFACE MOUNTED, HOFFMAN A-1212CH
- SD — SMOKE DETECTOR; POTTER PAD100-PD W/ BASE PAD100-6B (FURNISHED & INSTALLED BY CONTRACTOR)
- JUNCTION BOX IN-LINE UNISTRUT RACEWAY SYSTEM (P2801 & P2803 AS REQ'D)
- S — SINGLE POLE SWITCH, SURFACE MOUNTED
- S_3 — THREE WAY SWITCH, SURFACE MOUNTED
- S_4 — FOUR WAY SWITCH, SURFACE MOUNTED
- GROUNDING - TYPE DUPLEX RECEPTACLE, SURFACE MOUNTED
- GROUNDING - TYPE QUADRULEX RECEPTACLE
- 240V, 60A, YARD RECEPTACALE. RUSSELLSTOLL TYPE SCA, CAT. NO. 3323-78
- GFCI — GROUND FAULT CIRCUIT - INTERRUPTER, DUPLEX RECEPTACLE, SURFACE MOUNTED
- WP — GFCI PROTECTED WEATHER-PROOF GROUNDING-TYPE RECAPTACLE, FLUSH MOUNTED
- ROOF MOUNTED EXHAUST FAN

- C — EXPLOSION PROOF LIGHT, 40W, TYPE HLEML CEILING MOUNT HUBBELL LIGHTING; HLEML-45-30-X3-G-AN
- HD — EXPLOSION PROOF HEAT DETECTOR, POTTER
- P — OUTDOOR WALL MOUNTED LED LIGHT FIXTURE, HUBBELL LIGHTING CAT. NO. WGH-110L-4K-U-M (120V, 54W LED, WITH PHOTOCONTROL)
- EL — DIE-FORMED STEEL EMERGENCY LIGHT UNIT, 6 VOLT, 2 LAMP HEADS, 120VAC INPUT, DUAL-LITE CCU2 LED FIXTURE. CONNECT ALL EMERGENCY LIGHTS AHEAD OF CIRCUIT SWITCHES. ARROWS INDICATE AIMING ANGLE.
- F1 — LIGHTING FIXTURE, LED, COLUMBIA LIGHTING CATALOG NO. LAW4-40ML-EU, (4', 120-277V)
- F2 — LIGHTING FIXTURE, LED, COLUMBIA LIGHTING CATALOG NO. LAW2-40LW-EU, (2', 120-277V)
- FT — INTERMATIC FAN TIMER MODEL T1975 (FURNISHED & INSTALLED BY CONTRACTOR)
- DS — DISCONNECT SWITCH
- FE — FIRE EXTINGUISHER
- PC — PHOTO CELL FOR BUILDING WALL PACKS AND PERIMETER LIGHTING
- WALL MOUNTED, ILLUMINATED EXIT SIGN WITH RED LEDs AND INTEGRAL BATTERY PACK. INSTALL ABOVE DOOR LEVEL. NUMBER OF SHADED QUADRANTS = NUMBER OF FACES

LIGHTING AND POWER NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1,
2. UNLESS SPECIFICALLY NOTED THE CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING, SECURITY AND MISCELLANEOUS EQUIPMENT AND INTERCONNECTING RACEWAY AND ASSOCIATED CONDUCTORS AS SHOWN ON THIS DRAWING. CONTRACTOR SHALL CONCEAL CONDUIT RUNS WITHIN CONTROL HOUSE WALLS, UNLESS SPECIFIED. IF SURFACE RUN CONDUITS ARE REQUIRED, USE EMT FOR EXPOSED CONDUIT RUNS.
3. BATHROOM LIGHTING FIXTURES ARE TO BE MOUNTED 7'-0" ABOVE FINISHED FLOOR. BATHROOM EXHAUST FAN SHALL BE SWITCHED WITH A TIMER, SEPARATE FROM BATHROOM LIGHT SWITCH (BOTH CONTRACTOR FURNISHED AND INSTALLED). A GFCI RECEPTACLE SHALL BE FURNISHED AND INSTALLED IN THE BATHROOM.
4. OUTDOOR LIGHTING FIXTURES SHALL BE MOUNTED APPROX. 7'-0" ABOVE FINISHED FLOOR, UNLESS ABOVE DOORWAYS, WHICH SHALL BE MOUNTED JUST BELOW BOND BEAM. ALL OUTDOOR LIGHTING JUNCTION BOXES SHALL BE INSTALLED FLUSH WITH EXTERIOR WALL.
5. SECURITY OUTLET BOXES (SB) SHALL BE 4" X 4" X 2-1/8". SECURITY OUTLET BOXES SHALL BE MOUNTED FLUSH WITH WALL SURFACE WITH 3/4" CONDUIT RUNNING INSIDE MASONRY WALL TO SURFACE MOUNTED SECURITYJUNCTION BOXES PER TABLE BELOW. SECURITY OUTLET BOXES (SB) SHALL BE 4" X 4" X 2-1/8". SECURITY OUTLET BOXES SHALL BE MOUNTED FLUSH WITH WALL SURFACE WITH 3/4" CONDUIT RUNNING INSIDE MASONRY WALL TO SURFACE MOUNTED SECURITYJUNCTION BOXES PER TABLE BELOW.

FROM:	TO:	FROM:	TO:	FROM:	TO:	FROM:	TO:	FROM:	TO:
SB1	SJB1	SB3	SJB1	SB5	SJB2	SB7	SJB3	SB9	SJB4
SB2	SJB1	SB4	SJB2	SB6	SJB3	SB8	SJB4		

SECURITY OUTLET BOXES SB1, SB2, SB4, SB8 AND SB9 SHALL BE MOUNTED 42" ABOVE FINISHED FLOOR SECURITY OUTLET BOXES SB3, SB5, SB6 AND SB7 SHALL BE MOUNTED 12" BELOW ROOF TEES. TOP OF SECURITY JUCNTION BOXES SHALL BE MOUNTED 2" BELOW ROOF TEES. SEE CONTROL HOUSE RACEWAY PLAN, DRAWING CE3, FOR CONDUIT RUNNING BETWEEN SECURITY JUNCTION BOXES. DO NOT INSTALL LB'S INSIDE THE CONCRETE BLOCK WALLS.
6. BATTERY ROOM EXHAUST FAN SHALL NOT BE SWITCHED WITH BATTERY ROOM LIGHTS. ALUMINUM 3/4" CONDUIT SHALL RUN IN BATTERY ROOM TO THE LIGHTING FIXTURES AND EXHAUST FAN. ALL CONDUIT RUNS IN BATTERY ROOM SHALL BE ALUMINUM. CONTRACTOR SHALL SURFACE MOUNT ALL ALUMINUM CONDUIT, AND WALL PENETRATIONS SHALL BE PVC COATED AND SEALED.
7. CONTROL BUILDING RECEPTACLES SHALL BE MOUNTED 2'-6" ABOVE FINISHED FLOOR AT LOCATIONS SHOWN ON DRAWING, EXCEPT FOR CEILING MOUNTED RECEPTACLE BOXES. RECEPTACLES SHALL BE CONNECTED WITH OTHER RECEPTACLES ON THE SAME CIRCUIT USING WALL MOUNTED 3/4" EMT CONDUIT, SEE DETAIL 4, DWG CE4.
8. LIGHT SWITCHES SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR AT THE LOCATIONS SHOWN ON DRAWING. LIGHT SWITCHES SHALL BE CONNECTED TO LIGHTS USING WALL MOUNTED 3/4" EMT CONDUIT, SEE DETAIL 4, DWG CE5.
9. CIRCUITS FOR BUILDING LIGHTING, RECEPTACLES, SMOKE DETECTORS AND EQUIPMENT FED FROM THESE CIRCUITS SHALL HAVE #12 AWG COPPER CONDUCTORS IN 3/4" EMT CONDUITS EXCEPT IN BATTERY ROOM WHERE 3/4" ALUMINUM CONDUIT SHALL BE USED. FOR ALL OTHER CIRCUITS SEE CONDUIT AND CABLE SCHEDULES.
10. CONTRACTOR SHALL FURNISH AND INSTALL AC LIGHTING FIXTURES, INCLUDING LAMPS AND CLEAR LEXAN COVERS IN THE LOCATIONS AND MOUNTING HEIGHTS SPECIFIED.
11. JEA WILL FURNISH AND CONTRACTOR WILL INSTALL ONE (1) 240V TRUCK RECEPTACLE (RUSSELLSTOL TYPE SCA, 60A, CAT. # 3323-78) ON THE EXTERIOR WALL OF THE CONTROL HOUSE AS SHOWN, FOUR (4) FEET ABOVE GRADE. 240V TRUCK RECEPTACLE CONDUIT SHALL BE A 1-1/2" RGS CONDUIT RUN FROM CABLE TRAY THROUGH THE MASONRY WALL TO RECEPTACLE LOCATION.
12. CONTRACTOR SHALL FURNISH GE TYPE 350CX AND MOUNTING JB WITH 16 AWG IN SEPARATE CONDUIT FOR CONTACTS TO RTU (SEE DWG. CE4, DETAIL 7). THE CABLING TO THE FIRE ALARM SYSTEM IS NOT SHOWN ON THIS DRAWING.
13. THE CONTRACTOR SHALL FURNISH AND INSTALL HVAC DISCONNECT SWITCHES ON THE INTERIOR AND EXTERIOR OF THE CONTROL BUILDING. THE DISCONNECT SWITCHES SHALL BE SQUARE D HEAVY-DUTY SAFETY SWITCHES RATED 60A, 240VAC, 2-POLE, NON-FUSED TYPE WITH INSULATED NEUTRAL. THE INTERIOR SAFETY SWITCH SHALL BE FURNISHED WITH A NEMA 1 ENCLOSURE. THE EXTERIOR SAFETY SWITCH SHALL BE FURNISHED WITH A NEMA 3R ENCLOSURE WITH MYERS HUB. SEE DETAIL 18, DRAWING CE5.
14. CONTRACTOR SHALL COORDINATE WITH JEA SECURITY AND PROVIDE THE CONDUITS AND BOXES REQUIRED FOR DOOR CARD READER SECURITY SYSTEMS.

SCALE: 3/8"=1'-0" — 4' 2' 0 4' 8'

GRAPHIC SCALE

JEA — BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
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ISSUED FOR DESIGN REVIEW

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		-	-	-	-	DATE	3/12/24
		-	-	-	-	BY	JPF
		-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING LIGHTING & POWER

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

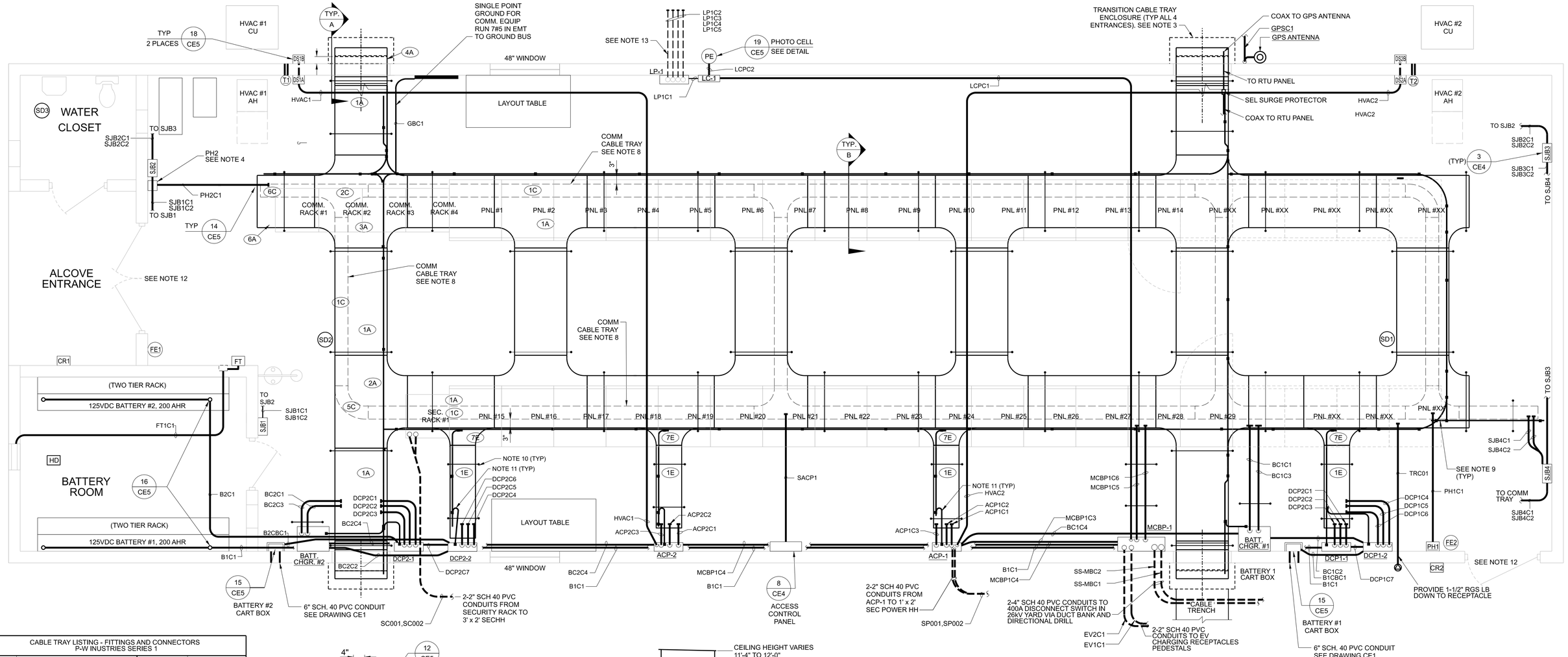
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DRAWING SET: NM2023

DRAWING ID: CE2

SHEET #: 39 OF 61

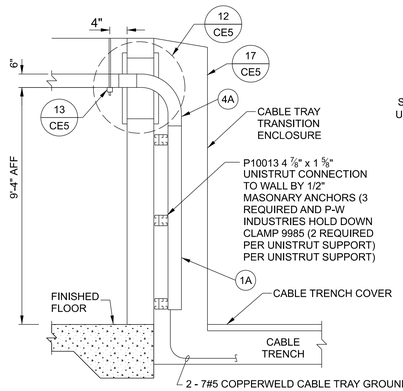
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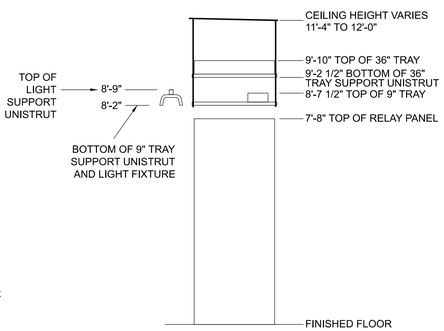
CABLE TRAY LISTING - FITTINGS AND CONNECTORS P-W INUSTRIES SERIES 1			
ITEM	DESCRIPTION & RADIUS	TRAY SIZE DESIGNATOR	TRAY SIZE, DEPTH,WIDTH MATERIAL
1	STRAIGHT	A	6" x 36" ALUMINUM
2	HORIZONTAL TEE (12"RAD)	C	4" x 9" ALUMINUM
3	HORIZONTAL CROSS (12"RAD)	E	6"x18" ALUMINUM
4	90° OUTSIDE VERTICAL ELBOW (12"RAD)		
5	90° HORIZONTAL ELBOW (12" RAD)		
6	BLIND END		
7	HORIZONTAL REDUCING TEE (12" RAD) 36" x 18"		

CABLE TRAY AND GROUNDING LEGEND:

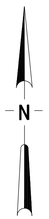
- = 7#5 COPPER GROUND CONDUCTOR (BY CONTRACTOR)
- DS = ELECTRICAL DISCONNECT SWITCH (BY CONTRACTOR)
- CR = CARD READER (BY OWNER)
- SC = SECURITY CAMERA (BY OWNER)
- PH = PHONE HANDEST (BY OWNER)
- HD = EXPLOSION PROOF HEAT DETECTOR (BY CONTRACTOR)
- SD = SMOKE DETECTOR (BY CONTRACTOR)
- FT = INTERMATIC FAN TIMER MODEL T1975 (BY CONTRACTOR)



SECTION A — EXTERIOR TRAY ENCLOSURE



SECTION B — CABLE TRAY OVER PANELS



CABLE TRAY AND GROUNDING NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE RACEWAY SYSTEM AS INDICATED ON THIS DRAWING, DETAIL DRAWINGS, CONDUIT SCHEDULE AND THE SPECIFICATIONS, THE RACEWAY SYSTEM SHALL BE COMPRISED OF CONDUIT, WIREWAY AND CABLE TRAY INCLUDING SUPPORT SYSTEMS. CONDUIT ROUTING IS SHOWN DIAGRAMATIC, CONTRACTOR SHALL COMPLY WITH NEC FOR INSTALLATION, CONDUIT SUPPORTS AND FITTINGS.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL THE CABLE TRAY TRANSITION ENCLOSURE IN ACCORDANCE WITH DETAIL 17, DRAWING CE5. CABLE TRAY TRANSITION ENCLOSURE MAY BE FABRICATED BY KEMCO INDUSTRIES, INC. SANFORD, FLORIDA ATTN: STEVE KRACHT, PHONE # (407) 322-1230.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL THE 9", 18" AND 36" CABLE TRAY SYSTEMS IN THE SWITCHBOARD ROOM AS DEPICTED ON THIS DRAWING.
5. THE CONTRACTOR SHALL INSTALL A SURFACE MOUNTED 4" x 4" x 2" JUNCTION BOX AT 4'-0" ABOVE FINISHED FLOOR FOR FOR INSTALLATION OF AN OWNER FURNISHED PHONE HANDSET AT EACH LOCATION DESIGNATED ON THIS DRAWING. ¾" EMT TO CABLE TRAY AS INDICATED.
6. SEE BUILDING LIGHTING AND POWER PLAN DWG. CE2 FOR CIRCUITING.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL AN INSULATED (600V) #4 AWG CU GROUND CONDUCTOR FROM THE 7#5 CABLE TRAY GROUND TO EACH POWER PANEL, BATTERY CHARGER, BATTERY CART BOX, SWITCHBOARD PANEL, SCADA RTU, EACH HVAC DISCONNECT SWITCH, EACH TEMPERATURE ALARM THERMOSTAT AND IRRIGATION CONTROLLER USING BURNDY GC-CT CONNECTORS.
8. THE CONTRACTOR SHALL FURNISH AND INSTALL THE 9" FIBER OPTIC CABLE TRAY SYSTEM IN THE SWITCHBOARD ROOM. THE BOTTOM OF THE FIBER OPTIC CABLE TRAY UNISTRUT SUPPORT SHALL BE MOUNTED AT 8'-2" AFF; UNDERHUNG BELOW THE 36" CABLE TRAY SYSTEM (SEE DETAIL C, DRAWING CE5). 7#5 COPPERWELD GROUND CONDUCTOR, WHICH IS TIED INTO 36" CABLE TRAY GROUNDING SYSTEM, SHALL BE ATTACHED TO THE OUTSIDE OF EACH COMM CABLE TRAY SECTION AND AT INTERVALS NOT EXCEEDING FOUR FEET, USING BURNDY GB AND GC CONNECTORS (WITH THE HEAD OF BOLT ON THE INTERIOR OF THE FIBER OPTIC CABLE TRAY).
9. MECHANICAL COMPRESSION CONNECTORS, TO BE APPROVED IN WRITING BY ENGINEER.
10. CABLE TRAY SUPPORTS DENOTED BY THE FOLLOWING SYMBOL: •——
11. PROVIDE CASE GROUND ON ALL PANELS AND ELECTRICAL EQUIPMENT. CONNECT CASE GROUNDS TO CONTROL BUILDING GROUNDING SYSTEM. SEE DETAIL 14 ON DWG CE5.
12. CONTRACTOR SHALL COORDINATE WITH JEA SECURITY AND PROVIDE THE CONDUITS AND BOXES REQUIRED FOR DOOR CARD READER SECURITY SYSTEM.
13. CONTRACTOR SHALL PROVIDE 4-2" SCHEDULE 40 PVC CONDUITS STUBBED OUT 30" BELOW GRADE AND 4'-0" PAST WALL, AND CAPPED FOR FUTURE PERIMETER LIGHTING.

SCALE: 3/8"=1'-0" — 4' 2' 0 4' 8'

GRAPHIC SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

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	-	-	-	-	-	DRAFTING	
	-	-	-	-	-	DATE	3/12/24
	-	-	-	-	-	BY	JPF
	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING CABLE TRAY & GROUNDING

NORMANDY SUBSTATION

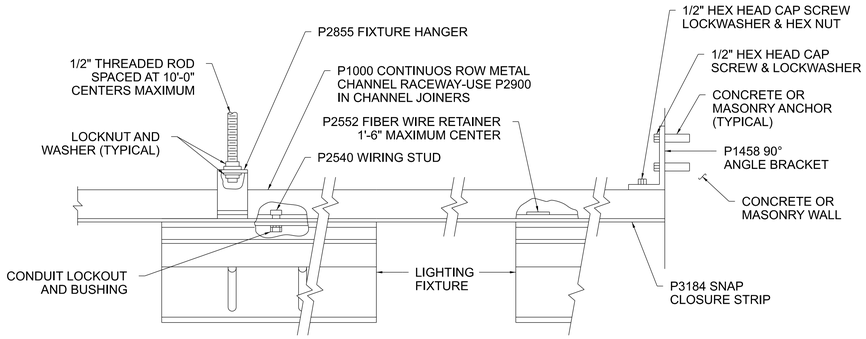
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SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

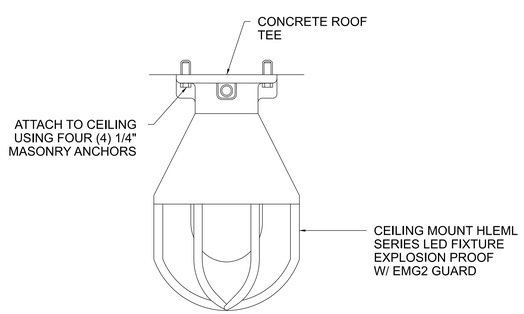
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DRAWING SET: NM2023
DRAWING ID: CE3
SHEET #: 40 OF 61

JEA ARCH D (24"X36" CE3.dgn 2024-3-26 - 08:00



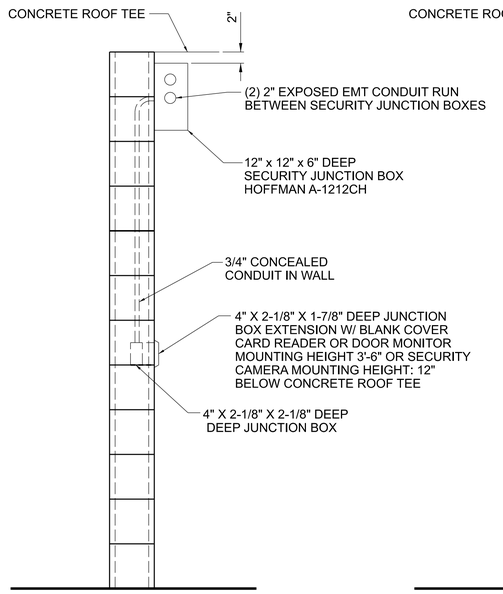
DETAIL 1

FIXTURE TYPE F
(PART NUMBERS REFER TO UNISTRUT CATALOG NUMBERS)
(NOT TO SCALE)



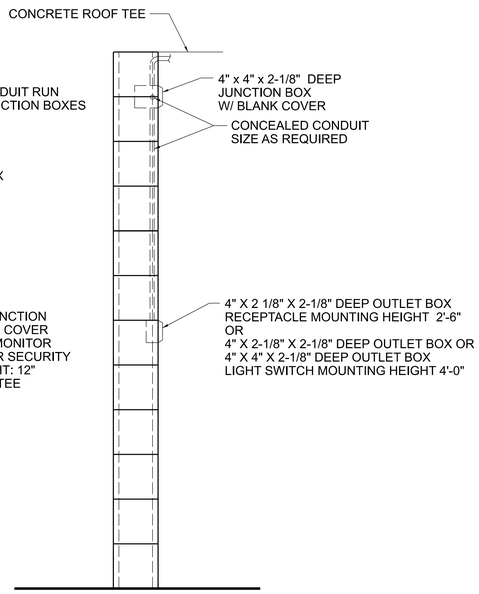
DETAIL 2

EXPLOSION PROOF
FIXTURE TYPE C
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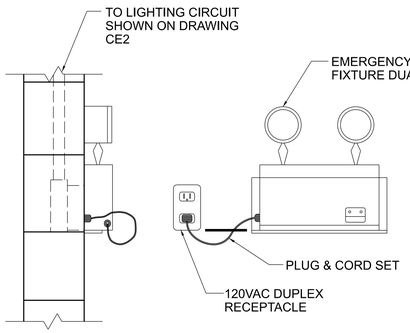
DETAIL 3

CONCEALED SECURITY
OUTLET BOX INSTALLATION
(NOT TO SCALE)



DETAIL 4

RECEPTACLE/LIGHT SWITCH
JUNCTION BOX INSTALLATION
(NOT TO SCALE)

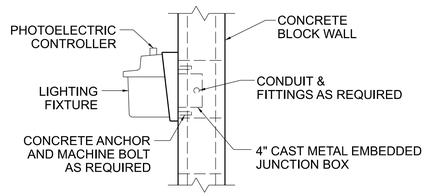


SIDE VIEW

FRONT VIEW

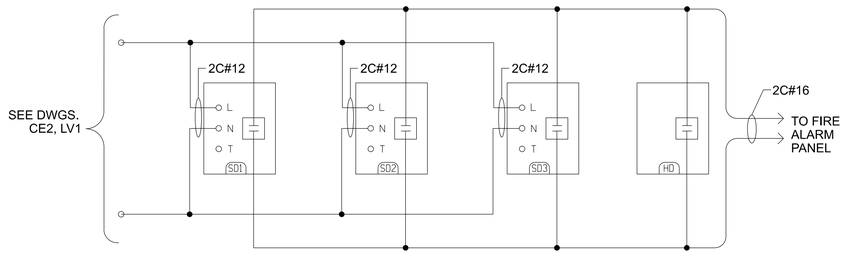
DETAIL 5

FIXTURE TYPE EL
EMERGENCY LIGHTING FIXTURE
(NOT TO SCALE)



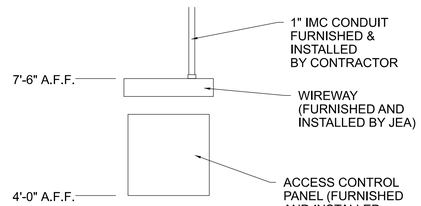
DETAIL 6

FIXTURE TYPE P
OUTDOOR WALL MOUNTED
LIGHTING FIXTURE
(NOT TO SCALE)



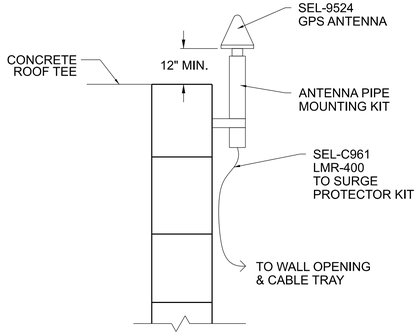
DETAIL 7

FIRE ALARM CIRCUIT WIRING
(NOT TO SCALE)



DETAIL 8

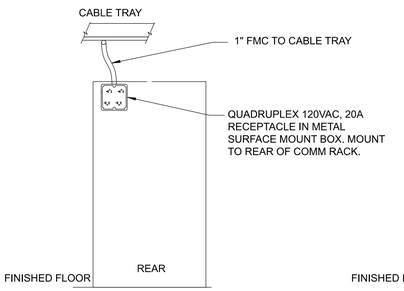
ACCESS CONTROL PANEL
INSTALLATION
(NOT TO SCALE)



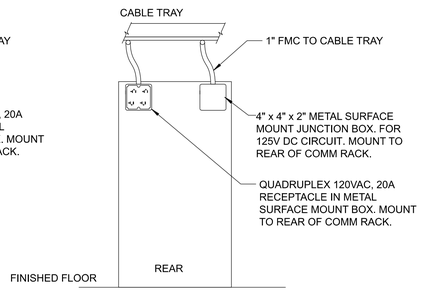
SIDE VIEW

DETAIL 9

GPS CLOCK ANTENNA
MOUNTING
(NOT TO SCALE)



COMM RACK #1 & #4 AND SECURITY RACK



COMM RACK #2 & #3

DETAIL 10

COMM & SECURITY RACK
(NOT TO SCALE)

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.

JEA.MRCH2.2PXDF CE4.dgn 2024-3-25 08:01 MODEL: CE4

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
Jacksonville, FL 32202
904.398.8636
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ENGINEERING	
DATE	3/12/24
BY	JPF
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	TRG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING DETAILS SHEET 1 OF 2

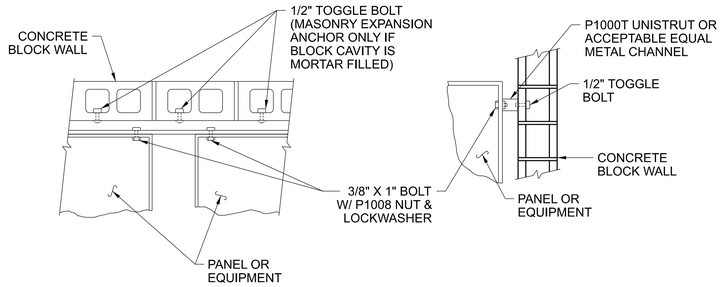
NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

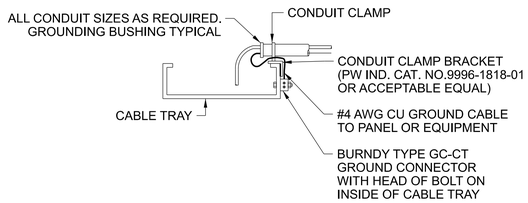
PROJ #: 8007704

DRAWING NAME: CE4.dgn
DRAWING SET: NM2023
DRAWING ID: CE4
SHEET #: 41 OF 61

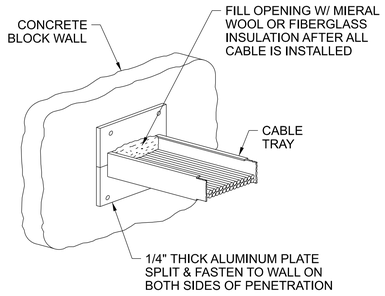


PLAN VIEW **SIDE VIEW**

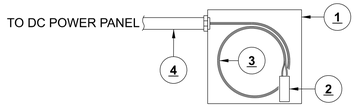
DETAIL 11
PANEL/EQUIPMENT MOUNTING ON BLOCK WALL
(NOT TO SCALE)



DETAIL 14
CONDUIT/GROUNDING TO CABLE TRAY
(NOT TO SCALE)



DETAIL 12
CABLE TRAY WALL PENETRATION
(NOT TO SCALE)

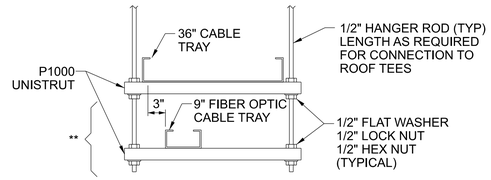


ITEM	DESCRIPTION
1	NEMA 1 STEEL ENCLOSURE, 12"X12"X6", ASA-61 GRAY FINISH, HOFFMAN A-1212CH (BY CONTRACTOR)
2	DC DISCONNECT HOUSING, 600V, 350A, COMPLETE WITH HARDWARE AND CRIMP
	CONNECTORS, JEA STOCK NO. BAT EL 001 (BY OWNER)
3	(2) #2 FINE STRANDED COPPER CONDUCTOR CABLE INSULATION RATED FOR 600V (BY CONTRACTOR)
4	CONDUIT, 2" IMC (BY CONTRACTOR)

NOTES:

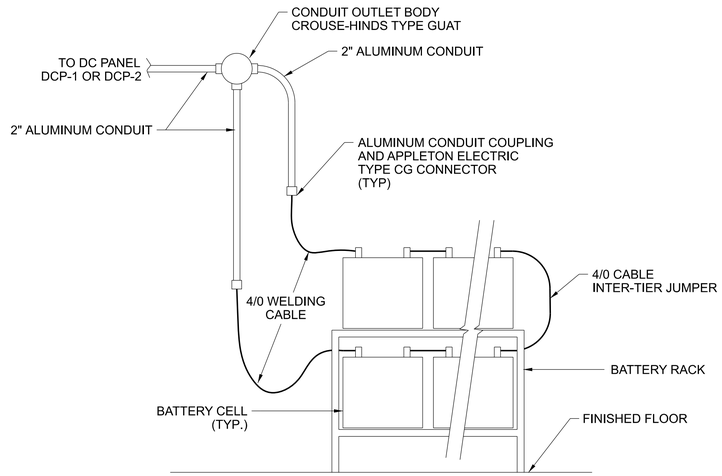
1. THE CONTRACTOR SHALL FURNISH ALL NECESSARY HARDWARE FOR MOUNTING THE BATTERY CART CONNECTION BOX TO THE CONTROL BUILDING WALL.
2. IN THE LOCATION AS SHOWN, THE CONTRACTOR SHALL FURNISH AND INSTALL 2" IMC CONDUIT, COMPLETE WITH NECESSARY HARDWARE,
3. THE CONTRACTOR SHALL FURNISH AND INSTALL (2) #2 STRANDED COPPER CONDUCTOR FLEXIBLE CABLES, AS REQUIRED. THE CONDUCTOR SHALL BE OF SUFFICIENT LENGTH TO PROVIDE ONE COIL TO BE STORED TO BE STORED IN THE BATTERY CART CONNECTION BOX.
4. THE CONTRACTOR SHALL INSTALL THE DC DISCONNECT HOUSING, USING THE CRIMP CONNECTORS PROVIDED.

DETAIL 15
BATTERY CART CONNECTION BOX
(NOT TO SCALE)

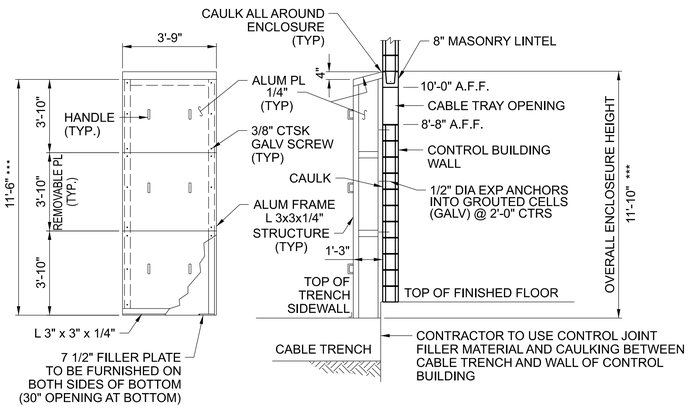


**NOTE:
DOUBLE TRAY SUPPORTS ONLY REQUIRED WHEN BOTH CABLE TRAYS ARE PRESENT, FOR LOCATION OF CABLE TRAYS REFER TO DRAWING CE1-3.

DETAIL 13
CABLE TRAY HANGER
(NOT TO SCALE)



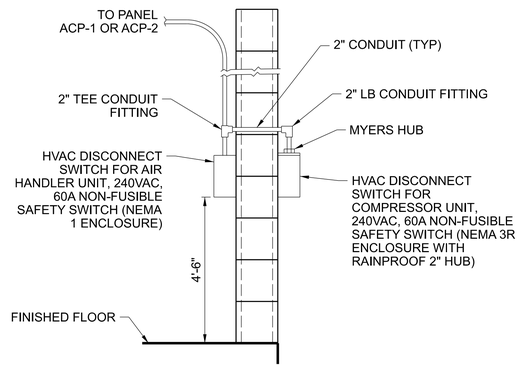
DETAIL 16
TWO TIER BATTERY RACK
(NOT TO SCALE)



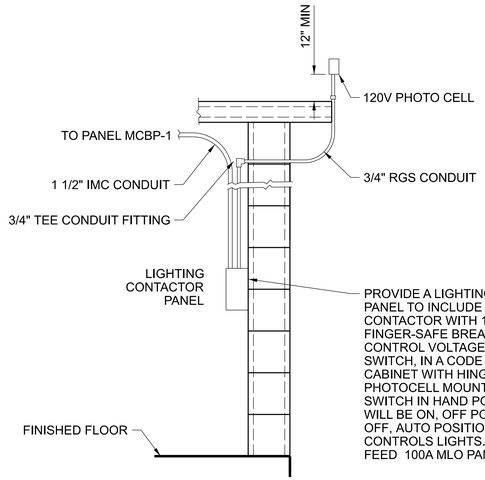
NORTH ELEVATION **EAST ELEVATION**

*** CONTRACTOR TO VERIFY WITH OWNER LENGTH OF CABLE TRAY ENCLOSURE BEFORE FABRICATING ENCLOSURE.

DETAIL 17
CABLE TRAY TRANSITION ENCLOSURE
(NOT TO SCALE)



DETAIL 18
HVAC DISCONNECT SWITCH
(NOT TO SCALE)



DETAIL 19
LIGHTING CONTACTOR WITH PHOTO CELL
(NOT TO SCALE)

JEA
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ENGINEERING	
DATE	3/12/24
BY	JPF
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	TRG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING DETAILS SHEET 2 OF 2

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CE5.dgn
DRAWING SET: NM2023
DRAWING ID: CE5
SHEET #: 42 OF 61

E:\ARCHIVE\2_24\30_CE5.dgn 2024-2-29 - 08:01 | MODEL: CE5

CONDUIT SCHEDULE FOR
NEW NORMANDY CONTROL BUILDING

CONDUIT #	FROM	TO	SIZE (IN)	TYPE	LENGTH (FT)	CABLE IN CONDUIT	REMARKS	REV
STATION SERVICE								
CSS2-1	STA. SERVICE TRAN #2	TRENCH	2	PVC	10	4-#3/0 AWG	REMOVE CABLE	
CSS1-1	STA. SERVICE TRAN #1	ATS	2	PVC	10	4-#3/0 AWG	REMOVE CABLE	
CSS2-2	STA. SERVICE TRAN #2	TRENCH	4	PVC	30	SS1/ATS	RISER FOR STA SERVICE PROVIDE WEATHERHEAD	
CATS-4	26kV YARD ATS	TRENCH	4	PVC	10	SS1/ATS		
CSS1-2	STA. SERVICE TRAN #1	26kV YARD ATS	4	PVC	40	SS2/ATS	RISER FOR STA SERVICE PROVIDE WEATHERHEAD	
CATS-5	26kV YARD ATS	400A FUSED DISC SWITCH	4	PVC	40	ATS/DISC-1		
SS-MBC1	400A FUSED DISC SWITCH	NEW CONTROL BUILDING - MCBP-1	4"	PVC	460	SSMBP1	PART OF DUCT AND PULLBOXES	
SS-MBC2	400A FUSED DISC SWITCH	NEW CONTROL BUILDING - MCBP-1	4"	PVC	460	SPARE	PART OF DUCT AND PULLBOXES (SPARECONDUIT)	
CONTROL BUILDING								
GPSC1	CABLE TRENCH	GPS ANTENNA	1"	PVC	20	CABLE BY JEA SUBCONTRACTOR		
B1C1	BATTERY BANK #1	DCP1-1	2"	AL	45	BB1/DC		
B1CBC1	BATT. 1 CART BOX	DCP1-2	1"	IMC	25			
BC1C1	BATT. CHARGER #1	CABLE TRAY	2"	IMC	10			
BC1C2	BATT. CHARGER #1	DCP1-2	1"	IMC	20			
BC1C3	BATT. CHARGER #1	CABLE TRAY	2"	IMC	10			
BC1C4	BATT. CHARGER #1	ACP-1	2"	IMC	10	BC1/AC		
B2C1	BATTERY BANK #2	DCP2-1	2"	AL	50			
B2CBC1	BATT. 2 CART BOX	DCP2-2	1"	IMC	20			
BC2C1	BATT. CHARGER #2	CABLE TRAY	2"	IMC	10			
BC2C2	BATT. CHARGER #2	DCP2-2	1"	IMC	15			
BC2C3	BATT. CHARGER #2	CABLE TRAY	2"	IMC	10			
BC2C4	BATT. CHARGER #2	ACP-2	2"	IMC	25	BC2/AC		
DCP1C1	DCP1-1	CABLE TRAY	3"	EMT	10			
DCP1C2	DCP1-1	CABLE TRAY	3"	EMT	10			
DCP1C3	DCP1-1	CABLE TRAY	3"	EMT	10			
DCP1C4	DCP1-1	CABLE TRAY	3"	EMT	15			
DCP1C5	DCP1-1	CABLE TRAY	3"	EMT	15			
DCP1C6	DCP1-1	CABLE TRAY	3"	EMT	15			
DCP1C7	DCP1-1	DCP1-2	2"	IMC	3	DC1-1/DC1-2		
DCP2C1	DCP2-1	CABLE TRAY	3"	EMT	10			
DCP2C2	DCP2-1	CABLE TRAY	3"	EMT	10			
DCP2C3	DCP2-1	CABLE TRAY	3"	EMT	10			
DCP2C4	DCP2-2	CABLE TRAY	3"	EMT	15			
DCP2C5	DCP2-2	CABLE TRAY	3"	EMT	15			
DCP2C6	DCP2-2	CABLE TRAY	3"	EMT	15			
DCP2C7	DCP2-1	DCP2-2	2	IMC	3	DC2-1/DC2-2		
MCBP1C1	MCBP-1	CABLE TRAY	3"	IMC	10		SPARE	
MCBP1C2	MCBP-1	CABLE TRAY	3"	IMC	10		SPARE	
MCBP1C3	MCBP-1	ACP-1	2"	IMC	15	FDRACP1		
MCBP1C4	MCBP-1	ACP-2	2"	IMC	30	FDRACP2		
ACP1C1	ACP-1	CABLE TRAY	3"	EMT	10			
ACP1C2	ACP-1	CABLE TRAY	3"	EMT	10			
ACP1C3	ACP-1	CABLE TRAY	3"	EMT	10			
ACP2C1	ACP-2	CABLE TRAY	3"	EMT	10			
ACP2C2	ACP-2	CABLE TRAY	3"	EMT	10			
ACP2C3	ACP-2	CABLE TRAY	3"	EMT	10			
LCPC1	LC-1	MCBP-1	1-1/2"	EMT	65			
LCPC2	LC-1	PHOTO CELL	3/4"	RGS	20		FEED TO PHOTOCELL	
LP1C1	LC-1	LP-1	1-1/2"	EMT	3			
LP1C2	LP-1	4' UG OUTSIDE & CAPPED	2"	PVC	10		SPARE FOR FUTURE PERIMETER LIGHTS	
LP1C3	LP-1	4' UG OUTSIDE & CAPPED	2"	PVC	10		SPARE FOR FUTURE PERIMETER LIGHTS	
LP1C4	LP-1	4' UG OUTSIDE & CAPPED	2"	PVC	10		SPARE FOR FUTURE PERIMETER LIGHTS	
LP1C5	LP-1	4' UG OUTSIDE & CAPPED	2"	PVC	10		SPARE FOR FUTURE PERIMETER LIGHTS	
TRC01	CONT HOUSE TRUCK RECEPTICAL	CABLE TRAY	2"	IMC/RGS	25	TR/AC	IMC INSIDE /RGS OUTSIDE	
SJB1C1	SECURITY JB#1	SECURITY JB#2	2"	EMT	20	CABLE BY JEA SUBCONTRACTOR		bid
SJB1C2	SECURITY JB#1	SECURITY JB#2	2"	EMT	20	CABLE BY JEA SUBCONTRACTOR		bid
SJB2C1	SECURITY JB#2	SECURITY JB#3	2"	EMT	60	CABLE BY JEA SUBCONTRACTOR		bid

CONDUIT #	FROM	TO	SIZE (IN)	TYPE	LENGTH (FT)	CABLE IN CONDUIT	REMARKS	REV
SJB2C2	SECURITY JB#2	SECURITY JB#3	2"	EMT	60	CABLE BY JEA SUBCONTRACTOR		bid
SJB3C1	SECURITY JB#3	SECURITY JB#4	2"	EMT	25	CABLE BY JEA SUBCONTRACTOR		bid
SJB3C2	SECURITY JB#3	SECURITY JB#4	2"	EMT	25	CABLE BY JEA SUBCONTRACTOR		bid
SJB4C1	SECURITY JB#4	COMM. CABLE TRAY	2"	EMT	20	CABLE BY JEA SUBCONTRACTOR		bid
SJB4C2	SECURITY JB#4	COMM. CABLE TRAY	2"	EMT	20	CABLE BY JEA SUBCONTRACTOR		bid
PH1C1	JUNCTION BOX PH1	CABLE TRAY	3/4"	EMT	10	CABLE BY JEA SUBCONTRACTOR		bid
PH2C1	JUNCTION BOX PH2	CABLE TRAY	3/4"	EMT	15	CABLE BY JEA SUBCONTRACTOR		bid
GBC1	GROUND BUS	CABLE TRAY	1"	EMT	15	GND/CB		bid
HVAC1	DS1A	ACP-2	1-1/2"	IMC	10	AH1/AC, CON1/AC	HVAC#1 DISCONNECT	bid
HVAC2	DS2A	ACP-1	1-1/2"	IMC	10	AH2/AC, CON2/AC	HVAC#2 DISCONNECT	bid
SACP1	ACCESS CONT. PNL.	SECURITY PANEL	1"	IMC	15	CABLE BY JEA SUBCONTRACTOR		bid
FT1C1	FAN TIMER	BATTERY ROOM FAN	3/4"	AL	10			
EV1C1	MDP1	EV CHARGING PEDISTAL 1	2"	PVC				
EV2C1	MDP1	EV CHARGING PEDISTAL 2	2"	PVC				
SECURITY COMMUNICATIONS								
SC001	SEC RACK	SEC. COMM. HH#1	2"	PVC	70	CABLE BY JEA SUBCONTRACTOR		bid
SC002	SEC RACK	SEC. COMM. HH#1	2"	PVC	70	CABLE BY JEA SUBCONTRACTOR		bid
SC003	SEC. COMM. HH	SECURITY ENCL. AT GATE (HOFFMAN BOX)	2"	PVC	25	CABLE BY JEA SUBCONTRACTOR		bid
SC004	SEC. COMM. HH	SECURITY ENCL. AT GATE (HOFFMAN BOX)	2"	PVC	25	CABLE BY JEA SUBCONTRACTOR		bid
SECURITY POWER								
SP001	CONTROL BUILDING - ACP-1	SEC. POWER. HH#1	2"	PVC	110	CABLE BY JEA SUBCONTRACTOR		bid
SP002	CONTROL BUILDING - ACP-1	SEC. POWER. HH#1	2"	PVC	110	CABLE BY JEA SUBCONTRACTOR		bid
SP003	PANEL SEI	SECURITY ENCL. AT GATE (HOFFMAN BOX)	2"	PVC	150	SECPC1		bid
SP004	PANEL SEI	SECURITY ENCL. AT GATE (HOFFMAN BOX)	2"	PVC	150	SPARE		bid

JEA ARCH D 24"X36" CS1.dgn 2024-5-25 - 08:19 MODEL: CS1

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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ENGINEERING	
DATE	3/12/24
BY	JPF
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JPF
REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CONDUIT SCHEDULE

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CS1.dgn
DRAWING SET: NM2023
DRAWING ID: CS1
SHEET #: 43 OF 61

CABLE NOTES:

1. TYPE B, BS, F, AND FO CABLE SHALL BE FURNISHED BY THE OWNER, UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR SHALL FURNISH ALL OTHER CABLE, AS SPECIFIED
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL CABLE LENGTHS. CABLE LENGTHS LISTED ARE APPROXIMATE.

POWER CABLE SCHEDULE FOR NEW NORMANDY CONTROL BUILDING

CABLE LEGEND:

- A - THHN INSULATED COPPER CONDUCTOR, RATED 600V
- B - CONTROL CABLE
- BS - SHIELDED CONTROL CABLE
- C - RHW, THHW, OR THWN INSULATED COPPER CONDUCTOR, 600V
- F - INSTRUMENT CABLE
- FO- FIBER OPTIC CABLE
- S - SINGLE CONDUCTOR
- M- MULTIPLE CONDUCTOR

CABLE #	FROM	TO	VOLT	SIZE	# C	S/M	TYPE	LENGTH CKT-FT	CONDUIT NUMBERS	REMARKS
STATION SERVICE										
SS1/ATS	STA SERVICE TRANS #1	26KV YARD ATS	600	500KCMIL	4	S	C	115	CSS2-2, TRENCH, CATS4	
SS2/ATS	STA SERVICE TRANS #2	26KV YARD ATS	600	500KCMIL	4	S	C	45	CSS1-2	
ATS/DISC-1	26KV YARD ATS	400A FUSED DISC SW	600	500KCMIL	4	S	C	45	CATS-5	
CONTROL BUILDING AC POWER										
SSMBP1	400A FUSED DISC SW	NEW CONTROL BLDG. PANEL MDP1	600	500 KCMIL, #1/0AWG-G	3 1	S	C	460	SS-MBC1	THRU PULL BOX
FDRACP1	PANEL MDP1	PANEL ACP-1	600	4/0 AWG	3	S	C	20	MDP1C3	
FDRACP2	PANEL MDP1	PANEL ACP-2	600	4/0 AWG	3	S	C	35	MDP1C4	
FDRLP1	PANEL MDP1	CONTACTOR PANEL/ LP-1	600	#6 AWG, #8 AWG G	3 1	M	C	75	LCPC1	SOUTHWIRE CAT. NO. 443408 OR APPROVED EQUAL
EV1/AC	PANEL MDP1	EV1 PEDISTAL	600	#8 AWG, #10 AWG G	3 1	S	C	35	EV1C1	
EV1WP/AC	PANEL MDP1	EV1 PEDISTAL WP RECEPTICAL	600	10 AWG	3	S	C	35	EV1C1	
EV2/AC	PANEL MDP1	EV2 PEDISTAL	600	#8 AWG, #10 AWG G	3 1	S	C	55	EV2C1	
EV2WP/AC	PANEL MDP1	EV2 PEDISTAL WP RECEPTICAL	600	10 AWG	3	S	C	55	EV2C1	
BC1/AC	PANEL ACP-1	BATTERY CHARGER #1	600	#6 AWG	3	S	C	50	BC1C4	
BC2/AC	PANEL ACP-2	BATTERY CHARGER #2	600	#6 AWG	3	S	C	25	BC2C4	
BC1/ALM	BATTERY CHARGER #1	CABLE TRAY	600	#18 AWG	2	M	B	70	BC1C1, CAB TRAY	CHARG #1 ALARM
BC2/ALM	BATTERY CHARGER #2	CABLE TRAY	600	#18 AWG	2	M	B	70	BC2C1, CAB TRAY	CHARG #2 ALARM
TR/AC	PANEL ACP-2	TRUCK RECEPT	600	#6 AWG	3	M	C	80	ACP2C1, CAB. TRAY, TRC01	CONTROL HOUSE TRUCK RECEPT
AH1/AC	PANEL ACP-2	DS1A-HVAC #1-AH	600	#10 AWG	3	M	C	65	HVAC1	HVAC 1 AIR HANDLER
CON1/AC	PANEL ACP-2	DS1B-HVAC #1-CON	600	#8 AWG, #10 AWG G	3 1	M	C	70	HVAC1	HVAC 1 COND. UNIT
AH2/AC	PANEL ACP-1	DS2A-HVAC #2-AH	600	#10 AWG	3	M	C	75	HVAC2	HVAC 2 AIR HANDLER
CON2/AC	PANEL ACP-1	DS1B-HVAC #1-CON	600	#8 AWG, #10 AWG G	3 1	M	C	80	HVAC2	HVAC 2 COND. UNIT
RELAY PANELS AC POWER										
P1/AC	PANEL ACP-2	230kV RELAY PNL 1	600	#10	3	M	C	45	ACP2C3, CAB. TRAY	A/C PANEL 1-3
P1P2/AC	230kV RELAY PNL 1	230kV RELAY PNL 2	600	#10	3	M	C	10	TRAY	
P2P3/AC	230kV RELAY PNL 2	230kV RELAY PNL 3	600	#10	3	M	C	10	TRAY	
P4/AC	PANEL ACP-2	230kV RELAY PNL 4	600	#10	3	M	C	45	ACP2C3, CAB. TRAY	A/C PANEL 4-6
P4P5/AC	230kV RELAY PNL 4	230kV RELAY PNL 5	600	#10	3	M	C	10	TRAY	
P5P6/AC	230kV RELAY PNL 5	230kV RELAY PNL 6	600	#10	3	M	C	10	TRAY	
P7/AC	PANEL ACP-2	230kV RELAY PNL 7	600	#10	3	M	C	55	ACP2C3, CAB. TRAY	A/C PANEL 7-9
P7P8/AC	230kV RELAY PNL 7	230kV RELAY PNL 8	600	#10	3	M	C	10	TRAY	
P8P9/AC	230kV RELAY PNL 8	230kV RELAY PNL 9	600	#10	3	M	C	10	TRAY	
P10/AC	PANEL ACP-2	230kV RELAY PNL 10	600	#10	3	M	C	65	ACP2C3, CAB. TRAY	A/C PANEL 10-12
P10P11/AC	230kV RELAY PNL 10	230kV RELAY PNL 11	600	#10	3	M	C	10	TRAY	
P11P12/AC	230kV RELAY PNL 11	230kV RELAY PNL 12	600	#10	3	M	C	10	TRAY	
P13/AC	PANEL ACP-2	230kV RELAY PNL 13	600	#10	3	M	C	75	ACP2C3, CAB. TRAY	A/C PANEL 13-14
P13P14/AC	230kV RELAY PNL 13	230kV RELAY PNL 14	600	#10	3	M	C	10	TRAY	
P15/AC	PANEL ACP-2	138kV RELAY PNL 15	600	#10	3	M	C	30	ACP2C3, CAB. TRAY	A/C PANEL 15-17
P15P16/AC	138kV RELAY PNL 15	138kV RELAY PNL 16	600	#10	3	M	C	10	TRAY	
P16P17/AC	138kV RELAY PNL 16	138kV RELAY PNL 17	600	#10	3	M	C	10	TRAY	
P18/AC	PANEL ACP-2	138kV RELAY PNL 18	600	#10	3	M	C	30	ACP2C3, CAB. TRAY	A/C PANEL 18-20
P18P19/AC	138kV RELAY PNL 18	138kV RELAY PNL 19	600	#10	3	M	C	10	TRAY	
P19P20/AC	138kV RELAY PNL 19	138kV RELAY PNL 20	600	#10	3	M	C	10	TRAY	
P21/AC	PANEL ACP-2	138kV RELAY PNL 21	600	#10	3	M	C	30	ACP2C3, CAB. TRAY	A/C PANEL 21-23
P21P22/AC	138kV RELAY PNL 21	138kV RELAY PNL 22	600	#10	3	M	C	10	TRAY	
P22P23/AC	138kV RELAY PNL 22	138kV RELAY PNL 23	600	#10	3	M	C	10	TRAY	
P24/AC	PANEL ACP-2	138kV RELAY PNL 24	600	#10	3	M	C	35	ACP2C3, CAB. TRAY	A/C PANEL 24-26
P24P25/AC	138kV RELAY PNL 24	138kV RELAY PNL 25	600	#10	3	M	C	10	TRAY	
P25P26/AC	138kV RELAY PNL 25	138kV RELAY PNL 26	600	#10	3	M	C	10	TRAY	
P27/AC	PANEL ACP-2	138kV RELAY PNL 27	600	#10	3	M	C	45	ACP2C3, CAB. TRAY	A/C PANEL 27-29
P27P28/AC	138kV RELAY PNL 27	138kV RELAY PNL 28	600	#10	3	M	C	10	TRAY	
P28P29/AC	138kV RELAY PNL 28	138kV RELAY PNL 29	600	#10	3	M	C	10	TRAY	

CABLE #	FROM	TO	VOLT	SIZE	# C	S/M	TYPE	LENGTH CKT-FT	CONDUIT NUMBERS	REMARKS
COMP3/AC	PANEL ACP-2	COMM RACK #3	600	#10	3	M	C	60	ACP2C3, CAB. TRAY	A/C SUPPLY
COMP4/AC	PANEL ACP-2	COMM RACK #4	600	#10	3	M	C	60	ACP2C3, CAB. TRAY	A/C SUPPLY
SECP1/AC	PANEL ACP-2	SECURITY RACK #1	600	#10	3	M	C	30	ACP2C3, CAB. TRAY	A/C SUPPLY
SECURITY SYSTEM										
SECPC1	PANEL SEI	SECURITY ENCL. AT GATE (HOFFMAN BOX)	600	#6 AWG, #10 AWG G	3 1	S	C	160	SP03	POWER TO HOFFMAN BOX AT GATE
CONTROL BUILDING 125V DC SYSTEM										
BB1/DC	BATERY BANK #1	DC POWER PANEL DCP1-1	600	# 4/0	2	S	C	45	B1C1	
BC1/DC	BATTERY CHARGER #1	DC POWER PANEL DCP1-2	600	#6	2	S	C	20	BC1C2	
B1CB/DC	BATTERY #1 CART BOX	DC POWER PANEL DCP1-2	600	#2	2	S	C	25	B1CBC1	
BB2/DC	BATERY BANK #2	DC POWER PANEL DCP2-1	600	# 4/0	2	S	C	45	B2C1	
BC2/DC	BATTERY CHARGER #2	DC POWER PANEL DCP2-2	600	#6	2	S	C	20	BC2C2	
B2CB/DC	BATTERY #2 CART BOX	DC POWER PANEL DCP2-2	600	#2	2	S	C	25	B2CBC1	
DC1-1/DC1-2	DC POWER PANEL DCP1-1	DC POWER PANEL DCP1-2	600	#4/0	2	S	C	15	DCP1C7	
DC2-1/DC2-2	DC POWER PANEL DCP2-1	DC POWER PANEL DCP2-2	600	#4/0	2	S	C	15	DCP2C7	
COMP2/DC1	DC POWER PANEL DCP1-1	COMM PANEL #2	600	#10	2	M	B	85	DCP1C3, TRAY	
COMP2/DC2	DC POWER PANEL DCP2-1	COMM PANEL #2	600	#10	2	M	B	35	DCP2C3, TRAY	
COMP3/DC1	DC POWER PANEL DCP1-1	COMM PANEL #3	600	#10	2	M	B	85	DCP1C3, TRAY	
COMP3/DC2	DC POWER PANEL DCP2-1	COMM PANEL #3	600	#10	2	M	B	35	DCP2C3, TRAY	
P1/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 1	600	#10	2	M	B	80	DCP1C3, TRAY	
P1/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 1	600	#10	2	M	B	40	DCP2C3, TRAY	
P2/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 2	600	#10	2	M	B	80	DCP1C3, TRAY	
P2/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 2	600	#10	2	M	B	40	DCP2C3, TRAY	
P3/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 3	600	#10	2	M	B	80	DCP1C3, TRAY	
P3/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 3	600	#10	2	M	B	40	DCP2C3, TRAY	
P4/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 4	600	#10	2	M	B	60	DCP1C3, TRAY	
P4/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 4	600	#10	2	M	B	55	DCP2C3, TRAY	
P5/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 5	600	#10	2	M	B	60	DCP1C3, TRAY	
P5/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 5	600	#10	2	M	B	50	DCP2C3, TRAY	
P6/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 6	600	#10	2	M	B	60	DCP1C3, TRAY	
P6/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 6	600	#10	2	M	B	55	DCP2C3, TRAY	
P7/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 7	600	#10	2	M	B	60	DCP1C3, TRAY	
P7/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 7	600	#10	2	M	B	55	DCP2C3, TRAY	
P8/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 8	600	#10	2	M	B	55	DCP1C4, TRAY	
P8/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 8	600	#10	2	M	B	60	DCP2C4, TRAY	
P9/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 9	600	#10	2	M	B	50	DCP1C4, TRAY	
P9/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 9	600	#10	2	M	B	65	DCP2C4, TRAY	
P10/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 10	600	#10	2	M	B	50	DCP1C4, TRAY	
P10/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 10	600	#10	2	M	B	50	DCP2C4, TRAY	
P11/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 11	600	#10	2	M	B	40	DCP1C4, TRAY	
P11/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 11	600	#10	2	M	B	60	DCP2C4, TRAY	
P12/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 12	600	#10	2	M	B	40	DCP1C4, TRAY	
P12/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 12	600	#10	2	M	B	80	DCP2C4, TRAY	
P13/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 13	600	#10	2	M	B	40	DCP1C4, TRAY	
P13/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 13	600	#10	2	M	B	60	DCP2C4, TRAY	
P14/DC1	DC POWER PANEL DCP1-1	230kV RELAY PNL 14	600	#10	2	M	B	40	DCP1C4, TRAY	
P14/DC2	DC POWER PANEL DCP2-1	230kV RELAY PNL 14	600	#10	2	M	B	80	DCP2C4, TRAY	
P15/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 15	600	#10	2	M	B	70	DCP1C6, TRAY	
P15/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 15	600	#10	2	M	B	20	DCP2C6, TRAY	
P16/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 16	600	#10	2	M	B	60	DCP1C6, TRAY	
P16/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 16	600	#10	2	M	B	30	DCP2C6, TRAY	
P17/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 17	600	#10	2	M	B	50	DCP1C6, TRAY	
P17/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 17	600	#10	2	M	B	40	DCP2C6, TRAY	
P18/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 18	600	#10	2	M	B	40	DCP1C6, TRAY	
P18/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 18	600	#10	2	M	B	50	DCP2C6, TRAY	

CABLE #	FROM	TO	VOLT	SIZE	# C	S/M	TYPE	LENGTH CKT-FT	CONDUIT NUMBERS	REMARKS
P19/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 19	600	#10	2	M	B	70	DCP1C6, TRAY	
P19/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 19	600	#10	2	M	B	20	DCP2C6, TRAY	
P20/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 20	600	#10	2	M	B	60	DCP1C6, TRAY	
P20/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 20	600	#10	2	M	B	30	DCP2C6, TRAY	
P21/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 21	600	#10	2	M	B	70	DCP1C6, TRAY	
P21/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 21	600	#10	2	M	B	20	DCP2C6, TRAY	
P22/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 22	600	#10	2	M	B	50	DCP1C6, TRAY	
P22/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 22	600	#10	2	M	B	40	DCP2C6, TRAY	
P23/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 23	600	#10	2	M	B	50	DCP1C5, TRAY	
P23/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 23	600	#10	2	M	B	40	DCP2C5, TRAY	
P24/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 24	600	#10	2	M	B	50	DCP1C5, TRAY	
P24/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 24	600	#10	2	M	B	40	DCP2C5, TRAY	
P25/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 25	600	#10	2	M	B	50	DCP1C5, TRAY	
P25/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 25	600	#10	2	M	B	50	DCP2C5, TRAY	
P26/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 26	600	#10	2	M	B	40	DCP1C5, TRAY	
P26/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 26	600	#10	2	M	B	50	DCP2C5, TRAY	
P27/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 27	600	#10	2	M	B	40	DCP1C5, TRAY	
P27/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 27	600	#10	2	M	B	50	DCP2C5, TRAY	
P28/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 28	600	#10	2	M	B	30	DCP1C5, TRAY	
P28/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 28	600	#10	2	M	B	60	DCP2C5, TRAY	
P29/DC1	DC POWER PANEL DCP1-2	138kV RELAY PNL 29	600	#10	2	M	B	20	DCP1C5, TRAY	
P29/DC2	DC POWER PANEL DCP2-2	138kV RELAY PNL 29	600	#10	2	M	B	70	DCP2C5, TRAY	

JEA

BUILDING COMMUNITY

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ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

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Jacksonville, FL 32202
904.398.8636
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PROFESSIONAL ENGINEER'S SEAL

FOR PROFESSIONAL'S SEAL SEE SIGNATURE SHEET
DWG. NAME: SS.DGN
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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	TRG
-	-	-	-	-	-	DRAFTING	
-	-	-	-	-	-	DATE	3/12/24
-	-	-	-	-	-	BY	JPF
-	-	-	-	-	-	REVIEW	JLC

NEW NORMANDY CONTROL HOUSE

CABLE SHEDULE

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: CT1.dgn

DRAWING SET: NM2023

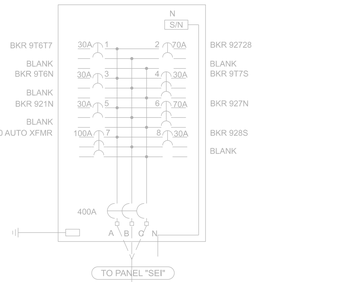
DRAWING ID: CT1

SHEET #: 44 OF 61

JEA MRD=0 2.5PX/96" CT1.dgn 2024-5-25 - 08:19 MODEL: CT1

AC PANEL "YPW"

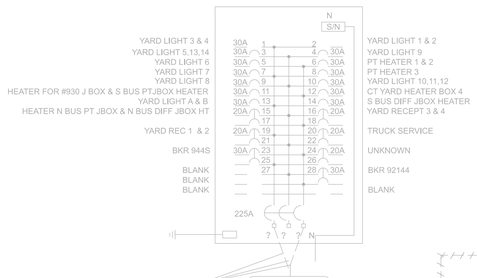
3Ø, 4 WIRE, 208/120V, 400A SOLID NEUTRAL SURFACE MOUNTED
GE TYPE NAB PANELBOARD
LOCATION: SOUTH A-FRAMES



TO PANEL "SEI"

AC PANEL "YPL"

3Ø, 4 WIRE, 208/120V, SOLID NEUTRAL SURFACE MOUNTED
LOCATION: SWITCH 9071 STAND

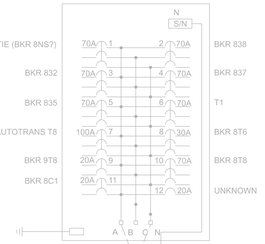


PHASING UNKNOWN

TO PANEL "SEI"

AC PANEL "YP"

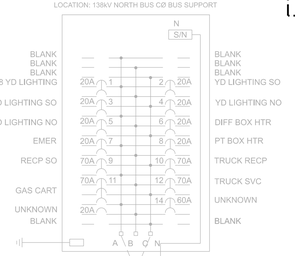
3Ø, 4 WIRE, 208/120V, 400A SOLID NEUTRAL SURFACE MOUNTED
GE TYPE NAB PANELBOARD
LOCATION: 138kV SOUTH BUS ???



TO PANEL "SEI"

AC PANEL "YL"

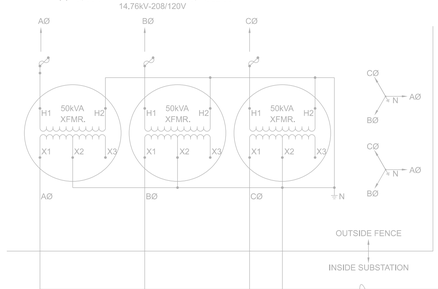
3Ø, 4 WIRE, 208/120V, 225A SOLID NEUTRAL SURFACE MOUNTED
GE TYPE NAB PANELBOARD
LOCATION: 138kV NORTH BUS CØ BUS SUPPORT



TO PANEL "SEI"

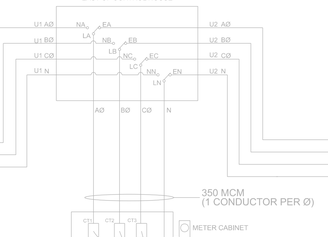
STATION SERVICE XFMR

NORMAL SOURCE, FEEDER 362
(3) 1Ø, 50KVA POLEMOUNT XFMRS, POLE 9811
14,76KV-208/120V



AUTOMATIC TRANSFER SWITCH (ATS)

ASCO 7000 SERIES
EAST OF CONTROL HOUSE



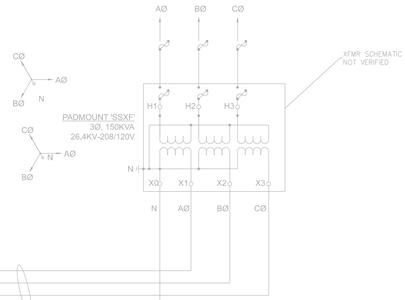
OH 4/0QUAD TO
UG 350 MCM
(1 CONDUCTOR PER Ø)

350 MCM
(1 CONDUCTOR PER Ø)

METER CABINET

STATION SERVICE XFMR

EMERGENCY SOURCE, FEEDER 363
3Ø, 150KVA PADMOUNT XFMR
14.4KV-208/120V

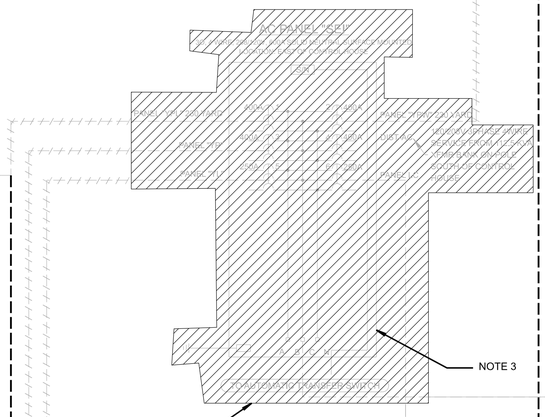


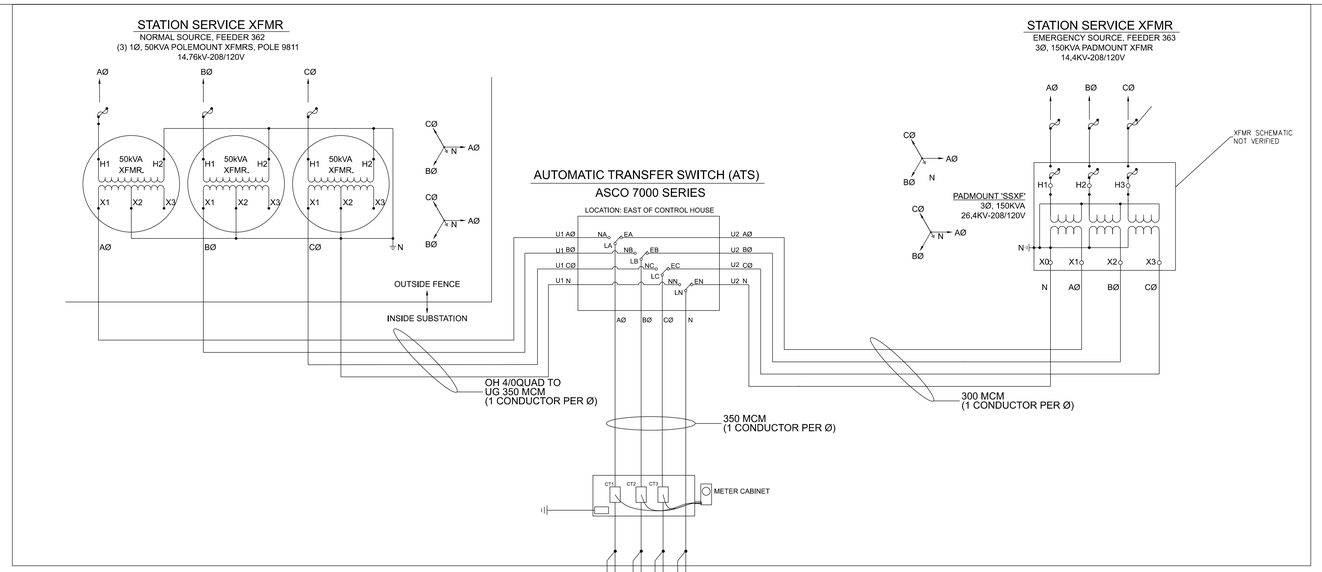
300 MCM
(1 CONDUCTOR PER Ø)

TO PANELS "SEI" AND "SEII"

AC PANEL "SEI"

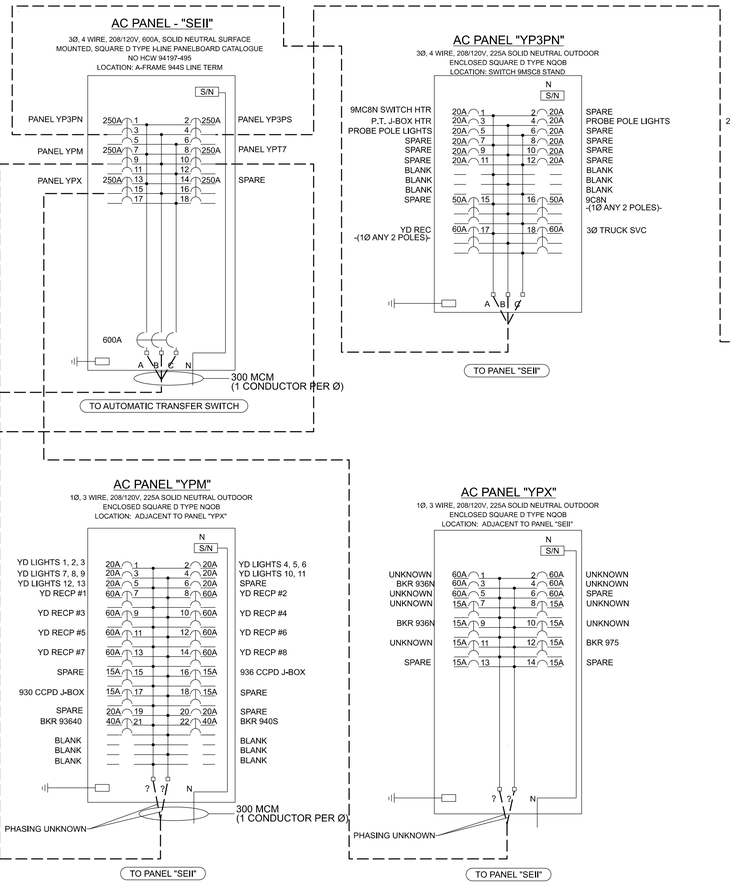
3Ø, 4 WIRE, 208/120V, 225A SOLID NEUTRAL SURFACE MOUNTED
GE TYPE NAB PANELBOARD
LOCATION: EAST OF CONTROL HOUSE


N
S/N
PANEL "YPL" 230 YARD
PANEL "YP"
PANEL "YL"
PANEL "YPW" 230 YARD
PANEL "LC"
PANEL "SEII"
PANEL "YPT" 138 YARD
PANEL "YP"
PANEL "YL"
PANEL "LC"
PANEL "SEII"
PANEL "SEI"
SPACE
SPACE
SPACE



LOW VOLTAGE ELECTRICAL NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. ALL AC AND DC PANELS AND STATION SERVICE EQUIPMENT SHOWN ON THIS DRAWING WERE DERIVED FROM A COMBINATION OF EXISTING DRAWINGS AND FIELD INVESTIGATION. CONTRACTOR SHALL VERIFY ALL ELECTRICAL AND PHYSICAL CHARACTERISTICS OF PANEL PRIOR TO CONSTRUCTION AND MARK UP ON AS-BUILT DRAWINGS.



JEA
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-	-	-	-	-	-
-	-	-	-	-	-

ENGINEERING	
DATE	3/12/24
BY	JDH
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JDH

NEW NORMANDY CONTROL HOUSE

LOW VOLTAGE AC PANEL SEII

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: NONE

PROJ #: 8007704

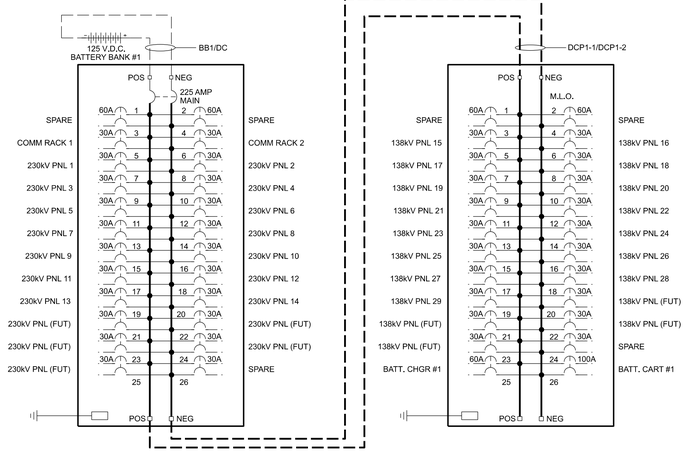
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DRAWING SET: NM2023

DRAWING ID: LV2

SHEET #: 46 OF 61

JEA ARCH D (24"X36" - V:\Projects\2023\23-0001.1\00\05 - Normandy Substation New Control House\Design\CAD\MMD\023\dgn\LV2.dgn PRINTED 2024/03/22 AT 15:48 MODEL: LV2

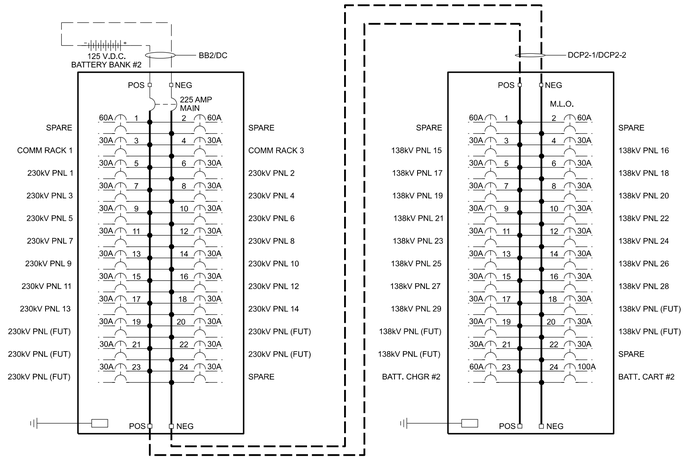


CONTROL HOUSE D.C. PANEL DCP1-1
(SEE NOTE 12)

2 WIRE, 125 V.D.C., 225A, SURFACE MOUNTED EATON POW-R-LINE 2a WITH EATON TYPE GHB BRANCH BREAKERS AS SHOWN, NEMA (1) ENCLOSURE WITH 225A TYPE HFD MAIN BREAKER (TOP) AND SUB-FEED LUGS (BOTTOM) (LOCKABLE PIANO HINGED DOOR)

CONTROL HOUSE D.C. PANEL DCP1-2

2 WIRE, 125 V.D.C., 225A, SURFACE MOUNTED EATON POW-R-LINE 2a WITH EATON TYPE GHB BRANCH BREAKERS AS SHOWN, NEMA (1) ENCLOSURE WITH M.L.O. LUGS (TOP) AND SUB-FEED LUGS (BOTTOM) (LOCKABLE PIANO HINGED DOOR)

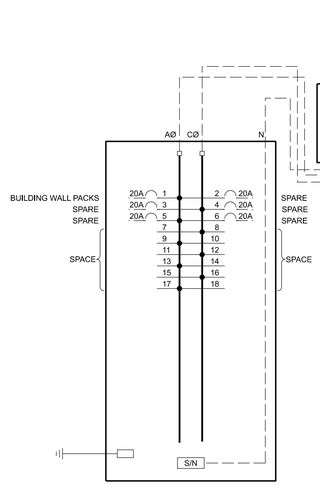


CONTROL HOUSE D.C. PANEL DCP2-1
(SEE NOTE 12)

2 WIRE, 125 V,D.C., 225A, SURFACE MOUNTED EATON POW-R-LINE 2a WITH EATON TYPE GHB BRANCH BREAKERS AS SHOWN, NEMA (1) ENCLOSURE WITH 225A TYPE HFD MAIN BREAKER (TOP) AND SUB-FEED LUGS (BOTTOM) (LOCKABLE PIANO HINGED DOOR)

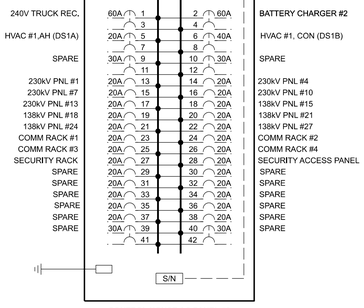
CONTROL HOUSE D.C. PANEL DCP2-2

2 WIRE, 125 V,D,C., 225A, SURFACE MOUNTED EATON POW-R-LINE 2a WITH EATON TYPE GHB BRANCH BREAKERS AS SHOWN, NEMA (1) ENCLOSURE WITH M.L.O. LUGS (TOP) AND SUB-FEED LUGS (BOTTOM) (LOCKABLE PIANO HINGED DOOR)



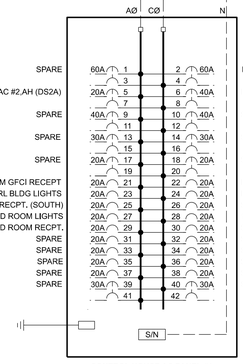
CONTROL HOUSE LIGHTING PANEL #1
(LP-1)

1Ø, 3 WIRE, 240/120V, 100A, MLO, SOLID NEUTRAL SURFACE MOUNTED, EATON POW-R-LINE 1a PANELBOARD WITH 18 SINGLE POLE BRANCHES EQUIPPED WITH EATON TYPE QBHW BREAKERS AS SHOWN AND NEMA 3R STAINLESS STEEL ENCLOSURE WITH LOCKABLE PIANO HINGED DOOR.



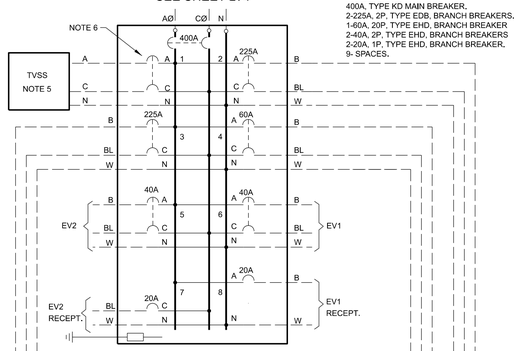
CONTROL HOUSE AC PANEL #2
(ACP-2)

1Ø, 3 WIRE, 240/120V, 225A, SOLID NEUTRAL SURFACE MOUNTED, EATON POW-R-LINE 1a PANELBOARD WITH 42 SINGLE POLE BRANCHES EQUIPPED WITH EATON TYPE QBHW BREAKERS AS SHOWN AND NEMA 3R STAINLESS STEEL ENCLOSURE WITH LOCKABLE PIANO HINGED DOOR.



CONTROL HOUSE AC PANEL #1
(ACP-1)

1Ø, 3 WIRE, 240/120V, 225A, SOLID NEUTRAL SURFACE MOUNTED, EATON POW-R-LINE 1a PANELBOARD WITH 42 SINGLE POLE BRANCHES EQUIPPED WITH EATON TYPE QBHW BREAKERS AS SHOWN AND NEMA 3R STAINLESS STEEL ENCLOSURE WITH LOCKABLE PIANO HINGED DOOR.



AC SERVICE PANEL (MCBP-1)

1Ø, 3WIRE, 240/120V, 400A, SOLID NEUTRAL, SURFACE MOUNTED EATON POW-R-LINE 4, MAIN BREAKER PANELBOARD.
400A, TYPE KD MAIN BREAKER.
2-225A, 2P, TYPE EDB, BRANCH BREAKERS,
1-60A, 20P, TYPE EHD, BRANCH BREAKER
2-40A, 2P, TYPE EHD, BRANCH BREAKERS
2-20A, 1P, TYPE EHD, BRANCH BREAKER.
9- SPACES.

4/0AWG CU CABLE XXXX, -XX'

#6AWG CU CABLE XXXX, -XX'

4/0AWG CU CABLE XXXX, -XX'

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET GN1.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL AC AND DC PANELS WITH BREAKERS. ENCLOSURES SHALL BE NEMA 1 INDOOR, HINGED COVER, AND HARDWARE TO COMPLETE THE INSTALLATION DEPICTED. PANEL BREAKERS SHALL BE BOLT-ON TYPE AND POSITIONED AND RATED IN ACCORDANCE WITH THIS DRAWING. PANELS SHALL HAVE 75°C LUGS.
3. THE CONTRACTOR SHALL LABEL THE BRANCH BREAKERS ACCORDING TO THE INSTRUCTIONS OF THE LABELING SUBSECTION OF THE SPECIFICATION.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL AC AND DC PANELS IN ACCORDANCE WITH DRAWING CE1.
5. CONTRACTOR TO FURNISH AND INSTALL TVSS, SURGE SUPPRESSION INC., ADVANTAGE MODEL #SKLA1S1. MOUNT NEXT TO PANEL ACP-4 IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. SIZE TVSS CIRCUIT BREAKER PER MANUFACTURER'S RECOMMENDATIONS.
7. CONTRACTOR SHALL PROVIDE TEMPORARY POWER.
8. AT THE TIME OF ORDER, THE CONTRACTOR SHALL PROVIDE THE MANUFACTURER WITH THE BUS CONFIGURATION FOR THE 125VDC POWER SUPPLY.
9. CONTRACTOR SHALL PROVIDE A LIGHTING CONTACTOR PANEL TO INCLUDE A 60A 240V CONTACTOR WITH 120V COIL, 15A FINGERSAFE BREAKER FOR 120V CONTROL VOLTAGE, HAND-OFF-AUTO-SWITCH, IN A CODE SIZED NEMA 1 CABINET WITH HINGED DOOR, A PHOTOCELL TO BE MOUNTED ON THE ROOF. SWITCH IN HAND POSITION LIGHTS WILL BE ON, OFF POSITION LIGHTS OFF, AUTO POSITION PHOTOCELL CONTROLS LIGHTS. CONTACTOR WILL FEED 100A MLO PANEL LP-1.

IEA ARCH-D (24"X36") V:\Projects\2025\2025-0001.000000 - Normandy Substation New Control House\Design\CAD\NM2025\Dgn\LV3.dgn PRINTED 2024/03/22 AT 10:48 MODEL: LV3

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

CONSULTANT INFORMATION
cma chen moore and associates
501 Riverside Ave, Ste. 501
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904.398.8636
www.chenmoore.com

ISSUED FOR DESIGN REVIEW

PROFESSIONAL ENGINEER'S SEAL

FOR PROFESSIONAL'S SEAL SEE SIGNATURE SHEET
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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW
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ENGINEERING	
DATE	3/12/24
BY	JDH
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JDH

NEW NORMANDY CONTROL HOUSE

LOW VOLTAGE AC AND DC DIAGRAM NEW CONTROL HOUSE

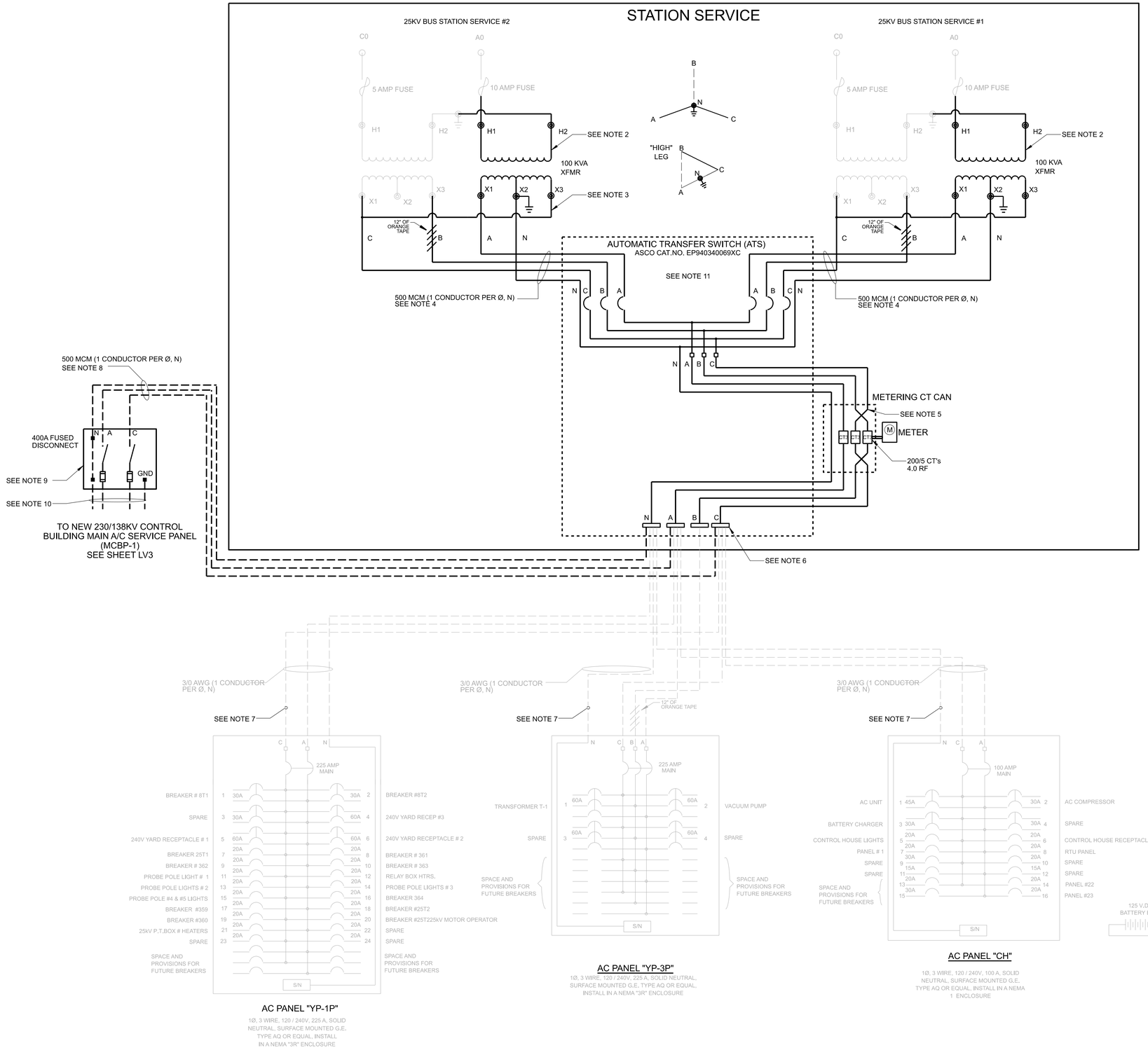
NORMANDY SUBSTATION

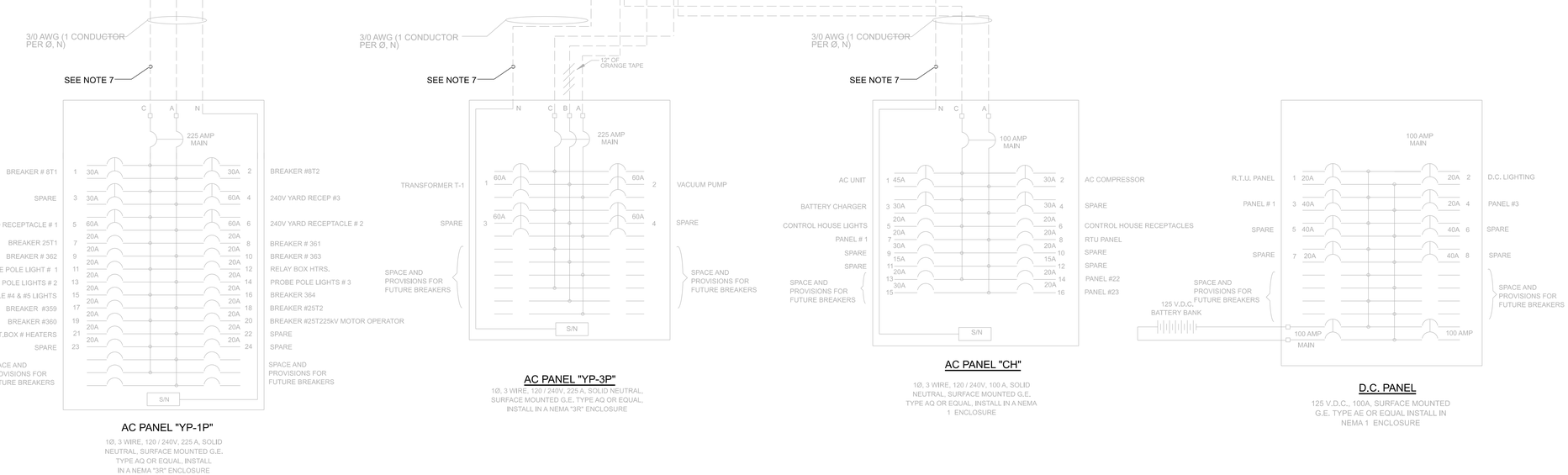
SCALE: NONE

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: LV3.dgn
DRAWING SET: NM2023
DRAWING ID: LV3
SHEET #: 47 OF 61





AC PANEL "YP-1P"

1Ø, 3 WIRE, 120 / 240V, 225 A, SOLID NEUTRAL, SURFACE MOUNTED G.E. TYPE AQ OR EQUAL, INSTALL IN A NEMA "3R" ENCLOSURE

AC PANEL "YP-3P"

1Ø, 3 WIRE, 120 / 240V, 225 A, SOLID NEUTRAL, SURFACE MOUNTED G.E. TYPE AQ OR EQUAL, INSTALL IN A NEMA "3R" ENCLOSURE

AC PANEL "CH"

1Ø, 3 WIRE, 120 / 240V, 100 A, SOLID NEUTRAL, SURFACE MOUNTED G.E. TYPE AQ OR EQUAL, INSTALL IN A NEMA 1 ENCLOSURE

D.C. PANEL

125 V.D.C., 100A, SURFACE MOUNTED G.E. TYPE AE OR EQUAL INSTALL IN NEMA 1 ENCLOSURE

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH JEA CONSTRUCTION MANAGEMENT AND OPERATIONS TO SCHEDULE OUTAGES AND TEMPORARY POWER REQUIREMENTS FOR THE RECONFIGURATION OF THE STATION SERVICE TRANSFORMER BANK.
2. CONTRACTOR SHALL COORDINATE WITH JEA OPERATIONS TO REMOVE THE EXISTING 50KVA TRANSFORMER AND INSTALL AN OWNER FURNISHED 100KVA TRANSFORMER.
3. CONTRACTOR SHALL PROVIDE NEW 500KCMIL CU JUMPERS FOR TRANSFORMER INTERCONNECTIONS.
4. CONTRACTOR SHALL REMOVE EXISTING 4-#3/0 AWG CONDUCTORS AND PROVIDE 4-500KCMIL CU 600V THWN CONDUCTORS TO EXISTING TRANSFER SWITCH IN 4" CONDUIT.
5. CONTRACTOR SHALL COORDINATE WITH JEA METERING GROUP WHILE REPLACING THE EXISTING CONDUCTORS THRU THE CT CAN.
6. CONTRACTOR SHALL REMOVE EXISTING SECONDARY CONNECTORS AND PROVIDE UTILCO PEDESTAL CONNECTOR CATALOG NO. PED6500DTP FOR EACH PHASE AND NEUTRAL. THE KIT SHALL INCLUDE THE CONNECTOR AND CLL INSULATING COVER.
7. CONTRACTOR SHALL RECONNECT THE EXISTING #3/0 AWG FROM EXISTING PANELS TO NEW PEDESTAL CONNECTORS.
8. CONTRACTOR SHALL PROVIDE 3-500KCMIL, CU. 600V, THWN CONDUCTORS IN 4" SCHEDULE 40 PVC DIRECT BURIED CONDUIT FROM ATS TO NEW 400A FUSED DISCONNECT SWITCH.
9. CONTRACTOR SHALL PROVIDE AN EATON 400A, 240V, HD, FUSED DISCONNECT SWITCH, NEMA 4X ENCLOSURE. EATON CAT. NO. DH225NWKG OR APPROVED EQUAL.
10. CONTRACTOR SHALL PROVIDE 3-500KCMIL, AND 1-1/0AWG GROUND, CU. 600V, THWN CONDUCTORS IN 4" SCHEDULE 40 PVC DIRECT BURIED CONDUIT.
11. IN THE EVENT THE NEW 500KCMIL CONDUCTOR WILL NOT FIT THE EXISTING 400A TRANSFER SWITCH LUGS, CONTRACTOR SHALL PROVIDE UTILCO COPPER PIGTAIL ADAPTORS CATALOG NO. CPM-500.

JEA
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ENGINEERING	
DATE	3/12/24
BY	JDH
REVIEW	TRG
DRAFTING	
DATE	3/12/24
BY	JLC
REVIEW	JDH

NEW NORMANDY CONTROL HOUSE

LOW VOLTAGE AC AND DC DIAGRAM 26kV YARD

NORMANDY SUBSTATION

SCALE: NONE

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: LV4.dgn
DRAWING SET: NM2023
DRAWING ID: LV4
SHEET #: 48 OF 61

LV4.dgn 2024-3-22 - TI-REV4
JEA ARCH E2 24"X36" V:\Projects\2022\23-0051.100005 - Normandy Substation New Control House\Design\CAD\MODD23.dgn\LV4.dgn 2024/03/22 AT 15:08 MODEL: LV4

GENERAL NOTES & DESIGN CRITERIA

CODES:
FLORIDA BUILDING CODE - 7TH (2020 EDITION), ACI-318, ACI-360, ASCE 7-10, AISC, AWS, AISI, ANSI, & CRSI, ASCE MOP 113, NESC, ASCE 48-11.

DESIGN LIMITATIONS:
THIS DESIGN AND THESE DRAWINGS ARE LIMITED TO ONLY THE STRUCTURAL ASPECTS OF THE APPLICABLE CODES. REFER TO OTHER DISCIPLINES FOR NON-STRUCTURAL ISSUES.

LOADS:

GRAVITY:

ROOF LIVE LOAD	20 PSF
DEAD LOAD (SUPERIMPOSED)*	10 PSF
CABLE TRAY DEAD LOAD*	250 PLF (SEE CABLE TRAY PLAN)

*NOTE EXCLUDE SUPERIMPOSED DEAD LOADS FOR WIND UPLIFT DESIGN. LOAD INCLUDES WEIGHT OF TRAY AND CONTENTS.

WIND LOAD:
CONTROL BUILDING

BASIC WIND SPEED, V (LRFD)	139 MPH (MRI 3000)
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	±0.18 (ENCLOSE BUILDING)
COMPONENTS & CLADDING	SEE THIS SHEET

DELEGATED ENGINEERING ITEMS:
1. HOLLOWCORE PRECAST SLABS SHALL BE DESIGNED BY A FLORIDA LICENSED ENGINEER, SIGNED AND SEALED. DRAWINGS AND CALCULATIONS SHALL BE SUBMITTALS FOR THE CONTROL HOUSE FOR REVIEW AND APPROVAL.

HORIZONTAL AND VERTICAL CONTROL:
REFER TO THE CIVIL DRAWINGS FOR SUBSTATION BASE ELEVATION AND HORIZONTAL & VERTICAL SITE CONTROL. MINIMUM FOUNDATION BEARING DEPTHS AND MAXIMUM TOP OF FOUNDATION REVEAL RELATIVE TO ADJACENT FINAL GRADE SHALL BE IN ACCORDANCE WITH THE STRUCTURAL FOUNDATION DETAILS ON THIS SHEET.

DEMOLITION AND UNDERGROUND CONSTRUCTION:
REFER TO THE CIVIL ENGINEERING AND SUBSTATION FOUNDATION PLAN SHEET FOR EXISTING CONDITIONS, SCOPE OF DEMOLITION & SITE CONSTRUCTION. UNLESS OTHERWISE NOTED IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ANY UNDERGROUND UTILITIES AND OTHER APPURTENANCES PRIOR TO CONSTRUCTION; REPAIR TO ANY DAMAGED UNDERGROUND UTILITIES AND OTHER APPURTENANCES IS THE RESPONSIBILITY OF THE CONTRACTOR. UNLESS OTHERWISE NOTED ANY PERMITTING REQUIRED FOR THE PROPOSED CONSTRUCTION INCLUDING CONSTRUCTION DEWATERING PERMITTING IS THE RESPONSIBILITY OF THE CONTRACTOR.

SOIL & DEEP FOUNDATIONS:
FOUNDATION DESIGN PARAMETERS WERE BASED ON THE REPORT OF GEOTECHNICAL EXPLORATION PREPARED BY MESKEL & ASSOCIATES (MAE PROJECT NO. 0020-0016, DATED MARCH 15, 2023).
NET SOIL BEARING CAPACITY 2,000 PSF

THE CONTRACTOR SHALL FOLLOW ALL SITE PREPARATION AND TESTING RECOMMENDATIONS PROVIDED BY MESKEL & ASSOCIATES. THE GENERAL CONTRACTOR IS RESPONSIBLE TO EMPLOY AN INDEPENDENT QUALIFIED TESTING LABORATORY TO INSPECT EARTHWORK OPERATION AND TEST COMPACTED SOILS TO INSURE AND CERTIFY THAT THE SOILS SUPPORTING FOOTINGS AND SLABS ARE ADEQUATE TO PROPERLY SUPPORT DESIGN LOADS.

CONCRETE:
ALL CONCRETE SHALL BE NORMAL WEIGHT w/ A 28 DAY COMPRESSIVE STRENGTH FOR THE FOLLOWING:

PRECAST	5,000 PSI
FOUNDATIONS	4,000 PSI
SLAB ON GRADE	4,000 PSI
REINFORCING STEEL:	ASTM A615, GRADE 60
LAPS	48 BAR DIA.
PRESTRESSING REINFORCEMENT STRANDS:	ASTM A416 GRADE 270 LOW RELAXATION
PRECAST SLAB JOINT GROUT	3,000 PSI (28 DAY)
WELDED WIRE FABRIC:	ASTM A185
LAPS (TYPICAL)	12 INCHES

UNLESS OTHERWISE SHOWN ON DRAWINGS, MINIMUM COVER FOR REINFORCING SHALL BE THE FOLLOWING:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSE TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THRU #18 BARS;	2"
#5 BAR, W31 OR D31 WIRE AND SMALLER	1-1/2"
CONCRETE NOTE EXPOSED TO EARTH OR WEATHER:	
SLABS, WALLS, JOISTS:	
#14 AND #18 BARS:	1-1/2"
#11 BAR AND SMALLER	3/4"
BEAMS, COLUMNS, PEDESTALS:	
PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS, AND HOOPS	1-1/2"
SLABS-ON-GRADE:	1" FROM TOP

A CERTIFIED TESTING AGENCY SHALL BE ENGAGED TO PERFORM INDUSTRY STANDARD TESTING INCLUDING SLUMP TESTS AND CYLINDER BREAKS TO ENSURE CONFORMANCE WITH PLANS & SPECIFICATIONS (IF PROVIDED), SUBMIT REPORTS FOR REVIEW AND APPROVAL.

MINIMUM FREQUENCY OF TESTING FOR EACH CLASS OF CONCRETE IS THE GREATEST OF:
A) ONCE EACH DAY.
B) ONCE FOR EACH 100 CY
C) ONCE FOR EACH 5,000 SF OF SLAB OR WALL SURFACE AREA.
D) FIVE TESTS.

EACH TEST SHALL CONSIST OF A MINIMUM (2) 6"x12" OR (3) 4"x8" 28 DAY BREAKS PER ACI. EARLIER DAY BREAKS IE 3, 7, 14 DAYS ARE REQUIRED FOR APPROVAL OF EARLY INSTALLATION OF OF POST INSTALLED ADHESIVE EPOXY ANCHORS AND/OR INSTALLATION OF EQUIPMENT. SEE FOUNDATION CURING AND POST INSTALLED ADHESIVE EPOXY ANCHOR CURING REQUIREMENTS BELOW. A 56 DAY OR "HOLD" TEST IS ALSO RECOMMENDED TO ADDRESS FIELD ISSUES IN THE EVENT OF SLOW STRENGTH GAIN.

ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONFORMANCE WITH ACI 315 DURING PLACEMENT OF CONCRETE

PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, WALLS, ETC.

PROVIDE 1/4" PRE-MOLDED EXPANSION JOINT MATERIAL WHERE SLAB ON GRADE ABUTS COLUMNS & GRADE BEAMS, AND 1/2" JOINT MATERIAL AT WALLS OR OTHER VERTICAL SURFACES UNLESS OTHERWISE SHOWN OR NOTED.

POST-INSTALLED EPOXY ANCHORS:

EPOXY	HILTI "HIT-RE 500 V3" OR ENGINEER APPROVED EQUAL

OVERHEAD AND/OR CONSTANT TENSION POST-INSTALLED ANCHOR INSTALLATIONS NOT SHOWN IN THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITING BY ENGINEER OF RECORD.

INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE DRAWINGS AND THE MANUFACTURER'S RECOMMENDATIONS.

LOCATE BY NON-DESTRUCTIVE MEANS, AND AVOID ALL EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF ANCHORS. IF EXISTING REINFORCING LAYOUT PROHIBITS THE INSTALLATION OF ANCHORS AS INDICATED IN THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY.

INSTALL MASONRY ANCHORS IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED AT LEAST ONE COURSE ABOVE, ONE COURSE BELOW, AND ONE COURSE ON EACH SIDE OF THE ANCHOR.

STRUCTURAL STEEL:

ANGLES, PLATES & MISC. STEEL	ASTM A36
PIPE	ASTM A53, GRADE B (Fy= 35KSI)
ANCHOR RODS & BOLTS	ASTM F1554, GRADE 36 (U.O.N.)
WASHERS	ASTM F436 (U.O.N.)
NUTS	ASTM A563, GRADE "A" HEX (U.O.N.)
WELDS	AWS, SERIES E70XX

ALL EXPOSED STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED

BRACE AND MAINTAIN ALL STEEL IN ALIGNMENT UNTIL OTHER PARTS OF CONSTRUCTION NECESSARY FOR PERMANENT SUPPORT ARE COMPLETED. INSTALL TEMPORARY SHORING AS REQUIRED FOR THE STABILITY OF THE STEEL FRAME UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN COMPLETED AND THE BUILDING IS ENCLOSED.

MASONRY:

CONCRETE BLOCK	ASTM C90, 1900 PSI COMPRESSIVE STRENGTH
MORTAR	ASTM C270 TYPE "S"1800 PSI COMPRESSIVE STRENGTH
MASONRY	F'm=1900 PSI

ALL GROUT SHALL BE PER ASTM C473 AND SHALL BE A SHRINKAGE COMPENSATING, PRE-MIXED TYPE CONSISTING OF NON-METALLIC AGGREGATE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS AND A SLUMP OF 8" TO 11" WITH 3/8" MAX AGGREGATE.

MASONRY REINFORCING

LAPS (TYPICAL U.O.N.)	48 BAR DIAMETERS
HORIZONTAL REINFORCING	ASTM A-82 9 Ga. MINIMUM, LADDER TYPE
BRICK TIES & MASONRY ANCHORS	DUR-O-WALL OR ENGINEER APPROVED EQUAL

BLOCK SHALL NOT BE MOISTENED BEFORE GROUTING.

ALL MASONRY CROSS WEBS SHALL BE FULLY BEDDED IN MORTAR AROUND CELLS TO BE GROUTED.

GROUT PLACEMENT STOPPED FOR (1) HOUR OR MORE SHOULD BE STOPPED 1-1/2" BELOW THE TOP OF THE MASONRY UNIT TO PROVIDE A KEY FOR SUBSEQUENT GROUTING.

UNIFORM LOADS ARE NOT TO BE APPLIED TO MASONRY WALLS FOR (3) DAYS.

CONCENTRATED LOADS ARE NOT TO BE APPLIED TO MASONRY WALLS FOR (7) DAYS.

VERTICAL REINFORCING MUST HAVE A MINIMUM CLEARANCE OF 3-1/2" TO INSIDE FACE.

VERTICAL REINFORCING IN WALLS SHALL BE SECURED AND LATERALLY SUPPORTED AGAINST DISPLACEMENT AT INTERVALS NOT EXCEEDING 192X(BAR DIAMETER) OR 10 FT (WHICHEVER IS LESS) WHENEVER A CLEANOUT IS REQUIRED.

TYPICAL VERTICAL REINFORCING SIZE AND SPACING SHALL BE ABOVE AND BELOW ALL WALL OPENINGS.

EXTEND ALL VERTICAL WALL REINFORCEMENT TO WITHIN 2" OF TOP OF WALL OR BEAM UNLESS NOTED OTHERWISE. TERMINATE REINFORCING WITH STANDARD ACI 90 DEGREE HOOK. IF ROOF JOISTS AND/OR TRUSSES BEAR ON TOP OF THE WALL AND THERE IS NO PARAPET. IF PARAPET EXISTS, HOOK IS NOT REQUIRED.

TEMPORARY SHORING FOR ALL EXTERIOR MASONRY WALLS SHALL REMAIN IN PLACE & CONNECTED ELIMINATING CANTILEVER ACTION OF THE WALLS UNTIL FINAL CONNECTIONS ARE COMPLETED.

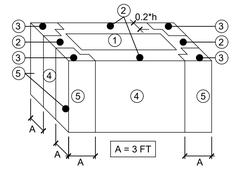
MISCELLANEOUS NOTES:
A. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING THAT IS REQUIRED THAT IS REQUIRED DURING CONSTRUCTION TO KEEP THE STRUCTURE SAFE & PLUMB UNTIL THE ENTIRE STRUCTURE IS ERECTED. BRACING SHOWN ON DRAWINGS IS FOR THE COMPLETED STRUCTURE ONLY.
B. ALL STRUCTURAL OPENINGS AROUND OR AFFECTED BY MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT SHALL BE VERIFIED WITH EQUIPMENT PURCHASED BEFORE PROCEEDING WITH STRUCTURAL WORK.
C. COMPATIBILITY WITH OTHER METALS:COPPER MATERIALS SHALL NOT BE USED IN DIRECT CONTACT WITH METALLIC COATED STEEL MEMBERS OR COMPONENTS.
D. IF FOOTING ELEVATIONS SHOWN OCCUR IN DISTURBED, UNSTABLE OR UNSUITABLE SOIL, THE ENGINEER SHALL BE NOTIFIED.
E. THE GENERAL CONTRACTOR SHALL COORDINATE THE DRAWINGS FOR ALL DISCIPLINES FOR ANCHORED, EMBEDDED, AND SUPPORTED ITEMS WHICH AFFECT THE STRUCTURAL DRAWINGS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES.

CONTROL BUILDING NOTES:
1. CONTROL BUILDING FLOOR SHALL BE LEVEL WITH A VARIANCE OF NOT MORE THAN 1/16" PER 10'-0"
2. REFER TO PROJECT SPECIFICATIONS FOR FINISHING AND SEALING.
3. PROVIDE TERMITE PROTECTION IN ACCORDANCE WITH ARTICLE 1816 OF THE FLORIDA BUILDING CODE.
4. PROVIDE MASONRY CONTROL JOINTS WITHIN 10' OF BUILDING CORNERS AND AT A 30 FT MAXIMUM SPACING.
5. BOND BEAM REINFORCEMENT SHALL BE CONTINUOUS ACROSS MASONRY CONTROL JOINTS.
6. UNLESS MORE STRINGENTLY NOTED ON THE PLANS, REINFORCE ALL MASONRY WALLS AT:
   A. EACH CORNER, END OF WALL, & WALL INTERSECTION
   B. EACH SIDE OF DOOR AND WINDOW OPENINGS
   C. EACH SIDE OF CONTROL JOINTS
   D. AT A MAXIMUM SPACING OF 32".
7. PROVIDE HORIZONTAL JOINT REINFORCEMENT IN ALL WALLS AT 16" VERTICALLY AND IN THE TWO MORTAR JOINTS ABOVE AND BELOW OPENINGS. EXTEND REINFORCEMENT A MINIMUM OF 24" BEYOND LAP. WHERE REQUIRED, LAP REINFORCEMENT 6" MINIMUM.
8. SEE ELECTRICAL, MECHANICAL & PLUMBING DETAILS FOR EMBEDDED ITEMS, OPENINGS, SLEEVES, ETC. NOT SHOWN ON THE STRUCTURAL DETAILS.
9. CONTRACTOR SHALL CONFIRM ALL DOOR OPENING REQUIREMENTS WITH DOOR MANUFACTURER BEFORE PROCEEDING WITH CONSTRUCTION.
10. COORDINATE OPENINGS AND PENETRATIONS FOR CMU CONSTRUCTION WITH DOOR MANUFACTURER BEFORE PROCEEDING WITH CONSTRUCTION.
11. EXCEPT AS SPECIFICALLY NOTED IN THE PLANS, ALL FOOTING AND SLAB SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF PROJECT GEOTECHNICAL REPORT.
12. PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED TO MAINTAIN STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE BUILDING SHALL NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED.
13. THE DOOR HARDWARE SCHEDULE IS PROVIDED FOR CONVENIENCE ONLY. THE CONTRACTOR SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR NECESSARY DOOR HARDWARE.
14. INSULATION CRITERIA:
   A. CONTROL BUILDING ROOF INSULATION TO BE A MINIMUM 6" THICK RIGID INSULATION ON TOP OF HOLLOW CORE LID TO ACHIEVE AN INSULATION RATING OF R25.
   B. CONTROL BUILDING EXTERIOR WALL INSULATION TO BE A MINIMUM OF 1-1/2" THICK RIGID INSULATION (EIFS) ON EXTERIOR OF CMU WALLS TO ACHIEVE AN INSULATION RATING OF R5.7.

FLORIDA BUILDING CODE COMPONENTS & CLADDING WIND DESIGN PRESSURES

ZONE	EFFECTIVE WIND AREA (SF)	POSITIVE WIND PRESSURE (PSF)	NEGATIVE WIND PRESSURE (PSF)
1	≤ 10	17	-67
	20	16	-63
	50	16	-57
	100	16	-52
	200	16	-48
	≥ 500	16	-42
2	≤ 10	17	-88
	20	16	-83
	50	16	-75
	100	16	-70
	200	16	-64
	≥ 500	16	-56
3	≤ 10	17	-121
	20	16	-109
	50	16	-94
	100	16	-83
	200	16	-71
	≥ 500	16	-56
4	≤ 10	39	-42
	20	37	-40
	50	35	-38
	100	33	-36
	200	31	-34
	≥ 500	29	-32
5	≤ 10	39	-51
	20	37	-48
	50	35	-43
	100	33	-40
	200	31	-37
	≥ 500	29	-32

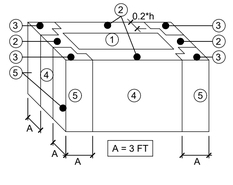
TABLE NOTES:
1. PRESSURES DERIVED FROM ASCE 7-16 RISK CATEGORY IV, BASIC WIND SPEED OF 139 MPH.
2. PRESSURES ARE GIVEN AT ULTIMATE STRENGTH LEVEL. FOR ASD SERVICE LEVEL WIND PRESSURES MULTIPLY PRESSURE BY 0.6
3. LINEAR INTERPOLATION BETWEEN TABLE NUMBERS PERMISSIBLE.



FACTORY MUTUAL COMPONENTS & CLADDING WIND DESIGN PRESSURES

ZONE	EFFECTIVE WIND AREA (SF)	POSITIVE WIND PRESSURE (PSF)	NEGATIVE WIND PRESSURE (PSF)	FM ROOF RATING
1	≤ 10	32	-95	105
2	≤ 10	32	-125	135
3	≤ 10	32	-170	180
4	≤ 10	54	-59	60
5	≤ 10	54	-72	75

TABLE NOTES:
1. PRESSURES DERIVED FROM FM 1-28, BASIC WIND SPEED OF 109 MPH WITH AN IMPORTANCE FACTOR OF I = 1.15 AND A SAFETY FACTOR OF 2.
2. THESE PRESSURES ARE TO BE USED FOR ALL COMPONENTS AND CLADDING UNDER THE PER VIEW OF FACTORY MUTUAL INCLUDING BUT NOT LIMITED TO DOORS, WINDOWS, ROOF COVERINGS AND WALL CLADDING. THESE PRESSURES DO NOT APPLY TO STRUCTURAL ELEMENTS I.E. HOLLOW CORE.



REQUIRED SUBMITTALS:
GENERAL CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE SEOR FOR REVIEW AND APPROVAL:
1. CONCRETE MIX DESIGN.
2. CMU & MASONRY ACCESSORIES.
3. PRECAST HOLLOWCORE ROOF SLAB.
4. REINFORCEMENT SHOP DRAWING
5. ROOF COVERING AND INSULATION
6. EXTERIOR INSULATION FINISHING SYSTEM

JEA.ARCH.ID.[XX]06 20299 Control Building 0.dwg 3/20/2024 - 3/20/2024 MODEL: CD1

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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CONSULTANT INFORMATION

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7563 PHILIPS HIGHWAY
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PHONE: (904) 296-2646
WWW.STRUCTURESINTL.COM
FLORIDA CERTIFICATE OF AUTHORIZATION NO: 9800

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-	-	-	-	-	-	DATE	3/12/2024
-	-	-	-	-	-	BY	AJB
-	-	-	-	-	-	REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

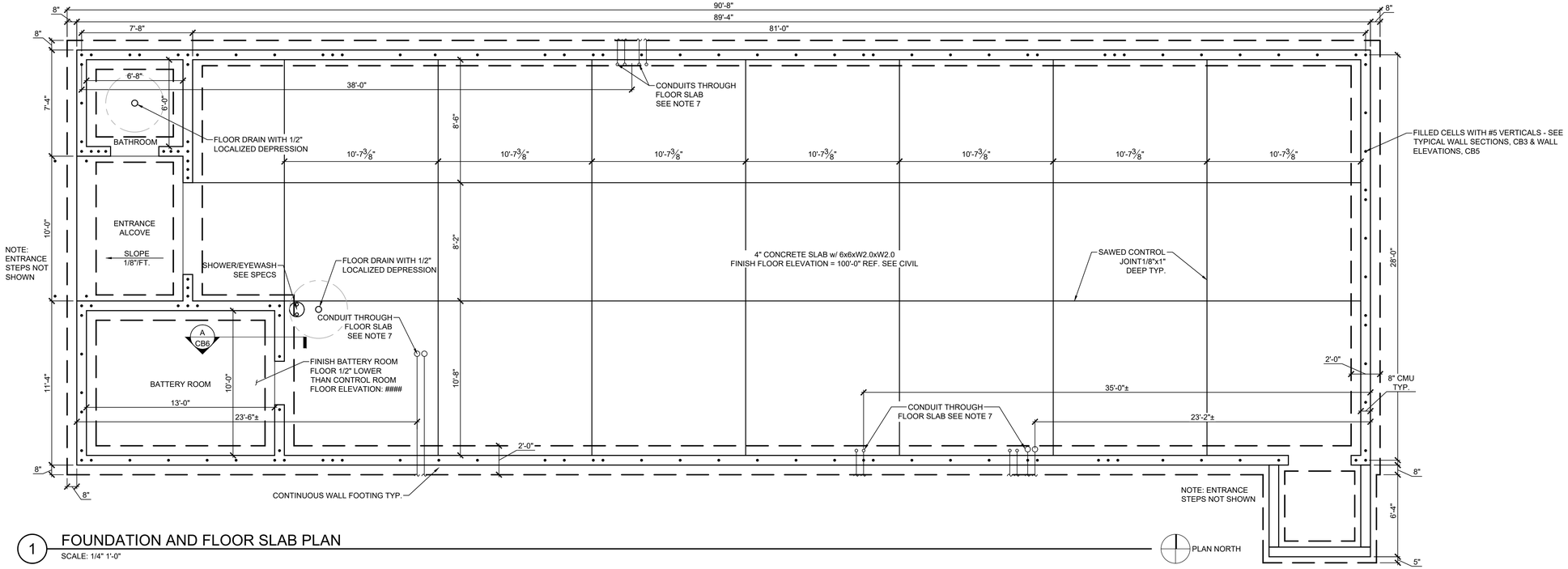
GENERAL NOTES & DESIGN CRITERIA

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN
PROJ #: 8007704

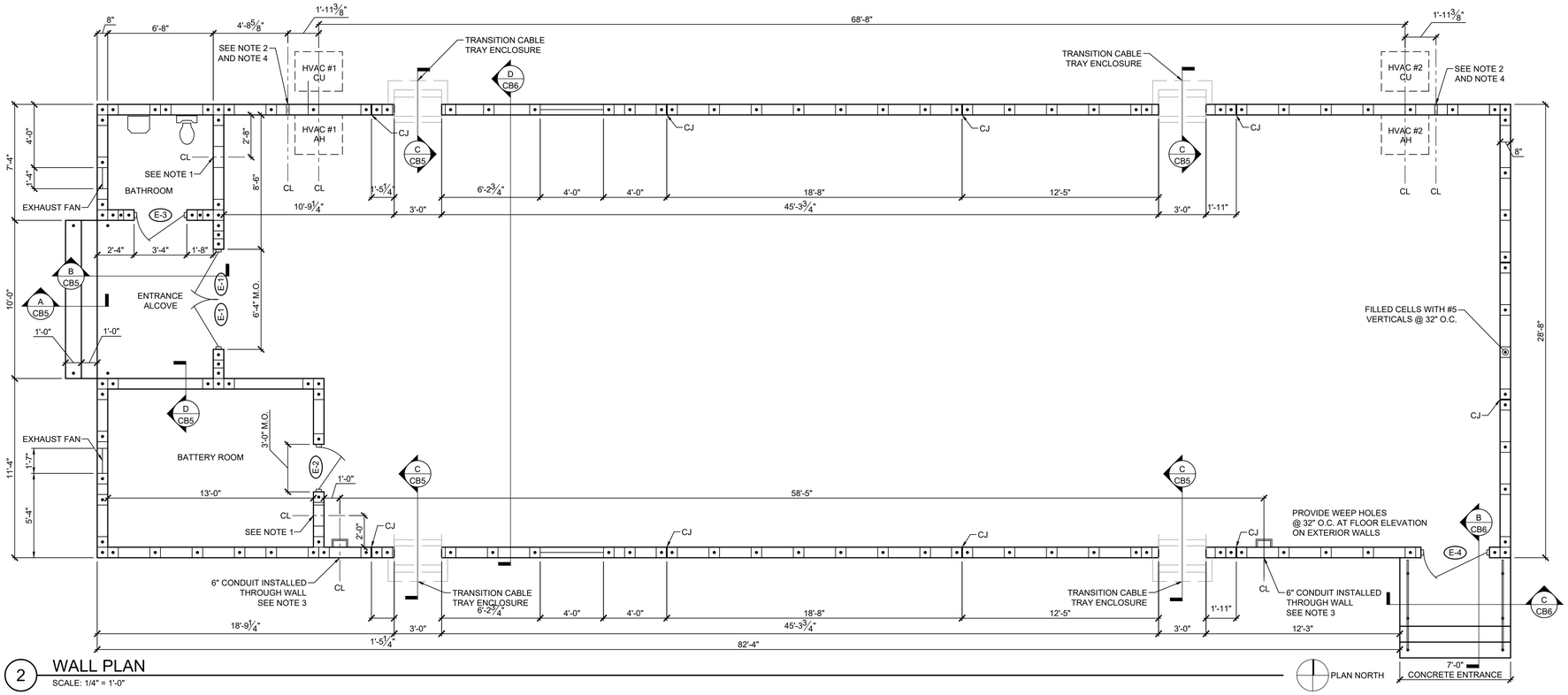
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DRAWING SET: NM2023
DRAWING ID: CB0
SHEET #: 49 OF 61



1 FOUNDATION AND FLOOR SLAB PLAN

SCALE: 1/4" 1'-0"

PLAN NORTH



2 WALL PLAN

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

PLAN NORTH

NOTES:

1. 16"x8" HVAC VENT WITH GRILL BOTH ENDS.
2. 1 - 2" PVC SLEEVE FOR HVAC UNIT FREON LINES. INSTALL 24" ABOVE FINISHED FLOOR.
3. 6" CONDUIT TO BE INSTALLED THRU WALL UNDER BATTERY CART BOX. INSTALL 24" ABOVE FINISHED FLOOR.
4. 1 -2" PVC SLEEVE FOR HVAC CONDENSATE DRAINAGE AT 12" ABOVE FINISHED FLOOR.
5. CONTRACTOR SHALL CONFIRM ALL DOOR OPENING REQUIREMENTS FOR CMU CONSTRUCTION WITH DOOR MANUFACTURER BEFORE PROCEEDING WITH CONSTRUCTION.
6. ALL CONDUITS INSTALLED THROUGH FLOOR SLAB SHALL EXIT CONTROL BUILDING AT A DEPTH BELOW AS SPECIFIED ON THE MEP DRAWINGS.
7. CONDUITS ARE REQUIRED TO PENETRATE THE FOUNDATION STEM WALL AND FLOOR SLAB. THE CONTRACTOR SHALL REFER TO THE CONTROL BUILDING ELECTRICAL DRAWINGS TO COORDINATE LOCATIONS PRIOR TO THE CONSTRUCTION OF THE FOUNDATION OR PLACEMENT OF ANY CONCRETE.
8. THIS DRAWING SHALL BE WORKED WITH ALL REFERENCE DRAWINGS. NOTE: SLAB-EMBEDDED PLUMBING PIPING IS NOT SHOWN.

LEGEND:

- • GROUT FILLED CELL WITH 1-#5 REBAR VERTICAL SEE E/CB3
- (E-X) DOOR (SEE DOOR SCHEDULE CB2)

REFERENCE DRAWINGS:

1. CB2 - CONTROL BUILDING ROOF PLAN
2. CB3 - CONTROL BUILDING ELEVATIONS
3. CB4 - CONTROL BUILDING SECTIONS & DETAILS
4. CB5 - CONTROL BUILDING SECTIONS & DETAILS
5. CB6 - CONTROL BUILDING SECTIONS & DETAILS
6. CB7 - CONTROL BUILDING SECTIONS & DETAILS

JEA

BUILDING COMMUNITY

21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION

STRUCTURES INTERNATIONAL, LLC

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WWW.STRUCTURESINTL.COM

FLORIDA CERTIFICATE OF AUTHORIZATION NO: 9800

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DATE	3/12/2024
BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING PLAN VIEWS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

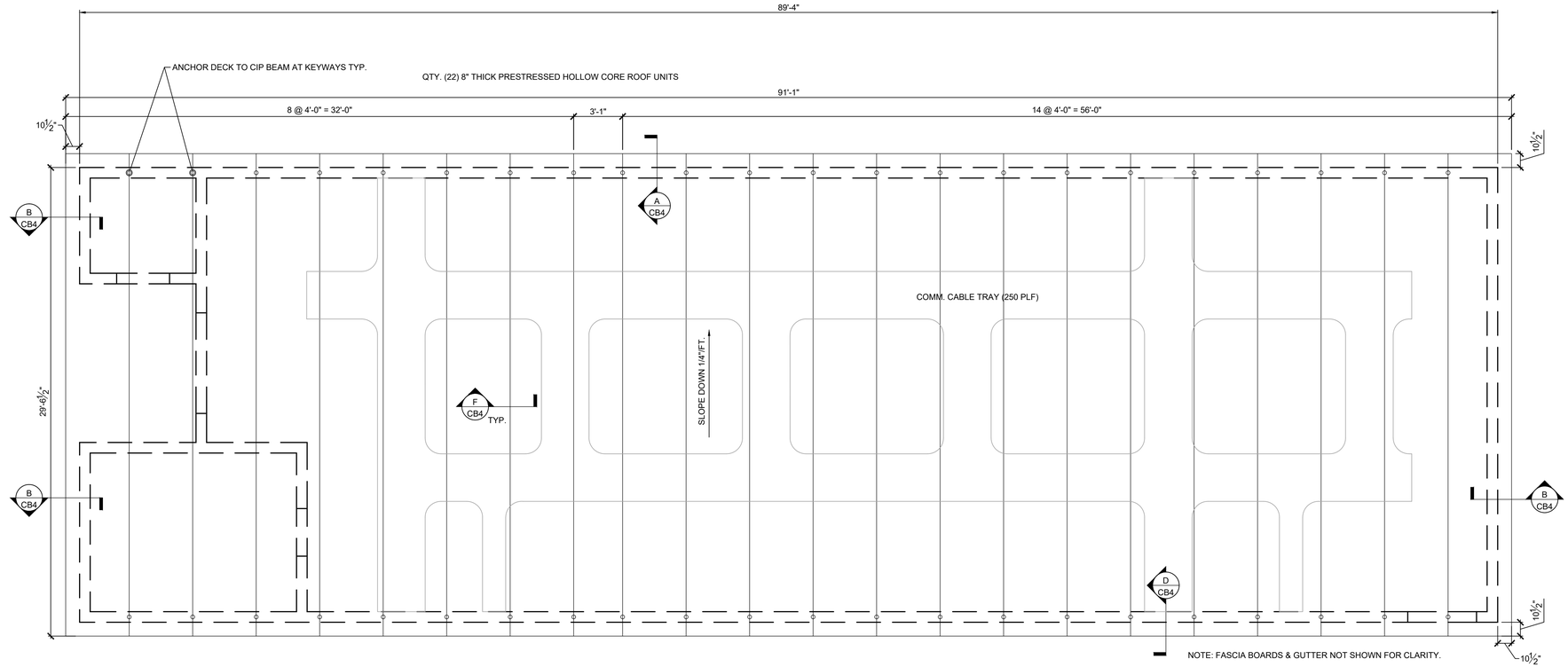
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DRAWING SET: NM2023

DRAWING ID: CB1

SHEET #: 50 OF 61

JEA_ANSI-D_24"x36" 2208R Control Building 1.dwg 3/20/2024 - 3/20/2024 MODEL: CD1



NOTE: FASCIA BOARDS & GUTTER NOT SHOWN FOR CLARITY.

PLAN NORTH

2 ROOF PLAN

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

NOTES:

1. 16"x8" HVAC VENT WITH GRILL BOTH ENDS.
2. 1 - 2" PVC SLEEVE FOR HVAC UNIT FREON LINES. INSTALL 24" ABOVE FINISHED FLOOR.
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LEGEND:

- [•] GROUT FILLED CELL WITH 1-#5 REBAR VERTICAL SEE E/CB3
- (E-X) DOOR (SEE DOOR SCHEDULE CB2)

REFERENCE DRAWINGS:

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2. CB3 - CONTROL BUILDING ELEVATIONS
3. CB4 - CONTROL BUILDING SECTIONS & DETAILS
4. CB5 - CONTROL BUILDING SECTIONS & DETAILS
5. CB6 - CONTROL BUILDING SECTIONS & DETAILS
6. CB7 - CONTROL BUILDING SECTIONS & DETAILS

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NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING PLAN VIEWS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

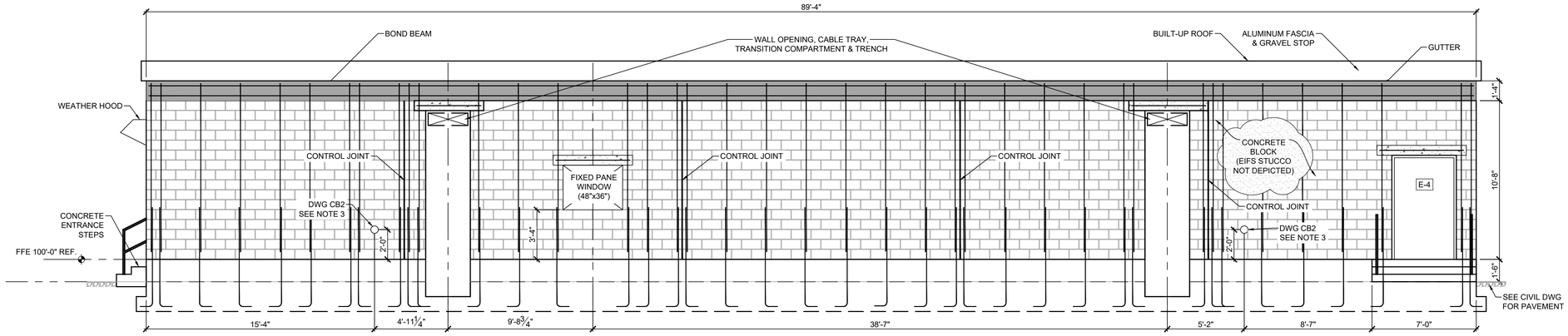
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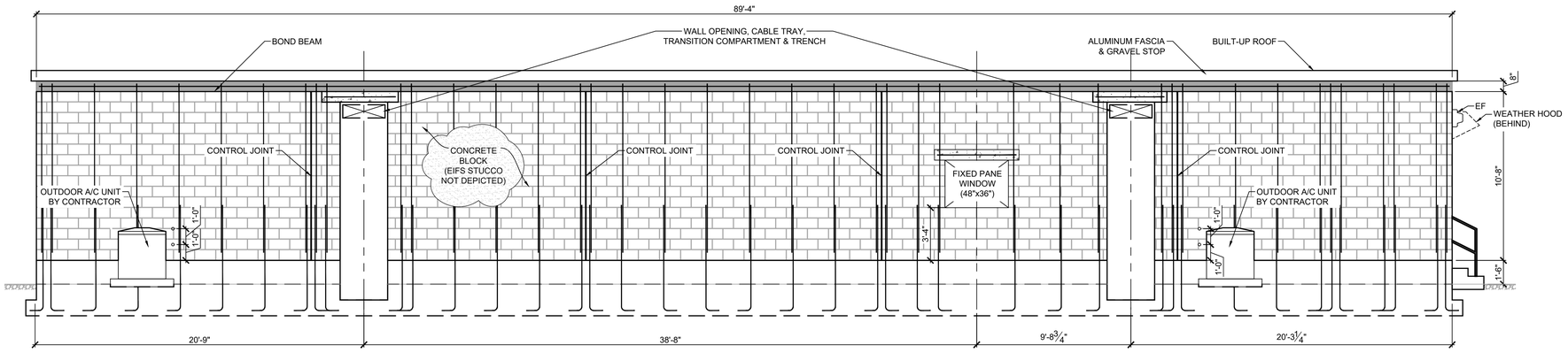
SHEET #: 51 OF 61

JEA_ARCH-D (24"x36" - 22389 Control Building 1.dwg 3/20/2024 - 3/20/2024 MODEL: CD1



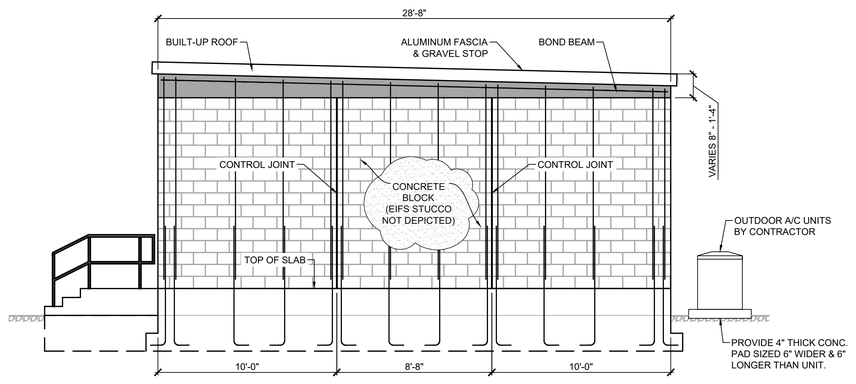
1 SOUTH ELEVATION

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



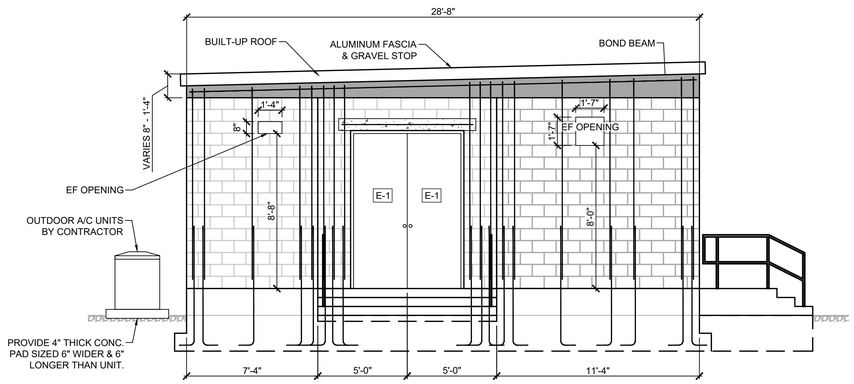
2 NORTH ELEVATION

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



3 EAST ELEVATION

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



4 WEST ELEVATION

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

NOTES:

1. PROVIDE HARDWARE FOR EACH DOOR AS PER SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS.
2. FOR INSTALLATION OF CABLE TRANSITION COMPARTMENT, SEE CONTROL BUILDING ELECTRICAL DRAWINGS.
3. NON-SHRINK PAINTABLE GROUT OR NON-SHRINK PAINTABLE SEALANT TO BE PLACED BETWEEN HOLLOW CORE ROOF SLABS AND TOP LINTEL ON BOTH SIDES OF WALL PRIOR TO PAINTING OR INSTALLATION OF BUILT-UP ROOF.
4. REFER TO CONTROL BUILDING LIGHTING PLAN FOR PROPER INSTALLATION OF OUTDOOR LIGHTING BOXES INSIDE THE CONTROL BUILDING MASONRY WALLS.
5. REFER TO CONTROL BUILDING LIGHTING PLAN FOR PROPER INSTALLATION OF SECURITY OUTLET BOXES INSIDE THE CONTROL BUILDING MASONRY WALLS.
6. PROVIDE AND INSTALL ONE (1), 48" WIDE X 36" TALL FIXED PANE, GLASS WINDOW AS DESCRIBED ON THIS SHEET. ALSO SEE SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS.
7. BATTERY ROOM DOOR TO CARRY SAFETY SIGN WARNING OF EXPLOSIVE GASES AND NO SPARKS OR SMOKING ON BOTH SIDES OF DOOR. SEE SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS.
8. EXPLOSION PROOF SURFACE MOUNT EXHAUST FAN WITH LOUVERED VENT TO BE FIELD LOCATED. OPENING FOR EXHAUST FAN TO MATCH CONTRACTOR SUPPLIED FAN. SEE SPECIFICATIONS.

WINDOW:

KAWNEER PRODUCTS MODEL IR501, IMPACT RESISTANT, LAMINATED, INSULATED AND TINTED, 1-5/16" OVERALL GLASS WITH BRONZE FRAME.

DOOR SCHEDULE

DOOR NUMBER	DIMENSIONS			MAKE	DOOR FINISH	DETAILS			FRAME		SWING	HARDWARE
	WIDTH	HEIGHT	THICKNESS			HEAD	JAMB	SILL	FRAME MATERIAL	FINISH		
E-1	3'-0"	8'-8"	1 3/4"	1	2	4/CB6	5/CB6	6/CB6	3	4	RHR	SEE NOTE 1
E-1	3'-0"	8'-8"	1 3/4"	1	2	4/CB6	5/CB6	6/CB6	3	4	LHR	
E-2	2'-8"	6'-8"	1 3/4"	1A	2	4/CB6	5/CB6	-	3	4	LHR	
E-3	3'-0"	6'-10"	1 3/4"	1	2	4/CB6	5/CB6	6/CB6	3	4	RHR	
E-4	4'-0"	6'-10"	1 3/4"	1	2	4/CB6	5/CB6	6/CB6	3	4	RHR	

DOOR LEGEND:

1. STEELCRAFT METAL DOOR LF-18F FLUSH SEAMLESS
1A. STEELCRAFT METAL DOOR LF-18F FLUSH SEAMLESS, DOOR E-2: 36" H x 24" W REINFORCED GLASS WITH 10" H x 8" W TRANSFER GRILL
2. SEE SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS
3. STEELCRAFT DESIGNATED F16-4. SEE SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS
4. SEE SECTION VIII, SUBSECTION 7 OF SPECIFICATIONS

JEA
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JACKSONVILLE, FLORIDA 32202

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DATE	3/12/2024
BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING ELEVATIONS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

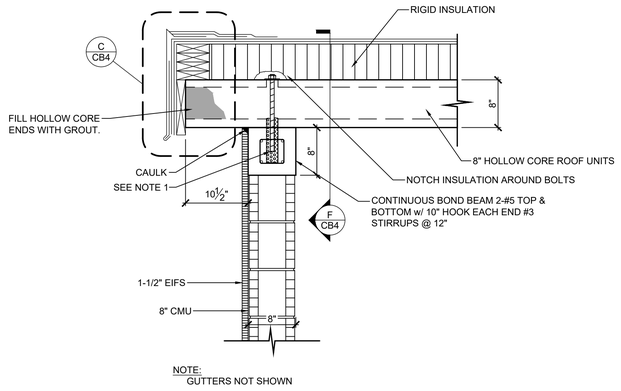
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DRAWING SET: NM2023

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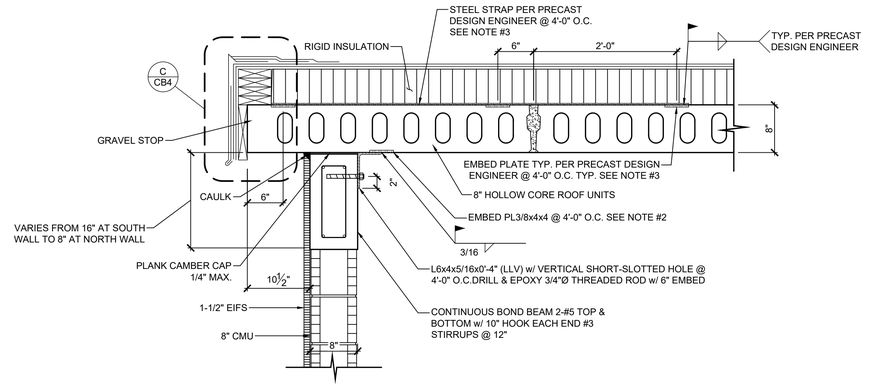
SHEET #: 52 OF 61

JEA ARCH D 24"X36" 20999 Control Building 2.dwg 3/20/2024 - 3/20/2024 MODEL: CD1



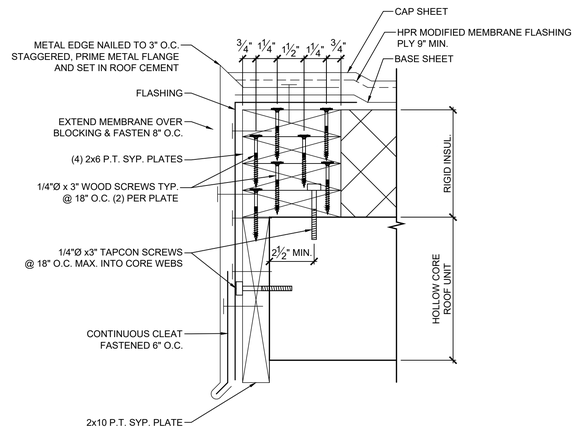
A SECTION
SCALE: 1/2"=1'-0"

NOTE:
1. DRILL 5/8"Ø HOLE THROUGH CORE AND A MINIMUM OF 5 5/8" INTO TOP LINTEL. INSTALL 1/2"Ø GALVANIZED ALL THREAD ROD USING "HILTI HIT-RE500 V3" EPOXY PER MANUFACTURERS SPECIFICATIONS. AFTER EPOXY HAS SET, INSTALL ONE (1) GALVANIZED FLAT WASHER AND ONE (1) GALVANIZED HEX NUT PER BOLT. CUT ALL THREAD RODS FLUSH WITH TOP OF NUT AND APPLY COLD GALVANIZED PAINT.

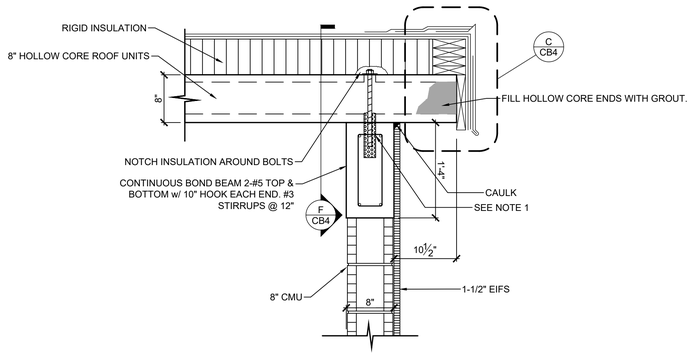


B SECTION
SCALE: 1/2"=1'-0"

NOTE:
1. DRILL 5/8"Ø HOLE THROUGH CORE AND A MINIMUM OF 5 5/8" INTO TOP LINTEL. INSTALL 1/2"Ø GALVANIZED ALL THREAD ROD USING "HILTI HIT-RE500 V3" EPOXY PER MANUFACTURERS SPECIFICATIONS. AFTER EPOXY HAS SET, INSTALL ONE (1) GALVANIZED FLAT WASHER AND ONE (1) GALVANIZED HEX NUT PER BOLT. CUT ALL THREAD RODS FLUSH WITH TOP OF NUT AND APPLY COLD GALVANIZED PAINT.
2. OUT OF PLANE SHEAR AT EMBED: Vu= 1.96 KIP.
3. REQUIREMENT OF STEEL STRAP AND EMBED SHALL BE DETERMINED AND DESIGNED BY PRECAST DESIGN ENGINEER.

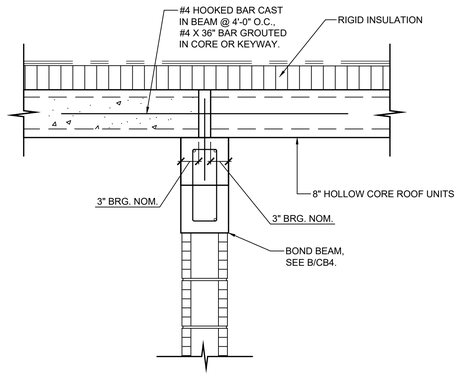


C SECTION
SCALE: 3"=1'-0"

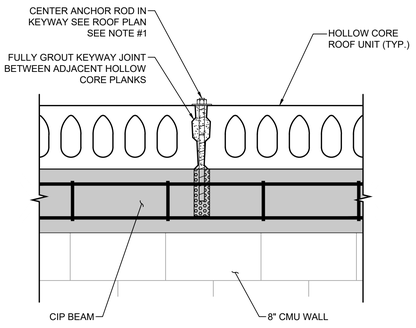


D SECTION
SCALE: 1/2"=1'-0"

NOTE:
1. DRILL 5/8"Ø HOLE THROUGH CORE AND A MINIMUM OF 5 5/8" INTO TOP LINTEL. INSTALL 1/2"Ø GALVANIZED ALL THREAD ROD USING "HILTI HIT-RE500 V3" EPOXY PER MANUFACTURERS SPECIFICATIONS. AFTER EPOXY HAS SET, INSTALL ONE (1) GALVANIZED FLAT WASHER AND ONE (1) GALVANIZED HEX NUT PER BOLT. CUT ALL THREAD RODS FLUSH WITH TOP OF NUT AND APPLY COLD GALVANIZED PAINT.



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



F SECTION
SCALE: 1"=1'-0"

NOTE:
1. DRILL 5/8"Ø HOLE THROUGH CORE AND A MINIMUM OF 5 5/8" INTO TOP LINTEL. INSTALL 1/2"Ø GALVANIZED ALL THREAD ROD USING "HILTI HIT-RE500 V3" EPOXY PER MANUFACTURERS SPECIFICATIONS. AFTER EPOXY HAS SET, INSTALL ONE (1) GALVANIZED FLAT WASHER AND ONE (1) GALVANIZED HEX NUT PER BOLT. CUT ALL THREAD RODS FLUSH WITH TOP OF NUT AND APPLY COLD GALVANIZED PAINT.

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

ISSUED FOR DESIGN REVIEW

CONSULTANT INFORMATION
STRUCTURES INTERNATIONAL, LLC
7563 PHILIPS HIGHWAY
BUILDING 600
JACKSONVILLE, FL 32256
PHONE: (904) 296-2646
WWW.STRUCTURESINTL.COM
FLORIDA CERTIFICATE OF AUTHORIZATION NO: 9800

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ENGINEERING	
DATE	3/12/2024
BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING DETAILS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

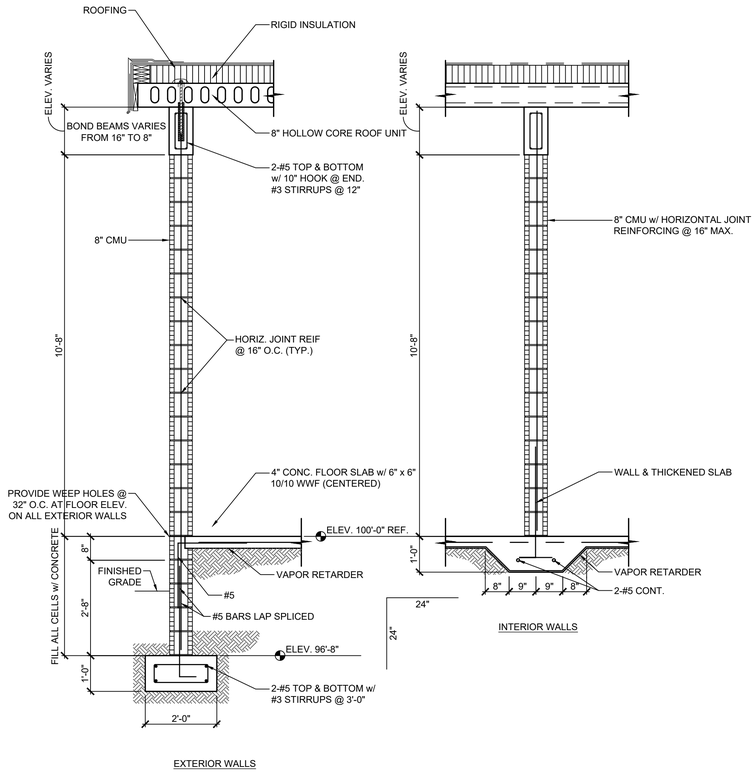
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DRAWING SET: NM2023

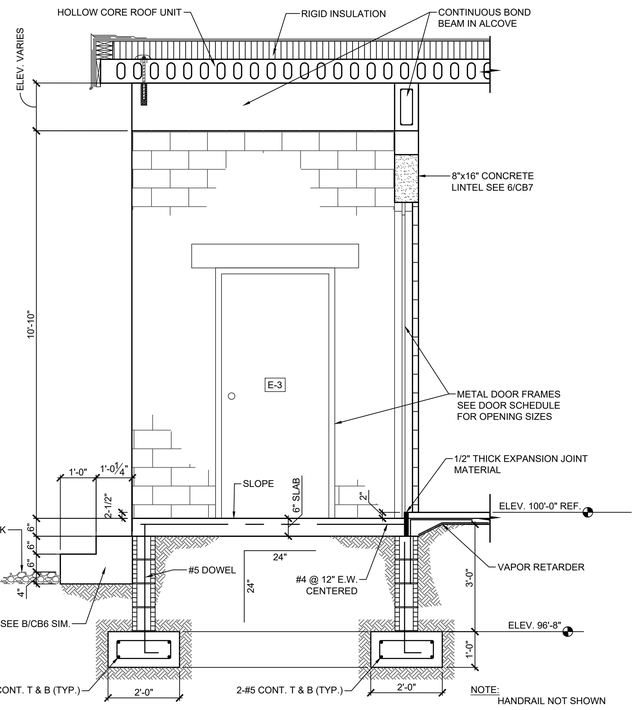
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SHEET #: 53 OF 61

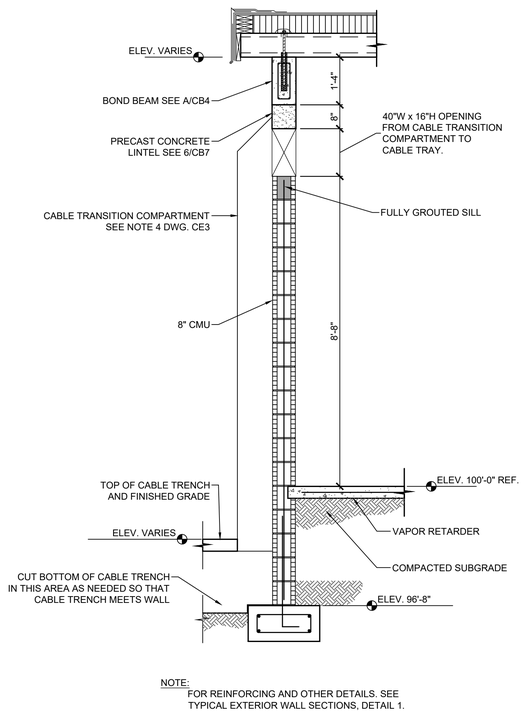
JEA.ARCH.42.[#POR]" 20396 Control Building 3.dwg 3/20/2024 - 3/20/2024 MODEL: CD1



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

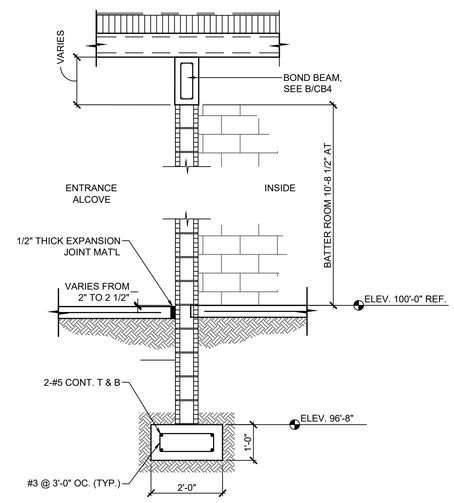


B SECTION
SCALE: 1/2"=1'-0"



NOTE:
FOR REINFORCING AND OTHER DETAILS. SEE TYPICAL EXTERIOR WALL SECTIONS, DETAIL 1.

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



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

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
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ENGINEERING	
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BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING DETAILS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

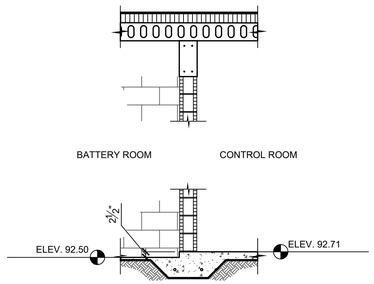
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DRAWING SET: NM2023

DRAWING ID: CB5

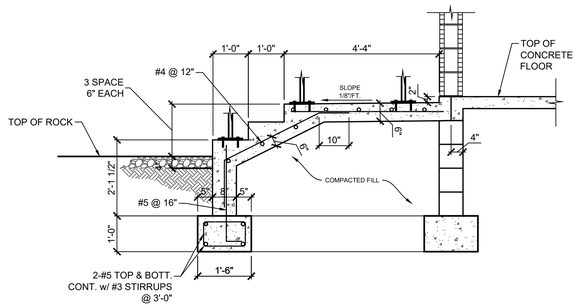
SHEET #: 54 OF 61

JEA_ARCH-D 24"X36" 22069 Content Building 5.dwg 3/20/2024 - 3/20/2024 MODEL: CD1

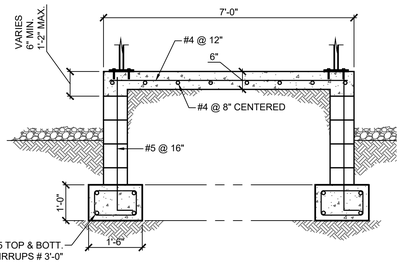


NOTE:
FINISHED ELEVATION OF BATTERY ROOM FLOOR TO BE 1/2" BELOW FINISHED ELEVATION OF CONTROL ROOM FLOOR.

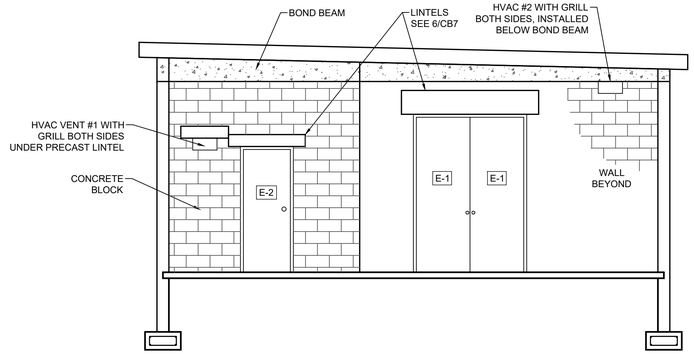
A SECTION
SCALE: 3/8"=1'-0"



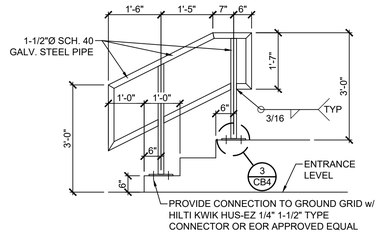
B SECTION
SCALE: 1/2"=1'-0"



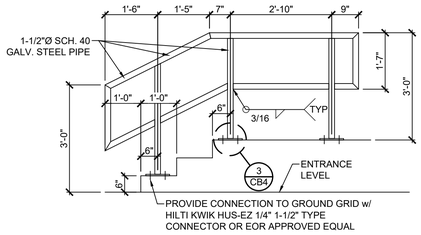
C SECTION
SCALE: 1/2"=1'-0"



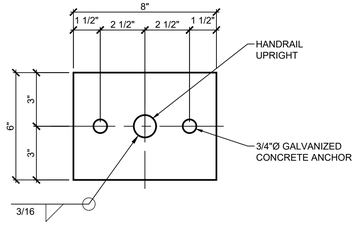
D SECTION
NOT TO SCALE



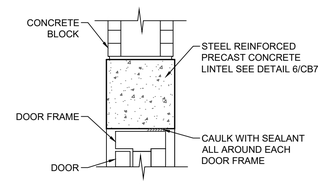
1 SECTION
SCALE: 1/2" = 1'-0"



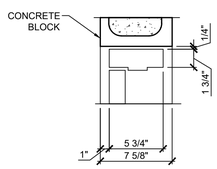
2 SECTION
SCALE: 1/2" = 1'-0"



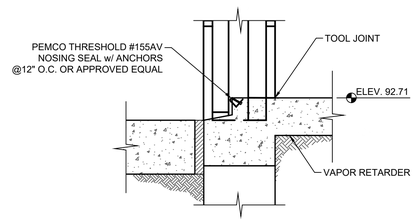
3 SECTION
SCALE: 3"=1'-0"



4 DOOR HEAD SECTION
NOT TO SCALE



5 DOOR JAMB SECTION
SCALE: 1-1/2"=1'-0"



6 DOOR SILL SECTION
NOT TO SCALE

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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DATE	3/12/2024
BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

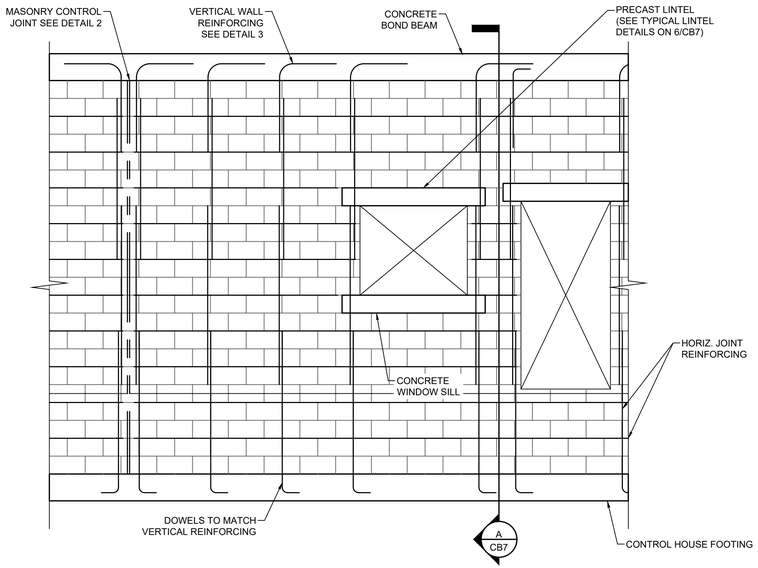
CONTROL BUILDING DETAILS

NORMANDY SUBSTATION

SCALE: AS SHOWN
SUBSTATION & TRANSMISSION ENGINEERING
PROJ #: 8007704

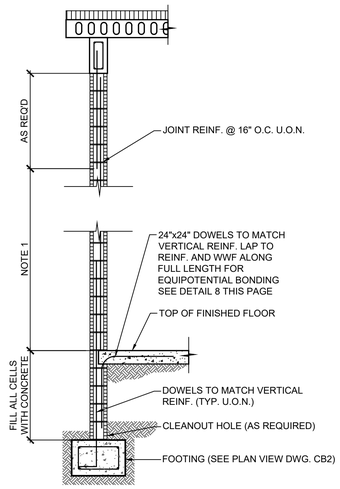
DRAWING NAME: CB6.dwg
DRAWING SET: NM2023
DRAWING ID: CB6
SHEET #: 55 OF 61

#5 ARCH D 24"x36" 22999 Control Building 4.dwg 3/20/2024 3/20/2024 MODEL: CD1



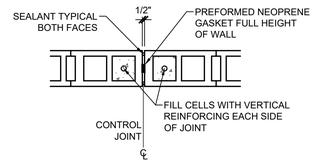
NOTES:
PROVIDE FILLED CELL WITH #5 VERTICAL FULL HEIGHT EACH SIDE OF ALL OPENINGS, AT CORNERS AND WALL INTERSECTIONS, AT 32" MAXIMUM SPACING.

1 TYPICAL WALL REINFORCEMENT DETAIL
SCALE: 3/8"=1'-0"



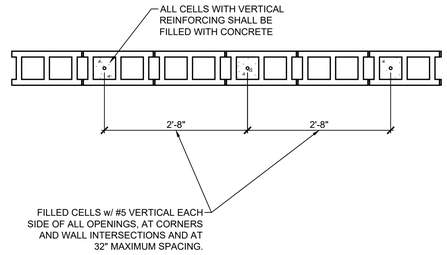
NOTES:
1. 5' MAXIMUM LIFTS
2. MINIMUM LAP LENGTH: 48 BAR DIAMETERS

A TYPICAL WALL REINFORCEMENT SECTION
SCALE: 3/8"=1'-0"

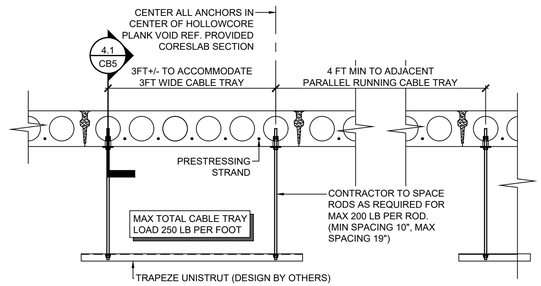


NOTES:
1. TRUSS TYPE JOINT REINFORCEMENT SHALL BE STOPPED EACH SIDE OF JOINT. BOND BEAM REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTROL JOINT.
2. PROVIDE CONTROL JOINTS WHERE SHOWN ON PLAN.

2 CMU CONTROL JOINT DETAIL
SCALE: 3/4"=1'-0"

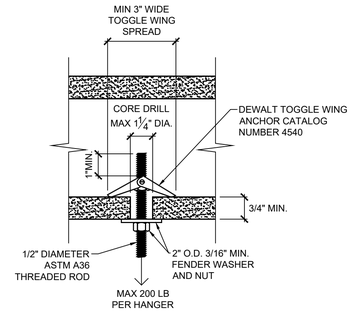


3 VERTICAL WALL REINFORCEMENT DETAIL
SCALE: 3/4"=1'-0"

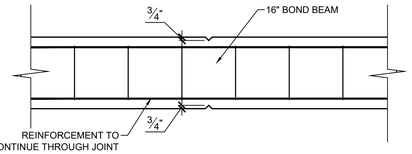


NOTES:
1. CONTRACTOR SHALL DETERMINE LOCATION, PLACEMENT, LENGTH & NUMBER OF ALL THREADED RODS REQUIRED, CONTRACTOR SHALL ALSO PROVIDE WASHERS AND NUTS.

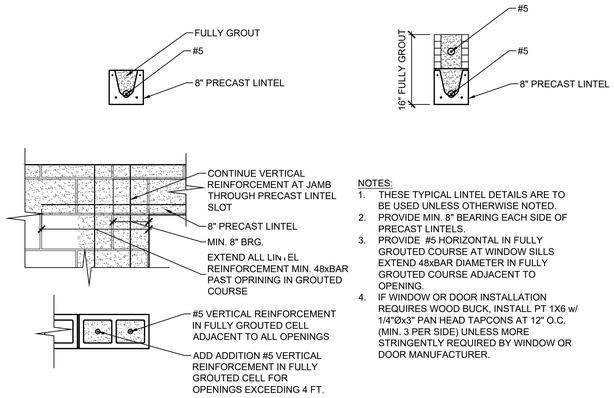
5 TYPICAL CABLE TRAY HANGER SECTION
NOT TO SCALE



5.1 TOGGLE WING ANCHOR DETAIL
SCALE: 3"=1'-0"

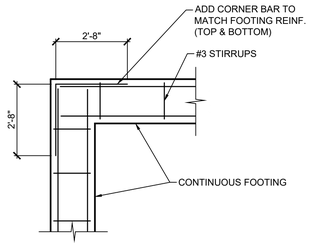


4 BOND BEAM CONTROL JOINT DETAIL
SCALE: 3/4"=1'-0"

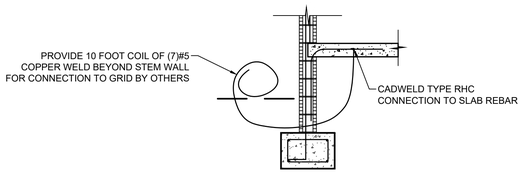


NOTES:
1. THESE TYPICAL LINTEL DETAILS ARE TO BE USED UNLESS OTHERWISE NOTED.
2. PROVIDE MIN. 8" BEARING EACH SIDE OF PRECAST LINTELS.
3. PROVIDE #5 HORIZONTAL IN FULLY GROUTED COURSE AT WINDOW SILLS EXTEND 48xBAR DIAMETER IN FULLY GROUTED COURSE ADJACENT TO OPENING.
4. IF WINDOW OR DOOR INSTALLATION REQUIRES WOOD BUCK, INSTALL PT 1X6 w/ 1/4"Øx3" PAN HEAD TAPCONS AT 12" O.C. (MIN. 3 PER SIDE) UNLESS MORE STRINGENTLY REQUIRED BY WINDOW OR DOOR MANUFACTURER.

6 TYPICAL MASONRY LINTEL DETAILS
NOT TO SCALE



7 TYPICAL WALL CORNER FOOTING
SCALE: 3/8"=1'-0"



NOTES:
1. PROVIDE EQUIPOTENTIAL BONDING TO SLAB REBAR REINFORCEMENT AT EACH CORNER OF CONTROL BUILDING

8 CONTROL BUILDING FLOOR EQUIPOTENTIAL BONDING
NOT TO SCALE

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BUILDING COMMUNITY
21 W CHURCH ST.
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ENGINEERING	
DATE	3/12/2024
BY	JPG
REVIEW	JPG
DRAFTING	
DATE	3/12/2024
BY	AJB
REVIEW	JPG

NEW NORMANDY CONTROL HOUSE

CONTROL BUILDING DETAILS

NORMANDY SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE: AS SHOWN

PROJ #: 8007704

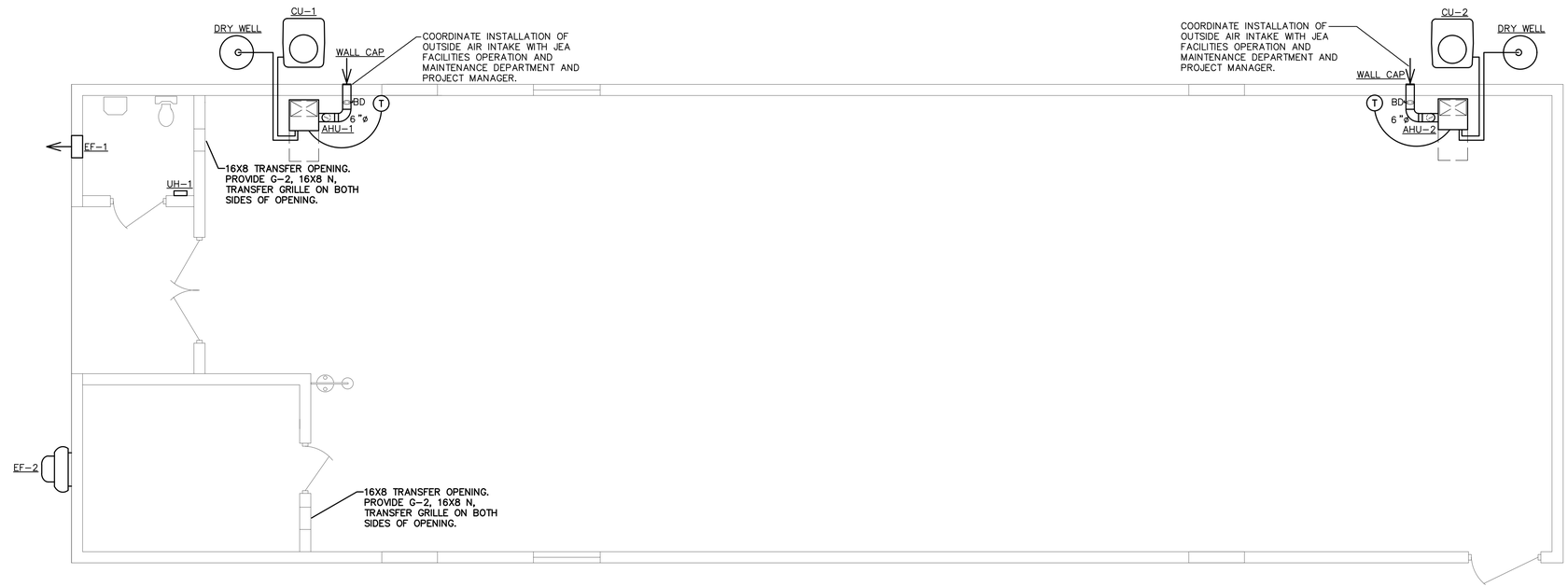
DRAWING NAME: CB7.dwg

DRAWING SET: NM2023

DRAWING ID: CB7

SHEET #: 56 OF 61

JEA ARCH.2 [LAYOUT: 20309 Control Building 5 dwg 3/20/2024 - 3/20/2024 MODEL: CD1]



HVAC FLOOR PLAN

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

P&H ENGINEERING

POWELL & HINKLE ENGINEERING, P.A.
1409 KINGSLEY AVENUE, BLDG 12A
ORANGE PARK, FLORIDA 32073
(904) 264-5570 FAX:(904) 278-2646

ROBERT L. HINKLE PE 29302
GALTON C. MOK PE 33192
LANE R. HINKLE PE 48076
THOMAS M. ELDER PE 56121
RICHARD A. MATHEWS PE 59418
DAVID R. SPELL JR. PE 54729
JAMES L. HENNESSEY PE 83241

JEA
BUILDING COMMUNITY
21 W CHURCH ST.
JACKSONVILLE, FLORIDA 32202

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CONSULTANT INFORMATION

cma chen moore and associates
501 Riverside Avenue
Suite 501
Jacksonville, FL 32207
904.398.8636
www.chenmoore.com

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REVIEW	LRH
DRAFTING	
DATE	3/12/2024
BY	KDW
REVIEW	LRH

NEW NORMANDY CONTROL HOUSE

HVAC FLOOR PLAN

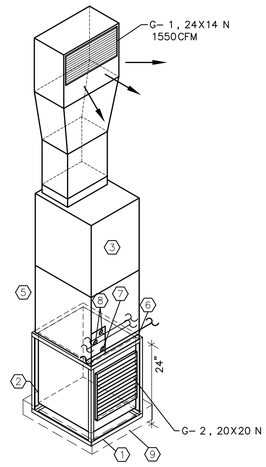
NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: M1.dwg
DRAWING SET: NM2023
DRAWING #: M1
SHEET #: 57 OF 61



1 : 1-1/2x1-1/2x1/4 GALV. STEEL FRAME FOR AHU AND RA DUCT RISER SUPPORT. ANCHOR FRAME TO FLOOR WITH 1/2" ANCHOR BOLTS AT FOUR CORNERS. FASTEN AHU ONTO THE FRAME WITH BOLTS TO PREVENT MOVEMENT.

2 : SHEET METAL RA PLENUM WITH EXTERNAL INSULATION, SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS

3 : AHU, SEE SCHEDULE FOR SIZE AND PLAN FOR LOCATION

4 : CONNECT TO SA DUCT, SEE PLAN FOR SIZE AND LOCATION

5 : CONNECT TO RA DUCT, SEE PLAN FOR SIZE AND LOCATION, SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS

6 : FILTER ACCESS PANEL, "DO NOT BLOCK". PROVIDE 1" PLEATED FILTER RACK

7 : CONNECT TO CONDENSATE TRAP, SEE CONDENSATE TRAP DETAIL FOR ADDITIONAL REQUIREMENTS, DO NOT BLOCK FILTER ACCESS PANEL

8 : REFRIGERANT LINE TO CONDENSER, SEE PLAN FOR CONDENSER LOCATION, DO NOT BLOCK FILTER ACCESS PANEL

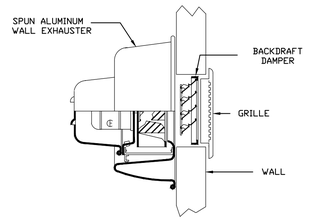
9 : SECONDARY DRAIN PAN UNDER STEEL MOUNTING FRAME, SEE SPECIFICATION FOR ADDITIONAL INFORMATION

DETAIL – AHU FLOOR SUPPORT
N.T.S.

EQUIPMENT SCHEDULE – ELECTRIC UNIT HEATER

APPROVED MANUFACTURER		MARKEL		
EQUIPMENT NUMBER		UH-1		
MOUNTING TYPE		CEILING		
COIL	CAPACITY – KW	1500 WATTS		
	ENT. AIR TEMP.–°F	29°F		
FAN	TYPE	CENTRIFUGAL		
	DRIVE	DIRECT		
	RPM	1060		
	CFM	100		
	S.P.	--		
	HP	--		
VOLTS/PHASE		120V/1ø		
MODEL NUMBER		E3055T2DWB		
MOUNTING HEIGHT BOTTOM OF UNIT A.F.F.		--		
ACCESSORIES/REMARK		(1)		

NOTE:
(1): HEATER TO BE WALL MOUNTED.



WALL EXHAUST FAN DETAIL
N.T.S.

EQUIPMENT SCHEDULE – SPLIT SYSTEMS

APPROVED MANUFACTURER			TRANE			
DESIGN TEMPERATURE	OUTDOOR	SUMMER	95°F DB/78°F WB			
		WINTER	29°F			
	INDOOR	SUMMER	75°F			
		WINTER	72°F			
TYPE (HEAT PUMP OR A/C)			A/C	A/C		
EQUIPMENT NUMBER	OUTDOOR UNIT		CU-1	CU-2		
	INDOOR UNIT		AHU-1	AHU-2		
COOLING CAPACITY	ENT. AIR DB/WB TEMP.		77°F/64.3°F	77°F/64.3°F		
	SENSIBLE LOAD – MBH		35.9	35.9		
	TOTAL LOAD – MBH		46	46		
HEATING CAPACITY (AT 47 °F) –MBH			--	--		
AUXILIARY HEAT	TYPE		--	--		
	CAPACITY		--	--		
FAN	TYPE		CENTRIFUGAL	CENTRIFUGAL		
	DRIVE		DIRECT	DIRECT		
	HP		3/4	3/4		
	EXT. S.P.		0.5	0.5		
CFM	TOTAL		1550	1550		
	OUTSIDE AIR		150	150		
ELECTRICAL DATA	OUTDOOR UNIT		230 V/1ø	230 V/1ø		
	INDOOR UNIT	FAN	230 V/1ø	230 V/1ø		
		HEATER	--	--		
MODEL NUMBERS	OUTDOOR UNIT		4TTR4048N1	4TTR4048N1		
	INDOOR UNIT		TEM6A0C48H41	TEM6A0C48H41		
EER OR (SEER) – MIN.			(14.6)	(14.6)		
COP AT 47°F (HSPF) – MIN.						
ACCESSORIES						
			(1)(2)(3)(4)(5)	(1)(2)(3)(4)(5)		

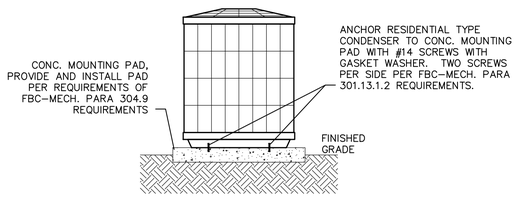
NOTE: SIZE REFRIGERATION LINES PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS BASED ON EQUIPMENT SIZE AND PIPING ROUTE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING OPTIONS AND ACCESSORIES RECOMMENDED BY MANUFACTURER FOR LONG-LINE OR BURIED LINE APPLICATIONS.

NOTE:
(1): ROUTE CONDENSATE TO DRYWELL.
(2): UNIT MOUNTED DISCONNECT
(3): PROVIDE WALL MOUNTED HONYWELL 5000 THERMOSTAT.
(4): AMERICAN STANDARD AND CARRIER ONLY ACCEPTABLE ALTERNATE EQUIPMENT PROVIDERS.
(5): PROVIDE 1" FILTER.

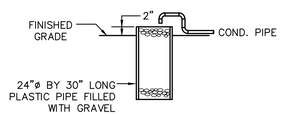
EQUIPMENT SCHEDULE – FAN

APPROVED MANUFACTURER		LOREN COOK	GREENHECK
EQUIPMENT NUMBER		EF-1	EF-2
MOUNTING TYPE		WALL	WALL
FAN	TYPE	AXIAL	CENTRIFUGAL
	DRIVE	DIRECT	BELT
	RPM	3400	895
	CFM	100	130
	S.P.	.25	.25
MOTOR	HP	54 WATTS	.11
	VOLTS/PHASE	120V/1ø	120V/1ø
MODEL NUMBER		CBF	CUBE-100-4
ACCESSORIES/REMARK		(2)(3)(4)(5)	(1)(2)(4)(6)

NOTE:
(1): EXPLOSION PROOF.
(2): BACK DRAFT DAMPER
(3): SPEED CONTROLLER
(4): UNIT MOUNTED DISCONNECT
(5): INTERLOCK WITH LIGHT SWITCH
(6): FAN TO RUN 24/7. PROVIDE WALL MOUNTED OVERRIDE SWITCH



DETAIL – PAD MOUNTED CONDENSER
N.T.S



DETAIL – DRY WELL
N.T.S.

EQUIPMENT SCHEDULE – DIFFUSERS, GRILLES & REGISTERS

NOTES: SEE ARCH. REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING DIFFUSERS. ALL FLEXIBLE DUCT CONNECTIONS TO RECTANGULAR DUCT TO BE SPIN-INS WITH AIR SCOOP AND BALANCE DAMPER. NECK SIZE AS SHOWN ON THE DRAWINGS.

APPROVED MANUFACTURER: TITUS (EXCEPT AS NOTED *)

EQUIP. NO.	MOUNTING TYPE	MODEL NUMBER	ACCESSORIES/REMARKS
G-1	SURFACE (SUPPLY)	272	
G-2	SURFACE (RETURN)	25RL	

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ISSUED FOR DESIGN REVIEW

DATE

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NEW NORMANDY CONTROL HOUSE

HVAC SCHEDULES & DETAILS

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: M2.dwg
DRAWING SET: NM2023
DRAWING #: M1
SHEET #: 58 OF 61

HEATING, VENTILATING, AND AIR CONDITIONING SPECIFICATIONS

1. SCOPE: PROVIDE A COMPLETE HEATING, AND AIR CONDITIONING SYSTEM AS SHOWN ON DRAWINGS AND MEETING THE REQUIREMENTS OF APPLICABLE STATE AND LOCAL CODES. OBTAIN ALL PERMITS AND NECESSARY CERTIFICATES. PROVIDE AIR TEST AND BALANCE FOR ALL HVAC SYSTEMS AND CONTROL SYSTEM SUPPORT DURING TAB WORK.

2. GUARANTEE: PROVIDE ALL NEW MATERIALS AND EQUIPMENT, AND GUARANTEE SAME AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. PROVIDE ADDITIONAL 4 YEAR GUARANTEE ON COMPRESSORS.

3. VISIT THE SITE AND THOROUGHLY INSPECT CONDITIONS AFFECTING THE WORK BEFORE SUBMITTING BID. ASSUME RESPONSIBILITY FOR MEETING ALL EXISTING CONDITIONS INCLUDING ACCESS AND WORK SPACE LIMITATIONS.

4. SUBMIT SHOP DRAWINGS OR CATALOG DATA FOR THE ARCHITECT'S APPROVAL BEFORE PURCHASING OR INSTALLING THE FOLLOWING: SPLIT-SYSTEM COMPRESSOR/CONDENSER UNITS, AIR HANDLING UNITS, VAV DAMPERS, SELF-CONTAINED DEDICATED OUTSIDE AIR ROOFTOP A/C UNITS INCLUDING ROOF CURBS, COMPUTER ROOM A/C UNIT, GRILLES, DIFFUSERS AND REGISTERS, DUCT SHOP DRAWING (WHERE DIFFERENT FROM DESIGN DRAWING), EXHAUST FANS, INSULATION, AND CONTROL SYSTEMS.

5. PROVIDE FOUR (4) COMPLETE SETS OF A COMPILATION OF CATALOG DATA OF EACH MANUFACTURED ITEM OF EQUIPMENT USED IN THE MECHANICAL WORK. IN ADDITION TO THE CATALOG DATA, INSTALLATION, OPERATING AND MAINTENANCE DATA AND BILL OF MATERIALS FOR ALL OPERATING EQUIPMENT SHALL BE SUBMITTED. EACH OF THE FOUR SETS OF DATA SHALL BE BOUND IN LOOSE LEAF BINDERS AND SUBMITTED TO THE ARCHITECT BEFORE FINAL PAYMENT IS MADE.

6. MECHANICAL/ELECTRICAL COORDINATION: UNLESS SPECIFICALLY REQUIRED OTHERWISE, ELECTRICAL CONTRACTOR SHALL FURNISH, SET AND WIRE DISCONNECT DEVICES FOR AHU AND AC UNITS, AND SHALL PROVIDE ALL POWER WIRING. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL A/C CONTROL DEVICES AND CONTROL WIRING. FURNISH DETAILED INFORMATION TO THE ELECTRICAL CONTRACTOR ON POWER WIRING REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT ACTUALLY PURCHASED AS SOON AS PRACTICAL. THIS SHALL INCLUDE ALL DIAGRAMS AND INSTRUCTIONS NECESSARY FOR THE ELECTRICAL CONTRACTOR TO MAKE CONNECTIONS PROPERLY. IF EQUIPMENT ACTUALLY PURCHASED REQUIRES LARGER ELECTRICAL SERVICE THAN EQUIPMENT SCHEDULED, ARRANGE AND PAY FOR REQUIRED ELECTRICAL SERVICE CHANGE. PROVIDE ALL AIR CONDITIONING CONTROL DEVICES, INCLUDING THERMOSTATS, AND COMPLETE ALL CONTROL WIRING, INCLUDING FINAL CONNECTIONS. COORDINATE LOCATION OF EQUIPMENT, PIPING, AND DUCTWORK WITH ELECTRICAL CONTRACTOR, FIRE PROTECTION CONTRACTOR, AND PLUMBING CONTRACTOR TO MAINTAIN CLEARANCE FOR EQUIPMENT MAINTENANCE, PREVENT INTERFERENCE WITH DUCT AND PIPING RUNS, AND TO PREVENT DUCTS AND PIPING FROM BEING INSTALLED OVER ELECTRICAL PANELS. IF INTERFERENCE DEVELOPS, THE ARCHITECT WILL DECIDE WHICH EQUIPMENT, CONDUIT, DUCT, PIPING, ETC., MUST BE RELOCATED REGARDLESS OF INSTALLATION ORDER. TAKE RESPONSIBILITY FOR RELOCATING MECHANICAL WORK, IF SO ORDERED, INCLUDING ALL ASSOCIATED COSTS. WITHIN 30 DAYS FOLLOWING AWARD OF THE CONTRACT, REPORT TO THE ARCHITECT IN WRITING, ALL REAL OR POTENTIAL ERRORS, AMBIGUITIES AND/OR CONFLICTS ON THE MECHANICAL WORK OR BETWEEN THE TRADES AND OBTAIN AN AGREEMENT WITH THE ARCHITECT ON A SOLUTION. THOSE REPORTED AFTER 30 DAYS, EXCEPT AS A RESULT OF UNFORESEEN CIRCUMSTANCES, SHALL BE RESOLVED AT THE DISCRETION OF THE ARCHITECT. REPORT CONFLICTS RESULTING FROM THE PROGRESS OF WORK TO THE ARCHITECT IMMEDIATELY OR ACCEPT THE EXPENSE FOR CORRECTIVE WORK CAUSED BY FAILURE TO REPORT SUCH A CONFLICT.

7. SPLIT SYSTEM HEAT PUMPS AND COMPRESSOR/CONDENSER UNITS – SINGLE SPEED
   A. CAPACITY SHALL BE AS SCHEDULED ON THE DRAWINGS AND ADJUSTED FOR LINE LOSSES OF REFRIGERANT PIPING. CAPACITY SHALL BE COMBINED RATING AT ACTUAL CONDITIONS ENTERING THE EVAPORATOR AND 95 DEGREES F OUTDOOR AMBIENT TEMPERATURE.
   B. UNIT SHALL HAVE ALL OPERATING COMPONENTS ASSEMBLED ON ONE COMMON BASE. THESE SHALL INCLUDE: COMPRESSOR, CONDENSER COIL, CONDENSER FAN AND MOTOR, CHARGING VALVES, ALL CONTROLS, AND A HOLDING CHARGE OF REFRIGERANT. UNITS SHALL BE DESIGNED FOR OUTDOOR INSTALLATION WITH ALL EXTERIOR SURFACES FACTORY PAINTED WITH PRIMER AND ENAMEL FOR WEATHER PROTECTION. DRAIN HOLES SHALL BE PROVIDED FOR ELIMINATION OF RAIN. PROVIDE REMOVABLE PANELS FOR ACCESS TO COMPONENTS.
   C. CONDENSER COIL SHALL BE OF THE CONTINUOUS *ALUMINUM *COPPER [OPTION ON UNITS > 5 TONS] PLATE FIN AND COPPER TUBE TYPE AND SHALL BE CIRCUITED FOR INTEGRAL SUB-COOLER. THE COIL SHALL BE TESTED WITH REFRIGERANT AND SEALED WITH A HOLDING CHARGE OF REFRIGERANT.
   D. COMPRESSOR SHALL BE MOUNTED ON VIBRATION ISOLATORS.
   E. REFRIGERATION CIRCUIT COMPONENTS SHALL INCLUDE LIQUID LINE SERVICE VALVE, SUCTION LINE SERVICE VALVE, AND FULL CHARGE OF COMPRESSOR OIL AND HOLDING CHARGE OF REFRIGERANT.
   F. UNITS SHALL BE PROVIDED WITH CONTROLS SPECIFIED ON THE DRAWINGS AND ALL STANDARD CONTROLS INCLUDING THE FOLLOWING EVEN IF NOT CONSIDERED STANDARD:
      1. SINGLE POINT POWER CONNECTION.
      2. COMPRESSOR AND FAN CONTACTORS.
      3. MOTOR OVERLOAD PROTECTION FOR UNGROUNDED LEGS.
      4. HIGH PRESSURE CUT-OUT.
      5. AUTO RESET LOW-PRESSURE SWITCH TO STOP COMPRESSOR IF REFRIGERANT PRESSURE DROPS BELOW 7 PSIG.
      6. COMPRESSOR ANTI-CYCLING RELAYS SET BETWEEN 3 AND 5 MINUTES.
      7. LOW-AMBIENT CONTROLLER DOWN TO 30° F. FOR WINTER OPERATION.
      8. EVAPORATOR FREEZE THERMOSTAT TO STOP UNIT OPERATION IF EVAPORATOR REACHES FREEZE-UP CONDITIONS.
      9. INDOOR TIME DELAY RELAY TO CONTINUE INDOOR BLOWER MOTOR AFTER COMPRESSOR CYCLES OFF.
      10. REFRIGERANT FILTER DRYER (TWO-WAY FOR HEAT PUMPS).
      11. THERMOSTATIC EXPANSION VALVE KIT.
   G. APPROVED MANUFACTURERS: CARRIER AND AMERICAN STANDARD.
8. AIR HANDLING UNITS
   A. AIR HANDLING UNITS SHALL BE DRAW THROUGH TYPE WITH 1" THICK, STANDARD SIZE, DISPOSABLE TYPE FILTERS AND SHALL HAVE DX COOLING COILS AND ELECTRIC HEATING COILS AS SCHEDULED ON DRAWINGS WITH MINIMUM UNIT CAPACITIES AS INDICATED.
   B. FAN CAPACITIES SHALL BE AS SCHEDULED ON DRAWINGS. FANS SHALL BE DIRECT DRIVE WITH TWO OR THREE SPEED MOTORS OR BELT DRIVE AS SCHEDULED. FANS AND MOTORS SHALL BE MOUNTED ON VIBRATION ISOLATORS.
   C. CASING SHALL BE CONSTRUCTED OF HEAVY DUTY, FACTORY PAINTED, GALVANIZED SHEET STEEL ADEQUATELY REINFORCED WITH STRUCTURAL MEMBERS. UNITS SHALL INCLUDE PLASTIC DRAIN PAN, WITH AT LEAST 1" THICK INSULATION, EXTENDING UNDER COIL AND FAN SECTIONS WITH BRASS DRAIN CONNECTION. REMOVABLE PANELS IN FRONT OF UNIT SHALL PROVIDE ACCESS TO ALL INTERNAL PARTS. UNITS SHALL HAVE FILTER ACCESS PANEL AND FILTER RACK. ALL UNIT PANELS SHALL BE INTERNALLY INSULATED TO MEET REQUIREMENTS OF THE FLORIDA ENERGY CODE. ALL INSULATING MATERIALS SHALL MEET THE REQUIREMENTS OF NFPA 90-A. UNITS SHALL BE EQUIPPED WITH DUCT COLLARS ON INTAKE AND DISCHARGE OF UNIT AND SINGLE POINT POWER CONNECTION.
   D. DIRECT EXPANSION COOLING COILS SHALL BE OF THE CONTINUOUS ALUMINUM PLATE FIN AND COPPER TUBE TYPE AND SHALL HAVE AN EQUALIZING TYPE DISTRIBUTOR. THE COIL SHALL BE TESTED WITH REFRIGERANT AND SEALED WITH A HOLDING CHARGE OF NITROGEN AT 10 PSIG.
   E. ELECTRIC HEATING COIL SHALL BE FACTORY INSTALLED AND PROTECTED WITH AIR FLOW SWITCH. HEATERS OVER 10 KW SHALL HAVE HEATING ELEMENTS SEQUENCED ON AND OFF IN AT LEAST TWO STAGES AND SHALL BE WIRED FOR MULTIPLE STAGE OPERATION. ALL HEATERS SHALL BE EQUIPPED WITH MANUAL RESET THERMAL OVERLOAD DEVICE, CURRENT OVERLOAD FOR HEATERS ABOVE 10 KW AND REQUIRED HEATING AND COOLING SYSTEM CONTROLS INCLUDING 60 VA CONTROL CIRCUIT (24 V) TRANSFORMER. LOW-VOLTAGE CONNECTIONS SHALL BE POINT-TO-POINT ON TERMINAL BOARD.
   F. UNIT CONTROLS SHALL INCLUDE BUT NOT BE LIMITED TO SOLID-STATE INTERLOCK CONTROL BOARD, CONTROL TRANSFORMER, AND EVAPORATOR FREEZE THERMOSTAT.
   G. APPROVED MANUFACTURERS: CARRIER AND AMERICAN STANDARD.

9. REFRIGERANT PIPING: INSTALL AND INSULATE ALL REFRIGERANT PIPING IN ACCORDANCE WITH A/C EQUIPMENT MFG. RECOMMENDATIONS FOR MINIMUM LOSS, OIL RETURN AND SERVICE REQUIREMENTS. PROVIDE LIQUID LINE FILTER/DRYER AND MOISTURE INDICATOR SIGHT GLASS ON CONDENSING UNIT. PIPING MATERIALS SHALL BE TYPE "L" HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS, REFRIGERANT GRADE. TRAP ALL SUCTION RISERS FOR PROPER OIL RETURN. AFTER COMPLETION OF THE ENTIRE SYSTEM AND BEFORE ANY PIPE IS COVERED, TEST THE ENTIRE REFRIGERANT CIRCUIT (LOW SIDE AT 150 PSIG AND HIGH SIDE AT 300 PSIG) TO ASSURE SYSTEM TIGHTNESS. REMAKE LEAKING JOINTS AND RETEST. AFTER COMPLETION OF TESTING, EVACUATE AND CHARGE THE SYSTEM UTILIZING UNIT MFG. APPROVED PROCEDURE.

10. CONDENSATE DRAIN PIPING: PROVIDE COPPER CONDENSATE PIPING OUTSIDE BUILDING AND PVC CONDENSATE PIPING INSIDE BUILDING. RUN PIPING AS NOTED ON DRAWING. PROVIDE A VALVE, FEMALE HOSE CONNECTION WITH HOSE THREAD CAP AND RUBBER WASHER, AND 4" DEEP TRAP TO PREVENT BACK SUCTION INTO THE AIR UNIT AS DETAILED ON DRAWINGS.

11. DUCT WORK: HVAC DUCT WORK SHALL BE GALVANIZED SHEET STEEL. FABRICATE SHEET METAL DUCT WORK IN ACCORDANCE WITH LATEST EDITION OF "HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE" AS PUBLISHED BY SMACNA AND DESIGNED FOR 1-1/2" W.G. MINIMUM STATIC PRESSURE. HVAC SUPPLY AND RETURN DUCT CHANGES IN DIRECTION, INCLUDING TEES, SHALL BE MADE WITH MITERED ELBOWS FITTED WITH CLOSELY SPACED TURNING VANES DESIGNED FOR MAINTAINING CONSTANT VELOCITY THROUGH ELBOW. CHANGES IN DIRECTION IN RETURN DUCTS MAY BE MADE WITH RADIUS ELBOWS INSTEAD OF MITERED ELBOWS AND TURNING VANES.

12. PIPE INSULATION: REFRIGERANT SUCTION PIPING SHALL BE 3/4" THICK, PRE-FORMED, FLAME-RETARDANT, NITRILE RUBBER BASED ELASTOMERIC INSULATION SIMILAR TO ARMSTRONG FR ARMAFLEX, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COVER PIPE INSULATION LOCATED OUTSIDE BUILDING WITH BANDED ALUMINUM JACKETS. INSTALL AND SECURE ALUMINUM JACKETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COPPER OR PVC USED FOR PRIMARY OR SECONDARY CONDENSATE PIPING LOCATED INSIDE BUILDING ABOVE CEILINGS SHALL BE INSULATED WITH 1/2", PRE-FORMED, FLAME-RETARDANT, ELASTOMERIC, POLYETHYLENE, PIPE INSULATION SIMILAR TO IMCOA IMOLOCK AND ARMSTRONG ARMAFLEX, OR, IN DRY LOCATIONS, 1/2" THICK 3.5 POUND DENSITY MOLDED FIBERGLASS WITH ALL-PURPOSE, HIGH DENSITY, WHITE KRAFT BONDED TO ALUMINUM FOIL, REINFORCED WITH FIBERGLASS YARN JACKET. INSTALL PIPE INSULATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

13. FLAMMABILITY: ALL INSULATION MATERIALS AND COATINGS SHALL MEET FLAME SPREAD AND SMOKE DEVELOPED RATINGS PER NFPA BULLETIN 90-A WHEN TESTED IN ACCORDANCE WITH ASTM STANDARD E84. SMOKE DEVELOPED LESS THAN OR EQUAL TO 50, AND FLAME SPREAD LESS THAN OR EQUAL TO 25. ALL COATINGS AND MASTICS SHALL BE NONFLAMMABLE IN THE WET STATE.

14. SUPPORTS FOR VERTICAL AIR HANDLING UNITS SHALL BE FABRICATED FROM GALVANIZED STEEL ANGLES DESIGNED TO SUPPORT THE UNIT. ANGLES SHALL BE AT LEAST 1/4" THICK. SUPPORTS SHALL BE DESIGNED TO ALLOW CLEARANCE FOR RETURN AIR DUCTS OR PLENUM. PROVIDE CLASS 1 UL-191 FLEXIBLE CONNECTIONS BETWEEN DUCTWORK AND AIR HANDLING UNITS.

15. AIR DISTRIBUTION EQUIPMENT: AIR DISTRIBUTION DEVICES SHALL BE SELECTED TO DELIVER INDICATED VOLUME OF SUPPLY AIR WITHOUT EXCEEDING THE AVAILABLE THROW AND WITH AN NC RATING NOT EXCEEDING 30, INCLUDING HALF OPEN DAMPER. SUBMITTAL DATA SHALL INDICATE PERFORMANCE OF SELECTED DEVICES INCLUDING AIR QUANTITY, PATTERN, THROW, PRESSURE DROP, SOUND LEVEL, FINISH, DIMENSIONS AND CONSTRUCTION. SUPPLY DIFFUSERS AND RETURN GRILLS SHALL BE AS SCHEDULED ON DRAWINGS AND SHALL HAVE BAKED ENAMEL FINISH WITH COLOR SELECTED BY ARCHITECT.

16. EXHAUST FAN SHALL BE OF SIZE, TYPE AND CAPACITY INDICATED ON THE DRAWINGS. POWER SUPPLY SHALL BE AS SCHEDULED. THE COMPLETE UNITS SHALL BE APPROVED BY THE UNDERWRITERS' LABORATORIES AND BE IN FULL ACCORDANCE WITH ALL PROVISIONS OF THE NATIONAL ELECTRIC CODE.

17. LEAVE ALL SYSTEMS COMPLETELY OPERATIVE IN ALL DETAILS AND IN SATISFACTORY WORKING CONDITION, AS DETERMINED BY THE ARCHITECT. FURNISH AND INSTALL AS PART OF THIS CONTRACT ALL APPARATUS AND MATERIAL OBVIOUSLY A PART OF THE SYSTEMS AND NECESSARY FOR THEIR OPERATION.

18. EQUIPMENT IDENTIFICATION: PROVIDE IDENTIFICATION NAMEPLATES ON ALL MECHANICAL RELATED EQUIPMENT INCLUDING CONTROL DEVICES, GIVING THE NAME AND NUMBER OF THE ITEM OF EQUIPMENT TO WHICH IT IS CONNECTED.

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NEW NORMANDY CONTROL HOUSE

HVAC SPECIFICATIONS

NORMANDY SUBSTATION

SCALE: AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

PROJ #: 8007704

DRAWING NAME: M3.dwg
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SHEET #: 59 OF 61

PLUMBING SPECIFICATIONS

1. COMPLY WITH ALL CODES APPLYING TO THE WORK OF THIS CONTRACT INCLUDING FLORIDA BUILDING CODE 2020, FLORIDA BUILDING CODE 2020 – MECHANICAL, AND FLORIDA BUILDING CODE 2020 – PLUMBING. OBTAIN INFORMATION ON ALL CODE RESTRICTIONS AND REQUIREMENTS. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, SUCH CONFLICT SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION. EXTRA PAYMENT WILL NOT BE ALLOWED FOR WORK REQUIRED BY CODE RESTRICTIONS EXCEPT THROUGH WRITTEN AGREEMENT WITH THE OWNER.

2. SCOPE: PROVIDE A COMPLETE PLUMBING SYSTEM AS SHOWN ON DRAWINGS AND MEETING REQUIREMENTS OF APPLICABLE STATE AND LOCAL CODES. OBTAIN ALL REQUIRED PERMITS AND CERTIFICATES.

3. GUARANTEE: PROVIDE ALL NEW MATERIALS AND EQUIPMENT, AND GUARANTEE SAME AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. AS FAR AS PRACTICAL, SIMILAR PRODUCTS SHALL BE BY ONE MFG.

4. ALL PRODUCTS DESIGNED FOR DISPENSING POTABLE WATER MUST MEET BOTH THE NSF 61 AND NSF 372 TEST STANDARDS VIA THIRD-PART TESTING AND CERTIFICATION.

5. FIXTURES: PLUMBING FIXTURES SHALL BE AS SCHEDULED ON THE DRAWINGS, APPROVED MANUFACTURERS ARE AMERICAN STANDARD, BRADLEY, CHICAGO, CRANE, DELTA, ELKAY, KOHLER. WATER COOLERS SHALL BE AS SCHEDULED ON DRAWINGS, APPROVED MANUFACTURERS ARE OASIS, ELKAY, HALSEY TAYLOR. FIXTURE TRIM AND FITTINGS SHALL BE C.P. BRASS INCLUDING PIPING SERVING FIXTURES EXPOSED BEYOND FACE OF FINISHED WALL. PROVIDE STOPS IN WATER SUPPLIES TO EACH AND EVERY FIXTURE. FIXTURE MOUNTING HEIGHT SHALL BE AS SHOWN ON THE ARCH. DRAWINGS.

6. SANITARY WASTE PIPING: SOIL, WASTE AND VENT PIPING SHALL BE SOLID WALL DWV POLYVINYL CHLORIDE (PVC), SCHEDULE 40, SOLVENT WELD JOINTS. EXPOSED SANITARY PIPING UNDER LAVATORIES SHALL BE CHROME PLATED COPPER/BRASS. SUPPORT ALL SOIL AND VENT STACKS AT BASE. PROVIDE CLEANOUTS AS REQUIRED BY CODE. USE SCREW TYPE CLEANOUTS FOR PIPING CONCEALED IN WALL WITH CHROMIUM PLATED BRONZE COVER PLATES. PITCH ALL 2 1/2" AND SMALLER DRAIN PIPING AT LEAST 1/4" PER FOOT AND 3" AND LARGER DRAIN PIPING AT LEAST 1/8" PER FOOT UNLESS OTHERWISE NOTED.

7. WATER SUPPLY PIPING: HOT AND COLD WATER SUPPLY PIPING SHALL BE CHLORINATED POLYVINYL CHLORIDE (CPVC), SOLVENT WELD JOINTS, SUITABLE FOR USE AT MINIMUM WORKING PRESSURE OF 160 PSI AT 73 DEG. F. AND 100 PSI AT 180 DEG. F. EXPOSED HOT OR COLD WATER PIPING UNDER LAVATORIES, AND CONNECTIONS TO WATER CLOSETS AND URINALS SHALL BE CHROME PLATED COPPER/BRASS. PIPING SERVING WATER CLOSETS SHALL MAKE TRANSITION FROM THE WATER RISER(S) WITHIN CHASES/WALLS FROM CPVC TO COPPER. PIPES 1/2" THRU 2" SHALL BE CPVC-CT (COPPER PIPE SIZE) MEETING TEST REQUIREMENTS OF SDR 11. WATER HAMMER ARRESTERS SHALL BE BELLOWS OR PISTON TYPE SIZED PER MFG. RECOMMENDATIONS. VALVES SHALL BE LINE SIZE UNLESS SPECIFICALLY SHOWN OTHERWISE. ALL EQUIPMENT SERVICE VALVES AND ALL SHUT-OFF VALVES 2" AND SMALLER SHALL BE BRONZE BODY FULL PORT BALL VALVES WITH STAINLESS STEEL BALL AND NYLON SEAT. INSTALL BALL VALVES UPSTREAM OF ALL EQUIPMENT CONNECTIONS AND WHERE SHOWN ON DRAWINGS. PROVIDE UNIONS AT EACH THREADED VALVE, FIXTURE OR APPARATUS TO FACILITATE REMOVAL.

8. INSULATION: PIPING INSULATION SHALL BE PRE-FORMED, FLAME-RETARDANT, ELASTOMERIC, POLYETHYLENE, PIPE INSULATION SIMILAR TO AP ARMAFLEX, AP ARMAFLEX SS, IMCOA IMOLOCK OR NOMACO NOMALOCK, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PRE-FORMED OWENS-CORNING 3.5 POUND DENSITY FIBERGLASS PIPE INSULATION WITH ALL SERVICE JACKET AND SELF-SEALING LAP WILL BE APPROVED FOR PIPE INSTALLED IN DRY LOCATIONS. INSULATION THICKNESSES SHALL BE AS FOLLOWS: INSULATE COLD WATER PIPING WITH 1/2" THICK PIPE INSULATION PER MANUFACTURERS' RECOMMENDATIONS. INSULATE HOT WATER PIPING WITH 1" THICK PIPE INSULATION PER MANUFACTURERS' RECOMMENDATIONS. INSULATE ALL OTHER PVC/CPVC PIPING LOCATED IN SUPPLY OR RETURN AIR PLENUMS WITH MINIMUM 1/2" THICK PIPE INSULATION. INSULATION SHALL MEET ALL STATE AND LOCAL REQUIREMENTS FOR PLENUM USE. AT ALL EXPOSED PIPING UNDER HANDICAPPED SINKS, PROVIDE PRE MOLDED VINYL INSULATION. INSULATION SHALL BE "HANDI LAV-GUARD" INSULATION KITS AS MANUFACTURED BY TRUEBRO INC. OR APPROVED EQUAL. TRUEBRO INC. PHONE NO. IS (203) 875-2868. ALL INSULATION MATERIALS SHALL MEET FLAME SPREAD AND SMOKE DEVELOPED RATINGS PER NFPA BULLETIN 90-A WHEN TESTED IN ACCORDANCE WITH ASTM STANDARD E 84. SMOKE DEVELOPED LESS THAN OR EQUAL TO 50, AND FLAME SPREAD LESS THAN OR EQUAL TO 25.

9. PIPE HANGERS: PIPE HANGERS SHALL BE GALVANIZED STEEL CLEVIS HANGERS SELECTED WITHIN THE MANUFACTURER'S PUBLISHED LOAD RATINGS AND SHALL BE AUTO-GRIP, FEE AND MASON, OR GRINNEL. HANGERS FOR COPPER PIPE SHALL BE EITHER COPPER-PLATED TYPE OR THERE SHALL BE A SHIELD OF 4 POUNDS SHEET LEAD TO COMPLETELY SURROUND THE PIPE TO PREVENT DIRECT CONTACT WITH THE HANGER. SUPPORTS FOR PIPES WITH VAPOR BARRIER TYPE COVERING SHALL NOT CONTACT THE PIPE BUT SHALL SURROUND THE UNBROKEN COVERING. PROVIDE GALVANIZED STEEL SHIELDS WITH MITERED CORNERS PROPERLY FORMED TO THE JACKET OUTSIDE DIAMETER BETWEEN HANGER CLEVISES AND THE LOWER 1/3 OF THE CIRCUMFERENCE.

10. PIPE SLEEVES: PROVIDE PIPE SLEEVES OR CORE BORE FOR ALL PIPES PASSING THROUGH CONCRETE OR MASONRY WALLS. SLEEVES THROUGH FLOOR SLABS OR FIRE WALLS SHALL BE GALVANIZED STEEL PIPE OF PROPER SIZE. FILL ALL SPACES BETWEEN PIPING AND SLEEVES PASSING THROUGH FIRE-RATED WALLS, FLOORS, OR CEILINGS WITH MATERIAL CAPABLE OF MAINTAINING THE FIRE-RESISTANCE RATING OF THE WALL, FLOOR OR CEILING. USE METACAULK 950GW-1 OR APPROVED EQUAL CAULKING MATERIAL FOR PVC AND CPVC PIPING.

11. ESCUTCHEONS: PROVIDE ESCUTCHEONS ON ALL FINISHED SURFACES WHERE PIPING PENETRATE. FASTEN SECURELY TO PIPE OR PIPE COVERING.

12. CONTROLS: PROVIDE ALL PRESSURE CONTROLS, TEMPERING VALVES, AQUASTATS, TEMPERATURE AND PRESSURE RELIEF VALVES AND CONTROL VALVES NECESSARY FOR THE OPERATION OR ADJUSTMENT OF EQUIPMENT AND NOT SUPPLIED AS PART OF THE EQUIPMENT. INSTALL ALL HIGH VOLTAGE (120 V OR ABOVE) CONTROL WIRING IN EMT CONDUIT. INSTALL LOW VOLTAGE CONTROL WIRING IN CONDUIT UNLESS CONCEALED IN WALLS OR ABOVE FINISHED CEILINGS. DO NOT RUN LOW VOLTAGE CONTROL WIRING IN THE SAME CONDUIT AS HIGH VOLTAGE CONTROL OR POWER WIRING.

13. TESTING: ALL DRAINAGE, VENT AND INSIDE CONDUCTOR PIPING SHALL BE TESTED BEFORE FIXTURES ARE INSTALLED BY CAPPING OR PLUGGING THE OPENINGS AND FILLING THE ENTIRE SYSTEM WITH WATER, ALLOWING IT TO STAND THUS FILLED FOR 24 HOURS WITH AT LEAST 10 FEET OF PRESSURE. IF REQUIRED TO TEST SYSTEM IN SECTIONS, PROVIDE NECESSARY TEST TEES, PLUGS AND STAND PIPE TO TEST THE SYSTEM WITH AT LEAST 10 FEET OF PRESSURE. REMAKE ALL LEAKING JOINTS AND RETEST. TEST ALL WATER SUPPLY PIPING BEFORE FIXTURES, EQUIPMENT AND/OR HYDRANTS ARE CONNECTED. CAP OR PLUG THE OPENINGS, FILL THE SYSTEM WITH WATER AND APPLY A HYDROSTATIC PRESSURE OF 1.5 TIMES THE OPERATING PRESSURE OR 125 PSIG, WHICH EVER IS HIGHER. HOLD TEST PRESSURES FOR AT LEAST 24 HOURS. REMAKE ALL LEAKING JOINTS AND RETEST UNTIL SYSTEMS PROVE TIGHT. THESE TESTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY GOVERNING AUTHORITY. TEST EACH FIXTURE FOR SOUNDNESS, STABILITY OF SUPPORT, AND SATISFACTORY OPERATION OF ALL ITS PARTS.

14. DISINFECTION OF POTABLE WATER PIPING: DISINFECT ANY PART OF POTABLE WATER SYSTEM INSTALLED OR REPAIRED IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS BEFORE IT IS PLACED IN SERVICE:

AFTER TESTS ARE COMPLETED, FILL ALL WATER SUPPLY SYSTEMS WITH A SOLUTION CONTAINING 50 PPM OF AVAILABLE CHLORINE AND ALLOW TO STAND FOR A PERIOD OF AT LEAST 24 HOURS BEFORE BEING FLUSHED WITH CLEAN WATER. DELIVER A DATED LETTER CERTIFYING STERILIZATION TO THE ARCHITECT.

AFTER TESTS ARE COMPLETED, FILL ALL WATER SUPPLY SYSTEMS WITH A SOLUTION CONTAINING 200 PPM OF AVAILABLE CHLORINE AND ALLOW TO STAND FOR A PERIOD OF AT LEAST 3 HOURS BEFORE BEING FLUSHED WITH CLEAN WATER. DELIVER A DATED LETTER CERTIFYING STERILIZATION TO THE ARCHITECT.

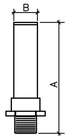
15. CLEANING AND RUBBISH: DURING THE WORK, KEEP THE PREMISES CLEAR OF RUBBISH CREATED AS A RESULT OF THE WORK. PROTECT AND PREVENT UNNECESSARY INDUCTION OF DIRT INTO PIPING, FIXTURES AND EQUIPMENT. ON COMPLETION OF THE WORK, REMOVE ALL RUBBISH AND DEBRIS RESULTING FROM THE WORK AND DISPOSE OF SAME. THOROUGHLY CLEAN AND LEAVE IN A SATISFACTORY CONDITION FOR USE OF ALL EQUIPMENT, PIPE, FIXTURES, ETC.

LEGEND

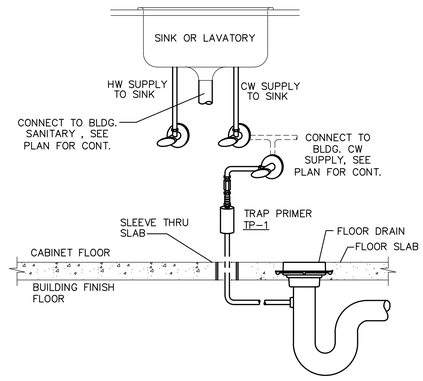
	FLOOR DRAIN		PIPE RISERS (DROP)
	FLOOR CLEANOUT		PIPE RISERS (UP)
	WALL CLEANOUT		PIPE END (CAPPED)
	TRAPPED DRAIN	S	SANITARY SEWER LINE
	TRAP	V	VENT LINE
INV. EL.	INVERT ELEVATION	VTR	VENT THRU ROOF
	COLD WATER		HOT WATER
	UNION		WALL HYDRANT
	BALL VALVE (EXCEPT OTHERWISE NOTED)	S.A.	SHOCK ABSORBER
	VALVE (NORMAL CLOSE)	A.P.	ACCESS PANEL
	PRESSURE RELIEF VALVE		CHECK VALVE
	DOUBLE COMBINATION WYE		VERTICAL MOUNT DOUBLE COMBINATION WYE (TYP. FOR DETAIL).

MODEL	PDI SIZE	MIPS THREAD	DIMENSIONS (APPROXIMATE) A	DIMENSIONS (APPROXIMATE) B	AIR CHAMBER VOLUME	FIXTURE UNIT CAPACITY
		in.	in.	in.	cubic in.	
1250XL-A	A	1/2	5 1/4	1 1/8	3.5	1-11
1250XL-B	B	3/4	5 5/8	1 5/8	4.3	12-32
1250XL-C	C	1	7 1/2	1 5/8	6.5	33-60
1250XL-D	D	1	9 5/16	1 3/4	10.0	61-113
1250XL-E	E	1	10 1/4	2 1/2	22.4	114-154
1250XL-F	F	1	10 7/8	2 7/8	34.4	155-330

NOTES:
1. "PDI" REFERS TO THE PLUMBING AND DRAINAGE INSTITUTE.
2. MODEL NUMBERS, DIMENSIONS AND ASSOCIATED CAPACITIES INDICATED IN THIS DETAIL WERE DERIVED FROM ZURN/WILKINS WATER HAMMER ARRESTERS PRODUCT LINE.
3. WATER HAMMER ARRESTERS ARE REQUIRED TO BE "LEAD-FREE" AND SHALL MEET THE REQUIREMENTS OF BOTH NSF 61 AND NSF 372.



WATER HAMMER ARESTOR
NOT TO SCALE



DETAIL – TRAP PRIMER TO FLOOR DRAIN
NOT TO SCALE

PLUMBING EQUIPMENT SCHEDULE

F-1
WHITE VITREOUS CHINA FLOOR MOUNTED, TANK TYPE, SIPHON JET WATER CLOSET WITH ELONGATED BOWL, 17" HIGH RIM FOR HANDICAPPED USE; AMERICAN STANDARD "CADET 3" MODEL 270BA.001 WITH COMMERCIAL GRADE SEAT MODEL 5320.110, CHROME PLATED LOOSE T-KEY STOP AND SUPPLY. PROVIDE LEFT HAND TRIP LEVER AS REQUIRED TO MEET A.D.A. REQUIREMENTS.
F-2
WHITE VITREOUS CHINA WALL HUNG LAVATORY FOR HANDICAPPED. AMERICAN STANDARD "LUCERNE" MODEL 0356.041 WITH CHICAGO 333-665PSHABCP SINGLE HANDLE DECK MOUNTED COLD WATER ONLY FAUCET, OFFSET GRID DRAIN, P-TRAP, BRASSCRAFT KT SERIES 1/4 TURN BALL STOP VALVE, WALL SUPPLIES AND HEAVY DUTY CHAIR CARRIER. INSTALL FIXTURE AND INSULATE SUPPLY AND DRAIN LINES TO COMPLY WITH A.D.A. REQUIREMENTS.
F-3
COMBINATION DRENCH SHOWER AND EYE WASH UNIT WITH DURAJADE POWDER-COATED FINISH, STAINLESS STEEL SHOWER HEAD AND STAINLESS STEEL EYE WASH BOWL, SPEAKMAN MODEL SE-693-SSH.
CO-1
FLOOR CLEAN OUT, SIOUX CHIEF SERIES 834, NICKEL BRONZE, ABS THREADED BRASS INSERT, SCHEDULE 40 HUB CONNECTION.
CO-2
SAME AS CO-1 EXCEPT WITH 12" X 12" CONCRETE BASE AROUND CLEANOUT COVER.
HB-1
ANTI-SIPHON, FREEZEPROOF WALL HYDRANT IN LOCKABLE BOX, WOODFORD MODEL B65-CH WITH VACUUM BREAKER, CHROME FINISH, LOOSE KEY OPERATION.
FD-1
FLOOR DRAIN LIGHT DUTY, J. R. SMITH 2051C-P050-PB WITH POLISHED BRONZE 6" ROUND STRAINER AND RECTORSEAL SURE SEAL FOR P-TRAP SEAL PROTECTION.
TP-1
TRAP PRIMER, MIFAB MODEL MR-500. PROVIDE WITH MODEL MI-DU DISTRIBUTION UNIT AND ISOLATION VALVE. FOR ADDITIONAL INFORMATION, SEE DETAIL.

ALL FIXTURES AND TRIM SELECTIONS SUBJECT TO OWNER/ARCHITECT/INTERIOR DESIGNER FINAL APPROVAL. ALL FIXTURE COLOR AND TRIM FINISH SELECTIONS SUBJECT TO THE OWNER/ARCHITECT/INTERIOR DESIGNER FINAL APPROVAL.

PLUMBING GENERAL NOTES

1. SEE SPECIFICATION FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

2. COORDINATE HVAC EQUIPMENT AND DUCT LOCATION WITH HVAC CONTRACTOR. SEE MECH DWGs. FOR ADDITIONAL INFORMATION.

3. DO NOT INSTALL PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT. COORDINATE ELECTRICAL PANEL AND EQUIPMENT LOCATION WITH ELECTRICAL CONTRACTOR.

4. RUN ALL HORIZONTAL COLD & HOT WATER PIPING ABOVE CEILINGS UNLESS OTHERWISE NOTED.

5. EXTERIOR HOSE BIBS TO BE LOCATED 18" ABOVE GRADE UNLESS OTHERWISE NOTED.

6. INSTALL ALL WORK IN A NEAT AND WORKMANLIKE MANNER, USING ONLY WORKMEN THOROUGHLY QUALIFIED IN THE TRADE OR DUTIES THEY ARE TO PERFORM. ROUGH WORK WILL BE REJECTED.

7. MAINTAIN A MINIMUM 10' CLEARANCE BETWEEN HVAC EQUIPMENT FRESH AIR INTAKES AND SANITARY VENTS.

8. DOMESTIC WATER SHUT-OFF VALVES LOCATED ABOVE DRYWALL CEILINGS SHALL BE GROUPED TOGETHER TO PROVIDE ACCESS FROM SINGLE ACCESS PANELS IF POSSIBLE. PROVIDE WITH IDENTIFICATION TAG INDICATING AREAS THE VALVE CONTROLS.

9. UNLESS OTHERWISE DIRECTED, ALL DOMESTIC WATER SHALL BE LOCATED AS HIGH AS POSSIBLE, TIGHT TO BOTTOM OF STRUCTURE. UNLESS OTHERWISE DIRECTED, SANITARY AND VENT PIPING SHALL BE LOCATED AS HIGH AS POSSIBLE, TIGHT TO BOTTOM OF STRUCTURE, WITH MINIMUM SLOPE REQUIRED BY APPLICABLE CODE REQUIREMENTS.

10. COORDINATE ALL LATERAL CONNECTIONS WITH CIVIL ENGINEERING DRAWINGS, ANY CONFLICTS TO BE RESOLVED PRIOR TO START OF CONSTRUCTION.

11. CLEANOUTS ON 6" AND SMALLER PIPING SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18" FOR RODDING.

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REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW

ENGINEERING	
DATE	3/12/2024
BY	RMB
REVIEW	LRH
DRAFTING	
DATE	3/12/2024
BY	RMB
REVIEW	LRH

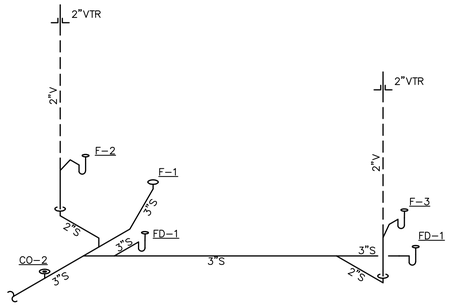
NEW NORMANDY CONTROL HOUSE

PLUMBING NOTES & SPECIFICATIONS

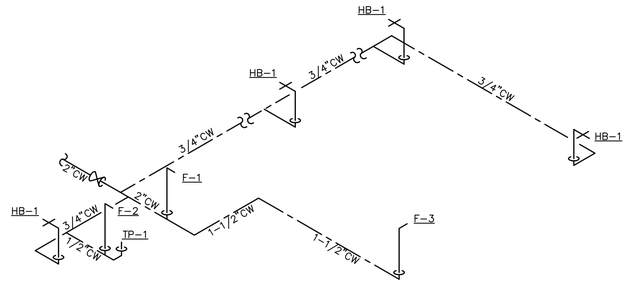
NORMANDY SUBSTATION

SCALE: AS SHOWN
SUBSTATION & TRANSMISSION ENGINEERING
PROJ #: 8007704

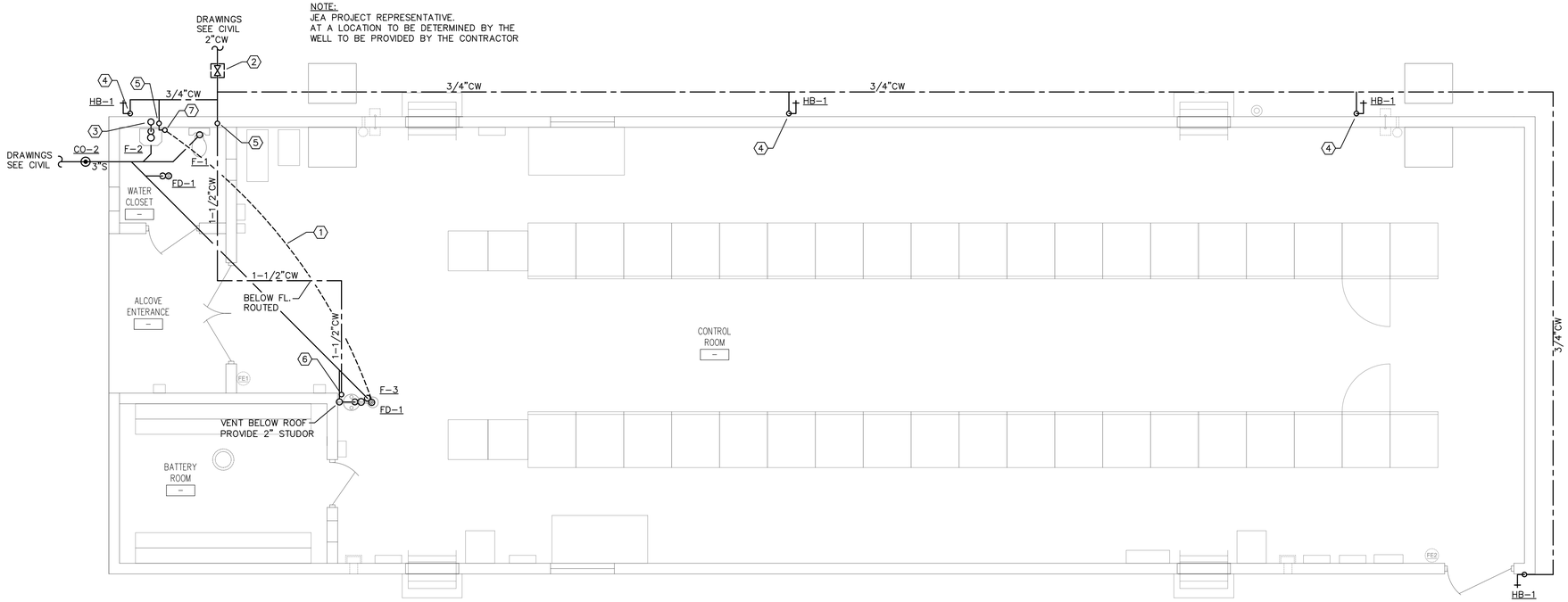
DRAWING NAME: P1.dwg
DRAWING SET: NM2023
DRAWING #: P1
SHEET #: 61 OF 62



SANITARY RISER DIAGRAM
SCALE: N.T.S.



DOMESTIC WATER RISER DIAGRAM
SCALE: N.T.S.



1. TRAP PRIMER SUPPLY TO FD-1.
2. 2" SHUT-OFF VALVE IN VALVE BOX BELOW GRADE.
3. 2" VENT UP TO 2" VTR.
4. 3/4" CW UP TO HB-1.
5. 1/2" CW UP TO FIXTURE.
6. 1-1/2" CW UP TO FIXTURE.
7. 1/2" CW UP TO TRAP PRIMER TP-1.

PLUMBING FLOOR PLAN
SCALE: 1/4" = 1'-0"

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1	05/15/23	22007	CONTRACTOR REQUESTED REVISION	RMB	

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DATE	3/12/2024
BY	RMB
REVIEW	LRH
DRAFTING	
DATE	3/12/2024
BY	RMB
REVIEW	LRH

NEW NORMANDY CONTROL HOUSE

PLUMBING FLOOR PLAN & RISER DIAGRAM

NORMANDY SUBSTATION

SCALE: AS SHOWN
SUBSTATION & TRANSMISSION ENGINEERING
PROJ #: 8007704

DRAWING NAME: P2.dwg
DRAWING SET: NM2023
DRAWING #: P2
SHEET #: 62 OF 62