



ROSELAND ELEVATED STORAGE TANK CONVERSION AND PUMP STATION

PREPARED FOR
INDIAN RIVER COUNTY

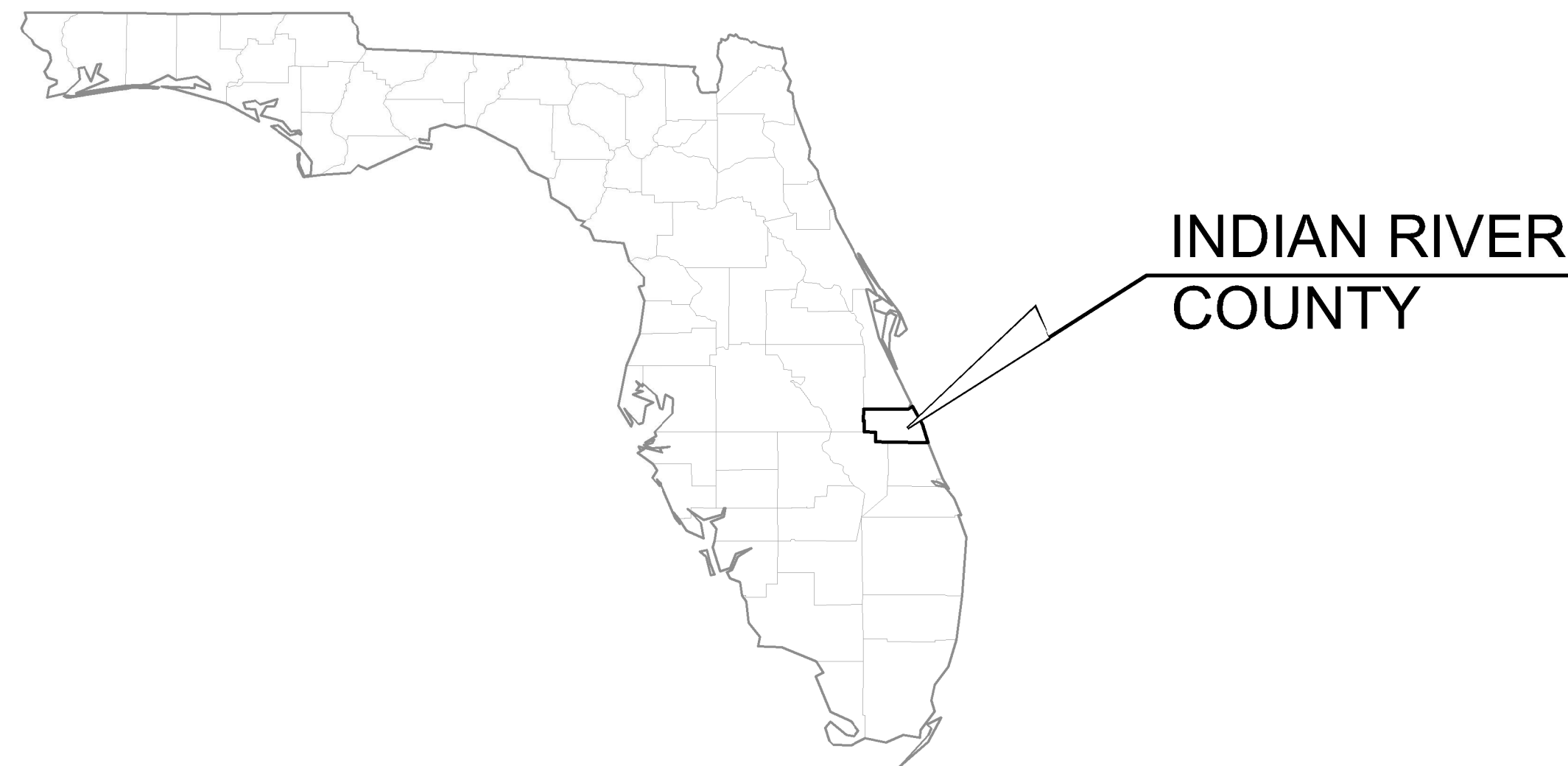
MARCH 2019

PROJECT NO. 044572041B
IRC BID No. 2019 _____

BOARD OF COUNTY COMMISSIONERS

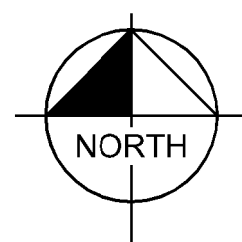
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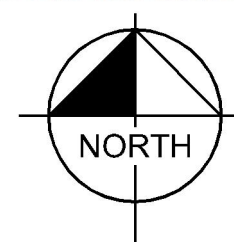
VICINITY MAP

N.T.S.



LOCATION MAP

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No.	REVISIONS	DATE	BY

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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND EST PUMP STATION
PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY FLORIDA

LICENSED PROFESSIONAL

MARK MILLER

FLORIDA LICENSE NUMBER
45320

DATE: _____

COVER SHEET

SHEET NUMBER

G-1

Plotted By: Tabow, Matt Sheet: Set: Roseland Layer: G-2 GENERAL AND STRUCTURAL NOTES March 09, 2019 12:04:03pm \\wvbf02\02\Drawings\Project\WEB_Civil\044572041 - Roseland_Tank_Conversion\CADD\plan_sheets\G-1_COVER_SHEET.dwg
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GENERAL NOTES:

- THE CONTRACTOR IS RESPONSIBLE TO CONTACT UTILITY COMPANIES TO IDENTIFY AND LOCATE ANY UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL ASSIST UTILITY COMPANIES IN THE EFFORTS TO FIELD VERIFY UNDERGROUND UTILITIES. IF CONFLICTS EXIST, THE CONTRACTOR SHALL FIELD ADJUST TO AVOID THE CONFLICT AND REQUEST APPROVAL FROM THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- CONTRACTOR TO FIELD VERIFY LOCATION OF ALL EXISTING SUBSURFACE AND SURFACE UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR TO COORDINATE WITH FPL TO PROTECT AND SHIELD POWER LINES DURING CONSTRUCTION.
- IN SITUATIONS WHERE DRAWINGS DO NOT CONTAIN DETAILS FOR SPECIFIC APPLICATIONS, CONTRACTOR SHALL REFER TO THE "INDIAN RIVER COUNTY WATER UTILITIES DEPARTMENT, MANUAL OF MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS, WATER AND SEWER SYSTEMS," LATEST EDITION.

STRUCTURAL GENERAL NOTES:

- CODES:
 -FLORIDA BUILDING CODE (2017)
 -OTHER STRUCTURES: ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
- DESIGN LOADS:
 -LIVE LOADS: SLAB ON GRADE (200 PSF)
 -WIND DESIGN DATA:
 -ULTIMATE DESIGN WIND SPEED, $V_{ULT} = 180$ MPH
 -NOMINAL DESIGN WIND SPEED, $V_{ASD} = 139$ MPH
 -RISK CATEGORY III/IV
 -WIND EXPOSURE CATEGORY C
- CONCRETE SLAB - SEE SPECIFICATION 03300
- ALL REINFORCING STEEL BARS - SEE SPECIFICATION 03200
- ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWING
- GENERAL CONDITIONS:
 ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ELECTRICAL AND SHOP DRAWINGS AND SPECIFICATIONS

 THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY, SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK

 FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, ELECTRICAL, HEATING AND VENTILATION DRAWINGS FOR TYPE, SIZE, LOCATION AND COORDINATE SPECIAL INSTALLATION REQUIREMENTS WITH THE EQUIPMENT SUPPLIERS AND PRE-ENGINEERED BUILDING FABRICATOR FOR THESE ITEMS. CONTRACTOR RESPONSIBLE FOR ALL FINAL LOCATIONS OF ALL EQUIPMENT PENETRATIONS PRIOR TO ALL CONCRETE PLACEMENTS.

 THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION AND OTHERS

 SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER AND PRE-ENGINEERED BUILDING SUPPLIER REQUIREMENTS

 ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES

 ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN

 STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN

REINFORCED CONCRETE GENERAL NOTES:

- SEE SPECIFICATION 03100 - CONCRETE FORMWORK, 03200 - CONCRETE REINFORCEMENT, 03300 CAST-IN-PLACE CONCRETE FOR MORE DETAILED REQUIREMENTS. IF CONFLICTS ARE OBSERVED, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- CONCRETE WORK SHALL CONFORM TO REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE STRUCTURES".
- WHEN THE AMBIENT TEMPERATURE EXCEEDS 77°F, THE CONTRACTOR SHALL MAKE SPECIAL PREPARATIONS TO ENSURE THAT THE CONCRETE WILL BE TRANSPORTED, PLACED, CONSOLIDATED, AND FINISHED AT THE FASTEST RATE POSSIBLE COMPATIBLE WITH OTHER REQUIREMENTS FOR GOOD CONSTRUCTION PRACTICE; AND SPECIAL MEANS SHALL BE TAKEN IN CONVEYING THE CONCRETE TO THE FORMWORKS, SO THAT LARGE SURFACE AREAS OF FRESH CONCRETE ARE NOT EXPOSED TO THE SUN AND HOT WINDS.
- SLABS.
 - CONCRETE SLABS ON GRADE SHALL BE PLACED SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE CONTRACT DRAWINGS. ADJUST SUBGRADE LEVELS TO ACCOUNT FOR SLOPED SLAB ON GRADE SURFACES.
 - IN CASE OF HIGH TEMPERATURES AND WIND, THE CONTRACTOR SHALL USE ADEQUATE PROTECTION AGAINST THE SUN AND WIND.
- THE TECHNICAL WORK SITE INSPECTOR SHALL KEEP A COMPREHENSIVE CONTROL OF ALL CONCRETE JOINTS. THE CONTRACTOR SHALL NOT INSTALL CONCRETE JOINTS WITHOUT THE APPROVAL OF THE TECHNICAL WORK SITE INSPECTOR.
- ALL CONCRETE JOINTS IN SLABS SHALL BE CUT PERPENDICULAR TO THE SLAB SURFACE.
- PLACING JOINTS WHERE CONCRETE CAN TAKE ITS NATURAL SLOPE IS NOT PERMITTED (NO DIAGONAL JOINTS ALLOWED).
- ALL CONCRETE JOINTS SHALL BE PREPARED ACCORDING TO THE FOLLOWING:
 - ALL SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED, SHALL BE CLEAN, SOLID AND FREE FROM LOOSE OR UNSOUND FRAGMENTS, OBJECTIONABLE COATINGS AND ANY OTHER SUBSTANCES OR DEBRIS. IT SHALL BE SUFFICIENTLY ROUGH TO ENSURE THAT A FULL BOND IS DEVELOPED WITH THE NEW CONCRETE.
 - BEFORE FRESH CONCRETE IS PLACED, THE SURFACES SHALL BE CHIPPED OR ROUGHENED 3/4" - 1 3/16" AND CLEANED OF ALL DEBRIS AND FOREIGN MATERIAL WITH AN AIR-OPERATED WATER JET WITH AIR PRESSURES IN EXCESS OF 90 PSI TO PROVIDE A THOROUGHLY CLEAN SURFACE. FREE WATER SHALL BE REMOVED FROM THE SURFACES WITH THE AIR JET.
 - AFTER SEVEN DAYS OR AFTER CURING HAS FINISHED, A BONDING AGENT SHALL BE APPLIED TO PREVIOUSLY PLACED CONCRETE PRIOR TO RESUMING CONCRETE POUR.
 - SPACING: AT LEAST THREE DIAMETERS ON CENTER. COVER SHALL BE MAINTAINED AND EMBEDMENT SHALL NOT CONTACT REINFORCEMENT.
 - PROVIDE SHEAR KEY ON ALL WALL-TO-FOOTING CONNECTIONS. SEE DRAWING DETAILS.
- REINFORCEMENT WORK OF DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO "A.C.I. DETAILING MANUAL - 1988 (SP-66)", "CRSI MANUAL OF STANDARD PRACTICE (MSP I)" AND "STRUCTURAL WELDING CODE - REINFORCING STEEL (A.W.S. D1.4)"

- MINIMUM CONCRETE PROTECTIVE COVER FOR REINFORCEMENT OF ENGINEERED CONCRETE STRUCTURES SHALL BE AS FOLLOWS U.O.N.:
 - UNFORMED SURFACES CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH3.0"
 - BUILDING SURFACES FORMED IN CONTACT WITH EARTH OR EXPOSED TO WEATHER,
 - #6 THROUGH #18 BARS2.0"
 - #5 BARS AND SMALLER1.5"
 - BUILDING SURFACES NOT IN CONTACT WITH EARTH OR EXPOSED TO WEATHER (WALLS AND SLABS),
 - #14 AND #18 BARS1.5"
 - #11 BARS AND SMALLER1.0"
 - BUILDING BEAMS, GIRDERS AND COLUMNS - PRINCIPAL REINFORCEMENT, TIES, STIRRUPS AND SPIRALS.....1.5"
- WHERE CONTINUOUS REINFORCEMENT IS CALLED FOR, IT SHALL BE EXTENDED CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. SEE DETAILS ON DRAWINGS.
- WHERE REINFORCING IS NOT SHOWN ON THE CONTRACT DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN THE MINIMUM REINFORCEMENT PERMITTED BY THE APPLICABLE CODES NOR LESS THAN THE FOLLOWING:
 - DOWELS FROM TOP OF CONCRETE WALLS TO CONCRETE SLABS:
 - MAIN SLAB REINFORCING: SEE DRAWINGS.
 - TEMPERATURE & SHRINKAGE: SEE DRAWINGS.
- EXTEND DOWELS TO THE 1/4-POINT OF SLAB SPAN.
- WHERE REINFORCEMENT IS SHOWN IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN.
- PROVIDE DOWELS FROM FOUNDATION TO MATCH BAR SIZE AND NUMBER OF REINFORCING IN THE SUPPORTED ELEMENT, UNLESS NOTED OTHERWISE.
- REINFORCEMENT SHALL NOT BE TACK WELDED OR HEATED FOR BENDING.
- INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AT LEAST 24 HOURS PRIOR TO THE SCHEDULED CONCRETE PLACEMENT. NOTIFY ENGINEER OF COMPLETION AT LEAST 24 HOURS PRIOR TO THE SCHEDULED COMPLETION OF THE INSTALLATION OF REINFORCEMENT.
- WELDING OF REINFORCEMENT SHALL CONFORM TO A.W.S. D1.4 (INCLUDING PREHEAT REQUIREMENTS). ONLY BARS INDICATED ON DRAWINGS TO BE WELDED SHALL BE WELDED.
- REBARS SHALL BE PLACED CLEAN, FREE OF DUST, MUD, RUST, GREASE, OIL, PAINT, LANTANCE OR HARDENED CONCRETE, AND ANY OTHER SUBSTANCE CAPABLE OF REDUCING THE BOND WITH THE CONCRETE.
- UNLESS NOTED OTHERWISE, OVERLAPS & ANCHORS, SHALL BE AT LEAST 60 TIMES THE DIAMETER OF THE BIGGEST BAR DIAMETER.
- STEEL REINFORCING MESH NOT INDICATED IN DRAWINGS, MAY NOT OVERLAP MORE THAN 20% OF ITSELF IN THE SAME POSITION.
- ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING AT POSITIONS SHOWN ON PLANS SHALL BE PROVIDED. ALL REINFORCING, DOWELS, BOLTS AND COLLAR FLANGES SHALL BE SET AND TIED IN PLACE BEFORE THE CONCRETE IS POURED. "STABBING" INTO PREVIOUSLY PLACED CONCRETE IS NOT PERMITTED.
- CHAMFER EXPOSED CORNERS AND EDGES OF CONCRETE 3/4"
- ALL CORNERS OF CONCRETE IN CONTACT WITH LINER MUST TAKE SPECIAL CARE TO ELIMINATE SHARP EDGES, PROVIDE 2" MINIMUM ROUNDED EDGES TO AVOID DAMAGING LINER.

C-24 LAPS SHALL BE CLASS B TENSION LAP SPLICES, UNLESS NOTED OTHERWISE.

CLASS B SPLICES FOR REINFORCEMENT, OTHER THAN TOP BARS:

BAR SIZE	3,000 PSI	4,000 PSI	5,000 PSI
#3	22"	19"	17"
#4	29"	25"	23"
#5	36"	31"	28"
#6	43"	37"	34"
#7	63"	54"	49"
#8	72"	62"	56"
#9	81"	70"	63"
#10	91"	79"	71"
#11	101"	87"	78"

CLASS B SPLICES FOR REINFORCEMENT AS TOP BARS:

BAR SIZE	3,000 PSI	4,000 PSI	5,000 PSI
#3	28"	25"	22"
#4	38"	33"	29"
#5	47"	41"	36"
#6	56"	49"	44"
#7	81"	71"	63"
#8	93"	81"	72"
#9	105"	91"	81"
#10	118"	102"	92"
#11	131"	114"	102"

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KHA PROJECT 044572041	DATE MAR 2019
SCALE AS SHOWN	DESIGNED BY MT
DRAWN BY DJM	CHECKED BY MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY
 INDIAN RIVER COUNTY FLORIDA

LICENSED PROFESSIONAL

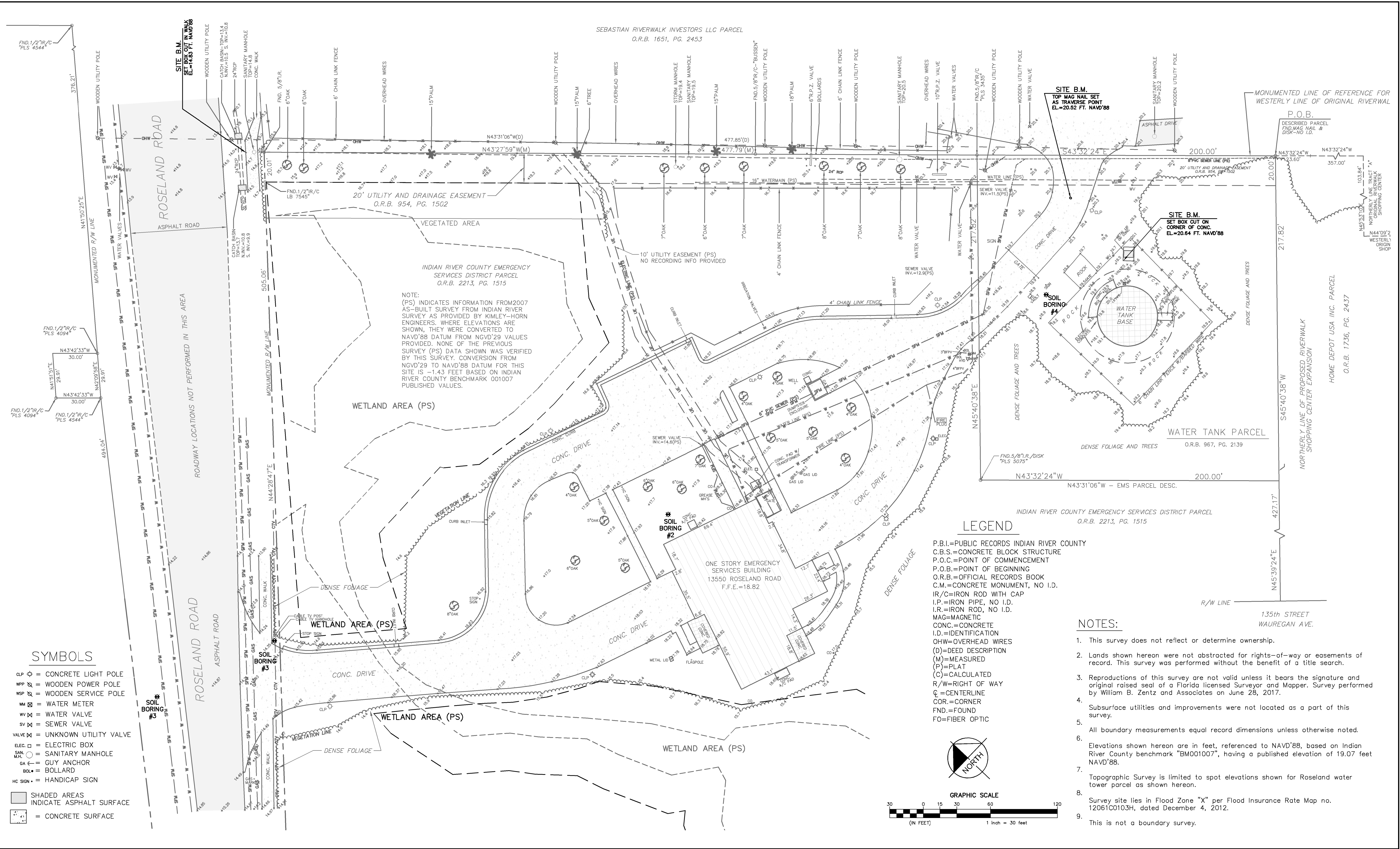
 MARK MILLER

 FLORIDA LICENSE NUMBER
 45320

**GENERAL AND
 STRUCTURAL NOTES**

SHEET NUMBER
G-2

Plotted By: Tabow, Matt Sheet Set: Roseland - Layout: C-1 EXISTING CONDITIONS - March 09, 2019 04:50:34pm \\web\p02\Draw\Project\Web_Civil\044572041 - Roseland Tank Conversion\CADD\plan_sheets\C-1_CIVIL_SHEETS.dwg
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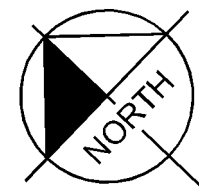
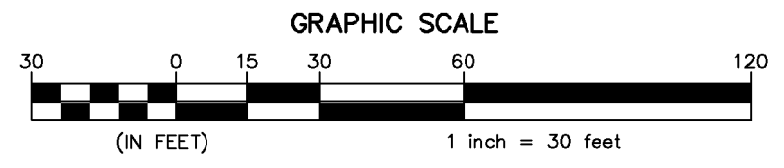
- SYMBOLS**
- CLP ⊕ = CONCRETE LIGHT POLE
 - WPP ⊕ = WOODEN POWER POLE
 - WSP ⊕ = WOODEN SERVICE POLE
 - WM ⊗ = WATER METER
 - WV ⊕ = WATER VALVE
 - SV ⊕ = SEWER VALVE
 - VALVE ⊕ = UNKNOWN UTILITY VALVE
 - ELEC ⊕ = ELECTRIC BOX
 - SM ⊕ = SANITARY MANHOLE
 - GA ⊕ = GUY ANCHOR
 - BOL ⊕ = BOLLARD
 - HC SIGN ⊕ = HANDICAP SIGN
 - SHADED AREAS = INDICATE ASPHALT SURFACE
 - CONC. SURF. = CONCRETE SURFACE

LEGEND

- P.B.I.=PUBLIC RECORDS INDIAN RIVER COUNTY
- C.B.S.=CONCRETE BLOCK STRUCTURE
- P.O.C.=POINT OF COMMENCEMENT
- P.O.B.=POINT OF BEGINNING
- O.R.B.=OFFICIAL RECORDS BOOK
- C.M.=CONCRETE MONUMENT, NO I.D.
- IR/C=IRON ROD WITH CAP
- I.P.=IRON PIPE, NO I.D.
- I.R.=IRON ROD, NO I.D.
- MAG=MAGNETIC
- CONC.=CONCRETE
- I.D.=IDENTIFICATION
- OHW=OVERHEAD WIRES
- (D)=DEED DESCRIPTION
- (M)=MEASURED
- (P)=PLAT
- (C)=CALCULATED
- R/W=RIGHT OF WAY
- CL=CENTERLINE
- COR.=CORNER
- FND.=FOUND
- FO=FIBER OPTIC

NOTES:

1. This survey does not reflect or determine ownership.
2. Lands shown herein were not abstracted for rights-of-way or easements of record. This survey was performed without the benefit of a title search.
3. Reproductions of this survey are not valid unless it bears the signature and original raised seal of a Florida licensed Surveyor and Mapper. Survey performed by William B. Zentz and Associates on June 28, 2017.
4. Subsurface utilities and improvements were not located as a part of this survey.
5. All boundary measurements equal record dimensions unless otherwise noted.
6. Elevations shown herein are in feet, referenced to NAVD'88, based on Indian River County benchmark "BM001007", having a published elevation of 19.07 feet NAVD'88.
7. Topographic Survey is limited to spot elevations shown for Roseland water tower parcel as shown herein.
8. Survey site lies in Flood Zone "X" per Flood Insurance Rate Map no. 12061C0103H, dated December 4, 2012.
9. This is not a boundary survey.



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LICENSED PROFESSIONAL	MARK MILLER
FLORIDA LICENSE NUMBER	45320

EXISTING CONDITIONS

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C-1

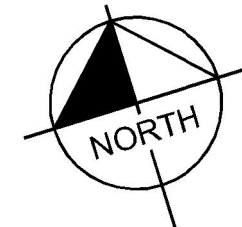
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INDIAN RIVER
COUNTY EMERGENCY
SERVICES BUILDING
(FIRE STATION)

PROPOSED PUMP STATION.
SEE SHEET C-4 AND M-1

ROSELAND
ELEVATED
STORAGE TANK



CALL 2 WORKING DAYS
BEFORE YOU DIG

IT'S THE LAW!
DIAL 811

811
Know what's below.
Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

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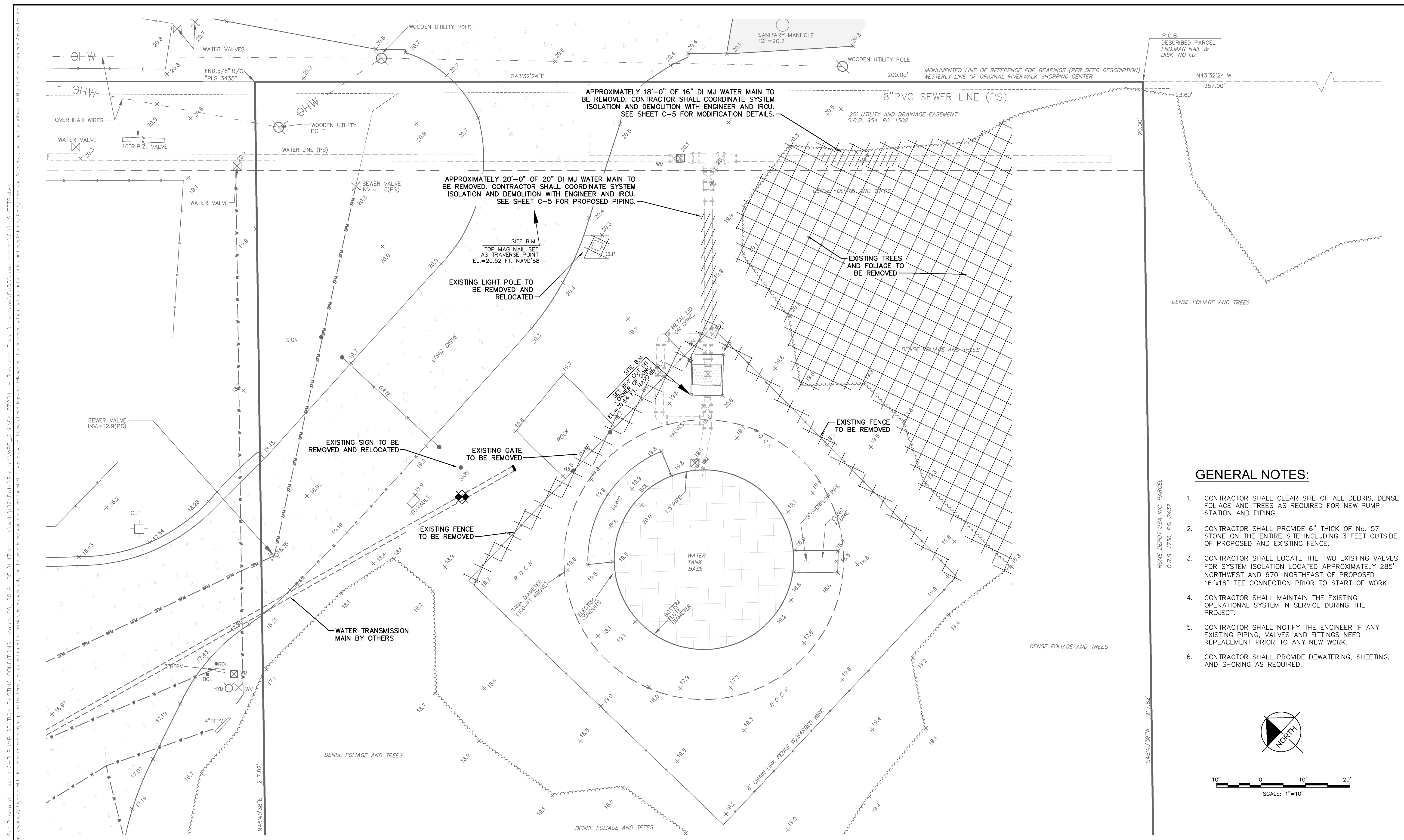
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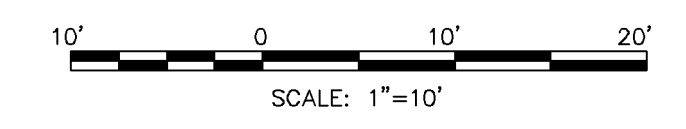
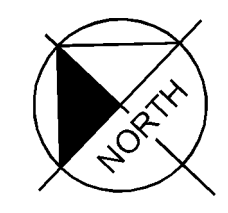
LICENSED PROFESSIONAL	MARK MILLER
FLORIDA LICENSE NUMBER	45320
DATE:	----

AERIAL MAP

SHEET NUMBER	C-2
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- GENERAL NOTES:**
- CONTRACTOR SHALL CLEAR SITE OF ALL DEBRIS, DENSE FOLIAGE AND TREES AS REQUIRED FOR NEW PUMP STATION AND PIPING.
 - CONTRACTOR SHALL PROVIDE 6" THICK OF No. 57 STONE ON THE ENTIRE SITE INCLUDING 3 FEET OUTSIDE OF PROPOSED AND EXISTING FENCE.
 - CONTRACTOR SHALL LOCATE THE TWO EXISTING VALVES FOR SYSTEM ISOLATION LOCATED APPROXIMATELY 285' NORTHWEST AND 670' NORTHEAST OF PROPOSED 16"x16" TEE CONNECTION PRIOR TO START OF WORK.
 - CONTRACTOR SHALL MAINTAIN THE EXISTING OPERATIONAL SYSTEM IN SERVICE DURING THE PROJECT.
 - CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY EXISTING PIPING, VALVES AND FITTINGS NEED REPLACEMENT PRIOR TO ANY NEW WORK.
 - CONTRACTOR SHALL PROVIDE DEWATERING, SHEETING, AND SHORING AS REQUIRED.



Plotted By: Tabow, Matt
 Sheet Set: Roseland - Layout: C-3 - PUMP STATION EXISTING CONDITIONS - March 09, 2019 - 05:01:17pm
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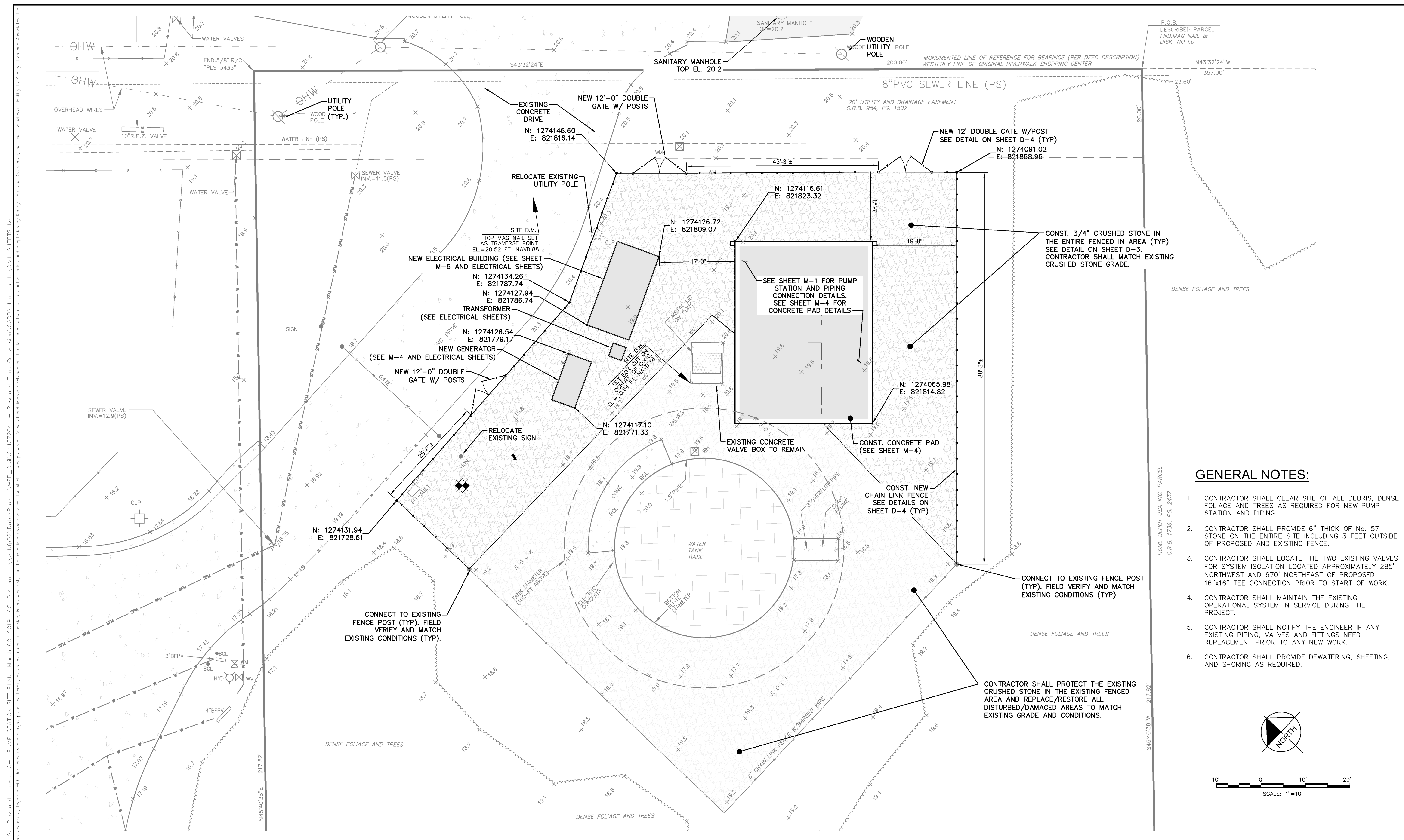
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LICENSED PROFESSIONAL	MARK MILLER
FLORIDA LICENSE NUMBER	45320

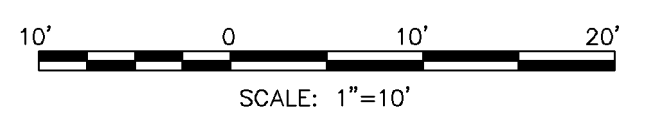
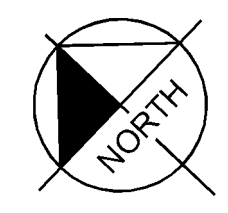
**PUMP STATION EXISTING
 CONDITIONS AND DEMOLITION
 SITE PLAN**

SHEET NUMBER	C-3
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GENERAL NOTES:

1. CONTRACTOR SHALL CLEAR SITE OF ALL DEBRIS, DENSE FOLIAGE AND TREES AS REQUIRED FOR NEW PUMP STATION AND PIPING.
2. CONTRACTOR SHALL PROVIDE 6" THICK OF No. 57 STONE ON THE ENTIRE SITE INCLUDING 3 FEET OUTSIDE OF PROPOSED AND EXISTING FENCE.
3. CONTRACTOR SHALL LOCATE THE TWO EXISTING VALVES FOR SYSTEM ISOLATION LOCATED APPROXIMATELY 285' NORTHWEST AND 670' NORTHEAST OF PROPOSED 16"x16" TEE CONNECTION PRIOR TO START OF WORK.
4. CONTRACTOR SHALL MAINTAIN THE EXISTING OPERATIONAL SYSTEM IN SERVICE DURING THE PROJECT.
5. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY EXISTING PIPING, VALVES AND FITTINGS NEED REPLACEMENT PRIOR TO ANY NEW WORK.
6. CONTRACTOR SHALL PROVIDE DEWATERING, SHEETING, AND SHORING AS REQUIRED.



No.	REVISIONS	DATE	BY

Kimley»Horn

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 1920 WEKIVA WAY SUITE 200, WEST PALM BEACH, FL 33411
 PHONE: 561-845-0665 FAX: 561-863-8175
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 044572041
DATE MAR 2019
SCALE AS SHOWN
DESIGNED BY MT
DRAWN BY DJM
CHECKED BY MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY

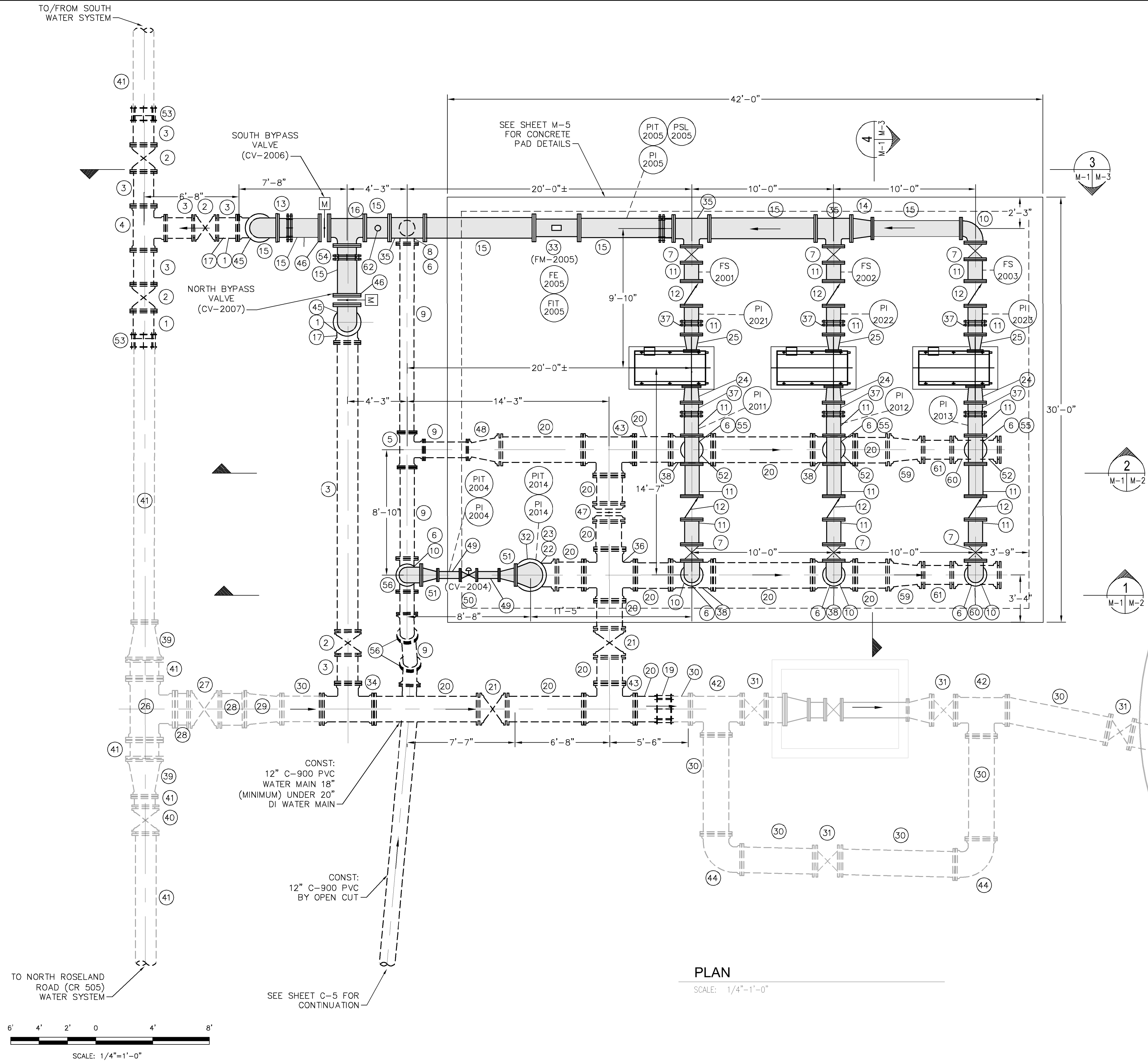
INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL
MARK MILLER
FLORIDA LICENSE NUMBER 45320

**PUMP STATION
 SITE PLAN**

SHEET NUMBER
C-4

Plotted By: Tabow, Matt
 Sheet Set: Roseland - Layout: M-1 PUMP STATION PLAN - March 09, 2019 - 07:03:00pm
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MATERIAL LIST (TYP)

- | | |
|--|--|
| 1 NEW 16" DI SPOOL PIECE PE x FLG (LENGTH TO SUIT) | 30 EXIST. 20" DI PIPE PE x PE TO REMAIN |
| 2 NEW 16" DI GATE VALVE MJ | 31 EXIST. 20" GATE VALVE TO REMAIN |
| 3 NEW 16" DI SPOOL PIECE PE x PE (LENGTH TO SUIT) | 32 NEW 20"x12" DI REDUCER, FLG'D |
| 4 NEW 16" DI TEE MJ | 33 NEW 16" FLOW METER (FM-2005) FLG'D |
| 5 NEW 12" DI TEE MJ | 34 NEW 20"x16" MJ TEE |
| 6 NEW 12" DI PIPE FLG x PE (LENGTH TO SUIT) | 35 NEW 16"x12" DI TEE FLG'D |
| 7 NEW 12" DI GATE VALVE FLG'D | 36 NEW 20"x20" DI CROSS FLG'D |
| 8 NEW 12" MJ 90° BEND | 37 NEW 12" DI MEGAFLANGE |
| 9 NEW 12" DI PIPE PE x PE (LENGTH TO SUIT) | 38 NEW 20"x12" MJ TEE |
| 10 NEW 12" DI 90° BEND FLG'D | 39 EXIST. 20"x16" MJ REDUCER TO REMAIN |
| 11 NEW 12" DI PIPE FLG x FLG (LENGTH TO SUIT) | 40 EXIST. 16" GATE VALVE TO REMAIN |
| 12 NEW 12" DI SILENT CHECK VALVE FLG'D | 41 EXIST. 16" DI PIPE TO REMAIN |
| 13 NEW 16" DI MEGAFLANGE | 42 EXIST. 20"x20" MJ TEE TO REMAIN |
| 14 NEW 16"x12" DI REDUCER FLG'D | 43 NEW 20"x20" MJ TEE |
| 15 NEW 16" DI PIPE FLG x FLG (LENGTH TO SUIT) | 44 EXIST. 20" MJ 90° BEND TO REMAIN |
| 16 NEW 16"x16" DI TEE FLG'D | 45 NEW 16" DI 90° BEND FLG'D |
| 17 NEW 16" MJ 90° BEND PE x PE | 46 NEW 16" DI MOTORIZED BVF FLG'D |
| 18 NEW 12" PUMP STATION BYPASS VALVE (CV-2009) FLG'D | 47 NEW 20" DI BVF MJ |
| 19 NEW 20" DI MJ RESTRAINED SLEEVE | 48 NEW 20"x12" DI REDUCER MJ |
| 20 NEW 20" DI PIPE PE x PE (LENGTH TO SUIT) | 49 NEW 6" 316 SS SCH. 40 SPOOL PIECE FLG'D |
| 21 NEW 20" DI GATE VALVE MJ | 50 NEW 6" FILL INLET CONTROL VALVE (CV-2004) FLG'D |
| 22 NEW 20" DI PIPE FLG x PE (LENGTH TO SUIT) | 51 NEW 12"x6" DI REDUCER FLG'D |
| 23 NEW 20" MJ 90° BEND PE x PE | 52 NEW 12" DI TEE FLG'D |
| 24 NEW 12"x10" DI REDUCER FLG'D | 53 NEW 16" DI MJ RESTRAINED SLEEVE |
| 25 NEW 12"x8" DI REDUCER FLG'D | 54 NEW 16" DI GATE VALVE, FLG'D |
| 26 EXIST. 24"x24" MJ TEE TO REMAIN | 55 NEW 12" DI BVF FLG'D |
| 27 EXIST. 24" GATE VALVE TO REMAIN | 56 NEW 12" MJ 45° BEND |
| 28 EXIST. 24" DI PIPE TO REMAIN | 57 NEW 6" DI MEGAFLANGE |
| 29 EXIST. 24"x20" MJ REDUCER TO REMAIN | 58 NEW PIPE SUPPORT. SEE DETAIL ON SHEET D-3. |
| | 59 NEW 20"x16" DI MJ REDUCER |
| | 60 NEW 16"x12" DI MJ TEE W/ MJ RESTRAINED PLUG |
| | 61 NEW 16" DI PIPE PE x PE (LENGTH TO SUIT) |
| | 62 2" COMBINATION AIR RELEASE/VACUUM VALVE (SEE DETAIL ON SHEET D-2) |

INSTRUMENTATION LIST (MIN)

- INSTALL 1/2" TAP, 1/2" SS SENSING TUBING, 1/2" BALL VALVE, 0-100 PSI LIQUID-FILLED PRESSURE INDICATOR (TYP.). SEE SPECIFICATIONS AND DETAIL ON SHEET D-3. SEE DETAIL ON SHEET D-4 FOR PIPE STAND MOUNT (PI 2014).
- PRESSURE INDICATOR TRANSMITTER ASSEMBLY (TYP.). SEE SPECIFICATIONS AND DETAIL ON SHEET D-3. SEE DETAIL ON SHEET D-4 FOR PIPE STAND MOUNT (PIT 2014).
- FLOW SWITCH (TYP.). SEE SPECIFICATIONS.
- FLOW METER. SEE SPECIFICATIONS.

No.	REVISIONS	DATE	BY

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 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 044572041
 DATE MAR 2019
 SCALE AS SHOWN
 DESIGNED BY MT
 DRAWN BY DJM
 CHECKED BY MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL

MARK MILLER

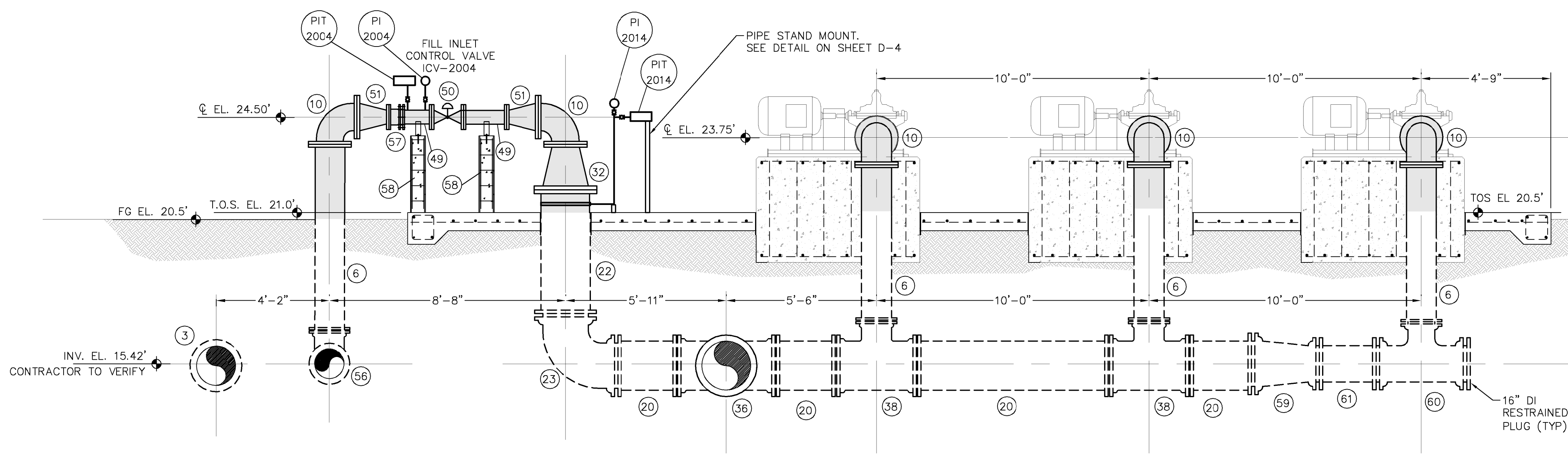
FLORIDA LICENSE NUMBER 45320

PUMP STATION PLAN

SHEET NUMBER

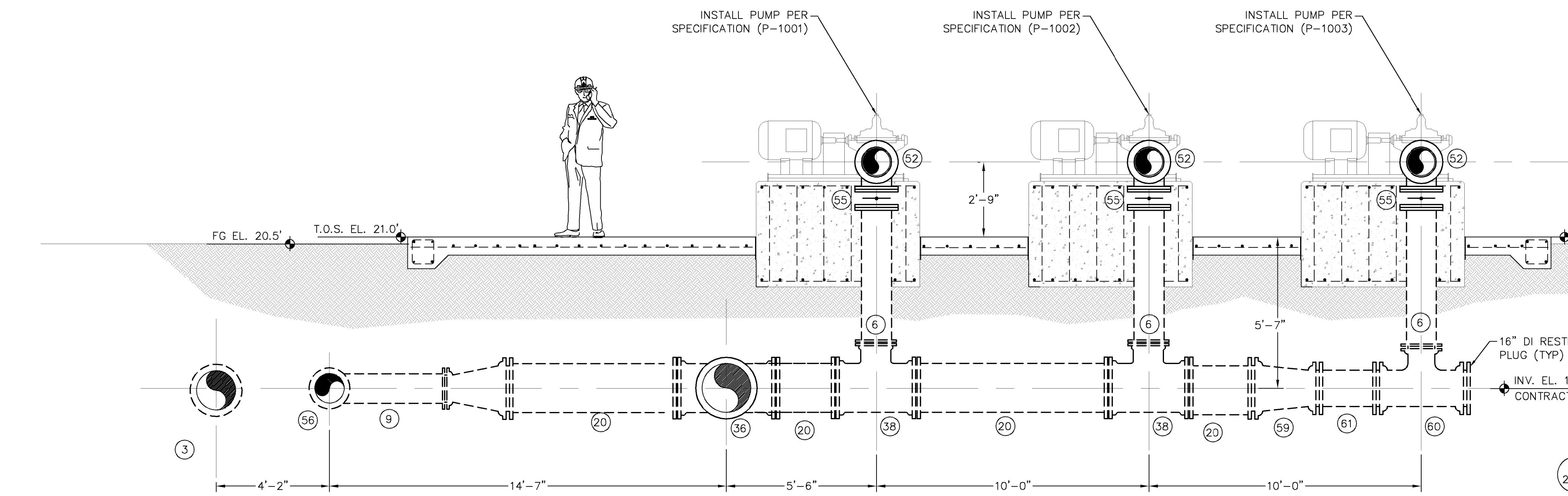
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Plotted By: Tabow, Matt
 Sheet Set: Roseland - Layout: M-2 - PUMP STATION SECTIONS - March 09, 2019 - 03:53:30pm
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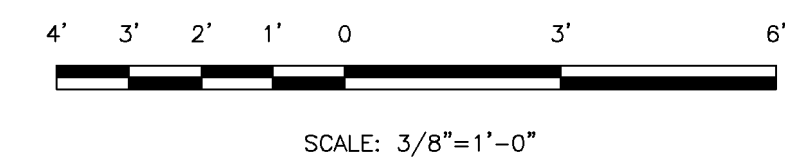
SECTION 1
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- ### MATERIAL LIST (TYP)
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| 1 NEW 16" DI SPOOL PIECE PE x FLG (LENGTH TO SUIT) | 30 EXIST. 20" DI PIPE PE x PE TO REMAIN |
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| 13 NEW 16" DI MEGAFLANGE | 42 EXIST. 20"x20" MJ TEE TO REMAIN |
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| 18 NEW 12" PUMP STATION BYPASS VALVE (CV-2009) FLG'D | 47 NEW 20" DI BVV MJ |
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| | 62 2" COMBINATION AIR RELEASE/VACUUM VALVE (SEE DETAIL ON SHEET D-2) |



SECTION 2
SCALE: 3/8"=1'-0"

- ### INSTRUMENTATION LIST (MIN)
- | | | | | | | | | | |
|----------|----------|---------------------------------|---|---------|---------|---------|---------|---------|---|
| PI 2005 | PI 2023 | PI 2022 | PI 2021 | PI 2013 | PI 2012 | PI 2011 | PI 2014 | PI 2004 | INSTALL 1/2" TAP, 1/2" SS SENSING TUBING, 1/2" BALL VALVE, 0-100 PSI LIQUID-FILLED PRESSURE INDICATOR (TYP.). SEE SPECIFICATIONS AND DETAIL ON SHEET D-3. SEE DETAIL ON SHEET D-4 FOR PIPE STAND MOUNT (PI 2014). |
| PIT 2005 | PIT 2014 | PIT 2004 | PRESSURE INDICATOR TRANSMITTER ASSEMBLY (TYP.). SEE SPECIFICATIONS AND DETAIL ON SHEET D-3. SEE DETAIL ON SHEET D-4 FOR PIPE STAND MOUNT (PIT 2014) | | | | | | |
| FS 2003 | FS 2002 | FS 2001 | FLOW SWITCH (TYP.) SEE SPECIFICATIONS. | | | | | | |
| FIT 2005 | FE 2005 | FLOW METER. SEE SPECIFICATIONS. | | | | | | | |



No.	REVISIONS	DATE	BY

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KHA PROJECT 044572041
 DATE MAR 2019
 SCALE AS SHOWN
 DESIGNED BY MT
 DRAWN BY DJM
 CHECKED BY MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY

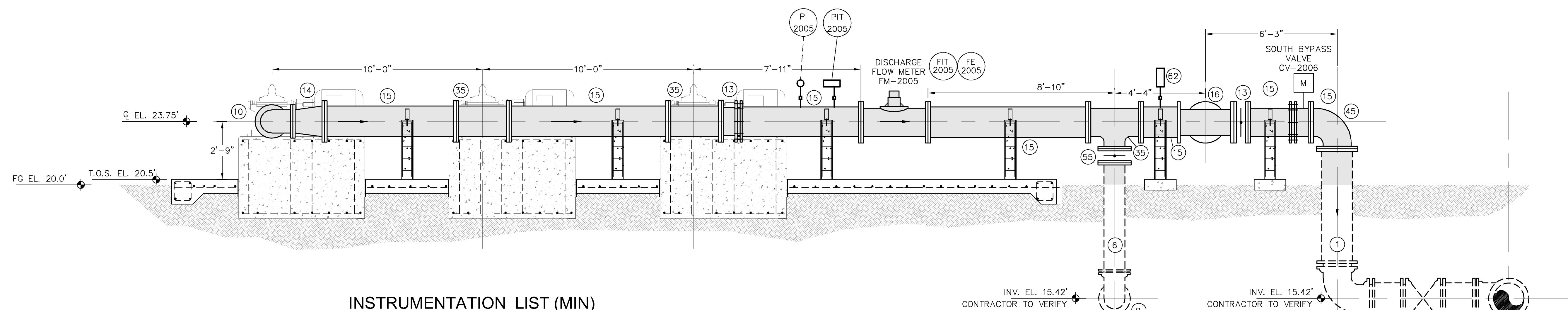
INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL
 MARK MILLER
 FLORIDA LICENSE NUMBER 45320

PUMP STATION SECTIONS

SHEET NUMBER
M-2

Plotted By: Tabow, Matt
 Sheet Set: Roseland - Layout: M-3 PUMP STATION SECTIONS - March 09, 2019 - 07:20:13pm
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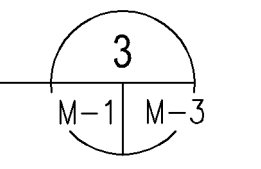


INSTRUMENTATION LIST (MIN)

- PI 2005
PI 2023
PI 2022
PI 2021
PI 2013
PI 2012
PI 2011
PI 2014
PI 2004
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- PIT 2005
PIT 2014
PIT 2004
 PRESSURE INDICATOR TRANSMITTER ASSEMBLY (TYP.). SEE SPECIFICATIONS AND DETAIL ON SHEET D-3. SEE DETAIL ON SHEET D-4 FOR PIPE STAND MOUNT (PIT 2014).
- FS 2003
FS 2002
FS 2001
 FLOW SWITCH (TYP.) SEE SPECIFICATIONS.
- FIT 2005
FE 2005
 FLOW METER. SEE SPECIFICATIONS.

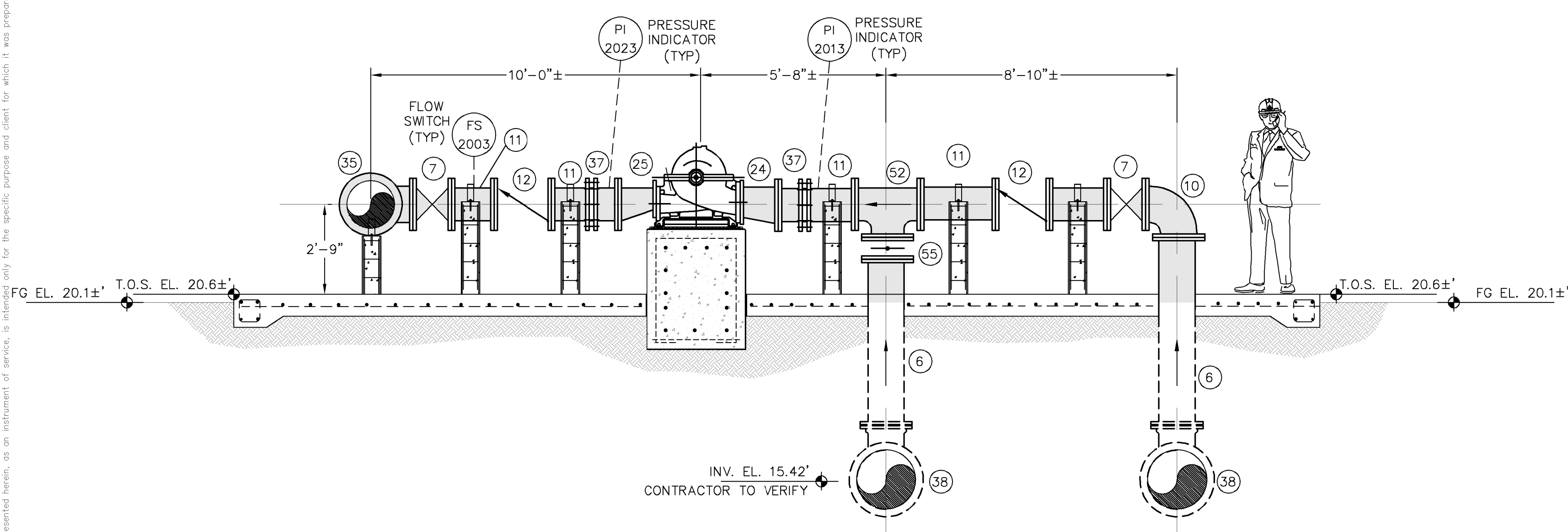
SECTION

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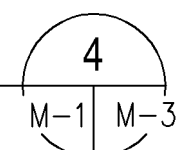
MATERIAL LIST (TYP)

- | | |
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|--|---|



SECTION

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



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

No.	REVISIONS	DATE	BY

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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY
 INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL
 MARK MILLER
 FLORIDA LICENSE NUMBER
 45320

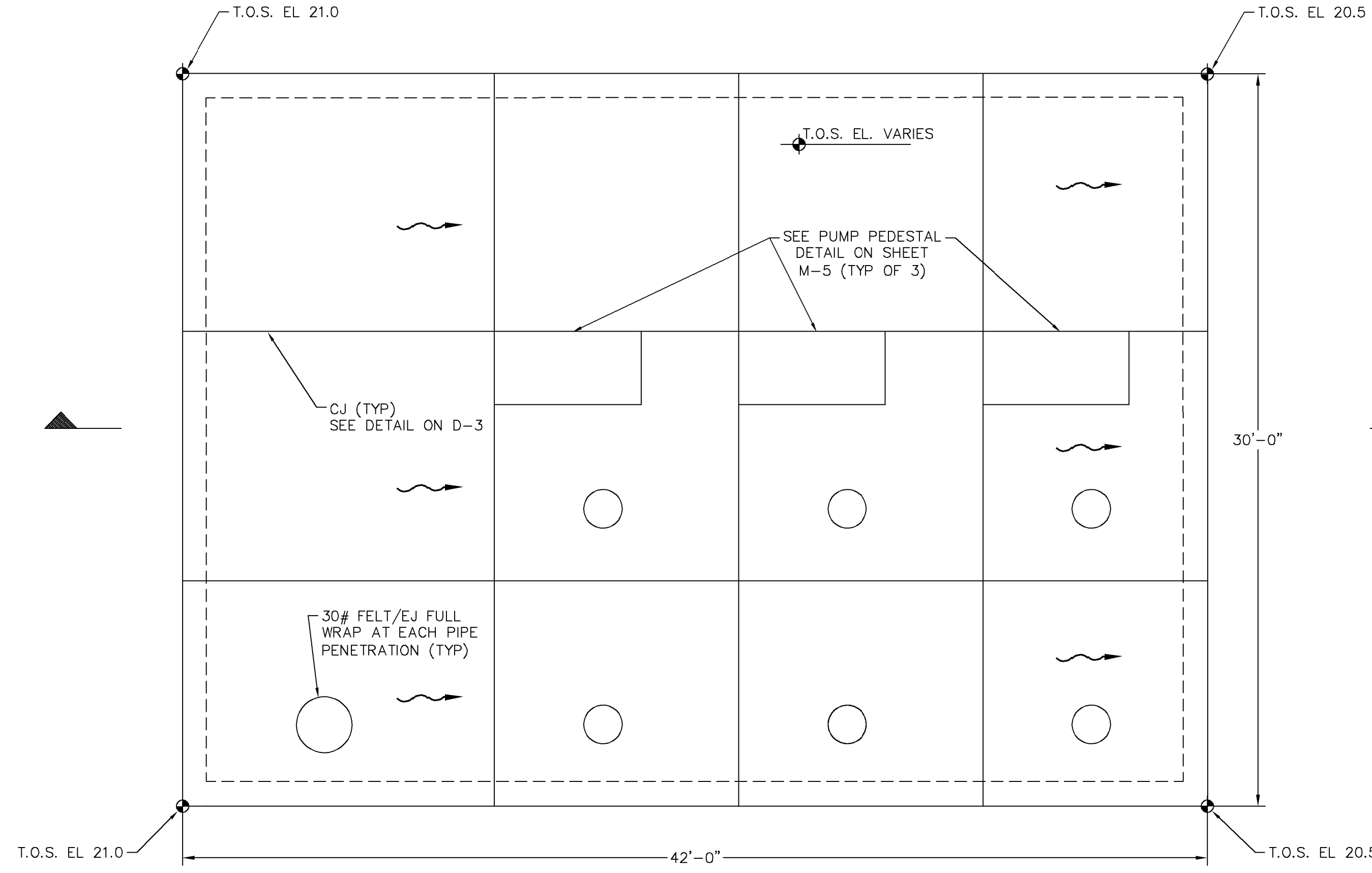
PUMP STATION SECTIONS

SHEET NUMBER
M-3

P:\Projects\2019\04572041\04572041.dwg - Roseland Est Pump Station and Generator Concrete Pad Plan and Sections - March 09, 2019, 07:21:49pm
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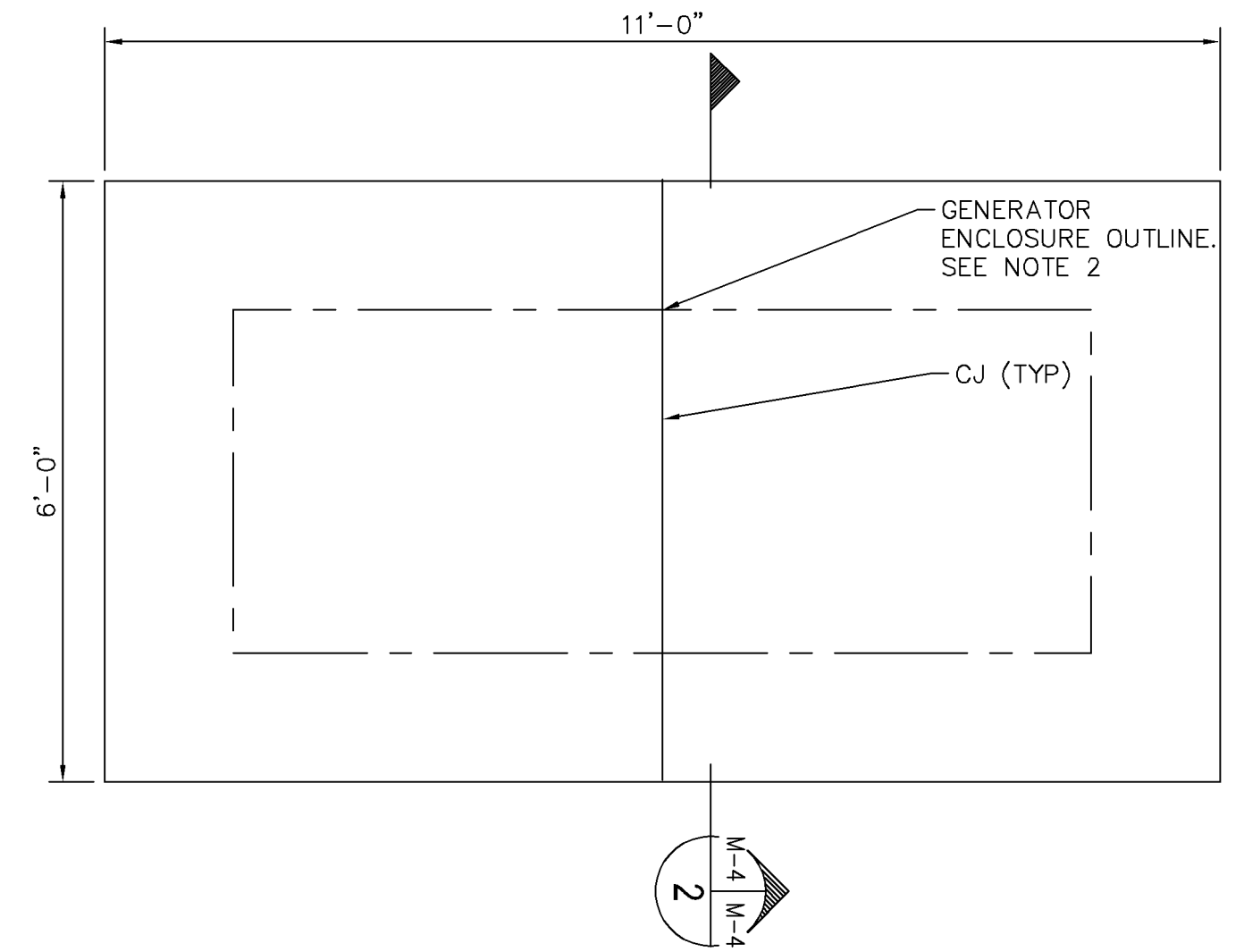
NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DETAILED AND FULLY COORDINATED SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, PUMP SUPPLIER AND GENERATOR MANUFACTURER FOR A FULLY FUNCTIONAL AND COMPLETE PUMP STATION AND GENERATOR AS SHOWN ON THE DRAWINGS AND SPECIFICATIONS.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
- THE PUMP STATION AND GENERATOR CONCRETE PAD DIMENSIONS AND REINFORCEMENT ELEMENTS MUST BE UPDATED AND COORDINATED WITH ENGINEER IF DIFFERENT FROM THE DRAWINGS.
- SEE ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT SUPPLIER REQUIREMENTS (TYP)
- VERIFY LOCATION OF EXISTING UNDERGROUND SITE UTILITIES PRIOR TO THE START OF WORK, AND COORDINATE LOCATION WITH STRUCTURAL DRAWINGS. NOTIFY THE ENGINEER OF ANY CONFLICTS IN WRITING. DO NOT PROCEED WITH AFFECTED WORK UNTIL CONFLICTS HAVE BEEN RESOLVED.
- STRUCTURAL DRAWINGS ARE NOT STAND-ALONE DOCUMENTS AND ARE INTENDED TO BE USED TOGETHER WITH CIVIL, MECHANICAL, ELECTRICAL LAYOUTS, AND SPECIFICATIONS.
- THE MORE STRINGENT SPECIFICATION SHALL APPLY WHERE DISCREPANCIES OCCUR BETWEEN DRAWINGS AND OTHER DOCUMENTS. ANY DISCREPANCIES SHALL BE PASSED ON TO ENGINEER.
- THE STRUCTURES HAVE BEEN DESIGNED TO RESIST DESIGN LOADS ONLY WHEN COMPLETED. CONSTRUCTION LOADS ON THE PARTIALLY COMPLETED STRUCTURES SHALL BE CONSIDERED BY THE CONTRACTOR AND INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING CONSTRUCTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS.



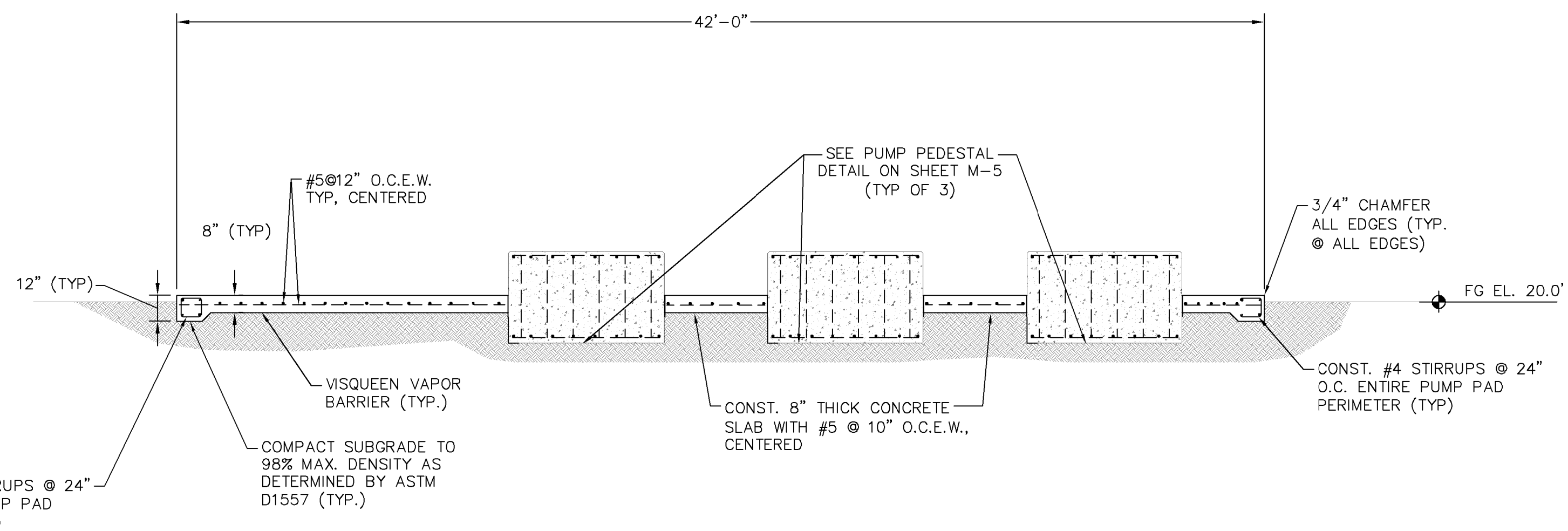
PUMP STATION PLAN

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



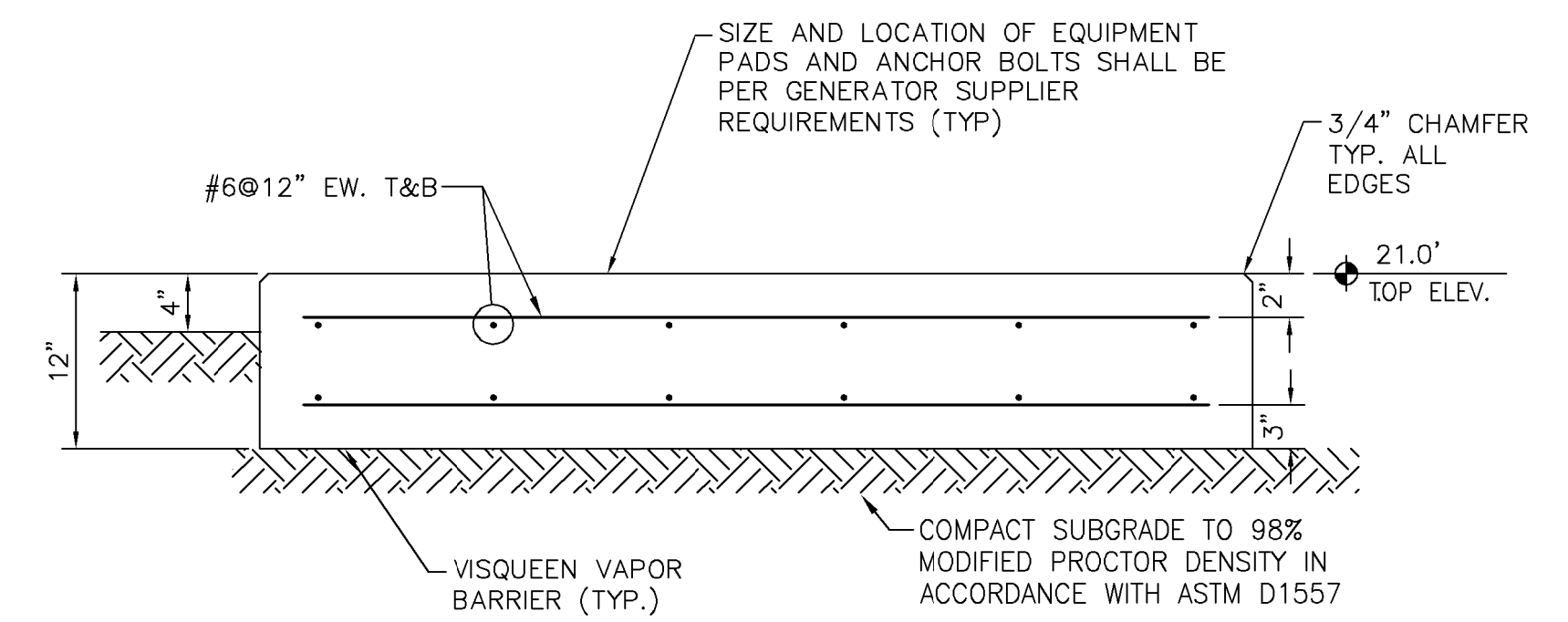
GENERATOR PLAN

SCALE: NTS



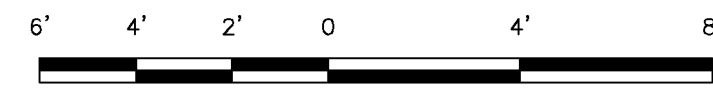
SECTION 1

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



SECTION 2

SCALE: NTS



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

No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT
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ROSELAND EST PUMP STATION
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 FLORIDA

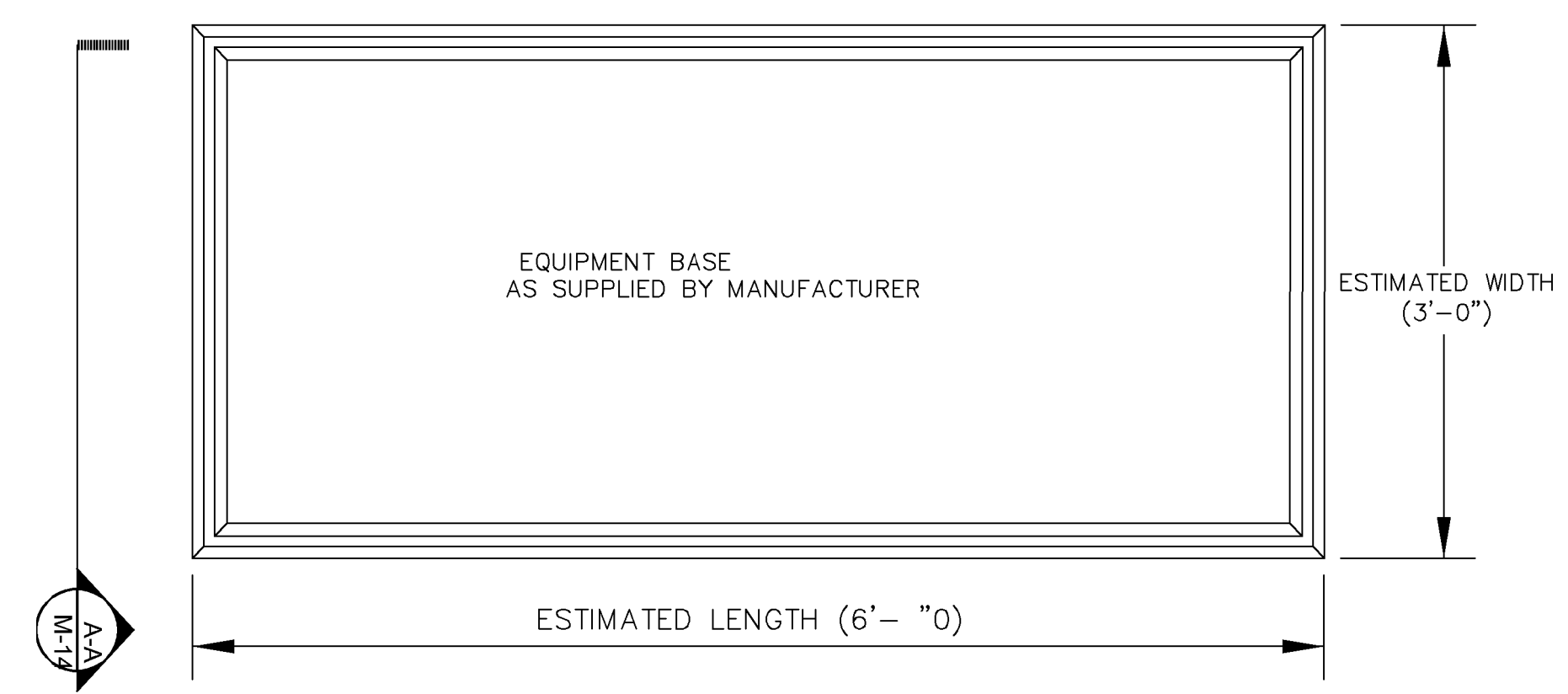
LICENSED PROFESSIONAL
 MARK MILLER
 FLORIDA LICENSE NUMBER
 45320
 DATE: _____

**PUMP STATION AND
 GENERATOR CONCRETE PAD
 PLAN AND SECTIONS**

SHEET NUMBER

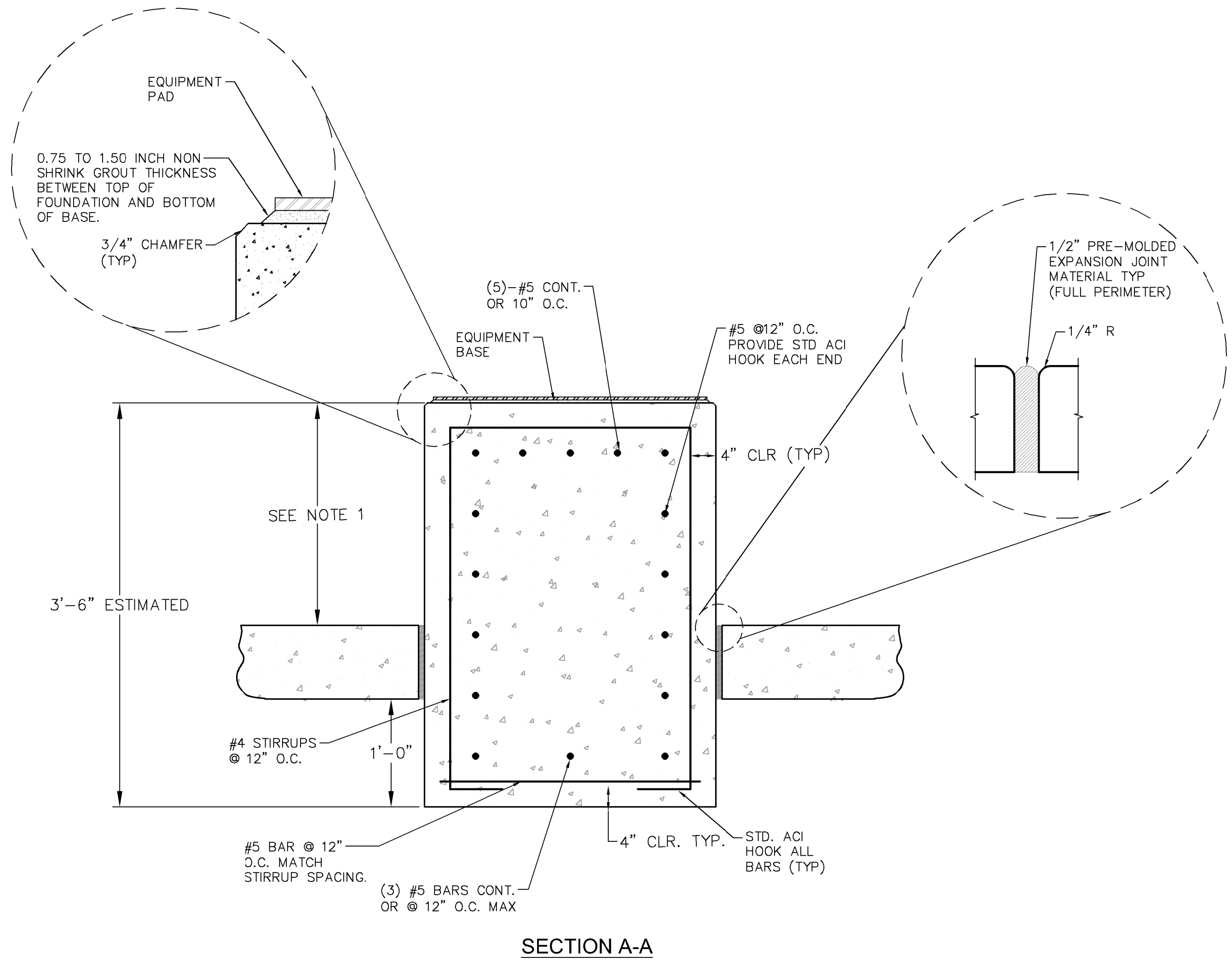
M-4

Picked By: Tabow, Matt Sheet Set: Roseland - Layout: M-5 PUMP STATION DETAILS - March 09, 2019 01:09:40pm \\web\p02\data\Project\WPB_Civil\044572041 - Roseland Tank Conversion\CADD\plan_sheets\MECH_SHEETS.dwg
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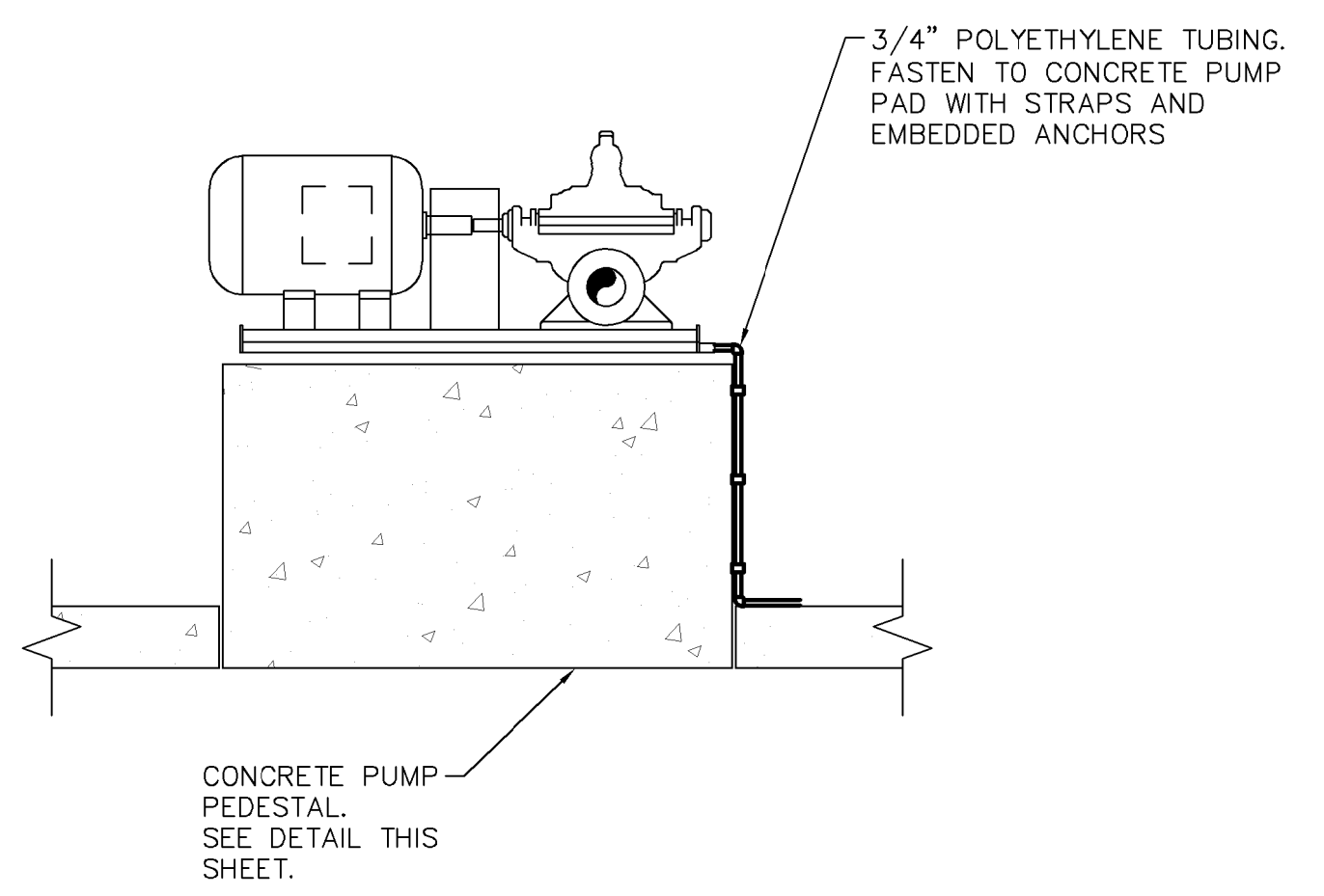


PLAN

- NOTES:**
- CONTRACTOR SHALL VERIFY PUMP ELEVATIONS, EQUIPMENT BASE WIDTH, AND EQUIPMENT BASE LENGTH PRIOR TO INSTALLING PIPING AND CONSTRUCTING CONCRETE PUMP PEDESTAL. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DETAILED PUMP STATION SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.



SECTION A-A
CONCRETE PUMP PEDESTAL DETAIL
N.T.S.



TYPICAL PUMP DRAIN SECTION
SCALE: NTS

No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY
 INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL
 MARK MILLER
 FLORIDA LICENSE NUMBER
 45320
 DATE: _____

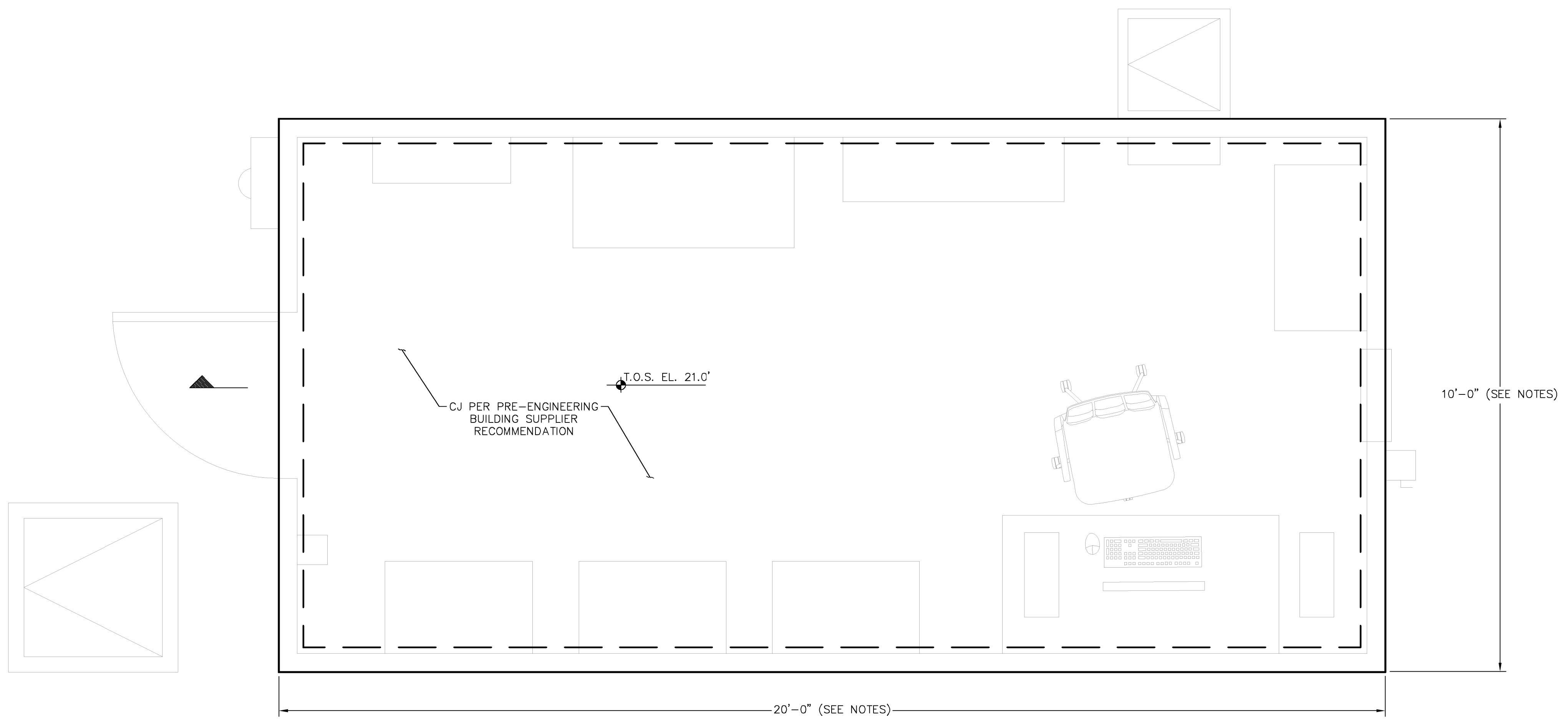
**PUMP STATION
 DETAILS**

SHEET NUMBER
M-5

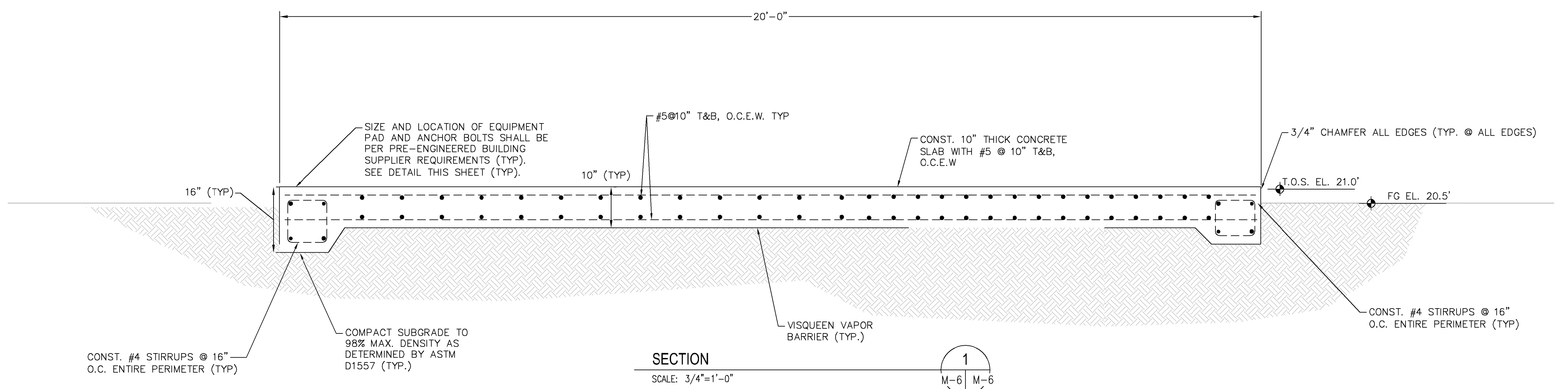
Pictured By: Tabow, Matt
 Sheet Set: Roseland - Layout: M-6 - PRE-ENGINEERED ELECTRICAL BUILDING - SLAB - March 09, 2019 - 07:25:26pm
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NOTES:

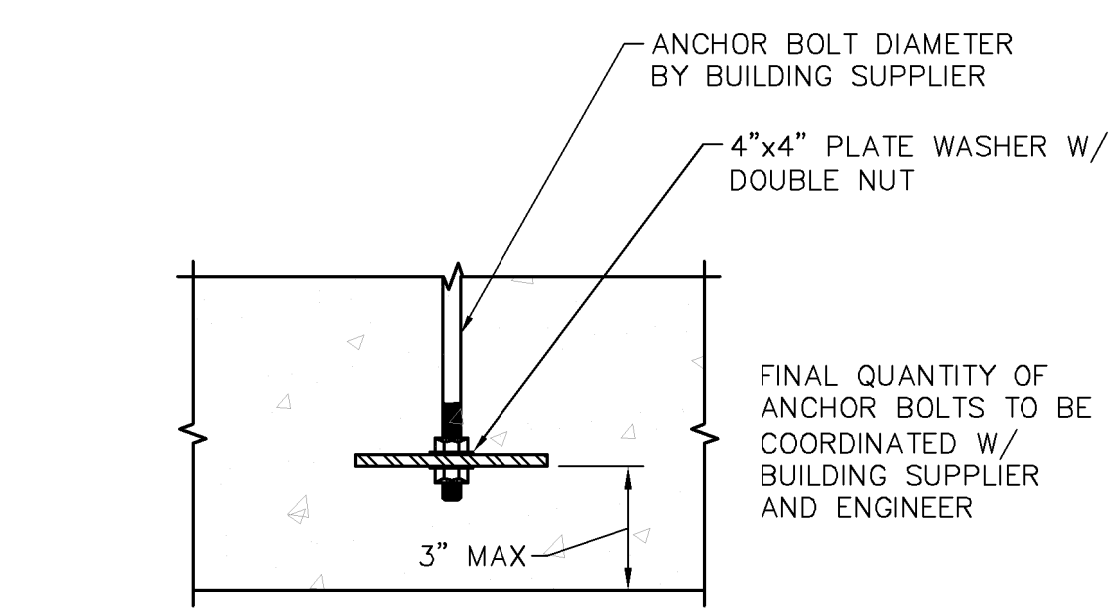
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DETAILED AND FULLY COORDINATED PRE-ENGINEERED ELECTRICAL BUILDING SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, PRE-ENGINEERING BUILDING SUPPLIER, ELECTRICAL EQUIPMENT SUPPLIER, AND GENERATOR MANUFACTURER FOR A FULLY FUNCTIONAL AND COMPLETE ELECTRICAL BUILDING AS SHOWN ON THE DRAWINGS AND SPECIFICATIONS.
3. CONTRACTOR SHALL VERIFY BUILDING ELEVATIONS, ELECTRICAL EQUIPMENT WIDTH, AND ELECTRICAL EQUIPMENT BASE LENGTH PRIOR TO FABRICATION.
4. SEE SPECIFICATION SECTION 1.3120 FOR PRE-ENGINEERED BUILDING DETAILS
- 4.a. THE ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN A FACTORY ASSEMBLED PREFABRICATED BUILDING. THE COMPLETED ASSEMBLY SHALL BE ONE PIECE WHEN DELIVERED AND REQUIRE ONLY OFF LOADING, INSTALLATION ON THE SITE-BUILT FOUNDATION, CONNECTION TO ELECTRICAL SERVICE AND PROGRAMMING OF CONTROLS AND INSTRUMENTATION BY THE PROJECT INTEGRATOR. TRUSS ROOF AND BUILDING EXTERIOR MAY BE FIELD INSTALLED BY THE MANUFACTURER. BUILDING MINIMUM DIMENSIONS ARE SHOWN ON THE CONTRACT PLANS.
- 4.b. THE BUILDING MANUFACTURER SHALL SUPPLY PLANS AND CALCULATIONS WHICH SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA AND SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING PERMITS AND CERTIFICATES OF OCCUPANCY REQUIRED FOR THE FACILITY. THE BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR OBTAINING ANY STATE BUILDING APPROVALS AND THIRD-PARTY INSPECTIONS IF REQUIRED BY THE STATE OF FLORIDA OR LOCAL MUNICIPALITY.
- 4.c. THE PRE-ENGINEERED BUILDING CONCRETE PAD DIMENSIONS AND REINFORCEMENT ELEMENTS MUST BE UPDATED AND COORDINATED WITH ENGINEER IF DIFFERENT FROM THE DRAWINGS.
5. SEE ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS.
6. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER PRE-ENGINEERED BUILDING SUPPLIER REQUIREMENTS (TYP)
7. VERIFY LOCATION OF EXISTING UNDERGROUND SITE UTILITIES PRIOR TO THE START OF WORK, AND COORDINATE LOCATION WITH STRUCTURAL DRAWINGS. NOTIFY THE ENGINEER OF ANY CONFLICTS IN WRITING. DO NOT PROCEED WITH AFFECTED WORK UNTIL CONFLICTS HAVE BEEN RESOLVED.
8. STRUCTURAL DRAWINGS ARE NOT STAND-ALONE DOCUMENTS AND ARE INTENDED TO BE USED TOGETHER WITH CIVIL, MECHANICAL, ELECTRICAL LAYOUTS, AND SPECIFICATIONS. .
9. THE MORE STRINGENT SPECIFICATION SHALL APPLY WHERE DISCREPANCIES OCCUR BETWEEN DRAWINGS AND OTHER DOCUMENTS. ANY DISCREPANCIES SHALL BE PASSED ON TO ENGINEER.
10. THE STRUCTURES HAVE BEEN DESIGNED TO RESIST DESIGN LOADS ONLY WHEN COMPLETED. CONSTRUCTION LOADS ON THE PARTIALLY COMPLETED STRUCTURES SHALL BE CONSIDERED BY THE CONTRACTOR AND INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING CONSTRUCTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS.



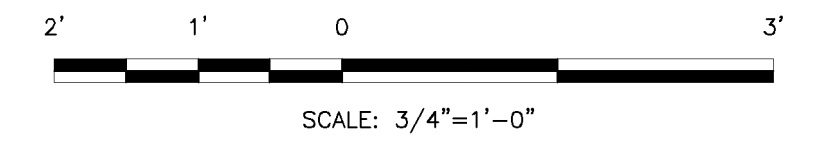
PLAN
SCALE: 3/4"=1'-0"



SECTION
SCALE: 3/4"=1'-0"



TYPICAL ANCHOR BOLT DETAIL
SCALE: NTS



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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND EST PUMP STATION
 PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL	MARK MILLER
FLORIDA LICENSE NUMBER	45320
DATE:	----

PRE-ENGINEERED ELECTRICAL BUILDING PLAN AND SECTIONS

SHEET NUMBER	M-6
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Pictured By: Tabow, Matt
 Sheet Set: Roseland - Layout: D=1 - IRCU STANDARD DETAILS - March 09, 2019 - 01:17:45pm
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SURVEY REQUIREMENTS

FOR ALL CONSTRUCTION/ROUTE SURVEY AND AS-BUILT RECORD DRAWINGS

- All construction/route survey and as-built record drawings shall meet the minimum requirements of the Chapter AJ-17, Florida Administration Code Pursuant to section 472 of the Florida Statutes.
- All state plane coordinates shall be based on the Florida State Plane Horizontal data (East Zone); or Florida High Precision Geodetic Network (superstation) and NAD 83/1999 - final adjustment, or the most current datum adopted by Indian River County.
- All elevations shown shall be based on 1929 NGVD, or the most current datum adopted by Indian River County.
- All incoming construction/route survey and as-built record drawings shall be received on a CD, as an electronic copy, AutoCad 2007 format, with a tie to a minimum of two (2) state plane coordinates. (NOTE: Prior to submitting the electronic copy, one (1) copy of each as-built (24"x36") shall be submitted for review and approval. After all approvals, a (24"x36") Mylar reproducible along with **five (5)** signed and sealed copies of each as-built shall be submitted.
- All construction/route survey and as-built record drawings shall be tied to a minimum of one (1) permanent reference monument (P.R.M.) at the end of each project. One P.R.M. shall be tied to a minimum of one (1) section corner or one-quarter (1/4) section corner whichever is closest to the project. State plane coordinates shall be physically shown on the drawing next to the P.R.M. used.
- All surveys that are required for the use of engineering design, and are located within a distance of one (1) mile from any Indian River County Global Positioning System (G.P.S.) control project monuments, shall be tied into the GPS monument from one (1) permanent reference point or the subdivision corner that is along the survey route and shall then be tied to the survey base line.
- Horizontal Control Monumentation for utility lines shall be a minimum of two (2) points at a maximum of 1,400 feet between points and shown on all plans.
- Vertical Control (when required) for linear utility lines, such as sewer, shall have a maximum of 1,100 feet between existing construction or established benchmarks.
- A minimum text size of 1/8" is required on all construction/route survey and as-built record drawings.

GENERAL INFORMATION REQUIREMENTS

FOR ALL CONSTRUCTION/ROUTE SURVEY AND AS-BUILT RECORD DRAWINGS

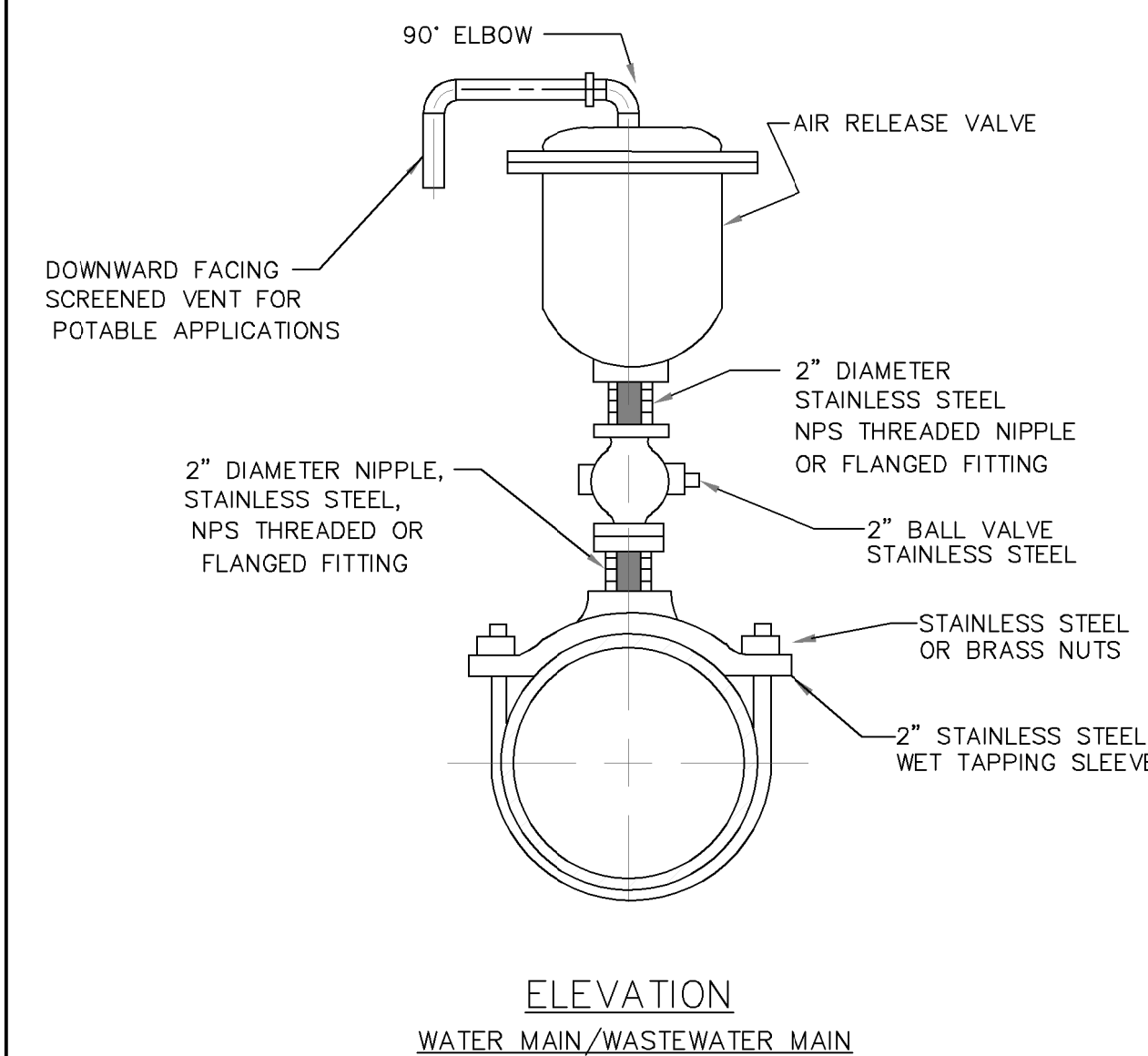
- Existing right-of-way limits and/or easements within the limits of construction.
- Survey baseline stationing every 100', control points set every 500', and at angle change of direction.
- Show cross section elevations at grade every 100' for gravity sewer line construction and 500' for water line and force main construction. Elevations that reflect any significant change in grade between the previously stated footage shall be shown on plans.
- Existing parcels, tracts, and lot corner locations shown with front footage dimensions per plat when platted. If construction project is along back of lots, then show back lot dimensions.
- Existing roadway edge of pavement or edge of dirt road.
- Existing utilities as located in field (water, sewer, telephone, electric, cable TV, etc.) (NOTE: Sunshine One to be contacted by surveying firm prior to survey locate; with the intent of county excavation.)
- Existing utilities as associated with number 5 above (example: valves, meters, manholes, etc.)
- Existing curbs, driveway widths and types.
- Existing drainage pipe crossings and driveway culverts (type, sizes and invert elevations.)
- Existing swales and/or ditches and elevations every 100' at top and bottom if within area of construction.
- Existing fences.
- Existing trees and/or shrubbery.
- All other non-movable items such as mailboxes, flag poles, etc.
- All street names.
- All commercial and single/multi family residence must have parcel I.D. indicated on the plan.

INFORMATION REQUIREMENTS

FOR ALL AS-BUILT RECORD DRAWINGS

In addition to the requirements specified in Drawings M-16 and M-16(A), the following shall be included on all As-Built Record Drawings before acceptance by the Indian River County Department of Utility Services.

- All as-built drawings (24"x36") shall state in 1" lettering "AS-BUILT" located in the bottom right hand side of the drawing original and/or copies, along with the as-built date.
- All utility as-built construction located within the rights-of-way, easements and alike shall be tied to the respective rights-of-way, easements, etc., every 1,000 feet and change of direction.
- All as-builts shall clearly depict as-built utility lines that were constructed along with their respective easement (if required). As-builts will not be accepted unless the verbiage "Proposed" and/or "To Be Constructed" have been revised to read "AS-Built". As-built Construction drawings with, to be constructed terminology, will not be accepted.
- All as-builts shall be certified by the project engineer or contracting surveyor.
- All projects, which utilize lift stations, shall specify on plans as to whether or not subject lift stations are to remain private or are to be dedicated to the county.
- All fire hydrants and valves shall be located with state plane coordinates, station number and off-set and shall be clearly identified on the as-built drawing.
- All valves shall be clearly identified by size, type, top elevation and direction/number of turns to open or close each valve.
- Horizontal directional bores shall have a profile or cross section drawing and include the bore log.
- The contractor is to provide the name of business or residence, street address and tax I.D. number for all properties adjacent to line extensions.
- Shown with a thin dashed line, top elevations of As-Built utility lines and existing utility lines shall be shown for all utility crossings.
- Baseline of construction and station of items to be on the centerline of the roadway.
- As-Built utility lines shall be shown with a wider solid line.
- Top of pipe elevations & stationing to be typed, listed, sealed & submitted for the engineer to locate the air release valves as construction proceeds.
- All as-builts shall be complete and approved before commencement of field test.



NOTES

- AUTOMATIC AIR RELEASE VALVE TO BE LOCATED ONLY WHERE CONDITIONS MAKE IT INACCESSIBLE OR AS REQUIRED BY THE IRCUDS.
- AIR RELEASE RISERS TO BE IN A VERTICAL PLUMB POSITION AND PLACED AT SUMMITS IN THE SYSTEM. FOR DIRECTIONAL BORES, AIR RELEASE VALVES ARE TO BE PLACED ON EITHER SIDE OF THE CROSSING.
- SEE TRACE WIRE DETAIL. M-13
- FOR AIR RELEASE VALVES LARGER THAN 2" CONSULT IRCUDS.

INDIAN RIVER COUNTY DEPARTMENT OF UTILITIES SERVICES		SURVEY REQUIREMENTS <small>SEPTEMBER 2011</small>	DRAWING NO. M-16	INDIAN RIVER COUNTY DEPARTMENT OF UTILITIES SERVICES		GENERAL INFORMATION REQUIREMENTS <small>SEPTEMBER 2011</small>	DRAWING NO. M-16 (A)	INDIAN RIVER COUNTY DEPARTMENT OF UTILITIES SERVICES		AS-BUILT REQUIREMENTS <small>SEPTEMBER 2011</small>	DRAWING NO. M-16 (B)	INDIAN RIVER COUNTY DEPARTMENT OF UTILITIES SERVICES		AIR RELEASE VALVE ASSEMBLY ABOVE GROUND (AUTOMATIC - WATER/WASTEWATER) <small>MARCH 2018</small>	DRAWING NO. M-8
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No.	REVISIONS	DATE	BY

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ROSELAND TANK CONVERSION
 PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY
FLORIDA

LICENSED PROFESSIONAL

MARK MILLER

FLORIDA LICENSE NUMBER
45320

DATE: _____

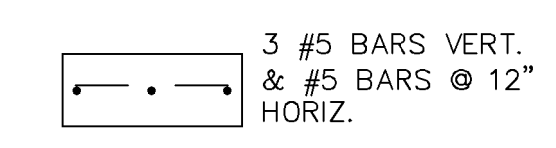
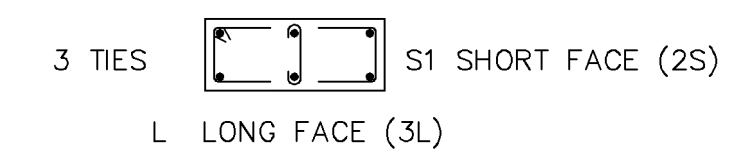
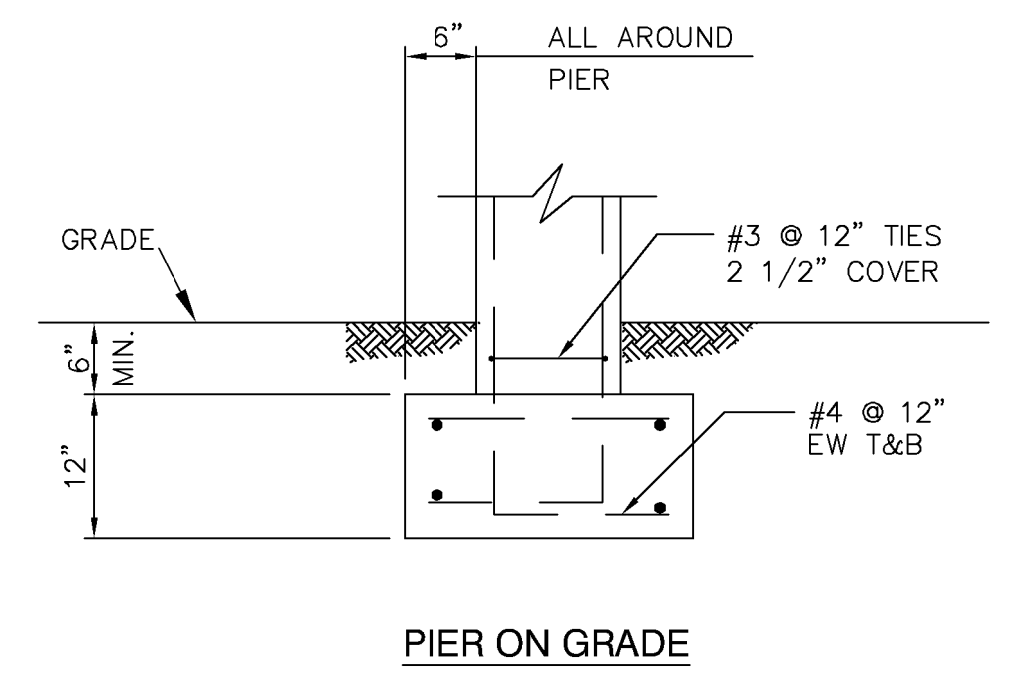
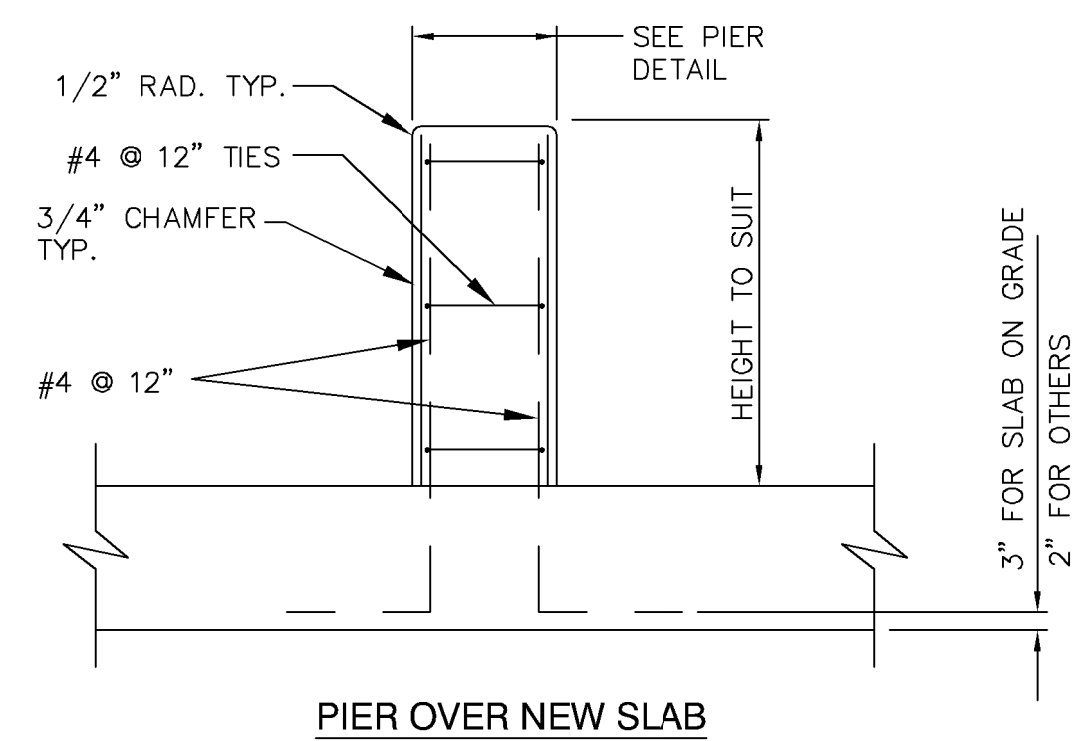
IRCU STANDARD DETAILS

SHEET NUMBER

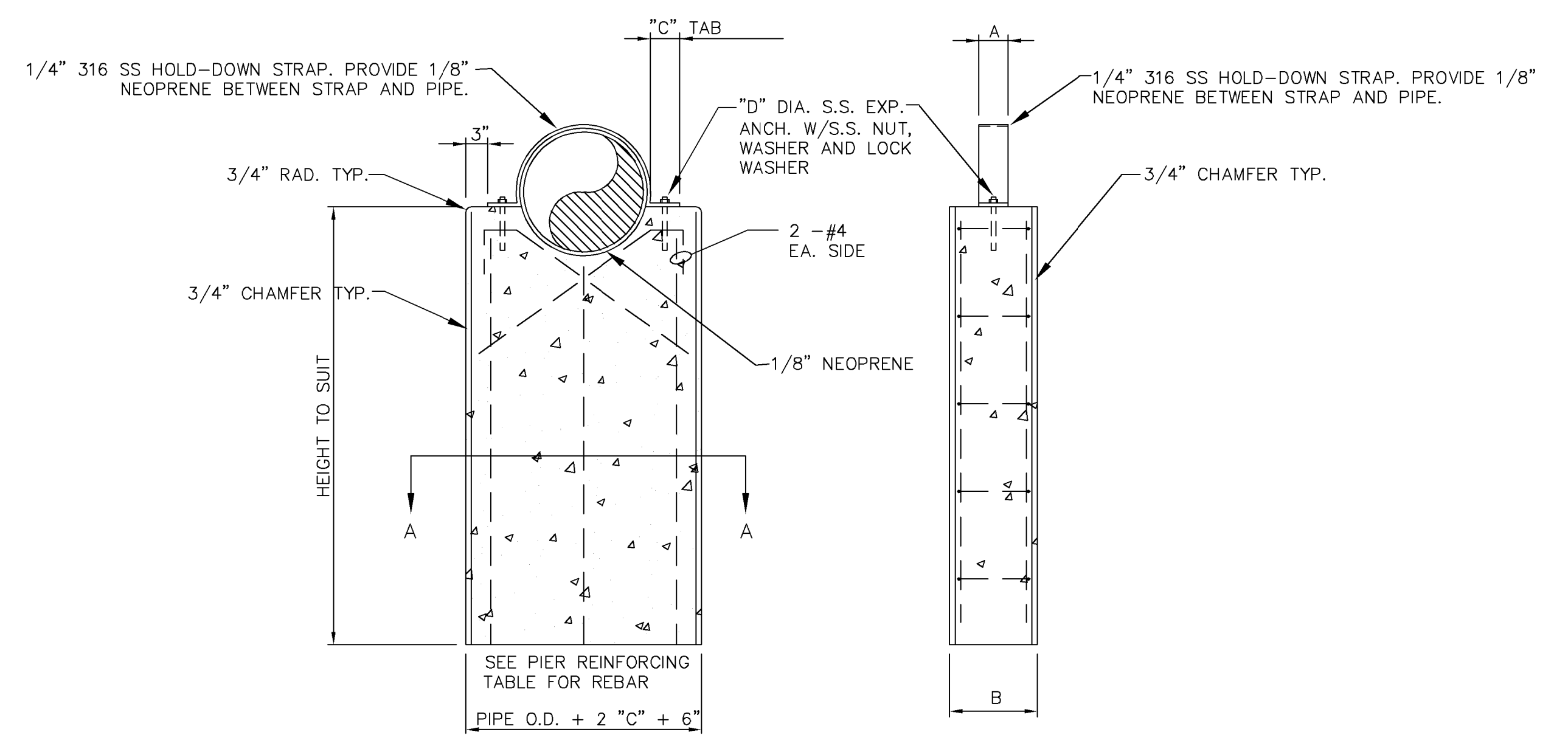
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Pictured By: Tabow, Matt
 Sheet Set: Roseland - Layout: D-3 - STANDARD DETAILS - March 09, 2019, 06:57:52pm
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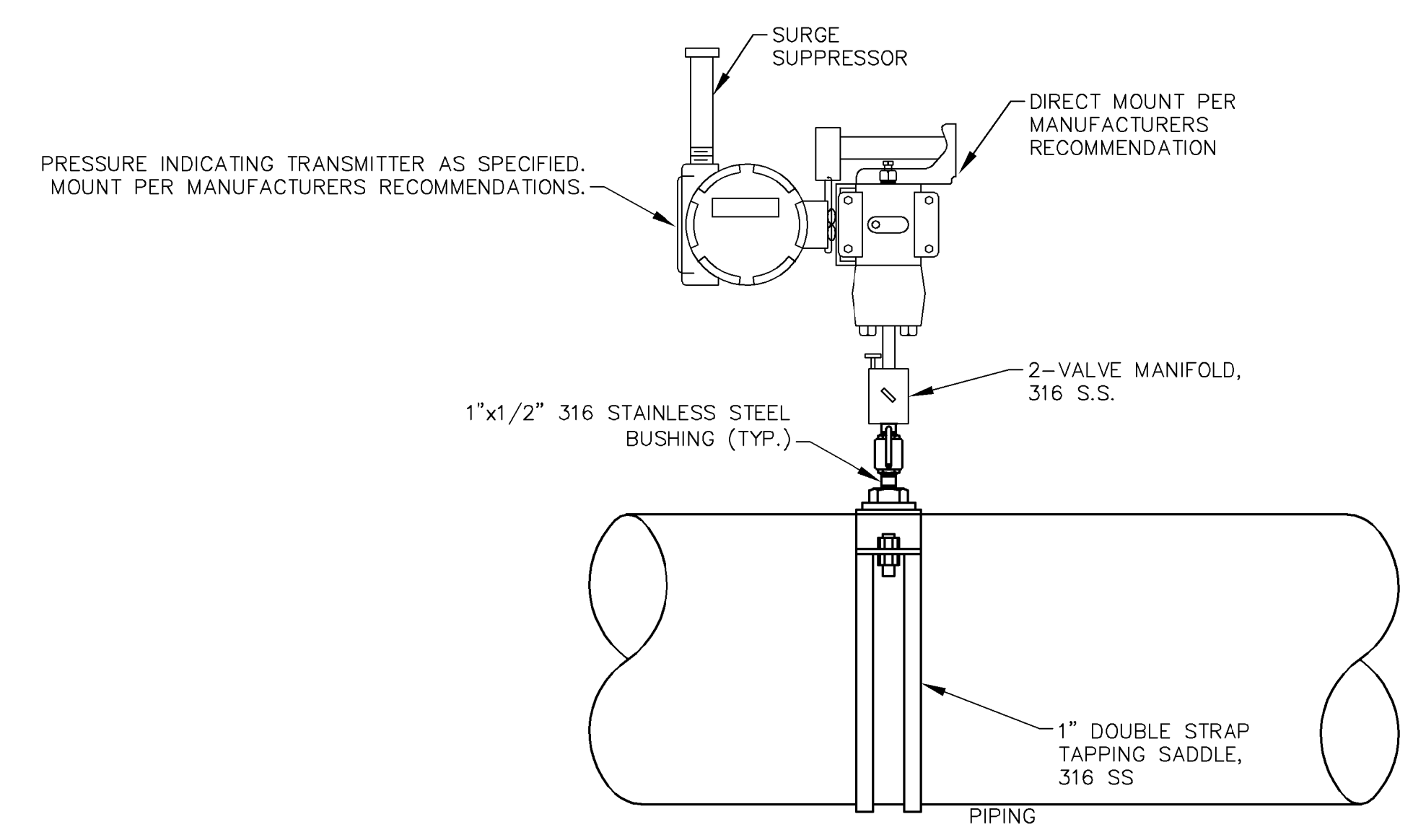
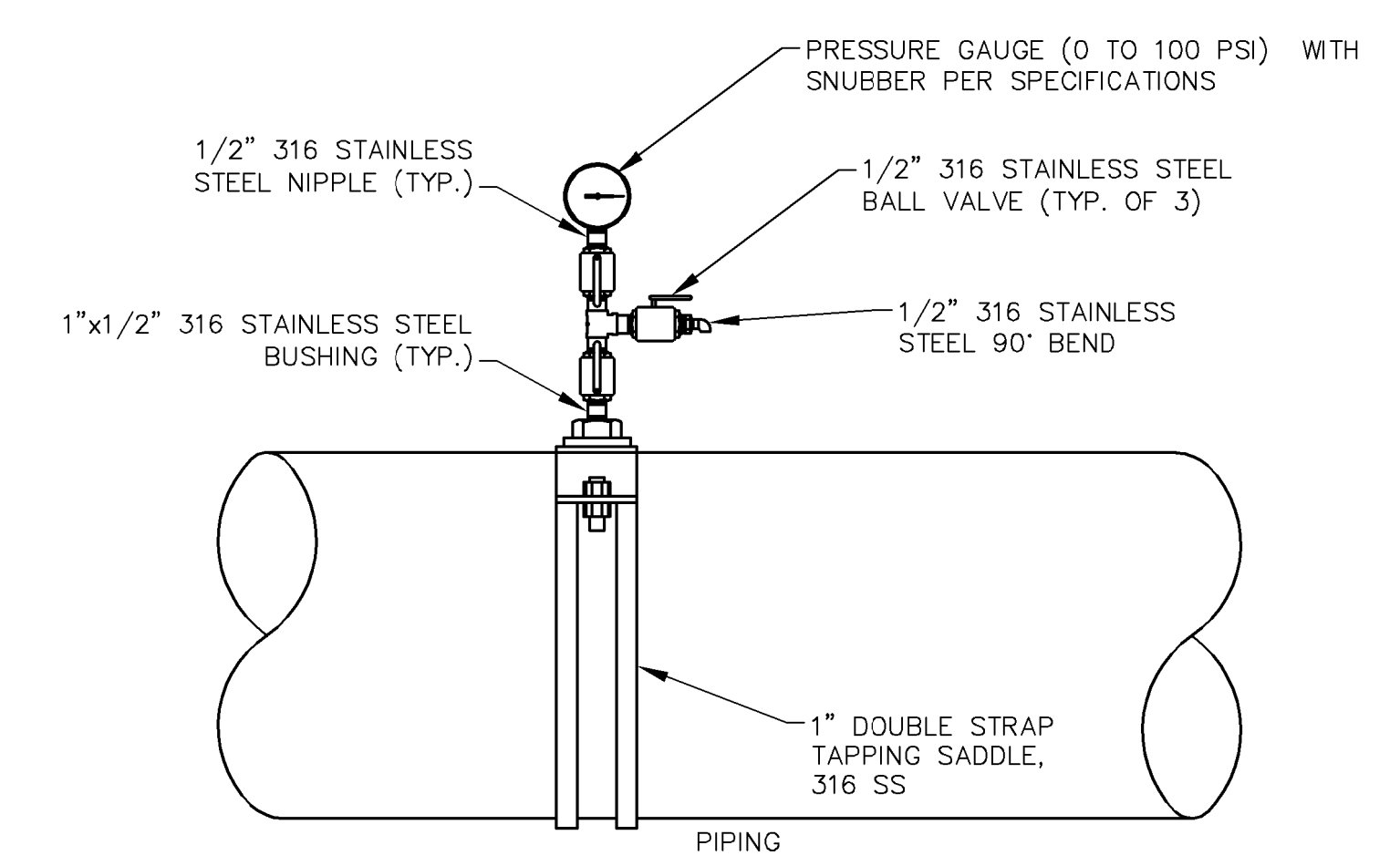
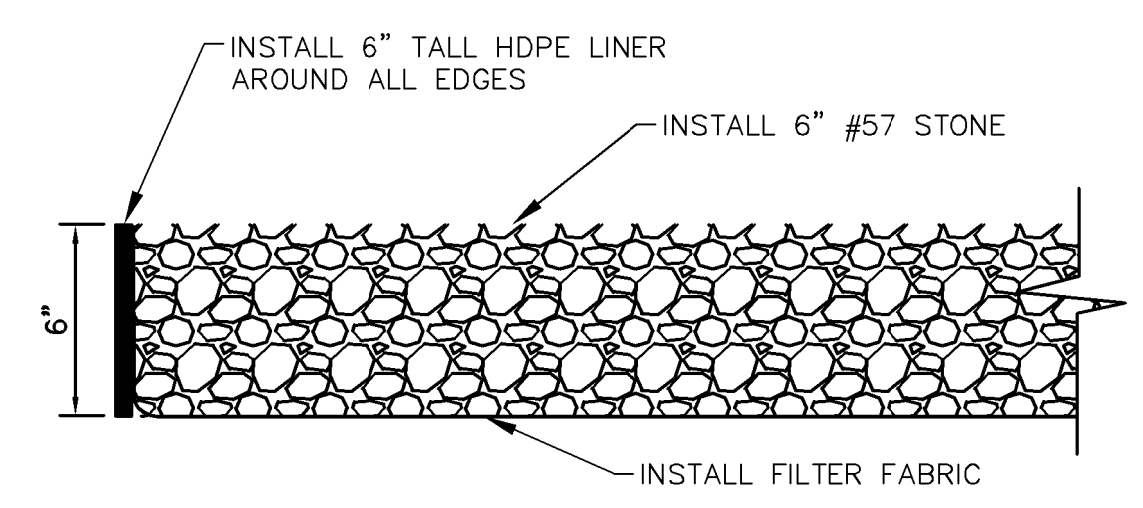
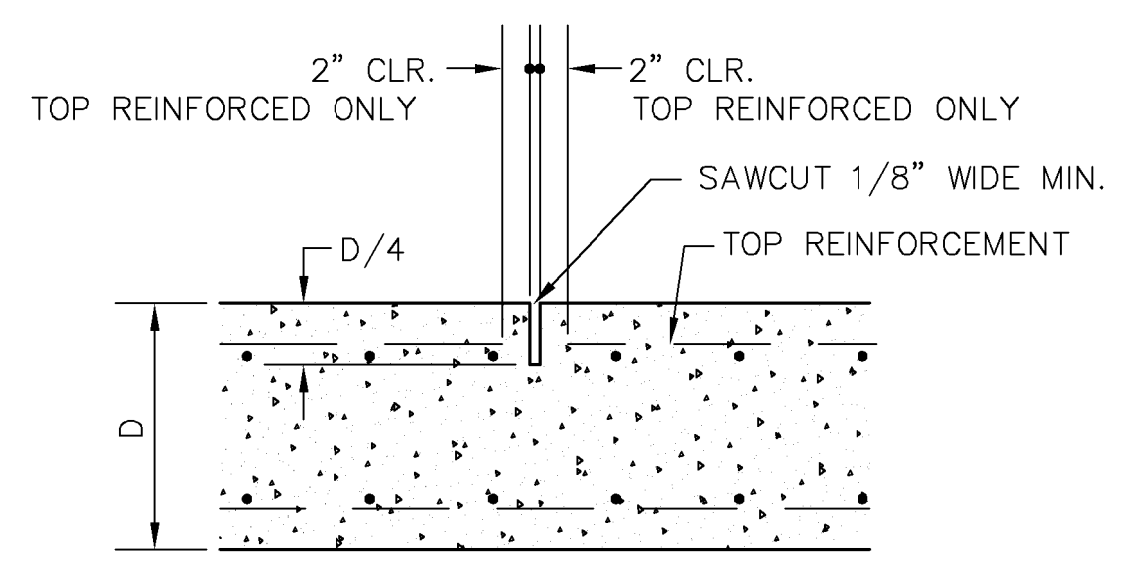
PIPE SUPPORT ASSEMBLY											
NOMINAL PIPE O.D.	"A"	"B"	"C"	"D"	FLAT BAR	FNDN SIZE W x L x 12"	FNDN LW	REBAR SW	PIER SIZE W x L	PIER REBAR EACH FACE	TIES
6	4	12	4	5/8	1/4	2'-0"x2'-8"x12"	2- #5	2- #5	1'-0" x 1'-6"	4- #5 2L2S	1 - #3 @ 12"
12	4	12	4	5/8	1/4	3'-2"			2'-2"	6- #5 3L2S	2 - #3 @ 12"
16	4	12	4	5/8	1/4	3'-6"			2'-6"	6- #5 3L2S	2 - #3 @ 12"



NOTE:
1. SEE PIER DETAILS FOR ADDITIONAL #4 REBAR AT TOP.



CONCRETE PIER PIPE SUPPORT
SCALE: N.T.S.



No.	REVISIONS	DATE	BY

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KHA PROJECT 044572041
DATE MAR 2019
SCALE AS SHOWN
DESIGNED BY MT
DRAWN BY DJM
CHECKED BY MM

ROSELAND TANK CONVERSION
PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY
FLORIDA

LICENSED PROFESSIONAL

MARK MILLER

FLORIDA LICENSE NUMBER 45320

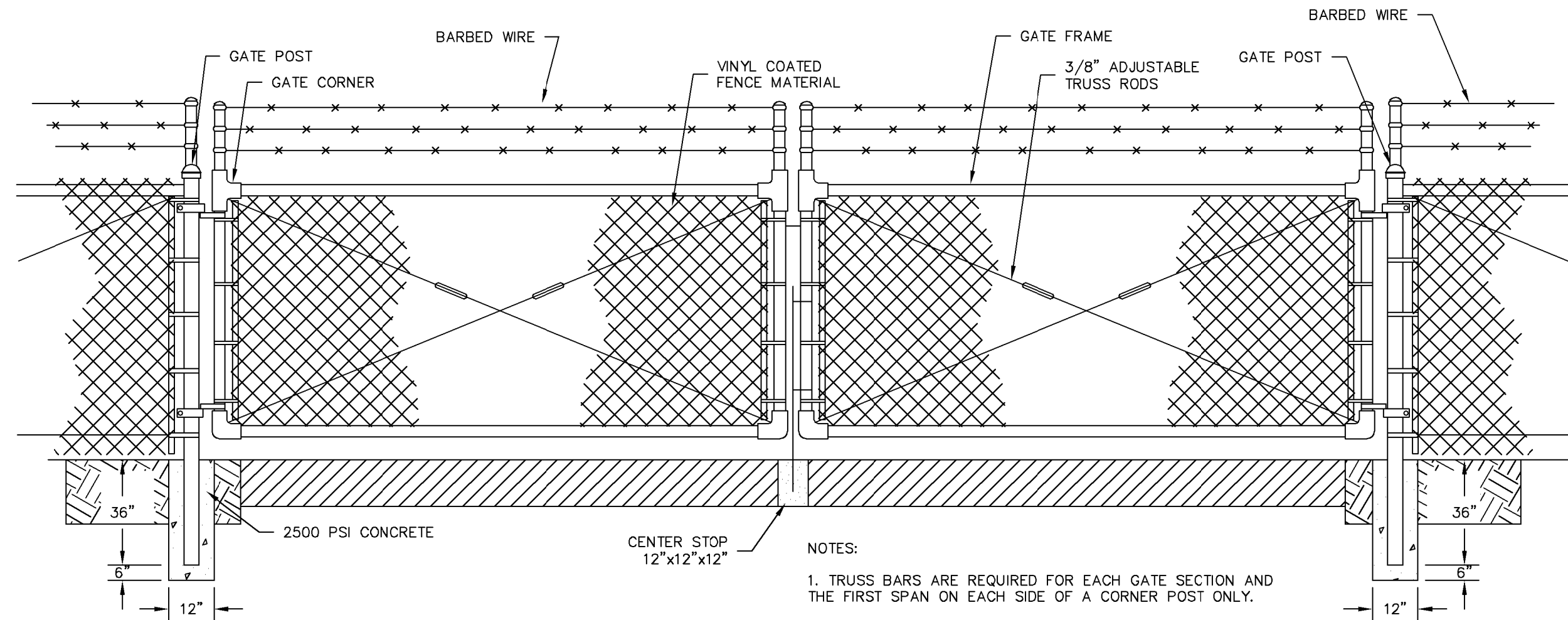
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STANDARD DETAILS

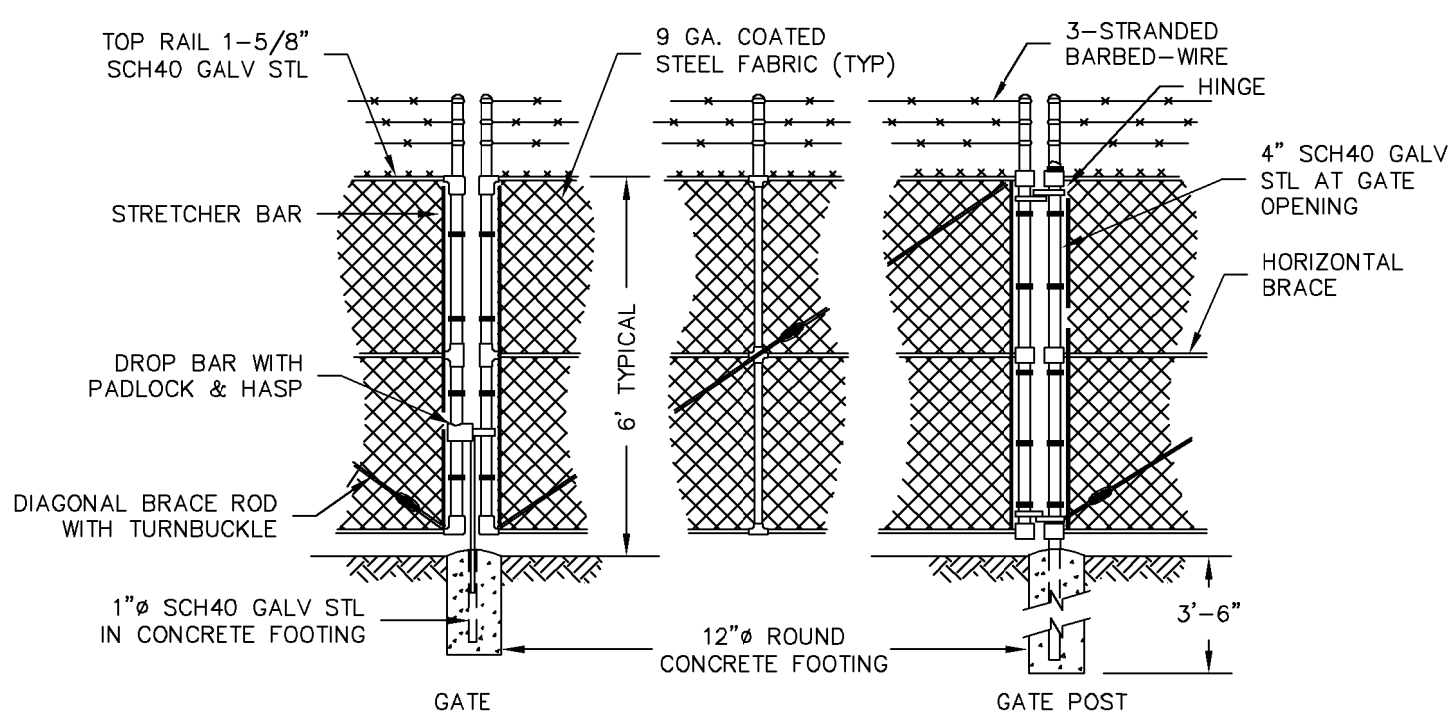
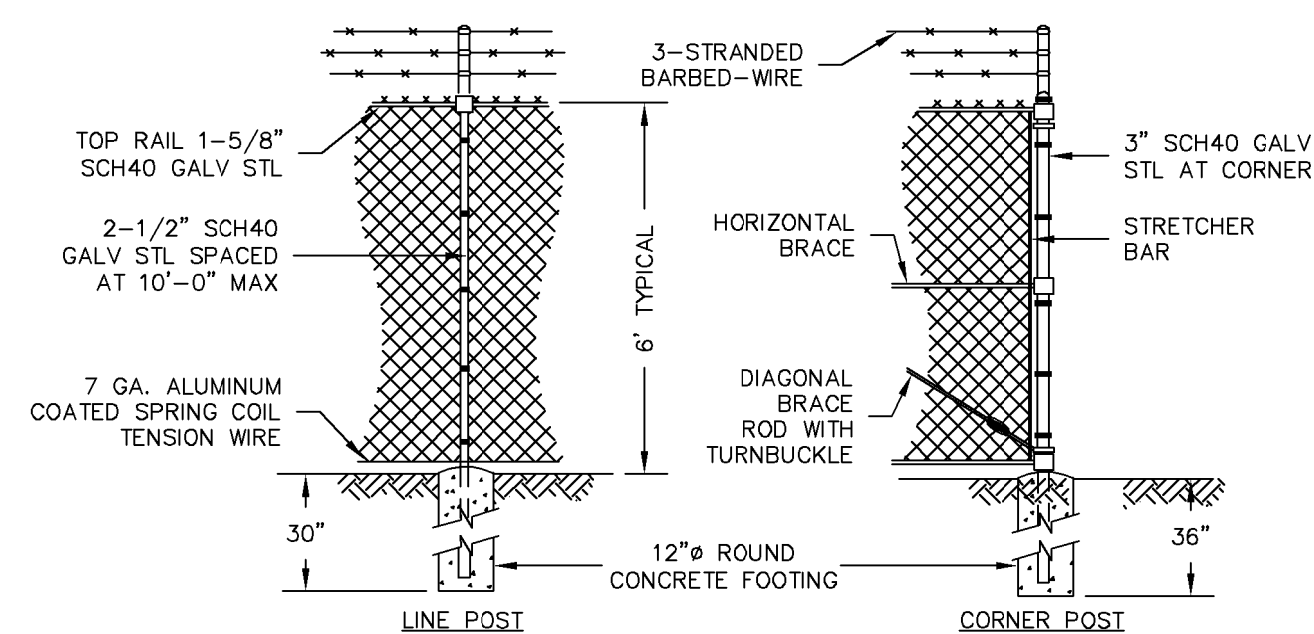
SHEET NUMBER

D-3

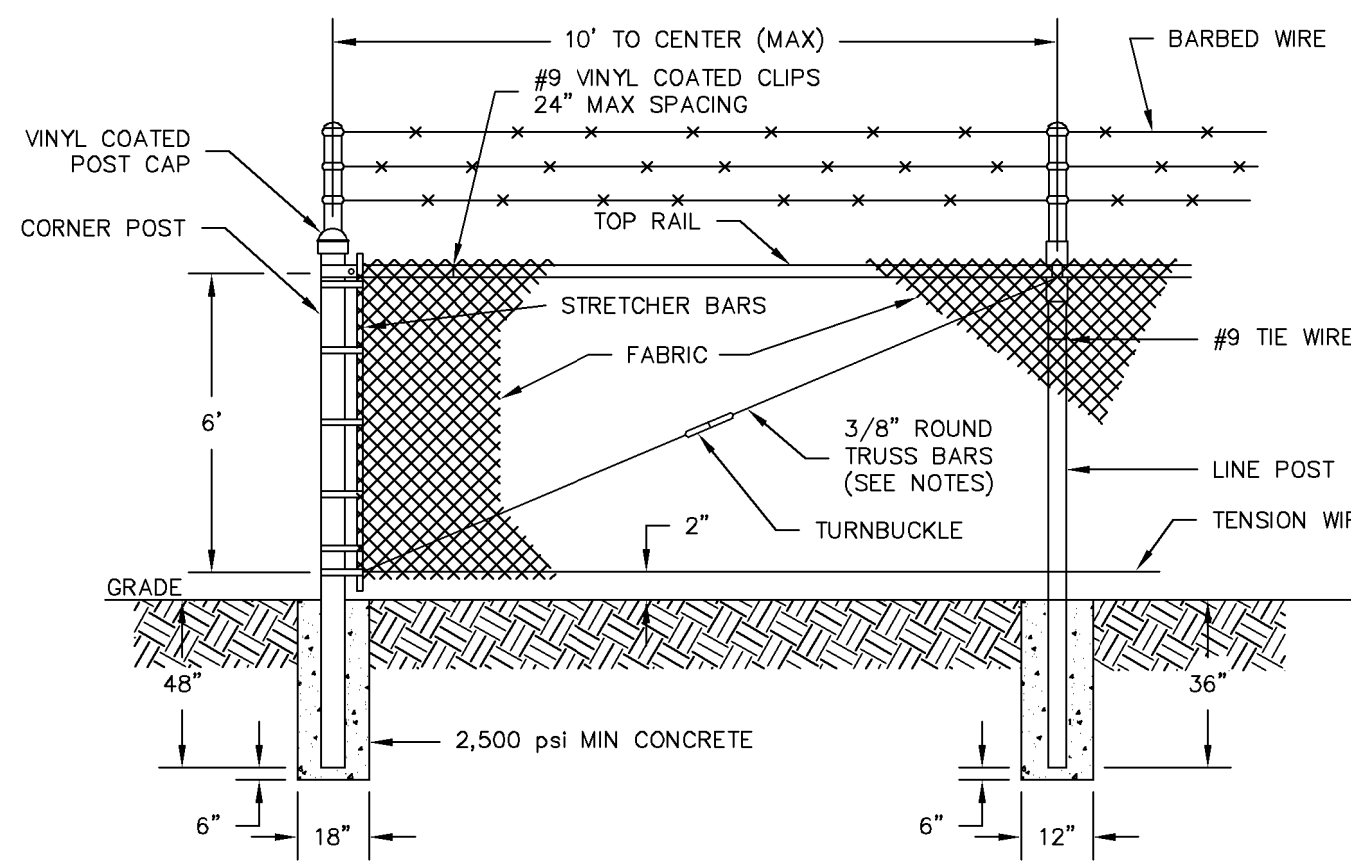
Plotted By: Tabow, Matt | Sheet Set: Roseland Tank Conversion | Layout: D-4 - STANDARD DETAILS | Date: 03/20/2019 | 05:24:29pm
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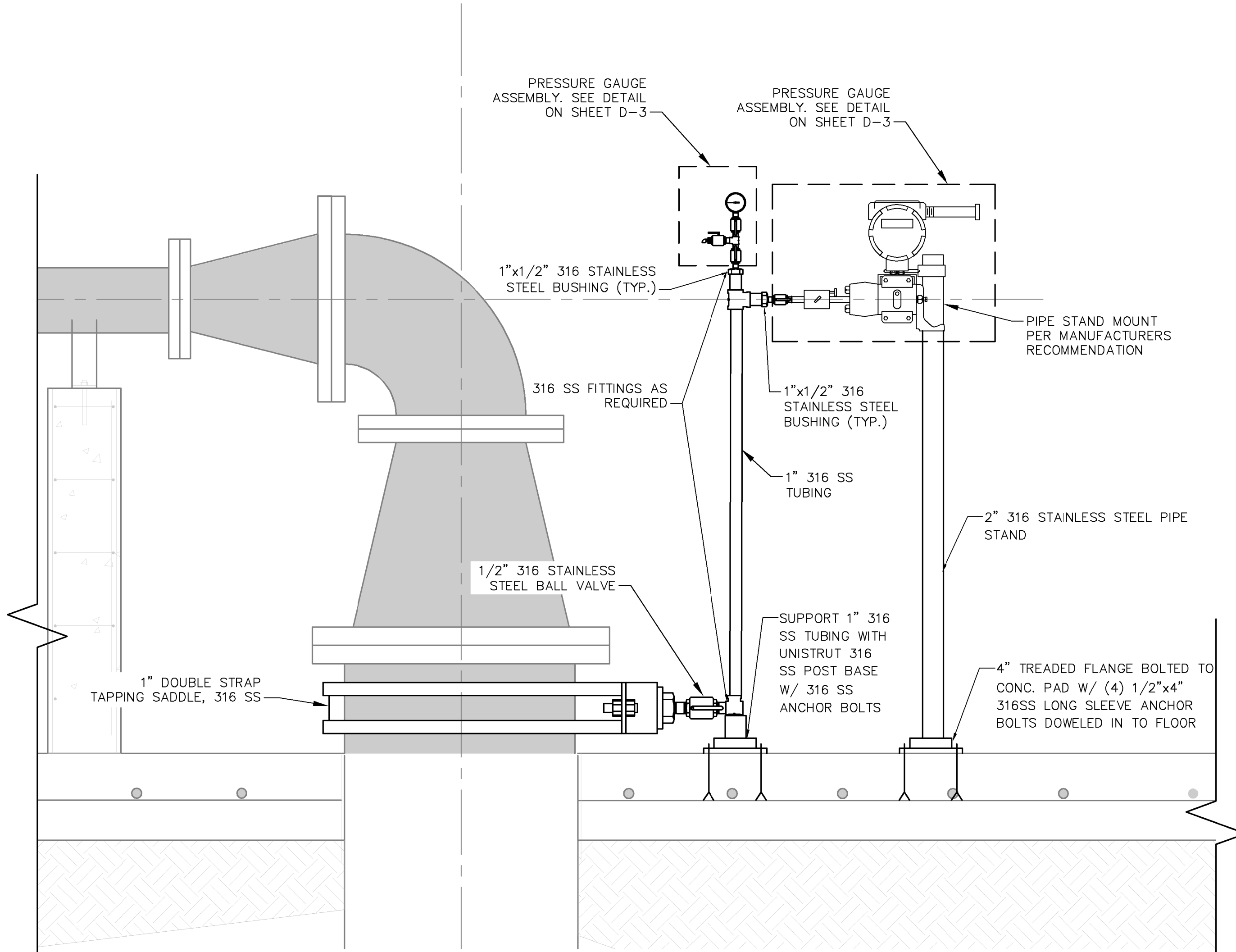
NOTES:
 1. TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.



NOTES:
 1. (3) 6' GATES TO HAVE A 12'-0" CLEAR OPENING.
 2. COATED STEEL WOVEN WIRE FABRIC SHALL BE STRETCHED TIGHT WITH STRETCHER BARS AND STRAPS AND FASTENED TOP & BOTTOM AT LINE POSTS WITH GALVANIZED PIG RING TIES.
 3. GATES TO BE SECURED OPEN WITH GATE STOP SET IN CONCRETE.
 4. ALL MATERIAL SHALL BE BLACK IN COLOR.
 5. FENCING SHALL BE VINYL COATED CHAIN-LINK.
 6. THREE STRANDED BARBED-WIRE SHALL BE USED.



FENCING DETAILS
 SCALE: N.T.S.



PRESSURE INDICATOR TRANSMITTER DETAIL NO. 2
 SCALE: N.T.S.

No.	REVISIONS	DATE	BY

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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND TANK CONVERSION
 PREPARED FOR
INDIAN RIVER COUNTY
 INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL	MARK MILLER
FLORIDA LICENSE NUMBER	45320
DATE:	----

STANDARD DETAILS
 SHEET NUMBER
D-4

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VALVE SYMBOLS

- GATE
- GLOBE
- BALL
- BALL
- BUTTERFLY
- CHECK
- DIAPHRAGM
- PLUG
- NEEDLE
- SOLENOID
- 3-WAY SOLENOID (SEE DETAIL A)
- PINCH VALVE
- RELIEF AND/OR SAFETY
- 3-WAY
- 5-WAY

CONTROL VALVES/ACTUATORS

- PRESSURE REDUCING REGULATOR, SELF CONTAINED
- BACK PRESSURE REGULATOR, SELF CONTAINED
- MOTOR OPERATED BALL VALVE
- MOTOR OPERATED BALL VALVE
- MOTOR OPERATED BUTTERFLY VALVE
- MOTOR OPERATED GLOBE VALVE
- CYLINDER OR PISTON OPERATED BUTTERFLY VALVE
- DAMPER
- AIR OPERATED CONTROL VALVE w/ AIR SUPPLY AND POSITIONER
- MODULATING CONTROL VALVE
- BLAST GATE
- VACUUM RELIEF VALVE

PIPING AND EQUIPMENT SYMBOLS

- CENTRIFUGAL PUMP
- BLOWER
- POSITIVE DISPLACEMENT PUMP (W/MANUAL STROKE ADJUSTMENT)
- ROTARY COMPRESSOR OR FAN
- VERTICAL TURBINE PUMP
- MIXING TEE
- MIXER OR AGITATOR
- STATIC MIXER
- SIGHT GLASS
- LEVEL GAUGE
- FLOW SIGHT GLASS
- INJECTION SPARGER
- REDUCER
- QUICK DISCONNECT
- FLOOR DRAIN
- RUPTURE DISC
- DIAPHRAGM OR CHEMICAL SEAL
- EDUCTOR
- Y-STRAINER
- PULSATION DAMPENER
- CALIBRATION COLUMN
- ATM. VENT TO ATMOSPHERE
- MEMBRANE TREATMENT STAGE
- EXPANSION JOINT

INSTRUMENT SYMBOLS

- LOCALLY MOUNTED
- PANEL MOUNTED (AUXILIARY LOCATION)
- CONTROL PANEL (PRIMARY LOCATION)
- COMPUTER FUNCTION (CONTROL PANEL)
- PILOT LITE

LIST OF RELAY FUNCTIONS

- ADJUSTABLE RATIO
- EXTRACT SQUARE ROOT
- CONVERT SIGNAL RELAY (TYPICAL EXAMPLES)
- E-VOLTAGE
- H-HYDRAULIC
- I-CURRENT
- O-ELECTROMAGNETIC OR SONIC
- P-PNEUMATIC
- R-RESISTANCE(ELECTRICAL)

FLOW MEASUREMENT SYMBOLS

- FLOW ELEMENT(ORFICE PLATE)
- FLOW TOTALIZING INDICATOR (TURBINE METER)
- FLOW ELEMENT(ANNUBAR)
- INSERTION TYPE MAGNETIC FLOWMETER
- MAGNETIC FLOWMETER
- INLINE FLOW INDICATOR
- INLINE FLOW INDICATOR (ROTOMETER) WITH INTEGRAL MANUAL VALVE

SPECIAL IDENTIFICATION

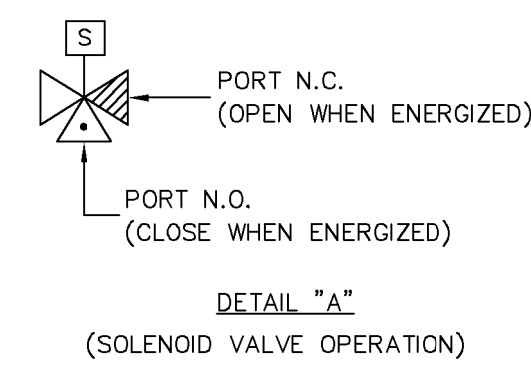
- AX - ANALYZER TEST CONNECTION
- PX - PRESSURE TEST CONNECTION
- S - SAMPLE
- XL - MOTOR RUNNING LIGHT
- SDI - SILT DENSITY INDEX TEST FILTER HOLDER W/0.45 MICRON FILTER HOLDER
- D - DRAIN
- N.C. - NORMALLY CLOSED
- N.O. - NORMALLY OPEN
- F.C. - FAIL CLOSED
- F.O. - FAIL OPEN

CONTROL SYMBOLS

- DISCRETE INPUT
- DISCRETE OUTPUT
- ANALOG INPUT
- ANALOG OUTPUT

LINE SYMBOLS

- PROCESS FLOW PIPING
- AIR STREAM OR PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL (OR FUTURE)
- FIBER OPTIC



FLOW SYMBOLS

- AS - AIR SUPPLY
- BAS - BLOWER AIR SUPPLY
- FW - FINISH WATER
- IAS - INSTRUMENT AIR SUPPLY
- PB - PERMEATE BLEND
- PW - POTABLE WATER
- SA - SAMPLE

INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER (OR PAIR)		SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS(2)		ALARM		
B			USERS CHOICE(3)	USERS CHOICE(3)	USERS CHOICE(3)
C	CONDUCTIVITY (ELECTRIC)			CONTROL	
D		DIFFERENTIAL			
E	VOLTAGE (E.M.F.)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FUNCTION)			
G	GAGING (DIMENSION)		GLASS (DIRECT VIEW)		
H	HAND (MANUAL) CURRENT (ELECTRIC)				HIGH
I			INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT(PILOT)		
M	MOISTURE OR HUMIDITY				
N	USER'S CHOICE(3)		USERS CHOICE(3)	USERS CHOICE(3)	USERS CHOICE(3)
O	OXIDE REDUCT. POTENTIAL		ORFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		TEST OR SAMPLE POINT		
Q	QUANTITY OR EVENT	INTERGRATE/TOTALIZER			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY			VALVE,DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED(4)	UNCLASSIFIED(4)	UNCLASSIFIED(4)	UNCLASSIFIED(4)	UNCLASSIFIED(4)
Y	USERS CHOICE(3)			RELAY OR COMPUTE	
Z	POSITION			DRIVE,ACTUATE,ETC.	

- ANY FIRST LETTER COMBINED W/ MODIFIER REPRESENTS A NEW AND SEPARATE MEASURED VARIABLE. EXAMPLES: PD=DIFFERENTIAL PRESSURE,FQ=TOTALIZED OR INTERGRATED FLOW. EXCEPTION IS MODIFIER "J" FOR MULTIPPOINT SCANNING. "A" IS USED FOR ANALYTICAL VARIABLES. EXAMPLES: pH,Na,SiO~s2~S,O~s2~S,ETC. A SYMBOL OR DESCRIPTION
- DENOTING THE FUNCTION IS SHOWN OUTSIDE THE INSTRUMENT SYMBOL. EXAMPLE: pH
- MEANING OF A "USER CHOICE" LETTER SHALL BE CONSISTENT THROUGHOUT A PROJECT AND SHALL BE SPECIFIED IN THE DRAWING LEGEND.
- UNCLASSIFIED LETTER MAY HAVE A FEW DIFFERENT MEANINGS ON A PROJECT.THE MEANING SHALL BE SPECIFIED NEAR EACH INSTRUMENT SYMBOL USING THE UNCLASSIFIED LETTER.

No.	REVISIONS	DATE	BY

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KHA PROJECT	044572041
DATE	MAR 2019
SCALE	AS SHOWN
DESIGNED BY	MT
DRAWN BY	DJM
CHECKED BY	MM

ROSELAND EST PUMP STATION
PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY

LICENSED PROFESSIONAL

MARK MILLER

FLORIDA LICENSE NUMBER
45320

FLORIDA

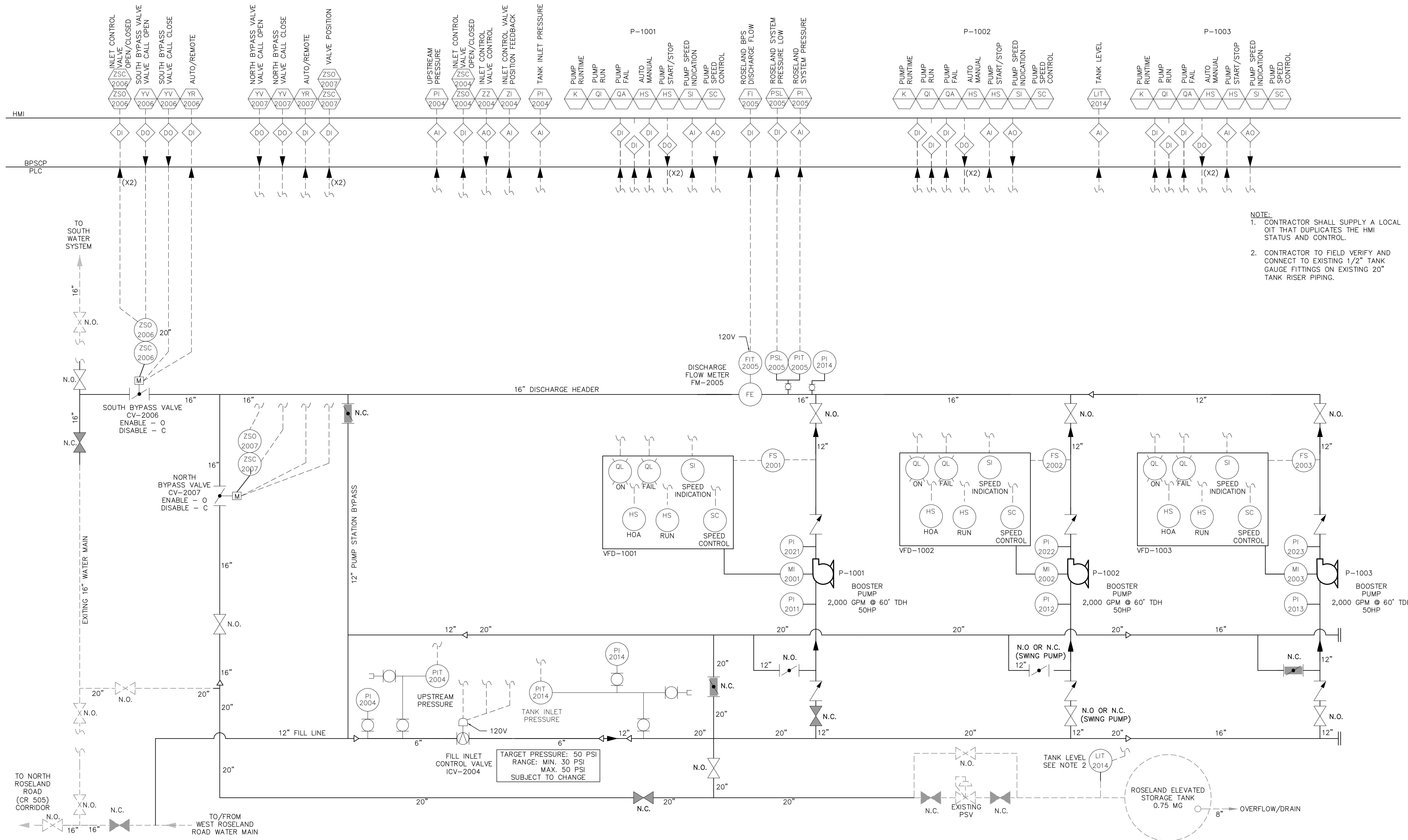
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P&ID LEGEND AND ABBREVIATIONS

SHEET NUMBER

I-0

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- NOTE:**
- CONTRACTOR SHALL SUPPLY A LOCAL OIT THAT DUPLICATES THE HMI STATUS AND CONTROL.
 - CONTRACTOR TO FIELD VERIFY AND CONNECT TO EXISTING 1/2" TANK GAUGE FITTINGS ON EXISTING 20" TANK RISER PIPING.

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DATE MAR 2019
SCALE AS SHOWN
DESIGNED BY MT
DRAWN BY DJM
CHECKED BY MM

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INDIAN RIVER COUNTY
 FLORIDA

LICENSED PROFESSIONAL
 MARK MILLER
 FLORIDA LICENSE NUMBER
 45320

P&ID

SHEET NUMBER
I-1

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GENERAL ELECTRICAL NOTES

- SCHEMATIC NATURE**
PLAN VIEWS ARE SCHEMATIC IN NATURE AND MEANT TO SHOW THE SCHEMATIC ARRANGEMENT OF EQUIPMENT AND CONDUIT.
- APPROVED SHOP DRAWINGS**
USE APPROVED SHOP DRAWINGS FOR LAY OUT OF EQUIPMENT. THE CONTRACT DOCUMENTS WILL VARY FROM THE SHOP DRAWINGS. INFORM THE ENGINEER IMMEDIATELY IF THERE ARE LAY OUT ISSUES OR INADEQUATE SPACE FOR EQUIPMENT OR CLEARANCES. LAND CONDUITS IN OPENINGS OF ENCLOSURES PER THE APPROVED SHOP DRAWINGS, DO NOT USE THE CONTRACT DRAWINGS.
- CLEARANCES**
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MEET N.E.C. CLEARANCES ABOUT EQUIPMENT. THE SAME APPLIES TO RACEWAY SUPPORTS.
- ROUTING**
CONDUIT ROUTING IS SCHEMATIC IN NATURE. CONDUIT ROUTING IS SHOWN FOR CLARITY ON THE CONTRACT DRAWINGS. ROUTE CONDUITS AS MAY BE REQUIRED.
- FIELD VERIFICATIONS**
FIELD VERIFY ALL EXISTING CONDITIONS. MAKE MINOR ADJUSTMENTS AS NEEDED. INFORM OWNER/ENGINEER OF INCONSISTENCIES IMMEDIATELY IF PROBLEMS OR CONFLICTS EXIST.
- COMPLETE AND FUNCTIONAL SYSTEMS**
PROVIDE ALL LABOR AND MATERIAL FOR A COMPLETE AND FUNCTIONAL SYSTEM. DEMONSTRATE SYSTEM OPERATION TO THE OWNER/ENGINEER.
- LABELING**
THE CONTRACTOR SHALL PROVIDE LAMCOID PRINTED LABELS FOR ALL EQUIPMENT AND TYPED PANELBOARD SCHEDULES AS REQUIRED.
- CONTRACTOR MINIMUM REQUIREMENTS**
PROVIDE AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR A COMPLETE SYSTEM SHALL BE INCLUDED.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS.

ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, NFPA, AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE U.L. APPROVED.

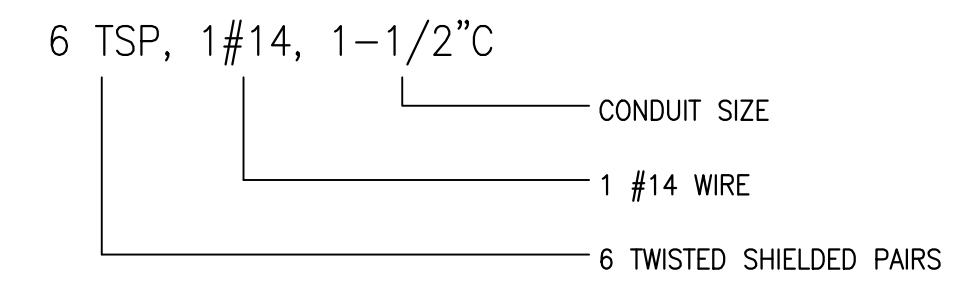
CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL CONCEALED FACILITIES BEFORE ANY WORK BEGINS.
- SCOPE OF WORK**
1. BOOSTER STATION ADDITION.
- CONDUIT**
CONDUIT SIZES AS SHOWN ON THE DRAWINGS ARE MINIMUM. THE CONTRACTOR MAY INCREASE AS REQUIRED FOR EASE OF PULLING.

- JUNCTION BOXES**
PROVIDE ADDITIONAL BOXES AS MAY BE REQUIRED.
- CONDUCTORS**
CONDUCTORS SHALL BE COPPER STRANDED TYPE THWN WITH 75°C RISE INSULATION.
- GROUNDING**
PROVIDE GROUND SYSTEM AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY THE NATIONAL ELECTRIC CODE.
- FUTURE FACILITIES**
WHERE FUTURE FACILITIES ARE INDICATED, CONDUIT ROUTING SHALL ACCOUNT FOR SUCH FACILITIES.
- RESPONSIBILITIES**
BIDDERS, SUPPLIERS, EQUIPMENT VENDORS, GENERAL CONTRACTOR, SUB CONTRACTORS AND OTHER SIMILAR ENTITIES ARE REQUIRED TO READ ALL THE CONTRACT DOCUMENTS INCLUDING DRAWINGS AND SPECIFICATIONS.
- HOME RUNS**
CONTRACTOR SHALL COORDINATE HOME RUNS BETWEEN PLAN VIEWS. WHERE ANY CONDUIT IS SHOWN IN ANY PLAN VIEW IT SHALL BE INSTALLED THE ENTIRE LENGTH AS MAY BE REQUIRED.
- SEPARATION**
MAINTAIN MIN. 12" SEPARATION BETWEEN 4-20MADC SIGNAL AND OTHER RACEWAYS.
- DEMOLITION**
AS MAY BE REQUIRED.
- SHUT DOWNS**
CONTRACTOR SHALL COORDINATE ANY POWER DOWNTIME WITH FPL AND THE OWNER. ANY POWER DOWN TIME SHALL BE APPROVED BY THE OWNER.
- RESTORATION**
CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL FACILITIES HE DISTURBS. CONTRACTOR SHALL PROVIDE CLEANUP, AND PROPER DISPOSAL, AND PAY ALL FEES FOR ALL DEMOLISHED MATERIALS AND THE LIKE.

ELECTRICAL ABBREVIATIONS

BPSCP	BOOSTER PUMP STATION CONTROL PANEL	OH	OVERHEAD OFF, OFF, ON
CP	CONTROL PANEL	PB	PUSH BUTTON
CM	COMPRESSOR	PB	PULL BOX
CR	CONTROL RELAY	PDP	POWER DIST. PANEL
CP	CONTROL PANEL	PM	POWER MONITOR
CV	CONTROL VALVE	PSB	PUMP STATION BYPASS
DFM	DISCHARGE FLOW METER	PSCP	PUMP STATION CONTROL PANEL
DISC	DISCONNECT SWITCH	PSV	PRESSURE SUSTAINING VALVE
ETM	ELAPSED TIME METER	R,G,A	RED, GREEN, AMBER PILOT LIGHT
F	FUSE	RTU	REMOTE TERMINAL UNIT
FSA	FIELD SURGE ARRESTOR	SM	SUB-METER
GEN	GENERATOR	SA	SURGE ARRESTER
GFI	GROUND FAULT INTERRUPTER	SB	SURGE BOX
HOA	HAND-OFF-AUTO	SC	SURGE CAPACITOR
HOR	HAND-OFF-REMOTE	SCC	SHIELDED CONTROL CABLE
IDF	INLET AND DISCHARGE FLOW	SS	SELECTOR SWITCH OR 316 STAINLESS STEEL
IPB	INST. PULL BOX		
LA	LIGHTNING ARRESTER	TD	TIME DELAY
M	MOTOR STARTER	TS	TEST SWITCH
MCC	MOTOR CONTROL CENTER	US	UP STREAM
MLO	MAIN LUGS ONLY	WP	WEATHER PROOF
MOV	MOTOR OPERATED VALVE	XFMR	TRANSFORMER
NF	NON FUSED	ZSC	POSITION SWITCH CLOSED
OL	OVER LOAD RELAY	ZSO	POSITION SWITCH OPEN

CONDUIT LEGEND



ELECTRICAL LEGEND

	RACEWAY EXPOSED		SELECTOR SWITCH
	LIGHTING RACEWAY CONCEALED		PUSH BUTTON
	RACEWAY CONCEALED		ON-OFF SWITCH
	RACEWAY TURNED UP/DOWN		NORMALLY OPEN CONTACT
	MOTOR		NORMALLY CLOSED CONTACT
	TRANSFORMER		JUNCTION BOX
	FUSE		PANELBOARD, ELECTRICAL EQUIP. ENCL
	CIRCUIT BREAKER		MOTOR OPERATED VALVE
	CAPACITOR		RED, MAINTAINED PUSH BUTTON
	LIGHTNING ARRESTER		TIMING CONTACT
	SAFETY DISCONNECT SWITCH, HP RATED		ENCLOSED COMBINATION STARTER
	GROUND		CONTROL RELAY, MOTOR STARTER, ETC.
	DUPLEX, 14" AFF		DENOTES CONDUIT TAG 01
	LEVEL SWITCH, FLOAT SWITCH		DENOTES SEPARATE CONDUITS WITH SEPARATE WIRE
	THERMAL SWITCH		DENOTES PANELBOARD A, CIRCUIT 3
	HEATER		
	PILOT LIGHT		
	RUN TIME METER		

MATERIAL SCHEDULE

LOCATION	CONDUIT	MISC ENCLOSURE MATERIALS	MISC ENCLOSURE NEMA RATING	FASTENERS, STRUT, THREADED ROD, ETC.	REMARKS
INTERIOR					
EXPOSED	PVC SCHED. 80	316 SS	4X	316 SS	
EXTERIOR					
BELOW GRADE	PVC SCHED. 40	CONCRETE BOXES	N/A	316 SS	
ABOVE GRADE	PVC SCHED. 80	316 SS	4X	316 SS	

GENERAL NOTES

- THE SCHEDULE SHALL ESTABLISH THE MINIMUM LEVEL OF QUALITY FOR MATERIALS. UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS
- THE SCHEDULE SHALL NOT APPLY TO POWER TRANSFORMERS, LIGHT FIXTURES AND THE LIKE, THOSE ELEMENTS ARE NOTED OR INDICATED ELSEWHERE

LEGEND

N/A	NOT APPLICABLE
316 SS	316 STAINLESS STEEL

C&W engineering
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DATE	FEB 2019
SCALE	AS SHOWN
DESIGNED BY	DGW
DRAWN BY	AOD
CHECKED BY	DGW

ROSELAND TANK CONVERSION

PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY

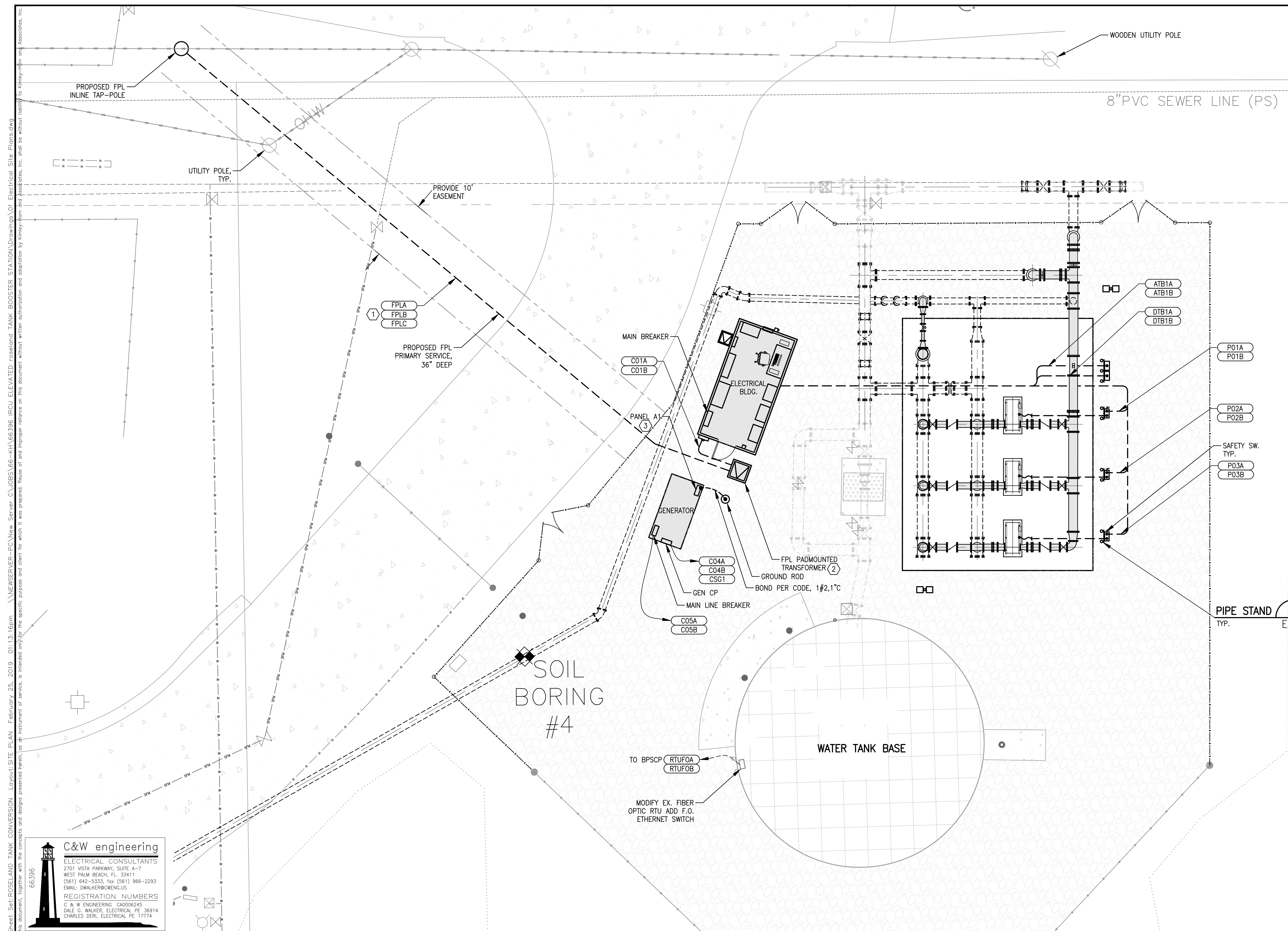
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ELECTRICAL NOTES & LEGENDS

SHEET NUMBER	E-1
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- SPECIFIC ELECTRICAL NOTES**
- ① CONTRACTOR SHALL COORDINATE ALL FPL WORK. INSTALL FPL PROVIDED RACEWAYS. CONTRACTOR SHALL PROVIDE DIRECTIONAL DRILL.
 - ② PROVIDE AND INSTALL FPL CONCRETE PAD PER FPL REQUIREMENTS.
 - ③ PANEL A1 PROVIDED INTEGRAL WITH THE GENERATOR ENCLOSURE. CODE CLEARANCES SHALL BE PROVIDED BY THE GENERATOR MANUFACTURER.

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 FLORIDA LICENSE NUMBER
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**PUMP STATION ELECTRICAL
 SITE PLAN**

SHEET NUMBER
E-2

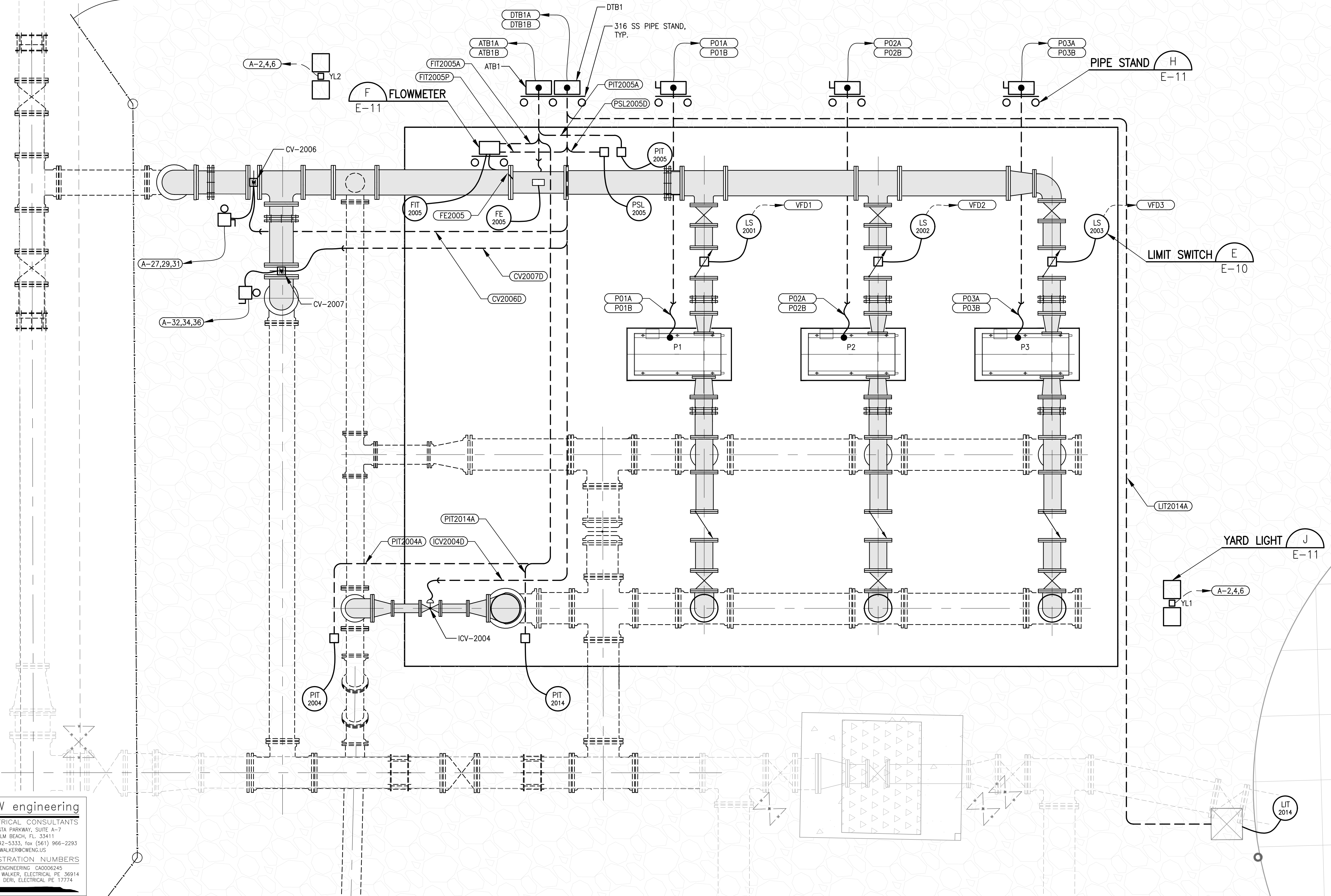
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8" 0 8" 16"
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GENERAL ELECTRICAL NOTES
 1. ELECTRICAL LAYOUT IS SCHEMATIC IN NATURE, LAYOUT SHALL BE BASED ON MECHANICAL LOCATIONS.



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BAR SCALE
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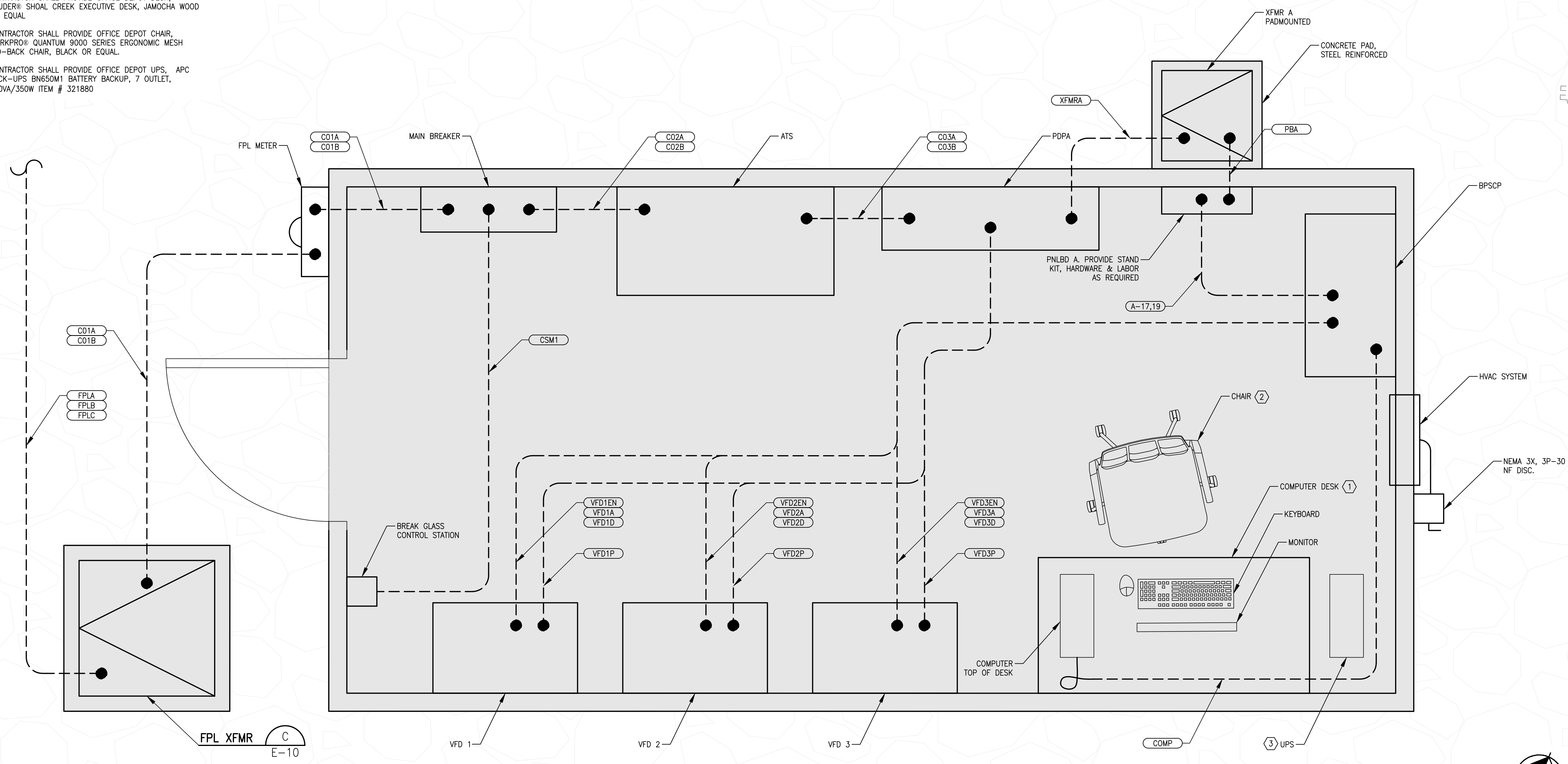
PUMP STATION INSTRUMENT ELECTRICAL PLAN

SHEET NUMBER
E-3

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SPECIFIC ELECTRICAL NOTES

- 1 CONTRACTOR SHALL PROVIDE OFFICE DEPOT DESK, SAUDER® SHOAL CREEK EXECUTIVE DESK, JAMOCHA WOOD OR EQUAL.
- 2 CONTRACTOR SHALL PROVIDE OFFICE DEPOT CHAIR, WORKPRO® QUANTUM 9000 SERIES ERGONOMIC MESH MID-BACK CHAIR, BLACK OR EQUAL.
- 3 CONTRACTOR SHALL PROVIDE OFFICE DEPOT UPS, APC BACK-UPS BN650M1 BATTERY BACKUP, 7 OUTLET, 650VA/350W ITEM # 321880



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NORTH

0 30' 60'

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**ELECTRICAL BUILDING
 EQUIPMENT PLAN**

SHEET NUMBER
E-4

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GROUNDING SYSTEM NOTES

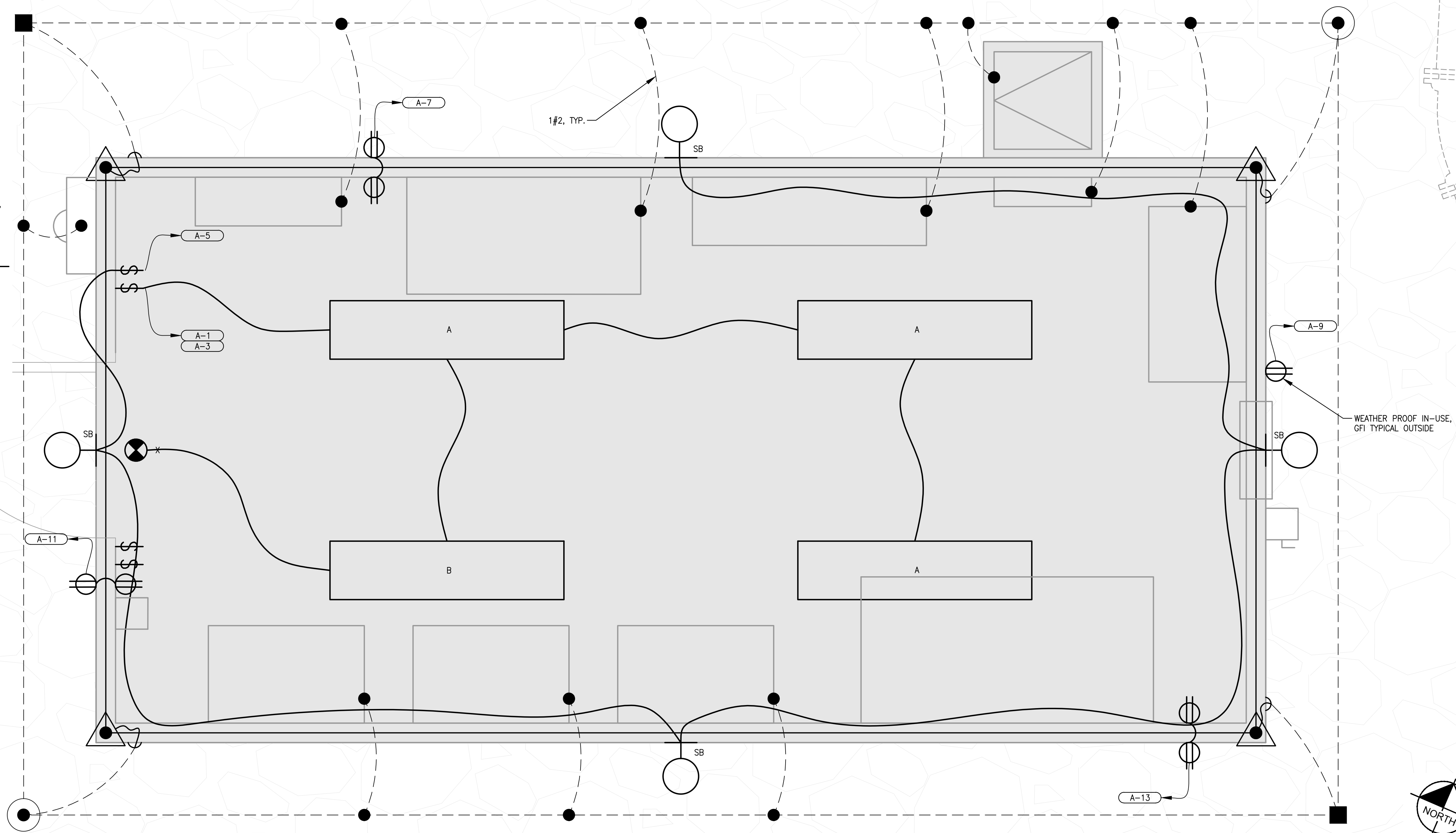
1. PROVIDE A GROUND RING BURIED BELOW GRADE. THE GROUND RING SHALL BE INSTALLED 6" AWAY FROM FOUNDATION AND 30" DEEP.
2. BOND PIPE STANDS, LIGHT POLES, EQUIP. RACKS AND THE LIKE TO GROUND RING USING AN EXOTHERMIC WELD.
3. BOND REBAR IN CONCRETE FOR PAD TO BURIED GROUND RING. EXOTHERMICALLY WELD A #2 TINNED SOLID COPPER CONDUCTOR TO THE REBAR AND CONNECT TO THE BURIED GROUND RING.
4. ELECTRICAL CONTRACTOR SHALL TEST THE GROUND SYSTEM. THE RESULTS SHALL NOT BE GREATER THAN 5 OHMS.
5. ALL CONNECTIONS TO GROUND SYSTEM SHALL BE MADE IN LINE WITH BENDS NOMINAL 12" RADIUS IN THE DIRECTION OF CURRENT FLOW..
6. ALL BENDS IN GROUND WIRES SHALL BE NOMINAL 12" RADIUS.

LIGHTNING PROTECTION NOTES

1. PLAN INDICATES MINIMUM SCHEMATIC REQUIREMENTS.
2. PROVIDE U.L. LISTED LIGHTNING PROTECTION SYSTEM. ADD AIR TERMINAL PER U.L. REQUIREMENTS.
3. LEADS SHALL BE BRAIDED ROPE LAID CONDUCTORS; NOT BUILDING WIRE CONCEALED IN CONDUIT.
4. HORIZONTAL LEADS SHALL NOT OBSTRUCT WALKWAYS AND SHALL BE CONCEALED UNDER GROUND; PROVIDE SLEEVES FOR CONCRETE PENETRATIONS.

GROUNDING LEGEND

- GROUND RODS
- GROUND WELL
- ▲ AIR TERMINAL

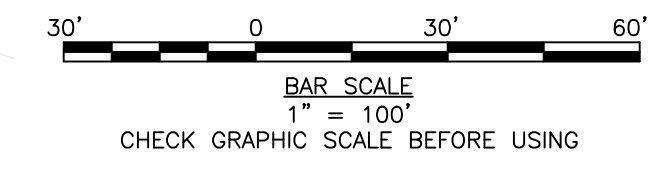


FIXTURE SCHEDULE

TYPE	MANUFACTURER	SERIES	SOURCE	INPUT WATTS	REMARKS
A	LITHONIA	FEM	LED,35K	50	MULTI-VOLT, GASKETED, WET, STAINLESS FASTENERS
B	LITHONIA	FEM	LED,35K	50	MULTI-VOLT, GASKETED, WET, STAINLESS FASTENERS, BATTERY BACKED EMERGENCY LIGHT
SB	LITHONIA	KAXW	LED,35K	50	MULTI-VOLT, WALL PACK, WET, STAINLESS FASTENERS, PHOTO CELL
X	LITHONIA	LXR	LED	---	MULTI-VOLT, STAINLESS FASTENERS, WET, BATTERY BACKED

GENERAL ELECTRICAL NOTES

1. INCLUDE MOUNTING EQUIPMENT.
2. PROVIDE HOTS, NEUTRALS, TRAVELLERS AS REQUIRED



C&W engineering
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KHA PROJECT	044572041
DATE	FEB 2019
SCALE	AS SHOWN
DESIGNED BY	DGW
DRAWN BY	AOD
CHECKED BY	DGW

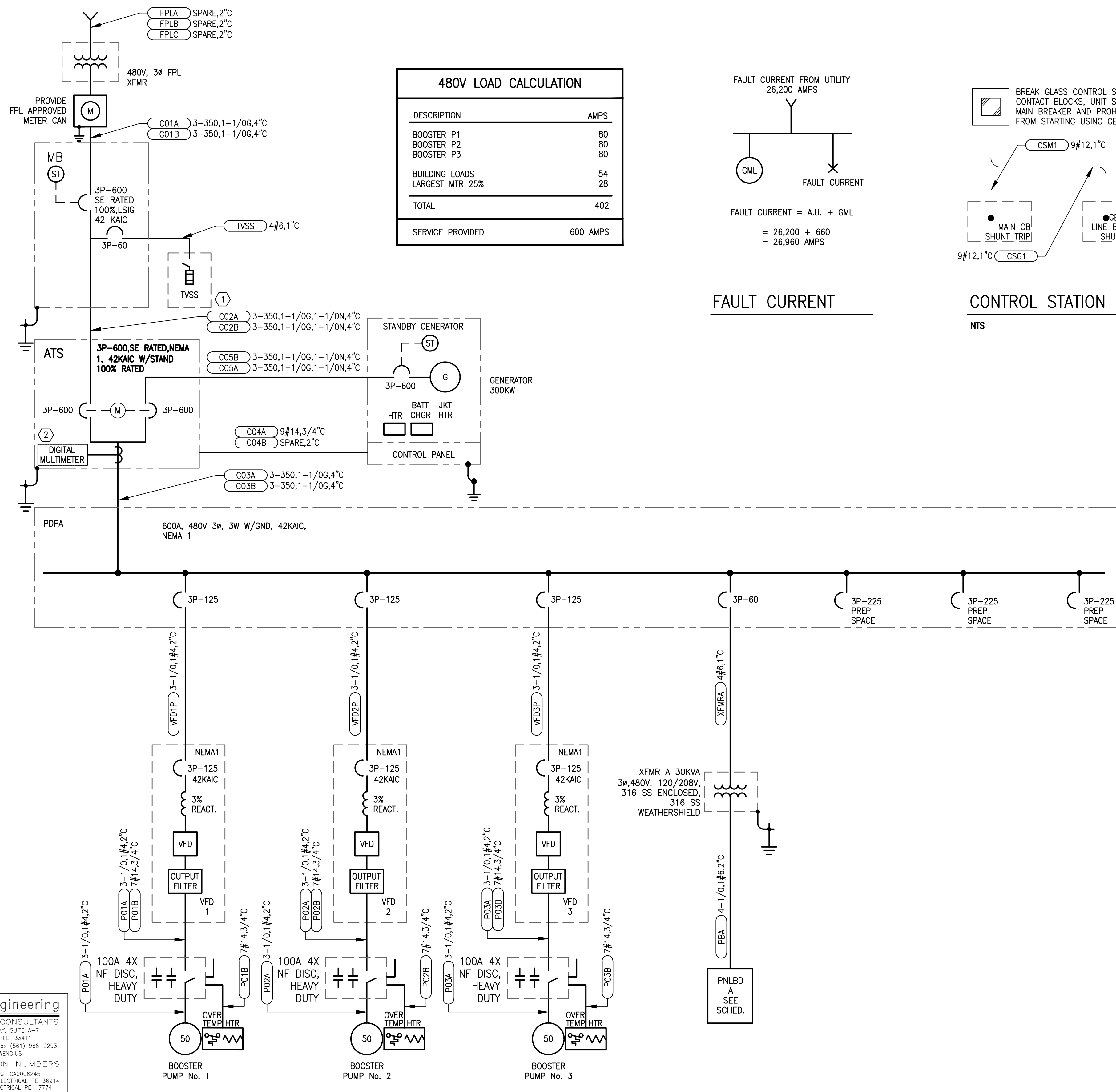
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 INDIAN RIVER COUNTY
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**BUILDING GROUNDING,
 LIGHTNING PROTECTION AND
 LIGHTING PLAN**

SHEET NUMBER
E-5

Plotted By: Andrew Demorchi
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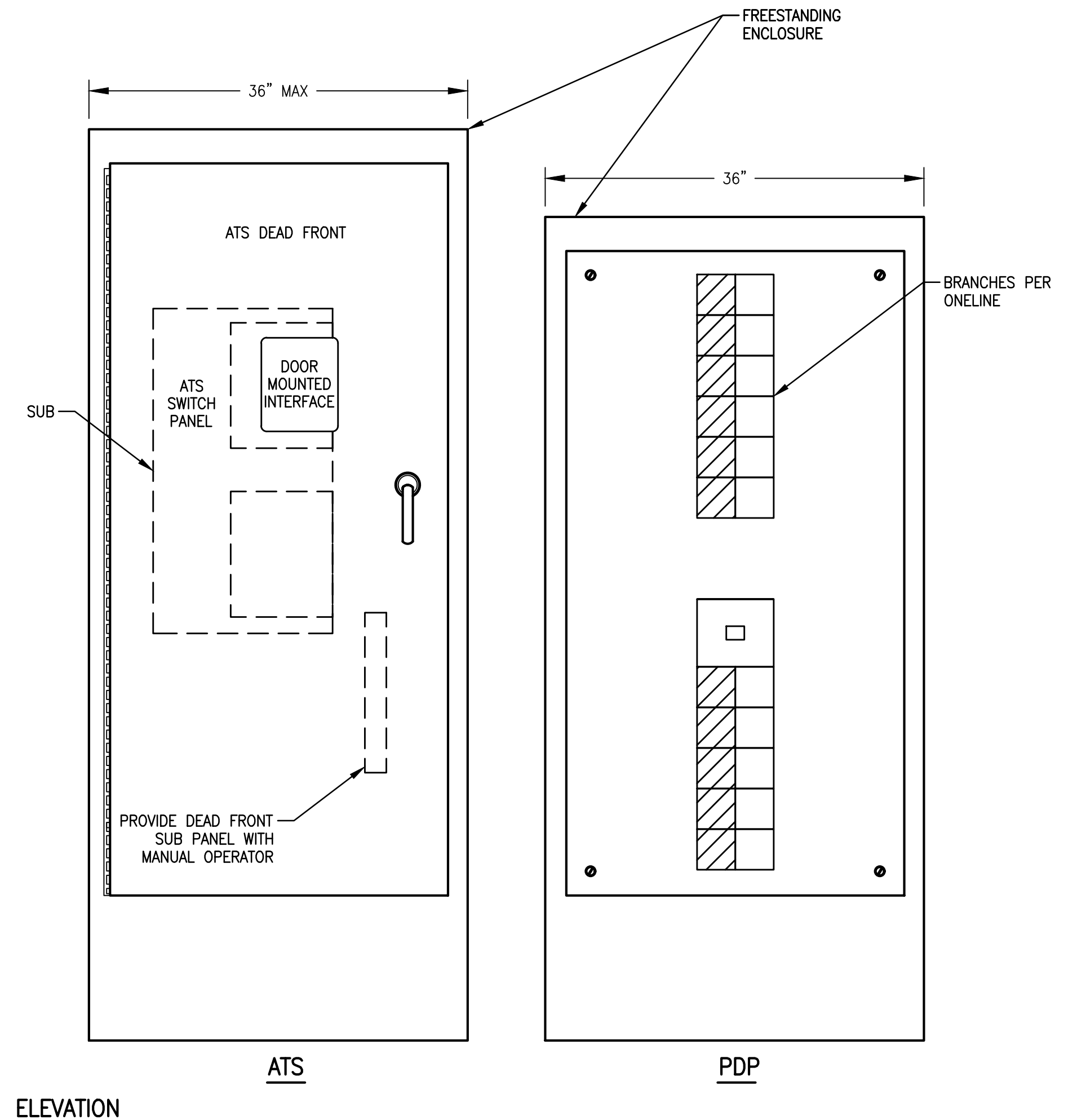


SPECIFIC ELECTRICAL NOTES

- ① SURGE SUPPRESSION INC. SHDLAM, NEMA 4X, SS.
- ② DIGITAL MULTI-METER WITH P.T.S., C.T.S., AND ALL OTHER MATERIALS AS MAY BE REQUIRED.

ATS NOTES

- 1. GENERAL ENCLOSURE CONSTRUCTION:
 - A. FREE STANDING ENCLOSURE.
 - B. HINGED FRONT DOOR.
 - C. FABRICATED FROM 14 GA. STEEL.
 - D. PAINTED ANSI-61 LIGHT GRAY.
 - E. KEYLOCKABLE HANDLE.
 - F. 3-POINT LATCHING.
 - G. NEMA 1 ENCLOSURE.



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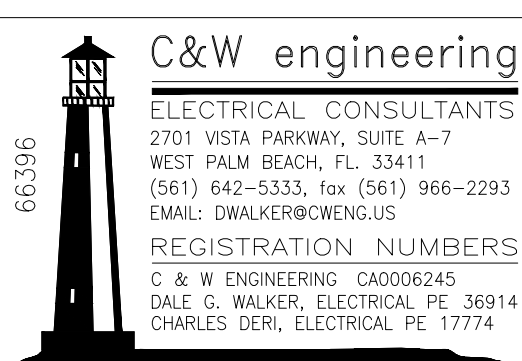
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ELECTRICAL INSTALL ONELINE

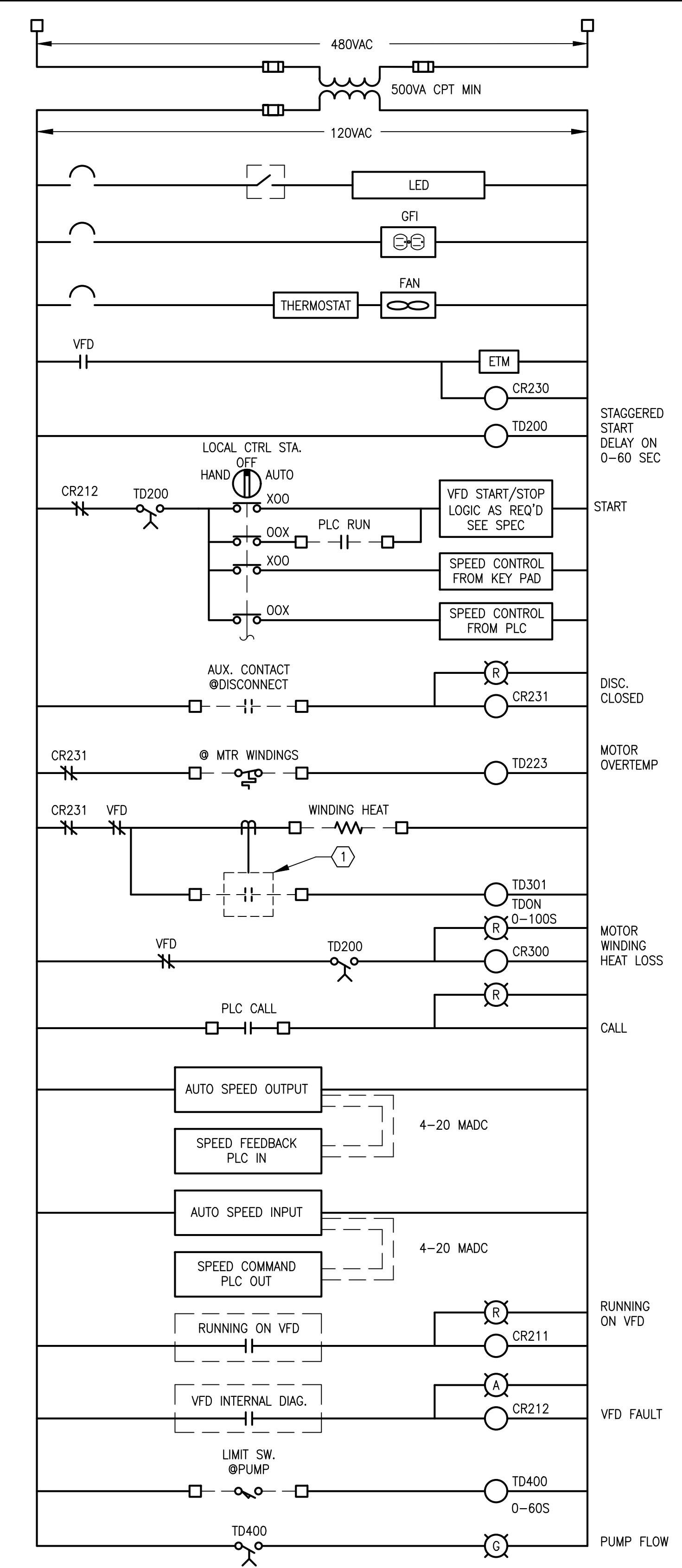
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VFD SCHEMATIC
NTS

SPECIFIC ELECTRICAL NOTES

1. PROVIDE CURRENT MONITOR AND CT SYSTEM TO MONITOR MOTOR HEAT CIRCUIT FAILURE AND SIGNAL THE SCADA SYSTEM IF MOTOR HEAT FAILS.

DISCRETE PARAMETERS

- VFD RUN
- VFD FAULT
- VFD H-O-A, AUTO
- MOTOR OVERTEMP
- MTR WIND. HEAT LOSS
- DISC STATUS
- LIMIT SWITCH
- SPARE

ANALOG OUTPUT PARAMETERS

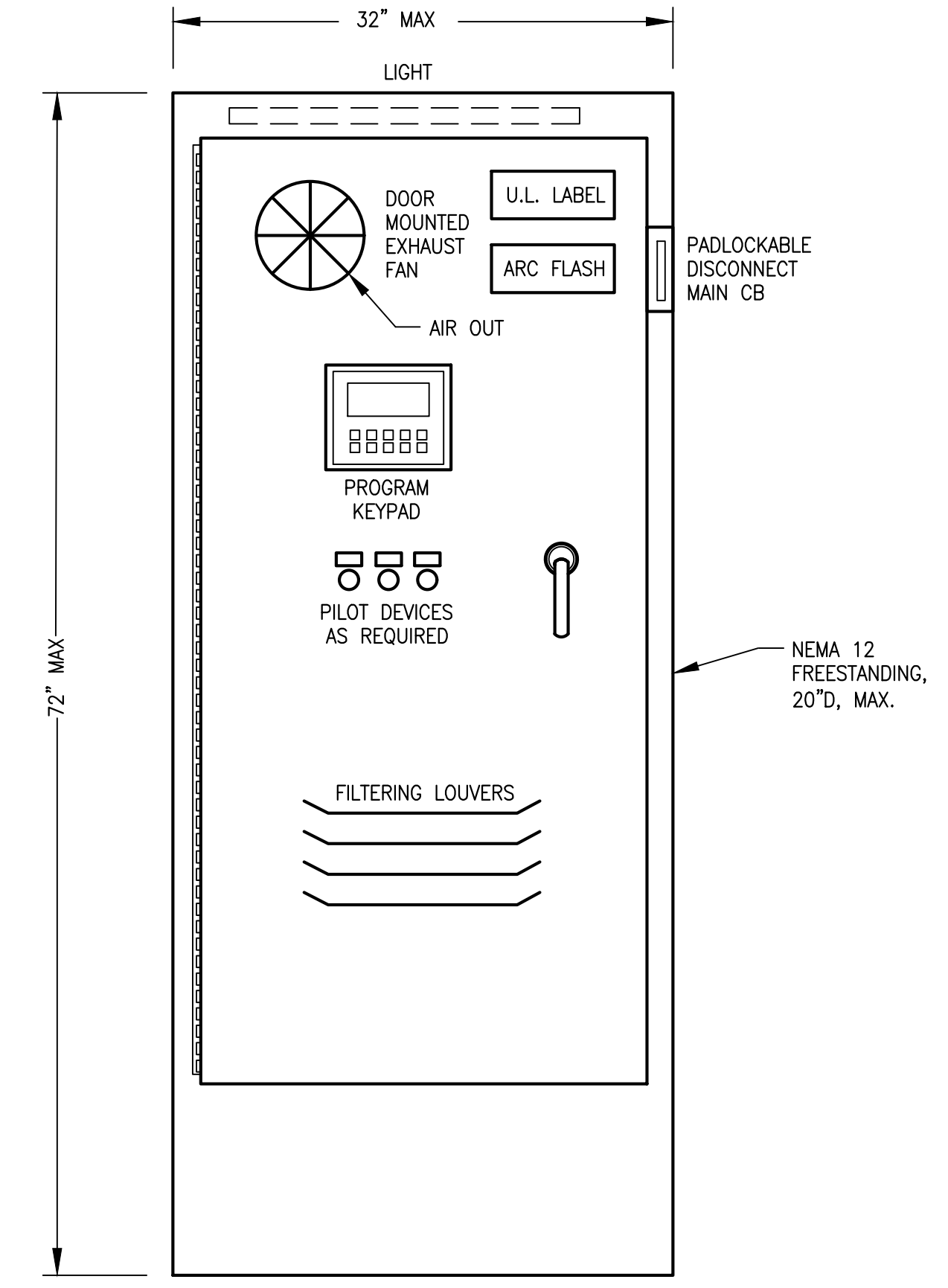
- 1. MOTOR AMPS

ANALOG INPUT PARAMETERS

- 1. SPEED COMMAND
- 2. SPEED INDICATION

TO PLC VIA COMM. CABLE AND ANY OTHER PARAMETERS AS REQUIRED BY OWNER

TO PLC VIA HARDWIRED I/O



VFD ELEVATION DETAIL
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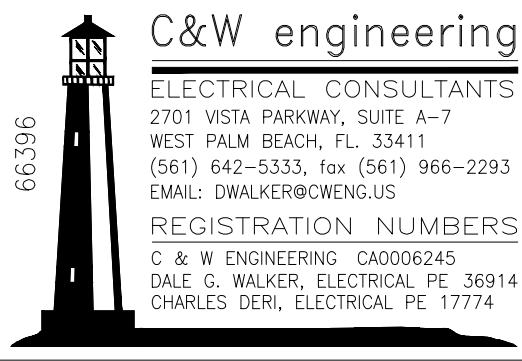
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VFD DETAILS

SHEET NUMBER
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PANELBOARD SCHEDULE A

WIRE SIZE	COND SIZE	BUS AMPS			LOAD	POLES	AMPS	BUS A B C	AMPS	POLES	LOAD	BUS AMPS			WIRE SIZE	COND SIZE	
		A	B	C								A	B	C			
3#12	3/4	13			INTERIOR LIGHTING	1	20	1	2	20	3	SITE LIGHTING	5			5#12	3/4
3#12	3/4		6		INTERIOR LIGHTING	1	20	3	4				5				
3#12	3/4			6	EXTERIOR LIGHTING	1	20	5	6				5				
3#12	3/4	6			RECEPTACLES	1	20	7	8	30	3	CV 2009	6			4#10	3/4
3#12	3/4		5		RECEPTACLES	1	20	9	10				6				
3#12	3/4			3	RECEPTACLES	1	20	11	12				6				
3#12	3/4	6			RECEPTACLES	1	20	13	14								
3#12	3/4		6		COMPUTER	1	20	15	16								
4#8	1			22	BPSCP	2	30	17	18								
3#12	3/4		1		BYPASS MOV	1	20	19	20	20	3	AIR COND	2			4#10	3/4
3#12	3/4			1	INLET MOV	1	20	21	22				2				
3#12	3/4	1			S. BYPASS MOV	1	20	23	24					2			
4#10	3/4		6		CV 2006	3	30	25	26								
				6				27	28								
								29	30	20	3	FM 2004			1	3#12	3/4
								31	32	30	3	CV 2007	5			3#12	3/4
								33	34				5				
								35	36					5			
					SPARE	1	20	37	38	100	3	SUBFEED TO PANEL A1	30			5#3	1-1/2
					SPARE	1	20	39	40					30			
					SPARE	1	20	41	42					30			

FREESTANDING

RATED VOLTAGE: <input checked="" type="checkbox"/> 120/208 <input type="checkbox"/> 277/480 3Ø, 4 WIRE	BRANCH POLES: <input type="checkbox"/> 12 <input type="checkbox"/> 20 <input type="checkbox"/> 30 <input checked="" type="checkbox"/> 42	APP. MF'RS. C-H, SQD OR GE ONLY
RATED AMPS: <input checked="" type="checkbox"/> 100 <input type="checkbox"/> 225 <input type="checkbox"/> 400 <input type="checkbox"/> 150	CABINET: <input checked="" type="checkbox"/> SURFACE <input type="checkbox"/> FLUSH	NEMA <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 3R <input type="checkbox"/> 4X
<input type="checkbox"/> MAIN LUGS ONLY <input type="checkbox"/> MAIN 100 AMPS <input checked="" type="checkbox"/> BREAKER <input type="checkbox"/> FUSED SWITCH	<input checked="" type="checkbox"/> HINGED DOOR	<input checked="" type="checkbox"/> KEYED DOOR LATCH
<input type="checkbox"/> FUSED <input checked="" type="checkbox"/> CIRCUIT BREAKER (BOLT-IN) BRANCH DEVICES	<input type="checkbox"/> _____ TO BE GFI BREAKERS	FULL NEUTRAL BUS <input type="checkbox"/> GROUND BUS

ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 22,000 AMPS SYMMETRICAL.

PANELBOARD SCHEDULE A1 (INSIDE GENERATOR)

WIRE SIZE	COND SIZE	BUS AMPS			LOAD	POLES	AMPS	BUS A B C	AMPS	POLES	LOAD	BUS AMPS			WIRE SIZE	COND SIZE	
		A	B	C								A	B	C			
3#12	3/4	13			INTERIOR LIGHTING	1	20	1	2	20	1	G1 ALT HEATER	5			3#12	3/4
4#6	1		13		G1 JKT HTR 1	2	60	3	4								
3#12	3/4	6		13	RECEPTACLES	1	20	5	6	20	1	BATTERY CHARGER 1			5	3#12	3/4
								7	8								
								9	10								
								11	12								
								13	14								
					SPARE	1	20	15	16	20	1	SPARE					
					SPARE	1	20	17	18	20	1	SPARE					
					SPARE	1	20	19	20	20	1	SPARE					

RATED VOLTAGE: <input checked="" type="checkbox"/> 120/208 <input type="checkbox"/> 277/480 3Ø, 4 WIRE	BRANCH POLES: <input type="checkbox"/> 12 <input checked="" type="checkbox"/> 20 <input type="checkbox"/> 30 <input type="checkbox"/> 42	APP. MF'RS. C-H, SQD OR GE ONLY
RATED AMPS: <input checked="" type="checkbox"/> 100 <input type="checkbox"/> 225 <input type="checkbox"/> 400 <input type="checkbox"/> 150	CABINET: <input checked="" type="checkbox"/> SURFACE <input type="checkbox"/> FLUSH	NEMA <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 3R <input type="checkbox"/> 4X
<input type="checkbox"/> MAIN LUGS ONLY <input type="checkbox"/> MAIN 100 AMPS <input checked="" type="checkbox"/> BREAKER <input type="checkbox"/> FUSED SWITCH	<input checked="" type="checkbox"/> HINGED DOOR	<input checked="" type="checkbox"/> KEYED DOOR LATCH
<input type="checkbox"/> FUSED <input checked="" type="checkbox"/> CIRCUIT BREAKER (BOLT-IN) BRANCH DEVICES	<input type="checkbox"/> _____ TO BE GFI BREAKERS	FULL NEUTRAL BUS <input type="checkbox"/> GROUND BUS

ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 22,000 AMPS SYMMETRICAL.

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 CHECKED BY DGW

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 INDIAN RIVER COUNTY FLORIDA

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PANELBOARD SCHEDULES

SHEET NUMBER
E-8

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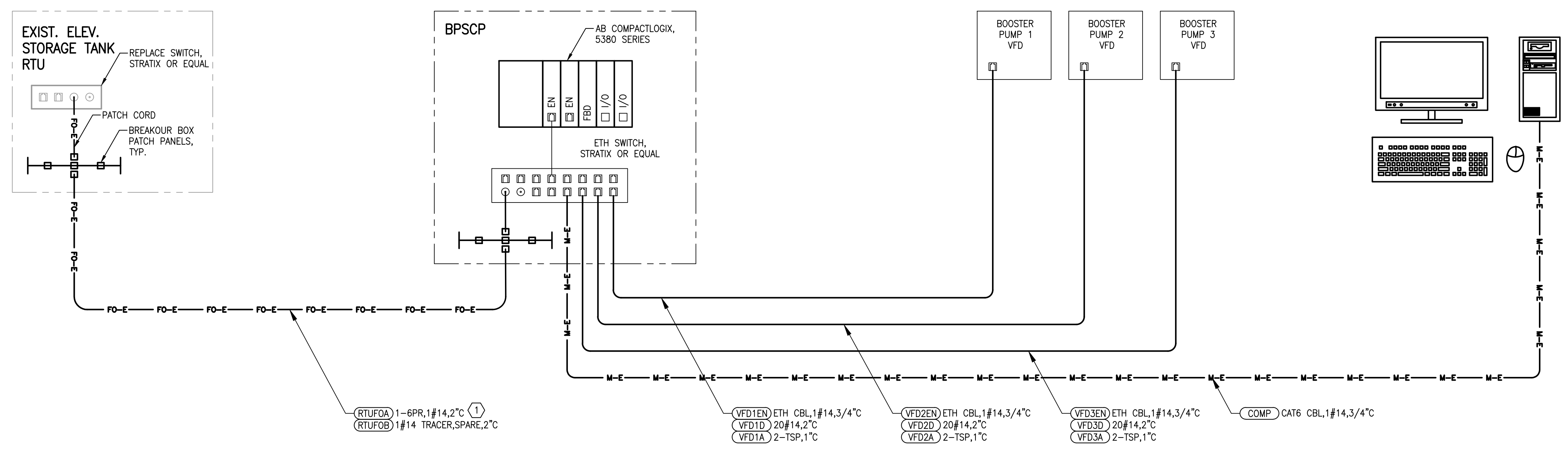
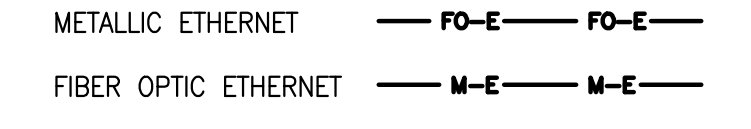
GENERAL ELECTRICAL NOTES

- CONTRACTOR SHALL CONTROL THE DRIVE USING HARD WIRED SIGNALS AND I/O.
- DRIVES SHALL CONVEY INFORMATION, NOT RELATED TO CONTROLS, VIA ETHERNET.

SPECIFIC ELECTRICAL NOTES

- ① NEW FIBER SHALL BE 6-PAIR SINGLE MODE, FIBER OPTIC CABLE, 1#14, TRACER WIRE.

LEGEND



NETWORK DIAGRAM

NTS

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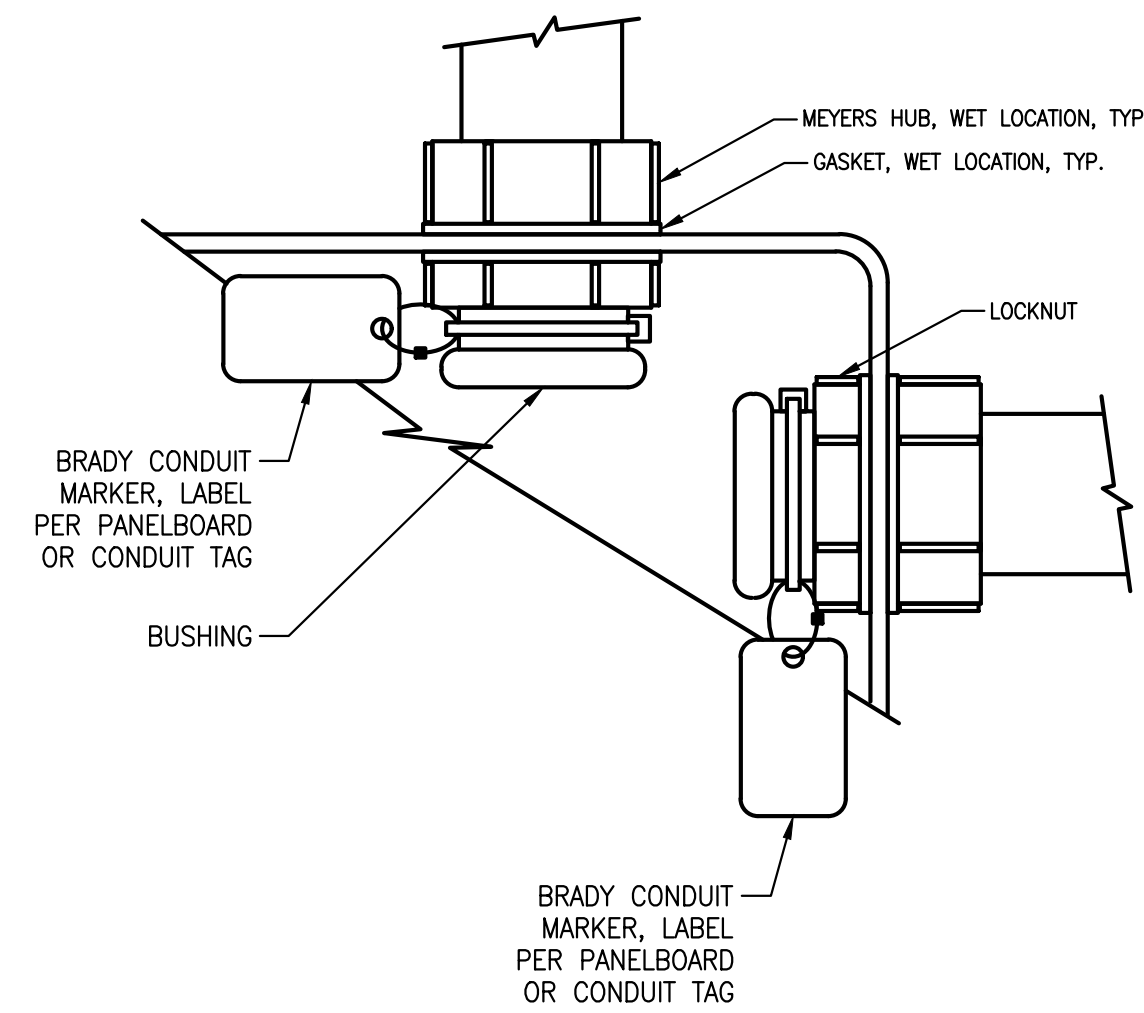
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NETWORK DIAGRAM

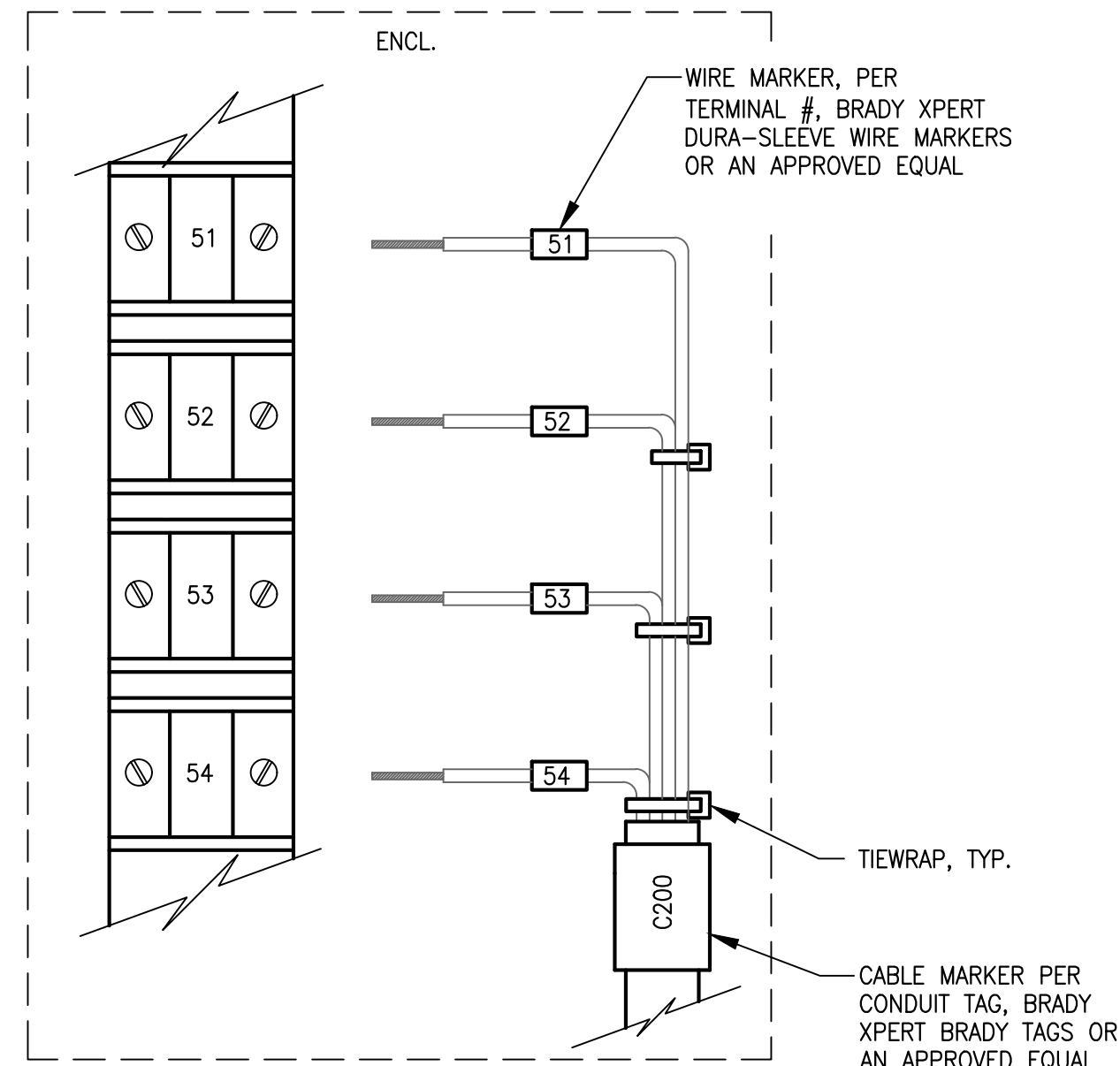
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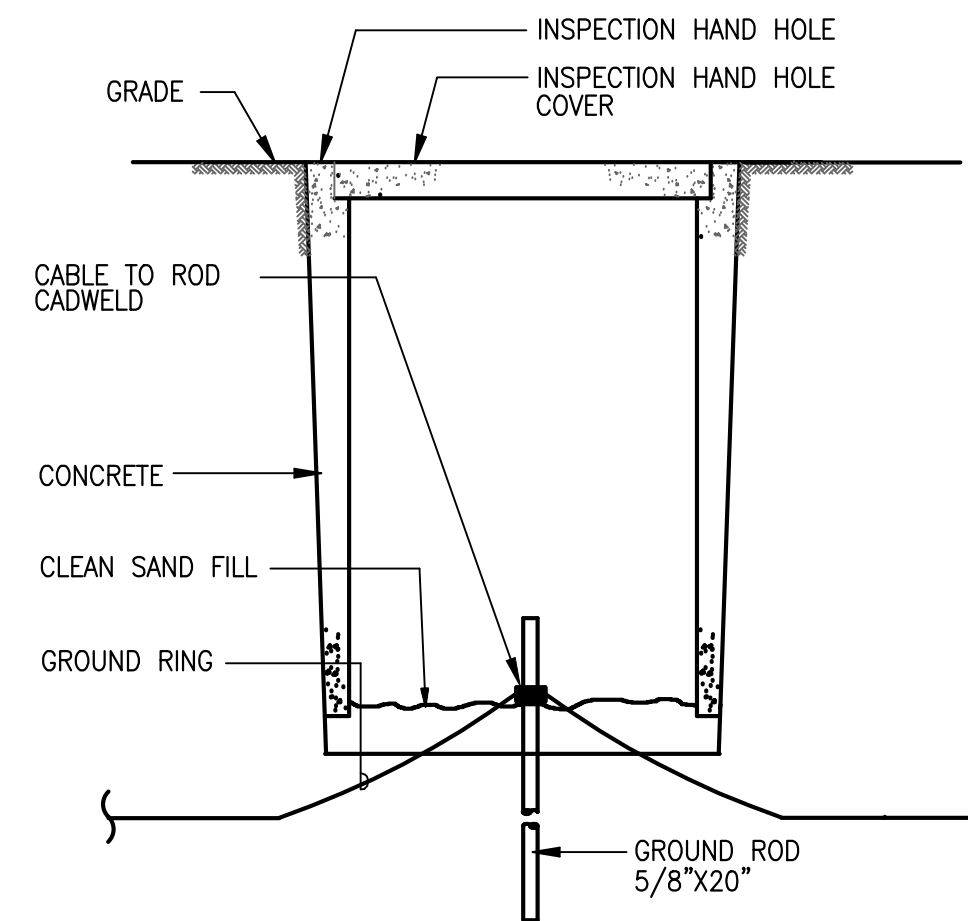
CONDUIT TERMINATION DETAIL

NTS



TERMINATION EXAMPLE DETAIL

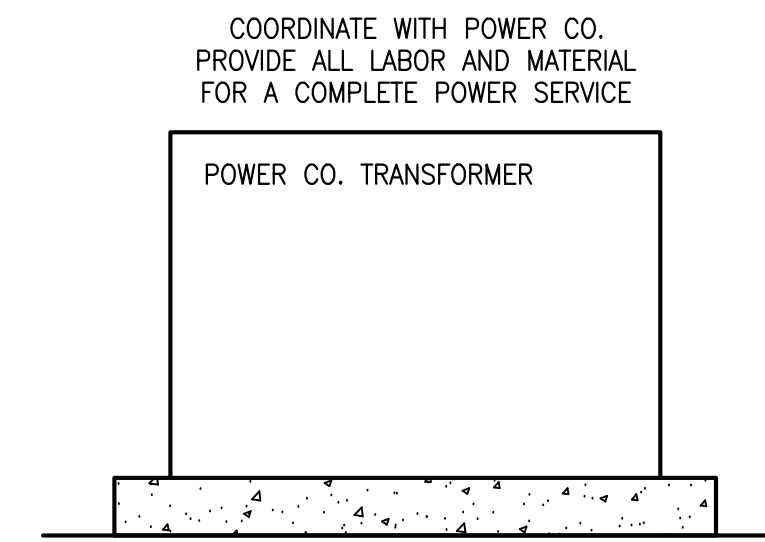
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GROUND WELL DETAIL

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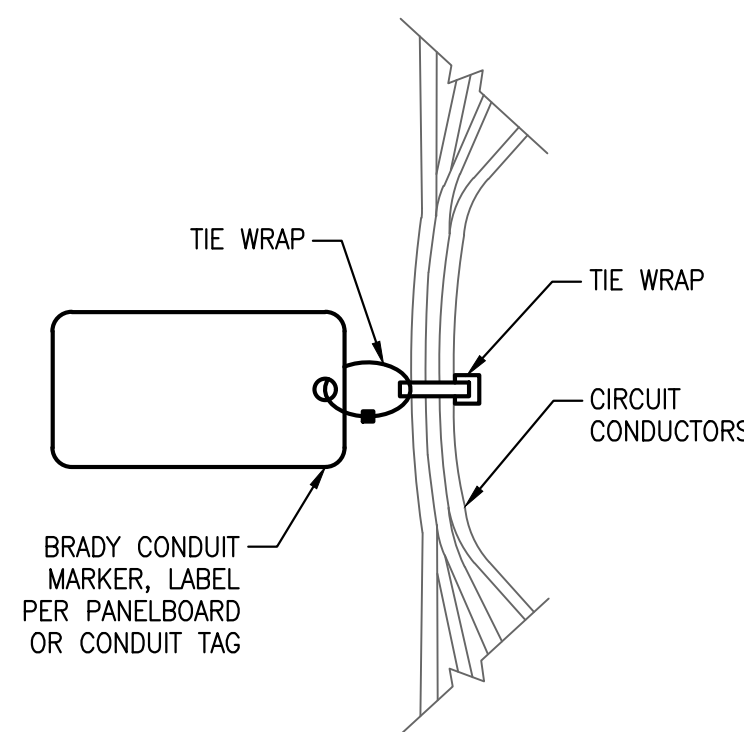
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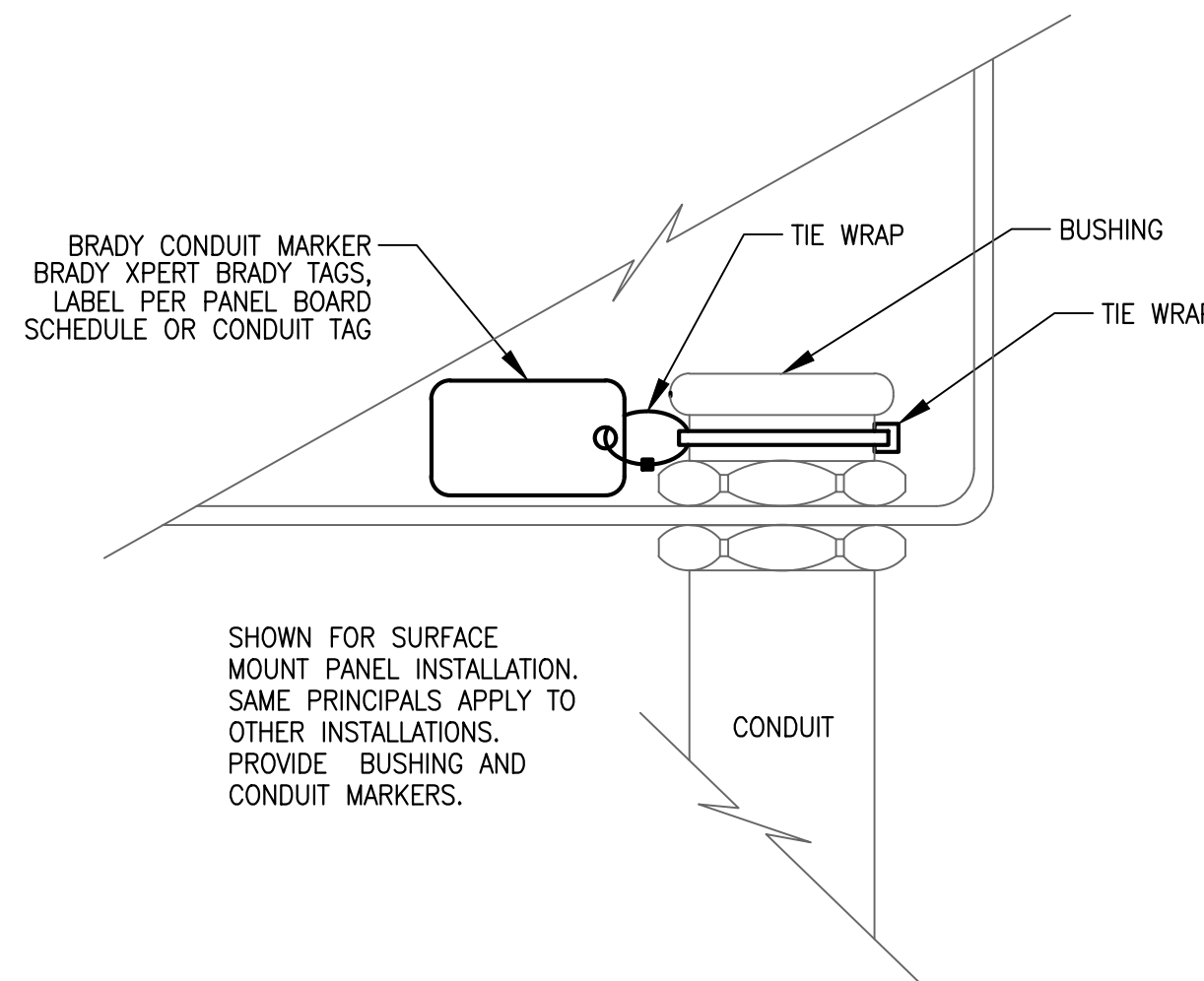
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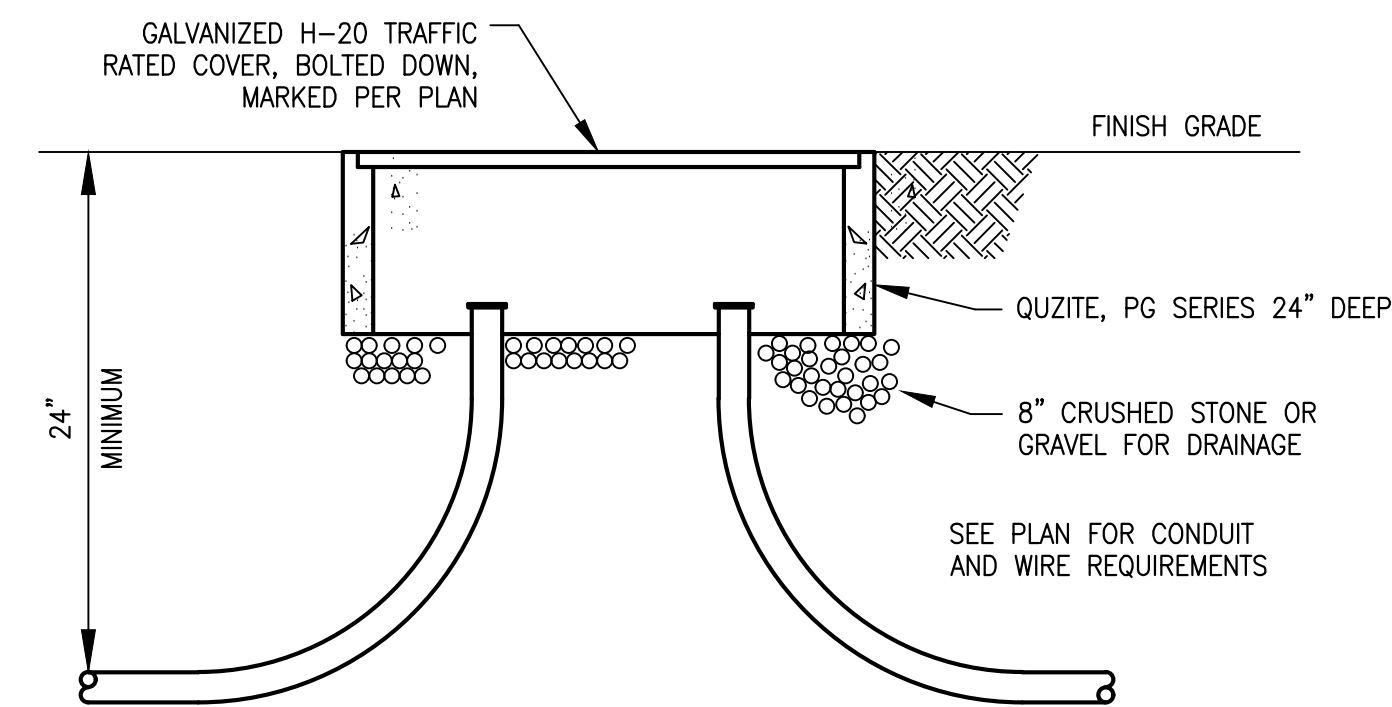
CIRCUIT MARKER DETAIL

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CONDUIT DETAIL

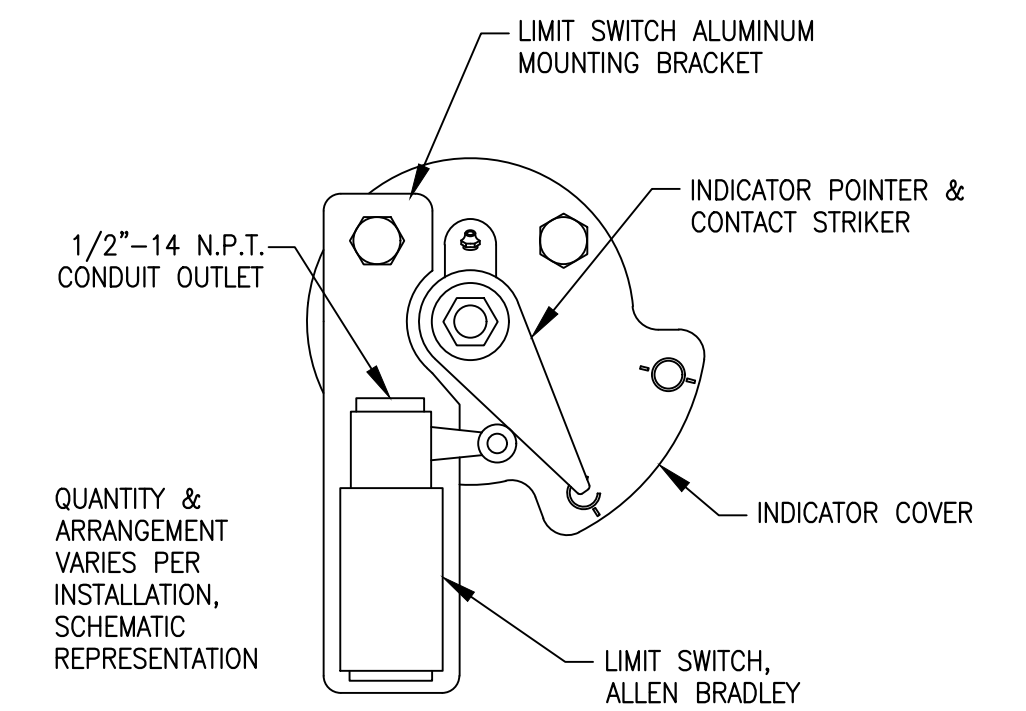
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HAND HOLE

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D



LIMIT SWITCH

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 PREPARED FOR
INDIAN RIVER COUNTY

INDIAN RIVER COUNTY

FLORIDA

LICENSED PROFESSIONAL
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 FLORIDA LICENSE NUMBER
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DATE: _____

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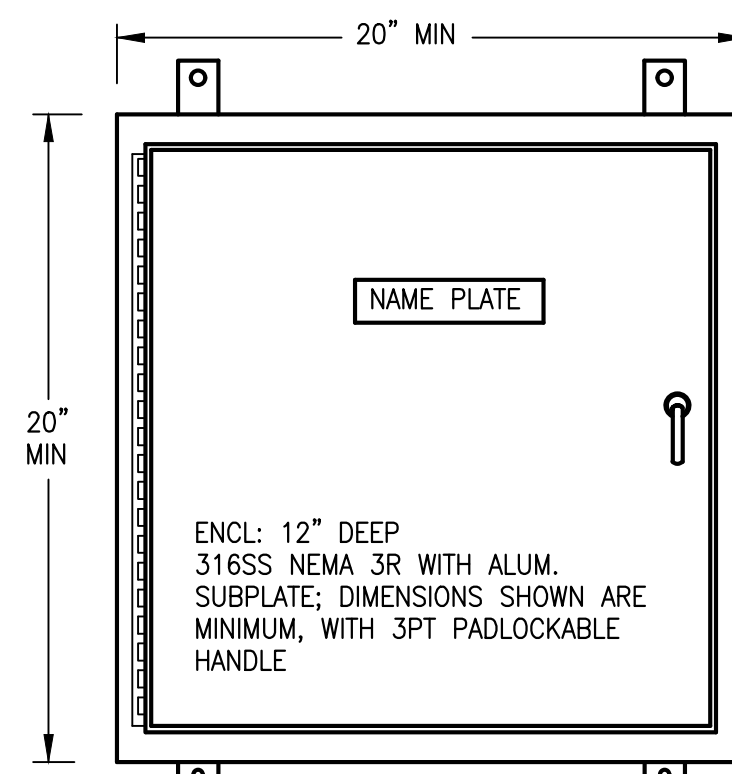
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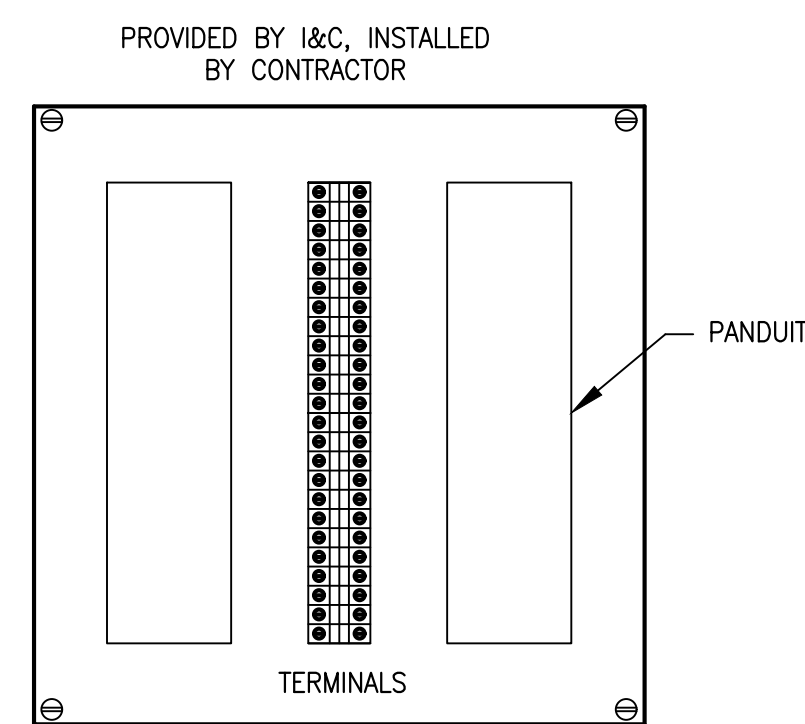
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GENERAL ELECTRICAL NOTES

- I&C SHALL IDENTIFY TERMINALS IN SHOP DRAWINGS.



FRONT VIEW

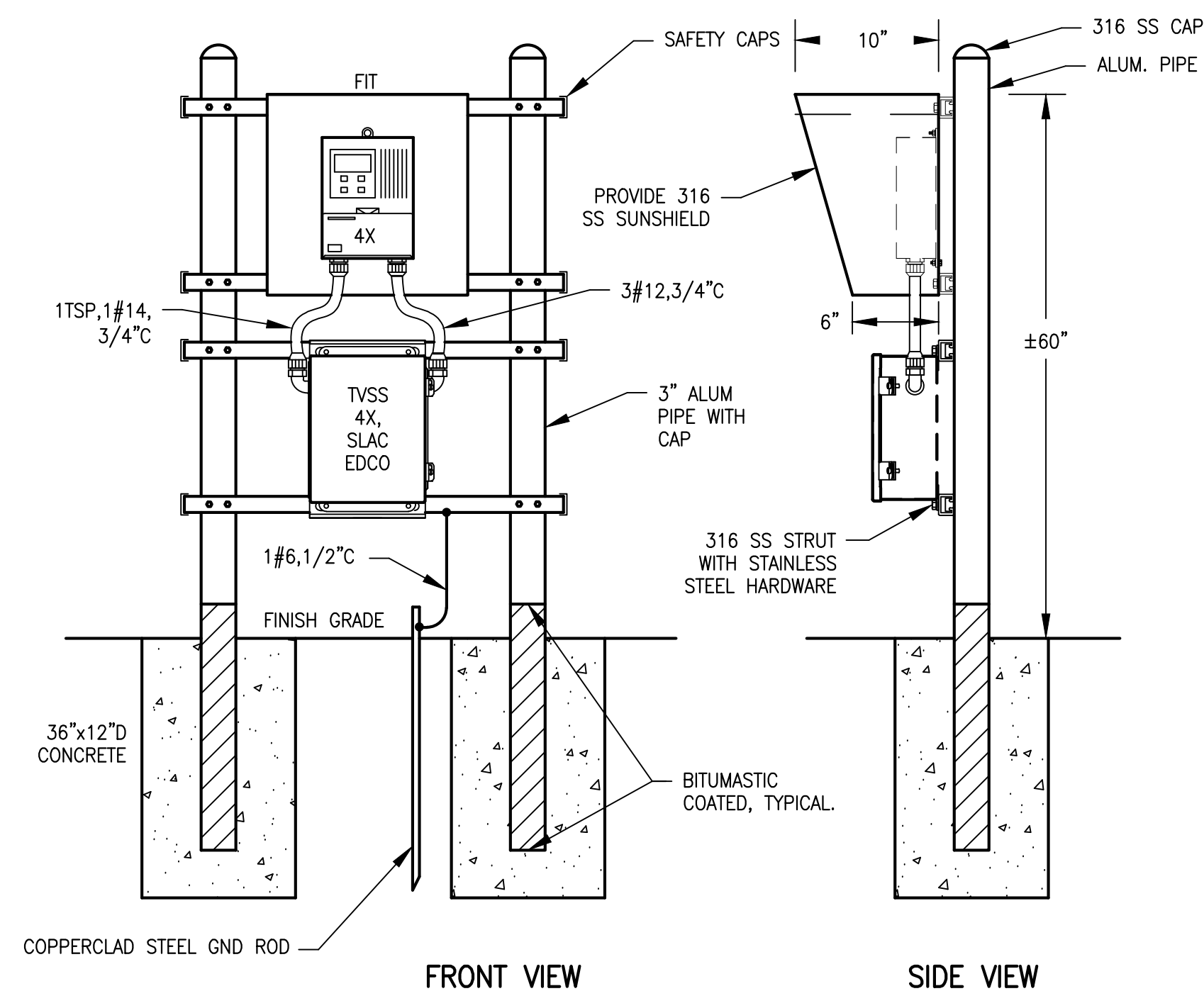


SUBPANEL LAYOUT

TERMINAL BOX DETAIL

NTS, TYP. FOR TERMINAL BOXES

G

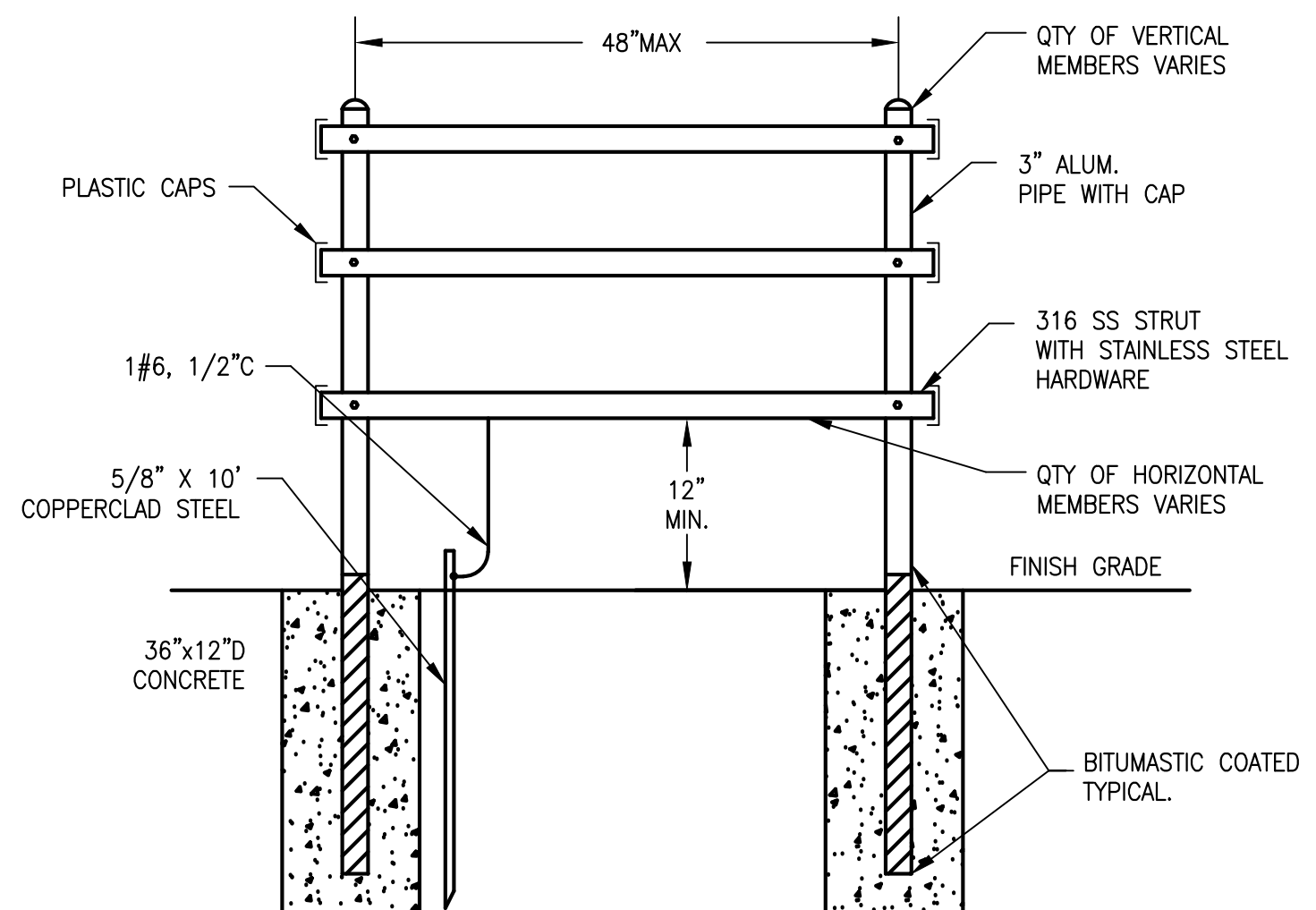


FRONT VIEW

SIDE VIEW

METER INSTALLATION

I



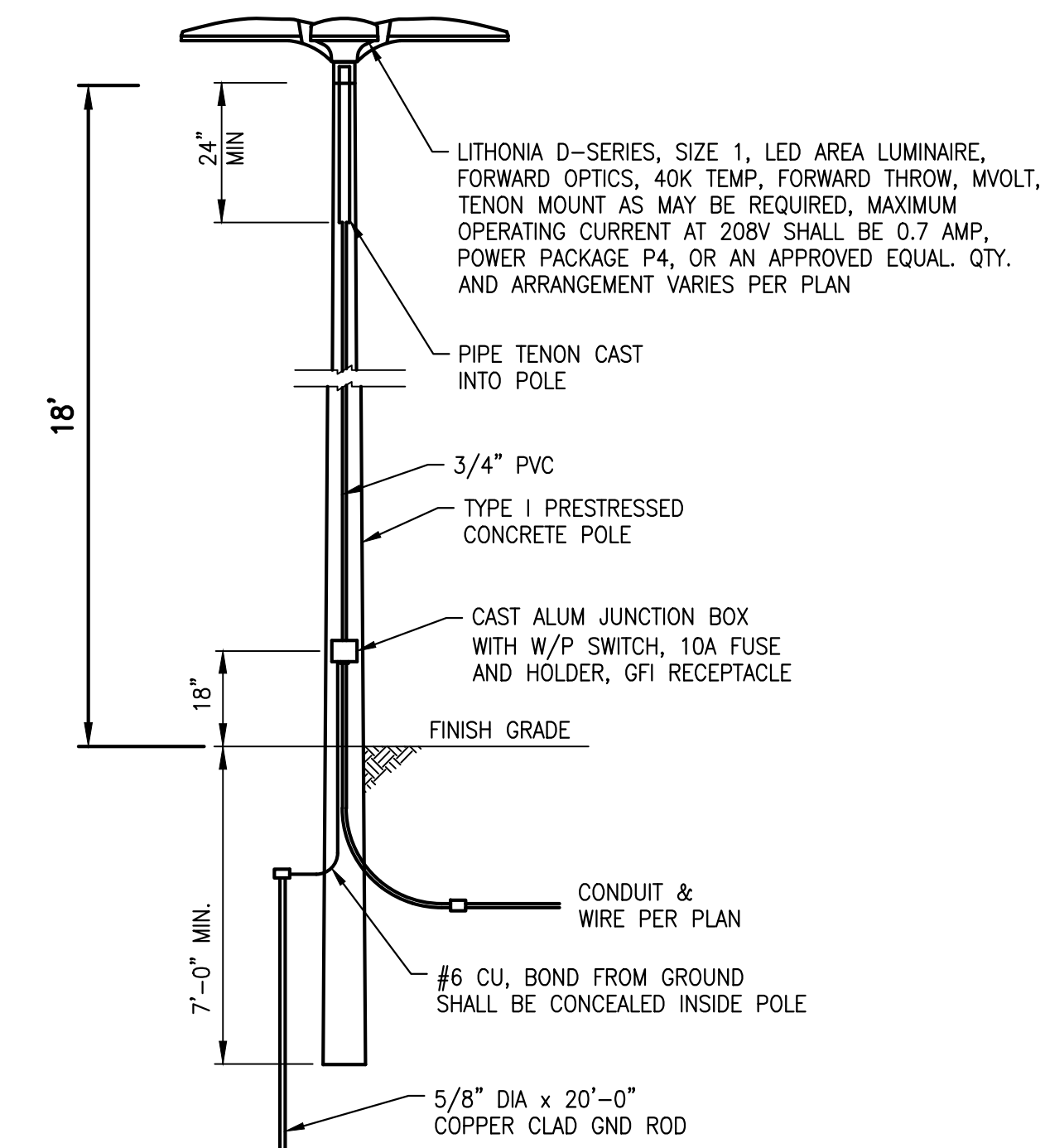
PIPESTAND RACK DETAIL

EQUIPMENT VARIES PER LOCATION

H

PROVIDE SIGNED AND SEALED SHOP DRAWING CERTIFYING THE POLE/LIGHT ASSEMBLY INSTALLATION WILL MEET DESIGN WIND PRESSURES DERIVED FROM ASCE 7-10 PER FBC SECTION 1609 FOR THE FOLLOWING CRITERIA:

- BASIC WIND SPEED = 160 MPH (3 SECOND GUST)
- RISK CATEGORY = III
- EXPOSURE = C
- DIRECTIONALITY FACTOR = 0.85



YARD LIGHT

J

C&W engineering
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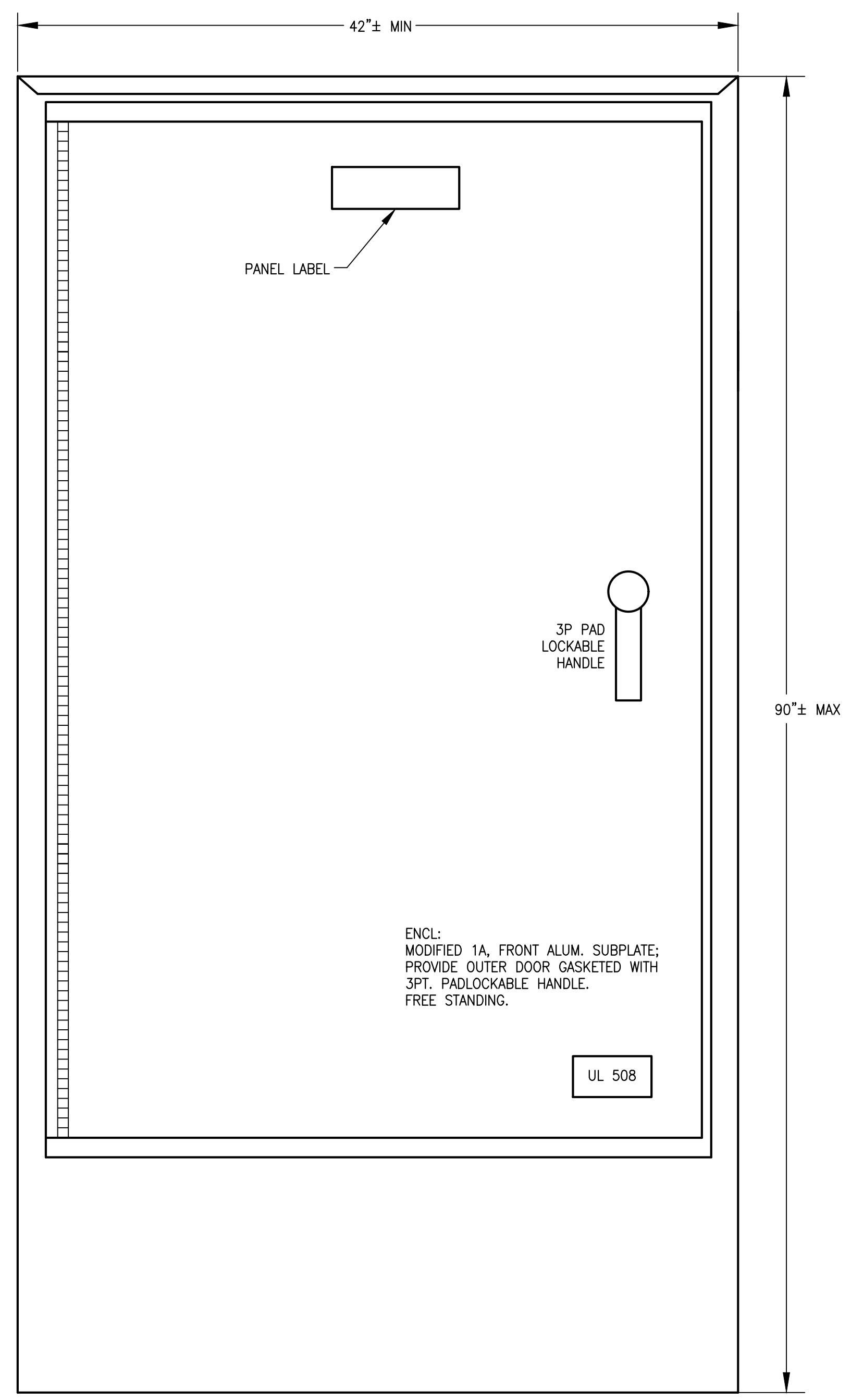
ELECTRICAL DETAILS

SHEET NUMBER
E-11

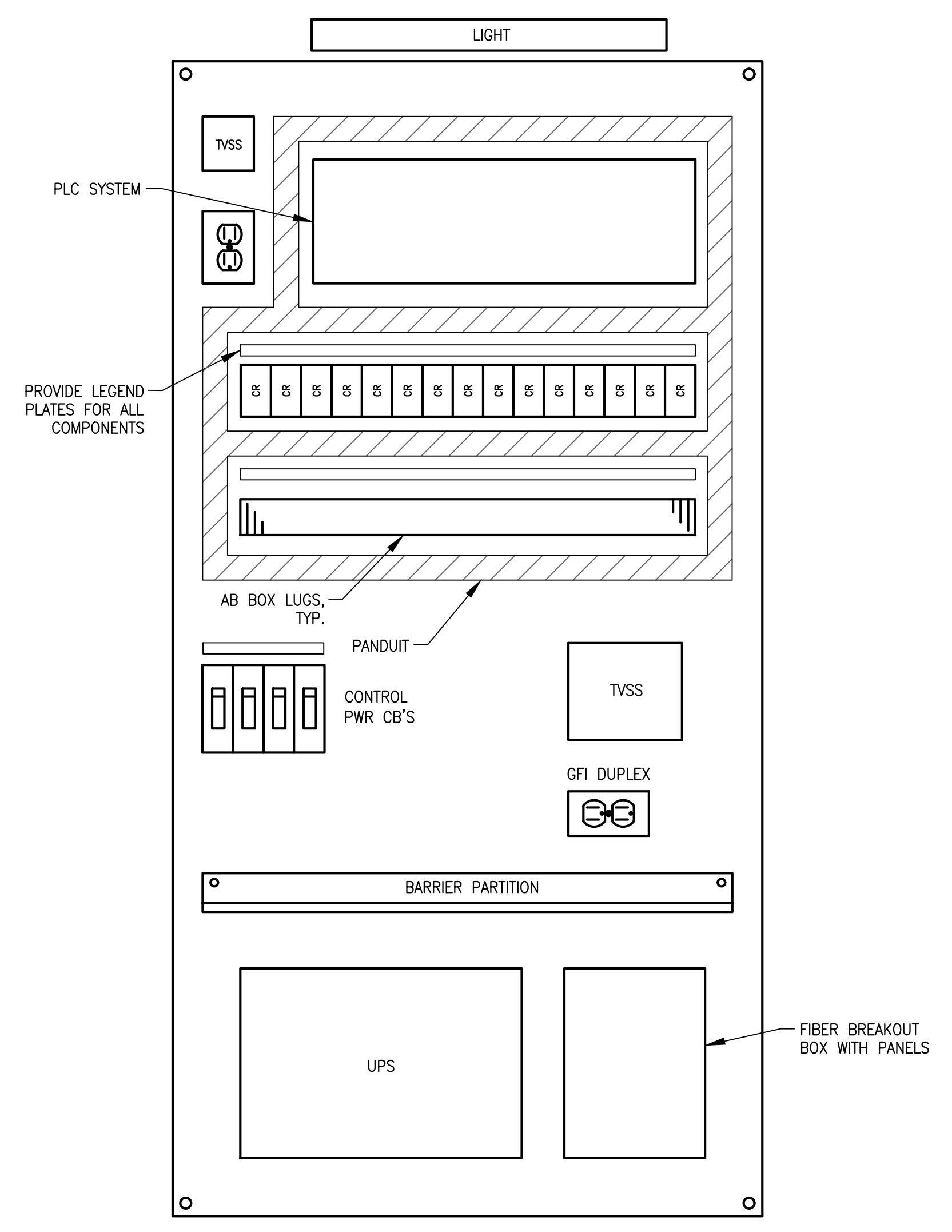
No.	REVISIONS	DATE	BY

Plotted By: Andres Demorchi
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 \\NEWSEVER-PC\New_Sever_C\JOBS\66-KH\66396-RCU ELEVATED ROSELAND TANK BOOSTER STATION\Drawings\02 Electrical Details.dwg
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 C & W ENGINEERING CA0006245
 DALE G. WALKER, ELECTRICAL PE 36914
 CHARLES DERI, ELECTRICAL PE 17774



PUMP STATION CONTROL PANEL, OUTER DOOR, DEAD FRONT
 NTS



SUBPLATE LAYOUT
 NTS

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ROSELAND TANK CONVERSION
 PREPARED FOR
INDIAN RIVER COUNTY
 INDIAN RIVER COUNTY FLORIDA

LICENSED PROFESSIONAL
 DALE G. WALKER
 FLORIDA LICENSE NUMBER 36914
 DATE: _____

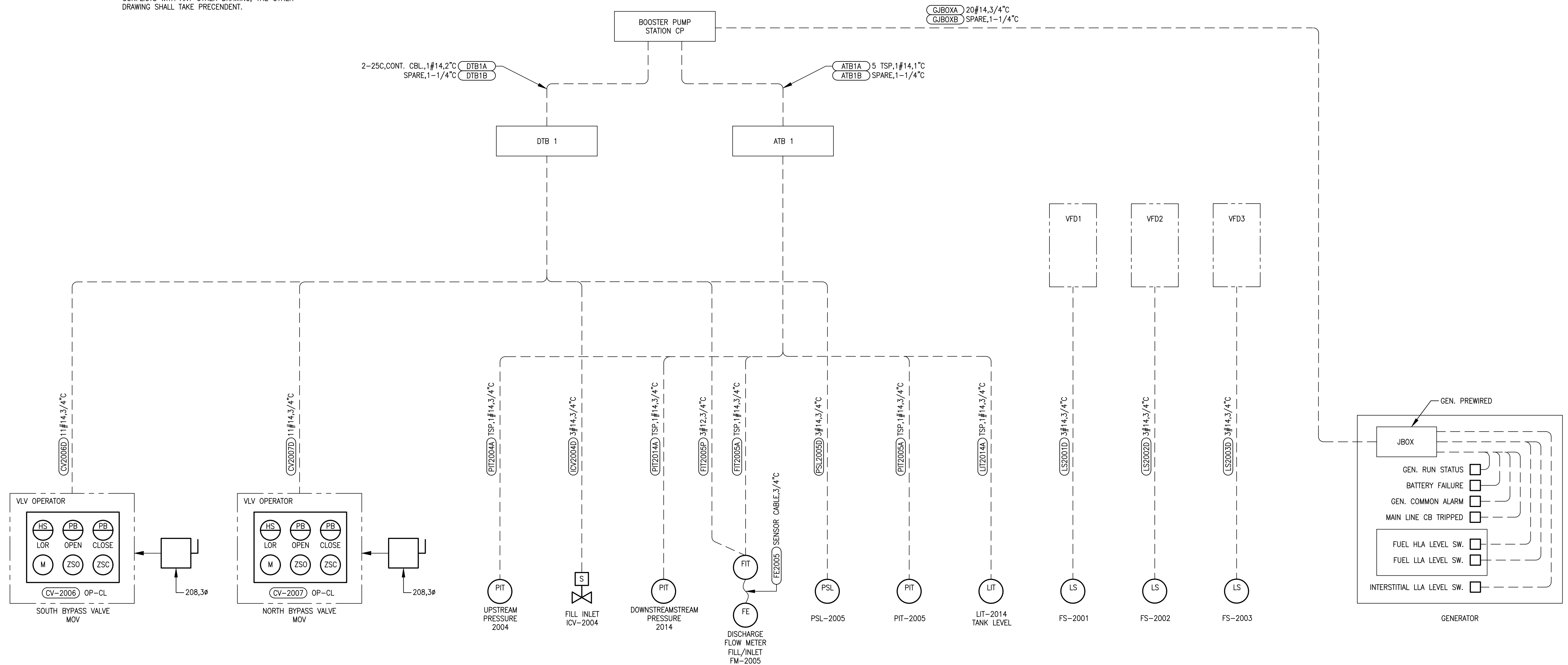
BOOSTER PUMP STATION CONTROL PANEL

SHEET NUMBER
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GENERAL ELECTRICAL NOTES

- CONTRACTOR SHALL PROVIDE A PAD LOCKABLE DISCONNECT FOR EACH MOTOR OPERATED VALVE. PROVIDE A NEMA 4, MOTOR RATED SWITCH.
- THIS DRAWING IS INCLUDED TO INDICATE CONDUIT, WIRE, AND GENERAL ARRANGEMENTS. IF THIS DRAWING CONFLICTS WITH ANY OTHER DRAWING, THE OTHER DRAWING SHALL TAKE PRECEDENT.



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KHA PROJECT	044572041
DATE	FEB 2019
SCALE	AS SHOWN
DESIGNED BY	DGW
DRAWN BY	AOD
CHECKED BY	DGW

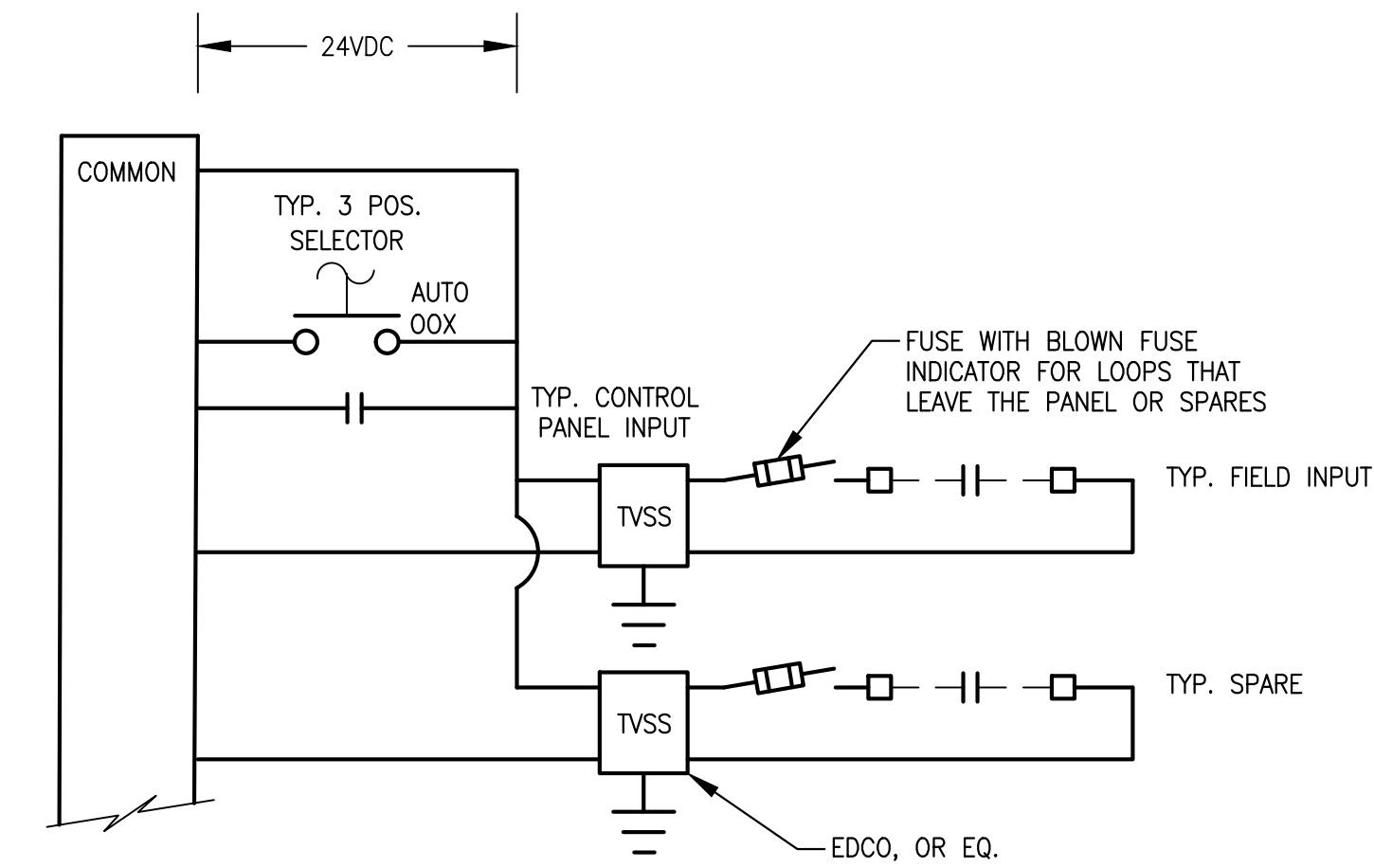
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FIELD INSTRUMENT RISER

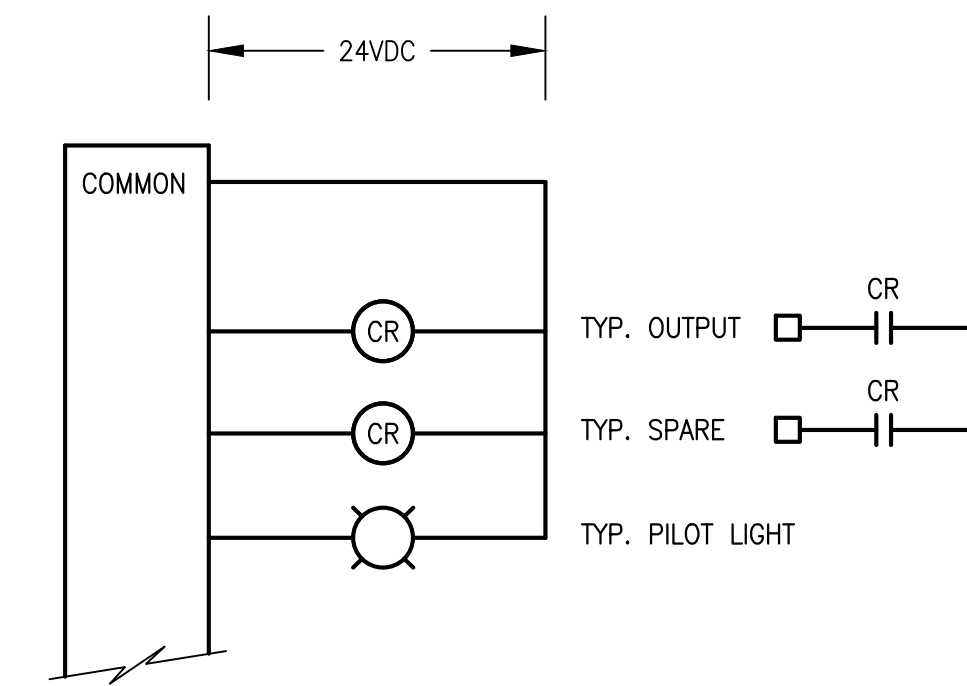
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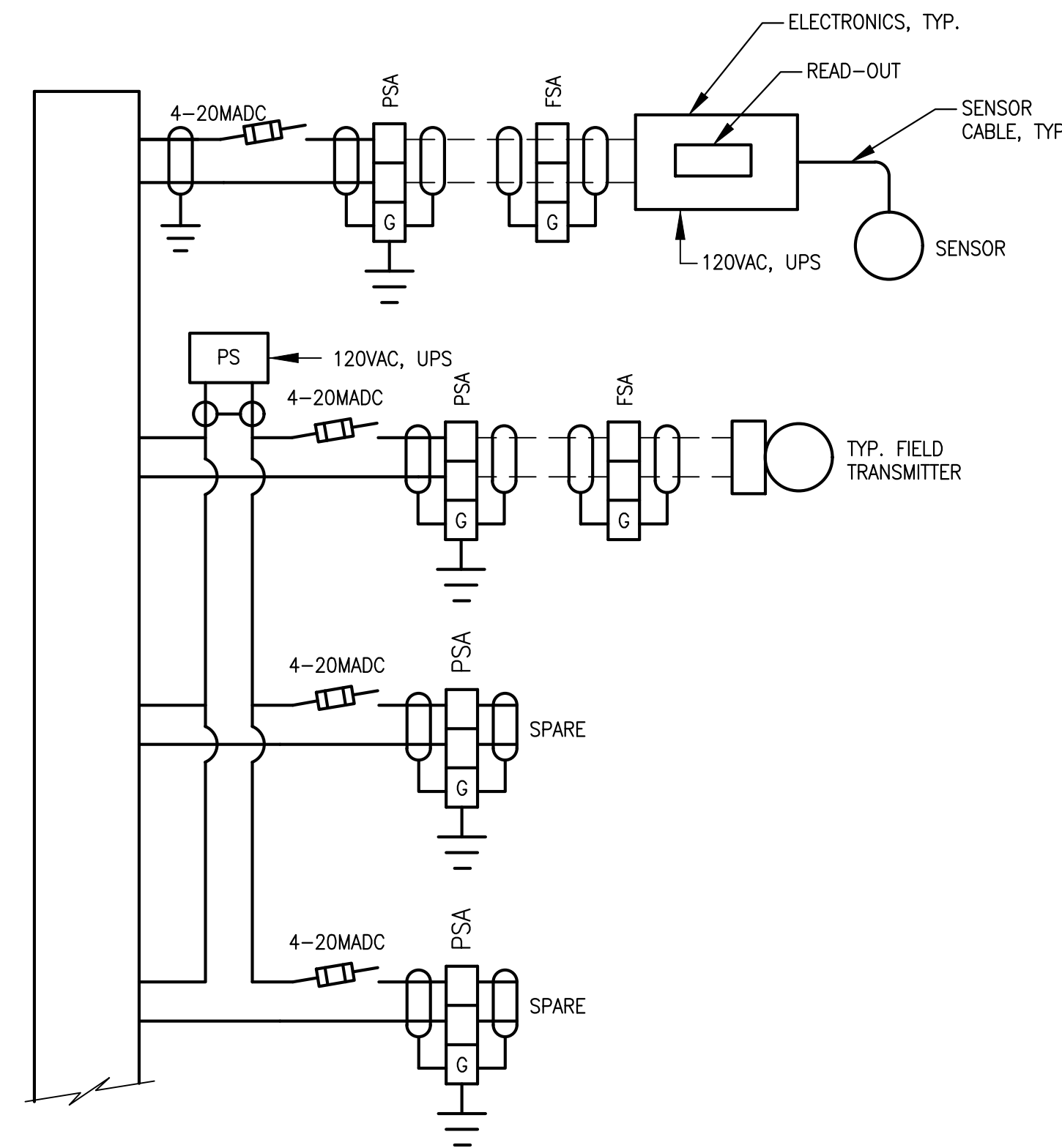
TYPICAL DI DIAGRAM

NTS



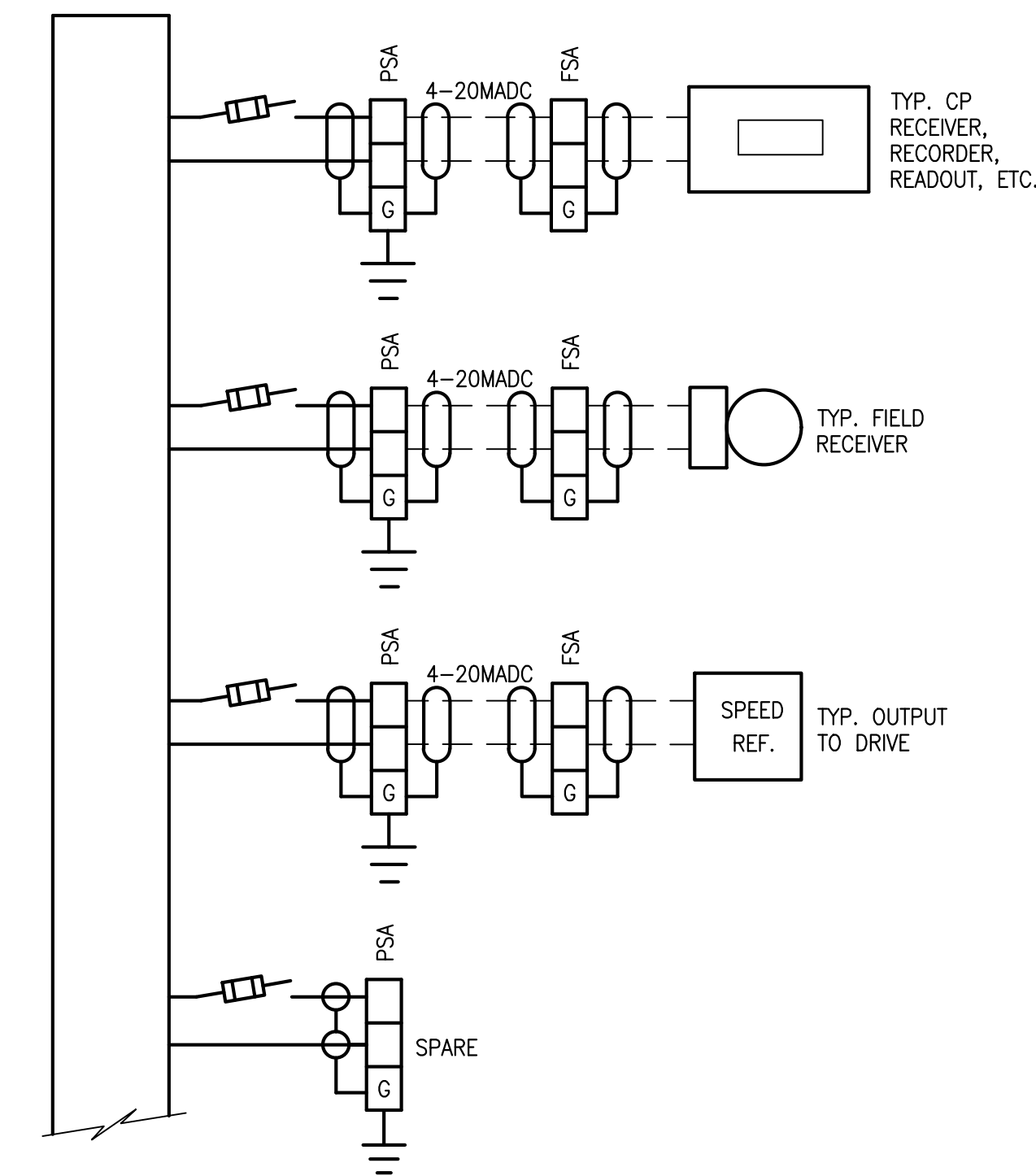
TYPICAL DO DIAGRAM

NTS



TYPICAL AI LOOP DIAGRAM

NTS



TYPICAL AO LOOP DIAGRAM

NTS

GENERAL ELECTRICAL NOTES

1. THESE DIAGRAMS ARE SCHEMATIC.

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KHA PROJECT
 044572041
 DATE
 FEB 2019
 SCALE AS SHOWN
 DESIGNED BY DGW
 DRAWN BY AOD
 CHECKED BY DGW

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LOOP DIAGRAMS

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