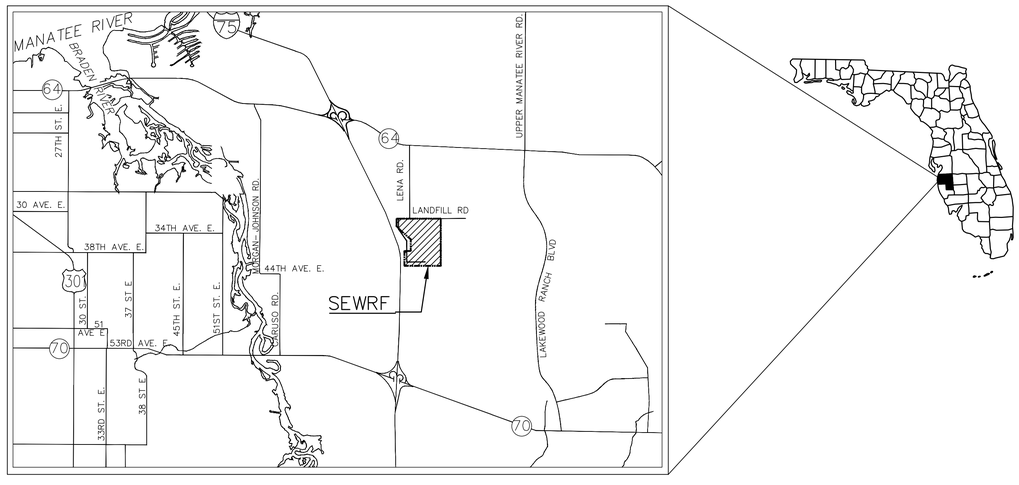
SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

COUNTY PROJECT No. 6084880

ISSUE FOR BID

APRIL 2014

MANATEE COUNTY, FLORIDA



PROJECT VICINITY MAP
SECTION 35S, TOWNSHIP 18E, RANGE 1

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MATTHEW S. LOVE, P.E.
No. 66118

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION
APRIL 2014
ISSUE FOR BID
G-0.1 - COVER SHEET

GENERAL NOTES

1. THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATION THEY DEEM NECESSARY, PRIOR TO BIDDING, TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
2. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.
3. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
4. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
5. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURERS' MAXIMUM RECOMMENDED DEFLECTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA FOR THE DURATION OF THE PROJECT.
7. THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS.
8. FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED PIPELINES TO AVOID CONFLICTS. NO ADDITIONAL PAYMENT SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND THE OWNER'S ENGINEER.
9. THE CONTRACTOR SHALL INCLUDE IN HIS BID; BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC, AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING THE EXISTING WASTEWATER TREATMENT PLANT OPERATIONS AT ALL TIMES.
10. ALL PROPOSED WORK SHALL BE COORDINATED WITH WASTEWATER TREATMENT PLANT PERSONNEL AND MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
11. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
12. CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT WORKMANLIKE MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO MAKING THE CONNECTIONS.
13. UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED.
14. ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
15. WATER SHALL NOT BE PERMITTED IN EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
16. THE CONTRACTOR SHALL NOT ALLOW ANY DISCHARGE OF WASTEWATER TO LANDS AND/OR ADJACENT WATER BODIES OR STORM DRAINS. ANY LEAKAGE MUST BE CONTAINED AND TRANSFERRED BY THE CONTRACTOR TO THE PLANT DRAIN PUMP STATION AT THE WASTEWATER TREATMENT PLANT.
17. ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
18. ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING.
19. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE.
20. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION.THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL EROSION, SEDIMENT AND TURBIDITY CONTROL MEASURES PRIOR TO CONSTRUCTION OF ANY COMPONENTS ASSOCIATED WITH THE PROJECT. SEDIMENT CONTROL INCLUDES SILT DAMS, TRAPS, EROSION PROTECTION, AND ANY OTHER APPURTENANCES NEEDED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS.
21. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
22. CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
23. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE BMPS IDENTIFIED IN CHAPTER 4, 4.40 "DEWATERING" OF "THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL".
24. CONTRACTOR SHALL COORDINATE WORK SUCH THAT THE PLANT SHALL STAY IN OPERATION AT ALL TIMES.
25. LINE INACTIVATIONS SHALL BE CONCLUDED AT OFF PEAK TIMES AS DICTATED BY PLANT OPERATIONS STAFF.
26. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF FLORIDA TO PERFORM CONSTRUCTION STAKING IN ACCORDANCE WITH RULE 61G17-6.004 (3) OF THE FLORIDA ADMINISTRATIVE CODE.

RESTORATION AND MISCELLANEOUS NOTES

1. THE CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE.
2. THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, SIDEWALKS, FENCES, LANDSCAPING AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
3. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
4. ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
5. LIMITS OF PROPOSED ROADWAY OVERLAY SHOWN ARE APPROXIMATE. CONTRACTOR SHALL OVERLAY ALL DISTURBED AREAS OF ACCESS ROAD AS PART OF THIS PROJECT IN ACCORDANCE WITH THE DETAILS.
6. CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
7. THE CONTRACTOR SHALL RAISE EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.
8. CONTRACTOR SHALL RESTORE GRADE TO PRECONSTRUCTION ELEVATIONS UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL PROVIDE A 10'x20' TEMPORARY STORAGE UNIT ONSITE 30 DAYS PRIOR TO COMMENCING ANY MODIFICATION TO THE PROPOSED ELECTRICAL ROOM. STORAGE UNIT SHALL REMAIN ONSITE DURING ACTIVE CONSTRUCTION PERIOD.

SIDEWALK NOTES

1. ALL SIDEWALKS SHALL BE CONSTRUCTED WITH 4 INCH THICK 3000 PSI CLASS I CONCRETE REINFORCED WITH 6X6 NO. 10 MESH.
2. SIDEWALKS SHALL BE CONSTRUCTED TO THE SPECIFICATIONS OF THE MANATEE COUNTY DEVELOPMENT STANDARDS AND A MINIMUM OF FIVE (5) FEET WIDE.
3. THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL NOT BE MORE THAN 1/2 INCH UNDER A TEN-FOOT STRAIGHTEDGE, NOR MORE THAN 1/8 INCH ON A FIVE-FOOT TRAVERSE SECTION. THE EDGE OF THE SIDEWALK SHALL BE CAREFULLY FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/2 INCH.
4. EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE SIDEWALK AND DRIVEWAYS OR AT FIXED OBJECTS AND SIDEWALK INTERSECTIONS SHALL BE 1/2 INCH JOINTS.
5. CONTRACTION JOINTS: FIXED OPEN-TYPE CONTRACTION JOINTS SHALL BE FORMED BY STAKING A METAL BULKHEAD IN PLACE AND DEPOSITING THE CONCRETE ON BOTH SIDES. AFTER THE CONCRETE HAS SET SUFFICIENTLY TO PRESERVE THE WIDTH AND SHAPE OF THE JOINT, THE BULKHEAD SHALL BE REMOVED. AFTER THE SIDEWALK HAS BEEN FINISHED OVER THE JOINT, THE SLOT SHALL BE EDGED WITH A TOOL HAVING A 1/2 INCH RADIUS. SAWED JOINTS: A SLOT APPROXIMATELY 3/16 INCH WIDE AND NOT LESS THAN 1-1/2 INCHES DEEP SHALL BE CUT WITH A CONCRETE SAW AFTER THE CONCRETE HAS SET.

SURVEY NOTES

1. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED.
2. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS. UNDERGROUND UTILITY LINE LOCATIONS (IF SHOWN HEREON) ARE BASED UPON UTILITY PROVIDER ATLASES AND VISIBLE SURFACE EVIDENCE.
3. RE-USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE TO WHOM CERTIFIED.
4. ALL FOUND POINTS ARE UNMARKED UNLESS OTHERWISE NOTED. ALL PERIMETER BEARINGS AND DISTANCES ARE ALSO FIELD MEASURED UNLESS NOTED.
5. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
6. ANY ZONING INFORMATION SHOWN OR NOTED HEREON IS BASED ON INFORMATION AVAILABLE DURING THE PREPARATION OF THE SURVEY. THIS INFORMATION SHOULD BE VERIFIED WITH THE GOVERNING AUTHORITY PRIOR TO ANY DETERMINATIONS OR DESIGN.
7. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
8. UNLESS OTHERWISE INDICATED, THE PROPERTY DESCRIPTION AND EASEMENTS SHOWN WERE FURNISHED TO POLARIS ASSOCIATES, INC. AND ARE PRESUMED TO BE CORRECT. NO SEARCH OF ANY PUBLIC RECORDS, FOR EASEMENTS, DEEDS, ETC., WAS PERFORMED BY THIS FIRM FOR THE COMPLETION OF THIS SURVEY AND THERE MAY BE ADDITIONAL RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
9. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS, RIGHTS-OF-WAY AND OTHER MATTERS OF RECORD.
10. ELEVATIONS ARE BASED ON MANATEE COUNTY BENCHMARK HAVING AN ELEVATION OF 37.36 NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
11. THIS SURVEY IS BASED ON U.S. FEET.

MOT NOTE

1. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY MAINTENANCE OF TRAFFIC (MOT) PLAN FOR APPROVAL PRIOR TO THE BEGINNING OF CONSTRUCTION. APPROVAL DOES NOT MITIGATE ANY RESPONSIBILITY FROM THE CONTRACTOR OR TRANSFER RESPONSIBILITY TO THE COUNTY. THE MOT PLAN SHALL ADDRESS SPECIFICALLY THE CONTRACTOR'S METHODS OF BRINGING EQUIPMENT, MATERIALS AND FILL ONTO THE CONSTRUCTION SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED TO IMPLEMENT THE APPROVED MOT PLAN.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE FOLLOWING JURISDICTIONAL BODIES AND UTILITY COMPANIES:

INVESTIGATE BEFORE YOU EXCAVATE
CALL LOCAL PUBLIC UTILITY NOTIFICATION CENTER
TOLL FREE 1-800-432-4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

MANATEE COUNTY
TRANSPORTATION DEP.
ALLEN BRENTLEY
2904 12TH STREET COURT E.
BRADENTON, FL 34208
(941) 708-7509

MANATEE COUNTY
UTILITIES OPERATIONS
KATHY McMAHON
4422-C 66TH STREET W.
BRADENTON, FL 34210

VERIZON FLORIDA, INC.
DON DURDEN
1701 RINGLING BLVD.
SARASOTA, FL 34236
(941) 952-5616

PARAGON CABLE -
BRIGHTHOUSE NETWORK, LLC
WALTER KROL
5413 S.R. 64 E.
BRADENTON, FL 34208
(941) 748-3816 Ext. 24053

FLORIDA POWER AND LIGHT
LARRY RUSSO
125 12TH AVENUE EAST
BRADENTON, FL 34208
(941) 723-4424

TECO/PEOPLES GAS
TED FELEGY
8261 VICO CT.
SARASOTA, FL 34240
(941) 342-4026

2. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.
3. ALL BELOW GROUND DUCTILE IRON PIPE SHALL BE ENCASED IN A POLYETHYLENE WRAP IN ACCORDANCE WITH AWWA STANDARDS.
4. ALL VALVE BOX COVERS SHALL BE PAINTED TO INDICATE THEIR TYPE OF SERVICE.
5. ALL TEST POINT TAPPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.

PROCESS AREA TABLE

NUMERIC DESIGNATION	PROCESS AREA
0	GENERAL
1	SITE CIVIL
2	LOW SERVICE
3	HIGH SERVICE
4	GROUND STORAGE TANK
5	CHEMICAL SYSTEM
9	DETAILS

DRAWING NUMBER DESIGNATION

M - 7 . 1

- M - INDICATES DISCIPLINE (EX. "M" REFERS TO MECHANICAL)
- 7 - INDICATES PROCESS AREA OR STRUCTURE (EX. "7" REFERS TO THE EFFLUENT PROCESS AREA) * NOT ALL PROCESS AREAS / STRUCTURES ARE INCLUDED FOR EACH DISCIPLINE
- 1 - INDICATES SHEET NUMBER OF PROCESS AREA OR STRUCTURE

DRAWING INDEX

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

MATTHEW S. LOVE, P.E.
No. 66118

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

GENERAL NOTES AND SHEET INDEX

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.2

STATUS: ISSUE FOR BID
REVISION

S:\102A\0160\08-Drawings\General\0202-1024O160.dwg, 4/29/2014 4:25:47 PM, Brian Naught

GENERAL ABBREVIATIONS

@.	AT
ABW	AUTOMATIC BACKWASH
A/C	AIR CONDITIONER UNIT
AC	ACRES
AC	ASPHALTIC CONCRETE
ABD	ABANDONED
AL./ALUM.	ALUMINUM
ANCH.	ANCHOR
APPROX.	APPROXIMATE
BLDG.	BIULDING
BM.	BEAM
BOT./BOTT.	BOTTOM
(C)	CALCULATED DATA
C	CHANNEL
C.	CONDUIT
C.B.	CATCH BASIN
CCR	CERTIFIED CORNER RECORD
CHKR	CHECKERED
CIR.	CIRCLE
CLF	CHAIN LINK FENCE
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
COL.	COLUMN
CONN.	CONNECTOR/CONNECTION
CONC.	CONCRETE
COR	CORNER
CPB	CONDOMINIUM PLAT BOOK
C/T	CURB TIE
CU.	COPPER
(D)	DEED DATA
D.	DEEP/DRAIN
DB	DEED BOOK
DBL.	DOUBLE
DHW.	DESIGN HIGH WATER
DISCH.	DISCHARGE
DN.	DOWN
DRWY	DRIVEWAY
E.W.	EACH WAY
EA.	EACH
ECMP	ELLIPTICAL CORRUGATED METAL PIPE
EL./ELEV.	ELEVATION
ELEC.	ELECTRICAL CONDUIT
EP	EDGE OF PAVEMENT
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ETC.	AND SO FORTH
EXIST.	EXISTING
EXP.	EXPANSION
(F)	FIELD DATA
FCM	FOUND CONCRETE MONUMENT
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FF	FINISHED FLOOR
FIR	FOUND IRON ROD
FND	FOUND NAIL & DISC
FOP	FOUND OPEN PIPE
FPP	FOUND PINCHED PIPE
FRRS	FOUND RAILROAD SPIKE
F/T	FENCE TIE
FT.	FOOT
FTG.	FOOTING
FXC	FOUND X-CUT
GALV.	GALVANIZED
GDRL	GUARDRAIL
GE	GRATE ELEVATION
GEN	GENERATOR
GI	GRATED INLET
GPM	GALLONS PER MINUTE
GRTG.	GRATING
G.S.	GALVANIZED STEEL
GST	GROUND STORAGE TANK
GR./GRD.	GRADE
GWP	GUY WIRE POLE
HDWALL	HEADWALL
H.R.	HANDRAIL
HWL	HIGH WATER LEVEL
IE	INVERT ELEVATION
IN.	INCH
INV.	INVERT
IP	IRON PIPE
IR	IRON ROD
J.B.	JUNCTION BOX
JT.	JOINT
(L)	LEGAL DESCRIPTION DATA
LB	LICENSED BUSINESS
LG.	LONG
LN.	LANE
LP	LIGHT POLE
LS	LICENSED SURVEYOR
MAS	MASONRY
MAX.	MAXIMUM
MCC	MOTOR CONTROL CENTER
MES	MITERED END SECTION
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MES	MITERED END SECTION
MHW	MEAN HIGH WATER
MON.	MONUMENT
NG	NATURAL GROUND
N.T.S.	NOT TO SCALE
NO.	NUMBER
NP	NORMAL POOL
ø	DIAMETER/PHASE
O/A	OVERALL
OPNG.	OPENING
OR	OFFICIAL RECORDS BOOK
(P)	PLAT BOOK
PCCP	PRE-STRESSED CYLINDRICAL CONCRETE PIPE
PG	PAGE
PLCS.	PLACES
PLS	PROFESSIONAL LAND SURVEYOR
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
POT	POTABLE
PP	POWER POLE
PRM	PERMANENT REFERENCE MONUMENT
PROP.	PROPOSED
PSM	PROFESSIONAL SURVEYOR & MAPPER
P/T	PAVEMENT TIE
P.V.	PLUG VALVE
PVMT	PAVEMENT
R.	RADIUS/RISER/RELAY
RCP	REINFORCED CONCRETE PIPE
REF.	REFERENCED
REINF.	REINFORCED/REINFORCING
REQ'D	REQUIRED
RESTR.	RESTRAINED
RLS	REGISTERED LAND SURVEYOR
RW;R/W	RIGHT-OF-WAY
SAN.	SANITARY
SEC.	SECTION
SGL	SINGLE
SHW	SEASONAL HIGH WATER
SIR	SET IRON ROD ½" LB 6113
SND	SET NAIL & DISC LB 6113
SPRK	SPRINKLER
SQ.	SQUARE
SN.	SIGN
SR	STATE ROAD
SSMH	SANITARY SEWER MANHOLE
S/T	SIDEWALK TIE
STL.	STEEL
STY	STORY
S/W;SWK	SIDEWALK
SYM.	SYMBOL
TBM	TEMPORARY BENCH MARK
TOB	TOP OF BANK
T.&B.	TOP & BOTTOM
TEL	TELEPHONE
TEMP.	TEMPORARY
THK	THICK
TOS	TOE OF SLOPE
TYP.	TYPICAL
UG	UNDERGROUND GAS
UP	UTILITY POLE
UT	UNDERGROUND TELEPHONE
VCP	VITRIFIED CLAY PIPE
VERT.	VERTICAL
W	WIDE FLANGE/WIDE/WATT
W/	WITH
WF	WOOD FENCE
W/L	WATER LINE
W.L.	WATER LEVEL
W/M	WATER MAIN
W.M.	WATER METER
WRF	WATER RECLAMATION FACILITY
W.P.	WEATHER PROOF
W.S.	WALL SLEEVE/WATER STOP/WATER SERVICE
W/T	WALL TIE
WTR.	WATER

FLOW ABBREVIATIONS

AL	ALUM SOLUTION
AB	AERATION BASIN
AD	AEROBIC DIGESTER
AX	ANOXIC BASIN
BA	BLOWER AIR
BP	BYPASS
BW	BACKWASH
CA	COMPRESSED AIR
CCC	CHLORINE CONTACT CHAMBER
CCE	CHLORINATED EFFLUENT
CF	CLOTH FILTER
CLE	CLARIFIER EFFLUENT
CLG	CHLORINE GAS
CLS/CL2S	CHLORINE SOLUTION
D/DR	DRAIN
DAF	DISSOLVED AIR FLOTATION
DF	NEW CLOTH FILTER
DS	DEWATERED SLUDGE
EFF	EFFLUENT
EXP	EXPANSION
FBW	FILTER BACKWASH
FC	FINAL CLARIFIER
FE	FILTER EFFLUENT
FLE	FILTERED LAKE EFFLUENT
FLW	FLOCCULATED WATER
FM	FLOW METER
FW	FILTERED WATER
GBT	GRAVITY BELT THICKENER
GR	GRIT
HDW	HEADWORKS
INF	INFLUENT
IR	INTERNAL RECYCLE
HSBFP	HIGH SOLIDS BELT FITER PRESS
ML	MIXED LIQUOR
OF	OVERFLOW
P	POLYMER
PD	PLANT DRAIN
PDFM	PLANT DRAIN FORCE MAIN
PS	PUMP STATION
PW	POTABLE WATER
RAS	RETURNED ACTIVATED SLUDGE
RCW	RECLAIMED WATER
REJ	REJECT
RML	RECIRCULATED MIXED LIQUOR
RW	REUSE WATER
SAM	SAMPLE
SB	SPLITTER BOX
SC	SCUM
SDR	STORMWATER DRAINAGE
SL	SAMPLE LINE
SPW	STORAGE POND WATER
SS	SANITARY SEWER
TS	THICKENED SLUDGE
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WW	WASTEWATER

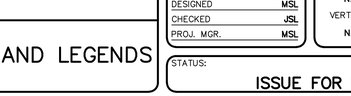
PIPING ABBREVIATIONS

ARV	AIR RELEASE VALVE
ABD	ABANDONED
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CB	CATCH BASIN
CO	CLEANOUT
CORP	CORPORATION
CV	CHECK VALVE
D.I.	DUCTILE IRON
DIA	DIAMETER
D.I.P.	DUCTILE IRON PIPE
ELEC.	ELECTRICAL
EXIST.	EXISTING
FHA	FIRE HYDRANT ASSEMBLY
FL	FLANGED
GS	GALVANIZED STEEL
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
MJ	MECHANICAL JOINT
PE	PLAIN END
PS	PUMP STATION
PV	PLUG VALVE
PVC	POLYVINYLCHLORIDE
RED.	REDUCER
SCH	SCHECULE
SDR.	DIAMETER RATIO
SS.	STAINLESS STEEL
TBR	TO BE REMOVED
UE	UNDERGROUND ELECTRIC
VERT.	VERTICAL
WM	WATER METER

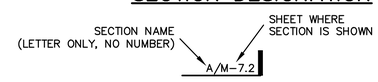
LEGEND

EXISTING		PROPOSED
	PIPE 12" OR LARGER (ABOVE GROUND)	
	PIPE 12" OR LARGER (UNDERGROUND)	
	PIPE SMALLER THAN 12" (ABOVE GROUND)	
	PIPE SMALLER THAN 12" (UNDERGROUND)	
	GATE VALVE	
	BUTTERFLY VALVE	
	BALL VALVE	
	PLUG VALVE	
	REDUCER	
	MANHOLE	M.H.
C.B.	CATCH BASIN	C.B.
	TOP OR TOE OF BANK	
	PIPING, STRUCTURES OR EQUIPMENT TO BE REMOVED	
25	CONTOURS	26

PIPE IDENTIFICATION



SECTION DESIGNATION



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REV.NO.	DESCRIPTIONS	DATE
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MATTHEW S. LOVE, P.E.
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EB0006691
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

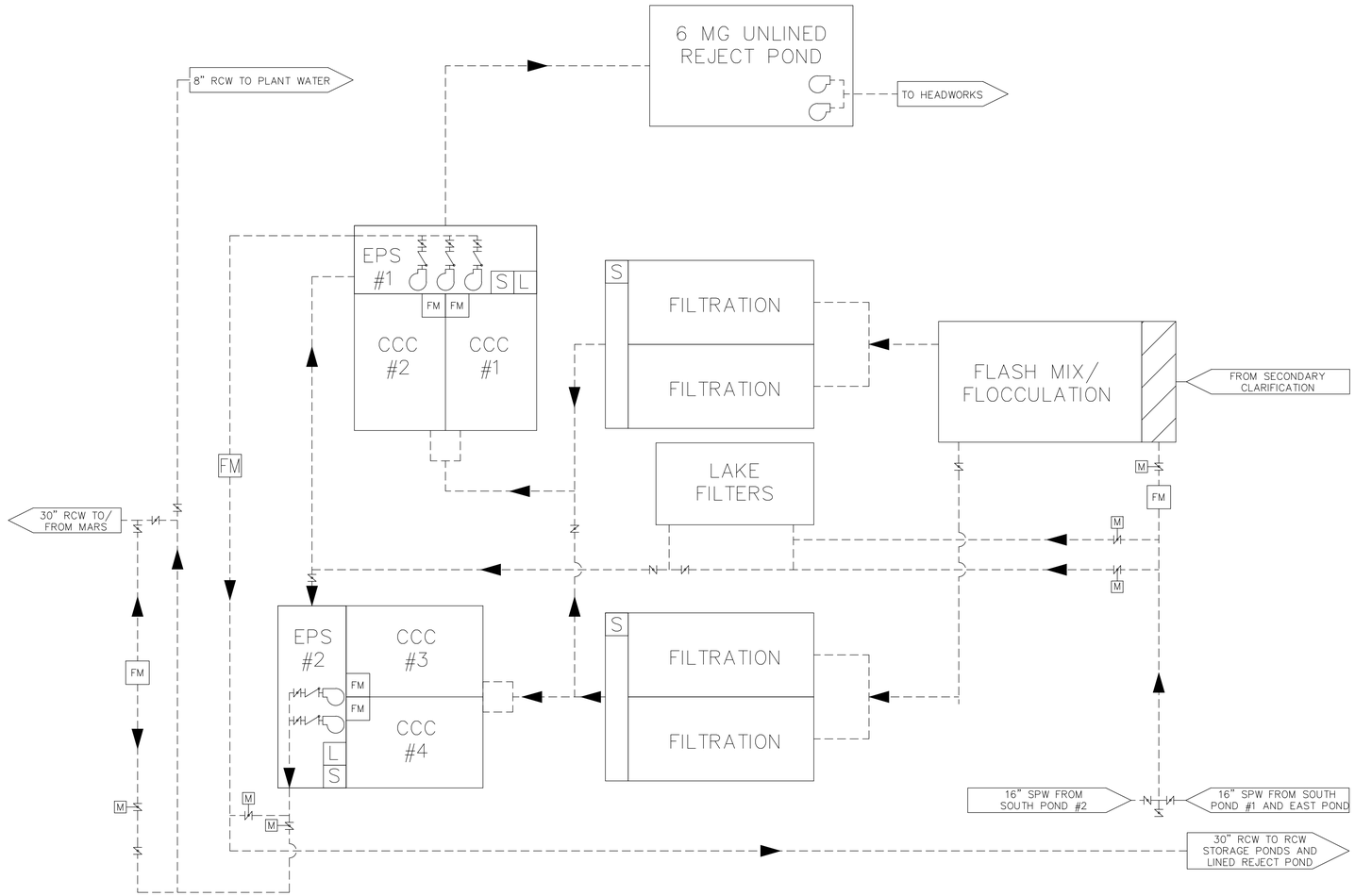
ABBREVIATIONS, SYMBOLS AND LEGENDS

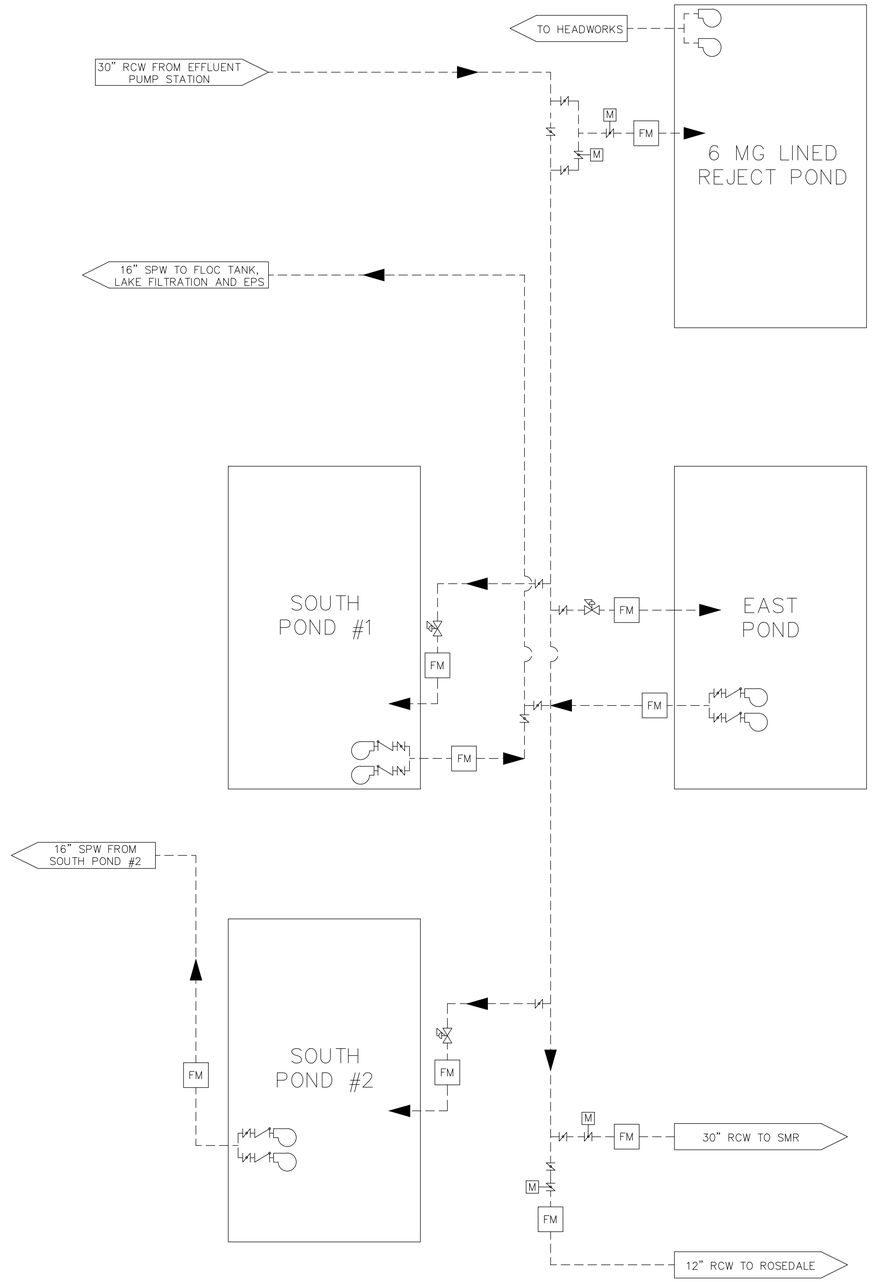
DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.3

STATUS: ISSUE FOR BID
REVISION





LEGEND

L	LEVEL SENSOR/FLOW INDICATOR		PUMP
S	SAMPLING LOCATION		CHECK VALVE
FM	FLOW METER		BUTTERFLY VALVE
	EXISTING EQUIPMENT	M	MOTOR OPERATED VALVE
	EXISTING PIPING		BACK PRESSURE SUSTAINING VALVE
			SURGE ANTICIPATOR VALVE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

EXISTING EFFLUENT TREATMENT PROCESS FLOW DIAGRAM

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.4

STATUS: ISSUE FOR BID
REVISION

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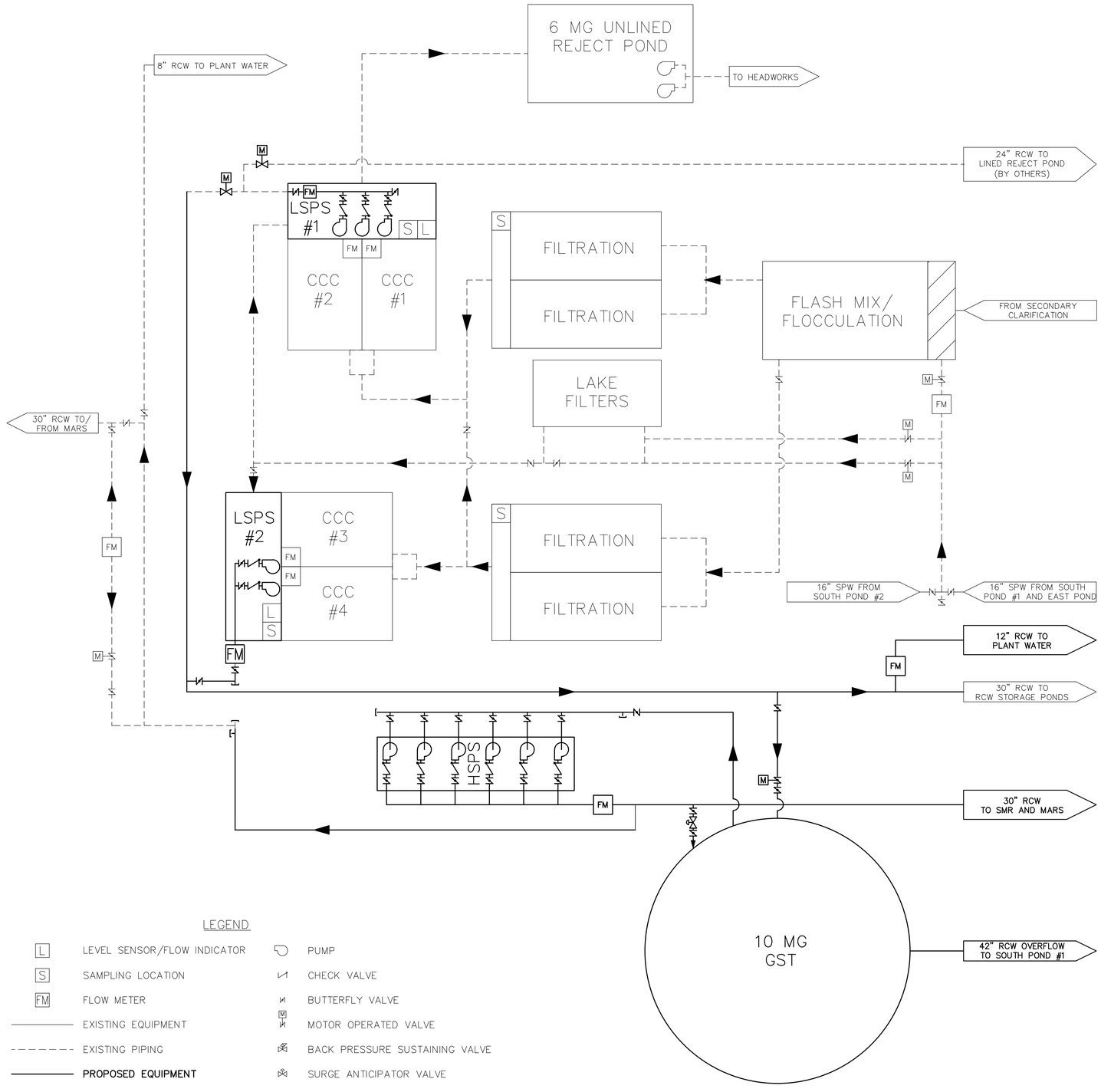

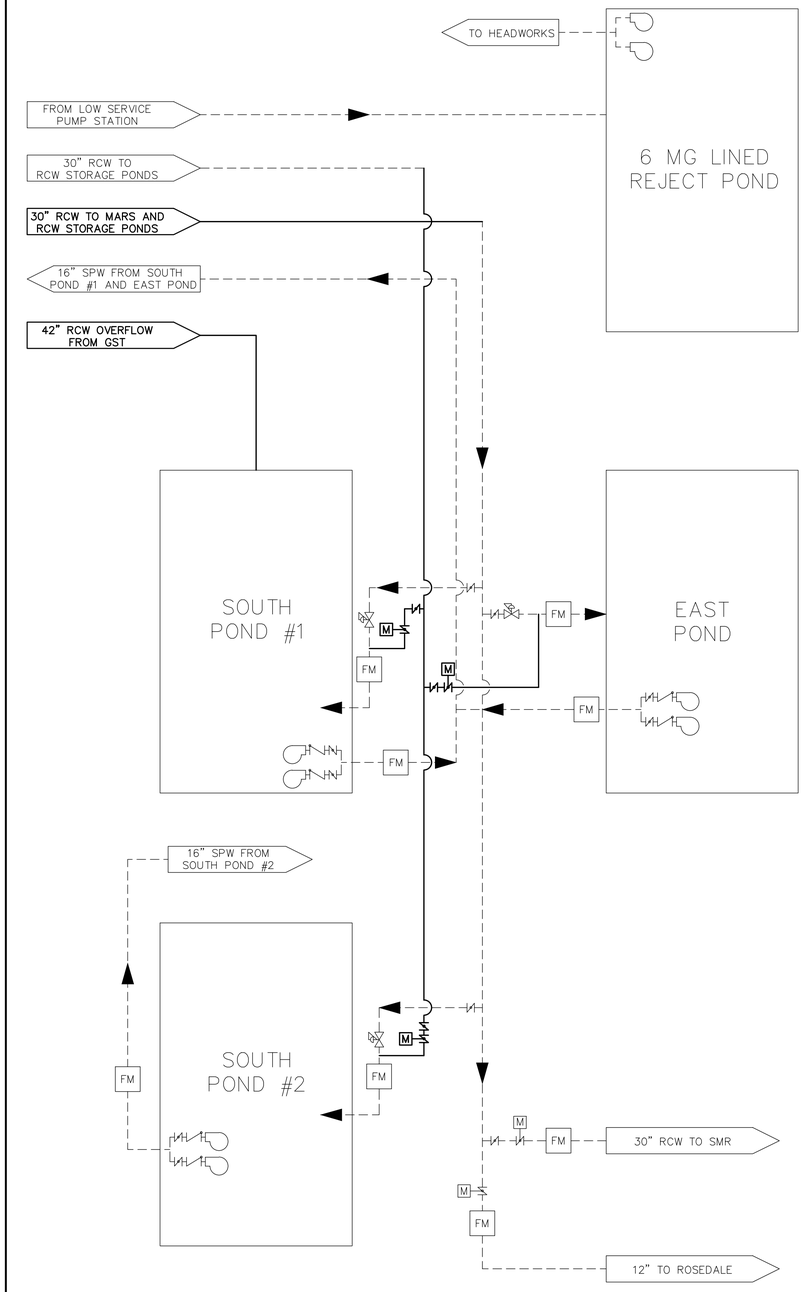

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PROPOSED EFFLUENT TREATMENT PROCESS FLOW DIAGRAM

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.5

STATUS: ISSUE FOR BID
REVISION

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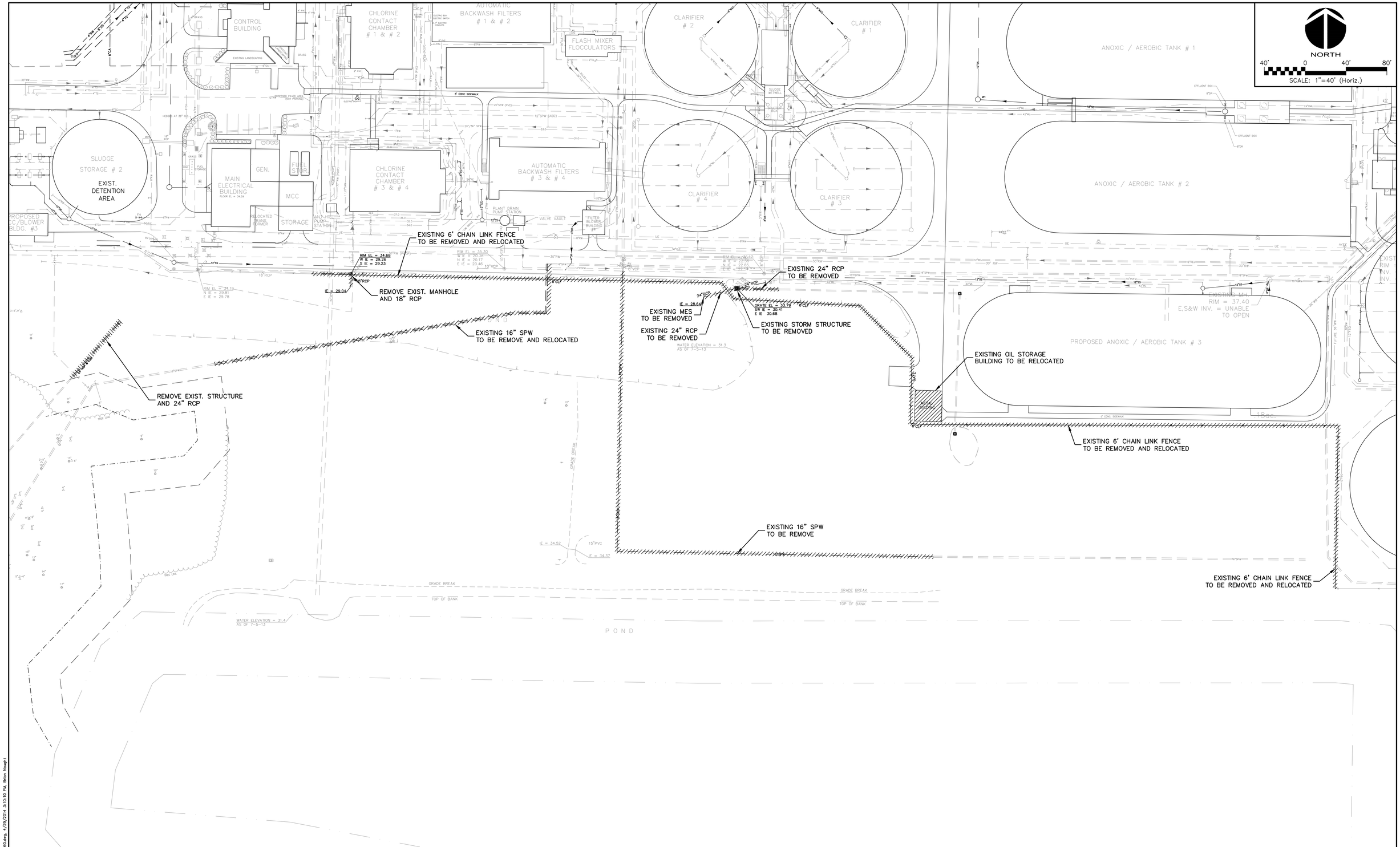

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MANATEE COUNTY, FLORIDA

MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

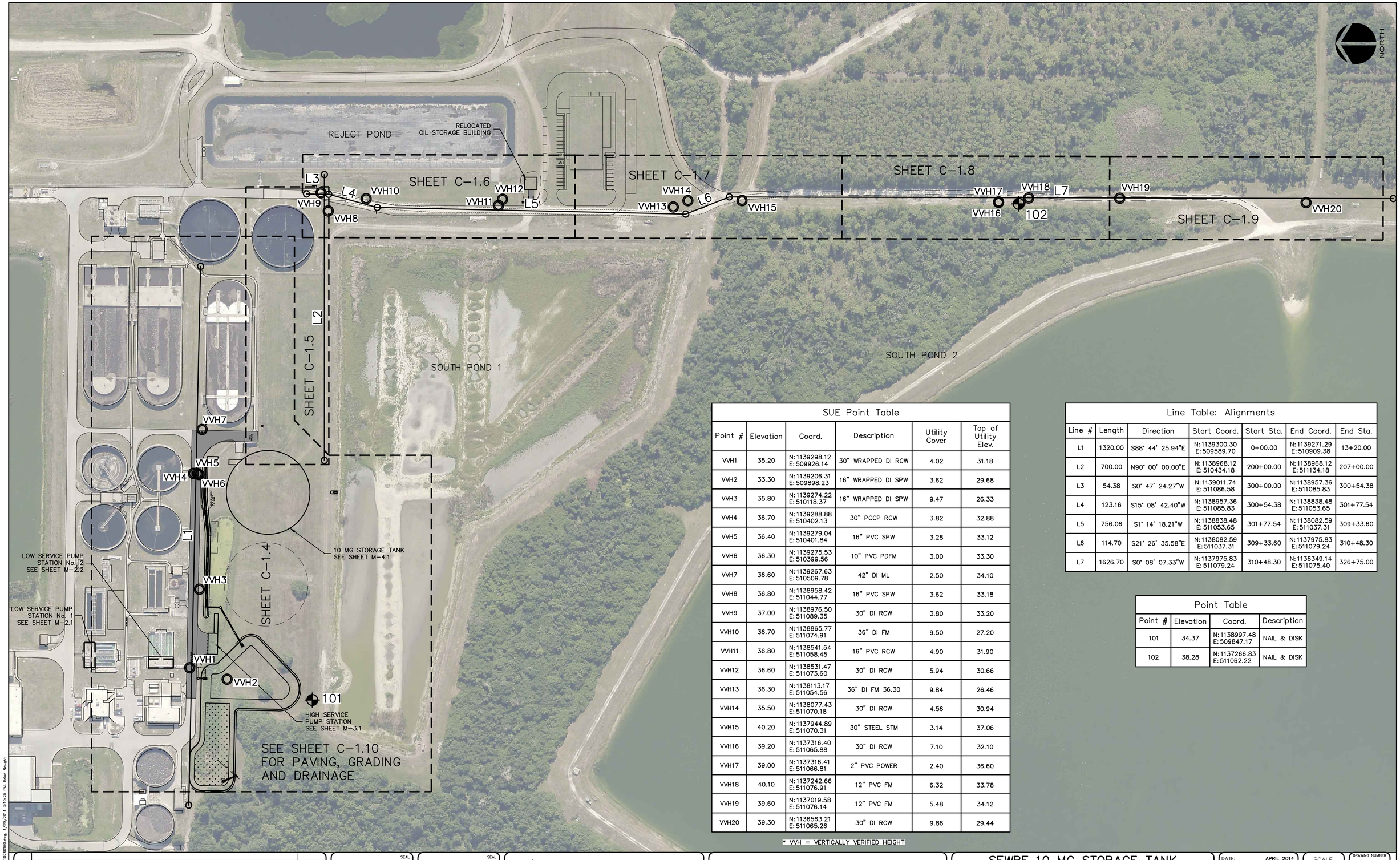
DEMOLITION PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 40'
VERTICAL: NA

DRAWING NUMBER
D-1.1

STATUS: ISSUE FOR BID
REVISION



SUE Point Table

Point #	Elevation	Coord.	Description	Utility Cover	Top of Utility Elev.
VVH1	35.20	N: 1139298.12 E: 509926.14	30" WRAPPED DI RCW	4.02	31.18
VVH2	33.30	N: 1139206.31 E: 509898.23	16" WRAPPED DI SPW	3.62	29.68
VVH3	35.80	N: 1139274.22 E: 510118.37	16" WRAPPED DI SPW	9.47	26.33
VVH4	36.70	N: 1139288.88 E: 510402.13	30" PCCP RCW	3.82	32.88
VVH5	36.40	N: 1139279.04 E: 510401.84	16" PVC SPW	3.28	33.12
VVH6	36.30	N: 1139275.53 E: 510399.56	10" PVC PDFM	3.00	33.30
VVH7	36.60	N: 1139267.63 E: 510509.78	42" DI ML	2.50	34.10
VVH8	36.80	N: 1138958.42 E: 511044.77	16" PVC SPW	3.62	33.18
VVH9	37.00	N: 1138976.50 E: 511089.35	30" DI RCW	3.80	33.20
VVH10	36.70	N: 1138865.77 E: 511074.91	36" DI FM	9.50	27.20
VVH11	36.80	N: 1138541.54 E: 511058.45	16" PVC RCW	4.90	31.90
VVH12	36.60	N: 1138531.47 E: 511073.60	30" DI RCW	5.94	30.66
VVH13	36.30	N: 1138113.17 E: 511054.56	36" DI FM 36.30	9.84	26.46
VVH14	35.50	N: 1138077.43 E: 511070.18	30" DI RCW	4.56	30.94
VVH15	40.20	N: 1137944.89 E: 511070.31	30" STEEL STM	3.14	37.06
VVH16	39.20	N: 1137316.40 E: 511065.88	30" DI RCW	7.10	32.10
VVH17	39.00	N: 1137316.41 E: 511066.81	2" PVC POWER	2.40	36.60
VVH18	40.10	N: 1137242.66 E: 511076.91	12" PVC FM	6.32	33.78
VVH19	39.60	N: 1137019.58 E: 511076.14	12" PVC FM	5.48	34.12
VVH20	39.30	N: 1136563.21 E: 511065.26	30" DI RCW	9.86	29.44

* VVH = VERTICALLY VERIFIED HEIGHT

Line Table: Alignments

Line #	Length	Direction	Start Coord.	Start Sta.	End Coord.	End Sta.
L1	1320.00	S88° 44' 25.94"E	N: 1139300.30 E: 509589.70	0+00.00	N: 1139271.29 E: 510909.38	13+20.00
L2	700.00	N90° 00' 00.00"E	N: 1138968.12 E: 510434.18	200+00.00	N: 1138968.12 E: 511134.18	207+00.00
L3	54.38	S0° 47' 24.27"W	N: 1139011.74 E: 511086.58	300+00.00	N: 1138957.36 E: 511085.83	300+54.38
L4	123.16	S15° 08' 42.40"W	N: 1138957.36 E: 511085.83	300+54.38	N: 1138838.48 E: 511053.65	301+77.54
L5	756.06	S1° 14' 18.21"W	N: 1138838.48 E: 511053.65	301+77.54	N: 1138082.59 E: 511037.31	309+33.60
L6	114.70	S21° 26' 35.58"E	N: 1138082.59 E: 511037.31	309+33.60	N: 1137975.83 E: 511079.24	310+48.30
L7	1626.70	S0° 08' 07.33"W	N: 1137975.83 E: 511079.24	310+48.30	N: 1136349.14 E: 511075.40	326+75.00

Point Table

Point #	Elevation	Coord.	Description
101	34.37	N: 1138997.48 E: 509847.17	NAIL & DISK
102	38.28	N: 1137266.83 E: 511062.22	NAIL & DISK

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

KEY SHEET, SUE LOCATES AND HORIZONTAL CONTROL PLAN

DATE: APRIL 2014
MCE PROJ. # 1024-0160
DRAWN BFN
DESIGNED MSL
CHECKED JSL
PROJ. MGR. MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-1.1

STATUS: ISSUE FOR BID
REVISION

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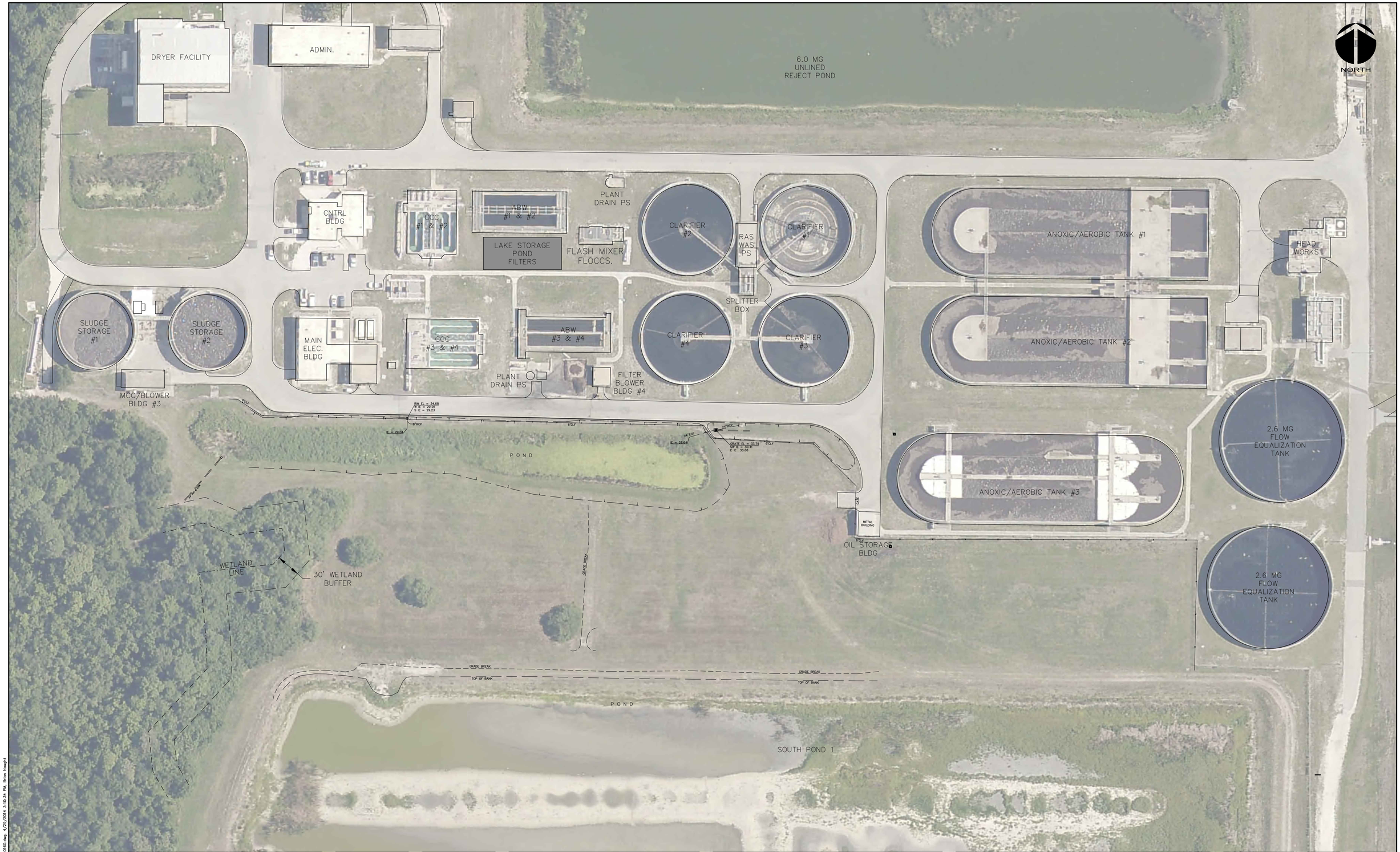

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

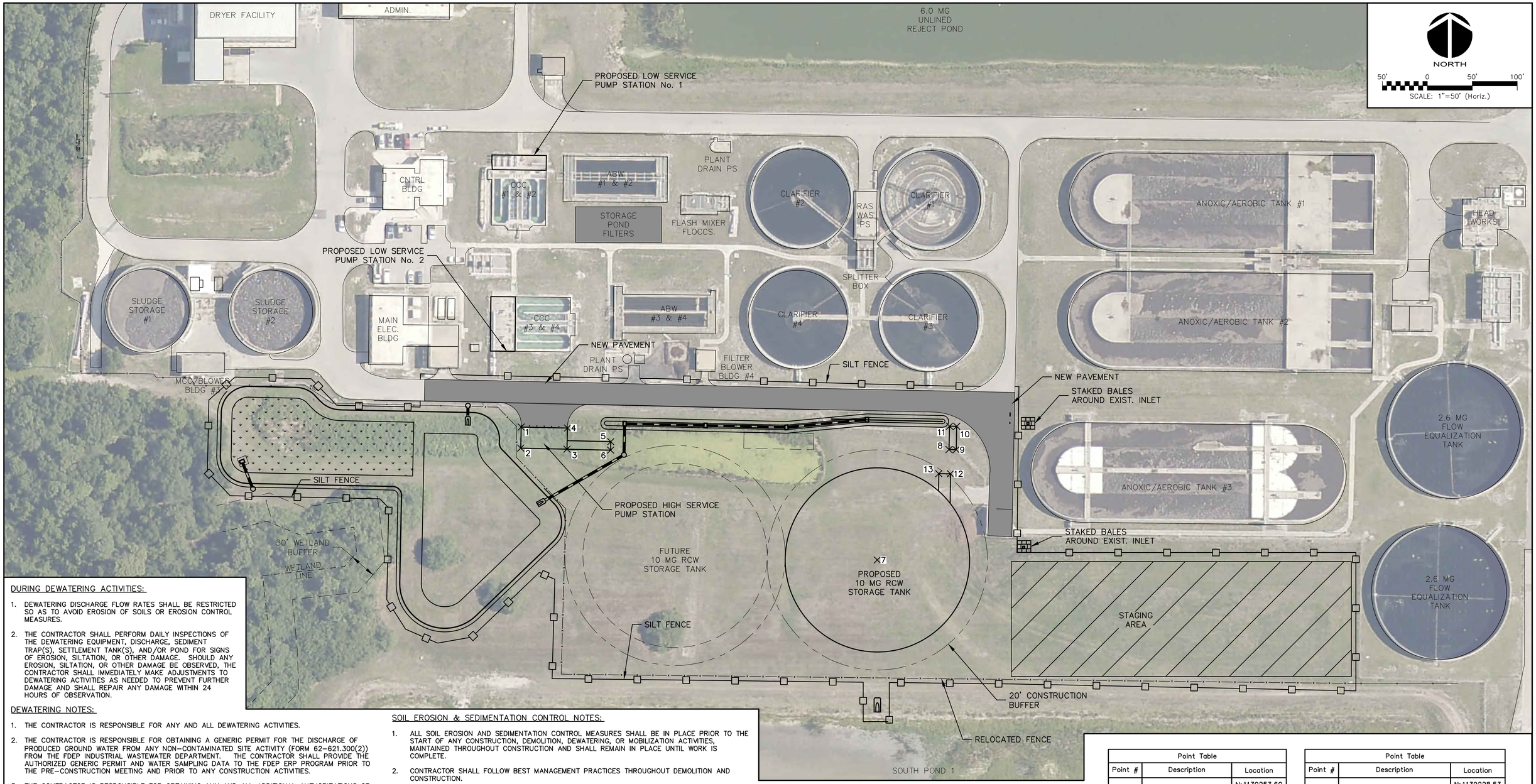
EXISTING SITE PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: NA

DRAWING NUMBER
C-1.2

STATUS: ISSUE FOR BID
REVISION



DURING DEWATERING ACTIVITIES:

1. DEWATERING DISCHARGE FLOW RATES SHALL BE RESTRICTED SO AS TO AVOID EROSION OF SOILS OR EROSION CONTROL MEASURES.
2. THE CONTRACTOR SHALL PERFORM DAILY INSPECTIONS OF THE DEWATERING EQUIPMENT, DISCHARGE, SEDIMENT TRAP(S), SETTLEMENT TANK(S), AND/OR POND FOR SIGNS OF EROSION, SILTATION, OR OTHER DAMAGE. SHOULD ANY EROSION, SILTATION, OR OTHER DAMAGE BE OBSERVED, THE CONTRACTOR SHALL IMMEDIATELY MAKE ADJUSTMENTS TO DEWATERING ACTIVITIES AS NEEDED TO PREVENT FURTHER DAMAGE AND SHALL REPAIR ANY DAMAGE WITHIN 24 HOURS OF OBSERVATION.

DEWATERING NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DEWATERING ACTIVITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY (FORM 62-621.300(2)) FROM THE FDEP INDUSTRIAL WASTEWATER DEPARTMENT. THE CONTRACTOR SHALL PROVIDE THE AUTHORIZED GENERIC PERMIT AND WATER SAMPLING DATA TO THE FDEP ERP PROGRAM PRIOR TO THE PRE-CONSTRUCTION MEETING AND PRIOR TO ANY CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL ADDITIONAL AUTHORIZATIONS OR PERMITS ASSOCIATED WITH DEWATERING ACTIVITIES INCLUDING OBTAINING ANY APPLICABLE WATER TESTING.
4. CONTRACTOR SHALL PREPARE AND SUBMIT A DEWATERING PLAN SHOWING APPLICABLE BEST MANAGEMENT PRACTICES TO FDEP ERP PROGRAM FOR REVIEW AND APPROVAL PRIOR TO ANY DEWATERING ACTIVITIES. THE PROPOSED DEWATERING PLAN SHALL ALSO INCLUDE THE PROPOSED POINT(S) OF DISCHARGE.
5. APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES INCLUDING, BUT NOT LIMITED TO TEMPORARY SEDIMENT TRAP(S), SETTLEMENT TANK(S), STAKED BALES, RIP RAP, SILT FENCE, AND/OR ROCK CHECK DAMS, SHALL BE INSTALLED PRIOR TO ANY DEWATERING ACTIVITIES. THE CONTRACTOR SHALL MAINTAIN AND INSPECT DAILY.
6. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZING AND MAINTAINING ALL DEWATERING EQUIPMENT AND S.E.S.C. MEASURES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTING AND HAULING OFF SITE IN A TIMELY MANNER ANY AQUATIC LIFE IMPACTED BY DEWATERING AND CONSTRUCTION ACTIVITIES TO AN APPROVED LANDFILL FACILITY.

SOIL EROSION & SEDIMENTATION CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION, DEMOLITION, DEWATERING, OR MOBILIZATION ACTIVITIES, MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
2. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT DEMOLITION AND CONSTRUCTION.
3. HAY BALES AND/OR SILT SCREENS SHALL BE INSTALLED ADJACENT TO THE WORK AREAS TO PREVENT SEDIMENT TRANSPORT PRIOR TO THE COMMENCEMENT OF WORK.
4. INLET PROTECTION SHALL BE PLACED AT ALL INLETS IN OR ADJACENT TO THE PROJECT AREA.
5. AS SOON AS PRACTICAL, ALL DRESSED SLOPES AND DISTURBED AREAS SHALL BE SODDED OR SEEDED AND MULCHED TO PREVENT EROSION.
6. NO EXCAVATION SHALL EXTEND BELOW THE DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS WITHOUT PRIOR APPROVAL.
7. CONTRACTOR SHALL PREPARE AND SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND PROVIDE APPROVED FDEP NOI TO COUNTY.
8. CONTRACTOR SHALL PREPARE AND SUBMIT A DISPOSAL PLAN FOR EXCAVATION MATERIAL INCLUDING THE LOCATION OF DISPOSAL SITE(S) AND DISPOSAL PLANS SHOWING APPLICABLE BEST MANAGEMENT PRACTICES FOR REVIEW AND APPROVAL PRIOR TO ANY EARTHWORK ACTIVITIES.

DEWATERING SEQUENCE:

1. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION AND/OR DEWATERING ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
2. FOLLOWING THE COMPLETION OF DEWATERING, THE CONTRACTOR SHALL REMOVE ALL WELL POINTS, PIPES, PUMPS, AND ANY ADDITIONAL DEWATERING EQUIPMENT FROM THE PROJECT SITE.
3. FOLLOWING THE REMOVAL OF DEWATERING EQUIPMENT, THE CONTRACTOR SHALL EXCAVATE ANY SEDIMENT OR MUCK ACCUMULATED WITHIN THE TEMPORARY SEDIMENT TRAP(S) SETTLEMENT TANK(S), AND/OR POND(S) AND DISPOSE OF SEDIMENT TO A QUALIFIED LAND FILL.
4. FOLLOWING REMOVAL OF SEDIMENT, THE CONTRACTOR SHALL REMOVE THE SETTLEMENT TANK(S) AND/OR FILL THE SEDIMENT TRAP(S) WITH CLEAN SANDY SOIL TO RESTORE THE NATURAL GRADE AND SOD OVER AS SOON AS PRACTICALLY POSSIBLE.

Point Table		
Point #	Description	Location
1	HSPS CORNER	N: 1139253.60 E: 509959.49
2	HSPS CORNER	N: 1139230.11 E: 509958.96
3	HSPS CORNER	N: 1139228.96 E: 510010.45
4	HSPS CORNER	N: 1139252.45 E: 510010.97
5	METER CORNER	N: 1139237.33 E: 510059.15
6	METER CORNER	N: 1139227.87 E: 510058.93
7	STORAGE TANK CENTER	N: 1139105.70 E: 510355.60

Point Table		
Point #	Description	Location
8	PLANT WATER METER CORNER	N: 1139228.53 E: 510435.35
9	PLANT WATER METER CORNER	N: 1139228.35 E: 510443.35
10	PLANT WATER METER CORNER	N: 1139254.35 E: 510443.93
11	PLANT WATER METER CORNER	N: 1139254.52 E: 510435.93
12	TANK FILL STATION CORNER	N: 1139201.55 E: 510436.98
13	TANK FILL STATION CORNER	N: 1139201.70 E: 510423.98

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 66118

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PROPOSED SITE PLAN AND SUGGESTED SOIL EROSION AND SEDIMENTATION CONTROL

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: NA

DRAWING NUMBER
C-1.3

STATUS: ISSUE FOR BID
REVISION

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SCALE: 1"=40' (Horiz.)

NORTH

STA: 3+38.07, 0' R
30" SLEEVE
CONNECT TO EXIST. 30"

STA: 4+76.91, 0' R
30" 90° BEND

STA: 5+31.60, 2' R
16" 45° BEND
CONNECT TO EXIST. 16" SPW

STA: 8+38.98, 7' L
30"x24" TAPPING SLEEVE AND VALVE
30"x24" REDUCER

STA: 8+51.06, 24' L
12" x 12" TEE
(2) 12"x8" REDUCER
8" SLEEVE
CONNECT TO EXIST. 8" RW

STA: 6+11.99, 20' R
42" 45° BEND

HSPS

FUTURE HSPS

STA: 8+44.73, 58' R
30" x 16" TEE

12" METER ASSEMBLY
SEE DETAIL M-9.2

STA: 9+14.08, 3' R
16" TEE
16" SLEEVE
CONNECT TO EXIST. 16" DIP

STA: 5+45.12, 20' R
42" TEE W/PLUG
42" BFV

SEE SHEET M-3.1
FOR PUMP STATION
MECHANICAL DETAILS

STA: 8+51.03, 58' R
30" x 12" TEE

TANK FILL
VALVE STATION
SEE DETAIL M-9.2

STA: 4+65.32, 68' R
16" 45° BEND

STA: 2+41.81, 100' R
16" 11.25° BEND

RELOCATED
16" SPW

STA: 4+07.94, 68' R
16" 11.25° BEND

STA: 2+05.57, 107' R
16" 11.25° BEND
CONNECT TO EXIST. 16" SPW

CONCRETE
MAINTENANCE PAD

STA: 9+05.98, 105' R
30" 45° BEND

10 MG RCW
STORAGE TANK
(SEE SHEET M-4.1)

30" RCW
MAIN

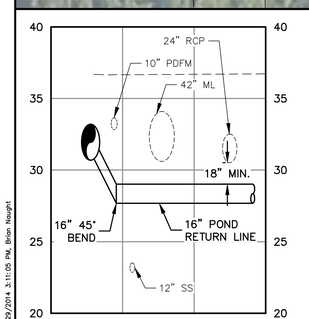
16" POND
RETURN LINE

STA: 7+72.65, 294' R
42"x12" TEE

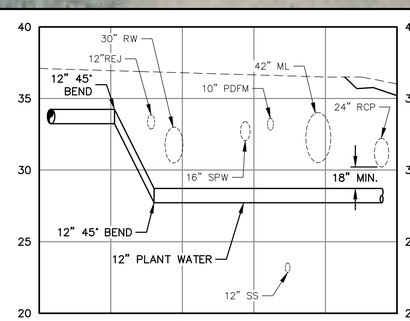
STA: 7+93.62, 294' R
12" BFV
12" 90° BEND

MATCHLINE SEE SHEET C-1.5 FOR CONTINUATION

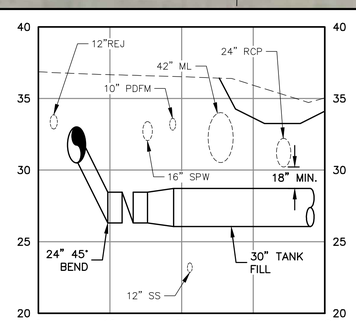
STA: 7+73.81, 347' R
42" MES
INV. EL = 31.70



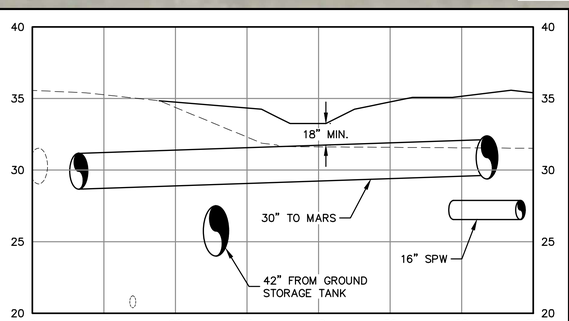
SECTION A
SCALE: 1"=10' HORI., 1"=5' VERT.



SECTION B
SCALE: 1"=10' HORI., 1"=5' VERT.



SECTION C
SCALE: 1"=10' HORI., 1"=5' VERT.



SECTION D
SCALE: 1"=10' HORI., 1"=5' VERT.

GENERAL NOTES:

1. EXISTING OIL STORAGE BUILDING SHALL BE RELOCATED. SEE SHEET C-1.6.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 40'
VERTICAL: NA

DRAWING NUMBER
C-1.4

STATUS: ISSUE FOR BID
REVISION

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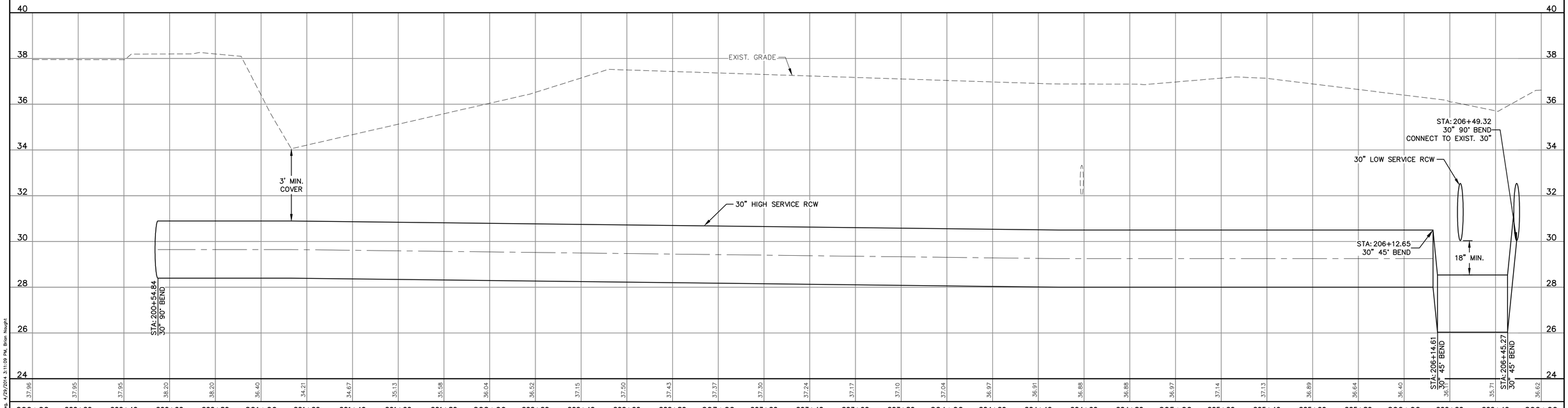

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MATTHEW S. LOVE, P.E.
No. 66118

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Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN AND PROFILE 1 OF 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

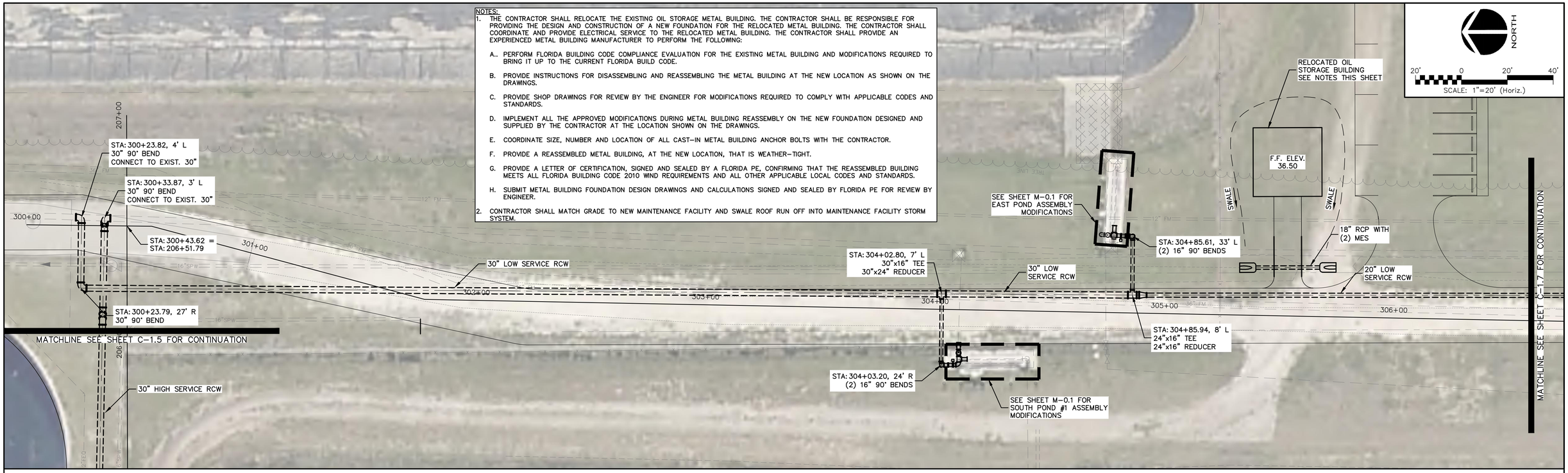
SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

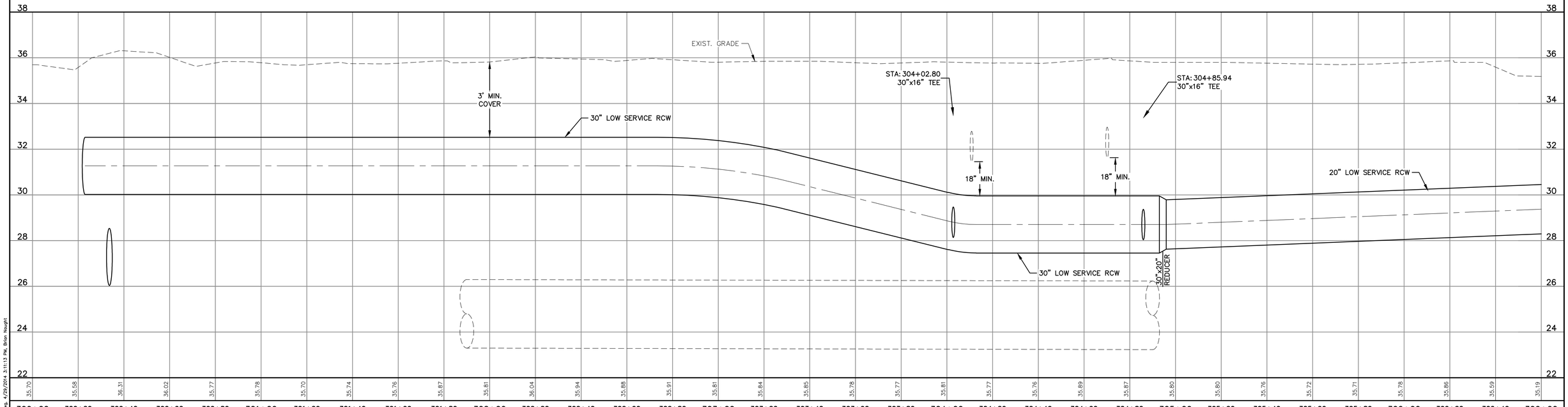
DRAWING NUMBER
C-1.5

STATUS: ISSUE FOR BID
REVISION

S:\1024\0160\05-Drawings\Civil\CU701-1024l60.dwg, 4/29/2014 3:11:09 PM, Brian Naught

NOTES:
1. THE CONTRACTOR SHALL RELOCATE THE EXISTING OIL STORAGE METAL BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE DESIGN AND CONSTRUCTION OF A NEW FOUNDATION FOR THE RELOCATED METAL BUILDING. THE CONTRACTOR SHALL COORDINATE AND PROVIDE ELECTRICAL SERVICE TO THE RELOCATED METAL BUILDING. THE CONTRACTOR SHALL PROVIDE AN EXPERIENCED METAL BUILDING MANUFACTURER TO PERFORM THE FOLLOWING:
   - A.. PERFORM FLORIDA BUILDING CODE COMPLIANCE EVALUATION FOR THE EXISTING METAL BUILDING AND MODIFICATIONS REQUIRED TO BRING IT UP TO THE CURRENT FLORIDA BUILD CODE.
   - B. PROVIDE INSTRUCTIONS FOR DISASSEMBLING AND REASSEMBLING THE METAL BUILDING AT THE NEW LOCATION AS SHOWN ON THE DRAWINGS.
   - C. PROVIDE SHOP DRAWINGS FOR REVIEW BY THE ENGINEER FOR MODIFICATIONS REQUIRED TO COMPLY WITH APPLICABLE CODES AND STANDARDS.
   - D. IMPLEMENT ALL THE APPROVED MODIFICATIONS DURING METAL BUILDING REASSEMBLY ON THE NEW FOUNDATION DESIGNED AND SUPPLIED BY THE CONTRACTOR AT THE LOCATION SHOWN ON THE DRAWINGS.
   - E. COORDINATE SIZE, NUMBER AND LOCATION OF ALL CAST-IN METAL BUILDING ANCHOR BOLTS WITH THE CONTRACTOR.
   - F. PROVIDE A REASSEMBLED METAL BUILDING, AT THE NEW LOCATION, THAT IS WEATHER-TIGHT.
   - G. PROVIDE A LETTER OF CERTIFICATION, SIGNED AND SEALED BY A FLORIDA PE, CONFIRMING THAT THE REASSEMBLED BUILDING MEETS ALL FLORIDA BUILDING CODE 2010 WIND REQUIREMENTS AND ALL OTHER APPLICABLE LOCAL CODES AND STANDARDS.
   - H. SUBMIT METAL BUILDING FOUNDATION DESIGN DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY FLORIDA PE FOR REVIEW BY ENGINEER.
2. CONTRACTOR SHALL MATCH GRADE TO NEW MAINTENANCE FACILITY AND SWALE ROOF RUN OFF INTO MAINTENANCE FACILITY STORM SYSTEM.





REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN AND PROFILE 2 OF 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING NUMBER
C-1.6

STATUS: ISSUE FOR BID
REVISION

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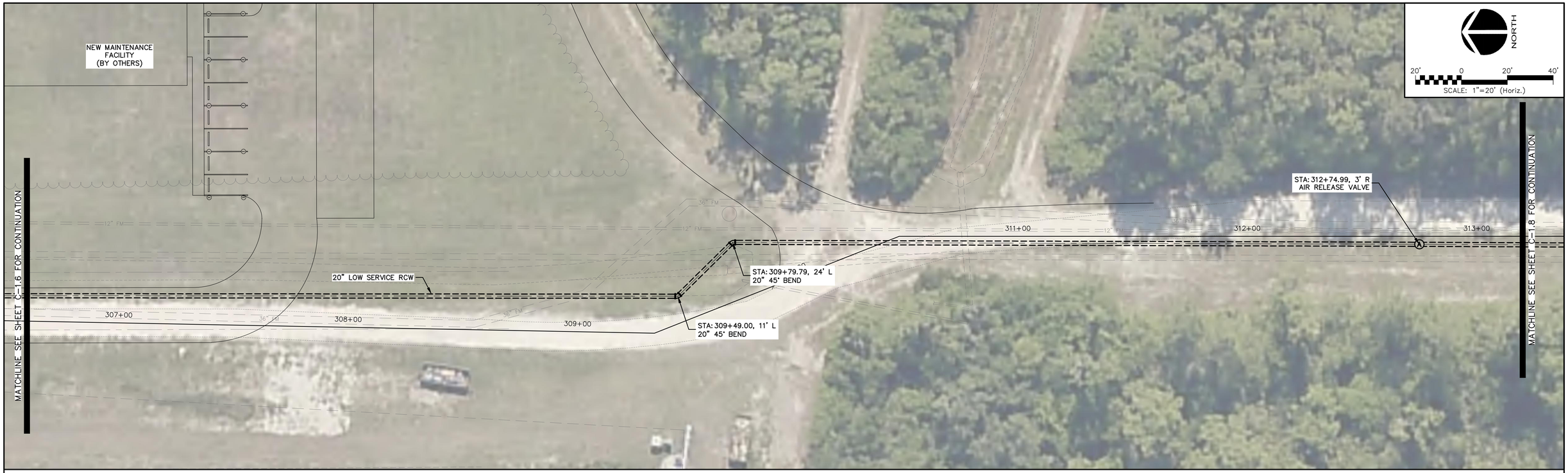

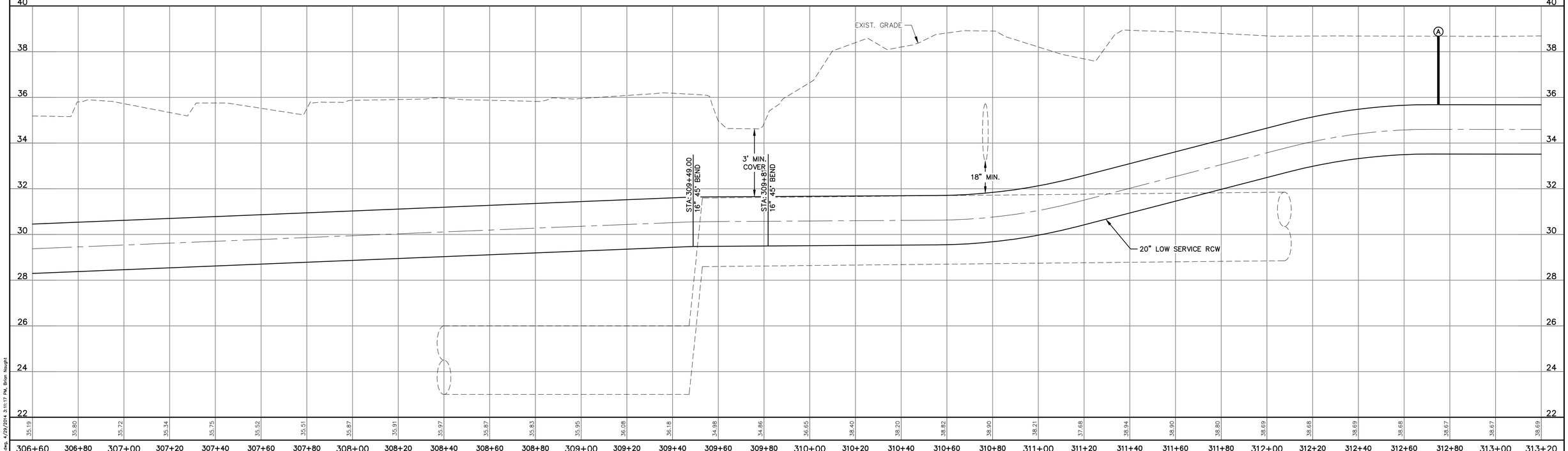

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN AND PROFILE 3 OF 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING NUMBER
C-1.7

STATUS: ISSUE FOR BID
REVISION

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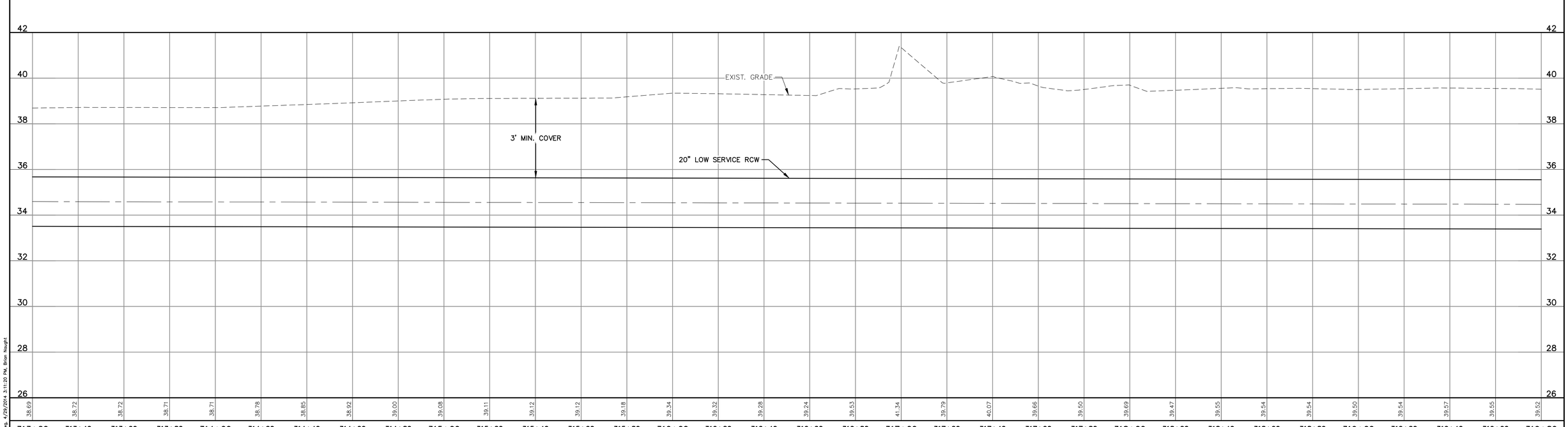

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN AND PROFILE 4 OF 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING NUMBER
C-1.8

STATUS: ISSUE FOR BID
REVISION

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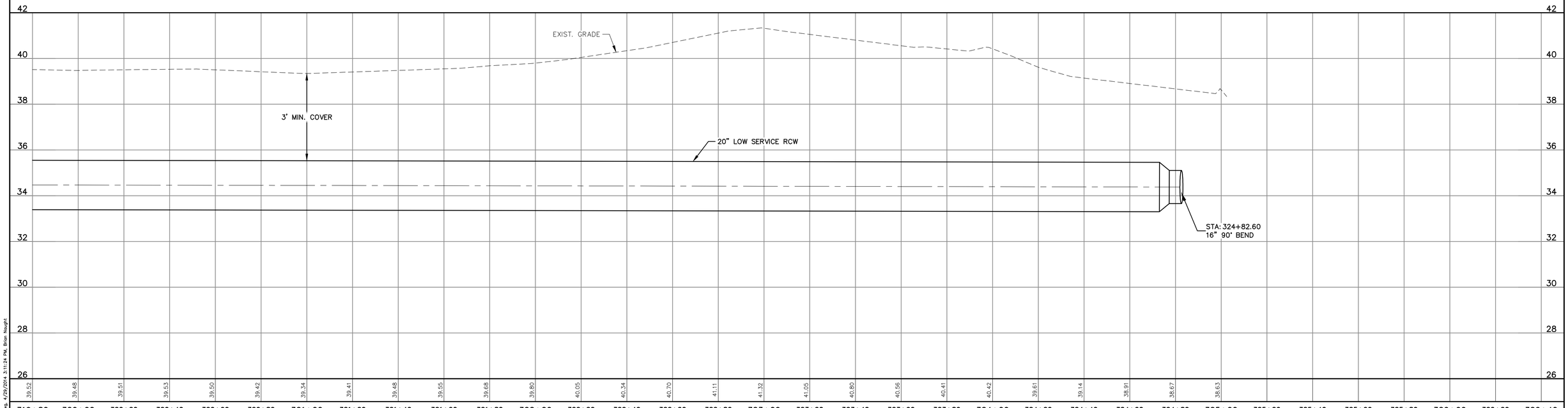

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

YARD PIPING PLAN AND PROFILE 5 OF 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING NUMBER
C-1.9

STATUS: ISSUE FOR BID
REVISION

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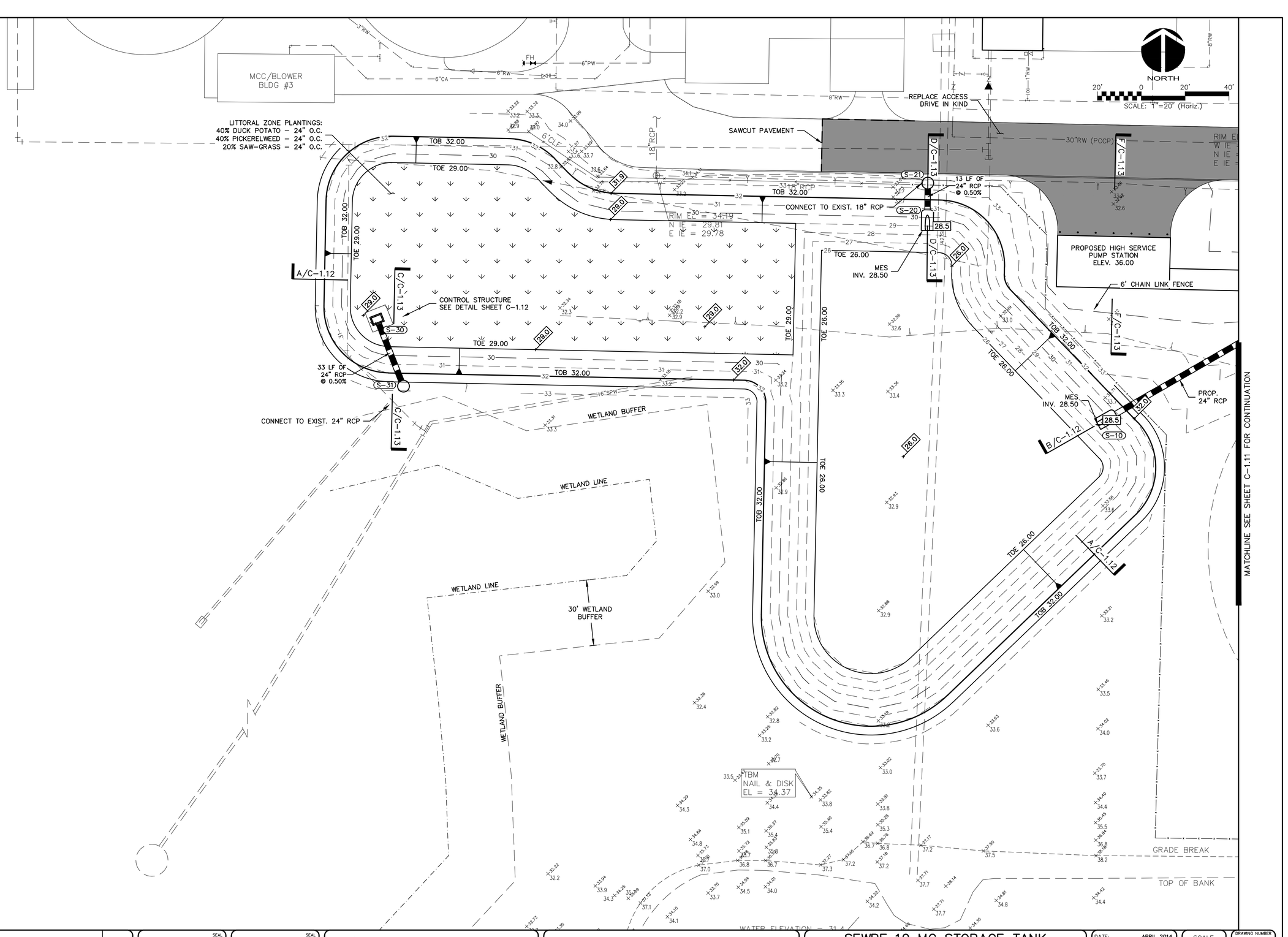

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PAVING, GRADING AND DRAINAGE PLAN 1 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 30'
VERTICAL: NA

DRAWING NUMBER
C-1.10

STATUS: ISSUE FOR BID
REVISION

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NORTH

SCALE: 1"=20' (Horiz.)

SAWCUT PAVEMENT

PRESERVE AND PROTECT EXIST. 8" VCP

REPLACE ACCESS DRIVE IN KIND

FILTER BLOWER BLDG #4

90 LF OF 24" RCP @ 0.20%

PROP. 24" RCP

35 LF OF 24" RCP @ 0.39%

102 LF OF 24" RCP @ 0.11%

CONNECT TO EXIST. 24" RCP

RIM EL = 36.17
W IE = 22.36
N IE = 22.85
E IE = 22.54

WATER ELEVATION = 31.3
AS OF 7-5-13

ANOXIC/AEROBIC TANK #3

FUTURE 10 MG RCW STORAGE TANK

PROPOSED 10 MG RCW STORAGE TANK ELEV. 37.70

GRADE BREAK

IE = 34.52 15"PVC

IE = 34.37

6' CHAIN LINK FENCE

MATCHLINE SEE SHEET C-1.10 FOR CONTINUATION

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REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

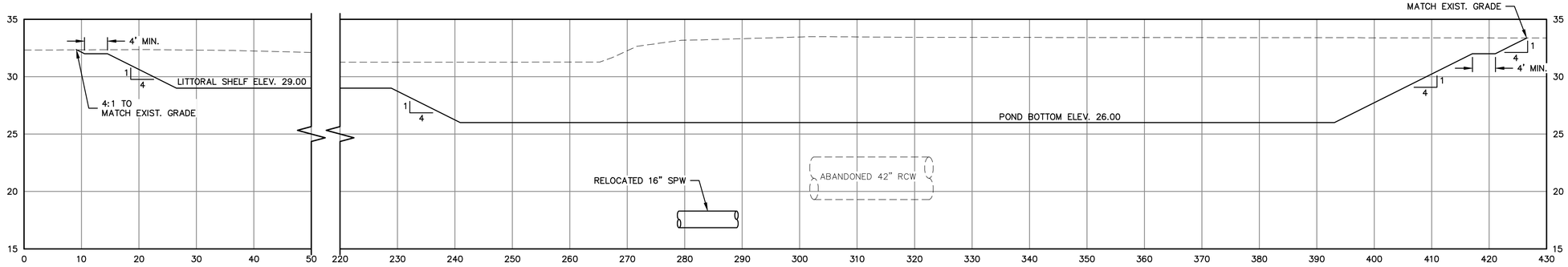
PAVING, GRADING AND DRAINAGE PLAN 2 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 30'
VERTICAL: NA

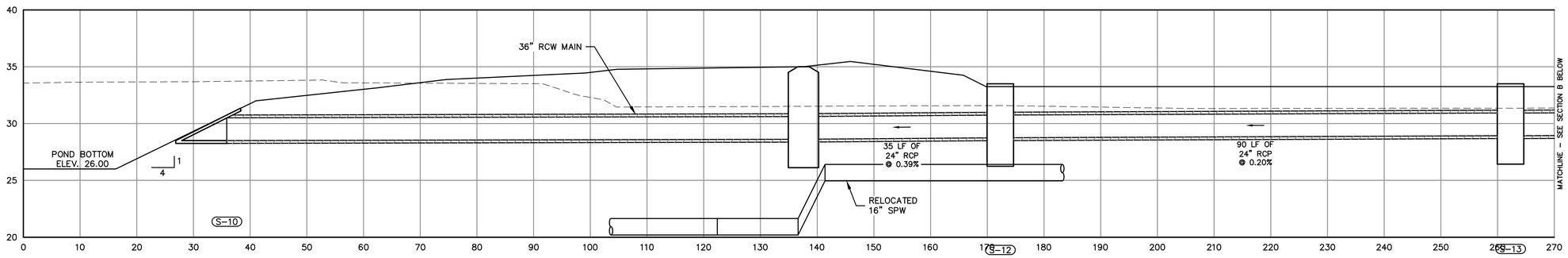
DRAWING NUMBER
C-1.11

STATUS: ISSUE FOR BID
REVISION



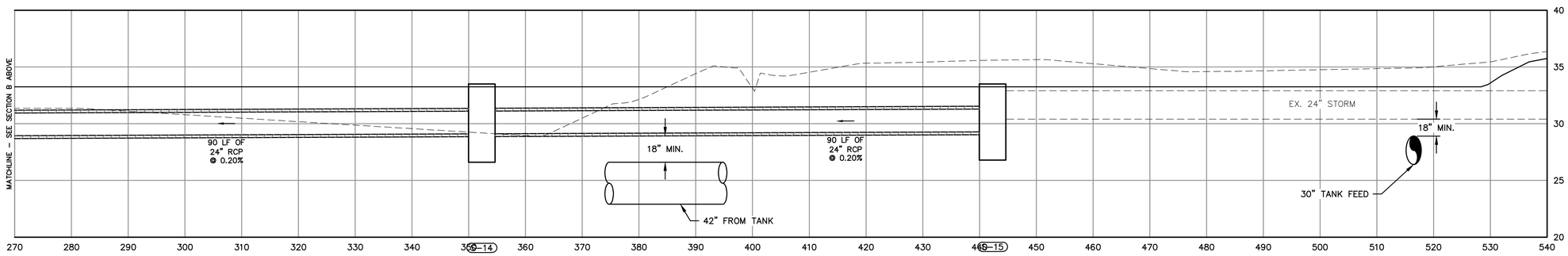
SECTION A/C-1.10

SCALE: 1"=10" HORIZ.
1" = 5' VERT.



SECTION B/C-1.10/C-1.11

SCALE: 1"=10" HORIZ.
1" = 5' VERT.



SECTION B/C-1.10/C-1.11

SCALE: 1"=10" HORIZ.
1" = 5' VERT.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PAVING, GRADING AND DRAINAGE SECTIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 30'
VERTICAL: NA

DRAWING NUMBER
C-1.12

STATUS: ISSUE FOR BID
REVISION

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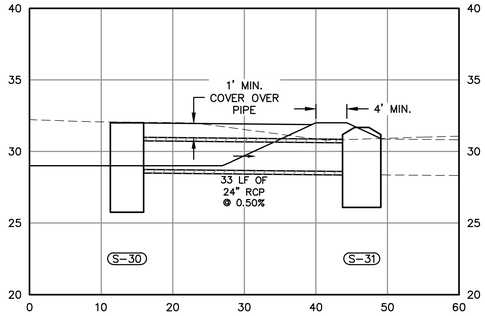
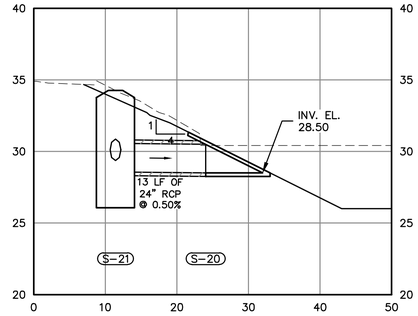


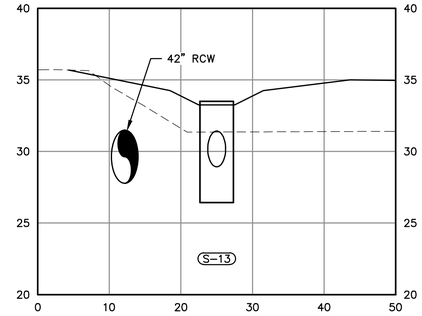
SECTION C/C-1.10

SCALE: 1"=10" HORIZ.
1" = 5' VERT.



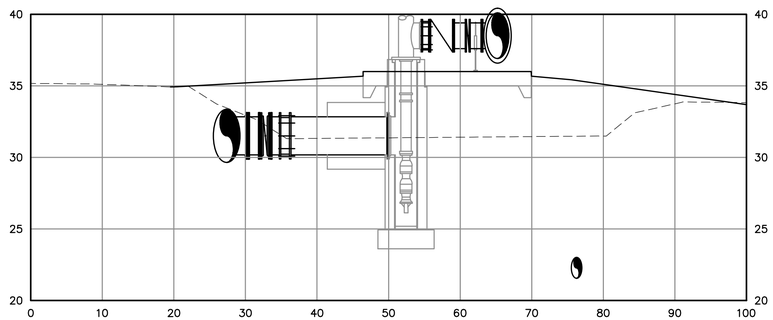
SECTION D/C-1.10

SCALE: 1"=10" HORIZ.
1" = 5' VERT.



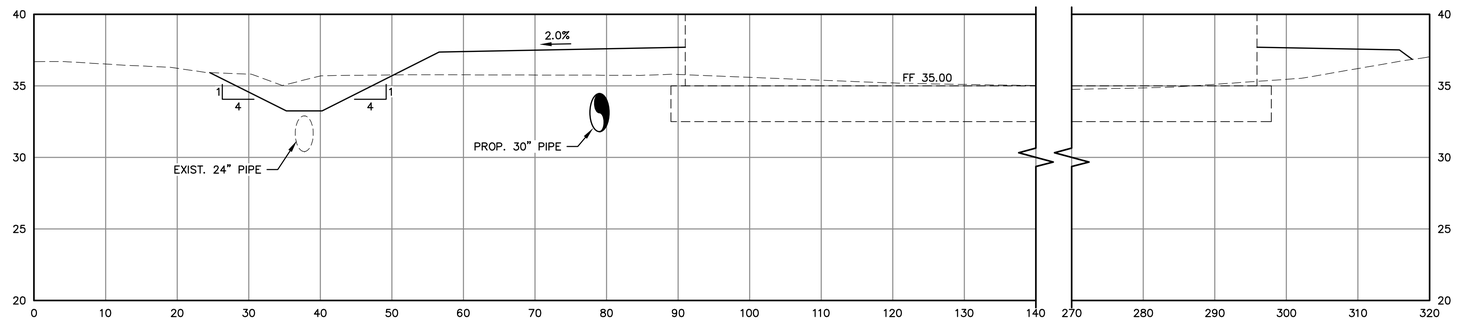
SECTION E/C-1.11

SCALE: 1"=10" HORIZ.
1" = 5' VERT.



SECTION F/C-1.10

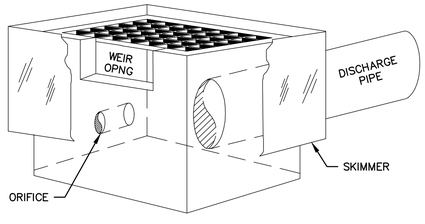
SCALE: 1"=10" HORIZ.
1" = 5' VERT.



SECTION G/C-1.10

SCALE: 1"=10" HORIZ.
1" = 5' VERT.

DRAINAGE STRUCTURE TABLE						
STRUCTURE:	STATION:	OFFSET:	TOP ELEV:	SUMP DEPTH	TYPE:	INVERT ELEV:
S-10	3+98.64	119.70' R	30.75	0.00'	24" MES	24" RCP INV: 28.50 (NE)
S-11	4+85.69	67.09' R	35.00	2.00'	4' Dia. Manhole	24" RCP INV: 28.61 (N) 24" RCP INV: 28.61 (SW)
S-12	4+85.70	32.38' R	33.50	2.00'	Inlet Type E	24" RCP INV: 28.75 (E) 24" RCP INV: 28.75 (S)
S-13	5+75.70	32.42' R	33.50	2.00'	Inlet Type E	24" RCP INV: 28.93 (E) 24" RCP INV: 28.93 (W)
S-14	6+65.70	32.46' R	33.50	2.00'	Inlet Type E	24" RCP INV: 29.11 (E) 24" RCP INV: 29.11 (W)
S-15	7+55.09	21.98' R	33.50	2.00'	Inlet Type E	24" RCP INV: 29.29 (W) 24 inch Concrete Pipe INV: 30.65 (E)
S-20	3+11.15	28.71' R	31.25	0.00'	24" MES	24" RCP INV: 28.50 (N)
S-21	3+10.97	16.12' R	34.26	2.00'	4' Dia. Manhole	18" RCP INV: 29.36 (W) 24" RCP INV: 28.56 (S)
S-30	0+61.19	83.73' R	32.00	2.50'	Inlet Type E	24" RCP INV: 28.75 (S)
S-31	0+73.88	113.97' R	31.67	2.00'	4' Dia. Manhole	24" RCP INV: 28.59 (N) 24 inch Concrete Pipe INV: 28.62 (SW)



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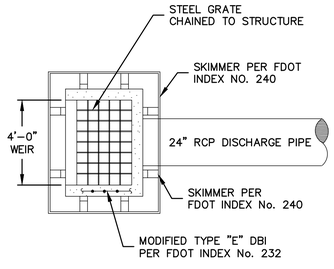
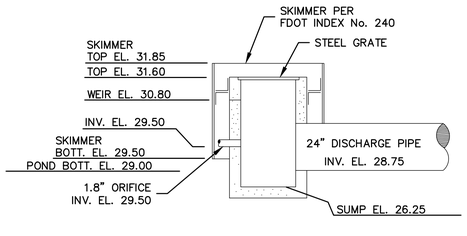


PLAN



SECTION

OUTFALL STRUCTURE MODIFIED FDOT TYPE "E" INLET

SCALE: NTS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PAVING, GRADING AND DRAINAGE DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 30'
VERTICAL: NA

DRAWING NUMBER
C-1.13

STATUS: ISSUE FOR BID
REVISION

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LITTORAL ZONE PLANTINGS

20% SAW-GRASS – 24" O.C.

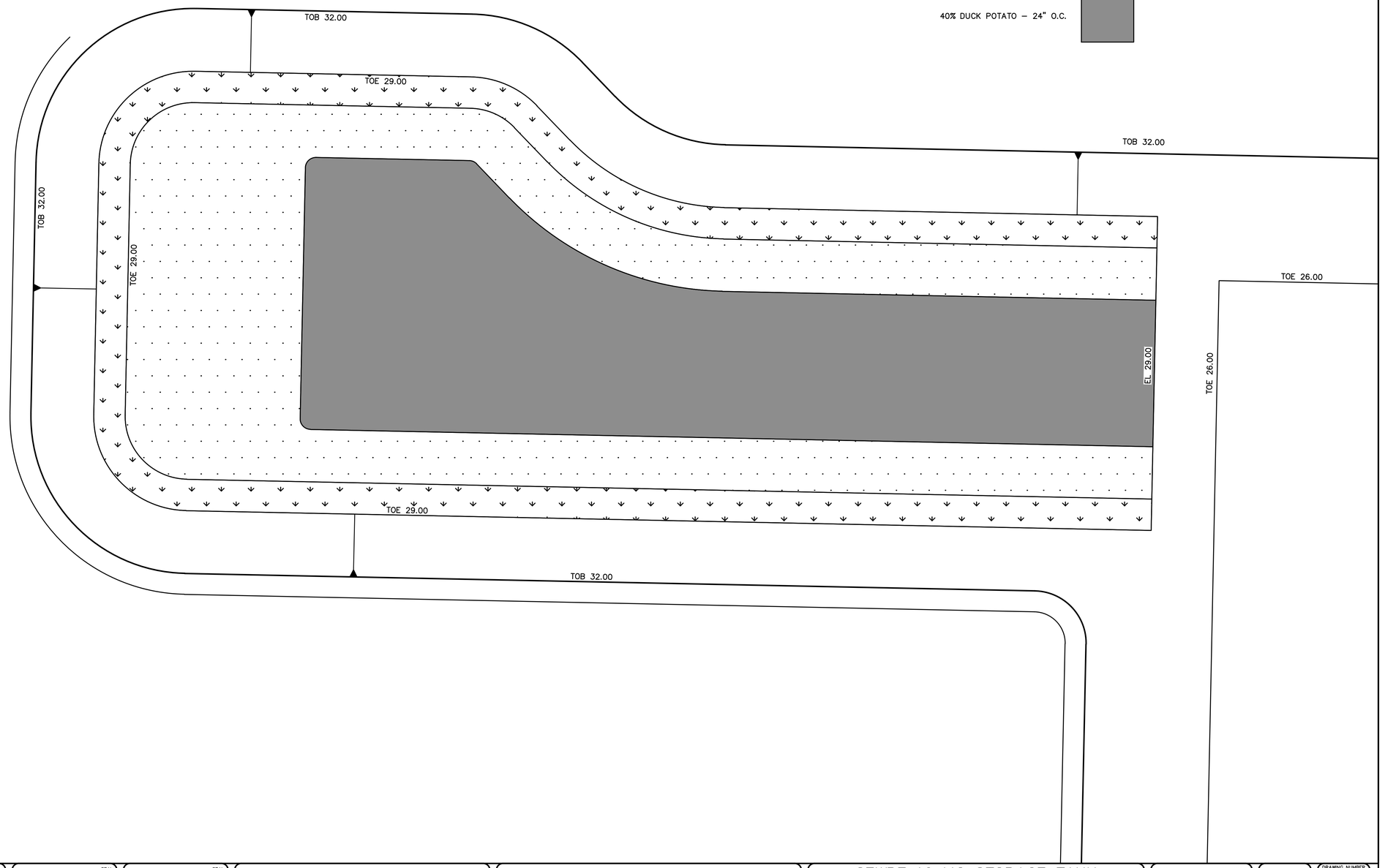
40% PICKERELWEED – 24" O.C.

40% DUCK POTATO – 24" O.C.

NORTH

10' 0 10' 20'

SCALE: 1"=10' (Horiz.)



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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

LITTORAL PLANTING DETAIL

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

DRAWING NUMBER
C-1.14

STATUS: REVISION
ISSUE FOR BID

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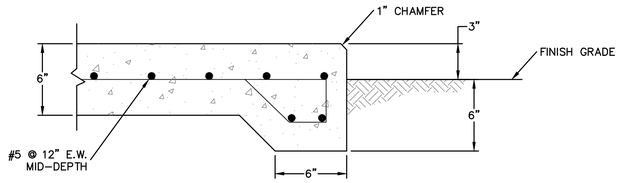
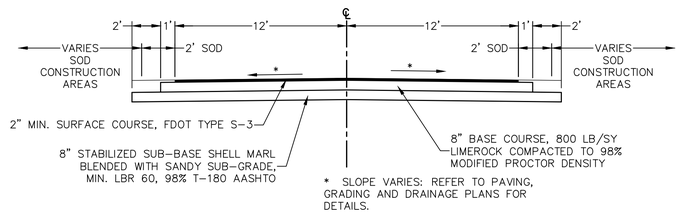


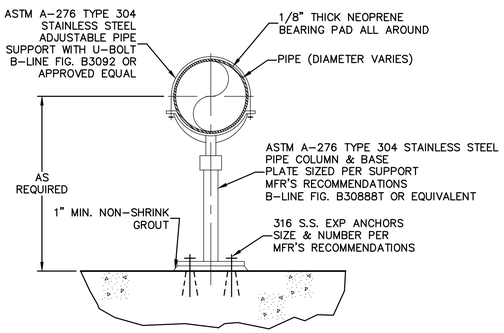
TYPICAL EQUIPMENT PAD DETAIL

NOT TO SCALE



INTERIOR PLANT ROADWAY TYPICAL SECTION

NOT TO SCALE



STANCHION PIPE SUPPORT

NOT TO SCALE

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.

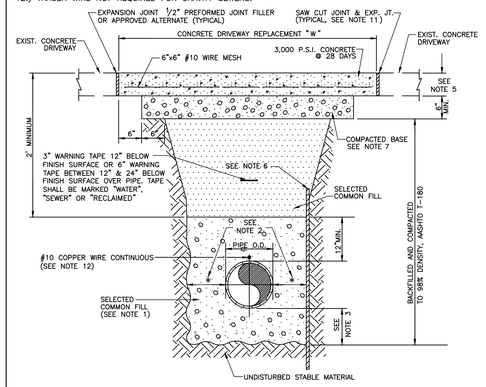
8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

9.) DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.

10.) IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/16" WIDE AND 1 1/2" DEEP) AFTER THE CONCRETE HAS SET.

11.) IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.

12.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
REV.BY	DATE			
CLB/KE	6/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

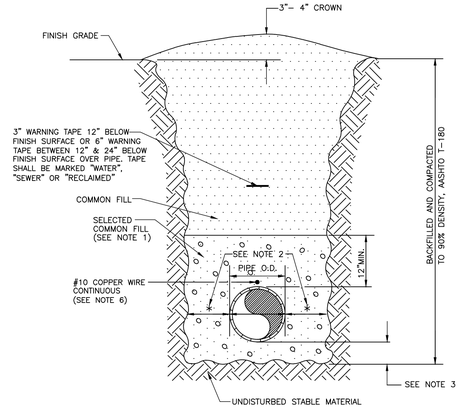
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES FOR SELECTED COMMON FILL AND NOT TO EXCEED 12 INCHES FOR COMMON FILL. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

6.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV.BY	DATE			
CLB/KE	02/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) ASPHALTIC CONCRETE FRICTION COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE. SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATIVE.

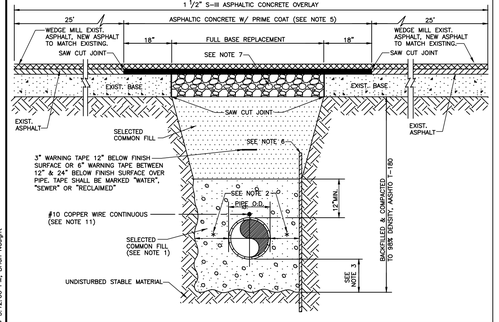
8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.

11.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

12.) NOTES 5.) THRU 11.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
REV.BY	DATE			
CLB/KE	02/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

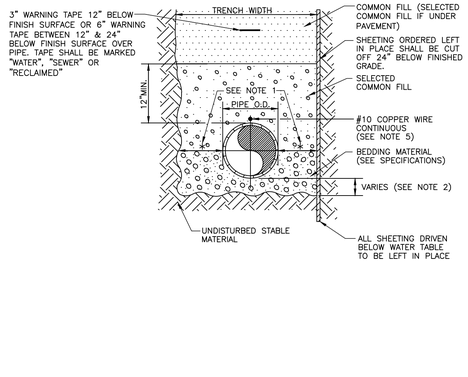
1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

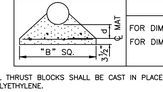
4.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

5.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH TYPE A-2 PIPE BEDDING	UG-15
REV.BY	DATE			
CLB/KE	08/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			

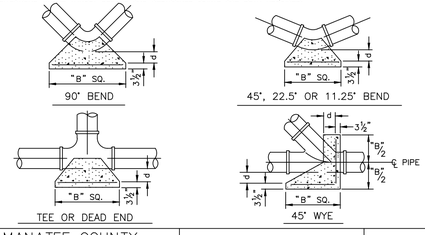
THRUST BLOCK DIMENSIONS B ft. x d inches												
PIPE SIZE (IN.)	90°BEND		45°BEND		22.5°BEND		11.25°BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3½	1.1	3½	0.8	3½	0.6	3½	1.3	3½	1.1	3½
6	2.2	5¼	1.6	3¾	1.2	3½	0.8	3½	1.9	4½	1.6	3¾
8	2.9	7	2.1	5	1.5	3½	1.1	3½	2.4	5¾	2.0	4¾
10	3.5	8½	2.6	6¼	1.9	4½	1.3	3½	3.0	7¼	2.5	6
12	4.2	10	3.1	7½	2.2	5¼	1.6	3¾	3.5	8½	3.0	7¼
14	4.9	11¾	3.6	8¾	2.6	6¼	1.8	4¼	4.1	9¾	3.4	8¼
16	5.5	13¼	4.1	9¾	2.9	7	2.1	5	4.7	11¼	3.9	9¼
18	6.2	15	4.6	11	3.3	8	2.3	5½	5.2	12½	4.4	10½
20	6.9	16½	5.0	12	3.6	8¾	2.6	6¼	5.8	14	4.9	11¾
24	8.2	19¾	6.0	14½	4.3	10¼	3.1	7½	6.9	16½	5.8	14
30	10.1	24¼	7.5	18	5.3	12¾	3.8	9	8.5	20½	7.2	17¼
36	12.1	29	8.9	21¼	6.4	15¼	4.5	10¾	10.2	24½	8.6	20¾



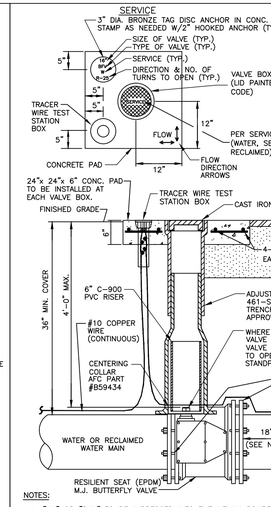
REINFORCEMENT MAT SCHEDULE
FOR DIM."B"BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY
FOR DIM."B"LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH f'c=3000 PSI, REINFORCEMENT f_y=60.0 KSI.THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B"DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS SHALL BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			CONCRETE THRUST BLOCKS	UG-7
REV.BY	DATE			
CLB/KE	2/05	MARCH 17, 2009		
JAA/JB	2/09	DATE OF APPROVAL		

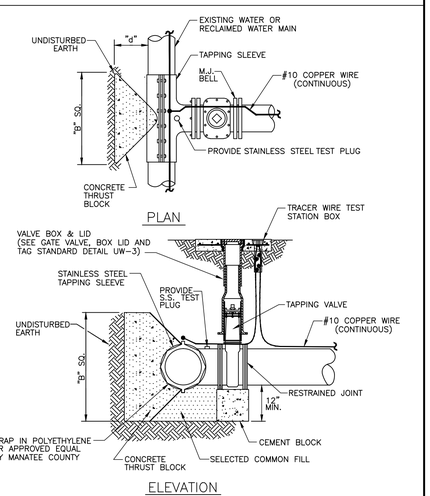


* MODIFIED FROM CITY STANDARD

NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "W" OR PURPLE DISC WITH "RW" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. "FLOW" AND FLOW DIRECTION ARROWS TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. CONCRETE THRUST BLOCK IS ALSO REQUIRED UNLESS RESTRAINED JOINT LENGTH IS TREATED AS A PLUG SHOWN IN STANDARD DETAIL UG-8
9. SHOULD THERE BE AN OBSTACLE/CONFLICT IN INSTALLING THE VALVE, THE ENGINEER OF RECORD MAY PROPOSE A REVERSE TAP, ETC. AND SEPARATE APPROVAL SHALL BE OBTAINED FROM MANATEE COUNTY.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			BUTTERFLY VALVE, BOX, LID AND TAG	UW-3
REV.BY	DATE			
CLB/KE	08/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			



NOTES:

1. NO CUTS SHALL BE MADE BEFORE:
   (A) A 60 MINUTE TEST OF 180 PSI FOR WATER OR 150 PSI FOR SEWER IS MADE.
   (B) ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
   (C) ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
2. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS LARGER) FROM A JOINT OR FITTING.
3. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
4. THRUST BLOCK IS REQUIRED AND INCLUDED IN EVERY TAP. SEE CONCRETE THRUST BLOCK DETAIL FOR DIMENSIONS "B" & "d".
5. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TAPPING SLEEVE AND VALVE	UW-4
REV.BY	DATE			
CLB/KE	08/05	MARCH 17, 2009		
JAA/JB	10/08	DATE OF APPROVAL		
JAA/JEA	02/09			

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 66118

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

CIVIL DETAILS 1 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-9.1

STATUS: ISSUE FOR BID
REVISION

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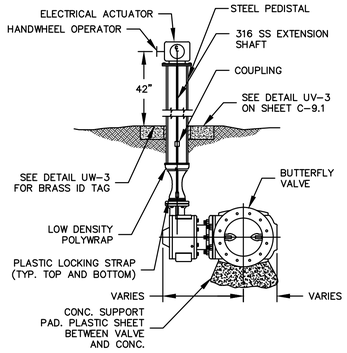
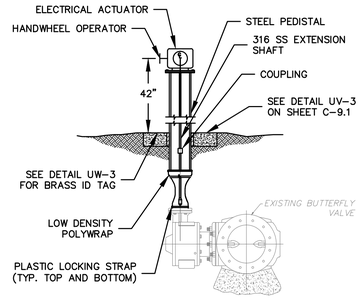


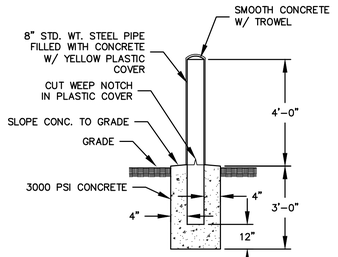
MOTOR OPERATOR INSTALLATION ON NEW BUTTERFLY VALVE

NTS



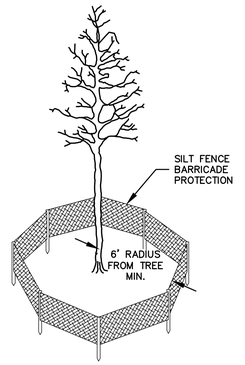
MOTOR OPERATOR INSTALLATION ON EXISTING BURIED BUTTERFLY VALVE

NTS



BOLLARD DETAIL

NOT TO SCALE



TREE PROTECTION DETAIL

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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No. 66118

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

CIVIL DETAILS 2 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-9.2

STATUS: ISSUE FOR BID
REVISION

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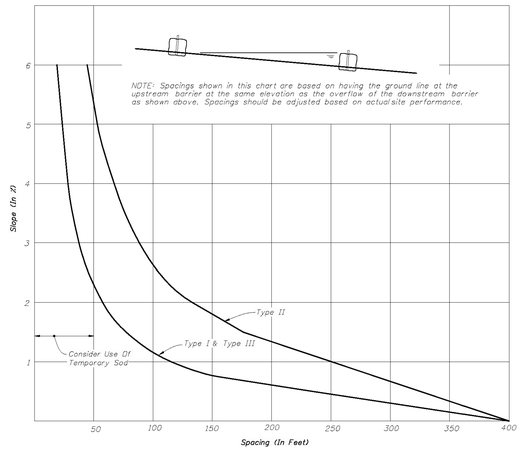
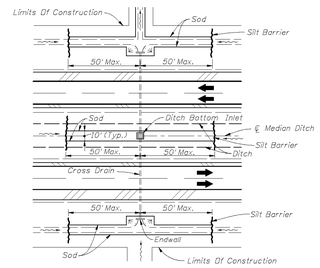
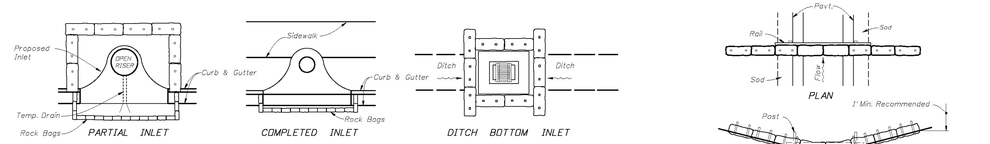


CHART I

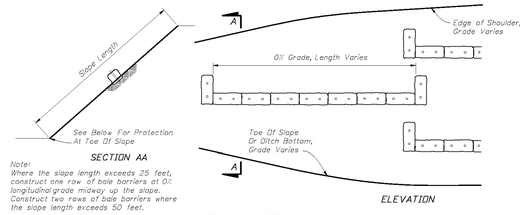
RECOMMENDED SPACING FOR SYNTHETIC BALES OR BALE TYPE BARRIERS AND TYPE III SILT FENCE



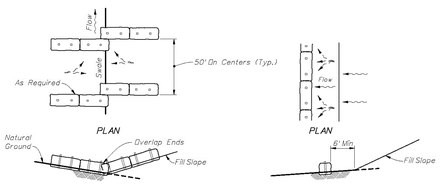
DITCH INSTALLATIONS AT DRAINAGE STRUCTURES



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



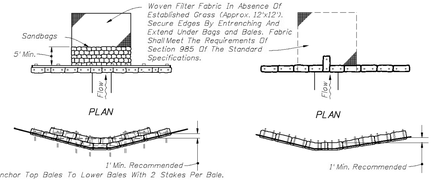
ALONG FILL SLOPE



AT TOE OF SLOPE

BARRIERS FOR FILL SLOPES

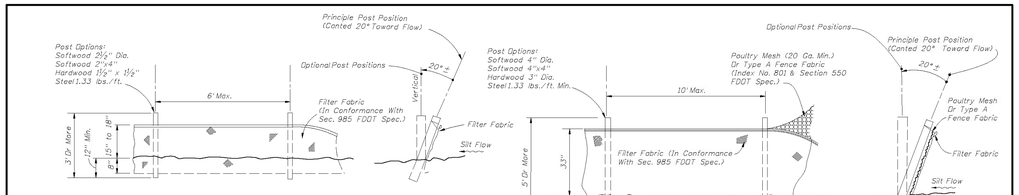
SYNTHETIC BALES OR BALE TYPE BARRIERS FOR PAVED DITCHES

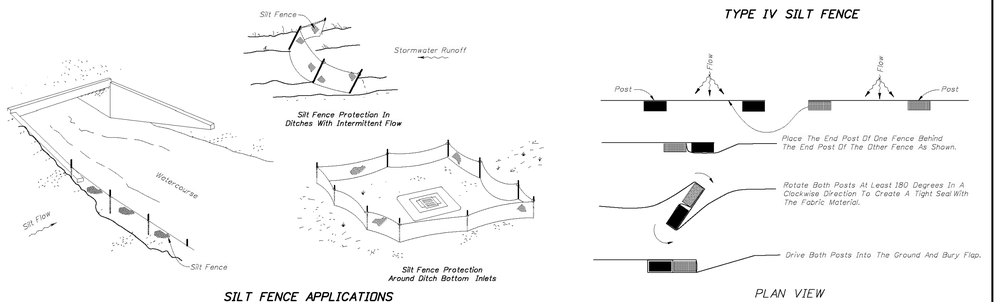


SYNTHETIC BALES OR BALE TYPE BARRIERS FOR UNPAVED DITCHES

NOTES FOR SYNTHETIC BALES OR BALE TYPE BARRIERS

1. Type I and II Synthetic Barrier should be spaced in accordance with Chart 1, Sheet 1.
2. Bales shall be trenched 3" to 4" and anchored with 2-1" x 2" for 1" dia.) x 4' wood stakes. Stakes of other material or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Rails and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
4. Adjacent bales shall be butted firmly together.
5. Where used in conjunction with silt fence, bales shall be placed on the upstream side of the fence.
6. Bales to be paid for under the contract unit price for Synthetic Bales, LF. The unit price shall include the cost of filter fabric for Type I and II Barriers. Sandbags shall be paid for under the unit price for Sandbagging, CY. Rock bags to be paid for under the contract unit price for Rock Bags, EA.





SILT FENCE APPLICATIONS

PLAN VIEW

JOINING TWO SILT FENCES

NOTES FOR SILT FENCES

1. Type III Silt Fence to be used at most locations. Where used in ditches, the spacing for Type III Silt fence shall be in accordance with Chart 1, Sheet 1.
2. Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where fill slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travelanes or off the right of way.
3. Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
4. Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.
5. Silt Fence to be paid for under the contract unit price for Staked Silt Fence, (LF).

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

CIVIL DETAILS 3 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-9.3

STATUS: ISSUE FOR BID
REVISION

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GENERAL NOTES:

1.0 GENERAL

1.1 ALL WORK IS TO BE PERFORMED IN A GOOD, WORKMANLIKE AND PROFESSIONAL MANNER.

1.2 ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA STATE BUILDING CODE, LATEST EDITION, OR LOCAL BUILDING CODE REQUIREMENTS IF MORE STRINGENT.

1.3 THESE DRAWINGS DO NOT SHOW PROVISIONS FOR SAFETY DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THE REQUIRED BRACING, SHORING, AND SAFETY DEVICES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

2.0 COORDINATION

2.1 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH AND COORDINATED WITH CIVIL, HVAC AND ELECTRICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.2 COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH WALLS OR CONCRETE SLABS WITH CIVIL, HVAC, ELECTRICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.3 ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THESE DRAWINGS ARE TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE WORK PROCEEDS.

2.4 THE (*) SYMBOL ON "STRUCTURAL" DRAWINGS, INDICATES DIMENSIONS TO BE VERIFIED BY GENERAL CONTRACTOR BASED ON FURNISHED SHOP DRAWINGS FOR EQUIPMENT PRIOR TO CONSTRUCTION, INCLUDING ORDERING AND FABRICATING MATERIALS.

3.0 FOUNDATIONS

3.1 DESIGN ALLOWABLE SOIL BEARING PRESSURE – 1,500 PSF IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES137207, DATED SEPTEMBER 2013). CONTRACTOR IS RESPONSIBLE FOR VERIFYING THIS VALUE PRIOR TO FOUNDATION CONSTRUCTION. IN AREAS WHERE THE SOIL DOES NOT YIELD THIS BEARING STRESS VALUE, ADJUSTMENT IN THE FOOTING DEPTHS AND FOUNDATION DIMENSION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS. WHEN THE HSPS SITE BECOMES ACCESSIBLE AN ADDITIONAL TEST BORING SHALL BE CONDUCTED TO CONFIRM ASSUMED SOIL CONDITIONS.

3.2 FOOTING EXCAVATIONS AND FORMS SHALL BE REVIEWED BY AN OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. THE REVIEW SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 17 OF THE FLORIDA STATE BUILDING CODE.

3.3 FOOTING ELEVATIONS SHALL NOT BE RAISED OR LOWERED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

3.4 ALL EXCAVATIONS SHALL BE ADEQUATELY DEWATERED BEFORE PLACEMENT OF CONCRETE. NO CONCRETE OR CONCRETE FILL SHALL BE PLACED IN STANDING WATER. WATER ACCUMULATION EXCEEDING 1 INCH SHALL BE PUMPED OUT.

3.5 ALL FILL BELOW FOUNDATIONS SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH WOOD SCRAPS, AND OTHER EXTRANEOUS MATERIALS. PLACE FILL IN LIFTS NOT EXCEEDING THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DESI37207, DATED OCTOBER 2013).

3.6 ALL FOOTINGS SHALL BE CENTERED UNDER THE SUPPORTING MEMBER UNLESS NOTED OTHERWISE.

3.7 ANCHOR BOLTS SHALL BE SET BY MEANS OF TEMPLATE. "FLOATING" ANCHOR BOLTS INTO PLACE IS PROHIBITED.

3.8 CONTRACTOR IS TO VERIFY THE ELEVATION AND LOCATION OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. ANY "KNOWN" UTILITY LINES DAMAGED WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. IF ANY "UNKNOWN" UTILITY LINES ARE ENCOUNTERED WHEN EXCAVATING THE CONTRACTOR IS TO CEASE ALL EXCAVATION ACTIVITY UNTIL THE ENGINEER AND OWNER ARE NOTIFIED AND INSTRUCTIONS ARE PROVIDED ABOUT HOW TO PROCEED.

4.0 REINFORCING STEEL

4.1 BARS SHALL BE ROLLED FROM NEW BILLET-STEEL OF DOMESTIC MANUFACTURE CONFORMING TO "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," ASTM A 615, GRADE 60.

4.2 DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL," LATEST PUBLICATION.

4.3 REINFORCING STEEL IN PLACE SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. THE REVIEW SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 17 OF THE FLORIDA STATE BUILDING CODE.

4.4 WELDED WIRE FABRIC SHALL CONFORM TO "STANDARD SPECIFICATION FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT," ASTM A-185.

4.5 PLACE WELDED WIRE FABRIC AT CENTER OF SLABS-ON-GRADE, UNLESS NOTED OTHERWISE.

4.6 PROVIDE BARS AT CORNERS AND INTERSECTIONS OF WALLS & FOOTINGS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS, U.N.O. ON THE DRAWINGS.

4.7 FABRICATE CONTINUOUS BARS IN WALLS & FOOTINGS TO THE LONGEST PRACTICABLE LENGTHS.

4.8 REINFORCING STEEL SHALL NOT BE BENT AFTER BEING PARTIALLY EMBEDDED IN HARDENED CONCRETE.

4.9 BARS SHALL BE COLD BENT AND SHALL NOT BE HEATED FOR ANY REASON.

4.10 REINFORCING BARS SHALL NOT BE WELDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4.11 LAP REINFORCING STEEL IN CONCRETE MINIMUM 50 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

4.12 LAP SPLICED BARS IN CONCRETE ARE TO BE WIRE TIED.

5.0 CONCRETE

5.1 IN GENERAL CONCRETE SHALL DEVELOP 4,000 psi MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS. REFERENCE "DESIGN CRITERIA" THIS DWG. & PROJECT SPECIFICATIONS, FOR APPLICATION & SPECIFIC CONCRETE MIX DESIGN REQUIREMENTS.

5.2 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 & TO "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ACI 350 (LATEST EDITIONS).

5.3 PLACE 1/2 INCH EXPANSION JOINT MATERIAL BETWEEN EDGES OF SLABS AND VERTICAL SURFACES UNLESS NOTED OTHERWISE.

5.4 PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLABS & WALLS AT LOCATIONS SHOWN ON DRAWINGS, AT OFFSETS AND CHANGES IN DIRECTION AND AT THIRTY (30) FEET MAXIMUM.

5.5 CHAMFER EXPOSED EDGES OF CONCRETE 3/4 INCH, UNLESS NOTED OTHERWISE.

5.6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CURING OF ALL CONCRETE. CURING METHODS SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ACI 350 AND "STANDARD PRACTICE FOR CURING CONCRETE," ACI 308, LATEST EDITIONS.

5.7 UNLESS NOTED OTHERWISE DOWELS SHALL BE THE SAME NUMBER AND SIZE AS THE LARGEST VERTICAL BAR TO WHICH THEY ARE SPLICED.

5.8 REFERENCE PROJECT SPECIFICATIONS FOR REQUIRED FINISHES.

5.9 BONDING AGENT TO BE STRUCTURAL EPOXY ADHESIVE CONFORMING TO ASTM C-881 TYPE I AND II, GRADE 2, CLASS B AND C WITH A MINIMUM BOND STRENGTH OF 1900 PSI.

5.10 CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR APPROVAL TO OWNER PRIOR TO FABRICATION. DO NOT FABRICATE REINFORCING PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS.

5.11 CONCRETE COVER FOR REINFORCING, SURFACES CAST AGAINST EARTH 3", ALL OTHERS SURFACES 2".

6.0 GROUT

6.1 PROVIDE NON-SHRINK GROUT UNDER ALL BASE PLATES AND BEARING PLATES AND ELSEWHERE AS INDICATED ON DRAWINGS. NON-SHRINK GROUT SHALL CONFORM TO CORPS OF ENGINEERS SPECIFICATION CRD-C-588, TYPE D

6.2 GROUT SHALL BE NON-METALLIC AND NON-STAINING AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi.

ABBREVIATIONS:

ADD'L	=	ADDITIONAL
AL	=	ALUMINUM
B.O.	=	BOTTOM OF
CLR	=	CLEAR
COL	=	COLUMN
CONC.	=	CONCRETE
CONT.	=	CONTINUOUS
DBL.	=	DOUBLE
DIR.	=	DIRECTION
DWG.	=	DRAWING
EA.	=	EACH
E.O.	=	EDGE OF
E.Q.	=	EQUAL
EXIST.	=	EXISTING
EXP.	=	EXPANSION
F.S.	=	FAR SIDE
FTG.	=	FOOTING
GA.	=	GAGE
GALV.	=	GALVANIZED
I/F	=	INSIDE FACE
JT.	=	JOINT
LLH	=	LONG LEG HORIZONTAL
LLV	=	LONG LEG VERTICAL
MAT'L	=	MATERIAL
MFG.	=	MANUFACTURER
MTL.	=	METAL
NOM.	=	NOMINAL
N.S.	=	NEAR SIDE
N.T.S.	=	NOT TO SCALE
O/F	=	OUTSIDE FACE
O/O	=	OUT TO OUT
OPNG.	=	OPENING
OPP.	=	OPPOSITE
PLCS.	=	PLACES
RAD.	=	RADIUS
REF.	=	REFERENCE
REINF.	=	REINFORCING
SPECS.	=	SPECIFICATIONS
S.S.	=	STAINLESS STEEL
STD.	=	STANDARD
STL.	=	STEEL
T&B	=	TOP & BOTTOM
T/D	=	TURN DOWN
THK.	=	THICK
T.O.	=	TOP OF
T.O.S	=	TOP OF STEEL
TYP.	=	TYPICAL
U.N.O.	=	UNLESS NOTED OTHERWISE

DESIGN LOADS:

LIVE LOADS:
SLAB ON GRADE 250 PSF
CODE:
2010 FLORIDA BUILDING CODE

DESIGN CRITERIA:

CONCRETE 28 DAY COMPRESSIVE STRENGTH:	f'c = 4,000 psi
SIDEWALK:	f'c = 3,000 psi
REINFORCING STEEL:	ASTM A615, GRADE 60
WELDED WIRE FABRIC:	ASTM A185
BOLTS SHALL BE 3/4"ø ASTM A325 OR TYPE 316 S.S.	
ANCHOR BOLTS SHALL BE 3/4"ø TYPE 316 S.S.	
SOIL BEARING CAPACITY:	REF. STRUCTURAL NOTE 3.1

LEGEND:

ENLARGED PLAN AREA, DETAIL =

CONC. WALL, PAD, ETC. =

GROUT =

PROJECT NORTH =

NORTH

ELEVATIONS =

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 59360

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA AND LEGEND

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	HAH
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
S-0.1

STATUS: ISSUE FOR BID
REVISION

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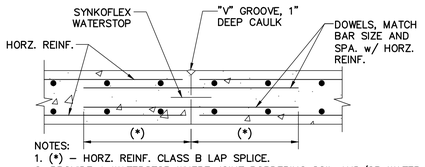
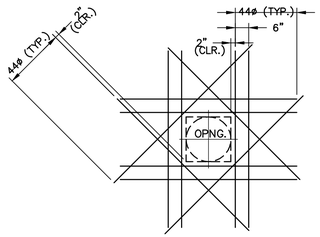


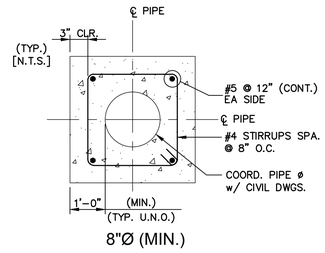
NOTES:
1. (*) – HORZ. REINF. CLASS B LAP SPLICE.
2. PROVIDE A WATERSTOP WHERE JOINT BORDERING SOIL AND/OR WATER. REFERENCE PROJECT SPECIFICATIONS FOR WATERSTOP REQUIREMENTS.

1 - DETAIL-TYP. C.I.P. CONC. SLAB CONST. JT. (CJ)
SCALE: 3/4" = 1'-0"

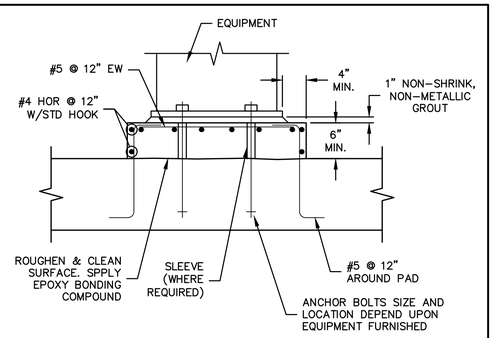


NOTES:
1. USE THIS DETAIL FOR PENETRATIONS 8" OR LARGER. FOR SMALLER OPENINGS BEND BARS IN FIELD PER ACI 350 LATEST EDITION.
2. PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENINGS. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS, EXCEPT WHERE NOTED OTHERWISE. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING, SIZE TO BE EQUAL TO MAIN REINFORCING. (TYP. EA. FACE).
3. ø SYMBOL = BAR DIAMETERS.

2 - DETAIL-TYP. RENIF. @ SLAB / WALL OPNG
SCALE: 3/8" = 1'-0"



3- DETAIL - TYP. CONC.ENCASED PIPE
SCALE: 1/2" = 1'-0"

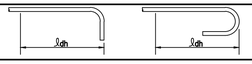


6- DETAIL - TYP. EQUIPMENT SUPPORT PAD
SCALE: NTS

DEVELOPMENT LENGTH OF STANDARD HOOKS
FOR BARS IN TENSION
fy = 60,000 psi f'c = 4000 psi OR GREATER

BAR SIZE	DEVELOPMENT LENGTH, ℓdh	
	BASIC	W/ CONC COVER *
#3	8"	6"
#4	10"	7"
#5	1'-0"	9"
#6	1'-2"	10"
#7	1'-5"	1'-0"
#8	1'-7"	1'-1"
#9	1'-9"	1'-3"
#10	2'-0"	1'-5"
#11	2'-2"	1'-6"

*SIDE COVER NORMAL TO PLANE OF HOOK AT LEAST 2 1/2"; AND FOR 90° HOOK END COVER BEYOND OUTSIDE END OF HOOK AT LEAST 2".



BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH
FOR BARS IN COMPRESSION
fy = 60,000 psi f'c = 4000 psi OR GREATER

BASIC DEVELOPMENT LENGTH		BAR SIZE	SPLICE LENGTH	
BASIC	CONFINEMENT *		BASIC	CONFINEMENT **
8"	8"	# 3	12"	12"
10"	8"	# 4	1'-3"	13"
1'-0"	9"	# 5	1'-7"	1'-4"
1'-3"	1'-0"	# 6	1'-11"	1'-7"
1'-5"	1'-1"	# 7	2'-2"	1'-10"
1'-7"	1'-3"	# 8	2'-6"	2'-1"
1'-9"	1'-4"	# 9	2'-10"	2'-4"
2'-0"	1'-6"	# 10	3'-2"	2'-7"
2'-2"	1'-8"	# 11	3'-6"	2'-10"

* BAR ENCLOSED WITHIN SPIRALS OF NOT LESS THAN 1/4 INCH DIAMETER AND NOT MORE THAN 4 INCH PITCH OR WITHIN #4 TIES IN CONFORMANCE WITH ACI 318, SECTION 7.10.5 AT NOT MORE THAN 4 INCHES ON CENTER, FACTOR 0.75 USED.

** BAR ENCLOSED WITHIN TIES PER ACI 350-01 SECTION 12.17.2.4.

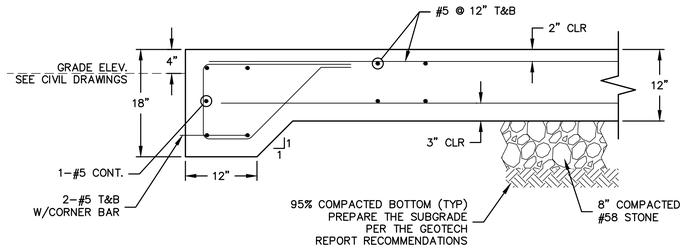
BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH
FOR BARS IN TENSION
fy = 60,000 psi f'c = 4000 psi OR GREATER, NORMAL WEIGHT CONCRETE

BASIC DEVELOPMENT LENGTH ** ℓd				BAR SIZE	CLASS B SPLICE LENGTH ** 1.3 x ℓd			
CLEAR SPACING ≥2db		CLEAR SPACING <2db			CLEAR SPACING ≥2db		CLEAR SPACING <2db	
BASIC	TOP *	BASIC	TOP *		BASIC	TOP *	BASIC	TOP *
1'-3"	1'-7"	1'-10"	2'-4"	# 3	1'-7"	2'-0"	2'-4"	3'-0"
1'-7"	2'-1"	2'-5"	3'-1"	# 4	2'-1"	2'-8"	3'-1"	4'-0"
2'-0"	2'-7"	3'-0"	3'-10"	# 5	2'-7"	3'-4"	3'-10"	5'-0"
2'-5"	3'-1"	3'-7"	4'-8"	# 6	3'-1"	4'-0"	4'-8"	6'-0"
3'-6"	4'-6"	5'-2"	6'-9"	# 7	4'-6"	5'-10"	6'-9"	8'-9"
4'-0"	5'-2"	6'-0"	7'-9"	# 8	5'-2"	6'-8"	7'-9"	10'-0"
4'-6"	5'-9"	6'-8"	8'-8"	# 9	5'-9"	7'-6"	8'-8"	11'-3"
4'-11"	6'-5"	7'-5"	9'-8"	# 10	6'-5"	8'-4"	9'-8"	12'-6"
5'-5"	7'-1"	8'-2"	10'-8"	# 11	7'-1"	9'-2"	10'-8"	13'-9"

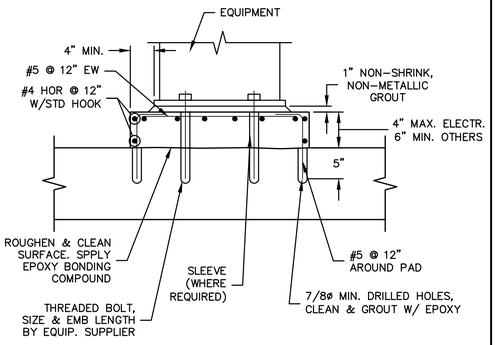
* TOP REINFORCEMENT IS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.

** LENGTHS SHOWN IN CHART SHALL BE MODIFIED WHERE REQUIRED TO CONFORM TO THE PROVISIONS OF ACI 318, SECTION 12.2.

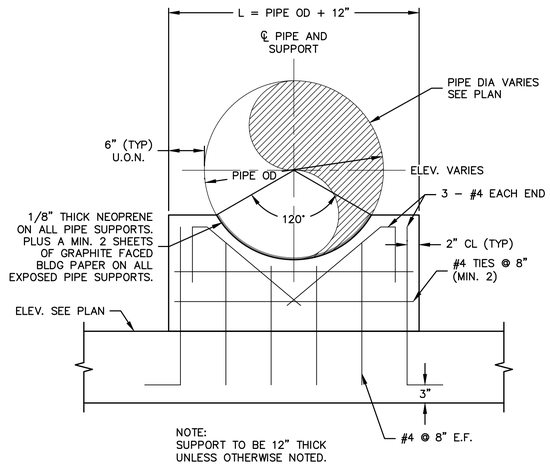
4 - SCHEDULE - REINF. BAR SPLICE REQUIREMENTS
SCALE: N.T.S.



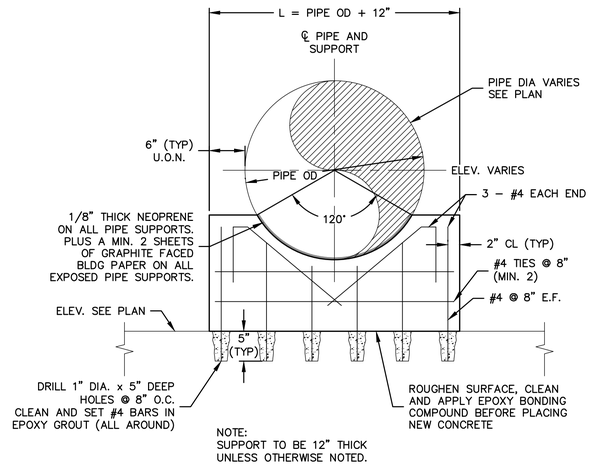
5- DETAIL - TYP. EQUIPMENT PAD
SCALE: NTS



7- DETAIL - TYP. EQUIPMENT SUPPORT PAD ON EXISTING CONCRETE
SCALE: NTS



8- DETAIL - TYP. PIPE SUPPORT DETAIL
SCALE: NTS



9- DETAIL - TYP. PIPE SUPPORT DETAIL ON EXISTING CONCRETE
SCALE: NTS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

H.A. HOBI, PE
No. 59360

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

STRUCTURAL SECTIONS AND DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024–0160
DRAWN	BFN
DESIGNED	HAH
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
S-0.2

STATUS: ISSUE FOR BID
REVISION

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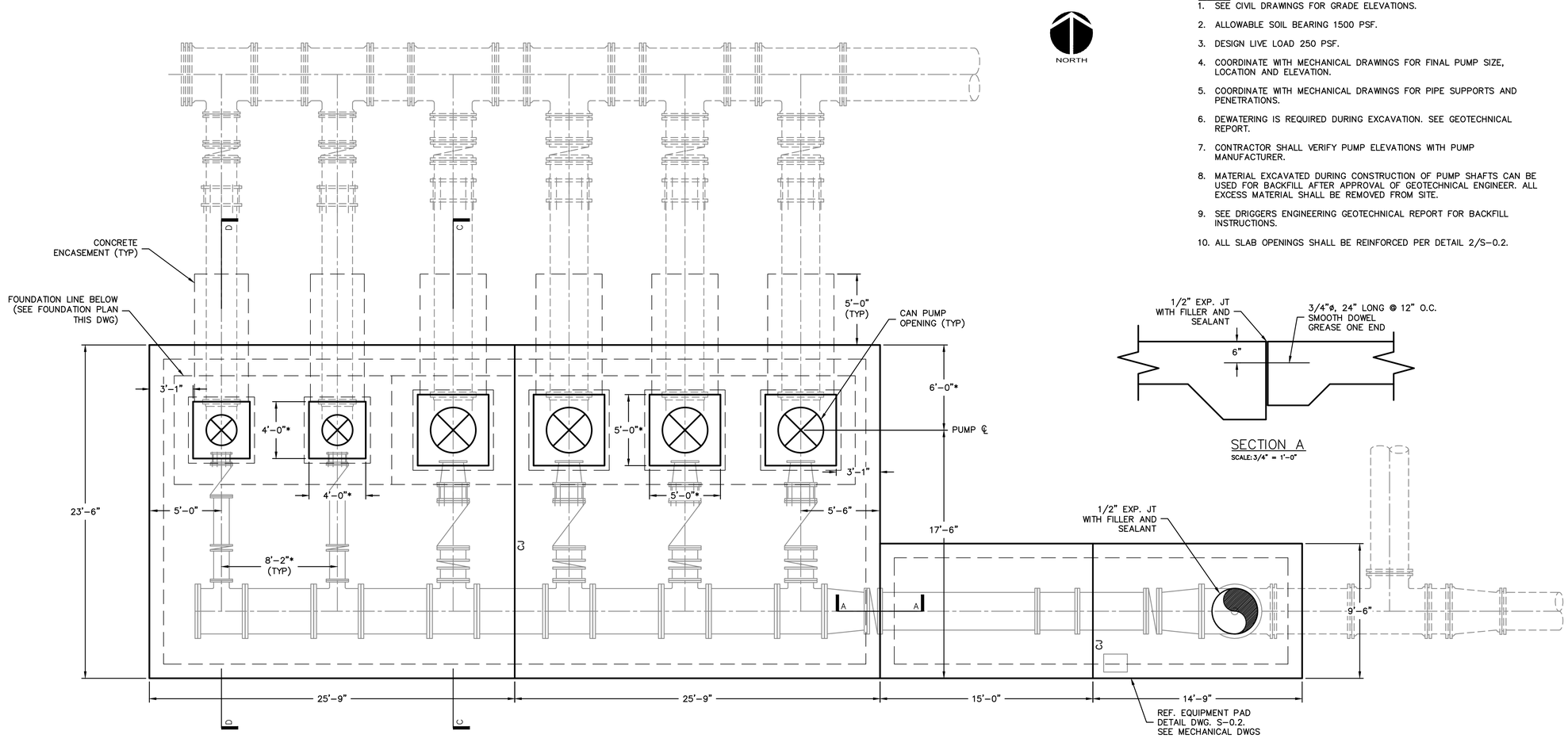
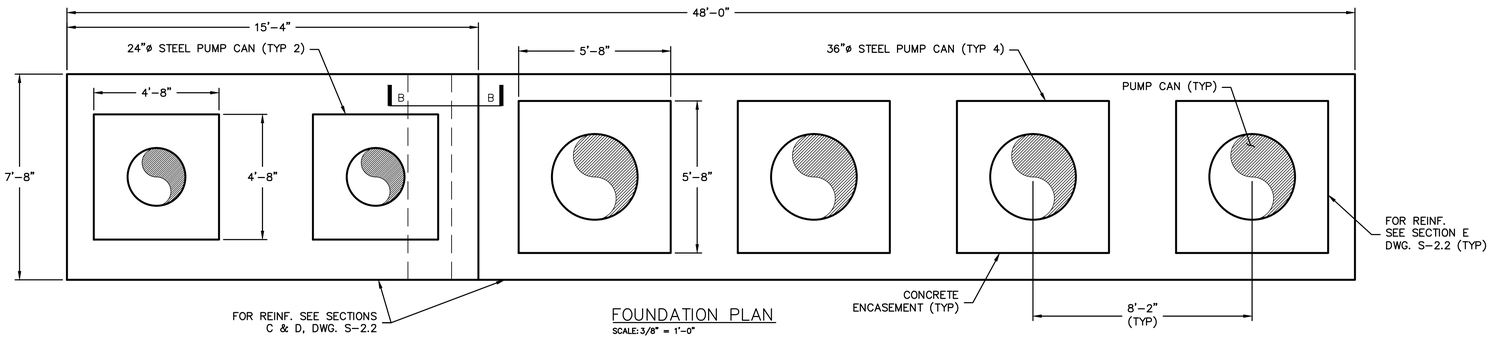
NOTES:
1. SEE CIVIL DRAWINGS FOR GRADE ELEVATIONS.
2. ALLOWABLE SOIL BEARING 1500 PSF.
3. DESIGN LIVE LOAD 250 PSF.
4. COORDINATE WITH MECHANICAL DRAWINGS FOR FINAL PUMP SIZE, LOCATION AND ELEVATION.
5. COORDINATE WITH MECHANICAL DRAWINGS FOR PIPE SUPPORTS AND PENETRATIONS.
6. DEWATERING IS REQUIRED DURING EXCAVATION. SEE GEOTECHNICAL REPORT.
7. CONTRACTOR SHALL VERIFY PUMP ELEVATIONS WITH PUMP MANUFACTURER.
8. MATERIAL EXCAVATED DURING CONSTRUCTION OF PUMP SHAFTS CAN BE USED FOR BACKFILL AFTER APPROVAL OF GEOTECHNICAL ENGINEER. ALL EXCESS MATERIAL SHALL BE REMOVED FROM SITE.
9. SEE DRIGGERS ENGINEERING GEOTECHNICAL REPORT FOR BACKFILL INSTRUCTIONS.
10. ALL SLAB OPENINGS SHALL BE REINFORCED PER DETAIL 2/S-0.2.

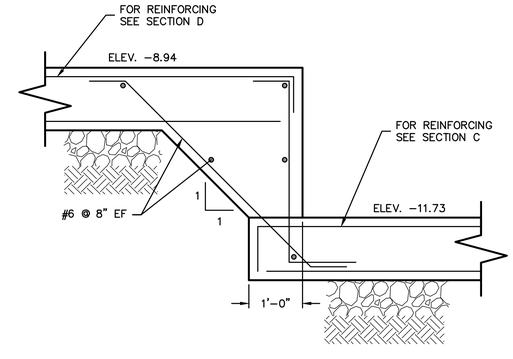


PLAN
SCALE: 1/4" = 1'-0"

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



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



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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

H.A. HOBI, PE
No. 59360

SEAL

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Clearwater, Florida 33756
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HIGH SERVICE PUMP STATION PLAN AND SECTION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	HAH
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
S-2.1

STATUS: ISSUE FOR BID
REVISION

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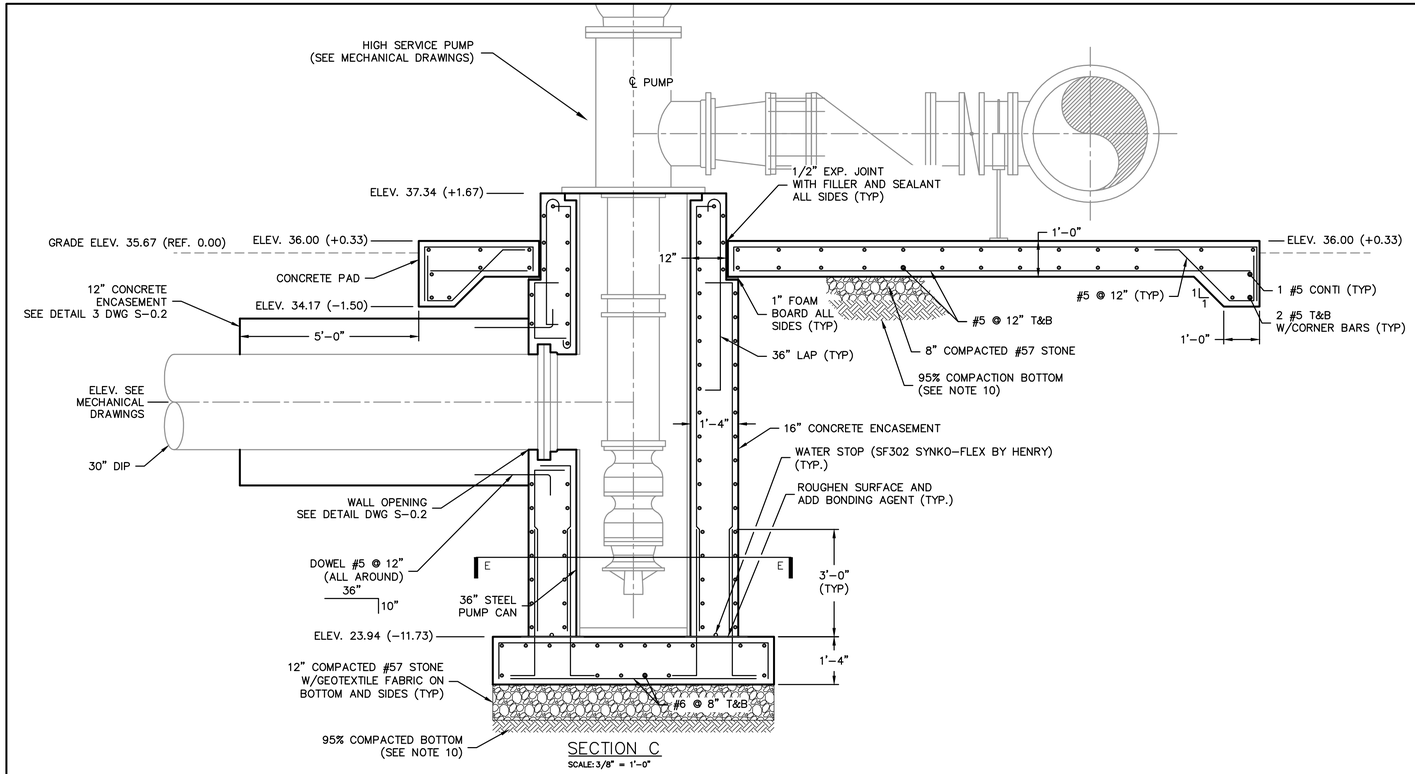
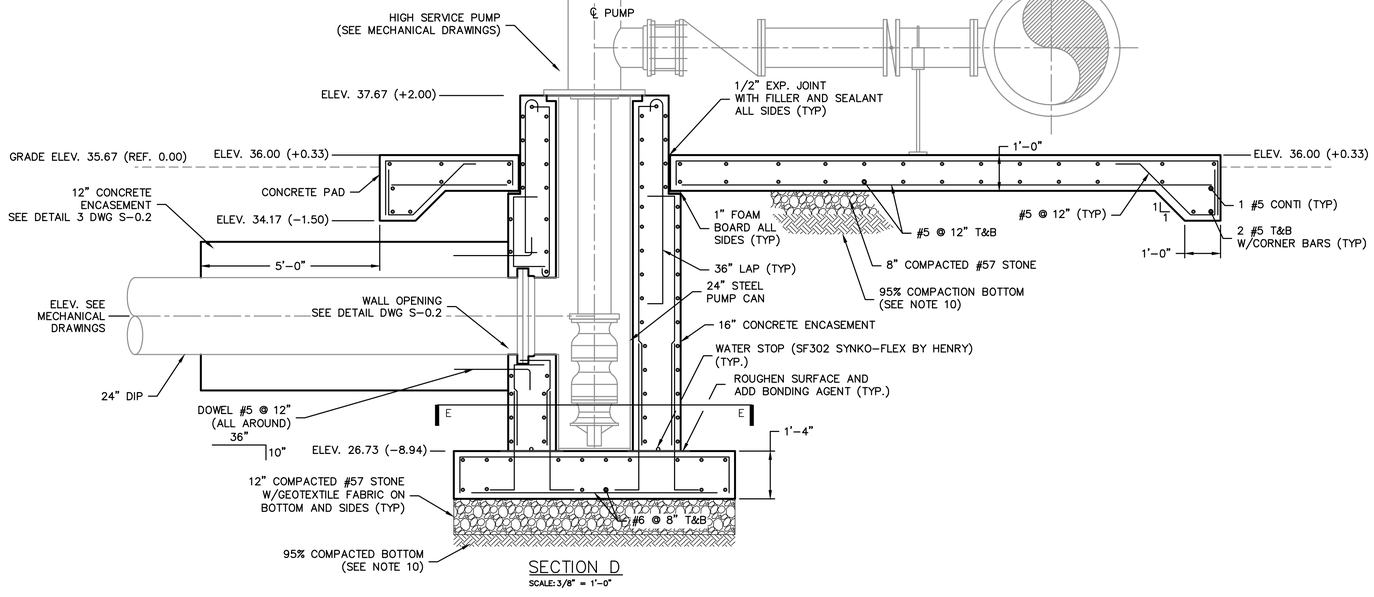


SECTION C

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

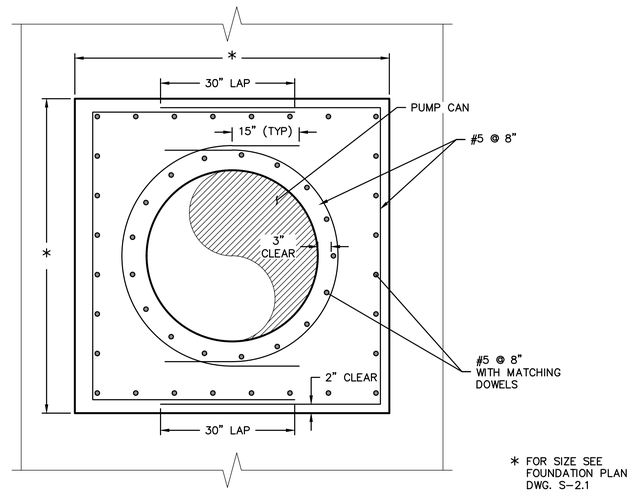


SECTION D

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

NOTES:

1. SEE CIVIL DRAWINGS FOR GRADE ELEVATIONS.
2. ALLOWABLE SOIL BEARING 1500 PSF.
3. DESIGN LIVE LOAD 250 PSF.
4. COORDINATE WITH MECHANICAL DRAWINGS FOR FINAL PUMP SIZE, LOCATION AND ELEVATION.
5. COORDINATE WITH MECHANICAL DRAWINGS FOR PIPE SUPPORTS.
6. DEWATERING IS REQUIRED DURING EXCAVATION. SEE GEOTECHNICAL REPORT.
7. CONTRACTOR SHALL VERIFY PUMP ELEVATIONS WITH PUMP MANUFACTURER.
8. MATERIAL EXCAVATED DURING CONSTRUCTION OF PUMP SHAFTS CAN BE USED FOR BACKFILL AFTER APPROVAL OF GEOTECHNICAL ENGINEER. ALL EXCESS MATERIAL SHALL BE REMOVED FROM SITE.
9. SEE DRIGGERS ENGINEERING GEOTECHNICAL REPORT FOR BACKFILL INSTRUCTIONS.
10. REFERENCE PROJECT GEOTECH REPORT FOR SUBGRADE PREPARATION & COMPACTED FILL REQUIREMENTS.



SECTION E

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

H.A. HOBI, PE
No. 59360

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HIGH SERVICE PUMP STATION SECTIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	HAH
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
S-2.2

STATUS: ISSUE FOR BID
REVISION

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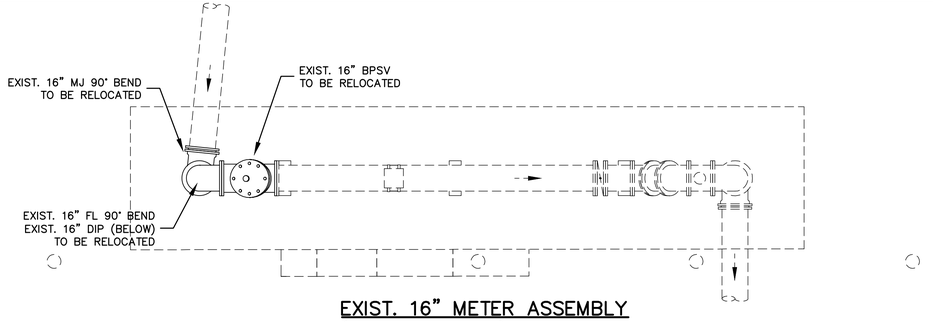
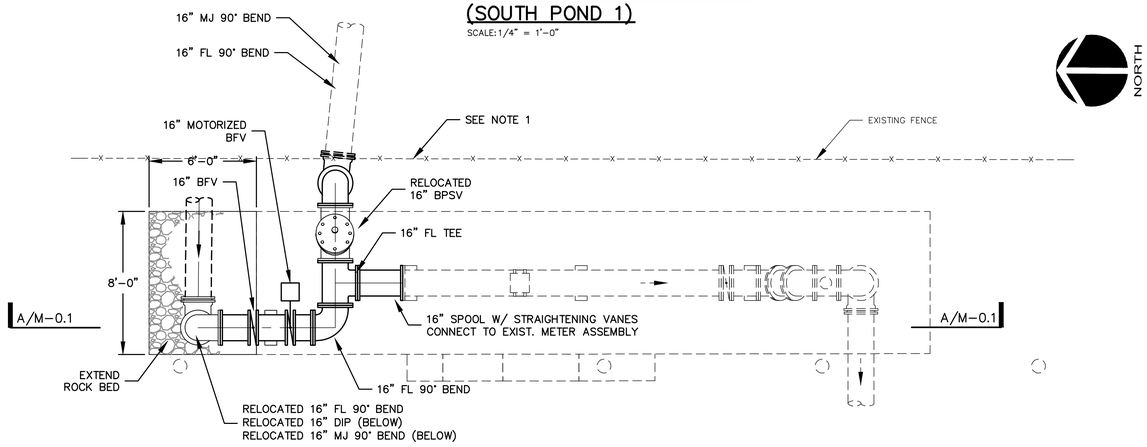


EXIST. 16" METER ASSEMBLY (SOUTH POND 1)

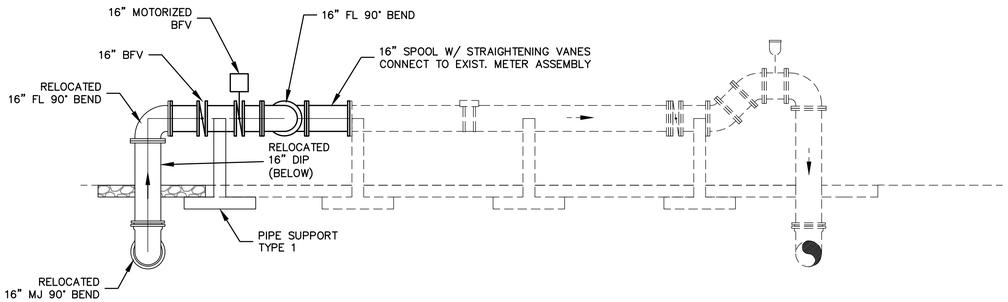
SCALE: 1/4" = 1'-0"



NOTE:
1. CONTRACTOR SHALL FIELD ADJUST EXISTING FENCE TO ACCOMMODATE METERING ASSEMBLY MODIFICATIONS.

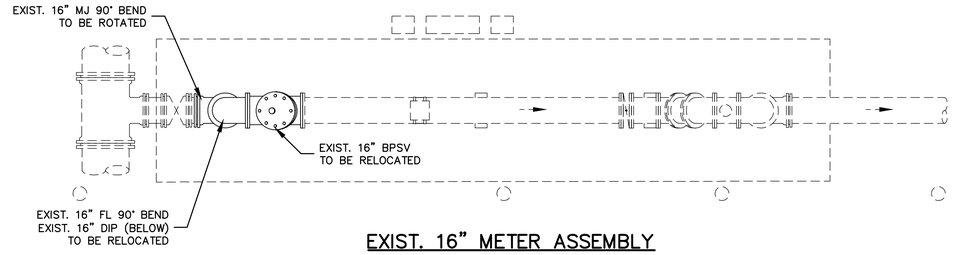
EXIST. 16" METER ASSEMBLY MODIFICATION PLAN (SOUTH POND 1)

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



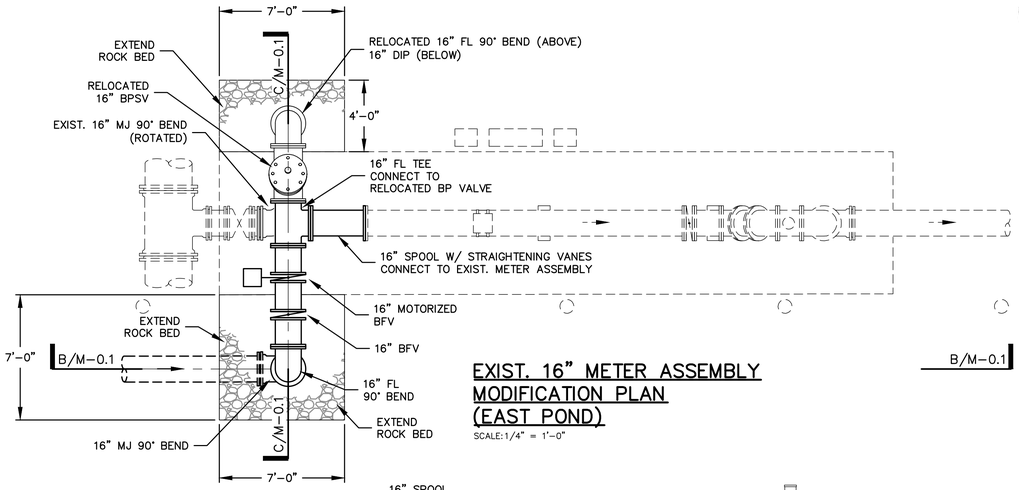
SECTION A/M-0.1

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



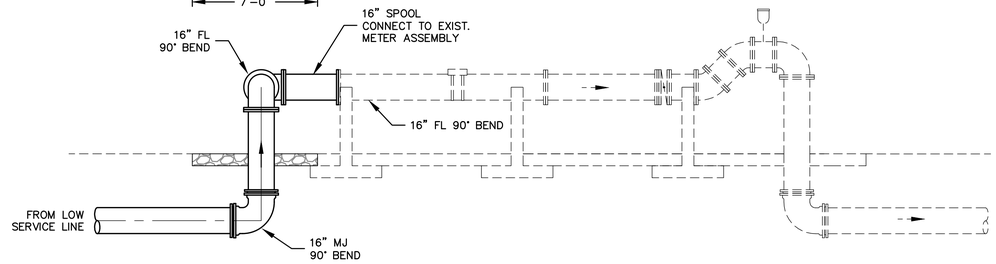
EXIST. 16" METER ASSEMBLY (EAST POND)

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



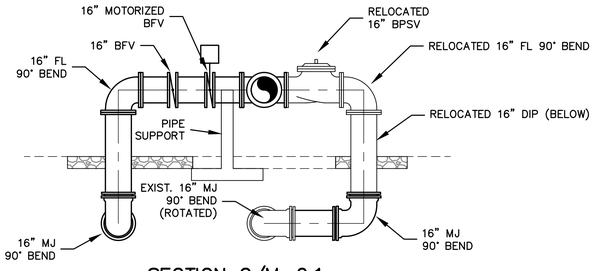
EXIST. 16" METER ASSEMBLY MODIFICATION PLAN (EAST POND)

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



SECTION B/M-0.1

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



SECTION C/M-0.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

EXIST. 16" METER ASSEMBLY MODIFICATIONS 1 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BPN
DESIGNED	MSL
CHECKED	MSL JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-0.1

STATUS: ISSUE FOR BID
REVISION

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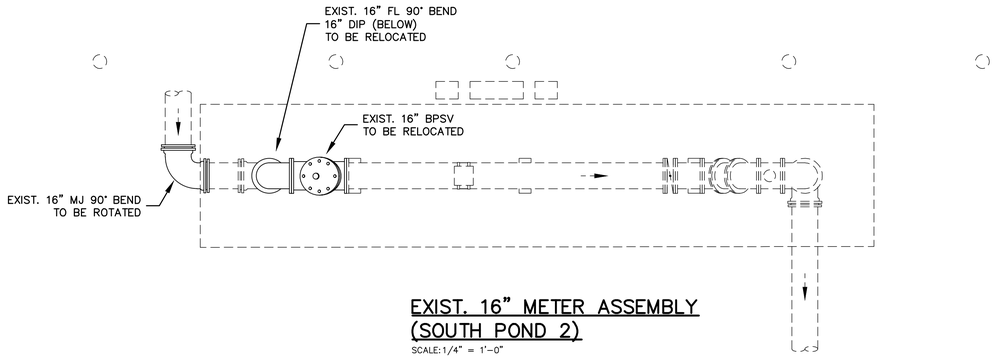
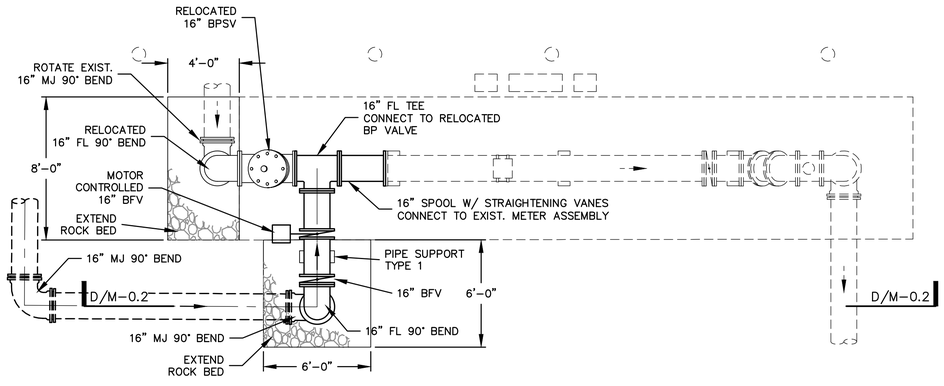


EXIST. 16" METER ASSEMBLY (SOUTH POND 2)

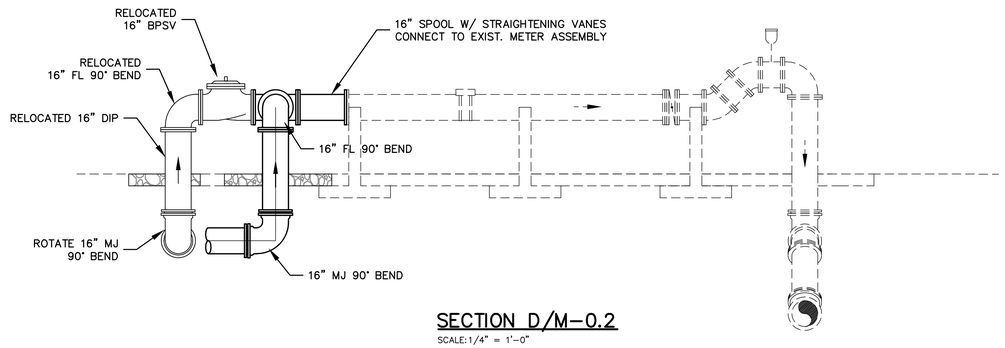
SCALE:1/4" = 1'-0"

NORTH



EXIST. 16" METER ASSEMBLY MODIFICATION PLAN (SOUTH POND 2)

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



SECTION D/M-0.2

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

CRANE MANUFACTURING STRAIGHTENING VANES

LINE SIZE	LINE I.D	(A) LENGTH OF VANE	(B) THK OF FLANGE RING	(C) O.D. OF VANE	O.D. OF TUBES	WALL THK. OF TUBES	NUMBER OF TUBES	LINE MODEL SIZE OF SCREWS	APPOXIMATE WEIGHTS FLANGE MODEL	APPOXIMATE WEIGHTS LINE MODEL
2	S40 2.067	6	.250	2.000	.625	.049	7	3/8 NC X 1	3	2
2	S80 1.939	6	.280	1.875	.562	.049	7	3/8 NC X 1	3	2
3	S40 3.068	8	.250	3.000	.562	.049	19	3/8 NC X 1	4	3
3	S80 2.900	8	.250	2.812	.562	.049	19	3/8 NC X 1	4	3
4	S40 4.026	10	.250	3.937	.812	.049	19	3/8 NC X 1	6	7
4	S80 3.826	10	.250	3.750	.750	.049	19	3/8 NC X 1.250	6	7
6	S40 6.065	12	.250	5.937	1.187	.055	19	1/2 NC X 1.250	21	19
6	S80 5.761	12	.250	5.625	1.125	.055	19	1/2 NC X 1.250	21	19
8	S40 7.981	16	.250	7.812	1.562	.055	19	1/2 NC X 1.250	37	35
8	S80 7.625	16	.250	7.500	1.500	.055	19	1/2 NC X 1.250	37	35
10	S40 10.020	20	.375	9.812	2.000	.075	19	1/2 NC X 1.250	57	54
10	S80 9.564	20	.375	9.437	1.875	.083	19	1/2 NC X 1.250	57	54
12	STD 12.000	24	.375	11.750	2.375	.083	19	1/2 NC X 1.500	81	77
12	S40 11.938	24	.375	11.750	2.375	.083	19	1/2 NC X 1.500	81	77
12	XH 11.750	24	.375	11.550	2.375	.083	19	1/2 NC X 1.500	81	77
14	STD 13.250	28	.375	13.000	2.625	.083	19	1/2 NC X 1.500	106	100
14	XH 13.000	28	.375	12.750	2.625	.083	19	1/2 NC X 1.500	106	100
16	STD 15.250	32	.375	15.000	3.000	.188	19	1/2 NC X 1.750	274	268
16	XH 15.000	32	.375	14.750	3.000	.188	19	1/2 NC X 1.750	274	268
18	S40 16.876	36	.375	16.625	3.375	.188	19	1/2 NC X 1.250	396	378
20	S40 18.814	40	.375	18.594	3.750	.188	19	1/2 NC X 1.250	477	468
24	S40 22.626	48	.375	22.626	4.500	.188	19	1/2 NC X 1.250	704	693

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

EXIST. 16" METER ASSEMBLY MODIFICATIONS 2 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-0.2

STATUS: ISSUE FOR BID
REVISION

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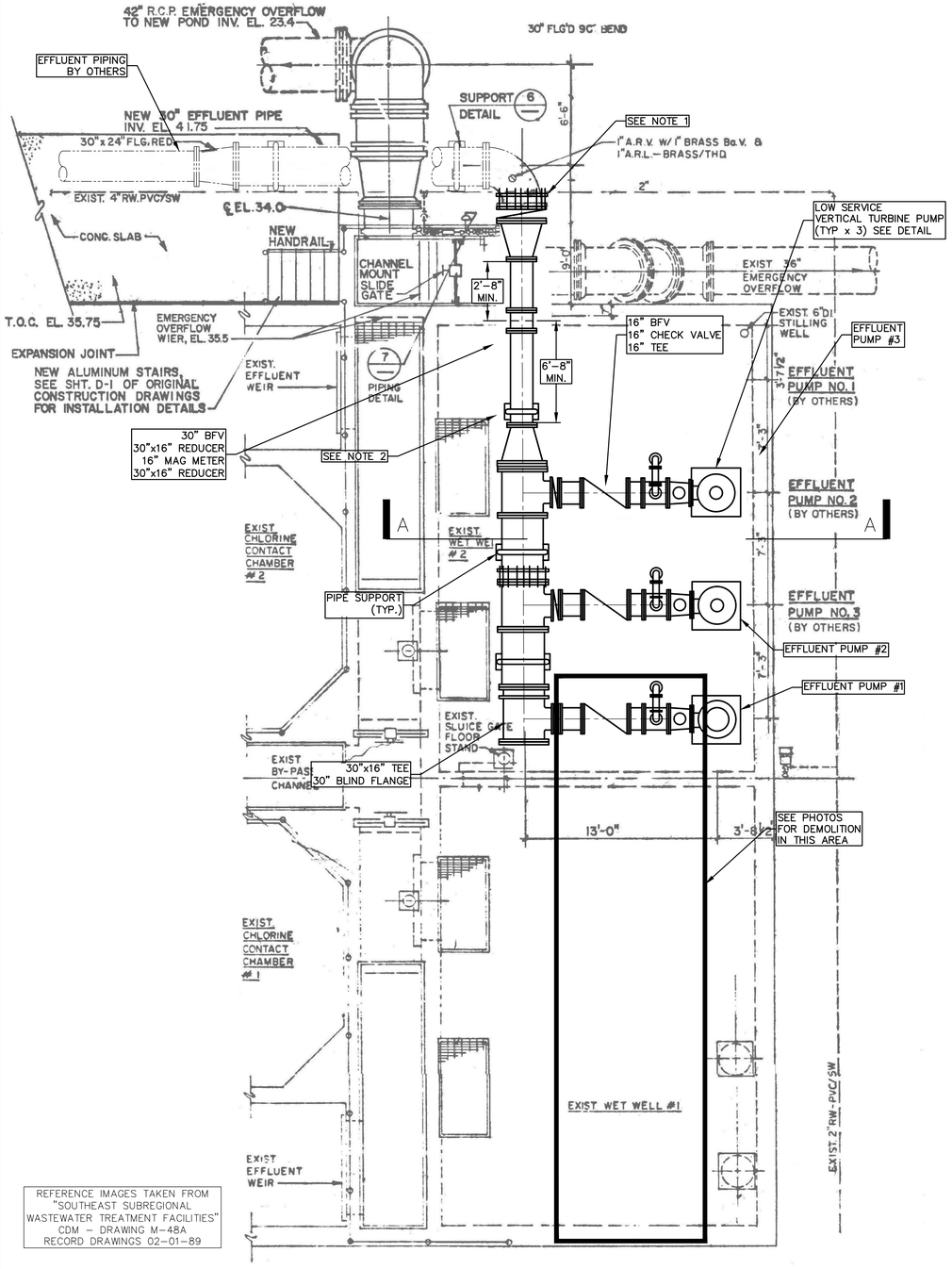
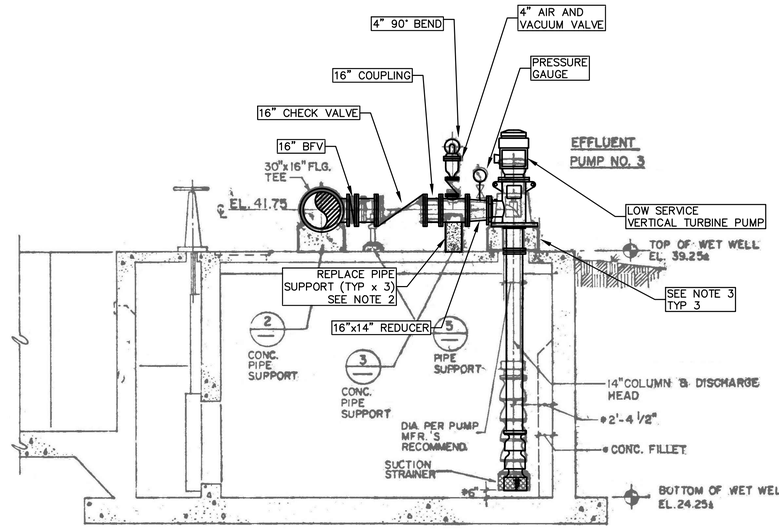


REFERENCE IMAGES TAKEN FROM "SOUTHEAST SUBREGIONAL WASTEWATER TREATMENT FACILITIES" CDM – DRAWING M-48A RECORD DRAWINGS 02-01-89

NORTH



NOTE:
PUMP AND PIPING LAY-OUT FOR EFFLUENT PUMP NO. 3 IS TYPICAL FOR EFFLUENT PUMPS NO.'S 1 & 2

* AS PER MFR.'S EQUIPMENT

LOW SERVICE VERTICAL TURBINE PUMP DETAIL (TYP 3)

SCALE: NTS

NOTES:
1. CONTRACTOR SHALL REMOVE STEEL DISCHARGE HEADER UP TO THE 90° BEND AND INSTALL A FLANGED ADAPTER TO CONNECT TO NEW DUCTILE IRON PIPE.
2. CONTRACTOR SHALL REMOVE CONCRETE PIPE SUPPORTS FOR THE DISCHARGE HEADER TO THE FINISHED FLOOR. CONTRACTOR SHALL SUPPLY 316 STAINLESS STEEL STANCHION TYPE PIPE SUPPORTS BEING SPACED NO FURTHER THAN 10' APART ON CENTER OR AS SHOWN.
3. CONTRACTOR SHALL RESTORE AND MODIFY THE EXISTING PUMP SUPPORT PER PUMP MANUFACTURER'S RECOMMENDATIONS. 316 STAINLESS STEEL ANCHOR BOLTS (TYP.) SHALL BE PROVIDED, SIZED PER PUMP MANUFACTURER'S RECOMMENDATIONS.
4. CONTRACTOR SHALL REMOVE 12" PLANT WATER FEED TO 3 FEET BELOW GRADE AND CAP LINE.

LEGEND

TO BE REMOVED

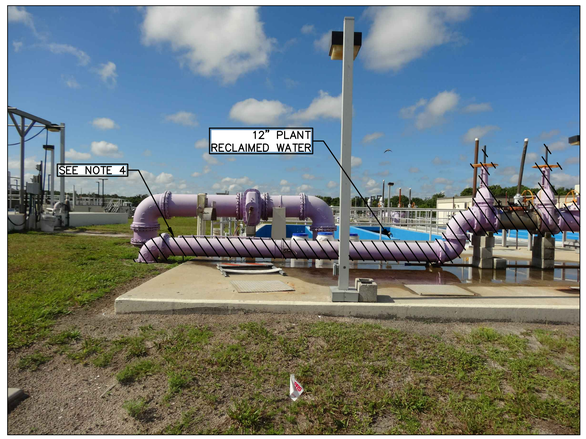


PHOTO 1
SCALE: NTS

PHOTO 2
SCALE: NTS

REV. NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

LOW SERVICE PUMP STATION NO. 1 PLAN, SECTIONS AND DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
M-2.1

STATUS: ISSUE FOR BID
REVISION

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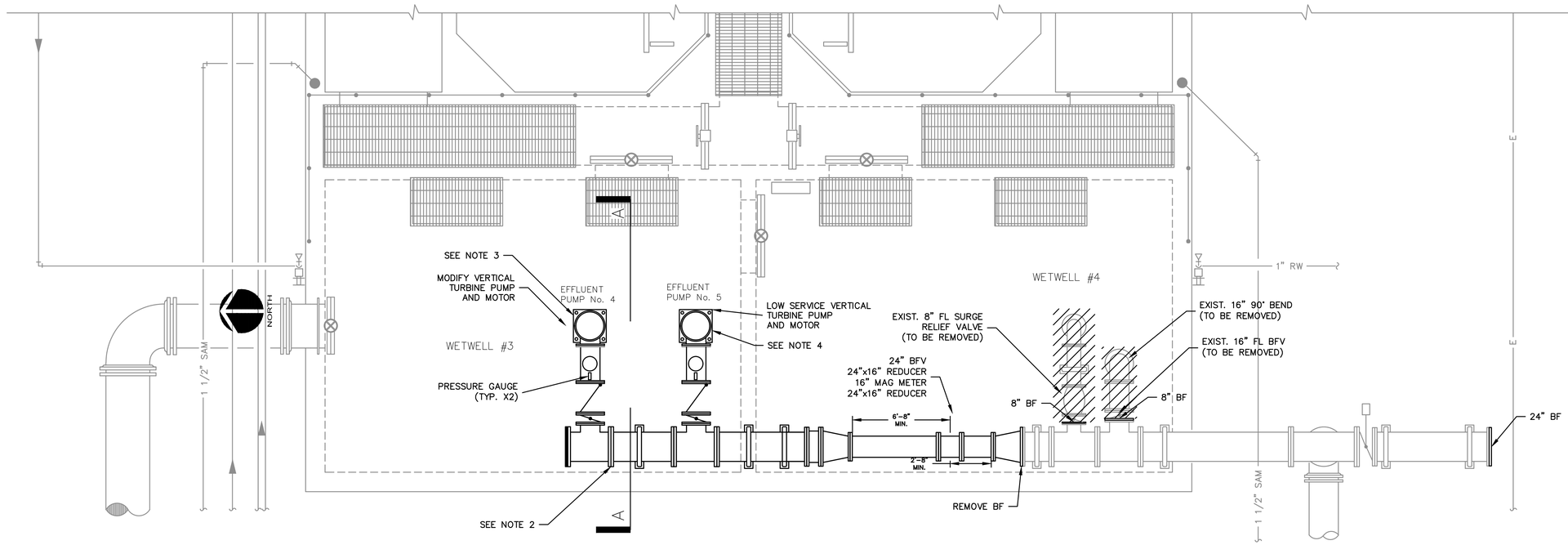

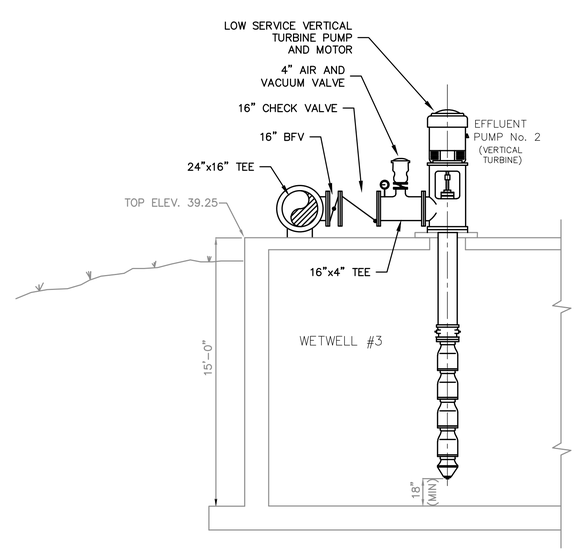

SECTION A

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

NOTES:

1. CONTRACTOR SHALL REMOVE DISCHARGE HEADER IN IT'S ENTIRETY.
2. CONTRACTOR SHALL REMOVE CONCRETE PIPE SUPPORTS FOR THE DISCHARGE HEADER TO THE FINISHED FLOOR. CONTRACTOR SHALL SUPPLY 316 STAINLESS STEEL STANCHION TYPE PIPE SUPPORTS BEING SPACED NO FURTHER THAN 10' APART ON CENTER OR AS SHOWN.
3. CONTRACTOR SHALL RESTORE AND MODIFY THE EXISTING PUMP SUPPORT PER PUMP MANUFACTURER'S RECOMMENDATIONS. 316 STAINLESS STEEL ANCHOR BOLTS (TYP.) SHALL BE PROVIDED, SIZED PER PUMP MANUFACTURER'S RECOMMENDATIONS.
4. CONTRACTOR SHALL CORE DRILL THE EXISTING TOP SLAB FOR PUMP INSTALLATION PER THE PUMP MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL PROVIDE PUMP SUPPORTS PER PUMP MANUFACTURER'S RECOMMENDATIONS WITH A MINIMUM OF 23" LONG #5 REBAR DOWELS INTO EXISTING CONCRETE SLAB WITH EPOXY, 316 STAINLESS ANCHOR BOLTS (TYP.) SHALL BE PROVIDED, SIZED PER PUMP MANUFACTURER'S RECOMMENDATIONS.
5. CONTRACTOR SHALL SUPPLY CHECKERED ALUMINUM PLATING COVERS ANCHORED WITH 316 STAINLESS STEEL BOLTS OVER EXISTING CORE HOLES NOT BEING REUSED FOR REMOVING PUMPS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

LOW SERVICE PUMP STATION NO. 2 PLAN AND SECTION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-2.2

STATUS: ISSUE FOR BID
REVISION

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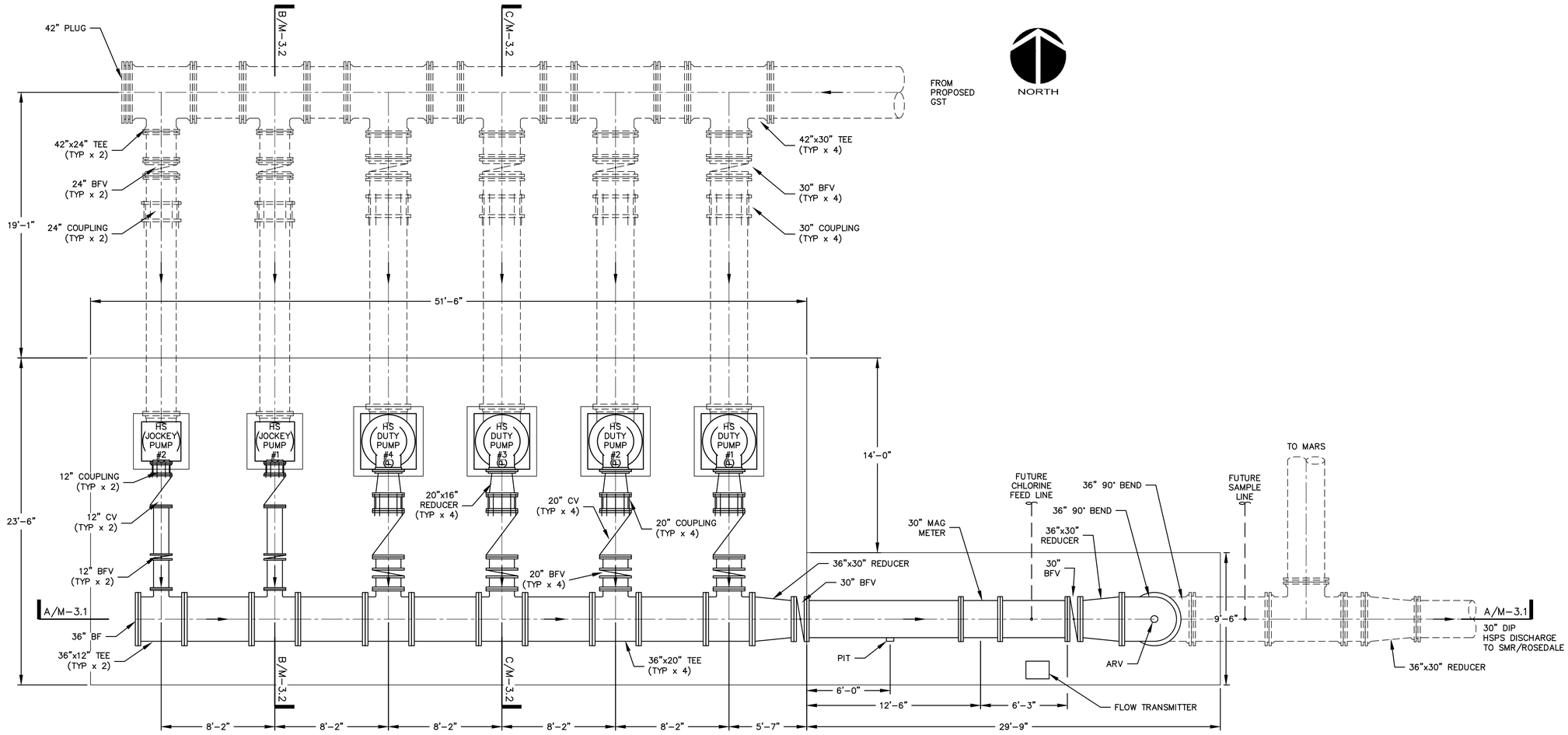

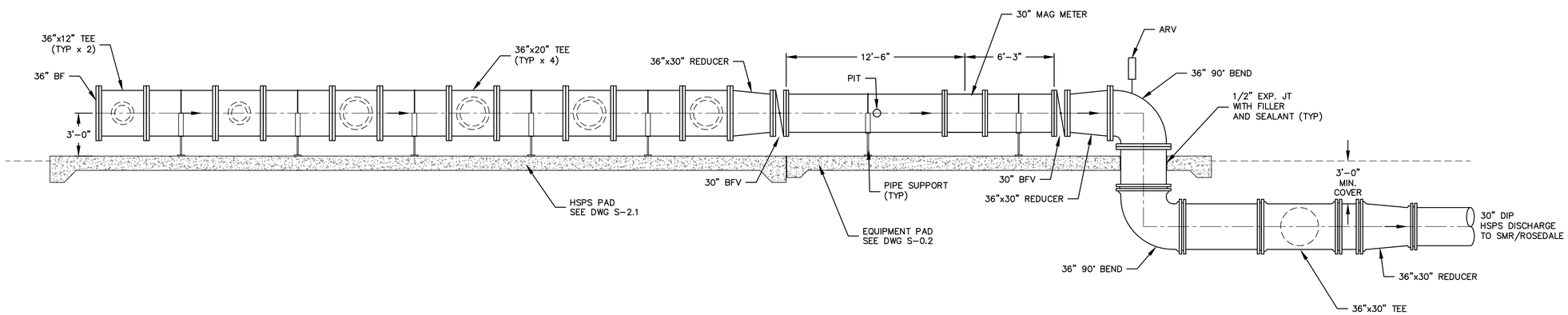

SECTION A/M-3.1

SCALE: X" = 1'-0"

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

MATTHEW S. LOVE, P.E.
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HIGH SERVICE PUMP STATION PLAN AND SECTION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-3.1

STATUS: ISSUE FOR BID
REVISION

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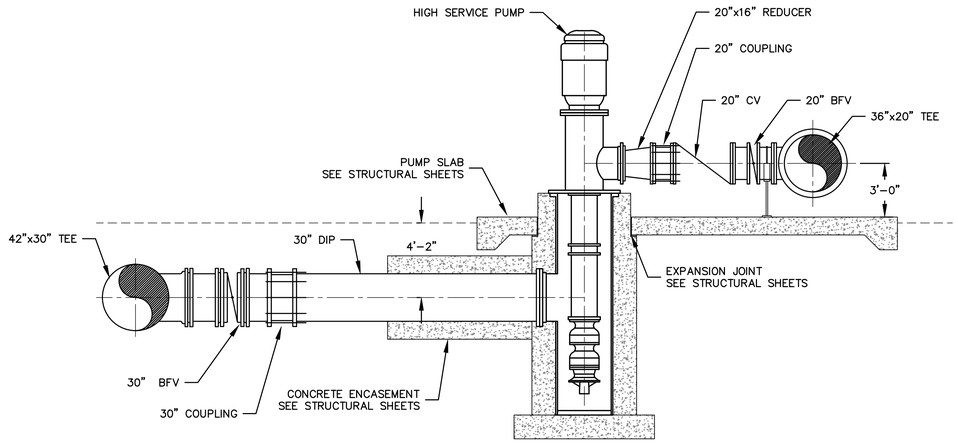
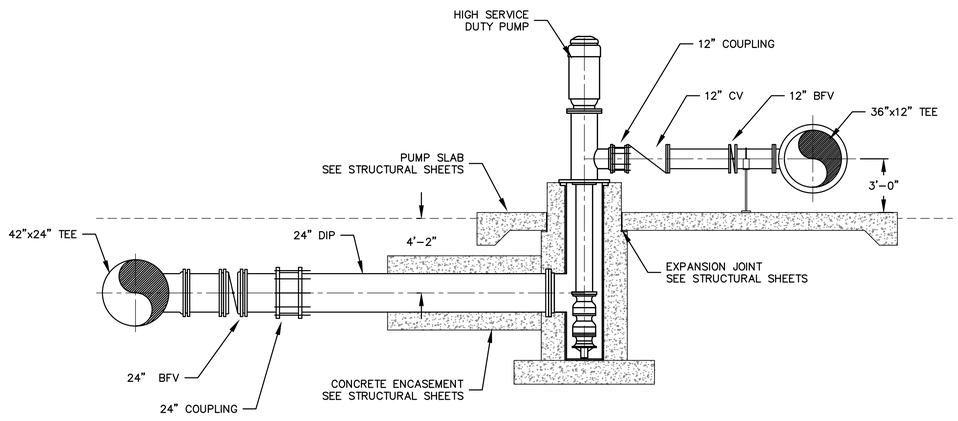


SECTION B/M-3.1

SCALE: X" = 1'-0"



SECTION C/M-3.1

SCALE: X" = 1'-0"

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HIGH SERVICE PUMP STATION SECTIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-3.2

STATUS: ISSUE FOR BID
REVISION

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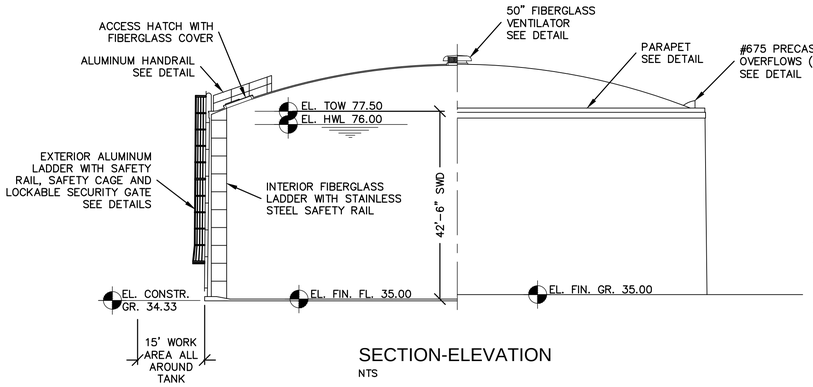
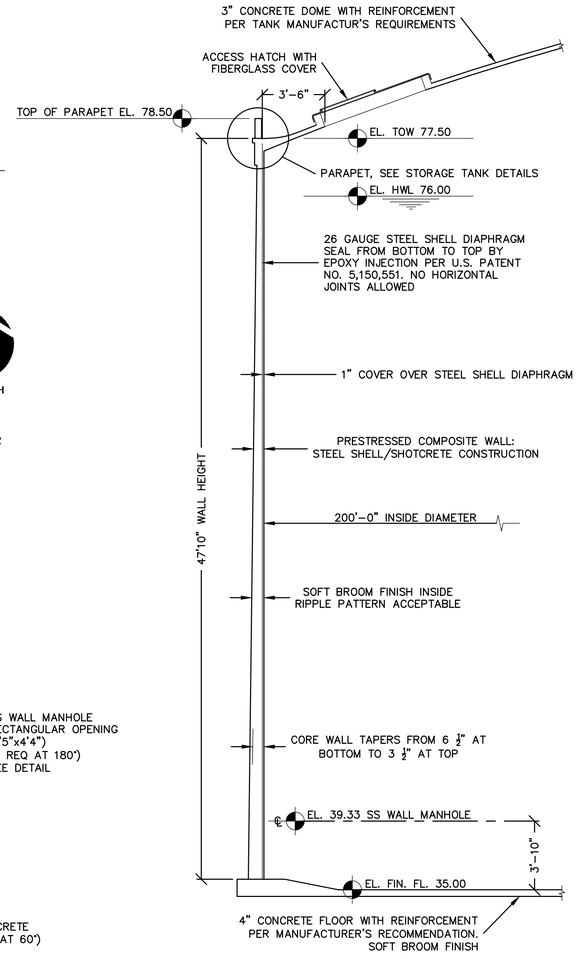
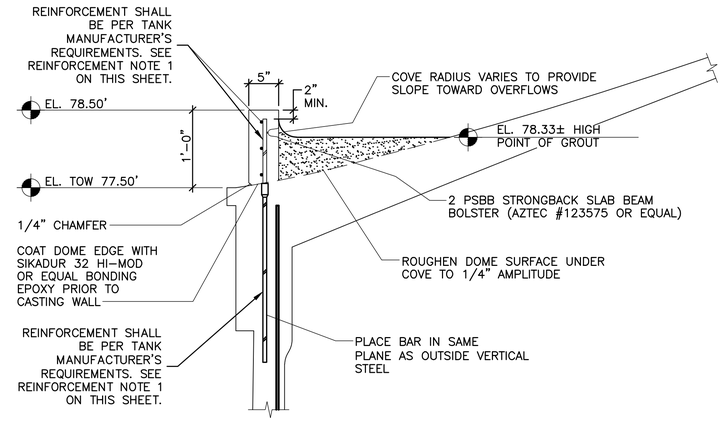


SECTION-ELEVATION
NTS

NOTES:
1. SHOTCRETE SHALL BE APPLIED BY OR UNDER DIRECT SUPERVISION OF NOZZLEMEN CERTIFIED BY THE AMERICAN CONCRETE INSTITUTE AS OUTLINED IN ACI CERTIFICATION PUBLICATION CP-60.
2. TENSION IN PRESTRESSING WIRE SHALL BE MEASURED BY AN ELECTRONIC DIRECT-READING STRESSOMETER ACCURATE TO WITHIN 2%.

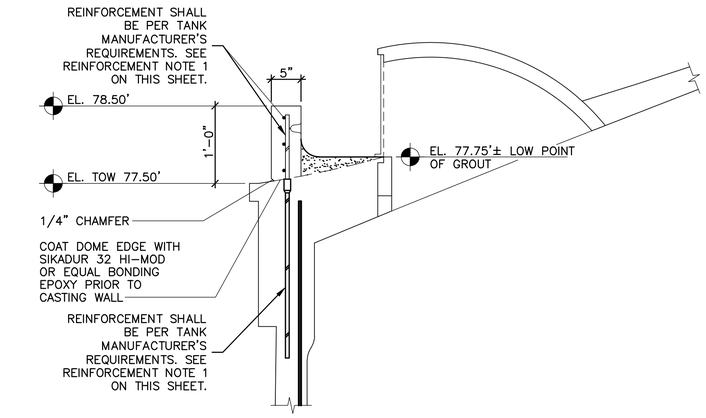


TYPICAL WALL SECTION
NTS



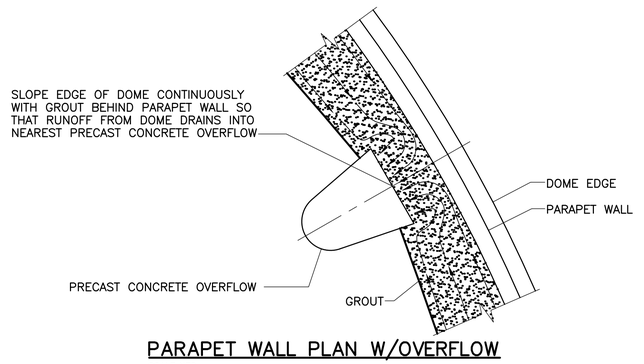
GROUT HIGH POINT

PARAPET WALL DETAIL
SCALE: 1" = 1'-0"

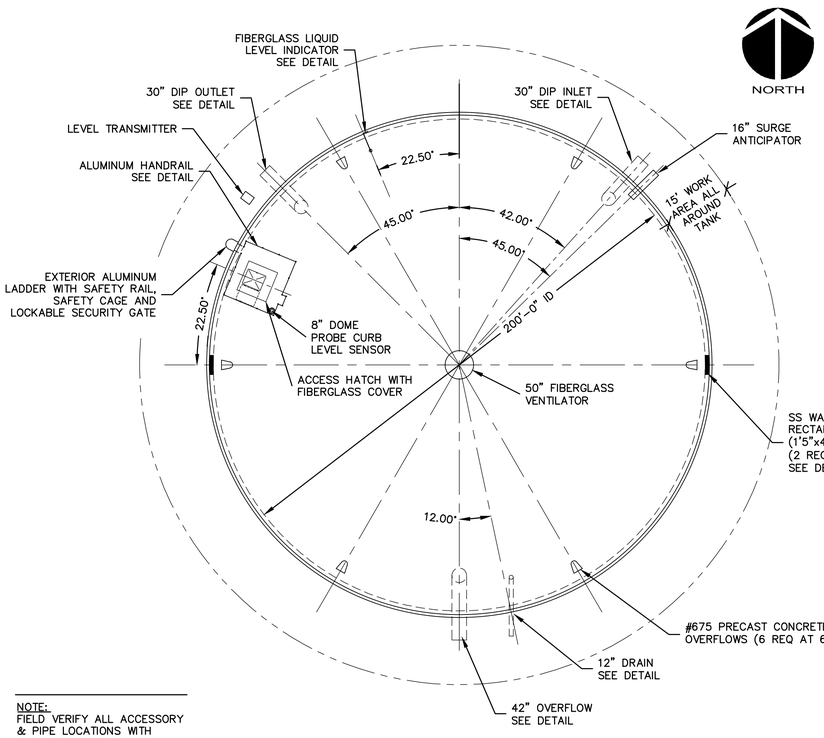


GROUT LOW POINT

PARAPET WALL DETAIL W/OVERFLOW
SCALE: 1" = 1'-0"



PARAPET WALL PLAN W/OVERFLOW
SCALE: NTS



PLAN
NTS

NOTE:
FIELD VERIFY ALL ACCESSORY & PIPE LOCATIONS WITH ENGINEER PRIOR TO PLACEMENT.

REINFORCEMENT NOTE:
1. THE INFORMATION PROVIDED ON THIS DRAWING IS FOR BIDDING PURPOSES ONLY. THE TANK MANUFACTURER SHALL SUBMIT COMPLETE DESIGN ANALYSES, WORKING DRAWINGS AND DETAILS OF THE STRUCTURE SIGNED AND SEALED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

SEAL

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1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PRESTRESSED CONCRETE TANK DETAILS 1 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
M-4.1

STATUS: ISSUE FOR BID
REVISION

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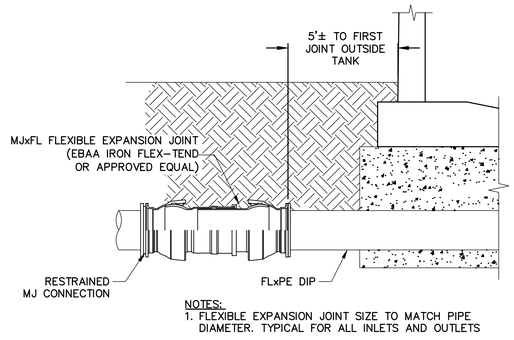
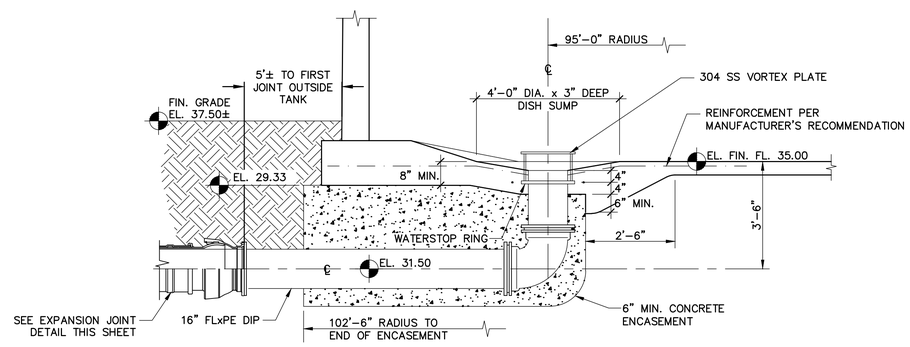
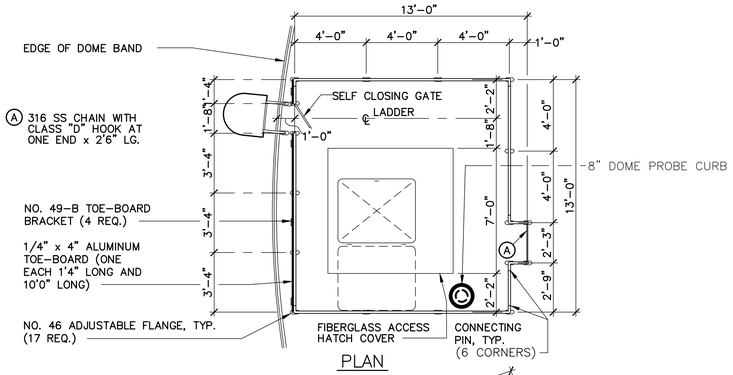


NOTES:
1. FLEXIBLE EXPANSION JOINT SIZE TO MATCH PIPE DIAMETER. TYPICAL FOR ALL INLETS AND OUTLETS

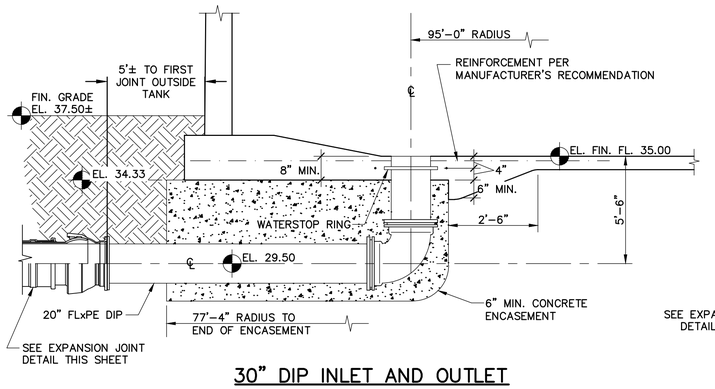
EXPANSION JOINT DETAIL
NTS



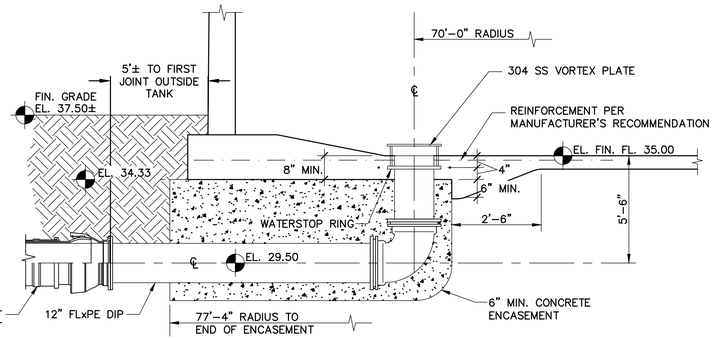
12" DIP DRAIN
NTS



PLAN



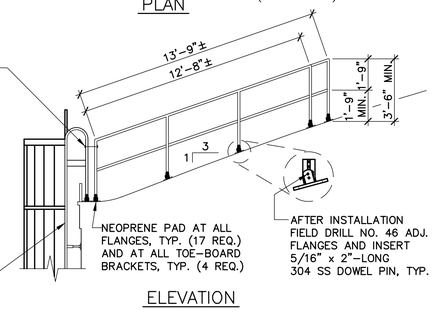
30" DIP INLET AND OUTLET
NTS



12" DIP OUTLET
NTS

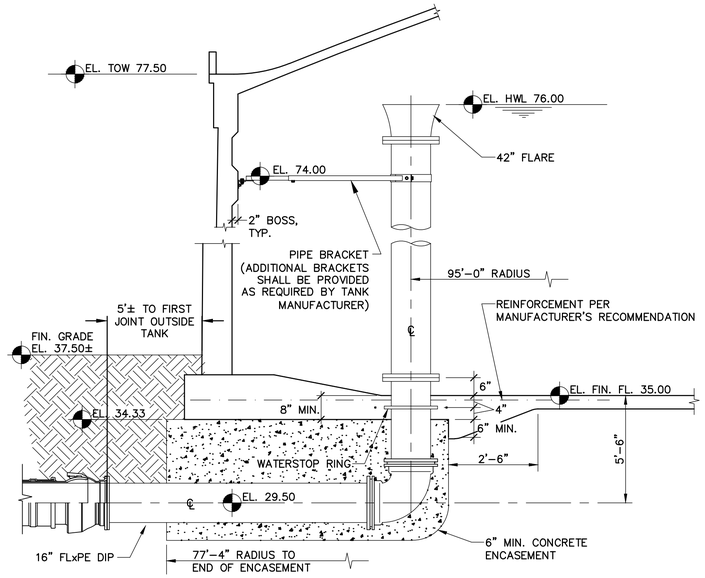
SS ALL-THREAD (2 REQ.) WITH SS HEX HEAD NUTS AND SS FLAT WASHERS. GRIND ALL-THREAD FLUSH W/NUTS. AS REQUIRED PER TANK MANUFACTURER

NOTES:
1. USE HOLLAENDER HIGH TENSILE ALUMINUM ALLOY FITTINGS
2. USE 1 1/2" SCHEDULE 40/6061-T6 ALUMINUM PIPE
3. TOE-BOARDS TO BE 6061-T6 ALUMINUM
4. USE SS EXPANSION ANCHORS

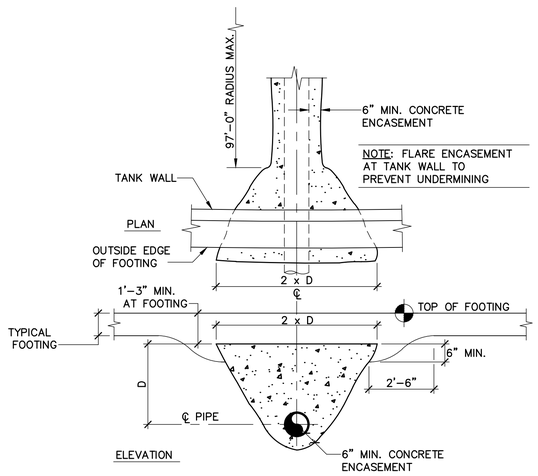


ELEVATION

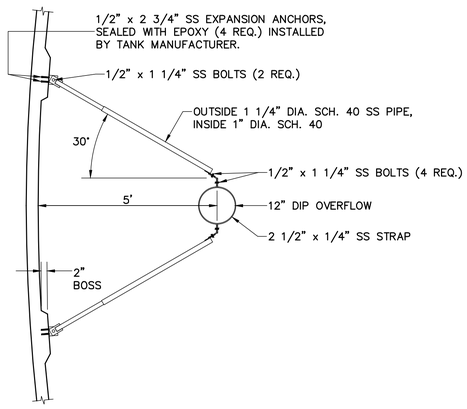
ALUMINUM HANDRAIL
NTS



42" DIP OVERFLOW
NTS



TYPICAL PIPE ENCASEMENT AT FOOTING
NTS



PIPE BRACKET
NTS

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

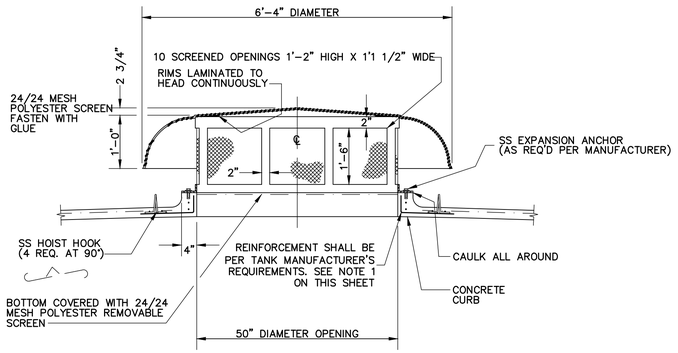
PRESTRESSED CONCRETE TANK DETAILS 2 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

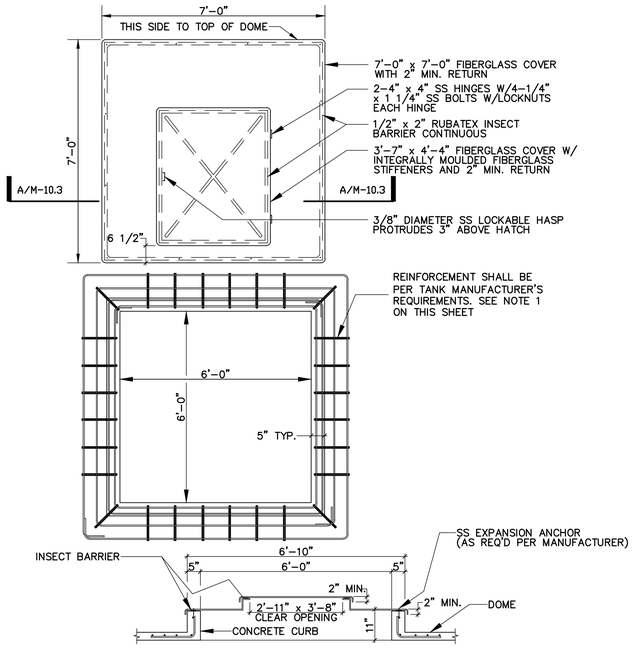
DRAWING NUMBER
M-4.2

STATUS: ISSUE FOR BID
REVISION



50" FIBERGLASS VENTILATOR

NTS

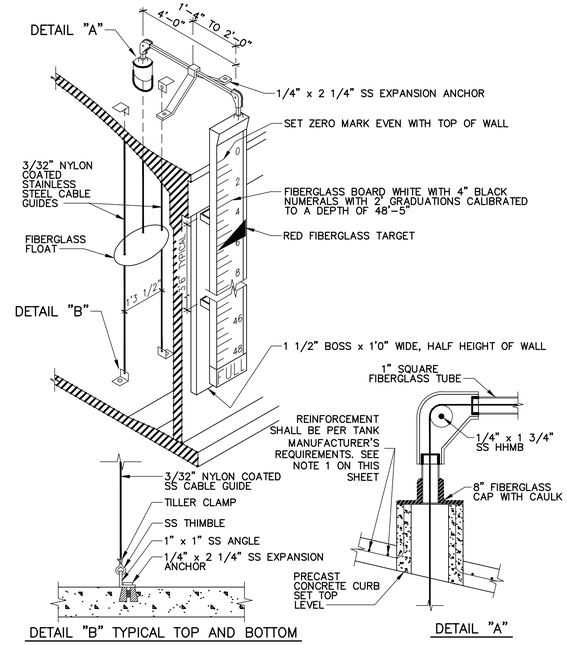


SECTION A/M-10.3

NTS

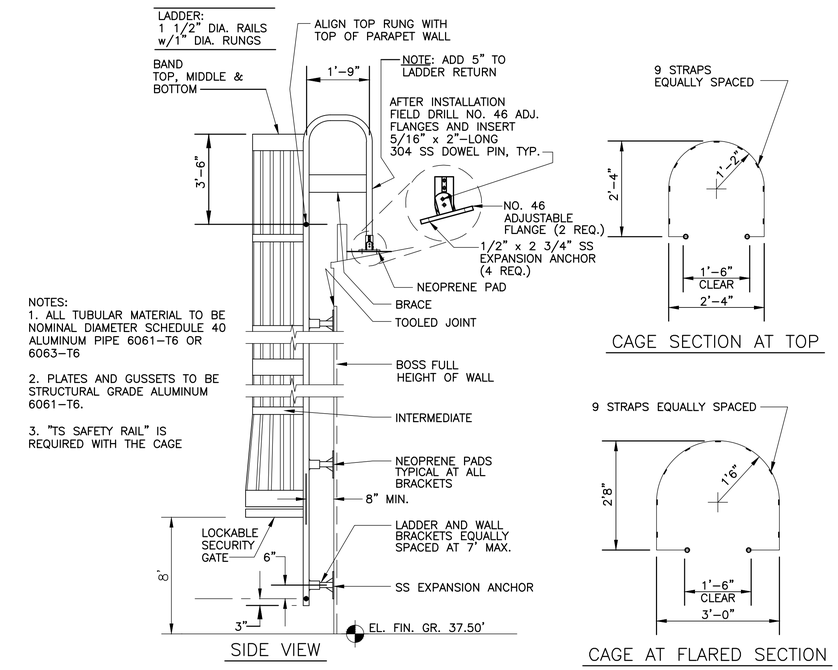
FIBERGLASS HATCH COVER

NTS



FIBERGLASS LIQUID LEVEL INDICATOR

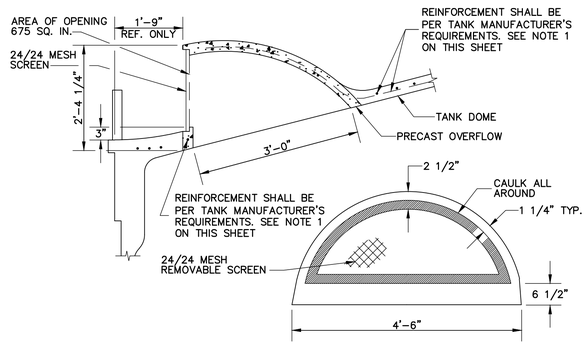
NTS



NOTES:
1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6 OR 6063-T6
2. PLATES AND GUSSETS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.
3. "TS SAFETY RAIL" IS REQUIRED WITH THE CAGE

EXTERIOR ALUMINUM LADDER WITH SAFETY RAIL, SAFETY CAGE AND LOCKABLE SECURITY GATE

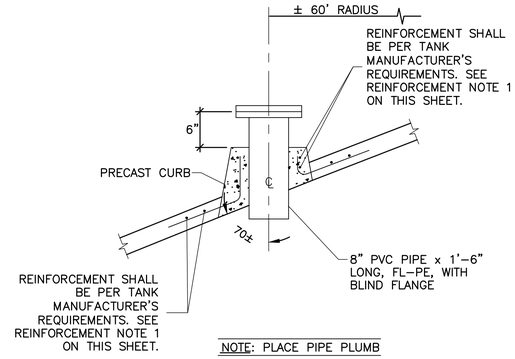
NTS



NOTE: KEEP SHOTCRETE REBOUND CLEANED OFF OF OVERFLOW. LEAVE PLYWOOD COVER IN PLACE UNTIL ALL SHOTCRETING IS COMPLETE.

#675 PRECAST CONCRETE OVERFLOW (6 REQ.)

NTS



NOTE: PLACE PIPE PLUMB

8" DOME PROBE CURB

SCALE:NTS

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

PRESTRESSED CONCRETE TANK DETAILS 3 OF 3

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
M-4.3

STATUS: ISSUE FOR BID
REVISION

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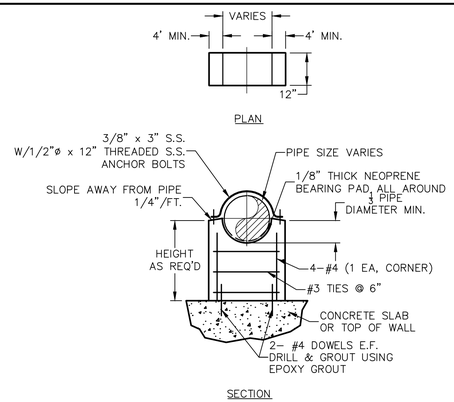
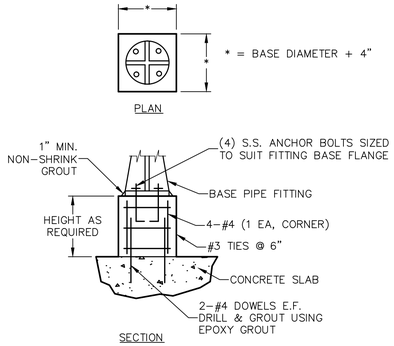


PIPE SUPPORT TYPE 1

NOT TO SCALE



PIPE SUPPORT TYPE 2

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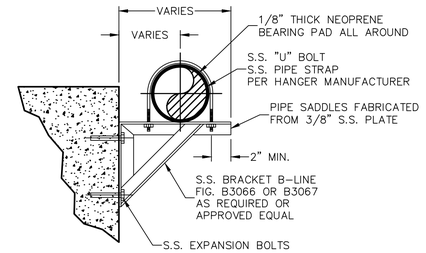
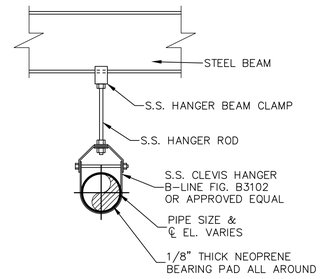


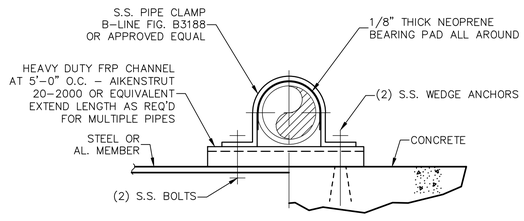
PIPE SUPPORT TYPE 3

NOT TO SCALE



PIPE SUPPORT TYPE 4

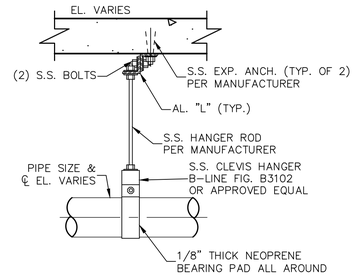
NOT TO SCALE



NOTE:
USE THIS DETAIL FOR SMALL DIA. PIPING OR CONDUIT ATTACHED TO CONCRETE SLAB, WALL, CEILING, METAL FRAMING MEMBERS OR EQUIPMENT MOUNTING BOARDS.

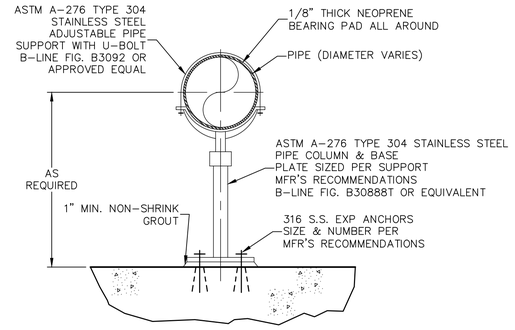
PIPE SUPPORT TYPE 5

NOT TO SCALE



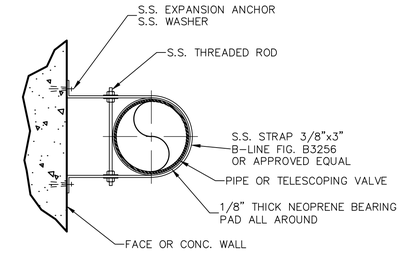
PIPE SUPPORT TYPE 6

NOT TO SCALE



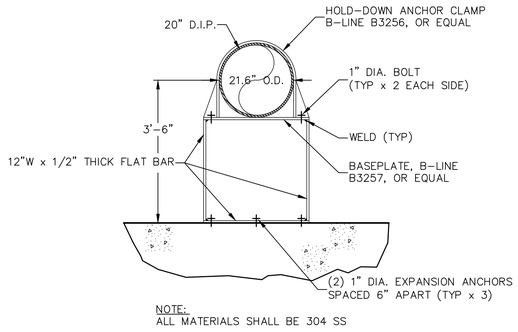
PIPE SUPPORT TYPE 7

NOT TO SCALE



PIPE STAND-OFF BRACKET TYPE 8

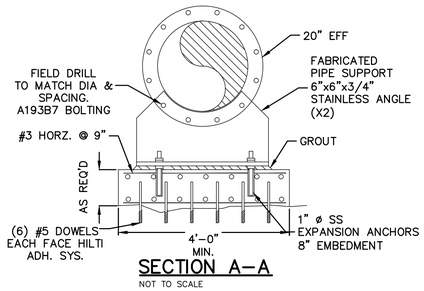
NOT TO SCALE



NOTE:
ALL MATERIALS SHALL BE 304 SS

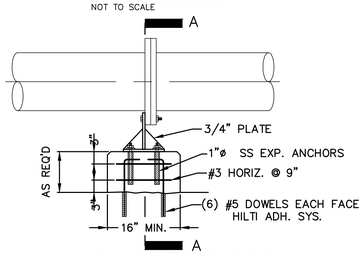
PIPE SUPPORT TYPE 9

NOT TO SCALE



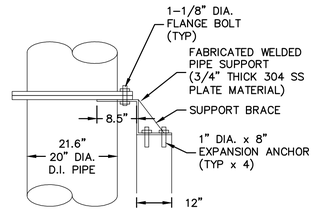
SECTION A-A

NOT TO SCALE



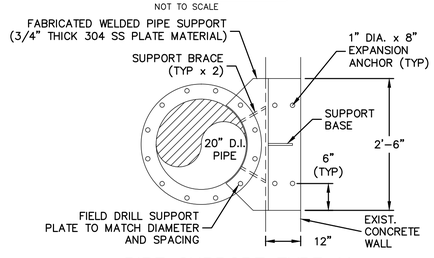
PIPE SUPPORT TYPE 10

NOT TO SCALE



SECTION B-B

NOT TO SCALE



PIPE SUPPORT TYPE 11

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

MATTHEW S. LOVE, P.E.
No. 66118

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK
AND INTERCONNECTION

MECHANICAL DETAILS 1 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
M-9.1

STATUS: ISSUE FOR BID
REVISION

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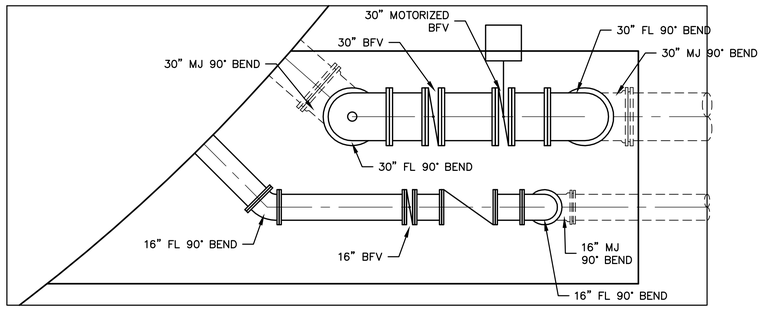
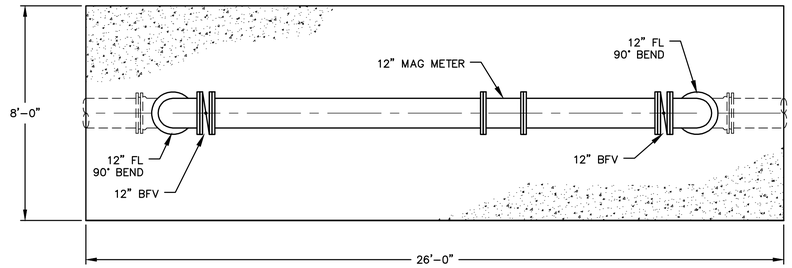
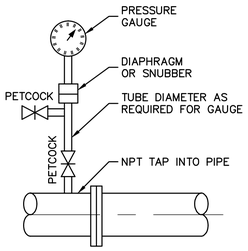
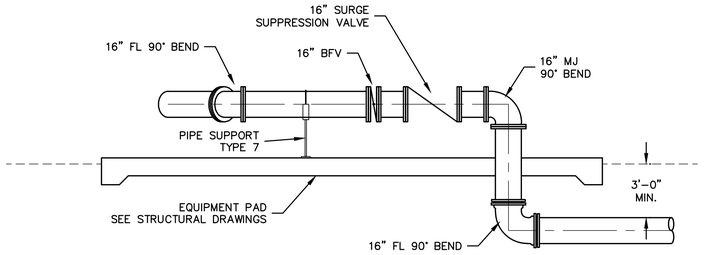
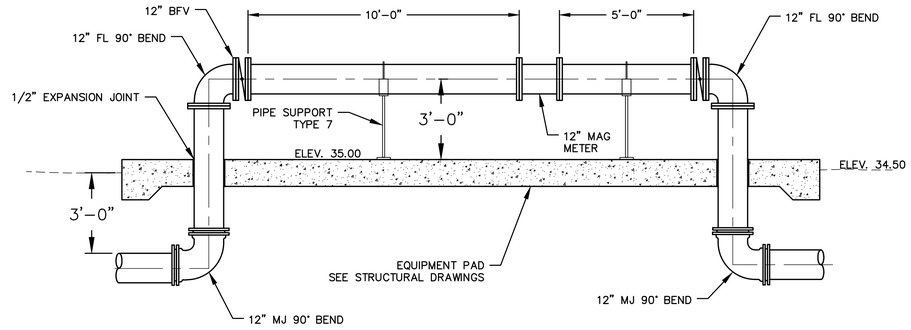


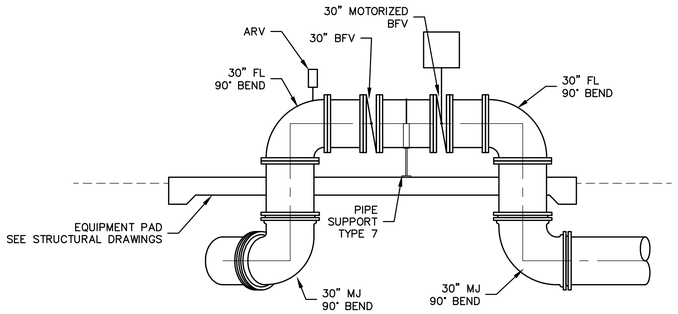




TYPICAL PRESSURE GAUGE INSTALLATION
NTS







TANK FILL VALVE STATION
NTS

12" METER ASSEMBLY
SCALE: 3/8" = 1'-0"

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 66118

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

MECHANICAL DETAILS 2 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	BFN
DESIGNED	MSL
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
M-9.2

STATUS: ISSUE FOR BID
REVISION

FUNCTION SYMBOL SCHEDULE

	FIRST LETTER		SUCCEEDING–LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	Analysis		Alarm		
B	Burner, Combustion		Programmer		
C	Conductivity (Electrical)			Control	Closed
D	Density or Specific Gravity	Differential			
E	Voltage		Sensor (Primary Element)	Eduction	
F	Flow Rate	Ratio (Fraction)			
G	Gaging		Glass, Viewing Device		
H	Hand				High
I	Current (Electrical)		Indicate		
J	Power	Scan			
K	Time, Time Schedule			Control Station	
L	Level		Light (Pilot)		Low
M	Motor				Middle, Intermediate
N	Vibration				
O	Operation	Offset	Orifice, Restriction		Open
P	Pressure, Vacuum		Point (Test) Connection		
Q	Quantity, Event	Integrate, Totalize	Integrate		
R	Radiation		Record, Print	Regulate	
S	Speed, Frequency	Safety		Switch	
T	Temperature			Transmit	
U	Multivariable	Trend	Multifunction	Multifunction	Multifunction
V	Viscosity	Vacuum		Valve, Damper, Louver, Gate	
W	Weight, Force, Torque		Well		
X	Unclassified		Unclassified	Unclassified	Unclassified
Y				Relay, Compute, Convert	
Z	Position			Final Control Element	Drive, Actuator, Unclassified Final Control Element

BASIC SYMBOLS

MULTIPLE FUNCTION

- OR — FIELD MOUNTED INSTRUMENT OR DEVICE
- OR — FRONT OF PANEL MOUNTED INSTRUMENT ON UCP OR MCC, VFD
- OR — REAR OF PANEL MOUNTED INSTRUMENT ON UCP OR MCC, VFD
- OR — FRONT OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
- OR — REAR OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
- OR — PLC AND/OR COMPUTER SOFTWARE COMPONENT (OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS)
- OR — PLC AND/OR COMPUTER GENERATED COMPONENT (NOT OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS)
- OR — PLC INPUT/OUTPUT

LINE CODES

- INSTRUMENT SIGNAL
- ELECTRICAL SIGNAL
- DATA LINK
- PNEUMATIC
- CAPILLARY
- SONIC OR R.F.
- HYDRAULIC
- TELEPHONE
- NO ELECTRICAL CONNECTION
- ELECTRICAL CONNECTIONS (INDICATED BY DOTS)
- HEAT TRACED PROCESS
- LINE OR EQUIPMENT
- MATCHLINE
- PROCESS LINE OR ELECTRICAL SIGNAL CONTINUATION TO/FROM SHEET NUMBER INDICATED (SHEET)
- CONTINUATION ON SAME SHEET
- CONTINUATION ON FACILITIES NOT SHOWN ON DRAWINGS

VALVES, PUMPS & METERS

- FLAME ARRESTOR
- PINCH VALVE
- GATE
- NEEDLE
- BUTTERFLY
- BALL OR ROTARY
- GLOBE
- PLUG OR COCK
- DIAPHRAGM
- CHECK
- DIAPHRAGM CHECK
- CONTROL VALVE POSITIONER
- PRESSURE REGULATING VALVE
- BACKPRESSURE REGULATING VALVE
- PISTON OPERATED S=SOLENOID OPERATED M=MOTOR OPERATED P=PNEUMATIC OPERATED
- DRAIN
- Y=WEIR GATE T=SLIDE SLUICE GATE I =STOP LOG
- BLIND FLANGE
- PULSATION DAMPENER
- PRESSURE RELIEF OR SAFETY
- 3–WAY
- 4–WAY
- TELESCOPING
- REDUCER
- HOSE CONNECTION
- WAFER/CHECK VALVE
- UNION

VALVES, PUMPS & METERS (CONT'D)

- FLOAT SWITCH OR FLOAT
- (ARV) AIR RELEASE VALVE (ARVV) AIR VACUUM RELEASE VALVE
- ELECTRIC MOTOR
- ORIFICE/ANNUBAR
- VORTEX SHEDDING METER
- POSITIVE DISPLACEMENT METER
- CAPACITANCE METER (LE)
- REGULATOR/FILTER
- SUBMERSIBLE PUMP
- MAGNETIC METER (INLINE/INSERT) (MAG)
- ULTRASONIC METER (LE)
- VENTURI OR FLOW TUBE
- PROPELLER OR TURBINE METER
- DOPPLER OR TRANSIT TIME FLOW METER
- ROTAMETER (FI)
- PROGRESSIVE CAVITY PUMP (M)
- CENTRIFUGAL PUMP
- VERTICAL TURBINE PUMP
- WELL PUMP (M)
- POSITIVE DISPLACEMENT PUMP
- DIAPHRAGM OR METERING PUMP (M)
- EDUCTOR
- STRAINER
- DIAPHRAGM ISOLATOR
- HORN (H)
- GRADUATED MEASURING CYLINDER
- LATERAL WYE
- RUPTURE DISK
- RESTRAINED FLEX CONN.
- FLEX CONN.
- FILTER AIR/WATER
- CENTRIFUGAL BLOWER
- POSITIVE DISPLACEMENT BLOWER
- MIXER
- SUBMERSIBLE AERATOR/MIXER (ELECTRIC MOTOR DRIVEN)

MISCELLANEOUS SYMBOLS

- PURGE CONNECTION (P)
- SAMPLE POINT (S)
- INTERLOCK (I)
- MULTIPLY (X)
- DIVIDE (÷)
- HIGH SELECT (>)
- LOW SELECT (<)
- SQUARE ROOT
- SUM (ALGEBRAIC) (Σ)
- SPECIAL FUNCTION (f)
- R+B RATIO PLUS BIAS
- dL/dt RATE OF RISE (LEVEL)

EQUIPMENT NOTATION

- B = BLOWER OR FAN
- E = ENGINE
- G = GENERATOR
- F = FILTER
- GS = GRINDER/SCREEN
- K = COMPRESSOR
- H = HOIST
- ME = MECHANICAL EQUIPMENT
- MX = MIXER
- P = PUMP
- R = HEAT EXCHANGER
- T = TANK OR SUMP

VALVE DESIGNATIONS

- HV = HAND VALVE
- FCV = FLOW CONTROL VALVE
- PRV = PRESSURE REGULATING VALVE
- LCV = LEVEL CONTROL VALVE
- FV = FLOW VALVE (NON–MODULATING)
- MV = MUD VALVE
- TV = TELESCOPING VALVE
- CV = CHECK VALVE
- MOV = MOTOR OPERATED VALVE

INSTRUMENT TAG NOTATION

FIC 0 1 01 A

- A — INSTRUMENT QUANTITY SUFFIX
- 01 — INSTRUMENT NUMBER
- 1 — PROCESS AREA
- 0 — PLANT AREA
- FIC — ISA INSTRUMENT FUNCTION

VALVE OPERATION NOTATION

- EFC = ELECTRIC FAIL CLOSE
- AFC = AIR FAIL CLOSE
- EFO = ELECTRIC FAIL OPEN
- AFO = AIR FAIL OPEN
- AFS = AIR FAIL STATIC
- EFS = ELECTRIC FAIL STATIC

CONTROLLER NOTATION

- PV = PROCESS VARIABLE INPUT
- SP = SET POINT INPUT
- C = CONTROL OUTPUT

(MODULATING)

PLC NOTATIONS

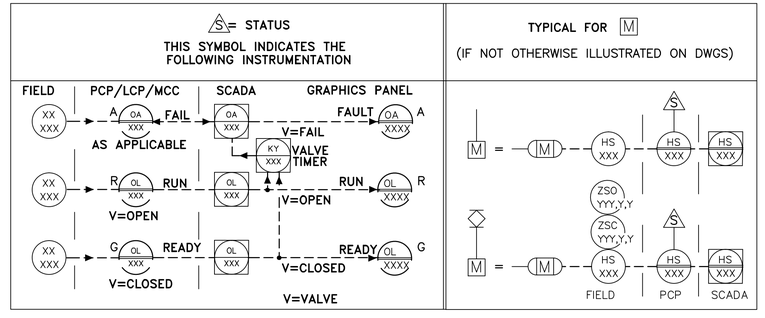
- AI = ANALOG INPUT
- AO = ANALOG OUTPUT
- DI = DISCRETE INPUT
- DO = DISCRETE OUTPUT
- D/A = DISCRETE TO ANALOG CONVERTOR
- SSDC = SURGE SUPPRESSION DEVICE

HAND SWITCH NOTATION

- HOA = HAND–OFF–AUTO
- S/S = START/STOP
- SEL = SELECTOR
- O/C = OPEN/CLOSE
- O/O = ON/OFF
- LOS = LOCKOUT–START
- D/S = DUTY/STANDBY
- FOS = FAST–OFF–SLOW
- OAC = OPEN–AUTO–CLOSE
- OOCA = OPEN–OFF–CLOSE–AUTO
- ROF = REVERSE–OFF–FORWARD
- ROL = RAISE–OFF–LOWER
- F/R = FORWARD/REVERSE
- HOR = HAND–OFF–REMOTE
- LOR = LOCAL–OFF–REMOTE
- SAR = SILENCE–AUTO–RESET

MISCELLANEOUS NOTATIONS

- S/D = SHUTDOWN
- O/R = OVERRIDE
- MCC = MOTOR CONTROL CENTER
- VFD = VARIABLE FREQUENCY DRIVE
- UCP = UNIT CONTROL PANEL
- LCP = LOCAL CONTROL PANEL
- MCP = MASTER CONTROL PANEL
- ES = ELECTRICAL SUPPLY
- IS = INLET SILENCER
- DS = DISCHARGE SILENCER
- SEQ = SEQUENCER/ALTERNATOR
- SA = SURGE ARRESTOR
- DO = DISSOLVED OXYGEN
- ETM = ELAPSED TIME METER
- TURB = TURBIDITY
- US = ULTRASONIC



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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

INSTRUMENTATION & CONTROL SYSTEM GENERAL NOTES, LEGENDS, AND ABBREVIATIONS

DATE:	APRIL 2014
MCE PROJ. #	1024–0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

DRAWING NUMBER
N/A
I-0.1

STATUS: ISSUE FOR BID
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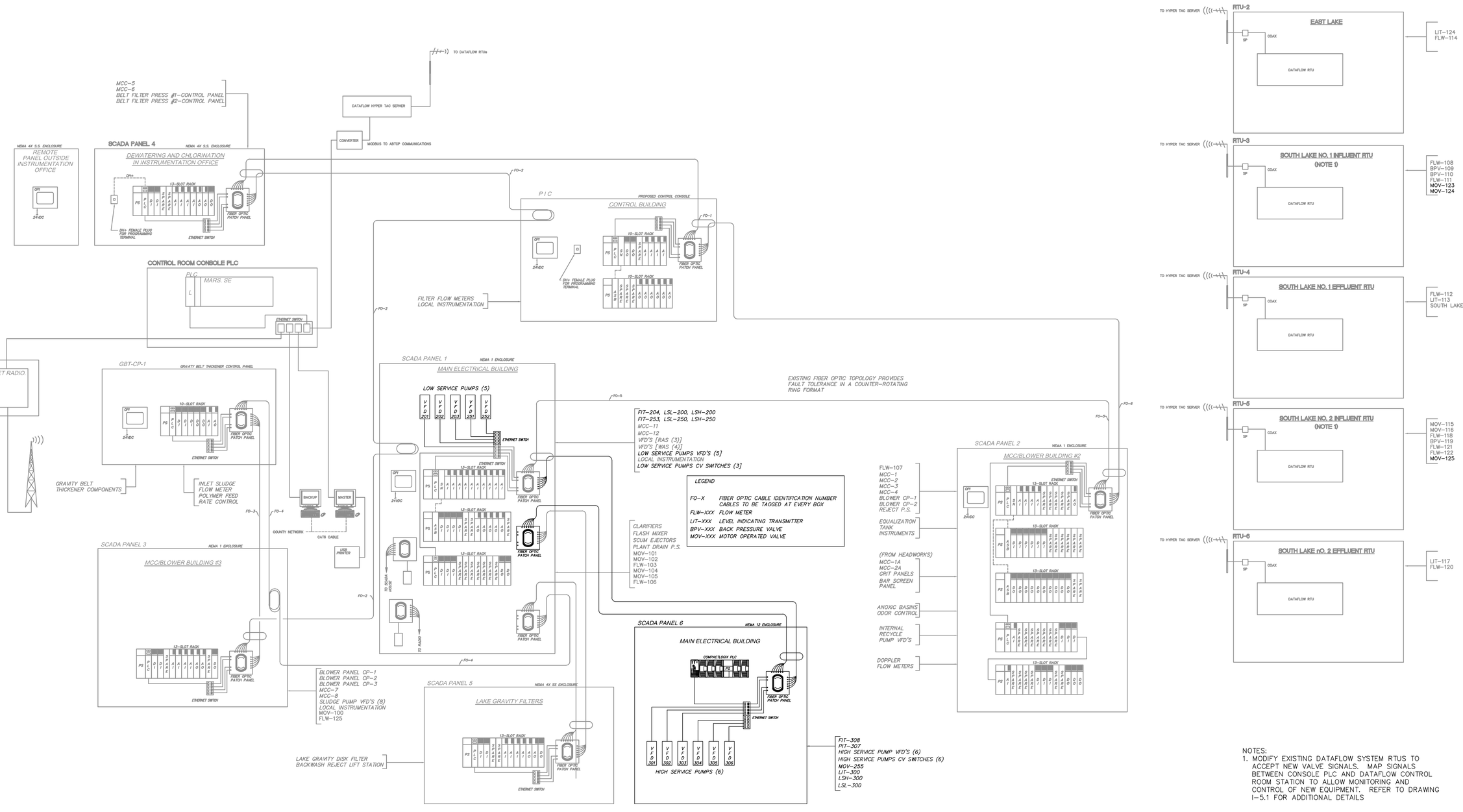

NOTES:
1. MODIFY EXISTING DATAFLOW SYSTEM RTUS TO ACCEPT NEW VALVE SIGNALS. MAP SIGNALS BETWEEN CONSOLE PLC AND DATAFLOW CONTROL ROOM STATION TO ALLOW MONITORING AND CONTROL OF NEW EQUIPMENT. REFER TO DRAWING I-5.1 FOR ADDITIONAL DETAILS

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

COMMUNICATIONS SYSTEM OVERVIEW

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MBE
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-0.2

STATUS: ISSUE FOR BID
REVISION

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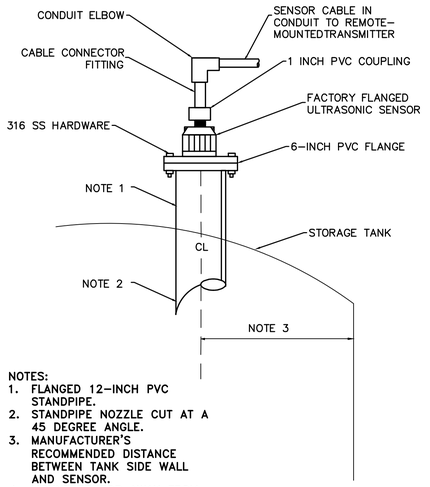
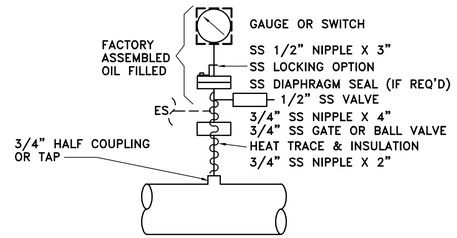
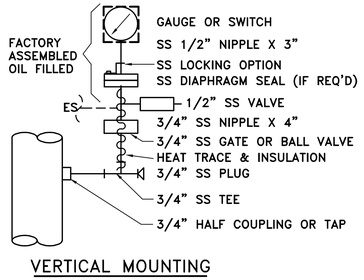


NOTES:
1. FLANGED 12–INCH PVC STANDPIPE.
2. STANDPIPE NOZZLE CUT AT A 45 DEGREE ANGLE.
3. MANUFACTURER'S RECOMMENDED DISTANCE BETWEEN TANK SIDE WALL AND SENSOR.
4. MOUNT SENSOR AWAY FROM TANK FILL LINE AND OTHER OBSTRUCTIONS.

ULTRASONIC SENSOR MOUNTING TANK INSTALLATION

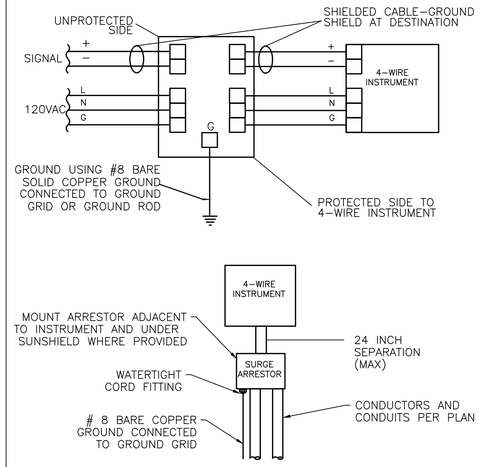


HORIZONTAL MOUNTING

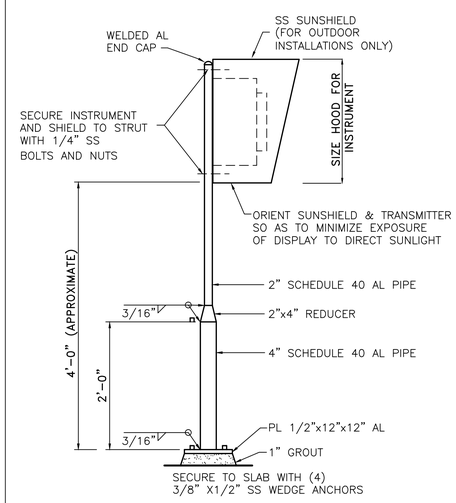


VERTICAL MOUNTING

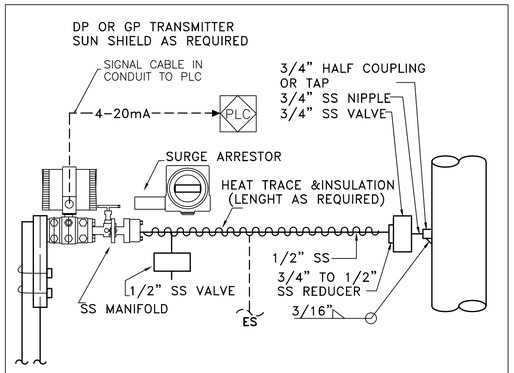
TYPICAL PRESSURE INDICATOR/ SWITCH PIPING DETAIL



4–WIRE INSTRUMENT SURGE ARRESTOR INSTALLATION



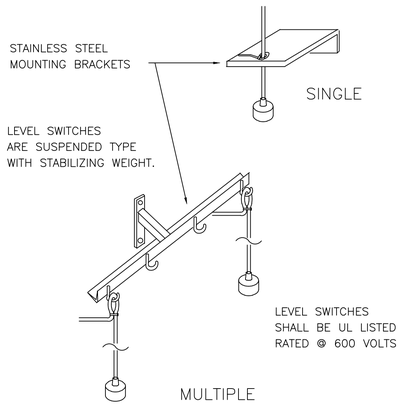
SINGLE INSTRUMENT STANCHION MOUNT DETAIL



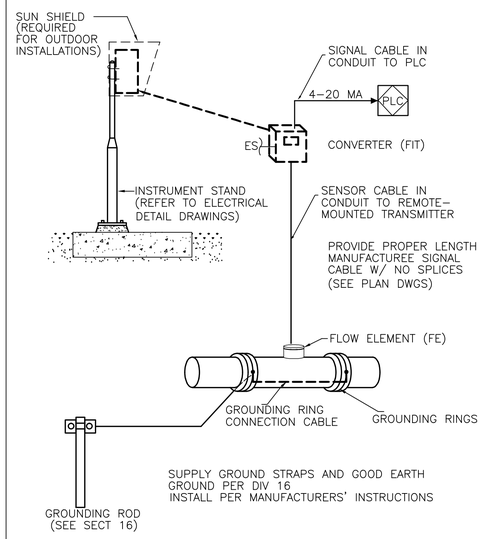
IF PIPING IS OVER 26' BETWEEN PIPE AND TRANSDUCER, USE 3/4" TUBING.

IF DP TRANSDUCER IS USED, VENT LOW PRESSURE CONNECTION TO ATMOSPHERE.

TYPICAL PRESSURE TRANSDUCER PIPING



TYPICAL LEVEL SWITCH MOUNTING DETAIL



TYPICAL MAGNETIC FLOWMETER INSTALLATION

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

INSTALLATION DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024–0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-0.3

STATUS: ISSUE FOR BID
REVISION

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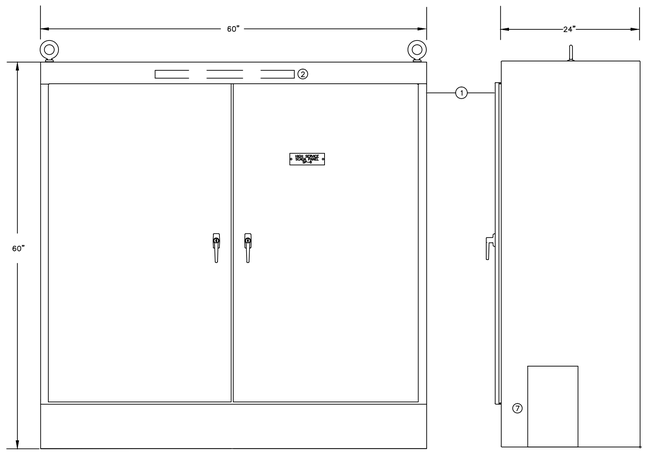

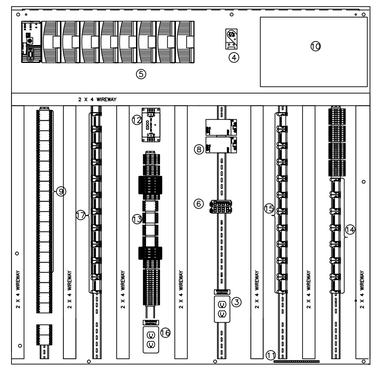

HIGH SERVICE SCADA PANEL (SP-6)

NOT TO SCALE

NOTES:

1. ENCLOSURE, NEMA 12, 60"H x 60"W X 24"D
2. FLUORESCENT LIGHT
3. UPS CONVENIENCE RECEPTACLE
4. TEMPERATURE SWITCH
5. PLC HARDWARE
6. ETHERNET NETWORK SWITCHES(SCADA SWITCH, WITH EXPANSION MODULE AS REQUIRED.
7. UPS
8. POWER SUPPLY, REDUNDANT, 24VDC
9. DC CONTROL RELAYS
10. FIBER OPTIC TERMINATION PATCH PANEL
11. GROUND CONNECTOR
12. AC LINE SURGE SUPPRESSOR
13. AC CONTROL RELAYS
14. SIGNAL ISOLATOR, 120VAC, 4-20MA IN/OUT
15. ANALOG SURGE SUPPRESSORS
16. CONVENIENCE RECEPTACLE
17. DISCRETE SURGE SUPPRESSORS

MISC. NOTES:

1. SUBPANEL TO BE POWDER EPOXY COATED WHITE.
2. PROVIDE HOUSEKEEPING PATH

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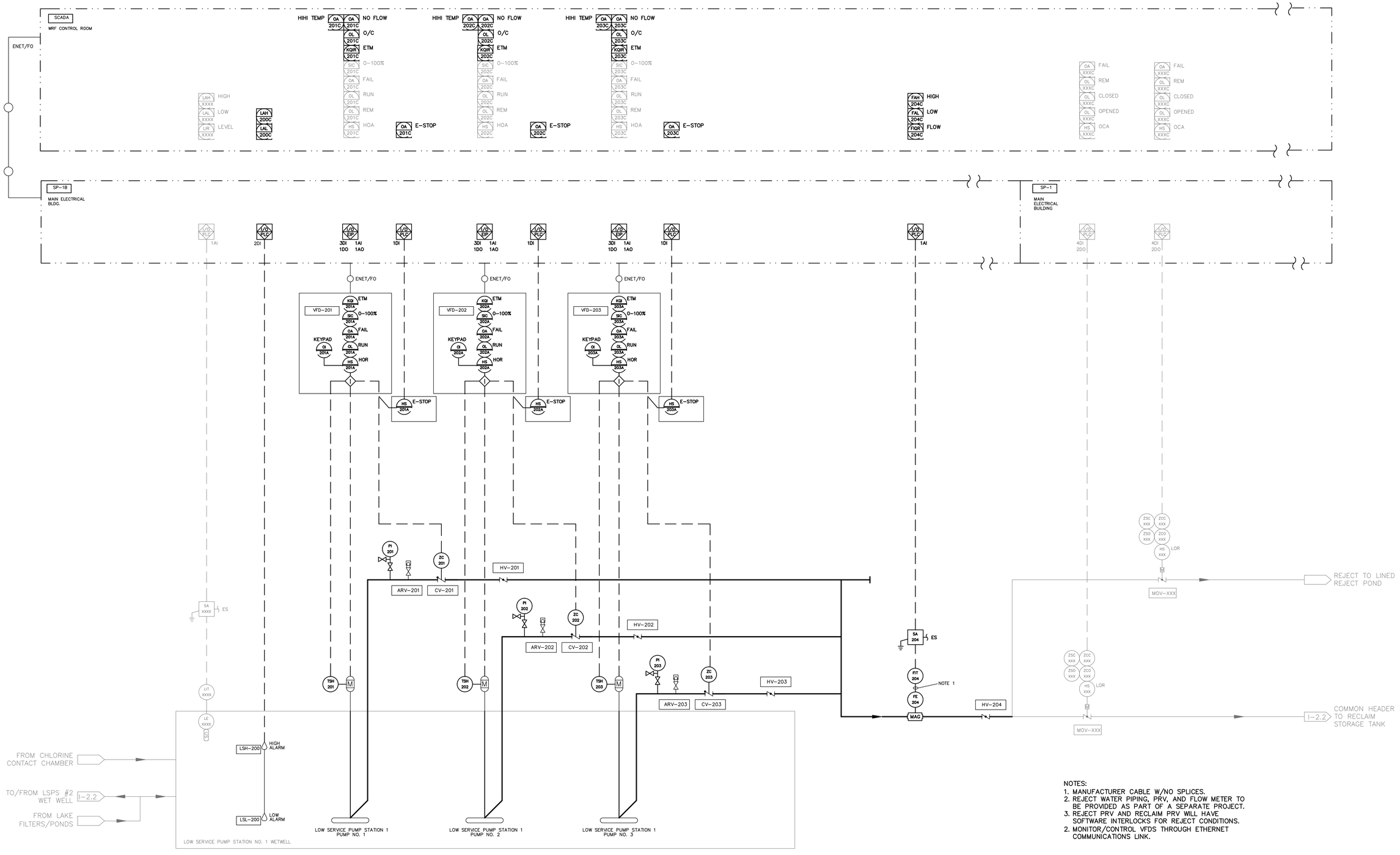
CONTROL PANEL DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSD
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-0.4

STATUS: ISSUE FOR BID
REVISION



NOTES:
1. MANUFACTURER CABLE W/NO SPLICES.
2. REJECT WATER PIPING, PRV, AND FLOW METER TO BE PROVIDED AS PART OF A SEPARATE PROJECT.
3. REJECT PRV AND RECLAIM PRV WILL HAVE SOFTWARE INTERLOCKS FOR REJECT CONDITIONS.
2. MONITOR/CONTROL VFDS THROUGH ETHERNET COMMUNICATIONS LINK.

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

LOW SERVICE PUMP STATION NO. 1

DATE:	APRIL 2014
MCE PROJ. #	1024–0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-2.1

STATUS: ISSUE FOR BID
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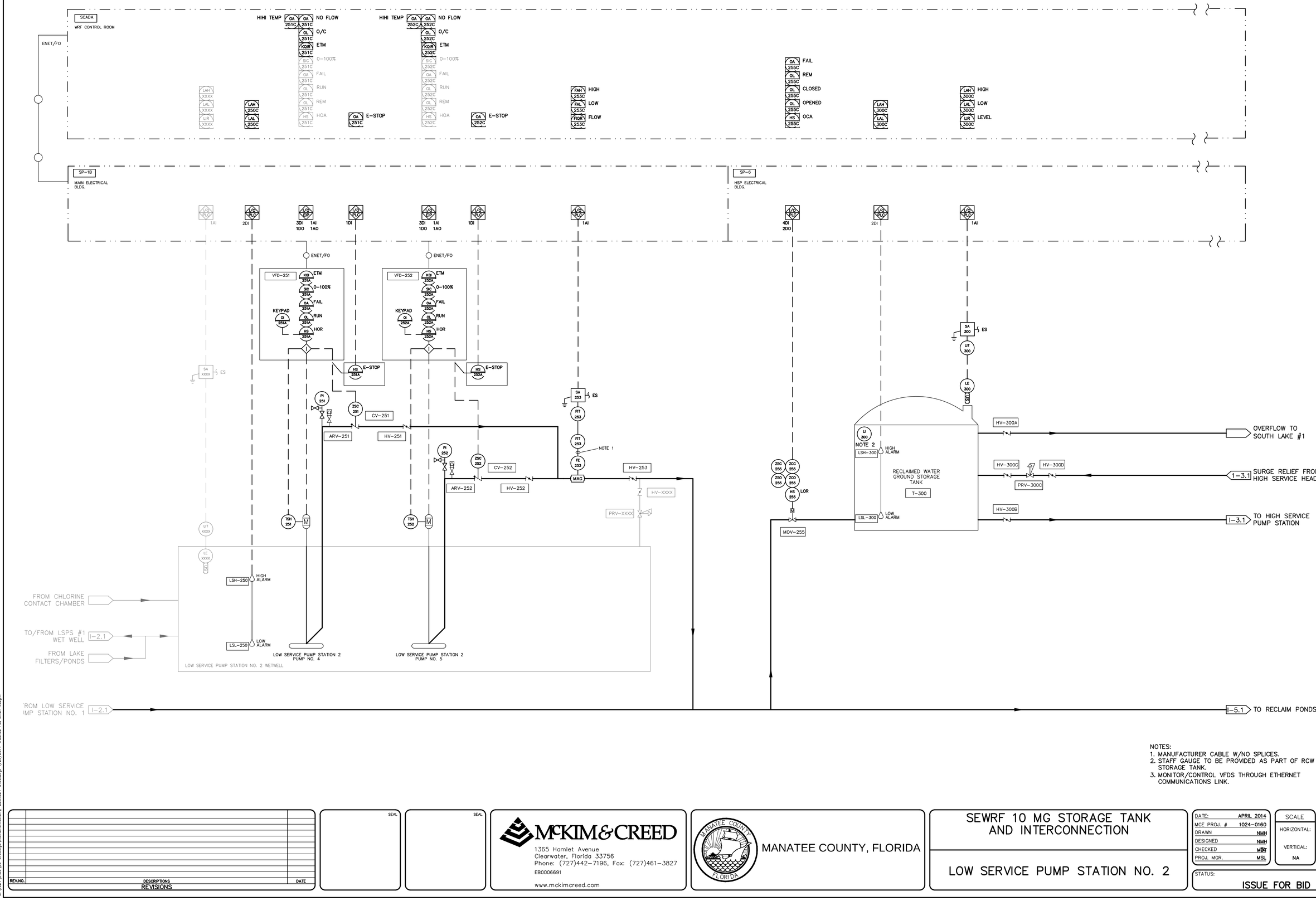

NOTES:
1. MANUFACTURER CABLE W/NO SPLICES.
2. STAFF GAUGE TO BE PROVIDED AS PART OF RCW STORAGE TANK.
3. MONITOR/CONTROL VFDS THROUGH ETHERNET COMMUNICATIONS LINK.

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

LOW SERVICE PUMP STATION NO. 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-2.2

STATUS: ISSUE FOR BID
REVISION

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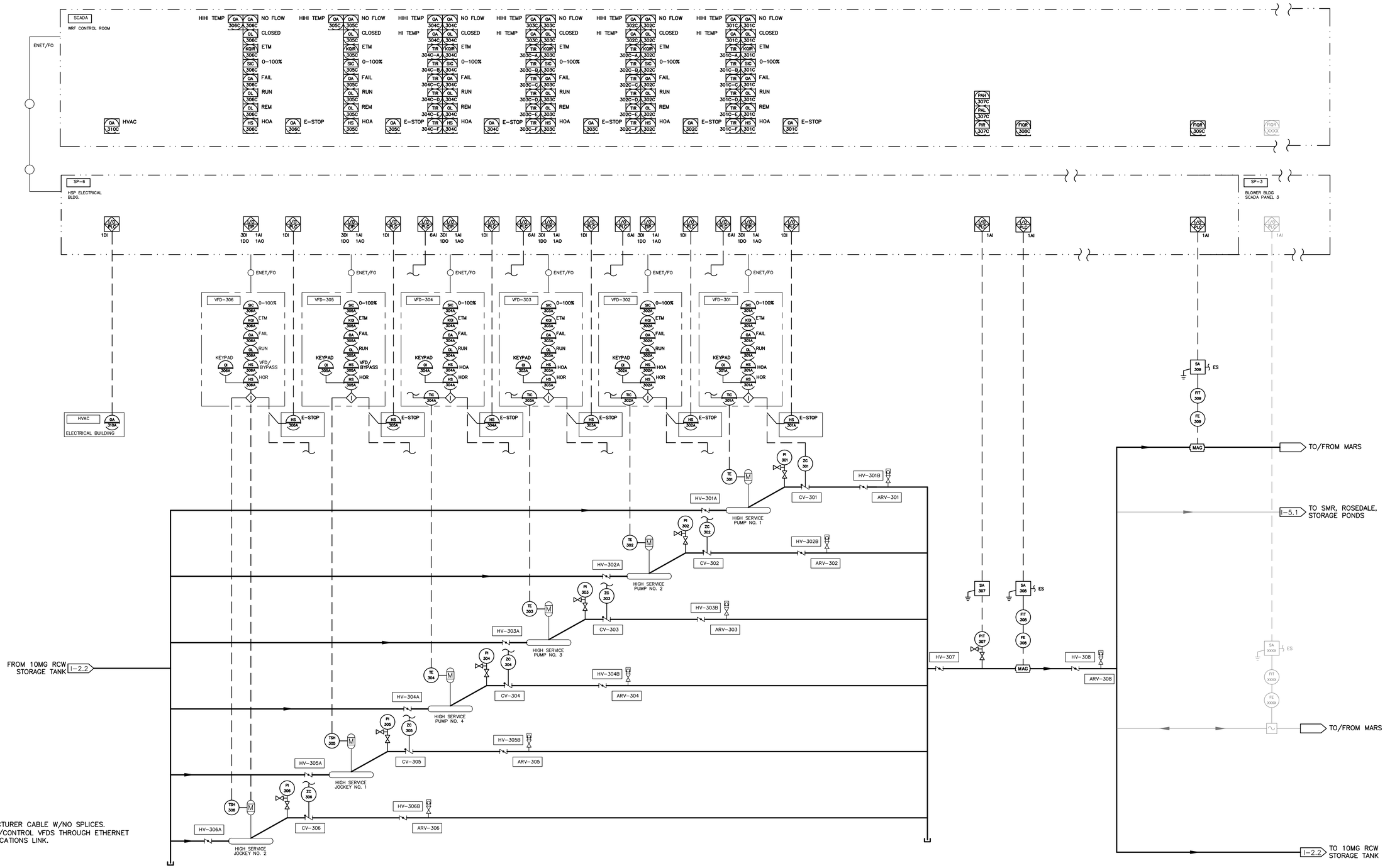

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HIGH SERVICE PUMP STATION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-3.1

STATUS: ISSUE FOR BID
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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

RECLAIM STORAGE PONDS, SMR AND ROSEDALE

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	NMH
DESIGNED	NMH
CHECKED	MSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL:
VERTICAL: NA

DRAWING NUMBER
I-5.1

STATUS: ISSUE FOR BID
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DEVICE SYMBOLS

- FS — FLOAT/FLOW SWITCH
- LS — LIMIT SWITCH
- PS — PRESSURE SWITCH
- T — THERMOSTAT
- PULL BOX, SIZE PER NEC
- JB — JUNCTION BOX, SIZE PER NEC
- E — ELECTRICAL EQUIPMENT CONNECTION
- GROUND ROD
- CONTROL STATION
- STOP–START STATION
- E–STOP
- LOCK–OUT–STOP SWITCH
- R — RED STOPPED LIGHT
- FUSE
- MOTOR OL RELAY
- HEATER
- CLASS 1/DIVISION I/II CONDUIT SEAL–OFF FITTING LOCATED AT LOCAL CONTROL PANEL
- LOCATED AT FIELD DEVICE
- LOCATED AT MAIN CONTROL PANEL
- MOUNTED ON DOOR
- 0A / 0F — THERMAL MAG BREAKER. TOP NUMBER –DENOTES TRIP SIZE . BOTTOM NUMBER DENOTES FRAME SIZE.
- CIRCUIT BREAKER
- A — AMMETER
- AS — AMMETER SWITCH
- V — VOLTMETER
- VS — VOLTMETER SWITCH
- HP — MOTOR (HP=RATED HORSEPOWER)
- VACUUM STARTER
- 52 — ANSI/IEEE TYPE–52 AC POWER CIRCUIT BREAKER
- INDUSTRIAL BATTERY SET W/MOUNTING RACK
- PM — POWER MONITOR
- 27 — UNDER VOLTAGE
- 46 — PHASE UNBALANCE
- 48 — INCOMPLETE SEQUENCE
- 49 — OVER TEMPERATURE
- 51 — TIMED OVERCURRENT
- 51G — TIMED GROUND FAULT
- 74 — ALARM RELAY
- 81 — FREQUENCY
- 86 — LOCK OUT
- 87 — DIFFERENTIAL
- E110 — DUCTBANK CALLOUT
- 042000 — CONDUIT OR CABLE NUMBER

GENERAL ELECTRICAL SYMBOLS

- LP–3 — CONDUIT HOMERUN TO EQUIPMENT SHOWN. LINE TYPE DESIGNATES CONCEALED, EXPOSED, ETC. NUMBERS/TEXT DESIGNATE HOMERUN EQUIPMENT (I.E. PANEL BOARD CIRCUIT NUMBER).
- GENERAL CONDUIT RUN EXPOSED
- CONCEALED CONDUIT IN FLOOR SLAB, UNDERGROUND, ETC.
- EXISTING CABLE OR CONDUIT
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP
- E — SITE ELECTRICAL
- E — EXISTING SITE ELECTRICAL
- T — SITE TELEPHONE
- T — EXISTING SITE TELEPHONE
- OHE — OVERHEAD ELECTRICAL UTILITY
- OHT — OVERHEAD TELEPHONE UTILITY
- UGE — UNDERGROUND ELECTRICAL UTILITY
- UGT — UNDERGROUND TELEPHONE UTILITY
- G — SITE GROUND
- G — EXISTING SITE GROUND
- ELECTRICAL INTERLOCK
- ELECTRICAL BUSS
- ELECTRICAL BUSS DUCT
- 100/200 4X — DISCONNECT SWITCH. TOP NUMBER DENOTES FUSE SIZE (NF=NON–FUSED). BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING.
- 0A/0F CB 3R — CIRCUIT BREAKER. TOP NUMBER DENOTES TRIP. BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING.
- 2 — 0A/0F 3R — COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH OR MOTOR CIRCUIT PROTECTOR. LEFT NUMBER DENOTES NEMA STARTER SIZE. TOP NUMBER DENOTES FUSE SIZE OR MCP. BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE.
- 3 FVNR — FULL VOLTAGE NON–REVERSING MOTOR STARTER. LEFT NUMBER DENOTES NEMA STARTER SIZE.
- RVSS — REDUCED VOLTAGE SOLID–STATE MOTOR STARTER.
- VFD — VARIABLE FREQUENCY MOTOR CONTROLLER.
- a $ 4 — LIGHTING CONTROL SWITCH: {LOWERCASE LETTER} – CONTROL SWITCHING
  - M – MOTOR RATED SWITCH
  - D – DIMMER CONTROL
  - OS – OCCUPANCY SENSOR
  - 3 – THREE–WAY SWITCHING
  - 4 – FOUR–WAY SWITCHING

OUTLETS: NUMBER DENOTES PANEL BOARD CIRCUIT FOR POWER OUTLETS. IF SHOWN, LOWERCASE LETTER DENOTES CONTROL SWITCHING FOR POWER OUTLETS.

- SIMPLEX RECEPTACLE.
- DUPLEX RECEPTACLE.
- QUADRAPLEX RECEPTACLE.
- VOICE (PHONE) OUTLET.
- DATA OUTLET.
- VOICE/DATA COMBINATION OUTLET.

LIGHTING SYMBOLS

- PP–C/1 B1:a — LIGHT FIXTURES (VARIOUS TYPES) – UPPERCASE LETTER DENOTES FIXTURE TYPE, REFER TO LIGHTING SCHEDULE OR NOTES. NUMBER DENOTES LIGHTING PANEL CIRCUIT. LOWERCASE LETTER DENOTES CONTROL SWITCH.
- PP–C/3 E2 — EMERGENCY LIGHT – BATTERY EQUIPPED, CIRCUIT AHEAD OF CONTROL SWITCHES. ADDITIONAL FIXTURE HEADS MAY BE SHOWN CONNECTED TO UNIT.
- PP–C/1 E3 — EMERGENCY EXIT LIGHT – BATTERY EQUIPPED.
- EXTERIOR POLE MOUNTED LIGHT
- PC — PHOTOELECTRIC CONTROL DEVICE
- LC — LIGHTING CONTACTOR

TYPICAL ABBREVIATIONS

A, AMP	AMPERE
AFD	ADJUSTABLE FREQUENCY DRIVE
AFG	ABOVE FINISHED GRADE
AIT	ANALYTICAL INDICATION TRANSMITTER
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CL	CHLORINE
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CR	CONTROL RELAY, CORROSION RESISTANT
CS	CONTROL SWITCH
CV	CONTROL VALVE
CT	CURRENT TRANSFORMER
CU	COPPER
EF	EXHAUST FAN
EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EPRF	EXPLOSION PROOF
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FVNR	FULL VOLTAGE NON–REVERSING STARTER
FLOUR	FLUORESCENT
FLR	FLOOR
FMC	FLEXIBLE METAL CONDUIT
FWE	FURNISHED WITH EQUIPMENT
GEN	GENERATOR
G, GND	GROUND
GFIC	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND–OFF–AUTO
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
Hz	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT (GALVANIZED)
INCAND	INCANDESCENT
JB	JUNCTION BOX
k	THOUSAND
kCMIL	THOUSAND CIRCULAR MILLS
kA	KILOVOLT AMPERE
kW	KILOWATTS
kWH	KILOWATT–HOURS
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
LIT	LEVEL INDICATION TRANSMITTER
LP	LIGHTING PANEL, LIGHT POLE
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED/MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
NEC	NATIONAL ELECTRIC CODE
N, NEU	NEUTRAL
NA	NOT APPLICABLE
NC	NORMALLY CLOSE
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSH–BUTTON
PCP	PUMP CONTROL PANEL
PF	POWER FACTOR
ϕ, PH	PHASE
PIT	PRESSURE INDICATION TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PP	POWER PANEL, POWER POLE
PT	POTENTIAL TRANSFORMER
PWR	POWER
RECEP	RECEPTACLE
RVSS	REDUCED VOLTAGE SOFT STARTER
REQ	REQUIRED
RM	ROOM
RMC	RIGID METAL CONDUIT (GALVANIZED)
RTU	REMOTE TELEMETRY UNIT
SCR	DC MOTOR DRIVE
SH	SHEET
SPEC	SPECIFICATION
SS	SELECTOR SWITCH
SST.	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCH GEAR
TEL	TELEPHONE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE, WATT
WH	WATT–HOUR
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES

1. REFERENCE ALL SPECIFICATIONS AND CONTRACT DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
2. THE GENERAL NOTES STATED ON THIS DRAWING ARE APPLICABLE TO ALL ELECTRICAL WORK UNLESS NOTED OTHERWISE.
3. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
4. THE ELECTRICAL INSTALLATION SHALL COMPLY THE REQUIREMENTS OF NECA–1 2006: (STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION).
5. THE SCHEDULING AND DURATION OF ANY SHUTDOWN OF ANY PLANT PROCESS FOR THE REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE COORDINATED IN ADVANCE WITH THE OWNER.
6. ALL SYMBOLS AND ABBREVIATION MAY NOT BE UTILIZED FOR THIS PROJECT.
7. ADDITIONAL SYMBOLS NOT SHOWN ON THIS DRAWING MAY BE SHOWN ELSEWHERE ON THE ELECTRICAL DRAWINGS.
8. ELECTRICAL DRAWINGS SHOW MAJOR CABLE AND CONDUIT REQUIREMENTS. REFERENCE EQUIPMENT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. ALL 480V ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM RATING OF 22K AIC.
10. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED SO THAT ALL CODE–REQUIRED AND MANUFACTURER–RECOMMENDED SERVICING CLEARANCES ARE MAINTAINED. INSTALLATIONS SHALL COMPLY WITH NEC 110–26 FOR CLEARANCE REQUIREMENTS.
11. ALL POWER AND CONTROL WIRING OR CABLES SHALL BE 600V RATED XHHW–2 STRANDED COPPER, UNLESS OTHERWISE NOTED ON DRAWINGS.
12. ALL AMPACITIES ARE BASED ON 75°C RATING. THE CONTRACTOR IS RESPONSIBLE FOR THE INCREASING OF CONDUCTOR SIZES AS NECESSARY TO MEET THE REQUIREMENTS OF NEC 110–14(C) WHERE TERMINATIONS ARE NOT LISTED AND LABELED FOR USE AT 75°C. THIS REQUIREMENT APPLIES TO TERMINATIONS IN BOTH NEW EQUIPMENT AND IN EXISTING EQUIPMENT TO WHICH TERMINATIONS ARE MADE AS PART OF THIS PROJECT.
13. NO SPLICES OR JUNCTIONS TO FEEDER CABLES SHALL BE MADE WITHOUT ENGINEERS APPROVAL.
14. ALL EXPOSED CONDUIT SHALL BE RIGID ALUMINUM.
15. ALL CONDUIT INSTALLED BELOW GRADE SHALL BE NON–REINFORCED CONCRETE DUCTBANK; REFERENCE DETAIL SHEETS.
16. ALL DUCTBANKS CROSSING ROADWAYS SHALL BE REINFORCED CONCRETE AND EXTEND 5–FEET FROM EDGE OF PAVEMENT. DUCTBANKS SHALL CROSS PROCESS PIPING AT 90° ANGLE WHERE POSSIBLE. REFERENCE DETAIL SHEETS.
17. ALL CONDUIT TRANSITIONS THROUGH FINISHED GRADE OR CONCRETE SHALL BE ALUMINUM WITH HEAVY WALL HEAT–SHRINKABLE TUBING 6" MIN. ABOVE AND BELOW TRANSITION.
18. ROUGH–IN CONDUIT AS REQUIRED FOR DIRECT CONNECTION TO EQUIPMENT AS SHOWN. PROVIDE FLEXIBLE CONNECTIONS TO ALL EQUIPMENT AND MAKE ALL CONNECTIONS COMPLETE AND IN ACCORDANCE WITH THE SPECIFICATIONS.
19. ALL CONDUIT SHALL RUN CONCEALED UNLESS OTHERWISE NOTED OR SHOWN. THE CONDUITS SHALL RUN PARALLEL TO LANDSCAPE AND STRUCTURAL FEATURES, AND THE BENDS AND TURNS SHALL BE MADE BY MEANS OF CONDUIT FITTINGS. MOST CONDUIT LAYOUTS ARE NOT AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROPOSE LOGICAL GROUPINGS, MARSHALLING AND ROUTING OF CONDUITS AND WIRING FOR APPROVAL BY ENGINEER PRIOR TO INSTALLATION.
20. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PULL BOXES, TERMINAL BOXES AND JUNCTION BOXES FOR INSTALLATION OF THE WIRING IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS THOUGH THE BOXES MAY NOT BE INDICATED ON THE DRAWINGS.
21. CONDUIT AND WIRING FOR LIGHTING, RECEPTACLES AND OTHER SINGLE PHASE POWERED DEVICES ARE GENERALLY NOT SHOWN BUT SHALL BE PROVIDED AS REQUIRED FOR PROPER SERVICE. MULTI–PHASE CIRCUITS SHALL BE PROVIDED WITH DEDICATED NEUTRAL CONDUCTORS.
22. ALL SPARE CONDUITS SHALL BE CAPPED OR PLUGGED AND SHALL INCLUDE 200# TEST POLYPROPYLENE PULL STRING.
23. STRUT–CHANNEL SHALL NOT BE BENT, DRILLED, CUT OR OTHERWISE MODIFIED TO PRODUCE FITTINGS, BRACES OR BRACKETS FOR CONDUIT AND EQUIPMENT SUPPORTS.
24. MANUFACTURED STRUT–CHANNEL BRACES, BRACKETS, FITTINGS OR POST BASES SHALL BE PROVIDED AND INSTALLED WITH ASSOCIATED HARDWARE AND FASTENERS FOR CONDUIT AND EQUIPMENT SUPPORTS.
25. CONTRACTOR SHALL PROVIDE AUXILIARY SUPPORTS FOR SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, CONTROL PANELS, ETC., AS REQUIRED.
26. CONTRACTOR SHALL PROVIDE AND INSTALL CONCRETE EMBEDDED LEVELING CHANNEL SUPPORTS FOR FLOOR MOUNTED EQUIPMENT.
27. STRUCTURAL MEMBERS SHALL NOT BE DRILLED, CUT, WELDED OR OTHERWISE MODIFIED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD.
28. ALL NEW EQUIPMENT SHALL FIT INTO EXISTING AVAILABLE SPACE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE EQUIPMENT WHICH MEETS THE SPACE REQUIREMENTS.
29. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS ARE BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS APPROVED BY THE ENGINEER MAY BE MADE BY THE CONTRACTOR AT HIS EXPENSE TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
30. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING FINAL CONNECTION OF ALL EQUIPMENT INSTALLED OR MODIFIED AS PART OF THIS CONTRACT.
31. NOT ALL MOISTURE AND HAZARDOUS AREA CONDUIT SEALS ARE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE CODE, SPECIFICATION, AND DRAWING REQUIREMENTS FOR THEIR LOCATION.
32. CONTRACTOR SHALL PROVIDE BLACK TEXT ON WHITE HEAT–SHRINKABLE CABLE/WIRE IDENTIFICATION LABEL AT BOTH ENDS OF POWER, CONTROL AND DATA WIRING.
33. GROUND FAULT CURRENT INTERRUPTING (GFCI) RECEPTACLES:
    A. SHALL BE RATED FOR 20A AT 120V WITH LED POWER INDICATOR
    B. INSTALLED IN INTERIOR SPACES WHERE EXPOSED TO WATER SOURCES SUCH AS TOILET ROOMS, SHOWER AREAS, KITCHENS, ETC., INDIVIDUAL GFCI RECEPTACLES SHALL BE PROVIDED.
    C. INSTALLED OUTDOORS OR IN PROCESS AREAS, ALL RECEPTACLES SHALL BE WEATHER PROOF, CORROSION RESISTANT, AND SHALL BE INDIVIDUAL GFCI DEVICES.

TYPICAL DEVICE MOUNTING HEIGHTS

RECEPTACLES (INTERIOR PROCESS AREAS)	16" AFF
RECEPTACLES (EXTERIOR PROCESS AREAS)	48" AFF
LIGHT SWITCHES	48" AFF
PHONE OUTLETS	16" AFF
PHONE OUTLETS (WALL MOUNT)	64" AFF
DATA OUTLETS	16" AFF
FIRE ALARM PULL STATION	48" AFF
FIRE ALARM AUDIO/VISUAL ALARM	80" AFF
FIRE ALARM VISUAL ALARM ONLY	80" AFF
EXIT LIGHTS (WALL MOUNT)	16" ABOVE DOOR
EMERGENCY LIGHTS (WALL MOUNT)	96" AFF

NOTE: DIMENSIONS ARE TO DEVICE TOP UNLESS NOTED OTHERWISE.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP DATA No.	LAMP DATA TYPE	BALLAST No.	BALLAST TYPE	VOLTAGE	WATTAGE	MOUNTING	MANUFACTURER	CATALOGUE/SERIES NUMBER	REMARKS
P1	LED AREA LIGHT	1 ARRAY	110W LED	1	DRIVER	MVOLT	111	POLE	LITHONIA OR EQUAL	KAD LED 1 63B530/40K SR3 120 SPD09 WGDBLXD	MOUNT ON 25 FT HEAVY DUTY ALUMINUM POLE, RATED FOR 140MPH WINDS MIN, MOUNTED ON 3FT HIGH BOLLARD BASE, TV CAMERA MOUNTING AS SHOWN TYPE 3 DISTRIBUTION, 4000K CT
P2	LED AREA LIGHT PROCESS AREA	1 ARRAY	54W LED	1	DRIVER	120	60	POLE	LITHONIA OR EQUAL	KAD LED 49B 530/50K SR5 120 SPD09 WGDBLXD	MOUNT ON 10 FT HEAVY DUTY ALUMINUM POLE, BRONZE

LIGHTING FIXTURE SCHEDULE NOTES:

1. REFER TO INDIVIDUAL LIGHTING PLANS FOR FIXTURE MOUNTING HEIGHTS NOT INDICATED ON THE SCHEDULE.

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

ELECTRICAL GENERAL NOTES, LEGENDS AND ABBREVIATIONS

DATE:	APRIL 2014
MCE PROJ. #	1024–0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	MSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.1

STATUS: ISSUE FOR BID
REVISION

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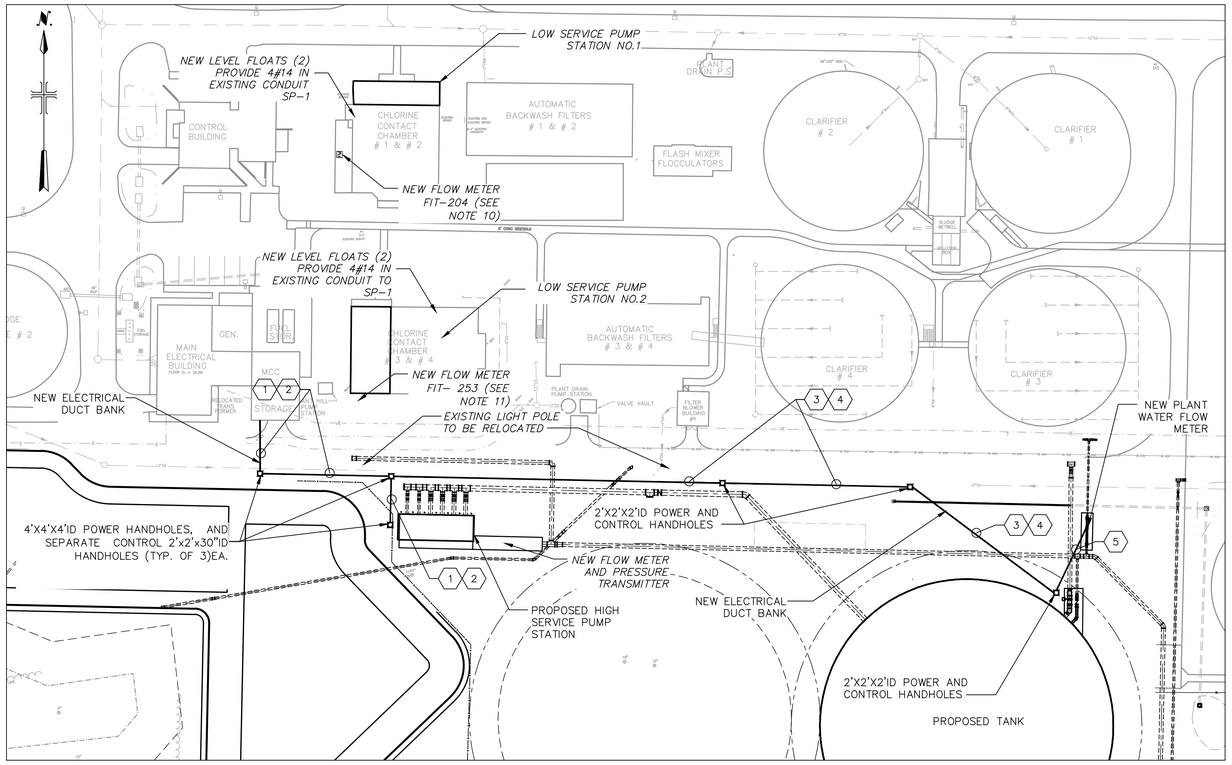
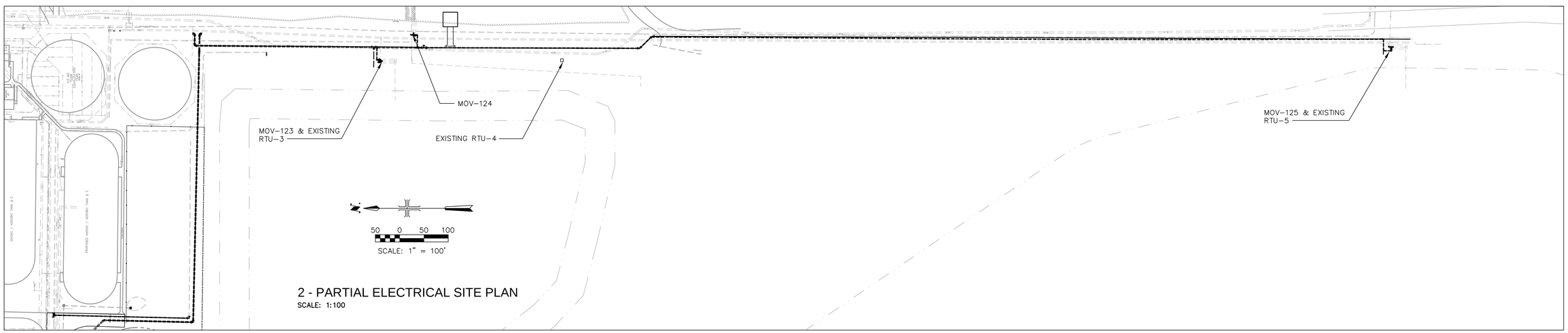
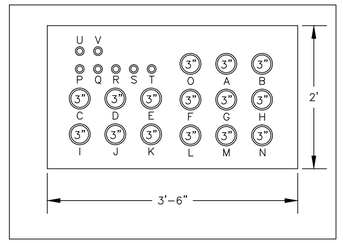


25 0 25 50
SCALE: 1" = 50'

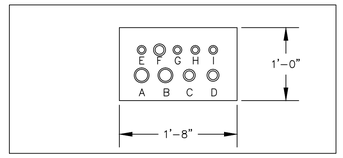
1 - PARTIAL ELECTRICAL SITE PLAN
SCALE: 1:50



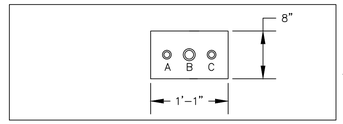
2 - PARTIAL ELECTRICAL SITE PLAN
SCALE: 1:100



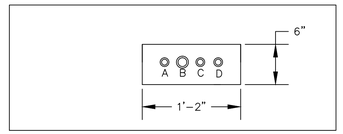
DUCTBANK SECTION @ (1)
NTS (SEE NOTE 9 TYP.)



DUCTBANK SECTION @ (2)
NTS



DUCTBANK SECTION @ (3)
NTS



DUCTBANK SECTION @ (4)
NTS

NOTES:

1. REFER TO SHEET E001 FOR GENERAL ELECTRICAL NOTES ABBREVIATIONS AND SYMBOLS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ELECTRICAL CODES.
3. CONDUIT SHALL BE AS FOLLOWS:
   A. EXPOSED CONDUIT SHALL BE RIGID ALUMINUM.
   B. CONDUIT PENETRATING FROM UNDERGROUND SHALL BE PVC COATED RIGID STEEL. REFER TO DETAILS.
   C. CONDUIT BELOW GRADE SHALL BE CONCRETE ENCASED SCH. 40 PVC.
4. CONTRACTOR SHALL COORDINATE AND FIELD ROUTE ALL CONDUIT.
5. CONTRACTOR SHALL COORDINATE LOCATIONS AND DEPTHS OF UNDERGROUND DUCT BANK AND CONDUIT RUNS WITH SITE EQUIPMENT AND PIPING. DUCT BANKS SHALL BE ROUTED UNDER PIPING UNLESS COORDINATED AND REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.
6. CONTRACTOR SHALL RUN DISCRETE AND ANALOG SIGNALS, IN SEPARATE CONDUITS AND SEPARATE DUCT BANK FROM 480 POWER CONDUIT. SEPARATION SHALL BE A MINIMUM OF 12 INCHES INSTALL SEPARATE HANDHOLES FOR CONTROL SIGNAL AND POWER CONDUITS IN THE LOCATIONS SHOWN.
7. ALL POWER AND CONTROL WIRE SHALL HAVE XHHW-2 INSULATION.
8. REFER TO ELECTRICAL POWER AND CONTROL SINGLE LINE DIAGRAMS
9. DIMENSIONS ARE APPROXIMATE AND FOR INFORMATION PURPOSES ONLY. CONTRACTOR TO VERIFY ALL DIMENSIONS.
10. CONNECT NEW FLOW METER CONDUIT TO NEAREST ACCESS MANHOLE FOR POWER AND SIGNAL. UTILIZE EXISTING CONDUITS BACK TO ELECTRICAL ROOM AND CONNECT TO PANEL BOARD AND SP-1
11. RUN NEW CONDUIT FROM FLOW METER TO NEW JB SOUTH WALL. CONNECT POWER AND SIGNAL TO PANELBOARD AND (SP-1)

KEYNOTES:

(1) INSTALL THE FOLLOWING CONDUIT AND WIRE.
- A. 3 #350, 3#12, 2#14, 1 #3G, 3 INCH CONDUIT (480V POWER, SPACE HEAT, TEMP SWITCH TO JOCKEY PUMP 1)
- B. 3 #350, 3#12 2#14, 1 #3G, 3 INCH CONDUIT (480V POWER, SPACE HEAT, TEMP SWITCH TO JOCKEY PUMP 2)
- C. 3 #350, 3#12, 1 #1G, 3 INCH CONDUIT (480V POWER TO HS PUMP 1)
- D. 3 #350, 3#12, 1 #1G, 3 INCH CONDUIT (480V POWER TO HS PUMP 2)
- E. 3 #350, 3#12, 1 #1G, 3 INCH CONDUIT (480V POWER TO HS PUMP 3)
- F. 3 #350, 3#12, 1 #1G, 3 INCH CONDUIT (480V POWER TO HS PUMP 4)
- G. PULL STRING, 3 INCH CONDUIT (FUTURE HS PUMP 5)
- H. PULL STRING, 3 INCH CONDUIT (FUTURE HS PUMP 6)
- I. PULL STRING 3" CONDUIT (SPARE)
- J. 3 #10, 1 #10G, 1 INCH CONDUIT (480V TO MOV-255 AT 10 MG TANK)
- K. 3C#18TPS, #14, 1 INCH CONDUIT (RTD & E-STOP PUMP 1)
- L. 3C#18TPS, #14, 1 INCH CONDUIT (RTD & E-STOP PUMP 2)
- M. 3C#18TPS, #14, 1 INCH CONDUIT (RTD & E-STOP PUMP 3)
- N. 3C#18TPS, #14, 1 INCH CONDUIT (RTD & E-STOP PUMP 4)
- O. PULL STRING, 1 INCH CONDUIT (FUTURE PUMP 5)
- P. PULL STRING, 1 INCH CONDUIT (FUTURE PUMP 6)
- Q. PULL STRING, 1 INCH CONDUIT (SPARE)

(2) INSTALL THE FOLLOWING CONDUIT AND WIRE
- A. 40 #14, 6 #14G, 2 INCH CONDUIT (PUMP CHECK VALVE STATUS, E-STOP TO VFD'S, TEMP SWITCHES, E-STOP & SPARES TO PLC 6) PROVIDE PULL STRING.
- B. 2" SPARE
- C. 3-2C#16TSP,1.5 INCH CONDUIT(HSPS FIT(2), PIT, SPARE TO PLC)
- D. 1.5" SPARE
- E. 18 #14, 1 #14G, 1 1/4" INCH CONDUIT (CONTROL, STATUS FOR MOV-255 & FLOATS AT 10 MG TANK)
- F. 4-2C#16TSP, 1 1 1/4" INCH CONDUIT(TANK LIT, FIT(2) & SPARE TO PLC 6)
- G. 9 #10, 1 INCH CONDUIT (120V POWER TO HSP FIT. INSTALL LIGHTING, GFCI AND HEAT TRACE ON OTHER CIRCUITS).
- H. 6 #10, 1 INCH CONDUIT (120V POWER FOR FIT(2) & GFCI AT 10 MG TANK AREA).
- I. PULL STRING, 1 INCH CONDUIT (SPARE)

(3) INSTALL THE FOLLOWING CONDUIT AND WIRE.
- A. 3 #10, 1 #10G, 1 INCH CONDUIT (480V TO MOV-255 AT 10 MG TANK)
- B. PULL STRING, 1.5" CONDUIT (SPARE)
- H. 6 #10, 1 INCH CONDUIT (120V POWER FOR FIT(2) & GFCI AT 10 MG TANK AREA).

(4) INSTALL THE FOLLOWING CONDUIT AND WIRE
- A. 14 #14, 1 #14G, 1 INCH CONDUIT (CONTROL, STATUS FOR VALVE AT 10 MG TANK TO PLC 6)
- B. 4-2#16TSP, 1 1/4" INCH CONDUIT (FIT(2), LIT, SPARE AT 10 MG TANK TO PLC 6)
- C. 6#14, 1 INCH CONDUIT (LSH & LSL FLOATS FOR 10MG TANK TO SP-6)
- D. PULL STRING, 1 INCH CONDUIT (SPARE)

(5) INSTALL THE FOLLOWING CONDUIT AND WIRE (INSTALL PULL STRING IN SIGNAL CONDUIT)
- A. 6 #10, 1 INCH CONDUIT (120V POWER FOR FIT & GFCI AT (PLANT WATER AREA)
- B. 1-2#16TSP, 1 1/4" INCH CONDUIT (FIT, FROM PLANT WATER METER AREA TO PLC 6)
- C. 1" SPARE CONDUIT W/ PULL STRING STUB SPARE IN SEPERATE 6"X6" STAINLESS STEEL JUNCTION BOX.

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

ELECTRICAL SITE PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AISA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
E-0.2

STATUS: ISSUE FOR BID
REVISION

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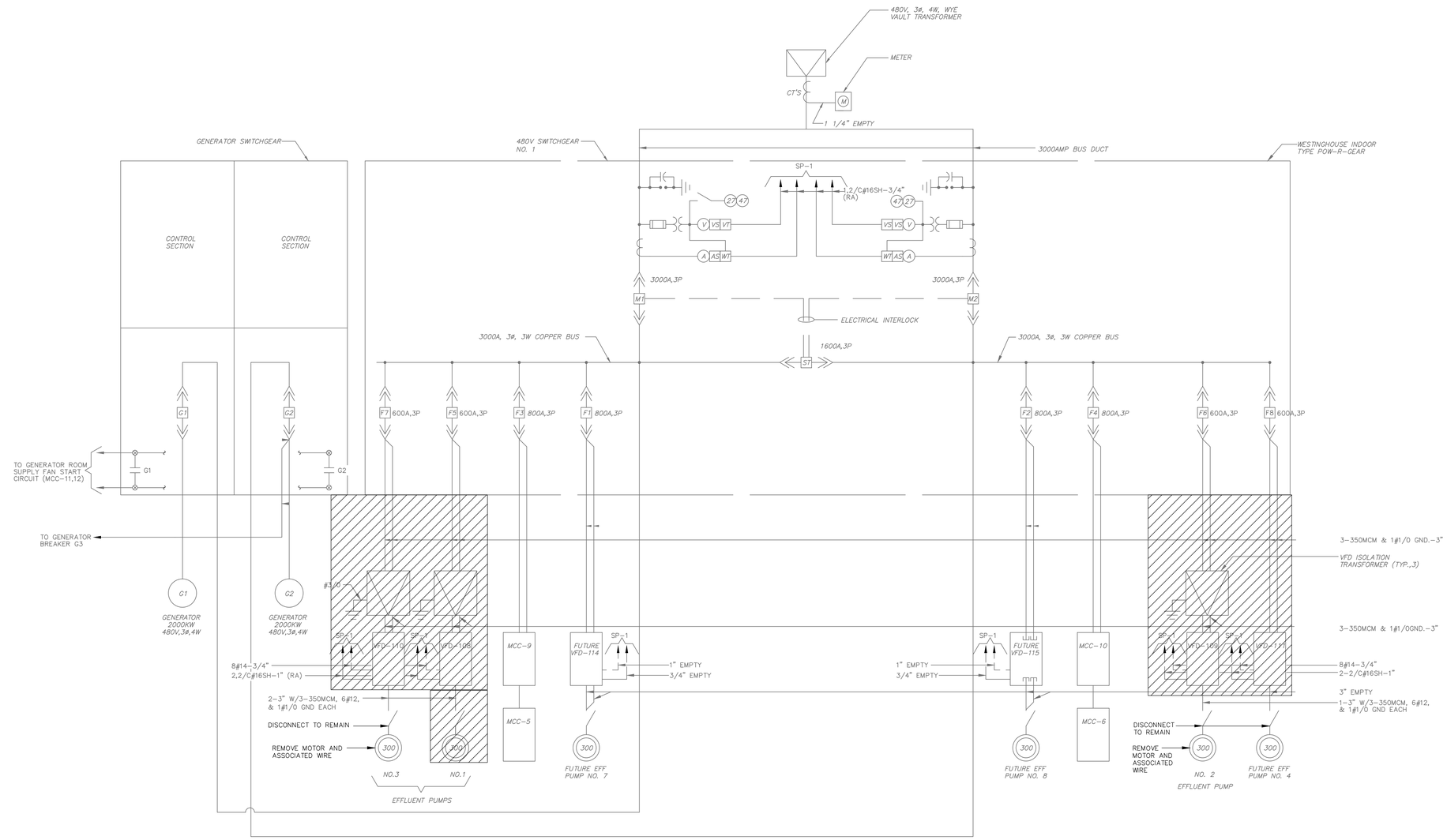

EXISTING SWITCHGEAR NO.1

N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

SINGLE LINE DIAGRAM EXISTING SWITCHGEAR NO. 1 ELECTRICAL DEMOLITION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AKA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.3

STATUS: ISSUE FOR BID
REVISION

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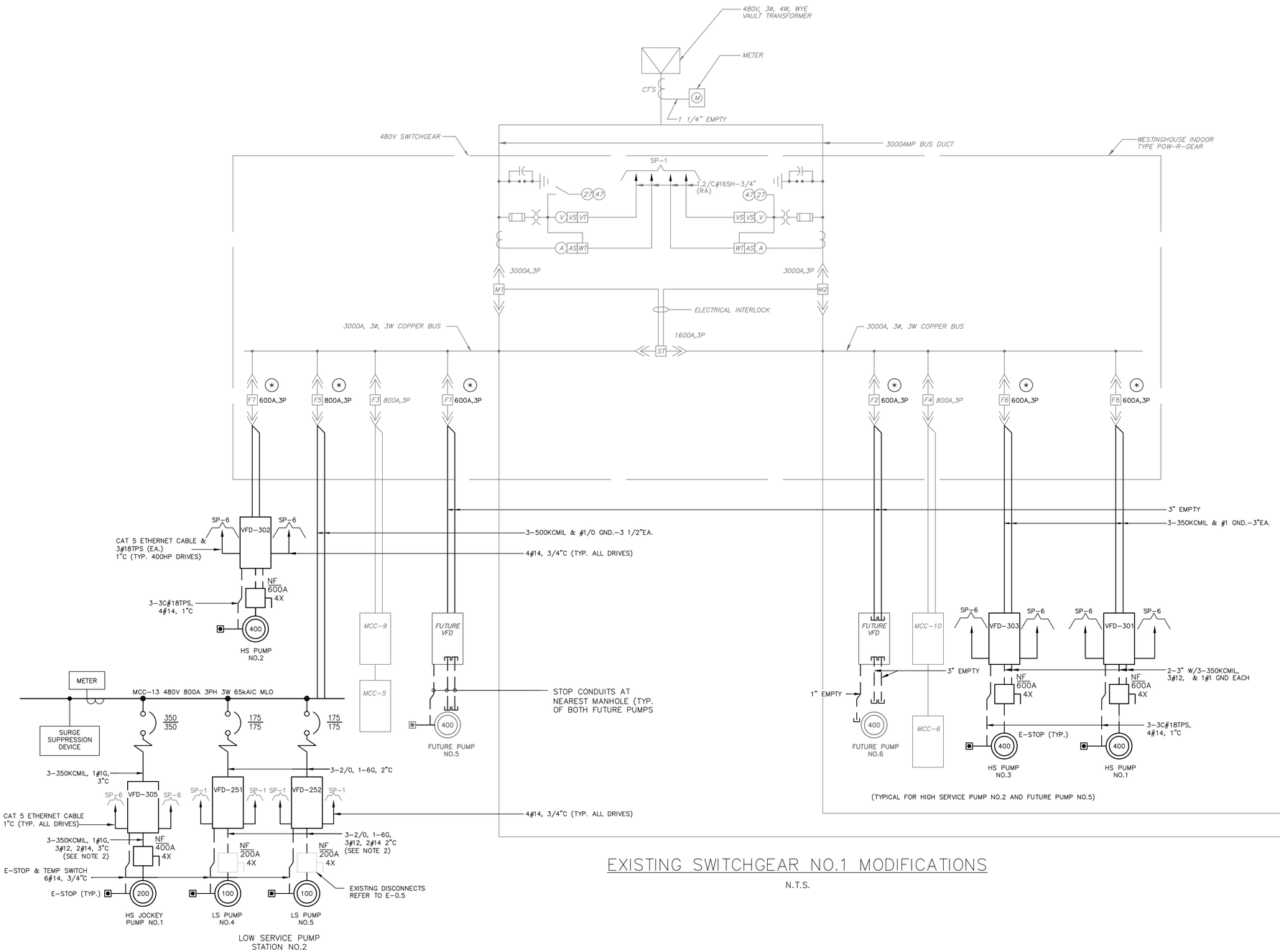

NOTES:

(*) EXISTING BREAKER TRIP UNIT TO BE REPLACED AND PLUG SETTING CHANGED AS SHOWN. TRIP UNITS ARE FOR EXISTING WESTINGHOUSE TYPE SPB 100 BREAKERS. CONTRACTOR TO HAVE BREAKERS RE-CALIBRATED BY NETA CERTIFIED PERSONNEL. CONTRACTOR TO ADHERE TO NFPA 70E FOR PROPER PPE WHEN WORKING ON ALL LIVE EQUIPMENT, WHICH INCLUDES THE RACKING OF THESE BREAKER.

1. ALL OUTDOOR EQUIPMENT ENCLOSURES TO STAINLESS STEEL NEMA 4X RATED
2. CONTRACTOR TO UTILIZE EXISTING CONDUIT TO PUMPS. CONDUCTORS 3#12 AND 2#14 ARE FOR SPACE HEATER AND MOTOR WINDING THERMAL SWITCHES RESPECTIVELY.

EXISTING SWITCHGEAR NO.1 MODIFICATIONS

N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

EXISTING SWITCHGEAR NO. 1 ELECTRICAL MODIFICATIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	MSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.4

STATUS: ISSUE FOR BID
REVISION

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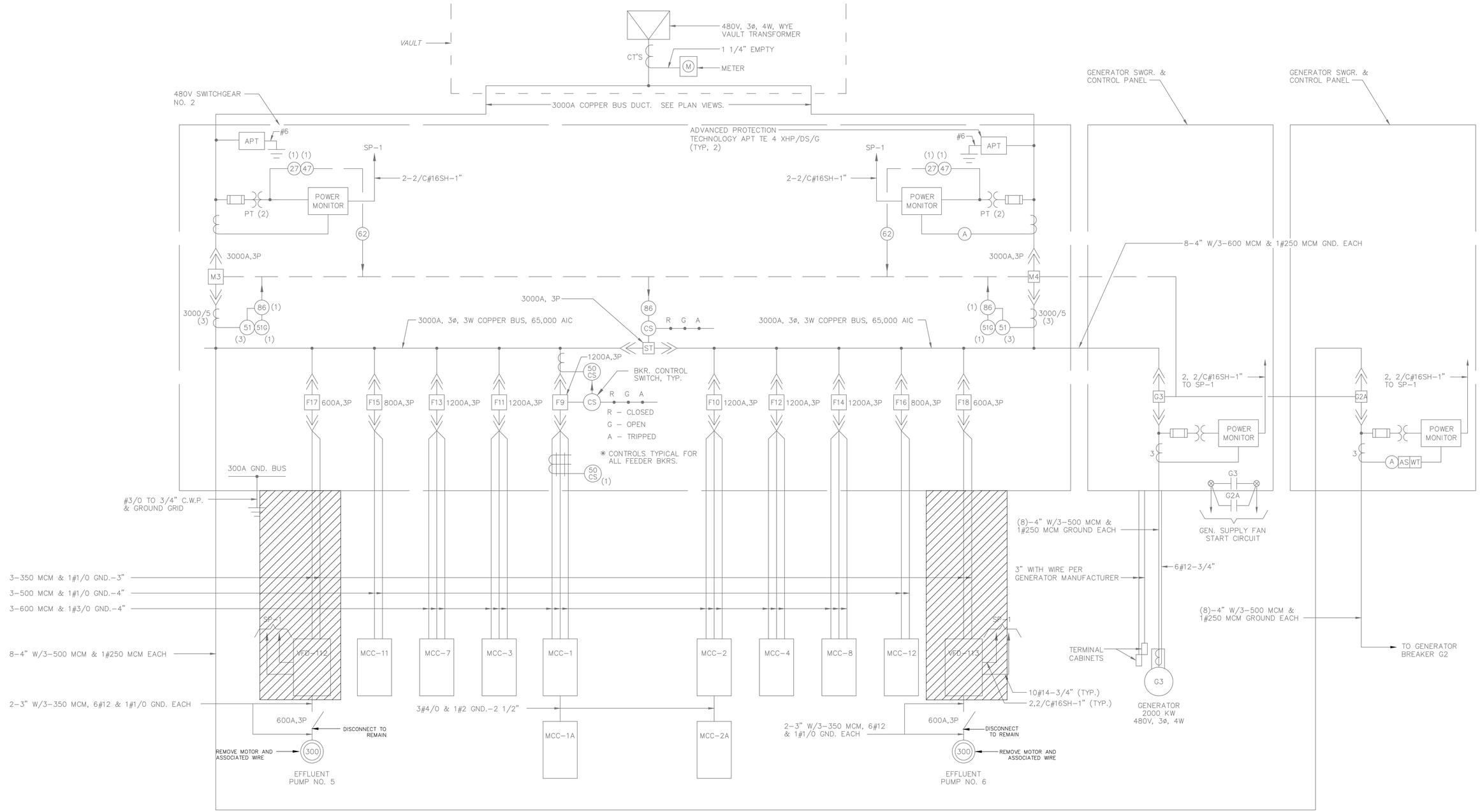

EXISTING SWITCHGEAR NO. 2

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK
AND INTERCONNECTION

SINGLE LINE DIAGRAM
EXISTING SWITCHGEAR NO. 2
ELECTRICAL DEMOLITION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AISA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.5

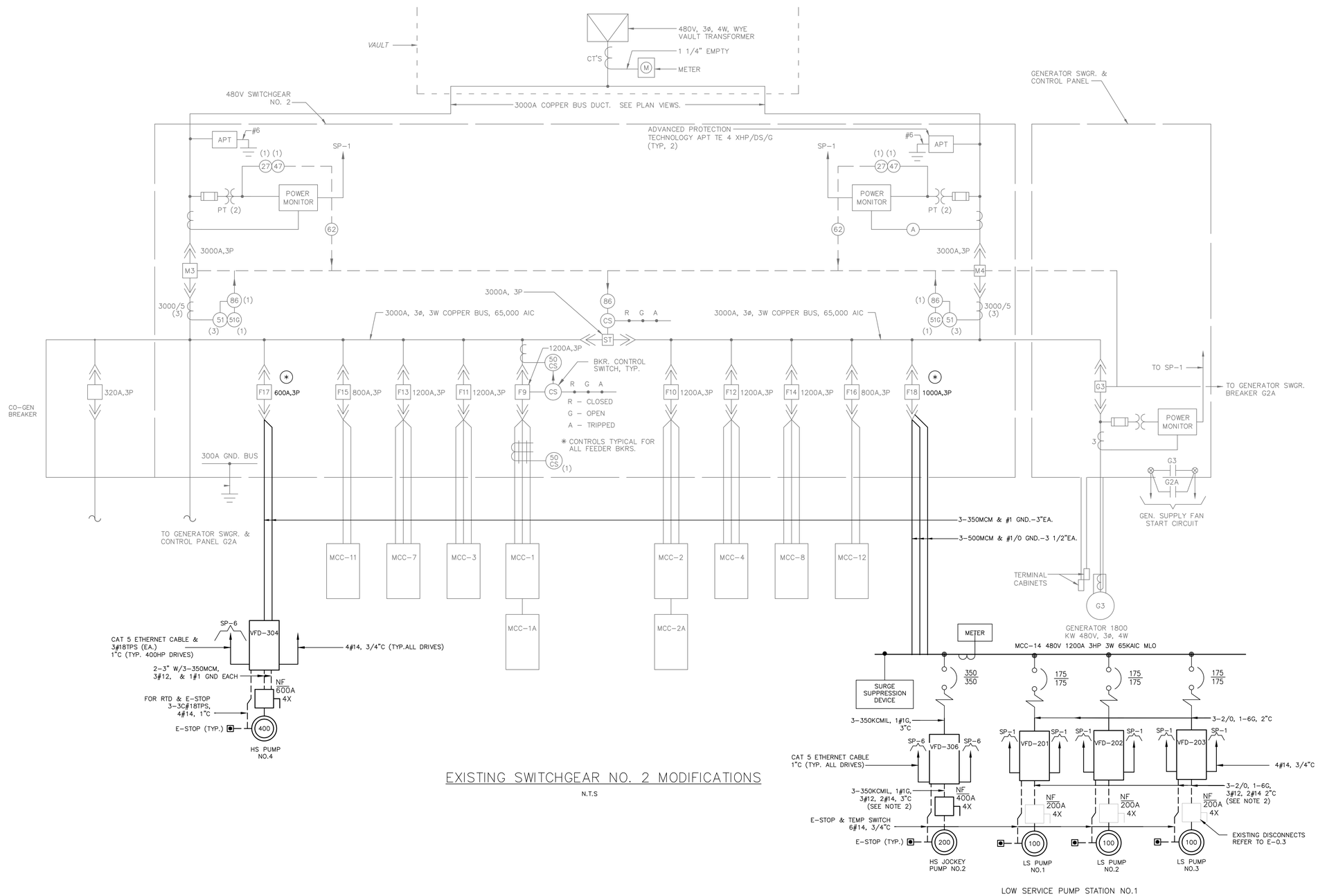
STATUS: ISSUE FOR BID
REVISION

S:\1024\Q1601\80-Drawings\Electrical\1024E_0.5-1024Q160.dwg, 4/29/2014 1:53:19 PM, Aubrey Haudricourt

NOTES:

(*) EXISTING BREAKER TRIP UNIT TO BE REPLACED AND PLUG SETTING CHANGED AS SHOWN. TRIP UNITS ARE FOR EXISTING WESTINGHOUSE TYPE SPB 100 BREAKERS. CONTRACTOR TO HAVE BREAKERS RE-CALIBRATED BY NETA CERTIFIED PERSONNEL. CONTRACTOR TO ADHERE TO NFPA 70E FOR PROPER PPE WHEN WORKING ON ALL LIVE EQUIPMENT, WHICH INCLUDES THE RACKING OF THESE BREAKER.

1. ALL OUTDOOR EQUIPMENT ENCLOSURES TO STAINLESS STEEL NEMA 4X RATED
2. CONTRACTOR TO UTILIZE EXISTING CONDUIT TO PUMPS. CONDUCTORS 3#12 AND 2#14 ARE FOR SPACE HEATER AND MOTOR WINDING THERMAL SWITCHES RESPECTIVELY.



EXISTING SWITCHGEAR NO. 2 MODIFICATIONS

N.T.S

LOW SERVICE PUMP STATION NO.1

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

EXISTING SWITCHGEAR NO. 2 ELECTRICAL MODIFICATIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWING NUMBER: E-0.6

STATUS: ISSUE FOR BID

REVISION

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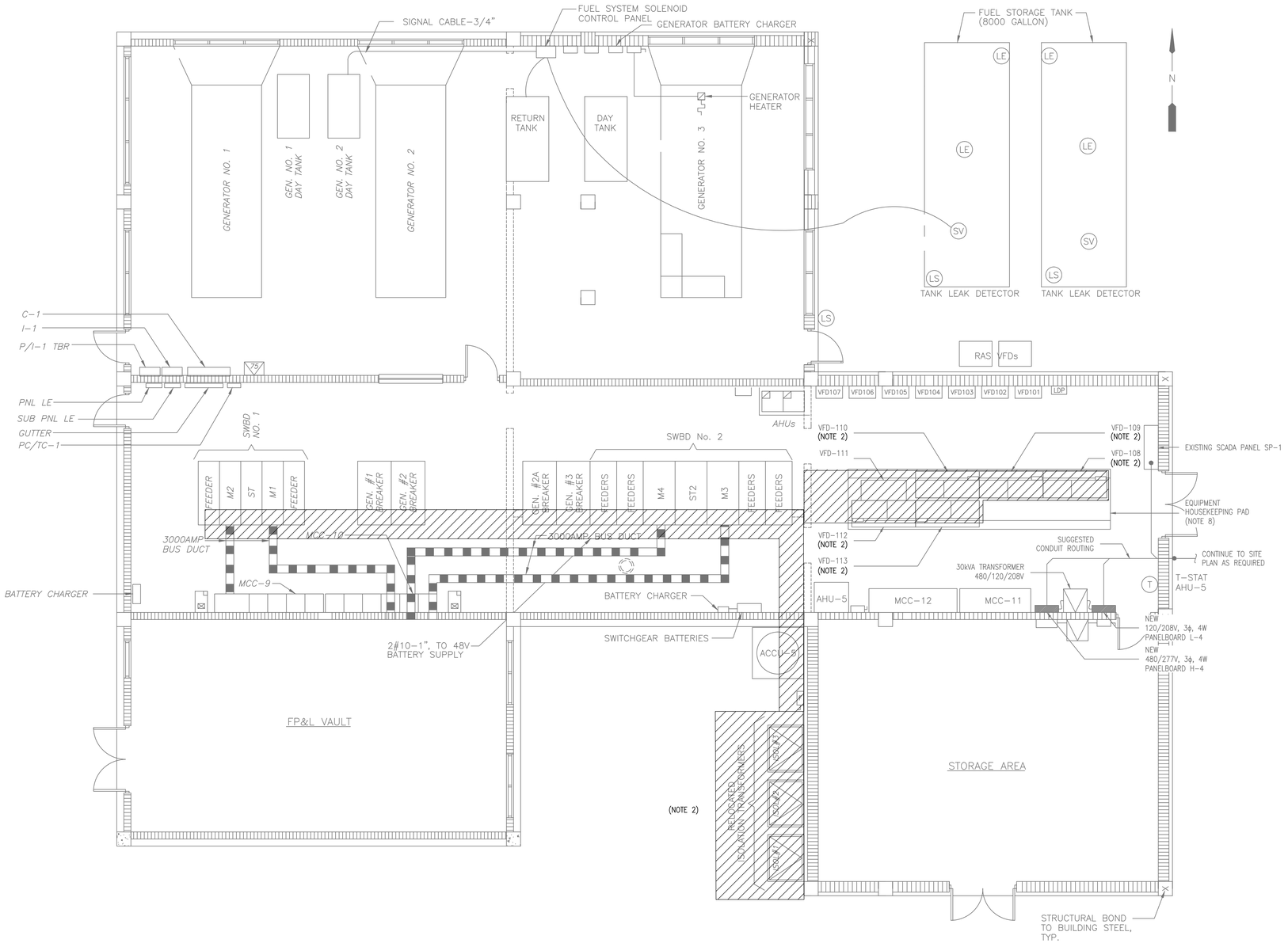

1 - ELECTRICAL POWER PLAN
3/16"=1'-0"

NOTES:

1. REFER TO DRAWING E1 FOR GENERAL NOTES.
2. EXISTING HIGH SERVICE PUMP VFD'S, TRANSFORMERS AND ALL ASSOCIATED CONDUIT AND WIRE ARE TO BE REMOVED. NEW VFD'S WILL BE INSTALLED IN SAME LOCATIONS FOR NEW LOW SERVICE PUMPS. CONTRACTOR SHALL COORDINATE REMOVAL OF OLD VFD'S AND INSTALLATION OF NEW VFD'S WITH THE SEQUENCE OF CONSTRUCTION REQUIREMENTS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

POWER PLAN MAIN ELECTRICAL BUILDING DEMOLITION

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AlSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.7

STATUS: ISSUE FOR BID
REVISION

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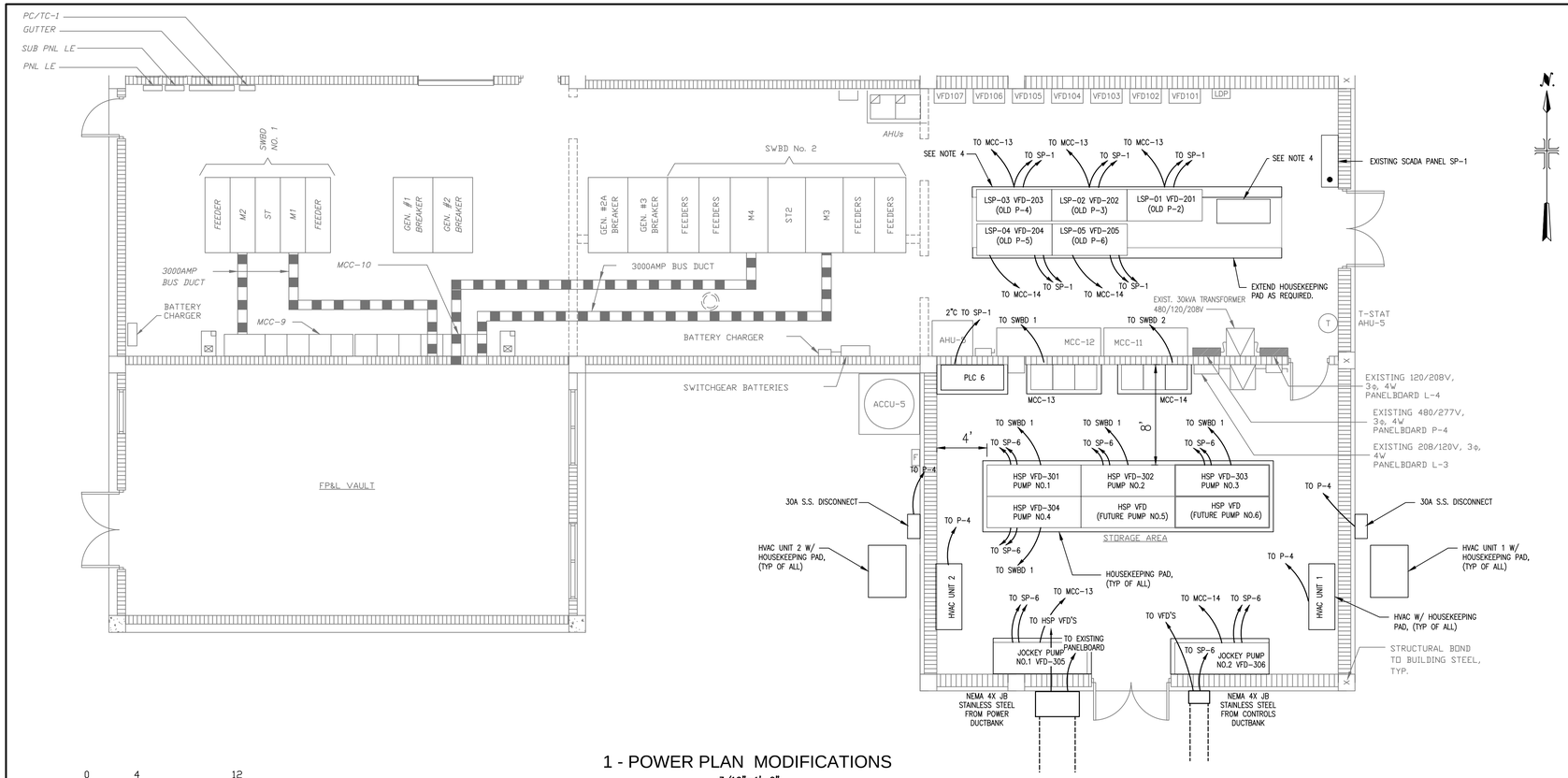

1 - POWER PLAN MODIFICATIONS

3/16"=1'-0"

0 4 12

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

NOTES:

1. ALL CONDUITS NOT SHOWN FOR CLARITY. SEE ONE LINE FOR MORE INFORMATION.
2. REFER TO DRAWING E0.1 FOR GENERAL NOTES.
3. EXISTING HIGH SERVICE PUMP VFD'S TO BE REMOVED AND REPLACED WITH VFD'S FOR LOW SERVICE PUMPS. CONTRACTOR SHALL COORDINATE REMOVAL OF OLD VFD'S AND INSTALLATION OF NEW VFD'S WITH THE SEQUENCE OF CONSTRUCTION REQUIREMENTS.
4. CONTRACTOR TO REMOVE EXISTING JUNCTION BOX (JB) AND INSTALL NEW VFD-203. WHERE EXISTING VFD FOR PUMP 1 IS BEING REMOVED, CLEAN AND CAP CONDUITS. FOR OTHER NEW VFD'S, CONTRACTOR IS TO UTILIZE EXISTING CONDUITS TO PUMP LOCATIONS AT LOW SERVICE PUMPS STATIONS 1 & 2.
5. CONTRACTOR SHALL ADJUST EXISTING LIGHTING TO ACCOMMODATE THE MOUNTING OF CONDUIT FROM THE CEILING. REMOVE AND REINSTALL LIGHT FIXTURES AS NECESSARY. IF CONDUIT CAUSES SHADOWS REINSTALL ON PENDANTS AS NECESSARY..
6. PROVIDE NEW BREAKERS AS SHOWN ON PANEL SCHEDULE. MATCH EXISTING WITHSTAND RATING.

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	MOV-101 (EXISTING)	0.33	1.2	3	0.7			3	1.2	0.33	MOV-102 (EXISTING)	20	2
			0.33				0.7				0.33			
			0.33					0.7			0.33			
7	20	MOV-105 (EXISTING)	0.33	1.2	3	0.7			3	1.2	0.33	MOV-104 (EXISTING)	20	8
			0.33				0.7				0.33			
			0.33					0.7			0.33			
13	20	MOV-255	0.33	1.2	3	1.8			3	5.4	1.5	HVAC UNIT 2 CONDENSOR	30	14
			0.33				1.8				1.5			
			0.33					1.8			1.5			
19	30	HVAC UNIT 1 CONDESOR	1.5	5.4	3	2.2			3	2.4	0.66	HVAC UNIT 2 AIR HANDLER	15	20
			1.5				2.2				0.66			
			1.5					2.2			0.66			
25	15	HVAC UNIT 1 AIR HANDLER	0.66	2.4	3	0.7			3			SPARE	20	26
			0.66				0.7							
			0.66					0.7						
		TOTAL KVA				6.0	6.0	6.0						
		GRAND CONNECTED TOTAL KVA					17.9							

PANEL **P-4**
LOCATION: SOUTH WALL
BUILDING: ELECTRICAL BUIDING
NOTES: EXISTING PANEL

SERVICE CHARACTERISTICS
VOLTS: 480Y/277
PHASE: 3
WIRE: 4
35k MIN AIC SYMM, FULLY RATED ASSEMBLY

225 A MLO
A MCB

2 - EXISTING POWER PANEL P-4

SEE NOTE 6

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

MAIN ELECTRICAL BUILDING POWER PLAN MODIFICATIONS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AlSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.8

STATUS: ISSUE FOR BID

REVISION

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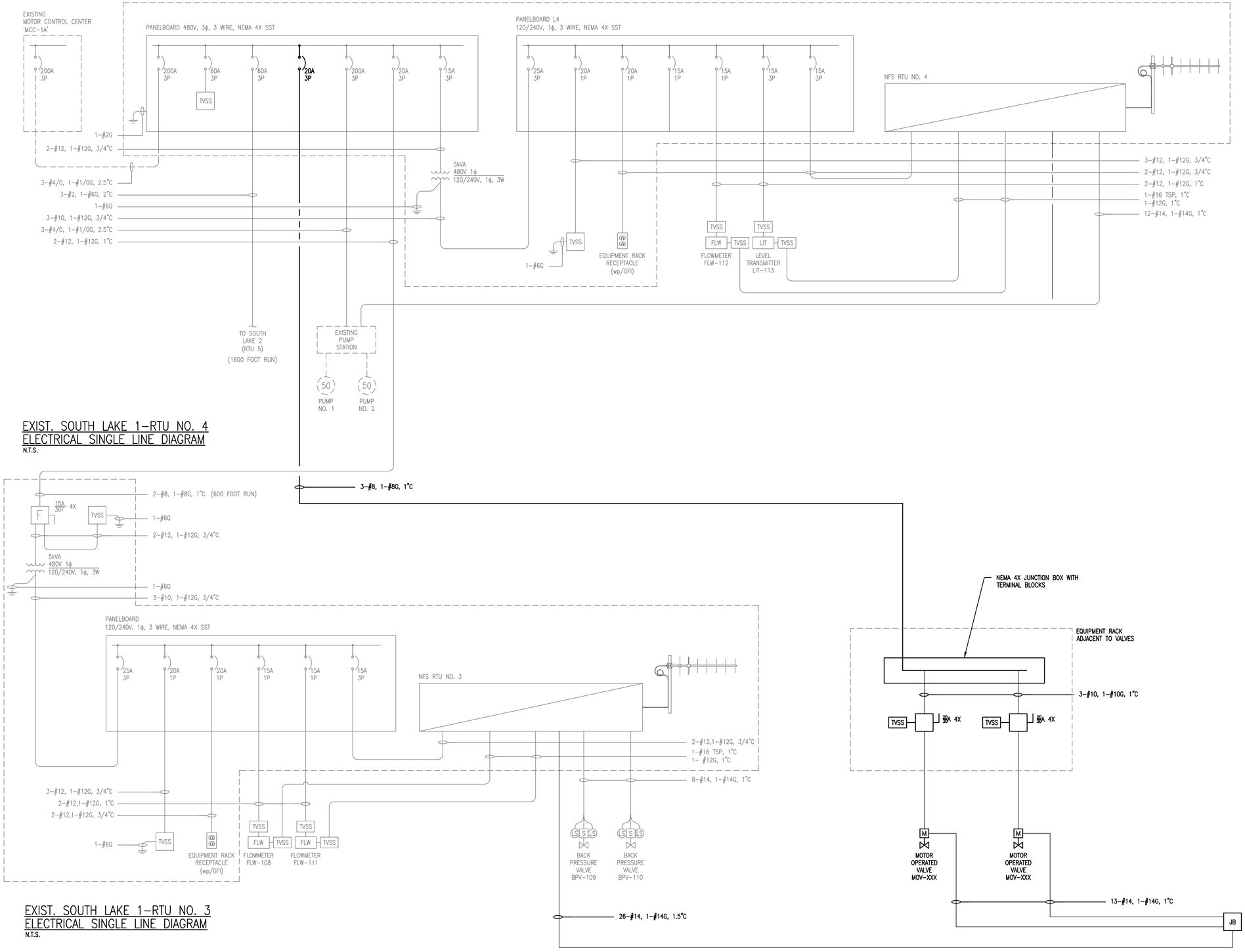

EXIST. SOUTH LAKE 1-RTU NO. 4 ELECTRICAL SINGLE LINE DIAGRAM

N.T.S.

EXIST. SOUTH LAKE 1-RTU NO. 3 ELECTRICAL SINGLE LINE DIAGRAM

N.T.S.

NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED SO THAT ALL CODE-REQUIRED AND MANUFACTURER-RECOMMENDED SERVICING CLEARANCES ARE MAINTAINED. INSTALLATIONS SHALL COMPLY WITH NEC 110-26 FOR CLEARANCE REQUIREMENTS.
3. ALL POWER AND CONTROL CABLING SHALL BE 600V RATED THHN/THWN STRANDED COPPER.
4. REFER TO I&C DRAWING FOR INSTRUMENT INSTALLATION REQUIREMENTS.
5. REFER TO I&C SPECIFICATIONS AND DRAWINGS FOR INSTRUMENTATION POWER AND SIGNAL TVSS INSTALLATION REQUIREMENTS FOR EACH INSTRUMENT.
6. PROVIDE GROUND TRIODE AT EACH EQUIPMENT RACK.

KEYNOTES:

(1) PROVIDE CONDUIT/WIRE AS REQUIRED TO CONNECT INSTRUMENT TVSS DEVICES WHERE SHOWN. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

ELECTRICAL RTU NO. 3 AND NO. 4 SINGLE LINE DIAGRAM

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	MSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.9

STATUS: ISSUE FOR BID
REVISION

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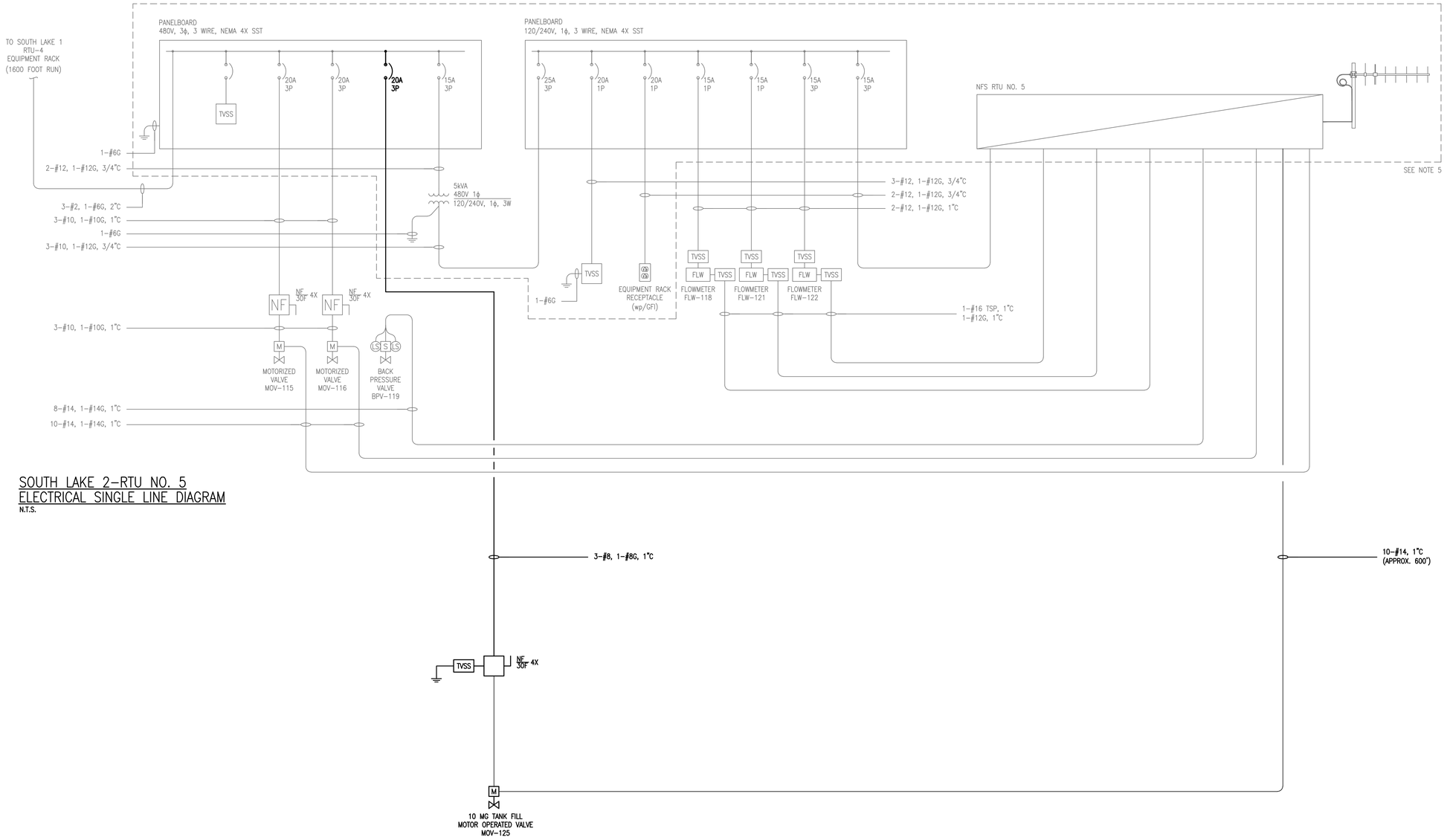

SOUTH LAKE 2-RTU NO. 5
ELECTRICAL SINGLE LINE DIAGRAM
N.T.S.

NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED SO THAT ALL CODE-REQUIRED AND MANUFACTURER-RECOMMENDED SERVICING CLEARANCES ARE MAINTAINED. INSTALLATIONS SHALL COMPLY WITH NEC 110-26 FOR CLEARANCE REQUIREMENTS.
3. ALL POWER AND CONTROL CABLING SHALL BE 600V RATED THHN/THWN STRANDED COPPER.
4. REFER TO I&C DRAWING FOR INSTRUMENT INSTALLATION REQUIREMENTS.
5. REFER TO I&C SPECIFICATIONS AND DRAWINGS FOR INSTRUMENTATION POWER AND SIGNAL TVSS INSTALLATION REQUIREMENTS FOR EACH INSTRUMENT.
6. PROVIDE GROUND TRIODE AT EACH EQUIPMENT RACK.

KEYNOTES:

(1) PROVIDE CONDUIT/WIRE AS REQUIRED TO CONNECT INSTRUMENT TVSS DEVICES WHERE SHOWN. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

ELECTRICAL
SINGLE LINE DIAGRAM
RTU NO. 5

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	MSA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.10

STATUS: ISSUE FOR BID
REVISION

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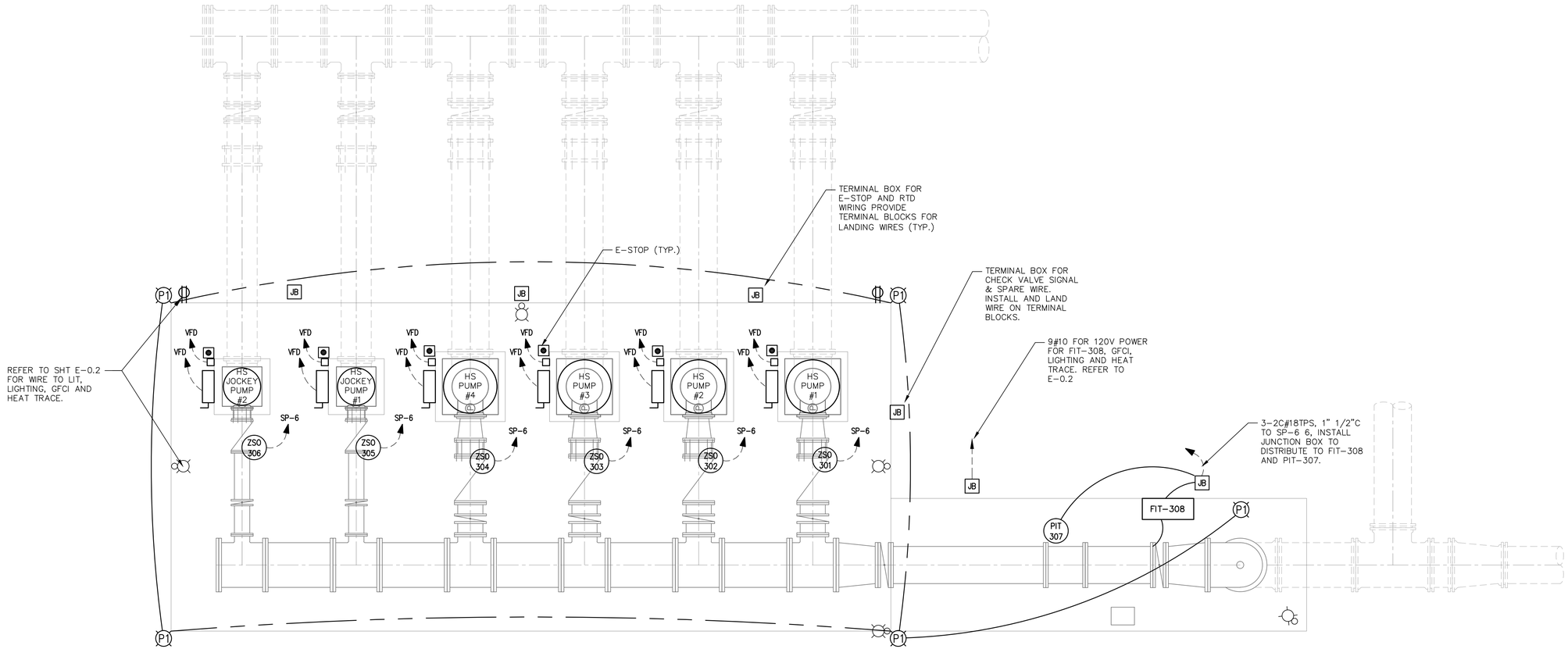
NORTH



1 - ELECTRICAL PLAN
1/4"=1'-0"

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

ELECTRICAL
HIGH SERVICE PUMP STATION PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
E-3.1

STATUS: ISSUE FOR BID
REVISION

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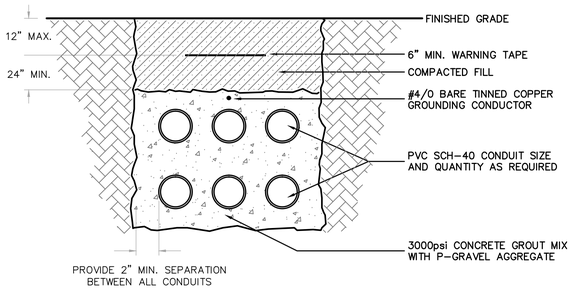
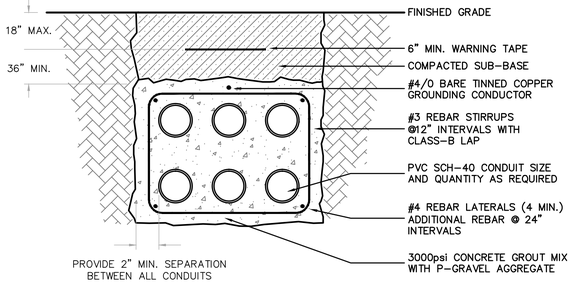
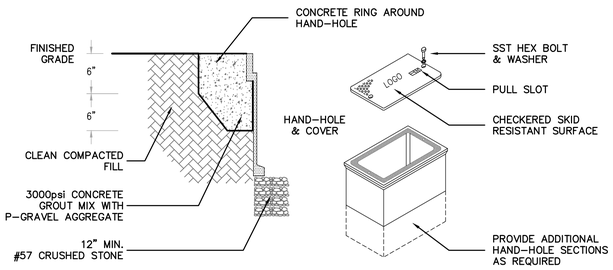


NON-REINFORCED CONCRETE DUCTBANK (WRF YARD PIPING)
N.T.S.



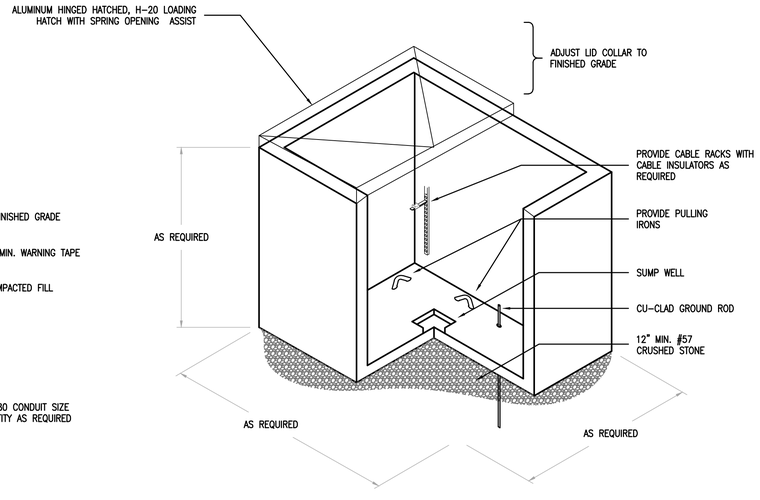
REINFORCED CONCRETE DUCTBANK (ROADWAY CROSSING)
N.T.S.



NOTES:

1. HOUSING SHALL BE REINFORCED CONCRETE AND SHALL HAVE A COMPRESSIVE STRENGTH NO LESS THAN 10,000psi.
2. HAND-HOLE AND COVER SHALL BE RATED FOR AASHTO H20 LOADING.
3. PROVIDE STAINLESS STEEL BOLTS, WASHERS AND INSERTS.
4. PROVIDE COVER LOGO "ELECTRICAL" "CONTROLS" OR "COMMUNICATIONS" AS APPLICABLE OR INDICATED ON THE DRAWINGS.
5. MINIMUM BOX SIZE SHALL BE 24" LONG x 17" WIDE x 24" DEEP.

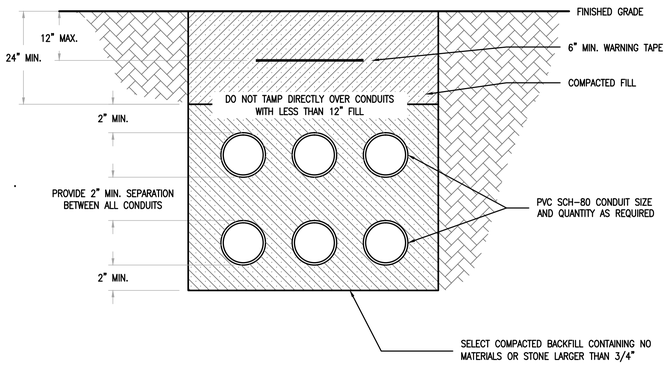
TRAFFIC RATED HAND-HOLE DETAIL
N.T.S.



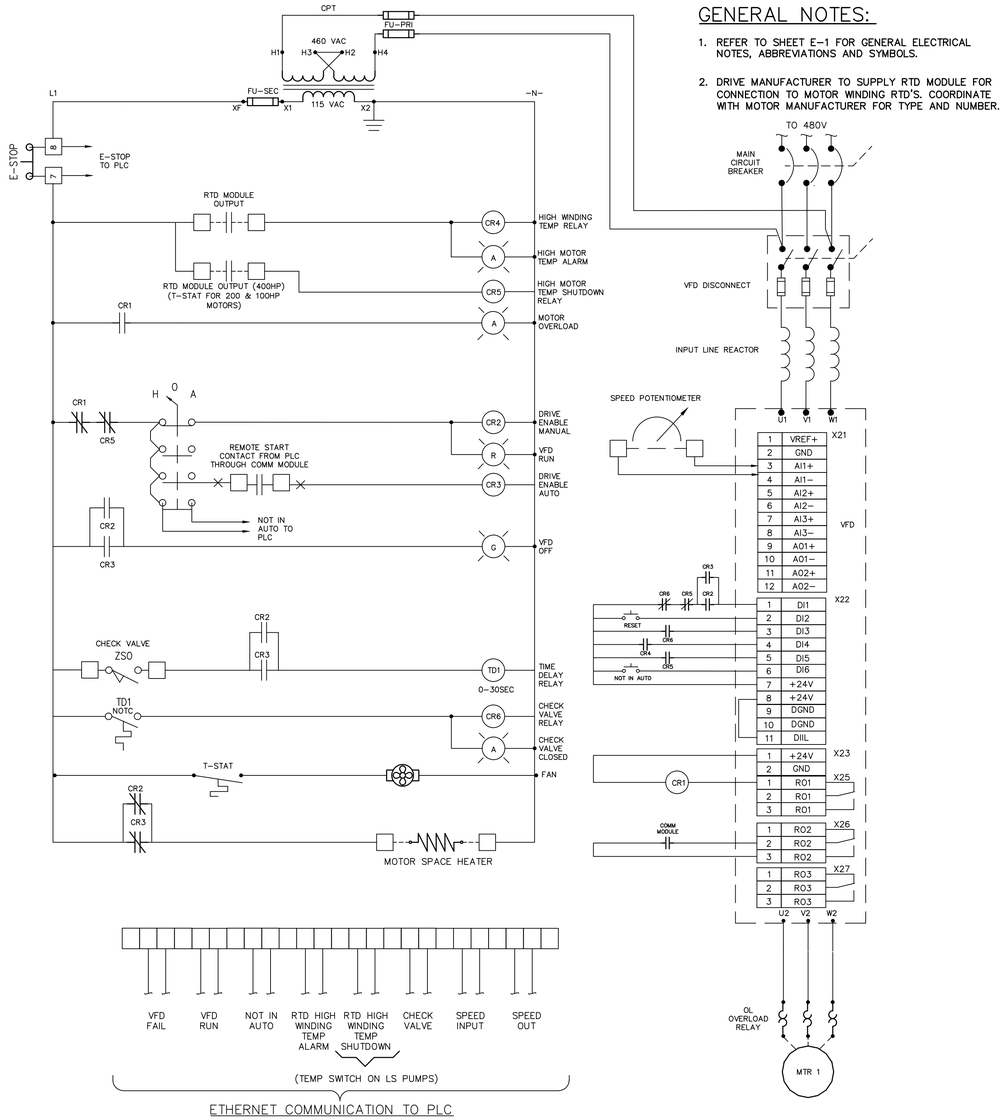
DETAIL NOTES:

1. BOND ALL METALLIC PARTS WITH #2awg BARE TINNED COPPER.
2. EXOTHERMIC WELD CU-CLAD GROUND ROD TO GROUND CABLE.

STANDARD ELECTRICAL MAN-HOLE
SCALE: N.T.S.



DIRECT BURIED DUCTBANK
SCALE: N.T.S.



TYP. VFD MOTOR SCHEMATIC
N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. DRIVE MANUFACTURER TO SUPPLY RTD MODULE FOR CONNECTION TO MOTOR WINDING RTD'S. COORDINATE WITH MOTOR MANUFACTURER FOR TYPE AND NUMBER.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

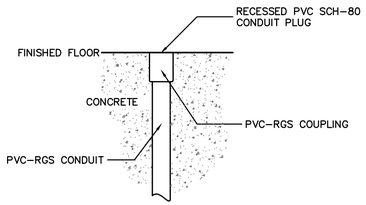
ELECTRICAL DETAILS – 1 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	MSA
PROJ. MGR.	MSL

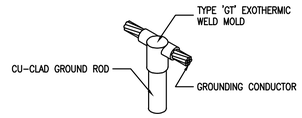
SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-9.1

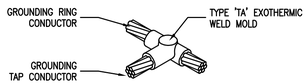
STATUS: ISSUE FOR BID
REVISION



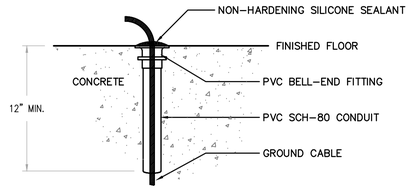
CONDUIT STUB-UP DETAIL (FUTURE)
N.T.S.



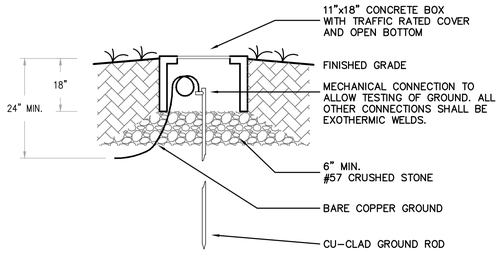
EXOTHERMIC WELD 'GT' CONNECTION
N.T.S.



EXOTHERMIC WELD 'TA' CONNECTION
N.T.S.



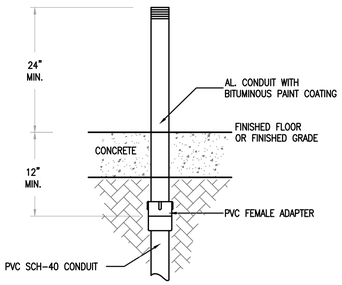
GROUND CABLE SLEEVE DETAIL
N.T.S.



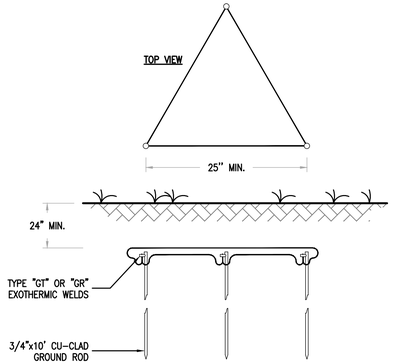
GROUND ROD TEST WELL DETAIL
N.T.S.

GENERAL NOTES:

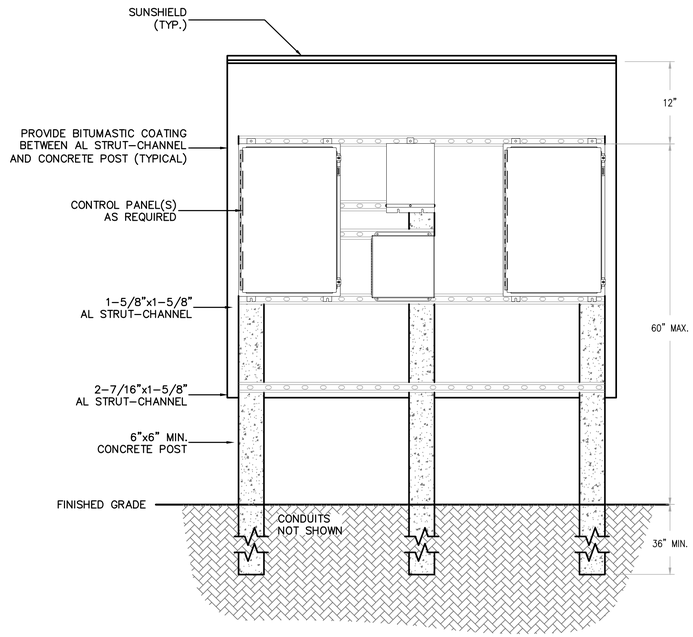
1. REFER TO SHEET E1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS, SYMBOLS AND LIGHTING FIXTURE SCHEDULE.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
3. THE NEW ELECTRICAL SERVICE SHALL BE 480/277-VOLT, 3-PHASE, 4-WIRE.
4. ALL POWER CONDUCTORS SHALL BE 600V RATED XHHW-2 STRANDED CU.
5. ALL CONTROL CONDUCTORS SHALL BE 600V RATED THHN/THWN STRANDED CU.
6. ALL EXPOSED CONDUITS SHALL BE RIGID ALUMINUM (AL).
7. ALL UNDERGROUND CONDUITS SHALL BE DIRECT BURIED PVC SCH-80.
8. SERVICE LATERAL CONDUIT SHALL BE CONCRETE ENCASED PVC SCH-80.

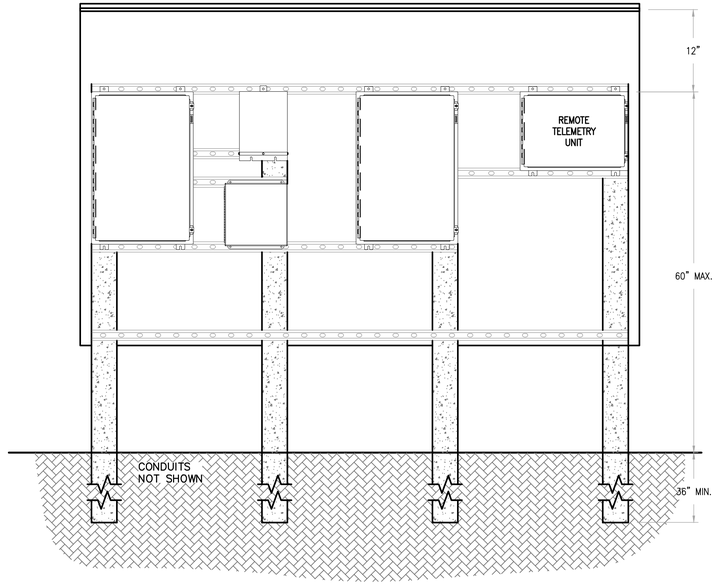


CONDUIT STUB-UP (NEW)
N.T.S.

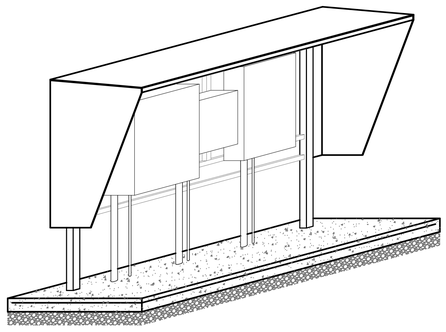


GROUND TRIODE
N.T.S.

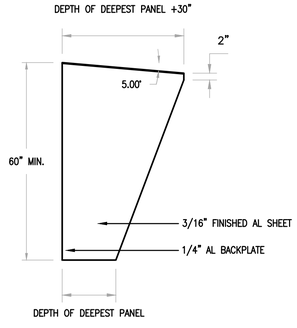




ELECTRICAL EQUIPMENT RACK LAYOUT WITH RTU
N.T.S.



SUN/RAIN HOOD TYPICAL (ISOMETRIC)
N.T.S.



SUN/RAIN HOOD DETAIL (SIDE-VIEW)
N.T.S.

DETAIL NOTES:

1. CONTRACTOR SHALL SUBMIT LAYOUT OF ELECTRICAL EQUIPMENT RACK.
2. CONTRACTOR SHALL NOT CONSTRUCT ELECTRICAL EQUIPMENT RACK PRIOR TO RECEIVING APPROVED SUBMITTAL, INCLUDING ORDERING AND FABRICATION OF MATERIALS.
3. ALL EQUIPMENT MOUNTING HARDWARE SHALL BE 316 STAINLESS-STEEL.
4. CONCRETE SHALL BE 3000psi. CONCRETE PADS SHALL BE REINFORCED WITH 6x6-1.4Wx1.4W WWF. PAD SHALL EXTEND 36" OUT FROM DEEPEST PANEL AND 6" OUT FROM SIDES OF SUN/RAIN HOOD.
5. PROVIDE ADDITIONAL VERTICAL 6" 'I-BEAM' POSTS AND BASES LIKE THOSE SHOWN ON PLANS TO SPAN GREATER DISTANCES GREATER THAN 96".
6. ALARM STROBE SHALL BE MOUNTED, WATER-TIGHT, ATOP PUMP CONTROL PANEL 'PCP'.
7. PROVIDE WEATHERPROOF CORROSION RESISTANT FLUORESCENT FIXTURE MOUNTED UNDERNEATH SUN/RAIN HOOD, LIGHT SWITCH AND GFIC RECEPTACLE.
8. STRUT-CHANNEL SHALL BE MOUNTED TO 'I-BEAM' POSTS WITH STAINLESS-STEEL FASTENERS AND GALVANIZED CLAMPING HARDWARE.
9. THE BOTTOM OF EQUIPMENT SHALL BE MOUNTED NO LESS THAN 20" ABOVE FINISHED CONCRETE PERSONNEL PAD.
10. CONDUITS SHALL BE INSTALLED UNBROKEN (NO FITTINGS, COUPLINGS, UNIONS, ETC.) THROUGH CLASS-1/DIV-II BOUNDARY.

ELECTRICAL EQUIPMENT RACK LAYOUT (FRONT ELEVATION)
N.T.S.

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK
AND INTERCONNECTION

ELECTRICAL
DETAILS – 2 OF 2

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	EJB
DESIGNED	ALA
CHECKED	AIGA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-9.2

STATUS: ISSUE FOR BID
REVISION

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HVAC LEGEND

PIPING SYMBOLS

- RS — REFRIGERANT SUCTION
- RL — REFRIGERANT LIQUID
- D — DRAIN LINE
- BALL VALVE
- DIRECTION OF FLOW
- FLOOR DRAIN
- PIPE TURNING DOWN
- PIPE TURNING UP
- TEE WITH BRANCH OFF TOP OF MAIN
- TEE WITH BRANCH OFF BOTTOM OF MAIN

DUCTWORK SYMBOLS

- SUPPLY DIFFUSER
- EXHAUST OR RETURN GRILLE OR REGISTER
- DUCT TRANSITION OR REDUCER
- FLEXIBLE DUCT
- DUCT DROP
- DUCT RISE

DUCTWORK SYMBOLS

- RISE IN ELEVATION OF HORIZONTAL DUCTWORK IN DIRECTION OF AIRFLOW
- DROP IN ELEVATION OF HORIZONTAL DUCTWORK IN DIRECTION OF AIRFLOW
- (M) MOTOR OPERATED DAMPER (MOD) W/ACCESS DOOR
- MANUAL VOLUME DAMPER (MVD)
- AD — ACCESS DOOR
- SUPPLY OR OA DUCT — TURNING UP
- RETURN/EXHAUST/RELIEF DUCT TURNING UP
- SUPPLY OR OA DUCT TURNING DOWN
- RETURN/EXHAUST/RELIEF DUCT TURNING DOWN
- 8"ø — FLEXIBLE DUCT

NOTES:
1. ALL DUCT DIMENSIONS SHOWN ARE IN INCHES AND ARE FREE AREA SIZES UNLESS OTHERWISE SHOWN.

SINGLE LINE DUCTWORK

- MEDIUM OR HIGH PRESSURE SUPPLY
- LOW PRESSURE SUPPLY
- RA — RETURN AIR
- EA — EXHAUST AIR
- RFA — RELIEF AIR
- OA — OUTSIDE AIR

MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

- A) OA INTAKE
- B) RELIEF
- C) EXHAUST OUTLET
- D) EXHAUST FAN
- CEILING MOUNTED EXHAUST FAN
- $ — SWITCH
- T2 — THERMOSTAT OR TEMP. INDICATOR; SUBSCRIPT INDICATES ITEM SERVED
- TS — TEMPERATURE SENSOR

AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
℄	CENTER LINE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
FCU	FAN COIL UNIT
EC	ELECTRICAL CONTRACTOR
GC	GENERAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
RF	RETURN FAN
SF	SUPPLY FAN
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN

- DETAIL OR SECTION NUMBER
- SHEET ON WHICH DETAIL OR SECTION APPEARS
- SHEET ON WHICH DETAIL OR SECTION IS CUT
- UC / CFM — UNDERCUT DOOR BY G.C.
- SPECIFIC OR NEW WORK NOTES
- REVISION NOTES
- 21x12 — RECTANGULAR DUCT
- 12ø — ROUND DUCT
- A — 12x12 — 400 — 3W — DEVICE TYPE, NECK SIZE, CFM, FLOW PATTERN — GRILLE, REGISTER OR DIFFUSER DESIGNATION

GENERAL NOTE: ALL ITEMS IN LEGEND MAY NOT BE REQUIRED ON THIS PROJECT

GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
2. THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
3. IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE TO THE ENGINEER, SCALED DRAWINGS OF ALL MECHANICAL SPACES.
4. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
5. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING AND CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER THIS CONTRACT. DO NOT INSTALL PIPING OR DUCTWORK OVER ANY ELECTRICAL SWITCHGEAR.
6. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT DEVICES. ALL LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER PRIME CONTRACTORS PRIOR TO INSTALLATION.
7. THE MECHANICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
8. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PENETRATIONS (PERTAINING TO HIS WORK) THROUGH THE ROOF, WALLS, FLOORS AND THE WATERPROOFING AROUND THE OPENINGS. PENETRATIONS THROUGH FIRE RATED ASSEMBLY SHALL BE PROTECTED AS REQUIRED BY SPECIFICATIONS AND CODE (FIRE DAMPERS, SLEEVES, FIRE CAULK, ETC.).
9. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF FLOORS AND WALLS PERTAINING TO HIS WORK.
10. CONDENSATE DRAINS SHALL BE A MINIMUM OF 3/4"ø COPPER PIPE INSULATED WITH A 25/50 RATED CLOSED CELL FLEXIBLE ELASTOMERIC HAVING A NOMINAL WALL THICKNESS OF 1/2". A P-TRAP SHALL BE INSTALLED IN PIPE AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED TO A FLOOR DRAIN OR AS INDICATED ON PLANS.
11. LOCATE ROOM TEMPERATURE SENSORS 48" ABOVE FINISHED FLOOR OR AS NOTED ON THE PLANS.
12. ALL SENSORS, WIRING, AND CONDUIT ARE TO BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
13. ALL DUCTWORK, PIPING, EQUIPMENT, ETC. SHALL BE SUPPORTED FROM THE BUILDING SUPPORT STRUCTURE AND NOT THE ROOF.
14. ALL EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS AS DESCRIBED IN THE LATEST VERSION OF ASHRAE STANDARD 90.1 AND THE FLORIDA BUILDING ENERGY CODE.
15. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF PIPING WITH THE GENERAL CONTRACTOR AND OTHER PRIME CONTRACTORS.
16. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND ARE INDICATIVE OF THE WORK TO BE PERFORMED. IT IS NOT INTENDED THAT THEY SHOW EVERY DUCT, PIPE FITTING OR APPARATUS REQUIRED FOR A COMPLETE INSTALLATION. THEY ARE NOT INTENDED TO INDICATE EVERY BEND, OFFSET, CHANGE IN DIRECTION AND APPURTENANCE REQUIRED TO PROVIDE A COMPLETE AND WORKABLE SYSTEM. ALL MATERIALS AND EQUIPMENT USED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE STANDARDS UNDER WHICH THE MATERIALS ARE ACCEPTED AND APPROVED, AND IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE

OUTDOOR UNIT DATA									INDOOR UNIT DATA												NOTES
OUTDOOR UNIT MARK	BASIS OF DESIGN	COOLING		REF.	ELECTRICAL				INDOOR UNIT MARK	BASIS OF DESIGN	COOLING SUPPLY CFM	OUTSIDE AIR CFM	TOTAL COOLING MBH	SENSIBLE COOLING MBH	LEAVING AIR TEMP. (°F)		SUPPLY FAN HP	ELECTRICAL				
		TOTAL	SEER/EER	CHARGE	VOLTS	PHASE	MCA	MOP							dB	wB		VOLTS	PHASE	MCA	MOP	
ACCU-6	TRANE TTA120F4	10 TONS	11.2 EER	21.2 LBS	460	3	24.1	30	AHU-6	TRANE TWE120	4,000	0	117.9	91.0	59.4	57.7	2	460	3	4.0	15	1 – 15
ACCU-7	TRANE TTA120F4	10 TONS	11.2 EER	21.2 LBS	460	3	24.1	30	AHU-7	TRANE TWE120	4,000	0	117.9	91.0	59.4	57.7	2	460	3	4.0	15	1 – 15

NOTES:

1. UNITS SHALL BE CONTROLLED OFF OF ONE WALL MOUNTED PROGRAMMABLE THERMOSTAT.
2. UNIT TO BE PROVIDED WITH MERV 8, 1" THICK PLEATED MEDIA FILTERS. PROVIDE 2 ADDITIONAL SETS OF FILTERS.
3. UNIT TO BE PROVIDED WITH A ONE YEAR COMPREHENSIVE UNIT WARRANTY AND A FIVE YEAR COMPRESSOR WARRANTY.
4. PROVIDE UL LISTED DISCONNECT FOR OUTDOOR UNIT, INDOOR UNIT TO HAVE UL LISTED UNIT MOUNTED LOCKING TYPE DISCONNECT.
5. UNITS TO UTILIZE REFRIGERANT R-410A.
6. COOLING OUTPUT CAPACITY RATED AT 95° OAT, 80°DB/67°WB EAT.
7. UNIT SHALL BE CAPABLE OF LOW AMBIENT COOLING DOWN TO 20°F.
8. PROVIDE INDOOR UNIT WITH CONDENSATE OVERFLOW SWITCH WITH AUDIBLE AND VISUAL ALARMS (COORDINATE ALARM LOCATIONS WITH THE OWNER). UNIT SHALL SHUT OFF WHEN CONDENSATE OVERFLOW SWITCH IS ACTIVATED.
9. INDOOR UNIT SHALL BE PROVIDED WITH A TOP MOUNTED DISCHARGE PLENUM WITH 4-WAY ADJUSTABLE GRILLE.
10. INDOOR UNIT SHALL BE PROVIDED WITH A RETURN GRILLE.
11. INDOOR UNIT SHALL BE PROVIDED WITH SUBBASE AND RUBBER ISOLATORS.
12. CONDENSER COIL SHALL BE EPOXY COATED AND PROVIDED WITH VANDAL GUARD KIT.
13. UNIT SHALL BE DUAL COMPRESSOR AND DUAL CIRCUIT.
14. UNITS SHALL BE INSTALLED WITH MANUFACTURER'S RECOMMENDED CLEARANCES.
15. "BASIS OF DESIGN" SHALL BE TRANE; EQUALS BY JCI, AND CARRIER ARE ACCEPTABLE.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

HVAC LEGEND, GENERAL NOTES AND SCHEDULES

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	SMT
DESIGNED	SMT
CHECKED	RMW
PROJ. MGR.	MSL

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

DRAWING NUMBER
H-0.1

STATUS: ISSUE FOR BID
REVISION

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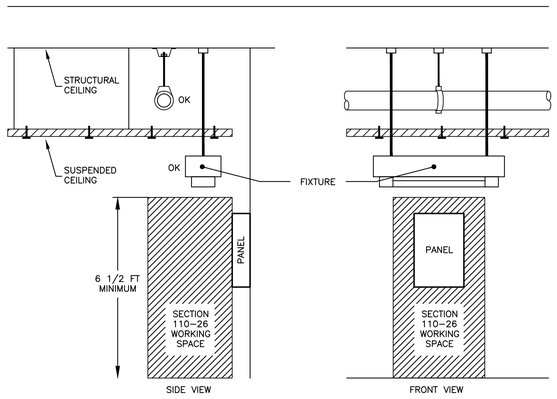
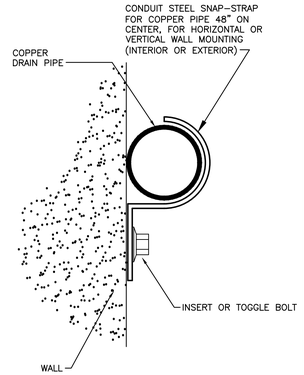


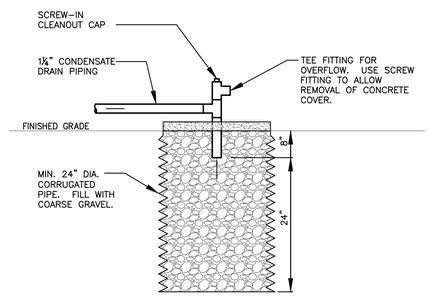
NOT TO SCALE

1 WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT



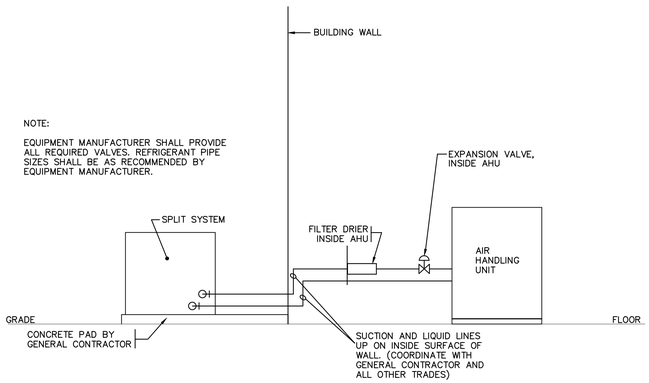
NOT TO SCALE

2 CONDENSATE DRAIN SUPPORT



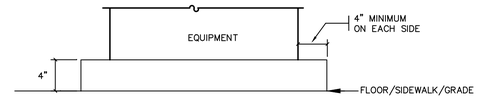
NOT TO SCALE

3 FRENCH DRAIN DETAIL



NOT TO SCALE

4 REGRIGERANT PIPING SCHEMATIC

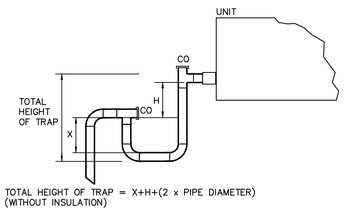


NOTES:
1. ACTUAL PAD SIZE TO BE DETERMINED BY CONTRACTOR AFTER EQUIPMENT SHOP DRAWING HAS BEEN APPROVED.

NOT TO SCALE

5 SUPPORT PAD DETAIL

BLOW THROUGH
X = MIN. 1" PLUS CASING STATIC PRESSURE
H = MIN. 1"
DRAW THROUGH
X = 1/2 "H"
H = MIN. 1" PLUS CASING STATIC PRESSURE



TOTAL HEIGHT OF TRAP = X+H+(2 x PIPE DIAMETER)
(WITHOUT INSULATION)

NOT TO SCALE

6 CONDENSATE TRAP DETAIL

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

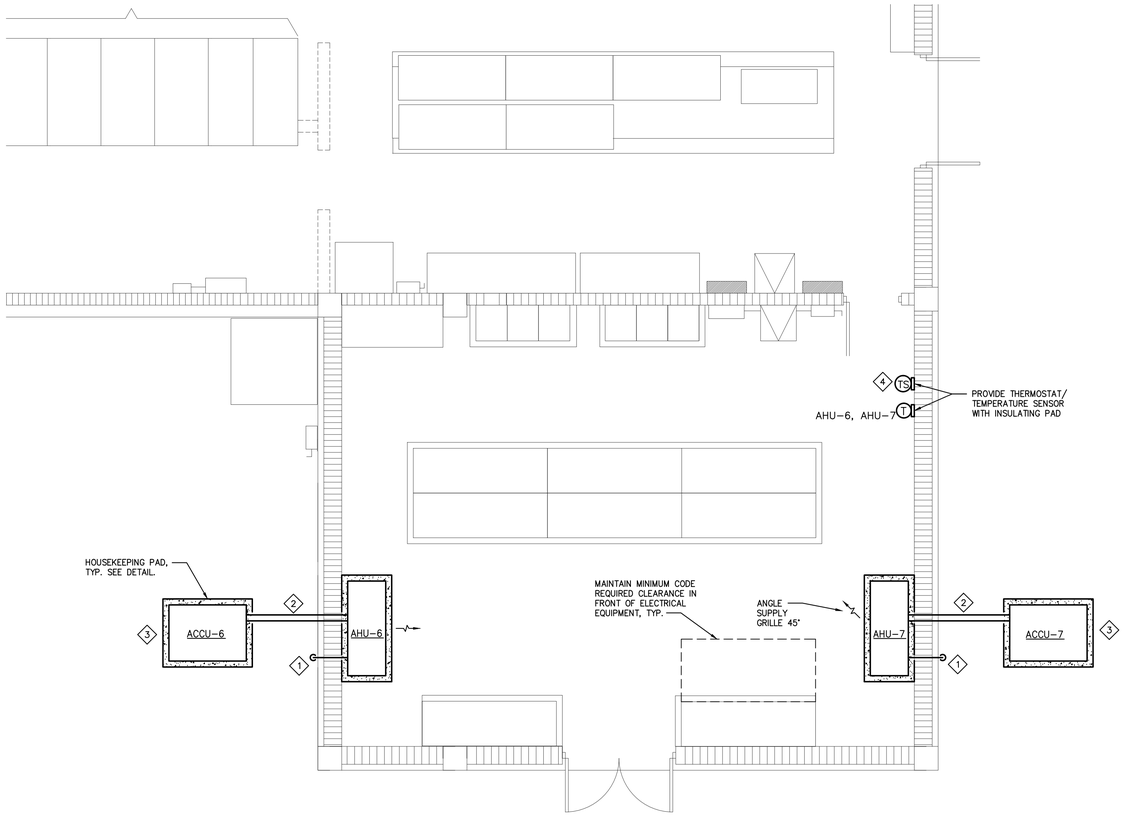
HVAC DETAILS

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	SMT
DESIGNED	SMT
CHECKED	RMW
PROJ. MGR.	MSL

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

DRAWING NUMBER
H-0.2

STATUS: ISSUE FOR BID
REVISION



N NORTH

1 H-0.3

MAIN ELECTRICAL BUILDING HVAC PLAN

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

NEW WORK NOTES

1. ROUTE 1-¼" CONDENSATE DRAIN THROUGH EXTERIOR WALL TO FRENCH DRAIN. INSULATE PIPING INSIDE THE BUILDING WITH ½" THICK FLEXIBLE ELASTOMERIC INSULATION. SEAL WALL PENETRATIONS WATERTIGHT.
2. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. INSULATE WITH 1-½" FLEXIBLE ELASTOMERIC INSULATION. SEAL WALL PENETRATIONS WATERTIGHT.
3. OUTDOOR CONDENSING UNIT TO SIT ON NEW PAD ON GRADE. COORDINATE FINAL LOCATION WITH EXISTING CONDITIONS AND OWNER.
4. WALL MOUNTED TEMPERATURE SENSOR SHALL BE PROVIDED WITH CONTACTS TO SEND A HIGH TEMPERATURE ALARM WHEN THE HIGH TEMPERATURE SETPOINT (ADJ.) IS EXCEEDED.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SEWRF 10 MG STORAGE TANK AND INTERCONNECTION

MAIN ELECTRICAL BUILDING HVAC PLAN

DATE:	APRIL 2014
MCE PROJ. #	1024-0160
DRAWN	SMT
DESIGNED	SMT
CHECKED	RMW
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/4"=1'-0"
VERTICAL: N/A

DRAWING NUMBER
H-0.3

STATUS: ISSUE FOR BID
REVISION