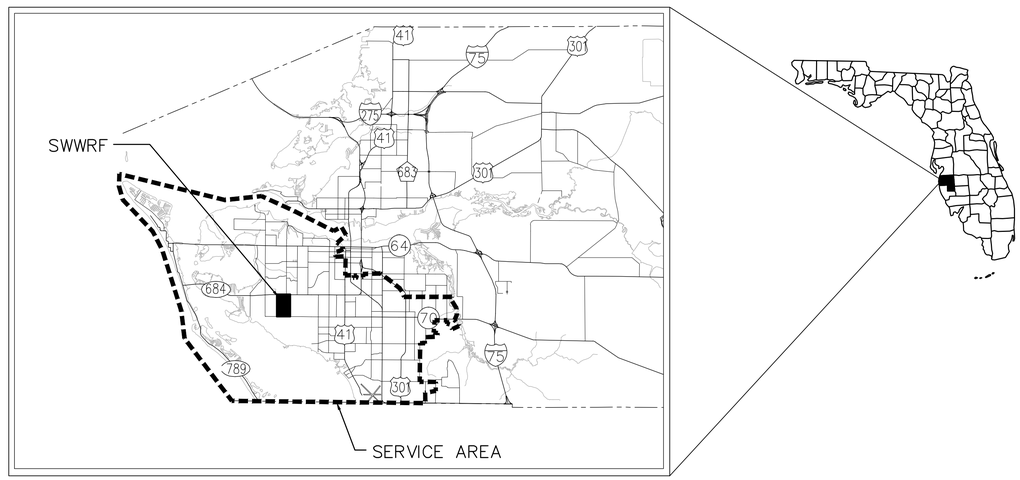
SWWRF LAKE FILTRATION
AND NORTH POND IMPROVEMENTS

COUNTY PROJECT #6079180

ISSUE FOR BID
FEBRUARY 2012

MANATEE COUNTY, FLORIDA



PROJECT VICINITY MAP

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SWWRF IMPROVEMENTS 1024-0147
FEBRUARY 2012
ISSUE FOR BID
G-0.1 - COVER SHEET

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	G-0.4	EXISTING PROCESS FLOW SCHEMATIC
	G-0.5	PROPOSED PROCESS FLOW SCHEMATIC
	G-0.6	PROPOSED SODIUM HYPOCHLORITE CHEM. FEED FACILITIES PIPING SCHEMATIC
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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 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. THERE SHALL BE NO "SIZE ON SIZE TAPS" OR "SIZE ON SMALLER TAPS" ON THIS PROJECT.
7. 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.
8. 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. THE MOST CURRENT SET OF RED-LINES DRAWINGS SHALL ALSO BE BROUGHT TO EACH MONTHLY PROGRESS MEETING.
9. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DETAILED CONSTRUCTION PHASING PLAN FOR APPROVAL, PRIOR TO BEGINING CONSTRUCTION.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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 ABOVE AND BELOW GROUND PIPE JOINTS SHALL BE FULLY RESTRAINED.
16. ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
17. SANITARY SEWERS AND FORCE MAINS CROSSING OVER OR UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER OR FORCE MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10' BETWEEN ANY TWO JOINTS. AS AN ALTERNATE, THE SEWER OR FORCE MAIN MAY BE PLACED IN A WATERTIGHT CASING PIPE.
18. WATER SHALL NOT BE PERMITTED IN BUILDING EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
19. 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.
20. ALL BELOW-GRADE FITTINGS 4-INCHES AND GREATER IN DIAMETER SHALL BE MECHANICAL JOINT DUCTILE IRON WITH FACTORY APPLIED, FUSION BONDED EPOXY COATINGS FOR THEIR INTERIOR AND EXTERIOR SURFACES.
21. ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
22. 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.
23. 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.
24. 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.
25. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
26. 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.

SURVEY NOTES

1. MANATEE SOUTHWEST WATER RECLAMATION FACILITY
   ELEVATIONS SHOWN HEREON ARE DATUM NGVD – 1929
   BASED ON MANATEE COUNTY BENCHRUN 50
   MATCHED TO BENCHMARK 50-29-10 (RIVET AND MANATEE COUNTY DISC CL ENTRANCE TO ADMIN BUILDING) EL=17.820
   NOTE: BENCHMARK 50-29-11 (RIVET AND MANATEE COUNTY DISC ON MITERED END SECTION AT 66TH AND 65TH WAS DETERMINED TO BE DISTURBED) RECORD EL=15.671 FIELD MEASURED EL=15.526.
   COORDINATES SHOWN HEREON ARE BASED ON STATE PLANE FLORIDA WEST ZONE NAD-83 (1999)
   NOTE: PER ONSITE ELECTRICIAN ALL LEVEL TRANSMITTERS ARE SET TO READ 0 AT THE WEIR ELEVATION.
2. 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.
3. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING FACILITIES SHOWN WITHIN THE LIMITS OF CONSTRUCTION ARE PROVIDED BY McKIM & CREED SPECIFICALLY FOR THIS PROJECT.

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 DEPT.
GENE RIGGS
2904 12TH STREET COURT E.
BRADENTON, FL 34208
(941) 708-7509 Ext. 7509

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

MANATEE COUNTY
UTILITIES OPERATIONS
BOB CROUCH
4422-C 66TH STREET W.
BRADENTON, FL 34210
(941) 792-8811 Ext 5075

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.
6. ADJUST EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.

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. CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
6. THE CONTRACTOR SHALL ADJUST EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.
8. ALL DISTURBED GRASS AREAS SHALL BE RESTORED WITH SOLID SOD IN LIKE KIND UNLESS OTHERWISE DIRECTED BY OWNER

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.

NOTES

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 TO OBTAINING ANY PERMITS REQUIRED TO IMPLEMENT THE APPROVED MOT PLAN.

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

PROCESS AREA TABLE

NUMERIC DESIGNATION	PROCESS AREA
0	SITE CIVIL
1	NORTH POND
2	DISC FILTERS
3	RCW RETURN PUMP STATION
4	REJECT RETURN
5	EFFLUENT PUMP STATION
6	CHLORINE INJECTION

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DRAWING INDEX AND GENERAL NOTES

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
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HORIZONTAL:
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DRAWING NUMBER
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REVISION

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GENERAL ABBREVIATIONS

@.	AT
ABW	AUTOMATIC BACKWASH
A/C	AIR CONDITIONER UNIT
AC	ACRES
AC	ASPALTIC CONCRETE
ABD	ABANDONED
AL./ALUM.	ALUMINUM
ANCH.	ANCHOR
APPROX.	APPROXIMATE
BLDG.	BUILDING
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
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
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
MES	MILLION GALLONS PER DAY
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 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 5/8" LB 6113
SND	SET NAIL & DISC LB 6113
SPRK	SPRINKLER
SQ.	SQUARE
SN.	SIGN
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
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
PLY	POLYMER
PS	PUMP STATION
PW	POTABLE WATER
RAS	RETURNED ACTIVATED SLUDGE
RCW	RECLAIMED WATER
RCWR	RECLAIMED WATER RETURN
RECIRC	RECIRCULATED WATER
REJ	REJECT
RML	RECIRCULATED MIXED LIQUOR
RW	REUSE WATER
SAM	SAMPLE
SB	SPLITTER BOX
SC	SCUM
SDR	STORMWATER DRAINAGE
SL	SAMPLE LINE
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

SURVEY LEGEND

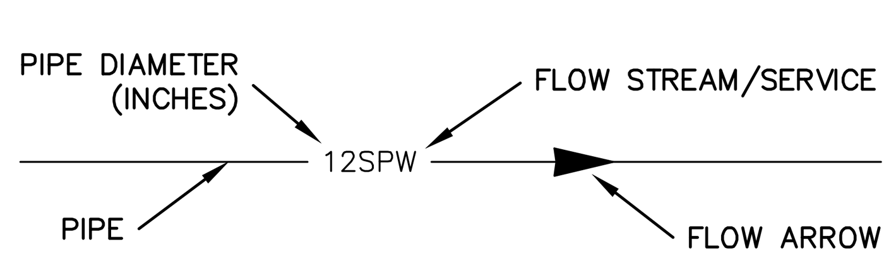
- + 25.25 = POINT OF ELEVATION FROM M&C SURVEY
- + 25.25 = POINT OF ELEVATION FROM OTHER SOURCE
- 25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE
- = BACKFLOW PREVENTER
- = BOLLARD or POST
- = BOX, CABLE TELEVISION
- = BOX, ELECTRIC UTILITY
- = BOX, ELECTRIC UTILITY (TRANSFORMER)
- = BOX, TELEPHONE
- = DECORATIVE LIGHT POLE
- = ELECTRIC OUTLET
- = FIRE HYDRANT
- = FIRE HYDRANT, RECLAIMED
- = FLAGPOLE
- = FLARED END SECTION
- = GRATE INLET
- = GROUND LIGHT
- = GUY ANCHOR
- = LIGHT POLE, CONCRETE
- = LIGHT POLE, METAL
- = LIGHT POLE, WOOD
- = MAILBOX
- = MANHOLE, ELECTRIC
- = MANHOLE, GREASE TRAP
- = MANHOLE, SANITARY SEWER
- = MANHOLE, STORM SEWER
- = MANHOLE, TELEPHONE
- = METER, ELECTRIC
- = METER, GAS
- = METER, RECLAIMED WATER
- = METER, WATER
- = MITERED END SECTION
- = MONITORING WELL
- = PEDESTRIAN CROSSING SIGNAL
- = SANITARY CLEANOUT
- = SPRINKLER HEAD
- = TELEPHONE RISER
- = TRAFFIC SIGN
- = TRAFFIC SIGNAL BOX
- = TRAFFIC SIGNAL POLE
- = UNDERGROUND CABLE TELEVISION MARKER
- = UNDERGROUND CABLE TELEVISION WARNING SIGN
- = UNDERGROUND ELECTRIC MARKER
- = UNDERGROUND ELECTRIC WARNING SIGN
- = UNDERGROUND FIBER OPTIC MARKER
- = UNDERGROUND FIBER OPTIC WARNING SIGN
- = UNDERGROUND FORCEMAIN MARKER
- = UNDERGROUND FORCEMAIN WARNING SIGN
- = UNDERGROUND GAS MARKER
- = UNDERGROUND GAS WARNING SIGN
- = UNDERGROUND RECLAIMED WATER MARKER
- = UNDERGROUND RECLAIMED WATER WARNING SIGN
- = UNDERGROUND SANITARY SEWER MARKER
- = UNDERGROUND SANITARY SEWER WARNING SIGN
- = UNDERGROUND TELEPHONE MARKER
- = UNDERGROUND TELEPHONE WARNING SIGN
- = UNDERGROUND WATER MARKER
- = UNDERGROUND WATER WARNING SIGN
- = UTILITY POLE, CONCRETE
- = UTILITY POLE, METAL
- = UTILITY POLE, WOOD
- UV = VALVE, UTILITY NOT DETERMINED
- GV = VALVE, GAS
- RV = VALVE, RECLAIMED WATER
- SV = VALVE, SANITARY
- WV = VALVE, WATER
- = WELL
- = CONCRETE
- = ASPHALT
- = OVERLAY EXIST. PAVEMENT
- = CONCRETE PAVERS
- = BRICK
- = TOP OF BANK
- = TOE OF SLOPE or CENTER LINE OF DITCH
- = 6' CHAIN LINK FENCE UNLESS OTHERWISE NOTED
- = OVERHEAD UTILITY LINES
- = STAKED SILT FENCE

STORM CURB INLETS

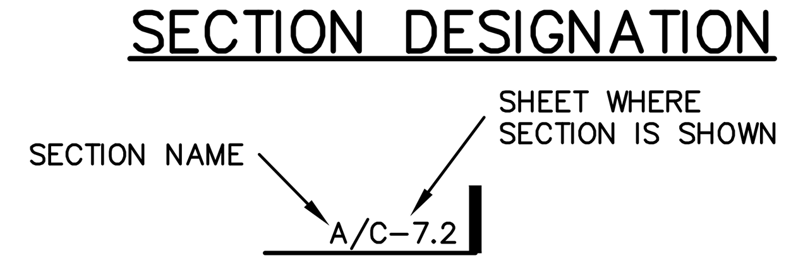
PIPING LEGEND

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.
TOB	TOP OF BANK	TOB
TOE	TOE OF BANK	TOE
	PIPING, STRUCTURES OR EQUIPMENT TO BE REMOVED	
25	CONTOURS	26
×29.0	SPOT ELEVATION	29.75
	FLOW ARROW	

PIPE IDENTIFICATION



SECTION DESIGNATION



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REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY FLORIDA

MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL ABBREVIATIONS, SYMBOLS AND LEGENDS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
G-0.3

STATUS: ISSUE FOR BID
REVISION

REV.NO.	DESCRIPTIONS REVISIONS	DATE

SEAL

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

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

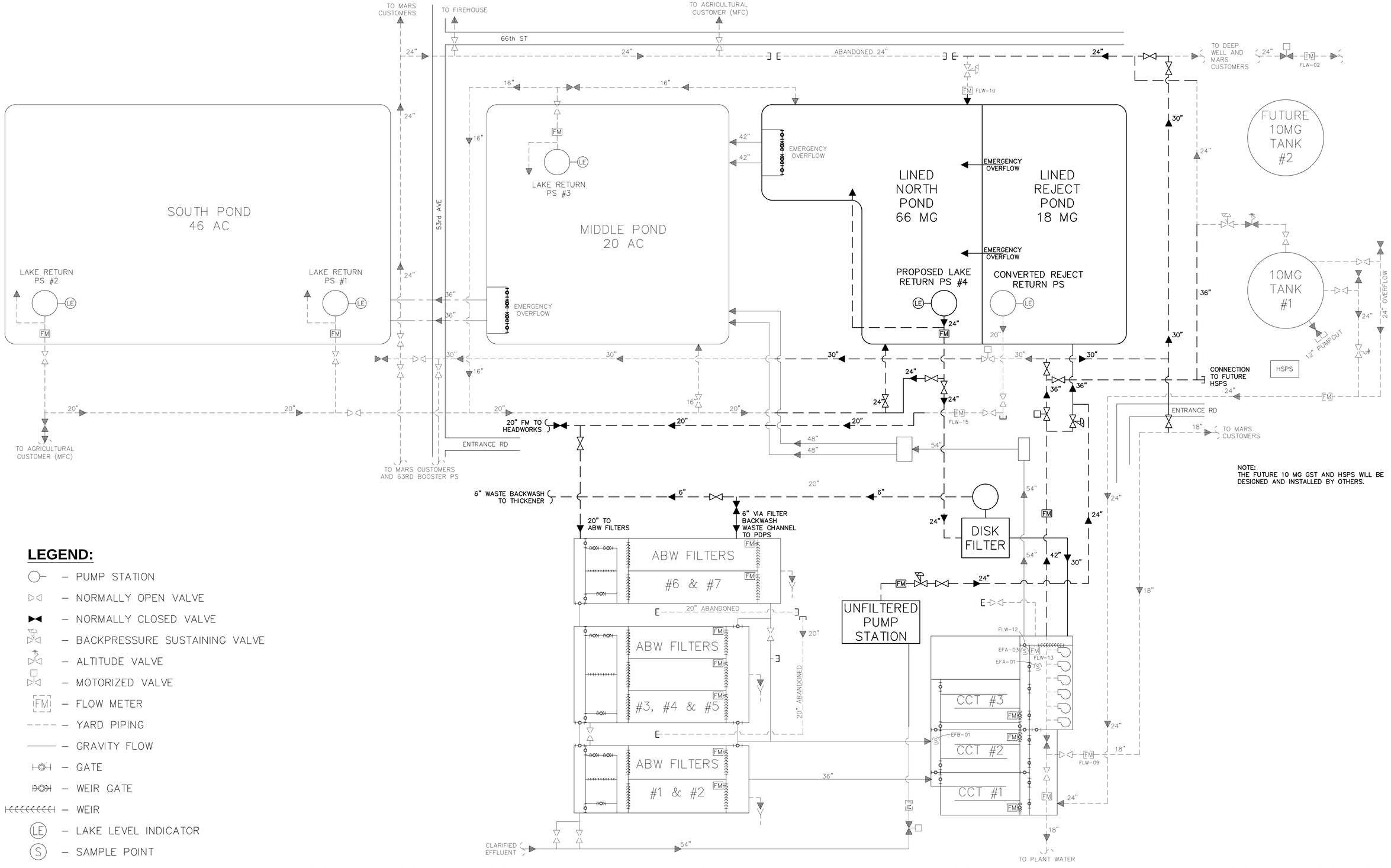
EXISTING PROCESS FLOW SCHEMATIC

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	DMP
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.4

STATUS: ISSUE FOR BID
REVISION



NOTE:
THE FUTURE 10 MG GST AND HSPS WILL BE DESIGNED AND INSTALLED BY OTHERS.

LEGEND:

- ◯— – PUMP STATION
- ▷◁ – NORMALLY OPEN VALVE
- ⋈ – NORMALLY CLOSED VALVE
- – BACKPRESSURE SUSTAINING VALVE
- – ALTITUDE VALVE
- – MOTORIZED VALVE
- FM – FLOW METER
- – – – – – YARD PIPING
- ——— – GRAVITY FLOW
- – GATE
- – WEIR GATE
- – WEIR
- LE – LAKE LEVEL INDICATOR
- S – SAMPLE POINT

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROPOSED PROCESS FLOW SCHEMATIC

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	DMP
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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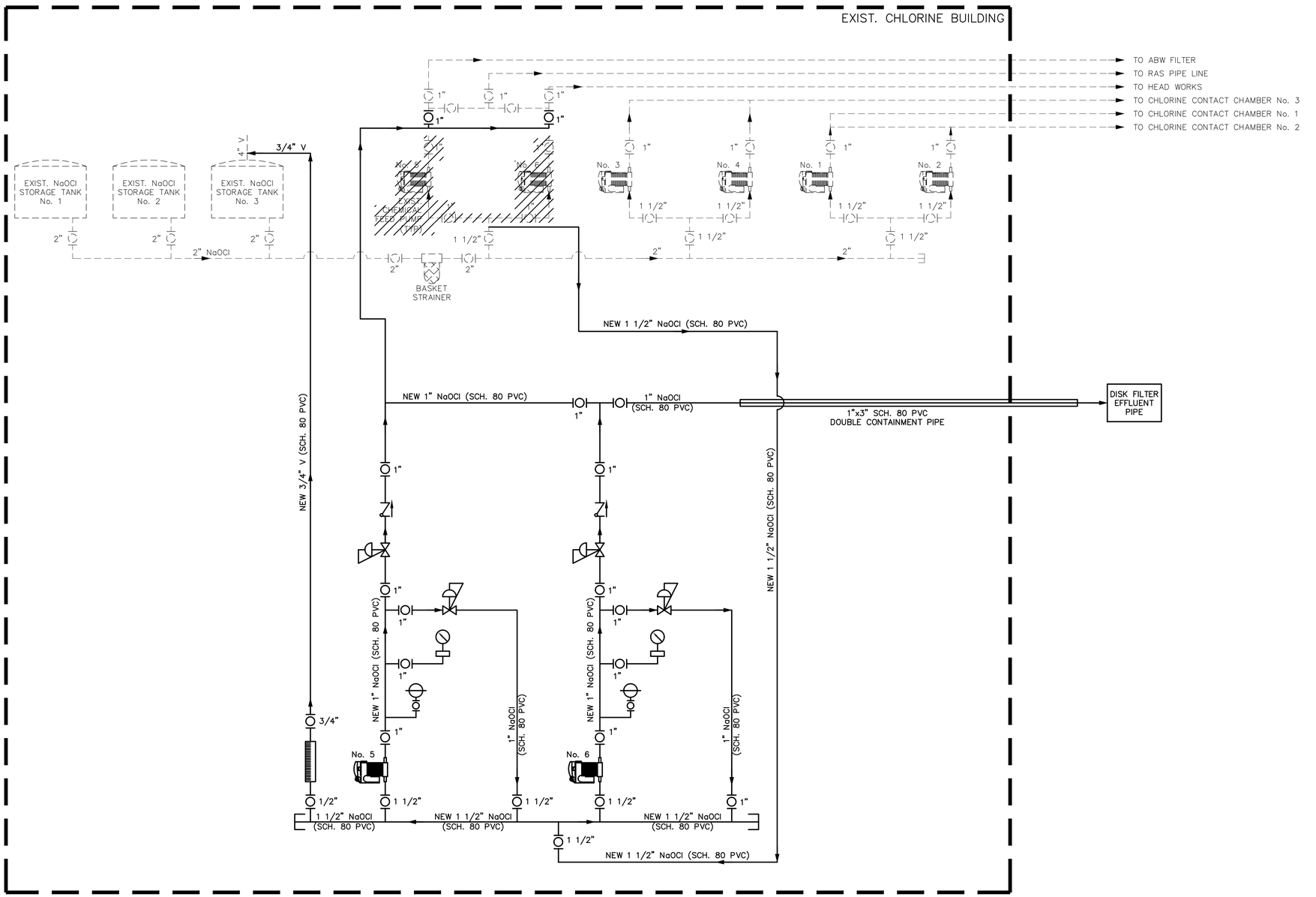
NOTES:
1. REPLACE CHEMICAL FEED PUMPS 5 AND 6 WITH NEW CHEMICAL FEED PUMPS. REPLACE THE SKID, PIPING AND VALVES ASSOCIATED WITH THE PUMPS. CONNECT TO THE CHLORINE SOLUTION PIPING FOR THE EXISTING ABW FILTERS, RAS PIPELINE, AND HEADWORKS. CONNECT TO THE NEW DISK FILTER EFFLUENT PIPE. SEE SODIUM HYPOCHLORITE CHEMICAL FEED PLANS AND DETAILS ON DRAWING Nos. C-6.1 AND C-6.2.



LEGEND

- Y-STRAINER
- BALL VALVE
- 500 ml CALIBRATION CHAMBER
- CHEMICAL FEED PUMP
- BACKPRESSURE VALVE
- PRESSURE RELIEF VALVE
- PRESSURE GAUGE
- PULSATION DAMPENER
- DOUBLE CONTAINMENT PIPE
- PROPOSED PIPING
- EXISTING PIPING

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROPOSED SODIUM HYPOCHLORITE CHEMICAL FEED FACILITIES PIPING SCHEMATIC

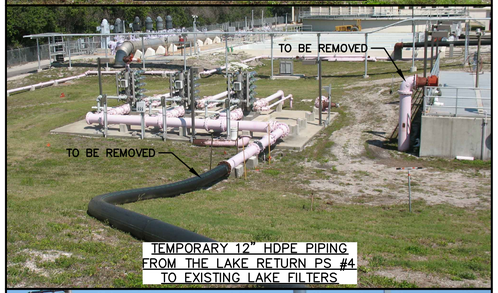
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
G-0.6

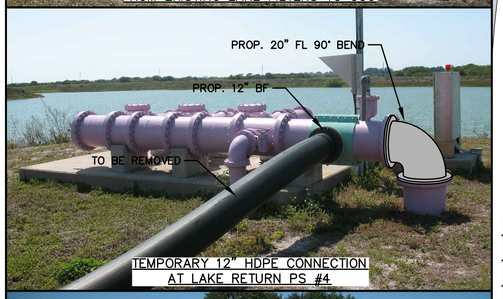
STATUS: ISSUE FOR BID
REVISION

ASR ABOVE GROUND PIPING TO THE CCC AND STORAGE PONDS



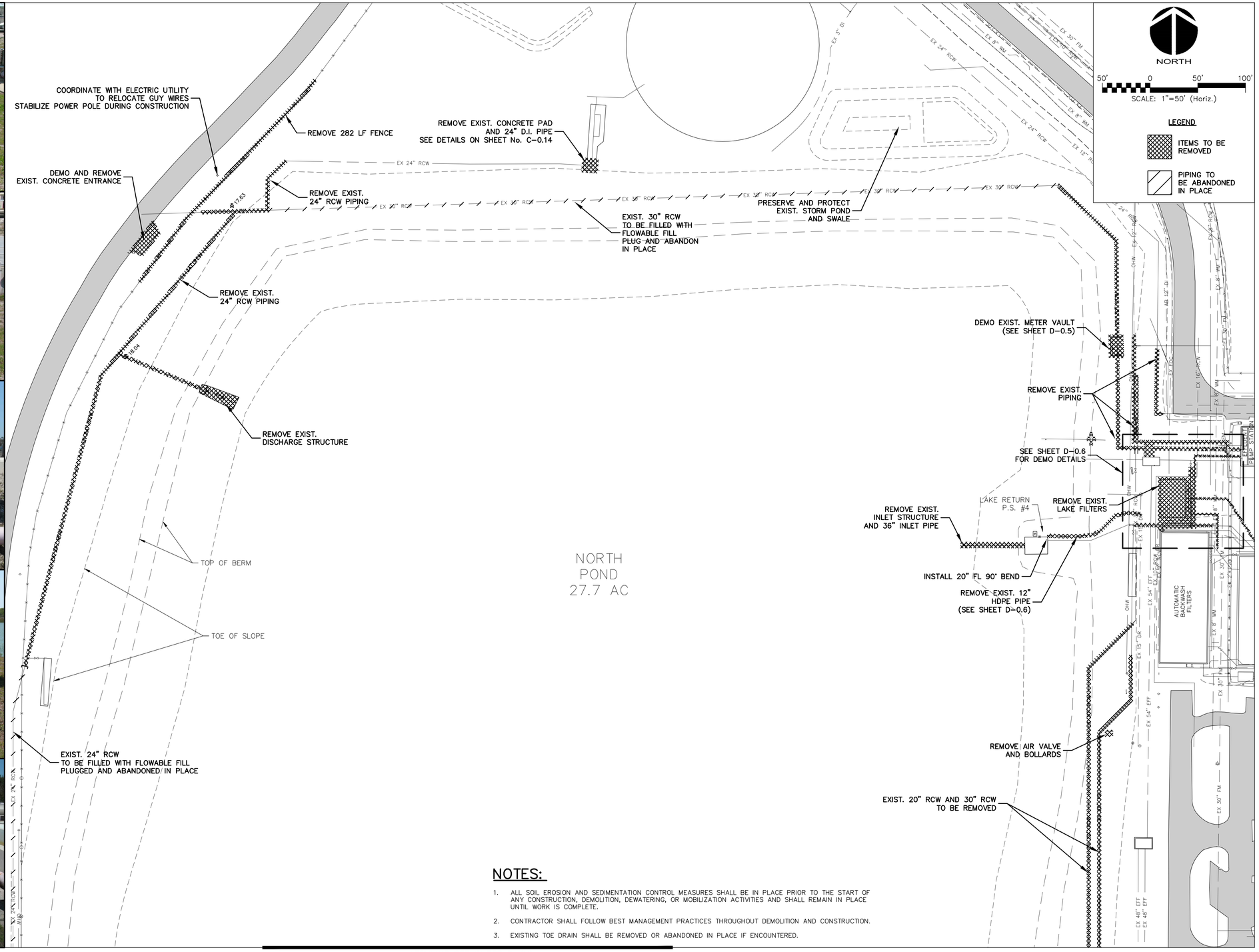
TEMPORARY 12" HDPE PIPING FROM THE LAKE RETURN PS #4 TO EXISTING LAKE FILTERS

TEMPORARY 12" HDPE CONNECTION FROM EXISTING LAKE FILTERS TO CCC



TEMPORARY 12" HDPE CONNECTION AT LAKE RETURN PS #4

ASR ABOVE GROUND PIPING AT THE CCC



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 AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
2. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT DEMOLITION AND CONSTRUCTION.
3. EXISTING TOE DRAIN SHALL BE REMOVED OR ABANDONED IN PLACE IF ENCOUNTERED.

MATCHLINE SEE SHEET D-0.2

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION PLAN No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: NA

DRAWING NUMBER
D-0.1

STATUS: ISSUE FOR BID
REVISION

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MATCHLINE SEE SHEET C-0.1.6

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 AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
2. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT DEMOLITION AND CONSTRUCTION.
3. EXISTING TOE DRAIN SHALL BE REMOVED OR ABANDONED IN PLACE IF ENCOUNTERED.
4. THE CONTRACTOR SHALL SUBMIT A DEADMAN DESIGNED FOR THE SPECIFIC FIELD CONDITIONS AND SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION PLAN No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: NA

DRAWING NUMBER
D-0.2

STATUS: ISSUE FOR BID
REVISION

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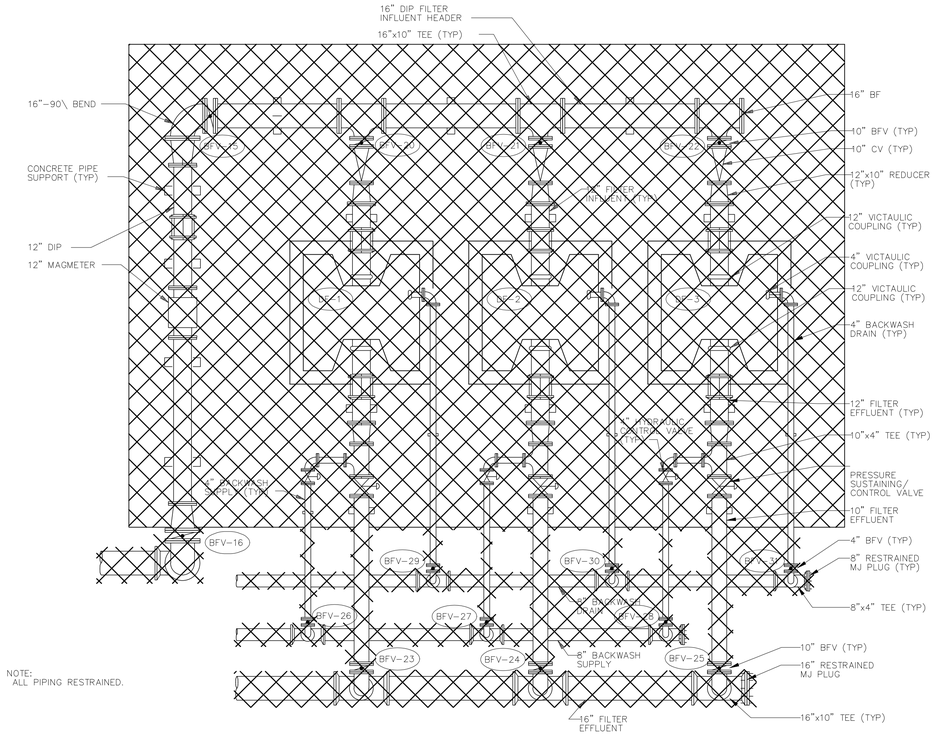


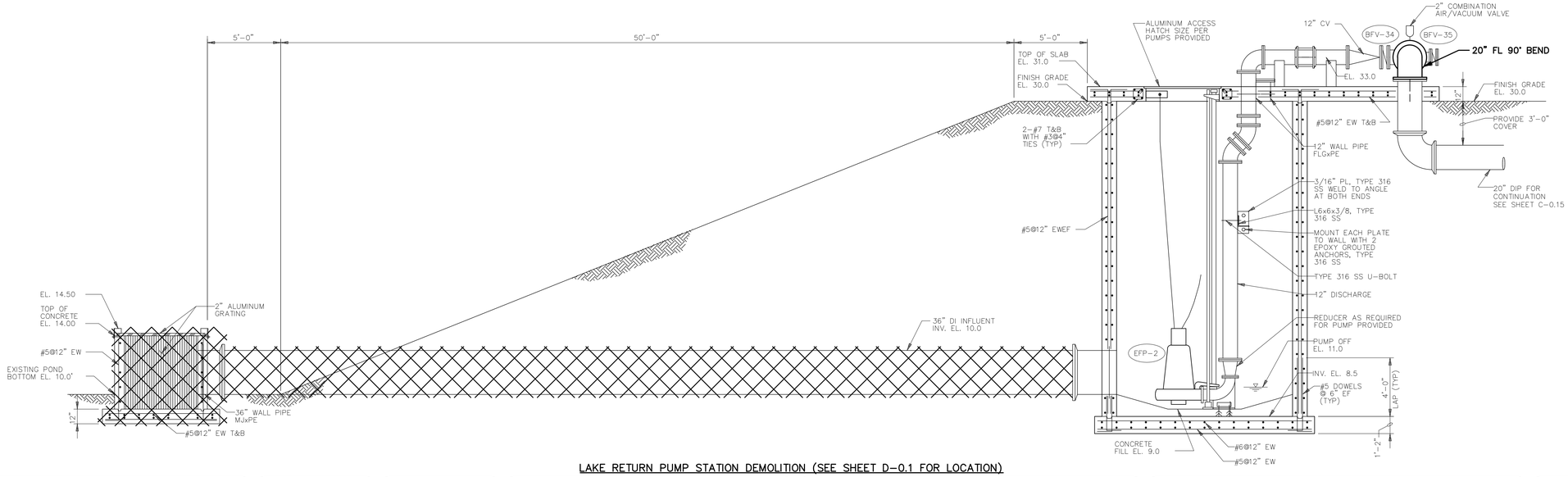
EXISTING LAKE FILTRATION SYSTEM PLAN

LEGEND

ITEMS TO BE REMOVED

NOTES:

1. EXISTING LAKE FILTRATION SYSTEM TO BE REMOVED IN IT'S ENTIRETY, INCLUDING, BUT NOT LIMITED TO: PIPING; EQUIPMENT; CONDUITS; AND CONCRETE PAD. EQUIPMENT TO BE TURNED OVER TO THE COUNTY SHALL BE CLEANED, CLEARLY IDENTIFIED AND DELIVERED TO THE COUNTY AT A DESIGNATED STORAGE AREA ON THIS TREATMENT PLANT SITE. SEE SHEET D-0.1 FOR LOCATION.
2. BACKGROUND IMAGE FROM RECORD DRAWINGS DATED MAY 1996 FOR "AUTOMATIC BACKWASH FILTER ADDITION".



LAKE RETURN PUMP STATION DEMOLITION (SEE SHEET D-0.1 FOR LOCATION)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION DETAILS No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
D-0.3

STATUS: ISSUE FOR BID
REVISION

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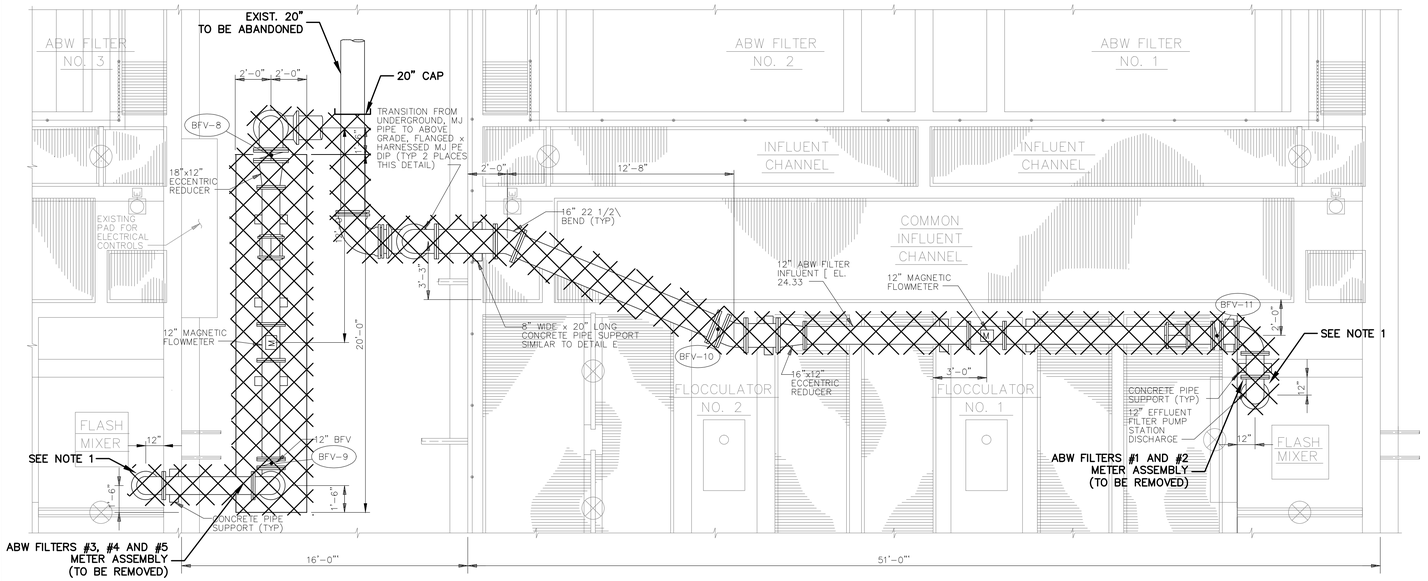
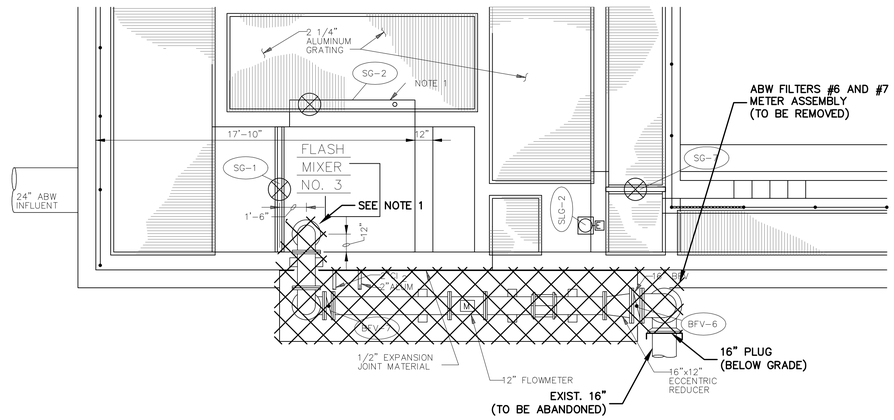


LAKE RETURN PIPING TO ABW FILTERS #1 THROUGH #5



LAKE RETURN PIPING TO ABW FILTERS #6 & #7

NOTES:
1. CONTRACTOR SHALL PLUG HOLE, AFTER PIPE IS REMOVED, WITH ALUMINUM CHECKER PLATING OR GRATING.
2. BACKGROUND IMAGE FROM RECORD DRAWINGS DATED MAY 1996 FOR "AUTOMATIC BACKWASH FILTERS ADDITION".

ABW FILTERS #1 & #2 METER ASSEMBLY

ABW FILTERS #3, #4 & #5 METER ASSEMBLY

ABW FILTERS #6 & #7 METER ASSEMBLY

LEGEND

ITEMS TO BE REMOVED

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION DETAILS No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
D-0.4

STATUS: ISSUE FOR BID
REVISION

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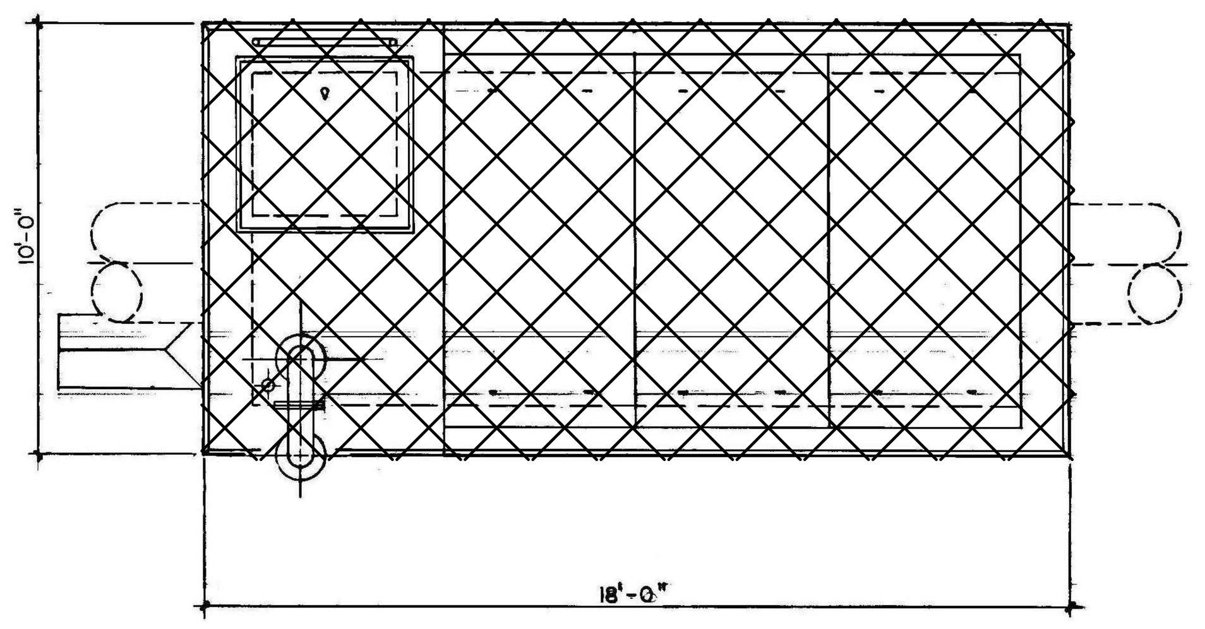
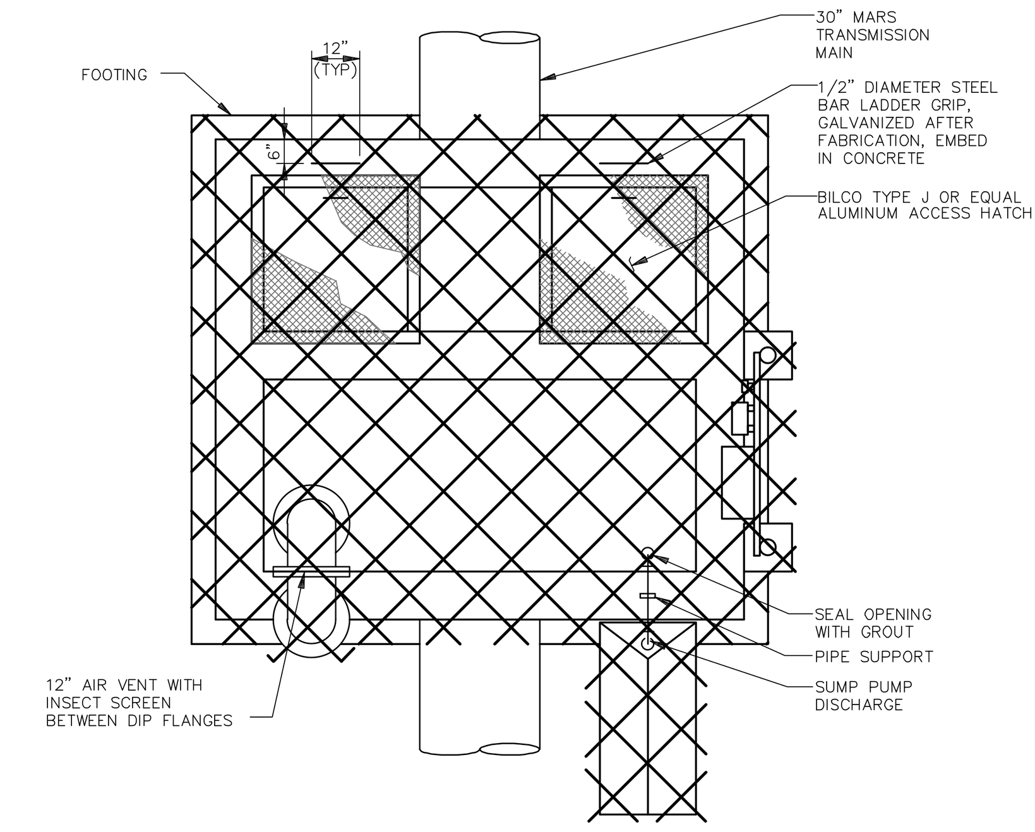
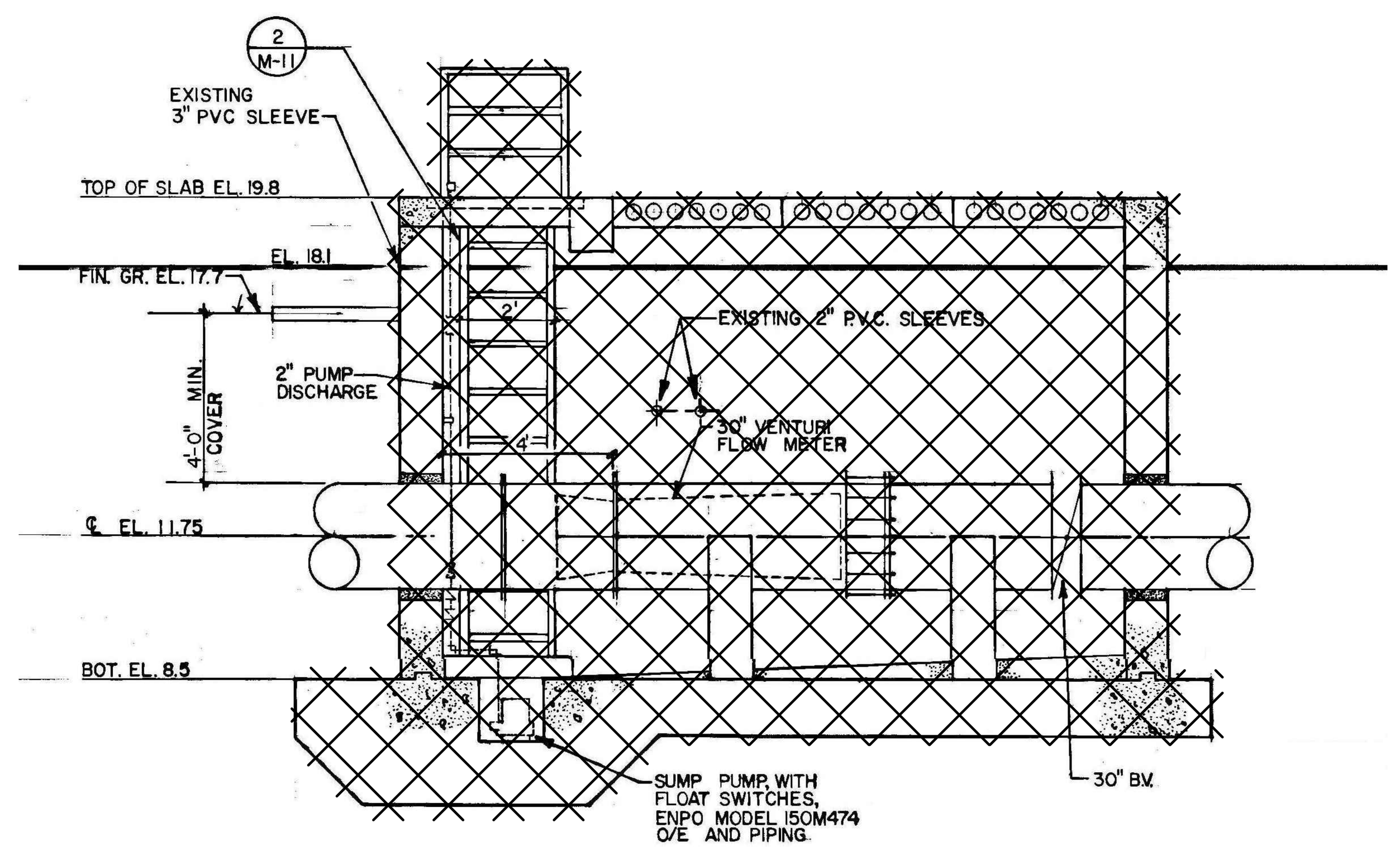


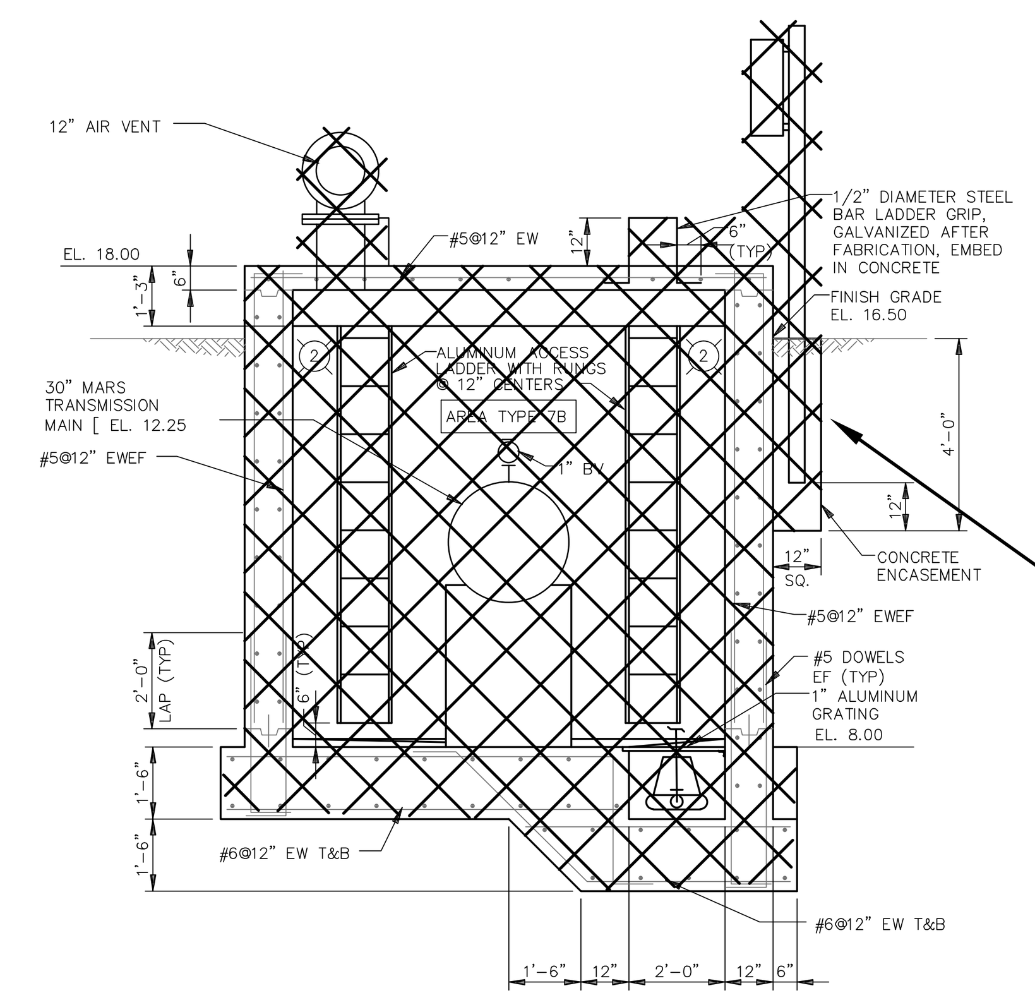
NORTH MARS METER PLAN



SOUTH MARS METER PLAN



NORTH MARS METER SECTION



DEMO EXIST. METER VAULT TO 3 FEET BELOW GRADE AND FILL WITH SAND. PUNCH 3 – 12" DIAMETER IN BOTTOM OF STRUCTURE. 30" PIPE TO REMAIN IN PLACE AND IN SERVICE.

SOUTH MARS METER SECTION

LEGEND

ITEMS TO BE REMOVED

NORTH MARS METER
(SEE SHEET D–0.1 FOR LOCATION)

SOUTH MARS METER
(SEE SHEET D–0.1 FOR LOCATION)

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

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EB0006691
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION DETAILS No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
D-0.5

STATUS: ISSUE FOR BID
REVISION

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42"DIP

CONECT PROP. 12" DIP AT EXIST. BLIND FLG. FACING UP.

EXIST. UNDERGROUND 12" DIP

EFFLUENT WET WELL/PUMPS

ALREADY REMOVED

PROP. 12" DIA. ABOVE GROUN

36"RCP (OUTFALL)

EXISTING JUNCTION OUTFALL BOX

54"EFFLUENT (OUTFALL)

16" PLUG

30

30

18

TOP OF BERM

NORTH LAKE

10"RW

8"PVC WM

NOTE:
SEE SHEET D-0.1 FOR LOCATION

DISC FILTERS

16" DI EFFULENT (DISC FILTER)
(EL. 10.25±)

30" CIP INFLUENT FM

EXIST. 15" DRAIN

54" RCP EFFLUENT (OUTFALL)/(EL 11.8±)

10"RW

PROP. 161 LF. 12" DIA. HDPE DR11 WELDED FLG. EACH END, ABOVE GROUND. (MIN. 5 FT. SLACK)

8" BW WASTE

20" FROM N. LAKE

(APPROX. 3'-0" COVER)
20" DIP EFF. FROM N. LAKE

10" PLUG

20" PLUG

2"PVC

4"DI AIR

2"PVC RW

CLOSED VALVE

FLOW

ROTATE 16"ø 90° TO SOUTH. INSTALL 16X12" DI REDUCER FLxFL, 12" DI 90° BEND FLxFL, CAP EXIST. U/G 16" DI WITH 16" DI BLIND FLG.

20" DIP

20" FROM S. LAKE

54" RCP EFFLUENT (OUTFALL)

2"PVC

10"DIP RW

4"DI AIR

2"PVC RW

EXIST 15" DRAIN

NEW ABW FILTERS

16" PLUG

8" PLUG

NOTE:
1. BACKGROUND IMAGE FROM RECORD DRAWING DATED APRIL 2009 FOR "SOUTHWEST WRF PIPING MODIFICATION PLAN".

LEGEND

ITEMS TO BE REMOVED

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DEMOLITION DETAILS No. 4

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
D-0.6

STATUS: ISSUE FOR BID
REVISION

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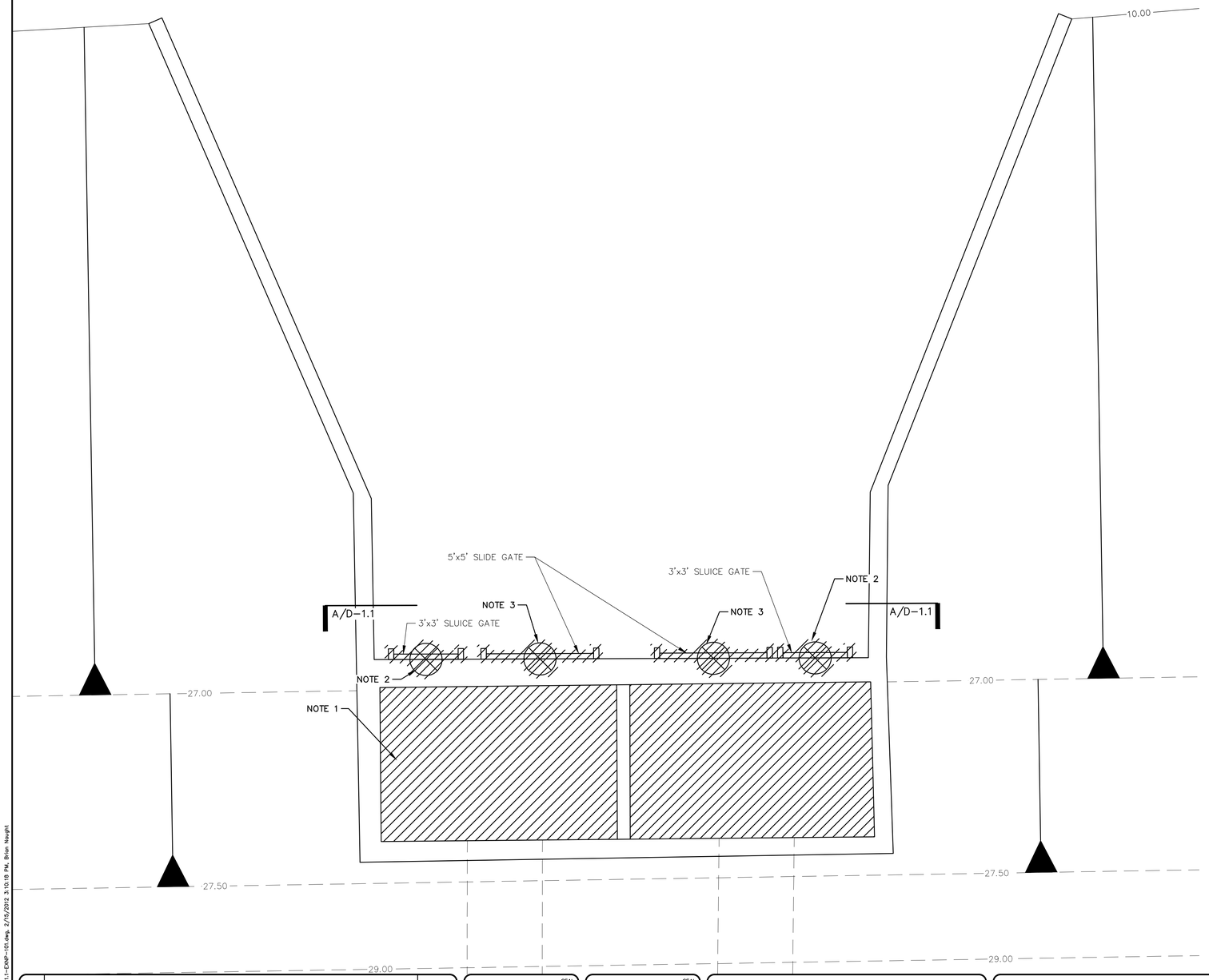
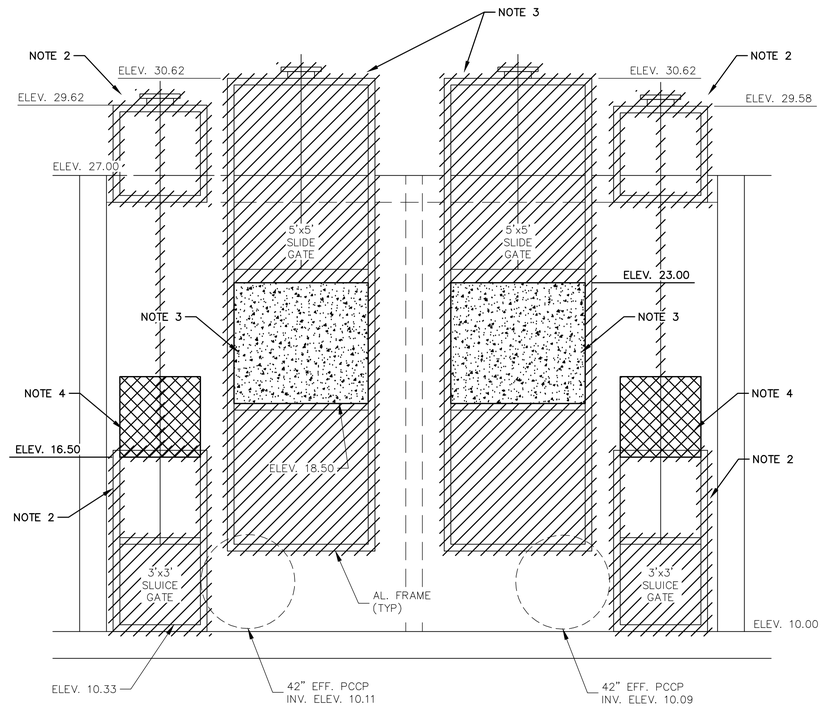
NORTH

3/8" = 1'-0" 12" 0 1' 2' 3' 4' 5'

DEMOLITION NOTES:

1. REMOVE GRATING FROM THE TOP OF THE STRUCTURE.
2. REMOVE ENTIRE SLUICE GATE, INCLUDING TOP AND BOTTOM FRAMES, HANDWHEEL, OPERATING STEM AND DISK. FILL HOLE IN EXISTING CONCRETE WALL WITH CONCRETE AND STEEL REINFORCING PER STRUCTURAL DRAWINGS.
3. REMOVE ENTIRE SLIDE GATE ASSEMBLY, INCLUDING ALUMINUM FRAME, GATE, OPERATING STEM AND HAND WHEEL. FILL HOLE IN EXISTING CONCRETE WALL WITH CONCRETE AND STEEL REINFORCING TO ELEV. 23.00 PER STRUCTURAL DRAWINGS. SEE STRUCTURAL DRAWINGS FOR DETAILS.
4. CUT A 3'x3' HOLE INTO THE EXISTING CONCRETE WALL.
5. SEE SHEETS Nos. S-1.1 AND S-1.2 FOR FURTHER DETAILS.





SECTION A/D-1.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

NORTH POND OUTLET STRUCTURE DEMOLITION PLAN AND SECTION

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE: HORIZONTAL: 3/8" = 1'-0" VERTICAL: N/A

DRAWING NUMBER: D-1.1

STATUS: ISSUE FOR BID REVISION

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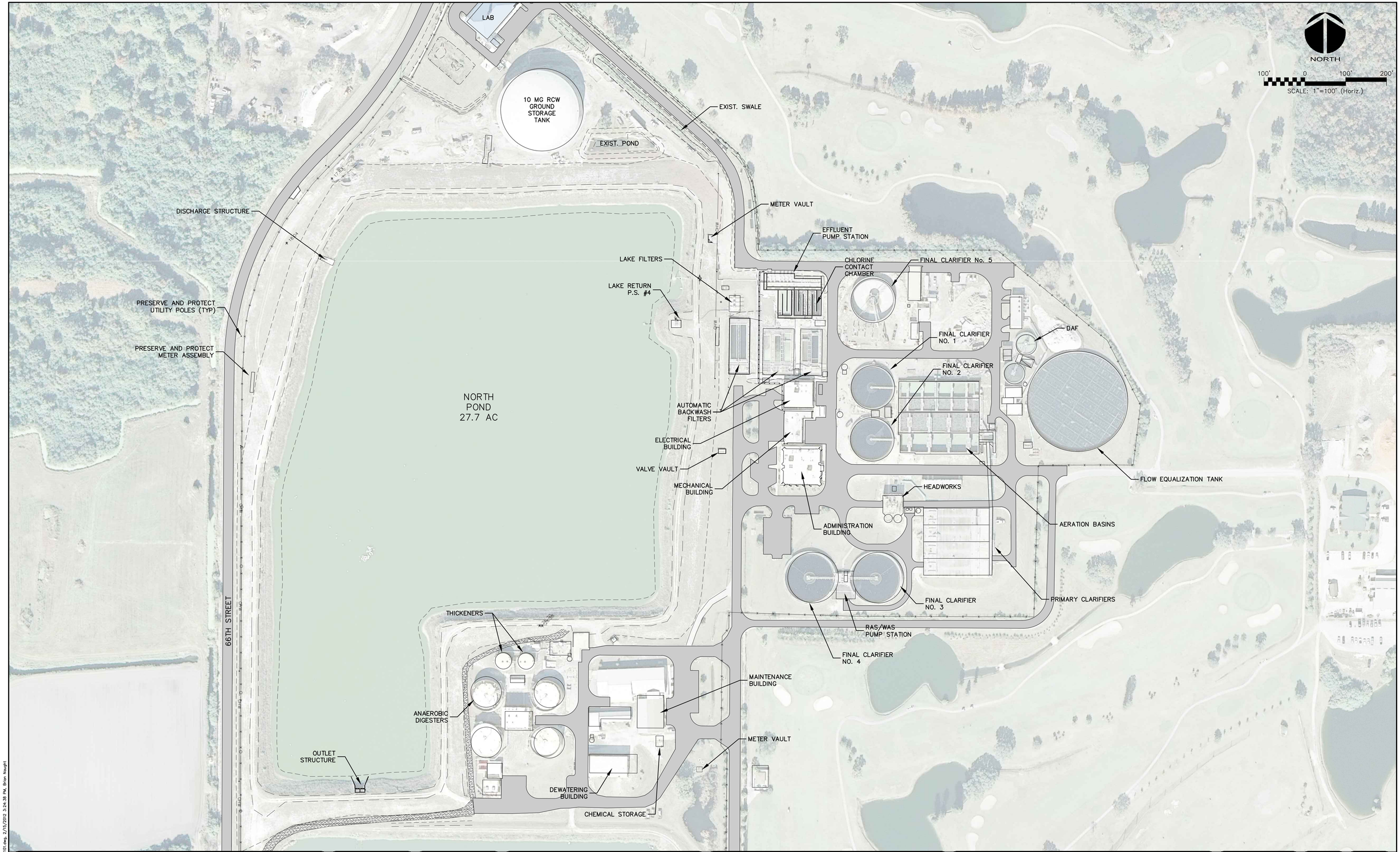

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

EXISTING SITE PLAN

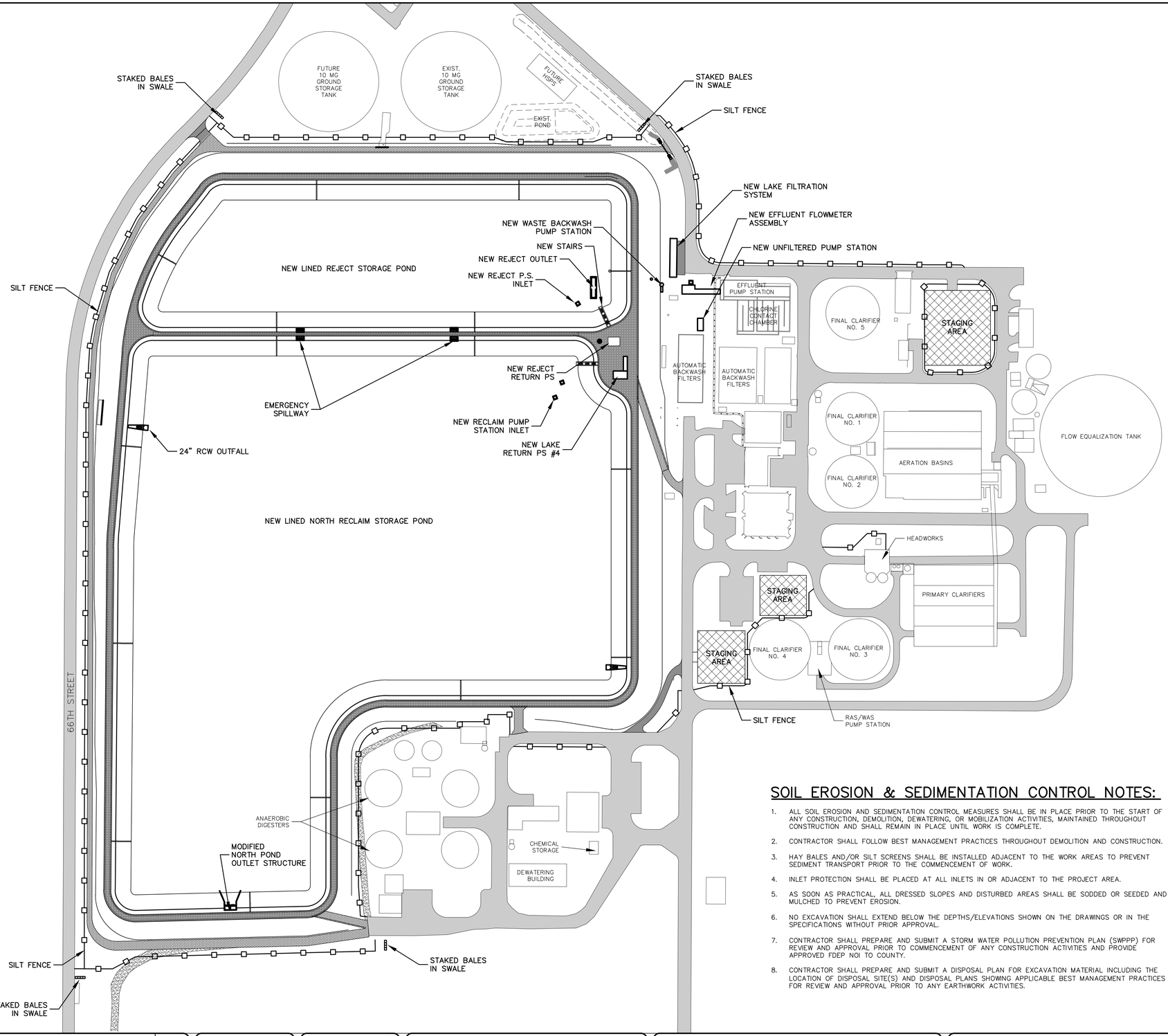
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-0.1

STATUS: ISSUE FOR BID
REVISION

S:\1024\01\07\BIM-Drawings\Civil\C-01-Civ-101.dwg, 2/10/2012 3:24:38 PM, Brian Naught



NORTH

100' 0 100' 200'

SCALE: 1"=100' (Horiz.)

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.

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 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. PRIOR TO DEWATERING OF THE RECLAIM POND, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO UTILIZE THE EXISTING RECLAIM POND PUMPS AND INFRASTRUCTURE TO DRAIN THE RECLAIM POND WATER. ONCE THE RECLAIM POND HAS BEEN FULLY DRAINED, THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN DEWATERING EQUIPMENT.
3. FOLLOWING THE COMPLETION OF DEWATERING, THE CONTRACTOR SHALL REMOVE ALL WELL POINTS, PIPES, PUMPS, AND ANY ADDITIONAL DEWATERING EQUIPMENT FROM THE PROJECT SITE.
4. 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.
5. 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 PRACTIBLY POSSIBLE.

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.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROPOSED SITE PLAN AND SOIL EROSION AND SEDIMENTATION CONTROL

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-0.2

STATUS: ISSUE FOR BID
REVISION

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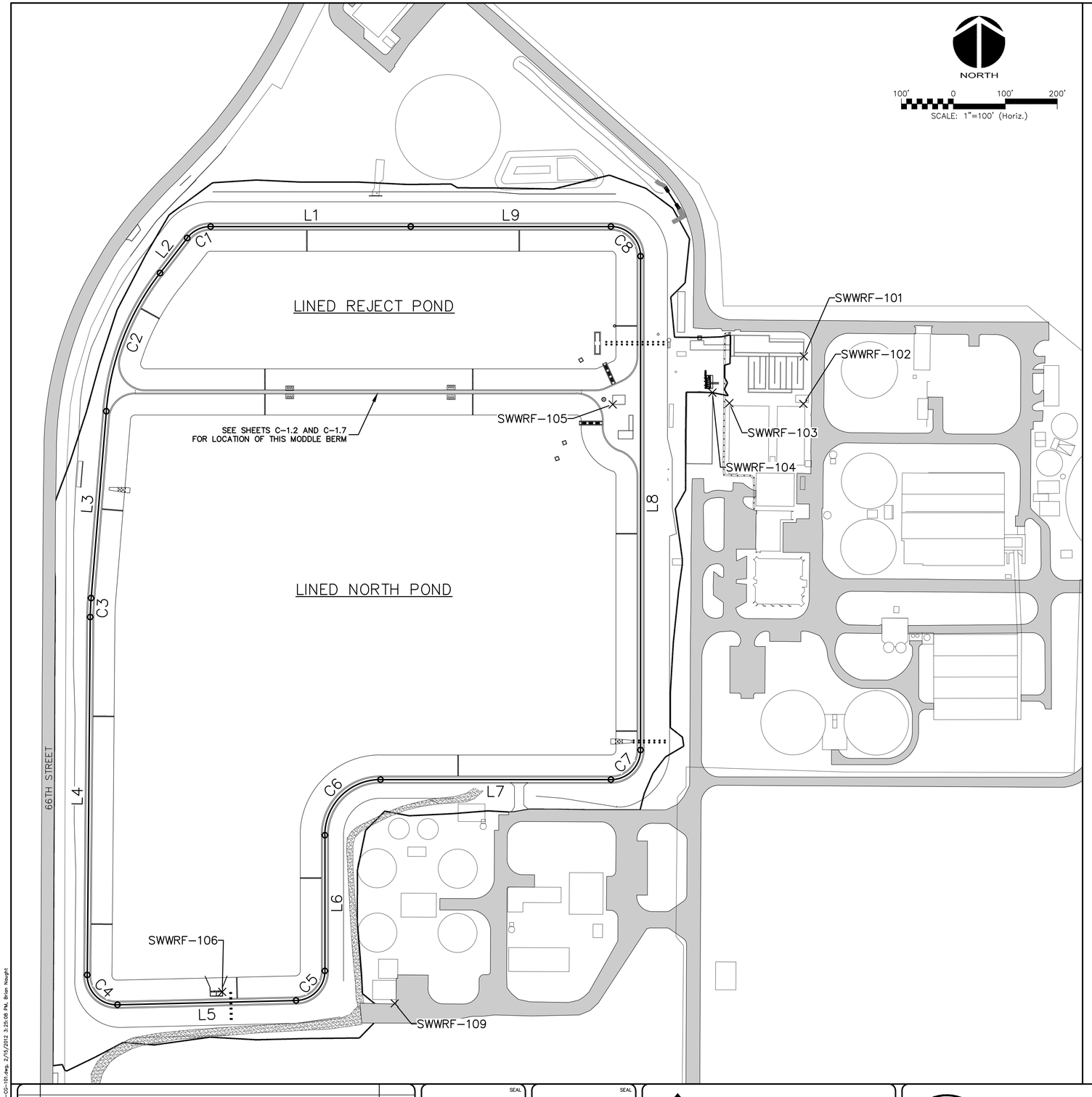

SURVEY NOTES

MANATEE SOUTHWEST WATER RECLAMATION FACILITY

ELEVATIONS SHOWN HEREON ARE DATUM NGVD – 1929

BASED ON MANATEE COUNTY BENCHRUN 50

MATCHED TO BENCHMARK 50–29–10 (RIVET AND MANATEE COUNTY DISC CL ENTRANCE TO ADMIN BUILDING) EL=17.820

NOTE: BENCHMARK 50–29–11 (RIVET AND MANATEE COUNTY DISC ON MITERED END SECTION AT 66TH AND 65TH

WAS DETERMINED TO BE DISTURBED) RECORD EL=15.671 FIELD MEASURED EL=15.526.

COORDINATES SHOWN HEREON ARE BASED ON STATE PLANE FLORIDA WEST ZONE NAD–83 (1999)

NOTE: PER ONSITE ELECTRICIAN ALL LEVEL TRANSMITTERS ARE SET TO READ 0 AT THE WEIR ELEVATION.

SURVEY BENCHMARKS

Point	Elevation	Northing Easting	Description
SWWRF–101	21.10	N:1134929.70 E:453760.20	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–102	22.11	N:1134838.40 E:453759.30	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–103	22.34	N:1134839.80 E:453616.90	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–104	22.34	N:1134860.00 E:453584.30	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–105	31.03	N:1134837.30 E:453392.40	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–106	27.04	N:1133706.40 E:452640.90	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"
SWWRF–109	18.89	N:1133684.30 E:452972.80	RIVET AND DISK IN TOP OF SLAB STAMPED "M&C LB 6566 REF PT"

Line Table

Line #	Length	Direction	Start Point	Start Station	End Point	End Station
L1	385.16'	N90° 00' 00.00"W	N:1135179.52 E:453003.82	101+00.00	N:1135179.52 E:452618.67	104+85.16
L2	85.29'	S37° 48' 56.56"W	N:1135157.47 E:452573.64	105+37.07	N:1135090.09 E:452521.34	106+22.36
L3	361.04'	S4° 39' 48.26"W	N:1134824.18 E:452417.99	109+11.67	N:1134464.33 E:452388.64	112+72.71
L4	689.03'	S0° 29' 13.30"W	N:1134427.93 E:452387.00	113+09.16	N:1133738.92 E:452381.14	119+98.19
L5	343.58'	N88° 37' 36.30"E	N:1133681.46 E:452439.51	120+89.58	N:1133689.69 E:452782.99	124+33.16
L6	261.35'	N0° 00' 00.00"E	N:1133746.67 E:452838.62	125+21.33	N:1134008.02 E:452838.62	127+82.67
L7	443.36'	N90° 00' 00.00"E	N:1134115.02 E:452945.62	129+50.75	N:1134115.02 E:453388.98	133+94.11
L8	950.50'	N0° 00' 00.00"E	N:1134172.02 E:453445.98	134+83.64	N:1135122.52 E:453445.98	144+34.14
L9	385.16'	N90° 00' 00.00"W	N:1135179.52 E:453388.98	145+23.67	N:1135179.52 E:453003.82	149+08.83

Curve Table

Curve #	Radius	Length	Chord Direction	Start Point	Start Station	End Point	End Station
C1	57.00	51.91'	S63° 54' 28.28"W	N:1135179.52 E:452618.67	104+85.16	N:1135157.47 E:452573.64	105+37.07
C2	500.00	289.31'	S21° 14' 22.41"W	N:1135090.09 E:452521.34	106+22.36	N:1134824.18 E:452417.99	109+11.67
C3	500.00	36.45'	S2° 34' 30.78"W	N:1134464.33 E:452388.64	112+72.71	N:1134427.93 E:452387.00	113+09.16
C4	57.00	91.39'	S45° 26' 35.20"E	N:1133738.92 E:452381.14	119+98.19	N:1133681.46 E:452439.51	120+89.58
C5	57.00	88.17'	N44° 18' 48.15"E	N:1133689.69 E:452782.99	124+33.16	N:1133746.67 E:452838.62	125+21.33
C6	107.00	168.08'	N45° 00' 00.00"E	N:1134008.02 E:452838.62	127+82.67	N:1134115.02 E:452945.62	129+50.75
C7	57.00	89.54'	N45° 00' 00.00"E	N:1134115.02 E:453388.98	133+94.11	N:1134172.02 E:453445.98	134+83.64
C8	57.00	89.54'	N45° 00' 00.00"W	N:1135122.52 E:453445.98	144+34.14	N:1135179.52 E:453388.98	145+23.67

NOTE:

LINE AND CURVE POINTS ARE LOCATED ON THE CENTERLINE OF THE TOP OF THE PROPOSED EXTERIOR BERM AROUND THE PROPOSED REJECT AND NORTH PONDS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

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www.mckimcreed.com

MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

HORIZONTAL CONTROL

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-0.3

STATUS: ISSUE FOR BID
REVISION

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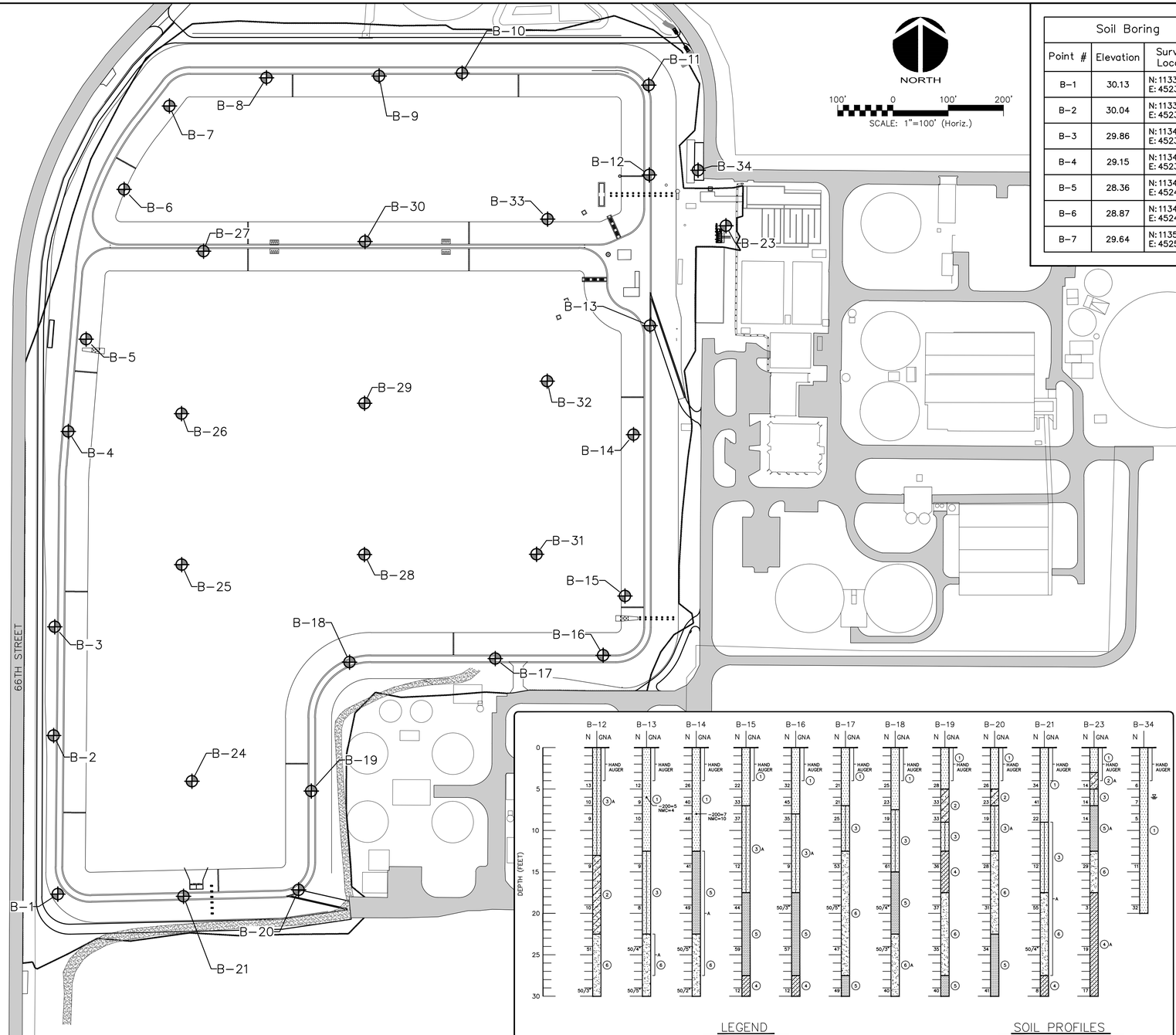


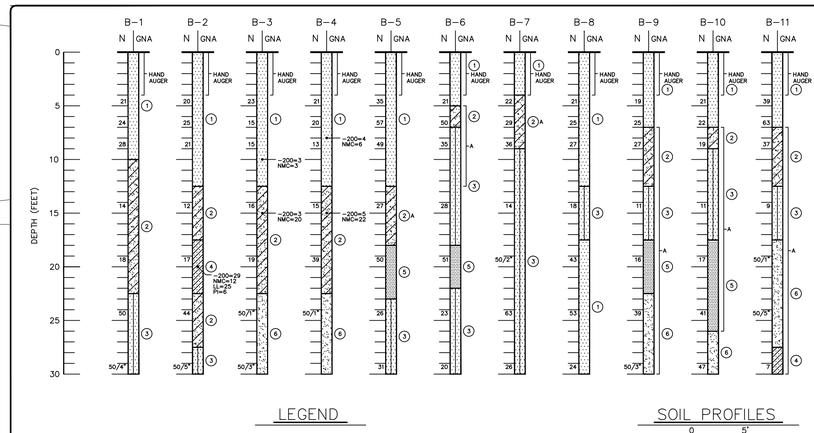
Soil Boring		
Point #	Elevation	Surveyed Location
B-1	30.13	N: 1133689.40 E: 452378.92
B-2	30.04	N: 1133976.40 E: 452371.39
B-3	29.86	N: 1134173.05 E: 452373.47
B-4	29.15	N: 1134526.44 E: 452397.94
B-5	28.36	N: 1134693.57 E: 452430.06
B-6	28.87	N: 1134964.41 E: 452498.95
B-7	29.64	N: 1135115.30 E: 452580.75

Soil Boring		
Point #	Elevation	Surveyed Location
B-8	28.82	N: 1135166.50 E: 452756.54
B-9	30.29	N: 1135169.60 E: 452960.24
B-10	29.67	N: 1135174.94 E: 453110.50
B-11	28.42	N: 1135153.24 E: 453448.27
B-12	30.30	N: 1134990.56 E: 453449.26
B-13	29.44	N: 1134717.90 E: 453450.55
B-14	30.49	N: 1134520.65 E: 453420.87

Soil Boring		
Point #	Elevation	Surveyed Location
B-15	28.76	N: 1134228.66 E: 453405.42
B-16	28.03	N: 1134121.63 E: 453365.89
B-17	28.60	N: 1134115.44 E: 453170.62
B-18	29.46	N: 1134108.94 E: 452906.95
B-19	28.43	N: 1133875.72 E: 452837.68
B-20	28.97	N: 1133697.20 E: 452814.50
B-21	29.03	N: 1133685.22 E: 452606.26

Soil Boring	
Point #	Approximate Location
B-23	N: 1134898.73 E: 453588.03
B-24	N: 1133893.45 E: 452621.50
B-25	N: 1134285.41 E: 452603.20
B-26	N: 1134558.73 E: 452602.95
B-27	N: 1134852.58 E: 452642.53
B-28	N: 1134303.70 E: 452933.79

Soil Boring	
Point #	Approximate Location
B-29	N: 1134577.51 E: 452934.15
B-30	N: 1134870.25 E: 452934.83
B-31	N: 1134304.23 E: 453245.45
B-32	N: 1134617.37 E: 453264.68
B-33	N: 1134910.58 E: 453265.45
B-34	N: 1134999.27 E: 453537.63



LEGEND

1. Brown to gray fine SAND with shell fragments (SP)
2. Brown slightly clayey fine SAND (SP-SC)
3. Brown to dark gray fine SAND to slightly silty fine SAND (SP/SP-SM)
4. Light gray clayey SAND (SC)
5. Gray to light tan fine to coarse SAND (SW)
6. Brown to white fine SAND (SP)

SP Unified Soil Classification System (ASTM D 2487) group symbol as determined by visual review

Groundwater level, March 2011

GNA Groundwater level not apparent in the upper 10 feet of soils

N SPT N-value in blows/foot

50/6" Fifty blows for six inches

A With shell fragments

-200 Fines passing No. 200 sieve (%)

NMC Natural Moisture Content (%)

LL Liquid Limit (%)

PI Plasticity Index (%)

SOIL PROFILES

0 5'

VERTICAL SCALE

DRAWN	DJG
CHECKED	DH
APPROVED	MEM
SCALE	NOTED

GEOTECHNICAL SERVICES
SWWRF IMPROVEMENTS
LAKE FILTRATION SYSTEM AND NORTH POND IMPROVEMENTS
BRADENTON, FLORIDA

PSI Information To Build On
Engineering • Consulting • Testing

DATE JAN 11 | PROJ. NO. 0775871 | SHEET 2

LEGEND

1. Brown to gray fine SAND with shell fragments (SP)
2. Brown slightly clayey fine SAND (SP-SC)
3. Brown to dark gray fine SAND to slightly silty fine SAND (SP/SP-SM)
4. Light gray clayey SAND (SC)
5. Gray to light tan fine to coarse SAND (SW)
6. Brown to white fine SAND (SP)

SP Unified Soil Classification System (ASTM D 2487) group symbol as determined by visual review

Groundwater level, March 2011

GNA Groundwater level not apparent in the upper 10 feet of soils

N SPT N-value in blows/foot

50/6" Fifty blows for six inches

A With shell fragments

-200 Fines passing No. 200 sieve (%)

NMC Natural Moisture Content (%)

LL Liquid Limit (%)

PI Plasticity Index (%)

SOIL PROFILES

0 5'

VERTICAL SCALE

DRAWN	DJG
CHECKED	DH
APPROVED	MEM
SCALE	NOTED

GEOTECHNICAL SERVICES
SWWRF IMPROVEMENTS
LAKE FILTRATION SYSTEM AND NORTH POND IMPROVEMENTS
BRADENTON, FLORIDA

PSI Information To Build On
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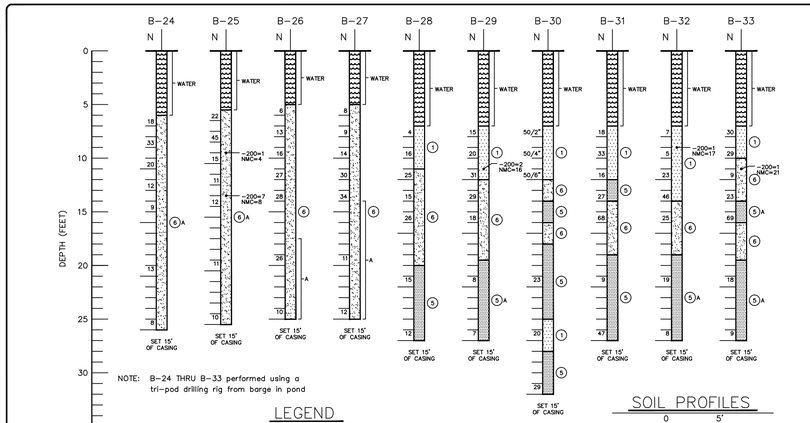
DATE JAN 11 | PROJ. NO. 0775871 | SHEET 3



NOTE: B-24 THRU B-33 performed using a tri-pod drilling rig from barge in pond

LEGEND

1. Brown to gray fine SAND with shell fragments (SP)
2. Brown slightly clayey fine SAND (SP-SC)
3. Brown to dark gray fine SAND to slightly silty fine SAND (SP/SP-SM)
4. Light gray clayey SAND (SC)
5. Gray to light tan fine to coarse SAND (SW)
6. Brown to white fine SAND (SP)

SP Unified Soil Classification System (ASTM D 2487) group symbol as determined by visual review

Groundwater level, March 2011

GNA Groundwater level not apparent in the upper 10 feet of soils

N SPT N-value in blows/foot

50/6" Fifty blows for six inches

A With shell fragments

-200 Fines passing No. 200 sieve (%)

NMC Natural Moisture Content (%)

LL Liquid Limit (%)

PI Plasticity Index (%)

SOIL PROFILES

0 5'

VERTICAL SCALE

DRAWN	DJG
CHECKED	DH
APPROVED	MEM
SCALE	NOTED

POND BORINGS

GEOTECHNICAL SERVICES
SWWRF IMPROVEMENTS
LAKE FILTRATION SYSTEM AND NORTH POND IMPROVEMENTS
BRADENTON, FLORIDA

PSI Information To Build On
Engineering • Consulting • Testing

DATE JAN 11 | PROJ. NO. 0775871 | SHEET 4

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

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

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

BORING LOCATIONS AND PROFILES

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-0.4

STATUS: ISSUE FOR BID
REVISION

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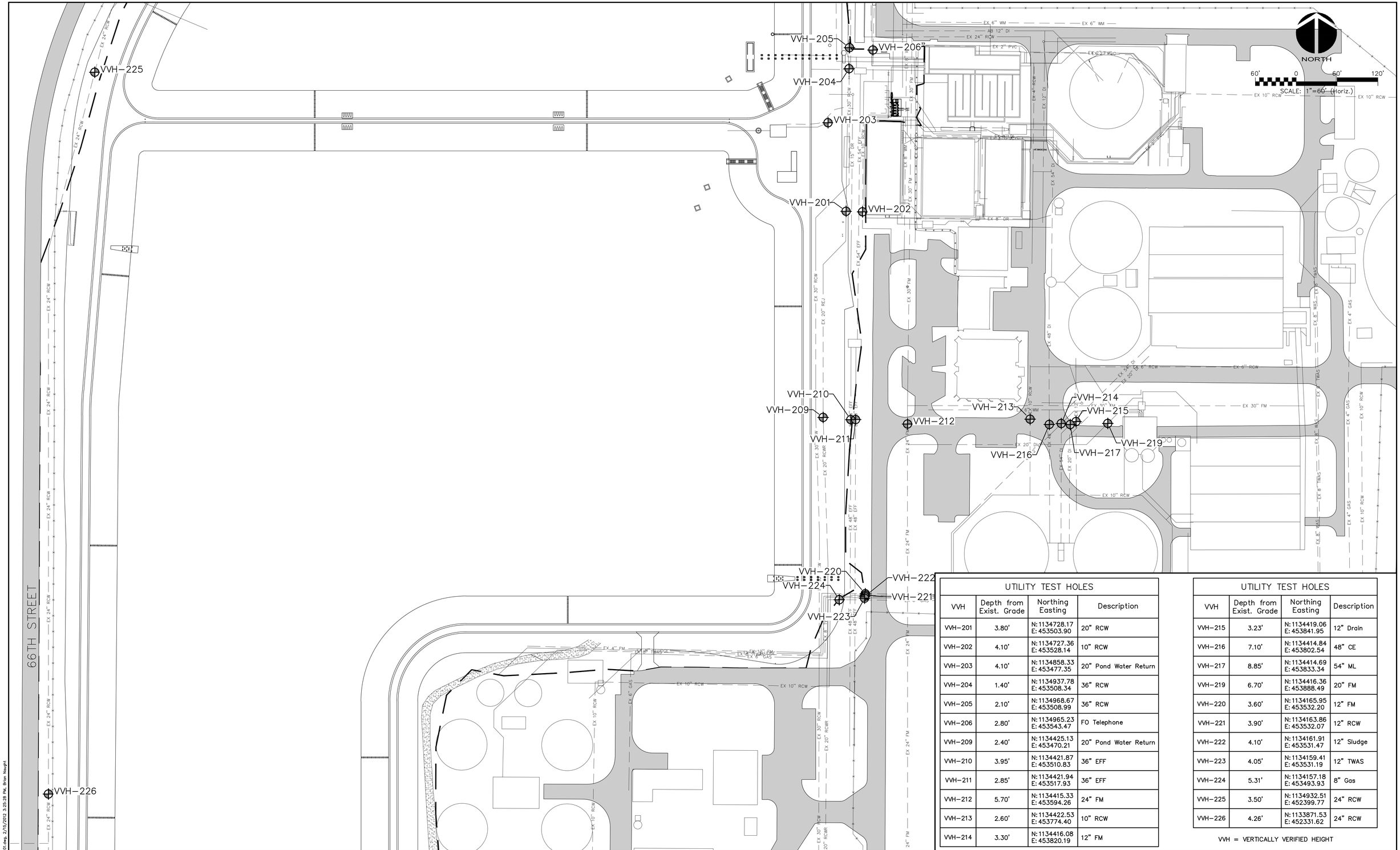

UTILITY TEST HOLES			
VVH	Depth from Exist. Grade	Northing Easting	Description
VVH-201	3.80'	N: 1134728.17 E: 453503.90	20" RCW
VVH-202	4.10'	N: 1134727.36 E: 453528.14	10" RCW
VVH-203	4.10'	N: 1134858.33 E: 453477.35	20" Pond Water Return
VVH-204	1.40'	N: 1134937.78 E: 453508.34	36" RCW
VVH-205	2.10'	N: 1134968.67 E: 453508.99	36" RCW
VVH-206	2.80'	N: 1134965.23 E: 453543.47	FO Telephone
VVH-209	2.40'	N: 1134425.13 E: 453470.21	20" Pond Water Return
VVH-210	3.95'	N: 1134421.87 E: 453510.83	36" EFF
VVH-211	2.85'	N: 1134421.94 E: 453517.93	36" EFF
VVH-212	5.70'	N: 1134415.33 E: 453594.26	24" FM
VVH-213	2.60'	N: 1134422.53 E: 453774.40	10" RCW
VVH-214	3.30'	N: 1134416.08 E: 453820.19	12" FM

UTILITY TEST HOLES			
VVH	Depth from Exist. Grade	Northing Easting	Description
VVH-215	3.23'	N: 1134419.06 E: 453841.95	12" Drain
VVH-216	7.10'	N: 1134414.84 E: 453802.54	48" CE
VVH-217	8.85'	N: 1134414.69 E: 453833.34	54" ML
VVH-219	6.70'	N: 1134416.36 E: 453888.49	20" FM
VVH-220	3.60'	N: 1134165.95 E: 453532.20	12" FM
VVH-221	3.90'	N: 1134163.86 E: 453532.07	12" RCW
VVH-222	4.10'	N: 1134161.91 E: 453531.47	12" Sludge
VVH-223	4.05'	N: 1134159.41 E: 453531.19	12" TWAS
VVH-224	5.31'	N: 1134157.18 E: 453493.93	8" Gas
VVH-225	3.50'	N: 1134932.51 E: 452399.77	24" RCW
VVH-226	4.26'	N: 1133871.53 E: 452331.62	24" RCW

VVH = VERTICALLY VERIFIED HEIGHT

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

SUE LOCATIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 60'
VERTICAL: NA

DRAWING NUMBER
C-0.5

STATUS: ISSUE FOR BID
REVISION

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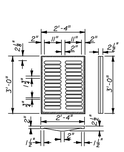
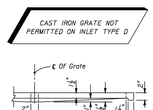
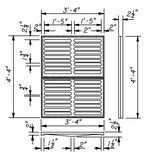


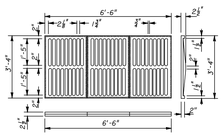
TYPE C
Approx. Weight 235 Lbs.



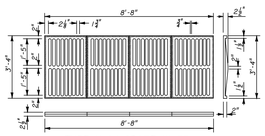
HALF SECTION CAST IRON GRATES



TYPE E
Approx. Weight 465 Lbs.

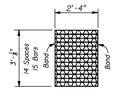


TYPE H (3-GRATE INLET)
Approx. Weight 725 Lbs.

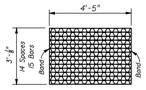


TYPE H (4-GRATE INLET)
Approx. Weight 967 Lbs.

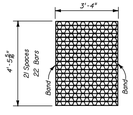
CAST IRON GRATES



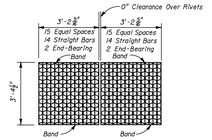
TYPE C
Straight Bars 2"x¼"
Reticuline Bars 1½"x⅜"
Bands 2"x¼"
Approx. Weight 104 Lbs.



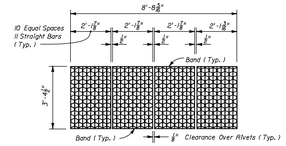
TYPE D
Straight Bars 2"x¼"
Reticuline Bars 1½"x⅜"
Bands 2"x¼"
Approx. Weight 190 Lbs.



TYPE E
Straight Bars 2"x¼"
Reticuline Bars 1¼"x⅜"
Bands 2"x¼"
Approx. Weight 215 Lbs.



TYPE H (2-GRATE INLET)
Straight End-Bearing Bars 2"x⅜"
Straight Bearing Bars 2"x¼"
Reticuline Bars 1½"x⅜"
Banding Bars 2"x¼"
Approx. Total Weight 310 Lbs.



TYPE H (4-GRATE INLET)
Straight End-Bearing Bars 2"x¼"
Reticuline Bars 1½"x⅜"
Banding Bars 2"x¼"
Approx. Total Weight 388 Lbs.

STEEL GRATES

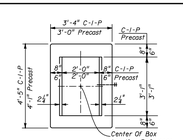
NOTE: Steel Grates Are Required On Inlets With Traversable Slots And On Inlets where Bicycle Traffic is Anticipated.

GENERAL NOTES

1. These inlets are suitable for bicycle traffic and are to be used in ditches, medians and other areas subject to infrequent traffic loadings but are not to be placed in areas subject to any heavy wheel loads. These inlets may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet.
2. Inlets subject to minimal debris should be constructed without slots. Where debris is a problem inlets should be constructed with slots. Slotted inlets located within roadway clear zones and areas subject to bicycles and/or pedestrians shall have traversable slots. The traversable slot modification is not adaptable to Inlet Type H. Slots may be constructed at either or both ends as shown on plans.
3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on all inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternate G grate is specified in the plans, either the steel grate, hot dip galvanized after fabrication, or the cast iron grate may be used, unless the plans stipulate the particular type.
4. Recommended maximum pipe sizes shown are for concrete pipe. Size for other types of pipe must be checked for fit.
5. All exposed edges and corners shall be ¾" chamfer or tooled to ¼" radius.
6. Concrete inlet pavement to be used on inlets without slots and inlets with nontraversable slots only when called for in the plans, but required on all traversable slot inlets. Cost to be included in contract unit price for inlets. Quantities shown are for information only.
7. Traversable slots constructed in existing inlets shall be paid for as inlets partial. For conversion work and method of payment see "TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS".
8. Sodding to be used on all inlets not located in paved areas and paid for under contract unit price for Performance Turf, SY.
9. For supplementary details see Index No. 201.
10. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for ½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.

DITCH BOTTOM INLET
TYPES C, D, E & H

Last Revision 07/01/07 | Sheet No. 2 of 6 | Index No. 232



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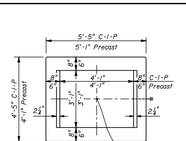

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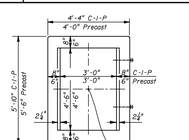
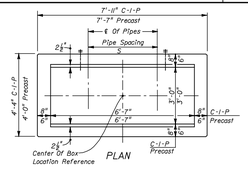


PLAN



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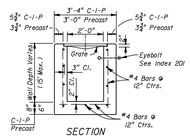
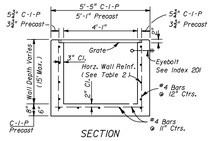


SECTION



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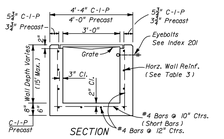

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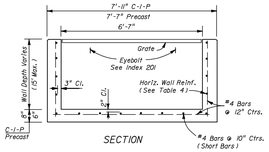


SECTION

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (In.²/Ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-15'	A12	0.20	12"	8"

TYPE C
Recommended Maximum Pipe Sizes:
2'-0" Wall - 18" Pipe
3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 2)

WALL DEPTH	SCHEDULE	AREA (In.²/Ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-6'	A12	0.20	12"	8"
6'-10'	A6	0.20	6"	5"
10'-13'	A4	0.20	4"	3"
10'-15'	B5.5	0.24	5½"	5"

TYPE D
Recommended Maximum Pipe Sizes:
3'-1" Wall - 24" Pipe
4'-1" Wall - 36" Pipe

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 3)

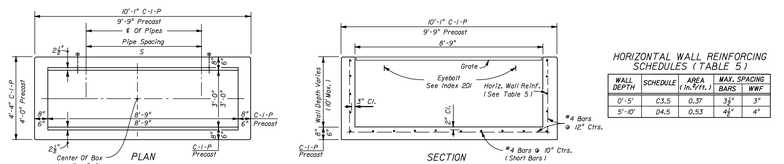
WALL DEPTH	SCHEDULE	AREA (In.²/Ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	A12	0.20	12"	8"
0'-7.5'	A6	0.20	6"	5"
7.5'-10'	B5.5	0.24	5½"	5"
10'-15'	C6.5	0.31	6½"	5"

TYPE E
Recommended Maximum Pipe Sizes:
3'-0" Wall - 24" Pipe
4'-6" Wall - 36" Pipe

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 4)

WALL DEPTH	SCHEDULE	AREA (In.²/Ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	B5.5	0.24	5½"	5"
5'-7'	C6.5	0.31	6½"	6"
7'-15'	D4.5	0.53	4½"	4"

TYPE H (2 & 3-GRATE INLET)
Recommended Maximum Pipe Sizes:
3'-0" Wall - 24" Pipe
6'-7" Wall - 1-60" Pipe
Or 2-24" Pipe (5+3'-5")



TYPE H (4-GRATE INLET)
Recommended Maximum Pipe Sizes:
3'-0" Wall - 24" Pipe
8'-9" Wall - 1-78" Pipe
Or 2-30" Pipe (5+4'-3")

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 5)

WALL DEPTH	SCHEDULE	AREA (In.²/Ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	C3.5	0.37	3½"	3"
5'-10'	D4.5	0.53	4½"	4"

GENERAL NOTES
See Sheet 2 of 6.

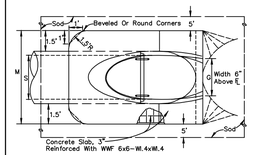
DITCH BOTTOM INLET
TYPES C, D, E & H

Last Revision 07/01/05 | Sheet No. 1 of 6 | Index No. 232

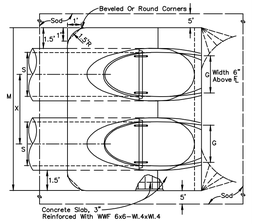
ELLIPTICAL PIPE

DIMENSIONS & QUANTITIES

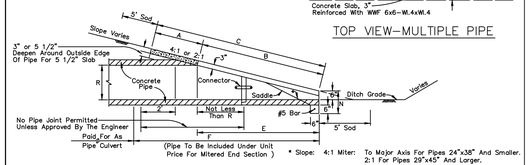
	Rise R	Span S	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe
2:1 Slope	12"	18"	2'-10"	1.97'	1.62'	3.59'	1.56'	4'	1.50'	4.92'	7.75'	10.58'	13.42'
	14"	23"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	5.38'	8.71'	12.04'	15.38'
	19"	30"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	6.04'	10.04'	14.04'	18.04'
	24"	38"	5'-0"	2.20'	3.85'	6.05'	3.56'	7'	2.85'	6.79'	11.79'	16.79'	21.79'
	29"	45"	5'-11"	2.34'	4.79'	7.13'	4.39'	8'	3.19'	7.50'	13.42'	19.33'	25.25'
	34"	53"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	8.25'	15.25'	22.25'	29.25'
	38"	60"	7'-10"	2.52'	6.46'	8.98'	5.89'	9'	3.95'	8.92'	16.75'	24.58'	32.42'
	43"	68"	8'-11"	2.62'	7.39'	10.01'	6.73'	10'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	76"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.59'	10.42'	20.33'	30.25'	40.17'
	53"	83"	10'-8"	2.80'	9.26'	12.06'	8.39'	12'	4.77'	11.08'	21.75'	32.42'	43.08'
	58"	91"	11'-8"	2.90'	10.19'	13.09'	9.23'	13'	5.01'	11.83'	23.50'	35.17'	46.83'
4:1 Slope	12"	18"	2'-10"	2.36'	3.06'	5.42'	3.03'	5'	1.50'	4.92'	7.75'	10.58'	13.42'
	14"	23"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90'	5.38'	8.71'	12.04'	15.38'
	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	6.04'	10.04'	14.04'	18.04'
	24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	6.79'	11.79'	16.79'	21.79'
	29"	45"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	7.50'	13.42'	19.33'	25.25'
	34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	13'	3.57'	8.25'	15.25'	22.25'	29.25'
	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	8.92'	16.75'	24.58'	32.42'
	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	10.42'	20.33'	30.25'	40.17'
	53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	11.08'	21.75'	32.42'	43.08'
	58"	91"	11'-8"	4.08'	18.87'	22.95'	18.38'	22'	5.01'	11.83'	23.50'	35.17'	46.83'



TOP VIEW-SINGLE PIPE



TOP VIEW-MULTIPLE PIPE



SECTION

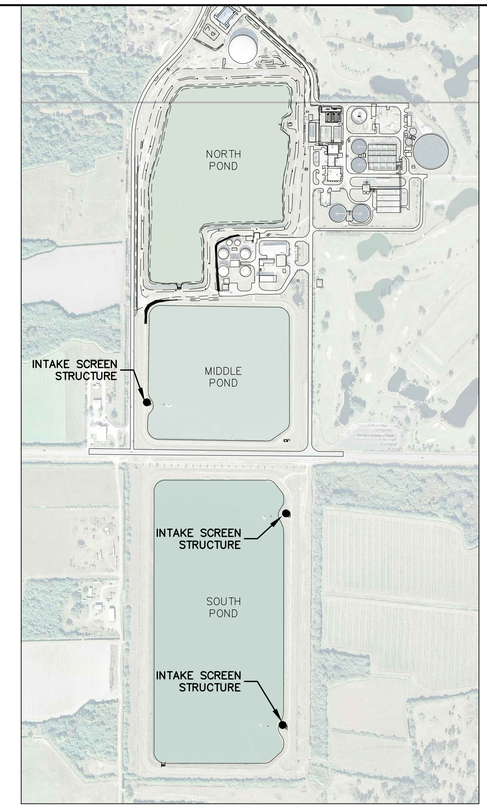
* Slope: 4:1 Miter: To Major Axis For Pipes 24"x38" And Smaller. 2:1 For Pipes 29"x45" And Larger.
2:1 Miter: To Major Axis For Pipes 29"x45" And Smaller. 1:1 For Pipes 34"x53" And Larger.

MANATEE COUNTY
TRANSPORTATION DEPARTMENT

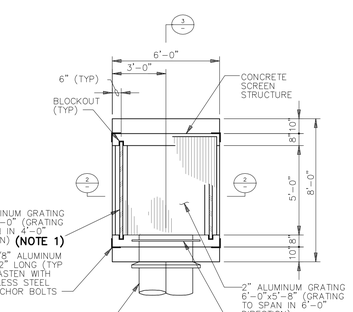
REV.BY	DATE

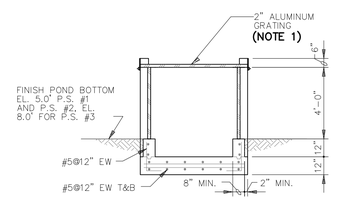
6/12/07
DATE OF B.O.C.C. APPROVAL

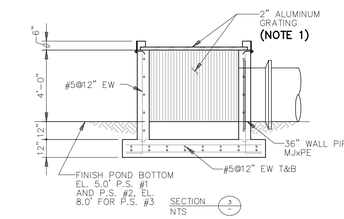
MITERED END SECTION FOR ELLIPTICAL, SINGLE, AND MULTIPLE PIPES | 102.1



MODIFIED INTAKE SCREEN LOCATION PLAN







NOTES:
1. CONTRACTOR SHALL REPLACE 2" AL GRATING WITH 1" AL GRATING. (TYP 3)
2. BACKGROUND IMAGE FROM RECORD DRAWINGS DATED JUNE 1998 FOR "STORAGE POND IMPROVEMENTS".

INTAKE STRUCTURE
SCREEN REPLACEMENT DETAIL

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.6

STATUS: ISSUE FOR BID
REVISION

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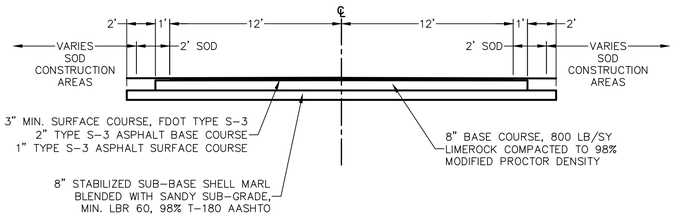
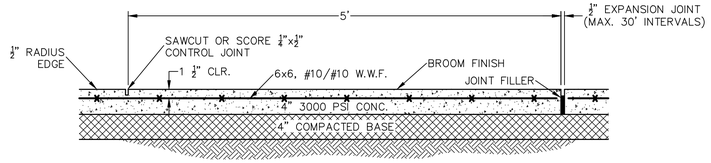


INTERIOR PLANT ROADWAY TYPICAL SECTION

NOT TO SCALE



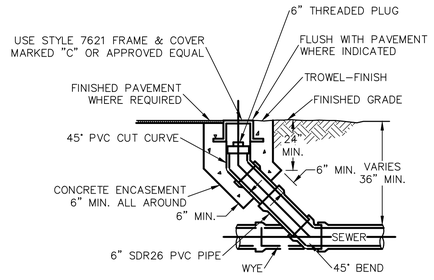
TYPICAL SIDEWALK DETAIL

NOT TO SCALE

NOTES:

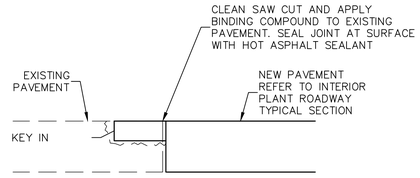
1. CONTRACTOR SHALL REMOVE EXISTING SLIDE AND SLUICE GATES IN THEIR ENTIRETY.
2. CONTRACTOR SHALL REPLACE EXISTING GATES AND ELECTRIC OPERATORS.
3. CONTRACTOR SHALL FIELD VERIFY CONDUIT AND WIRING FOR POWER AND CONTROLS AND REPLACE AS NECESSARY TO PROVIDE PROPERLY FUNCTIONING SYSTEM.
4. SEE SLUICE GATE DETAIL.
5. BACKGROUND IMAGE FROM RECORD DRAWINGS DATED JUNE 1998 FOR "STORAGE POND IMPROVEMENTS".

GATE SCHEDULE			
IDENTIFICATION NUMBER	SG-1	SG-2	SG-3
MOUNTING LOCATION	MIDDLE POND OUTLET	MIDDLE POND OUTLET	MIDDLE POND OUTLET
OPERATOR TYPE	FRAME MOUNTED ELECTRIC	FRAME MOUNTED ELECTRIC	FRAME MOUNTED ELECTRIC
OPENING WIDTH	5'-0"	5'-0"	4'-0"
FRAME HEIGHT	14'-0"	14'-0"	6'-0"
GATE HEIGHT "C"	5'-0"	5'-0"	4'-0"



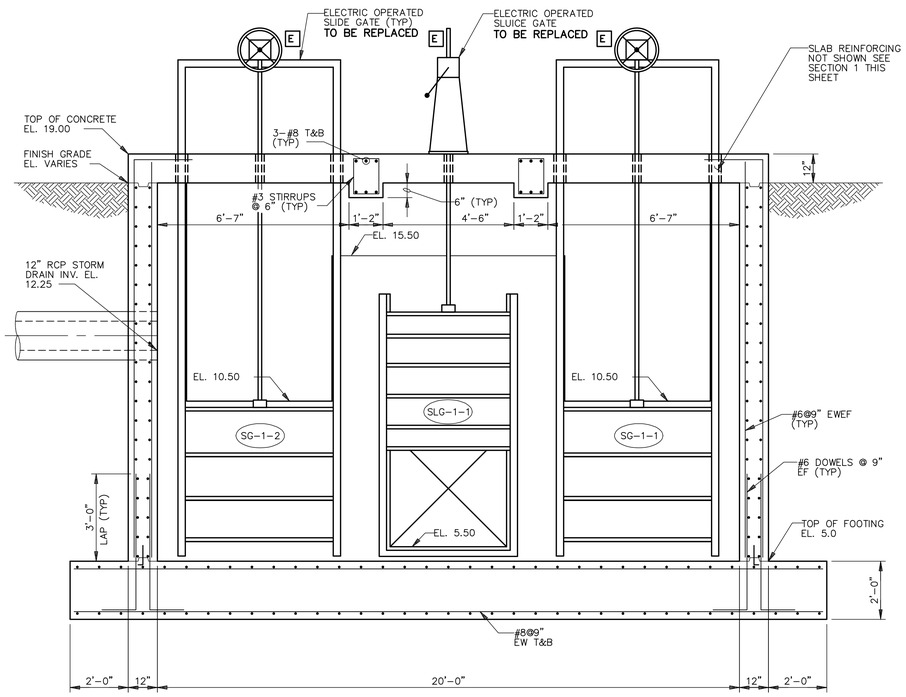
CLEANOUT DETAIL

NOT TO SCALE



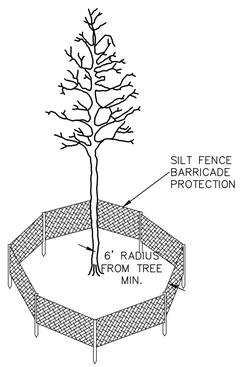
ASPHALT CONNECTION

NOT TO SCALE



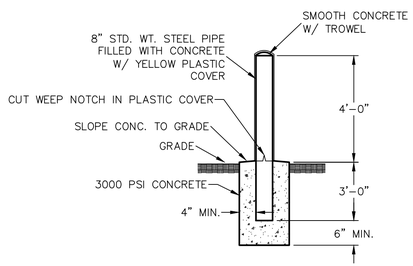
MIDDLE POND GATE SCHEDULE

NOT TO SCALE



TREE PROTECTION DETAIL

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.7

STATUS: ISSUE FOR BID
REVISION

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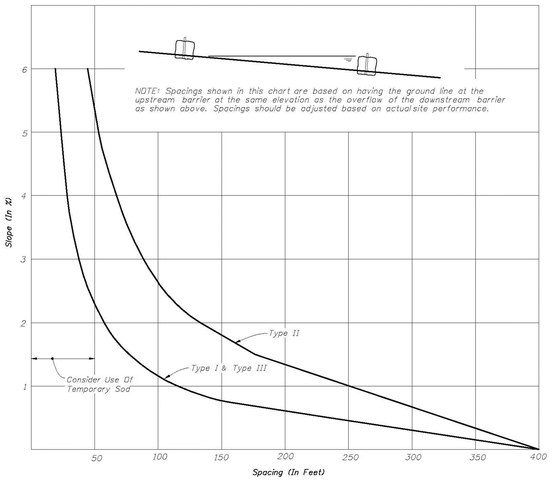
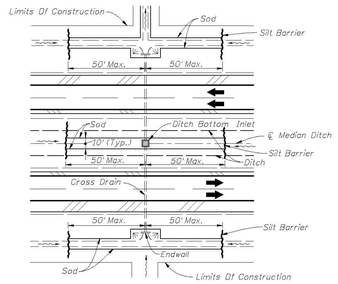
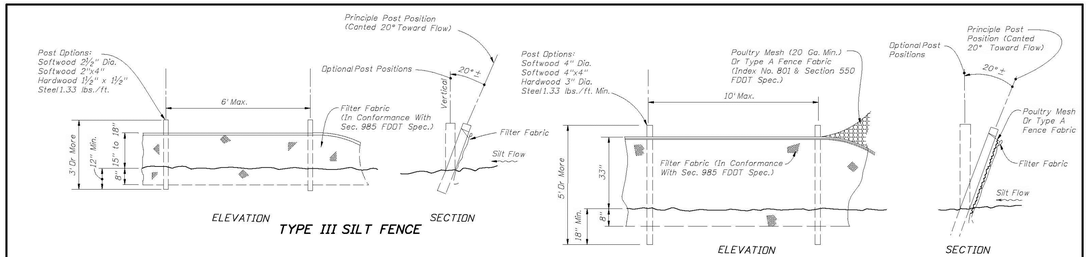


CHART I

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

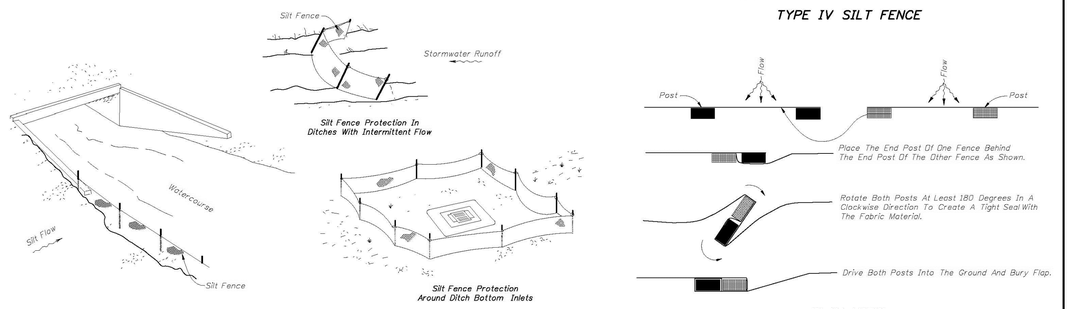


DITCH INSTALLATIONS AT DRAINAGE STRUCTURES



TYPE III SILT FENCE

TYPE IV SILT FENCE



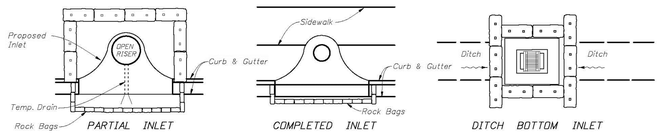
SILT FENCE APPLICATIONS

PLAN VIEW

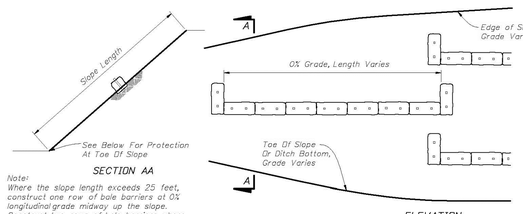
JOINING TWO SILT FENCES

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 I, 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 travellanes 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).

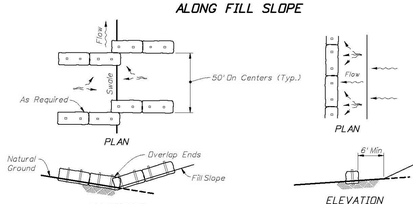


PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

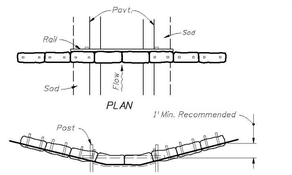


Note:
Where the slope length exceeds 25 feet, construct one row of bale barriers at 0% longitudinal grade midway up the slope. Construct two rows of bale barriers where the slope length exceeds 50 feet.

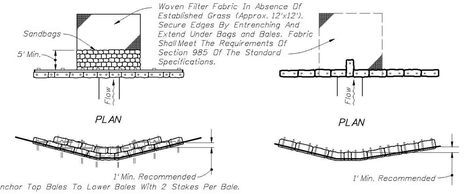
ALONG FILL SLOPE



AT TOE OF SLOPE
BARRIERS FOR FILL SLOPES



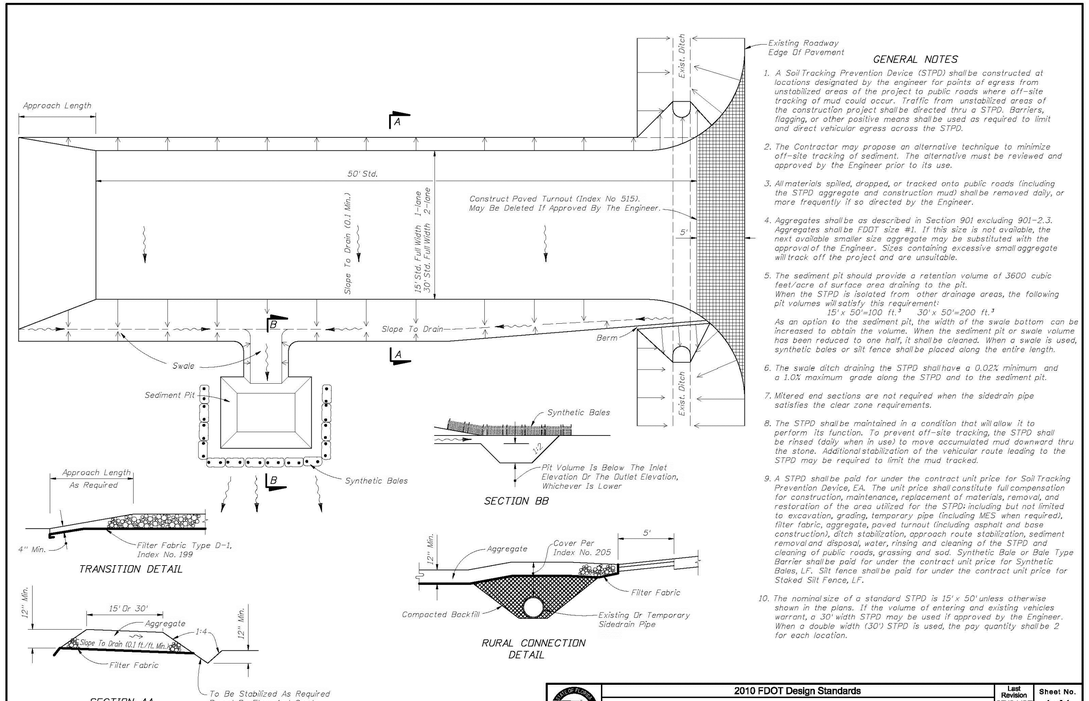
SYNTHETIC BALES OR BALE TYPE BARRIERS FOR PAVED DITCHES



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 I, Sheet 1.
2. Bales shall be anchored with 2-1" x 2" (or 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.



GENERAL NOTES

1. A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where off-site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The Contractor may propose an alternative technique to minimize off-site tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
3. All materials spilled, dropped, or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the Engineer.
4. Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:
   15' x 50'=100 ft.³ 30' x 50'=200 ft.³
   As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, synthetic bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the STPD shall have a 0.02% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the sidedrain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent off-site tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
9. A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD; including but not limited to excavation, grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. Synthetic Bale or Bale Type Barrier shall be paid for under the contract unit price for Synthetic Bales, LF. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, LF.
10. The nominal size of a standard STPD is 15' x 50' unless otherwise shown in the plans. If the volume of entering and existing vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.8

STATUS: ISSUE FOR BID
REVISION

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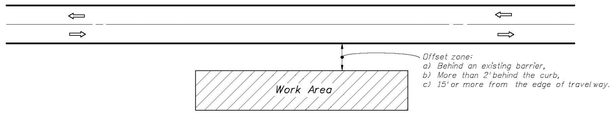


GENERAL NOTES

1. If the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the offset zone in any one hour, traffic control will be in conformance with Index No. 602.
2. No special signing is required.
3. When a side road intersects the highway within the work area, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. When construction activities encroach on a sidewalk refer to Index No. 660.
5. For general TCZ requirements and additional information, refer to Index No. 600.

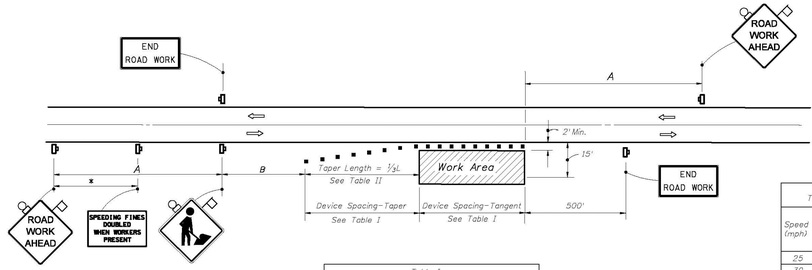
SYMBOLS

- Work Area
- Lane Identification + Direction of Traffic

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE BEHIND AN EXISTING BARRIER, MORE THAN 2' BEHIND THE CURB, OR 15' OR MORE FROM THE EDGE OF TRAVEL WAY.

2010 FDOT Design Standards	Last Revision	Sheet No.
TWO-LANE TWO-WAY, WORK OUTSIDE SHOULDER	07/01/05	1 of 1
	Index No.	601



DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft.) A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

x 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.) Cones or Tubular Markers: Taper	Tangent	Type I or Type II Barricades or Vertical Panels or Drums: Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II
Taper Length – Shoulder

Speed (mph)	½L (ft) 8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	
30	40	50	60	$L=\frac{WS^2}{60}$
35	55	68	82	
40	72	90	107	
45	120	150	180	
50	133	167	200	
55	147	183	220	
60	160	200	240	L=WS
65	173	217	260	
70	187	233	280	

8' minimum shoulder width

½L= Length of shoulder taper in feet

W= Width of total shoulder in feet (combined paved and unpaved width)

S= Posted speed limit (mph)

SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. When four or more work vehicles enter the through traffic lanes in a one hour period or less (excluding establishing and terminating the work area), the advanced FLAGGER sign shall be substituted for the WORKERS sign. For location of flaggers and FLAGGER signs, see Index No. 603.
2. WORKERS sign to be removed or fully covered when no work is being performed.
3. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign only on the side where the shoulder work is being performed.
4. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
5. For general TCZ requirements and additional information, refer to Index No. 600.

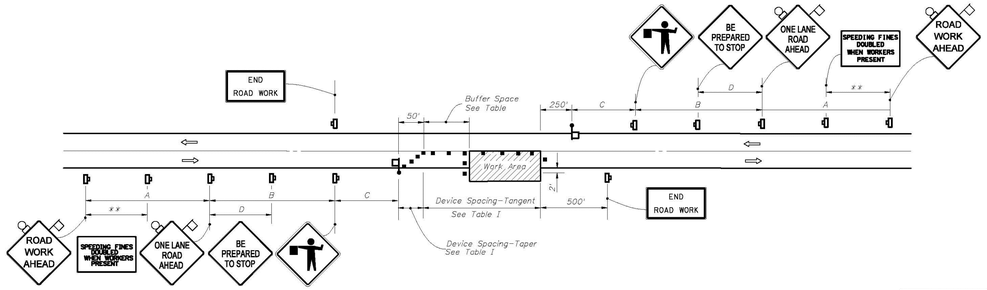
DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a) Work operations are 60 minutes or less.
   b) Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

2010 FDOT Design Standards	Last Revision	Sheet No.
TWO-LANE TWO-WAY, WORK ON SHOULDER	07/01/07	1 of 1
	Index No.	602



DISTANCE BETWEEN SIGNS				
Speed (mph)	Spacing (ft.) A	B	C	D
40 or less	200	200	200	100
45	350	350	350	175
50	500	500	500	250
55 or greater	2640	1640	1000	500

x The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign.

xx 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

xxx BE PREPARED TO STOP sign may be omitted for speeds of 45 MPH or less.

TABLE I DEVICE SPACING				
Speed (mph)	Max. Distance Between Devices (ft.) Cones or Tubular Markers: Taper	Tangent	Type I or Type II Barricades or Vertical Panels or Drums: Taper	Tangent
25 to 45	20	50	20	50
50 to 70	20	50	20	100

BUFFER SPACE	
Speed (mph)	Dist. (ft.)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

GENERAL NOTES

1. Work operations shall be confined to one traffic lane, leaving the opposite lane open to traffic.
2. Additional one-way control may be effected by the following means:
   (1) Flag-carrying vehicle; (2) Official vehicle; (3) Pilot vehicles; (4) Traffic signals.
   When flaggers are the sole means of one-way control, the flaggers shall be in sight of each other or in direct communication at all times.
3. The ONE-LANE ROAD signs are to be fully covered and the FLAGGER signs either removed or fully covered when no work is being performed and the highway is open to two-way traffic.
4. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
5. The two channelizing devices directly in front of the work area and the one channelizing device directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
6. For general TCZ requirements and additional information, refer to Index No. 600.

DURATION NOTES

1. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:
   a) Work operations are 60 minutes or less.
   b) Speed limit is 45 mph or less.
   c) No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space.
   d) Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e) Volume and complexity of the roadway has been considered.

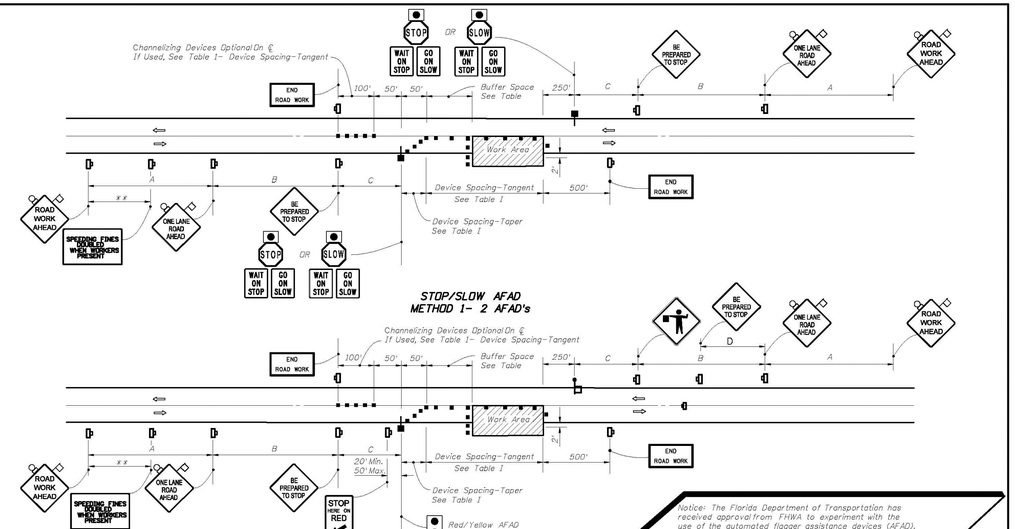
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Automated Flagger Assistance Devices (AFAD), With Gate
- Lane Identification + Direction of Traffic

2010 FDOT Design Standards	Last Revision	Sheet No.
TWO-LANE TWO-WAY, WORK WITHIN THE TRAVEL WAY	07/01/09	1 of 2
	Index No.	603



Notice: The Florida Department of Transportation has received approval from FHWA to experiment with the use of the automated flagger assistance devices (AFAD). AFAD's shall only be used when called for in the plans that include the appropriate pay item and developmental specification or approved by the State Roadway Design Office.

DISTANCE BETWEEN SIGNS				
Speed (mph)	Spacing (ft.) A	B	C	D
40 or less	200	200	200	100
45	350	350	350	175
50	500	500	500	250
55 or greater	2640	1640	1000	500

x (See Sheet 1 Notes)
xx (See Sheet 1 Notes)

AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD)

1. When used at nighttime, the AFAD flagging station shall be illuminated.
2. When the AFAD is not in use, it shall be moved outside the clear zone or be shielded by a barrier or crash cushion and the signs associated with the AFAD shall be removed or covered.
3. Duration Notes shown on sheet 1 of 2 do not apply when AFAD are used.

2010 FDOT Design Standards	Last Revision	Sheet No.
TWO-LANE TWO-WAY, WORK WITHIN THE TRAVEL WAY	07/01/09	2 of 2
	Index No.	603

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 4

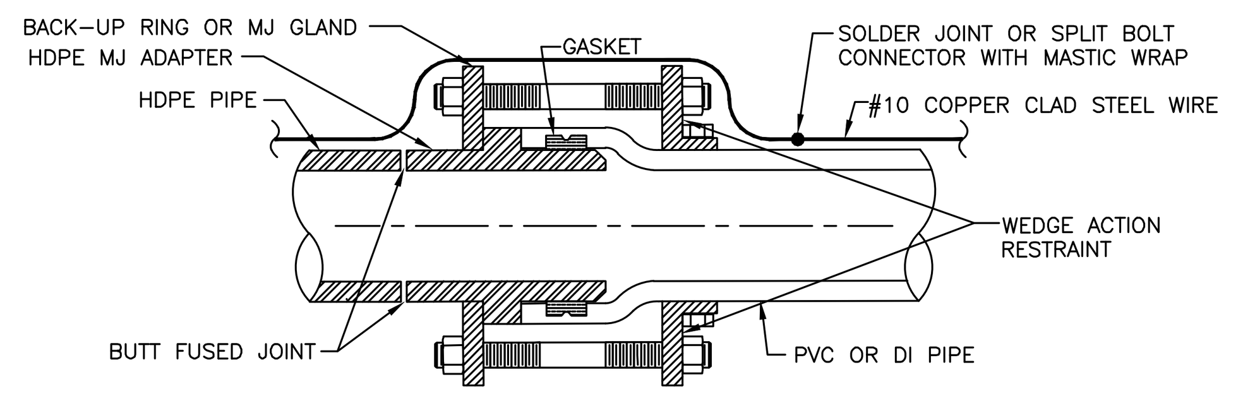
DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

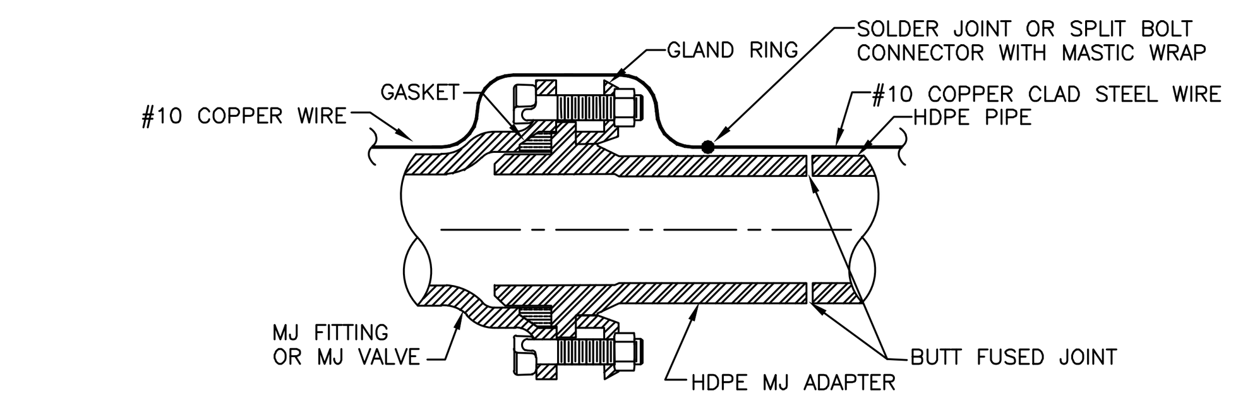
DRAWING NUMBER
C-0.9

STATUS: ISSUE FOR BID
REVISION

S:\1024\01417\06-Drawings\Civil\C-0.5-DET-501.dwg, 2/15/2012 3:26:14 PM, Brian Nought

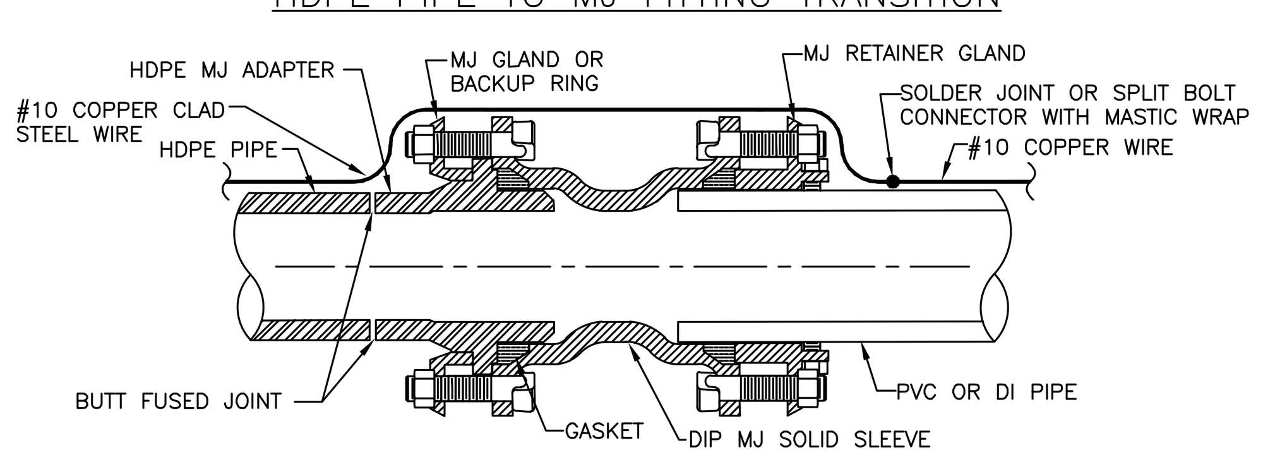


HDPE PIPE TO PVC PIPE / SPIGOT TO BELL CONNECTION



NOTE: SCHEMATIC SHOWN FOR STANDARD MJ FITTINGS AND GATE VALVES.

HDPE PIPE TO MJ FITTING TRANSITION



HDPE PIPE TO PVC PIPE SPIGOT TO SPIGOT CONNECTION

1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.

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MAY 10, 2011
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HDPE TO PVC OR DI PIPE ADAPTER

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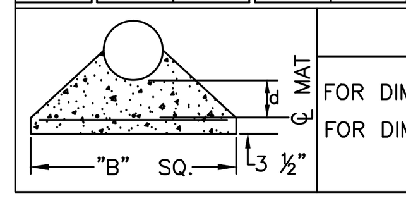
THRUST BLOCK DIMENSIONS B ft. x d inches

PIPE SIZE (IN.)	90° BEND B	90° BEND d	45° BEND B	45° BEND d	22.5° BEND B	22.5° BEND d	11.25° BEND B	11.25° BEND d	DEAD END & TEE B	DEAD END & TEE d	45° WYE B	45° WYE d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 ½
6	2.2	5 ¼	1.6	3 ¾	1.2	3 ½	0.8	3 ½	1.9	4 ½	1.6	3 ¾
8	2.9	7	2.1	5	1.5	3 ½	1.1	3 ½	2.4	5 ¾	2.0	4 ¾
10	3.5	8 ½	2.6	6 ¼	1.9	4 ½	1.3	3 ½	3.0	7 ¼	2.5	6
12	4.2	10	3.1	7 ½	2.2	5 ¼	1.6	3 ¾	3.5	8 ¼	3.0	7 ¼
14	4.9	11 ¾	3.6	8 ¾	2.6	6 ¼	1.8	4 ¼	4.1	9 ¾	3.4	8 ¼
16	5.5	13 ¼	4.1	9 ¾	2.9	7	2.1	5	4.7	11 ¼	3.9	9 ¼
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 ½
20	6.9	16 ½	5.0	12	3.6	8 ¾	2.6	6 ¼	5.8	14	4.9	11 ¾
24	8.2	19 ¾	6.0	14 ½	4.3	10 ¼	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 ¼	7.5	18	5.3	12 ¾	3.8	9	8.5	20 ½	7.2	17 ¼
36	12.1	29	8.9	21 ¼	6.4	15 ¼	4.5	10 ¾	10.2	24 ½	8.6	20 ¾

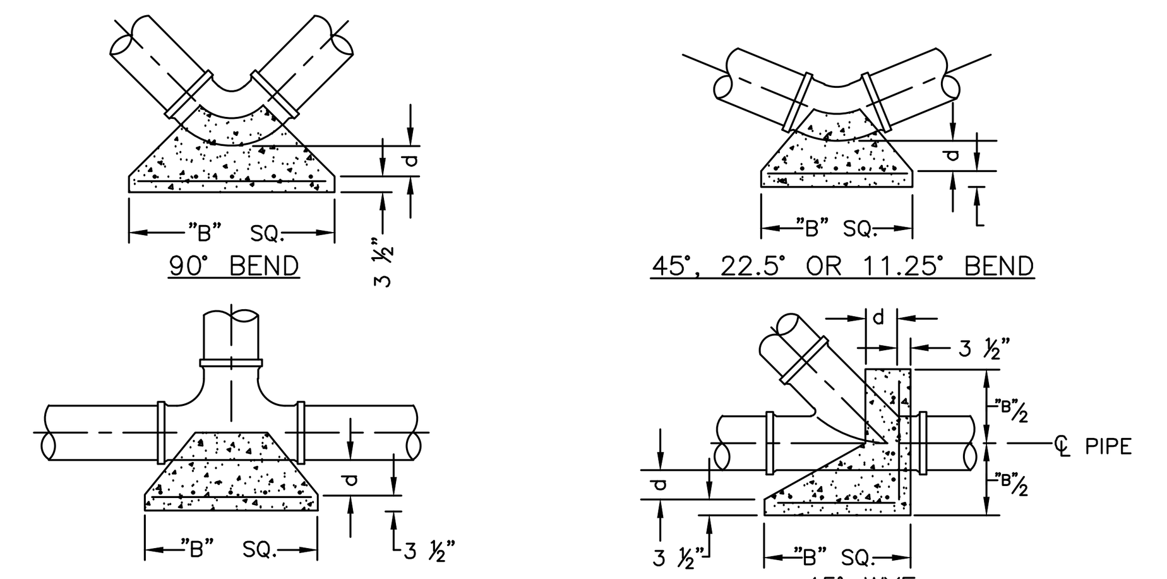


REINFORCEMENT MAT SCHEDULE

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 MAY 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.



90° BEND
45°, 22.5° OR 11.25° BEND
TEE OR DEAD END
45° WYE

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

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CONCRETE THRUST BLOCKS

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REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)					REDUCERS (SIZE/LENGTH)			PLUGS & VALVES
24	90	38	18	X24/169	X20/132	X16/90	X12/38	X10/6	X20/64	X16/117	X12/158	214
20	78	32	16	X20/141	X16/101	X12/53	X10/24	X8/1	X16/65	X12/115	X10/149	184
16	66	27	13	X16/111	X12/67	X10/41	X8/12		X12/64	X10/107	X8/111	151
12	52	22	10	X12/80	X10/56	X8/31	X6/1		X10/58	X8/62	X6/86	118
10	44	18	9	X10/63	X8/40	X6/7			X8/33	X6/61	X4/81	100
8	37	15	7	X8/49	X6/18	X4/1			X6/35	X4/60		83
6	29	12	6	X6/29	X4/1				X4/33			63
4	21	8	4	X4/12								45

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTINGSECTIONS OF PIPE.
3. ALL ISOLATIONVALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

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RESTRAINED LENGTHS FOR PVC PIPE

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REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)						REDUCERS (SIZE/LENGTH)				PLUGS & VALVES
36	142	59	28	x36/393	x30/318	x24/232	x20/165	x16/84	x12/1	X30/137	X24/247	X20/309	X16/359	453
30	124	51	25	X30/333	X24/252	X20/189	X16/115	X12/23	x10/1	X24/137	X20/213	X16/276		391
24	106	44	21	X24/270	X20/211	X16/143	X12/61	X10/10	x8/1	X20/98	X16/178	X12/241		327
20	92	38	18	X20/225	X16/161	X12/85	X10/39	x8/1		X16/98	X12/176	X10/227		280
16	77	32	15	X16/177	X12/107	X10/65	X8/19	x6/1		X12/98	X10/163	X8/169		231
12	61	25	12	X12/127	X10/89	X8/50	x6/1			X10/88	X8/96	X6/131		181
10	52	22	10	X10/101	X8/64	x6/11				X8/51	X6/94	X4/125		153
8	44	18	9	X8/78	X6/30	x4/1				X6/54	X4/92			128
6	34	14	7	X6/46	x4/1					X4/50				98
4	24	10	5	x4/19										69

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES (SIZE/LENGTH)						REDUCERS (SIZE/LENGTH)				PLUGS & VALVES
36	100	42	20	x36/163	x30/132	x24/96	x20/68	x16/35	x12/1	X30/57	X24/103	X20/128	X16/149	188
30	88	37	18	X30/138	X24/104	X20/78	X16/48	X12/10	x10/1	X24/57	X20/88	X16/114		162
24	75	31	15	X24/112	X20/87	X16/59	X12/25	x10/4	x8/1	X20/40	X16/74	X12/100		135
20	65	27	13	X20/93	X16/67	X12/35	X10/16	x8/1		X16/41	X12/73	X10/94		116
16	54	22	11	X16/73	X12/44	X10/27	x8/8	x6/1		X12/41	X10/68	X8/70		96
12	43	18	8	X12/53	X10/37	X8/21	x6/1			X10/37	X8/40	X6/54		75
10	37	15	7	X10/42	X8/26	x6/5				X8/21	X6/39	X4/52		63
8	30	13	6	X8/32	X6/12	x4/1				X6/22	X4/38			53
6	24	10	5	X6/19	x4/1					X4/21				41
4	17	7	3	x4/8										29

NOTE:

SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

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RESTRAINED LENGTHS FOR DIP

UG-9

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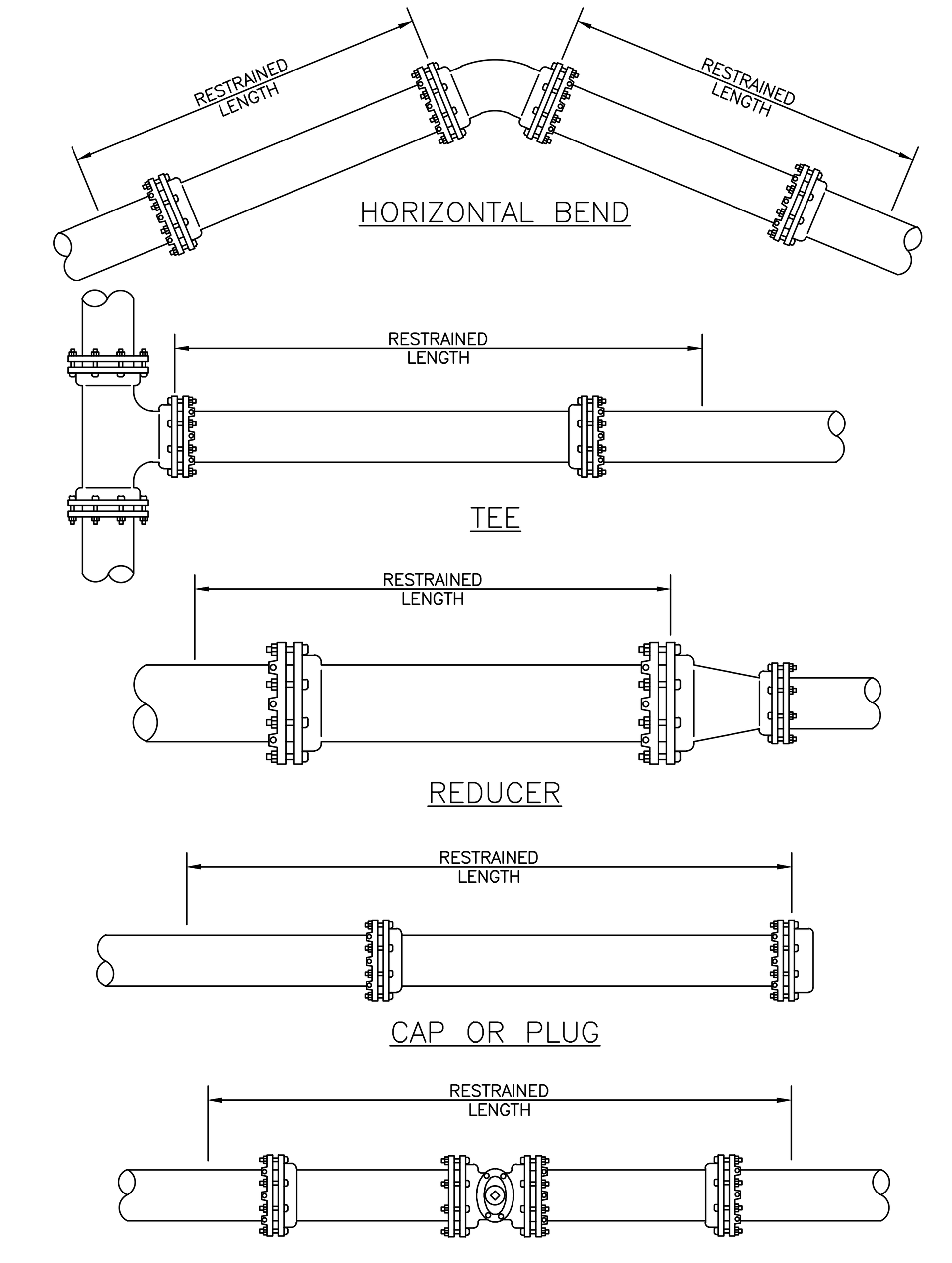

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DATE OF APPROVAL

RESTRAINED LENGTHS FOR PIPE

UG-10

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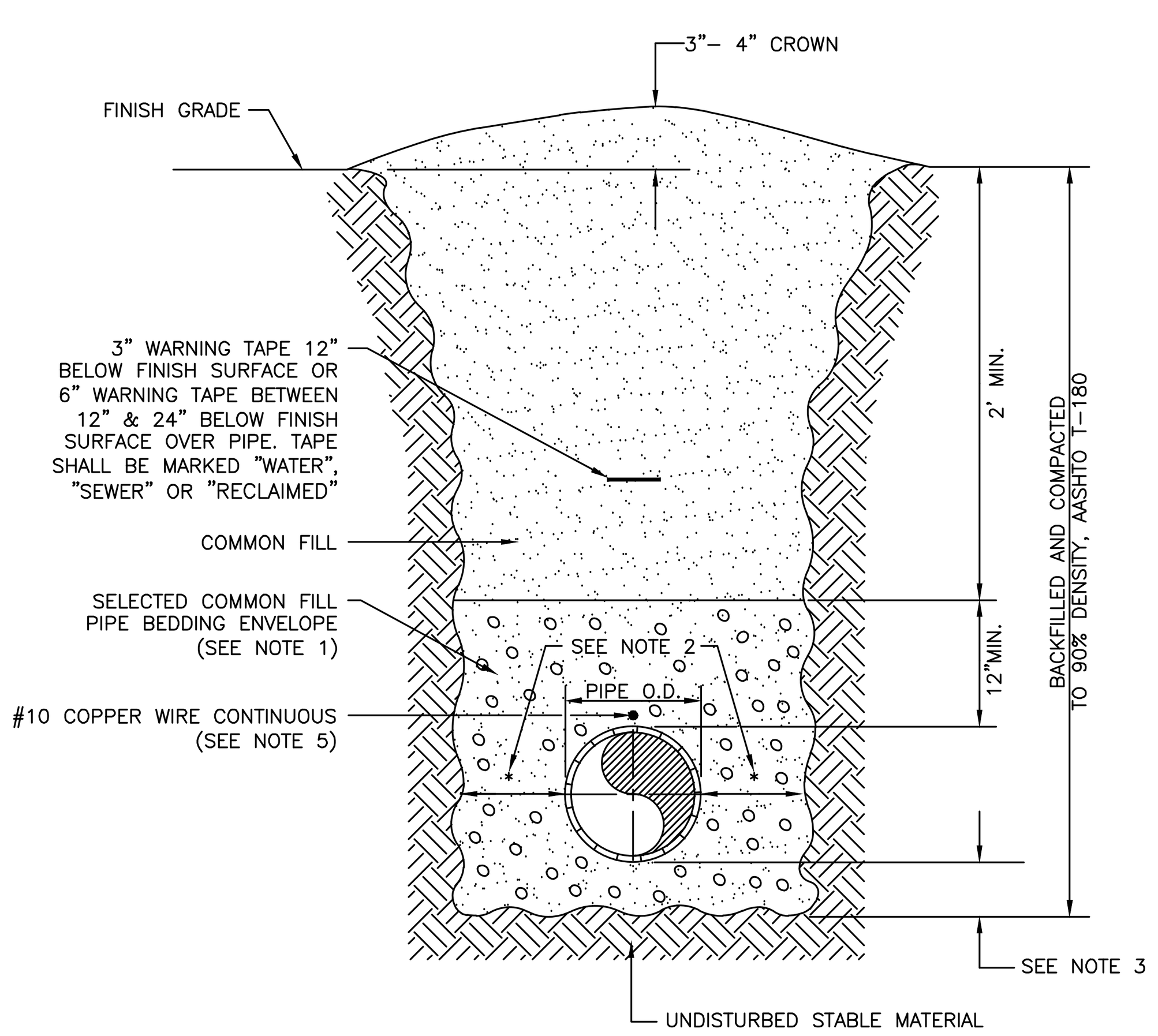
NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
WRT/KE	03/11

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DATE OF APPROVAL

TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING

UG-11

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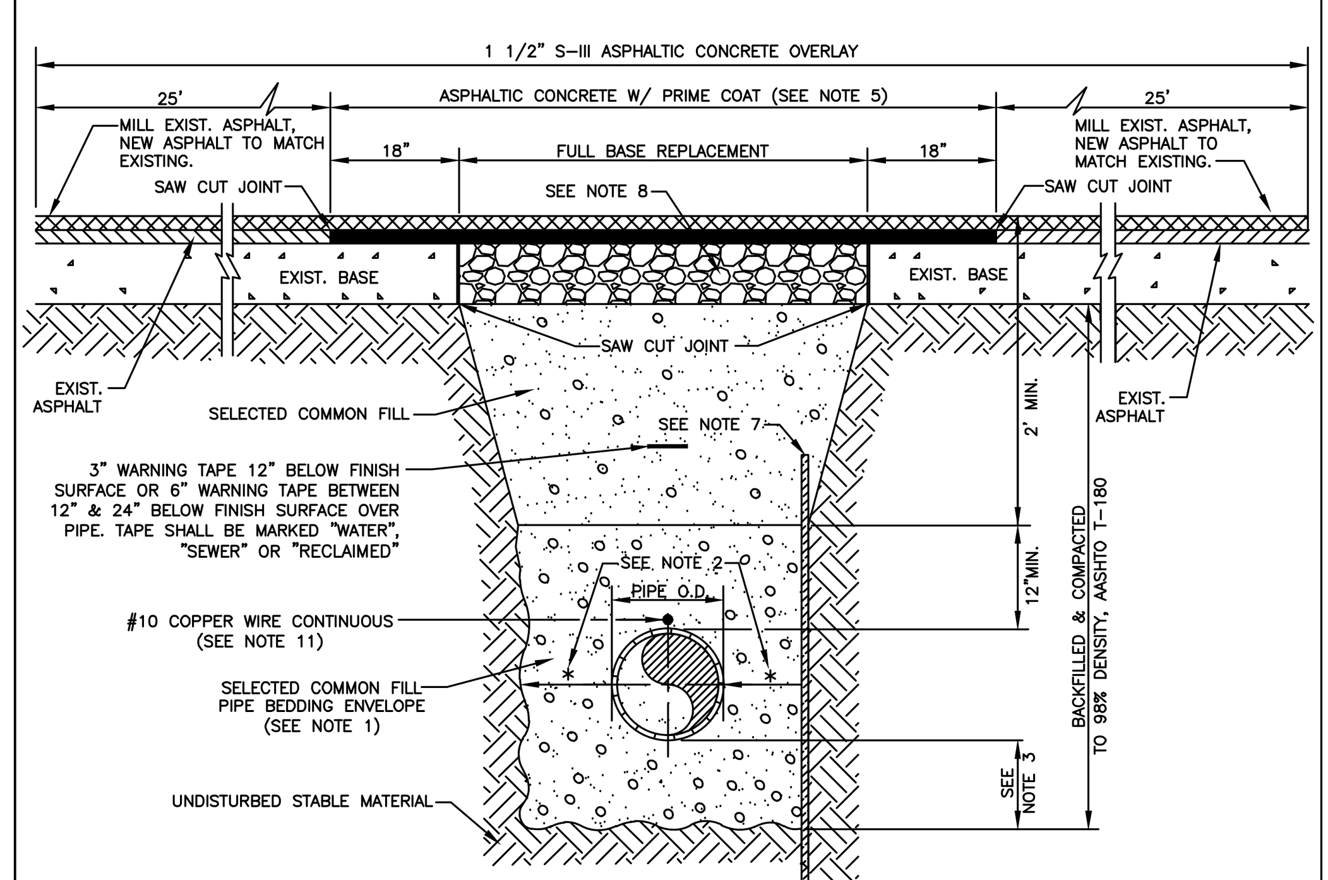
NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. 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 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
WRT/KE	03/11

MAY 10, 2011
DATE OF APPROVAL

TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-12

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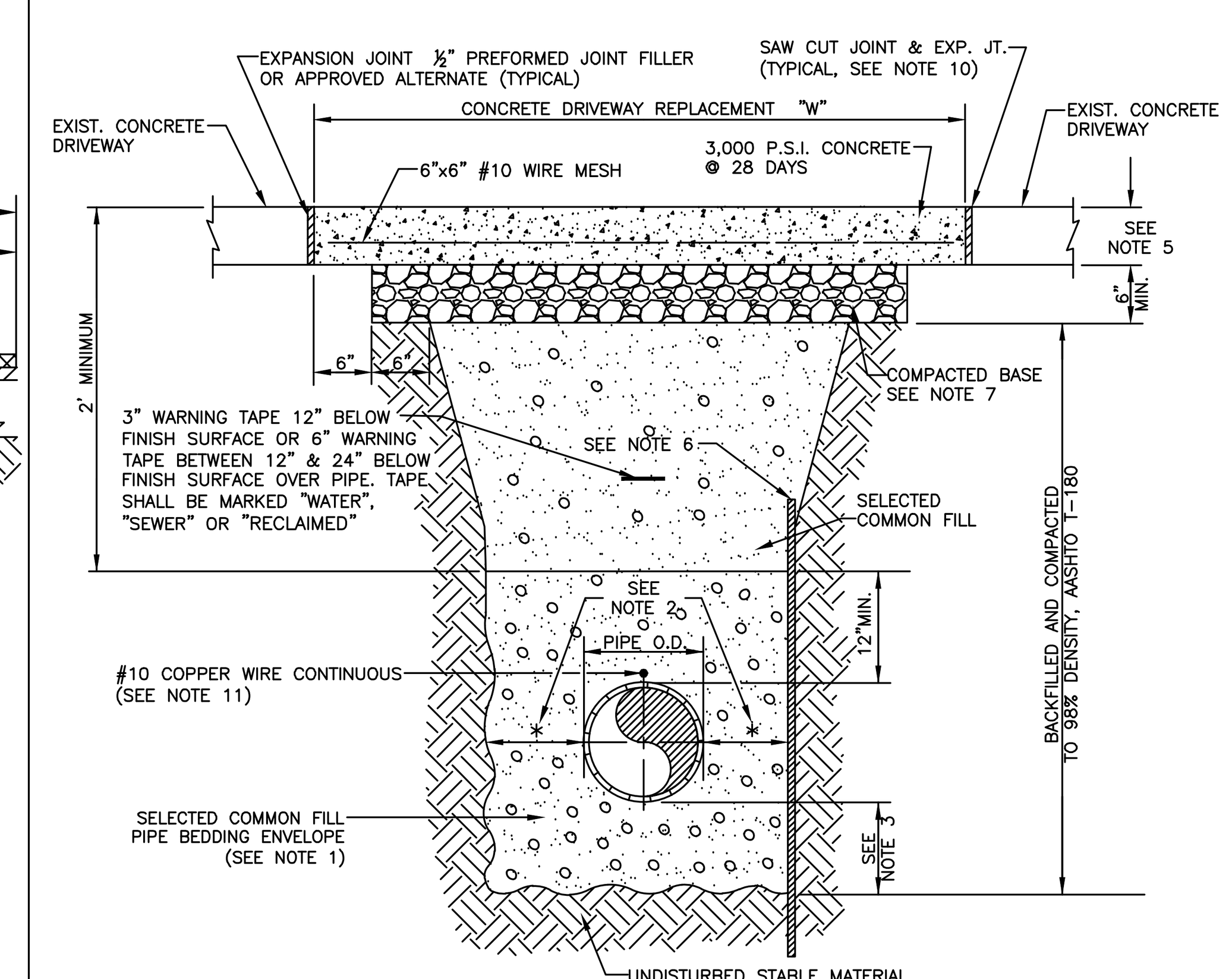
NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
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. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/16" WIDE AND 1½" DEEP) AFTER THE CONCRETE HAS SET.
10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



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MAY 10, 2011
DATE OF APPROVAL

TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING

UG-14

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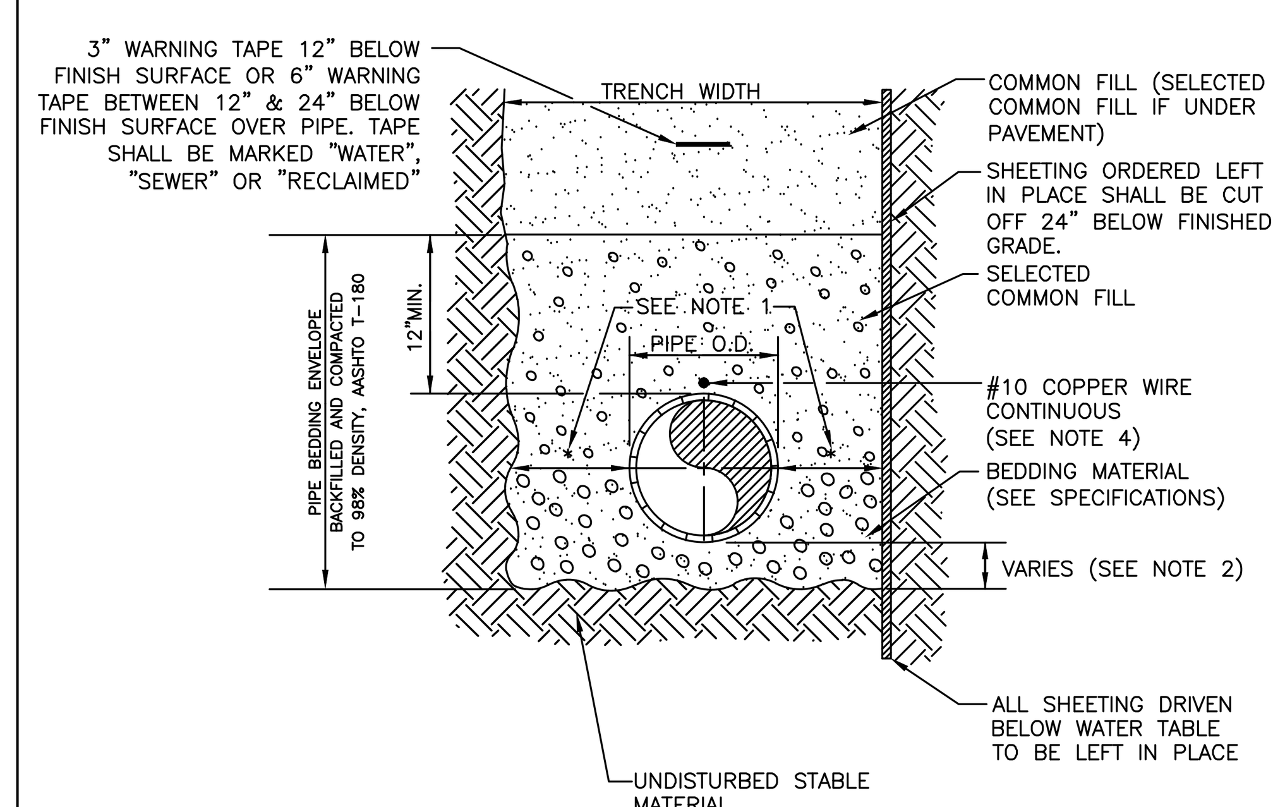
NOTES:

1. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
2. TYPICALLY 4" TO 6".
3. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



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DATE OF APPROVAL

TRENCH WITH TYPE A-2 PIPE BEDDING

UG-15

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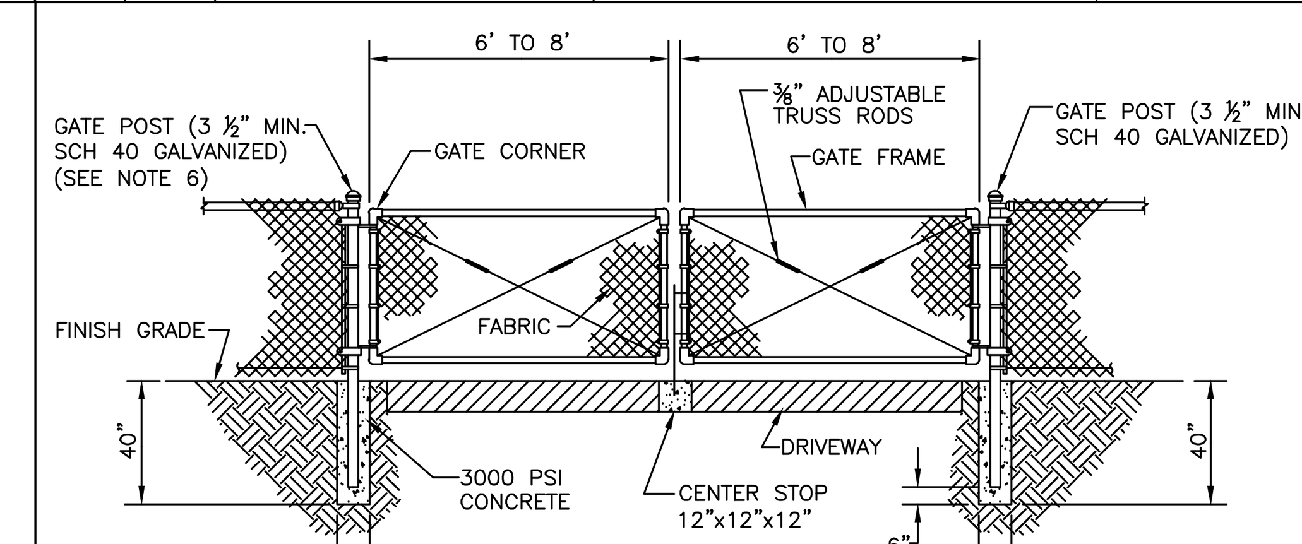
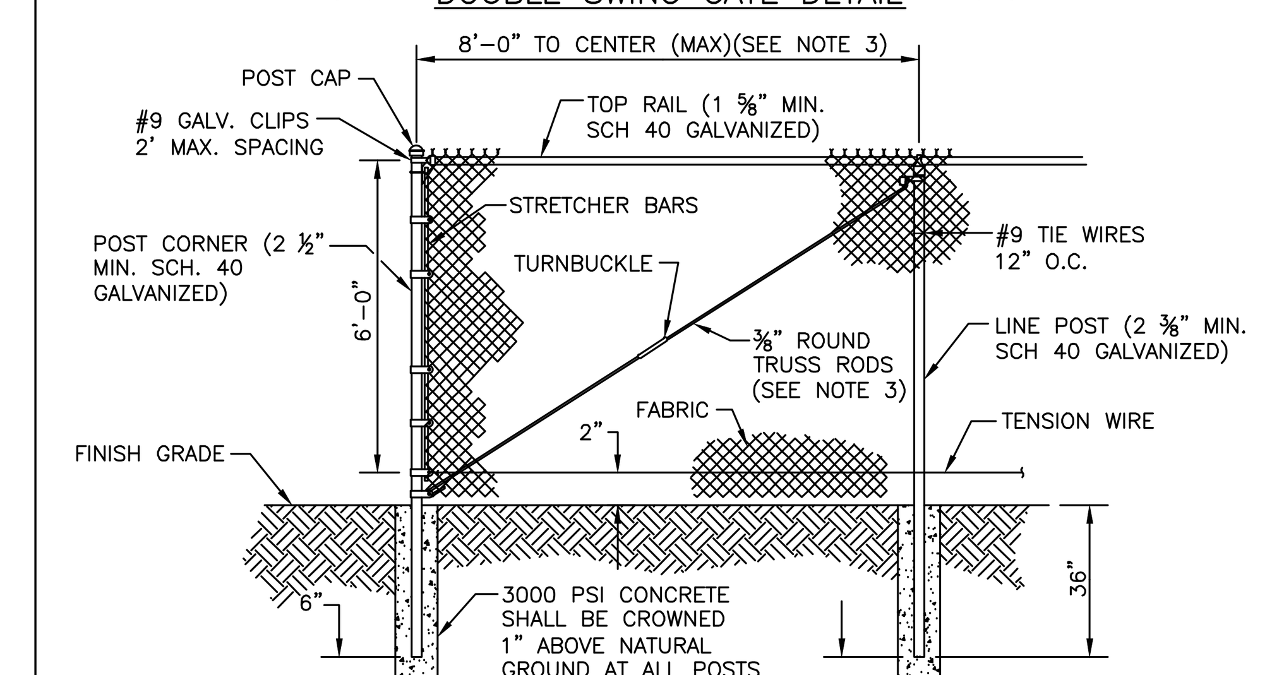


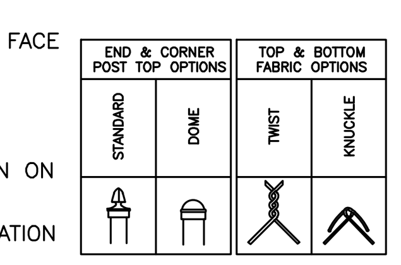
DOUBLE SWING GATE DETAIL



FENCE DETAIL

NOTES:

1. FENCING SHALL BE CONCRETE AGGREGATE, STUCCO, BRICK, STONE, SPLIT FACE CONCRETE MASONARY, OR CHAIN LINK.
2. CHAIN LINK FENCING SHALL BE #9 GAUGE, GALVANIZED STEEL WITH VINYL COATING.
3. TRUSS BARS ON CHAIN LINK FENCES ARE REQUIRED FOR THE FIRST SPAN ON EACH SIDE OF THE CORNER POST AND FOR EACH GATE SECTION.
4. LANDSCAPE SCREENING SHALL BE LOCATED ON THE EXTERIOR OF LIFT STATION FENCING.
5. SWING GATES SHALL BE CAPABLE OF SWINGING BOTH INWARDS AND OUTWARDS. CANTILEVER SLIDE GATES AND ROLL SLIDE GATES MEETING FDOT DESIGN STANDARDS MAY BE USED AS AN OPTION TO SWING GATES.
6. GATE POSTS AND TRACK LINE POSTS SHALL BE 4 INCH SCHEDULE 40 FOR CANTILEVER SLIDE GATES AND ROLL SLIDE GATES.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/BR	11/10

MAY 10, 2011
DATE OF APPROVAL

SECURITY FENCING

UG-18

PAGE 118

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 5

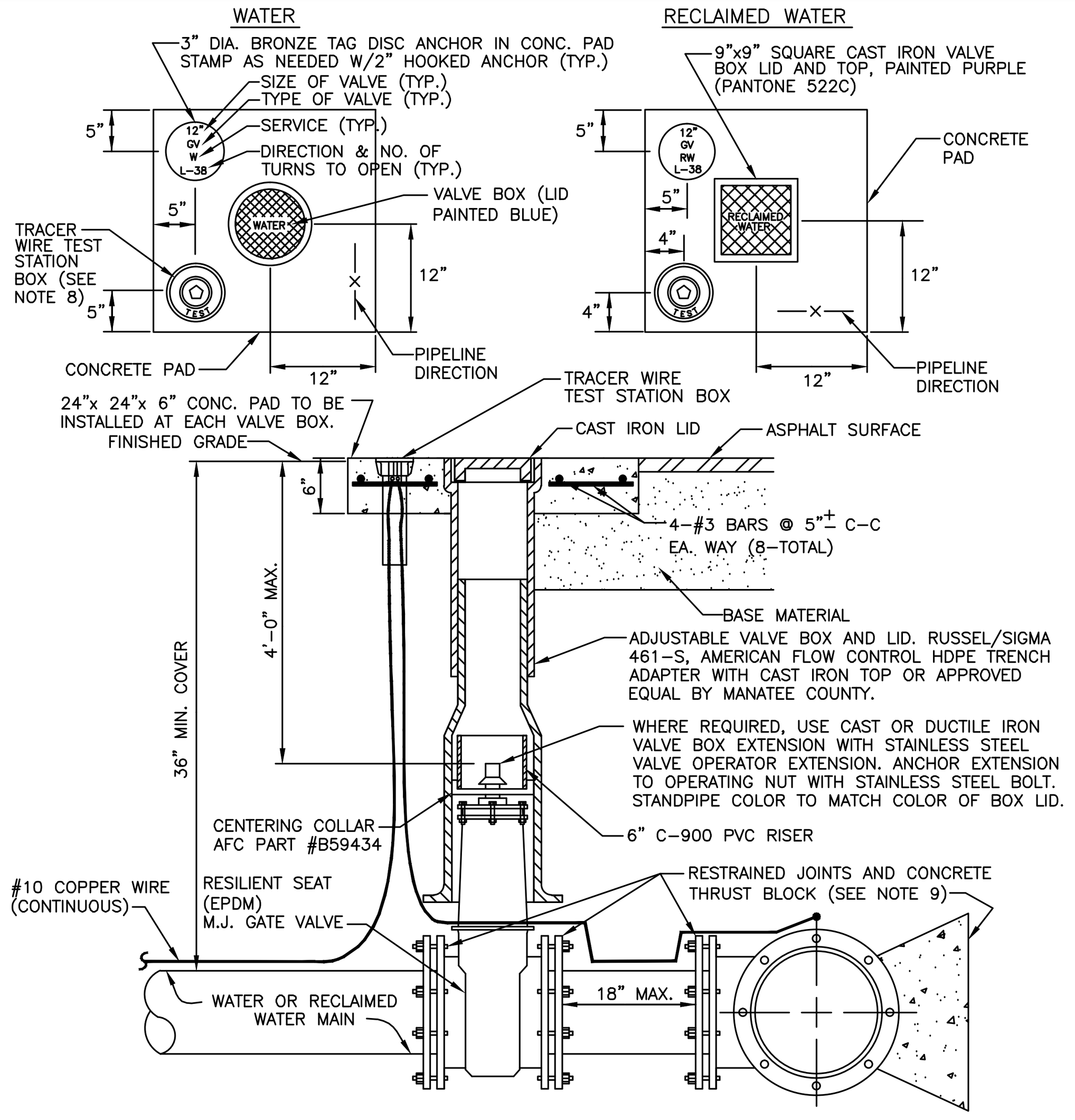
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.10

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\80-Drawings\Civil\C-0.5-DET-501.dwg, 2/15/2012 3:26:18 PM, Brian Nought



NOTES:

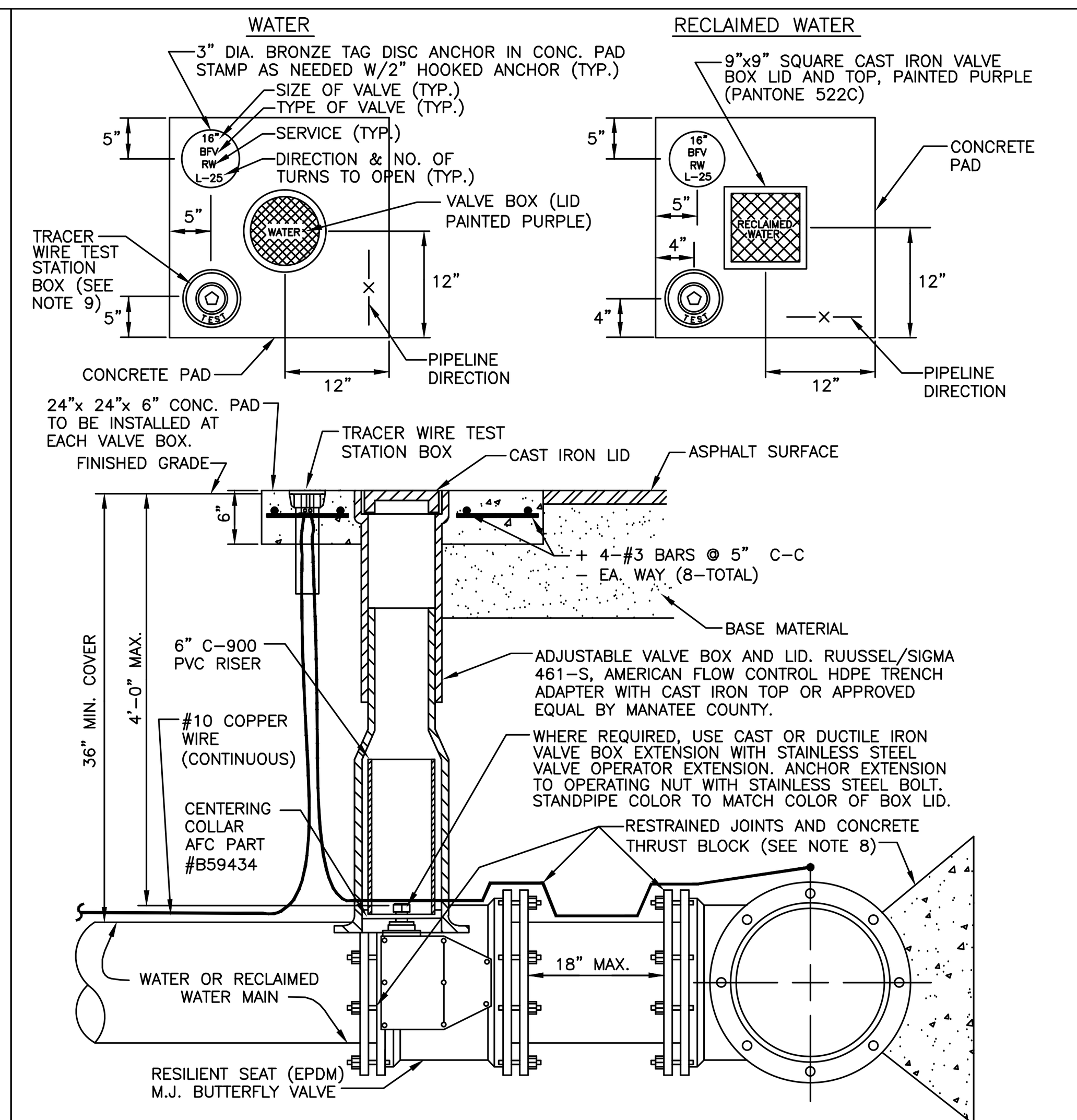
1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING 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. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
9. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
10. BINGHAM & TAYLOR P200NFG FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

GATE VALVE, BOX, LID AND TAG — UW-2 — PAGE 120



NOTES:

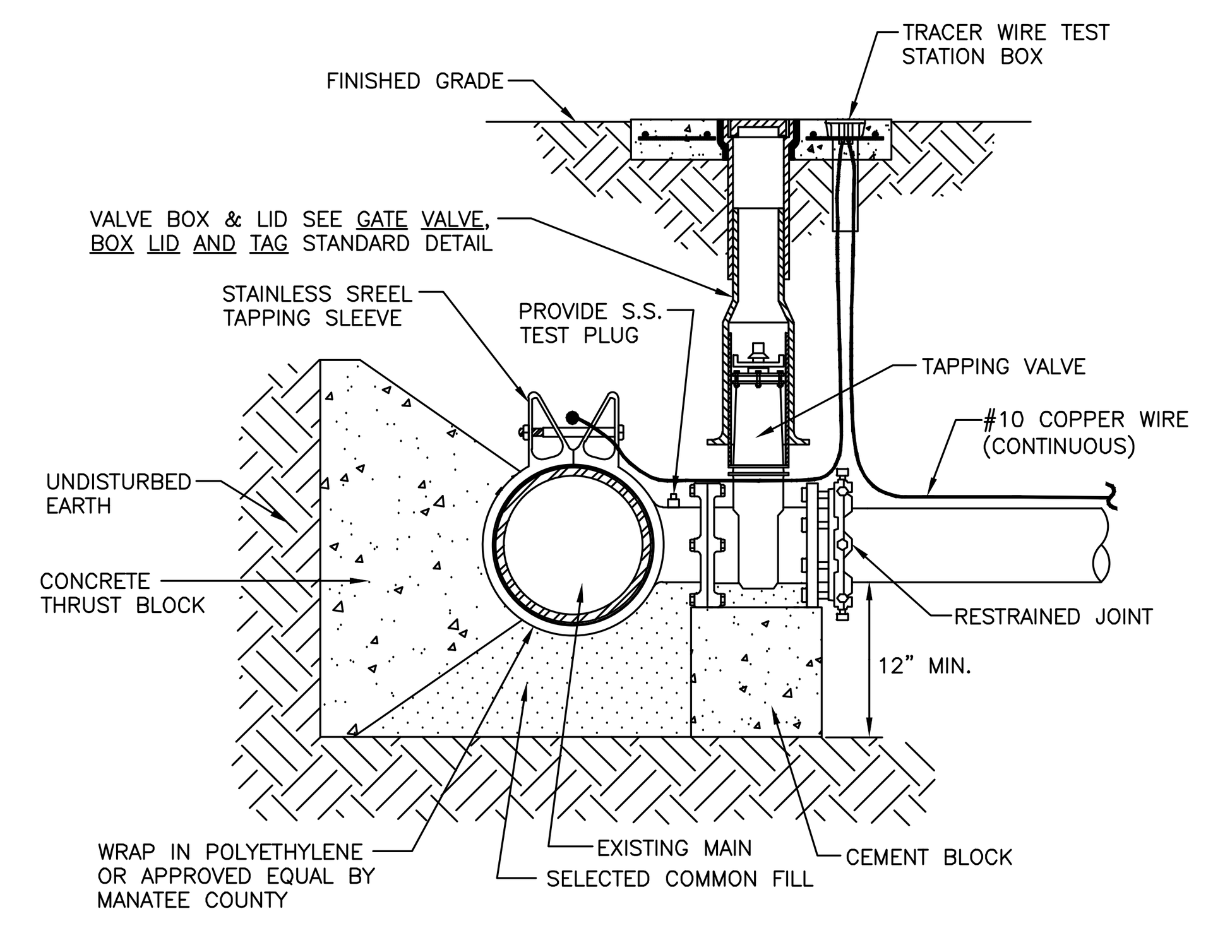
1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC DISTANCE IN FEET TO THE VALVE. WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING 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. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
9. BINGHAM & TAYLOR P200NFG OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

BUTTERFLY VALVE, BOX, LID AND TAG — UW-3 — PAGE 121



ELEVATION

NOTES:

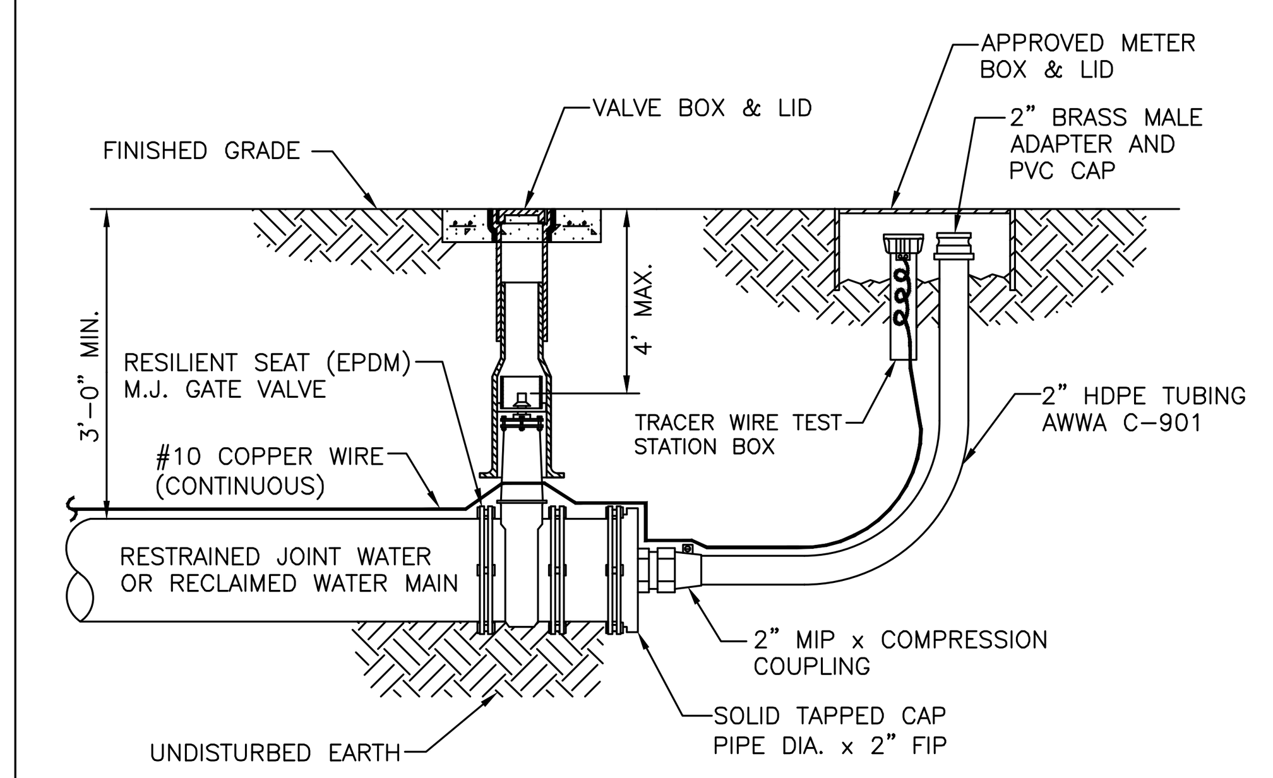
1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
2. ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
3. ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
4. 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 GREATER) FROM A JOINT OR FITTING.
5. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

TAPPING SLEEVE AND VALVE — UW-4 — PAGE 122



NOTE:

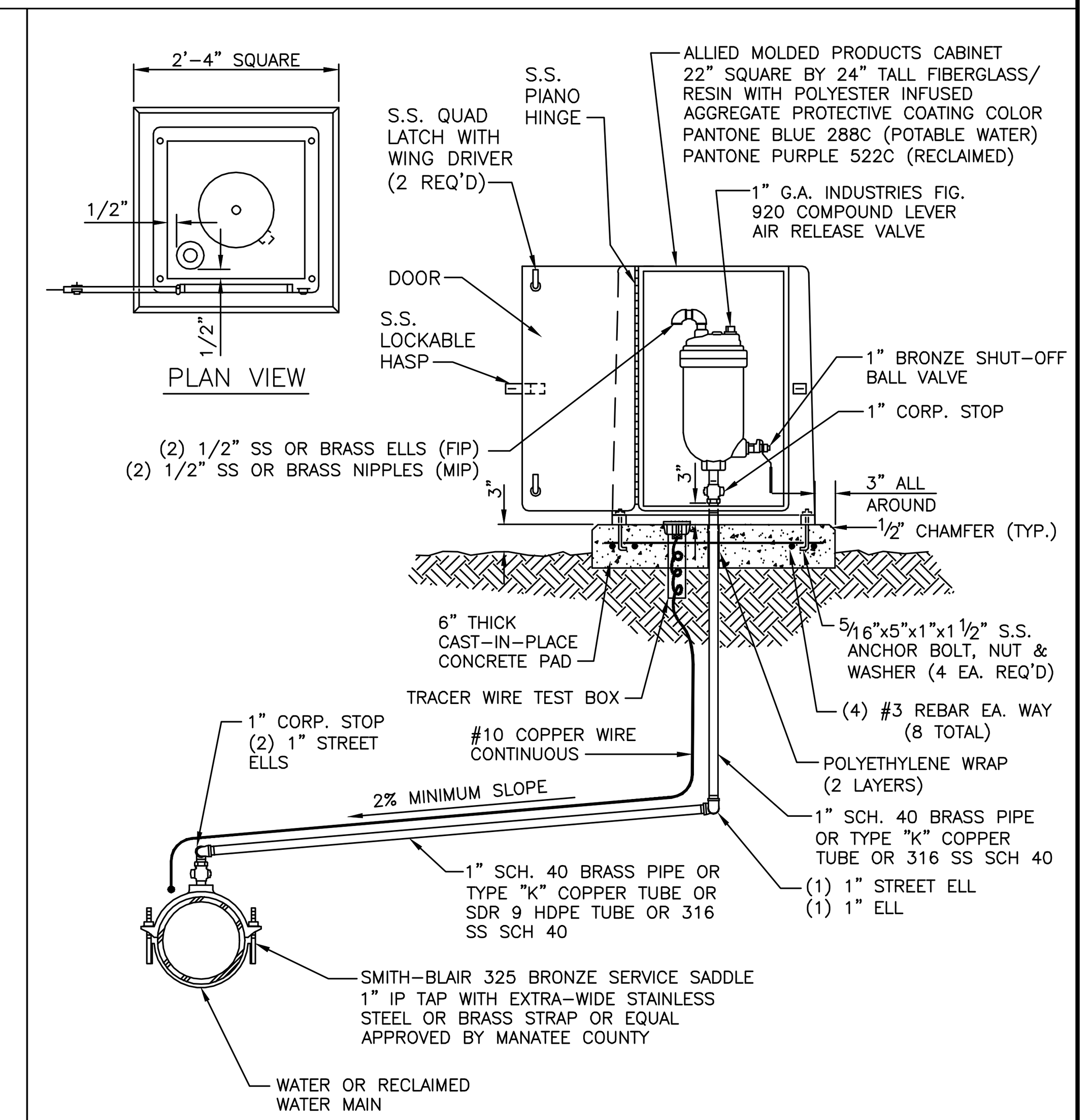
1. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

2" BLOW-OFF ASSEMBLY FOR 10" MAINS AND SMALLER — UW-7 — PAGE 125



NOTES:

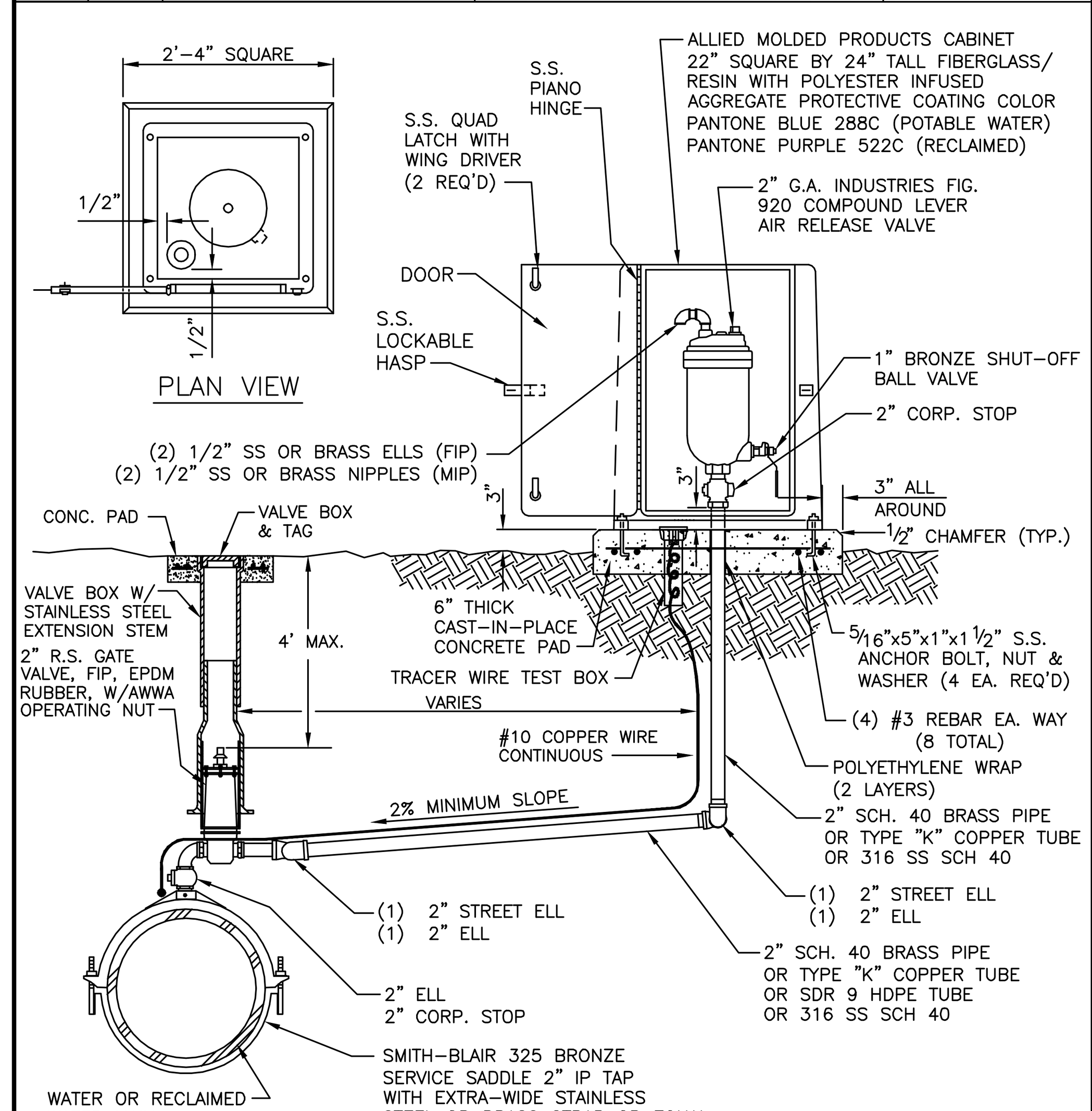
1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS — UW-9 — PAGE 127



NOTES:

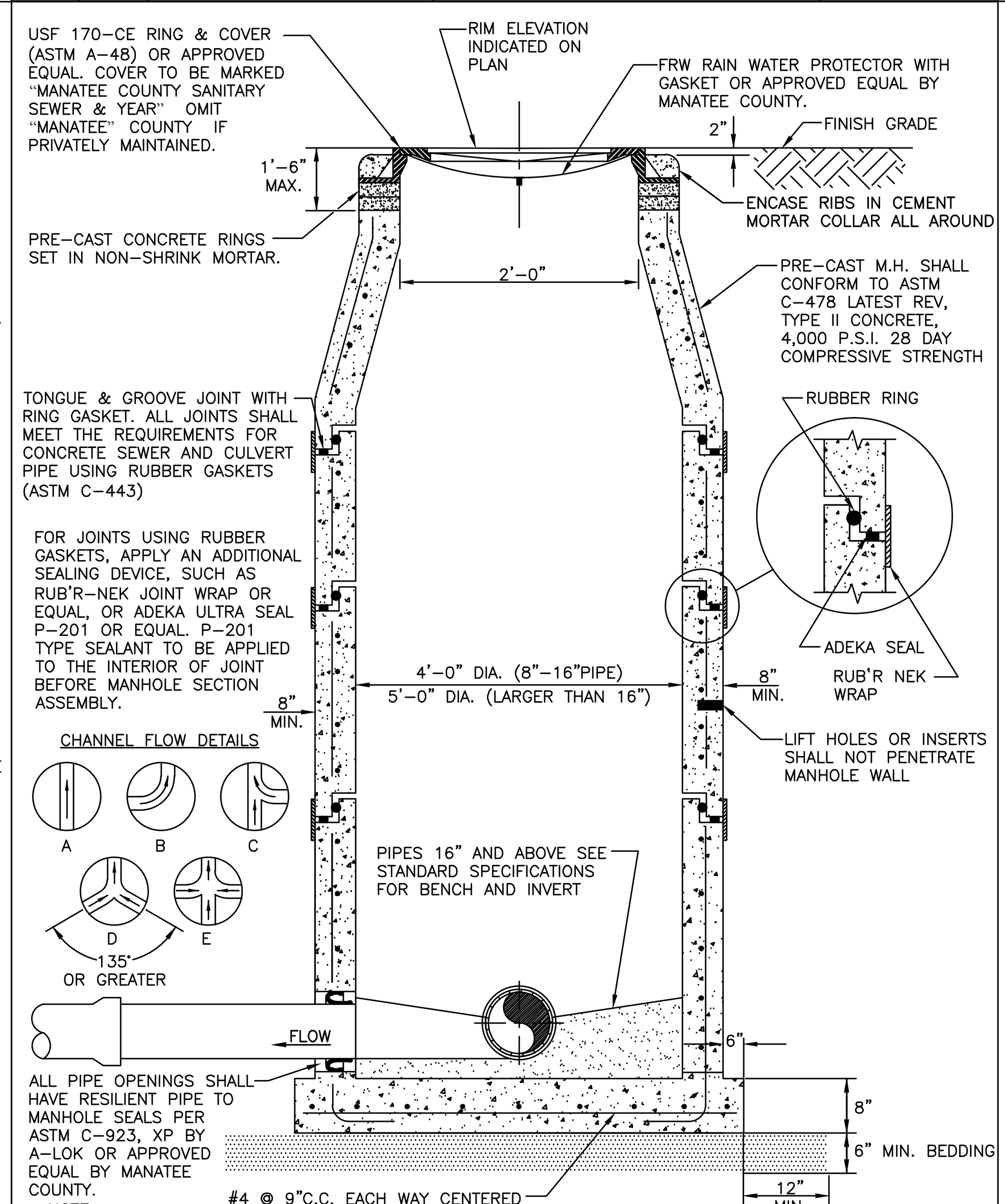
1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. SEE GATE VALVE, BOX, LID AND TAG STANDARD DETAIL. CENTERING COLLAR IS NOT REQUIRED ON 2" GATE VALVES.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

AIR RELEASE ASSEMBLY FOR 16-INCH AND LARGER MAINS — UW-10 — PAGE 128



NOTE:

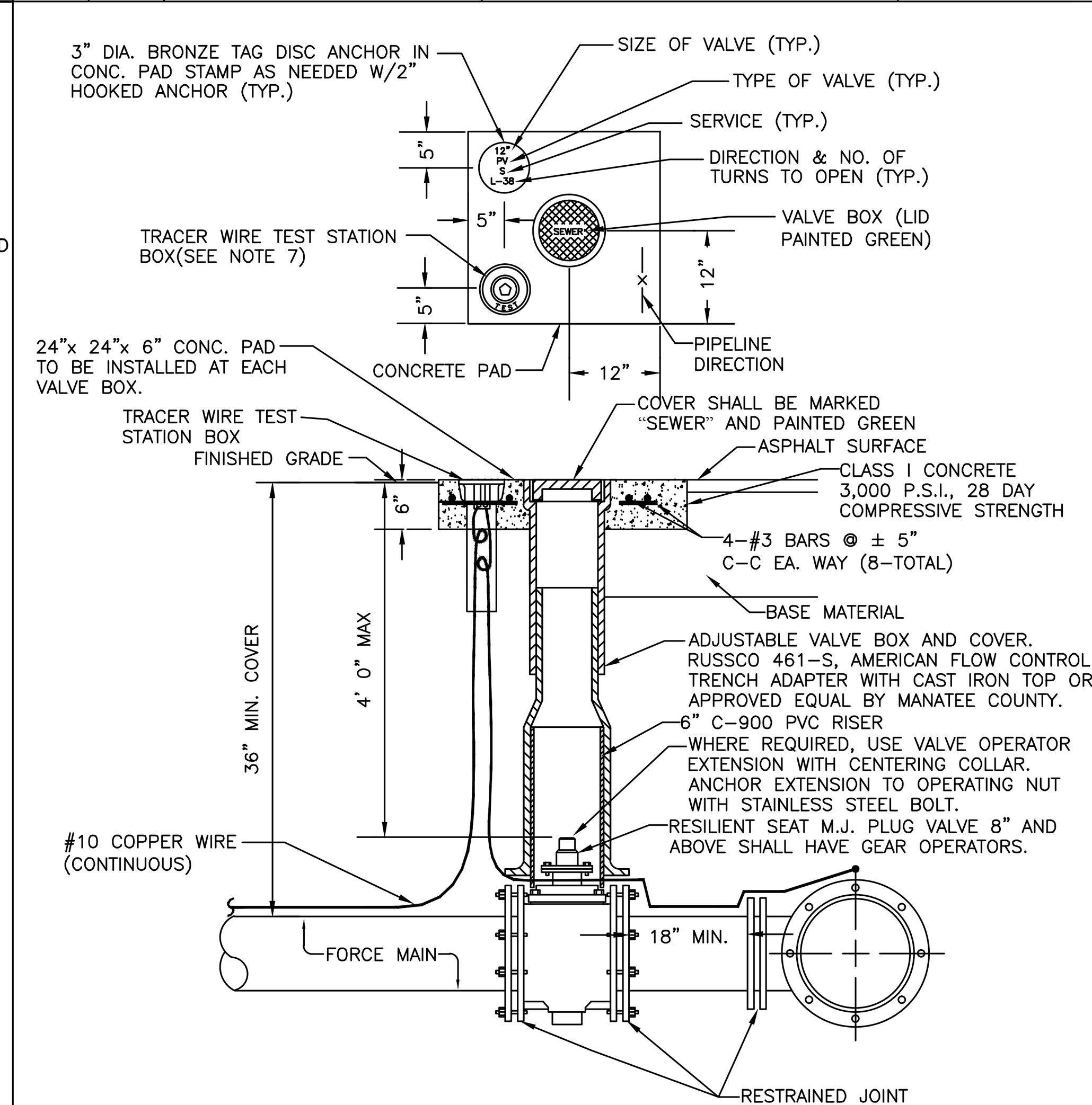
DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL HAVE AN APPROVED LINER.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
WRT/KE	04/11

MAY 10, 2011
DATE OF APPROVAL

STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW — US-2 — PAGE 142



NOTES:

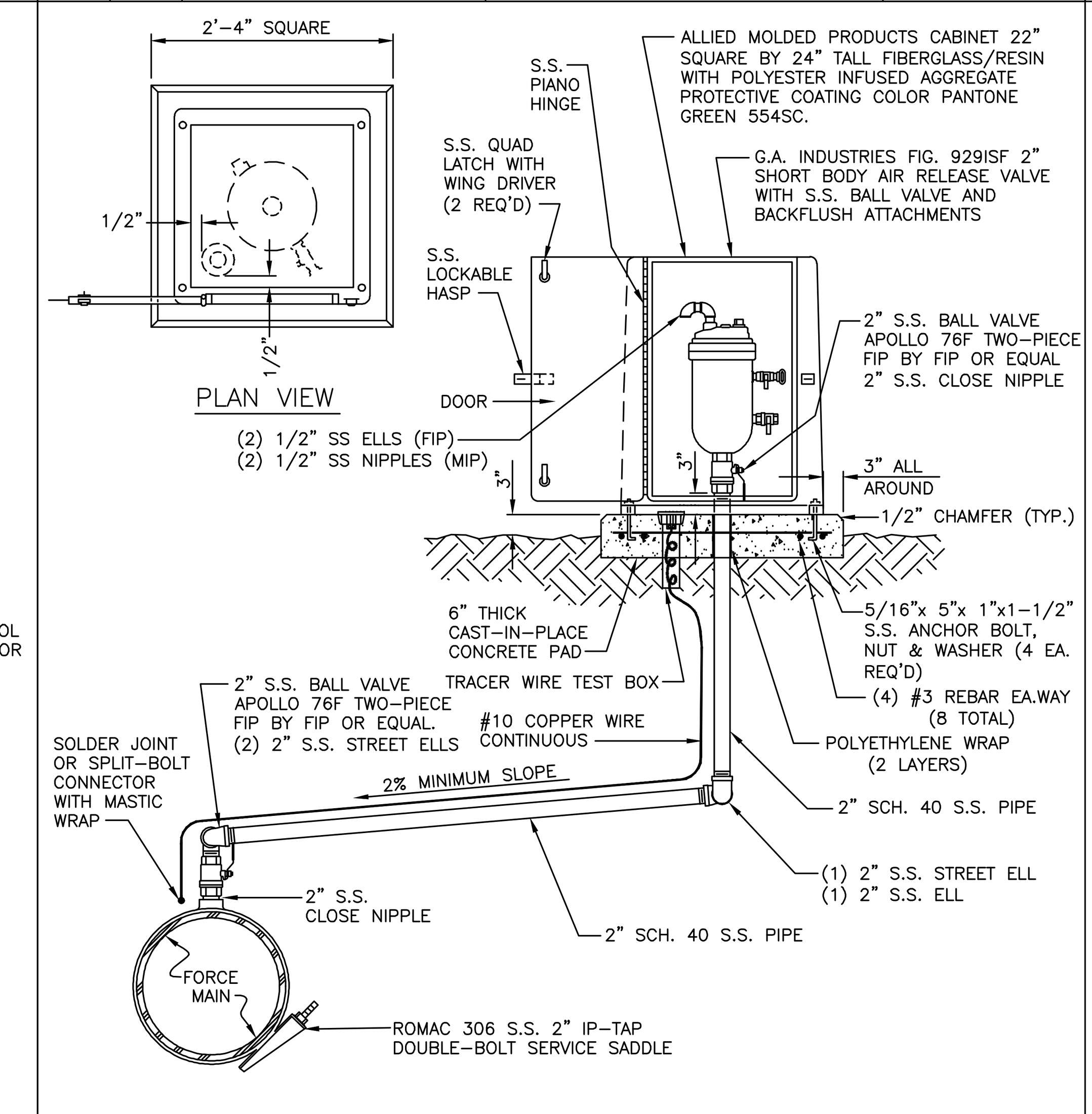
1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING VALVE. WHERE AN EXISTING FORCE MAIN IS TO BE TAPPED, USE A TAPPING GATE VALVE PER THE TAPPING SLEEVE AND VALVE DETAIL.
7. TEST BOX TO BE BINGHAM & TAYLOR P200NFG OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/DOM	11/10

MAY 10, 2011
DATE OF APPROVAL

PLUG VALVE, BOX, COVER AND TAG — US-12 — PAGE 152



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4" AND LARGER FORCE MAINS.
2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. AIR RELEASE VALVES TO BE IN BELOW-GRADE INSTALLATIONS UNLESS IMPRACTICAL. INSTALLATIONS MAY BE ABOVE-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
7. CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS — US-25 — PAGE 165

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 6

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.11

STATUS: ISSUE FOR BID
REVISION

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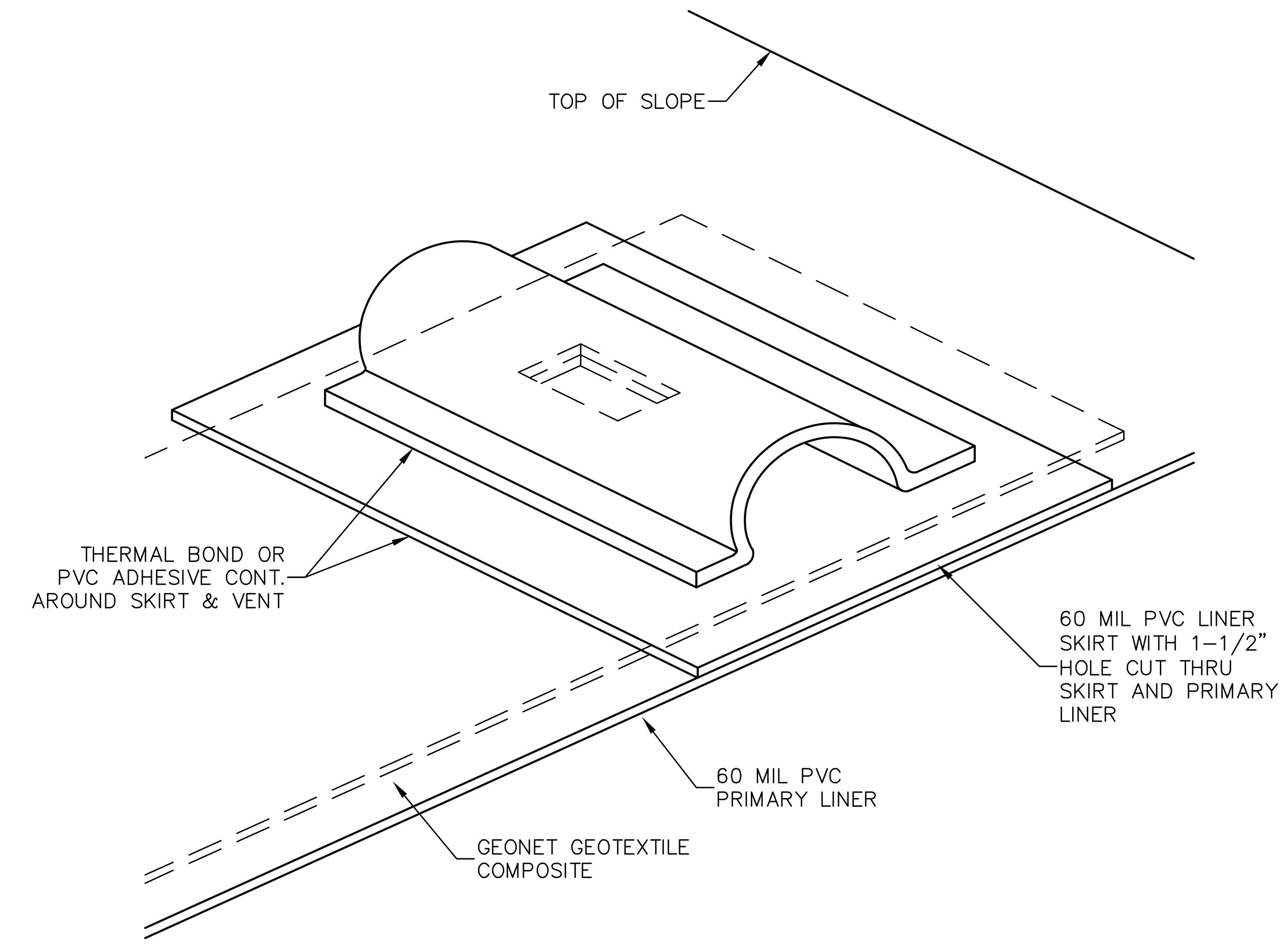
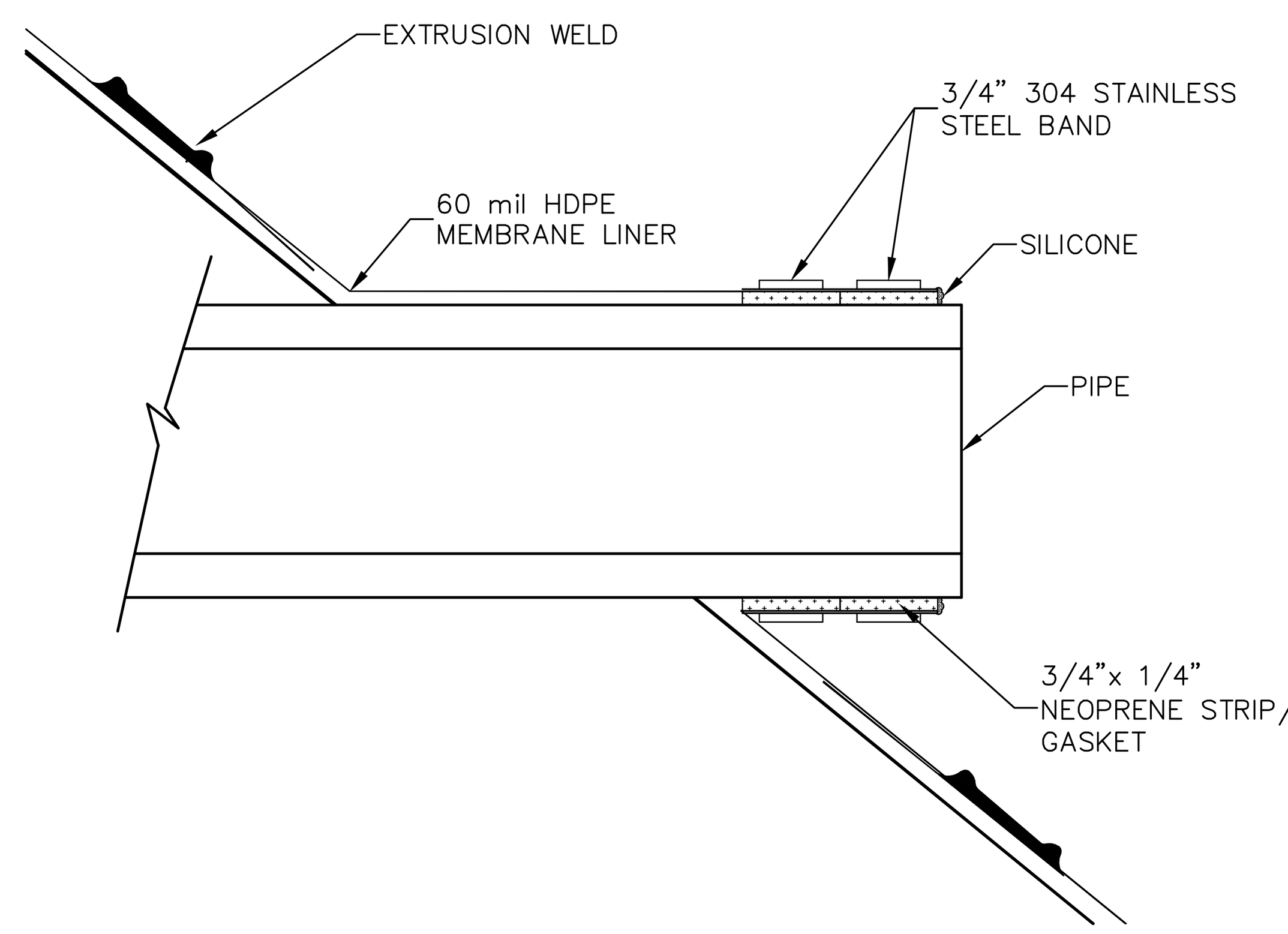
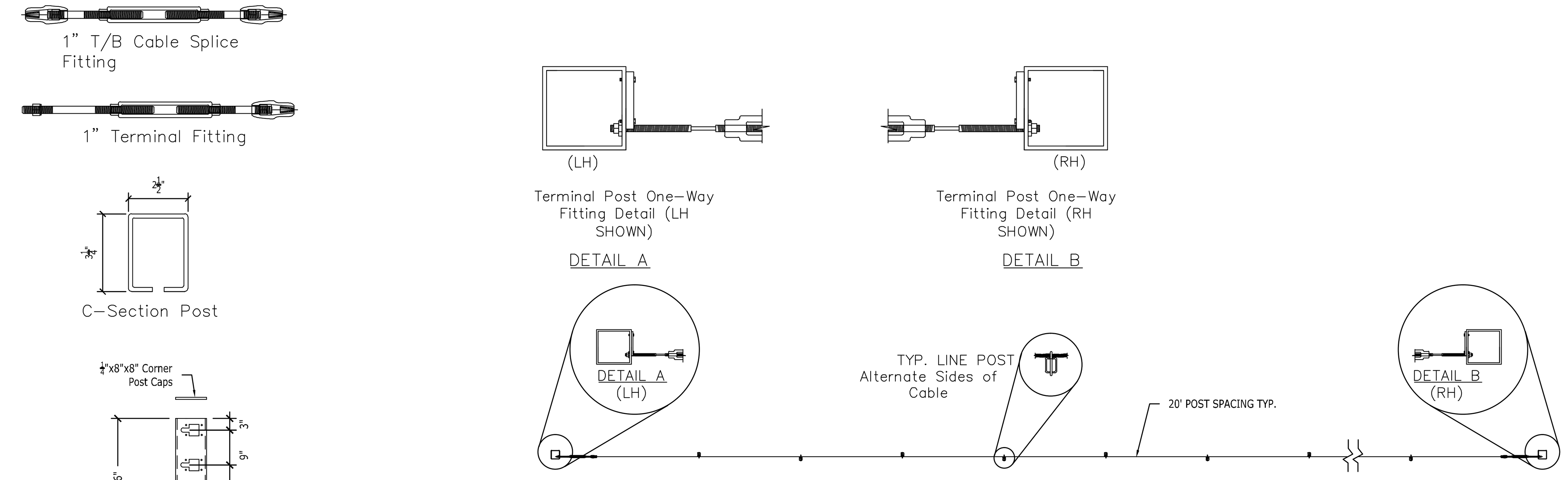
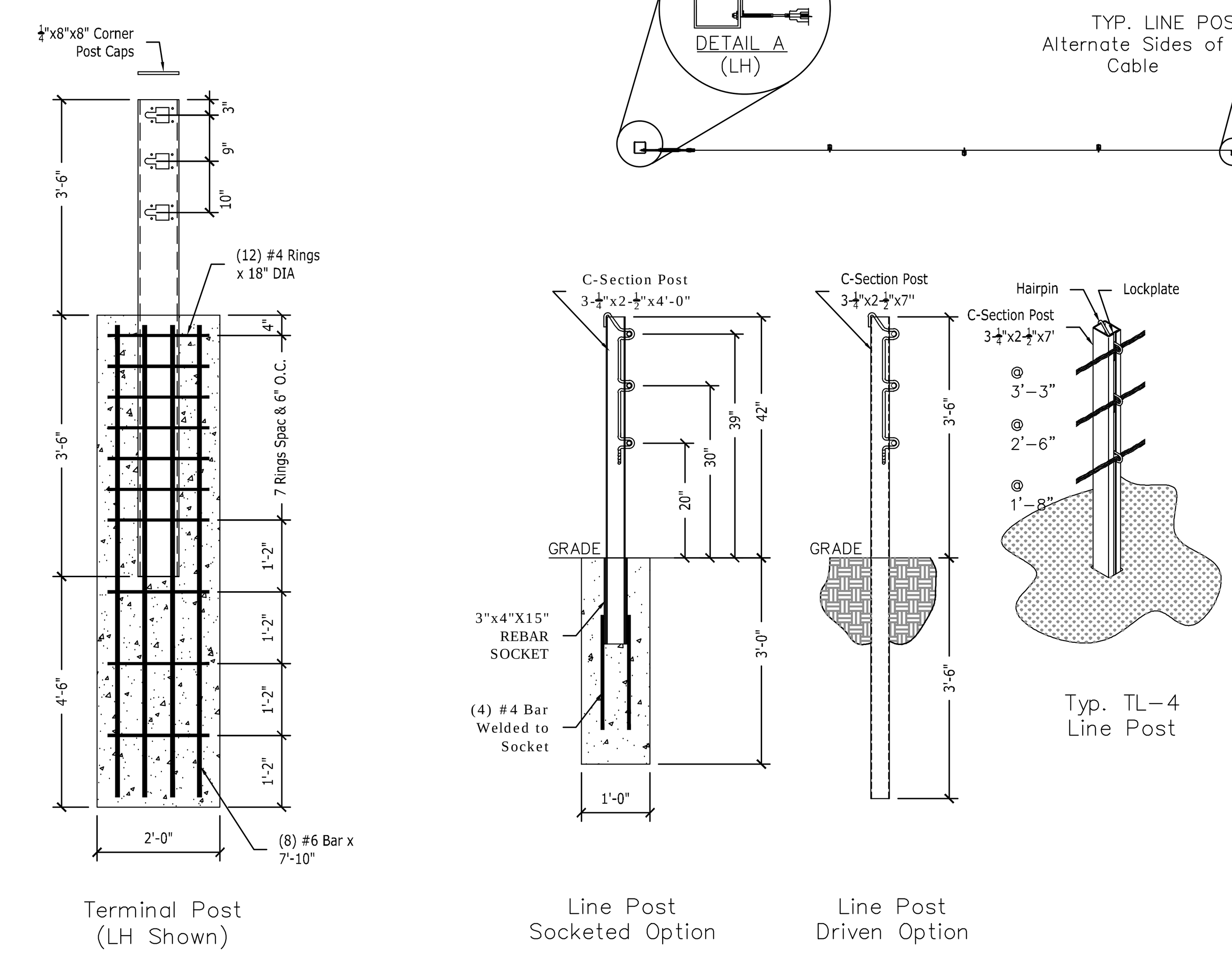


SPLIT PIPE GAS VENT
NOT TO SCALE



PIPE BOOT
NOT TO SCALE





Cable Tension Chart*	
-10 °F	8000
0 °F	7600
10 °F	7200
20 °F	6800
30 °F	6400
40 °F	6000
50 °F	5600
60 °F	5200
70 °F	4800
80 °F	4400
90 °F	4000
100 °F	3600
110 °F	3200

*Allowable Deviation from Chart +/- 10%

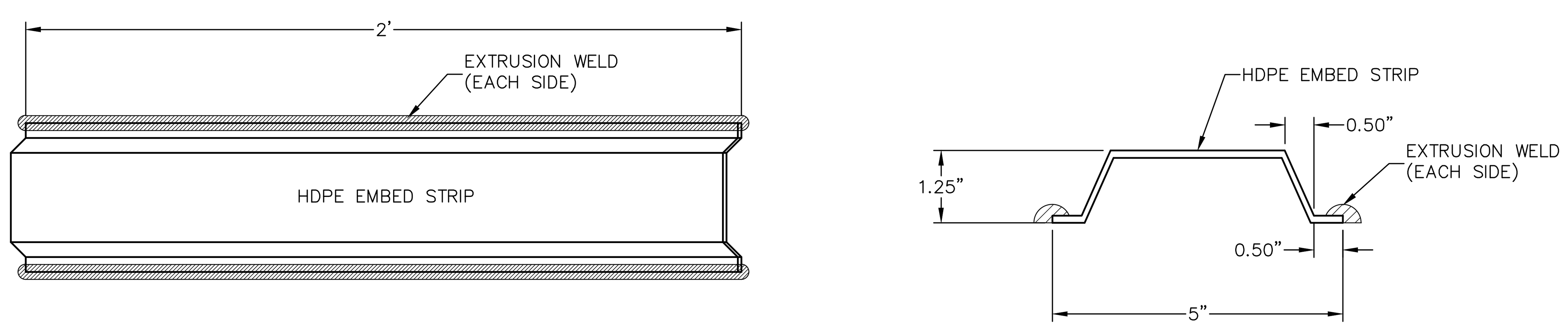
Deflection	Post Spacing
9'3"	30'
9'	28'
8'	20'
7'	12'
6'-8"	10'

GENERAL NOTES:

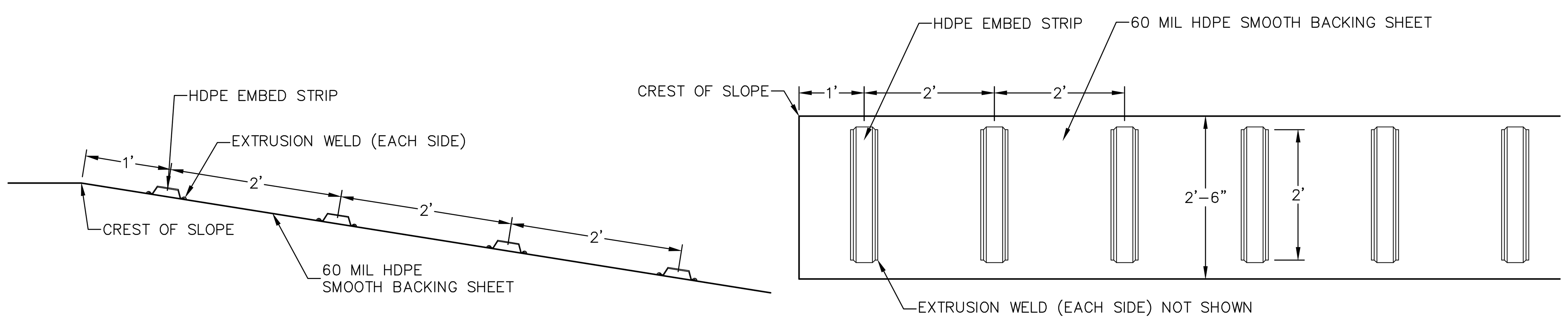
1. All concrete shall be minimum 3000 PSI.
2. The Cable Barrier System is accepted by the FHWA Test Level - 4.
3. Delineation on each post.
4. Every component to be galvanized.

* 3-STRAND CABLE GUARDRAIL SYSTEM SHALL BE PER THE GIBRALTAR TL-4 TAMPERPROOF CABLE SYSTEM OR APPROVED EQUAL.

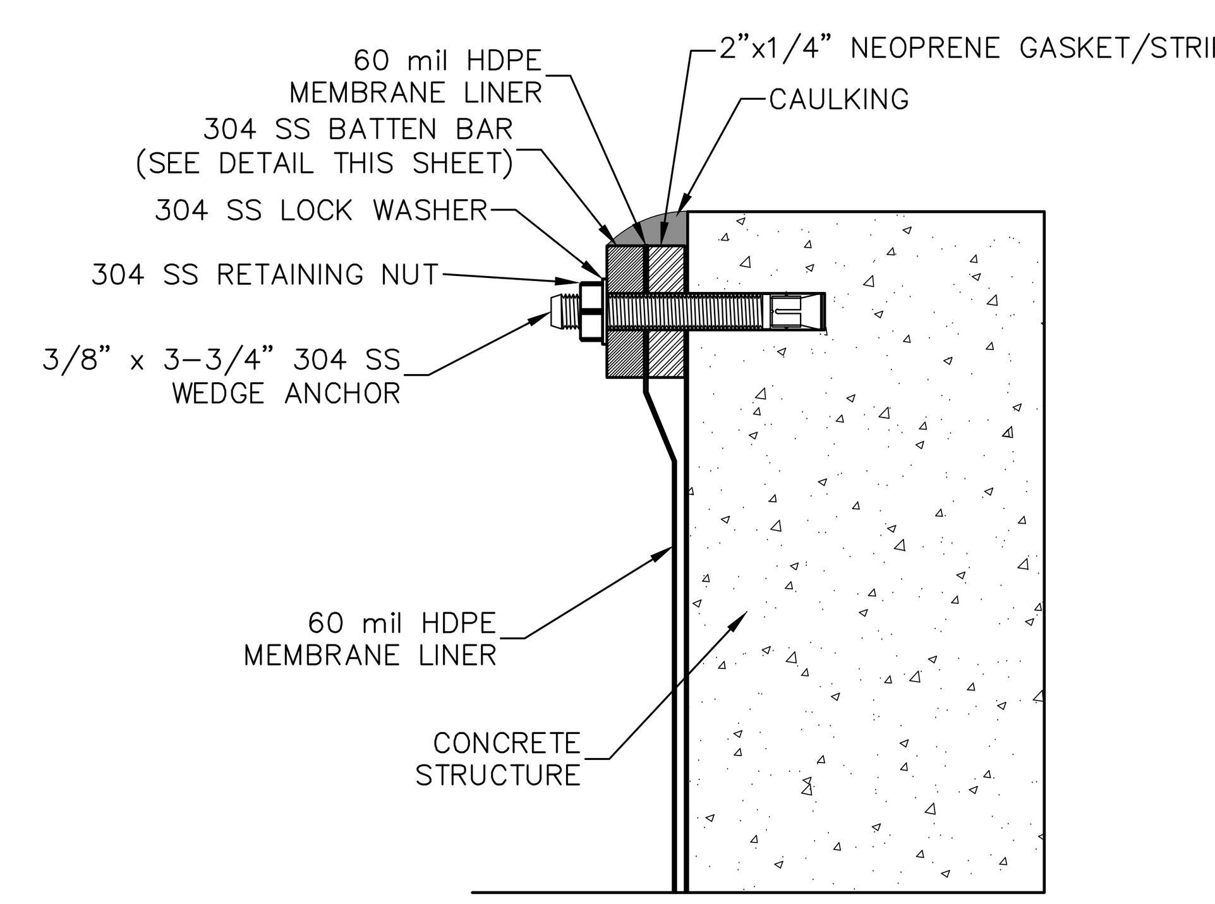
3-STRAND GUARDRAIL DETAIL
NOT TO SCALE



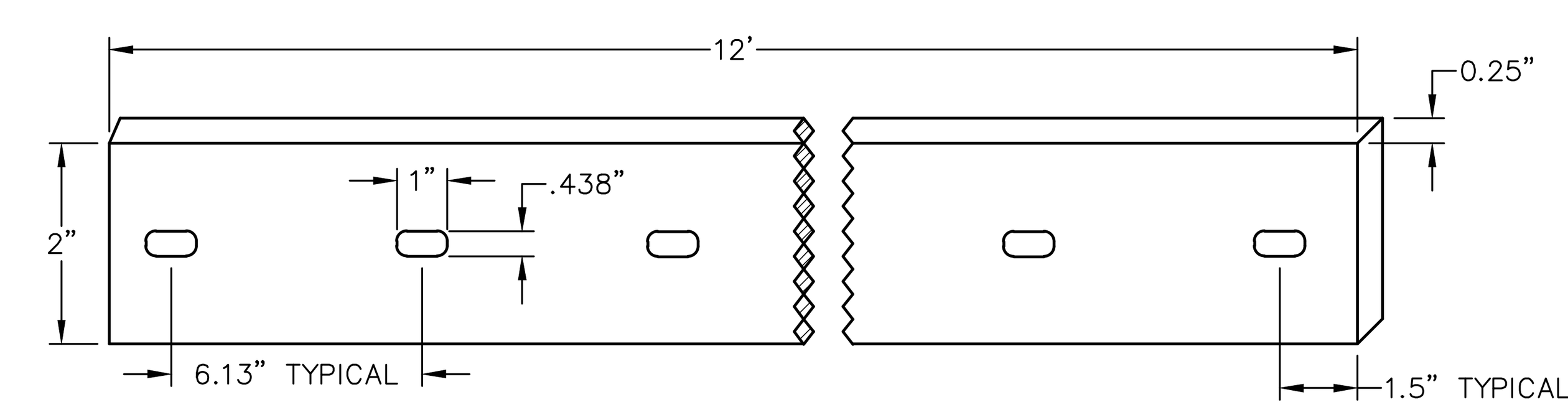
EMBED STRIP DETAIL
NOT TO SCALE



HDPE SAFETY LADDER
NOT TO SCALE

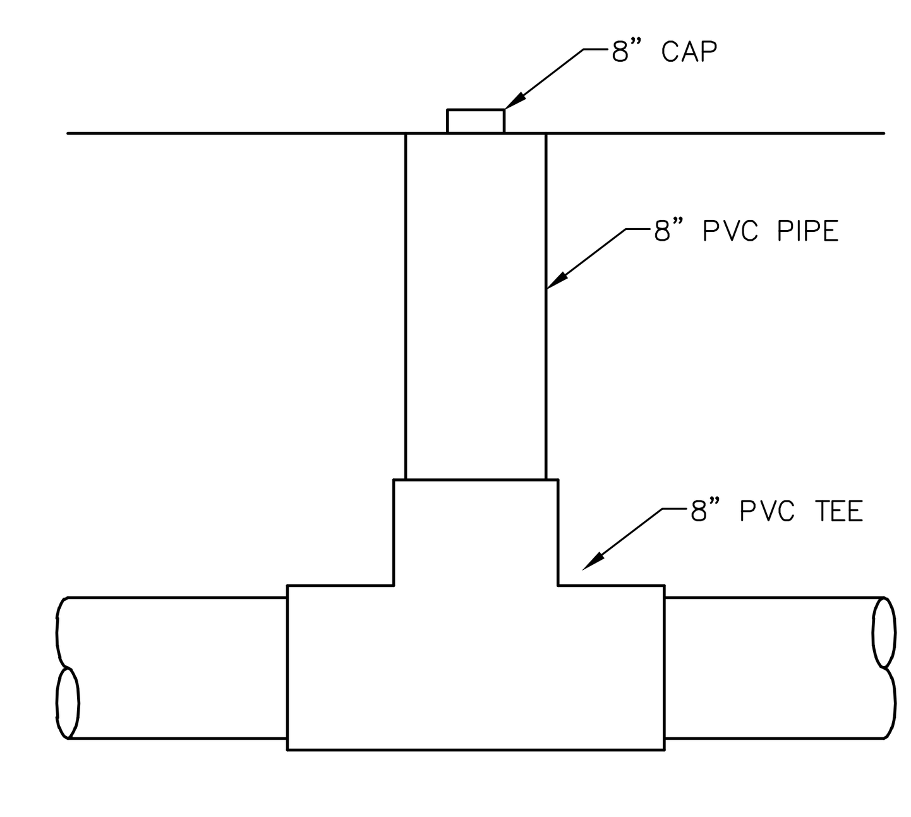


BATTEN BAR TO CONCRETE
NOT TO SCALE

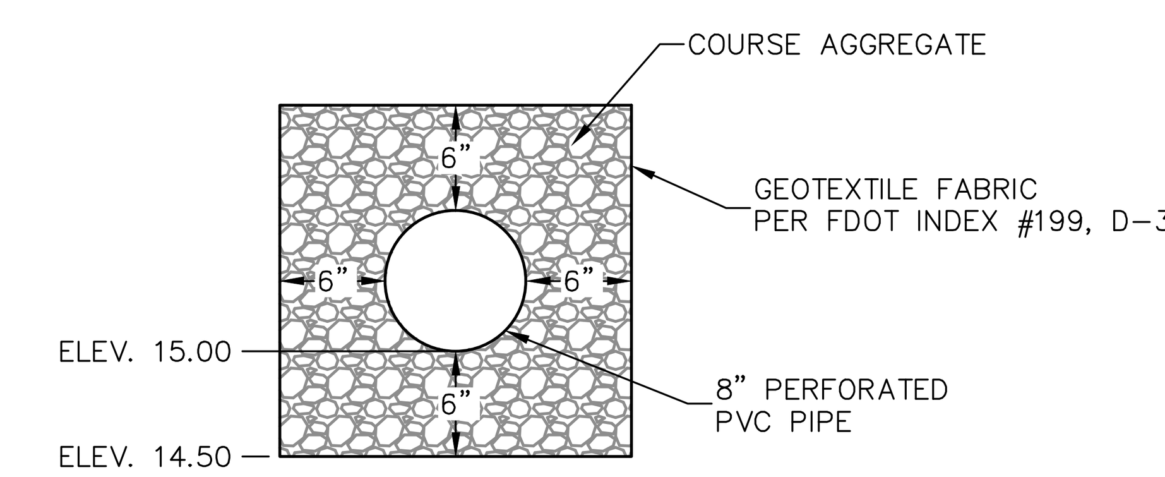


TOLERANCE
HOLE LOC. ±.060
OTHER DIM. ±.125

304 SS STAINLESS STEEL BATTEN BAR
NOT TO SCALE



INSPECTION PORT
NOT TO SCALE



TOE DRAIN
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CIVIL DETAILS No. 7

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	SJB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.12

STATUS: ISSUE FOR BID
REVISION

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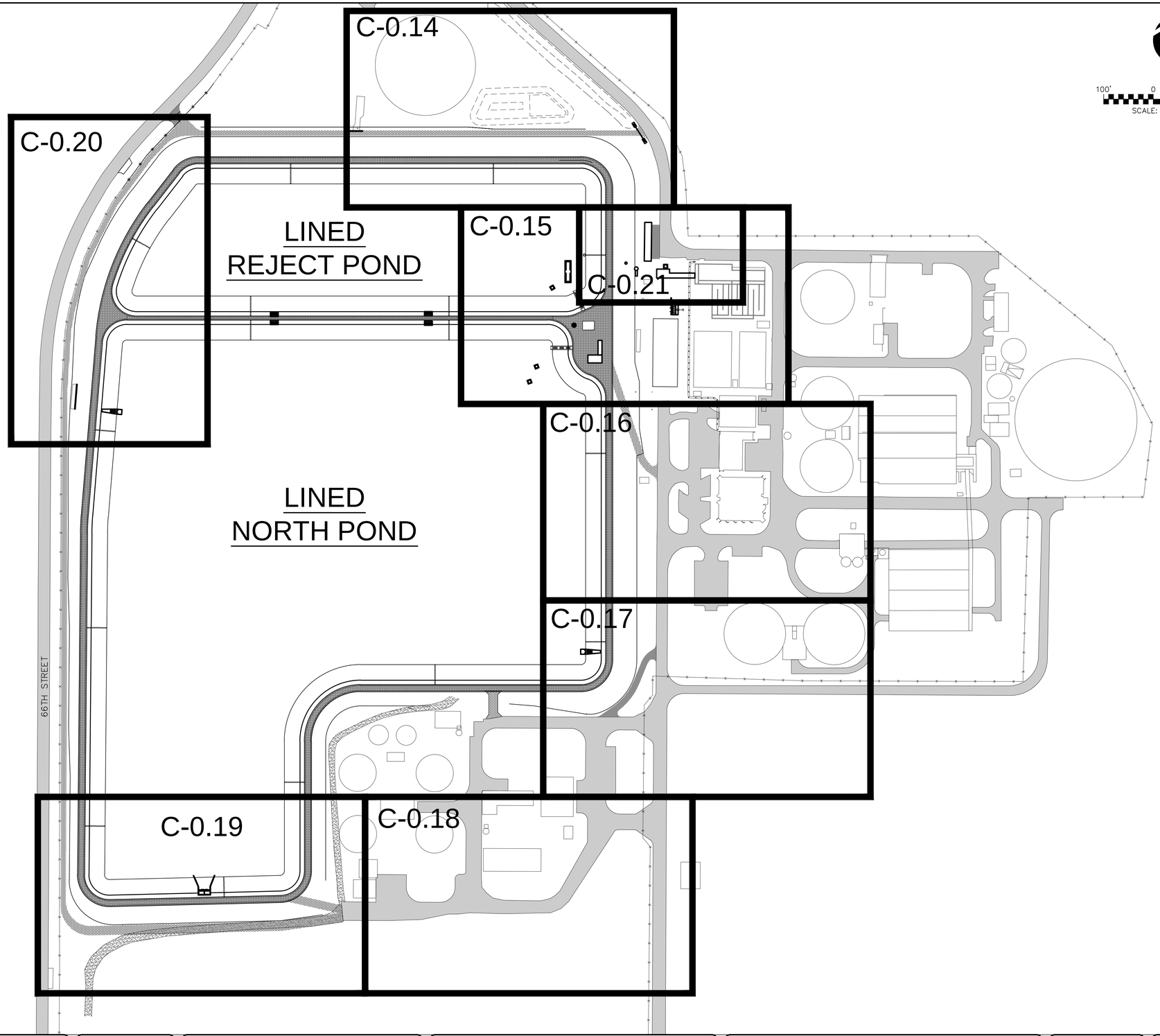

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

KEY SHEET

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
C-0.13

STATUS: ISSUE FOR BID
REVISION

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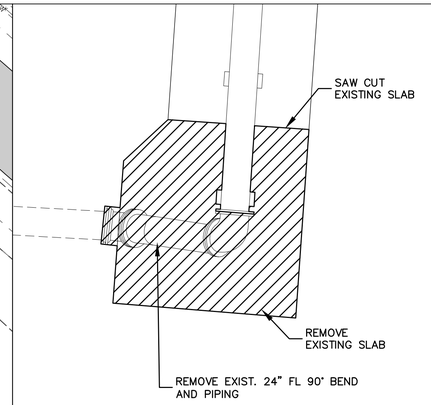
NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

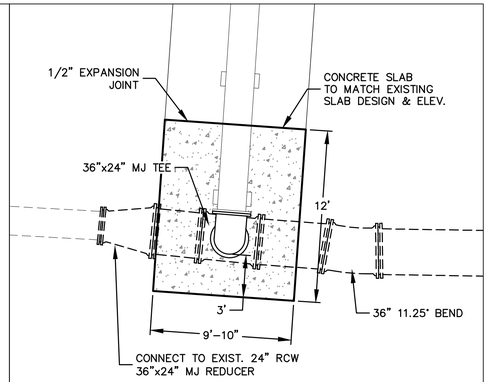
NORTH

20' 0 20' 40'
SCALE: 1"=20' (Horiz.)

EXIST. 10 MG GROUND STORAGE TANK



EXIST. PIPE DEMO DETAIL
SCALE:1" = 5'



PROP. PIPE CONNECTION DETAIL
SCALE:1" = 5'

STA:101+45, 64' RT
36" MJ TEE
36" MJ BFV
36" PLUG

STA:101+66, 64' RT
36"x24" MJ D.I. TEE
CONNECT TO EXIST. 24" 90° BEND
36" 11.25° MJ BEND
36"x24" MJ REDUCER
SEE DETAILS THIS SHEET

TOS

8" TOE DRAIN

30" D.I. RCW

36" D.I. RCW

FILL, PLUG AND ABANDON EXIST. 30" RCW

STA:145+67, 59' RT
36" MJ 11.25° BEND (DOWN)

STA:145+11, 67' RT
36" MJ TEE
36" MJ BFV
36" PLUG
36" MJ 45° BEND (DOWN)

STA:145+23, 59' RT
36" MJ 11.25° BEND (UP)
36"x30" MJ REDUCER
36" MJ TEE
36" MJ BFV
36" PLUG
36"x30" MJ REDUCER
36" MJ 45° BEND (DOWN)

STA:145+11, 62' RT
36" MJ 45° BEND (UP)

STA:145+02, 73' RT
36" MJ 45° BEND (UP)

STA:144+91, 87' RT
36" MJ D.I. 45° BEND

STA:144+91, 81' RT
30" MJ D.I. 45° BEND

30" D.I. RCW

TOB

PRESERVE AND PROTECT CONTRACTOR MAY NEED TO TEMPORARILY SUPPORT POWER POLE. CONTRACTOR SHALL COORDINATE WITH UTILITY

LIMITS OF PAVEMENT RESTORATION

STA:144+42, 119' RT
36" MJ D.I. 45° BEND

STA:144+42, 113' RT
30" MJ D.I. 45° BEND

36" D.I. RCW

TOS

101+00 148+00 147+00 146+00 145+00 144+00 149+00

MATCHLINE SEE SHEET C-0.15

MATCHLINE SEE SHEET C-0.21

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

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

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.14

STATUS: ISSUE FOR BID
REVISION

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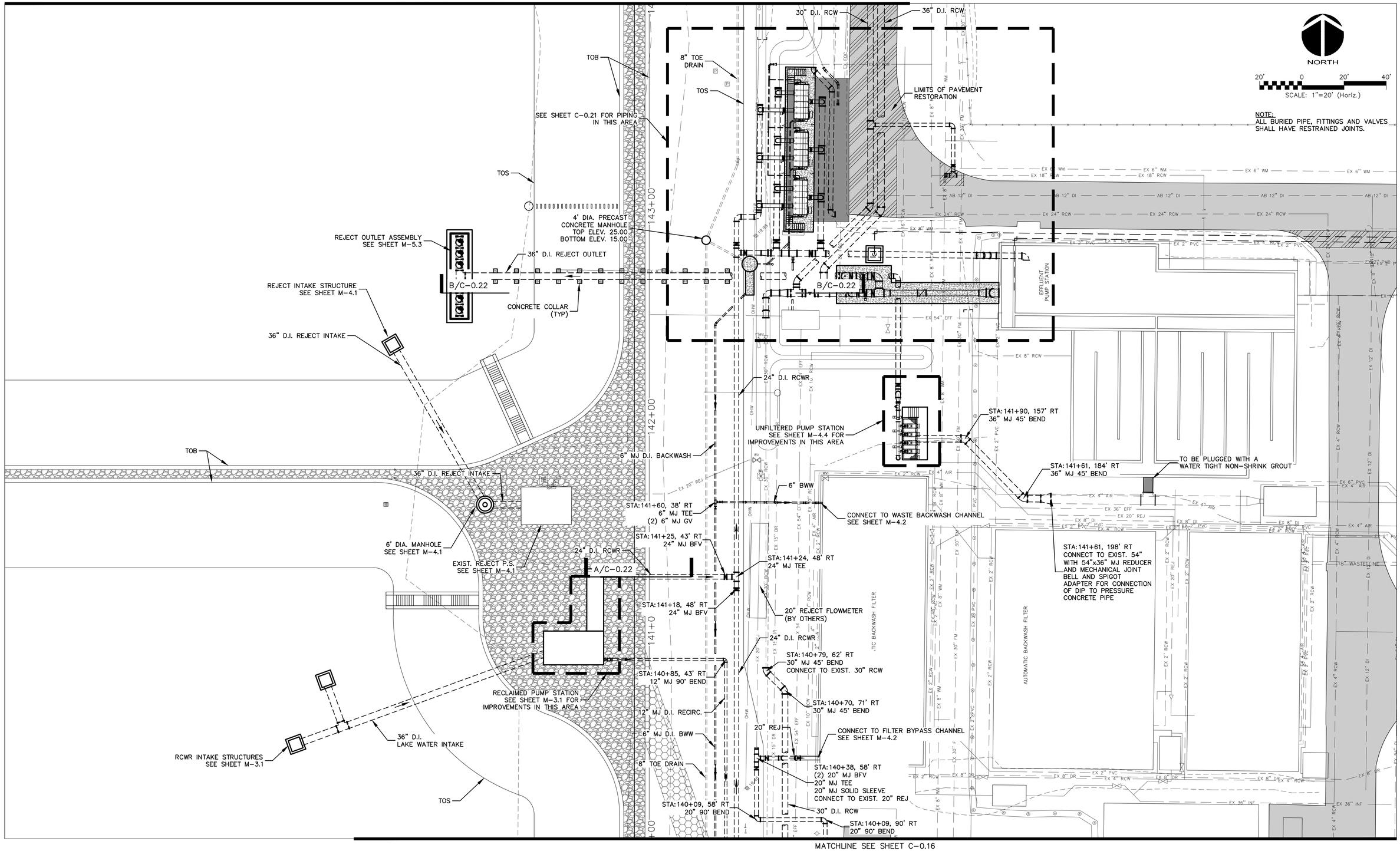
MATCHLINE SEE SHEET C-0.14



MATCHLINE SEE SHEET C-0.16

REV.NO.	DESCRIPTIONS REVISIONS	DATE

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.15

STATUS: ISSUE FOR BID
REVISION

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MATCHLINE SEE SHEET C-0.15

STA:139+89, 38' RT
6" MJ 11.25° BEND

STA:139+90, 43' RT
12" MJ 11.25° BEND

STA:139+90, 48' RT
24" MJ 11.25° BEND

STA:139+42, 48' RT
6" MJ 11.25° BEND

STA:139+42, 53' RT
12" MJ 11.25° BEND

STA:139+43, 58' RT
24" MJ 11.25° BEND

STA:139+91, 71' RT
30" MJ 45° BEND

STA:139+78, 84' RT
30" MJ 45° BEND

30" D.I. RCW

20" D.I. REJ

8" TO DRAIN

TOS

TOB

C/C-0.22

STA:137+31, 90' RT
20" MJ 90° BEND

12" MJ D.I. RECIRC.

6" MJ D.I. BACKWASH

30" D.I. RCW

24" MJ D.I. RCWR

ADMINISTRATION BUILDING

LIMITS OF PAVEMENT RESTORATION

STA:137+41, 463' RT
20" MJ 45° BEND

20" D.I. REJ

C/C-0.22

STA:137+26, 448' RT
20" MJ 45° BEND

HEADWORKS PIPING
SEE SHEET M-4.3

HEADWORKS

NORTH

20' 0 20' 40'

SCALE: 1"=20' (Horiz.)

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

MATCHLINE SEE SHEET C-0.17

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.16

STATUS: ISSUE FOR BID
REVISION

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MATCHLINE SEE SHEET C-0.16

MATCHLINE SEE SHEET C-0.18

REV.NO.	DESCRIPTIONS	DATE

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 4

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.17

STATUS: ISSUE FOR BID
REVISION

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 5

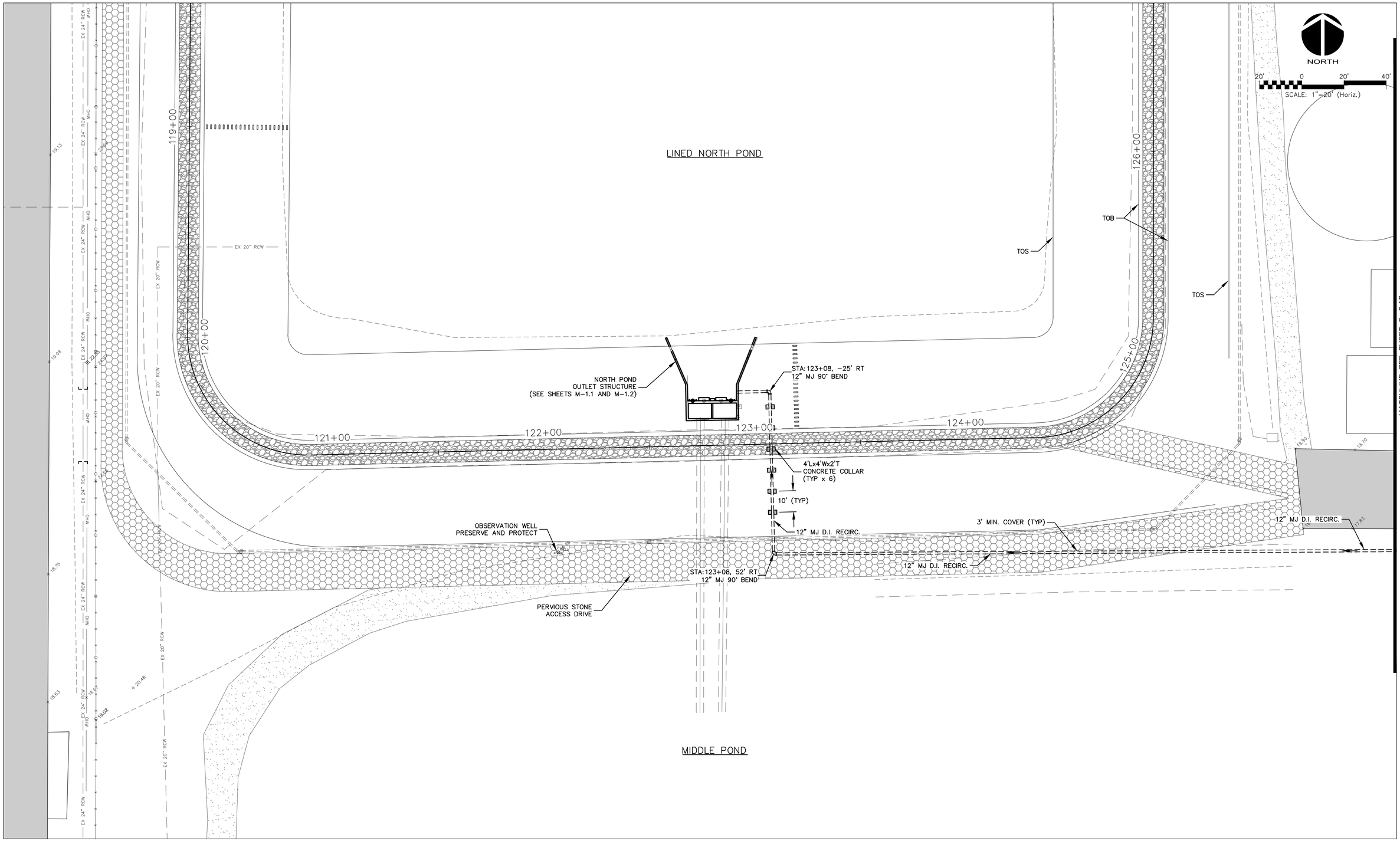
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.18

STATUS: ISSUE FOR BID

REVISION



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REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 6

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.19

STATUS: ISSUE FOR BID
REVISION

NORTH

20' 0 20' 40'

SCALE: 1"=20' (Horiz.)

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

EX 24" RCW

STA:110+63, 59' RT
MJ PLUG 24" RCW

STA:110+13, 61' RT
24" MJ TEE
CONNECT TO EXIST. 24" RCW

24" D.I. RCW

24" D.I. RCW

STA:108+87, 65' RT
24" MJ 11.25° BEND

TOS

8" TOE DRAIN

24" D.I. RCW

STA:107+75, 59' RT
24" MJ 11.25° BEND

EX 24" RCW

CONCRETE WALL

111+00

110+00

109+00

108+00

107+00

106+00

105+00

24" RCW
(SEE SECTION 110+50
SHEET C-1.14)

TOB

TOS

CONCRETE DISCHARGE STRUCTURE
SEE STRUCTURAL FOR DETAILS

24" D.I. RCW

STA:106+64, 60' RT
24" MJ 11.25° BEND

TOB

EX 30" RCP

STA:105+36, 59' RT
30" MJ WYE
(2) 30" MJ BFV

STA:105+46, 60' RT
24" MJ 45° BEND

30" D.I. RCW

STA:105+31, 49' RT
(2) 30"x24" MJ REDUCER
30" MJ WYE
24" MJ 45° BEND

LINED NORTH POND

TOS

TOS

STA:105+08, 69' RT
30" MJ 45° BEND

STA:104+99, 21' RT
CAP EXIST. 30" RCW

STA:104+97, 72' RT
24" MJ 45° BEND

FILL, PLUG AND ABANDON
EXIST. 30" RCW

STA:104+86, 70' RT
CONNECT TO EXIST. 24" RCW

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 7

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.20

STATUS: ISSUE FOR BID
REVISION

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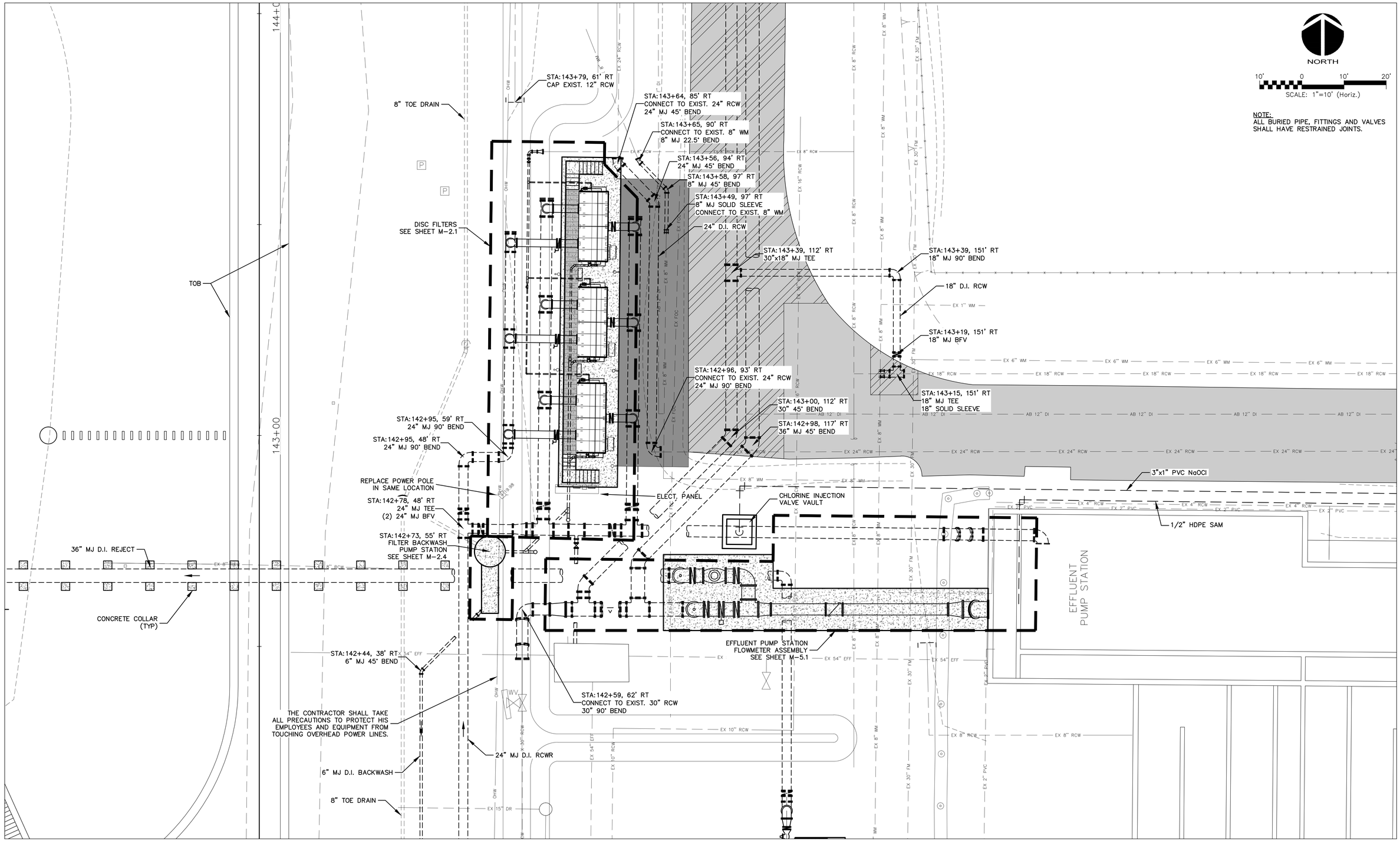

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

YARD PIPING No. 8

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

DRAWING NUMBER
C-0.21

STATUS: ISSUE FOR BID
REVISION

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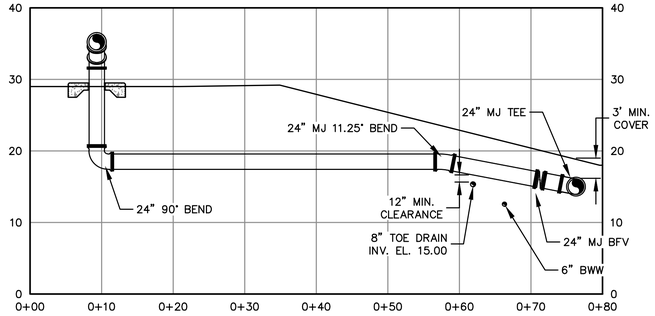
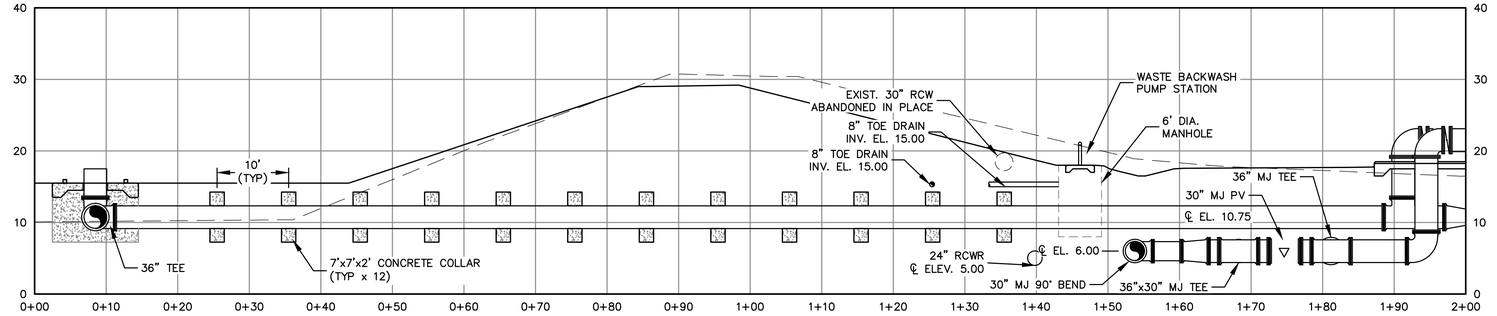


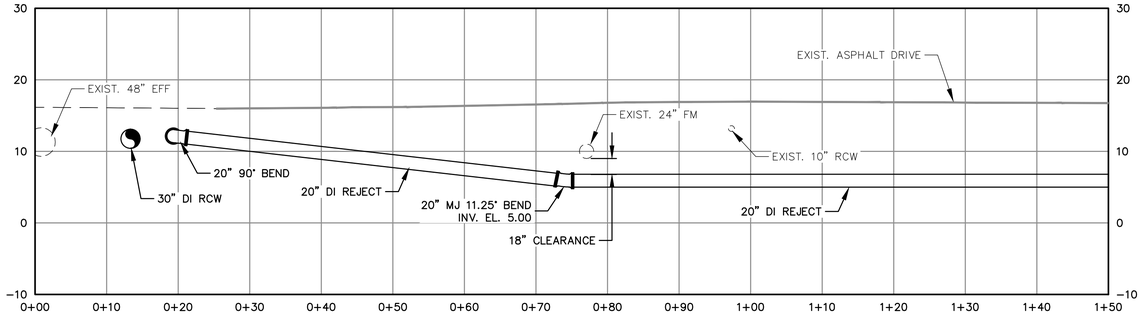
SECTION A/C–0.15

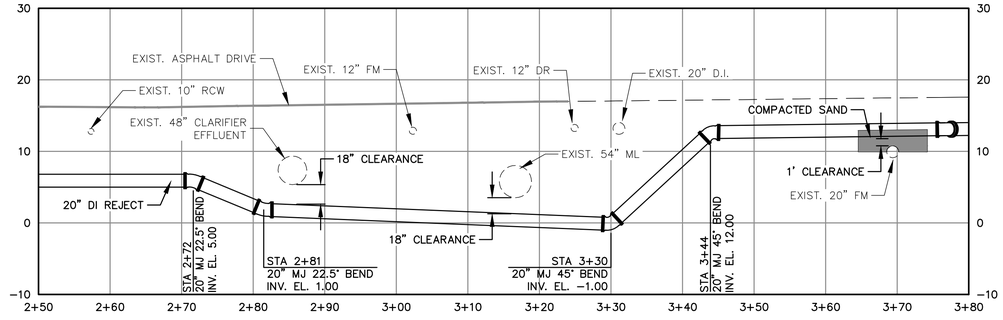
SCALE: 1" = 10'



SECTION B/C–0.15

SCALE: 1" = 10'





SECTION C/C–0.16

SCALE: 1" = 10'

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

UTILITY CONFLICT SECTIONS

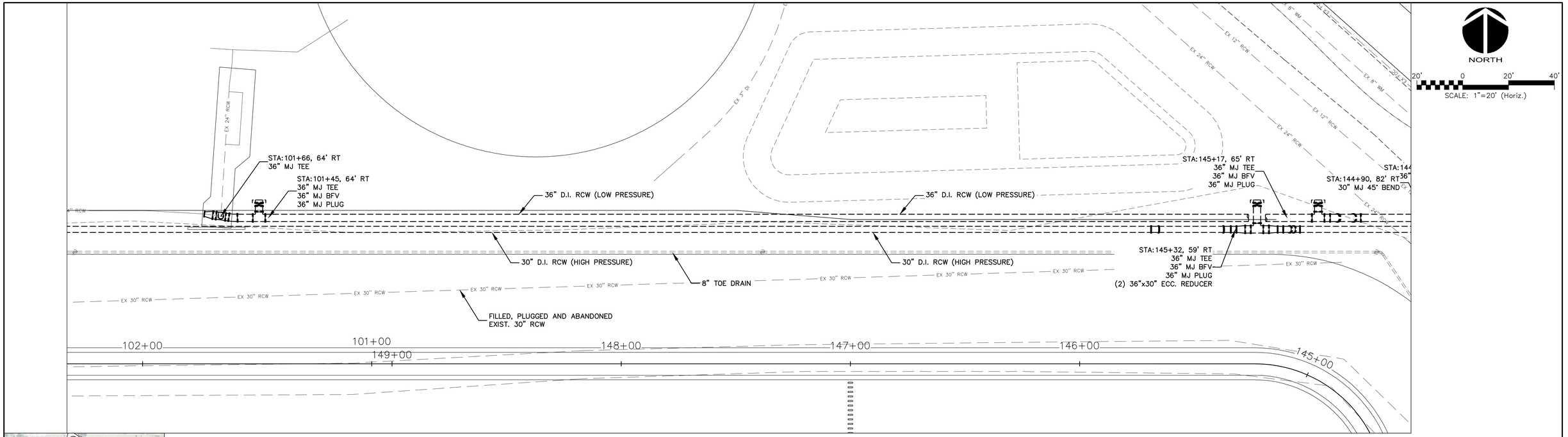
DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

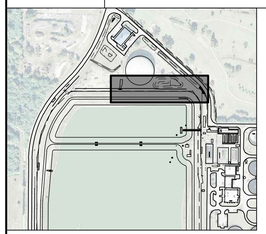
SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

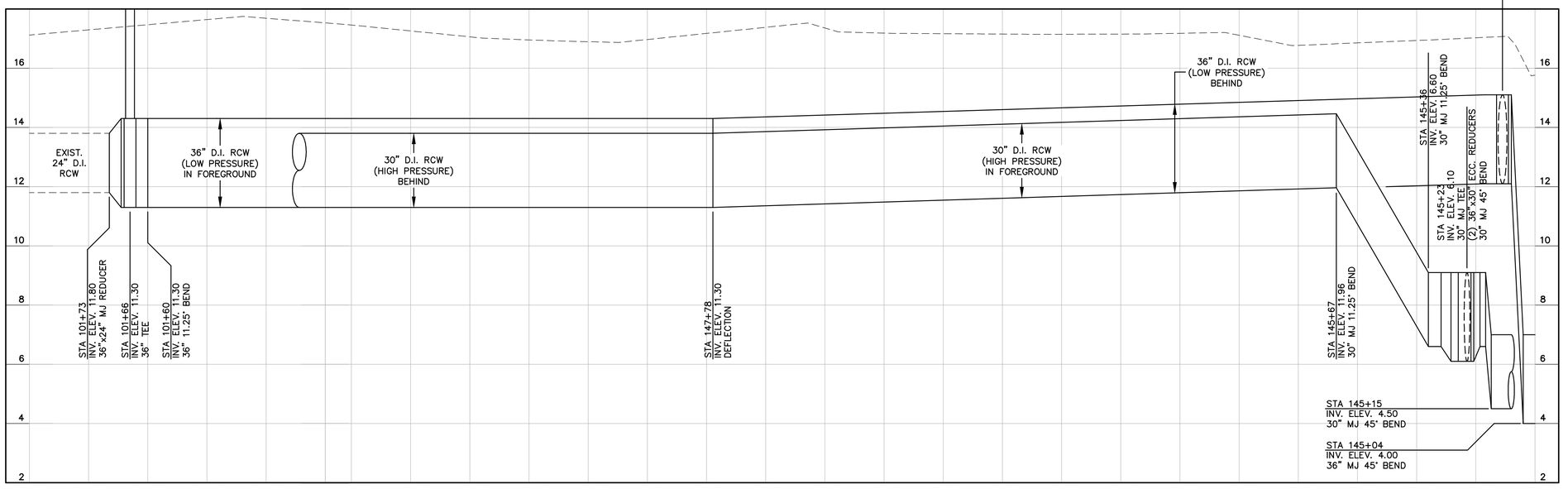
DRAWING NUMBER
C-0.22

STATUS: ISSUE FOR BID

REVISION







REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

UTILITY PLAN AND PROFILE No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

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

DRAWING NUMBER
C-0.23

STATUS: ISSUE FOR BID
REVISION

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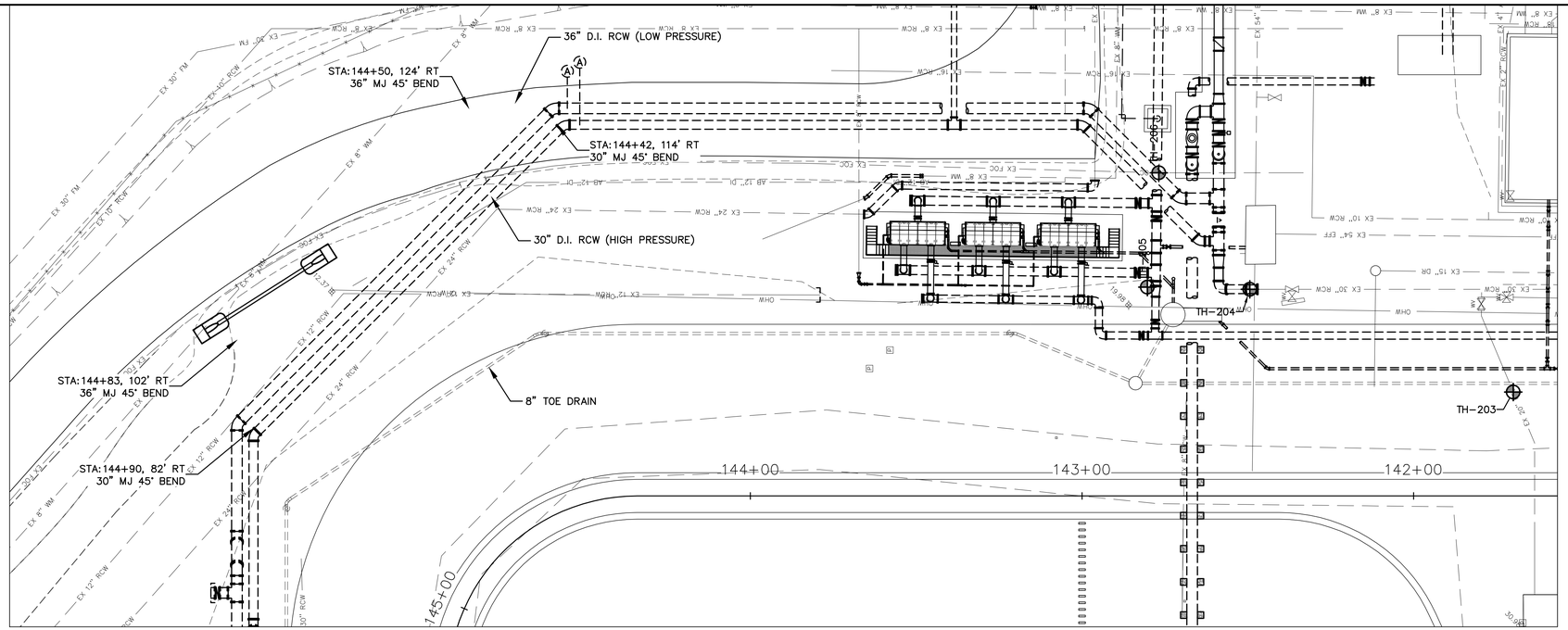

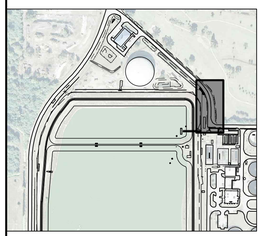

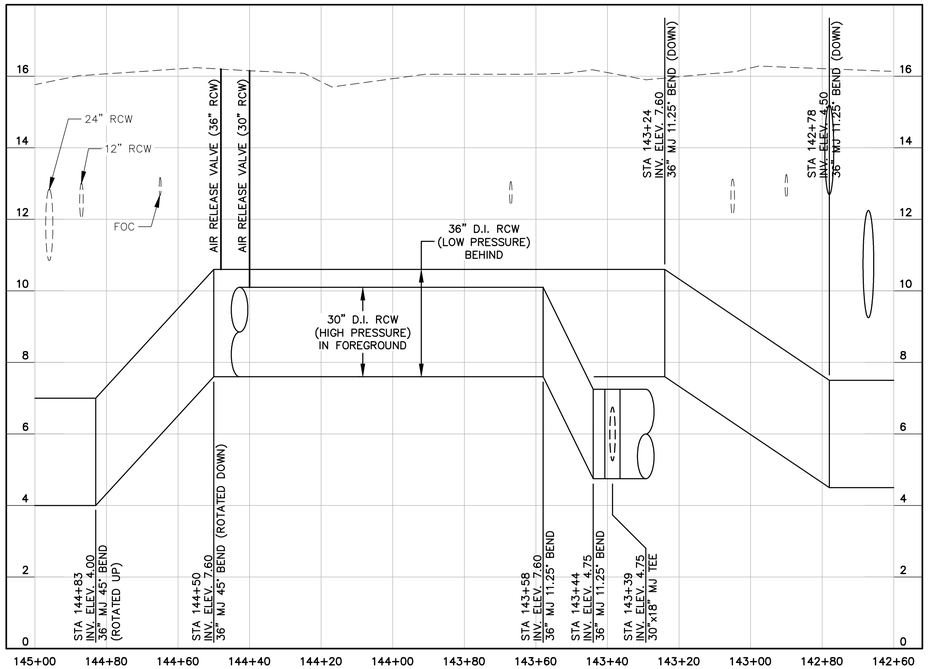

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

NORMAN J. SCALLY, P.E.
No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

UTILITY PLAN AND PROFILE No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

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

DRAWING NUMBER
C-0.24

STATUS: ISSUE FOR BID
REVISION

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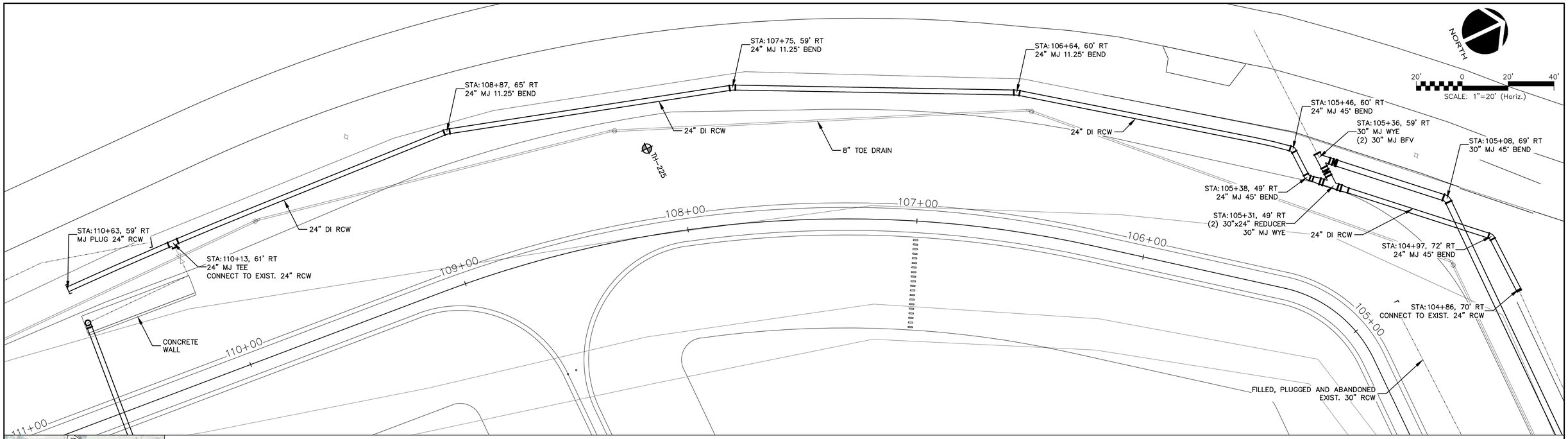

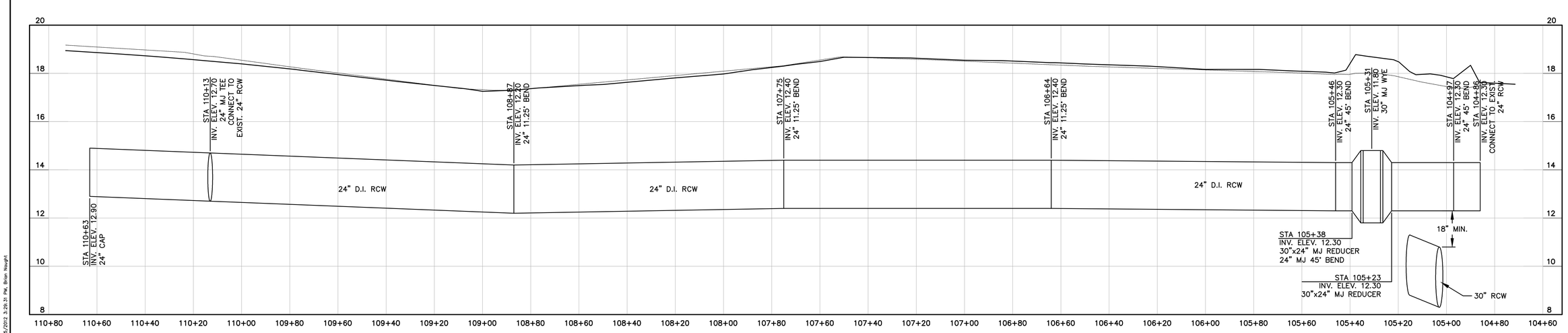

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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No. 41338

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

UTILITY PLAN AND PROFILE No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

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

DRAWING NUMBER
C-0.25

STATUS: ISSUE FOR BID
REVISION

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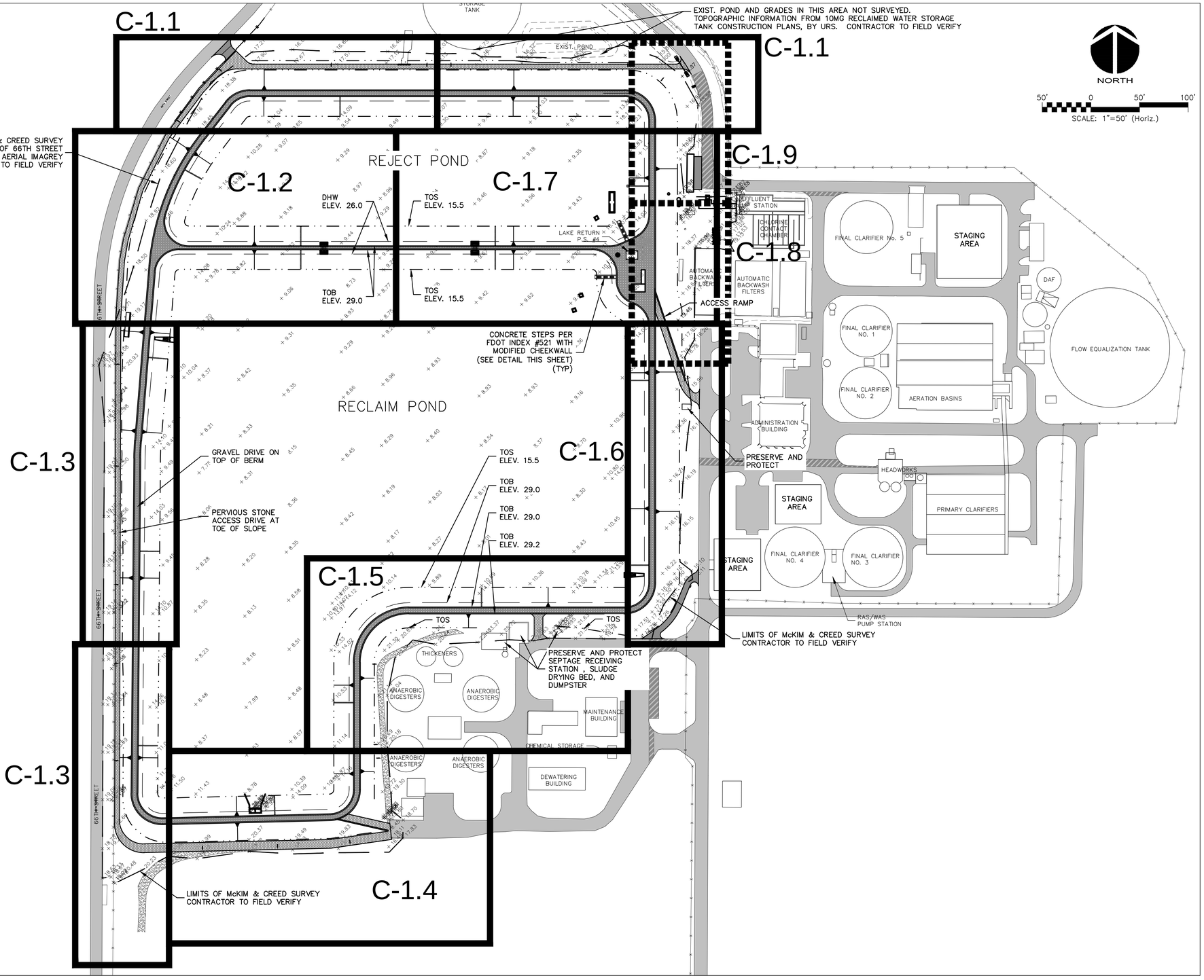
NOTES:

1. ALL ABOVE GROUND EXISTING VALVES, STRUCTURES, ASSEMBLIES AND APPURTENANCES TO REMAIN ARE TO BE ADJUSTED AS NEEDED TO THE PROPOSED GRADES OR REPLACED IN-KIND.
2. ALL BELOW GRADE INFRASTRUCTURE OR UTILITY LINES SHALL BE ADJUSTED AS NEEDED TO MAINTAIN MINIMUM COVER.
3. AREAS OF LIMITED SURVEY WERE BASED ON AERIAL IMAGERY AND SURVEYS PROVIDED BY OTHERS AND/OR AVAILABLE DATA. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CONSTRUCTABILITY OF PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL FIELD ADJUSTMENTS.
4. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY A 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.
5. THE PONDS AT THE SWWRF MAY CONTAIN ALLIGATORS OR OTHER DANGEROUS WILDLIFE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A SAFE WORK ENVIRONMENT IN AREAS OF CONSTRUCTION WHICH MAY INCLUDE CONTACTING THE APPROPRIATE ANIMAL CONTROL AUTHORITY FOR REMOVAL OF NUISSANCE WILDLIFE.



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

OVERALL GRADING PLAN AND KEY SHEET

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: NA

DRAWING NUMBER
C-1.0

STATUS: ISSUE FOR BID
REVISION

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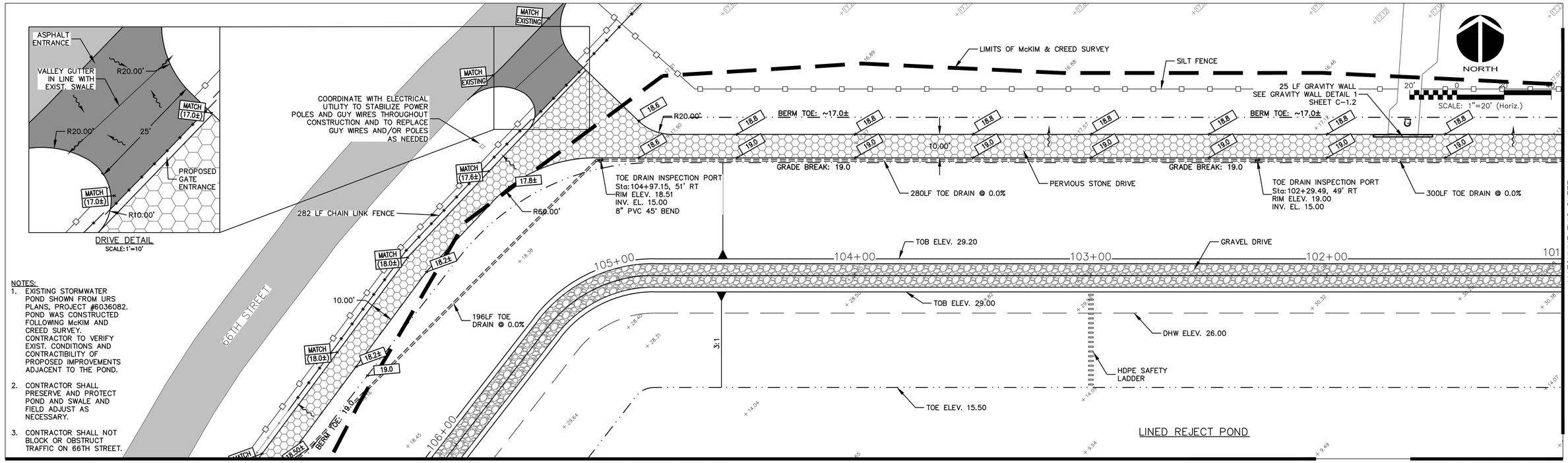

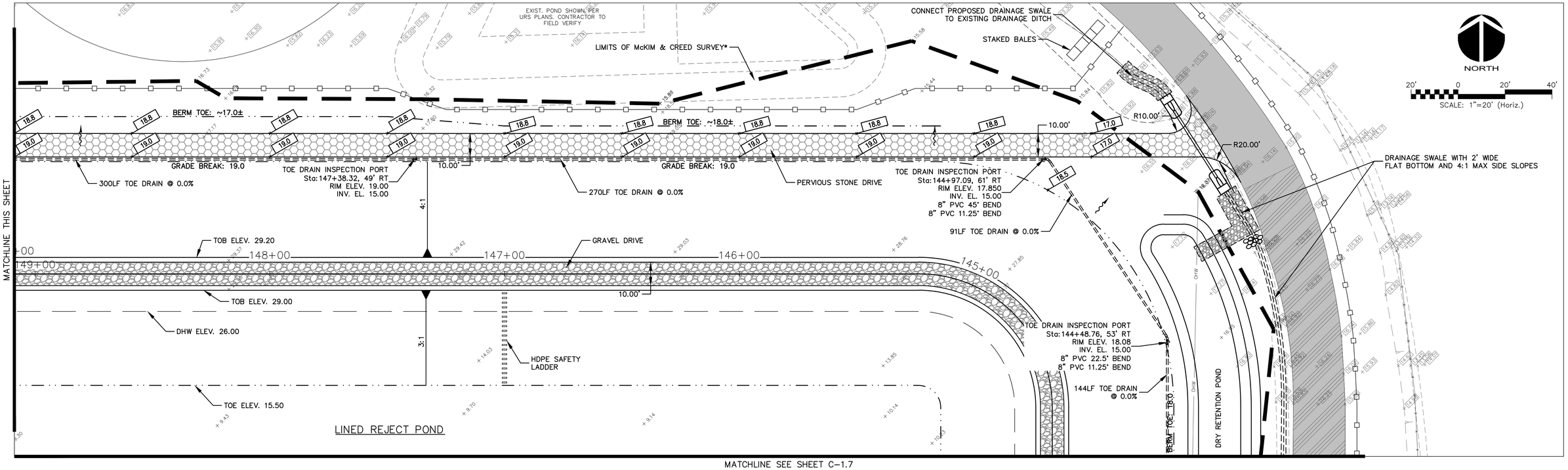

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

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Clearwater, Florida 33756
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.1

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\05-Drawings\Civil\C-1.1-Plo-101.dwg, 2/15/2012 3:30:34 PM, Brian Vaught

MATCHLINE SEE SHEET C-1.1

MATCHLINE SEE SHEET C-1.7

MATCHLINE SEE SHEET C-1.3

REV.NO.	DESCRIPTIONS	DATE
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TRAVIS N. TERPSTRA, P.E.
No. 71412

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.2

STATUS: ISSUE FOR BID
REVISION

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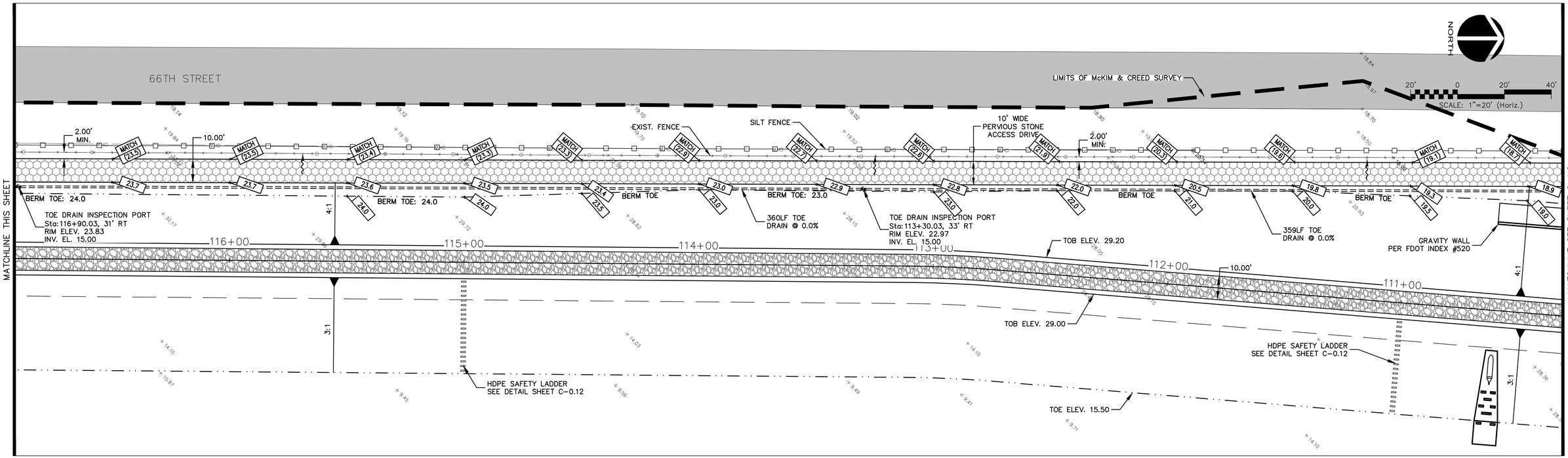

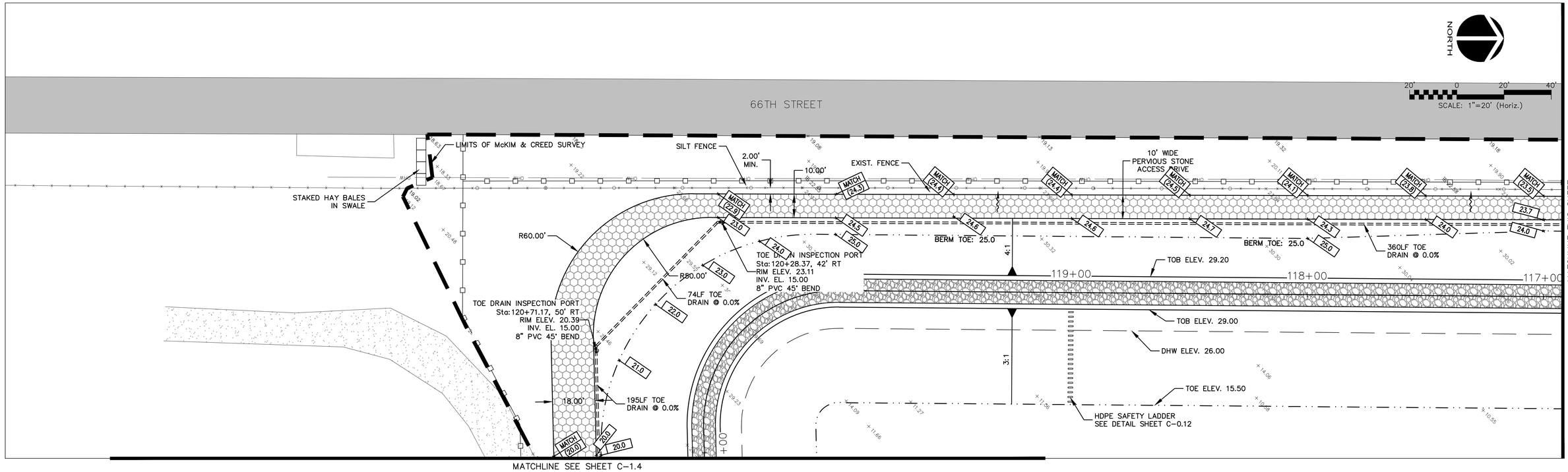

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.3

STATUS: ISSUE FOR BID
REVISION

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MATCHLINE SEE SHEET C-1.5

MATCHLINE SEE SHEET C-1.3

NORTH

20' 0 20' 40'

SCALE: 1"=20' (Horiz.)

ANAEROBIC DIGESTERS

GAS STORAGE FACILITY

GENERATOR BUILDING

EXIST. SAND/GRAVEL DRIVE

EXIST. ASPHALT ACCESS DRIVE

342LF TOE DRAIN @ 0.0%

BERM TOE: 22.0

4:1

3:1

TOE ELEV. 15.50

HDPE SAFETY LADDER SEE DETAIL SHEET C-0.12

DWH ELEV. 26.00

TOB ELEV. 29.00

TOB ELEV. 29.20

PERVIOUS STONE RAMP

TOE DRAIN INSPECTION PORT
Sta:124+90.83, 57' RT
RIM ELEV. 21.71
INV. EL. 15.00
8" PVC 45° BEND

105 LF 3 STRAND CABLE GUARDRAIL
SEE DETAIL SHEET C-0.12

16.00'

10.0±%

2.00'

195LF TOE DRAIN @ 0.0%

TOE DRAIN INSPECTION PORT
Sta:122+48.75, 45' RT
RIM ELEV. 19.95
INV. EL. 15.00

240LF TOE DRAIN @ 0.0%

57LF TOE DRAIN @ 0.0%

BERM TOE: 20.0

18.00'

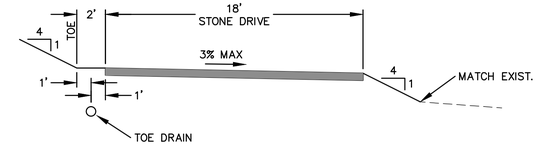
PERVIOUS STONE DRIVE
SEE DETAILS SHEET C-1.12

ADJUST TOP OF MONITORING WELL TO PROPOSED GRADE

CONNECT TO EXIST. GRAVEL DRIVE

LIMITS OF McKIM & CREED SURVEY

TOE DRAIN INSPECTION PORT
Sta:124+60.89, 58' RT
RIM ELEV. 19.71
INV. EL. 15.00
8" PVC 45° BEND



TYPICAL SECTION STA. 122+50 TO STA. 124+65
NTS

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 4

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.4

STATUS: ISSUE FOR BID
REVISION

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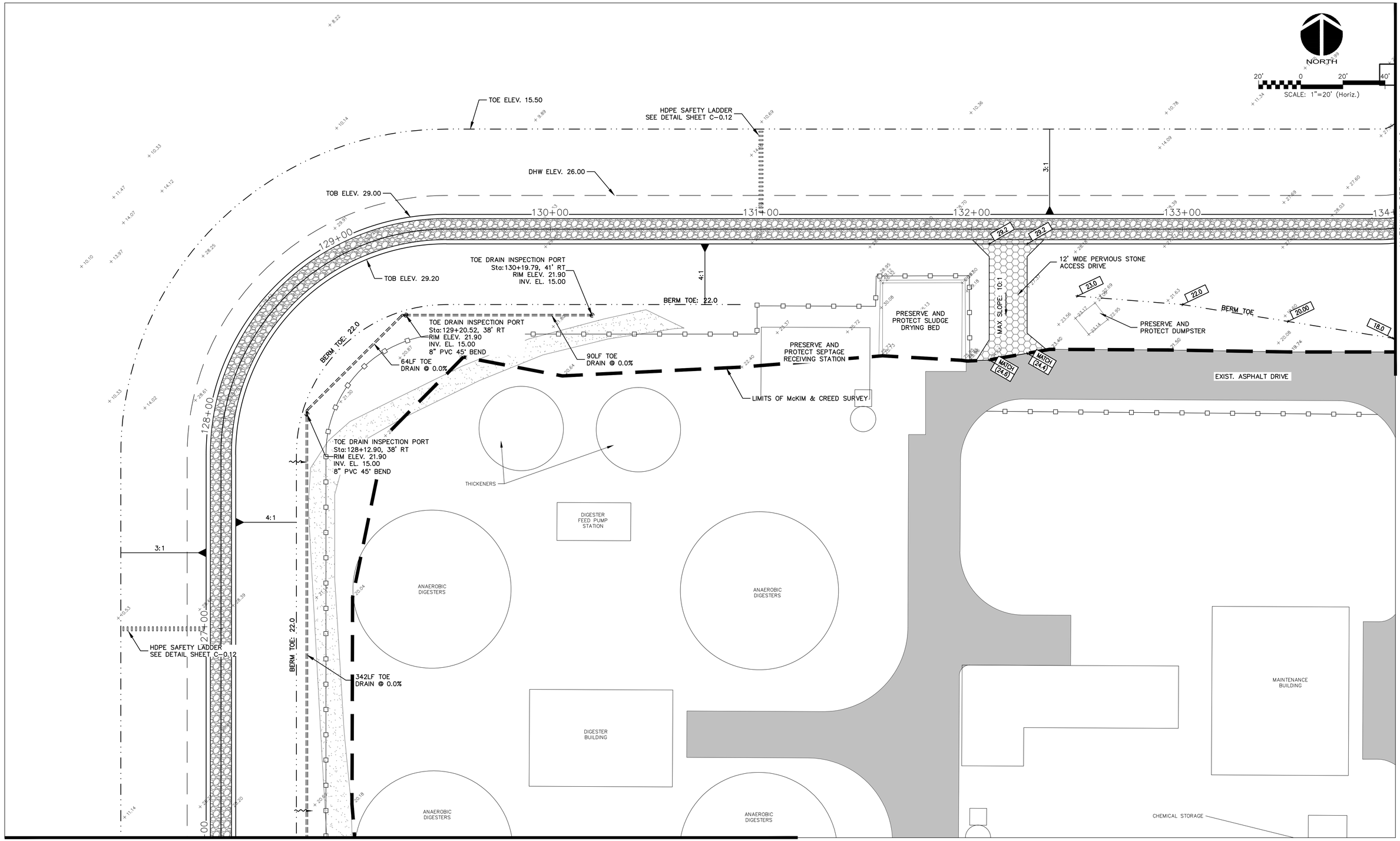

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 5

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.5

STATUS: ISSUE FOR BID
REVISION

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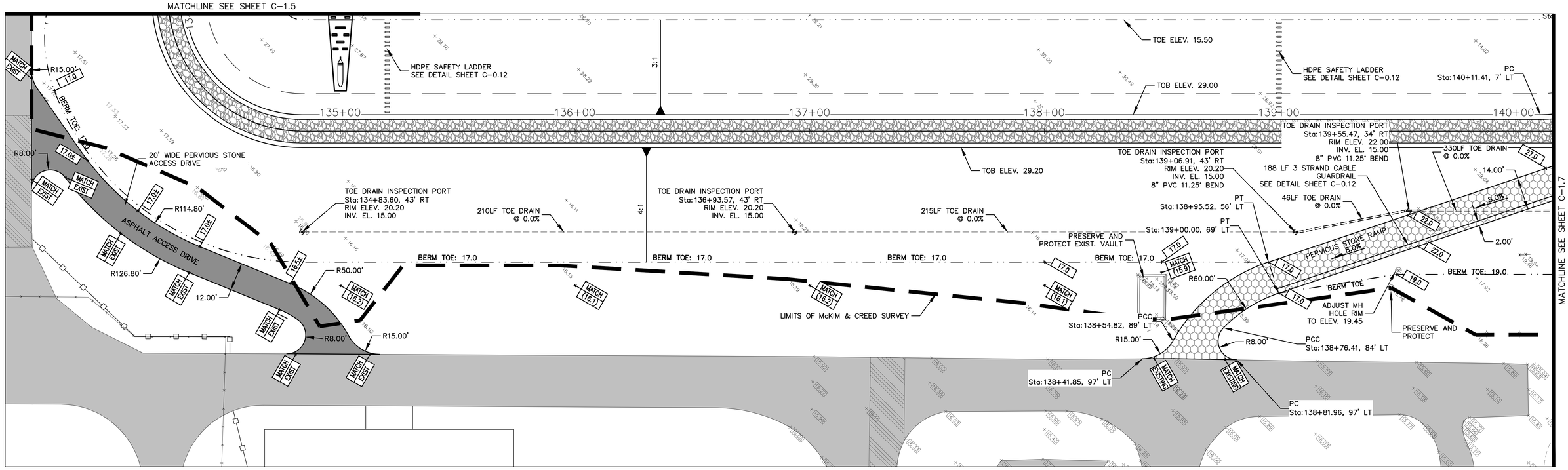

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 6

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.6

STATUS: ISSUE FOR BID
REVISION

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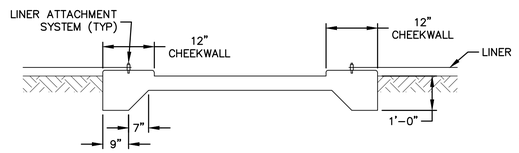
MATCHLINE SEE SHEET C-1.1



MODIFIED "CHEEKWALL" STAIR SECTION
NTS

NOTES:
1. ALL ABOVE GROUND EXISTING VALVES, STRUCTURES, ASSEMBLIES AND APPURTENANCES TO REMAIN ARE TO BE ADJUSTED AS NEEDED TO THE PROPOSED GRADES OR REPLACED IN-KIND.
2. ALL BELOW GRADE INFRASTRUCTURE OR UTILITY LINES SHALL BE ADJUSTED AS NEEDED TO MAINTAIN MINIMUM COVER.
3. AREAS OF LIMITED SURVEY WERE BASED ON AERIAL IMAGERY AND SURVEYS PROVIDED BY OTHERS AND/OR AVAILABLE DATA. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CONTRACTIBILITY OF PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL FIELD ADJUSTMENTS.

MATCHLINE SEE SHEET C-1.6

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 7

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-1.7

STATUS: ISSUE FOR BID
REVISION

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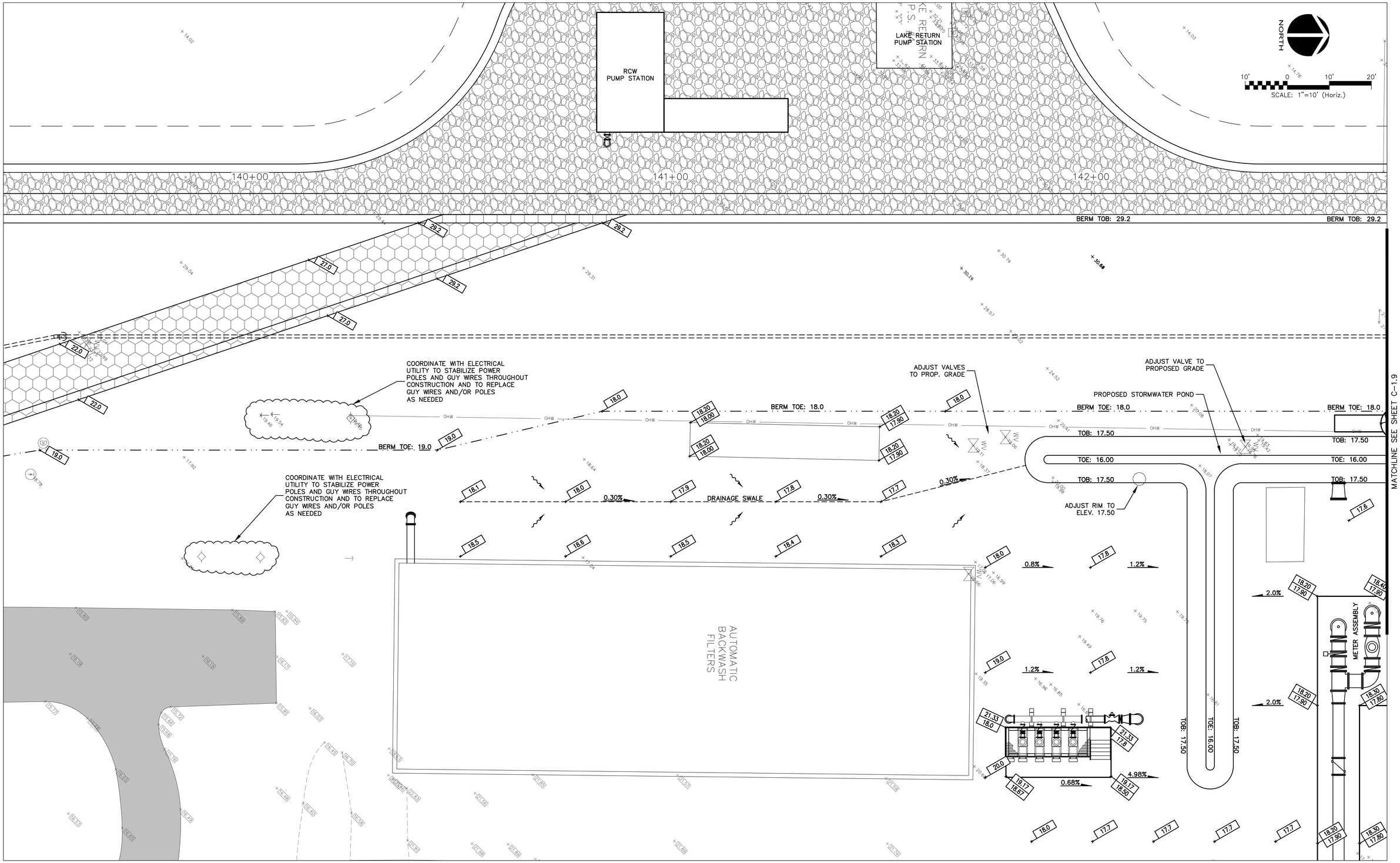

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 8

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

DRAWING NUMBER
C-1.8

STATUS: ISSUE FOR BID
REVISION

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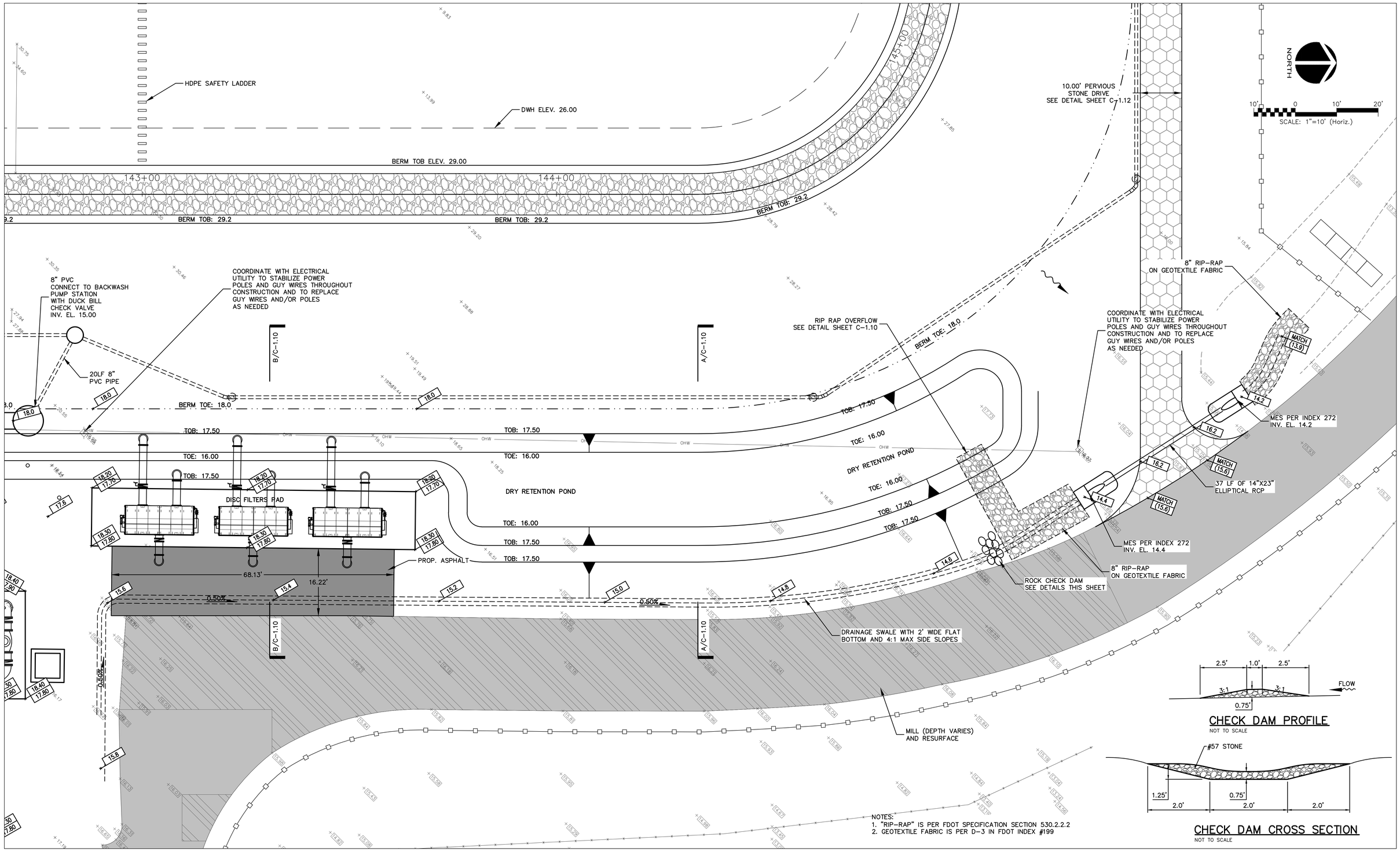

CHECK DAM PROFILE

NOT TO SCALE

CHECK DAM CROSS SECTION

NOT TO SCALE

NOTES:
1. "RIP-RAP" IS PER FDOT SPECIFICATION SECTION 530.2.2.2
2. GEOTEXTILE FABRIC IS PER D-3 IN FDOT INDEX #199

REV.NO.	DESCRIPTIONS	DATE
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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING PLAN No. 9

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

DRAWING NUMBER
C-1.9

STATUS: ISSUE FOR BID
REVISION

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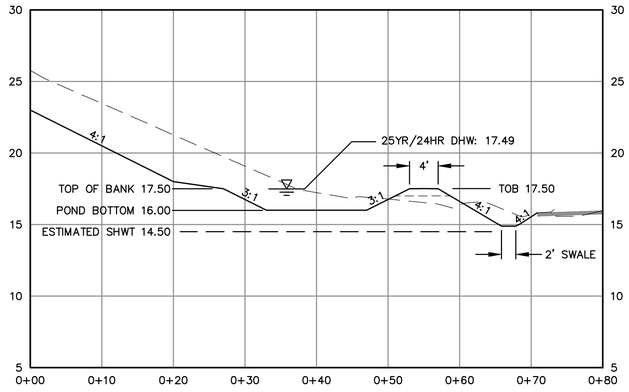
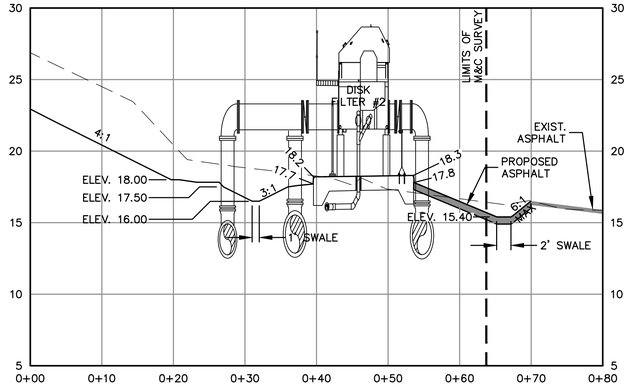


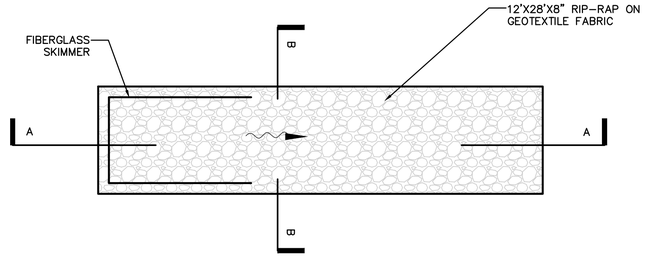
A: SECTION A/C–1.9

B: HORIZ: 1" = 10'
VERT: 1" = 5'

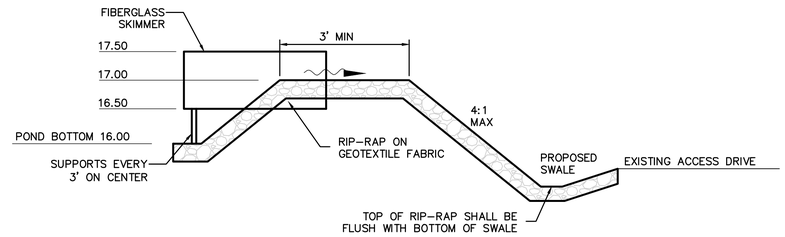


SECTION B/C–1.9

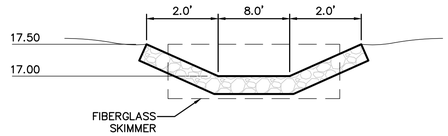
SCALE: HORIZ: 1" = 10'
VERT: 1" = 5'



PLAN



SECTION A–A: OVERFLOW PROFILE



SECTION B–B: OVERFLOW CROSS–SECTION

POND OUTLET DETAIL

NOT TO SCALE

NOTES:
1. "RIP–RAP" IS PER FDOT SPECIFICATION SECTION 530.2.2.2
2. GEOTEXTILE FABRIC IS PER D–3 IN FDOT INDEX #199

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRADING DETAILS AND SECTIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	BFN
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CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-1.10

STATUS: ISSUE FOR BID
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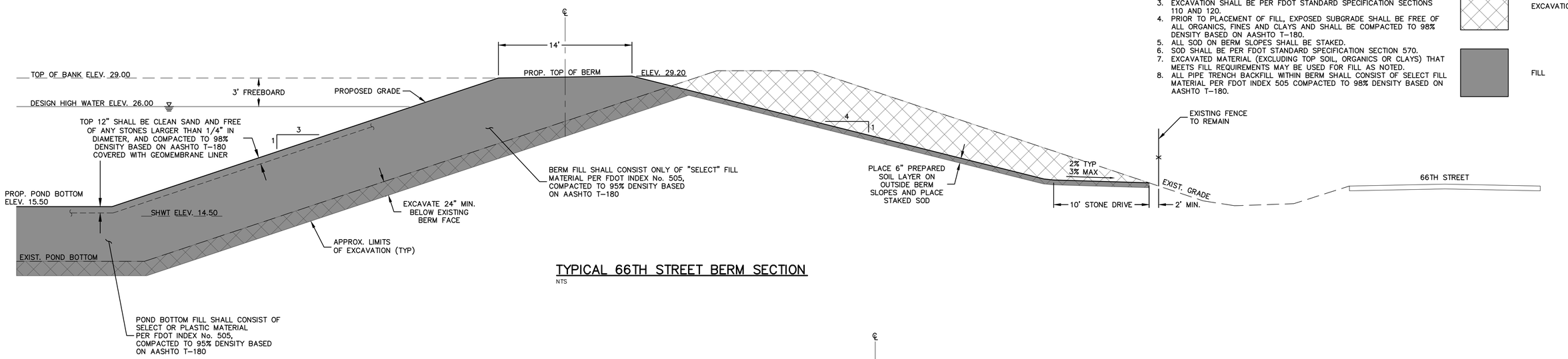
NOTES:
1. PREPARED SOIL LAYER PER FDOT STANDARD SPECIFICATIONS 162 AND 987.
2. SOD PER FDOT STANDARD SPECIFICATION SECTION 981.
3. EXCAVATION SHALL BE PER FDOT STANDARD SPECIFICATION SECTIONS 110 AND 120.
4. PRIOR TO PLACEMENT OF FILL, EXPOSED SUBGRADE SHALL BE FREE OF ALL ORGANICS, FINES AND CLAYS AND SHALL BE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180.
5. ALL SOD ON BERM SLOPES SHALL BE STAKED.
6. SOD SHALL BE PER FDOT STANDARD SPECIFICATION SECTION 570.
7. EXCAVATED MATERIAL (EXCLUDING TOP SOIL, ORGANICS OR CLAYS) THAT MEETS FILL REQUIREMENTS MAY BE USED FOR FILL AS NOTED.
8. ALL PIPE TRENCH BACKFILL WITHIN BERM SHALL CONSIST OF SELECT FILL MATERIAL PER FDOT INDEX 505 COMPACTED TO 98% DENSITY BASED ON AASHTO T-180.

LEGEND

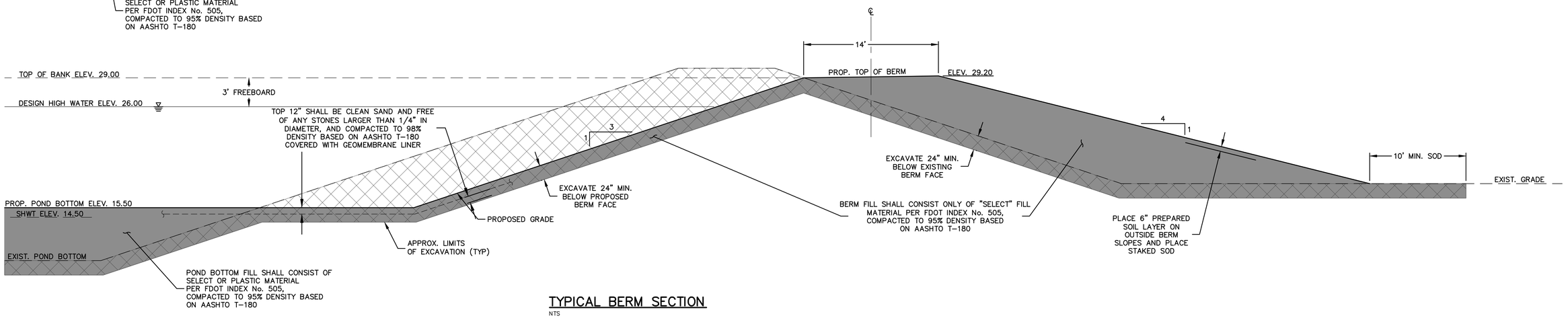
EXCAVATION

FILL



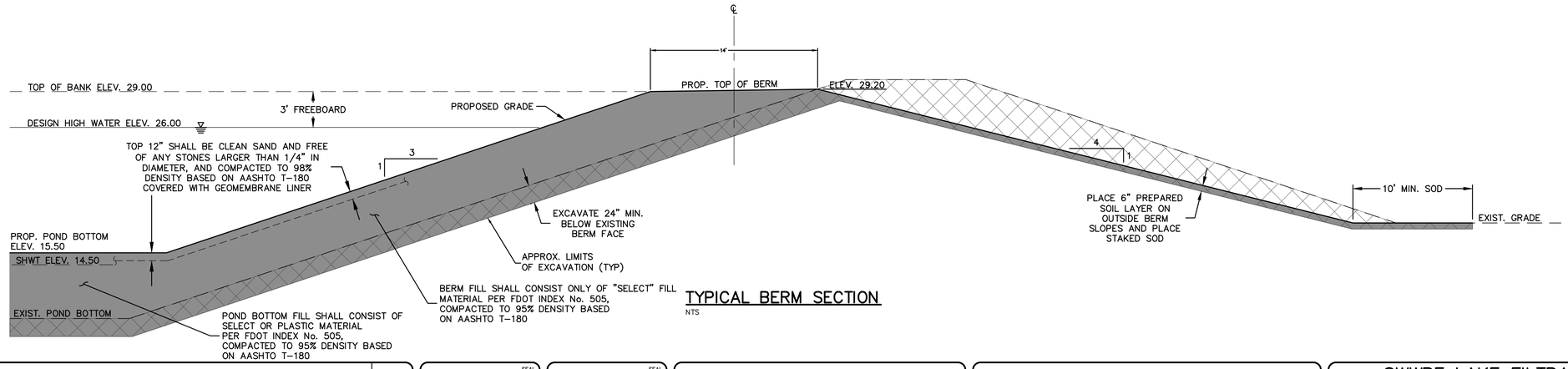
TYPICAL 66TH STREET BERM SECTION

NTS



TYPICAL BERM SECTION

NTS



TYPICAL BERM SECTION

NTS

REV.NO.	DESCRIPTIONS	DATE
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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

TYPICAL POND SECTIONS No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.11

STATUS: ISSUE FOR BID
REVISION

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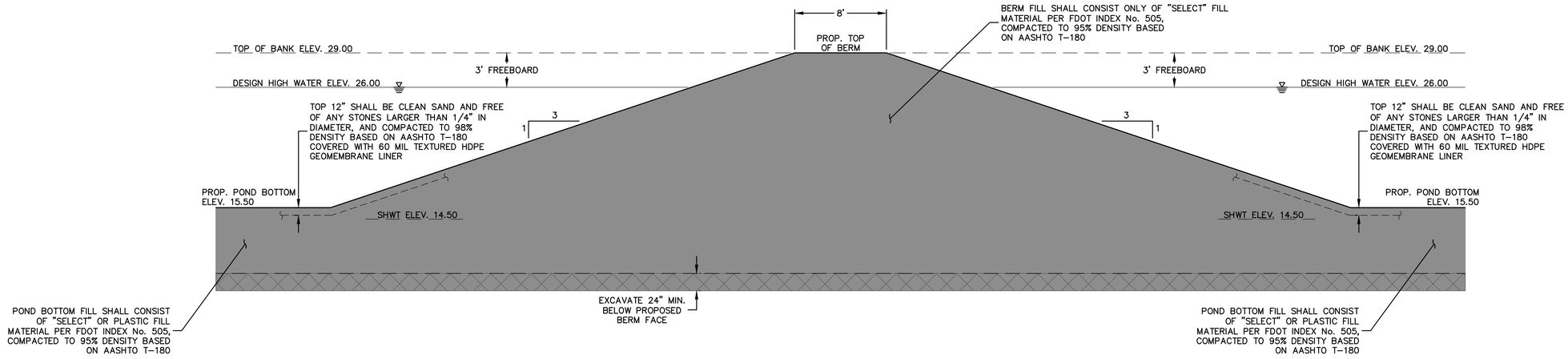
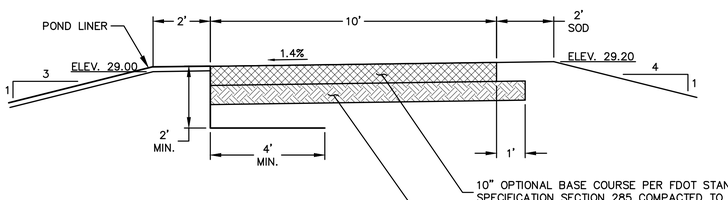
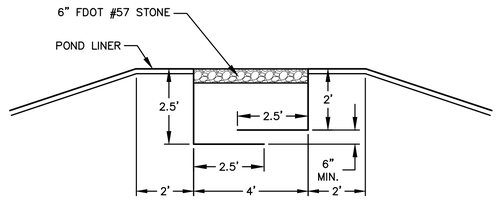


TYPICAL MIDDLE BERM SECTION
NTS

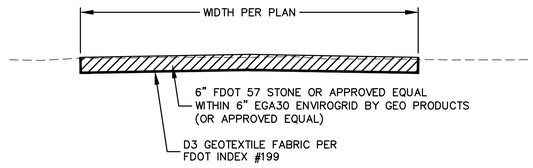


TOP OF BERM GRAVEL DRIVE SECTION
NTS



MIDDLE BERM TOP
NTS

NOTES:
1. OPTIONAL BASE COURSE MAY CONSIST OF:
   GRADED AGGREGATE PER FDOT SPECIFICATION SECTION 204.
   SHELL-ROCK PER FDOT SPECIFICATION SECTION 200 AND 913A
   SHELL BASE PER FDOT SPECIFICATION SECTION 200 AND 913



TYPICAL PERVIOUS STONE ACCESS DRIVE DETAIL
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

TYPICAL POND SECTIONS No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
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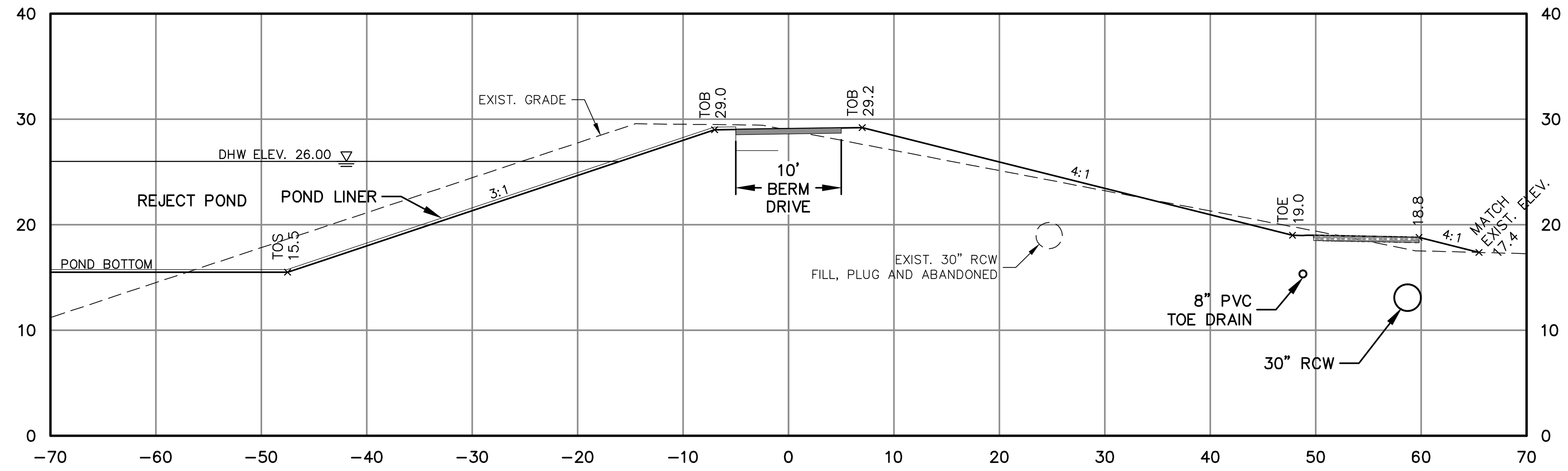
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

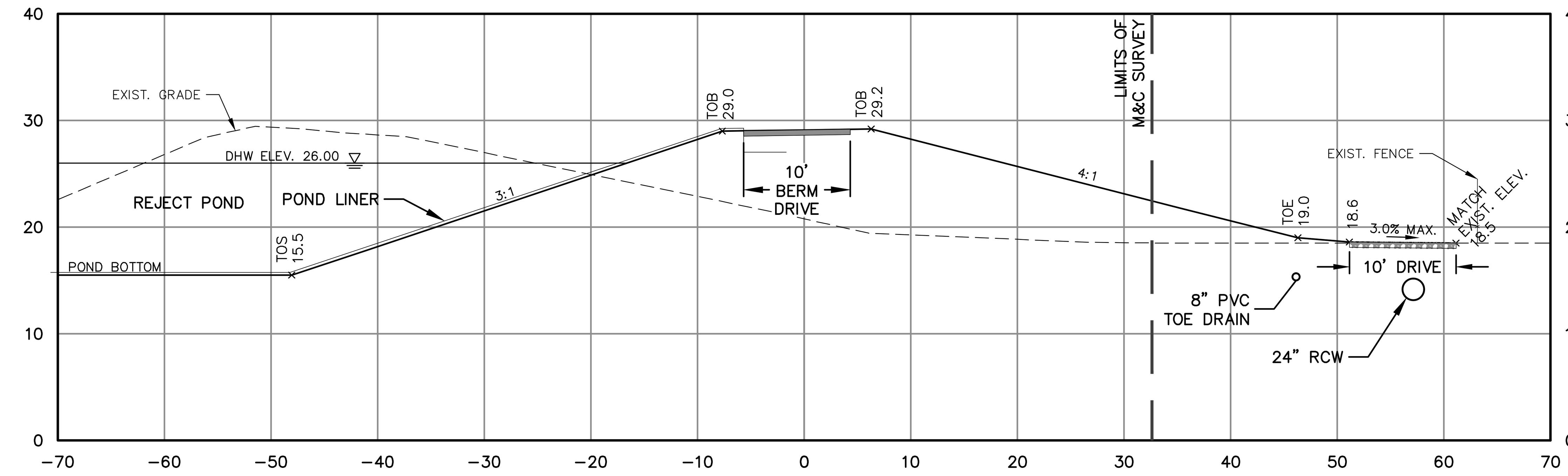
DRAWING NUMBER
C-1.12

STATUS: ISSUE FOR BID
REVISION

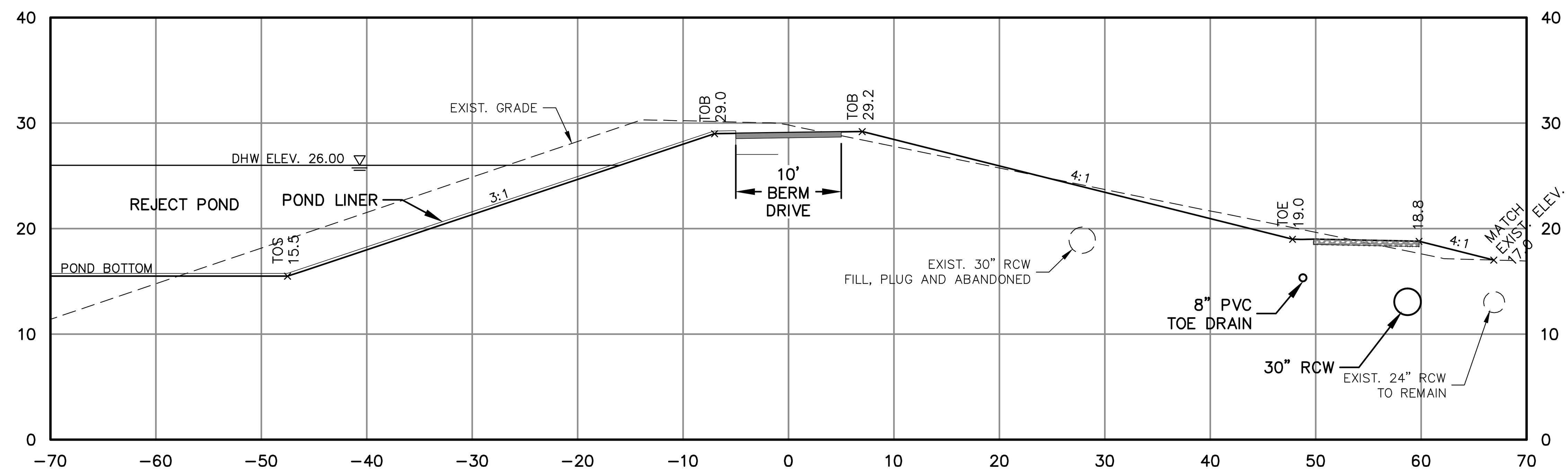
S:\1024\0147\05-Drawings\Civil\C-1.2-PC-801.dwg, 2/15/2012 3:33:08 PM, Brian Vaught



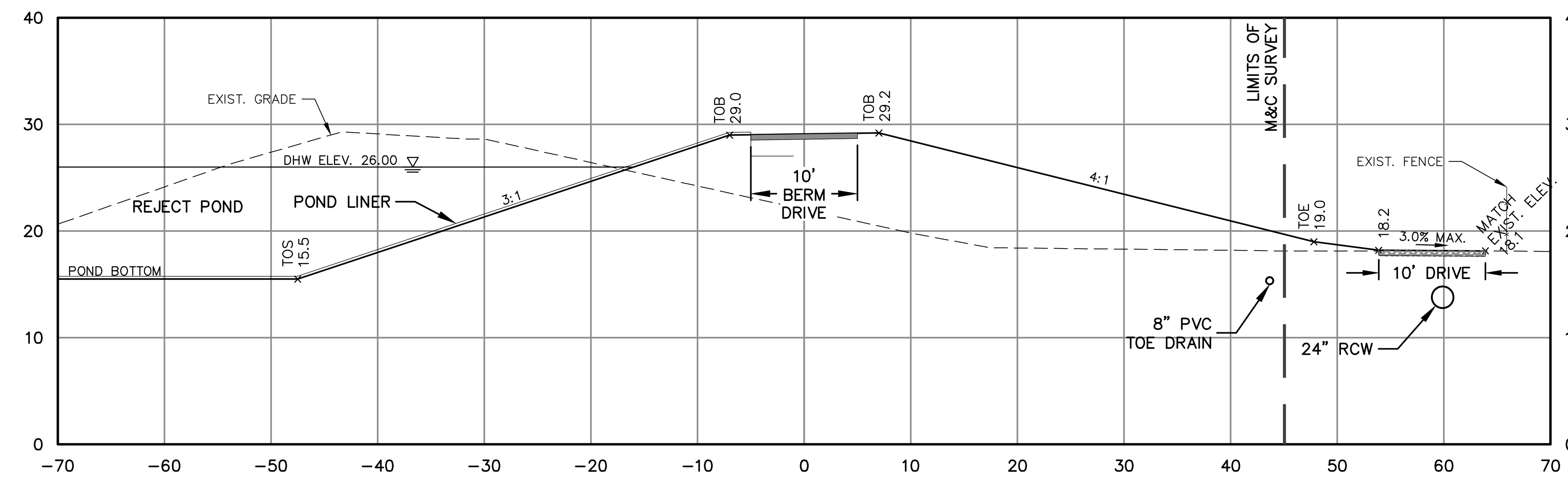
103+00



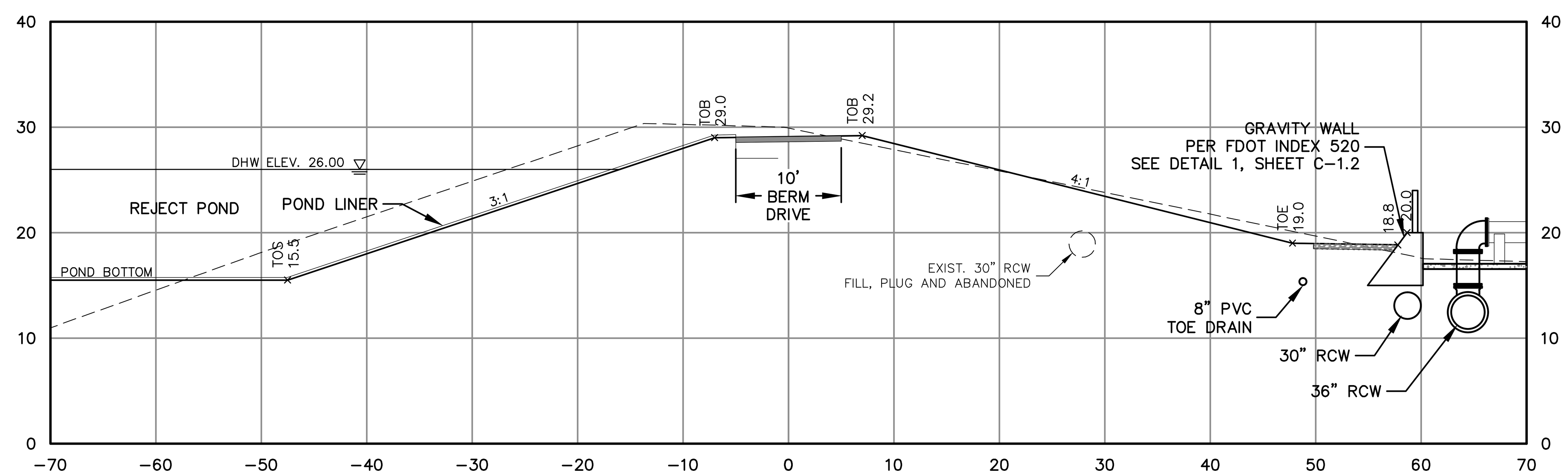
107+00



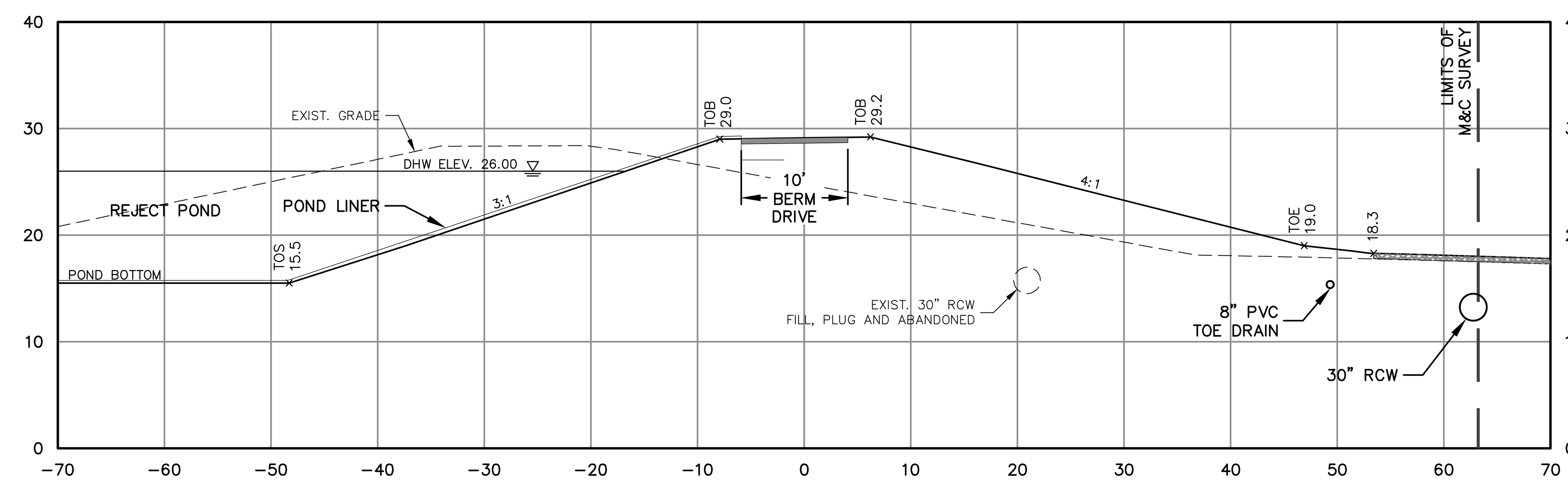
102+00



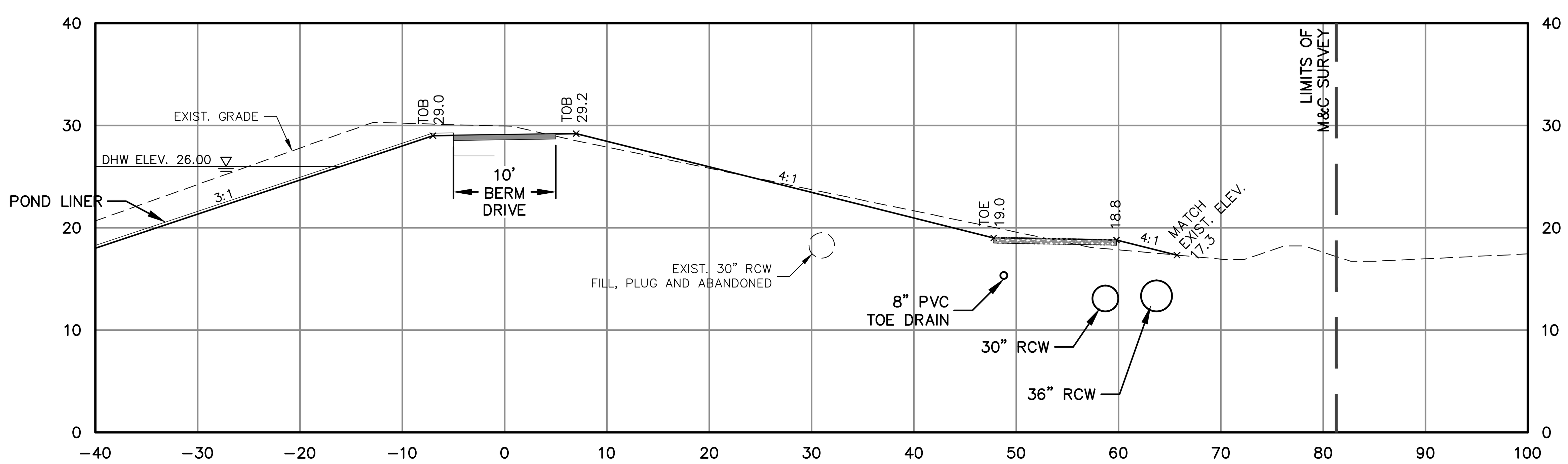
106+00



101+65



105+00



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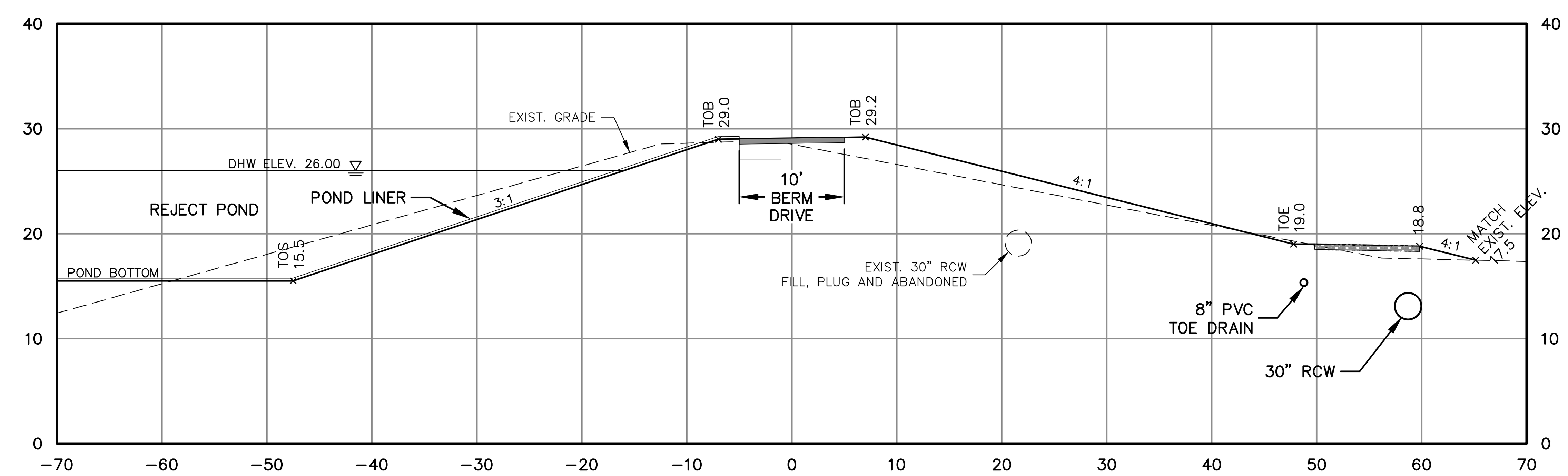

104+00

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

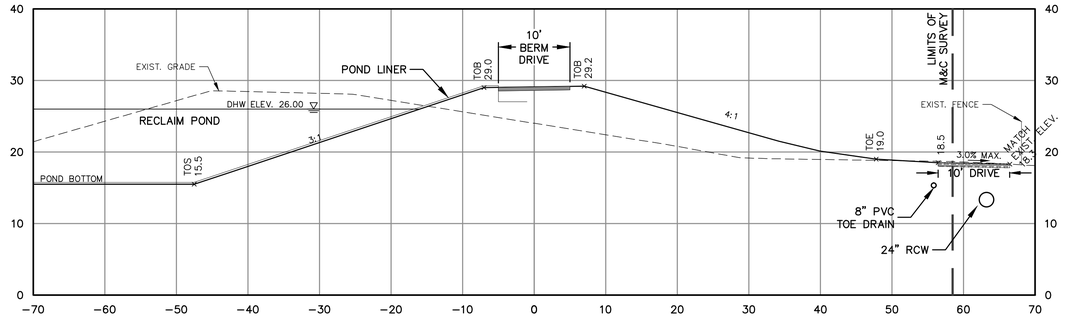
POND SECTIONS No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

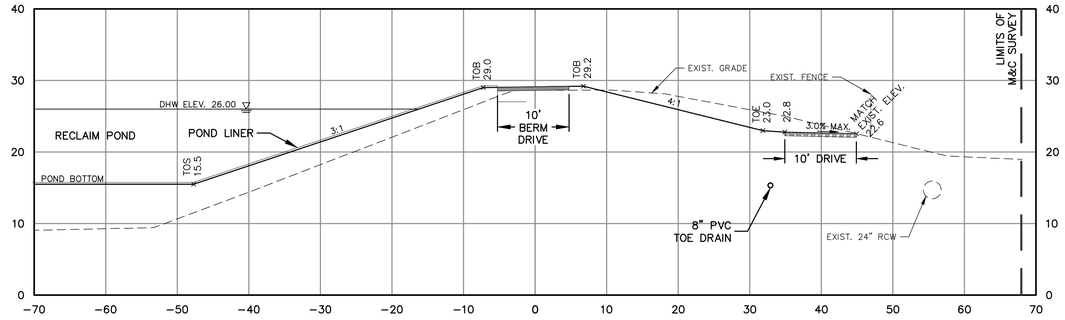
SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.13

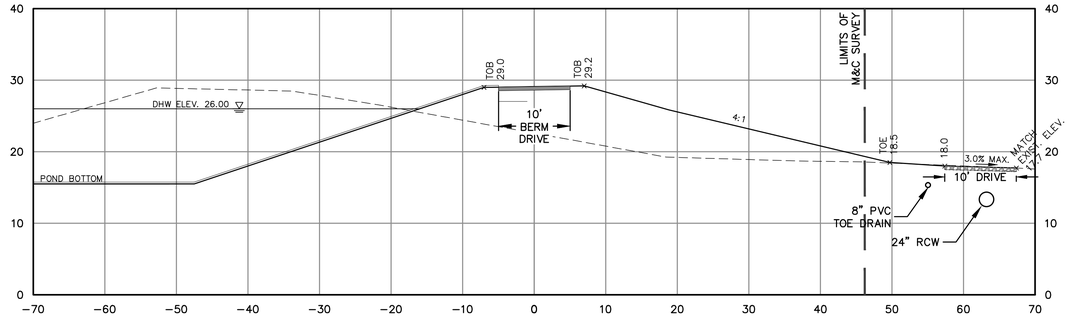
STATUS: ISSUE FOR BID
REVISION



110+00



113+00



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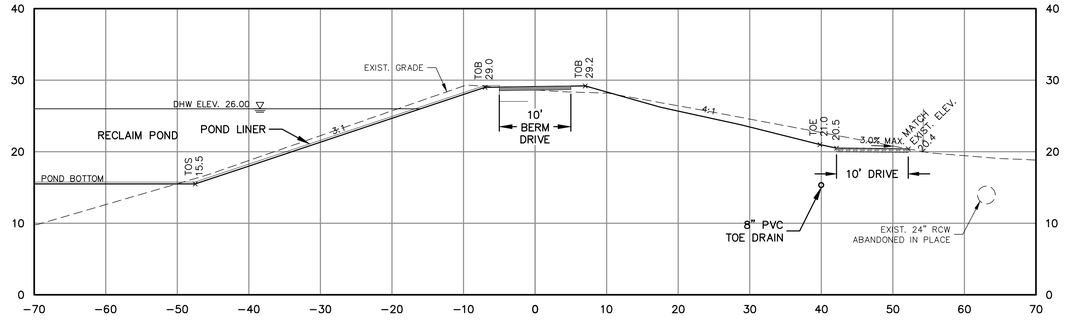

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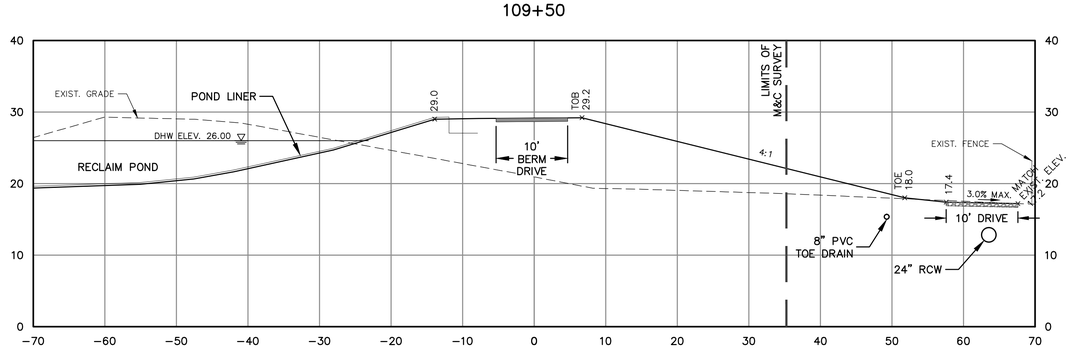

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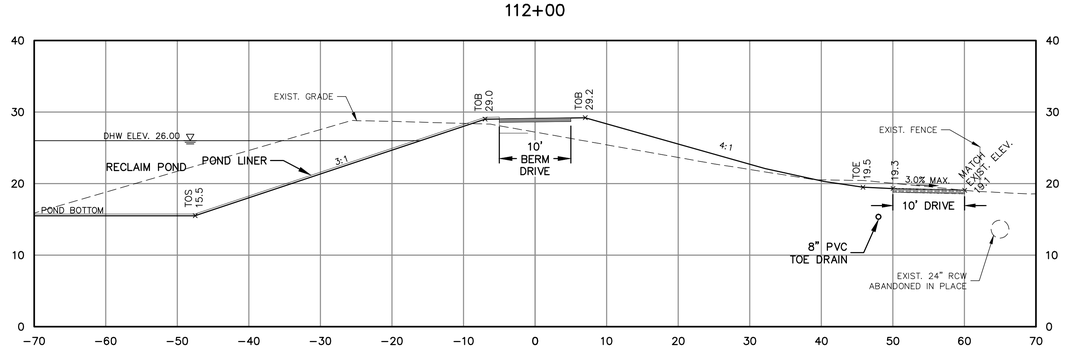

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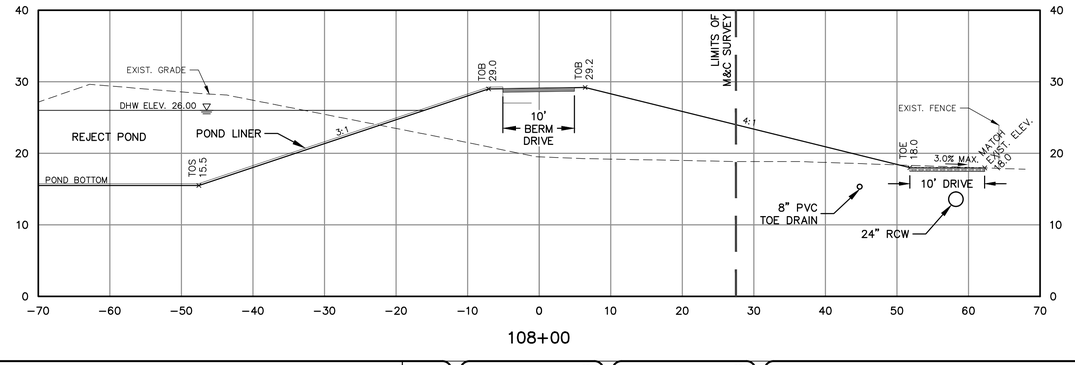

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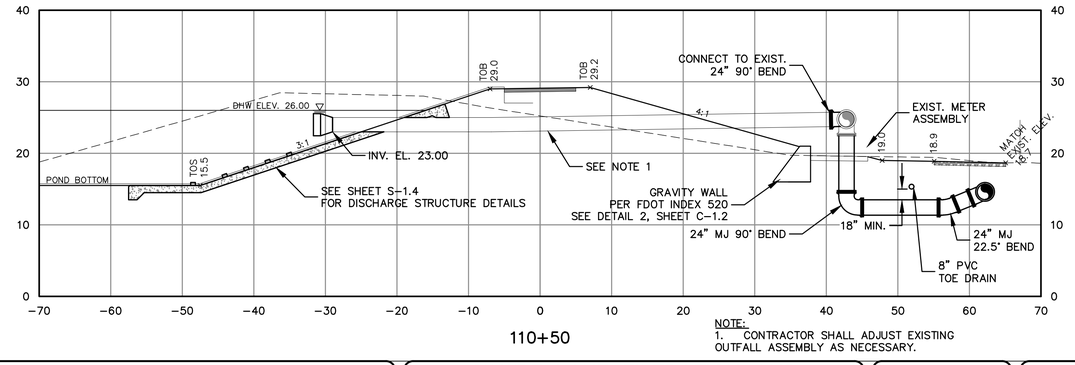

110+50

NOTE:
1. CONTRACTOR SHALL ADJUST EXISTING OUTFALL ASSEMBLY AS NECESSARY.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

POND SECTIONS No. 2

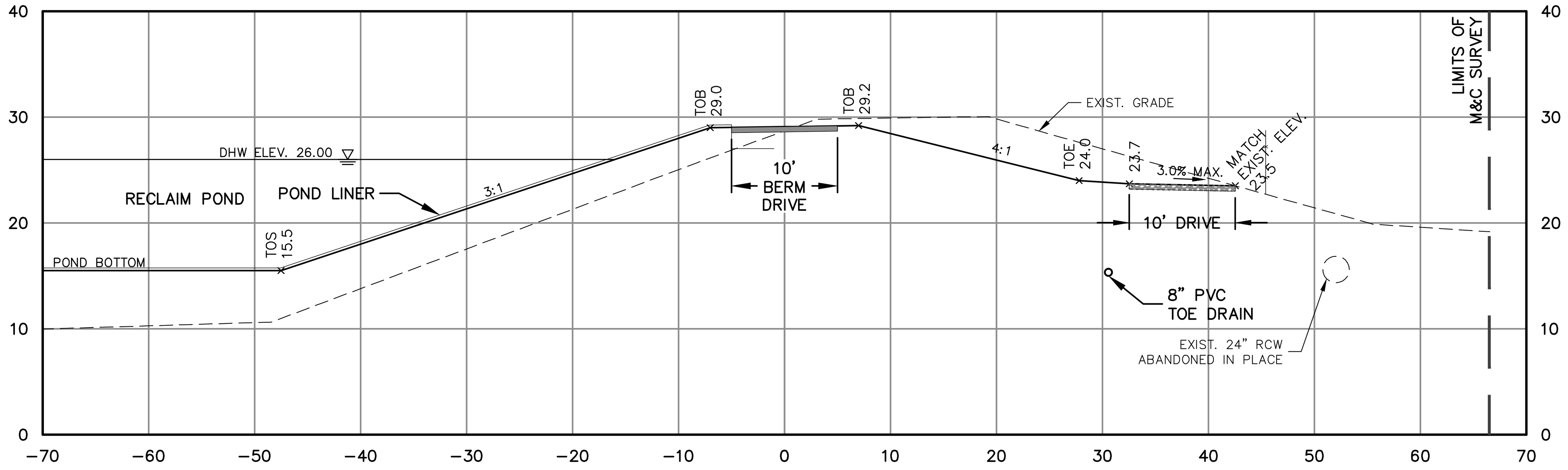
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.14

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\05-Drawings\Civil\C-1.2-Ponds.dwg, 2/15/2012 3:33:19 PM, Brian Vaught



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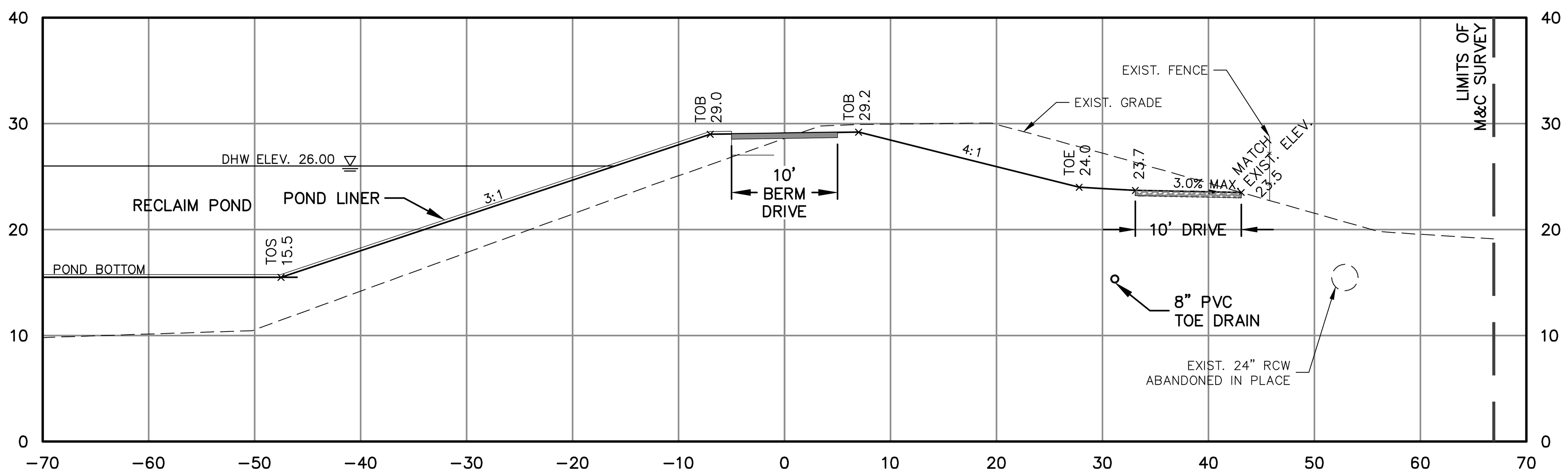

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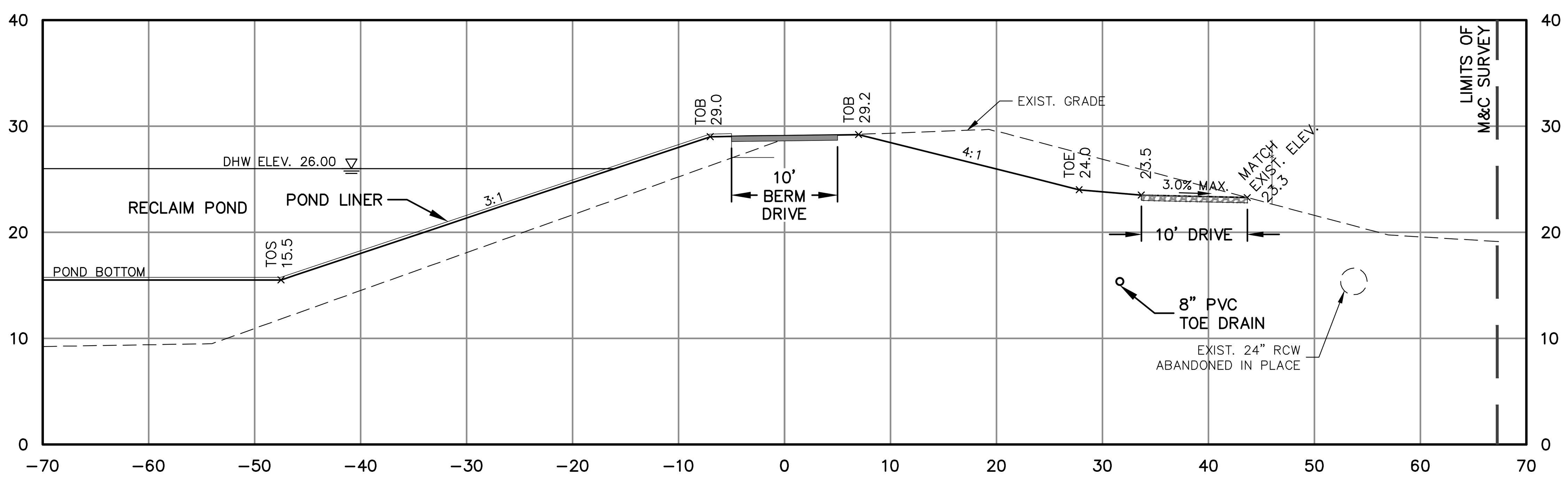

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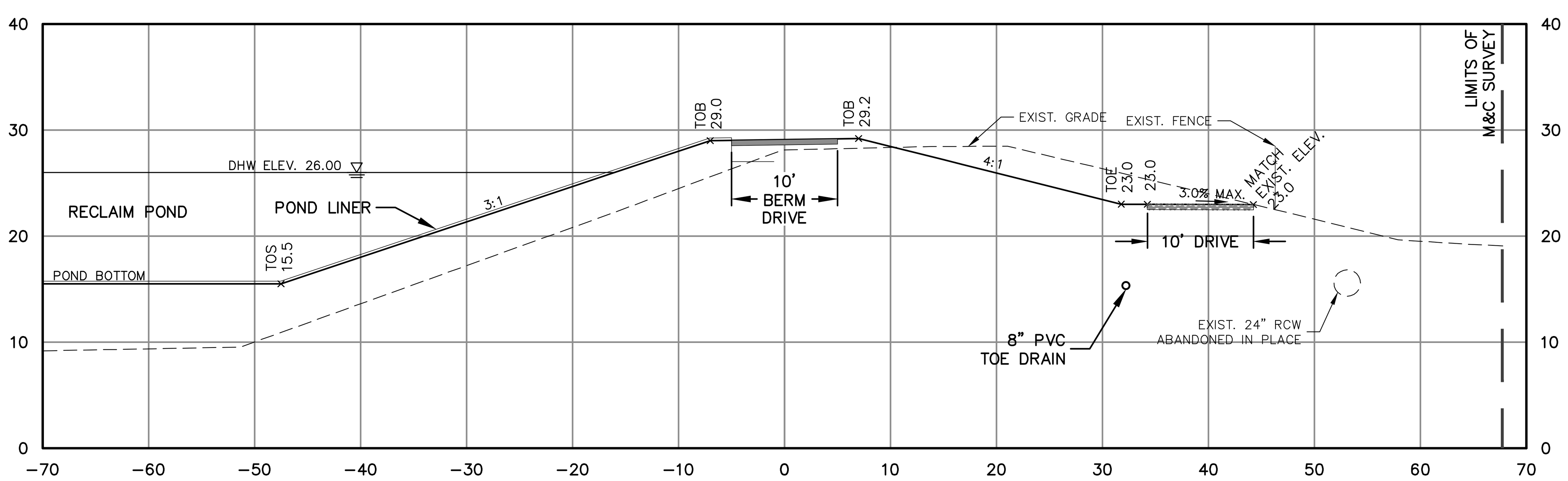
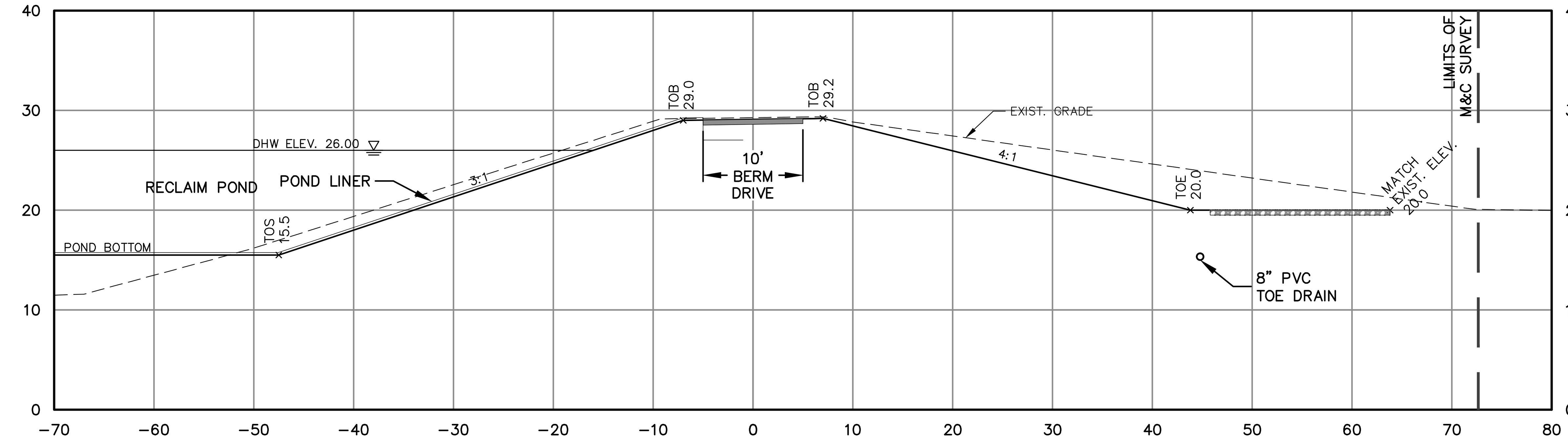


114+00



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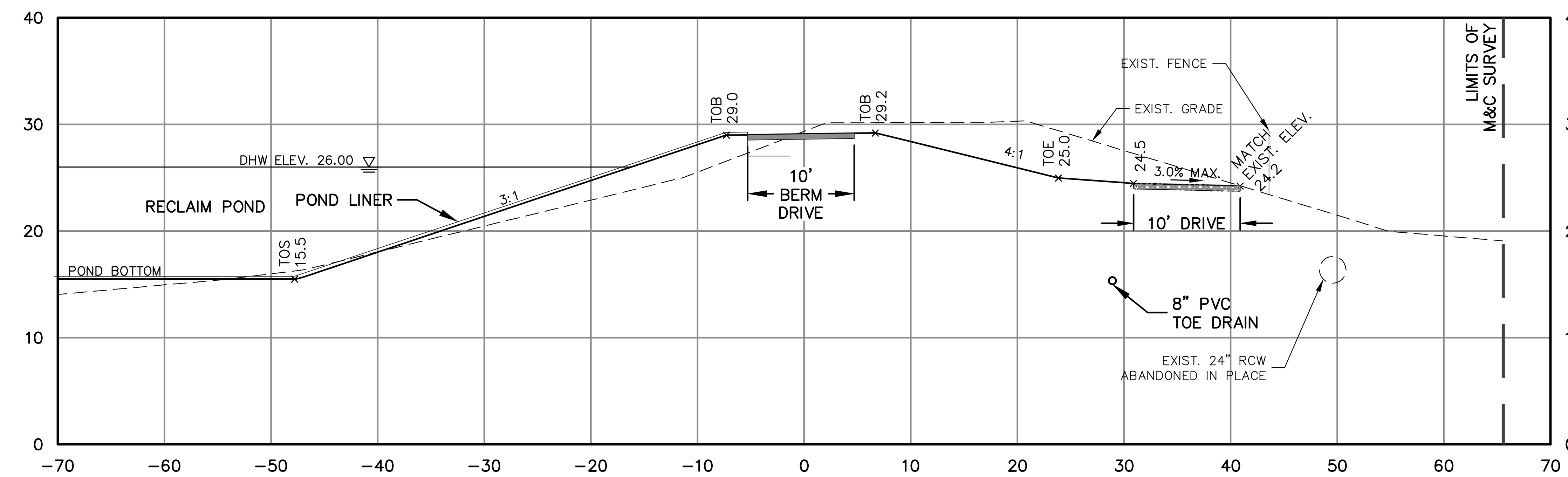

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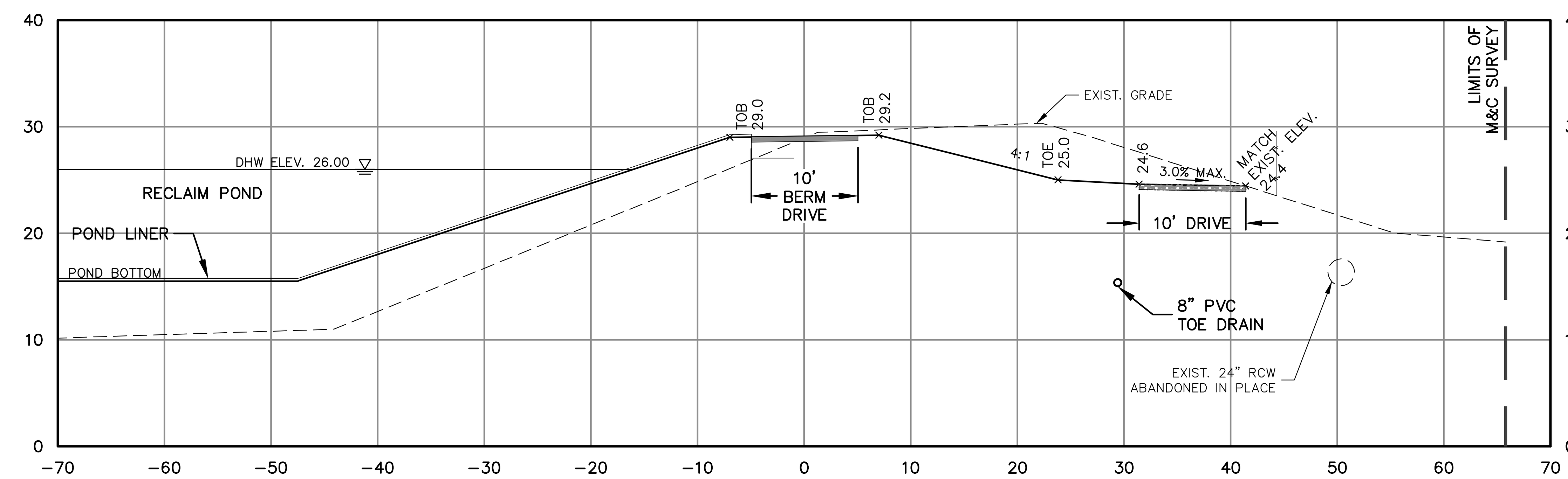

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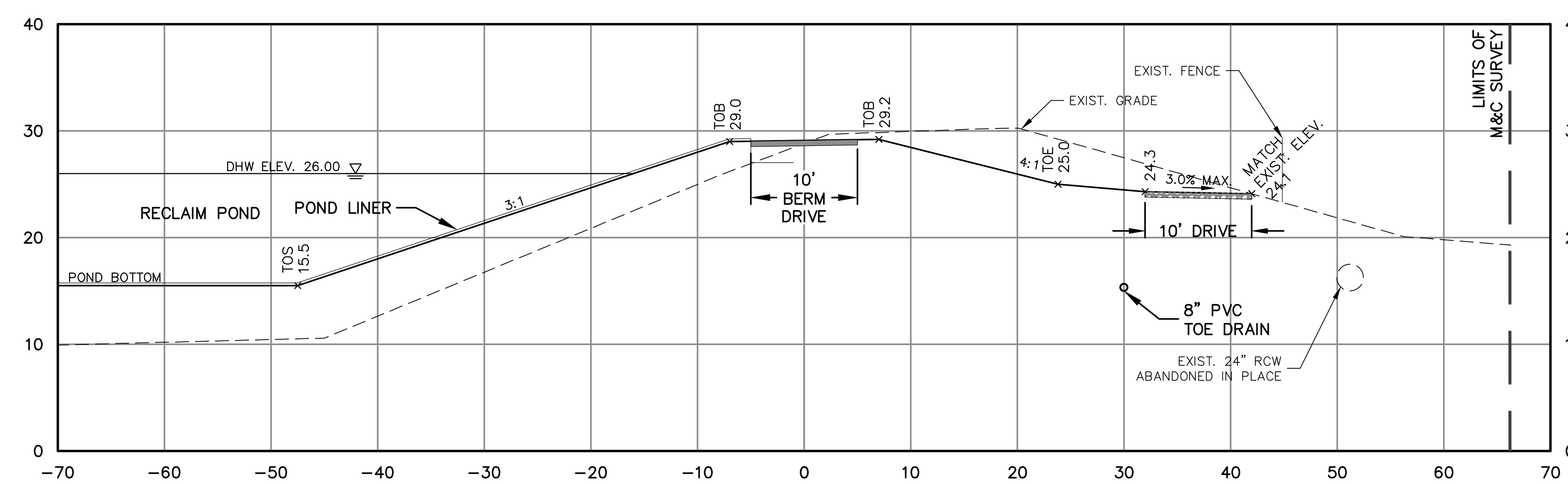

118+00

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

POND SECTIONS No. 3

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.15

STATUS: ISSUE FOR BID
REVISION

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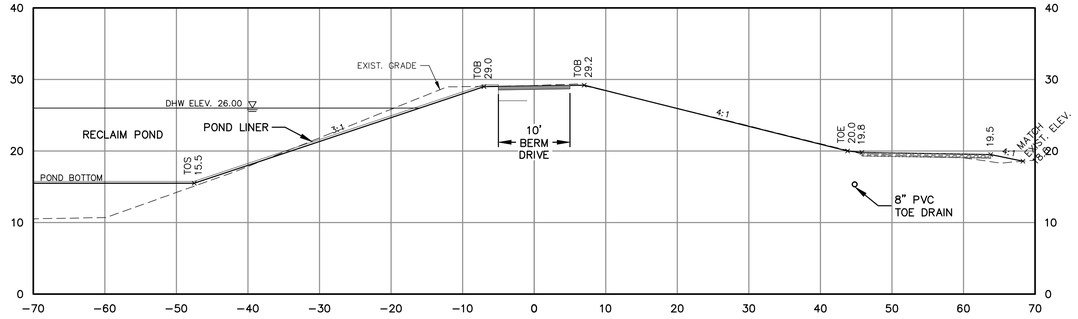
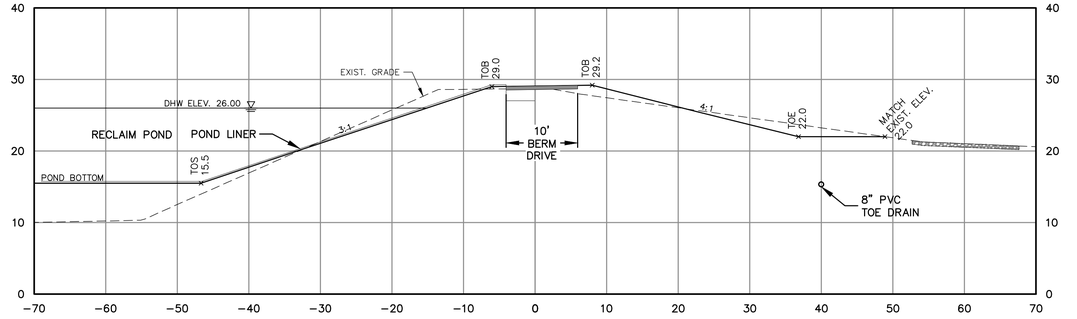


124+00



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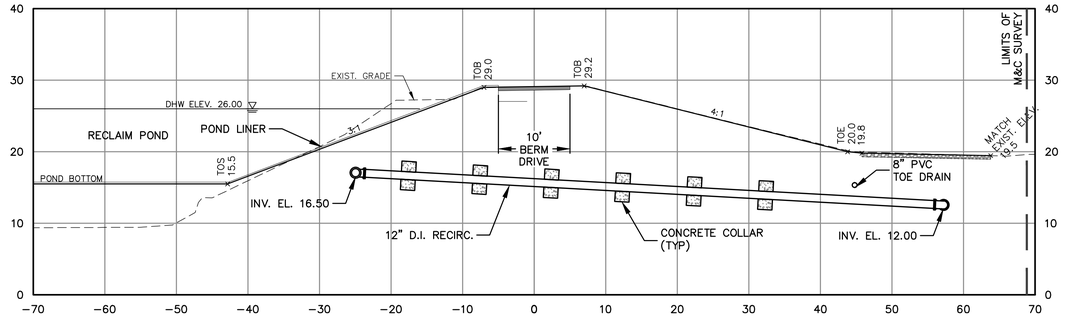
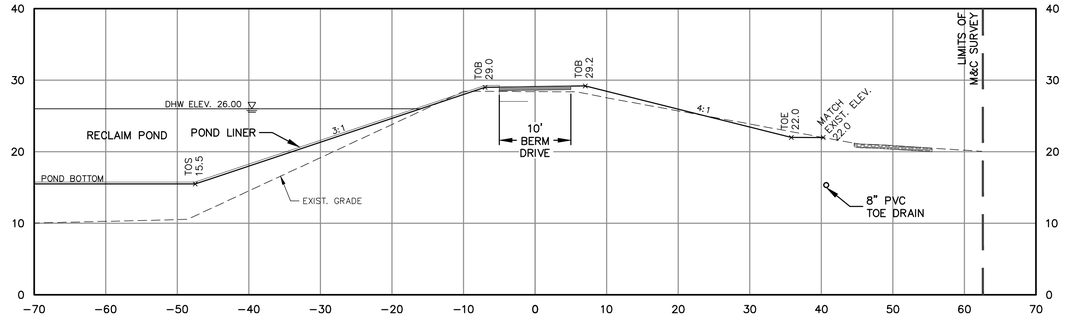


123+00



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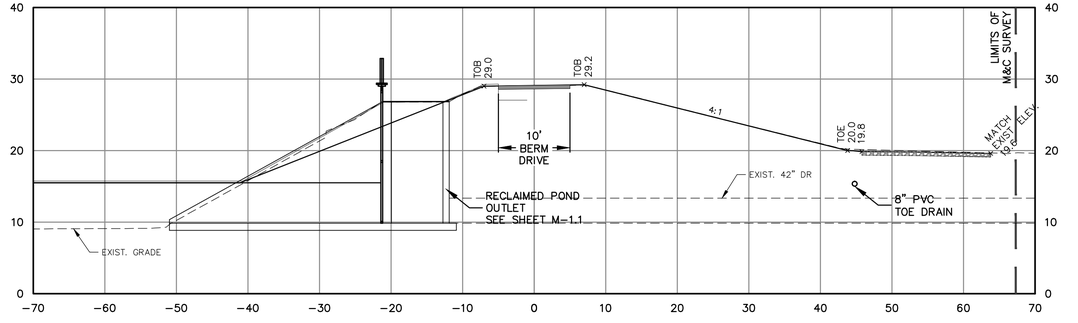

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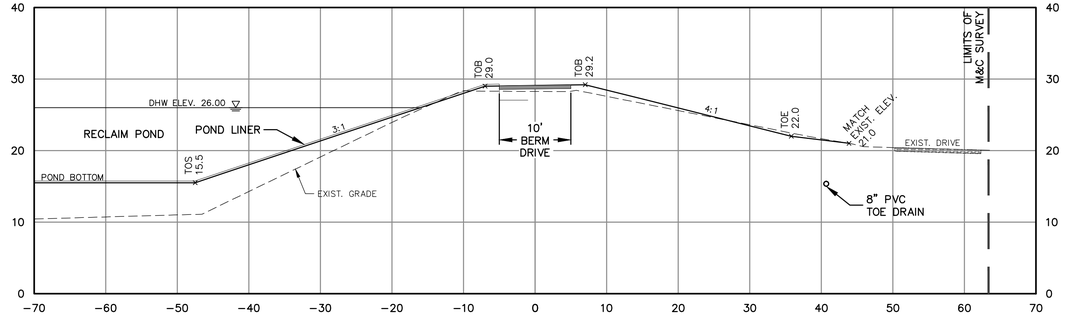

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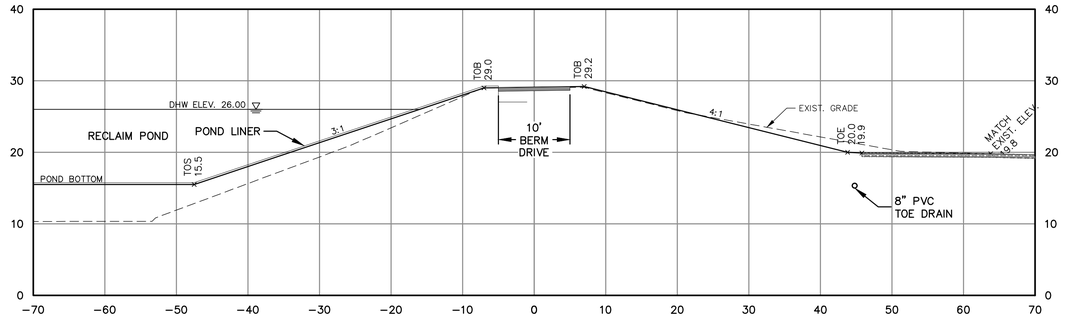

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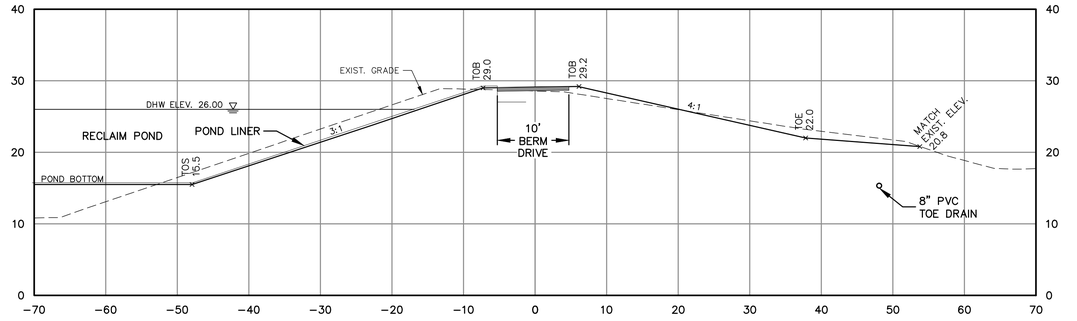

125+00

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

TRAVIS N. TERPSTRA, P.E.
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

POND SECTIONS No. 4

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.16

STATUS: ISSUE FOR BID
REVISION

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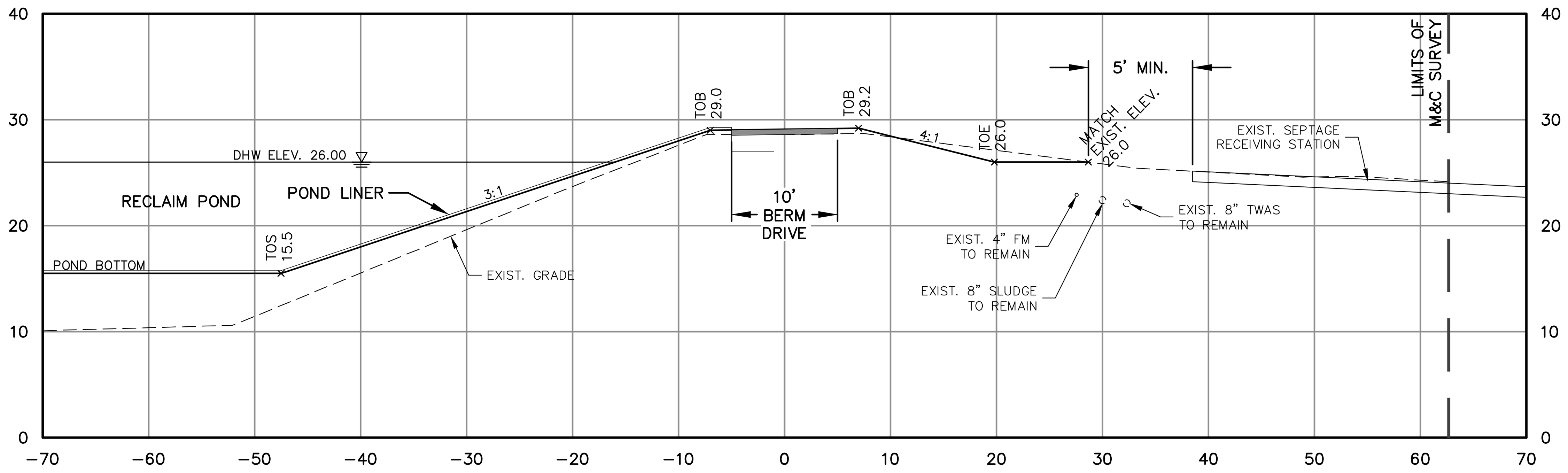

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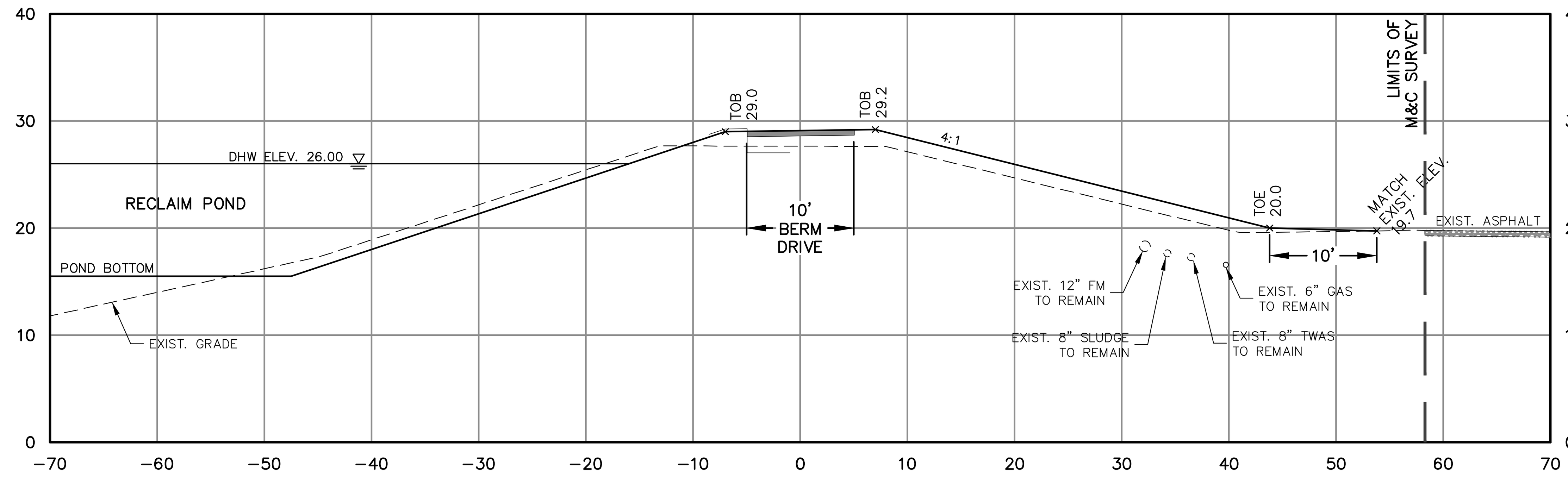

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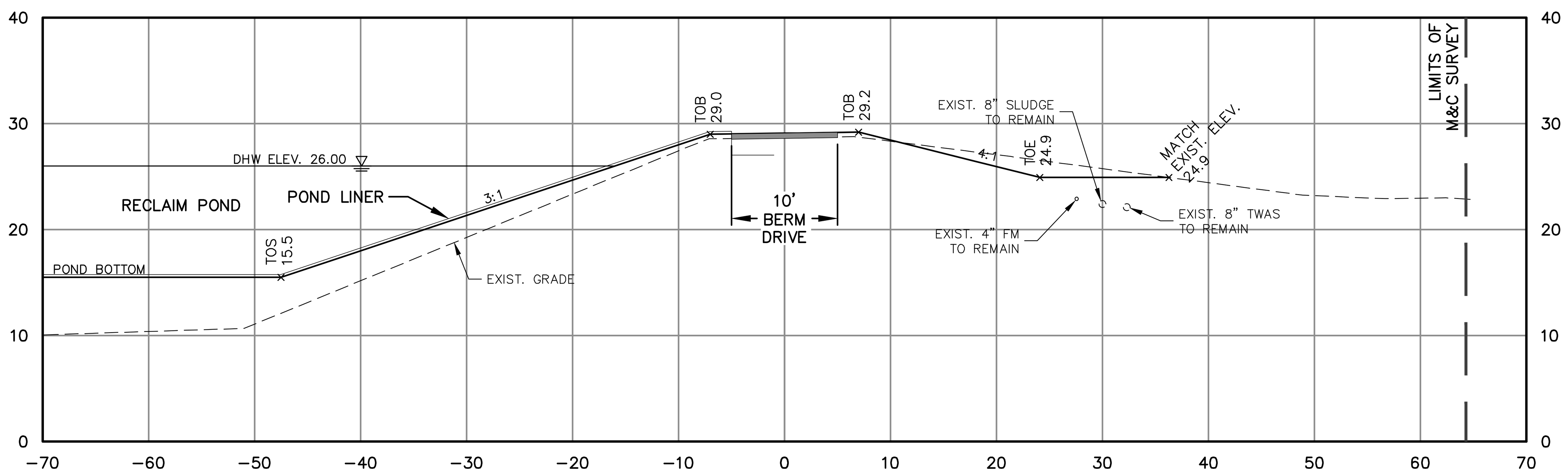

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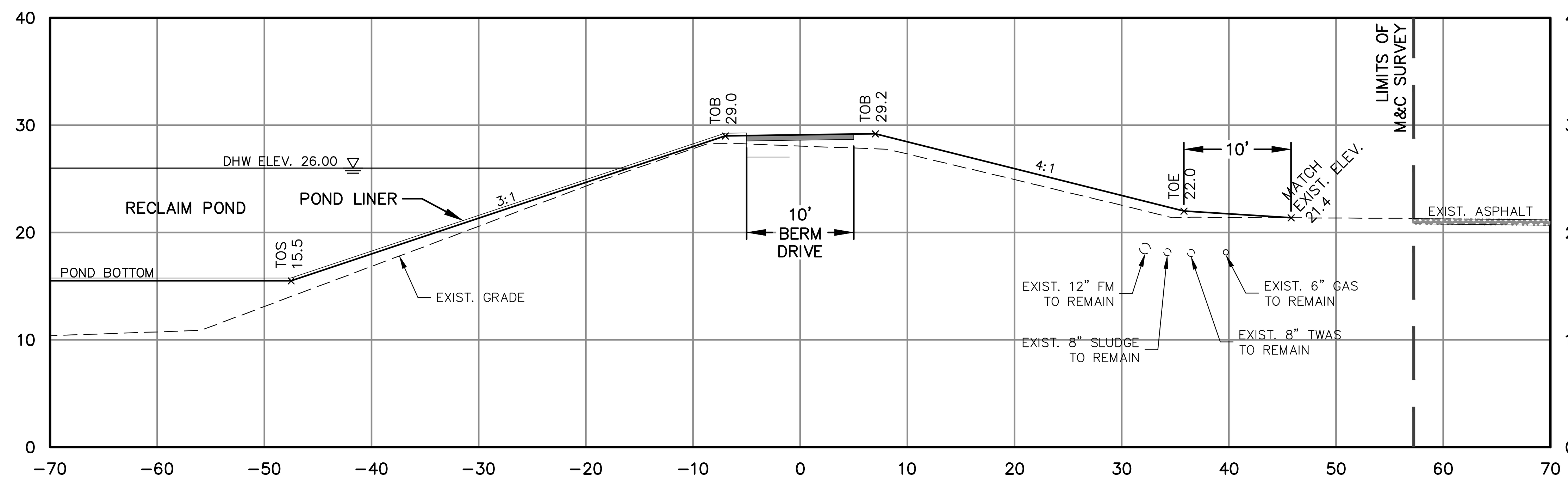

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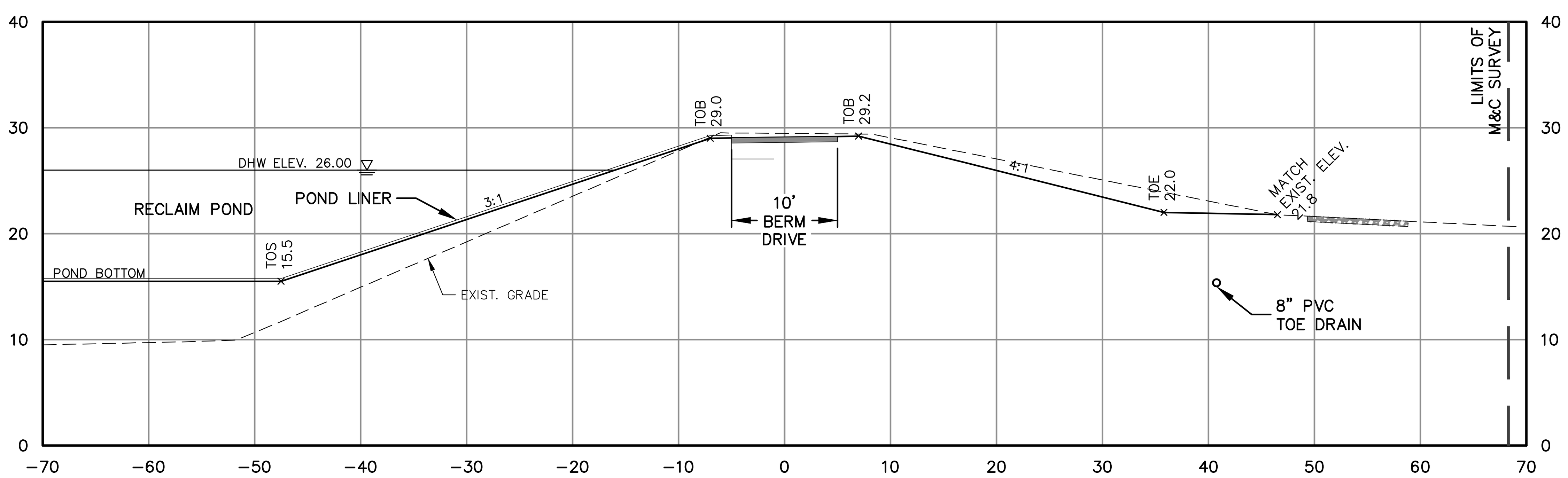

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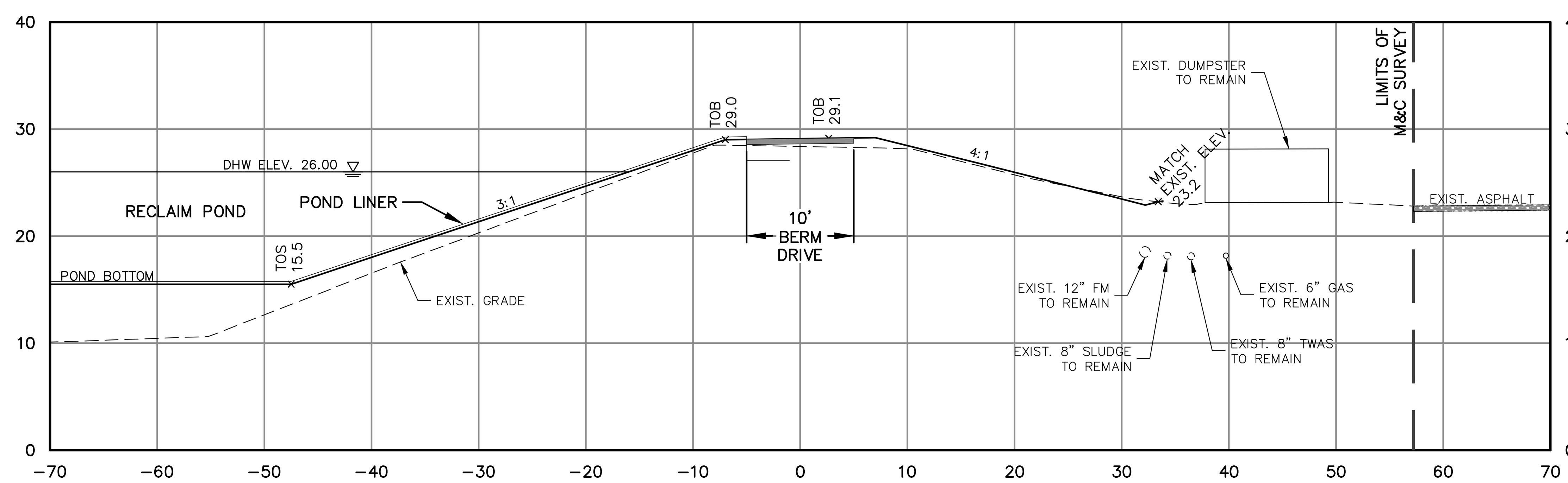

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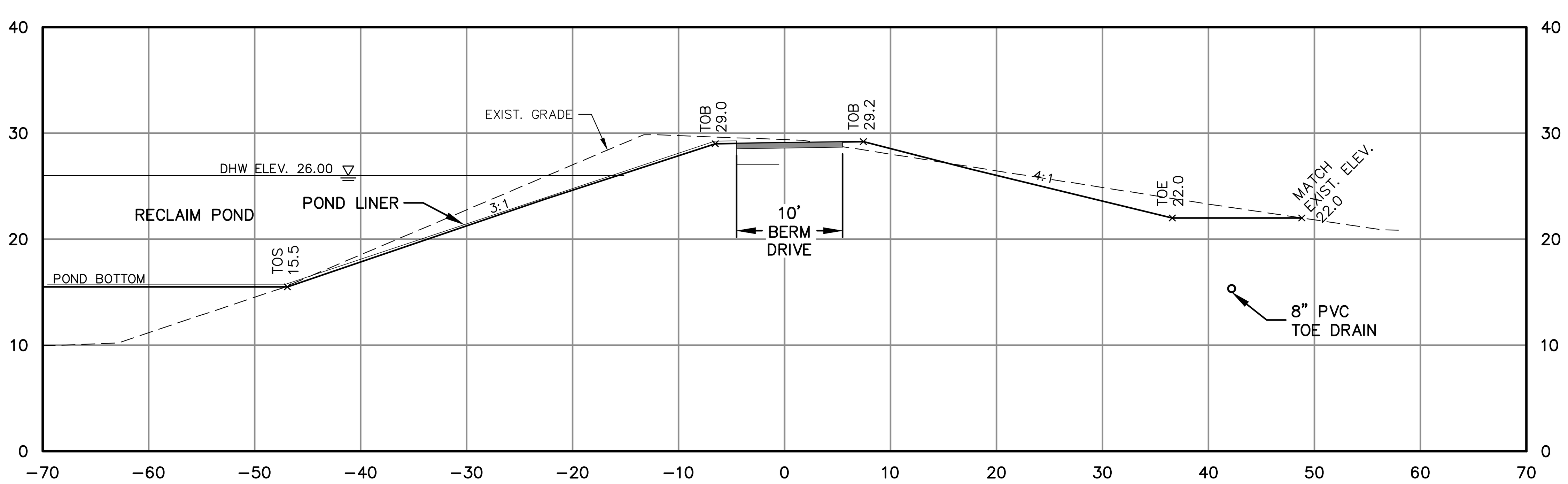
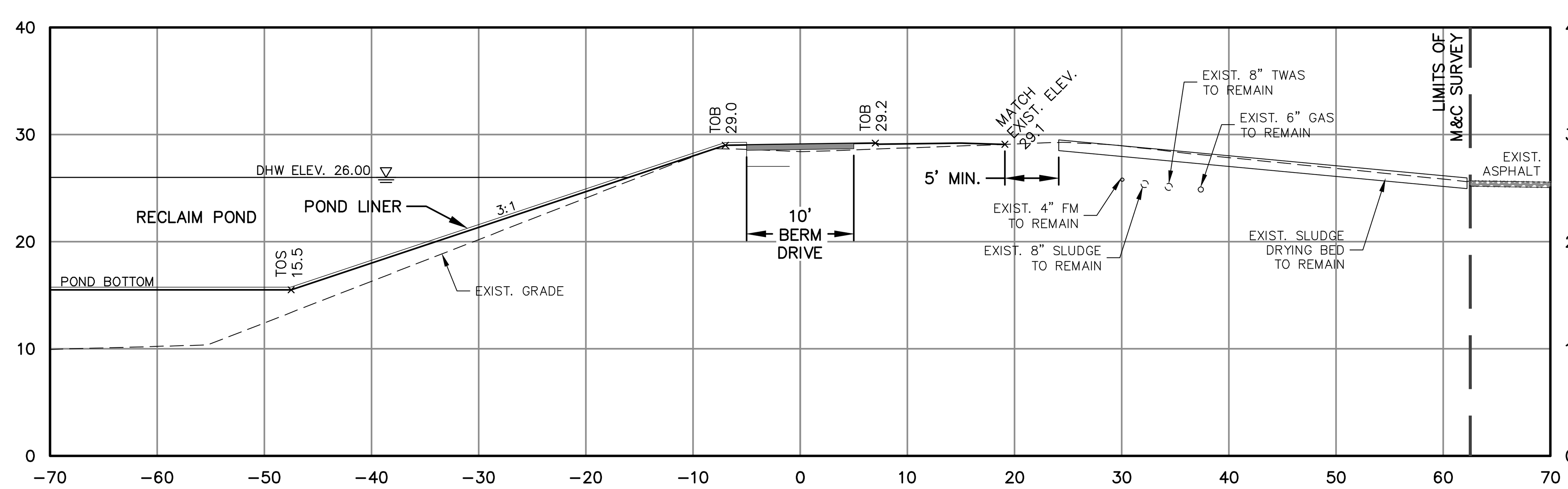


129+00



132+00

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

POND SECTIONS No. 5

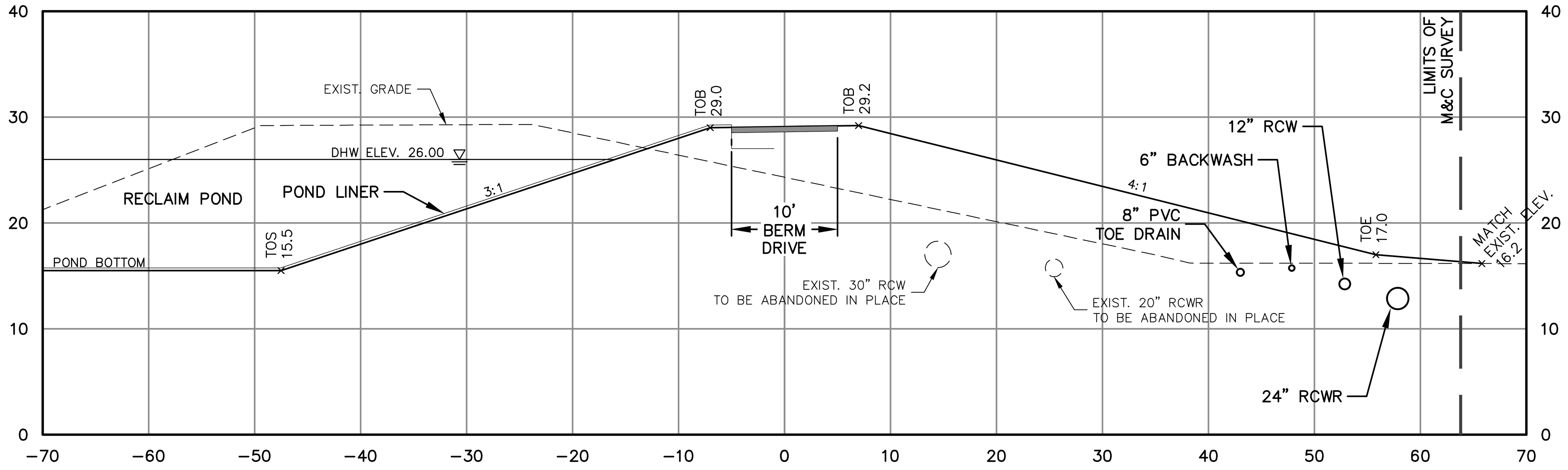
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

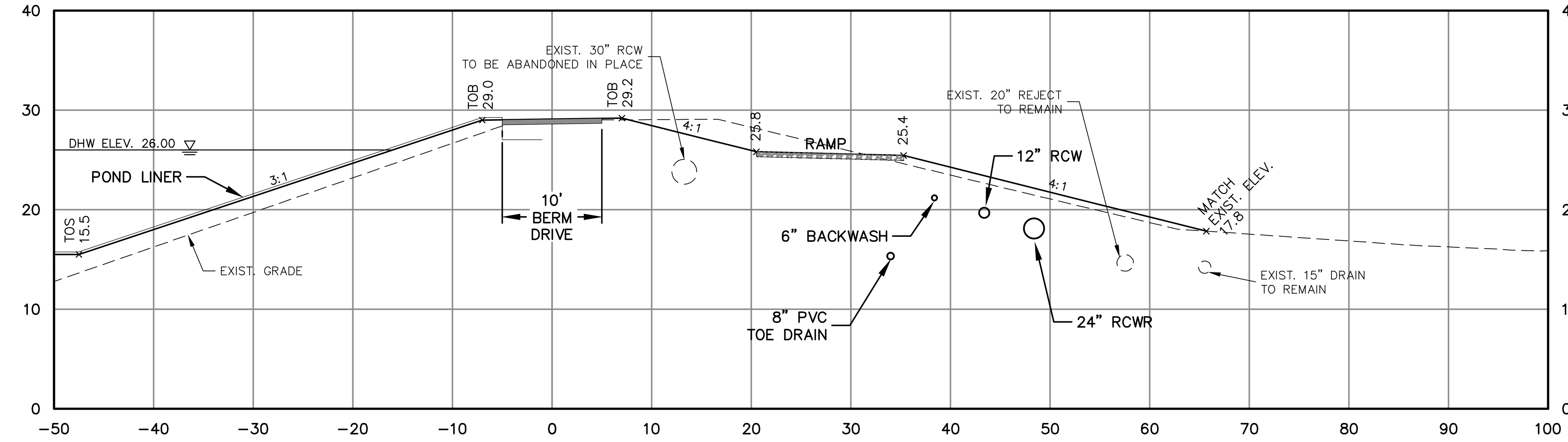
DRAWING NUMBER
C-1.17

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\80-Drawings\Civil\C-1.2-PG-B01.dwg, 2/15/2012 3:33:37 PM, Brian Nought



137+00



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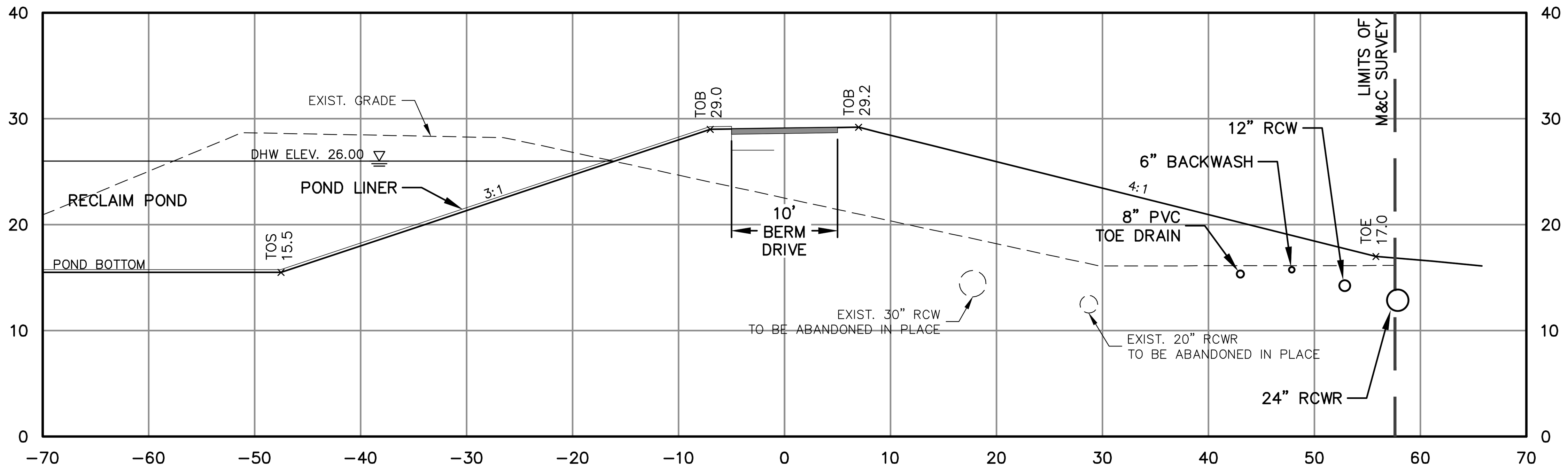

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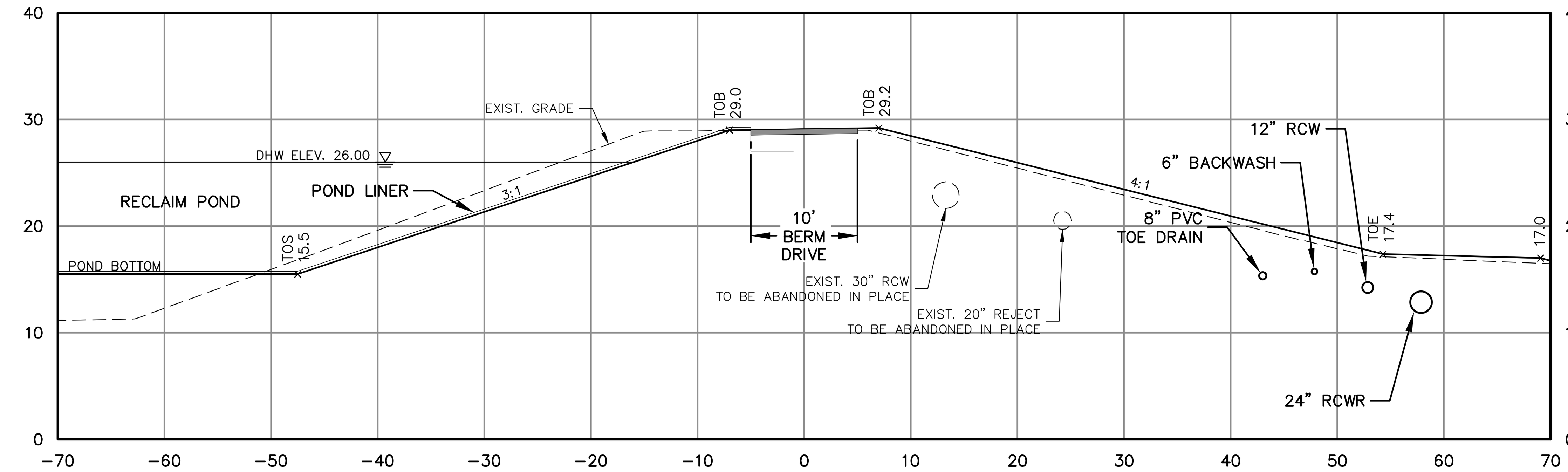

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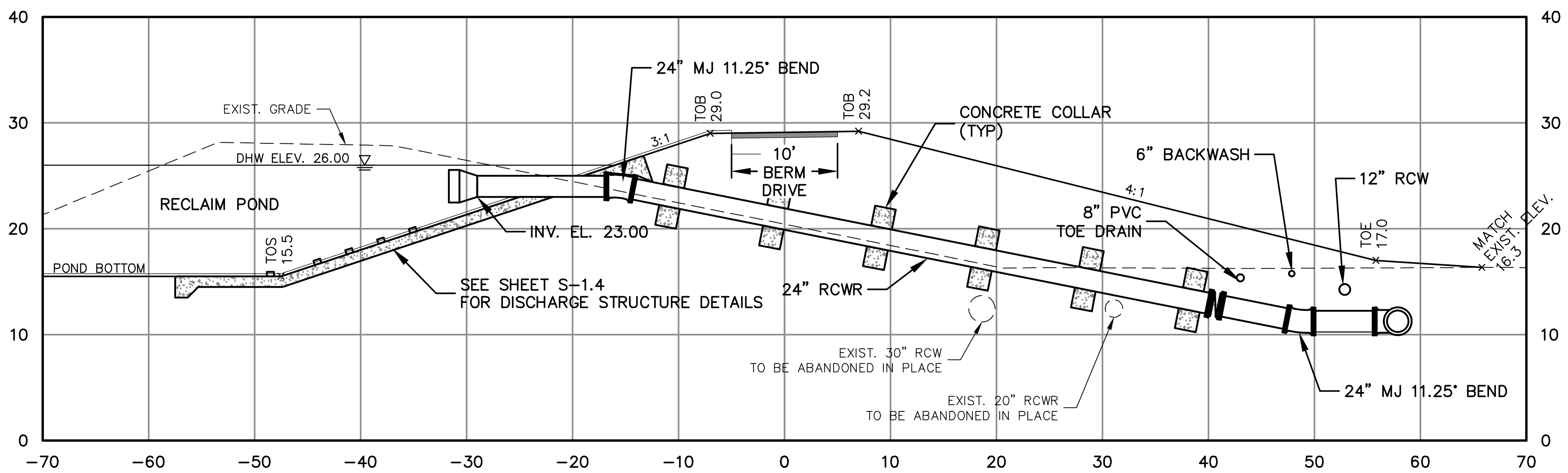

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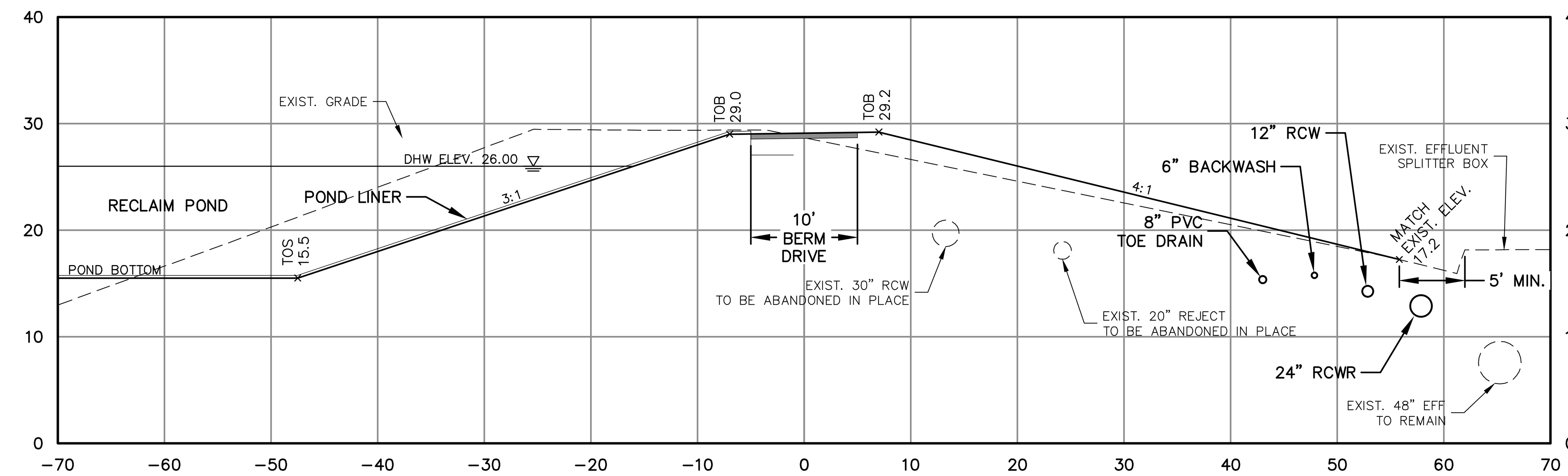

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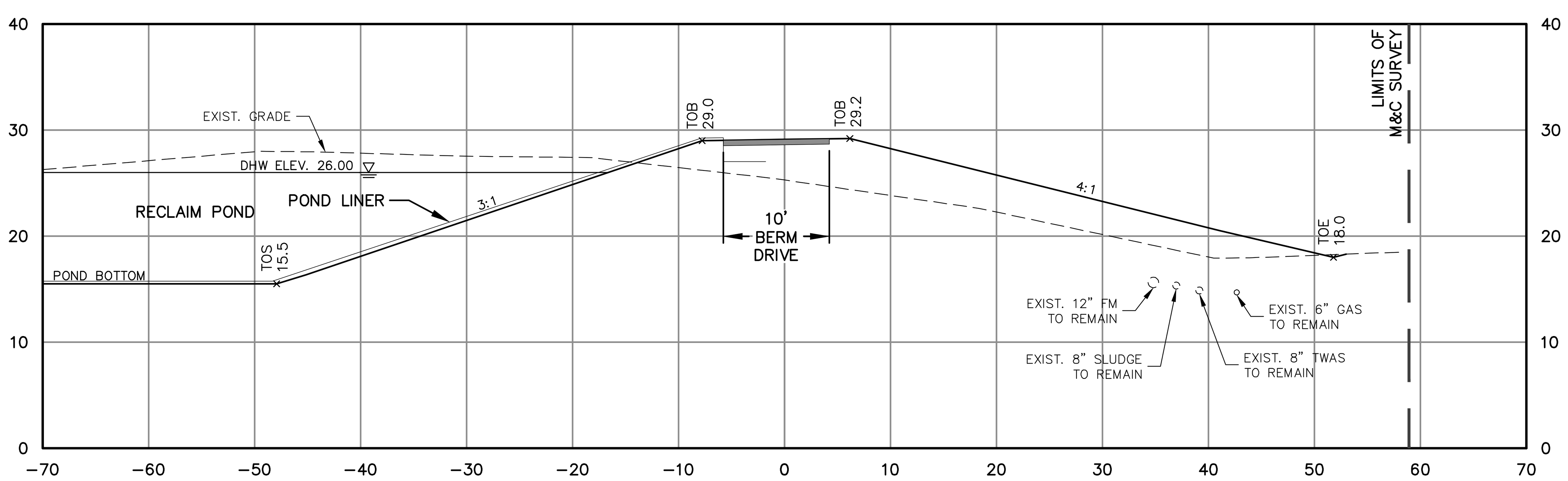

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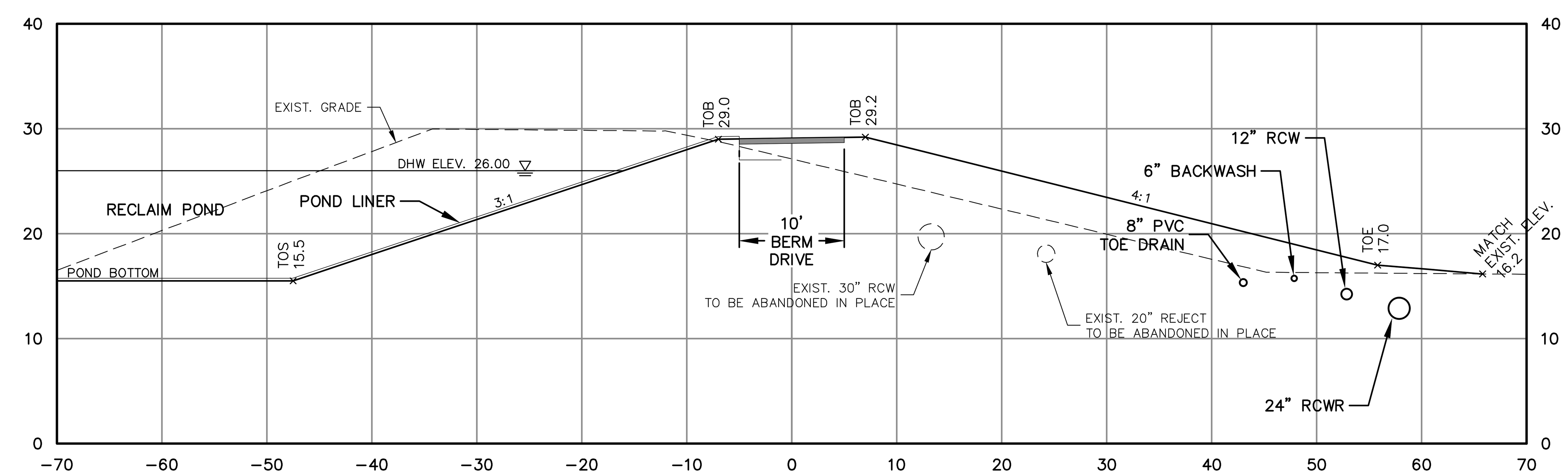

138+00

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

POND SECTIONS No. 6

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.18

STATUS: ISSUE FOR BID
REVISION

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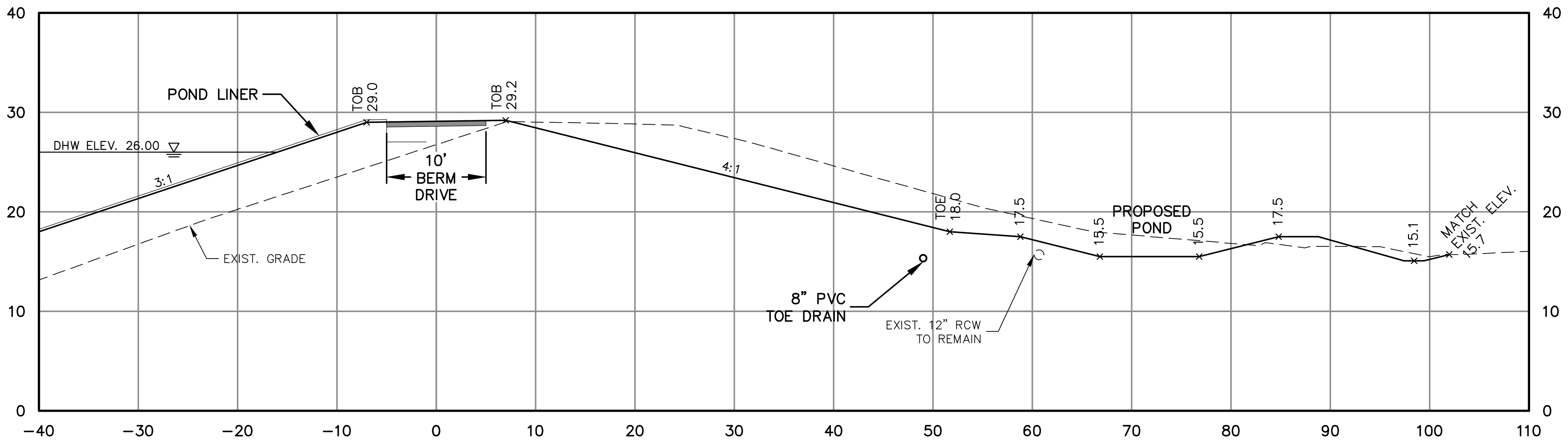

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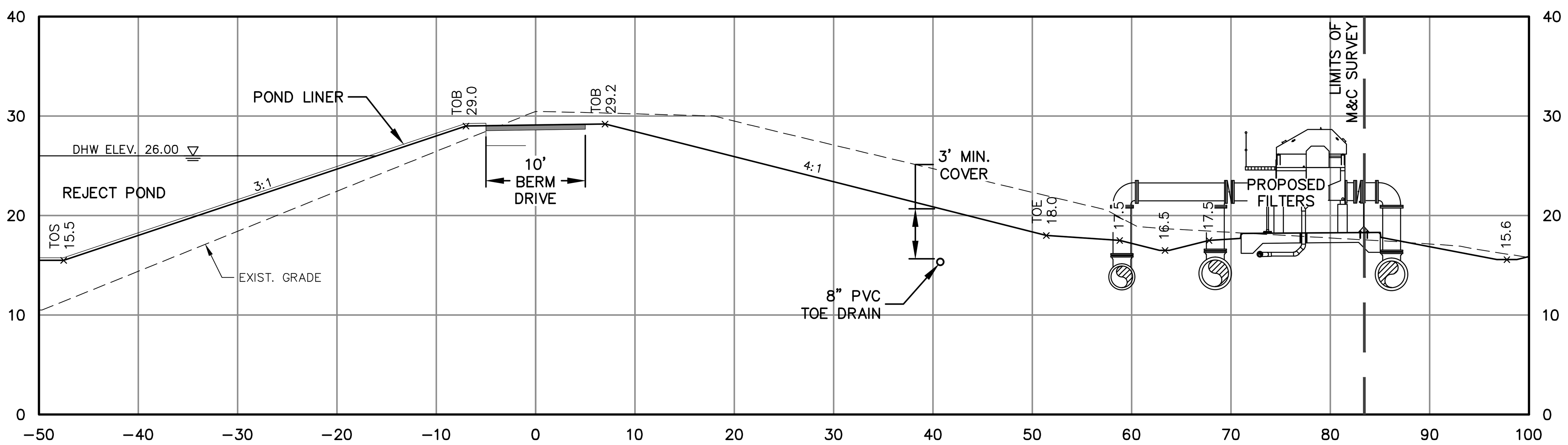

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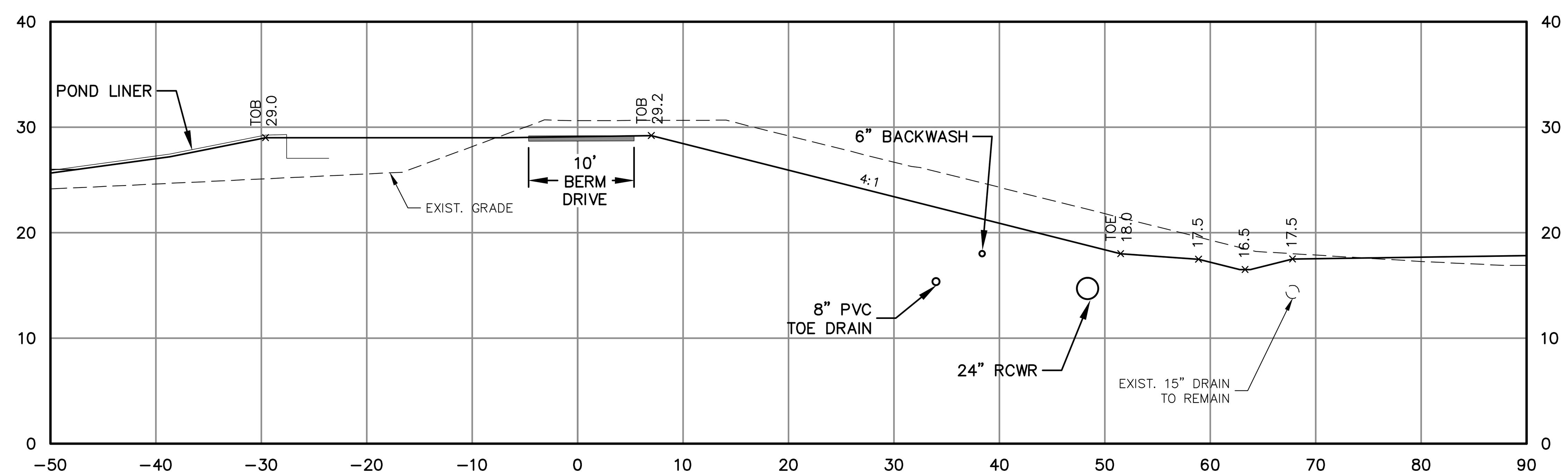

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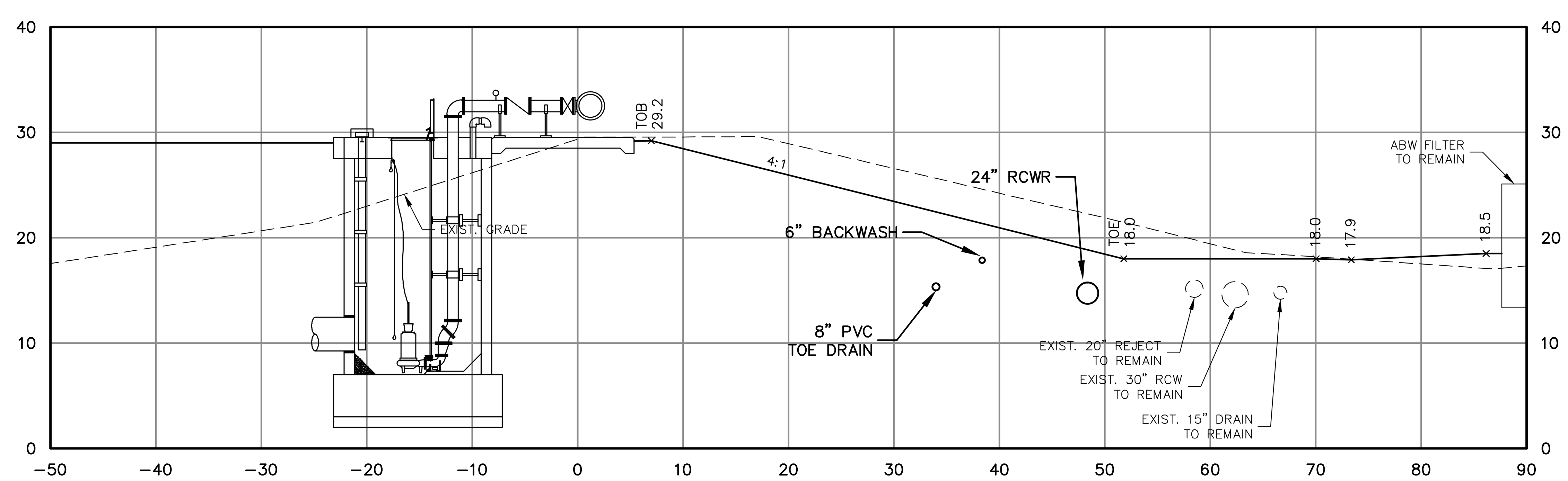

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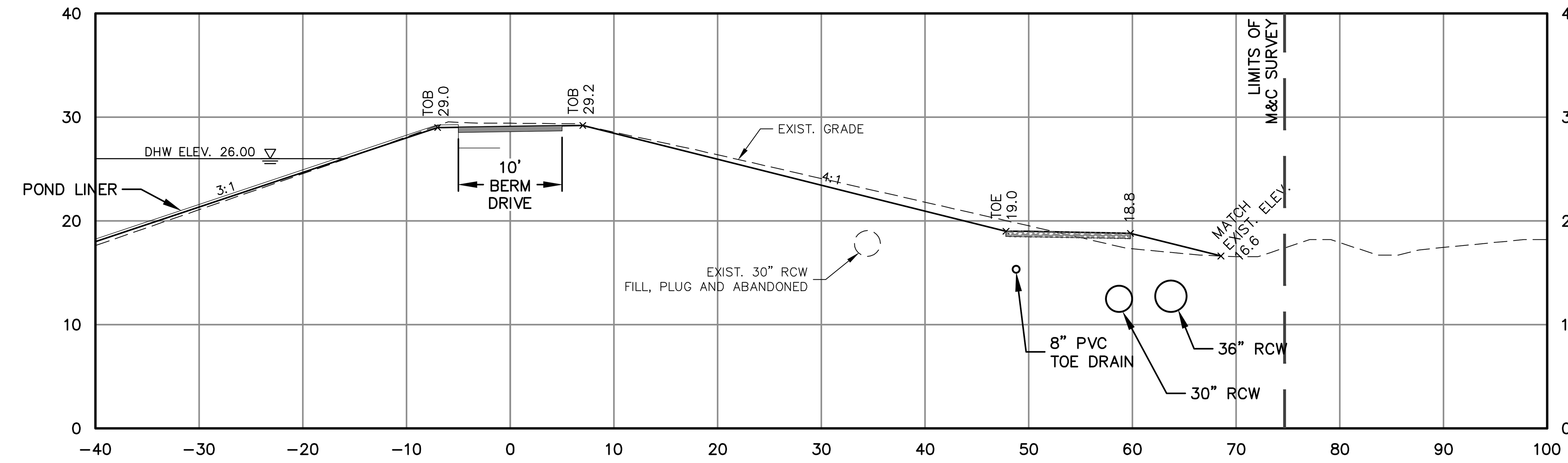
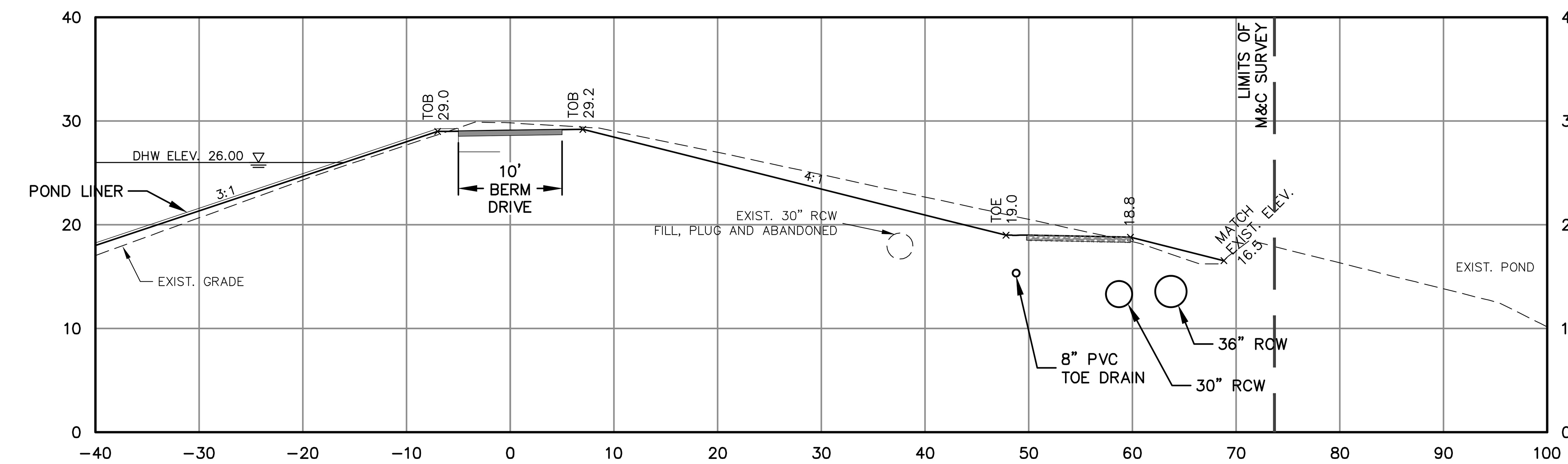


148+00



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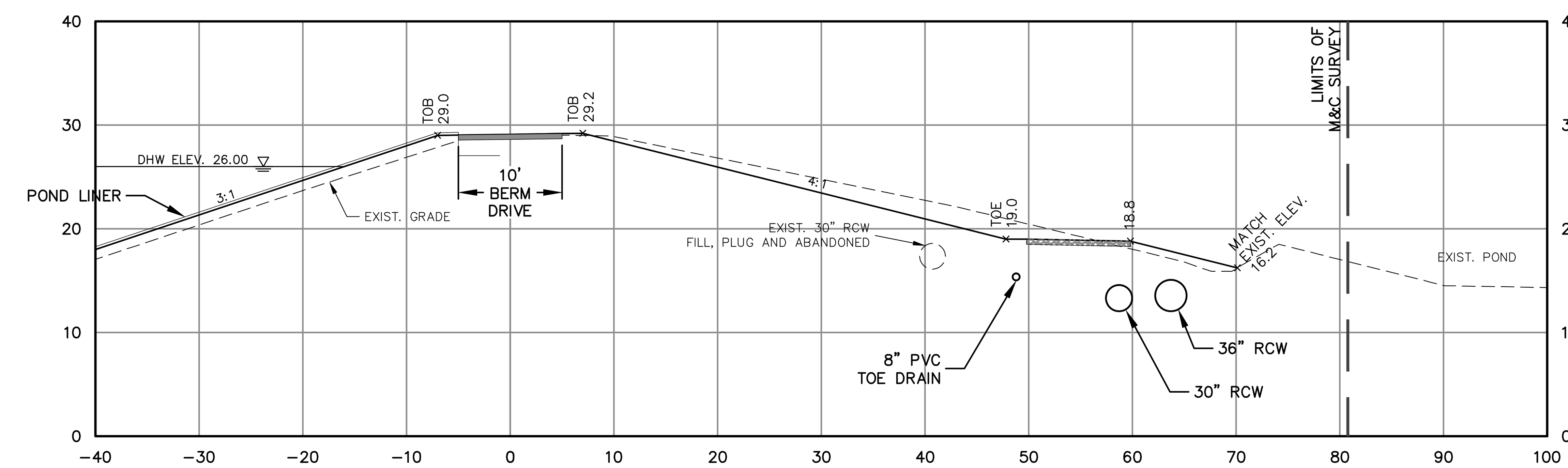

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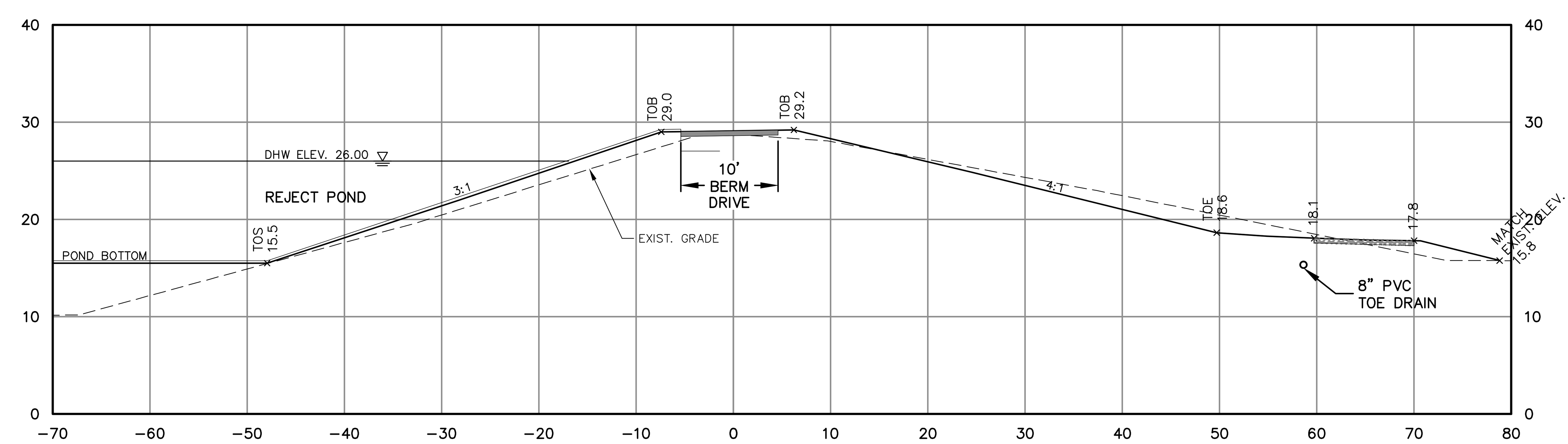

145+00

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

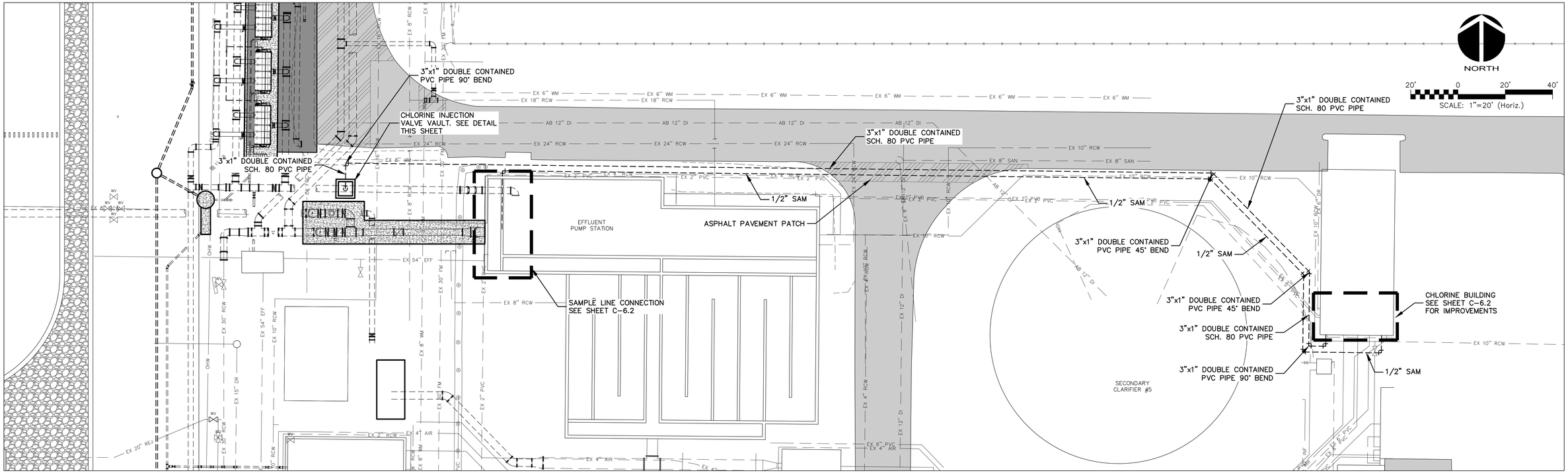
POND SECTIONS No. 7

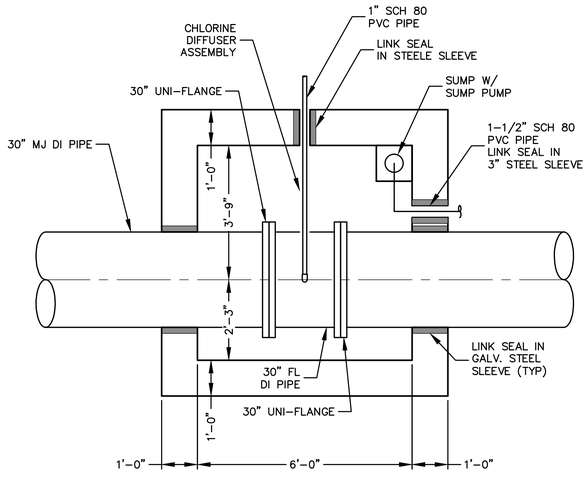
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	MSL

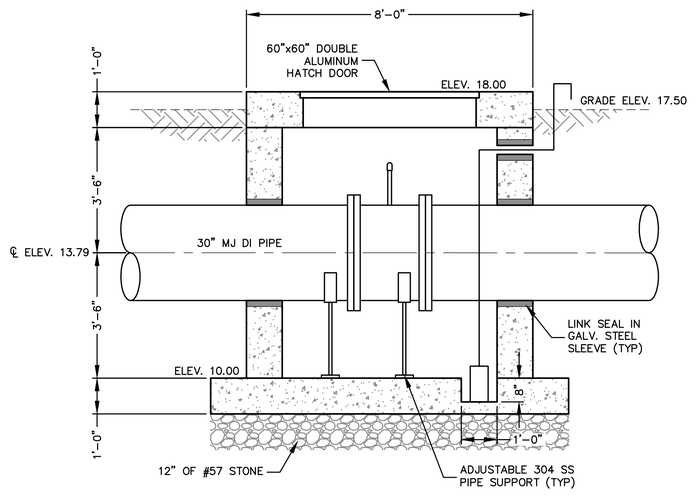
SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'

DRAWING NUMBER
C-1.19

STATUS: ISSUE FOR BID
REVISION







SECTION A/C-6.1

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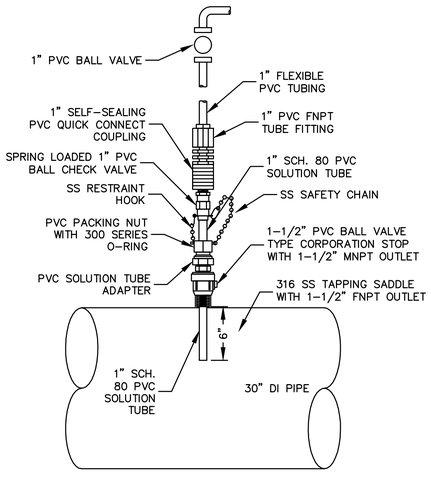

SODIUM HYPOCHLORITE INJECTOR DETAIL

SCALE: NTS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

NORMAN J. SCALLY, P.E.
No. 41338

SEAL

McKIM&CREED
1365 Hamlet Avenue
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EB0006691
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CHLORINE INJECTION PIPING

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-6.1

STATUS: ISSUE FOR BID
REVISION

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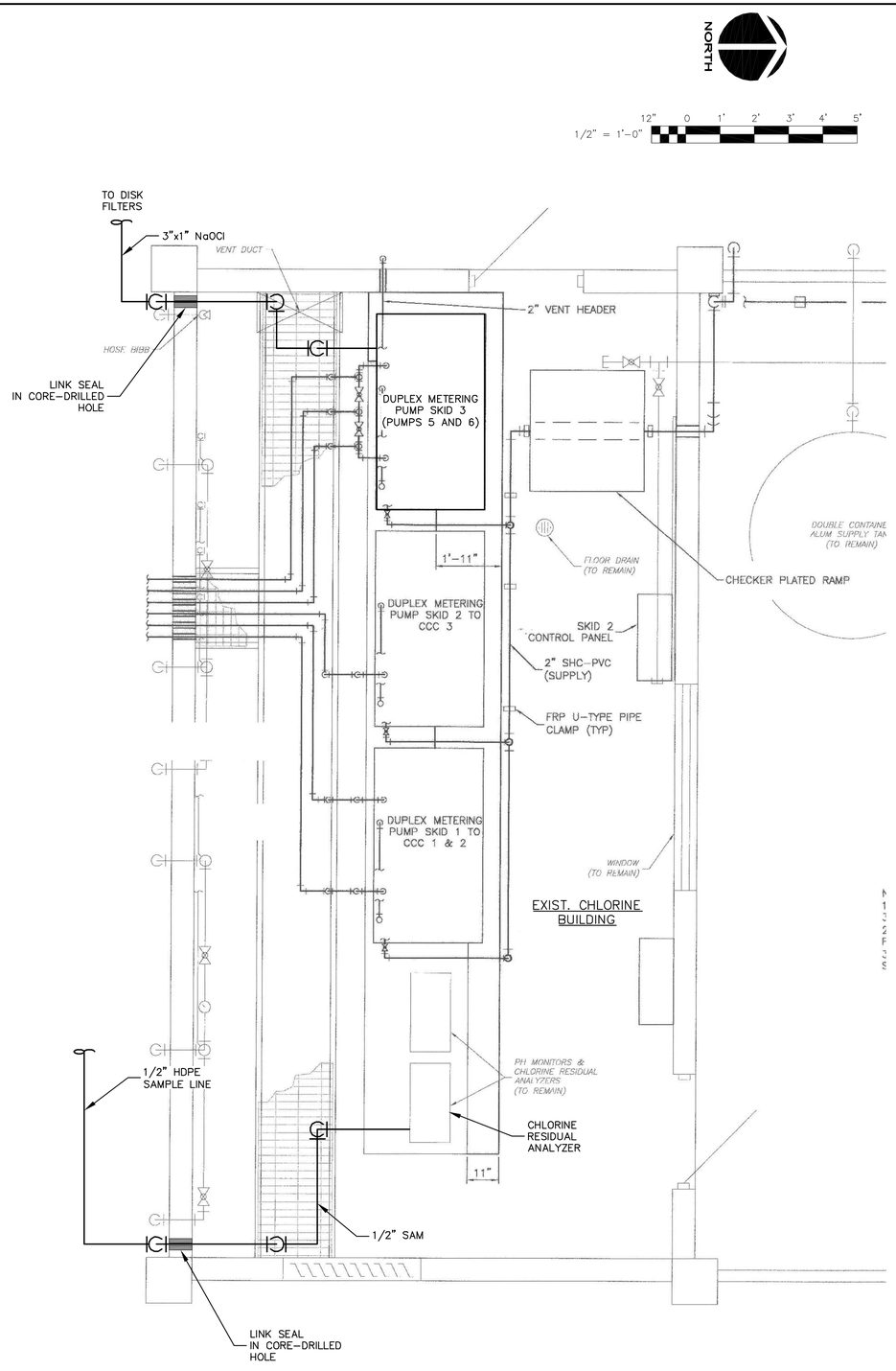

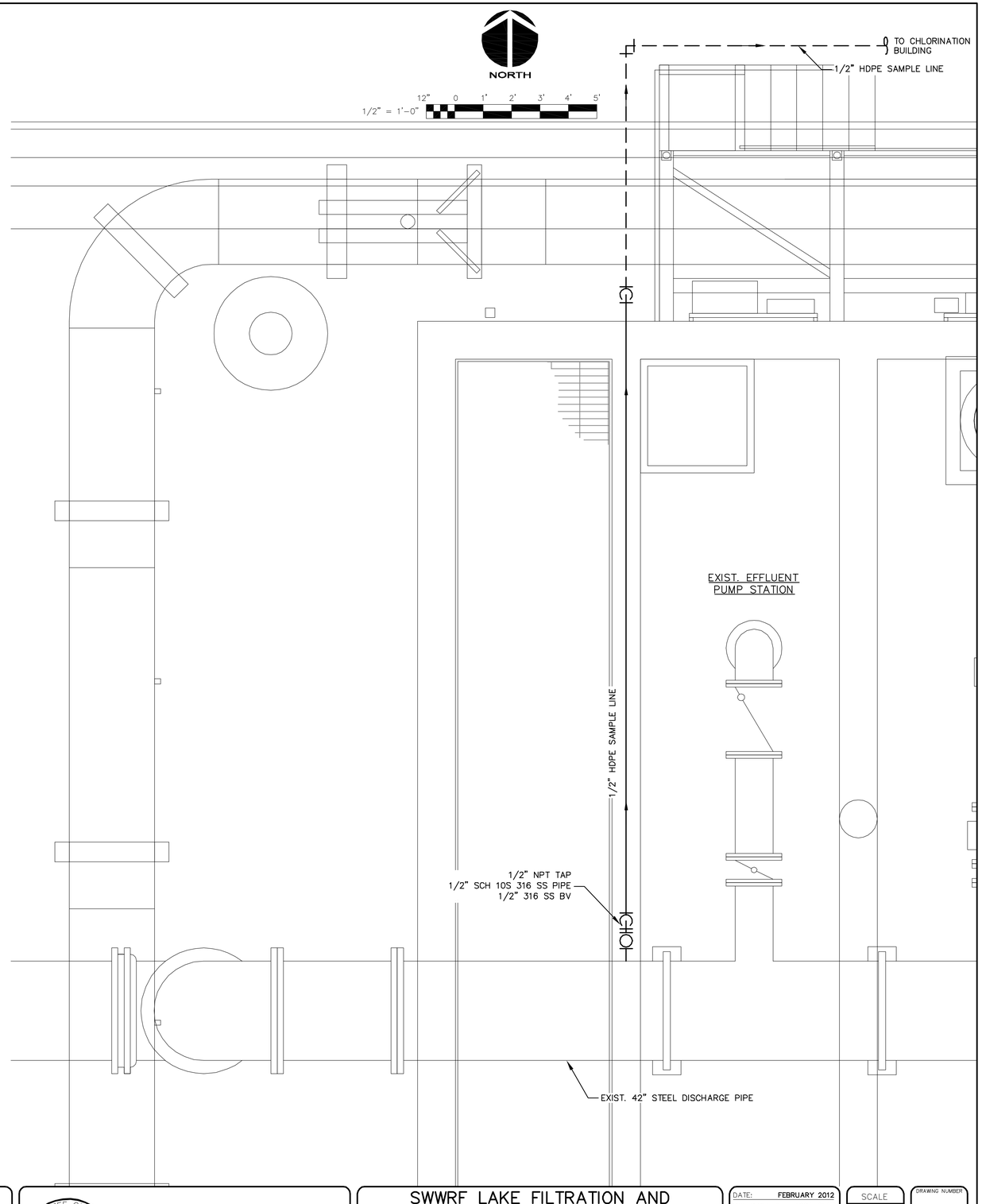

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CHLORINE INJECTION DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/2" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
C-6.2

STATUS: ISSUE FOR BID
REVISION

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STRUCTURAL 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 GENERAL, ARCHITECTURAL, CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.2 COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH SLABS AND WALLS w/ GENERAL, ARCHITECTURAL, CIVIL, ELECTRICAL AND MECHANICAL 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 CONSTRUCTION WORK PROCEEDS, INCLUDING ORDERING AND FABRICATING MATERIALS.

2.4 INDEPENDENT TESTING OF MATERIALS SHALL BE PROVIDED AS DEFINED IN PROJECT SPECIFICATIONS. IN GENERAL PROJECT INVOLVES THE FOLLOWING:
A. CONCRETE.

2.5 IF COORDIINATION OF INFORMATION PRESENTED CONFLICTS w/ THE PROJECT SPECIFICATIONS, THE DRAWINGS WILL TAKE PRECEDENCE.

2.6 IN GENERAL CALL-OUTS ARE FOR NEW CONSTRUCTION U.N.O.. EXISTING CONSTRUCTION CALL-OUTS, ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES ARE BASED ON EXISTING RECORD DRAWINGS PROVIDED TO McKIM & CREED. THE (*) SYMBOL ON INDIVIDUAL FACILITY "STRUCTURAL" DRAWINGS INDICATES EXISTING CONSTRUCTION CALL-OUTS, CONDITIONS, ELEVATIONS AND DIMENSIONS TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR U.N.O. PRIOR TO CONSTRUCTION, INCLUDING ORDERING AND FABRICATING MATERIALS. RECORD DRAWINGS PROVIDED BY THE MANATEE CO. PUBLIC UTILITIES DEPARTMENT UTILIZED INCLUDES:
A. NONE UTILIZED.

3.0 FOUNDATIONS

3.1 DESIGN ALLOWABLE SOIL BEARING PRESSURE – 1,000 PSF IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AS PREPARED BY PROFESSIONAL SERVICES INDUSTRIES, INC. (PROJECT No. 775-871 DATED MARCH 31, 2011). THE 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 OR BASE SLAB DEPTHS AND FOUNDATION DIMENSION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.2 PREPARE THE EXISTING SUBGRADE IN ACCORDANCE w/ THE GEOTECHNICAL REPORT AS PREPARED BY PROFESSIONAL SERVICES INDUSTRIES, INC. (PROJECT No. 775-871 DATED MARCH 31, 2011). IN THE EVENT UNUSUAL SOIL CONDITIONS ARE UNCOVERED, INCLUDING CONDITIONS THAT DEVIATE FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, NOTIFY THE OWNER AND ENGINEER PRIOR TO FOUNDATION CONSTRUCTION FOR INSTRUCTIONS HOW TO PROCEED. ADJUSTMENT IN THE FOOTING OR BASE SLAB DEPTHS AND GENERAL FOUNDATION CONSTRUCTION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.3 ALL FILL INSIDE THE BUILDING(S) AND 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 GEOTECHNICAL REPORT AS PREPARED BY PROFESSIONAL SERVICES INDUSTRIES, INC. (PROJECT No. 775-871 DATED MARCH 31, 2011).

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

3.5 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.

3.6 FOOTING EXCAVATIONS AND FORMS SHALL BE REVIEWED BY AN OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

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

3.8 CONSTRUCTION JOINTS IN SLABS, WALLS & FOOTINGS SHALL BE MADE AT LOCATIONS SHOWN ON DRAWINGS.

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

3.10 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.

3.11 THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION BEFORE ENCASING OR BACK FILLING AROUND ANY EXISTING UNDERGROUND STRUCTURE, PIPING, ELECTRICAL, OR OTHER UNDERGROUND WORK.

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 AND SUPPLEMENTARY REQUIREMENT S-1.

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. IN GENERAL "CLR" DISTANCES FOR CONCRETE COVER ARE PROVIDED ON THE DRAWINGS IN THE SECTIONS & DETAILS. FOR SECTIONS & DETAILS w/OUT CONCRETE COVER FOR REINFORCING BARS REFERENCE THE PROJECTS SPECIFICATIONS.

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 SLAB THK'D T/D EDGES, WALLS & FOOTINGS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS, U.N.O. ON THE DRAWINGS.

4.7 FABRICATE CONTINUOUS BARS IN SLABS, 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 REFERENCE DRAWINGS FOR REQUIREMENTS FOR LAP REINFORCING STEEL IN CONCRETE. ALL "LCS" SHALL CONFORM TO CLASS B SPLICE CRITERIA. IT IS ACCEPTABLE TO LAP REINFORCING IN NON "LCS" STRUCTURES A 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 3,000 TO 4,500 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 U.N.O.. GENERAL CONTRACTOR TO PROVIDE CONSTRUCTION JOINT LAYOUT PLAN PER THE PROJECT SPECIFICATIONS PRIOR TO CONSTRUCTION, INCLUDING ORDERING & FABRICATING MATERIALS.

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 ROUGHEN THE "BASE" CONCRETE POUR SURFACE TO A FULL AMPLITUDE OF 1/4" MINIMUM, WHERE NOTED ON THE CONSTRUCTION DRAWINGS.

5.12 CONCRETE MIXES TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. COMPRESSIVE STRENGTH TEST CYLINDERS TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE CONSTRUCTION OF THE PROJECT.

5.13 CONCRETE ACCESSORIES AS FOLLOWS:
a.) PREFORMED WATERSTOPS SHALL BE PVC IN ACCORDANCE w/ THE PROJECT SPECIFICATIONS.
b.) EXPANSIVE WATERSTOPS SHALL BE ADEKA ULTRA SEAL TYPE MC-2010M. THE WATERSTOP CAN BE EITHER ADHERED TO THE CONCRETE WITH 3M-2141 BONDING ADHESIVE OR NAILED IN PLACE USING USING 1.5 INCH CONCRETE NAILS 3 TO 6 INCHES APART.
c.) CAULK/SEALANT – SONOLASTIC (2) PART POLYSULFIDE.
d.) BONDING AGENT – SHALL BE STRUCTURAL EPOXY ADHESIVE CONFORMING TO ASTM C-881 TYPE I STRENGTH AND II, GRADE 2, CLASS B AND C WITH A MINIMUM BOND STRENGTH OF 1900 PSI.
1.) SIKA ARMATEC 110 EpoCem.

6.0 GROUT

6.1 PROVIDE NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES AND ELSEWHERE AS INDICATED ON DRAWINGS. NON-SHRINK GROUT SHALL CONFORM TO ASTM C 1107.

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

7.0 MASONRY (NOT APPLICABLE)

8.0 STRUCTURAL STEEL

8.1 STEEL SHALL CONFORM TO "STANDARD SPECIFICATION FOR STRUCTURAL STEEL," ASTM A-36 (Fy=36 ksi) FOR ANGLES, PLATES AND CHANNEL SECTIONS. WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A-572 (Fy=50ksi). HOLLOW STEEL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy=46 ksi). STEEL PIPE SHALL CONFORM TO ASTM A-53, GRADE B, (Fy=35 ksi).

8.2 STEEL WORK SHALL CONFORM TO "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS", OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., (LATEST EDITION), INCLUDING ALL SUPPLEMENTS AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", (LATEST EDITION).

8.3 CONNECTION BOLTS SHALL BE 3/4 INCH DIAMETER CONFORMING TO "STANDARD SPECIFICATION FOR HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS", ASTM A-325, UNLESS NOTED OTHERWISE CONNECTIONS ARE BEARING TYPE WITH THREADS EXCLUDED FROM SHEAR PLANES-(A-325x).

8.4 WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY AWS D1.1 "STRUCTURAL WELDING CODE". WELDING SHALL BE PERFORMED BY CERTIFIED PERSONNEL WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST PRESCRIBED IN THE AWS "STRUCTURAL WELDING CODE". ELECTRODES SHALL CONFORM TO AWS 5.5, E70XX.

8.5 LINTELS SHALL BEAR EIGHT (8) INCHES MINIMUM ON MASONRY UNLESS NOTED OTHERWISE.

8.6 THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF STEEL FRAMING AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.

8.7 ALL COPES, BLOCKS, CUTS, CUT-OFFS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL RE-ENTRANT CORNERS SHAPED, AND NOTCH-FREE TO A RADIUS OF AT LEAST 1 /2 INCH. THE FILLET AND ITS CONTIGUOUS CUTS SHALL MEET WITHOUT OFFSET OR CUTTING PAST THE POINT OF TANGENCY.

8.8 ANCHOR BOLTS SHALL BE ASTM F-1554 OR A-36 (NON-HEADED) AND SHALL HAVE HOOKS AS REQUIRED BY THE DRAWINGS. PROVIDE TWO (2) NUTS AND WASHERS WITH EACH ANCHOR BOLT AT COLUMNS UNLESS NOTED OTHERWISE.

8.9 OVERSIZED AND SLOTTED HOLES SHALL NOT BE USED FOR BOLTED CONNECTIONS ON THIS PROJECT EXCEPT AT LOCATIONS NOTED ON DRAWINGS.

8.10 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER, AS TO LOCATION AND TYPE OF SPLICE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS WILL BE REPLACED.

8.11 PRE-GROUTING BASE PLATES IS NOT PERMITTED.

8.12 ALL HOLES IN STRUCTURAL STEEL ARE TO BE PUNCHED OR DRILLED. FLAME CUTTING OF STEEL IS STRICTLY PROHIBITED.

8.13 ALL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION.

8.14 STRUCTURAL STEEL ERECTION SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

8.15 IN GENERAL SHOP CONNECTIONS SHALL BE EITHER WELDED OR BOLTED AND FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE.

8.16 FABRICATOR/CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER/ENGINEER APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS MAY BE EXPEDITED IF THE FABRICATOR ADHERES CLOSELY TO THE DETAILS, NOTES, AND INSTRUCTIONS, SHOWN ON THE DRAWINGS.

8.17 ALL GALVANIZED MATERIALS THAT ARE FIELD CUT, FIELD WELDED OR DAMAGED IN SURFACE FINISH SHALL BE CLEANED AND RE-COATED AS CALLED OUT IN THE PROJECT SPECIFICATIONS.

9.0 ALUMINUM

9.1 ALUMINUM FABRICATION SHALL BE IN CONFORMANCE WITH THE ALUMINUM ASSOCIATION, INC. "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

9.2 UNLESS NOTED OTHERWISE, MATERIALS SHALL BE:
a. PLATE & SHEET – ASTM B209; 6061-T6, 6061-T651 ALLOY.
b. EXTRUDED SHAPES – ASTM B221; 6061-T6, 6061-T651 ALLOY. PIPE SECTIONS ARE SCHEDULE 40 U.N.O..
c. CASTINGS – ASTM B108; 214 ALLOY.
d. BOLTS – ASTM A193; GRADE B8 OR, ASTM 276; TYPE 316 STAINLESS STEEL.
e. NUTS – ASTM A194; GRADE M, OR ASTM 276; TYPE 316 STAINLESS STEEL.

9.3 ALUMINUM SHALL BE SEPARATED FROM DIRECT CONTACT WITH OTHER MATERIALS (STEEL, CONCRETE, ETC.) BY PRESSURE SENSITIVE TAPE, BITUMASTIC COATING, OR OTHER PROTECTIVE METHOD SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

9.4 CONNECTIONS SHALL HAVE A MINIMUM OF TWO 3/4" DIAMETER STAINLESS STEEL BOLTS.

9.5 WELDING ALUMINUM SHALL CONFORM TO AWS A5.10 & THE REQUIREMENTS OF THE ALUMINUM ASSOCIATIONS "ALUMINUM DESIGN MANUAL" (LATEST EDITION)
TABLE 7.1-1 FOR WELD FILLERS FOR WROUGHT ALLOYS.

9.6 REFERENCE PROJECT SPECIFICATIONS FOR HANDRAIL REQUIREMENTS.

10.0 ABBREVIATIONS

10.1 THE FOLLOWING LIST OF ABBREVIATIONS IS NOT INTENDED TO REPRESENT ALL THOSE USED ON THE DRAWINGS, BUT TO SUPPLEMENT THE MORE COMMON ABBREVIATIONS USED.

ADD'L	=	ADDITIONAL	LLH	=	LONG LEG HORIZONTAL
AL	=	ALUMINUM	LLV	=	LONG LEG VERTICAL
BM.	=	BEAM	L.P.	=	LOW POINT
B.O.	=	BOTTOM OF	LSL	=	LONG SLOTTED
BRG.	=	BEARING	MAT'L.	=	MATERIAL
BTM.	=	BOTTOM	MECH.	=	MECHANICAL
C.I.P.	=	CAST-IN-PLACE	MFG.	=	MANUFACTURER
CJ	=	CONSTRUCTION JT.	MIN.	=	MINIMUM
CLR.	=	CLEAR	MTL.	=	METAL
COL.	=	COLUMN	NO.	=	NUMBER
CONC.	=	CONCRETE	N.S.	=	NEAR SIDE
CONN.	=	CONNECTION	N.T.S.	=	NOT TO SCALE
CONT.	=	CONTINUOUS	O.C.	=	ON CENTER
COORD.	=	COORDINATE	O/F	=	OUTSIDE FACE
CTR.	=	CENTER	O/O	=	OUT TO OUT
CTR'D.	=	CENTERED	OPNG.	=	OPENING
DIR.	=	DIRECTION	OPP.	=	OPPOSITE
DIST.	=	DISTANCE	ORIENT.	=	ORIENTED
DWG.	=	DRAWING	PLCS.	=	PLACES
DWG's.	=	DRAWINGS	PROJ.	=	PROJECT
DWL.	=	DOWEL	P.S.	=	PUMP STATION
DWL.'s	=	DOWELS	RAD.	=	RADIUS
EA.	=	EACH	RECT.	=	RECTANGULAR
EFFL.	=	EFFLUENT	REF.	=	REFERENCE
EL	=	ELEVATION	REINF.	=	REINFORCING
E.O.	=	EDGE OF	REINF.	=	REINFORCED
EQUIP.	=	EQUIPMENT	REQ'D.	=	REQUIRED
EXIST.	=	EXISTING	SIM.	=	SIMILAR
EXP.	=	EXPANSION	SL.	=	SLOPED
EXTR.	=	EXTERIOR	SPA.	=	SPACED
FDN.	=	FOUNDATION	SPECS.	=	SPECIFICATIONS
FLG.	=	FLANGE	SQ.	=	SQUARE
F.S.	=	FAR SIDE	S.S.	=	STAINLESS STEEL
FT.	=	FEET	SSL	=	SHORT SLOTTED
FTG.	=	FOOTING	STD.	=	STANDARD
GA.	=	GAGE	STL.	=	STEEL
GALV.	=	GALVANIZED	SUPPT.	=	SUPPORT
GALV'D.	=	GALVANIZED	T&B	=	TOP & BOTTOM
G'RAIL	=	GUARD RAIL	T/D	=	TURN DOWN
HORZ.	=	HORIZONTAL	THK.	=	THICK
H.P.	=	HIGH POINT	THK'D	=	THICKENED
H'RAIL	=	HAND RAIL	T.O.	=	TOP OF
I/F	=	INSIDE FACE	TYP.	=	TYPICAL
INFO.	=	INFORMATION	U.N.O.		UNLESS NOTED OTHERWISE
INTR.	=	INTERIOR	VERT.		VERTICAL
JT.	=	JOINT	W.W.F.		WELDED WIRE FABRIC

DESIGN LOADS:

LIVE LOAD:	300 PSF SLAB-ON-GRADE, 100 PSF STAIRS & PLATFORMS
ROOF:	NA
SNOW:	NA, IMPORTANCE FACTOR (Is): NA
SEISMIC:	NA, IMPORTANCE FACTOR (Ie): NA
WIND: ZONE:	130 mi/hr, EXPOSURE C, CATEGORY III, IMPORTANCE FACTOR (Iw): 1.15

FLORIDA BUILDING CODE (FBC) 2007 & ASCE 7-05 WIND DESIGN:

CALCULATED WIND BASE SHEARS: Vx = 1.7 k Vy = 4.3 k (FILTER UNIT CURBS) [EA. PAIR]

DESIGN CRITERIA:

CONCRETE 28 DAY COMPRESSIVE STRENGTH:	
SLAB-ON-GRADE:	f'c = 4,000 psi
EQUIPMENT PADS:	f'c = 3,000 psi
WALLS OF LIQUID CONTAINMENT STUCTURES (LCS):	f'c = 4,500 psi
SLABS OF LCS:	f'c = 4,500 psi
FOOTINGS:	f'c = 4,000 psi
BELOW GRADE & RETAINING WALLS:	f'c = 4,000 psi
SIDEWALK:	f'c = 3,000 psi
REINFORCING STEEL:	ASTM A615, GRADE 60
WELDED WIRE FABRIC:	ASTM A185
STRUCTURAL STEEL:	REF. STRUCTURAL NOTE 8.1
ALUMINUM:	REF. STRUCTURAL NOTE 9.2
BOLTS SHALL BE 3/4"ø ASTM A325 OR TYPE 316 S.S.:	REF. STRUCTURAL NOTES 8.3 & 9.2.d
ANCHOR BOLTS SHALL BE 3/4"ø ASTM F-1554 OR ASTM A-36 (STEEL); TYPE 316 S.S. (ALUMINUM):	REF. STRUCTURAL NOTE 8.8
STEEL ELECTRODES SHALL CONFORM TO:	AWS 5.5 E70XX
ALUMINUM WELD FILLERS ALLOYS SHALL CONFORM TO:	AWS A5.10 (REF. STRUCTURAL NOTE 9.5)
SOIL BEARING CAPACITY:	REF. STRUCTURAL NOTE 3.1

LEGEND:

ENLARGED PLAN AREA, DETAIL	=	
CONC. WALL, PAD, ETC.	=	
GROUT	=	
GRATING	=	
DETAIL OR SECTION NUMBER/SHOWN ON SHEET	=	X.SYY
PROJECT NORTH	=	NORTH
ELEVATION DATUM	=	
ELEVATION NUMBER/SHOWN ON SHEET	=	X.S-YY
ELEVATIONS X'-X" (Y.YY')	=	X'-X" = DISTANCE TO/FROM FACILITY REFERENCE EL 0'-0" Y.YY' = EQUIVALENT SITE EL VERTICAL DATUM

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY FLORIDA

MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA AND LEGEND

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
S-0.1

STATUS: ISSUE FOR BID
REVISION

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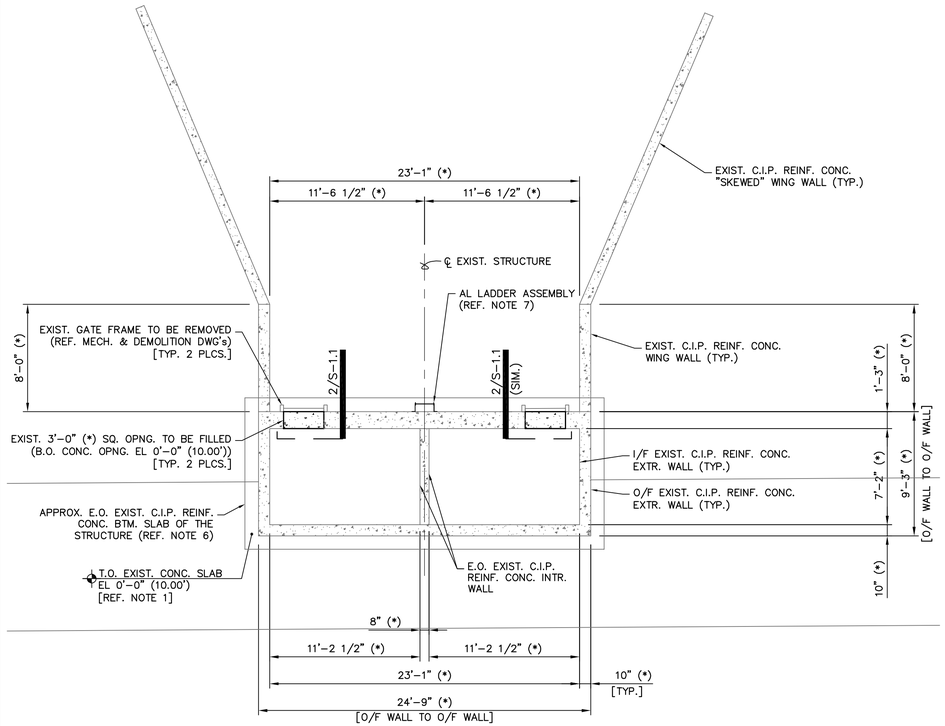


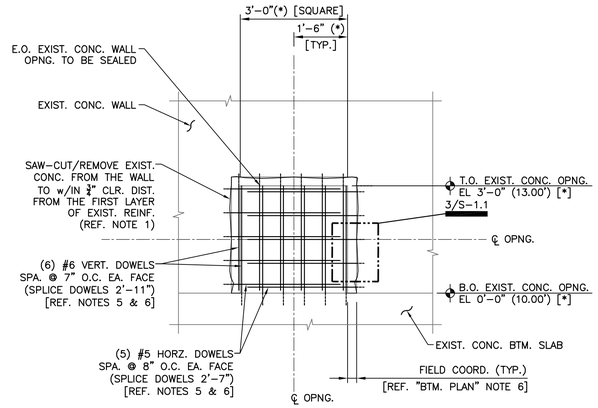
NORTH

1 - PLAN - NORTH POND OUTLET STRUCTURE BOTTOM LAYOUT

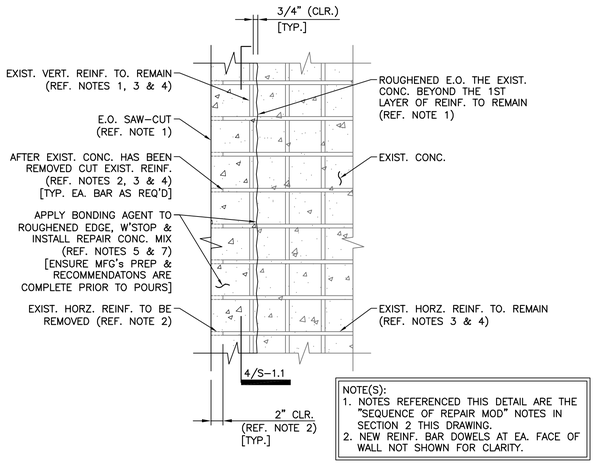
SCALE: 3/16"=1'-0"

BOTTOM PLAN NOTES:

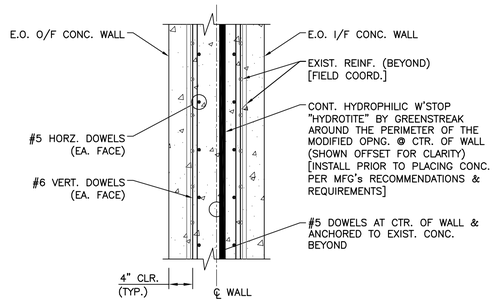
1. REFERENCE ELEVATION FOR THE EXISTING NORTH POND OUTLET STRUCTURE FACILITY IS THE BOTTOM SLAB T.O. CONC. EL 0'-0" = EL 10'-0" (10.00') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE VARIEIS FROM EL 16.00 (±) L.P. TO EL 29.00' (±) H.P.. REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB & WALL PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
5. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB.
6. RECORD DRAWINGS FOR THE EXISTING FACILITY WERE NOT PROVIDED BY THE OWNER FOR REVIEW & USE IN DESIGN. IN ADDITION SURVEY DATA FOR THE FACILITY DID NOT PROVIDE DATA DUE TO EXISTING BELOW GRADE CONDITIONS. THE BOTTOM SLAB EDGE OF CONCRETE SHOWN IS AN APPROXIMATE LOCATION BASED UPON EXPECTED CONSTRUCTION OF SIMILAR FACILITIES. EXISTING REINFORCING BAR SIZES AND SPACING IN WALLS & SLABS IS NOT KNOWN & REQUIRES COORDINATION DURING CONSTRUCTION OF THE MODIFICATION.
7. ANCHOR AL LADDER ASSEMBLY TO THE EXIST. STRUCTURE WALL. REFERENCE SECTIONS & DETAILS FOR ADDITIONAL INFORMATION.



SEQUENCE OF REPAIR MOD NOTES:
1. REMOVE EXIST. CONCRETE FROM THE E.O. SAW-CUT TO A ROUGHENED EDGE 3/4" BEYOND THE FIRST LAYER OF REINFORCEMENT PARALLEL TO THE E.O. THE SAW-CUT. USE EXTREME CAUTION NOT TO DAMAGE THE EXISTING REINFORCING. EXISTING REINFORCING DAMAGED BY THE GC OR THEIR SUBS SHALL BE REPAIRED & REPLACED BY THE GC, PER THE DIRECTION OF THE ENGINEER & AT NO EXPENSE TO THE OWNER OR THE ENGINEER.
   REGARDING CONCRETE REMOVAL:
   a.) IMPACT TOOLS CAN CAUSE MICRO-CRACKS IN THE CONCRETE TO REMAIN. IF IMPACT TOOLS ARE USED ADD'L CONCRETE TO BE REMOVED BY WATER JETTING OR OTHER APPROVED NON-IMPACT MEANS.
2. CUT EXISTING REINFORCING BARS PERPENDICULAR TO THE E.O. THE SAW-CUT TO 2" CLEAR OF THE E.O. THE SAW-CUT.
3. CLEAN EXPOSED REINFORCING OF ALL LOOSE CONC., AGGREGATE, DIRT, DUST & DEBRIS.
4. COAT REINFORCING BARS w/ SIKA FERROGARD 903.
5. INSTALL VERT. & HORZ. DWL.'s AT I/F & O/F WALL w/ 4" CLR. DISTANCE FROM THE E.O. CONCRETE. DOWEL SIZE & SPA. AS NOTED.
6. ANCHOR DWL.'s w/ HILTI HY150 INJECTION ADHESIVE. EMBED THE VERT. DWL.'s 4" (MIN.) IN TO THE EXIST. CONCRETE WALL & THE HORZ. DWL.'s 2 1/2" (MIN.) IN TO THE EXIST. CONCRETE WALL.
7. APPLY BONDING AGENT & W'STOP TO ROUGHENED SURFACES & INSTALL REPAIR CONCRETE AS FOLLOWS:
   a.) 4500 PSI PEA-GRAVEL MIX w/ SIKADUR 32 HI-MOD LPL, HIGH STRENGTH EPOXY BONDING/GROUTING ADHESIVE. (MIX IS SIM. TO PROJ. SPEC. EXCEPT FOR AGGREGATE SIZE.)



NOTE(S):
1. NOTES REFERENCED THIS DETAIL ARE THE "SEQUENCE OF REPAIR MOD" NOTES IN SECTION 2 THIS DRAWING.
2. NEW REINF. BAR DOWELS AT EA. FACE OF WALL NOT SHOWN FOR CLARITY.



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

NORTH POND OUTLET STRUCTURE MODIFICATION BOTTOM PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-1.1

STATUS: ISSUE FOR BID
REVISION

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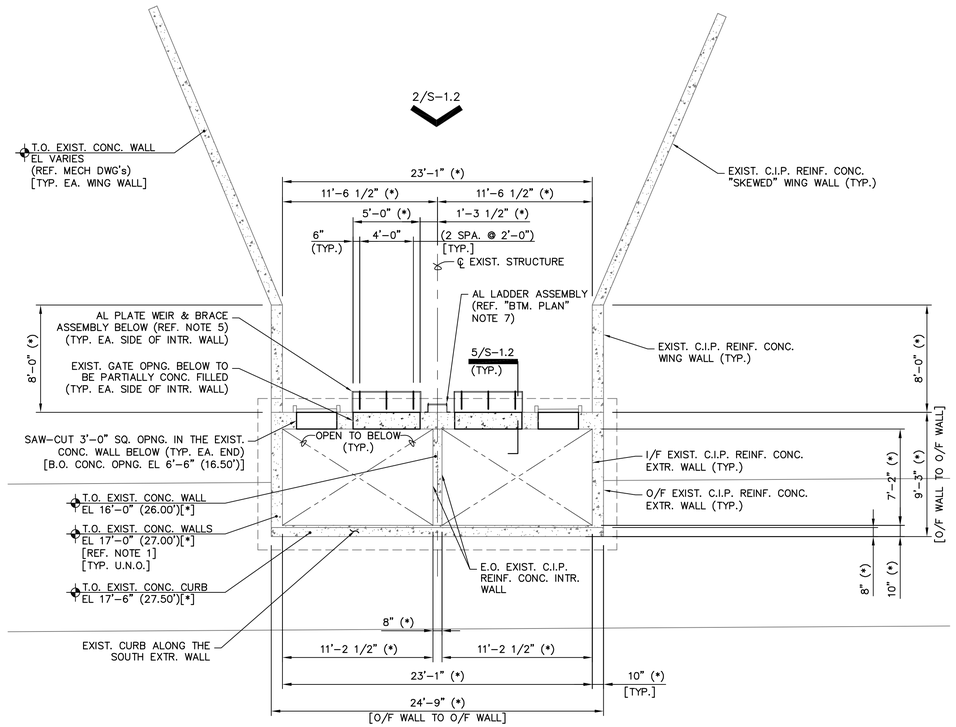
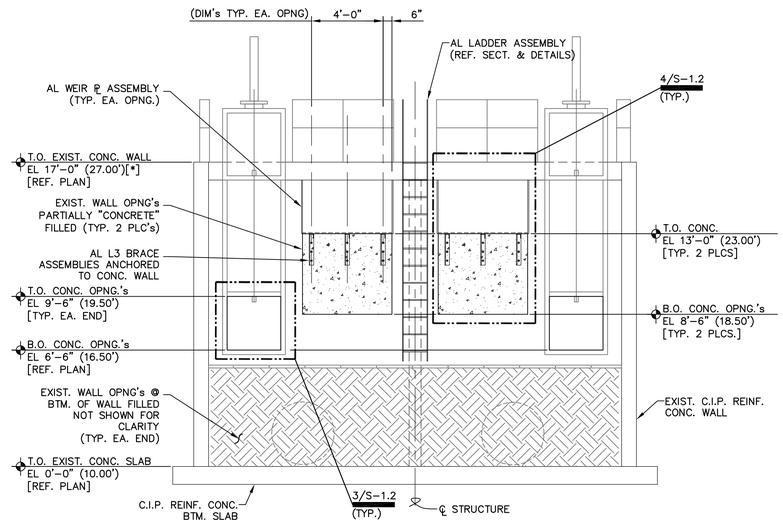
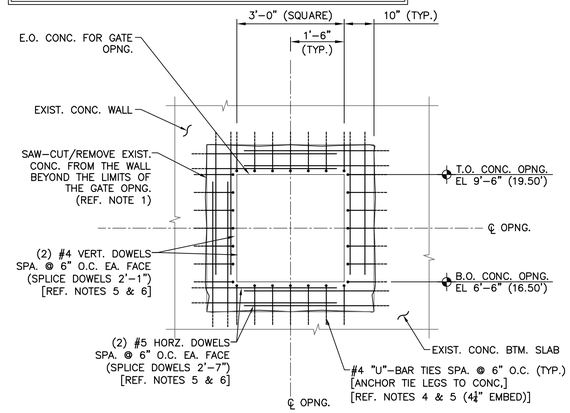
TOP PLAN NOTES:

1. REFERENCE ELEVATION FOR THE EXISTING NORTH POND OUTLET STRUCTURE FACILITY IS THE BOTTOM SLAB T.O. CONC. EL 0'-0" = EL 10'-0" (10.00') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB & WALL PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
4. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO CONC. WALLS.
5. WEIR PLATE ASSEMBLY TO BE ANCHORED TO THE CONCRETE WALL BELOW. REFERENCE SECTIONS & DETAILS FOR ADDITIONAL INFORMATION.
6. AL. GRATING TO BE REPLACED AT THE TOP OF THE FACILITY NOT SHOWN FOR CLARITY. REFERENCE MECH. DWG's FOR INFORMATION.
7. AL GUARD RAIL & POST ASSEMBLY REQUIREMENTS NOT SHOWN FOR CLARITY. REFERENCE MECH. DWG's FOR INFORMATION.

SEQUENCE OF REPAIR MOD NOTES:
1. REMOVE EXIST. CONCRETE FROM THE EXISTING WALL. REMOVE CONCRETE SO THAT SAW-CUT IS 10" BEYOND THE LIMITS OF THE 3'-0" SQ. GATE OPNG.
   REGARDING CONCRETE REMOVAL:
   a.) IMPACT TOOLS CAN CAUSE MICRO-CRACKS IN THE CONCRETE TO REMAIN. IF IMPACT TOOLS ARE USED ADD'L CONCRETE TO BE REMOVED BY WATER JETTING OR OTHER APPROVED NON-IMPACT MEANS.
2. CLEAN EXPOSED REINFORCING OF ALL LOOSE CONC., AGGREGATE, DIRT, DUST & DEBRIS.
3. COAT EXPOSED EXIST. REINFORCING BARS w/ SIKA FERROGARD 903.
4. INSTALL VERT. & HORZ. DWL.'s AT I/F & O/F WALL w/ 4" CLR. DISTANCE FROM THE E.O. CONCRETE. DOWEL SIZE & SPA. AS NOTED. INSTALL #4 TIES w/ 2" CLR. DISTANCE FROM THE E.O. THE GATE OPNG.
5. ANCHOR DWL.'s w/ HILTI HY150 INJECTION ADHESIVE. EMBED THE VERT. DWL.'s 4½" (MIN.) IN TO THE EXIST. CONCRETE WALL & THE HORZ. DWL.'s 5" (MIN.) IN TO THE EXIST. CONCRETE WALL.
6. APPLY BONDING AGENT & W'STOP TO ROUGHENED SURFACES & INSTALL REPAIR CONCRETE AS FOLLOWS:
   a.) 4500 PSI PEA-GRAVEL MIX w/ SIKADUR 32 HI-MOD LPL, HIGH STRENGTH EPOXY BONDING/GROUTING ADHESIVE. (MIX IS SIM. TO PROJ. SPEC. EXCEPT FOR AGGREGATE SIZE.)



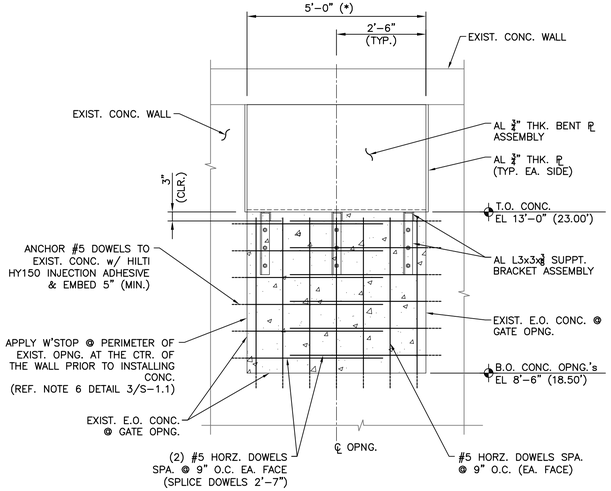


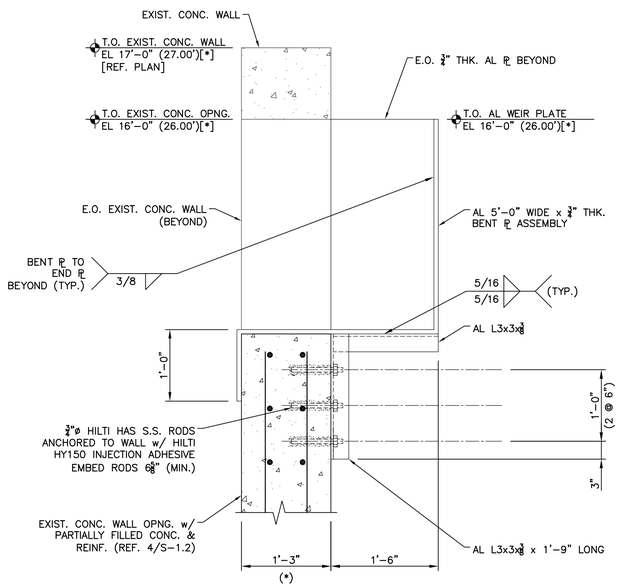


NORTH

1 - PLAN - NORTH POND OUTLET STRUCTURE TOP LAYOUT

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





REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

NORTH POND OUTLET STRUCTURE MODIFICATION TOP PLAN, SECTIONS AND DETAILS

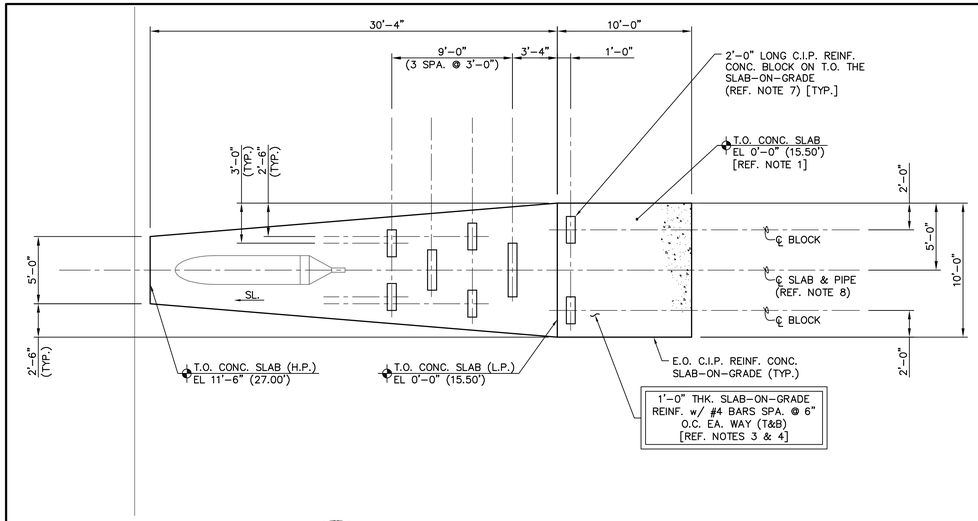
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-1.2

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\90-Drawings\Structural\S-1_2-90104-10240147.dwg, 2/15/2012 3:58:48 PM, Bill Band



NORTH

1 - PLAN - REJECT POND DISCHARGE STRUCTURE LAYOUT

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

LAYOUT PLAN NOTES:

1. REFERENCE ELEVATION FOR THE RECLAIM STORAGE POND DISCHARGE STRUCTURE FACILITY IS THE SLAB-ON-GRADE T.O. CONC. EL 0'-0" = EL 15'-6" (15.50') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE VARIES FROM 15.50' (±) L.P. TO 27.00' (±) H.P.. REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FACILITY SLAB-ON-GRADE PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, & MECHANICAL DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB.
7. C.I.P. REINFORCED CONCRETE ENERGY DISSIPATION BLOCKS ON TOP OF THE SLAB-ON-GRADE ARE 8" WIDE x 5" HIGH U.N.O..
8. CENTERLINE OF THE ENERGY DISSIPATION BLOCKS IS EQUAL TO THE CENTERLINE OF THE SLAB-ON-GRADE U.N.O..

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

DISCHARGE STRUCTURE PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-1.4

STATUS: ISSUE FOR BID
REVISION

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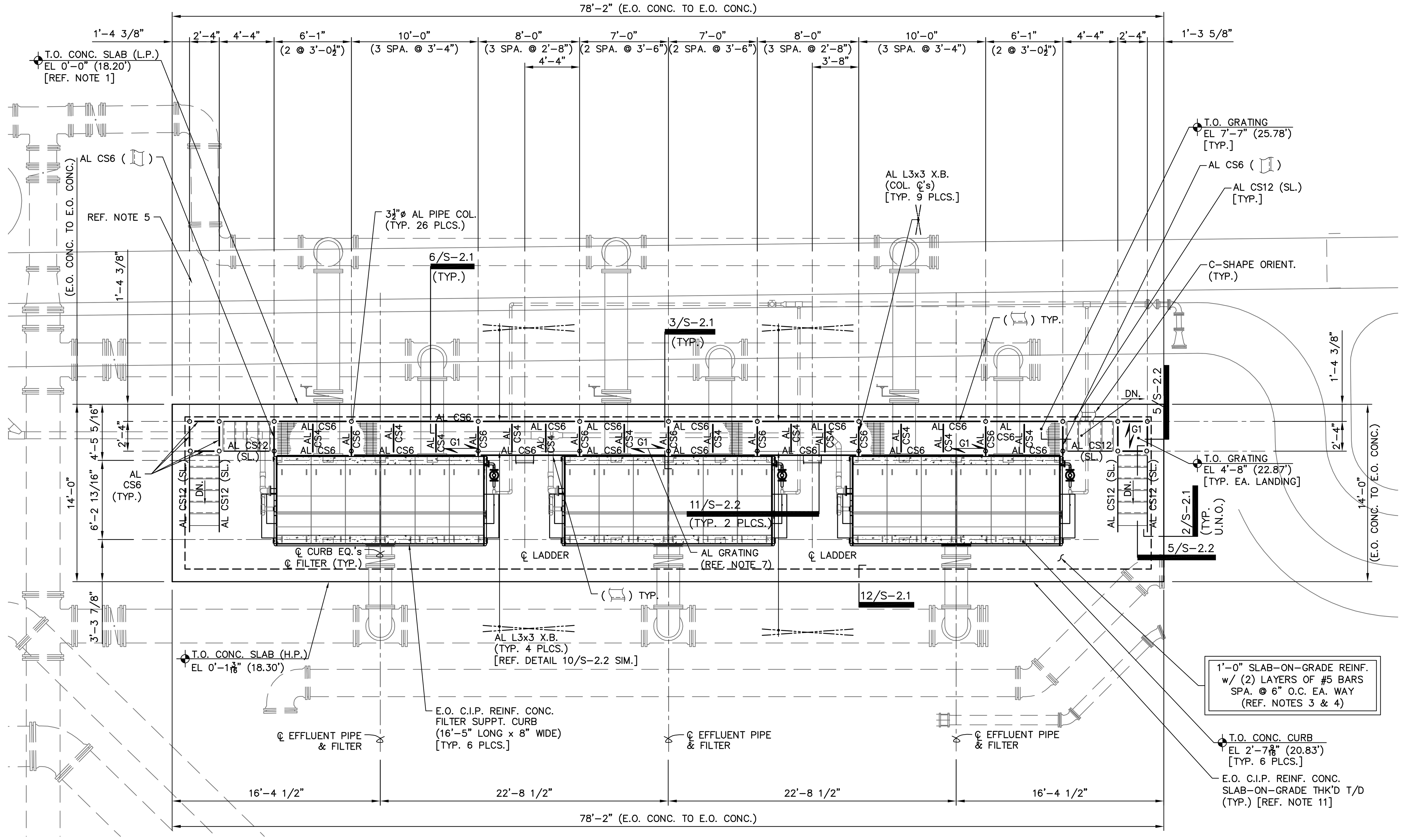
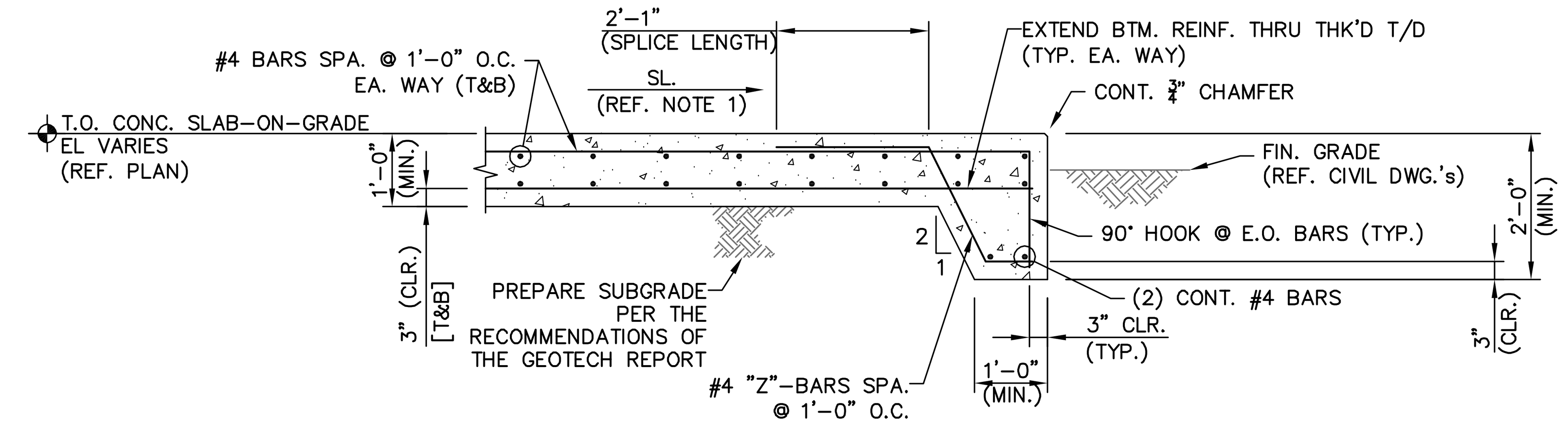


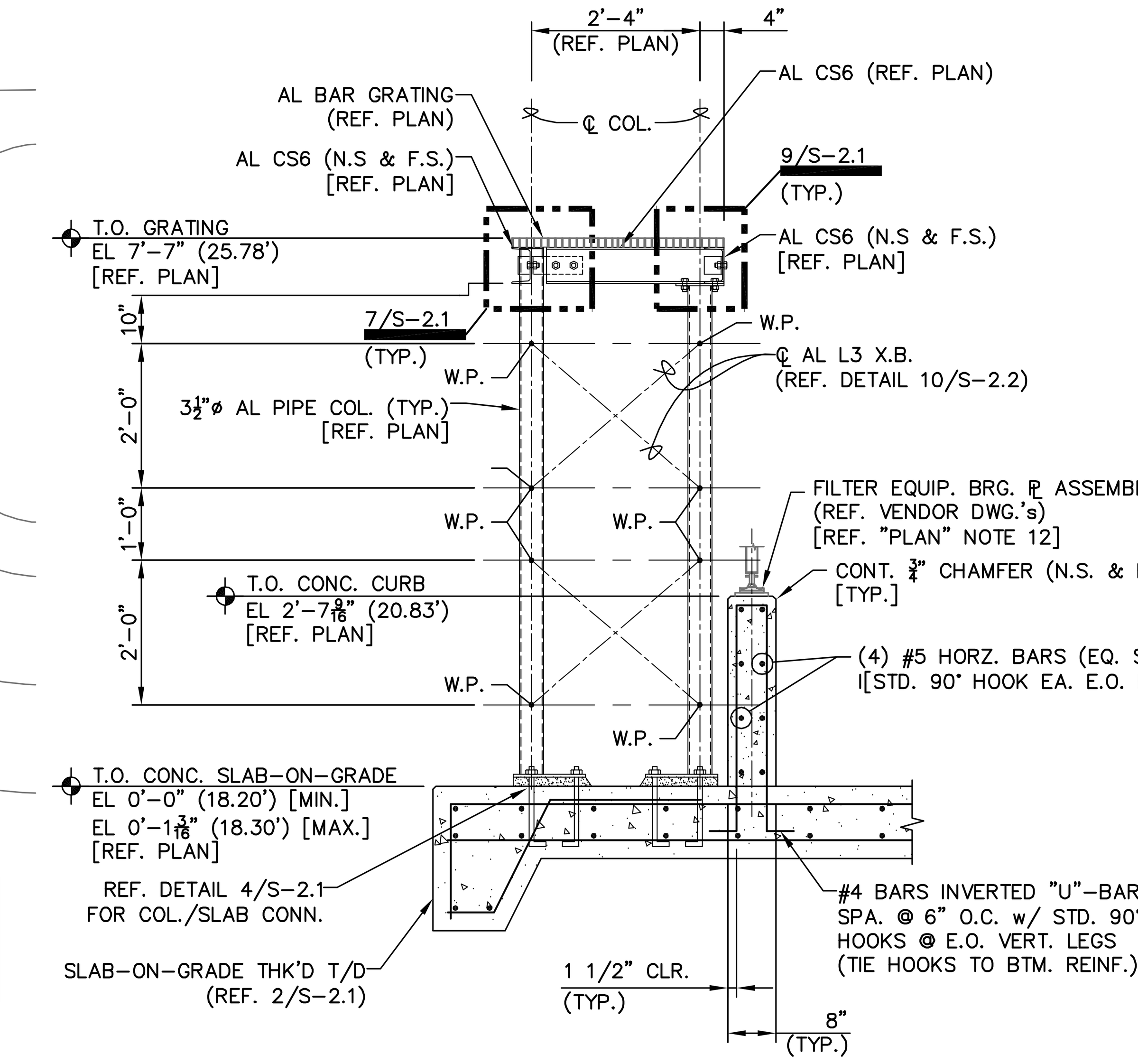
1 - PLAN - GRAVITY DISK FILTER SLAB
SCALE: 3/16"=1'-0"

FOUNDATION PLAN NOTES:

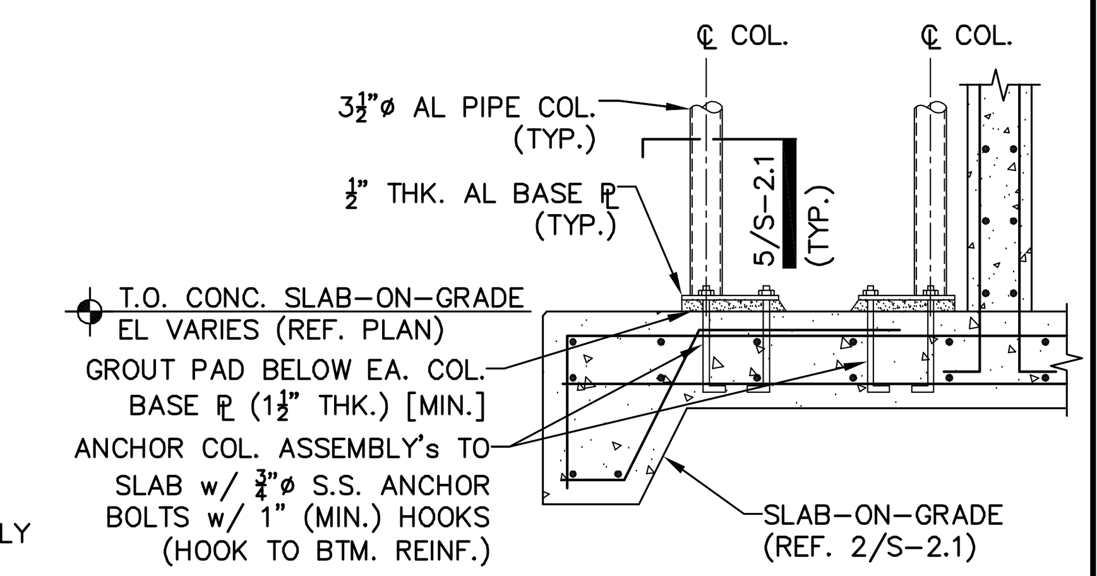
1. REFERENCE ELEVATION FOR THE GRAVITY DISK FILTER FACILITY IS THE SLAB-ON-GRADE T.O. CONC. L.P. EL 0'-0" = EL 18'-2 3/8" (18.20') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE IS 17.70' (±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FACILITY SLAB-ON-GRADE PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB & CURB.
7. " ⟶ " SYMBOL ON PLANS INDICATES SPAN DIRECTION OF GRATING MAIN BEARING BARS. GRATING IS ALUMINUM (AL) RECTANGULAR BAR U.N.O..
   G1 = 1 1/2 x 3/16" AL RECTANGULAR BAR GRATING (MFG's 19 "SG" SERIES SPACE PROFILE OR GREATER).
8. ATTACH GRATING TO AL SUPPORT FRAMING w/ S.S. CLIPS PER GRATE MFG's. RECOMMENDATIONS.
9. ALUMINUM FRAMING SECTIONS:
   AL CS4 = CS4x2.33 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   AL CS6 = CS6x4.03 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   AL CS12 = CS12x8.27 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   X.B. = ALUMINUM L3x3x1/4 L-SHAPE SECTION "X"-CROSS BRACING.
10. IN GENERAL FOR PLATFORM CONNECTIONS NOT SHOWN IT IS THE FABRICATOR'S RESPONSIBILITY TO PROVIDE IN THE PROJECT SHOP DRAWINGS.
11. WHERE SLAB WILL BE CONSTRUCTED TO ADJACENT CONCRETE SIDEWALK SECTIONS INSTALL EXTR. GRADE EXP. JT. MATERIAL. CAULK & SEAL THE TOP OF JOINT w/ SONOLASTIC "SL-2" POLYURETHANE OR AN APPROVED EQUAL.
12. PROVIDE GROUT PAD IF REQ'D BY THE FILTER EQUIPMENT MFG. TO ENSURE EQUIPMENT IS INSTALLED LEVEL & w/IN MFG.'s ALLOWED TOLERANCES. GC TO FIELD COORDINATE T.O. CONC. CURB EL AS REQUIRED.



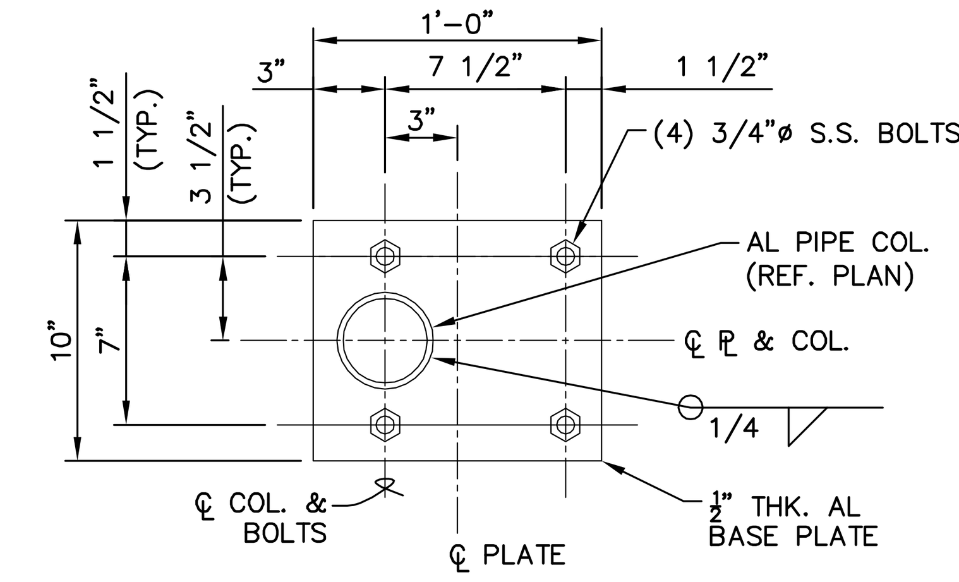
2 - SECTION - TYP. E.O. REINF. CONC. SLAB-ON-GRADE SUPPT. PAD @ GRADE
SCALE: 1/2" = 1'-0"



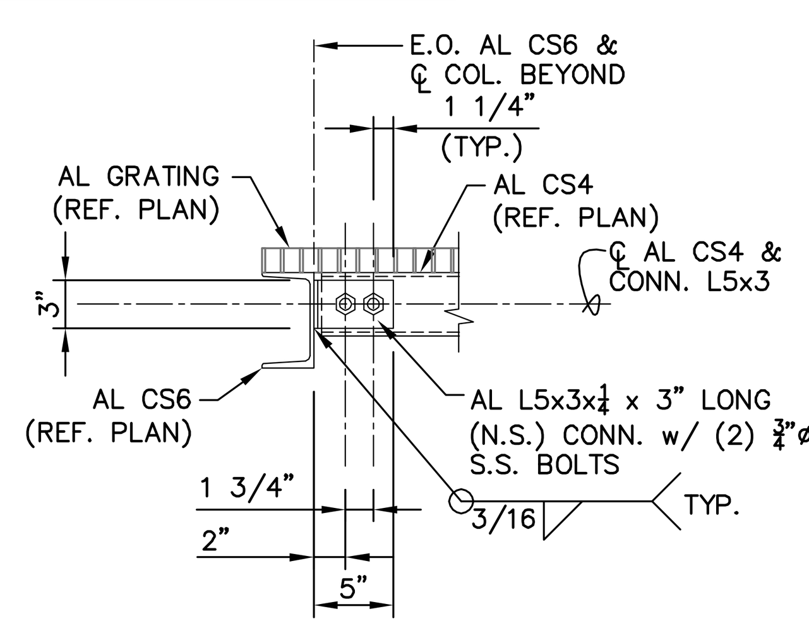
3 - SECTION - THRU AL PLATFORM FRAMING @ COL.'s
SCALE: 1/2" = 1'-0"



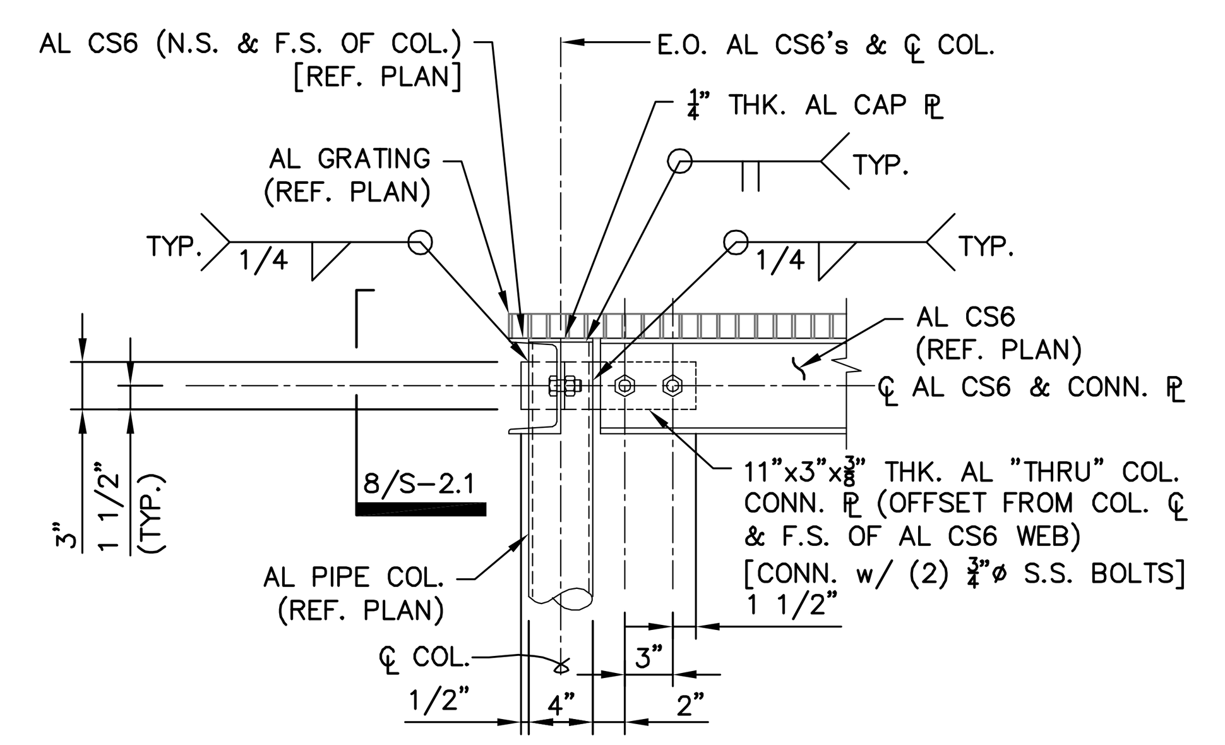
4 - DETAIL - AL COL. / SLAB CONN.'s
SCALE: 1/2" = 1'-0"



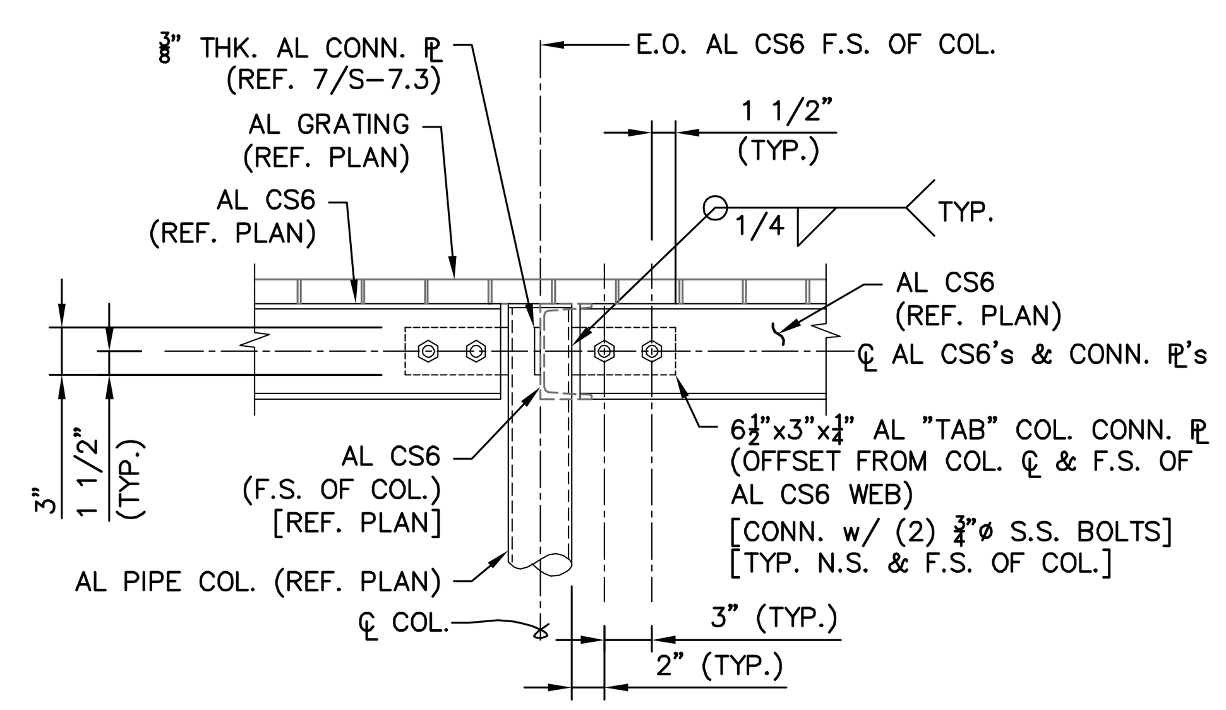
5 - SECTION - AL COL. BASE PLATE
SCALE: 1 1/2" = 1'-0"



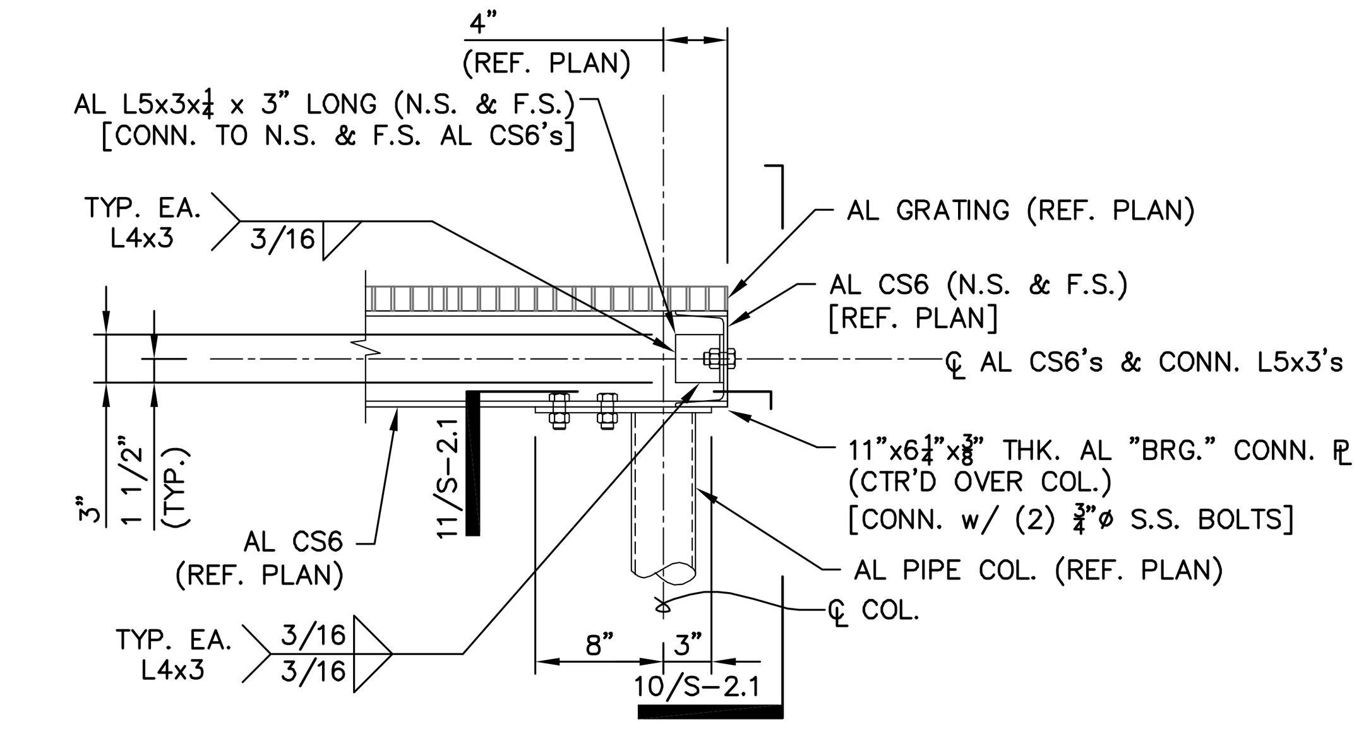
6 - SECTION - AL CS6 / AL CS4 CONN.
SCALE: 1" = 1'-0"



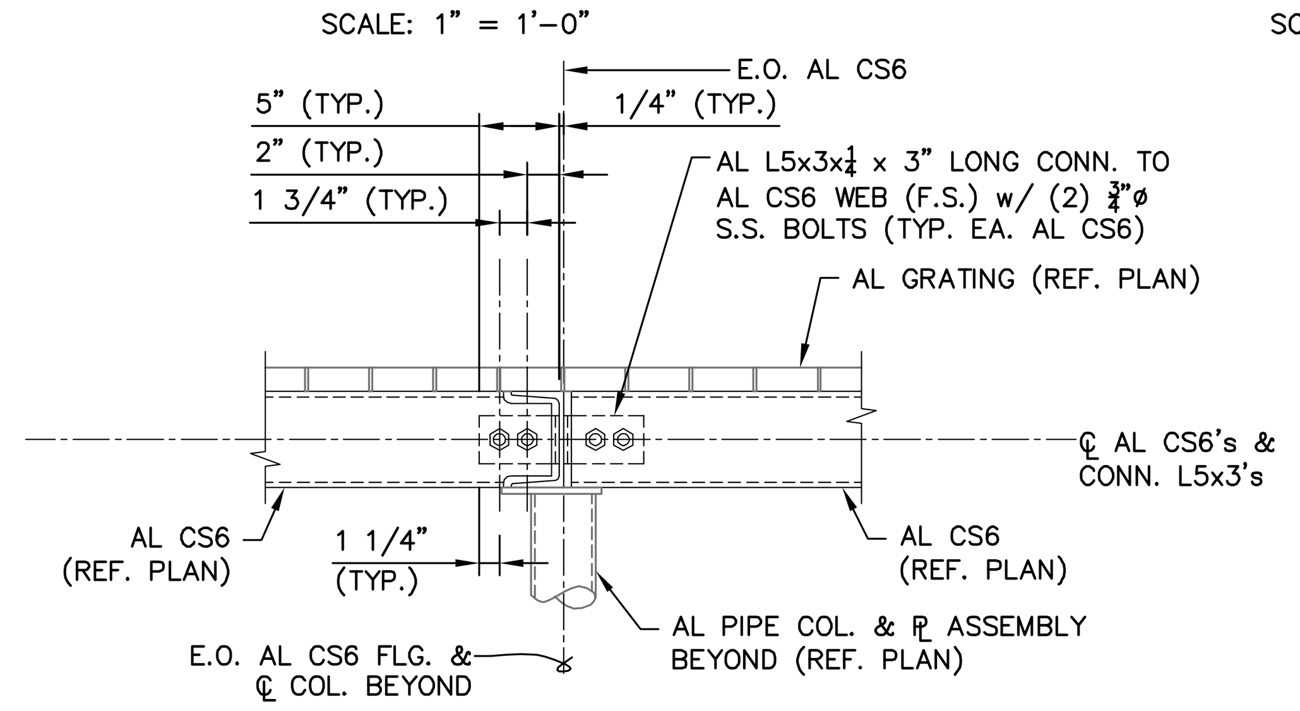
7 - DETAIL - AL PIPE COL. / AL CS6 THRU CONN. ℙ
SCALE: 1" = 1'-0"



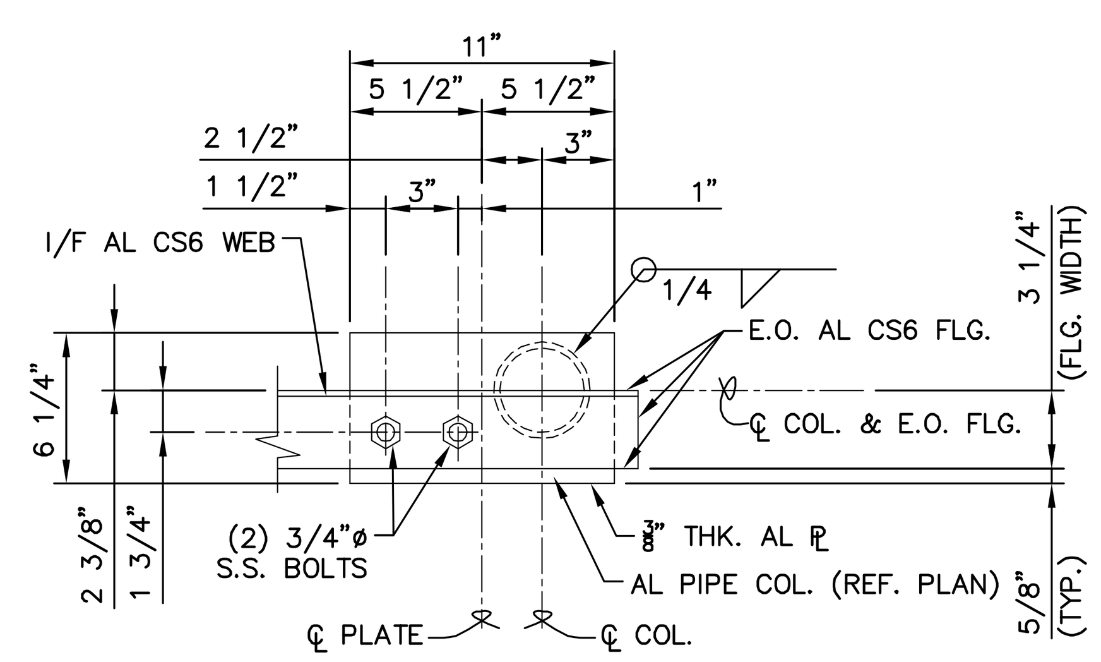
8 - SECTION - AL PIPE COL. / AL CS6 TAB CONN. ℙ
SCALE: 1" = 1'-0"



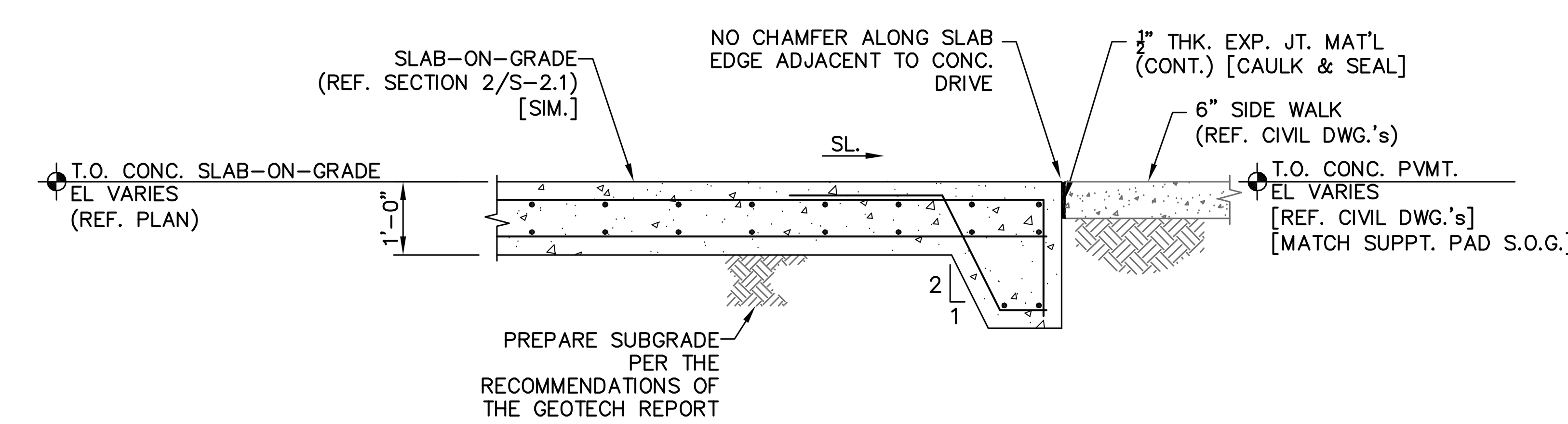
9 - DETAIL - AL PIPE COL. / AL CS6 BRG. CONN. ℙ
SCALE: 1" = 1'-0"



10 - SECTION - AL CS6 / AL CS6 / AL CS6 CONN.
SCALE: 1" = 1'-0"



11 - SECTION - AL COL. / BRG. ℙ CONN.
SCALE: 1 1/2" = 1'-0"



12 - SECTION - TYP. E.O. REINF. CONC. SLAB-ON-GRADE SUPPT. PAD @ PVMT.
SCALE: 1/2" = 1'-0"

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

SEAL

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EB0006691
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

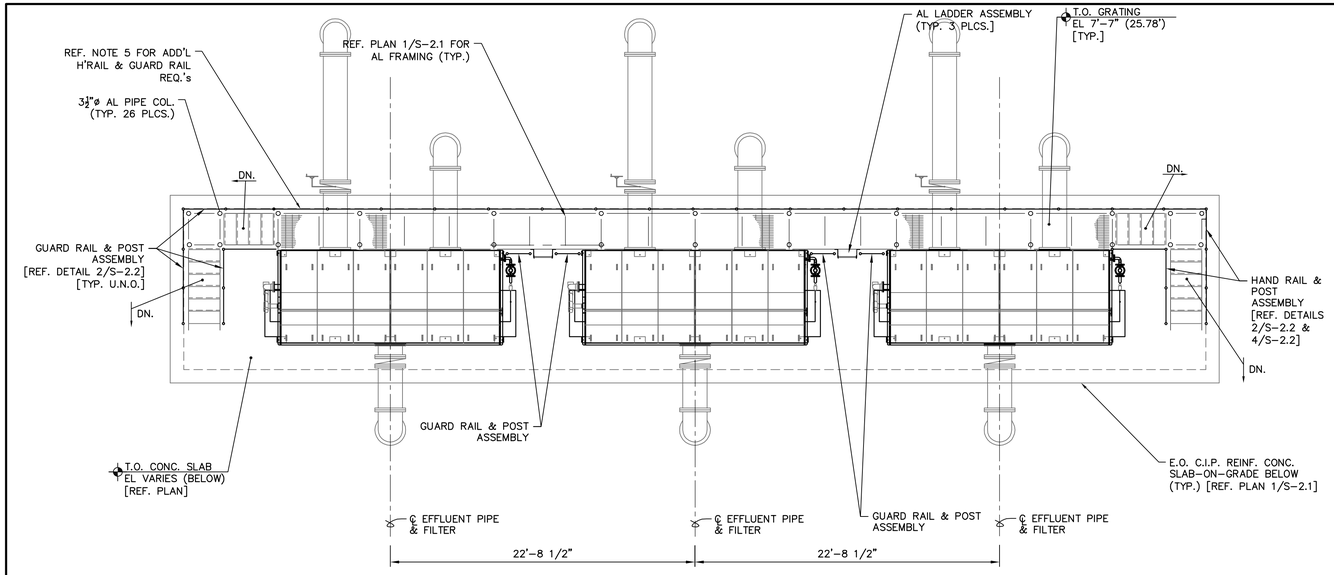
GRAVITY DISK FILTER FOUNDATION PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
S-2.1

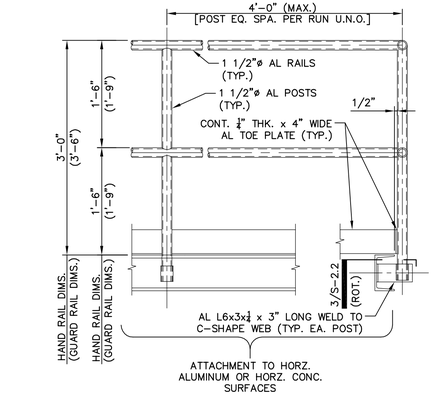
STATUS: ISSUE FOR BID
REVISION



1 - PLAN - AL HAND & GUARD RAIL LAYOUT

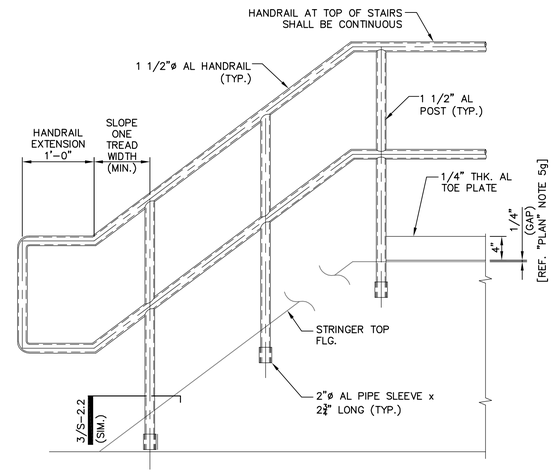
SCALE: 3/16"=1'-0"

NORTH



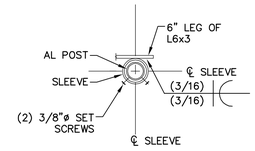
2 - DETAIL - AL HAND & GUARD RAIL / POST CONN.'s

SCALE: 1" = 1'-0"



4 - DETAIL - AL RAIL STAIR STRINGER INFO

SCALE: 1" = 1'-0"

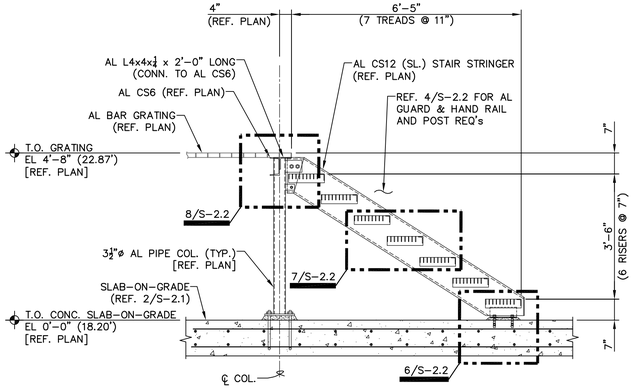


3 - SECTION - AL POST C-SHAPE CONN.

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

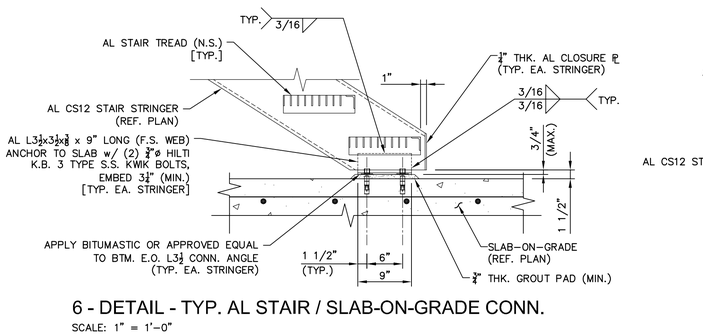
AL HAND & GUARD RAIL LAYOUT PLAN NOTES:

1. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
2. REFERENCE DWG. S-2.1 FOR ADDITIONAL AL PLATFORM FRAMING & SLAB-ON-GRADE REQUIREMENTS.
3. T.O. AL GRATING EL EQUALS THE T.O. TOP RUNG EL FOR THE AL LADDER SECTIONS.
4. IN GENERAL FOR PLATFORM CONNECTIONS NOT SHOWN IT IS THE FABRICATOR'S RESPONSIBILITY TO PROVIDE IN THE PROJECT SHOP DRAWINGS.
5. HAND RAIL & GUARD RAIL ASSEMBLY INFORMATION AS FOLLOWS:
   a.) PROVIDE HAND RAIL ALONG STAIR RUNS & GUARD RAIL AT PLATFORMS.
   b.) HANDRAILS DETAILS SHOWN DEPICT INTENT OF HANDRAIL INSTALLATION. HANDRAIL FABRICATOR/INSTALLER SHALL BE RESPONSIBLE FOR ADHERING TO FLORIDA BUILDING, OSHA & ADDITIONAL JURISDICTION CODES THAT MAY BE APPLICABLE. IT IS THE GENERAL CONTRACTOR'S (GC) RESPONSIBILITY TO VERIFY APPLICABLE CODES w/ THE INSPECTOR FOR THE LOCAL JURISDICTION.
   c.) HANDRAIL DETAILS SHOWN ARE 1 1/2"ø ALUMINUM POSTS AND RAILS. REFERENCE DWG. S-0.1 GENERAL NOTES & DESIGN CRITERIA, IN ADDITION TO THE PROJECT SPECS. FOR MATERIAL REQUIREMENTS.
   d.) COORDINATE w/ MECH. DWG.s THE REQUIRED LOCATIONS OF HANDRAIL/GUARDRAIL ASSEMBLIES. GC TO VERIFY LOCATIONS w/ THE INSPECTOR FOR THE LOCAL JURISDICTION, IF APPLICABLE.
   e.) WHERE ALUMINUM MEETS CONCRETE OR DISSIMILAR METALS, BITUMASTIC OR AN APPROVED EQUAL SHALL BE APPLIED TO THE MATING SURFACE.
   f.) HANDRAIL CENTERLINE TO EDGE OF CONCRETE DIMENSION SHALL BE 6" (MIN.) U.N.O. WHERE APPLICABLE.
   g.) GAP FOR TOE PLATE ABOVE WALKING SURFACE U.N.O..
   h.) POST & HANDRAIL FABRICATOR TO PROVIDE HARDWARE AND/OR JOINTS FOR THERMAL EXPANSION / CONTRACTION AS REQ'D.



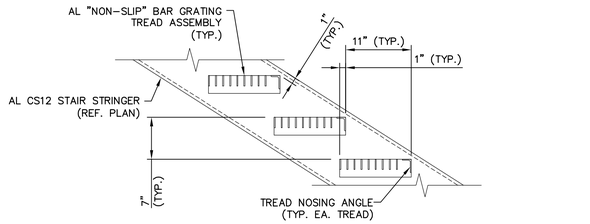
5 - SECTION - THRU AL PLATFORM ACCESS STAIR

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



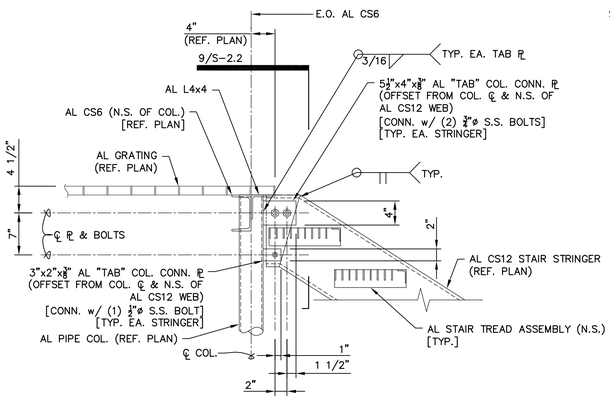
6 - DETAIL - TYP. AL STAIR / SLAB-ON-GRADE CONN.

SCALE: 1" = 1'-0"



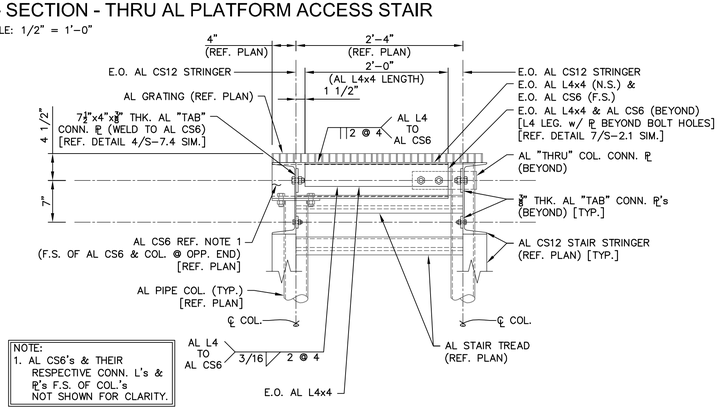
7 - DETAIL - TYP. AL STAIR INFO

SCALE: 1" = 1'-0"



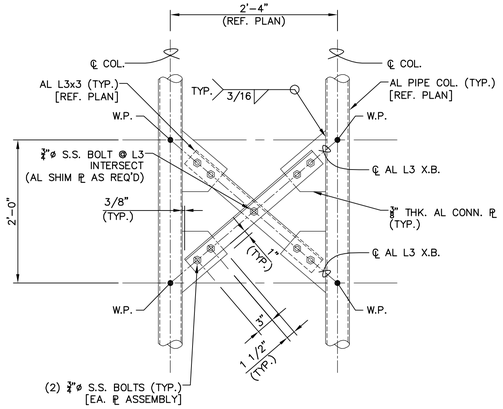
8 - DETAIL - TYP. AL PIPE COL. / STAIR AL CS12 CONN.

SCALE: 1" = 1'-0"



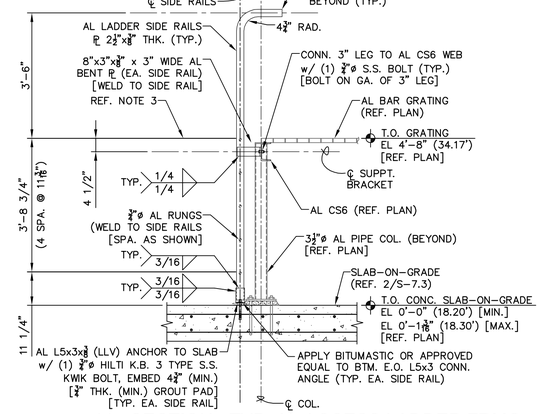
9 - SECTION - AL STAIR FRMG. & GRATING SUPPORT

SCALE: 1" = 1'-0"



10 - DETAIL - AL PLATFORM E/W DIR. "X"-BRACING

SCALE: 1" = 1'-0"



11 - SECTION - TYP. AL ACCESS LADDER FRMG.

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRAVITY DISK FILTER FOUNDATION & FRAMING ADDITIONAL SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-2.2

STATUS: ISSUE FOR BID
REVISION

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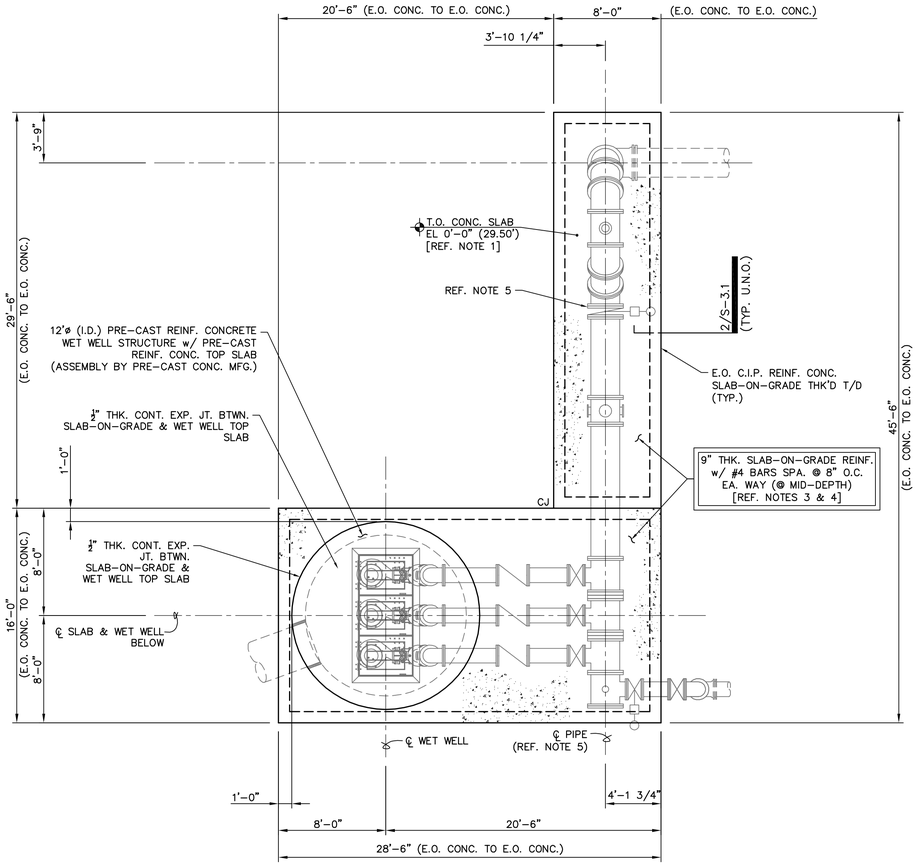
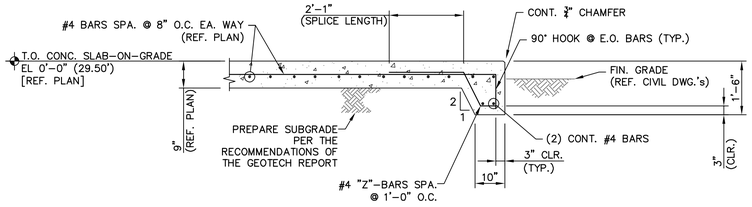


1 - PLAN - RECLAIM WATER PUMP STATION TOP LAYOUT

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

NORTH



2 - SECTION - TYP. SLAB-ON-GRADE THK'D T/D REINF.

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

FOUNDATION PLAN NOTES:

1. REFERENCE ELEVATION FOR THE GRAVITY DISK FILTER FACILITY IS THE SLAB-ON-GRADE T.O. CONC. EL 0'-0" = EL 29'-6" (29.50') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE IS 29.00' (±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FACILITY SLAB-ON-GRADE PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB.
7. INSTALL EXTR. GRADE EXP. JT. MATERIAL. CAULK & SEAL THE TOP OF JOINT w/ SONOLASTIC "SL-2" POLYEURETHANE OR AN APPROVED EQUAL.
8. PROVIDE 1" (MIN.) GROUT PAD BELOW PIPE & EQUIPMENT SUPPT.'s & ENSURE PIPING & EQUIPMENT IS INSTALLED LEVEL & w/IN MFG.'s ALLOWED TOLERANCES.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

RECLAIM WATER PUMP STATION TOP PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-3.1

STATUS: ISSUE FOR BID
REVISION

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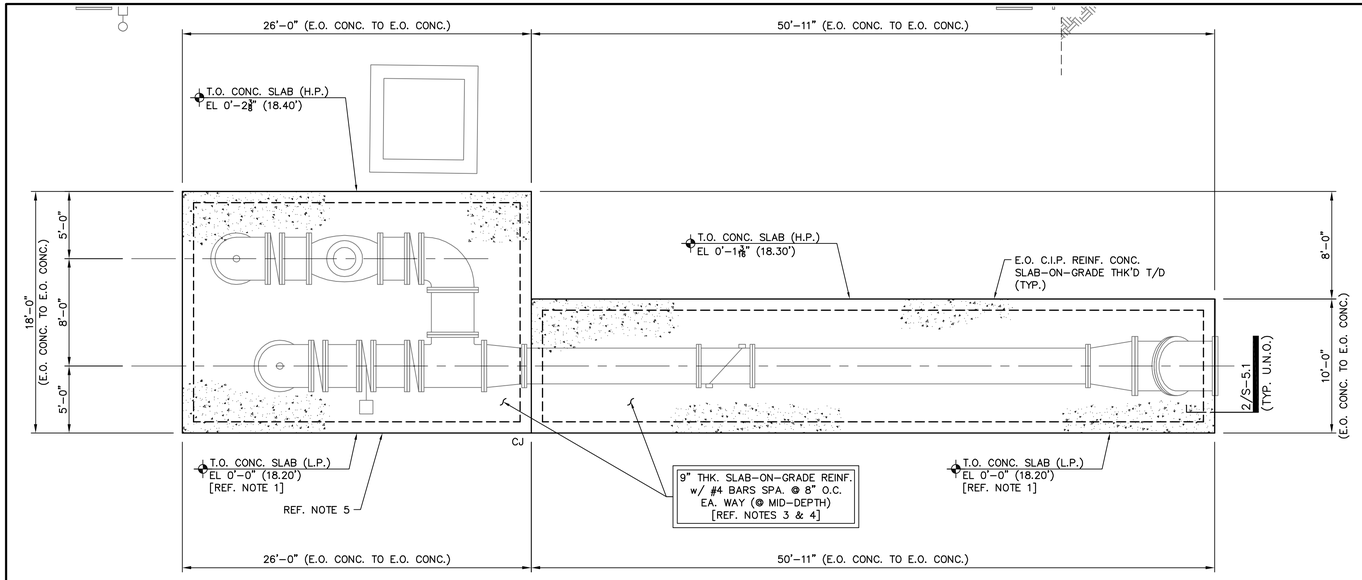
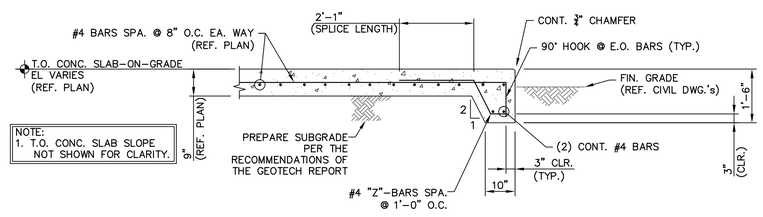


1 - PLAN - EFFLUENT PUMP STATION LAYOUT

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

NORTH



2 - SECTION - TYP. SLAB-ON-GRADE THK'D T/D REINF.

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

FOUNDATION PLAN NOTES:

1. REFERENCE ELEVATION FOR THE EFFLUENT PUMP STATION FACILITY IS THE SLAB-ON-GRADE L.P. EL T.O. CONC. EL 0'-0" = EL 18'-2⅜" (18.20') N.G.V.D.-29. REFERENCE CIVIL DWG's FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE IS 17.90' (±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FACILITY SLAB-ON-GRADE PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB.
7. INSTALL EXTR. GRADE EXP. JT. MATERIAL. CAULK & SEAL THE TOP OF JOINT w/ SONOLASTIC "SL-2" POLYEURETHANE OR AN APPROVED EQUAL.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

WILLIAM F. BAND, P.E.
No. 67838

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

EFFLUENT PUMP STATION PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-5.1

STATUS: ISSUE FOR BID
REVISION

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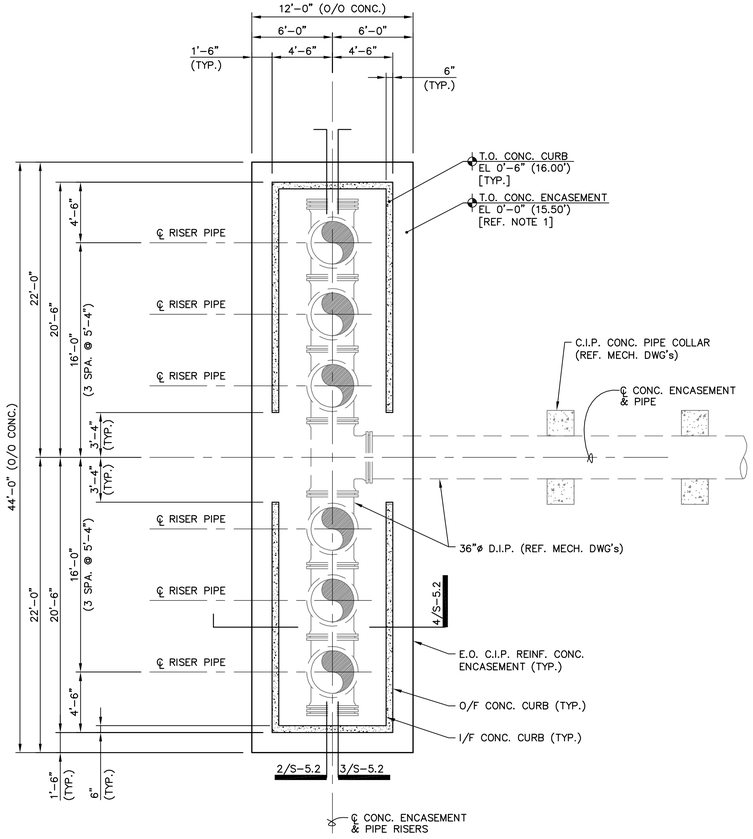
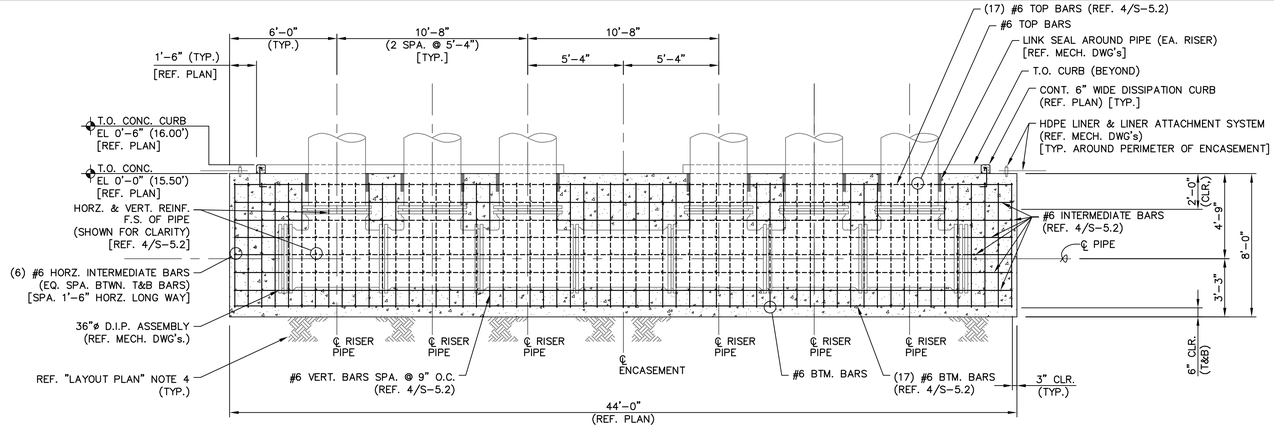


1 - PLAN - REJECT POND OUTLET ASSEMBLY PIPE LAYOUT

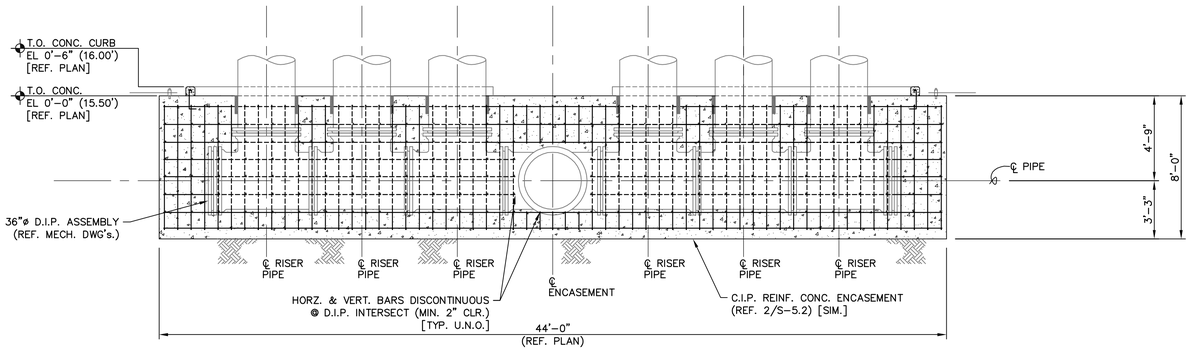
SCALE: 3/16"=1'-0"

NORTH



2 - SECTION - THRU REJECT POND OUTLET PIPE

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

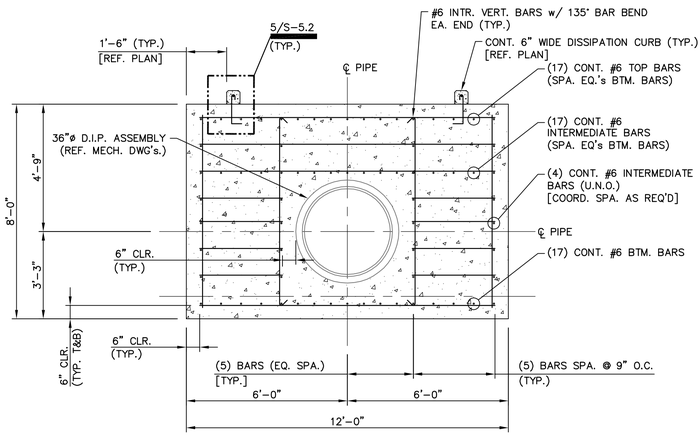


3 - SECTION - THRU REJECT POND OUTLET PIPE

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

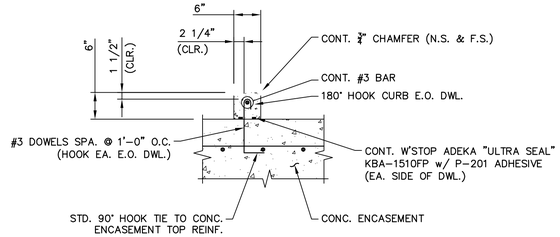
LAYOUT PLAN NOTES:

1. REFERENCE ELEVATION FOR THE REJECT POND INLET PIPE FACILITY IS THE T.O. CONC. EL 0'-0" = EL 15'-6" (15.50') N.G.V.D.-29. REFERENCE CIVIL DWG's FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE IS 15.50' (±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW & ON THE SIDES OF THE FACILITY CONCRETE ENCASEMENT PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL & MECHANICAL DWG's FOR ADDITIONAL ENCASEMENT PENETRATION, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. ENCASEMENT.



4 - SECTION - THRU REJECT POND OUTLET PIPE

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



5 - DETAIL - TYP. DISSIPATION CURB REINF.

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

REJECT POND OUTLET ASSEMBLY PLAN, SECTIONS AND DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-5.2

STATUS: ISSUE FOR BID
REVISION

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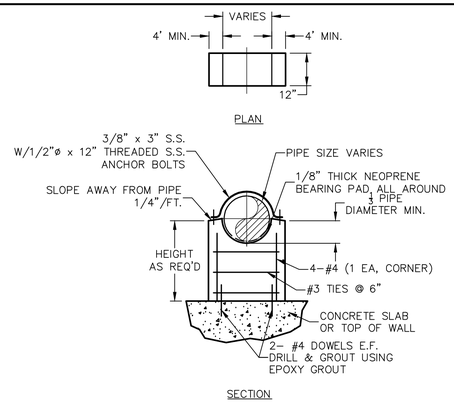
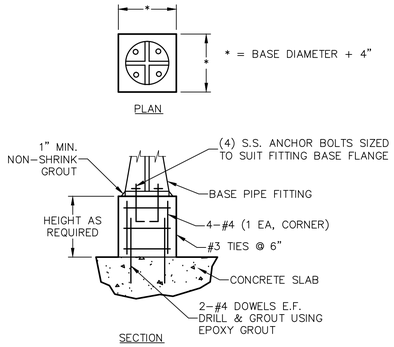


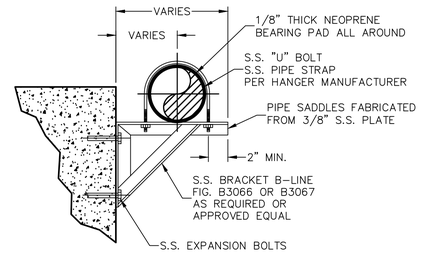
PIPE SUPPORT TYPE 1

NOT TO SCALE



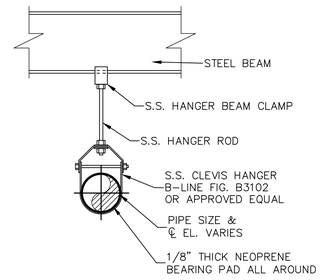
PIPE SUPPORT TYPE 2

NOT TO SCALE



PIPE SUPPORT TYPE 3

NOT TO SCALE



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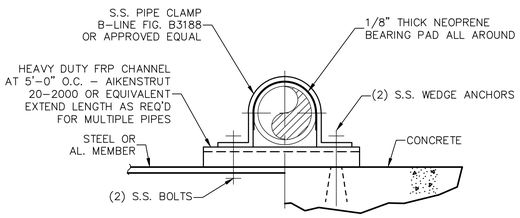
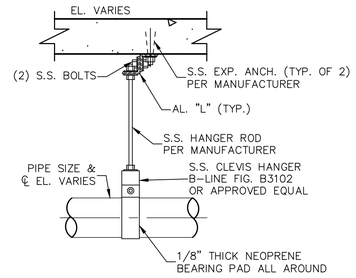
NOT TO SCALE



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

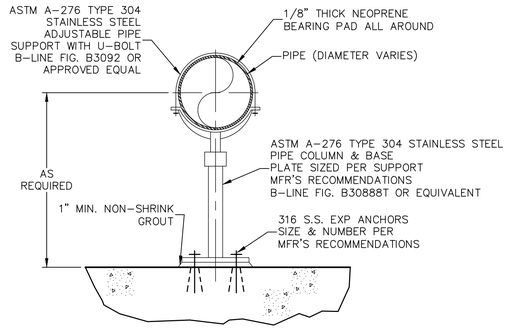
PIPE SUPPORT TYPE 5

NOT TO SCALE



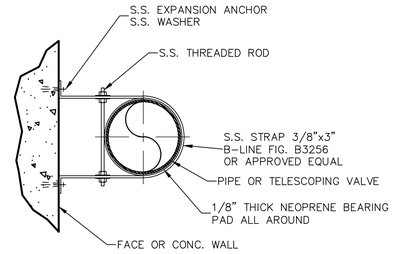
PIPE SUPPORT TYPE 6

NOT TO SCALE



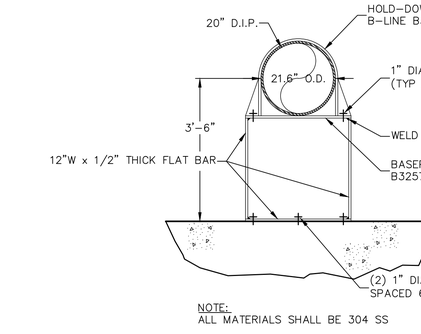
PIPE SUPPORT TYPE 7

NOT TO SCALE



PIPE STAND-OFF BRACKET TYPE 8

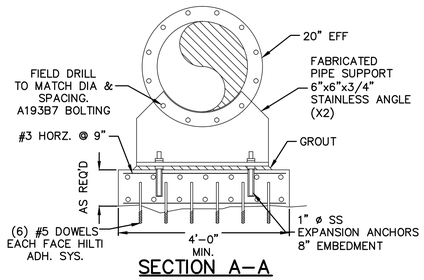
NOT TO SCALE



NOTE:
ALL MATERIALS SHALL BE 304 SS

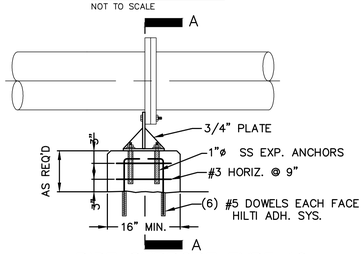
PIPE SUPPORT TYPE 9

NOT TO SCALE



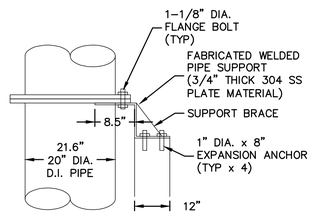
SECTION A-A

NOT TO SCALE



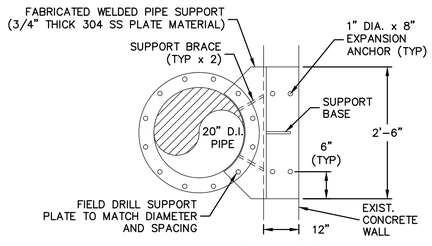
PIPE SUPPORT TYPE 10

NOT TO SCALE



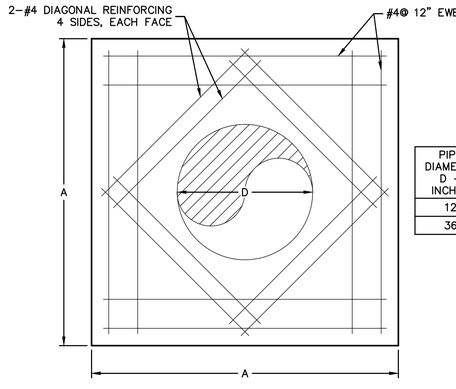
SECTION B-B

NOT TO SCALE



PIPE SUPPORT TYPE 11

NOT TO SCALE



PIPE DIAMETER D - INCHES	SIDE LENGTH A - FEET	CONCRETE COLLAR THICKNESS INCHES
12	4	24
36	7	24

CONCRETE COLLAR DETAIL

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND
NORTH POND IMPROVEMENTS

MECHANICAL
MISCELLANEOUS DETAILS No. 1

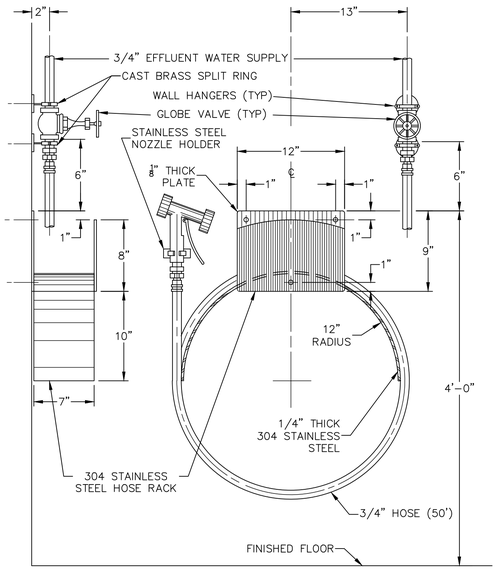
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
M-0.1

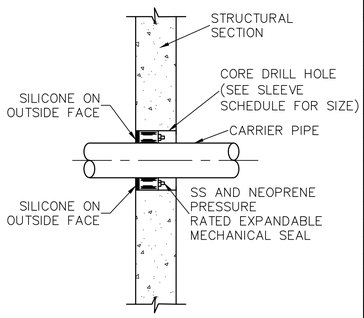
STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\05-Drawings\Mechanical\M-0.1-14-501.dwg, 2/10/2012 2:48:30 PM, Brian Nought



HOSE BIB AND RACK

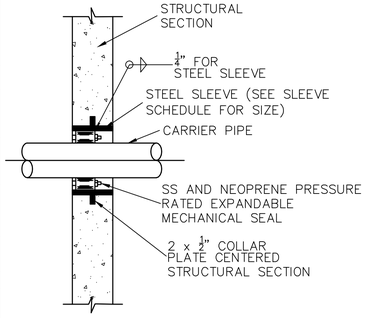
NOT TO SCALE



TYPE 1

SLEEVE SCHEDULE				
CARRIER PIPE			STEEL SLEEVE INSIDE DIAMETER (INCHES)	CORE DRILLED HOLE INSIDE DIAMETER (INCHES)
NOMINAL DIAMETER INCHES	MATERIAL	OUTSIDE DIAMETER INCHES		
1/2	SCH. 80 PVC	0.84	2.067	2
3/4	SCH. 80 PVC	1.05	2.067	3.0
1	SCH. 80 PVC	1.315	2.469	2.5
1 1/2	SCH. 80 PVC	1.90	4.026	4
2	SCH. 80 PVC	2.38	4.026	4
3	SCH. 80 PVC	3.50	5.047	5
4	SCH. 80 PVC	4.5	6.065	6
6	D.I.	9.60	10.02	10
8	D.I.	9.05	12.0	12
10	D.I.	11.10	13.25	14
12	D.I.	13.20	15.25	16
16	D.I.	17.40	19.25	20
18	D.I.	19.50	23.25	24
24	D.I.	25.80	29.25	30
36	D.I.	38.30	43.25	43
42	D.I.	44.50	47.25	48

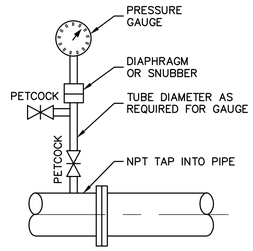
NOTE:
INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF NON-SHRINK GROUT.



TYPE 2

LINK SEAL WALL PENETRATION

NOT TO SCALE



TYPICAL PRESSURE GAUGE INSTALLATION

NTS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

MECHANICAL MISCELLANEOUS DETAILS No. 2

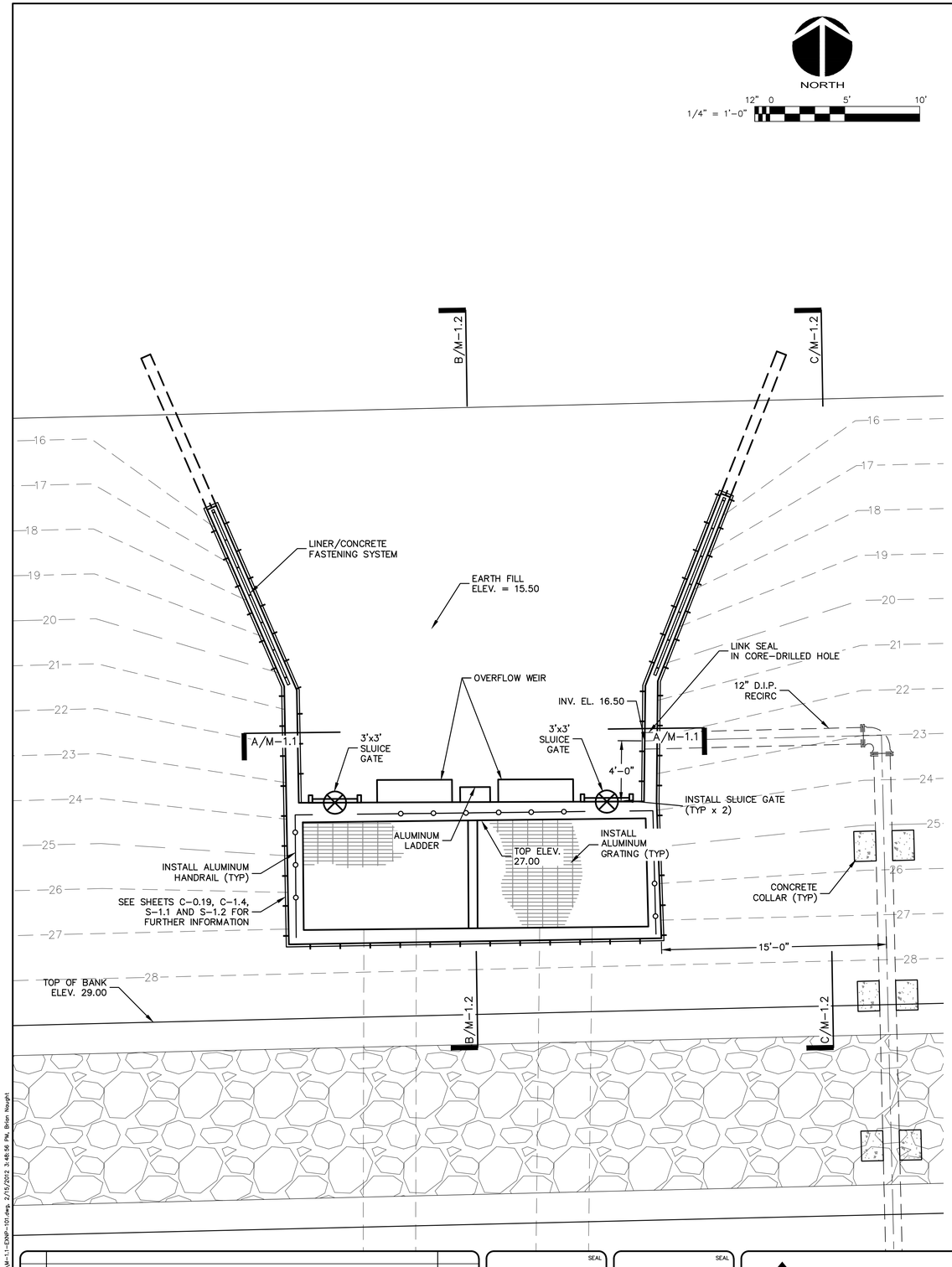
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	MSL

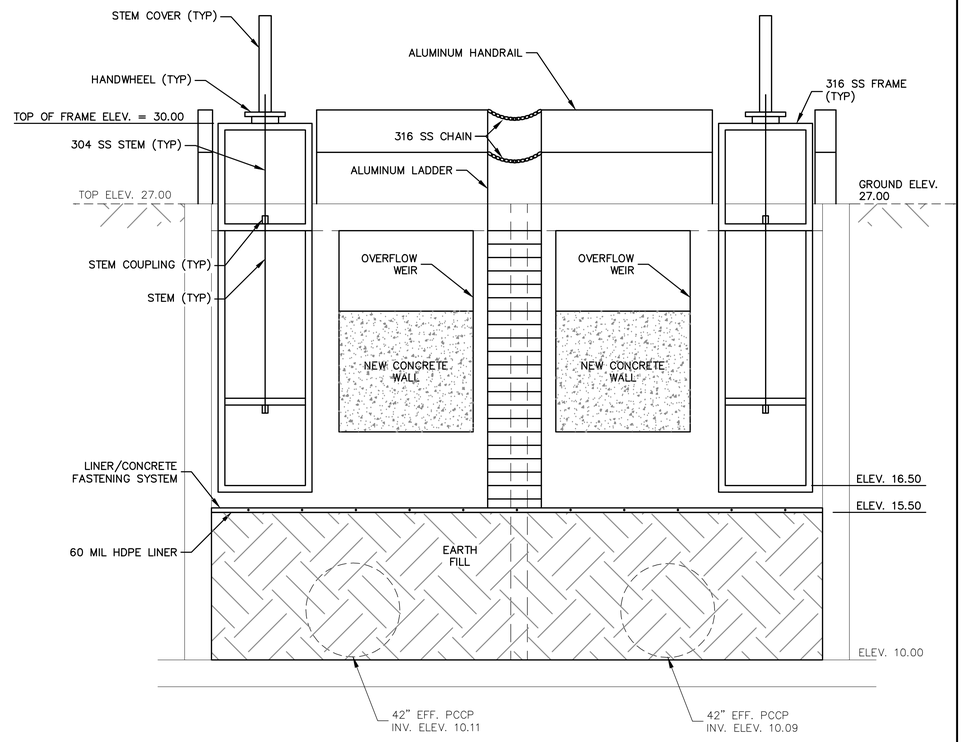
SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
M-0.2

STATUS: ISSUE FOR BID
REVISION

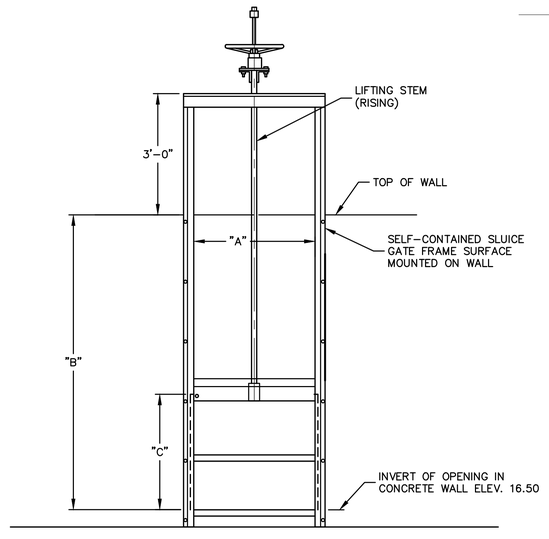
S:\1024\0147\05-Drawings\Mechanical\M-0.2-M-502.dwg, 2/15/2012 3:48:32 PM, Brian Naught





SECTION A/M-1.1

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



SELF-CONTAINED SLUICE GATE DETAIL

SCALE: NTS

SLUICE GATE SCHEDULE		
IDENTIFICATION NUMBER	SLC-1	SLC-2
MOUNTING LOCATION	NORTH POND OUTLET STRUCTURE	NORTH POND OUTLET STRUCTURE
OPERATOR TYPE	FRAME MOUNTED HANDWHEEL	FRAME MOUNTED HANDWHEEL
OPENING WIDTH "A"	3'-0"	3'-0"
FRAME HEIGHT "B"	10'-6"	10'-6"
GATE HEIGHT "C"	3'-0"	3'-0"
MAX. WATER DEPTH AT GATE	10'-6"	10'-6"

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

NORTH POND OUTLET STRUCTURE MODIFICATION PLAN

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: N/A

DRAWING NUMBER
M-1.1

STATUS: ISSUE FOR BID
REVISION

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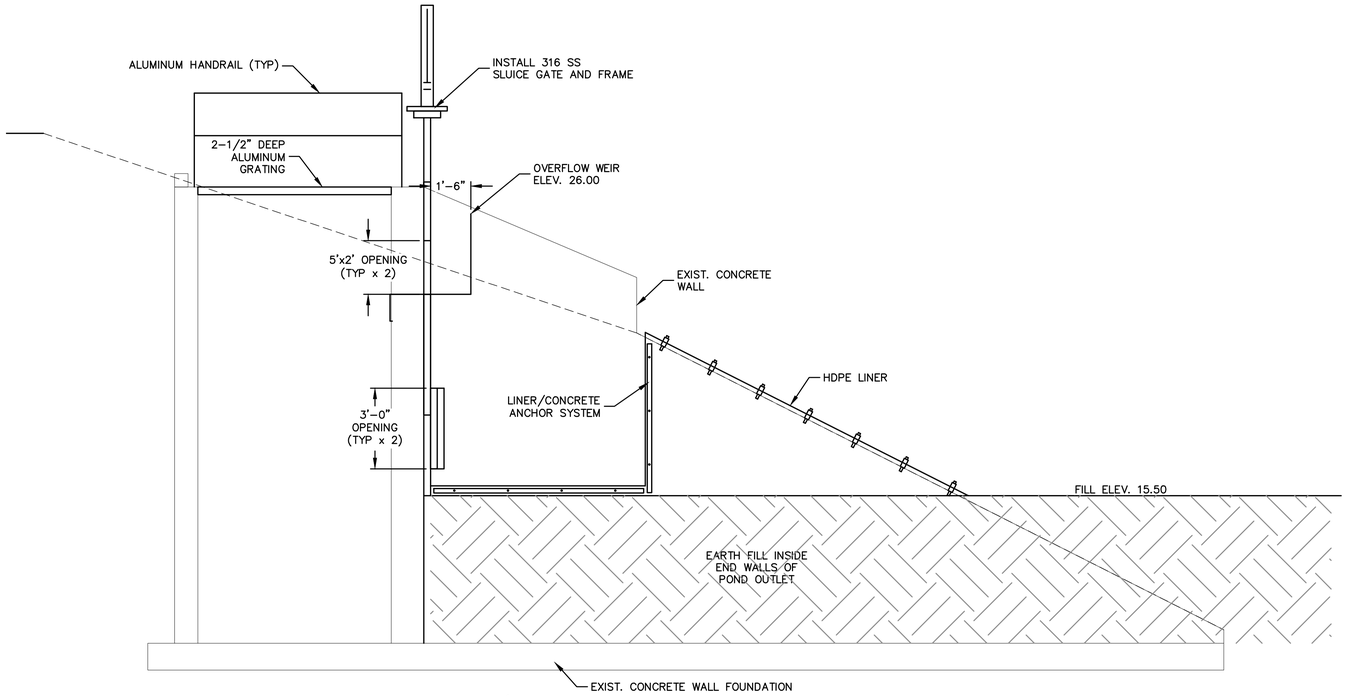
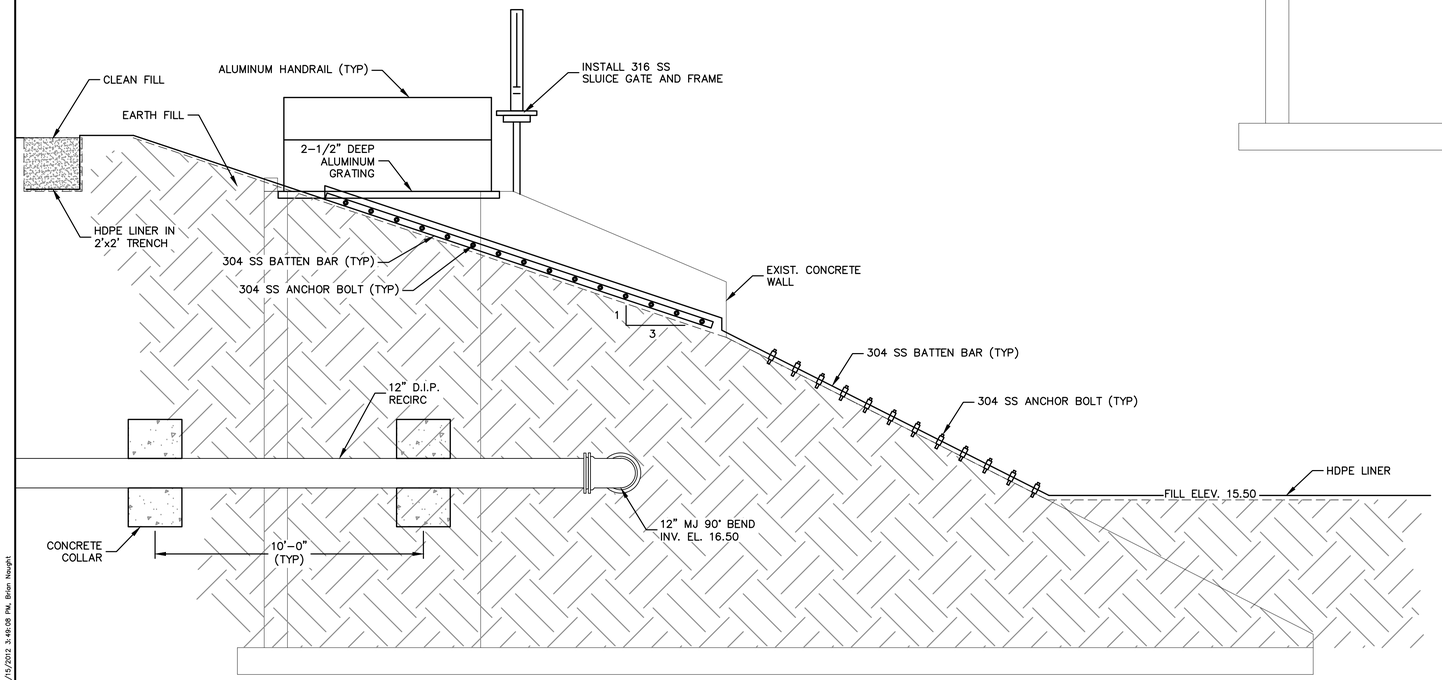


SECTION B/M-1.1

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



SECTION C/M-1.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

NORTH POND OUTLET STRUCTURE MODIFICATION SECTIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-1.2

STATUS: ISSUE FOR BID
REVISION

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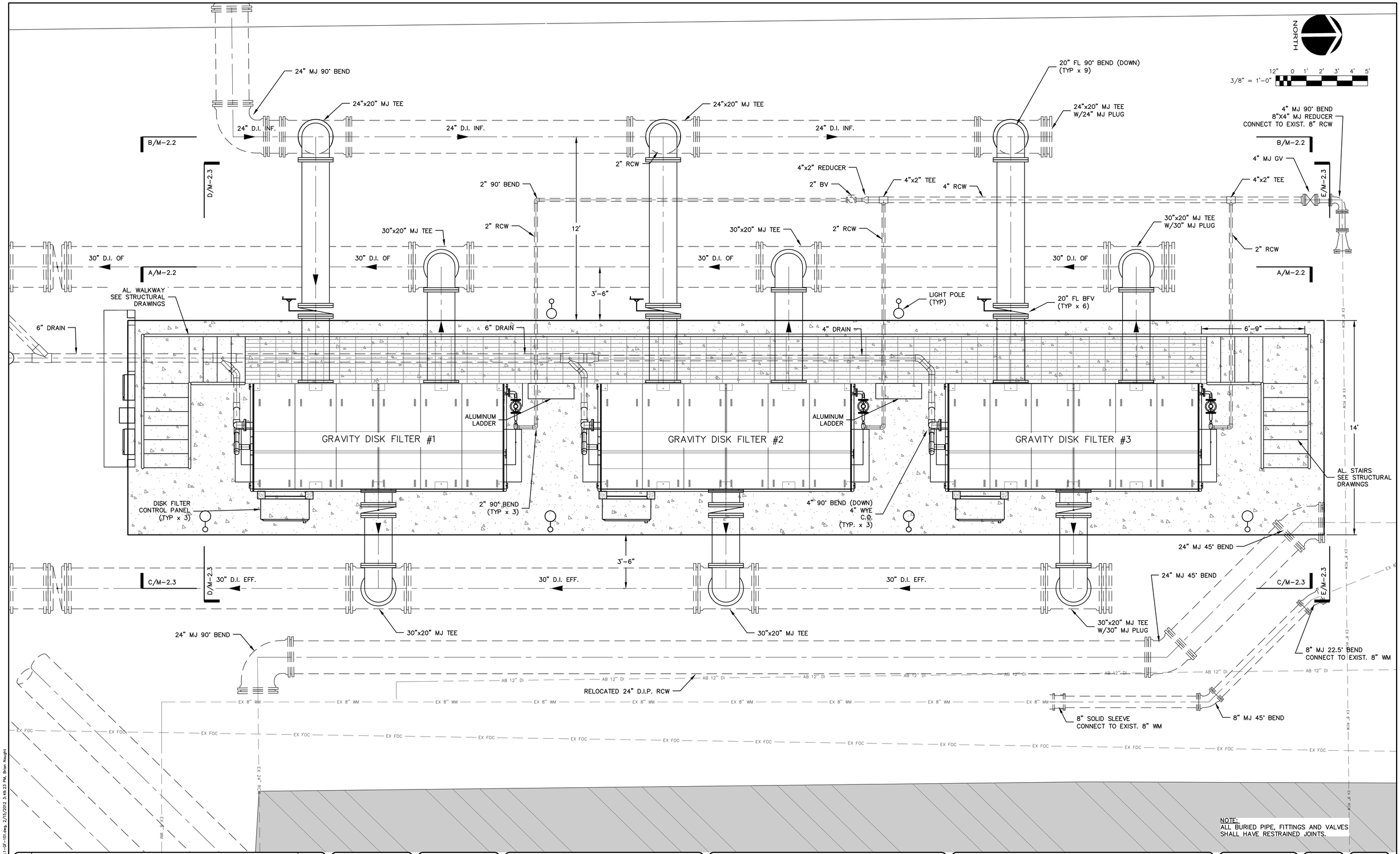

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRAVITY DISK FILTER PLAN

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-2.1

STATUS: ISSUE FOR BID
REVISION

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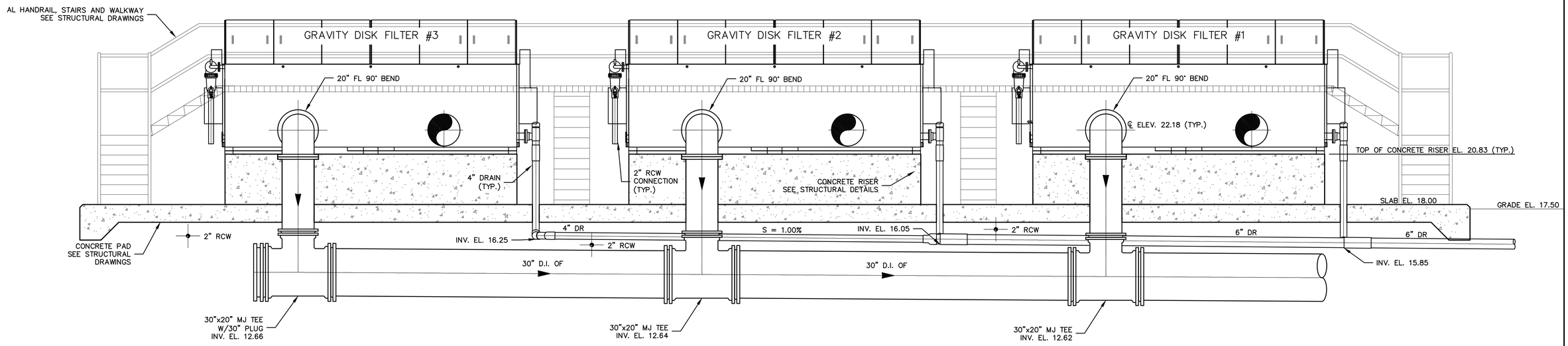
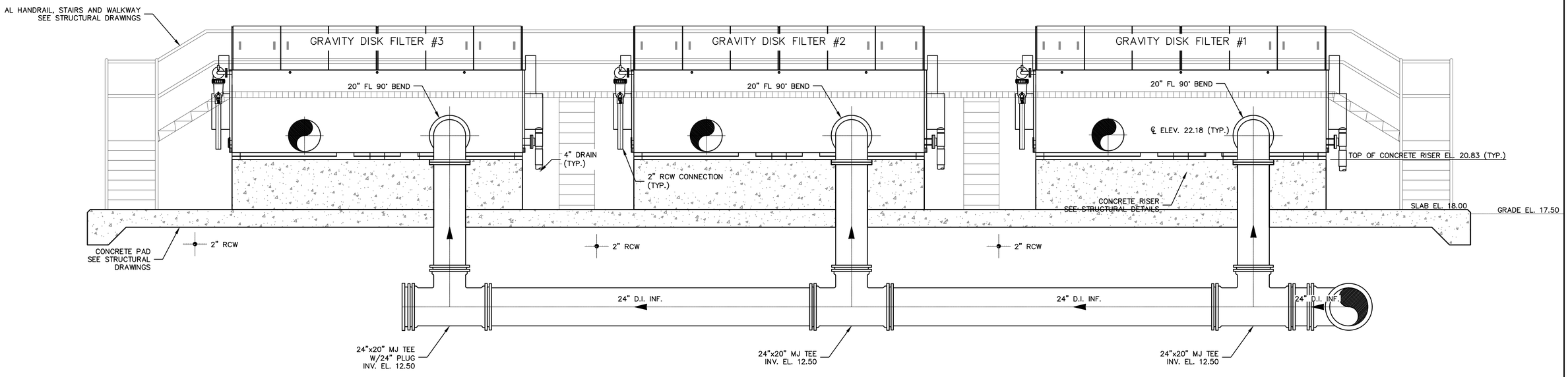
NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.



SECTION A/M-2.1

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



SECTION B/M-2.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRAVITY DISK FILTER SECTIONS No. 1

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

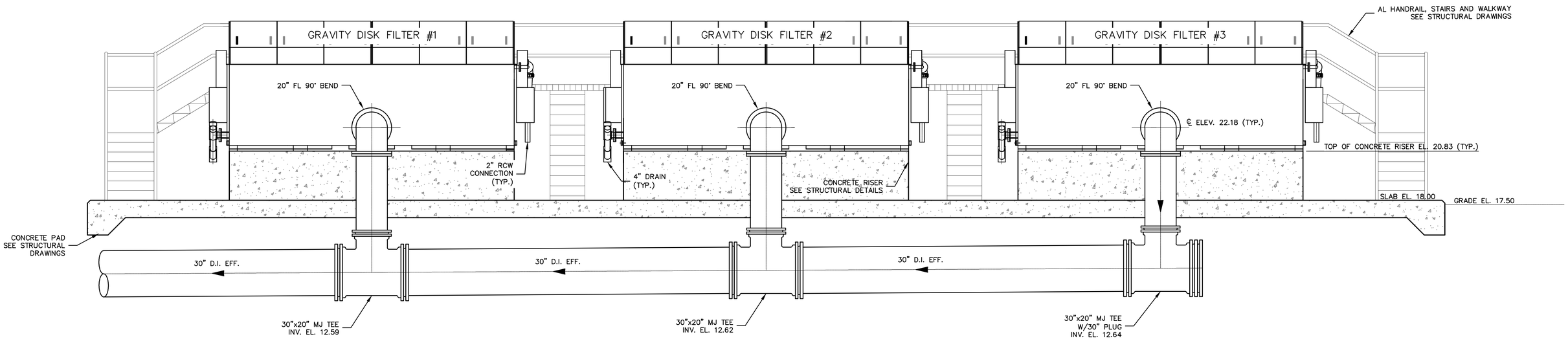
SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-2.2

STATUS: ISSUE FOR BID
REVISION

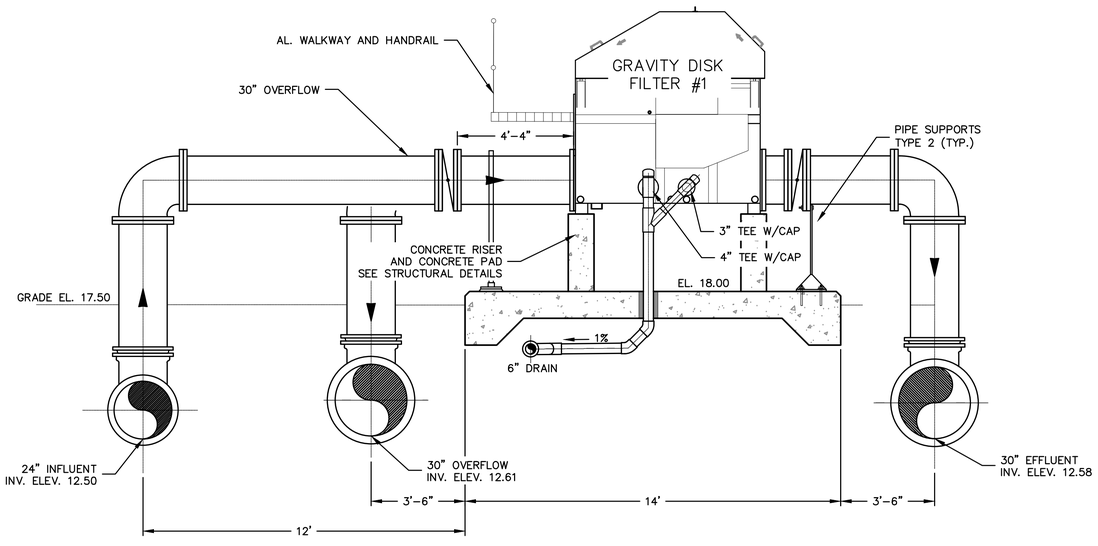
S:\1024\0147\05-Drawings\Mechanical\M-2.1-GF-101.dwg, 2/15/2012 3:48:45 PM, Brian Haught

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.



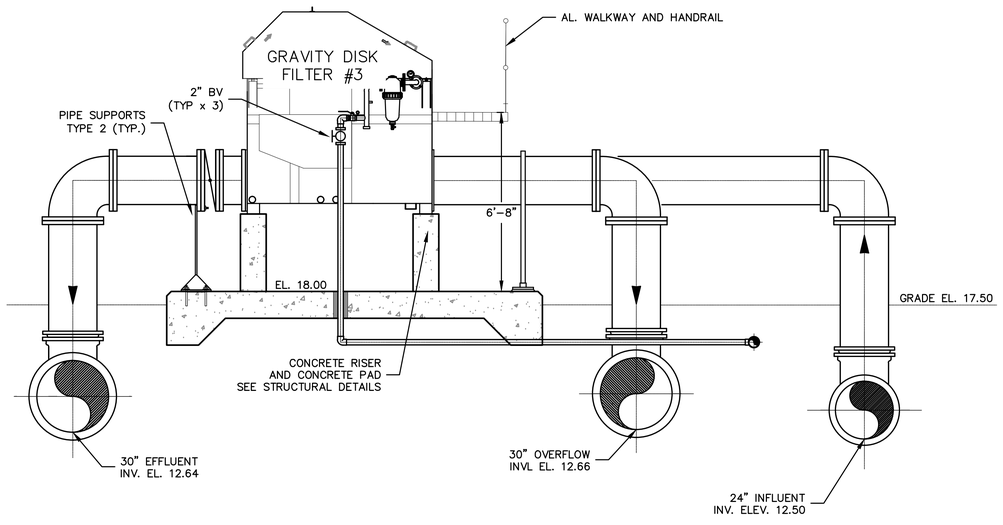
SECTION C/M-2.1

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



SECTION D/M-2.1

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



SECTION E/M-2.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRAVITY DISK FILTER SECTIONS No. 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	JSL
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-2.3

STATUS: ISSUE FOR BID
REVISION

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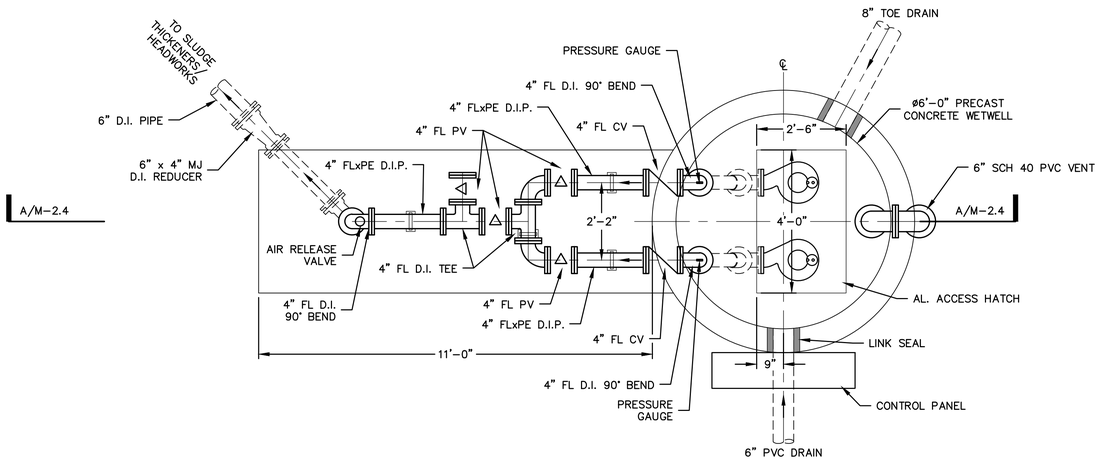
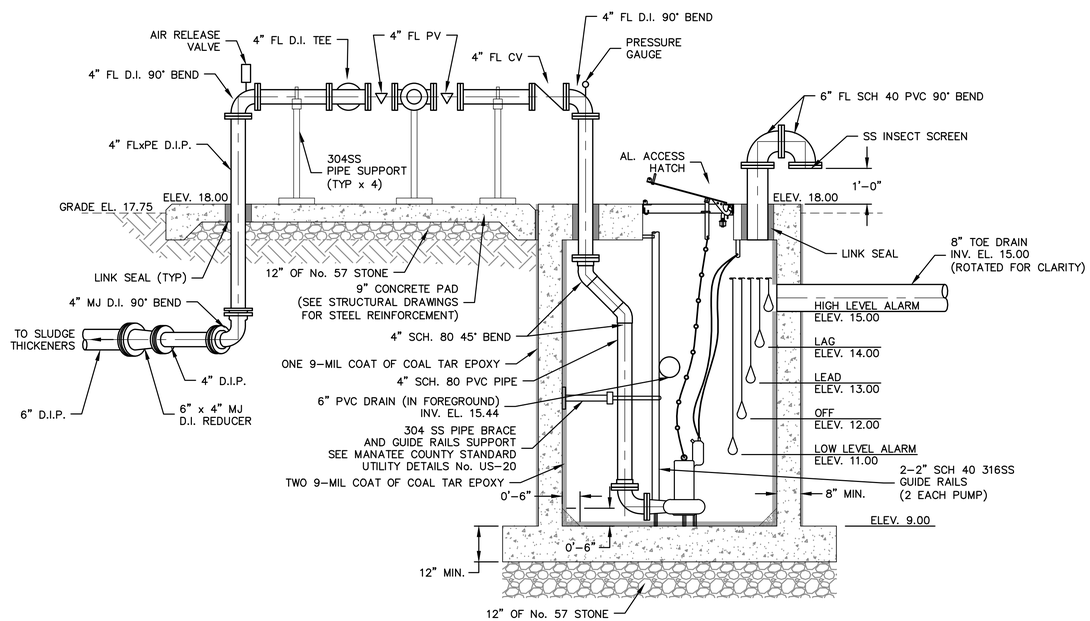
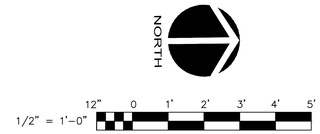




SECTION A/M-2.4

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



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

WASTE BACKWASH PUMP STATION

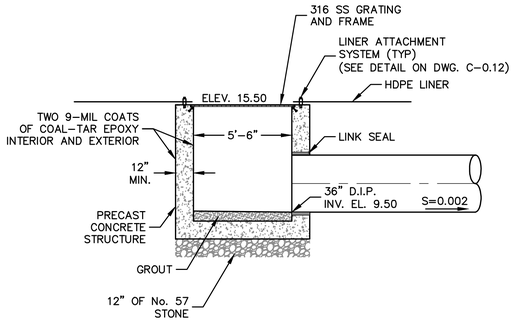
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/2" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-2.4

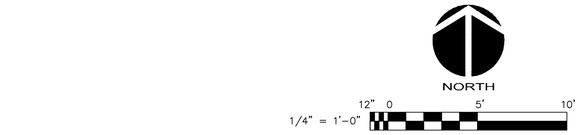
STATUS: ISSUE FOR BID
REVISION

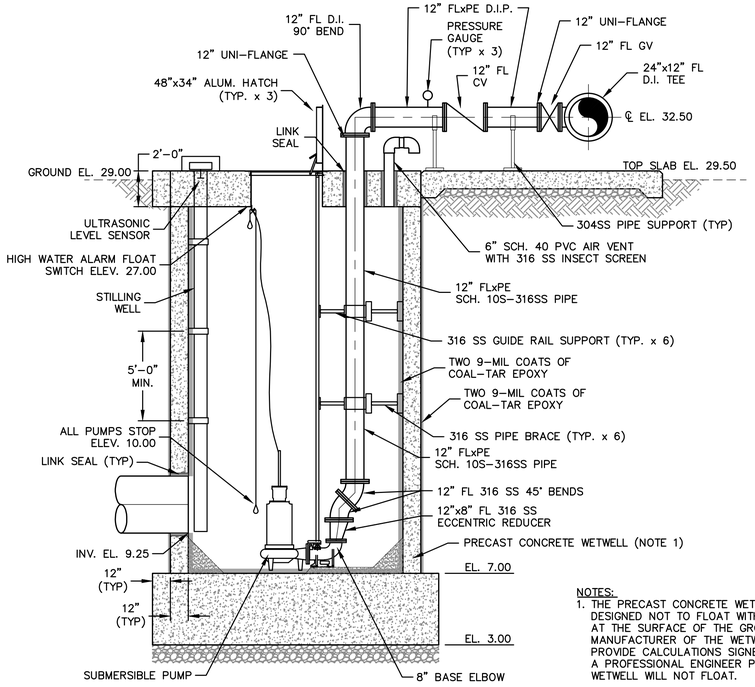
S:\1024\01417\05-Drawings\Mechanical\M-2.4-WBPS-101.dwg, 2/15/2012 3:50:27 PM, Brian Naught



SECTION C/M-3.1

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

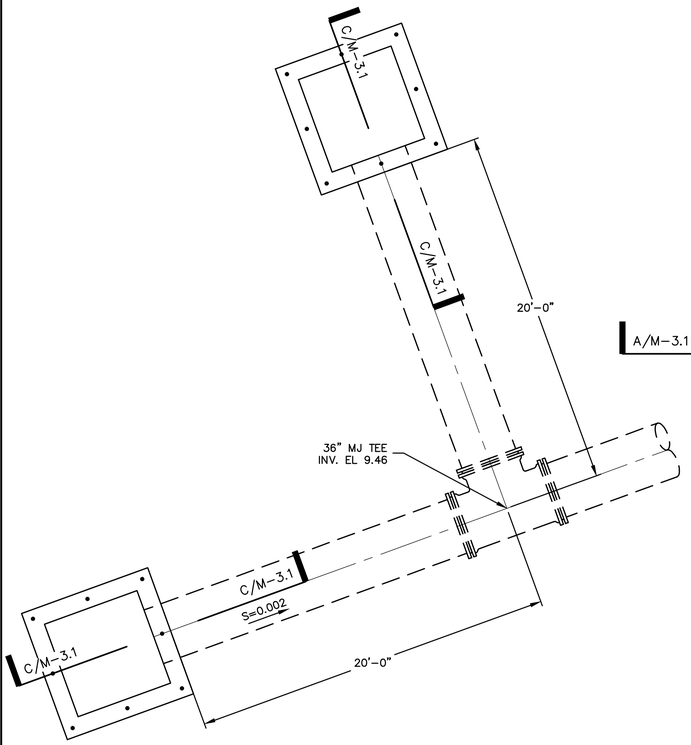


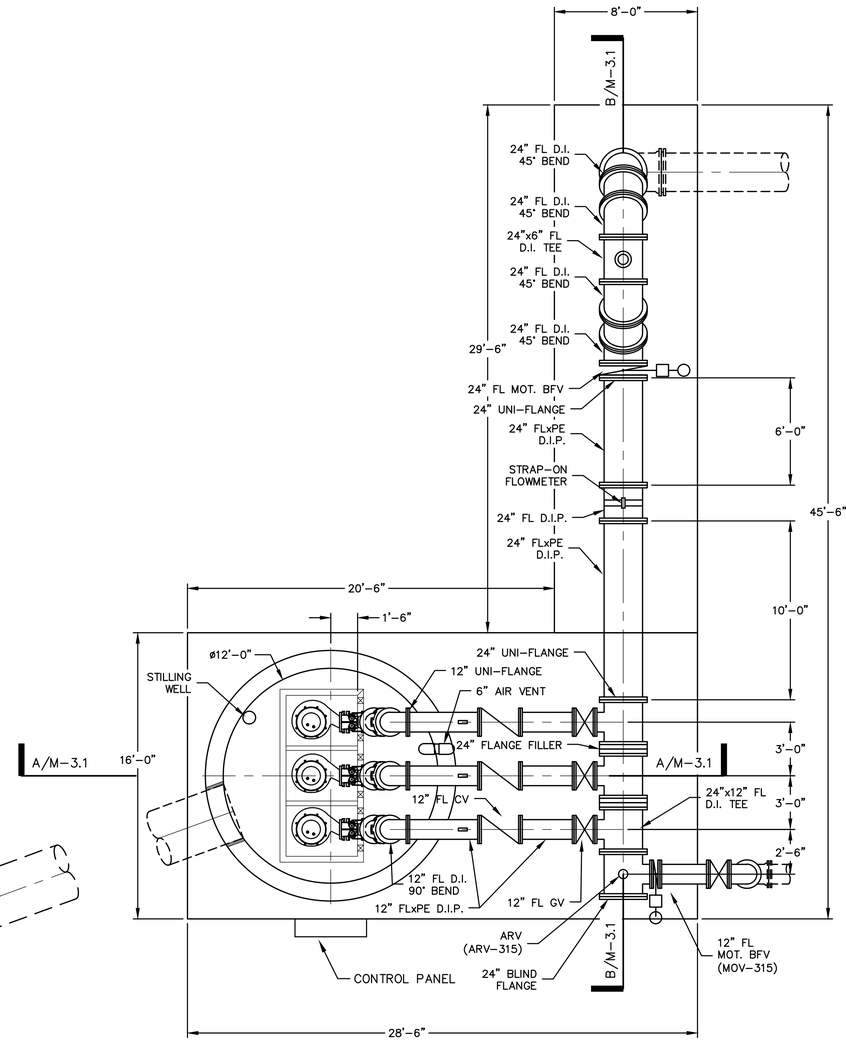


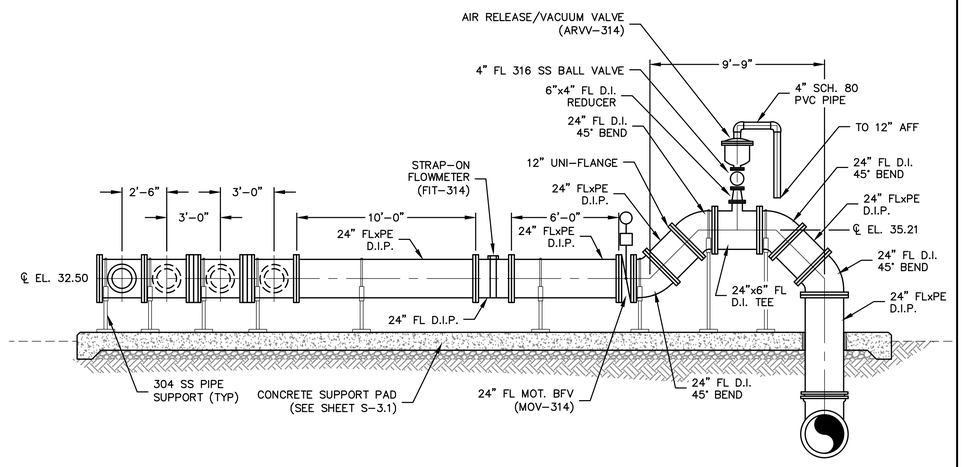
SECTION A/M-3.1

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

NOTES:
1. THE PRECAST CONCRETE WETWELL SHALL BE DESIGNED NOT TO FLOAT WITH GROUND WATER AT THE SURFACE OF THE GROUND. THE MANUFACTURER OF THE WETWELL SHALL PROVIDE CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER PROVING THAT THE WETWELL WILL NOT FLOAT.







SECTION B/M-3.1

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

RECLAIM PUMP STATION PLAN AND SECTIONS

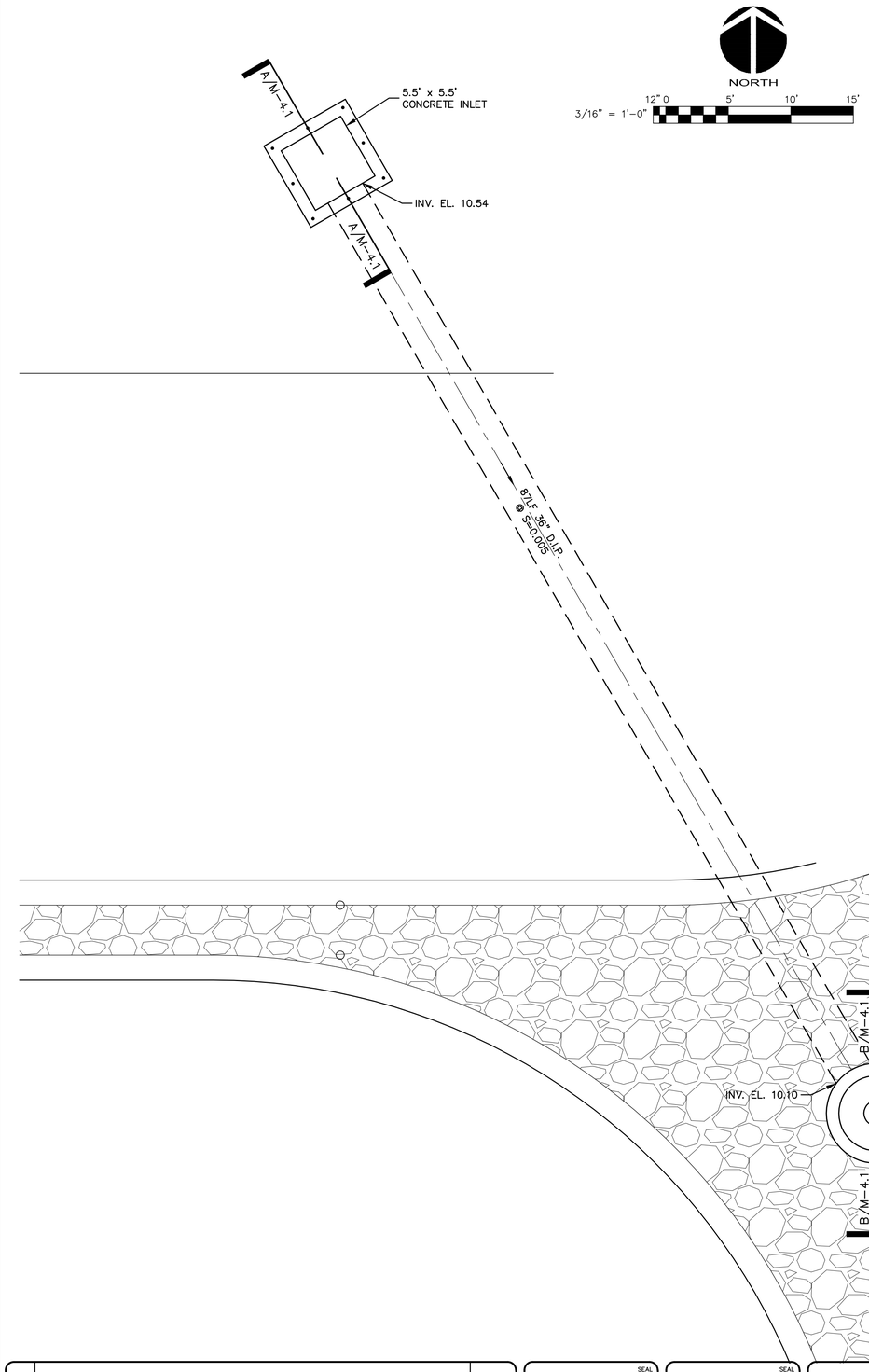
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

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

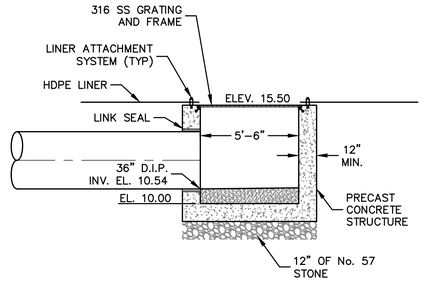
DRAWING NUMBER
M-3.1

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\90-Drawings\Mechanical\M-3.1-MPS-101.dwg, 2/15/2012 3:52:52 PM, Brian Naught

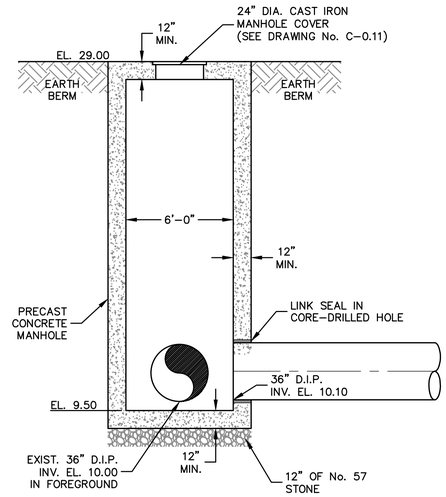


NOTE:
1. REMOVE EXIST. 36" PIPE AND REPLACE WITH 36" D.I.P. INSTALL 36" D.I.P. IN EXIST. P.S. CONCRETE WALL USING LINK SEAL.



SECTION A/M-4.1

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



SECTION B/M-4.1

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

TEMPORARY 12" HDPE CONNECTION AT LAKE RETURN PS #4

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

REJECT PUMP STATION INLET PLAN AND DETAIL

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: VARIES
VERTICAL: N/A

DRAWING NUMBER
M-4.1

STATUS: ISSUE FOR BID
REVISION

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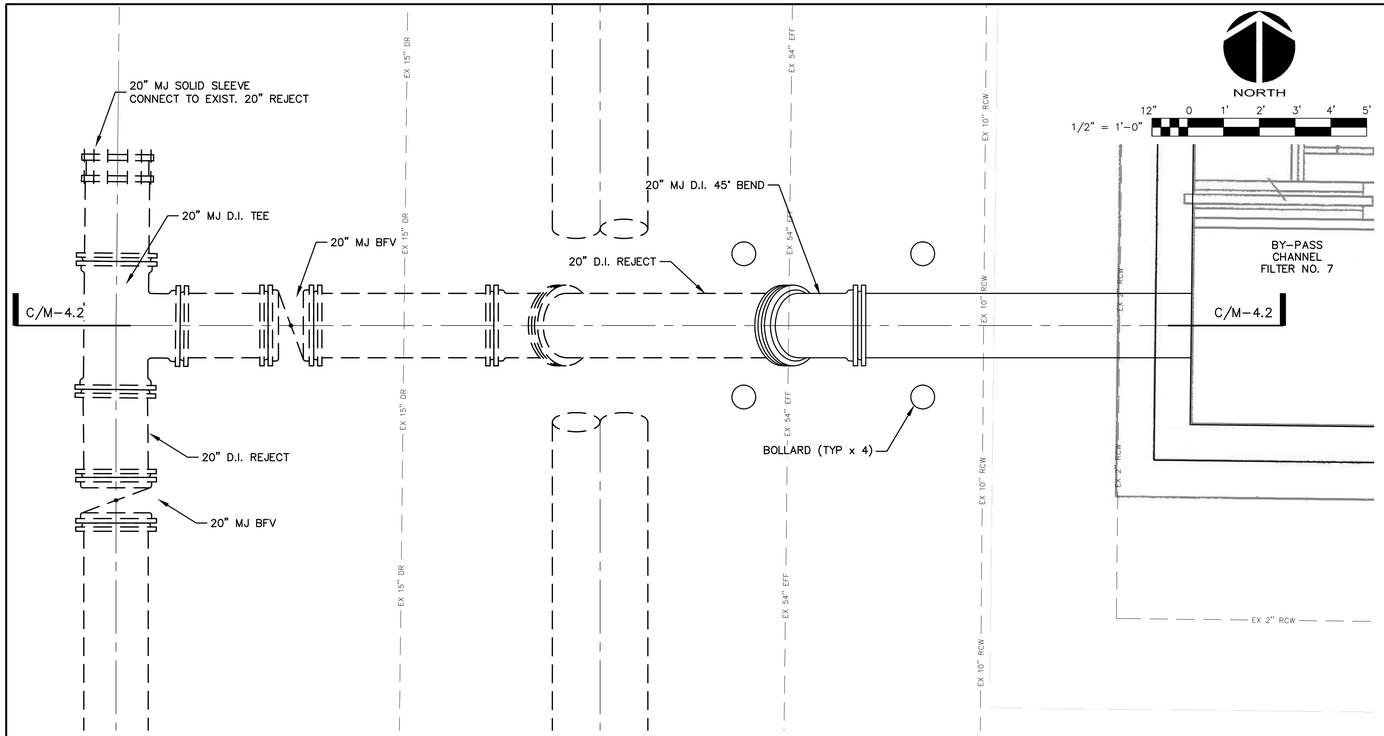
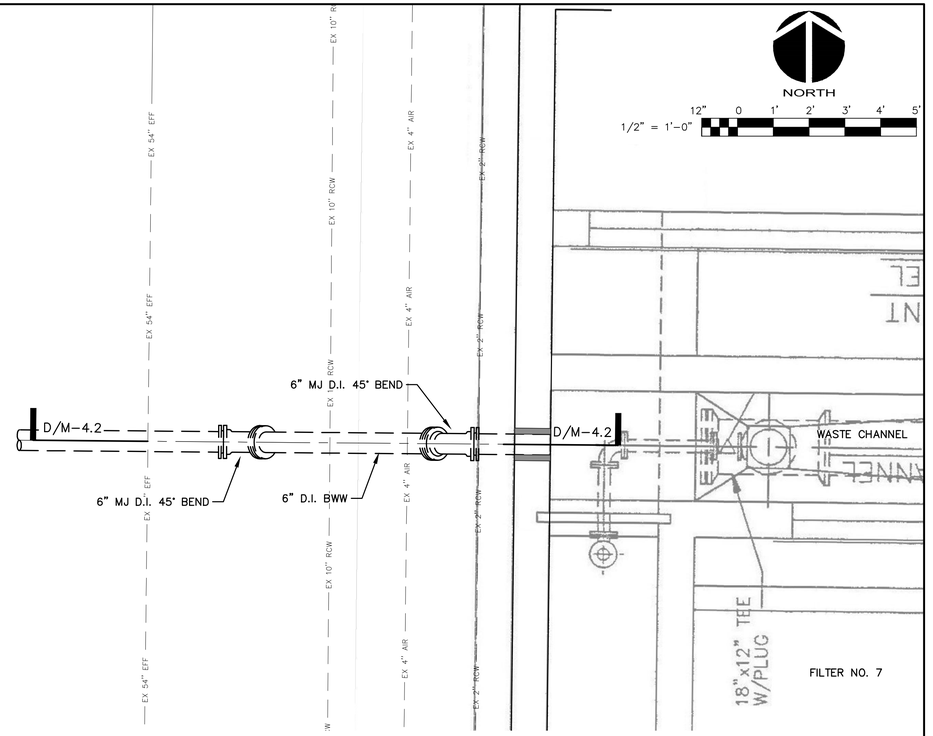
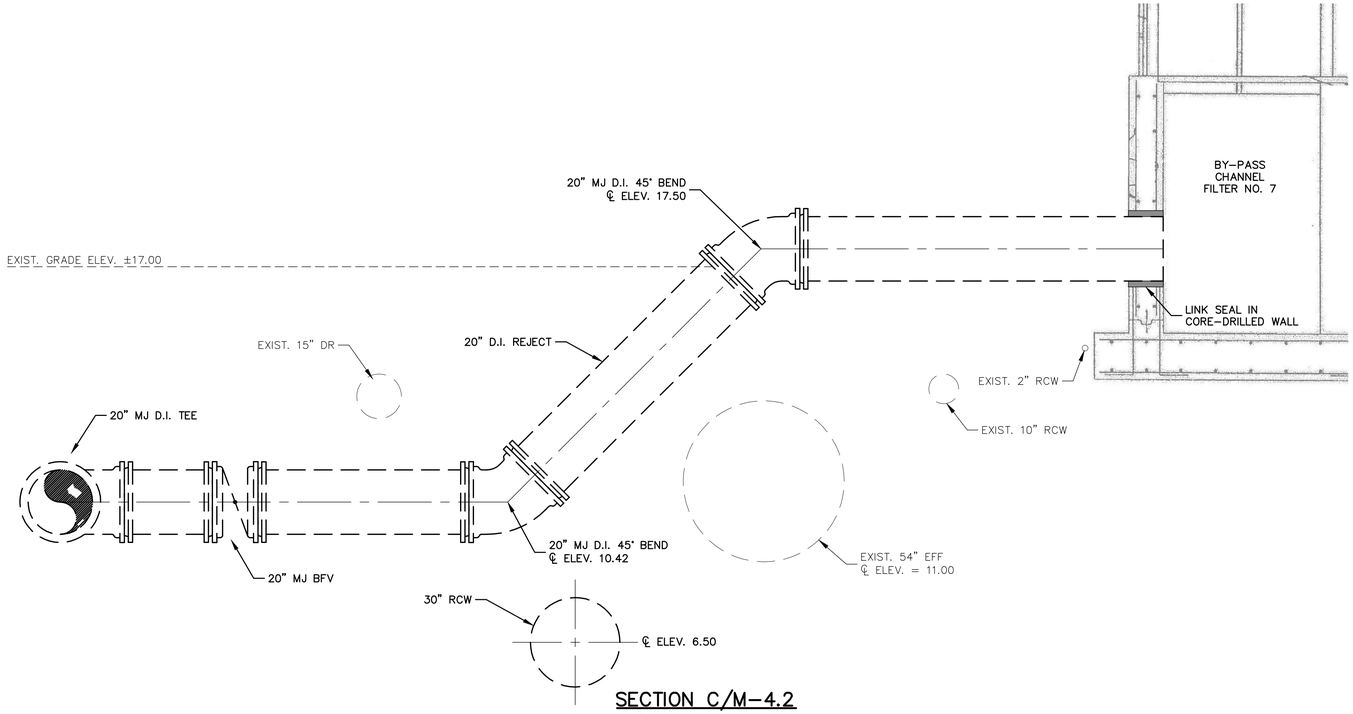
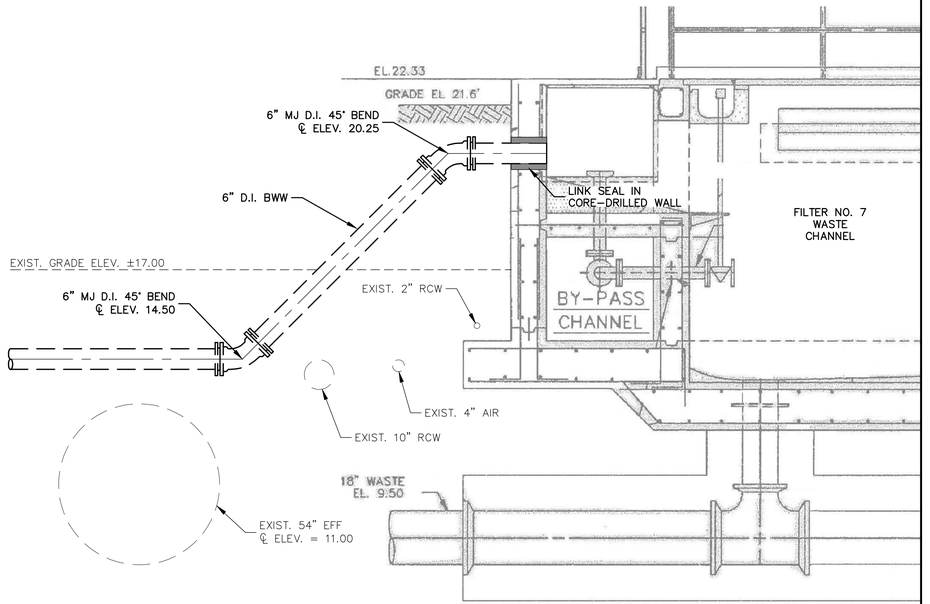






SECTION C/M-4.2

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



NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

WASTE REJECT PLAN AND SECTION AT ABW FILTERS No. 6 AND No. 7

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/2" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-4.2

STATUS: ISSUE FOR BID
REVISION

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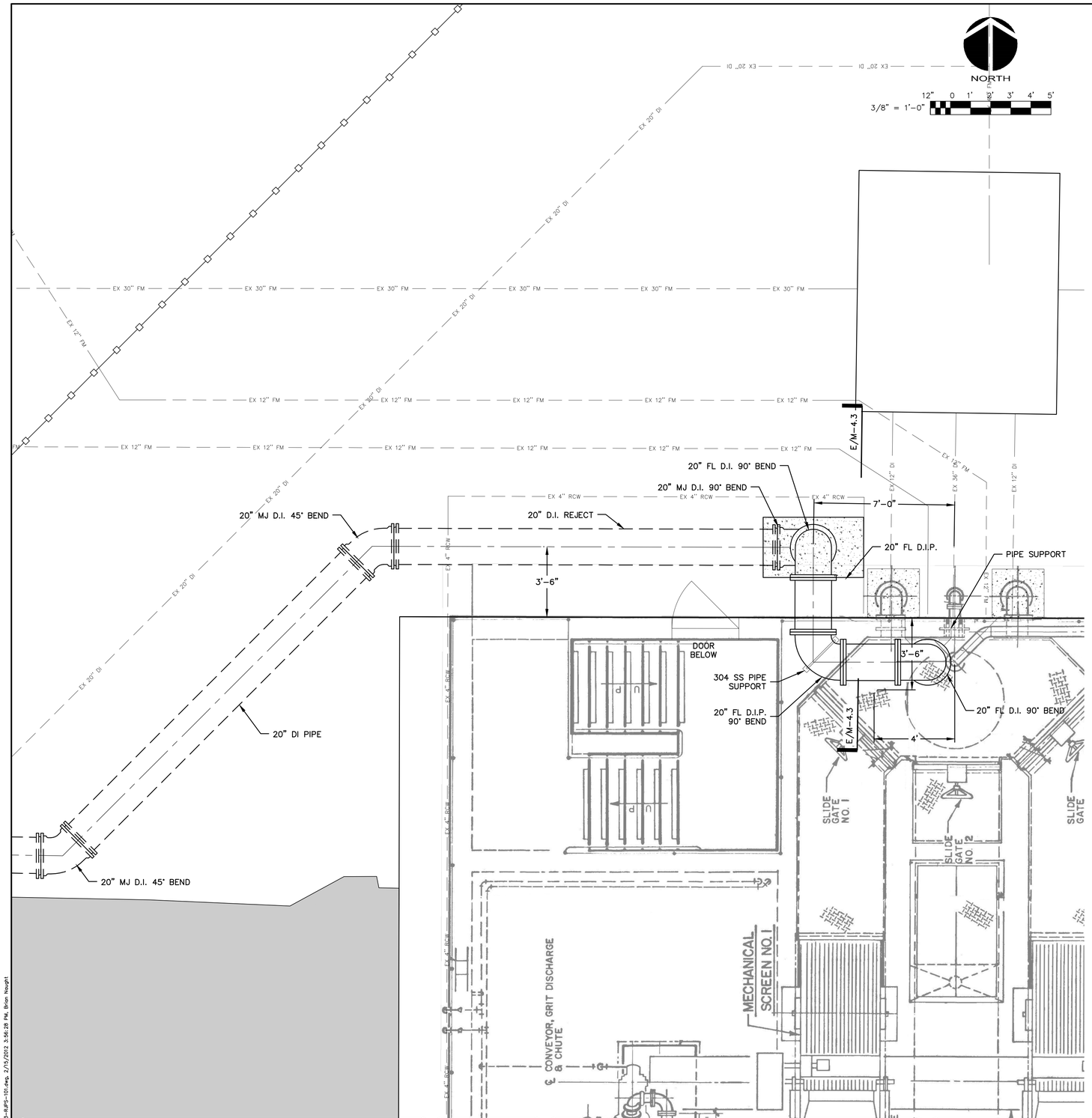

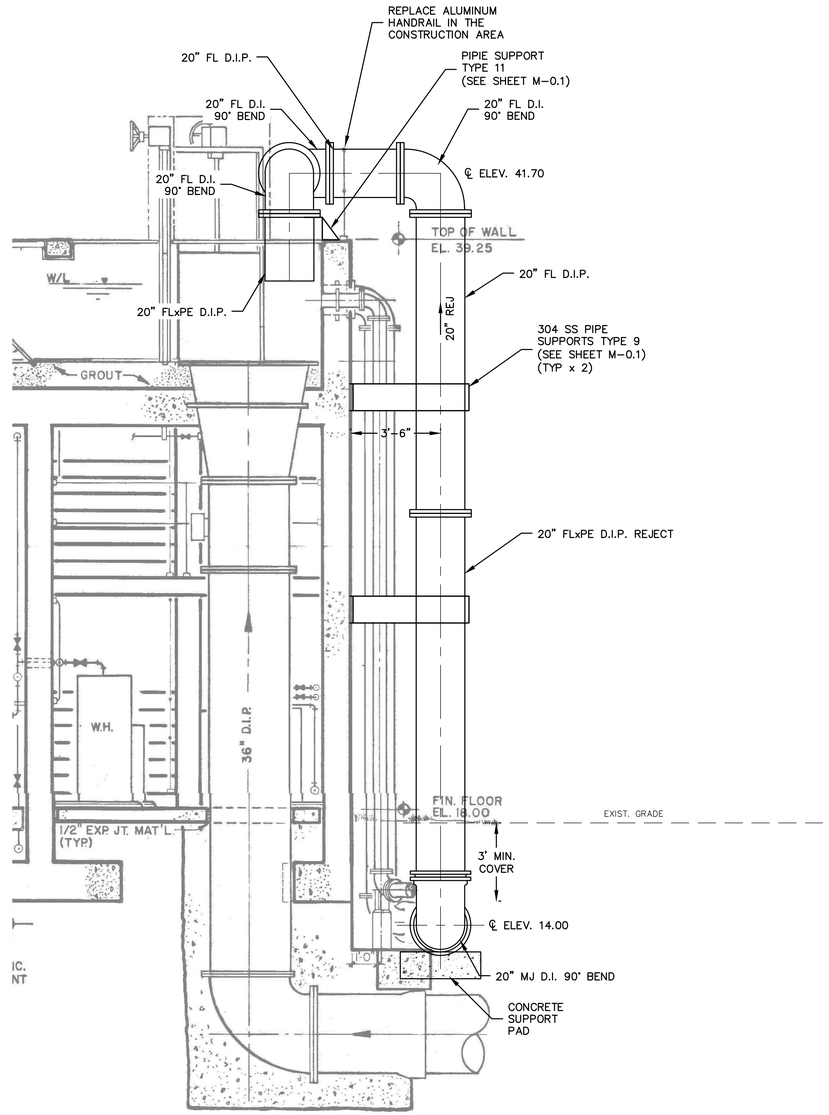

SECTION E/M-4.3

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

BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/06/88 FOR "SOUTHWEST REGIONAL WASTEWATER TREATMENT PLANT EXPANSION" MANATEE COUNTY

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

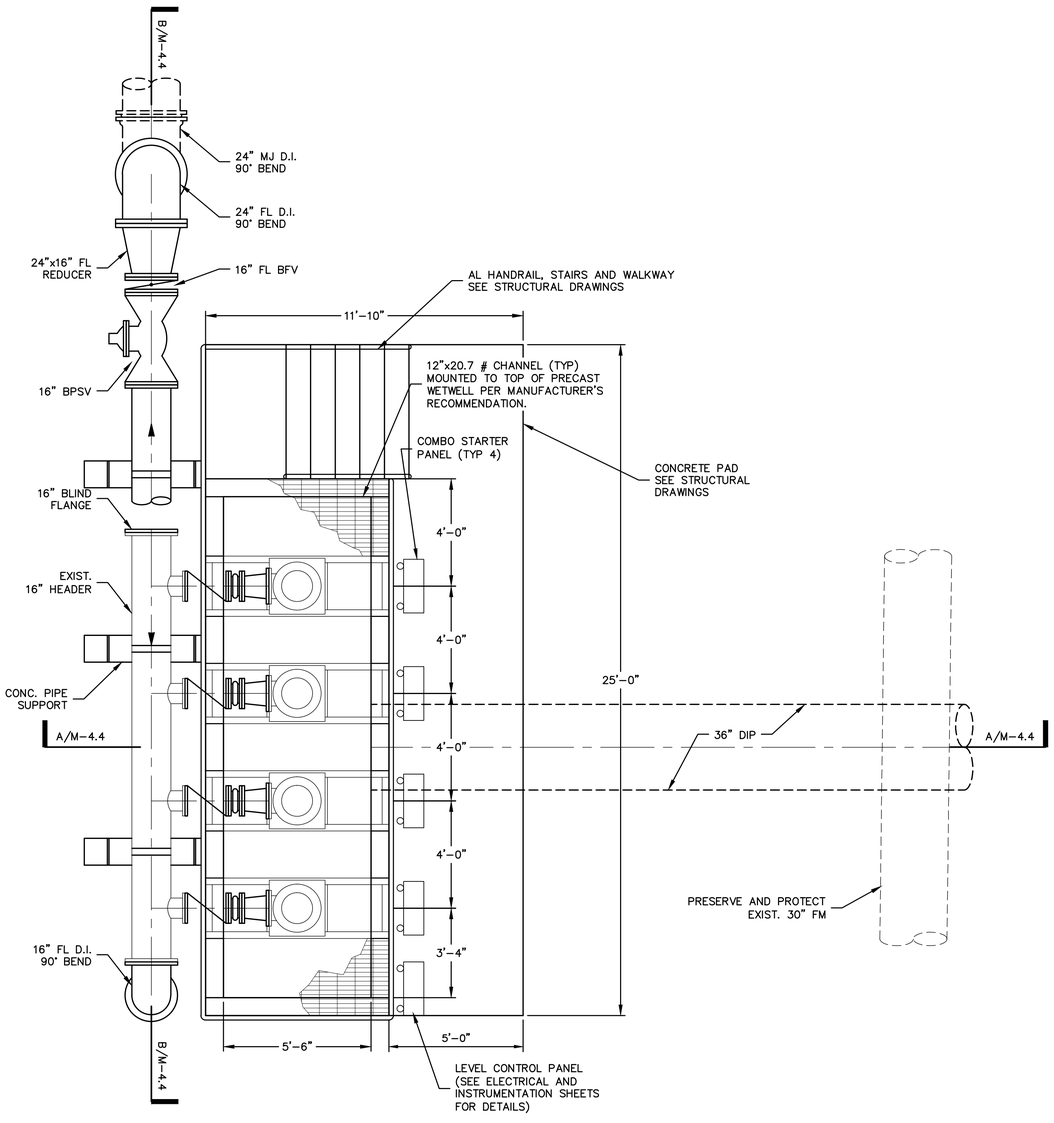
REJECT PLAN AND SECTION AT HEADWORKS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

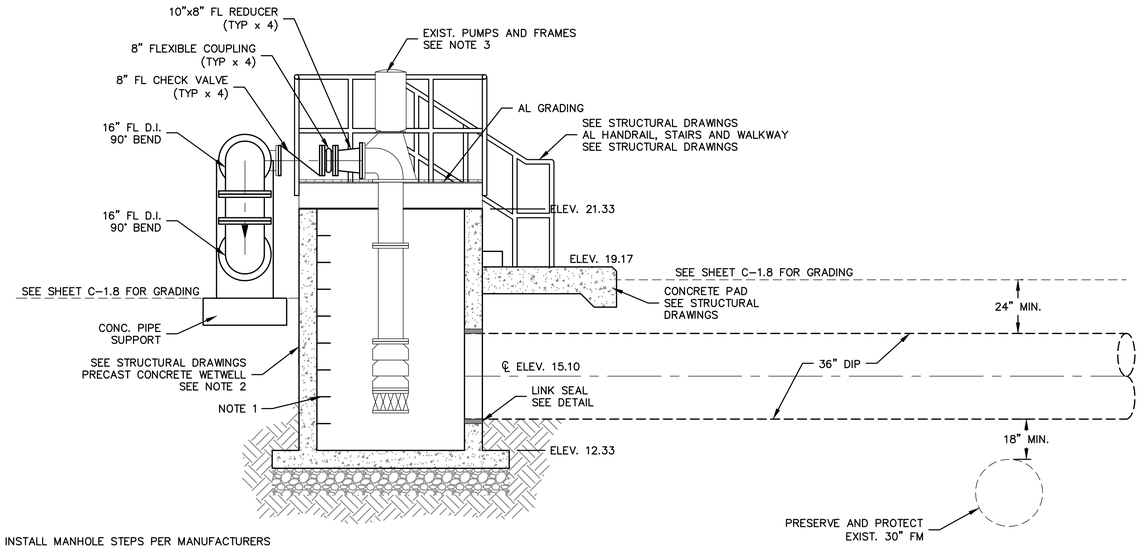
SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-4.3

STATUS: ISSUE FOR BID
REVISION

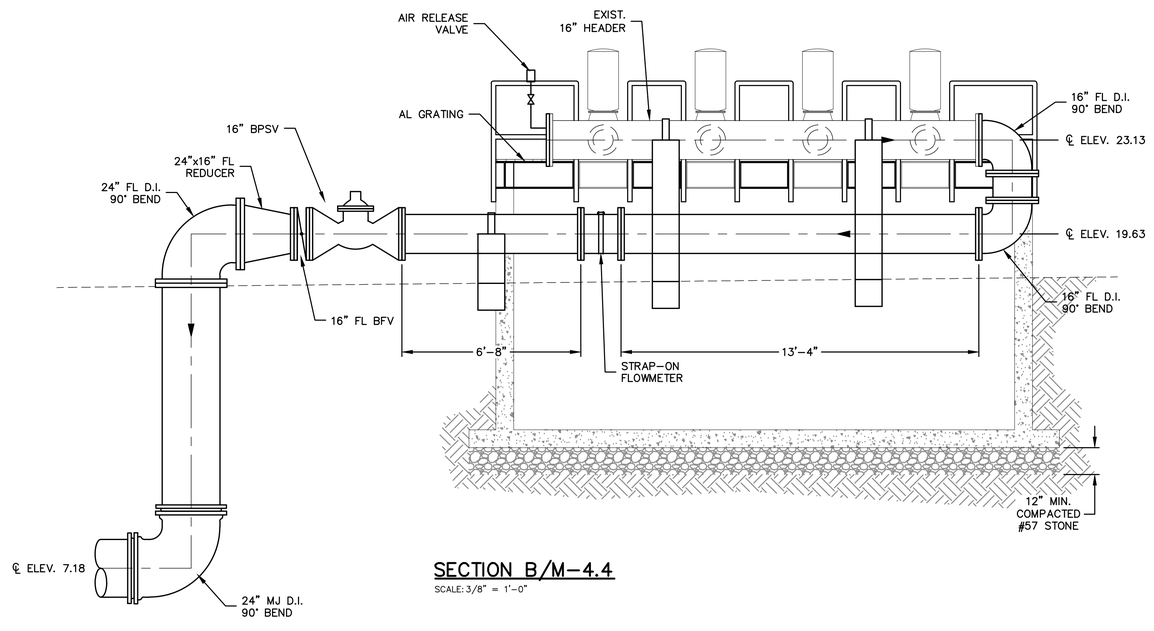


PLAN
SCALE: 3/8" = 1'-0"



SECTION A/M-4.4
SCALE: 3/8" = 1'-0"

NOTES:
1. CONTRACTOR SHALL INSTALL MANHOLE STEPS PER MANUFACTURERS REQUIREMENTS AND IN ACCORDANCE WITH OSHA AND ASTM C478 STANDARDS. MANHOLE STEPS SHALL BE MODEL ML-10-NCR AS MANUFACTURED BY AMERICAN STEP CO. INC. OR APPROVED EQUAL.
2. PRECAST WETWELL SHALL MEET ASTM C478. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION. SEE SPECIFICATION SECTION 03456.
3. THE COUNTY SHALL PROVIDE PUMPS, PUMP SUPPORT FRAMES AND 16" HEADER. THE CONTRACTOR SHALL HAVE MODIFIED TWO VERTICAL TURBINE PUMPS FROM A COLUMN LENGTH OF 150.25" TO 90.25". CONTRACTOR SHALL COORDINATE MODIFICATION WITH BARNEY'S PUMP, INC.
4. PUMPS SHALL BE NATIONAL PUMP MODEL J12XHC1-1 STAGE.



SECTION B/M-4.4
SCALE: 3/8" = 1'-0"

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

UNFILTERED PUMP STATION

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	MSL
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-4.4

STATUS: ISSUE FOR BID
REVISION

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NOTES:
1. ALL UNDERGROUND PIPING, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.
2. PROVIDE ADDITIONAL BRACING FOR ALL THE ALUMINUM CABLE TRAY SUPPORTS NEAR CONSTRUCTION ACTIVITIES.
3. CONTRACTOR SHALL SUBMIT CABLE TRAY SUPPORT DESIGN FOR REVIEW AND APPROVAL. SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA.
4. CONTRACTOR SHALL REMOVE SLIDE GATE NO. 8 IN ITS ENTIRETY. CONTRACTOR SHALL INSTALL A CHAMFERED OVERFLOW WALL WITH A TOP EL. OF 16.83. THE CONTRACTOR SHALL SUBMIT A DESIGN FOR THE WALL PRIOR TO INSTALLATION, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA, FOR REVIEW AND APPROVAL.

NORTH

1/4" = 1'-0" 12" 0 5' 10'

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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No. 66118

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

EFFLUENT PUMP STATION FLOWMETER ASSEMBLY PLAN

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

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

DRAWING NUMBER
M-5.1

STATUS: ISSUE FOR BID
REVISION

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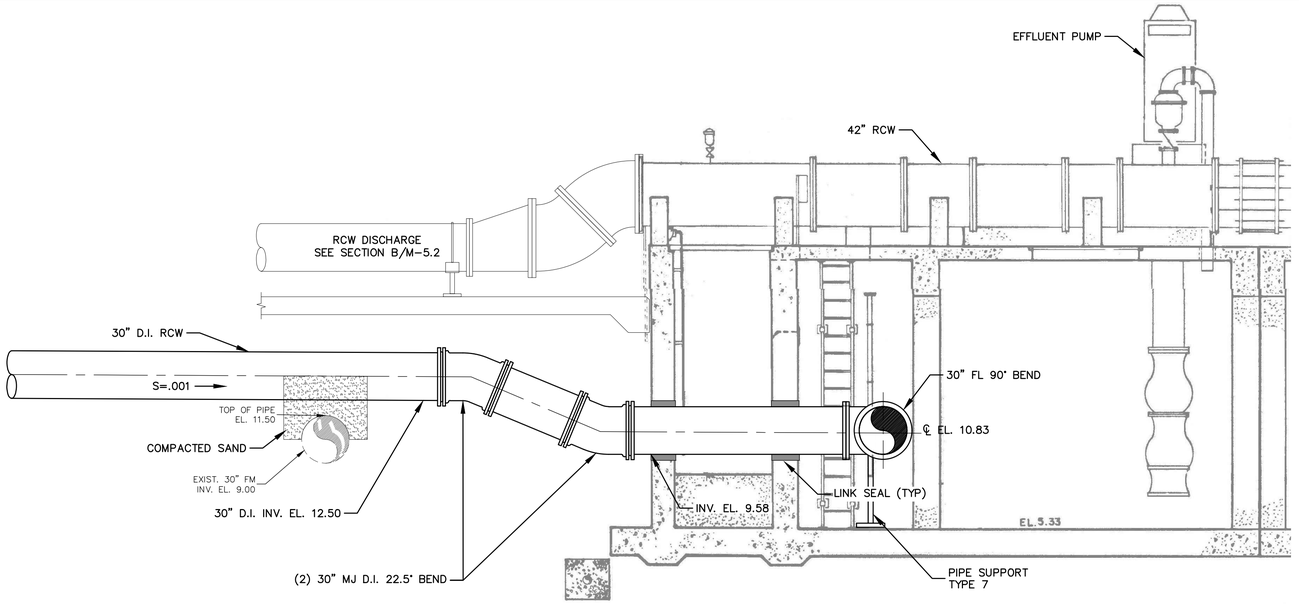
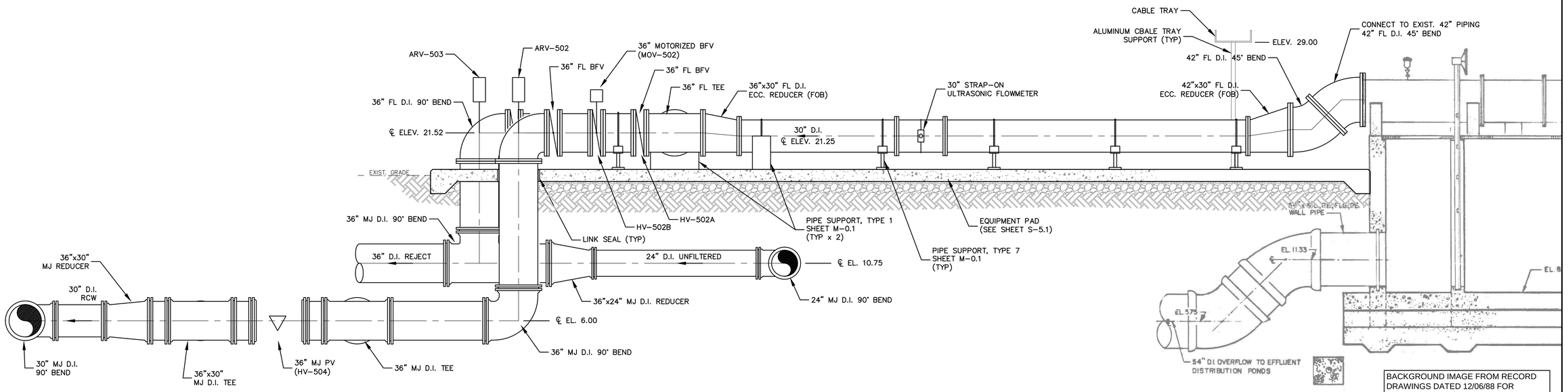


SECTION A/M-5.1

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



SECTION B/M-5.1

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

BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/06/88 FOR "SOUTHWEST REGIONAL WASTEWATER TREATMENT PLANT EXPANSION" MANATEE COUNTY

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

EFFLUENT PUMP STATION FLOWMETER ASSEMBLY SECTIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

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

DRAWING NUMBER
M-5.2

STATUS: ISSUE FOR BID
REVISION

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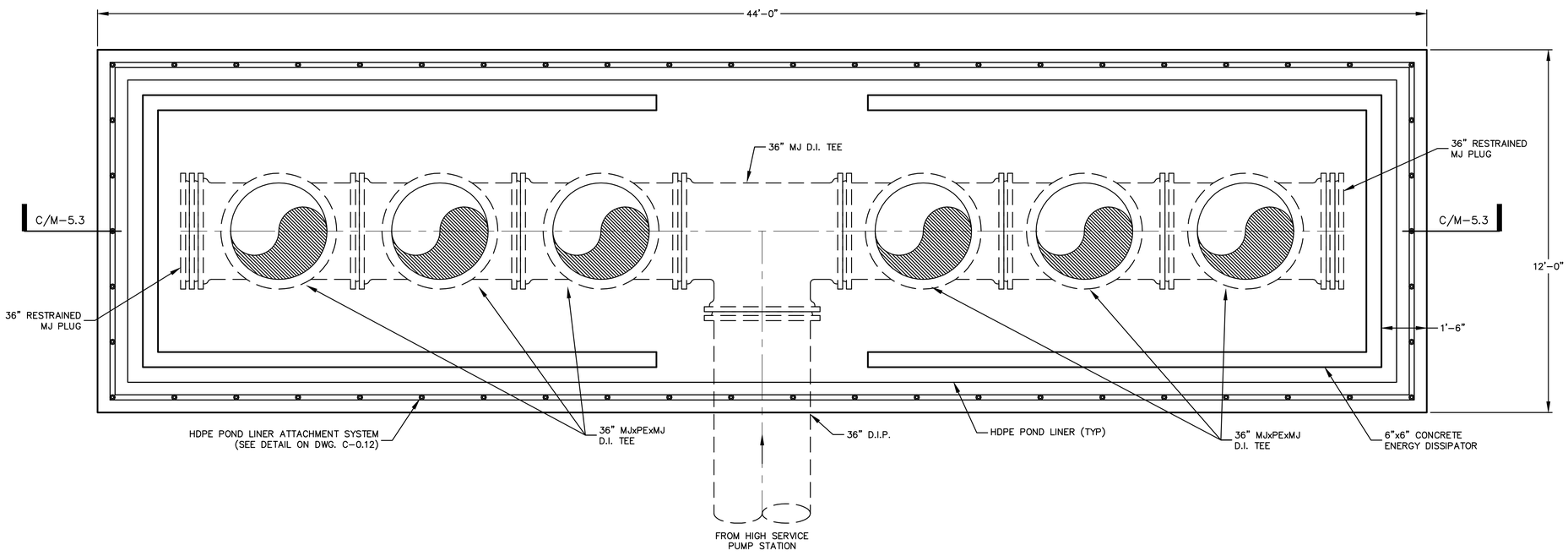
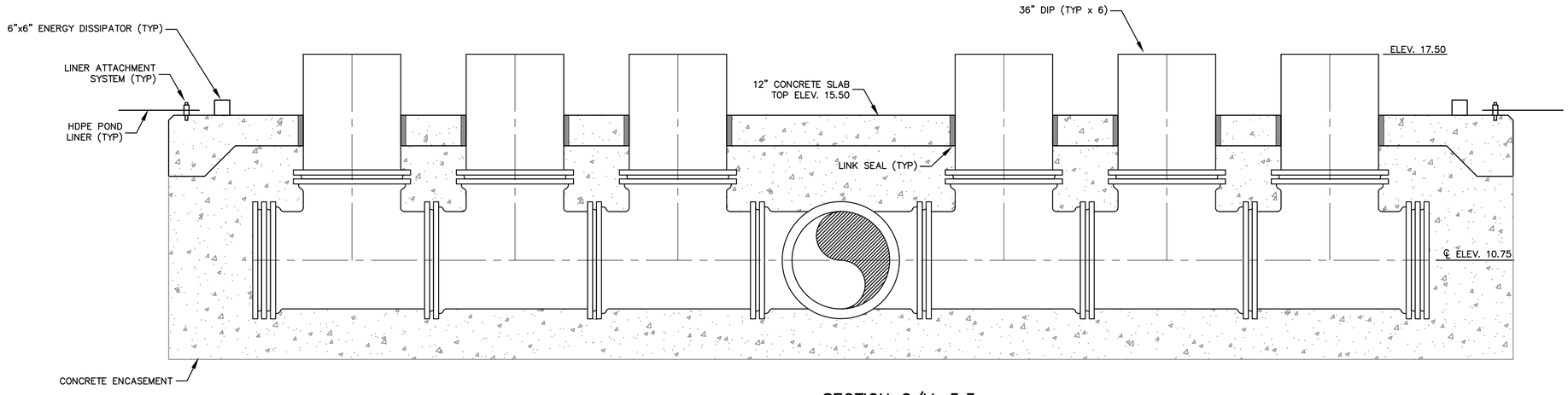
1/2" = 1'-0"





SECTION C/M-5.3

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

REJECT POND OUTLET ASSEMBLY PLAN AND SECTION

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1/2" = 1'-0"
VERTICAL: N/A

DRAWING NUMBER
M-5.3

STATUS: ISSUE FOR BID
REVISION

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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

VALVES, PUMPS & METERS (CONT'D)

- FLOAT SWITCH OR FLOAT
- (ARV) AIR RELEASE VALVE (ARVV) AIR RELEASE VACUUM VALVE (CAV) COMBINED AIR RELEASE VALVE
- ELECTRIC MOTOR
- ORIFICE/ANNUBAR
- AIR DIFFUSER
- LIQUID DIFFUSER
- 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)
- PROGRESSING CAVITY PUMP
- CENTRIFUGAL PUMP
- POSITIVE DISPLACEMENT PUMP
- DIAPHRAGM OR METERING PUMP
- EDUCTOR
- STRAINER
- DIAPHRAGM ISOLATOR
- HORN
- GRADUATED MEASURING CYLINDER
- CYLINDER HYDRAULIC OR PNEUMATIC
- LATERAL WYE
- RUPTURE DISK
- RESTRAINED FLEX CONN.
- FLEX CONN.
- FILTER AIR/WATER
- CENTRIFUGAL BLOWER
- POSITIVE DISPLACEMENT BLOWER
- MANUAL BAR RACK
- MIXER
- SUBMERSIBLE AERATOR/MIXER (ELECTRIC MOTOR DRIVEN)
- UNION

MISCELLANEOUS SYMBOLS

- PURGE CONNECTION
- SAMPLE POINT
- INTERLOCK
- MULTIPLY
- DIVIDE
- HIGH SELECT
- LOW SELECT
- SQUARE ROOT
- SUM (ALGEBRAIC)
- SPECIAL FUNCTION
- 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 (MODULATING)
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

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

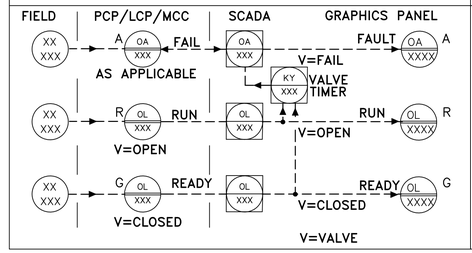
HOA = HAND–OFF–AUTO
S/S = START/STOP
SEL = SELECTOR
O/C = OPEN/CLOSE
O/O = ON/OFF
LOS = LOCKOUT–START
D/S = DUTY/STANDBY
FOS = FAST–OFF–SLOW
OAC = OPEN–AUTO–CLOSE
OOCA = OPEN–OFF–CLOSE–AUTO
ROF = REVERSE–OFF–FORWARD
ROL = RAISE–OFF–LOWER
F/R = FORWARD/REVERSE
HOR = HAND–OFF–REMOTE
LOR = LOCAL–OFF–REMOTE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

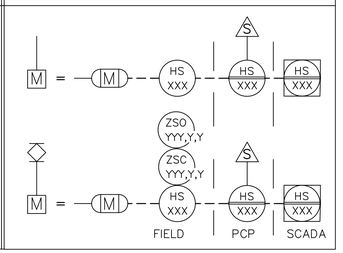
S = STATUS

THIS SYMBOL INDICATES THE FOLLOWING INSTRUMENTATION



TYPICAL FOR M

(IF NOT OTHERWISE ILLUSTRATED ON DWGS)



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MICHAEL TWEEDEL, P.E.
No. 60940

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION GENERAL NOTES, LEGEND AND ABBREVIATIONS

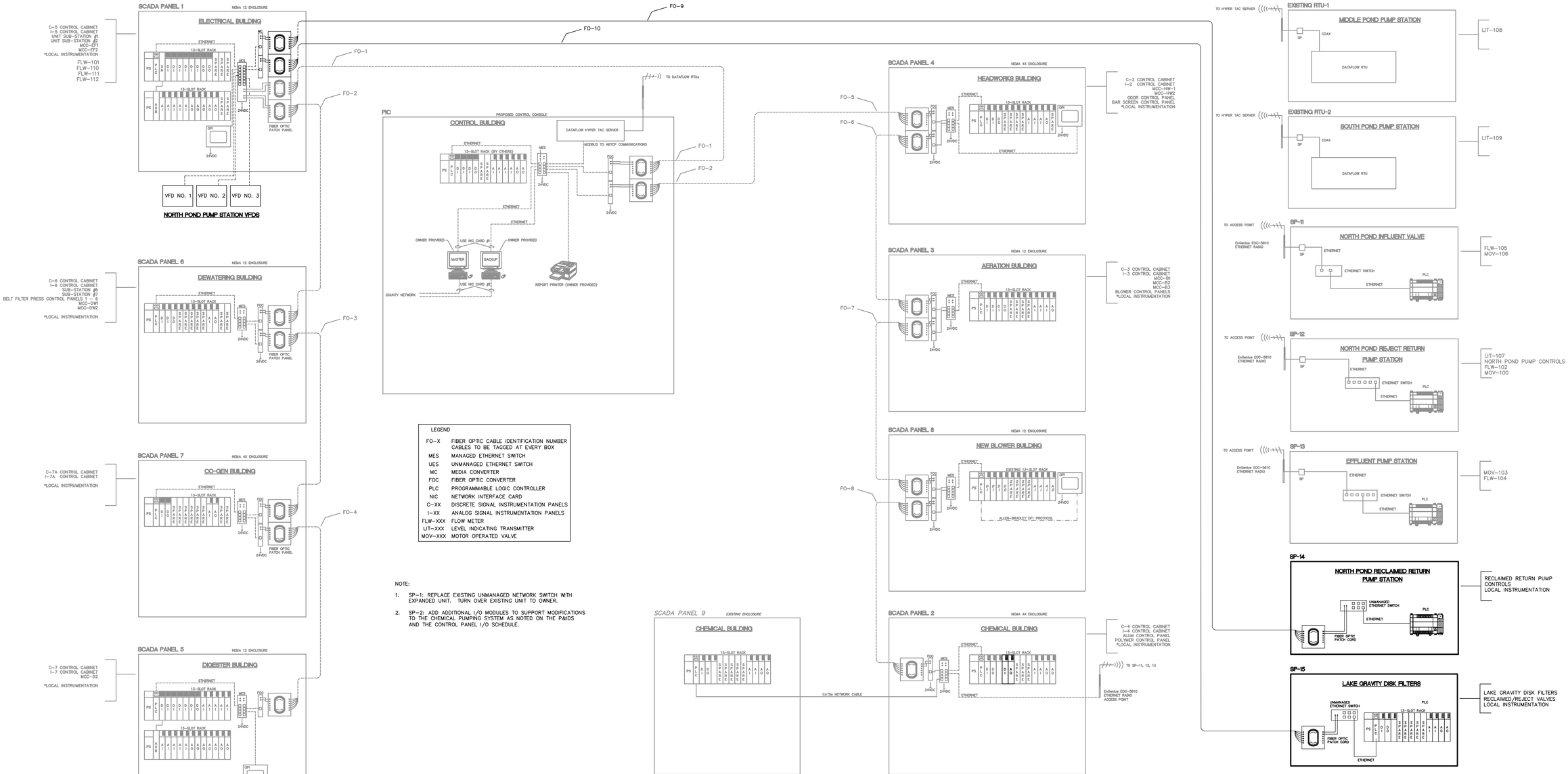
DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-0.1

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\08–Drawings\Instrumentation\I–0.1_1024O147.dwg, 2/15/2012 9:05:53 AM, Michael Tweedel



LEGEND	
FO-X	FIBER OPTIC CABLE IDENTIFICATION NUMBER CABLES TO BE TAGGED AT EVERY BOX
MES	MANAGED ETHERNET SWITCH
UES	UNMANAGED ETHERNET SWITCH
MC	MEDIA CONVERTER
FOC	FIBER OPTIC CONVERTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
NIC	NETWORK INTERFACE CARD
C-XX	DISCRETE SIGNAL INSTRUMENTATION PANELS
I-XX	ANALOG SIGNAL INSTRUMENTATION PANELS
FLW-XXX	FLOW METER
LIT-XXX	LEVEL INDICATING TRANSMITTER
MOV-XXX	MOTOR OPERATED VALVE

NOTE:

1. SP-1: REPLACE EXISTING UNMANAGED NETWORK SWITCH WITH EXPANDED UNIT. TURN OVER EXISTING UNIT TO OWNER.
2. SP-2: ADD ADDITIONAL I/O MODULES TO SUPPORT MODIFICATIONS TO THE CHEMICAL PUMPING SYSTEM AS NOTED ON THE P&IDS AND THE CONTROL PANEL I/O SCHEDULE.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

COMMUNICATIONS SYSTEM MODIFICATIONS OVERVIEW

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	EEB
DESIGNED	EEB
CHECKED	TER
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-0.2

STATUS: ISSUE FOR BID
REVISION MDT

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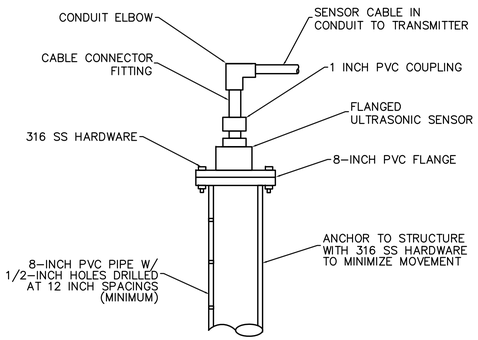
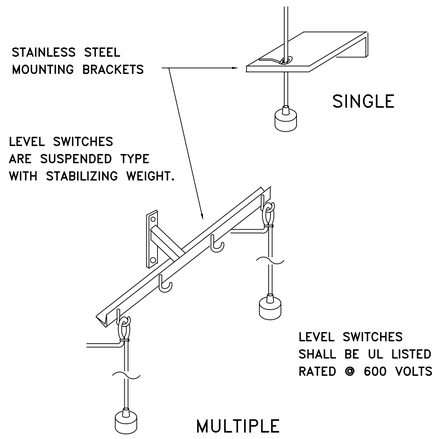
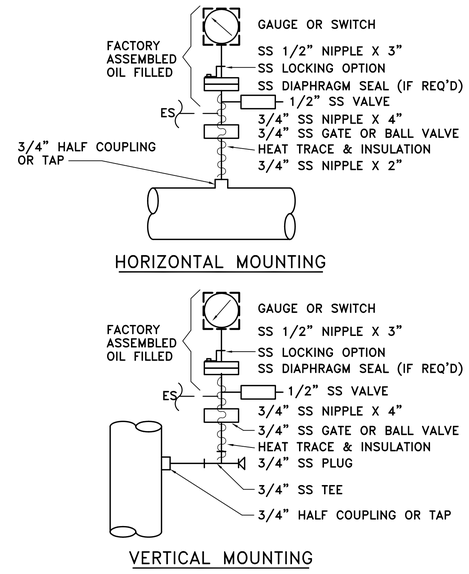


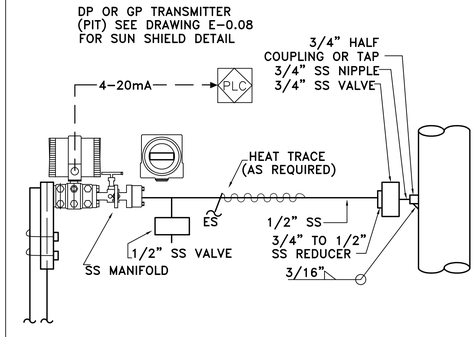
ULTRASONIC SENSOR MOUNTING
WITH STILLING WELL



TYPICAL LEVEL SWITCH MOUNTING DETAIL

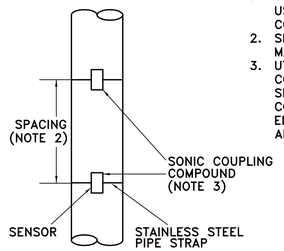


TYPICAL PRESSURE INDICATOR/
SWITCH PIPING DETAIL

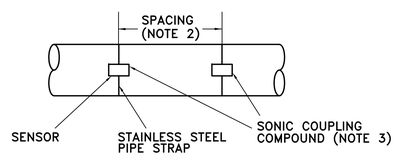


TYPICAL PRESSURE TRANSDUCER
PIPING DETAIL

NOTES:
1. SENSORS TO BE MOUNTED USING 'V' TYPE CONFIGURATION.
2. SENSOR SPACING PER MANUFACTURER INSTRUCTION.
3. UTILIZE SONIC COUPLING COMPOUND. COMPOUND TYPE SHALL BE SIL-GLYDE, DOW CORNING 111, GENERAL ELECTRIC RTV-108 OR APPROVED EQUAL.

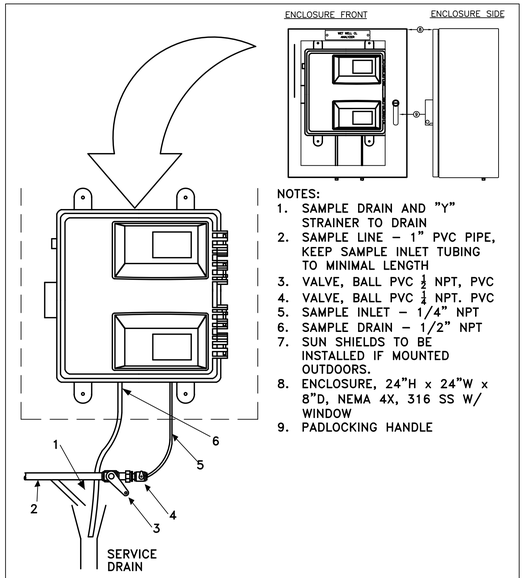


VERTICAL MOUNTING



HORIZONTAL MOUNTING

TRANSIT TIME FLOW METER
SENSOR MOUNTING DETAIL



NOTES:
1. SAMPLE DRAIN AND "Y" STRAINER TO DRAIN
2. SAMPLE LINE - 1" PVC PIPE, KEEP SAMPLE INLET TUBING TO MINIMAL LENGTH
3. VALVE, BALL PVC ½ NPT, PVC
4. VALVE, BALL PVC ¼ NPT. PVC
5. SAMPLE INLET - 1/4" NPT
6. SAMPLE DRAIN - 1/2" NPT
7. SUN SHIELDS TO BE INSTALLED IF MOUNTED OUTDOORS.
8. ENCLOSURE, 24"H x 24"W x 8"D, NEMA 4X, 316 SS W/ WINDOW
9. PADLOCKING HANDLE

CHLORINE ANALIZER MOUNTING
WITH SAMPLING TUBING

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
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DESIGNED	MDT
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SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-0.3

STATUS: ISSUE FOR BID
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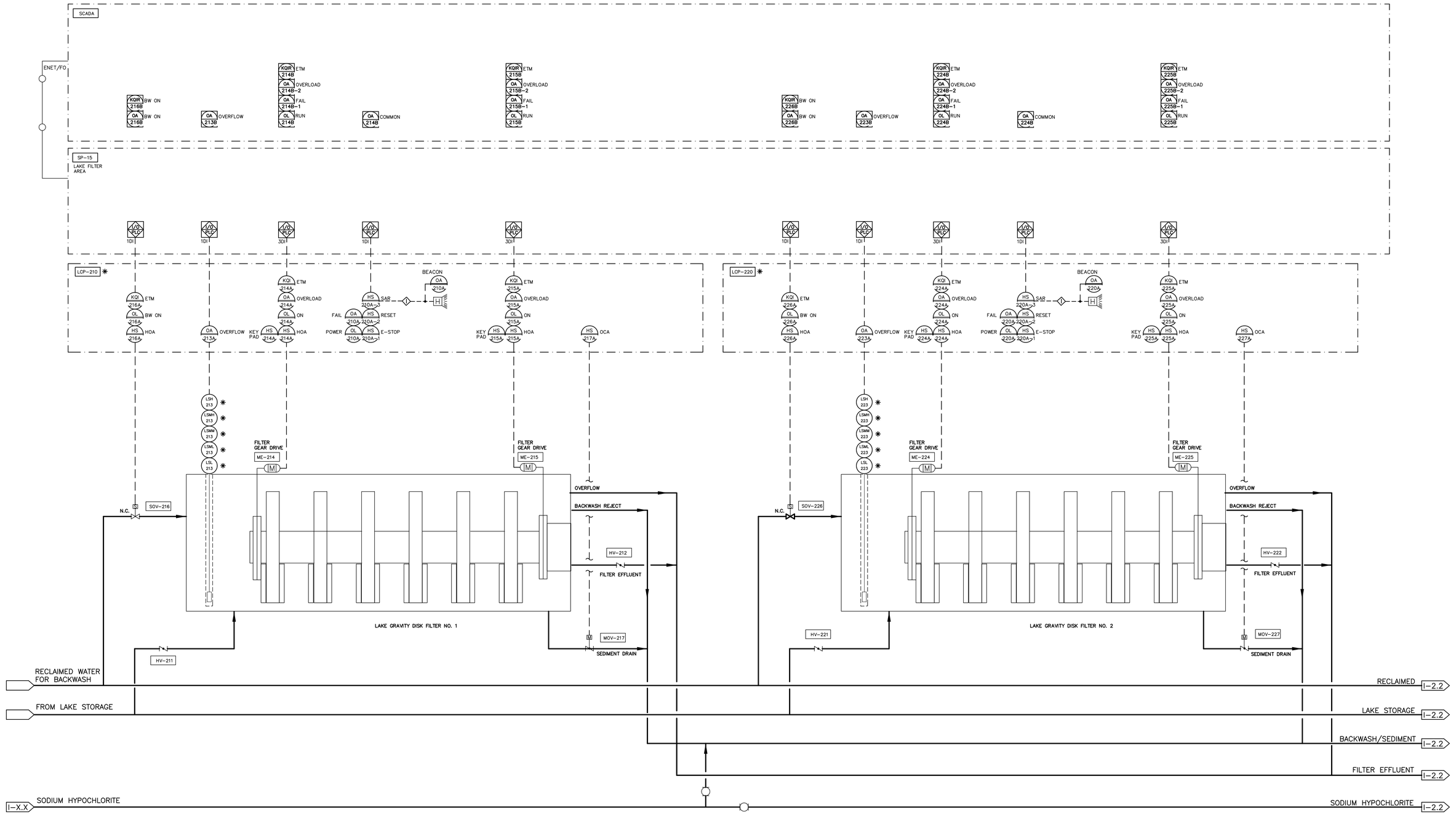

✳ BY FILTER EQUIPMENT SUPPLIER

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM LAKE GRAVITY DISK FILTERS NO. 1 AND 2

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	MDT
DESIGNED	MDT
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PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-2.1

STATUS: ISSUE FOR BID
REVISION

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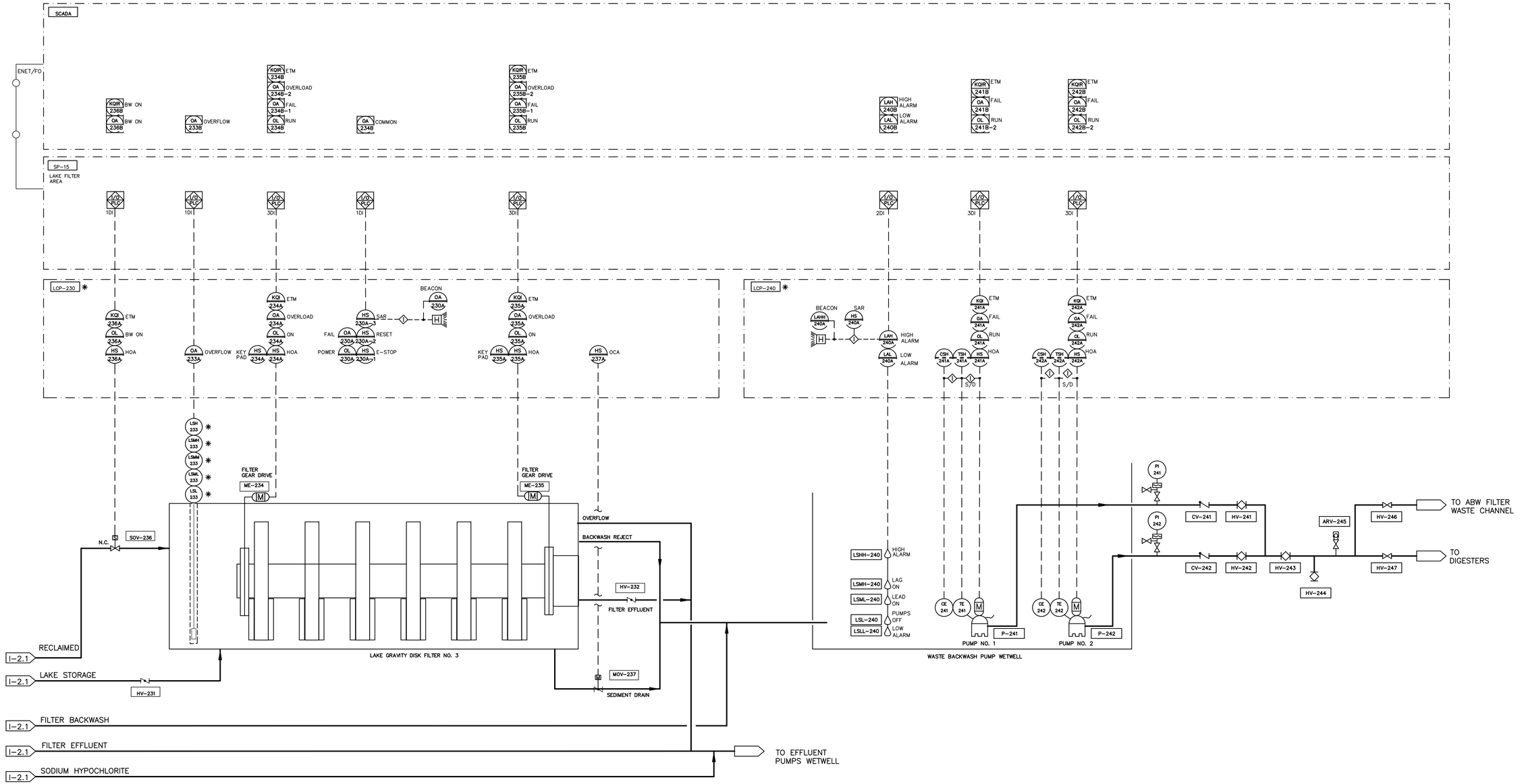

NOTE:

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM LAKE GRAVITY DISK FILTER NO. 3 AND BACKWASH PUMP STATION

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-2.2

STATUS: ISSUE FOR BID
REVISION

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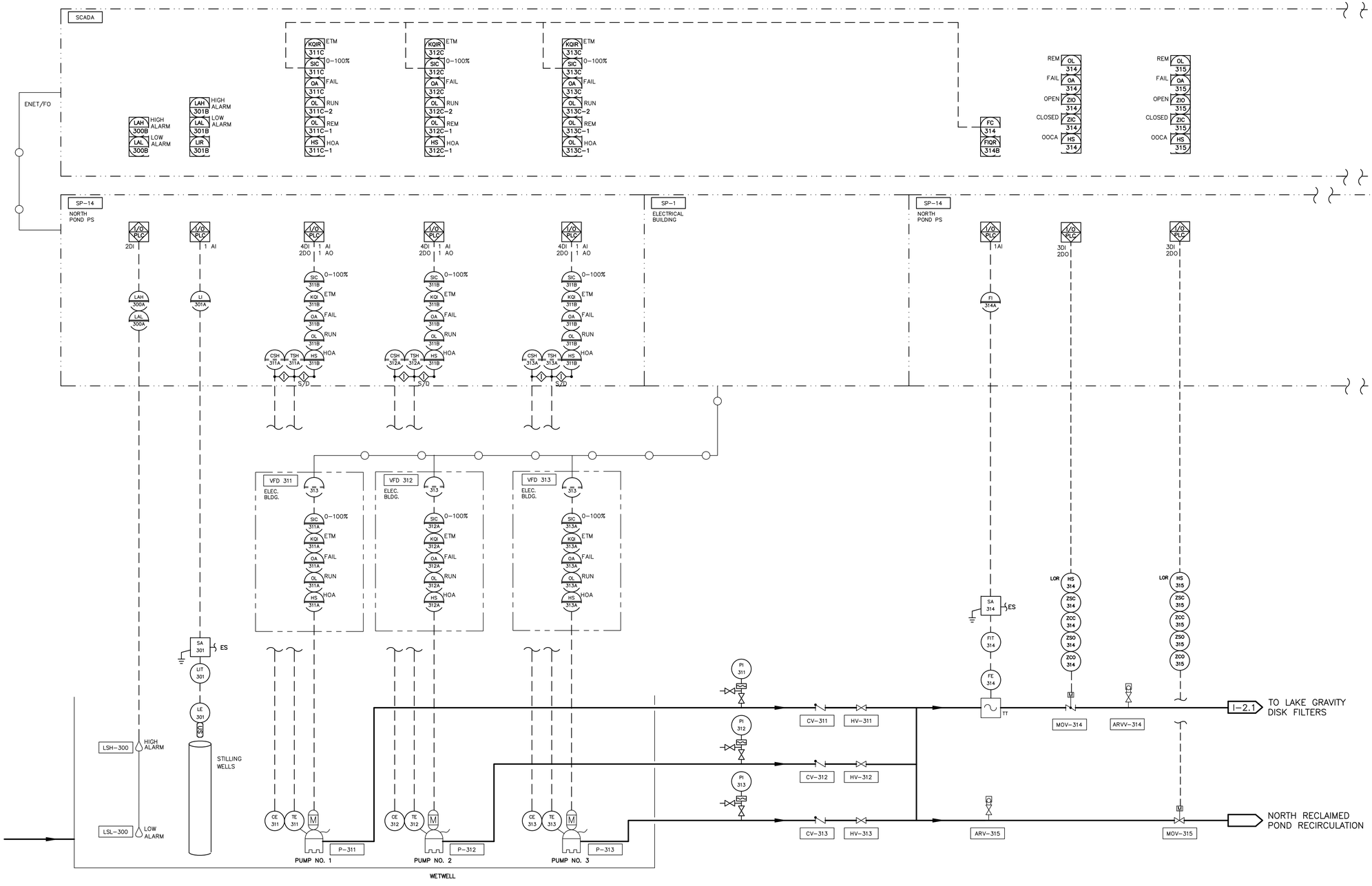

NORTH RECLAIMED POND PUMP STATION

SEE DRAWING I-0.2 FOR NETWORK CONNECTIVITY DETAILS.
1. CONTROL OF THE PUMP STATION VFDS FROM THE LOCAL SCADA PANEL (SP-14) OCCURS THROUGH AN ETHERNET COMMUNICATIONS LINK THROUGH THE ELECTRICAL BUILDING CONTROL PANEL (SP-1)

REV.NO.	DESCRIPTIONS	DATE
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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM NORTH RECLAIMED POND PUMP STATION

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VERTICAL: NA

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I-3.1

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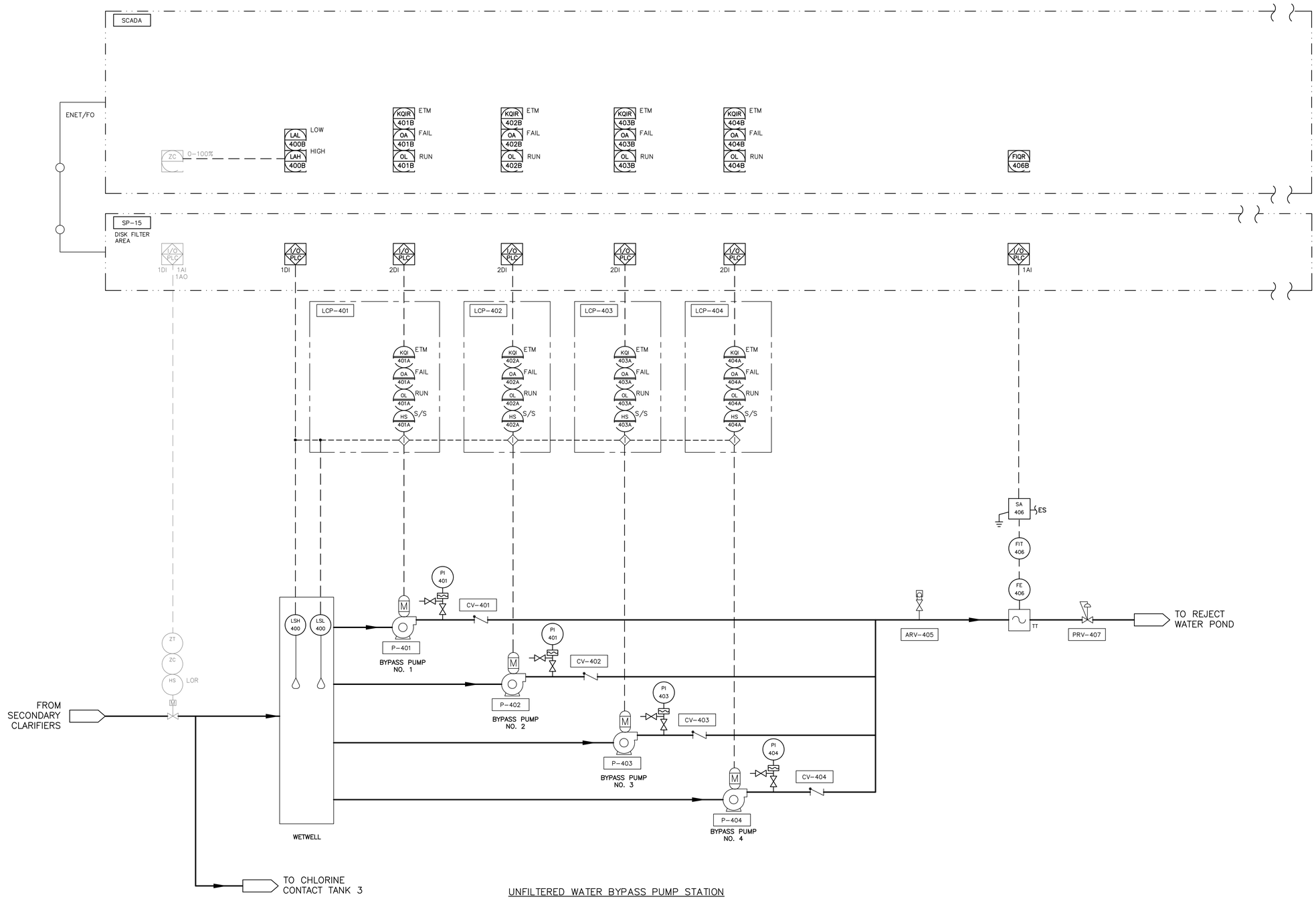

UNFILTERED WATER BYPASS PUMP STATION

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM UNFILTERED WATER BYPASS PUMP STATION

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	MDT
DESIGNED	MDT
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PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-4.1

STATUS: ISSUE FOR BID
REVISION

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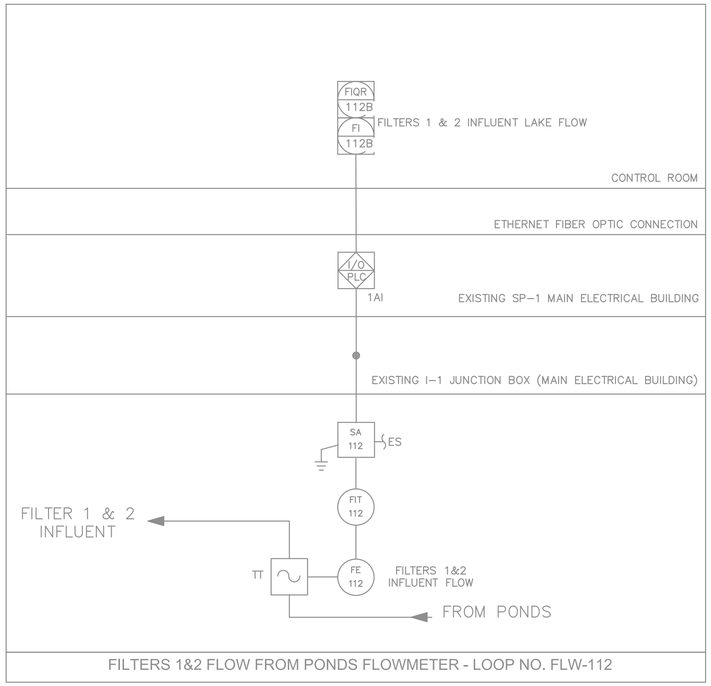
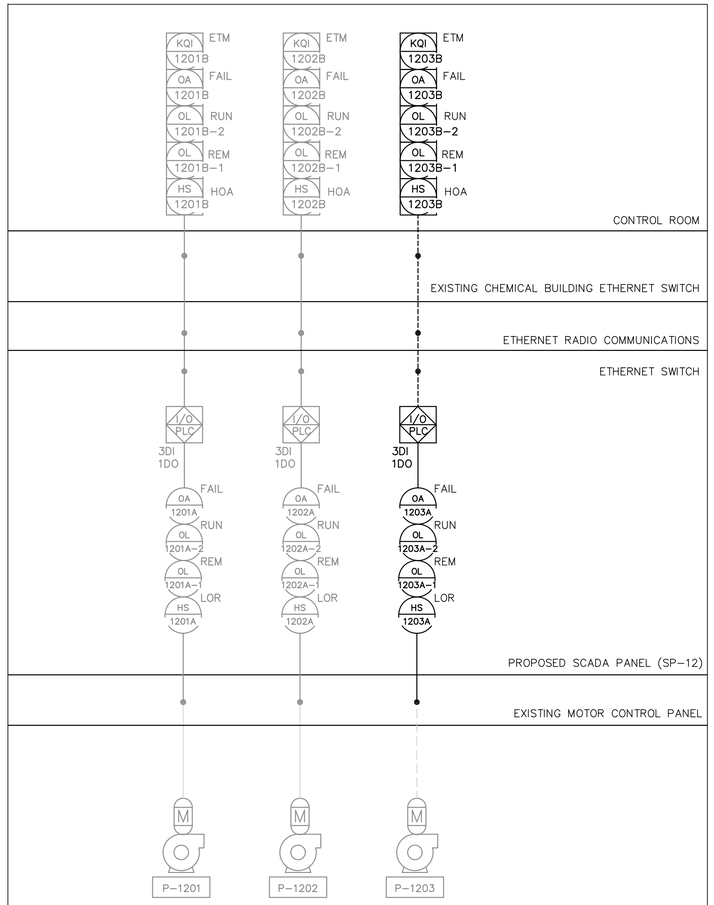
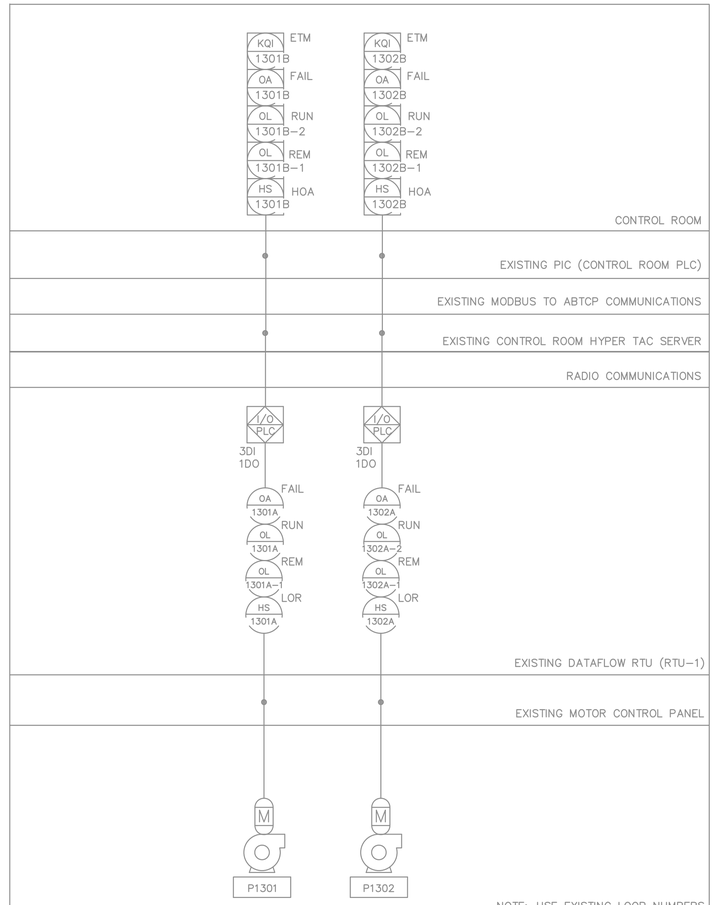


FILTERS 1&2 FLOW FROM PONDS FLOWMETER - LOOP NO. FLW-112



NORTH POND PUMP CONTROLS (SP-12)



NOTE: USE EXISTING LOOP NUMBERS

MIDDLE POND PUMP CONTROLS EXISTING DATAFLOW RTU

REV.NO.	DESCRIPTIONS	DATE
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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM NORTH POND REJECT RETURN PUMP STATION CONTROL MODIFICATIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
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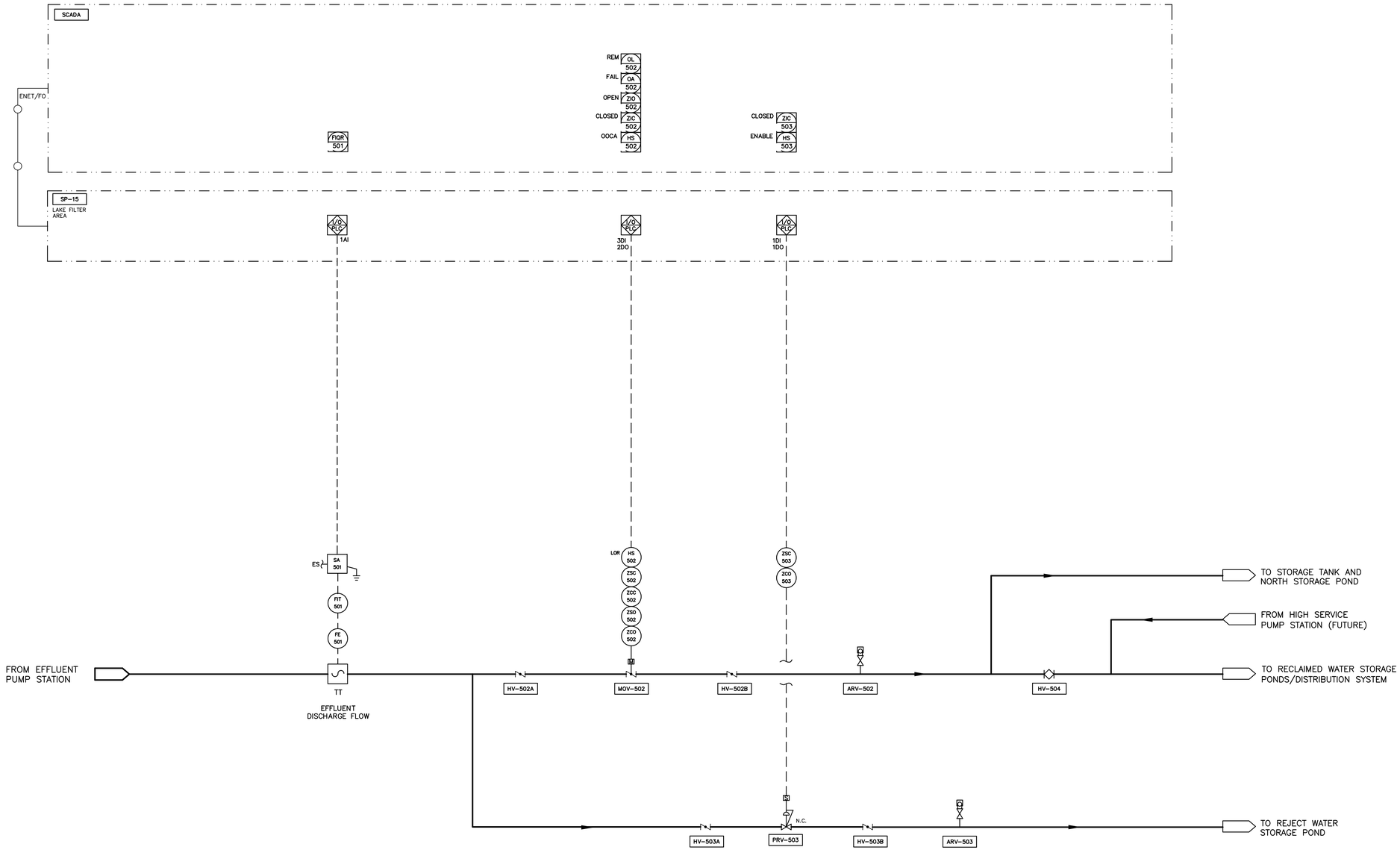
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-4.2

STATUS: ISSUE FOR BID
REVISION

C:\Files\Manatee\SWWRF Filters\Server Dwgs\I-4.2-1024147.dwg, 2/10/2012 8:38:54 AM, Michael Tweedel



NOTES:

1. RECLAIMED WATER VALVE OPERATED TO CLOSE IN AUTO ON LOW CHLORINE RESIDUAL OR HIGH TURBIDITY LEVEL.
2. REJECT WATER VALVE OPERATED TO OPEN IN AUTO ON LOW CHLORINE RESIDUAL OR HIGH TURBIDITY LEVEL.
3. VALVE RETURN TO SERVICE MANUALLY INITIATED ONLY AFTER MAINTAINED SAFE CHLORINE RESIDUAL AND TURBIDITY LEVELS.
4. DISCHARGE FLOW TO BE SEPARATELY TOTALIZED ON RECLAIMED AND REJECT OPERATIONS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

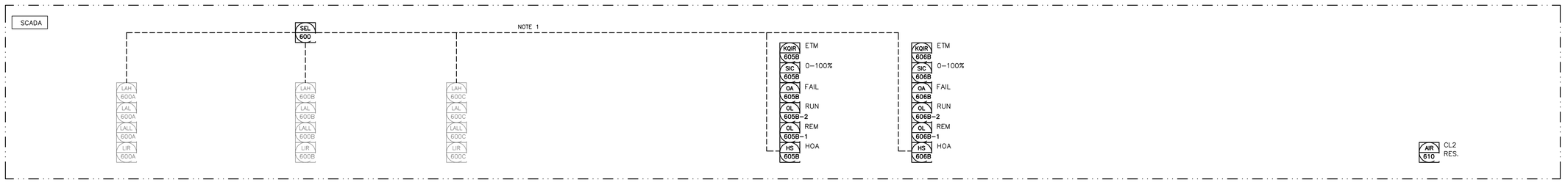
PROCESS AND INSTRUMENTATION DIAGRAM EFFLUENT PUMP STATION DISCHARGE

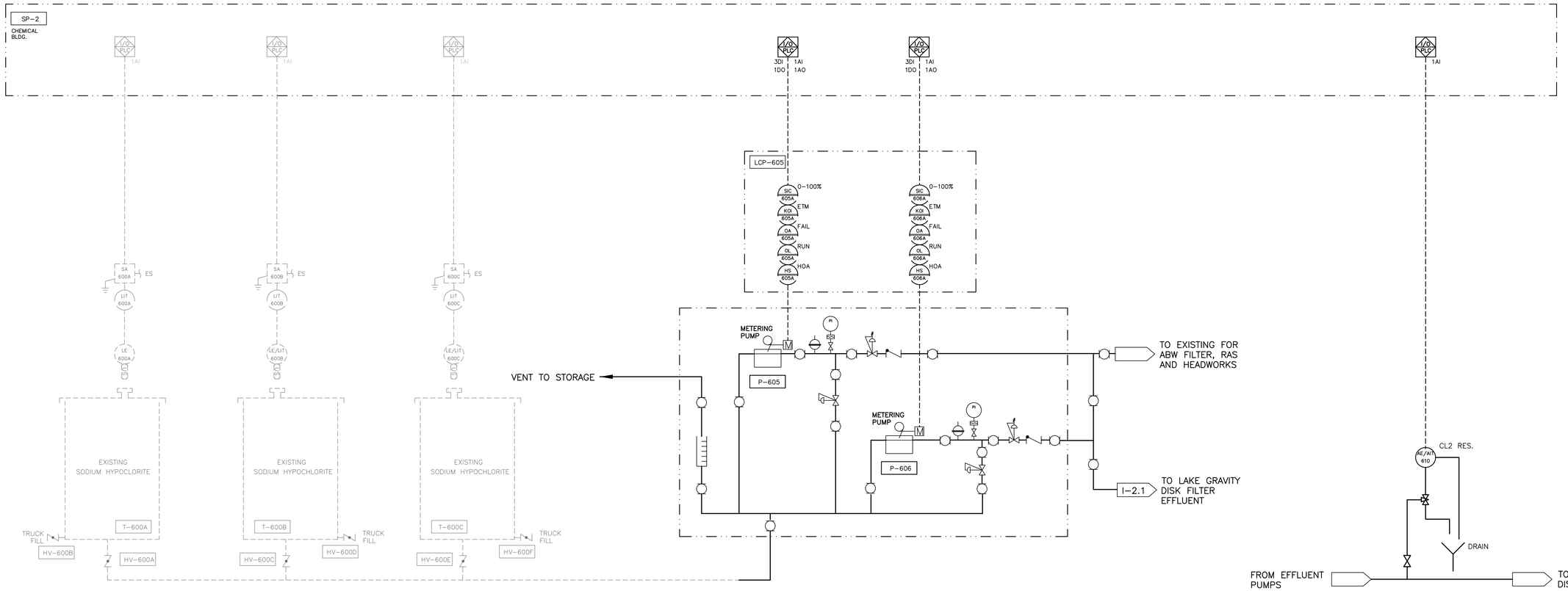
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-5.1

STATUS: ISSUE FOR BID
REVISION





NOTES:

1. METERING PUMPS ARE DISABLED FROM OPERATION IN AUTO MODE WHEN SELECTED STORAGE TANK IS AT LOW LEVEL.

REV.NO.	DESCRIPTIONS	DATE
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SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM SODIUM HYPOCHLORITE STORAGE AND PUMPING

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	MDT
DESIGNED	MDT
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PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-6.1

STATUS: ISSUE FOR BID
REVISION

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP DATA No.	LAMP DATA TYPE	BALLAST No.	BALLAST TYPE	VOLTAGE	WATTAGE	MOUNTING	MANUFACTURER	CATALOGUE/SERIES NUMBER	REMARKS
P1	HIGH-PRESSURE SODIUM SITE LIGHTING FIXTURE POLE-MOUNTED	1	150W HPS	1	ELCTRNC	120	187	POLE	NITE-BRITES COOPER/LUMARK LITHONIA	SBX-150S-5T-SC2-PSC HPHR-R2-150-120V-LL KSF1-150S-R2-120-SP04-LPI-CR	FIXTURE SHALL INCLUDE ENHANCED CORROSION RESISTANCE
	12' AL STRAIGHT SQUARE POLE	-	-	-	-	-	-	-	NITE-BRITES COOPER/LUMARK LITHONIA	SSA4-STB-12-D1-BRA SSA-4T12-WCM1-XG SSA-12-4C-DM19-DDB	POLE SHALL INCLUDE VIBRATION DAMPER
P2	HIGH-PRESSURE SODIUM SITE LIGHTING FIXTURE POLE-MOUNTED	1	150W HPS	1	ELCTRNC	120	187	POLE	NITE-BRITES COOPER/LUMARK LITHONIA	 HPHR-R2-150-120V-LL KSF1-150S-R2-120-SP04-LPI-CR	FIXTURE SHALL INCLUDE ENHANCED CORROSION RESISTANCE
	17' AL STRAIGHT SQUARE POLE	-	-	-	-	-	-	-	NITE-BRITES COOPER/LUMARK LITHONIA	SSA4-STB-17-D1-BRA SSA-4T17-WCM1-XG SSA-17-4C-DM19-DDB	POLE SHALL INCLUDE VIBRATION DAMPER

LIGHTING FIXTURE SCHEDULE NOTES:

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

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
- LOCK-OUT-STOP SWITCH
- R — RED STOPPED LIGHT
- FUSE
- MOTOR OL RELAY
- HEATER
- CLASS 1/DIVISION I/II CONDUIT SEAL-OFF FITTING
- LOCATED AT FIELD DEVICE
- LOCATED AT MAIN CONTROL PANEL
- LOCATED AT LOCAL CONTROL PANEL
- MOUNTED ON DOOR
- 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
- 0A/0F, 3R — DISCONNECT SWITCH. TOP NUMBER DENOTES FUSE SIZE (NF=NON-FUSED). BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING.
- CB 0A/0F, 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
- 3 - THREE-WAY SWITCHING
- D - DIMMER CONTROL
- 4 - FOUR-WAY SWITCHING
- OS - OCCUPANCY SENSOR

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.
- 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.

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

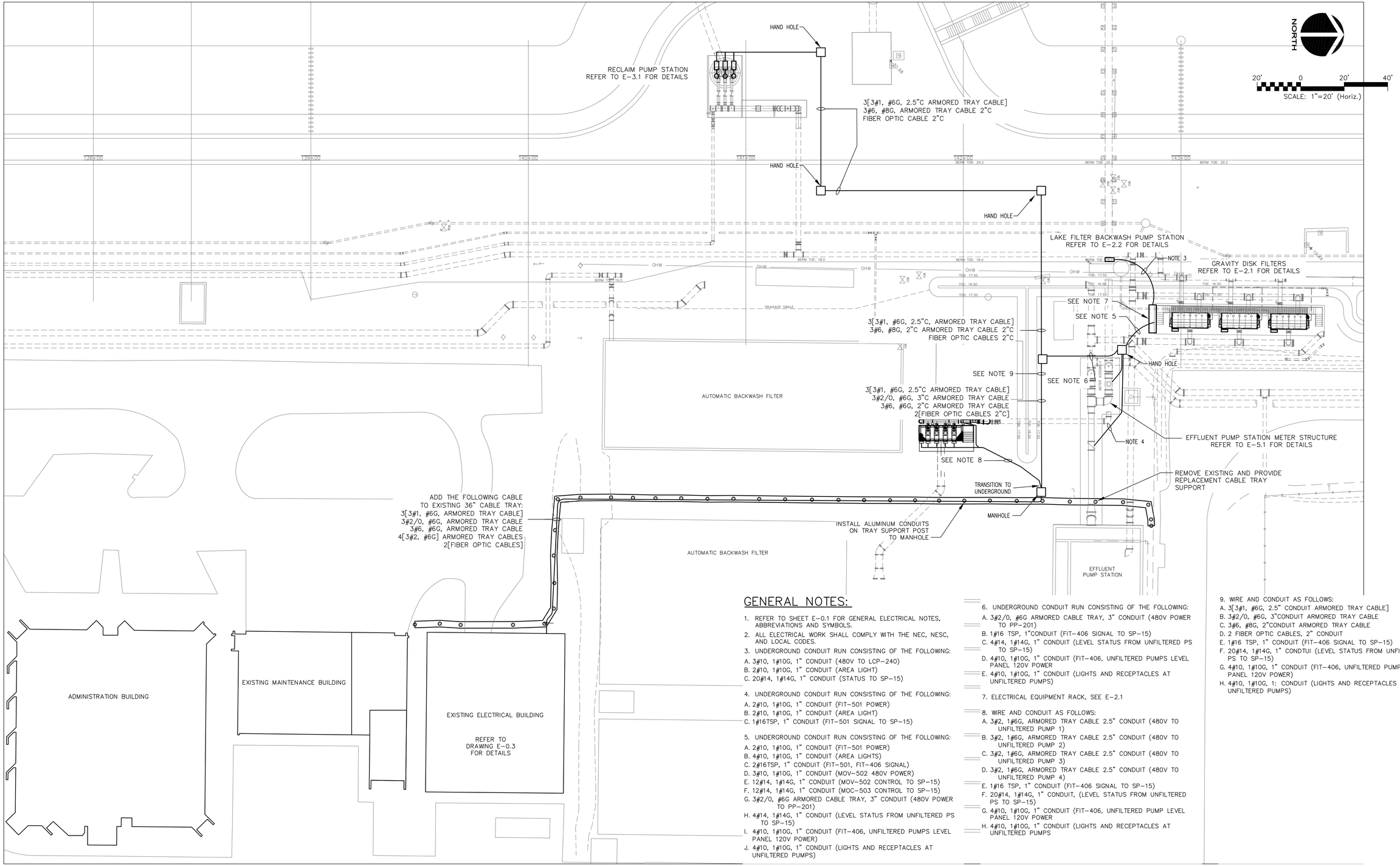
ELECTRICAL GENERAL NOTES, LEGENDS AND ABBREVIATIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.1

STATUS: ISSUE FOR BID
REVISION



GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NEC, NESC, AND LOCAL CODES.
3. UNDERGROUND CONDUIT RUN CONSISTING OF THE FOLLOWING:
   A. 3#10, 1#10G, 1" CONDUIT (480V TO LCP-240)
   B. 2#10, 1#10G, 1" CONDUIT (AREA LIGHT)
   C. 20#14, 1#14G, 1" CONDUIT (STATUS TO SP-15)
4. UNDERGROUND CONDUIT RUN CONSISTING OF THE FOLLOWING:
   A. 2#10, 1#10G, 1" CONDUIT (FIT-501 POWER)
   B. 2#10, 1#10G, 1" CONDUIT (AREA LIGHT)
   C. 1#16TSP, 1" CONDUIT (FIT-501 SIGNAL TO SP-15)
5. UNDERGROUND CONDUIT RUN CONSISTING OF THE FOLLOWING:
   A. 2#10, 1#10G, 1" CONDUIT (FIT-501 POWER)
   B. 4#10, 1#10G, 1" CONDUIT (AREA LIGHTS)
   C. 2#16TSP, 1" CONDUIT (FIT-501, FIT-406 SIGNAL)
   D. 3#10, 1#10G, 1" CONDUIT (MOV-502 480V POWER)
   E. 12#14, 1#14G, 1" CONDUIT (MOV-502 CONTROL TO SP-15)
   F. 12#14, 1#14G, 1" CONDUIT (MOC-503 CONTROL TO SP-15)
   G. 3#2/0, #6G ARMORED CABLE TRAY, 3" CONDUIT (480V POWER TO PP-201)
   H. 4#14, 1#14G, 1" CONDUIT (LEVEL STATUS FROM UNFILTERED PS TO SP-15)
   I. 4#10, 1#10G, 1" CONDUIT (FIT-406, UNFILTERED PUMPS LEVEL PANEL 120V POWER)
   J. 4#10, 1#10G, 1" CONDUIT (LIGHTS AND RECEPTACLES AT UNFILTERED PUMPS)
6. UNDERGROUND CONDUIT RUN CONSISTING OF THE FOLLOWING:
   A. 3#2/0, #6G ARMORED CABLE TRAY, 3" CONDUIT (480V POWER TO PP-201)
   B. 1#16 TSP, 1"CONDUIT (FIT-406 SIGNAL TO SP-15)
   C. 4#14, 1#14G, 1" CONDUIT (LEVEL STATUS FROM UNFILTERED PS TO SP-15)
   D. 4#10, 1#10G, 1" CONDUIT (FIT-406, UNFILTERED PUMPS LEVEL PANEL 120V POWER
   E. 4#10, 1#10G, 1" CONDUIT (LIGHTS AND RECEPTACLES AT UNFILTERED PUMPS)
7. ELECTRICAL EQUIPMENT RACK, SEE E-2.1
8. WIRE AND CONDUIT AS FOLLOWS:
   A. 3#2, 1#6G, ARMORED TRAY CABLE 2.5" CONDUIT (480V TO UNFILTERED PUMP 1)
   B. 3#2, 1#6G, ARMORED TRAY CABLE 2.5" CONDUIT (480V TO UNFILTERED PUMP 2)
   C. 3#2, 1#6G, ARMORED TRAY CABLE 2.5" CONDUIT (480V TO UNFILTERED PUMP 3)
   D. 3#2, 1#6G, ARMORED TRAY CABLE 2.5" CONDUIT (480V TO UNFILTERED PUMP 4)
   E. 1#16 TSP, 1" CONDUIT (FIT-406 SIGNAL TO SP-15)
   F. 20#14, 1#14G, 1" CONDUIT, (LEVEL STATUS FROM UNFILTERED PS TO SP-15)
   G. 4#10, 1#10G, 1" CONDUIT (FIT-406, UNFILTERED PUMP LEVEL PANEL 120V POWER
   H. 4#10, 1#10G, 1" CONDUIT (LIGHTS AND RECEPTACLES AT UNFILTERED PUMPS
9. WIRE AND CONDUIT AS FOLLOWS:
   A. 3[3#1, #6G, 2.5" CONDUIT ARMORED TRAY CABLE]
   B. 3#2/0, #6G, 3"CONDUIT ARMORED TRAY CABLE
   C. 3#6, #8G, 2"CONDUIT ARMORED TRAY CABLE
   D. 2 FIBER OPTIC CABLES, 2" CONDUIT
   E. 1#16 TSP, 1" CONDUIT (FIT-406 SIGNAL TO SP-15)
   F. 20#14, 1#14G, 1" CONDTUI (LEVEL STATUS FROM UNFILTERED PS TO SP-15)
   G. 4#10, 1#10G, 1" CONDUIT (FIT-406, UNFILTERED PUMPS LEVEL PANEL 120V POWER)
   H. 4#10, 1#10G, 1: CONDUIT (LIGHTS AND RECEPTACLES AT UNFILTERED PUMPS)

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL SITE PLAN

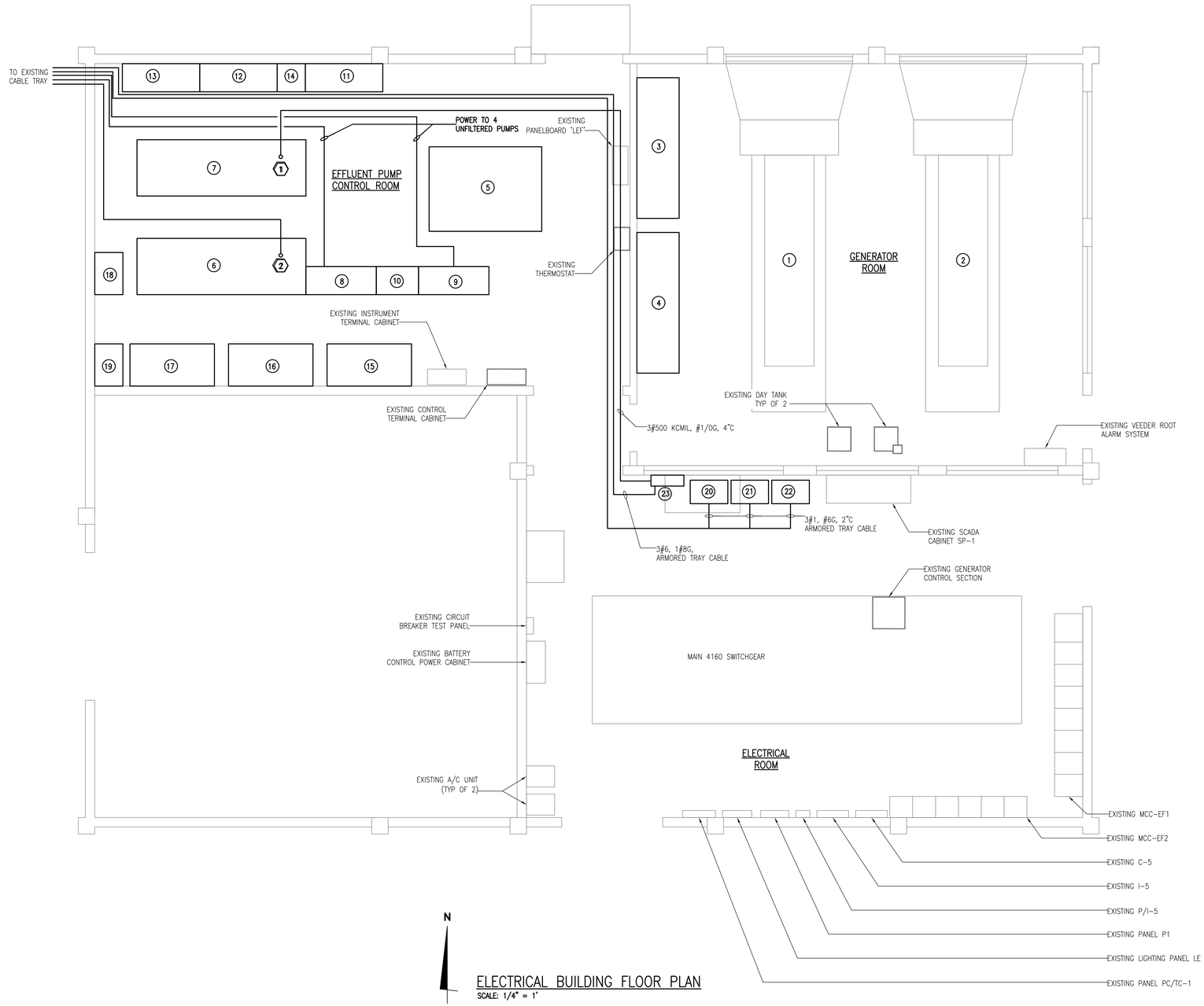
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
E-0.2

STATUS: ISSUE FOR BID
REVISION

S:\1024\0147\06-Drawings\Electrical\E-0.2-1024014 7.dwg, 2/10/2012 10:12:08 AM, Jon Mosley



ELECTRICAL BUILDING FLOOR PLAN
SCALE: 1/4" = 1'

NOTES:

1. REFER TO SHEET E001 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.

KEYNOTES:

(1) INSTALL 400 AMP TRIP BREAKER IN EXISTING 750 KVA GE POWERBREAK UNIT SUBSTATION NO. 10.

(2) INSTALL 175 AMP TRIP BREAKER IN EXISTING 750 KVA GE POWERBREAK UNIT SUBSTATION NO. 9.

(3) SUBSTATION NO. 9 AND NO. 10 ARE GENERAL EELCTRIC POWERBREAK SERIES WITH 1600 AMP BUSSING. ORIGINAL GE JOB NUMBER: 962044, ITEM: 01, SEC.: 102 PLANT: BN.

EQUIPMENT LEGEND:

(1) EXISTING 2000KW, 4160 GENERATOR No.1
(2) EXISTING 2000KW, 4160 GENERATOR No.2
(3) 500/667 KVA, 4160-480V UNIT SUBSTATION USB-1
(4) 500/667 KVA, 4160-480V UNIT SUBSTATION USB-2
(5) 4160V GENERATOR SWITCHGEAR
(6) 750 KVA, 4160-480V UNIT SUBSTATION USB-9
(7) 750 KVA, 4160-480V UNIT SUBSTATION USB-10
(8) SUBSTATION 11 480V SWITCHBOARD
(9) SUBSTATION 12 480V SWITCHBOARD
(10) EFFLUENT PUMP No. 5 ATS
(11) EFFLUENT PUMP No. 1 VFD
(12) EFFLUENT PUMP No. 2 VFD
(13) EFFLUENT PUMP No. 3 VFD
(14) EFFLUENT PUMP No. 2 ATS
(15) EFFLUENT PUMP No. 4 VFD
(16) EFFLUENT PUMP No. 5 VFD
(17) EFFLUENT PUMP No. 6 VFD
(18) INSTRUMENTATION/CONTROL CONDUCTOR JUNCTION BOX
(19) POWER CONDUCTOR JUNCTION BOX
(20) PROPOSED NORTH RECLAIMED PUMP STATION PUMP 1 VFD
(21) PROPOSED NORTH RECLAIMED PUMP STATION PUMP 2 VFD
(22) PROPOSED NORTH RECLAIMED PUMP STATION PUMP 3 VFD
(23) PROPOSED NEW 480V PANELBOARD PP-301

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL BUILDING FLOOR PLAN

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

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

DRAWING NUMBER
E-0.3

STATUS: ISSUE FOR BID
REVISION

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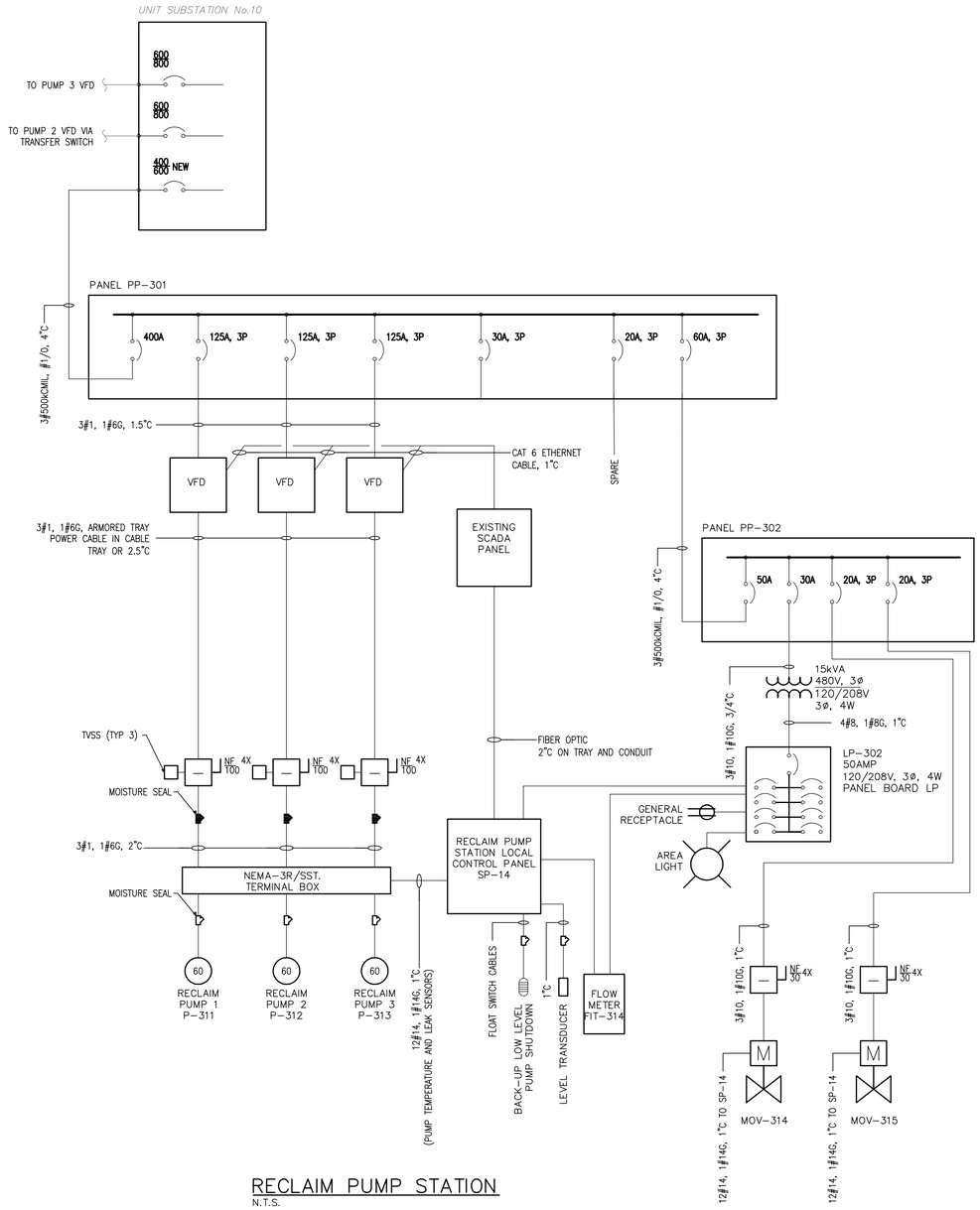
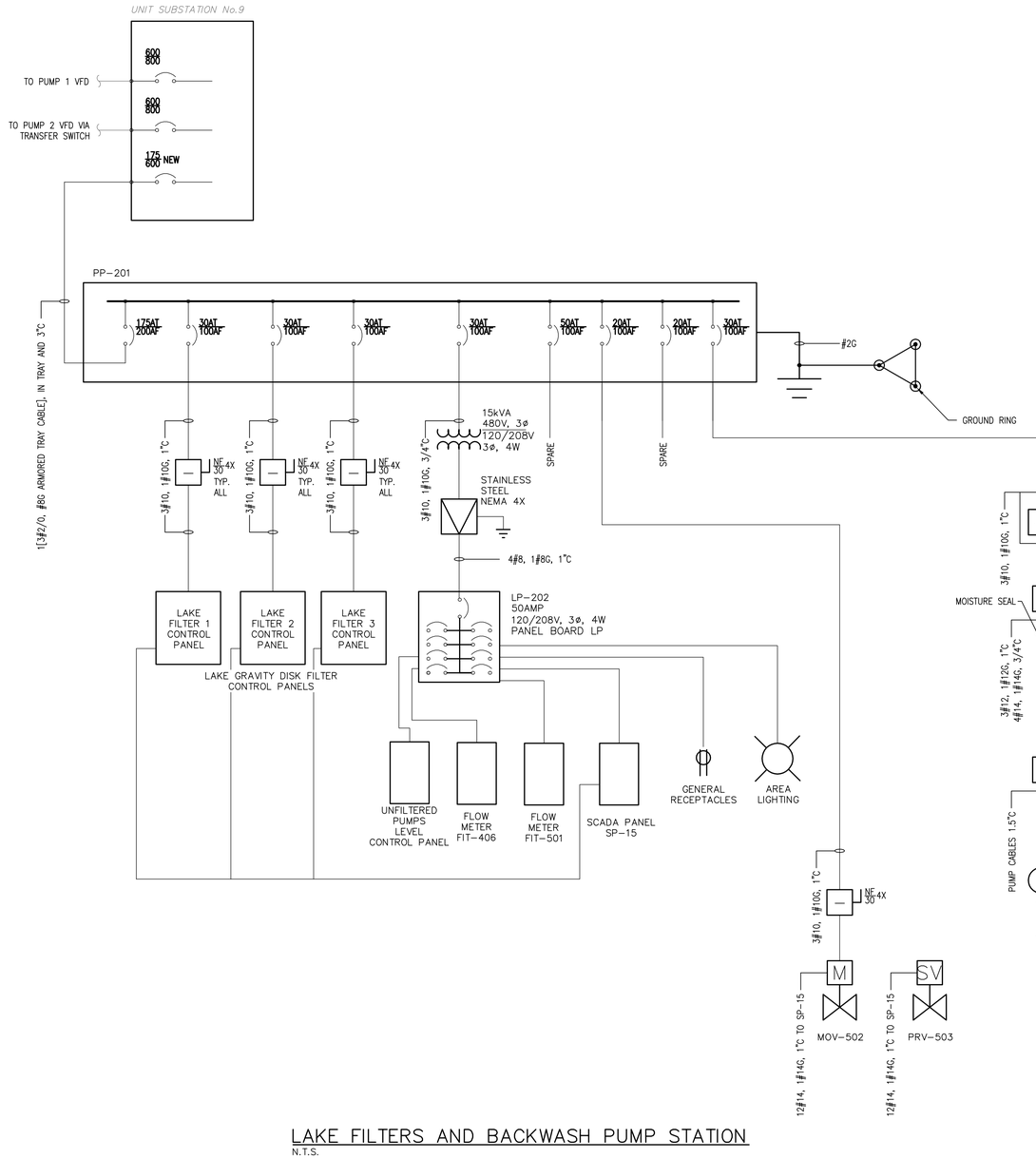


RECLAIM PUMP STATION
N.T.S.



LAKE FILTERS AND BACKWASH PUMP STATION
N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL BUILDING NO.1
LAKE FILTER BACKWASH PUMP STATION
SINGLE LINE DIAGRAMS

DATE:	FEBRUARY 2012
MCE. PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.4

STATUS: ISSUE FOR BID
REVISION

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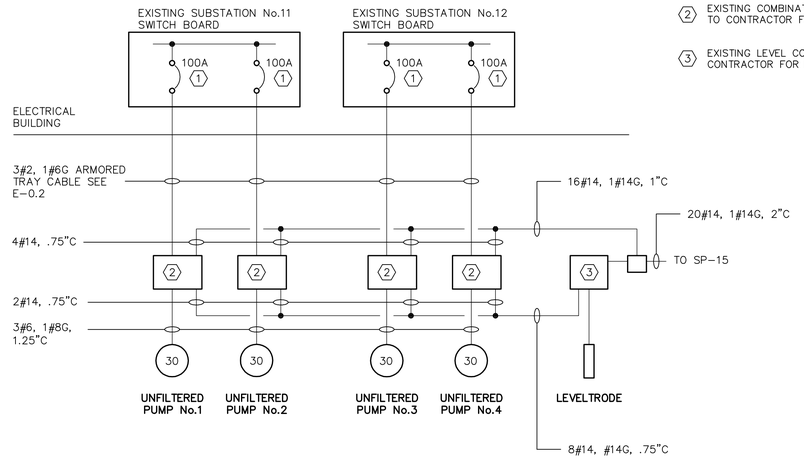
GENERAL NOTES:

1. EXISTING 100A, 3P, BREAKER
2. EXISTING COMBINATION MOTOR STARTER TO BE SUPPLIED BY OWNER TO CONTRACTOR FOR INSTALLATION
3. EXISTING LEVEL CONTROL PANEL TO BE SUPPLIED BY OWNER TO CONTRACTOR FOR INSTALLATION



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL BUILDING No.1 UNFILTERED PUMP STATION SINGLE LINE DIAGRAM

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
E-0.5

STATUS: ISSUE FOR BID
REVISION

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PANEL: PP-201

ENCLOSURE: NEMA: 4X MOUNTING: SURFACE — MAIN: 175A — MB ☒ MLO ☐

VOLTS: 480V, 3 PHASE, 3 WIRE — NEUTRAL: — 100% ☒ 200% ☐

LOCATION: AT GRAVITY FILTERS — BRACING: 22,000A FULLY RATED — FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
	5.60						1	A	2				5.00			
GRAVITY DISK FILTER 1		5.60		30	3	3#10, 1#10G, .75"C	3	B	4	3#10, 1#10G, .75"C	25	3		5.00		PANEL LP-202 TRANSFORMER
			5.60				5	C	6						5.00	
	5.60						7	A	8				0.00			
GRAVITY DISK FILTER 2		5.60		30	3	3#10, 1#10G, .75"C	9	B	10		50	3		0.00		SPARE
			5.60				11	C	12						0.00	
	5.60						13	A	14				0.25			
GRAVITY DISK FILTER 3		5.60		30	3	3#10, 1#10G, .75"C	15	B	16	3#10, 1#10G, 1"C	20	3		0.25		MOV-502
			5.60				17	C	18						0.25	
	3.00						19	A	20				0.00			SPACE
BACKWASH PUMP CONTROL PANEL		3.00		30	3	3#10, 1#10G, .75"C	21	B	22					0.00		SPACE
			3.00				23	C	24						0.00	SPACE
SPACE	0.00						25	A	26				0.00			SPACE
SPACE		0.00					27	B	28					0.00		SPACE
SPACE			0.00				29	C	30						0.00	SPACE
SPACE	0.00						31	A	32				0.00			SPACE
SPACE		0.00					33	B	34					0.00		SPACE
SPACE			0.00				35	C	36						0.00	SPACE
SPACE	0.00						37	A	38				0.00			SPACE
SPACE		0.00					39	B	40					0.00		SPACE
SPACE			0.00				41	C	42						0.00	SPACE
TOTAL(S):	19.80	19.80	19.80										5.25	5.25	5.25	

TOTAL BUS A LOAD: 25.05 KVA

TOTAL BUS B LOAD: 25.05 KVA

TOTAL CONNECTED KVA: 75.15 — TOTAL BUS C LOAD: 25.05 KVA

SCHEDULE NOTE'S:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

PANEL: LP-202

ENCLOSURE: NEMA 4X MOUNTING: SURFACE — MAIN: 50A — MB ☒ MLO ☐

VOLTS: 120/208V, 3 PHASE, 4 WIRE — NEUTRAL: — 100% ☒ 200% ☐

LOCATION: AT GRAVITY FILTERS — BRACING: 10,000A FULLY RATED — FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
SP-15	0.20			20	1	2#12, 1#12G, .75"C	1	A	2	2#12, 1#12G, .75"C	20	1	0.36			RECEPTACLES ON EQUIPMENT RACK
SPARE		0.00		20	1		3	B	4	2#12, 1#12G, .75"C	20	1		1.20		LIGHTS AT DISK FILTERS
FIT-501			0.10	20	1	2#10, 1#10G, .75"C	5	C	6	2#12, 1#12G, 1"C	20	1			0.20	LIGHT AT P.S.
FIT-406	0.10			20	1	2#10, 1#10G, .75"C	7	A	8	2#12, 1#12G, 1"C	20	1	0.40			LIGHT AT METER STATIO
SPARE		0.00		20	1		9	B	10	2#10, 1#10G, 1"C	20	1		1.20		LIGHTS AT U.F. PUMP STATION
SPARE			0.00	20	1		11	C	12	2#10, 1#10G, 1"C	20	1			0.36	RECPTS AT U.F. PUMP STATION
SPARE	0.00			20	1		13	A	14		20	1	0.00			SPARE
SPARE		0.00		20	1		15	B	16		20	1		0.00		SPARE
SPARE			0.00	20	1		17	C	18		20	1			0.00	SPARE
SPARE	0.00			20	1		19	A	20		20	1	0.00			SPARE
SPARE		0.00		20	1		21	B	22		20	1		0.00		SPARE
SPARE			0.00	20	1		23	C	24		20	1			0.00	SPARE
TOTAL(S):	0.300	0.000	0.100										0.760	2.400	0.560	

TOTAL BUS A LOAD: 1.060 KVA

TOTAL BUS B LOAD: 2.400 KVA

TOTAL CONNECTED KVA: 4.120 — TOTAL BUS C LOAD: 0.660 KVA

SCHEDULE NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PANELBOARD SCHEDULES

DATE: FEBRUARY 2012
MCE PROJ. # 1024-0147
DRAWN C.JR
DESIGNED ALA
CHECKED ALA
PROJ. MGR. MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER: E-0.6

STATUS: ISSUE FOR BID — REVISION

S:\1024\01\ATW\Mk-Drawings\Electrical\E-0.6-1024147.dwg, 2/10/2012 10:36:07 AM, Jon Mackey

PANEL: PP-301

ENCLOSURE: NEMA: 1 MOUNTING: SURFACE | MAIN: 400A | MB ☒ MLO ☐
VOLTS: 480V, 3 PHASE, 3 WIRE | NEUTRAL: | 100% ☒ 200% ☐
LOCATION: ELECTRICAL BUILDING | BRACING: 22,000A FULLY RATED | FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
	20.50						1	A	2				3.00			
RECLAIM PUMP 1 P-311		20.50		125	3	3#1/0, 1#6G, 2"C	3	B	4	3#6, 1#8G, 2"C	60	3		3.00		PANEL PP-302
			20.50				5	C	6						3.00	
	20.50						7	A	8				0.00			
RECLAIM PUM 2 P-312		20.50		125	3	3#1/0, 1#6G, 2"C	9	B	10		20	3		0.00		SPARE
			20.50				11	C	12						0.00	
	20.50						13	A	14				0.00			
RECLAIM PUMP 3 P-313		20.50		125	3	3#1/0, 1#6G, 2"C	15	B	16		30	3		0.00		SPARE
			20.50				17	C	18						0.00	
SPACE	0.00						19	A	20				0.00			SPACE
SPACE		0.00					21	B	22					0.00		SPACE
SPACE			0.00				23	C	24						0.00	SPACE
SPACE	0.00						25	A	26				0.00			SPACE
SPACE		0.00					27	B	28					0.00		SPACE
SPACE			0.00				29	C	30						0.00	SPACE
SPACE	0.00						31	A	32				0.00			SPACE
SPACE		0.00					33	B	34					0.00		SPACE
SPACE			0.00				35	C	36						0.00	SPACE
SPACE	0.00						37	A	38				0.00			SPACE
SPACE		0.00					39	B	40					0.00		SPACE
SPACE			0.00				41	C	42						0.00	SPACE
TOTAL(S):	61.50	61.50	61.50										3.00	3.00	3.00	

TOTAL BUS A LOAD: 64.50 KVA
TOTAL BUS B LOAD: 64.50 KVA
TOTAL CONNECTED KVA: 193.50 TOTAL BUS C LOAD: 64.50 KVA

SCHEDULE NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

PANEL: PP-302

ENCLOSURE: NEMA: 4X MOUNTING: SURFACE | MAIN: 60A | MB ☒ MLO ☐
VOLTS: 480V, 3 PHASE, 3 WIRE | NEUTRAL: | 100% ☒ 200% ☐
LOCATION: RECLAIM PUMP STATION | BRACING: 22,000A FULLY RATED | FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
	0.20						1	A	2				2.00			
MOTORIZED VALVE		0.20		20	3		3	B	4		20	3		2.00		PANEL LP-302
			0.20				5	C	6						2.00	
	0.20						7	A	8				0.00			
MOTORIZED VALVE		0.20		20	3		9	B	10		30	3		0.00		SPARE
			0.20				11	C	12						0.00	
SPACE	0.00						13	A	14				0.00			SPACE
SPACE		0.00					15	B	16					0.00		SPACE
SPACE			0.00				17	C	18						0.00	SPACE
SPACE	0.00						19	A	20				0.00			SPACE
SPACE		0.00					21	B	22					0.00		SPACE
SPACE			0.00				23	C	24						0.00	SPACE
TOTAL(S):	0.40	0.40	0.40										2.00	2.00	2.00	

TOTAL BUS A LOAD: 2.40 KVA
TOTAL BUS B LOAD: 2.40 KVA
TOTAL CONNECTED KVA: 7.20 TOTAL BUS C LOAD: 2.40 KVA

SCHEDULE NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

PANEL: LP-302

ENCLOSURE: NEMA: 4X MOUNTING: SURFACE | MAIN: 50A | MB ☒ MLO ☐
VOLTS: 120/208V, 3 PHASE, 4 WIRE | NEUTRAL: | 100% ☒ 200% ☐
LOCATION: RECLAIM PUMP STATION | BRACING: 10,000A FULLY RATED | FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
SP-15	0.10			20	1	2#18, 1#18G, 1"C	1	A	2		20	1	0.00			RECEPTACLES ON EQUIPMENT
		0.00		20	1		3	B	4		20	1		0.00		LIGHTS AT PUMP STATION
FIT-314			0.10	20	1		5	C	6		20	1			0.00	
SPARE	0.00			20	1		7	A	8		20	1	0.00			SPARE
SPARE		0.00		20	1		9	B	10		20	1		0.00		SPARE
SPARE			0.00	20	1		11	C	12		20	1			0.00	SPARE
TOTAL(S):	0.100	0.000	0.100										0.000	0.000	0.000	

TOTAL BUS A LOAD: 0.100 KVA
TOTAL BUS B LOAD: 0.000 KVA
TOTAL CONNECTED KVA: 0.200 TOTAL BUS C LOAD: 0.100 KVA

SCHEDULE NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

PANELBOARD SCHEDULES

DATE: FEBRUARY 2012
MCE PROJ. # 1024-0147
DRAWN CJR
DESIGNED ALA
CHECKED ALA
PROJ. MGR. MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.7

STATUS: ISSUE FOR BID
REVISION

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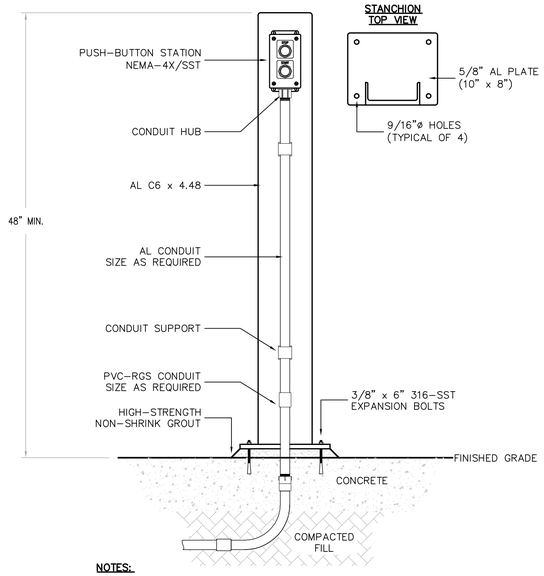
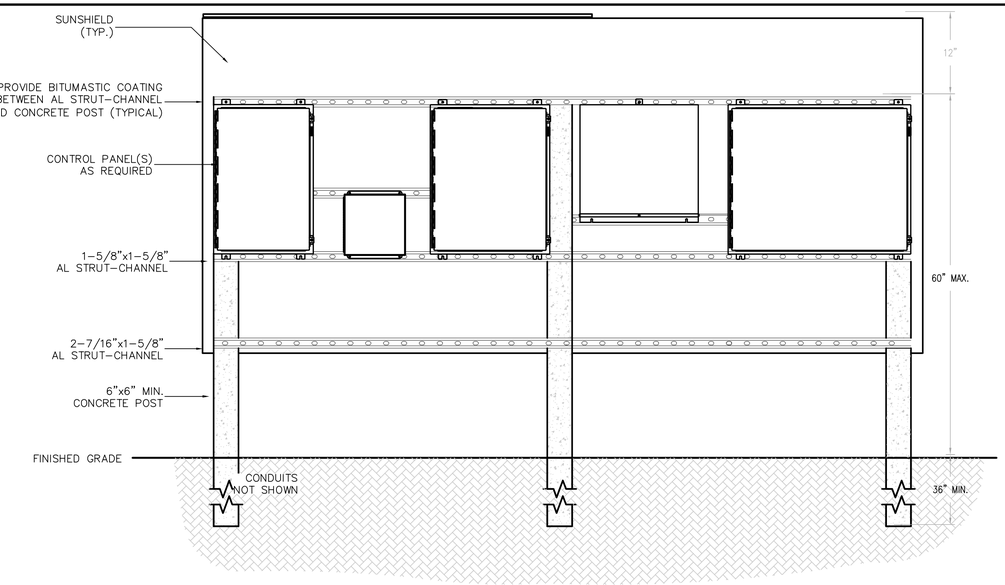


NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES AND REMOVE ALL SLAG.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. PROVIDE AND INSTALL 18"ø X 30" DEEP CONCRETE FOUNDATION WHERE MOUNTING SURFACE IS NOT AVAILABLE.
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

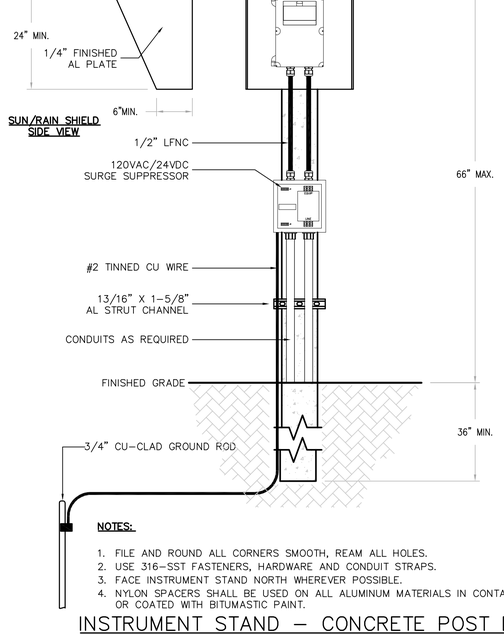
PUSH-BUTTON STANCHION DETAIL
N.T.S.



ELECTRICAL EQUIPMENT RACK FIELD MOUNTING DETAIL
N.T.S.

GENERAL NOTES:

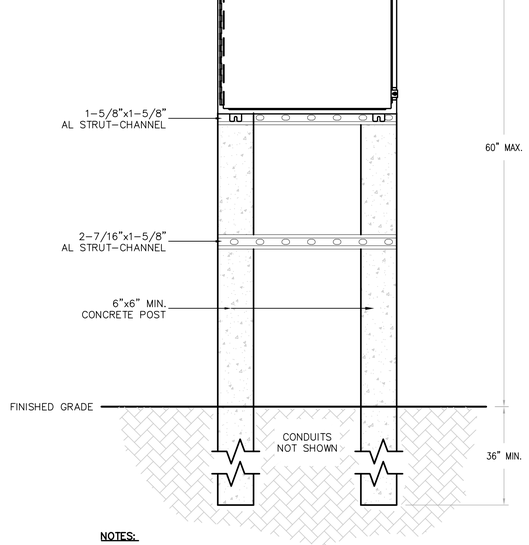
1. CONTRACTOR SHALL SUBMIT LAYOUT OF ELECTRICAL EQUIPMENT RACK.
2. CONTRACTOR SHALL NOT CONSTRUCT ELECTRICAL EQUIPMENT RACK PRIOR TO RECEIVING APPROVED SUBMITTAL, INCLUDING ORDERING AND FABRICATION OF MATERIALS.
3. ALL EQUIPMENT MOUNTING HARDWARE SHALL BE 316 STAINLESS-STEEL.
4. CONCRETE SHALL BE 3000psi. 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.
11. REFER TO SHEET E-0.01 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.



NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. FACE INSTRUMENT STAND NORTH WHEREVER POSSIBLE.
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

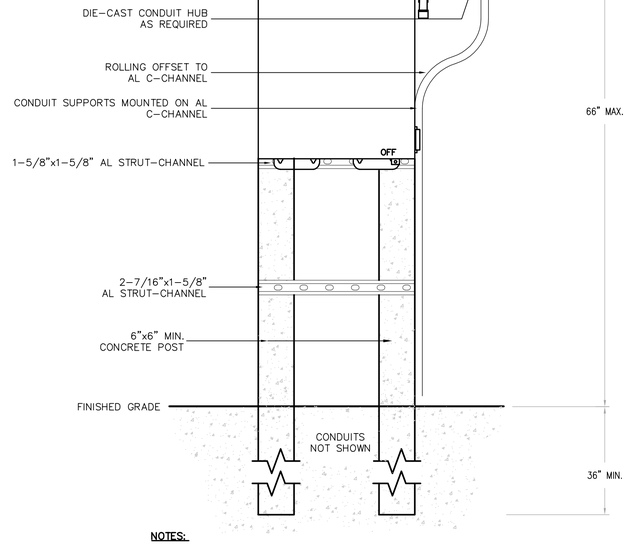
INSTRUMENT STAND - CONCRETE POST DETAIL
N.T.S.



NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. PROVIDE ADDITIONAL CONCRETE POSTS FOR SPANS GREATER THAN 60".
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

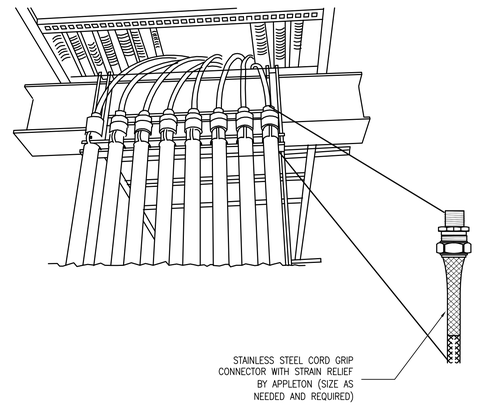
ELECTRICAL/CONTROL PANEL FIELD MOUNTING DETAIL
N.T.S.



NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. PROVIDE ADDITIONAL CONCRETE POSTS FOR SPANS GREATER THAN 60".
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

PANEL/DISCONNECT CONCRETE FLOOR MOUNTING DETAIL
N.T.S.



CONDUIT TO CABLE TRAY DETAIL USING STAINLESS STEEL CORD GRIP
N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL DETAILS

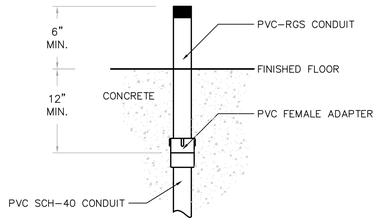
DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

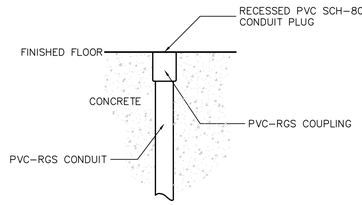
DRAWING NUMBER
E-0.8

STATUS: ISSUE FOR BID
REVISION

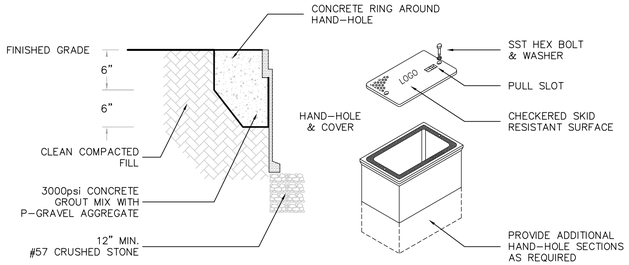
S:\1024\0147\05-Drawings\Electrical\E-0.8-1024147.dwg, 2/10/2012 10:13:11 AM, Jon Mackey



CONDUIT STUB–UP DETAIL (NEW)
N.T.S.



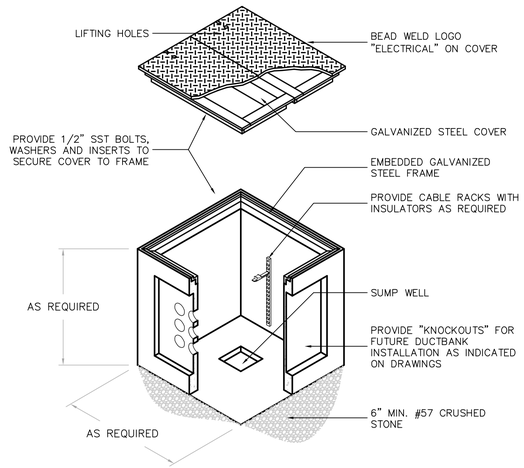
CONDUIT STUB–UP DETAIL (FUTURE)
N.T.S.



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.



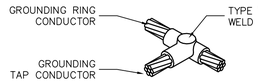
NOTES:

1. BOND ALL METALLIC PARTS WITH #2 TINNED COPPER.
2. EXOTHERMIC WELD CU–CLAD GROUND ROD TO GROUND CABLE.
3. PULL–BOX LID AND LID COLLAR SHALL BE RATED FOR AASHTO H20 LOADING.

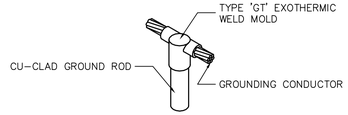
STANDARD ELECTRICAL PULL–BOX DETAIL
N.T.S.

GENERAL NOTES:

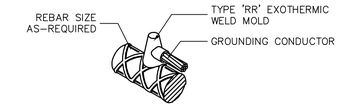
1. REFER TO SHEET E–0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.



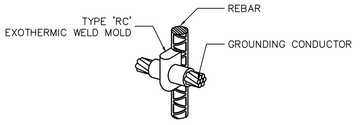
EXOTHERMIC WELD 'TA' CONNECTION
N.T.S.



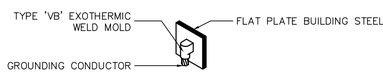
EXOTHERMIC WELD 'GT' CONNECTION
N.T.S.



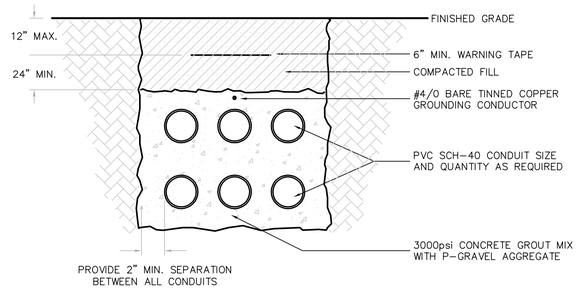
EXOTHERMIC WELD 'RR' CONNECTION
N.T.S.



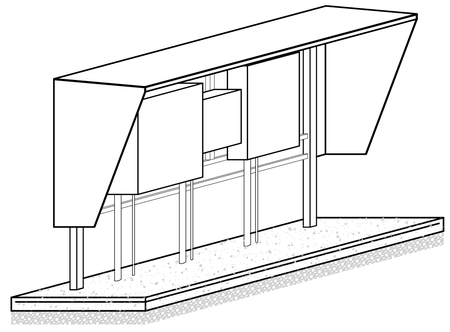
EXOTHERMIC WELD 'RC' CONNECTION
N.T.S.



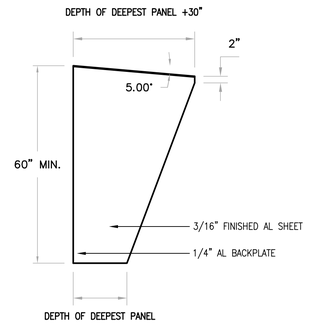
EXOTHERMIC WELD 'VB' CONNECTION
N.T.S.



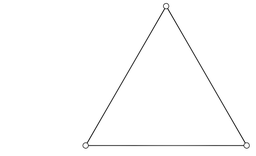
NON–REINFORCED CONCRETE DUCTBANK (YARD PIPING)
N.T.S.



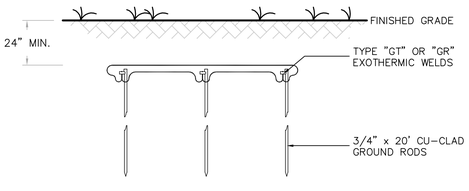
SUN/RAIN HOOD TYPICAL (ISOMETRIC)
N.T.S.



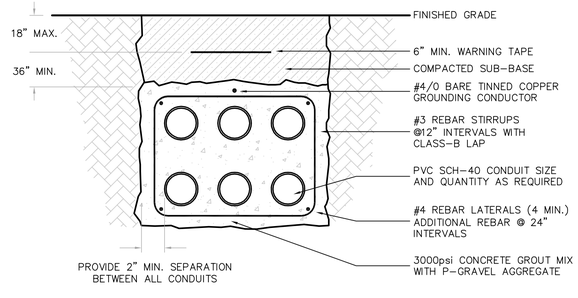
SUN/RAIN HOOD DETAIL (SIDE–VIEW)
N.T.S.



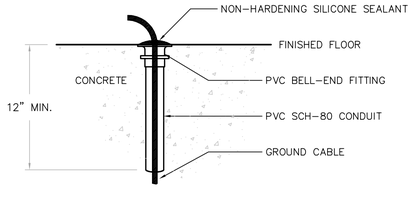
TOP VIEW



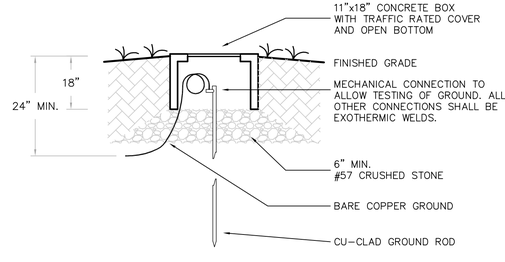
GROUND ROD TRIODE DETAIL
N.T.S.



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



GROUND CABLE SLEEVE DETAIL
N.T.S.



GROUND ROD TEST WELL DETAIL
N.T.S.

REV.NO.	DESCRIPTIONS	DATE

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EB0006691
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER: E-0.9

STATUS: ISSUE FOR BID
REVISION

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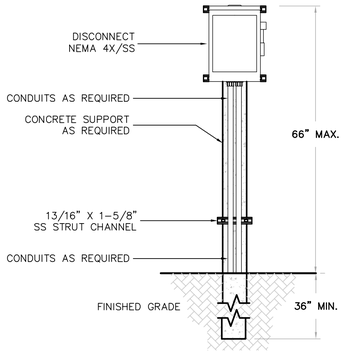
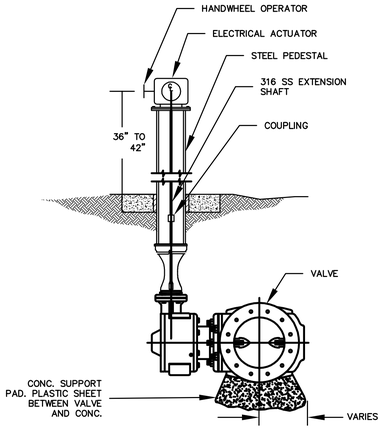


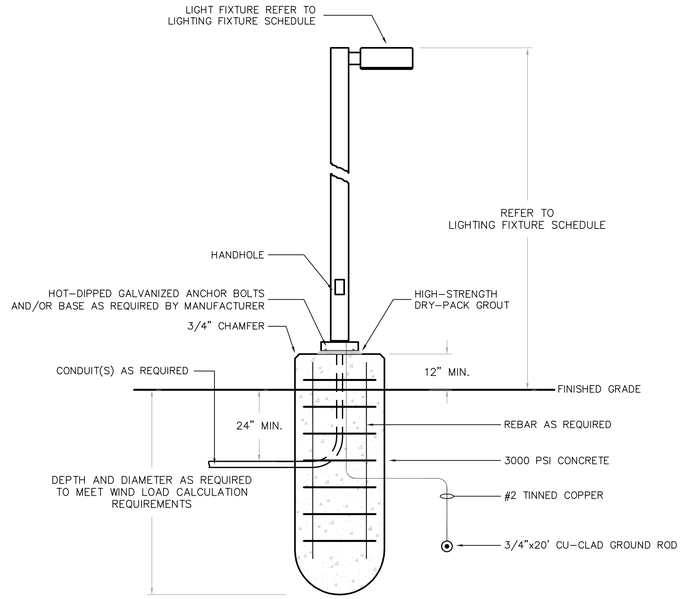
NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.



MOTOR OPERATED BURIED
VALVE WITH DISCONNECT DETAIL

NOT TO SCALE



DETAIL NOTES:

1. LIGHT-POLE CONCRETE ANCHOR BASE SHALL BE PROVIDED AND INSTALLED PER LIGHT-POLE FIXTURE MANUFACTURER INSTRUCTIONS.
2. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED DRAWINGS AND DESIGN CALCULATIONS FOR THE CONCRETE ANCHOR BASE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE.
3. DESIGN SUBMITTAL SHALL BE FROM A CURRENTLY LICENSED STRUCTURAL ENGINEER BY THE STATE OF FLORIDA.
4. CONCRETE ANCHOR BASE DESIGN SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT.
5. CONTRACTOR SHALL PROVIDE GEOTECHNICAL REPORT(S) FOR THE PROJECT SITE(S) IF NOT ALREADY REQUIRED BY CONTRACT DOCUMENTS.
6. CONTRACTOR SHALL NOT CONSTRUCT CONCRETE ANCHOR BASE PRIOR TO RECEIVING APPROVED SUBMITTAL, INCLUDING ORDERING AND FABRICATION OF MATERIALS.
7. PROVIDE ANCHORS, HARDWARE, SUPPORTS, ETC., AS NEEDED TO LIGHT-POLE FIXTURE.

LIGHT-POLE & CONCRETE ANCHOR BASE DETAIL

N.T.S.

REV.NO.	DESCRIPTIONS	DATE

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND
NORTH POND IMPROVEMENTS

ELECTRICAL DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.10

STATUS: ISSUE FOR BID
REVISION

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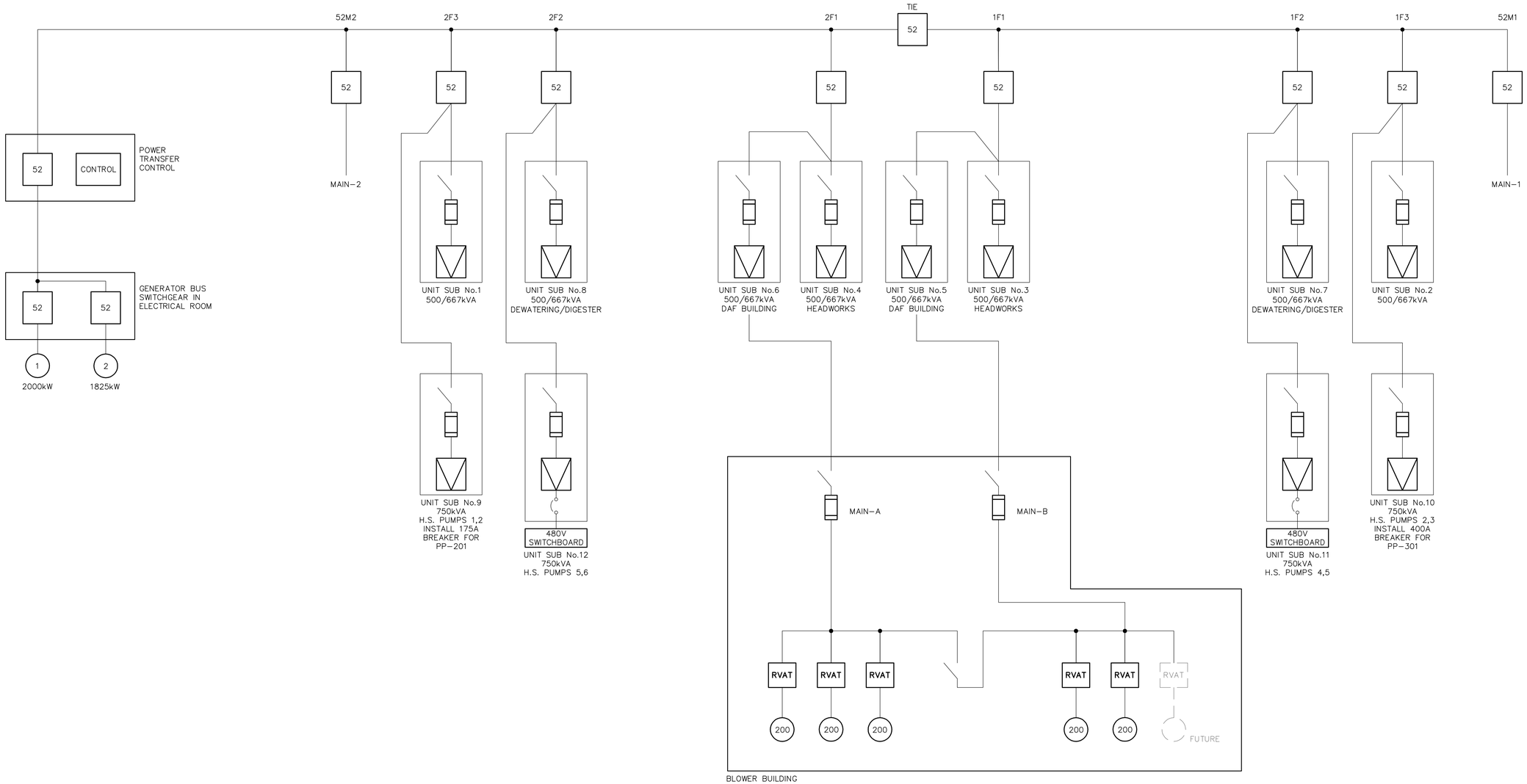

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

4160 SINGLE LINE DIAGRAM

DATE:	FEBRUARY 2012
MCE PROJ. #	1024–0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
E-0.11

STATUS: ISSUE FOR BID
REVISION

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NORTH

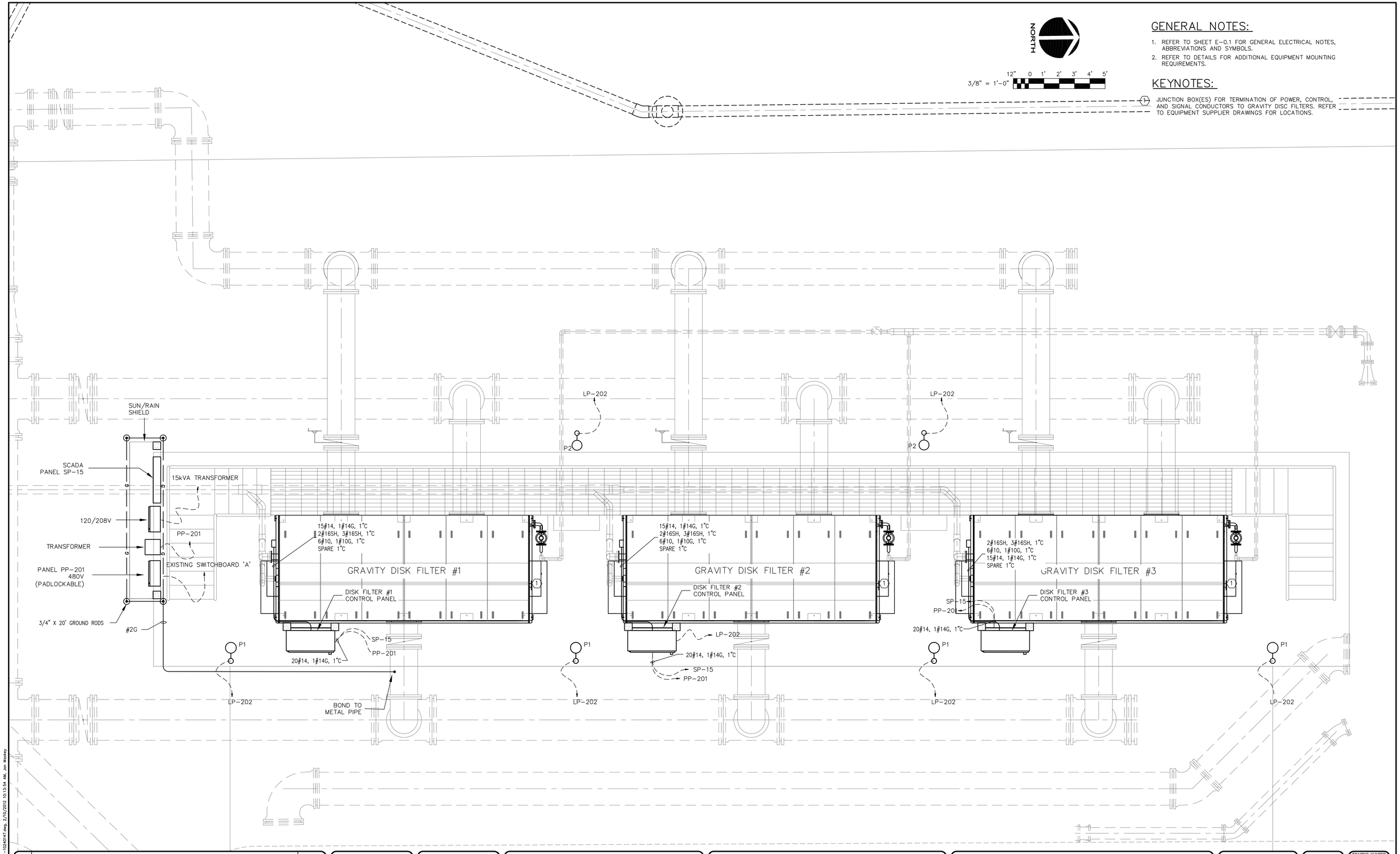
3/8" = 1'-0" 12" 0 1' 2' 3' 4' 5'

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. REFER TO DETAILS FOR ADDITIONAL EQUIPMENT MOUNTING REQUIREMENTS.

KEYNOTES:

1. JUNCTION BOX(ES) FOR TERMINATION OF POWER, CONTROL, AND SIGNAL CONDUCTORS TO GRAVITY DISC FILTERS. REFER TO EQUIPMENT SUPPLIER DRAWINGS FOR LOCATIONS.



REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

GRAVITY DISK FILTER ELECTRICAL PLAN

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
E-2.1

STATUS: ISSUE FOR BID
REVISION

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GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.

KEYNOTES:

(1) BOND TO PUMP CONTROL PANEL WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.

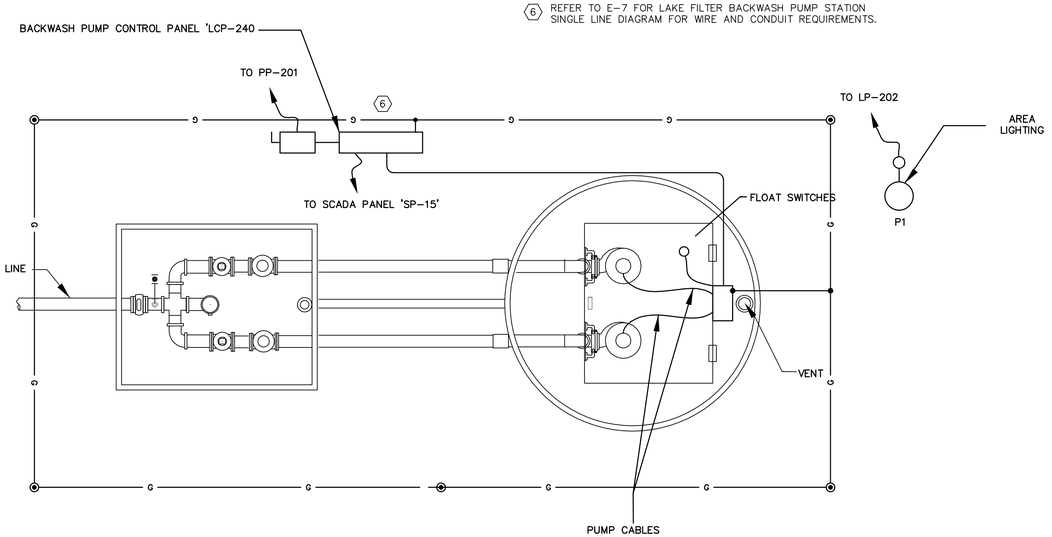
(2) BOND MECHANICAL PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD CONNECTIONS TO GROUNDING RING.

(3) EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.

(4) PROVIDE NEW SUPPORT FOR NEW PUMP CONTROL PANEL, REFER TO DETAILS

(5) PROVIDE SEAL-OFFS TO PROTECT CONTROL PANEL FROM CORROSIVE GAS. REFER TO SINGLE LINE DIAGRAM ON SHEET E-7.

(6) REFER TO E-7 FOR LAKE FILTER BACKWASH PUMP STATION SINGLE LINE DIAGRAM FOR WIRE AND CONDUIT REQUIREMENTS.



LAKE FILTER BACKWASH PUMP STATION
N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

LAKE FILTER BACKWASH PUMP STATION ELECTRICAL PLANS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

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

DRAWING NUMBER
E-2.2

STATUS: ISSUE FOR BID
REVISION

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NORTH

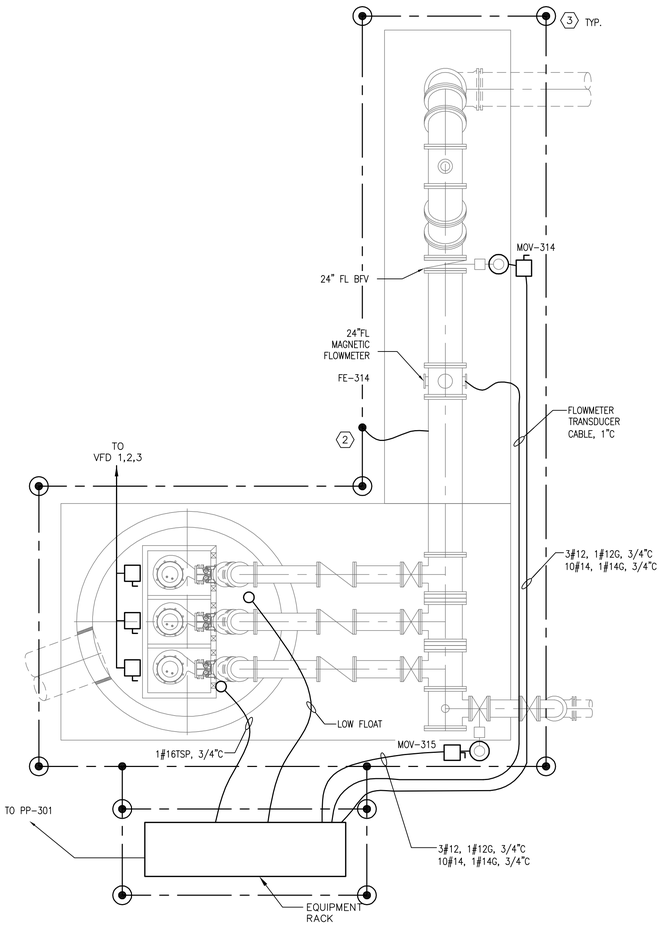
1/4" = 1'-0" 12" 0 5' 10'

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. REFER TO SHEET E-0.4 FOR LAKE FILTER BACKWASH PUMP STATION SINGLE LINE DIAGRAM FOR WIRE AND CONDUIT REQUIREMENTS.

KEYNOTES:

1. BOND TO PUMP CONTROL PANEL WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.
2. BOND MECHANICAL PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD CONNECTIONS TO GROUNDING RING.
3. EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.
4. PROVIDE NEW SUPPORT FOR NEW PUMP CONTROL PANEL, REFER TO DETAILS
5. PROVIDE SEAL-OFFS TO PROTECT CONTROL PANEL FROM CORROSIVE GAS. REFER TO SINGLE LINE DIAGRAM ON SHEET E-7.



RECLAIM PUMP STATION
N.T.S.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

RECLAIM PUMP STATION ELECTRICAL PLANS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	BFN
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

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

DRAWING NUMBER
E-3.1

STATUS: ISSUE FOR BID
REVISION

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GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. REFER TO SHEET E-0.4 FOR LAKE FILTER BACKWASH PUMP STATION SINGLE LINE DIAGRAM FOR WIRE AND CONDUIT REQUIREMENTS.

KEYNOTES:

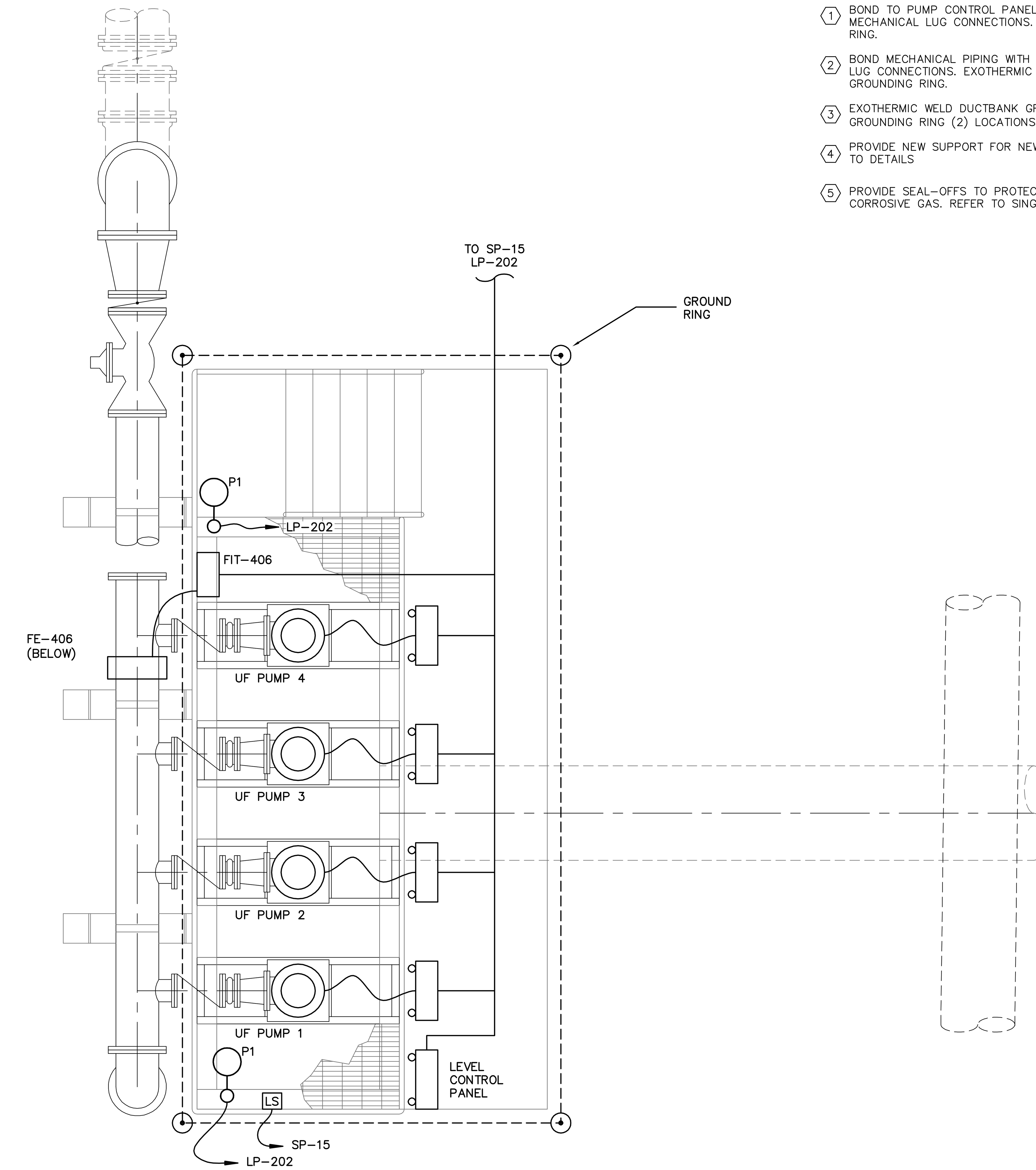
(1) BOND TO PUMP CONTROL PANEL WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.

(2) BOND MECHANICAL PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD CONNECTIONS TO GROUNDING RING.

(3) EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.

(4) PROVIDE NEW SUPPORT FOR NEW PUMP CONTROL PANEL, REFER TO DETAILS

(5) PROVIDE SEAL-OFFS TO PROTECT CONTROL PANEL FROM CORROSIVE GAS. REFER TO SINGLE LINE DIAGRAM ON SHEET E-7.



UF PUMP STATION
SCALE: 3/8" = 1'

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

ELECTRICAL – UFPS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-4.1

STATUS: ISSUE FOR BID
REVISION

EFFLUENT PUMP STATION METER STRUCTURE

SCALE: 1/4" = 1'

REV.NO.	DESCRIPTIONS	DATE

REVISIONS

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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

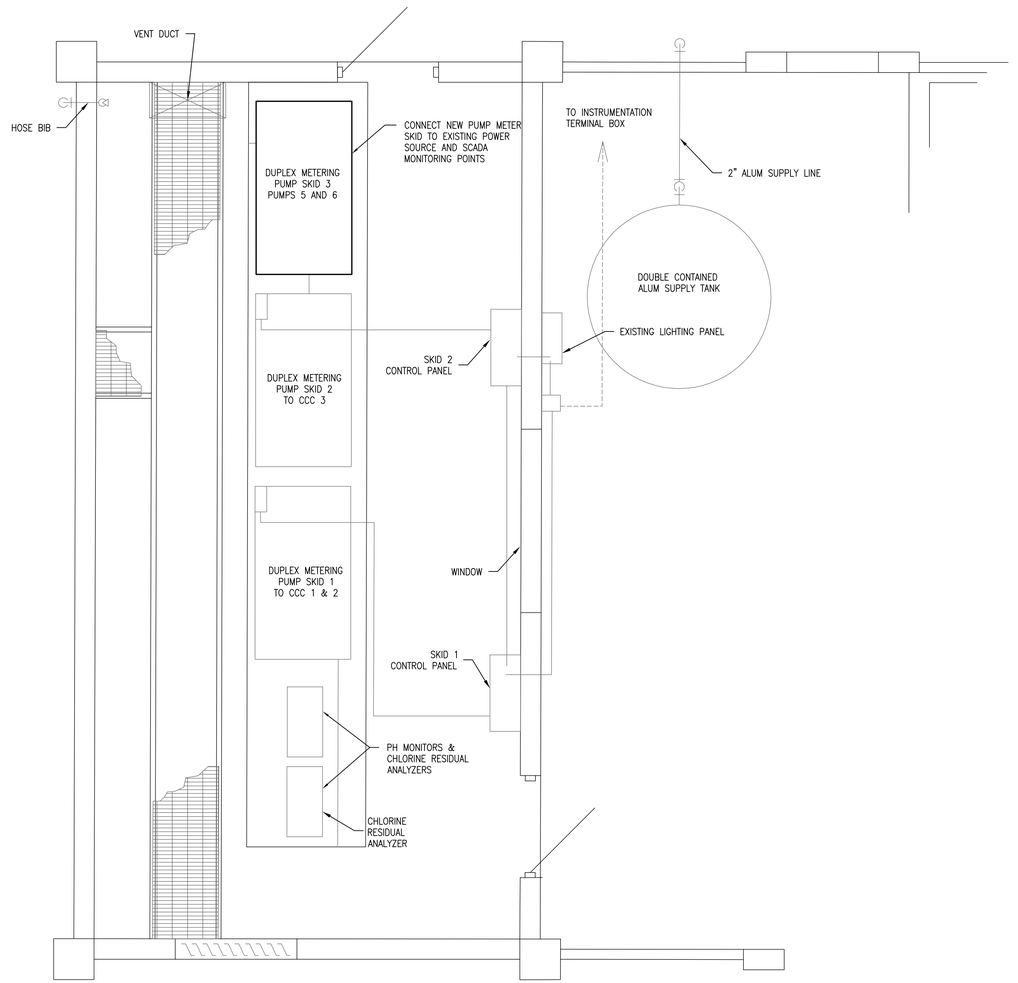
EFFLUENT PUMP STATION METER STRUCTURE ELECTRICAL DETAILS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	PBW
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

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

DRAWING NUMBER
E-5.1

STATUS: ISSUE FOR BID
REVISION



CHLORINE BUILDING
N.T.S.

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REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

SWWRF LAKE FILTRATION AND NORTH POND IMPROVEMENTS

CHLORINE BUILDING ELECTRICAL MODIFICATIONS

DATE:	FEBRUARY 2012
MCE PROJ. #	1024-0147
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	MSL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-6.1

STATUS: ISSUE FOR BID
REVISION