SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET
BROOKSVILLE, FLORIDA 34604-6899
TELEPHONE: 352-796-7211 FAX: 352-754-3497

January 23, 2020

RFB 2001
AQUIFER RECHARGE AT FLATFORD SWAMP IN MANATEE COUNTY, FLORIDA

ADDENDUM #1
(Acknowledgment is Required)

The Consultant must acknowledge the receipt of this Addendum by signing below and including a signed copy of this Addendum with its Bid Response.

Please note that underlined information (*example*) is added wording and stricken information (~~*example*~~) is deleted wording.

Please note the following change to Section 1.5 of the above referenced solicitation:

1.5 BID RECEIPT AND OPENING. One (1) signed hardcopy original, four (4) hardcopies, one (1) exact electronic Adobe™ portable document format file (.PDF) copy of all required response documents including the Bid Response Forms~~, and one (1) exact electronic Microsoft Excel™ format file (.xlsx) copy of Parts 1 through 4 and the Total Bid Amount sections of the Bid Response Forms~~ must be received by the District's Procurement Office (PRO), Building 4, at the Southwest Florida Water Management District, 2379 Broad Street (U.S. Hwy. 41 South), Brooksville, Florida 34604-6899, on or before **February 4, 2020** at **2:00 p.m.** Signature is required on the one (1) hardcopy original of the Bid Response Form~~, but not the one (1) Microsoft Excel ™ copy~~. Bids that are not received in a timely manner by this specific office will not be accepted. **All visitors must report to the lobby of Building 4 to sign in and be issued a visitors badge.** Bids will be opened immediately after this date and time, and will remain binding upon the bidder for a period of 90 days thereafter.

Please find revised drawings for Addendum 1 (Attached) that correct text, font, utility adjustments, coordinates, well relocate, SBS Recirc Pump and Instrumentation References on the PDF. Not all pages required modifications – revised items are marked on the drawings and a note was added to the bottom left corner of the sheets (ADDENDUM 1) that were revised.

Brian Bickhardt
Senior Procurement Specialist III

AD
cc: Lisann Morris

ACKNOWLEDGEMENT OF ADDENDUM #1

BY: _____
DATE

_____
(TYPE/PRINT NAME AND TITLE)

_____
COMPANY NAME

ATTACHMENT 1

REVISED DRAWINGS:
Ad. No. 1 - Text, Font, and Utility Adjustments
Ad. No. 2 - Coordinates, Well Relocate, SBS Recirc Pump, Instrumentation References

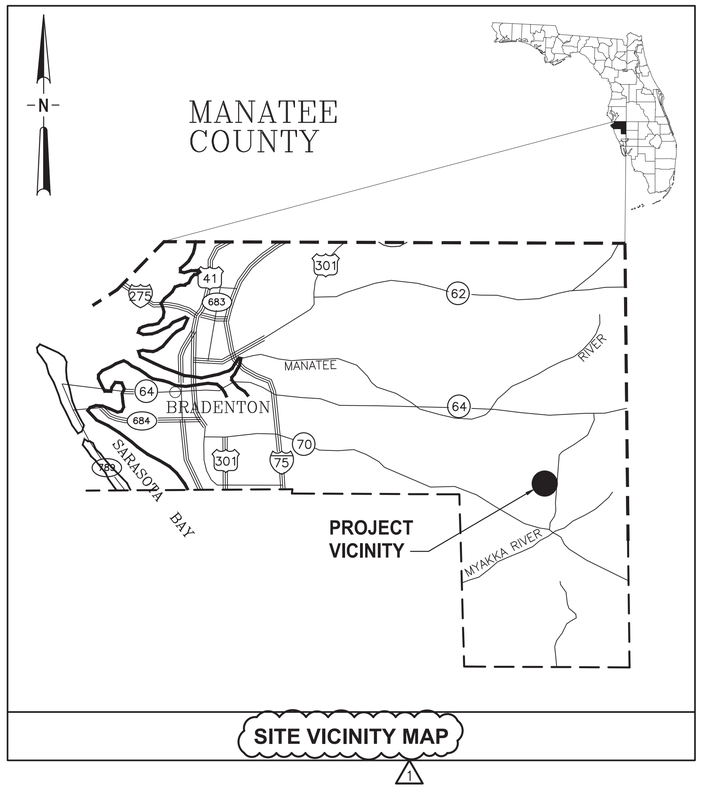
22x34

AQUIFER RECHARGE

AT FLATFORD SWAMP

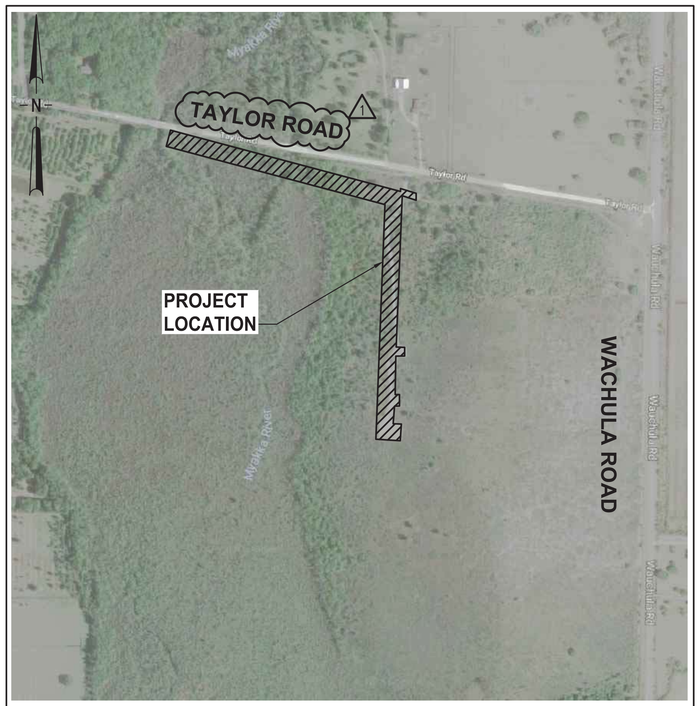
PREPARED FOR:

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



SITE VICINITY MAP

1



SITE LOCATION MAP

PREPARED BY:

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

PROJECT NO: 19850-041-01

SEPTEMBER 2019

BID SET

1 JAN/2020 ADDENDUM 1-TEXT FONT ADJUSTMENTS JTK SPM

GENERAL NOTES

1. TOPOGRAPHIC SURVEY DATED JUNE 6, 2018 PROVED BY DEGROVE SURVEYORS, INC. (904) 722–0400.
2. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (1988) AND ARE BASED ON NGS BENCHMARKS "D 562" (PID# DE8679) ELEVATION=56.14' NAVD88.
3. UNDERGROUND UTILITIES, FOUNDATIONS, OR OTHER IMPROVEMENTS, IF ANY WERE NOT LOCATED EXCEPT AS SHOWN.
4. JURISDICTIONAL WETLANDS WERE LOCATED BY JONES EDMUNDS AND ASSOCIATES AND RECORDED BY HANDHELD GPS.
5. FLOODPLAIN ELEVATIONS NOTED ON THE DRAWINGS ARE REFERENCED FROM THE FEMA FIRM PANEL 12081C039E, EFFECTIVE DATE 3/17/2014 AND FLOOD INSURANCE STUDY NUMBER 12081CV00A, MYAKKA RIVER FLOODWAY SECTION AH, EFFECTIVE DATE 3/17/2014,
6. THE COORDINATES SHOWN HEREON ARE REFERENCE TO THE STATE PLANE COORDINATE SYSTEM (WEST ZONE), NORTH AMERICAN DATUM OF 1983 (NAD83(2011)), U.S.SURVEY FEET. THE PLANE COORDINATES WERE DERIVED USING REAL TIME KINEMATIC (RTK) GPS WITH DIRECT OBSERVATIONS TO THE FLORIDA PERMANENT REFERENCE NETWORK.
7. CONTRACTOR SHALL VERIFY THE ACCURACY OF THE PROVIDED SURVEY INFORMATION TO HIS/HER SATISFACTION. CONTRACTOR IS SOLELY RESPONSIBLE FOR PROPER VERTICAL AND HORIZONTAL ALIGNMENT OF CONSTRUCTED FACILITIES, PIPELINES, AND FINISHED GRADE. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR RESTORING PROPERTY CORNERS AND LAND MARKERS WHICH MAY BE DISTURBED BY CONSTRUCTION. ALL STAKING SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.
8. CONTRACTOR SHALL RETAIN ON THE WORK SITE COPIES OF ANY PERMITS REQUIRED FOR CONSTRUCTION.
9. ALTHOUGH MEASUREMENTS MAY BE SHOWN ON THE DRAWINGS, CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL MATERIAL QUANTITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. CONTRACTOR SHALL PROVIDE OWNER A "RECORD DRAWING" SURVEY, SIGNED AND SEALED BY A REGISTERED SURVEYOR, FOR DOCUMENTATION OF MODIFICATIONS MADE DURING CONSTRUCTION.
11. CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED DURING WORK.
12. ALL REFERENCED FDOT STANDARD INDEX DRAWINGS CAN BE FOUND AT WWW.FDOT.GOV/DESIGN/STANDARDPLANS
13. FDOT INDICES SHALL REFER TO THE "FY 2019–20 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR ROAD CONSTRUCTION."
14. ALL WORK AND THE QUALITY OF MATERIALS SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE 2019 "FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
15. IT IS THE RESPONSIBILITY OF CONTRACTOR TO BECOME FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT (LAWS OF FLORIDA 90–96) EFFECTIVE OCTOBER 1, 1990.
16. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING UTILITIES, (SIZE, MATERIAL OF CONSTRUCTION, ELEVATION, ETC.) ESPECIALLY AT CONNECTING POINTS, PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL. CONTRACTOR SHALL INCLUDE CONSIDERATION OF SUCH UTILITIES IN PLANNING AND PRIOR TO EXECUTION OF WORK. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
17. 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 DRAWINGS BUT ARE NOT PURPORTED TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA. 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 DRAWINGS) AFFECTING THE PROPOSED WORK.
18. CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH "SUNSHINE STATE ONE CALL OF FLORIDA, INC." (1–800–432–4770) AT LEAST TWO BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, STRUCTURES, AND PROPERTY ON AND ADJACENT TO THE SITE CAUSED BY CONSTRUCTION ACTIVITIES.
20. CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULE WITH INDIVIDUAL COMPANIES CONCERNING RELOCATION OF UTILITIES AND ANY ADDITIONAL RELOCATIONS RESULTING FROM CONFLICTS NOT DELINEATED ON THE DRAWINGS.
21. CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES EXPOSED OR UNEXPOSED DURING CONSTRUCTION. AS REQUIRED TO COMPLETE THE WORK, THE CONTRACTOR SHALL DEWATER, HAND EXCAVATE, SHORE–UP TRENCHES, STABILIZE UTILITIES INCLUDING UTILITY POLES, AND PROVIDE SHEET PILING AT NO ADDITIONAL COST TO THE OWNER.
22. CONTRACTOR SHALL HAND EXCAVATE WHEN CONSTRUCTION IS WITHIN 2 FEET OF EXISTING UTILITIES.
23. THE CONTRACTOR IS HEREBY MADE RESPONSIBLE FOR THE SAFE MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING THE DURATION OF THE PROJECT.
24. CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD PLANS 102 SERIES AND THE TECHNICAL SPECIFICATIONS. ONE TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES WITH USE OF FLAGGER IF NECESSARY. LANE CLOSURE HOURS SHALL BE BETWEEN 9 AM to 4 PM ON WEEKDAYS. ALL TRAFFIC LANES MUST BE OPEN FOR TRAFFIC AT THE CLOSE OF WORKDAYS. ALL SIGNING, BARRICADES, LIGHTING, AND FLAGGERS SHALL BE INCLUDED IN THE BID PRICE. ALL WORK IS TO BE CARRIED OUT MONDAY THROUGH FRIDAY 9 A.M. TO 4 P.M., WITH NO WEEKEND OR HOLIDAY WORK WITHOUT APPROVAL BY THE OWNER.
25. EXISTING FEATURES ARE SHOWN LIGHT–LINED AND/OR SCREENED AND PROPOSED FEATURES ARE SHOWN HEAVY–LINED.
26. CONTRACTOR WILL REQUEST INSPECTIONS BY MANATEE COUNTY STAFF BY CONTACTING (904)748–4501.
27. CONTRACTOR TO COORDINATE WITH THE OWNER FOR PERMISSION TO REMOVE TREES OVER 8 INCHES.IN DIAMETER AT BREAST HEIGHT WITHIN DESIGNATED LIMITS OF CONSTRUCTION (L.O.C.). FOLLOWING OWNER'S APPROVAL, CONTRACTOR TO CONTACT MANATEE COUNTY FOR INSPECTION PRIOR TO REMOVING TREES. OVER 8 INCHES IN DIAMETER AT BREAST HEIGHT CONTRACTOR TO COORDINATE NUMBER AND TYPE OF TREES FOR MITIGATION.
28. CONTRACTOR SHALL REMOVE LITTER PER THE 2019 FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE SECTION 107–1. LITTER SHALL BE REMOVED AS NEEDED BUT NOT LESS THAN ONCE PER MONTH OR AS DIRECTED BY THE OWNER OR ENGINEER, IF REQUIRED. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE TRASH CONTAINER SUCH AS A DUMPSTER OR A ROLL–OFF. THE CONTRACTOR OR SUBCONTRACTORS SHALL NOT LITTER THE PROJECT AREA WITH PERSONAL TRASH. SUCH TRASH SHALL BE PICKED UP AND PROPERLY DISPOSED OF DAILY. NO TRASH SHALL BE PERMANENTLY DISPOSED OF ONSITE.
29. THE CONTRACTOR SHALL NOT USE THE RIGHT–OF–WAY TO STAGE EQUIPMENT OR STORE MATERIAL. THE CONTRACTOR MUST PROVIDE THEIR OWN STAGING AREA.
30. PRIOR TO MOBILIZING TO THE SITE, THE CONTRACTOR SHALL SCHEDULE AN INSPECTION WITH THE OWNER AND MANATEE COUNTY TO DOCUMENT THE CONDITION OF TAYLOR ROAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TAYLOR ROAD TO ITS ORIGINAL CONDITION AT THE COMPLETION OF THE PROJECT.

Sunshine811

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig!

DRAWING INDEX

DWG	DESCRIPTION
GENERAL	
G1	COVER SHEET
G2	DRAWING INDEX AND GENERAL NOTES
G3	ABBREVIATIONS
G4	LEGENDS
G5	KEY MAP
CIVIL	
C1	CIVIL SITE PLAN
C2	PLAN AND PROFILE
C3	PLAN AND PROFILE
C4	PLAN AND PROFILE
C5	PLAN AND PROFILE
C6	TYPICAL SECTIONS
C7	CIVIL DETAILS
C8	EROSION CONTROL SITE PLAN
C9	EROSION CONTROL NOTES
C10	EROSION CONTROL DETAILS
STRUCTURAL	
S1	GENERAL STRUCTURAL NOTES, ABBREVIATIONS, AND SYSMBOLS
S2	GRAVITY INTAKE STRUCTURE PLANS, SECTION, AND DETAILS
S3	RECHARGE PUMP STATION PLANS AND SECTION
S4	RECHARGE PUMP STATION BUILDING ELEVATIONS
S5	RECHARGE WELL BUILDING PLAN AND ELEVATIONS
S6	CHEMICAL FEED ENCLOSURE PLAN AND DETAILS
S7	BUILDING SCHEDULES AND DETAILS
S8	BUILDING SCHEDULES AND DETAILS
MECHANICAL	
M1	GRAVITY INTAKE STRUCTURE AND RECHARGE PUMP BUILDING PLAN AND SEC
M2	CHEMICAL FEED ENCLOSURE PLAN AND SECTION
M3	RECHARGE WELL BUILDING PLAN AND SECTION
M4	MONITORING WELL PLAN AND SECTION
M5	SUPPLY WELL PLAN AND SECTION
M6	MECHANICAL DETAILS
M7	MECHANICAL DETAILS
ELECTRICAL	
E1	ELECTRICAL SYMBOL LEGEND, ABBREVATION LEGEND, AND LUMINAIRE SCH
E2	POWER ONE–LINE DIAGRAM
E3	ELECTRICAL SITE PLAN
E4	RECHARGE PUMP BUILDING ELECTRICAL PLANS
E5	CHEMICAL FEED ENCLOSURE ELECTRICAL PLANS
E6	RECHARGE WELL BUILDING ELECTRICAL PLANS
E7	MONITORING WELL DETAIL ELECTRICAL
E8	LIGHTNING PROTECTION PLANS
E9	PANEL SCHEDULES
E10	PANEL SCHEDULES
INSTRUMENTATION	
I1	SYMBOLS & ABBREVIATIONS
I2	NETWORK DIAGRAM
I3	INSTRUMENT DETAILS
I4	PROCESS P&ID

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

DRAWING INDEX AND GENERAL NOTES

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: G2

STANDARD ABBREVIATIONS

&	AND
@	AT
A	AUTOMATIC
AA STD	ALUMINUM ASSOCIATION STANDARD
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ASBESTOS CEMENT
AC	ALTERNATING CURRENT
AC	AIR CONDITIONER
ACI	AMERICAN CONCRETE INSTITUTE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIP	ABANDONED IN PLACE
AISI	AMERICAN IRON STEEL INSTITUTE
AIT	ANALYTICAL INDICATING TRANSMITTER
ALT	ALTERNATIVE
ALUM	ALUMINUM
AM	AUTO-MANUAL
AMPS	AMPERES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ANALYZER PANEL
APP	APPROVE, APPROVED
APPROX	APPROXIMATE
AR	AIR RELEASE
ARV	AIR RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ADJUSTABLE SPEED DRIVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AWG	AMERICAN WIRE GUAGE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B/	BOTTOM OF
B/L	BASELINE OF CONSTRUCTION
BC	BARE COPPER
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BKR	BREAKER
BLD	BLIND
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BO	BLOW-OFF
BTM	BOTTOM
BTM/	BOTTOM OF
BV	BALL VALVE
BYP	BYPASS
C	CONDUIT, CONDUCTOR, CLOSE
C/L, CL	CENTERLINE
CAM	COMPUTER-AUTO-MANUAL
CAT	CATALOGUE
CB	CIRCUIT BREAKER
CC	CENTER TO CENTER
CCS	CENTRAL CONTROL SYSTEM
CF	COLUMN FOUNDATION
CFWE	CABLE FURNISHED WITH EQUIPMENT
CI	CAST IRON
CIP	CAST IN PLACE, CAST IRON PIPE
CISP	CAST IRON SLIP PIECE
CJ	CONSTRUCTION/CONTRACTION JOINT
CLF	CHAIN LINK FENCE
CLR	CLEAR
CM	COMPUTER-MANUAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CO	COMPANY
COL	COLUMN
COM	COMMUNICATION
CON	CONCENTRIC
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CORP	CORPORATION
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CRE	CORROSION RESISTANT
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CS	CARBON STEEL
CT	CURRENT TRANSFORMER, CABLE TRAY CONTACTOR
CTRD	CENTERED
CV	CHECK VALVE
D	DRAIN
DB	DUCT BANK
DBI	DITCH BOTTOM INLET
DC	DIRECT CURRENT
DES	DESIGNATION
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIPS	DUCTILE IRON PIPE SIZE
DIV	DIVISION
DN	DOWN, DAMPER
DR	DIMENSION RATIO
DR	DRAIN
DWG	DRAWING
DXS	DOUBLE EXTRA STRONG
E	EAST
E	ELECTRIC ACTUATOR
EA	EACH
ECC	ECCENTRIC
EES	EMERGENCY EYEWASH AND SHOWER
EF	EACH FACE, EXHAUST FAN
EG	SUCH AS
EJ	EXPANSION JOINT
EL, ELEV	ELEVATION
ELB	ELBOW
ELEC	ELECTRICAL
EOP	EDGE OF PAVEMENT
EQ	EQUAL
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
EST	ELEVATED STORAGE TANK
ETC	ETCETERA
EW	EACH WAY
EXIST	EXISTING
FBC	FLORIDA BUILDING CODE
F, FU	FUSE
F/F	FINISHED FLOOR
FAB	FABRICATED
FAC	FLORIDA ADMINISTRATIVE CODE
FCA	FLANGED COUPLING ADAPTER
FCV	FLOW CONTROL VALVE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDN	FOUNDATION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FDR	FEEDER
FE	FLOW ELEMENT
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE, FIBERGLASS
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISHED
FIT	FLOW INDICATING TRANSMITTER
FJ	FLANGED JOINT
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE(D)
FND	FOUNDATION
FNPT	FEMALE NATIONAL PIPE THREAD
FO	FIBER OPTIC
FOS	FAST-OFF-SLOW
FOSA	FAST-OFF-SLOW-AUTO
FOSR	FAST-OFF-SLOW-REMOTE
FP	FULL PENETRATION, FIELD PANEL
FR	FORWARD-REVERSE
FREQ	FREQUENCY
FRP	FIBER REINFORCED PLASTIC
FS	FLORIDA STATUTES, FAR SIDE, FLOW SWITCH
FT	FOOT
G	GROUND
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERUPTER
GND	GROUND
GPM	GALLONS PER MINUTE
GR	GRADE
GRTG	GRATING
GS	GALVANIZED STEEL
GSP	GALVANIZED STEEL PIPE
GST	GROUND STORAGE TANK
GV	GATE VALVE
H	HIGH
HD	HAND
HDD	HORIZONTAL DIRECTIONAL DRILL
HDNS	HARDNESS
HDPE	HIGH DENSITY POLYETHYLENE
HHWL	HIGH HIGH WATER LEVEL
HK	HOOK
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HORSEPOWER OR HIGH POINT
HPS	HIGH PRESSURE SODIUM
HR	HANDRAIL
HSP	HIGH SERVICE PUMP
HT	HEIGHT
HWL	HIGH WATER LEVEL
I&C	INSTRUMENTATION AND CONTROL
IC	INTERRUPTING CAPACITY
ID	INSIDE DIAMETER
ID	IDENTIFICATION
IE	INVERT ELEVATION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IF	INSULATED FLANGE
IJ	ISOLATION JOINT
INC	INCORPORATED
IPS	IRON PIPE SIZE
J, JB	JUNCTION BOX
JT	JOINT
KA	KILOAMPERES
KB	KNEE BRACE
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATTS
KWH	KILOWATT HOUR
L	LOWER
LB, LBS	POUND(S)
LE	LEVEL ELEMENT
LEL	LOWER EXPLOSIVE LIMIT
LF	LINEAR FEET
LG	LONG
LIT	LEVEL INDICATING TRANSMITTER
LIU	LIGHT INTERFACE UNIT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LLWL	LOW LOW WATER LEVEL
LOS	LOCKOUT STOP
LR	LONG RADIUS, LOCAL-REMOTE
LS	LIFT STATION
LSIG	LONG SHORT INSTANTANEOUS GROUND
LWL	LOW WATER LEVEL
M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL
M/F	MALE/FEMALE
MAX	MAXIMUM
MC	MODULATE-CLOSE
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MES	MITERED END SECTION
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MNPT	MALE NATIONAL PIPE THREAD
MO	MOTOR OPERATOR
MP	METERING PUMP
MPH	MILES PER HOUR
MS	MOTOR STARTER
MSC	MANUFACTURER SUPPLIED CABLE
MT, MTD	MOUNT(ED)
MTL	METAL
MV	MEDIUM VOLTAGE
N	NORTH(ING), NEUTRAL, NORMAL
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NE	NORTH EAST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
No.	NUMBER
NO	NORMALLY OPEN
NOM	NOMINAL
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPT	NATIONAL PIPE THREAD
NRS	NONRISING STEM
NS	NEAR SIDE
NSF	NATIONAL SANITATION FOUNDATION
NTS	NOT TO SCALE
NW	NORTH WEST
OC	ON CENTER(S), OPEN-CLOSE(D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OD	OUTSIDE DIAMETER
OF	OVERFLOW
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OPP	OPPOSITE
OS&Y	OUTSIDE STEM AND YOKE
OSC	OPEN-STOP-CLOSE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
P/L	PROPERTY LINE
PB	PULL BOX
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCV	PRESSURE CONTROL VALVE
PE	PLAIN END, POLYETHYLENE
PET	POLYETHYLENE TUBING
PF	POWER FACTOR
pH	HYDROGEN ION CONCENTRATION
PH	PHASE
PI	PRESSURE INDICATOR/GAUGE
PID	PROPORTIONAL INTEGRAL DERIVATIVE
PIT	PRESSURE INDICATING TRANSMITTER
PIV	POST INDICATOR VALVE
PL	PLATE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
POC	POINT OF CONNECTION
POE	POINT OF ENTRY
POJ	PUSH ON JOINT
PP	POWER POLE
PPE	PERSONAL PROTECTIVE EQUIPMENT
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH GAUGE
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TREATED, POTENTIAL TRANSFORMER
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
R	RADIUS
R/W, ROW	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RCPT	RECEPTACLE
RED	REDUCER
REF	REFERENCE
REINF	REINFORCEMENT, REINFORCING
REQ, REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
RJ	RESTRAINED JOINT
RM	REMOTE MULTIPLEXING MODULE
RMS	ROOT MEAN SQUARE
RPZ	REDUCED PRESSURE ZONE
RT	RIGHT
RTU	REMOTE TELEMETRY UNIT
S	SOUTH
SARV	SURGE ANTICIPATOR RELIEF VALVE
SBC	STANDARD BUILDING CODE
SCH	SCHEDULE
SCJ	SAW CUT JOINT
SDI	STEEL DECK INSTITUTE
SE	SOUTH EAST
SEC	SECOND
SF	SLOWER-FASTER
SHEC	SHOULDERED-END COUPLING
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOINT INSTITUTE
SM	STATIC MIXER
SP	SPACING, SPACED
SPD	SURGE PROTECTIVE DEVICE
SQ	SQUARE
SR	STATE ROAD, SURGE RELIEF
SRV	SURGE RELIEF VALVE
SS	START-STOP
SS, SST	STAINLESS STEEL
SSC	SUPERVISORY SET POINT CONTROL
SSRV	SOLID STATE REDUCED VOLTAGE
ST	SHUNT TRIP
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STS	STORMWATER SEWER
SW	SOUTH WEST, SWITCH
SWD	SIDE WATER DEPTH
SWJ	SOLVENT WELD JOINT
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
T, THK	THICK
T/	TOP OF
T/B,T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TEMP	TEMPERATURE
TGS	THREADED GALVANIZED STEEL
TGSP	THREADED GALVANIZED STEEL PIPE
TH	TOTAL HEAD
THD	THREADED
TJB	TERMINAL JUNCTION BOX
TK	TANK
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOSJ	TOP OF STEEL JOIST
TOW	TOP OF WALL
TS	TUBULAR STEEL
TSF	THICKENED SLAB FOOTING
TSP	TWISTED SHIELDED PAIR
TURB	TURBIDITY
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
ULC	ULTRASONIC LEVEL CONTROLLER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE, VOLTS
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VH	VAPOR HEATER
VIB	VIBRATION
VIF	VERIFY IN FIELD
VP	VAPORIZER
W	WIDE, WATT
W/	WITH
W/O	WITHOUT
WCJ	WALL CONTROL JOINT
WF	WALL FOOTING
WGT	WEIGHT
WP	WORK POINT, WEATHERPROOF
WSE, WSEL	WATER SURFACE ELEVATION
WT	WEIGHT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
XS	EXTRA STRONG

CUSTOM ABBREVIATIONS

ASR	AQUIFER STORAGE AND RECOVERY
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
SWFWMD	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
WTP	WATER TREATMENT PLANT
RW	RECOVERED WATER

NOTES:
1. SEE LEGENDS AND PIPE SCHEDULE FOR ADDITIONAL ABBREVIATIONS.
2. NOT ALL ABBREVIATIONS MAY BE USED FOR THIS PROJECT.

BID SET

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LTR.	DATE	REVISIONS	BY	APPRD.

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DRAWN JKRAMER
CHECKED DYONGE

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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ABBREVIATIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: G3

CIVIL LEGEND

- CONTOUR (90)
- LIMITS OF CONSTRUCTION (LOC)
- PROPERTY BOUNDARY
- CENTERLINE
- SILT FENCE (SF)
- DEMO AND REMOVE HATCH
- FENCE
- OVERHEAD ELECTRIC (OHE)
- UNDERGROUND ELECTRIC (UGE)
- UNDERGROUND WATER MAIN (UGW)
- STORM SEWER (STS)
- UNDERGROUND CABLE TELEVISION (UGTV)
- UNDERGROUND TELEPHONE (UGT)
- GAS MAIN (GAS)
- GRAVITY SANITARY SEWER (SAN)
- SANITARY FORCE MAIN (FM)
- WETLAND LIMIT (WL)
- SANITARY SEWER MANHOLE (SS)
- STORM WATER MANHOLE (SW)
- SPOT ELEVATION (+100.00)
- COORDINATE POINT
- BOLLARD
- MILLING AND RESURFACING
- ASPHALT PAVEMENT RESTORATION
- ASPHALT PAVEMENT
- CONCRETE
- GRAVEL
- LIMEROCK
- COMPACTED SOIL

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		PIPE
		WELDED PIPE
		FLANGED JOINT
		MECHANICAL JOINT OR RESTRAINED PUSH–ON JOINT
		FLEXIBLE COUPLING ADAPTER
		EXPANSION JOINT
		HUB & SPIGOT JOINT
		BALL JOINT
		FLANGED COUPLING ADAPTER W/ THRUST TIES
		FLEXIBLE COUPLING WITH THRUST TIES
		BLIND FLANGE
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		FEMALE QUICK DISCONNECT FITTING
		MALE QUICK DISCONNECT FITTING

NOTE:
EXISTING PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS LIGHT–LINED AND/OR SCREENED. PROPOSED PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS HEAVY–LINED. ABOVE GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS SOLID–LINED. BELOW GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS DASHED–LINED. SEE BELOW EXAMPLES:

OR — EXISTING PIPE (ABOVE GRADE)

OR — NEW PIPE (BELOW GRADE)

MECHANICAL LEGEND

DOUBLE LINE	SINGLE LINE	
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP
		ANCHOR
		WYE
		TEE
		CROSS
		ELBOW, 90 DEGREE
		ELBOW, 45 DEGREE
		ELBOW, 22.5 DEGREE
		ABANDON IN PLACE
		DEMOLISH AND REMOVE

VALVE SYMBOLS

- GATE
- BUTTERFLY
- BALL
- CHECK
- DIAPHRAGM
- NEEDLE
- PRESSURE RELIEF
- AIR RELEASE AND/OR VACUUM RELIEF
- REGULATED SIDE
- HYDRAULIC CONTROL VALVE

PIPE SUPPORT SYMBOLS

- FLANGED PIPE SUPPORT
- U–SHAPED PIPE SUPPORT
- PIPE SUPPORT W/ AXIAL LOAD SUPPORT

PIPING DESIGNATION

EXAMPLE: 12"–DI–FM

- 12" — NOMINAL PIPE DIAMETER
- DI — PIPE MATERIAL – SEE PIPE SCHEDULE
- FM — PIPE USE – SEE PIPE SCHEDULE

PIPE SCHEDULE

ABBREVIATION	FLOW STREAM IDENTIFICATION	PIPE/DUCT MATERIAL	PIPE MATERIAL ABBREV	SPECIFICATION NUMBER	PIPE LINING	NORMAL MAX OPERATING PRESSURE (PSIG)	FIELD TEST PRESSURE (PSIG)	RESTRAINT SYSTEM NOTES
24"–FPVC–GR	GRAVITY	DR 25 FUSABLE POLYVINYL CHLORIDE	FPVC	15148	N/A	5	10	(2)
12"–FPVC–FM	FORCE MAIN	DR 18 FUSABLE POLYVINYL CHLORIDE	FPVC	15148	N/A	50	150	(2)
6"/10"/12"–DI–FM	FORCE MAIN	DUCTILE IRON	DI	15155	CERAMIC EPOXY	50	150	(2)
3"/10"–SS–WELL	RECHARGE WELL	TYPE 304L SCH 40 STAINLESS STEEL	SS	15276	N/A	50	150	(2)
2"–PVC–DRAIN	WELL BUILDING	POLYVINYL CHLORIDE	PVC	15290	N/A	5	10	N/A
10"–PVC–VENT	VENT	SCH 40 POLYVINYL CHLORIDE	PVC	15291	N/A	50	N/A	N/A
2"–PVC–FM	MONITORING WELL	SCH 80 POLYVINYL CHLORIDE	PVC	15290	N/A	50	150	N/A

RESTRAINT SYSTEM NOTES:
(1) RESTRAIN ALL JOINTS, FITTINGS, AND VALVES IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE
(2) RESTRAIN ALL JOINTS, FITTINGS, AND VALVES INCLUDING NEW TO EXISTING

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1–TEXT FONT ADJUSTMENTS	JTK	SPM

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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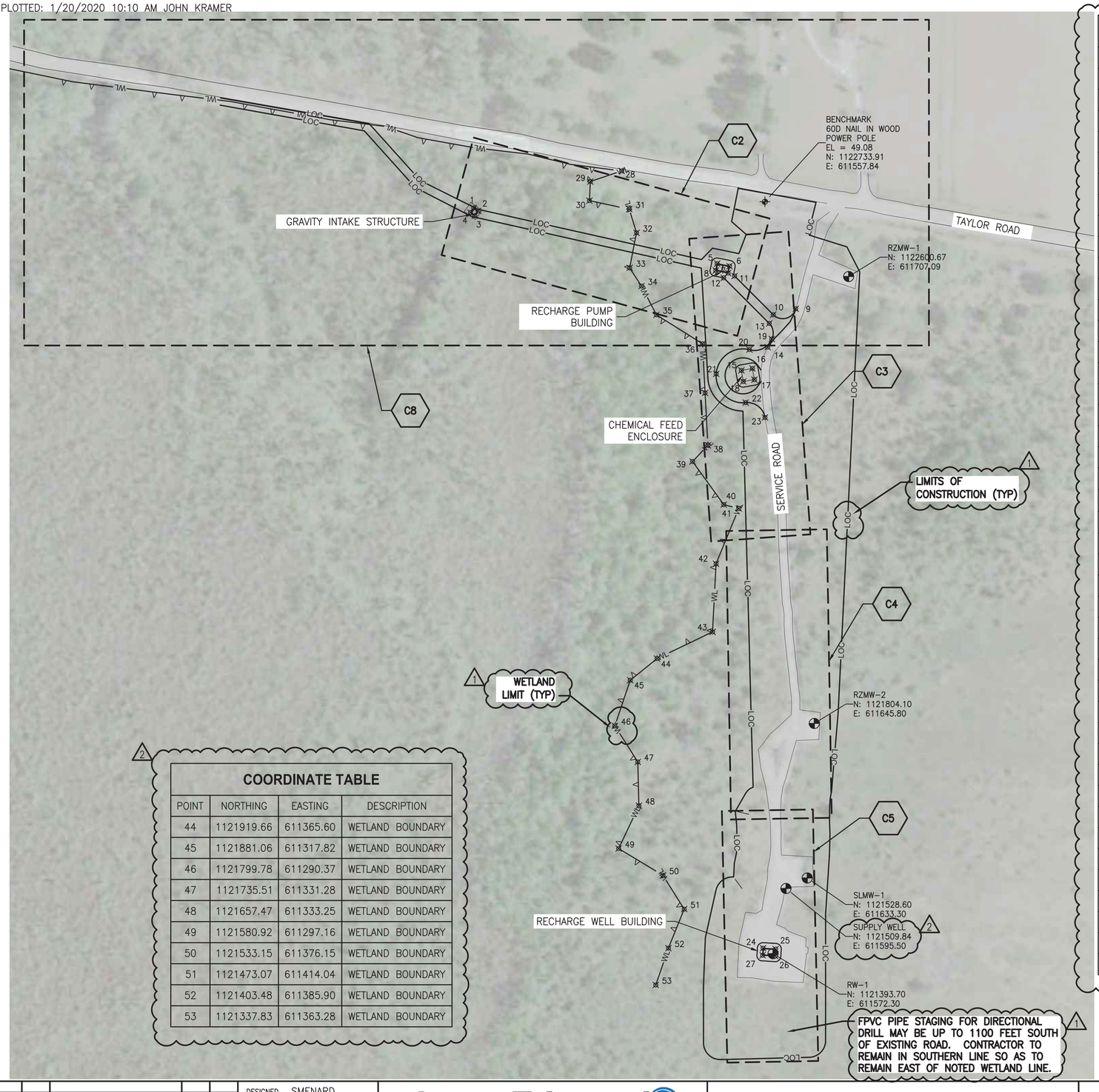
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

LEGENDS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: G4

SAVED: 1/14/2020 11:12 AM SMENARD Y:\19850–SWFWMD\PROJECTS\041–01_FLATFORD SWAMP AQUIFER RECHARGE\CAD\DWGS\GENERAL\19850041O1–G04.DWG



COORDINATE TABLE

POINT	NORTHING	EASTING	DESCRIPTION
1	1122722.90	611038.82	N CORNER GRAVITY INTAKE STRUCTURE
2	1122717.34	611046.68	E CORNER GRAVITY INTAKE STRUCTURE
3	1122709.11	611040.86	S CORNER GRAVITY INTAKE STRUCTURE
4	1122714.67	611033.00	W CORNER GRAVITY INTAKE STRUCTURE
5	1122623.60	611472.71	NW CORNER RECHARGE PUMP BUILDING
6	1122619.12	611494.76	NE CORNER RECHARGE PUMP BUILDING
7	1122606.87	611492.27	SE CORNER RECHARGE PUMP BUILDING
8	1122611.35	611470.22	SW CORNER RECHARGE PUMP BUILDING
9	1122543.06	611612.71	SE CONNECTION TO EXISTING ROAD AND ACCESS ROAD
10	1122532.60	611572.64	ARC ENDPOINT OF ACCESS ROAD
11	1122601.45	611503.81	NE CONNECTION TO BUILDING RAISED GRADE AND ACCESS ROAD
12	1122598.28	611484.33	S CONNECTION TO BUILDING RAISED GRADE AND ACCESS ROAD
13	1122517.03	611565.58	SE ARC ENDPOINT OF ACCESS ROAD
14	1122474.73	611562.71	SW CONNECTION TO EXISTING ROAD AND ACCESS ROAD
15	1122433.21	611515.84	NW CORNER CHEMICAL FEED ENCLOSURE
16	1122436.67	611535.54	NE CORNER CHEMICAL FEED ENCLOSURE
17	1122416.98	611539.00	SE CORNER CHEMICAL FEED ENCLOSURE
18	1122413.51	611519.30	SW CORNER CHEMICAL FEED ENCLOSURE
19	1122489.25	611570.04	NE CONNECTION TO ACCESS ROADS
20	1122470.42	611530.15	NORTHERN QUADRANT OF ACCESS ROAD
21	1122427.12	611471.12	WESTERN QUADRANT OF ACCESS ROAD
22	1122375.93	611523.45	SOUTHERN QUADRANT OF ACCESS ROAD
23	1122349.47	611557.95	SE CONNECTION TO EXISTING ROAD AND ACCESS ROAD
24	1121403.26	611554.50	NW CORNER RECHARGE WELL BUILDING
25	1121401.84	611576.96	NE CORNER RECHARGE WELL BUILDING
26	1121389.37	611576.17	SE CORNER RECHARGE WELL BUILDING
27	1121390.79	611553.71	SW CORNER
28	1122788.87	611302.61	WETLAND BOUNDARY
29	1122769.96	611246.74	WETLAND BOUNDARY
30	1122735.85	611245.13	WETLAND BOUNDARY
31	1122720.69	611316.16	WETLAND BOUNDARY
32	1122678.63	611329.03	WETLAND BOUNDARY
33	1122615.99	611316.74	WETLAND BOUNDARY
34	1122583.61	611337.90	WETLAND BOUNDARY
35	1122532.33	611364.45	WETLAND BOUNDARY
36	1122480.74	611446.68	WETLAND BOUNDARY
37	1122393.06	611451.17	WETLAND BOUNDARY
38	1122299.69	611456.26	WETLAND BOUNDARY
39	1122270.94	611428.93	WETLAND BOUNDARY
40	1122194.05	611484.42	WETLAND BOUNDARY
41	1122187.24	611511.23	WETLAND BOUNDARY
42	1122088.52	611470.73	WETLAND BOUNDARY
43	1121967.11	611464.49	WETLAND BOUNDARY

COORDINATE TABLE

POINT	NORTHING	EASTING	DESCRIPTION
44	1121919.66	611365.60	WETLAND BOUNDARY
45	1121881.06	611317.82	WETLAND BOUNDARY
46	1121799.78	611290.37	WETLAND BOUNDARY
47	1121735.51	611331.28	WETLAND BOUNDARY
48	1121657.47	611333.25	WETLAND BOUNDARY
49	1121580.92	611297.16	WETLAND BOUNDARY
50	1121533.15	611376.15	WETLAND BOUNDARY
51	1121473.07	611414.04	WETLAND BOUNDARY
52	1121403.48	611385.90	WETLAND BOUNDARY
53	1121337.83	611363.28	WETLAND BOUNDARY

GRAPHIC SCALE
0 50 100 200
SCALE IN FEET

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
2	JAN/2020	ADDENDUM 1-COORD./WELL RELOCATE	JTK	SPM
1	JAN/2020	ADDENDUM 1-TEXT FONT ADJUSTMENTS	JTK	SPM

DESIGNED SMENARD
DRAWN JKRAMER
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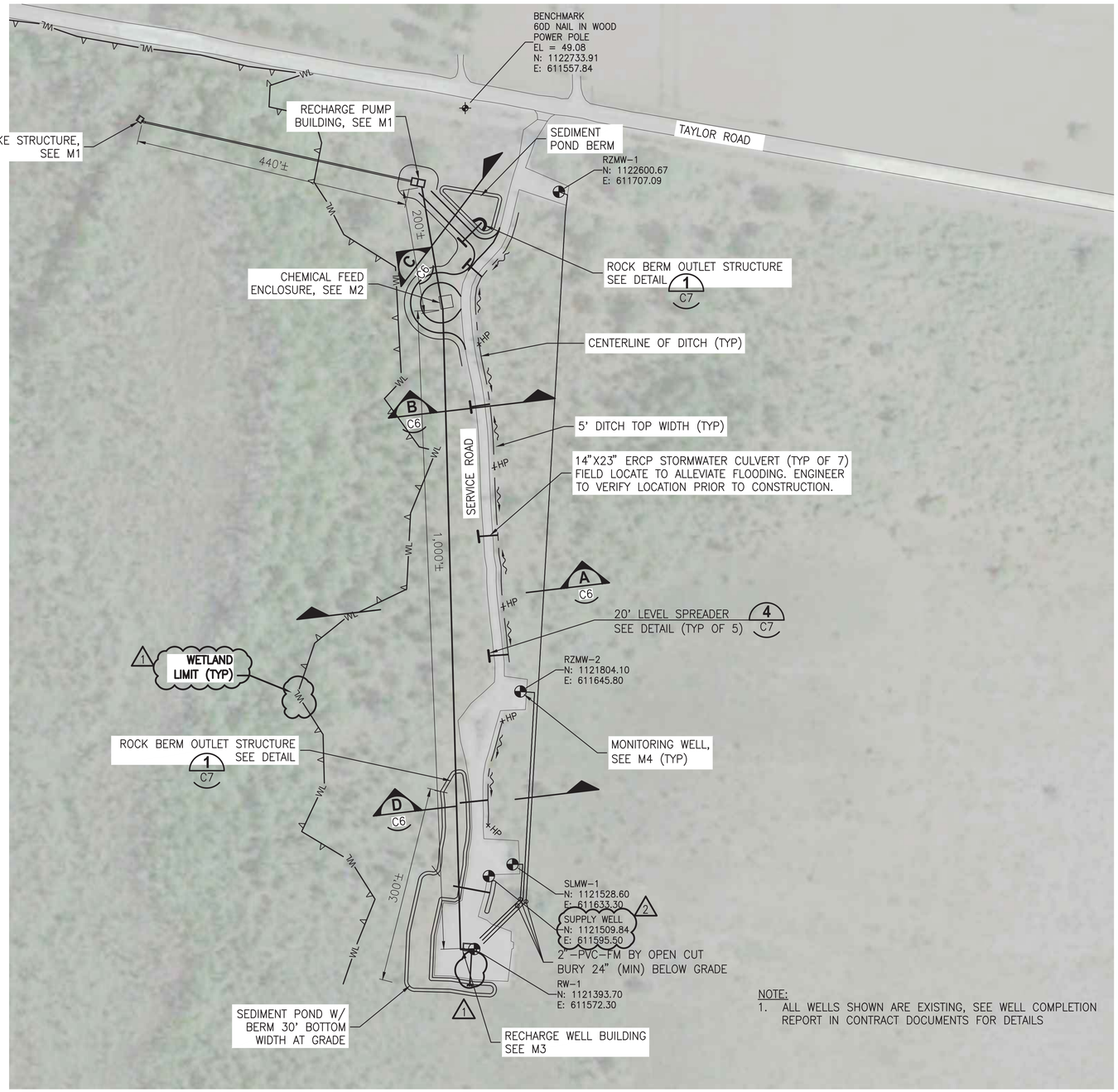
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

KEY MAP

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: G5



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SCALE IN FEET

BID SET

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LTR.	DATE	REVISIONS	BY	APPRD.
2	JAN/2020	ADDENDUM 1-COORD./WELL RELOCATE	JTK	SPM
1	JAN/2020	ADDENDUM 1-TEXT AND UTILITY ADJUST.	JTK	SPM

DESIGNED SMENARD
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

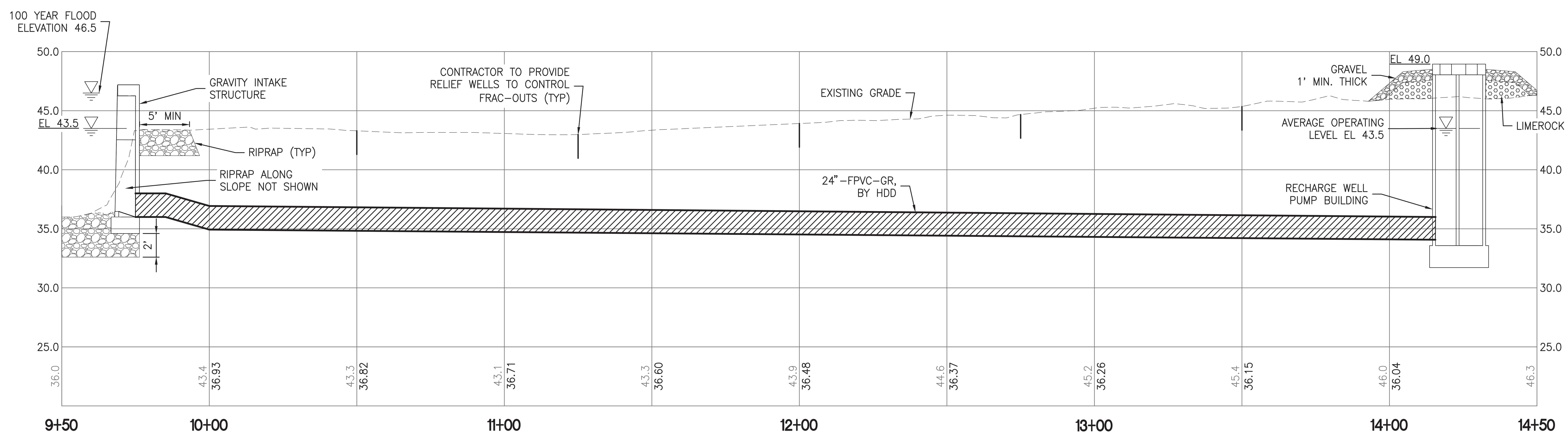
CIVIL SITE PLAN

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C1

PLOTTED: 1/20/2020 10:11 AM JOHN KRAMER


GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
N
GRAVITY INTAKE STRUCTURE, SEE C7, M1
STA: 9+74.99
N: 1122713.88
E: 611042.82
STA: 9+50.00
N: 1122719.37
E: 611018.44
10+00
11+00
12+00
13+00
14+00
14+56
24"-FPVC-GR, BY HDD
LIMITS OF CONSTRUCTION (TYP)
WETLAND LIMIT (TYP)
GRADE TO MATCH EXISTING
10' GRAVEL STRIP AROUND BUILDING
RECHARGE PUMP BUILDING, SEE M1
STA: 14+50.00
N: 1122609.68
E: 611506.26
STA: 14+15.59
N: 1122617.23
E: 611472.69
LIMEROCK ROAD
LOW POINT OF OVERHEAD WIRE ELEVATION 71.6'
OVERHEAD WIRE ELEVATION 77.1'
TOP OF WATER ELEV. 43.5'
REMAINS OF BARBED WIRE FENCE


100 YEAR FLOOD ELEVATION 46.5
EL 43.5
5' MIN
GRAVITY INTAKE STRUCTURE
RIPRAP (TYP)
RIPRAP ALONG SLOPE NOT SHOWN
CONTRACTOR TO PROVIDE RELIEF WELLS TO CONTROL FRAC-OUTS (TYP)
EXISTING GRADE
24"-FPVC-GR, BY HDD
EL 49.0
GRAVEL 1' MIN. THICK
AVERAGE OPERATING LEVEL EL 43.5
LIMEROCK
RECHARGE WELL PUMP BUILDING
50.0
45.0
40.0
35.0
30.0
25.0
9+50
10+00
11+00
12+00
13+00
14+00
14+50

BID SET

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1	JAN/2020	ADDENDUM 1-TEXT FONT ADJUSTMENTS	JTK	SPM

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C2

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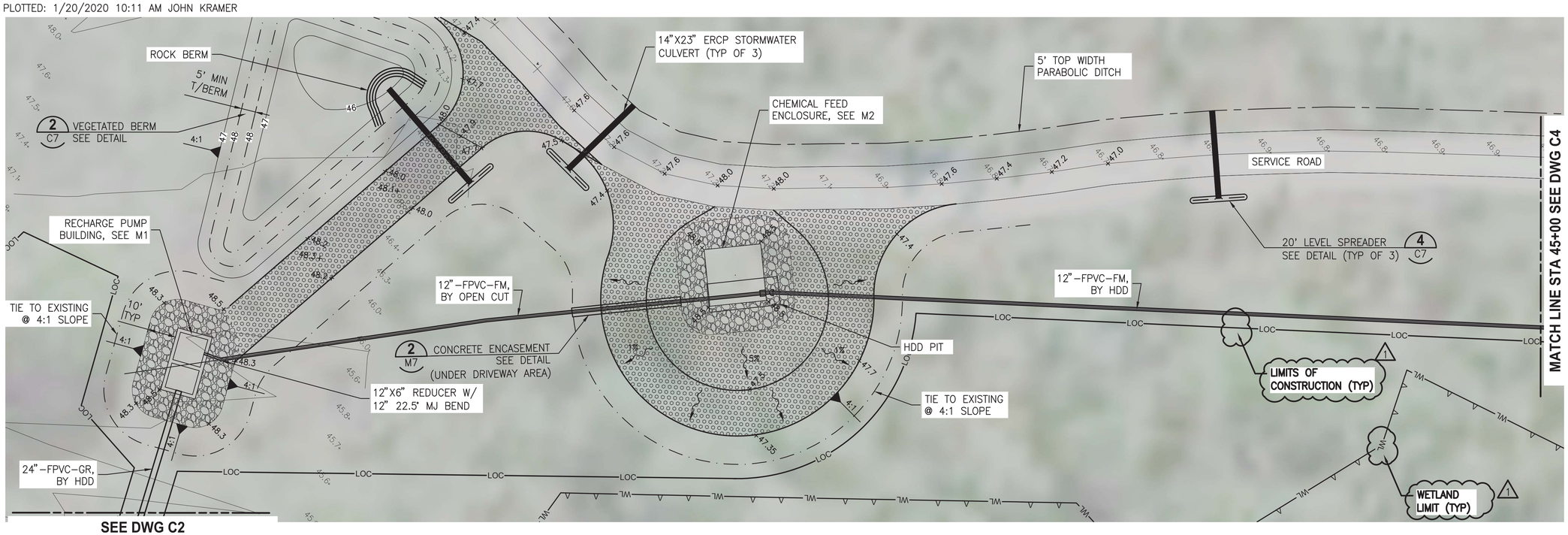

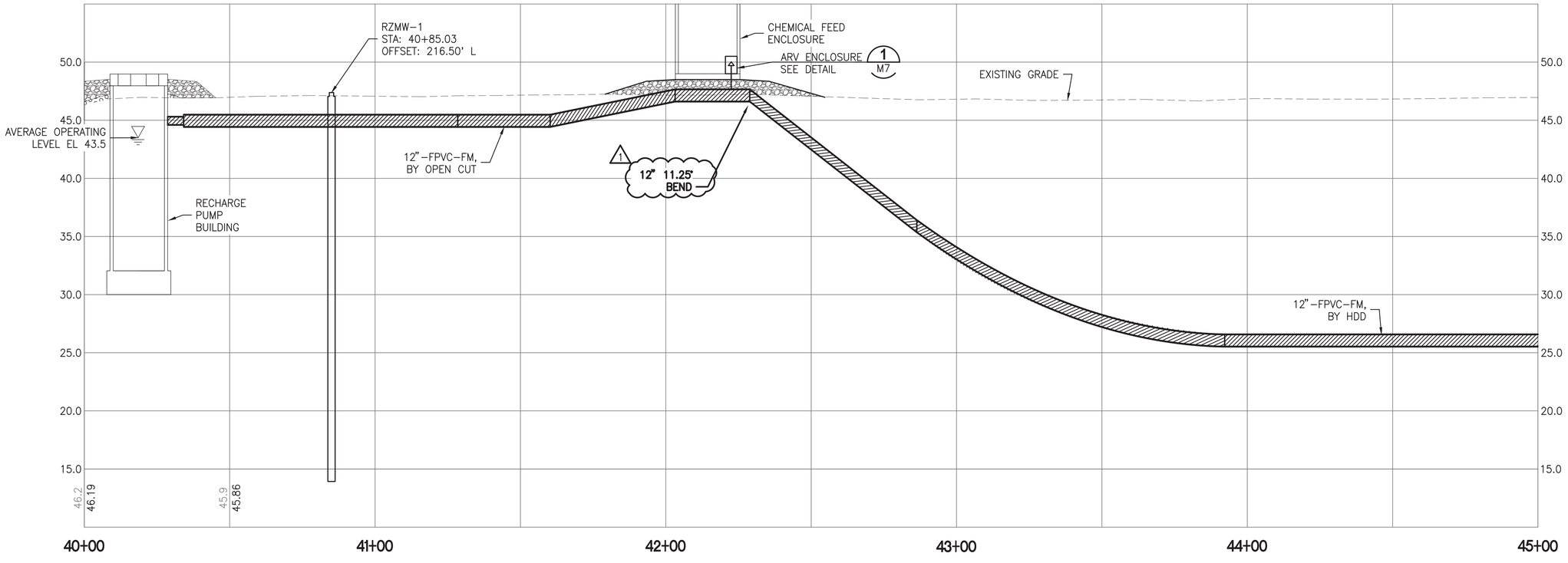

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SCALE IN FEET

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BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1-TEXT FONT ADJUSTMENTS	JTK	SPM

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

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P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
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DWG NO: C3

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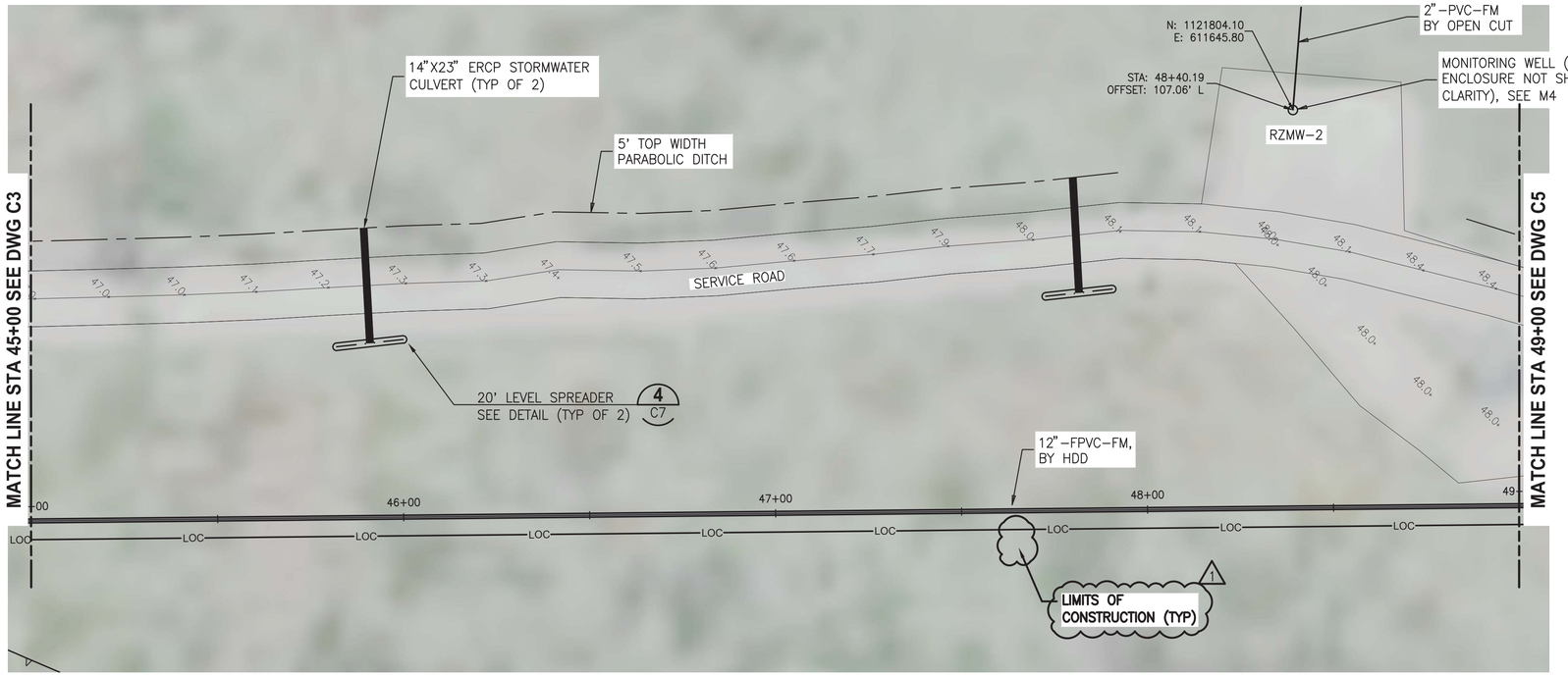

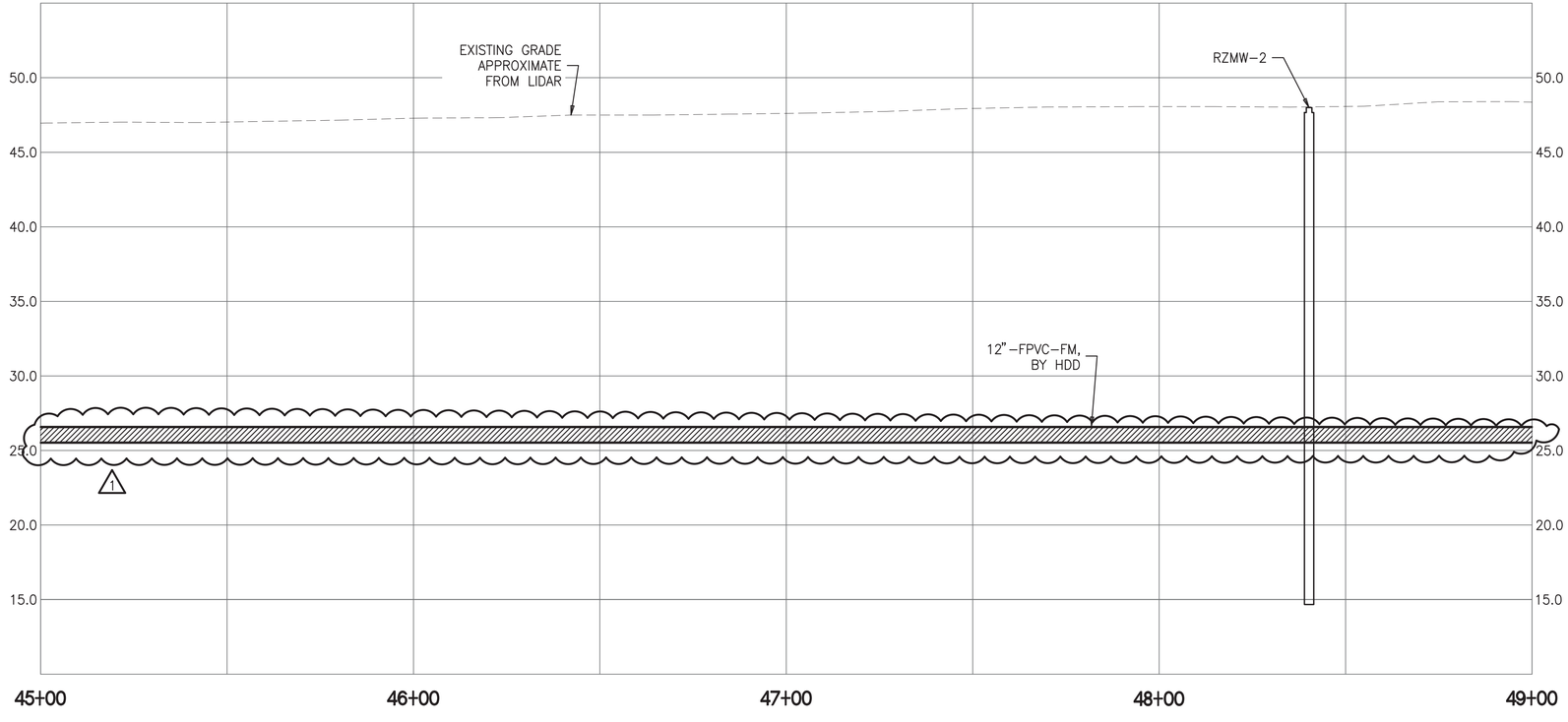

GRAPHIC SCALE
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SCALE IN FEET
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BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1–TEXT AND UTILITY ADJUST.	JTK	SPM

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

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PROJECT NO: 19850–041–01
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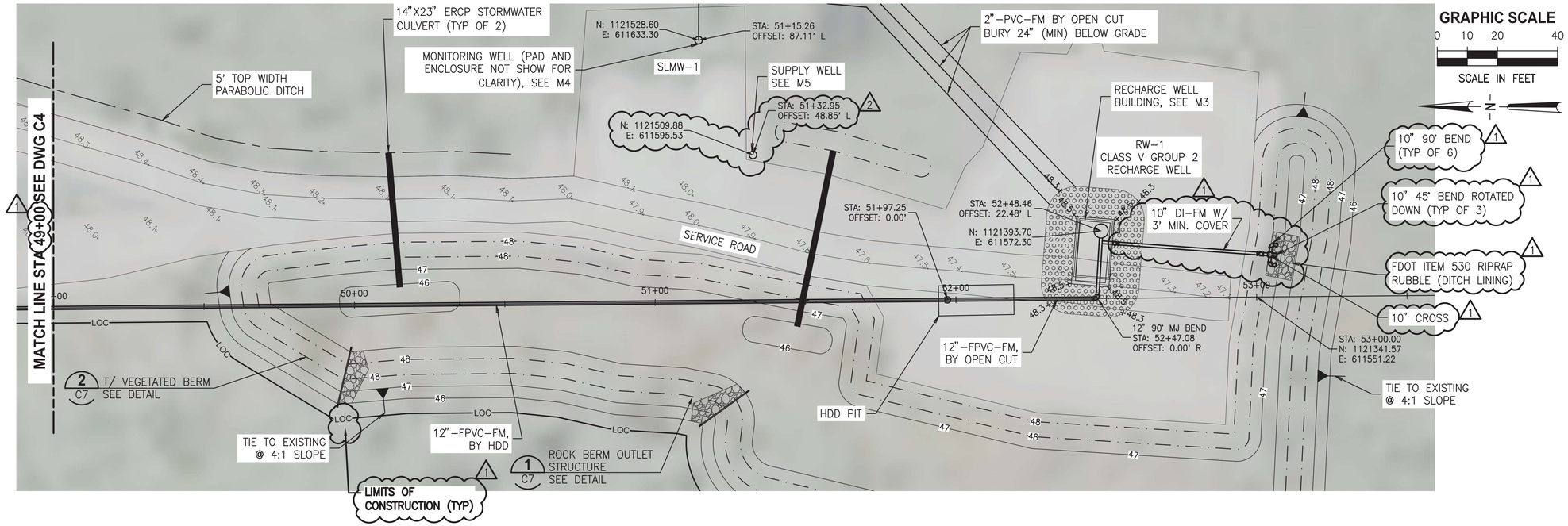
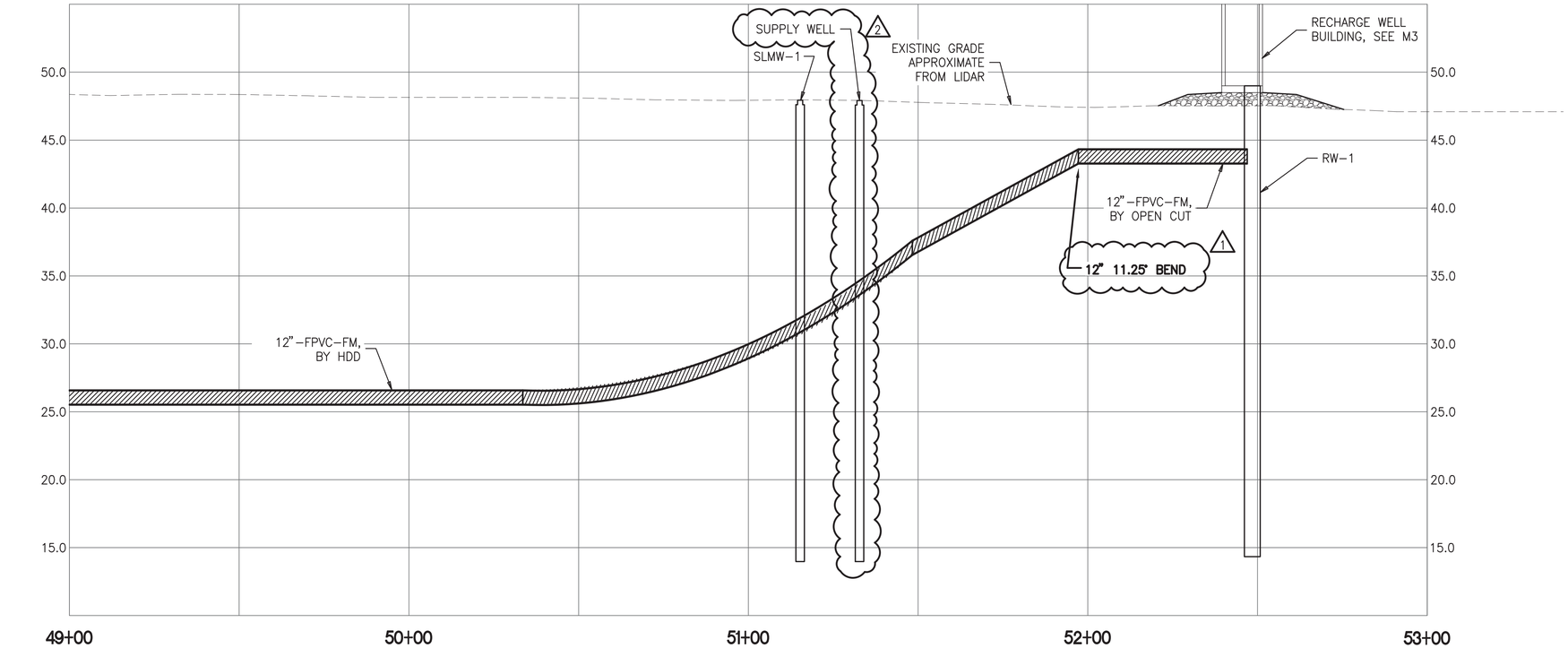
INDEX NO:
DWG NO: C4





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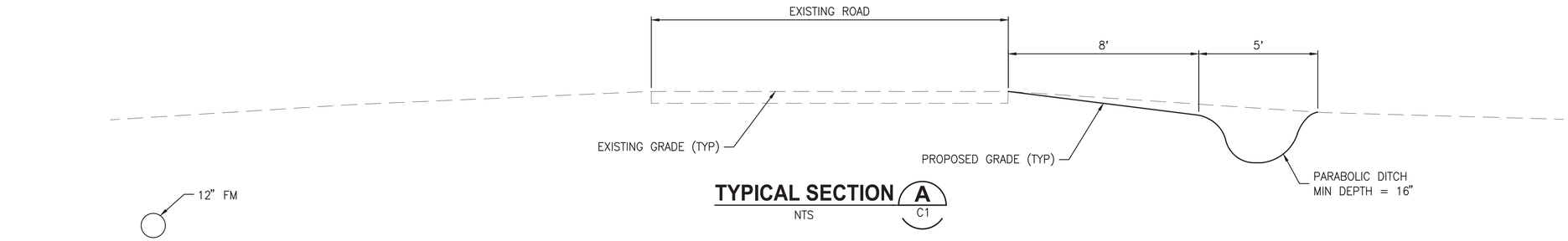
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

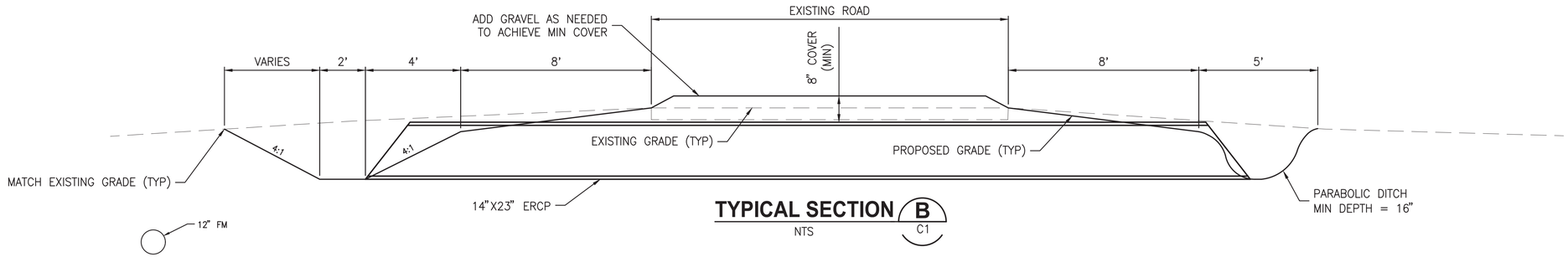
PLAN AND PROFILE

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

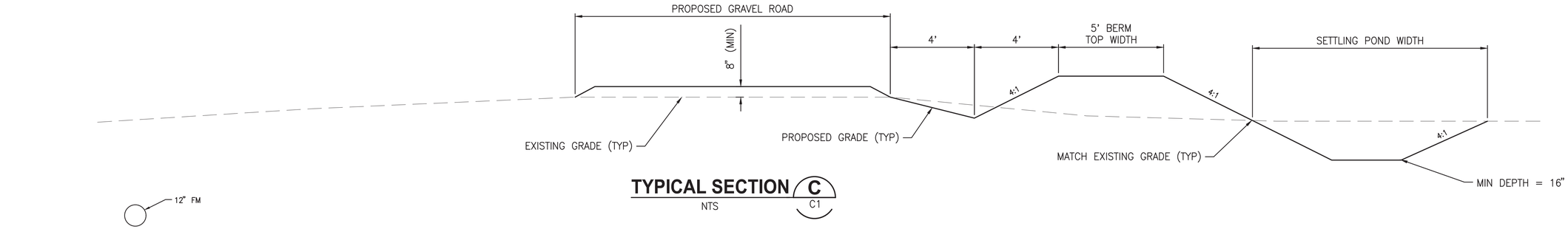
PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C5



TYPICAL SECTION A
NTS
C1



TYPICAL SECTION B
NTS
C1



TYPICAL SECTION C
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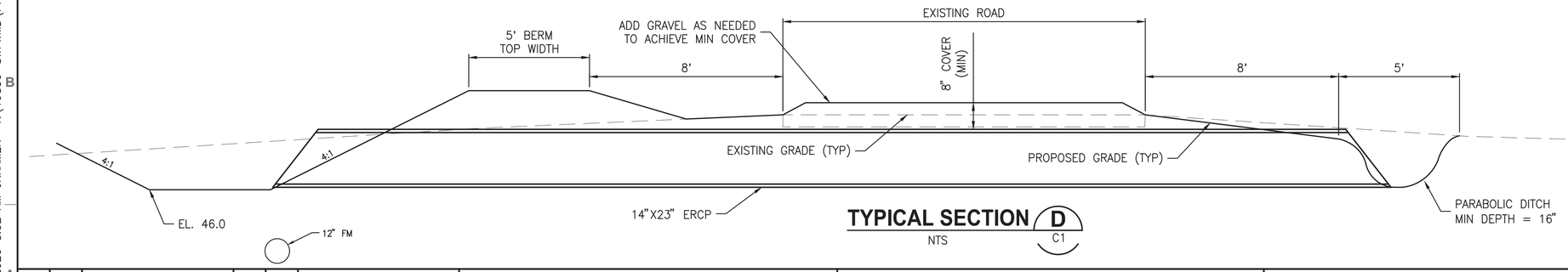


TYPICAL SECTION D
NTS
C1

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

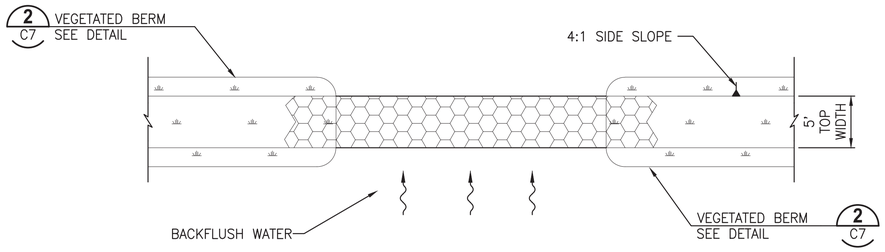
JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

TYPICAL SECTIONS

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C6



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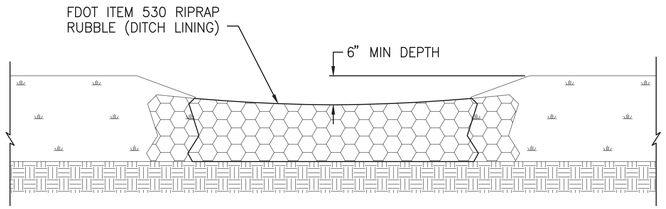

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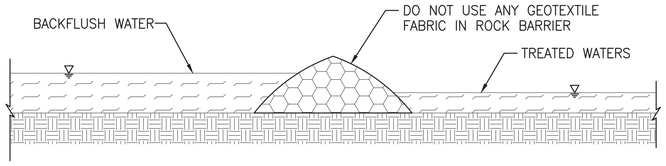
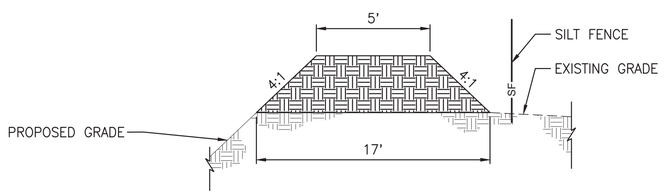


SIDE

ROCK BERM OUTLET STRUCTURE DETAIL 1
C1

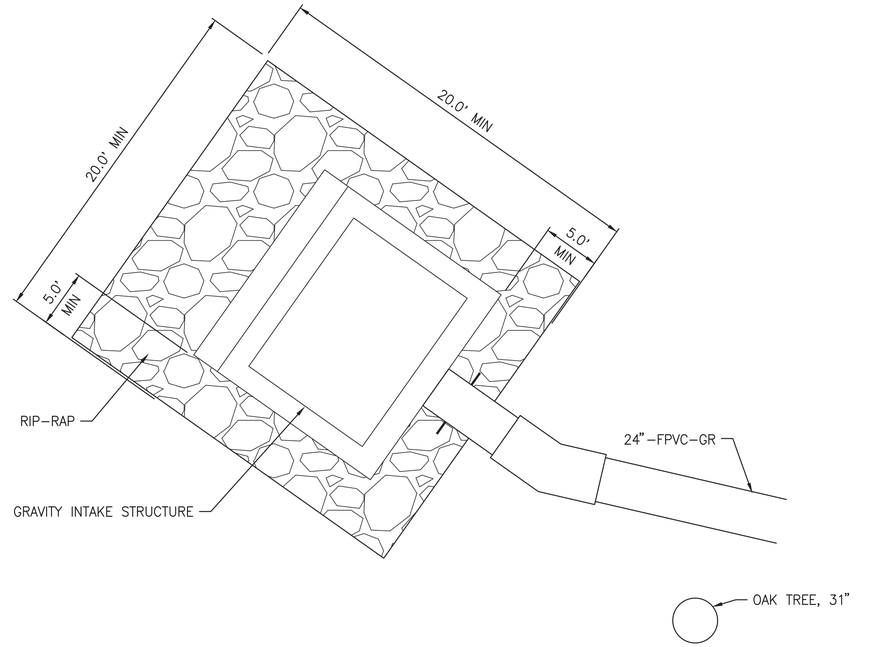
NTS



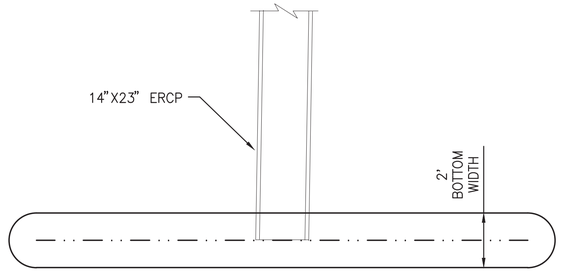
NOTES:

1. BERM SHALL BE COMPACTED TO PREVENT FAILURE.
2. WITHIN 7 DAYS OF CONSTRUCTION, BERM SHALL BE STABILIZED BY SEEDING AND MULCHING SLOPES AND BERM CREST WITH SEED MIX, PER SPECIFICATION 02920.
3. AREAS THAT FAIL TO ESTABLISH VEGETATIVE COVER TO PREVENT EROSION WILL BE FILLED WITH TOPSOIL AND RESEEDED AS SOON AS THEY ARE IDENTIFIED.
4. DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.

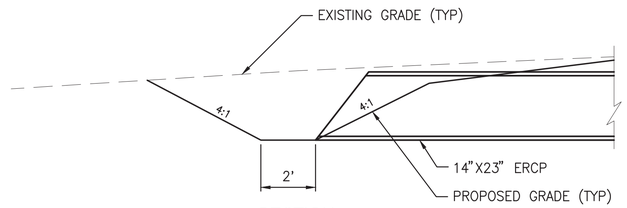
VEGETATED BERM 2
NTS



GRAVITY INTAKE STRUCTURE DETAIL 3
NTS



PLAN



SECTION

20' LEVEL SPREADER DETAIL 4
NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

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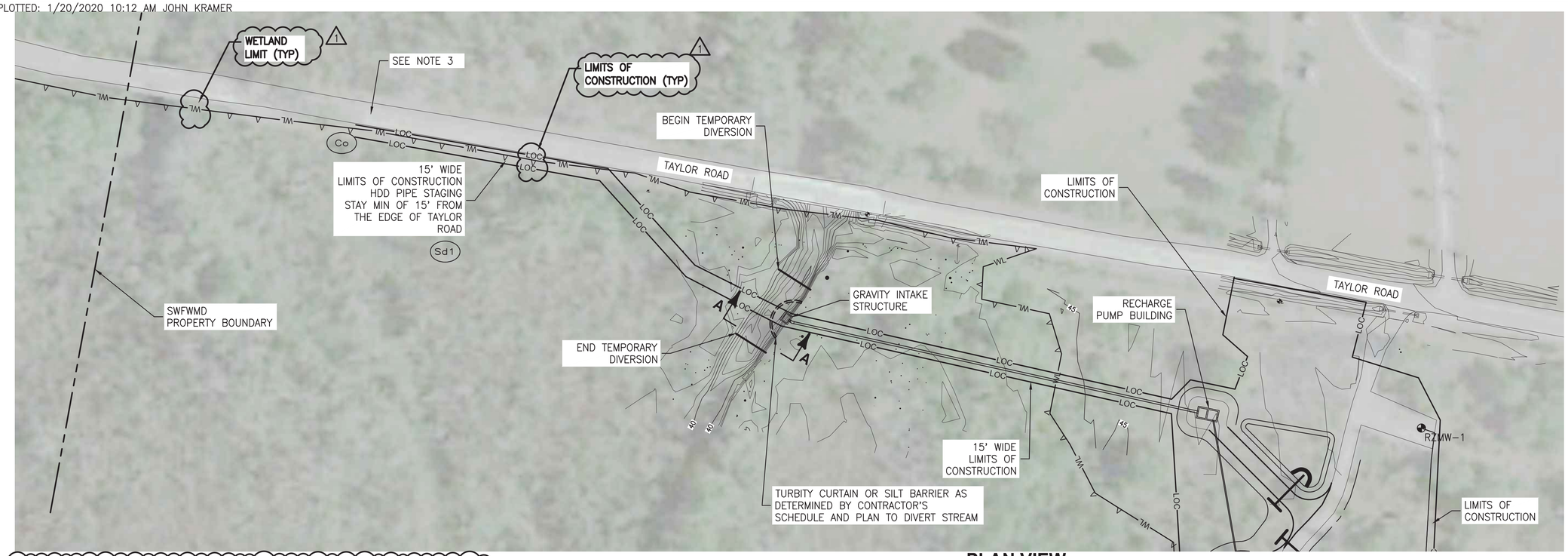
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CIVIL DETAILS

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C7



PLAN VIEW

1' = 60'

-N-

GRAPHIC SCALE

0 30 60 120

SCALE IN FEET

SWPPP BMPS LEGEND

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		Co (LABEL)	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION		Cr	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Sd1	SEDIMENT BARRIER		(INDICATE TYPE)	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN		Sd3 (LABEL)	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Tc	TURBIDITY CURTAIN		Tc	A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tr	TREE PROTECTION		(DENOTE TREE CENTERS)	To protect desirable trees from injury during construction activity.

EROSION PREVENTION AND CONTROL CONSTRUCTION NOTES:

A. ALL EROSION PREVENTION AND CONTROL MEASURES MUST BE INSPECTED AND APPROVED BY A QUALIFIED FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSPECTOR PRIOR TO ANY CONSTRUCTION ACTIVITIES. REMOVAL OF THESE SAME EROSION CONTROLS AND PREVENTION MEASURES MAY BE DONE ONLY AFTER AUTHORIZATION BY THE EROSION AND SEDIMENTATION CONTROL INSPECTOR IS OBTAINED.

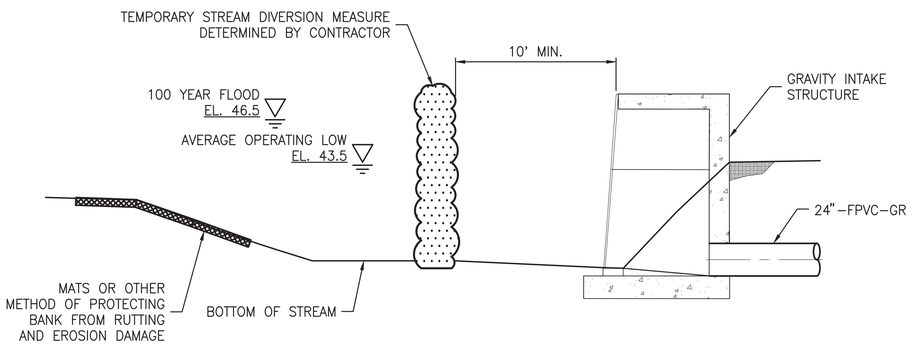
B. DURING CONSTRUCTION THE CONTRACTOR WILL PROVIDE TEMPORARY SEEDING AND MULCHING FOR AREAS THAT HAVE BEEN CLEARED AND NOT REWORKED WITHIN 7 CALENDAR DAYS DURING THE WET SEASON (APRIL THROUGH SEPTEMBER) AND 14 CALENDAR DAYS DURING THE DRY SEASON (OCTOBER THROUGH MARCH).

C. ALL SURFACES WATER DISCHARGE FROM THIS SITE, INCLUDING DEWATERING DISCHARGE SHALL MEET STATE WATER QUALITY STANDARDS (LESS THAN 29 NTU ABOVE BACKGROUND) PRIOR TO REACHING ANY WATERS OF THE STATE, INCLUDING WETLANDS.

D. IN THE EVENT THAT THE EROSION PREVENTION AND CONTROL DEVICES SHOWN IN THESE PLANS PROVE NOT TO BE EFFECTIVE, ALTERNATE METHODS FOR MAINTAINING STATE WATER QUALITY STANDARDS FOR DISCHARGE FROM THE CONSTRUCTION SITE WILL BE REQUIRED. ONE EFFECTIVE ALTERNATIVE METHOD INCLUDES THE INTRODUCTION OF FLOC LOGS INTO THE DISCHARGE FROM THE CONSTRUCTION SITE. NOTE THAT ANY ALTERNATE EROSION PREVENTION AND CONTROL DEVICES MUST BE APPROVED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR PRIOR TO PLACEMENT.

NOTES:

1. CONTRACTOR TO COORDINATE WITH SPECIFICATIONS 02240 DEWATERING AND 02370 EROSION & SEDIMENTATION.
2. EQUIPMENT AND ARRANGEMENT IS SHOWN FOR INVERT ONLY. CONTRACTOR TO SUBMIT PROPOSED DEWATERING PLAN AND EROSION CONTROL PLAN, ALONG WITH EQUIPMENT AND ARRANGEMENT, MATERIALS, LOCATIONS, AND ANY TEMPORARY FLUME OR CULVERT.
3. CONTRACTOR TO COMPLY WITH MAINTENANCE OF TRAFFIC REQUIREMENTS ESTABLISHED IN SECTION 01735, CONTROL OF WORK.



SECTION A-A

NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1-TEXT FONT ADJUSTMENTS	JTK	SPM

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL SITE PLAN

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: C8

CONTRACTOR REQUIREMENTS

SITE DESCRIPTION

PROJECT NAME(S) AND LOCATION:

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT FLATFORD SWAMP

MANATEE COUNTY: SECTIONS 19, 24, TOWNSHIP 35S; RANGES 21E, 22E

OWNER AND ADDRESS:

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET
BROOKSVILLE, FL 34604

DESCRIPTION:

THIS PROJECT WILL CONSIST OF:
THE CONSTRUCTION OF A SURFACE WATER INTAKE, GRAVITY PIPELINE, PUMP STATION, FORCE MAIN, CHEMICAL FEED ENCLOSURE, RECHARGE WELL, ACCESS ROAD AND ASSOCIATED STORMWATER FEATURES. .

SOIL DISTURBING ACTIVITIES WILL INCLUDE:
CLEARING, GRUBBING; INSTALLING STABILIZED CONSTRUCTION ENTRANCE, STABILIZED PIPE LAY–DOWN AREA AND INSTALLATION ACCESS, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; GRADING; EXCAVATION FOR STORMWATER, UTILITIES, BUILDING AND CONSTRUCTION OF GRAVEL ROAD, AND BUILDING AND CONSTRUCTION OF SURFACE WATER INTAKE STRUCTURE..

SOILS:

PIPE LAY–DOWN AREA, INSTALLATION ACCESS, AND SURFACE WATER INTAKE HAVE WETLAND SOILS THAT SHALL BE PROTECTED FROM RUTTING. SEE GEOTECHNICAL REPORT FOR SOILS DATA. FOR THE REMAINDER OF THE SITE.

SITE MAPS:

SEE ATTACHED GRADING PLAN FOR PRE & POST DEVELOPMENT GRADES, AREAS OF SOILS, DISTURBANCE, LOCATION OF SURFACE WATERS, WETLANDS, PROTECTED AREAS, MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS AND STORM WATER DISCHARGE POINTS.

SEE GENERAL NOTES AND SPECIFICATIONS FOR REQUIREMENTS FOR TEMPORARY AND PERMANENT STABILIZATION.

SITE AREA:
TOTAL AREA OF SITE – 10 ACRES
TOTAL AREA TO BE DISTURBED – 1 ACRES

NAME OF RECEIVING WATERS:
MYAKKA CREEK AT FLATFORD SWAMP
NOTE: MYAKKA RIVER AT SR 64, 11.2 SQUARE MILE DRAINAGE AREA
PEAK DISCHARGE 1,157 CFS FOR 10 YEAR EVENT. MYAKKA RIVER AT TAYLOR ROAD 10 YEAR FLOOD ELEVATION IS 45 FT NAVD 88

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN OFF, AN EROSION & SEDIMENT CONTROL PLAN HAS BEEN PREPARED TO INSTRUCT THE CONTRACTOR ON PLACEMENT OF THESE CONTROLS, IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN THE CONTROLS AS PER PLAN AS WELL AS ENSURING THE PLAN IS PROVIDING THE PROPER PROTECTION AS REQUIRED BY FEDERAL, STATE, AND LOCAL LAWS. REFER TO 'CONTRACTORS REQUIREMENTS' FOR A VERBAL DESCRIPTION OF THE CONTROLS THAT MAY BE IMPLEMENTED.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

IN AN EFFORT TO ENSURE COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS REGARDING EROSION AND TURBIDITY CONTROLS, THE FOLLOWING PERMITS HAVE BEEN OBTAINED.

FDEP ERP PERMIT # _____TBD_____
U.S.A.C.E. PERMIT #_____TBD_____

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FORGATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____

TITLE:_____

DATE:_____

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES, STABILIZED CONSTRUCTION ENTRANCE AND TURBIDITY BARRIERS WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN ACCORDANCE WITH THE PLANS AND AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND STABILIZED IN ACCORDANCE WITH THE SEDIMENT AND EROSION CONTROL PLAN.

GENERAL

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION.

SEQUENCE OF MAJOR ACTIVITIES

1. COMPLETE AND SUBMIT NOTICE OF INTENT (NOI) TO FDEP.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
3. STABILIZE LAY DOWN AREA AND ACCESS TO PROTECT WETLAND SOILS FROM RUTTING.
4. INSTALL SILT FENCES AND OTHER EROSION CONTROL DEVICES.
5. INSTALL TURBIDITY BARRIERS.
6. USE TEMPORARY STREAM DIVERSION AS NEEDED TO DIRECT MYAKKA RIVER FLOW WAY FROM INTAKE STRUCTURE AND GRAVITY PIPELINE DURING CONSTRUCTION.
7. PERFORM PRELIMINARY GRADING ON SITE AS REQUIRED.
8. STABILIZE CLEARED AREAS AND STOCKPILES AS SOON AS PRACTICABLE.
9. INSTALL UTILITIES, STORMWATER CULVERTS, AND FOOTINGS/SLABS.
10. CONSTRUCT DRIVE AREAS.
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING.
12. REMOVE ACCUMULATED SEDIMENT FROM PONDS AND DITCHES.
13. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY ROADS, DIVERSION DIKES AND RESEED AS REQUIRED.
14. COMPLETE AND SUBMIT NOTICE OF TERMINATION (NOT) TO FDEP.

CONTROLS

IT IS THE CONTRACTORS RESPONSIBILITY TO DEVELOP A DETAILED SEDIMENT AND EROSION CONTROL PLAN. THAT TAKES INTO ACCOUNT THEIR MEANS, METHODS, AND SCHEDULE. THE PLAN AND DETAILS SHOWN HERE ARE PERFORMANCE BASED CRITERIA.. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THEIR CONTROLS ARE ADEQUATE AND ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL STATE AND LOCAL EROSION AND SEDIMENT CONTROL PLAN AND AS REQUIRED TO MEET THE SEDIMENT AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES

1. FILTER FABRIC BARRIER: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2.0 ACRES.
2. BRUSH BARRIER WITH FILTER FABRIC: BRUSH BARRIER MAY BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WHERE ENOUGH RESIDUE MATERIAL IS AVAILABLE ON SITE.
3. LEVEL SPREADER: A LEVEL SPREADER MAY BE USED WHERE SEDIMENT–FREE STORM RUNOFF IS INTERCEPTED AND DIVERTED AWAY FROM THE GRADED AREAS ONTO UNDISTURBED STABILIZED AREAS. THIS PRACTICE APPLIES ONLY IN THOSE SITUATIONS WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL AND THE AREA BELOW THE LEVEL UP IS STABILIZED. THE WATER SHOULD NOT BE ALLOWED TO RECONCENTRATE AFTER RELEASE.
4. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.
5. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, ERODIBLE SOIL EXPOSED BY CLEARING GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 1.0 ACRES.
6. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE–EXCAVATED OR DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 21 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS. SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.
7. TEMPORARY GRASSING: THE SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER.
8. TEMPORARY MATTING: THE CONTRACTOR SHALL USE MATTING OR OTHER MEAN TO PROTECT THE WETLAND SOILS AND STREAM BANK FROM RUTTING AND EROSION DURING PIPELINE ASSEMBLY AND INSTALLATION.
9. TEMPORARY STREAM DIVERSION: THE CONTRACTOR SHALL DIVERT THE MYAKKA RIVER AS NEEDED TO CONTROL EROSION AND TURBIDITY DURING THE INSTALLATION OF THE PIPELINE AND THE INTAKE STRUCTURE.
10. TEMPORARY REGRASSING: IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT MAINTAINED A MINIMUM OF 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.
11. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.
12. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.
13. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL BE SEEDED.

STRUCTURAL PRACTICES

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT–TRAPPING FACILITY.
2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP IS USUALLY INSTALLED IN AN DRAINAGEWAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA WITH THE FOLLOWING LIMITATIONS:
   A. THE SEDIMENT TRAP MAY BE CONSTRUCTED EITHER INDEPENDENTLY OR IN CONJUNCTION WITH A TEMPORARY DIVERSION DIKE.
3. OUTLET PROTECTION: APPLICABLE TO THE OUTLETS OF ALL PIPES WHERE THE VELOCITY OF FLOW AT DESIGN CAPACITY OF THE OUTLET WILL EXCEED THE PERMISSIBLE VELOCITY OF THE RECEIVING CHANNEL OR AREA.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIAL OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION:

CONCRETE
DETERGENTS
AGGREGATE
PETROLEUM BASED PRODUCTS
CLEANING SOLVENTS
PAINTS
WOOD

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED ON SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE METHODS AND POSTED LOCATION.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, LIQUID ABSORBENT (I.e. KITTY LITTER OR EQUAL), SAND SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED IMMEDIATELY TO THE OWNER.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY–TO–DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE/SHE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSONNEL, WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IF APPLICABLE, IN THE OFFICE TRAILER ONSITE.

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

HAZARDOUS PRODUCTS

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.

IF SURPLUS PRODUCT MUST BE DISPOSED OF MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED AREA. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER TO DITCHES, PONDS OR OTHER WATERWAYS. WASHWATER SHALL BE COLLECTED IN A TEMPORARY SETTLING POND.

OTHER CONTROLS

WASTE DISPOSAL

WASTE MATERIALS

ALL WASTE MATERIALS EXCEPT LAND CLEARING DEBRIS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED AS NEEDED AND THE TRASH WILL BE HAULED TO A STATE APPROVED LANDFILL ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE CONSTRUCTION SITE BY THE CONSTRUCTION SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES THE DAY–TO–DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES DAY–TO–DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NEEDED TO PREVENT POSSIBLE SPILLAGE. THE WASTE WILL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH STATE AND LOCAL WASTE DISPOSAL REGULATIONS FOR SANITARY SEWER OR SEPTIC SYSTEMS.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED AREA ADJACENT TO THE SITE ENTRANCE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARP.

MAINTENANCE/INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS.

NO MORE THAN 1.0 ACRES OF THE SITE WILL BE CLEARED AT ONE TIME WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

ALL CONTROL MEASURES WILL BE INSPECTED BY A CERTIFIED SUPERINTENDENT, THE PERSON RESPONSIBLE FOR THE DAY–TO–DAY SITE OPERATION OR SOMEONE APPOINTED BY THE SUPERINTENDENT, AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF ANY STORM EVENT OF 1/2" OR GREATER.

ALL TURBIDITY CONTROL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.

BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE–THIRD THE HEIGHT OF THE FENCE.

SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.

CONSTRUCTION ENTRANCES WILL BE INSPECTED FOR DEPTH OF CRUSHED STONE BED AND FILTER FABRIC CONDITION. THE BED SHALL HAVE A 6" THICKNESS AND THE FILTER FABRIC SHALL BE FREE OF TEARS AND FIRMLY SECURE. ENTRANCES SHALL BE REMOVED PRIOR TO CONSTRUCTION OF DRIVEWAYS.

THE SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY AND AT THE END OF THE JOB.

DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.

TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.

A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. COPY OF THE REPORT FORM TO BE COMPLETED BY THE INSPECTOR IS ATTACHED. THE REPORTS WILL BE KEPT ON SITE DURING CONSTRUCTION AND AVAILABLE UPON REQUEST TO THE OWNER, ENGINEER OR ANY FEDERAL, STATE, AND LOCAL AGENCY APPROVING SEDIMENT AND EROSION PLANS, OR STORM WATER MANAGEMENT PLANS. THE REPORTS SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR AT LEAST THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED AND THE NOTICE OF TERMINATION IS SUBMITTED. THE REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON–COMPLIANCE.

THE SITE SUPERINTENDENT WILL SELECT UP TO THREE CERTIFIED INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT AND MUST ENFORCE THE FDEP NPDES SWPPP FOR THIS PROJECT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

NON–STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON–STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD.

UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION).

ALL NON–STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN OR OTHER APPROPRIATE AREA PRIOR TO DISCHARGE TO EXISTING DITCHES OR WETLANDS.

CONTRACTORS CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE	BUSINESS NAME & ADDRESS OF CONTRACTOR, ALL SUBS	RESPONSIBLE FOR/DUTIES
		GENERAL CONTRACTOR
		SUBCONTRACTOR
		SUBCONTRACTOR
		SUBCONTRACTOR

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1–TEXT FONT ADJUSTMENTS	JTK	MRH

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL NOTES

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: C9

SEDIMENT AND EROSION CONTROL NOTES

STORMWATER POLLUTION PREVENTION PLAN

INSPECTIONS MUST OCCUR AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.50 INCHES OR GREATER

INSPECTOR: _____ FDEP NPDES STORMWATER IDENTIFICATION NUMBER: _____

LOCATION	RAIN DATA	TYPE OF CONTROL (SEE BELOW)	DATE INSTALLED / MODIFIED	CURRENT CONDITION (SEE BELOW)	CORRECTIVE ACTION / OTHER REMARKS

CONDITION CODE:
G = GOOD M = MARGINAL, NEEDS MAINTENANCE OR REPLACEMENT SOON P = POOR, NEEDS IMMEDIATE MAINTENANCE OR REPLACEMENT
C = NEEDS TO BE CLEARED O = OTHER

CONTROL TYPE CODES

1. SILT FENCE	10. STORM DRAIN INLET PROTECTION	19. REINFORCED SOIL RETAINING SYSTEM	28. TREE PROTECTION
2. EARTH DIKES	11. VEGETATIVE BUFFER STRIP	20. GABION	29. DETENTION POND
3. STRUCTURAL DIVISION	12. VEGETATIVE PRESERVATION AREA	21. SEDIMENT BASIN	30. RETENTION POND
4. SWALE	13. RETENTION POND	22. TEMPORARY SEED / SOD	31. WASTE DISPOSAL / HOUSEKEEPING
5. SEDIMENT TRAP	14. CONSTRUCTION ENTRANCE STABILIZATION	23. PERMANENT SEED / SOD	32. DAM
6. CHECK DAM	15. PERIMETER DITCH	24. MULCH	33. SAND BAG
7. PIPE SLOPE DRAIN	16. CURB AND GUTTER	25. HAY BALES	34. OTHER
8. LEVEL SPREADERS	17. PAVED ROAD SURFACE	26. GEOTEXTILE	
9. NOT USED	18. ROCK OUTLET PROTECTION	27. RIP–RAP	

1

INSPECTOR INFORMATION:

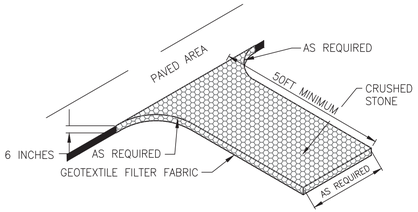
NAME: _____ QUALIFICATION _____ DATE _____

THE ABOVE SIGNATURE ALSO SHALL CERTIFY THAT THIS FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES IF THERE ARE NOT ANY INCIDENTS OF NON–COMPLIANCE IDENTIFIED ABOVE.

* * * * * *

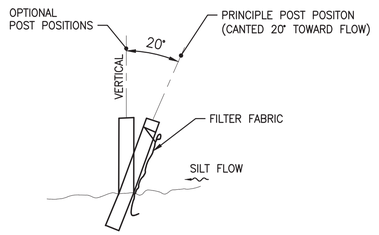
"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME (RESPONSIBLE AUTHORITY) _____ DATE _____

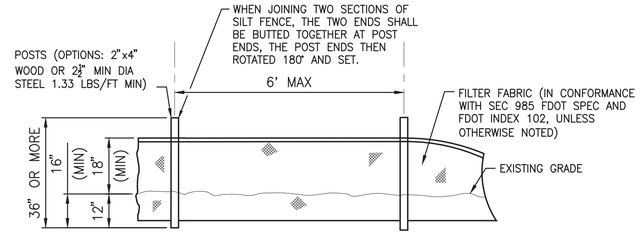


STABILIZED CONSTRUCTION ENTRANCE (Co)

NTS



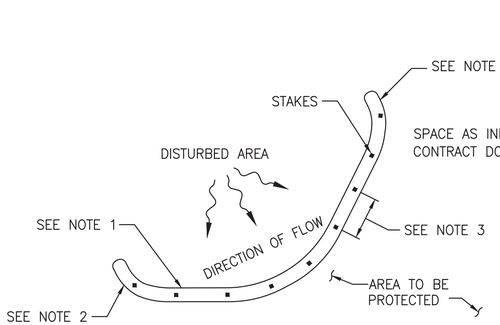
SECTION



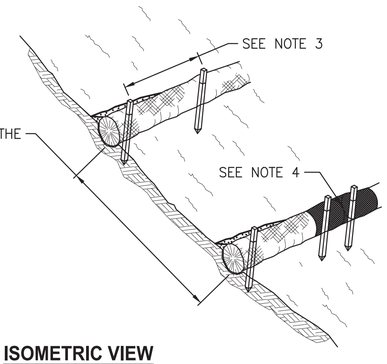
ELEVATION

TYPICAL SILT FENCE (Sd1)

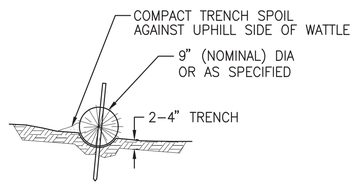
NTS



PLAN



ISOMETRIC VIEW



SIDE

NOTES:

1. INSTALL WATTLE ALONG CONTOUR OF SLOPE.
2. TURN ENDS OF WATTLE UPHILL TO PREVENT WATER FROM FLOWING AROUND ENDS.
3. SPACE STAKES AT 4 FT. MAX. INSTALL ADDITIONAL STAKES AS NECESSARY TO PREVENT MOVEMENT AND UNDERMINING.
4. ABUT ENDS OF ADJACENT WATTLES TIGHTLY. WRAP JOINT WITH 36 IN. WIDE SECTION OF SILT FENCE AND SECURE WITH STAKES.

WATTLE (Sd2)

NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1–TEXT FONT ADJUSTMENTS	JTK	MRH

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL DETAILS

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: C10

GENERAL STRUCTURAL NOTES

GENERAL CONDITIONS

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
3. FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH A DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
5. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
6. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

DESIGN CRITERIA

BUILDING CODES AND REFERENCES:

1. 2017 FLORIDA BUILDING CODE, 6TH EDITION (FBC)
2. REINFORCED CONCRETE:

   WATER RETAINING ENVIRONMENTAL STRUCTURES: ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"

   ALL OTHER STRUCTURES: ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
3. ALUMINUM: ADM1-2010, ALUMINUM DESIGN MANUAL
4. LIVE LOADS:

SLABS ON GRADE	300 PSF

5. WIND DESIGN CRITERIA:

RISK CATEGORY	III
ULTIMATE DESIGN WIND SPEED, V_{ULT}	154 MPH
NOMINAL DESIGN WIND SPEED, V_{ASD}	116 MPH
EXPOSURE CATEGORY	C
ENCLOSURE CLASSIFICATION	ENCLOSED

FOUNDATIONS

GEOTECHNICAL REPORT:

1. GEOTECHNICAL ENGINEERING SERVICES REPORT "FLATFORD SWAMP AQUIFER RECHARGE", PREPARED BY MC SQUARED, INC, PROJECT NO. T071726.162, DATED MAY 15, 2018. ANY INTERPRETATION OF THE CONTENTS OF THE GEOTECHNICAL REPORT IS THE RESPONSIBILITY OF THE CONTRACTOR.

FOUNDATION DESIGN PARAMETERS:

1. MAXIMUM ALLOWABLE BEARING PRESSURE.....2,000 PSF (NET)

CONCRETE (CAST-IN-PLACE)

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
2. ALL CONCRETE SHALL BE AIR-ENTRANED WITH A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.
3. WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
4. ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS FINISHING IS COMPLETED OR FORMS ARE REMOVED.
5. ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064 REQUIREMENTS. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
2. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

   a. CONCRETE CAST AGAINST EARTH — 3"

   b. FORMED SURFACE IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER — 2"
3. LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL.
4. THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
5. UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR WALLS AND SLABS SHALL BE AS FOLLOWS.

MINIMUM REINFORCING						
THICKNESS	6"	8"	10"	12" - 16"	18" - 22"	24"
REINF. EACH WAY	#4 @ 12"	#5 @12"	#5 @ 12"	#5 @ 12"	#6 @ 12"	#7 @ 12"
LOCATION	CTR	CTR	EF	EF	EF	EF

ALUMINUM

1. ALUMINUM DESIGN, DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL.
2. ALUMINUM IN CONTACT WITH OR EMBEDDED IN CONCRETE OR MASONRY SURFACES SHALL BE COATED WITH A HEAVY COATING OF ALKALI RESISTANCE BITUMINOUS PAINT.
3. ALL BOLTS USED IN CONNECTIONS WITH ALUMINUM MEMBERS SHALL BE STAINLESS STEEL A316, UNLESS NOTED OTHERWISE.
4. ALL WELDING OF ALUMINUM STRUCTURES SHALL CONFORM TO "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, LATEST EDITION.

STAINLESS STEEL

1. STAINLESS STEEL PLATES, SHEETS AND STRUCTURAL SHAPES SHALL BE IN ACCORDANCE TO ASTM A240.
2. STAINLESS STEEL MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

   a. EXTERIOR AND SUBMERGED USE: TYPE 316 / TYPE 316L (WHERE WELDED)
3. ALL WELDING OF STRUCTURAL STAINLESS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STAINLESS STEEL", AWS D1.6, LATEST EDITION.
4. STAINLESS STEEL BOLTS, NUTS AND WASHERS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F593 UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL

1. DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND THE DESIGN DRAWINGS.
2. STEEL MATERIAL:

   a. W-SHAPED SECTIONS : ASTM A992, GRADE 50
   b. HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B
   c. ALL OTHER STRUCTURAL STEEL: ASTM A36
   d. ALL PIPE: ASTM A53, GRADE B
3. WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. ELECTRODES SHALL BE E-70XX.
4. BOLTED CONNECTIONS:

   a. MAIN CONNECTIONS: 3/4" DIA, ASTM A325 BOLTS. HOLES: 13/16" DIA CONNECTION SHALL BE "BEARING" TYPE WITH THREADS EXCLUDED FROM THE SHEAR PLANE.

   b. ALL CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS. GUSSET PLATES SHALL BE A MINIMUM OF 3/8" THICK.

STRUCTURAL ABBREVIATIONS

&	AND	EXP	EXPANSION	PEMB	PRE-ENGINEERED METAL BUILDING
@	AT	FE	FIRE EXTINGUISHER	PERP	PERPENDICULAR
#	NUMBER	FF	FAR FACE, FINISHED FLOOR	PL	PLATE
ADDTL	ADDITIONAL	FG	FINISHED GRADE	PLF	POUND PER LINEAR FOOT
ALUM	ALUMINUM	FRP	FIBER REINFORCED PLASTIC	PT	PRESSURE TREATED
AEWS	AUTOMATIC END WELDED STUD(S)	FT	FOOT	PROJ	PROJECTION
ALT	ALTERNATE	FTG	FOOTING	PSF	POUNDS PER SQUARE FOOT
APROX	APPROXIMATE(LY)	FV	FIELD VERIFY	PSI	POUNDS PER SQUARE INCH
BLD	BUILDING	GA	GAGE	PVC	POLYVINYL CHLORIDE
BM	BEAM	GALV	GALVANIZED	R	RADIUS
BOT	BOTTOM	HK	HOOK	REINF	REINFORCING
CJ	CONTROL JOINT	HORIZ	HORIZONTAL	REQD	REQUIRED
CL	CENTER LINE	HSS	HOLLOW STRUCTURAL SECTION	RO	ROUGH OPENING
CLR	CLEAR	HP	HIGH POINT	SCHED	SCHEDULE(D)
CMU	CONCRETE MASONRY UNIT	ID	INSIDE DIAMETER	SIM	SIMILAR
COL	COLUMN	JT	JOINT	SJ	SAWCUT JOINT
CONC	CONCRETE	LB(S)	POUND(S)	SMS	SHEET METAL SCREW
CONN	CONNECTION	LONG	LONGITUDINAL	SPECS	SPECIFICATIONS
CONST JT	CONSTRUCTION JOINT	LP	LOW POINT	SQ	SQUARE
CONT	CONTINUOUS	MANUF	MANUFACTURER	SS	STAINLESS STEEL
DIA	DIAMETER	MATL	MATERIAL	STD	STANDARD
DEG	DEGREE(S)	MAX	MAXIMUM	STL	STEEL
DO	DITTO	MECH	MECHANICAL	T/	TOP OF
DWG	DRAWING	MFR	MANUFACTURER	TB	TIE BEAM
DWL	DOWEL(S)	MIN	MINIMUM	T&B	TOP AND BOTTOM
(E)	EXISTING	MISC	MISCELLANEOUS	THK	THICK
EA	EACH	MO	MASONRY OPENING	THRU	THROUGH
EF	EACH FACE	MTL	METAL	TOC	TOP OF CONCRETE
EJ	EXPANSION JOINT	NO	NUMBER	TOS	TOP OF STEEL
EL	ELEVATION	NTS	NOT TO SCALE	TYP	TYPICAL
ELEC	ELECTRICAL	OC	ON CENTER	UNO	UNLESS NOTED OTHERWISE
EMBED	EMBEDMENT	OD	OUTSIDE DIAMETER	VERT	VERTICAL
EOC	EDGE OF CONCRETE	OH	OPPOSITE HAND	WWF	WELDED WIRE FABRIC
EQ	EQUAL	OPNG	OPENING		
EW	EACH WAY	PCS	PIECES		
EXIST	EXISTING				

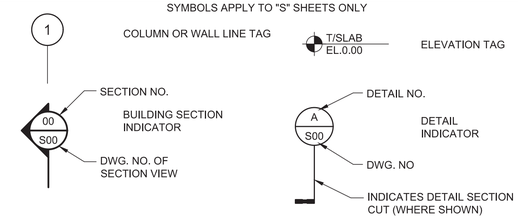
LEGEND

STRUCTURAL LEGEND APPLIES TO "S" SHEETS ONLY

- EARTH FILL
- UNDISTURBED EARTH
- COMPACTED GRANULAR FILL
- GROUT OR SAND (AS NOTED)
- GRATING
- CONCRETE
- EXISTING CONCRETE
- DEMOLITION
- STEEL
- PRECAST CONCRETE

SYMBOLS

SYMBOLS APPLY TO "S" SHEETS ONLY



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WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

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DRAWN J.SOBCZAK
CHECKED D.MORRIS

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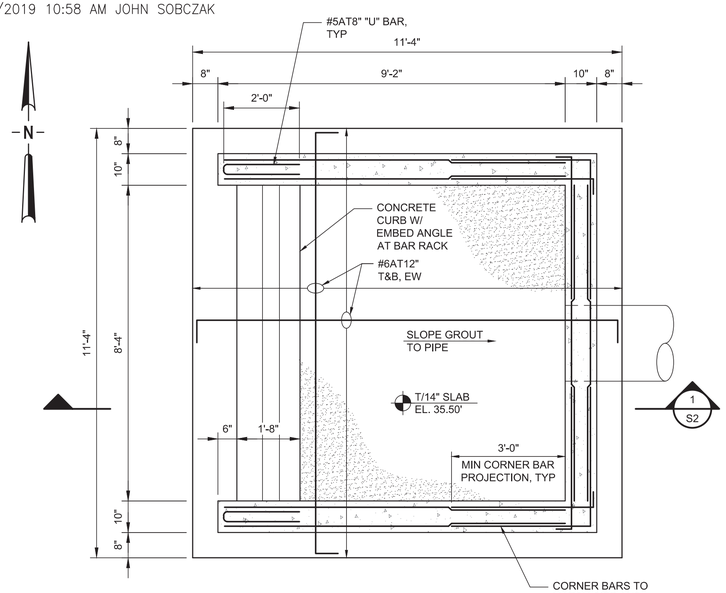
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

GENERAL STRUCTURAL NOTES, ABBREVIATIONS & SYMBOLS

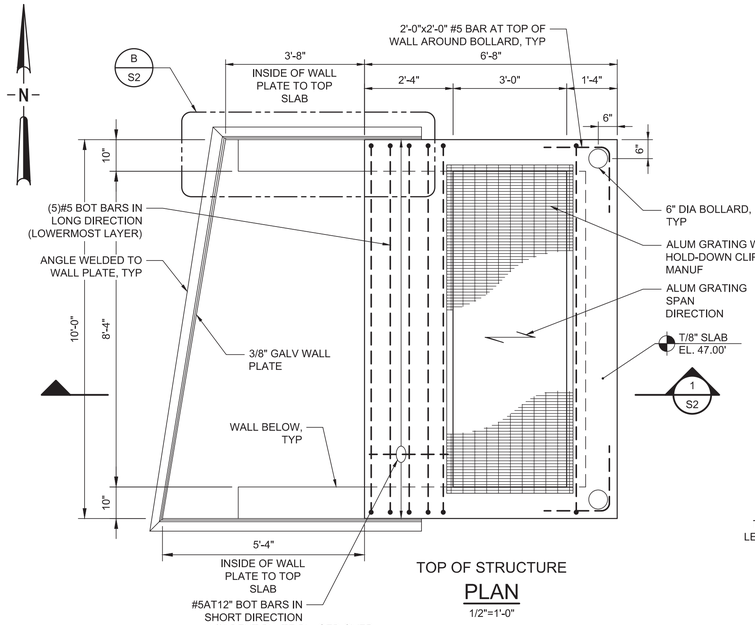
APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S1



FOUNDATION PLAN

1/2"=1'-0"



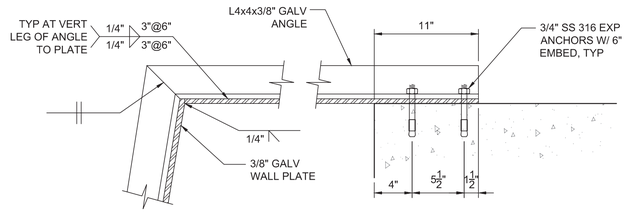
TOP OF STRUCTURE PLAN

1/2"=1'-0"

GRAPHIC SCALE

0 1 2 4

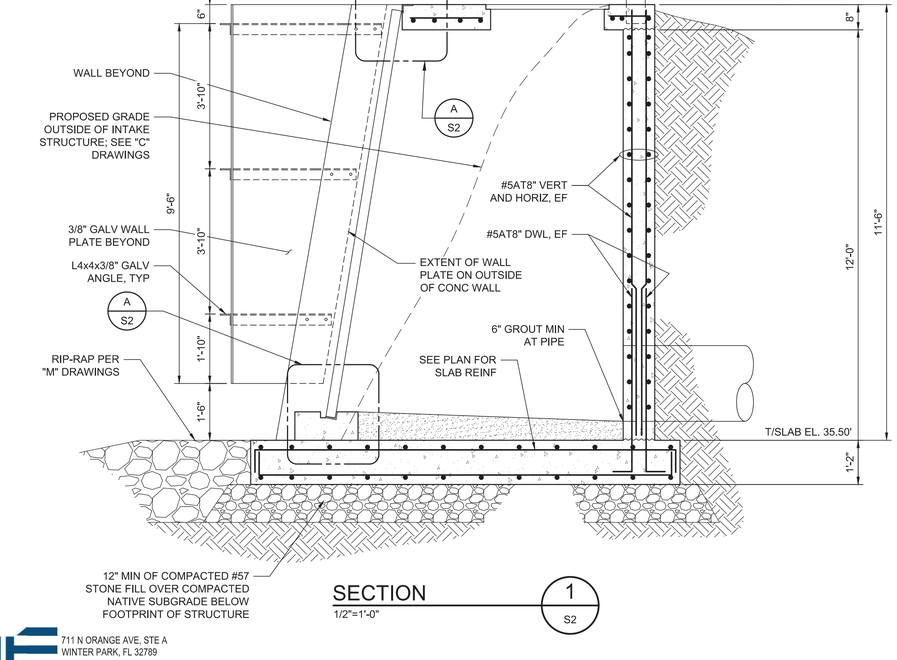
SCALE IN FEET



BAR RACK SHROUD

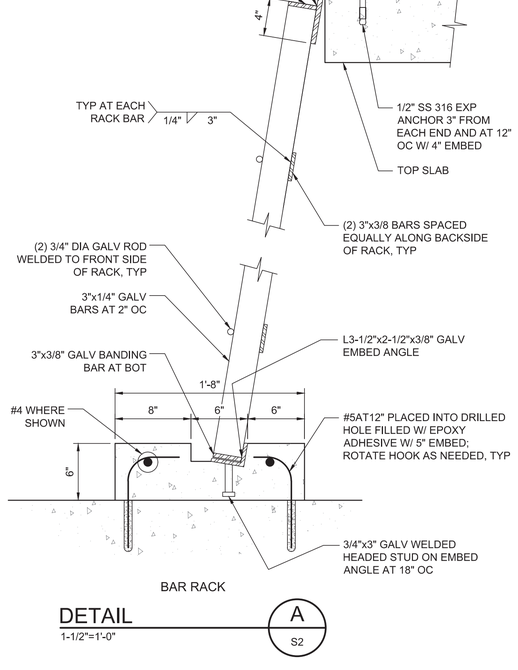
DETAIL B

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



SECTION 1

1/2"=1'-0"



BAR RACK

DETAIL A

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

BID SET

711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

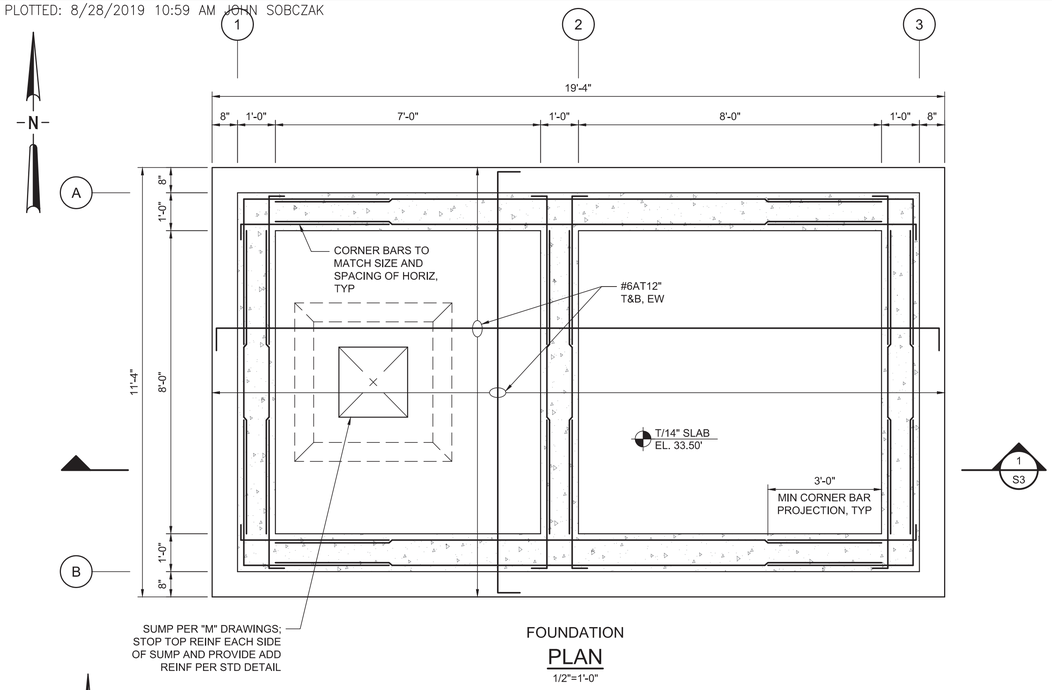
JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

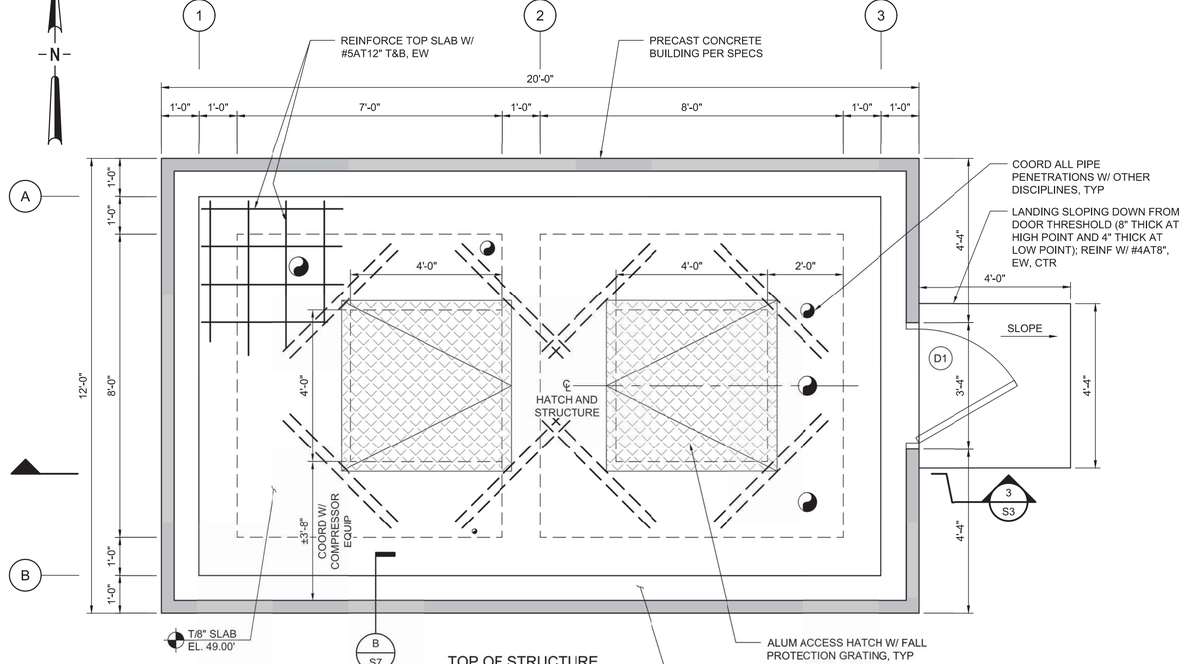
GRAVITY INTAKE STRUCTURE PLANS, SECTION AND DETAILS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

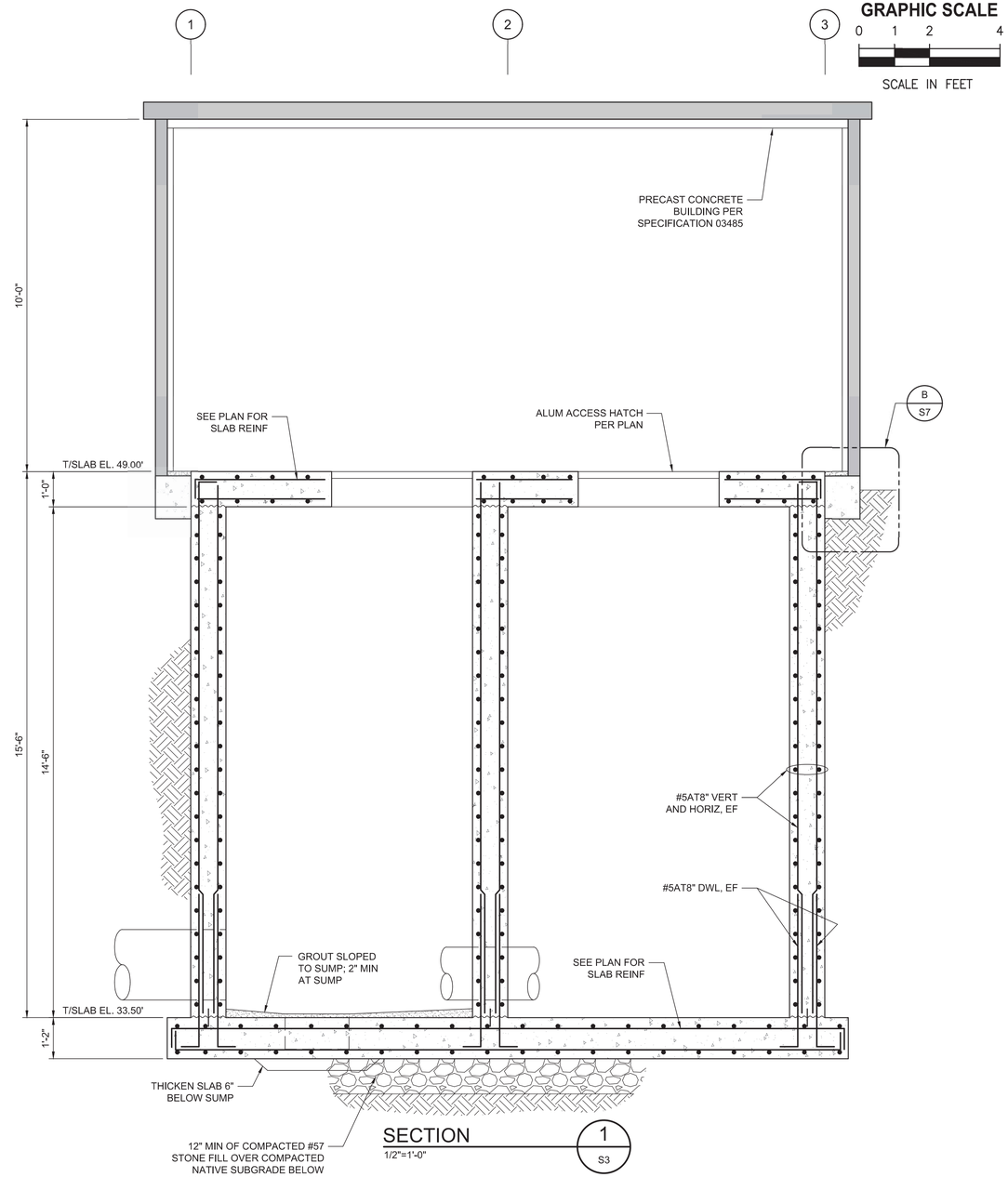
PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S2



FOUNDATION
PLAN
1/2"=1'-0"



TOP OF STRUCTURE
PLAN
1/2"=1'-0"



SECTION
1/2"=1'-0"
1
S3

NOTES:
1. SEE SHEET S7 FOR DOOR SCHEDULE AND INTERIOR FINISH SCHEDULE FOR BUILDING.
2. ONE (1) 4A-60B-C HALOTRON 1 FIRE EXTINGUISHER SHALL BE PROVIDED AT DOOR.

BID SET

WEKIVA ENGINEERING
711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

JonesEdmunds
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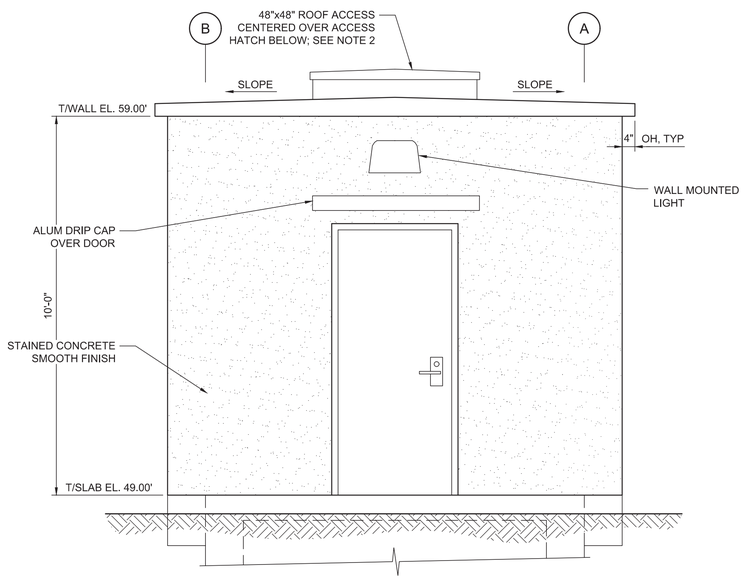
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

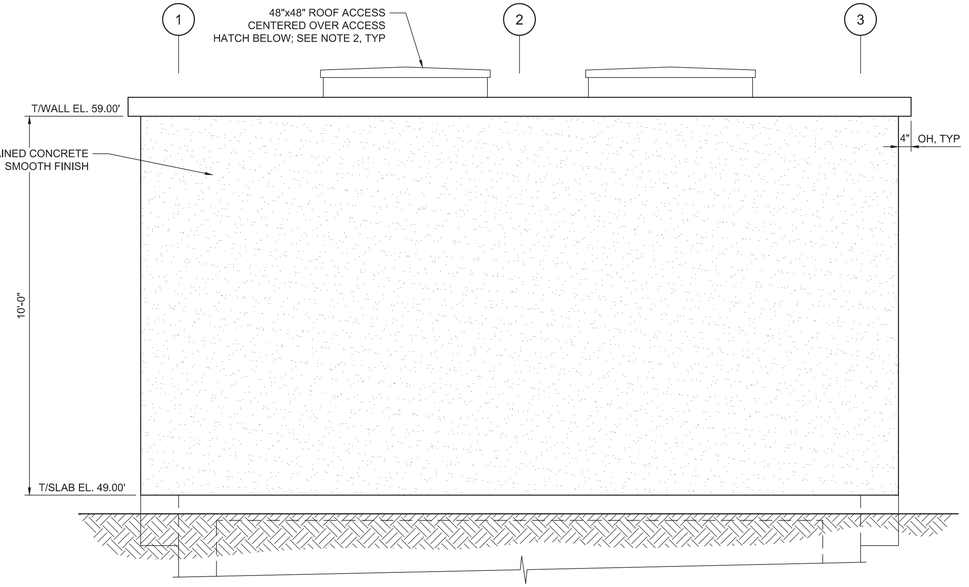
RECHARGE PUMP STATION PLANS AND SECTION

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S3



EAST
ELEVATION
1/2"=1'-0"

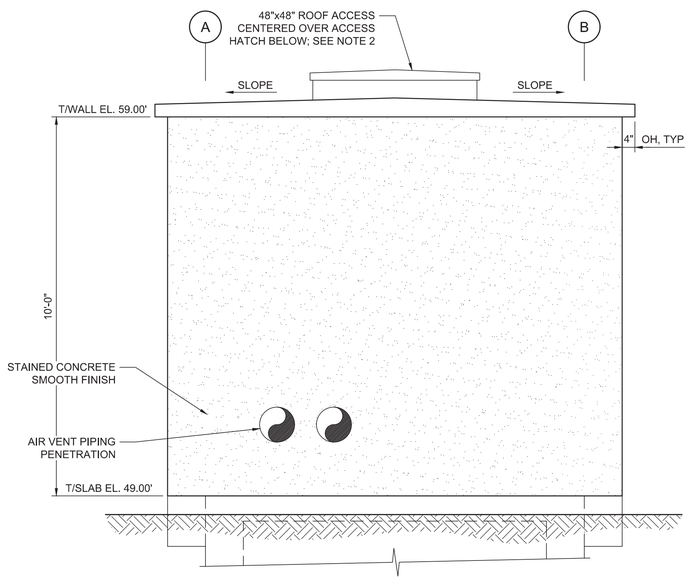


SOUTH
ELEVATION
1/2"=1'-0"

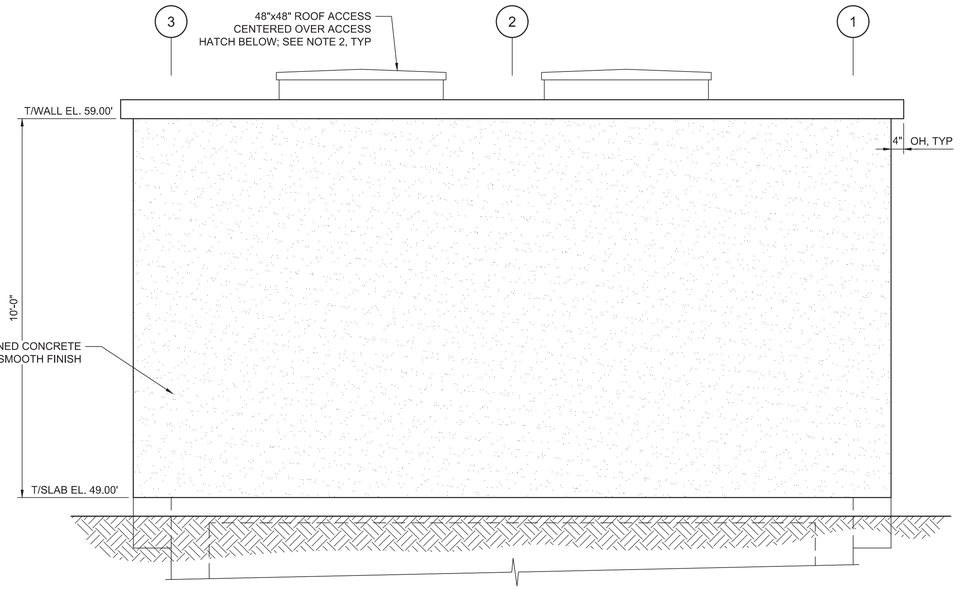
GRAPHIC SCALE

0 1 2 4 8

SCALE IN FEET



WEST
ELEVATION
1/2"=1'-0"



NORTH
ELEVATION
1/2"=1'-0"

NOTES:
1. SEE SHEET S7 FOR DOOR SCHEDULE AND INTERIOR FINISH SCHEDULE FOR BUILDING.
2. PROVIDE THERMALLY BROKEN ROOF HATCH BY BILCO. CONTRACTOR TO PROVIDE SS COUNTER FLASHING AND SEALANT TO ENSURE THE INSTALLATION TO THE PRECAST STRUCTURE IS WATER-TIGHT.

BID SET

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711 N ORANGE AVE, STE A
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WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

JonesEdmunds
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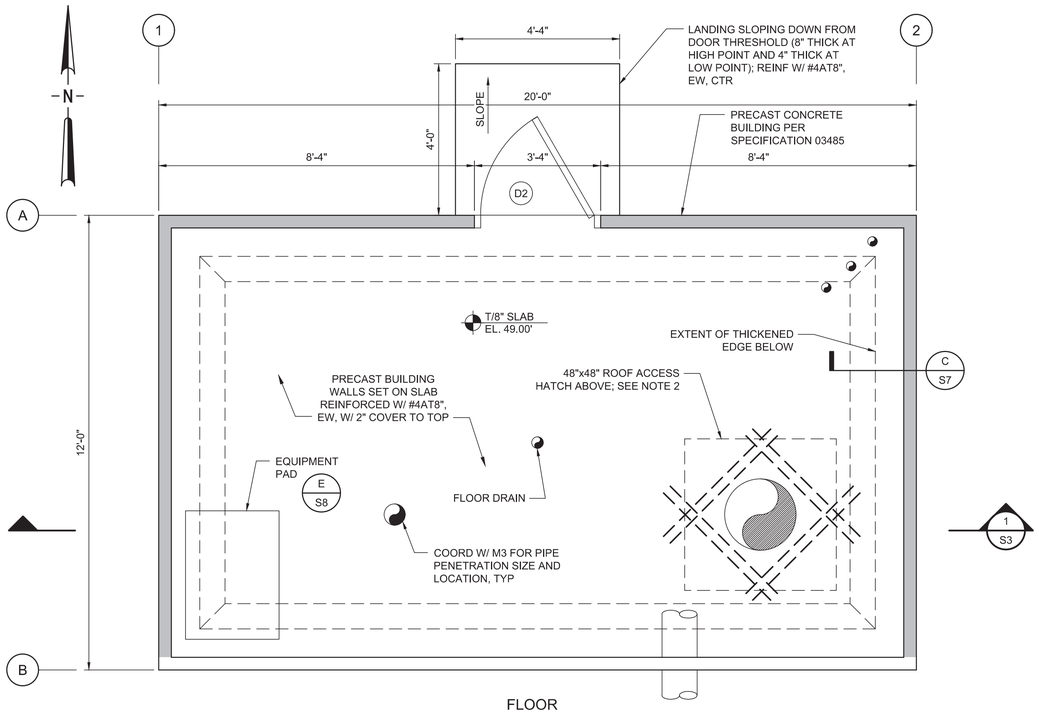
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

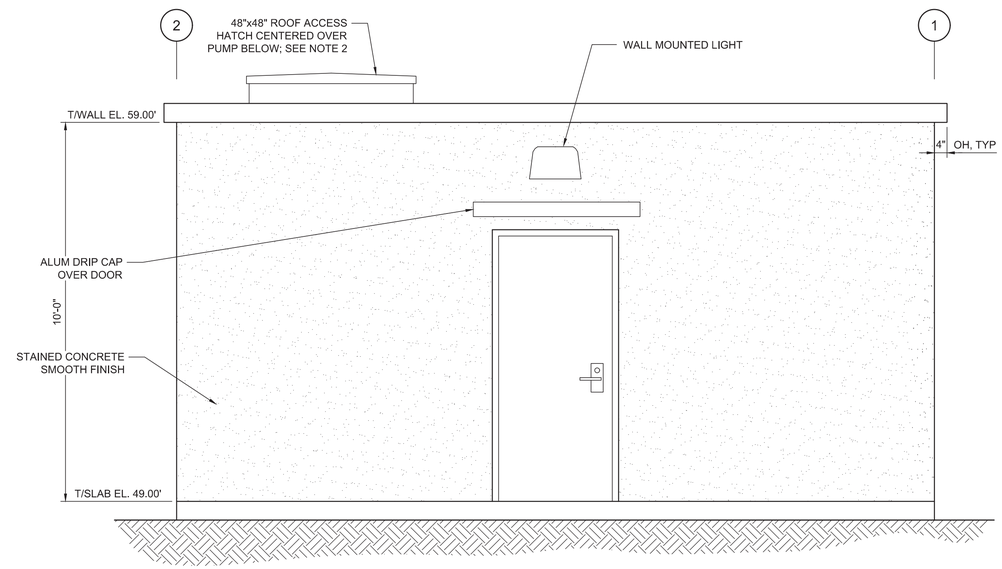
RECHARGE PUMP STATION BUILDING ELEVATIONS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S4



FLOOR
PLAN
1/2"=1'-0"

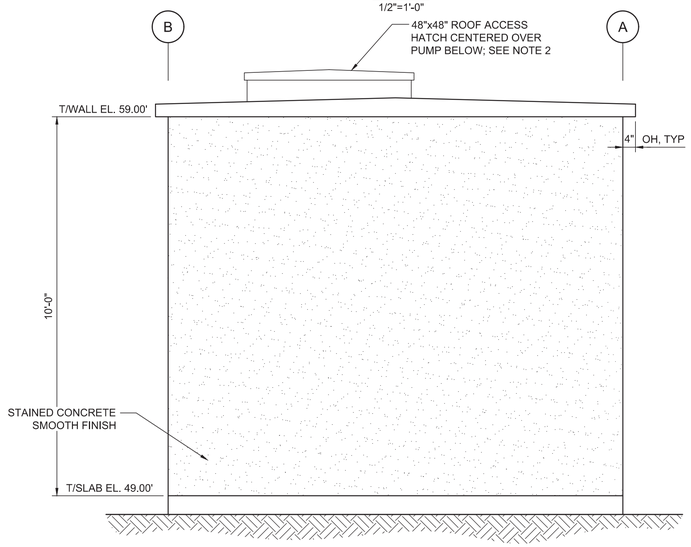


NORTH
ELEVATION
1/2"=1'-0"

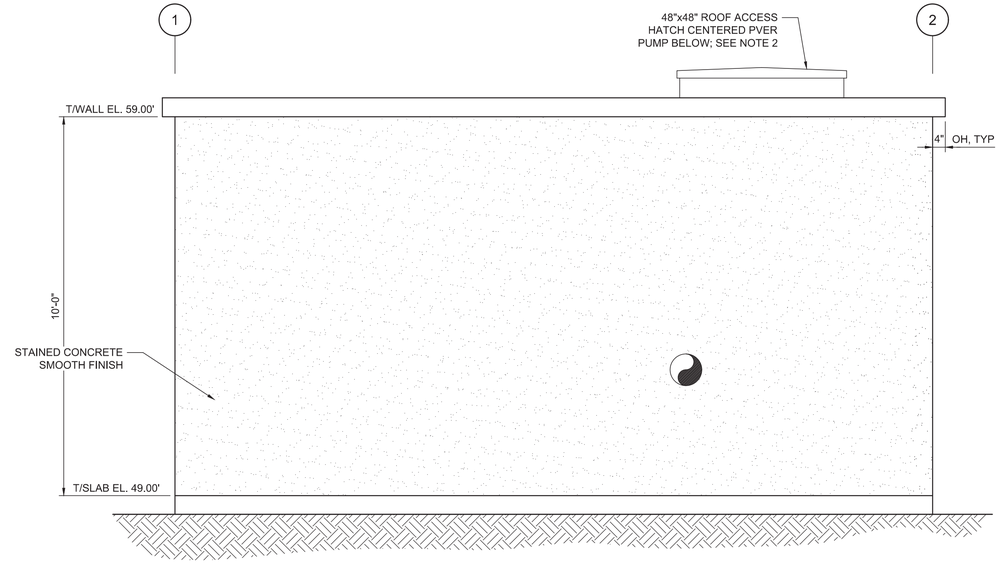
GRAPHIC SCALE

0 1 2 4

SCALE IN FEET



EAST (WEST SIMILAR)
ELEVATION
1/2"=1'-0"



SOUTH
ELEVATION
1/2"=1'-0"

NOTES:
1. SEE SHEET S7 FOR DOOR SCHEDULE AND INTERIOR FINISH SCHEDULE FOR BUILDING.
2. PROVIDE THERMALLY BROKEN ROOF HATCH BY BILCO. CONTRACTOR TO PROVIDE SS COUNTER FLASHING AND SEALANT TO ENSURE THE INSTALLATION TO THE PRECAST STRUCTURE IS WATER-TIGHT.

BID SET

711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

JonesEdmunds
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730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
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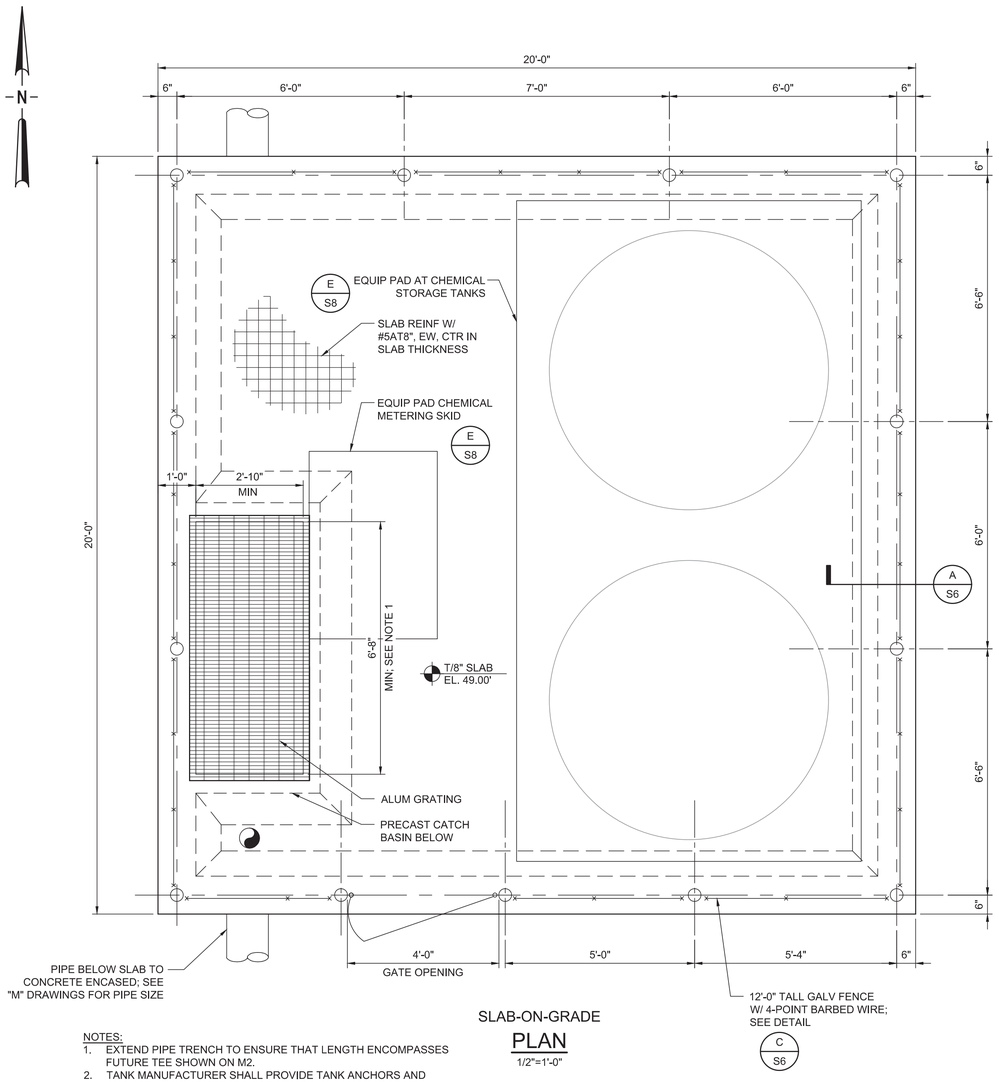
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE WELL BUILDING PLAN AND ELEVATIONS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S5

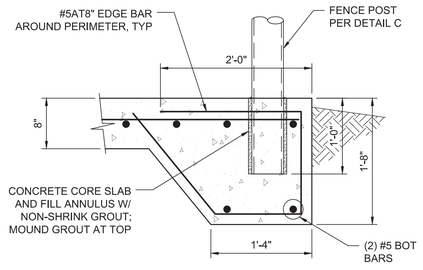


SLAB-ON-GRADE

PLAN

1/2"=1'-0"

NOTES:
1. EXTEND PIPE TRENCH TO ENSURE THAT LENGTH ENCOMPASSES FUTURE TEE SHOWN ON M2.
2. TANK MANUFACTURER SHALL PROVIDE TANK ANCHORS AND ANCHOR LUGS OR STRAPS FOR UPLIFT. ALL ANCHORS AND HARDWARE SHALL BE SS 316. POST-INSTALLED ANCHORS SHALL BE EMBEDDED A MINIMUM OF 10".

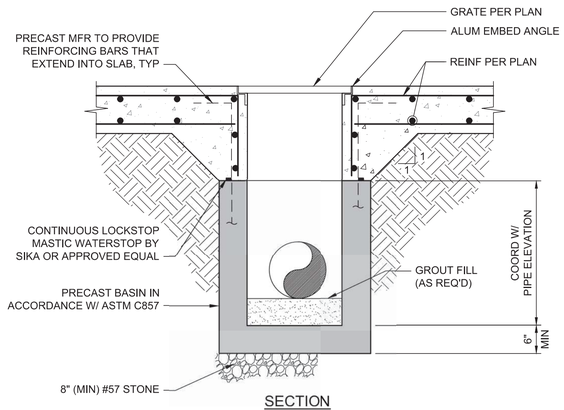


THICKENED EDGE WITH FENCE POST

DETAIL

1"=1'-0"

A
S6



SECTION

CATCH BASIN

DETAIL

NTS

B
-

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET

NOTES:
1. TRUSS BARS ARE REQUIRED FOR THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2. ALL COMPONENTS OF FENCE SHALL BE HOT-DIPPED GALVANIZED. POSTS TO BE GALVANIZED WITH MINIMUM OF 1.8 OUNCES PER SQUARE FOOT AND WIRE MESH SHALL BE GALVANIZED WITH MINIMUM OF 1.2 OUNCES PER SQUARE FOOT.
3. PROVIDE PVC OR NYLON SLATS OVER ENTIRETY OF FENCE. COLOR TO BE DARK GREEN.

CHAIN LINK FENCE

DETAIL

N.T.S.

C
-

BID SET

WEKIVA ENGINEERING
711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

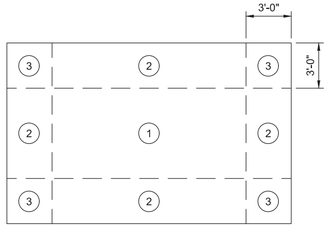
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CHEMICAL FEED ENCLOSURE PLAN AND DETAILS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S6

SAVED: 8/28/2019 10:44 AM JOHN P:\JONES EDMUNDS\18-135 FLATFORD SWAMP PUMP STATION\DRAWINGS\STRUCTURAL\S6.DWG



DESIGN WIND PRESSURES

(COMPONENTS AND CLADDING)

LOCATION	ZONE		P PSF	P PSF
ROOF	W/O OVERHANG	1	21.0	-51.8
		2	21..0	-86.9
		3	21.0	-130.7
WALLS	FIELD		47.4	-51.3
	CORNER*		47.4	-63.2

(*) CORNER ZONE WIDTH: 3'-0"
NEGATIVE SIGN INDICATES PRESSURE OUTWARD
ALL PRESSURES SHOWN CORRESPOND TO A COMPONENT W/ AREA <10FT^2.
WIND PRESSURES ARE CALCULATED USING THE ULTIMATE WIND SPEED.

DESIGN WIND PRESSURES

NTS

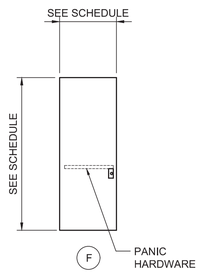
ROOM FINISH SCHEDULE

BUILDING	FLOOR	BASE	WALLS				CEILING	REMARKS
			NORTH	SOUTH	EAST	WEST		
PUMP/ELECTRICAL	F2	-	W1	W1	W1	W1	C3	-
RECHARGE WELL	F1	-	W1	W1	W1	W1	C3	-

NOTES:
1. F1 - CONCRETE FLOOR W/ STEEL TROWEL FINISH W/ CONCRETE SEAL ONLY.
2. F2 - CONCRETE FLOOR W/ STEEL TROWEL FINISH W/ EPOXY COATING. EPOXY FLOOR COATING SYSTEM SHALL INCLUDE COROTECH V155 PRE-PRIMER AND COROTECH V440 WATERBORNE AMINE EPOXY WITH COROTECH V630 AGGREGATE BY BENJAMIN MOORE.
3. W1 - PRECAST CONCRETE WALL STAINED
4. W2 - GYPSUM BOARD PAINTED
5. C3 - PRECAST CONCRETE CEILING STAINED
6. C4 - GYPSUM BOARD PAINTED
7. ALL EXPOSED METAL PLATES ON PRECAST WALL TO BE PAINTED.

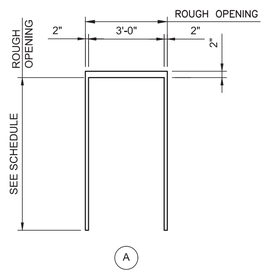
DOOR SCHEDULE

BUILDING	NUMBER	DOORS					FRAMES			DETAILS			FIRE RATING	HARD-WARE SET	DESIGN WIND PRESSURE (ASD)	NOTES
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	HEAD	JAMB	THRES-HOLD				
PUMP/ELECTRICAL	D1	3'-0"	8'-0"	F	AL	PTD	A	AL	PTD	A	A	A	-	HW-1	± 50 PSF	SEE BELOW
RECHARGE WELL	D2	3'-0"	8'-0"	F	AL	PTD	B	AL	PTD	A	A	A	-	HW-1	± 50 PSF	SEE BELOW
NOTES	DOOR HARDWARE: 1. HANDLE: LINDSTRUM STAINLESS STEEL, 8-1/2" X 2", OR EQUAL. 2. LOCKSET: CAL-ROYAL LEVER LOCK, OR EASI-SETTM, OR EQUAL. 3. DEADBOLT: YALE OR EASI-SETTM STAINLESS STEEL KEYED OUTSIDE ONLY, OR EQUAL. 4. EXIT DEVICES: YALE 1800 SERIES, SURFACE VERTICAL ROD EXIT DEVICE, OR EQUAL. 5. HINGES: HAGAR STAINLESS STEEL FIVE KNUCKLE BALL BEARING WITH NON-REMOVABLE PINS, OR EQUAL. 6. THRESHOLD: HAGAR OR NATIONAL GUARD PRODUCTS EXTRUDED ALUMINUM WITH NEOPRENE SEAL, OR EQUAL. 7. OVERHEAD DOOR HOLDER: YALE SURFACE MOUNTED OVERHEAD SLIDE TYPE WITH SAFETY RELEASE, OR EQUAL 8. DRIP CAP: HAGER OR NATIONAL GUARD PRODUCTS ALUMINUM WITH STAINLESS STEEL SCREWS, OR EQUAL. 9. DOOR CLOSER: NORTON CE1604H OR YALE 4410 WITH HOLD OPEN, OR EQUAL. SURFACE BOLTS (UPPER AND LOWER): MAGNOKROM INC. 400-401 CADMIUM PLATED FINISH, OR EQUAL. 10. ASTRAGAL: GALVANIZED STEEL, SAME FINISH AND BRAND AS DOOR. 11. DOOR STOP: IVES 445B26D BRUSHED CHROME (INACTIVE LEAF ONLY), OR EQUAL. DOORS 1. MAN DOORS TO HAVE INSULATED CORE AND A MINIMUM OF 18 GAUGE THICKNESS. FRAMES TO BE MINIMUM 16 GAUGE THICKNESS. 2. ALL DOORS SHALL HAVE A VALID FLORIDA PRODUCT APPROVAL NUMBER. LIST OF ABBREVIATIONS: AL = ALUMINUM SS = STAINLESS STEEL HM = HOLLOW METAL STL = STEEL FRP = FIBER REINFORCED PLASTIC PTD = PAINTED/PRE-FINISHED															



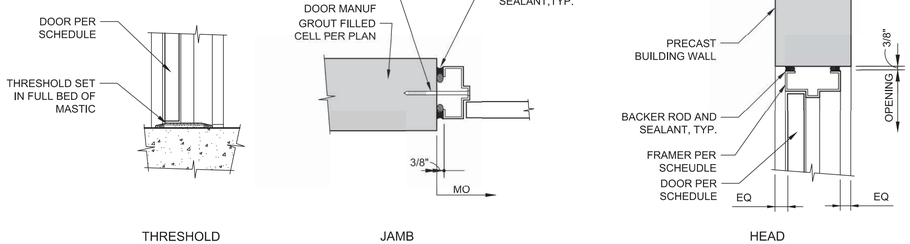
DOOR TYPES

NTS



FRAME TYPES

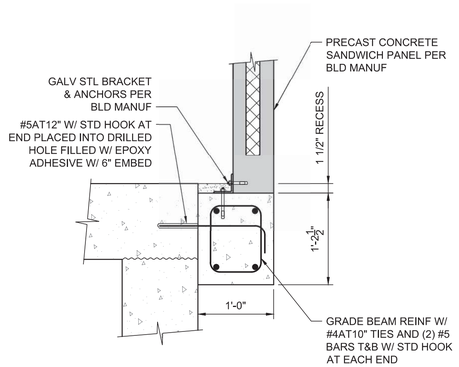
NTS



THRESHOLD JAMB HEAD

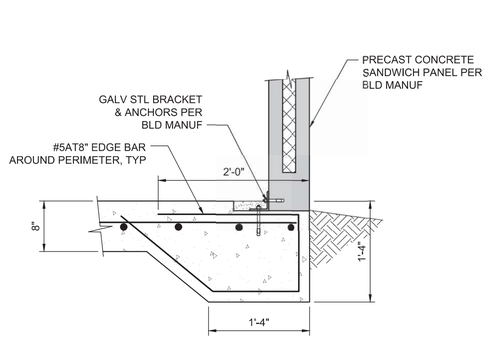
DOOR DETAILS

DETAIL A
1"=1'-0"
-



PRECAST CONCRETE PANEL BASE CONNECTION

DETAIL B
1"=1'-0"
S3



THICKENED EDGE WITH FENCE POST

DETAIL C
1"=1'-0"
S5

BID SET

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WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

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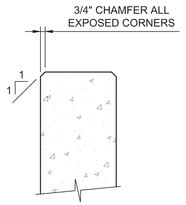
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BUILDING SCHEDULES AND DETAILS

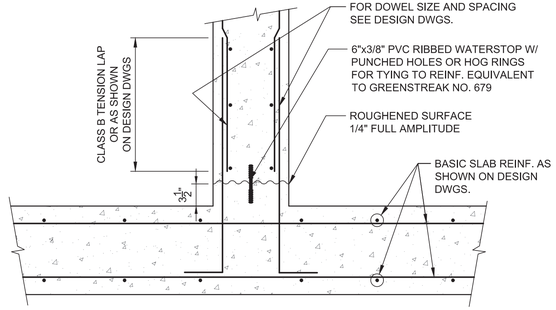
APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S7



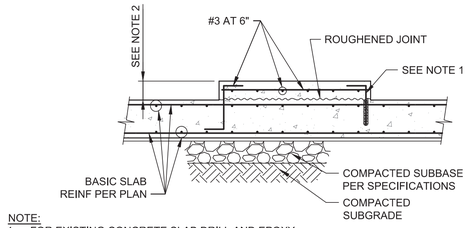
CHAMFER

DETAIL A
NTS



WALL BASE CONSTRUCTION JOINT

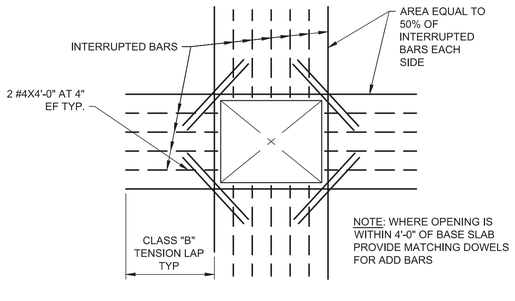
DETAIL B
NTS



NOTE:
1. FOR EXISTING CONCRETE SLAB DRILL AND EPOXY #5AT12" AROUND PERIMETER W/ 6" MIN EMBEDMENT.
2. COORDINATE WITH MANUFACTURER REQUIREMENTS AND "M" DRAWINGS FOR MINIMUM PAD HEIGHT.

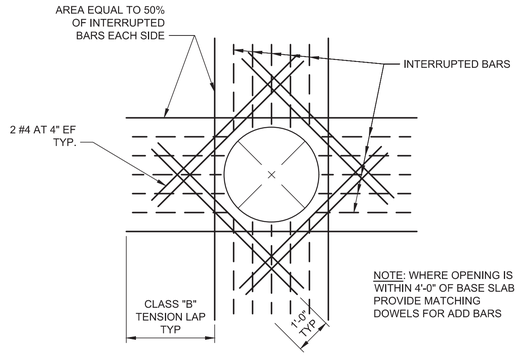
EQUIPMENT PAD

DETAIL E
NTS



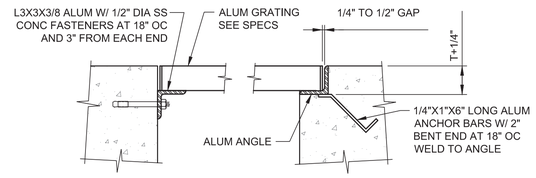
REINF AT RECTANGULAR OPENINGS GREATER THAN 12"

DETAIL C
NTS



REINF AT CIRCULAR OPENINGS GREATER THAN 12"

DETAIL D
NTS



MAXIMUM SPAN	DEPTH	BEARING BAR	
		THICKNESS	SPACING
3'-0"	1 1/4"	3/16"	1 3/16"
4'-0"	1 1/2"	3/16"	1 3/16"
5'-0"	2"	3/16"	1 3/16"
6'-0"	2 1/4"	3/16"	1 3/16"

ALUM GRATING AND GRATING SUPPORT

DETAIL F
NTS

BID SET

WEKIVA ENGINEERING
711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED J.SOBCZAK
DRAWN J.SOBCZAK
CHECKED D.MORRIS

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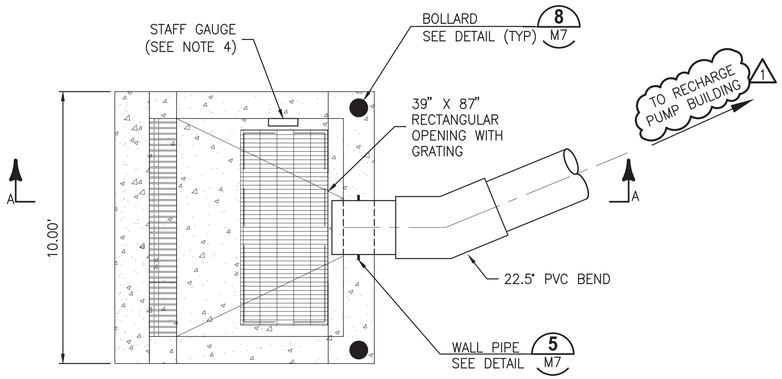
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BUILDING SCHEDULES AND DETAILS

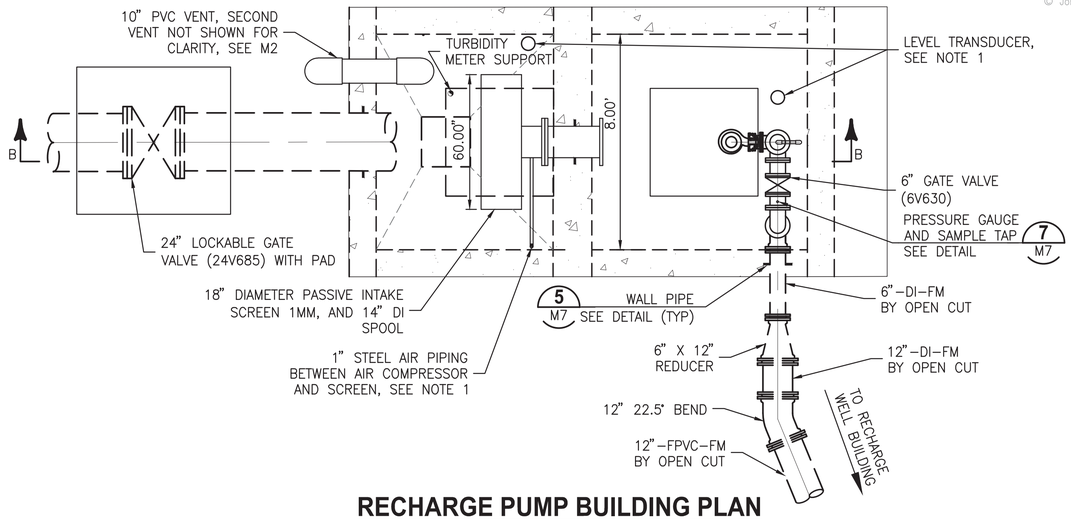
APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: AUG. 2019
INDEX NO:
DWG NO: S8



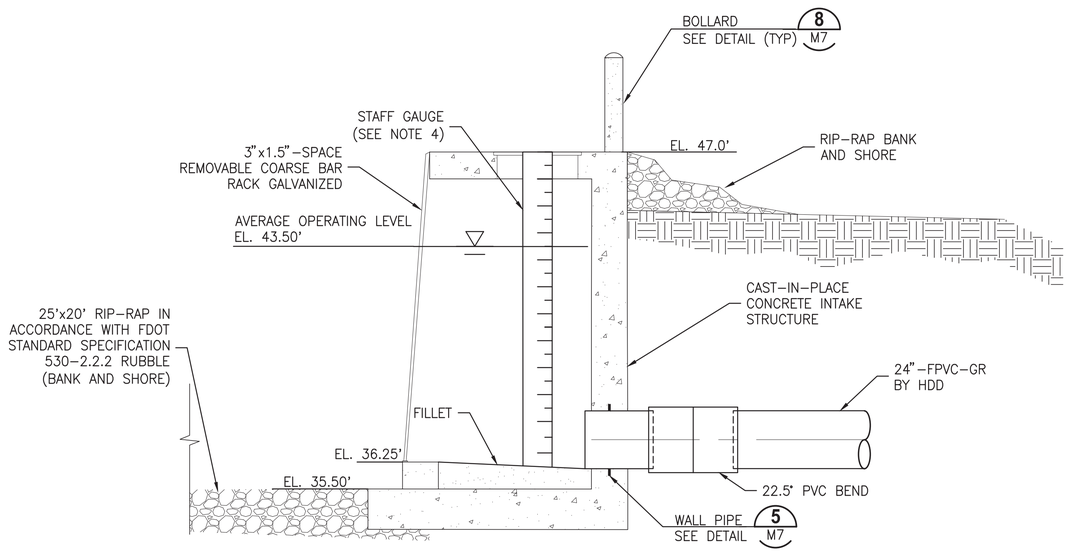
GRAVITY INTAKE STRUCTURE PLAN

NTS



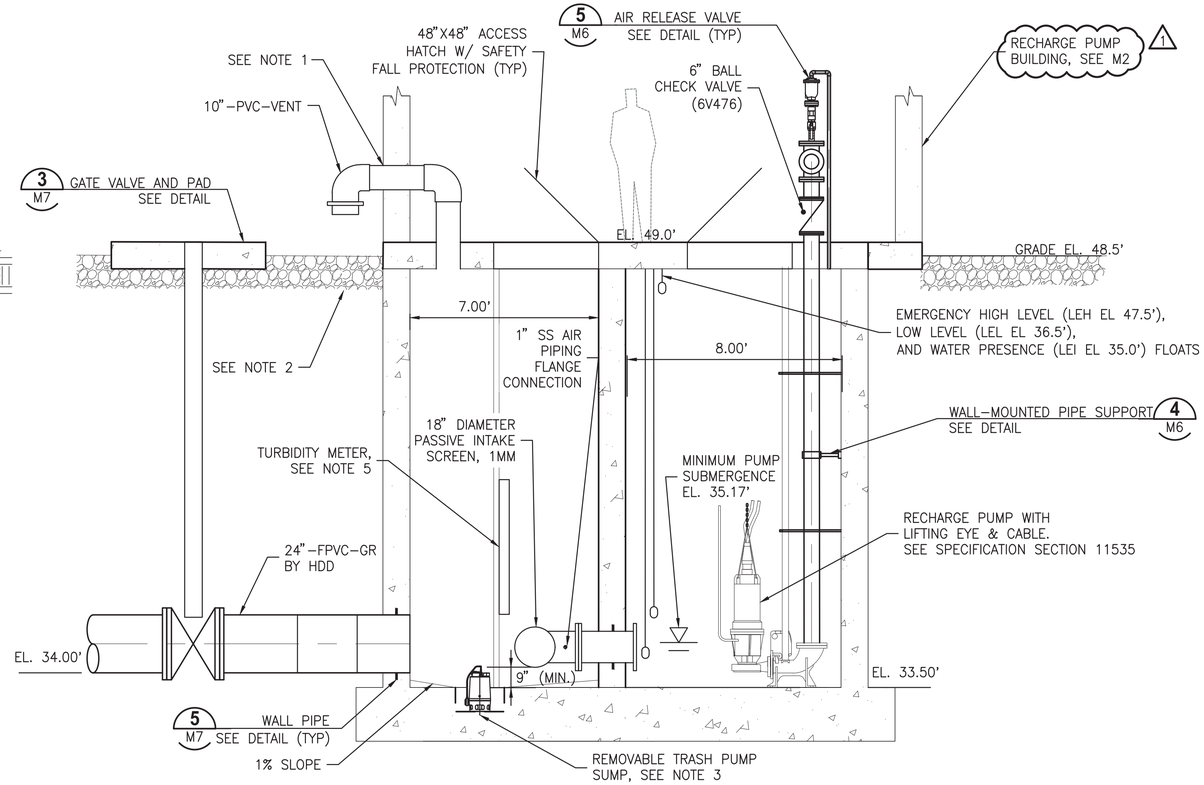
RECHARGE PUMP BUILDING PLAN

NTS



GRAVITY INTAKE STRUCTURE SECTION A-A

NTS



RECHARGE PUMP BUILDING SECTION B-B

NTS

NOTES:

1. SEAL WITH LINK-SEAL PER DETAIL 2 ON SHEET M6. TYPICAL FOR ALL NON-WETTED PIPE PENETRATIONS.
2. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
3. TRASH PUMP SHALL BE STORED IN THE RECHARGE WELL BUILDING WITH ELECTRICAL CONNECTION AND SUFFICIENT HOSE, SAFETY CABLE, AND ELECTRICAL CORD LENGTH, MINIMUM 40 FEET IN LENGTH, TO BE LOWERED INTO THE WET WELL SUMP. WET WELL SUMP DIMENSIONS SHALL BE 10.75-INCH DEEP BY 21.75 INCH BY 21.75 INCH. PUMP SHALL BE CAPABLE OF HANDLING AT LEAST 2-INCHES OF SOLIDS AND SHALL NOT EXCEED 30 LBS. PUMP SHALL BE GRUNDFOS MODEL UNILIFT AP50 OR ENGINEER APPROVED EQUAL.
4. STAFF GAUGE SHALL BE MADE OF PVC OR EQUIVALENT, WITH DIMENSION OF 6 INCHES WIDE BY 11 FEET LONG. GAUGE SHALL BE MARKED IN INCREMENTS OF 0.10 FOOT PER FOOT. ZERO SHALL BE READ AS 36.00 AND MAXIMUM INCREMENT SHALL READ AS 47.00' NAVD 1988 WITH CONTRACTOR CONFIRMING ELEVATIONS UTILIZING SURVEY EQUIPMENT.
5. TURBIDITY METER SHALL BE EXO TURBIDITY SENSOR FOR YSI EXO SONDE PROBE DESIGNED WITH VERTICAL DEPLOYMENT TUBE MADE OF 4-INCH SCH 40 PVC IN ACCORDANCE WITH THE YSI SONDE O&M MANUAL TO BE LOWERED INTO STRUCTURE WITH 2-INCH STAINLESS STEEL GUIDE BRACKET.

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1-TEXT FONT ADJUSTMENTS	JTK	SPM

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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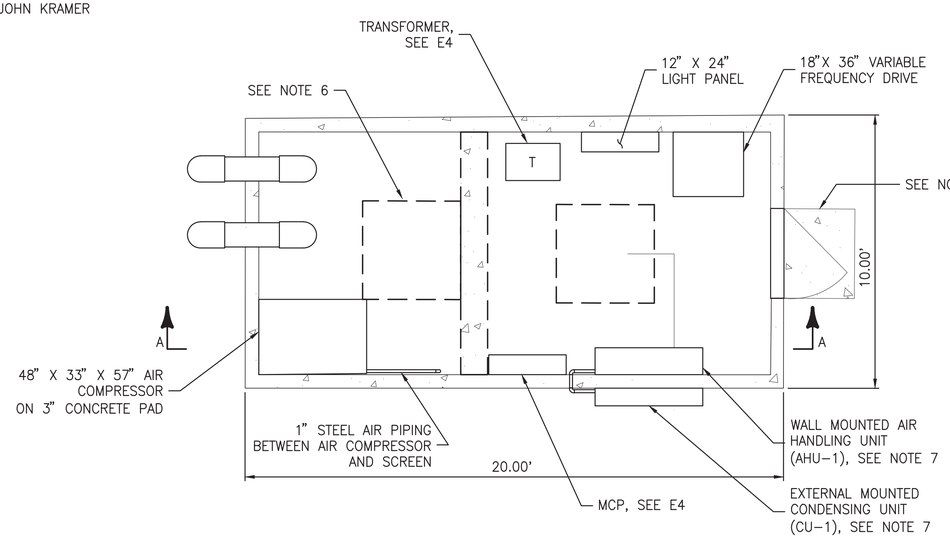
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

GRAVITY INTAKE STRUCTURE
AND RECHARGE PUMP BUILDING
PLANS AND SECTIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

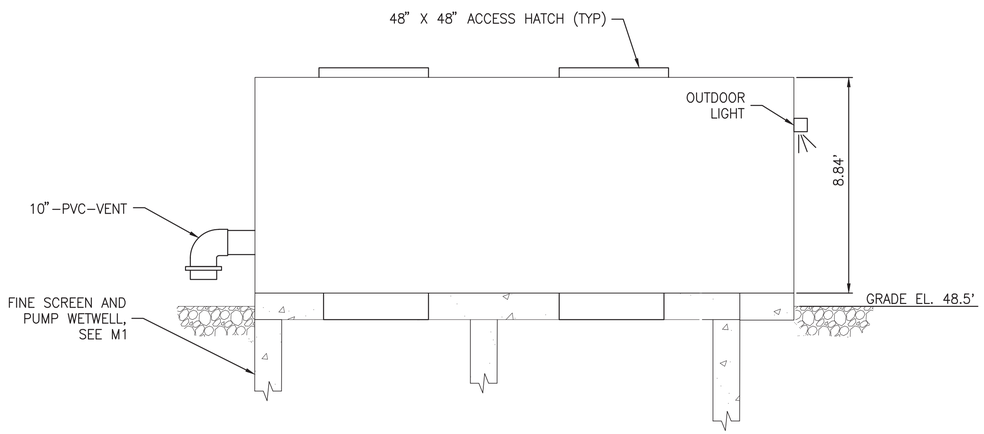
PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: M1

BID SET



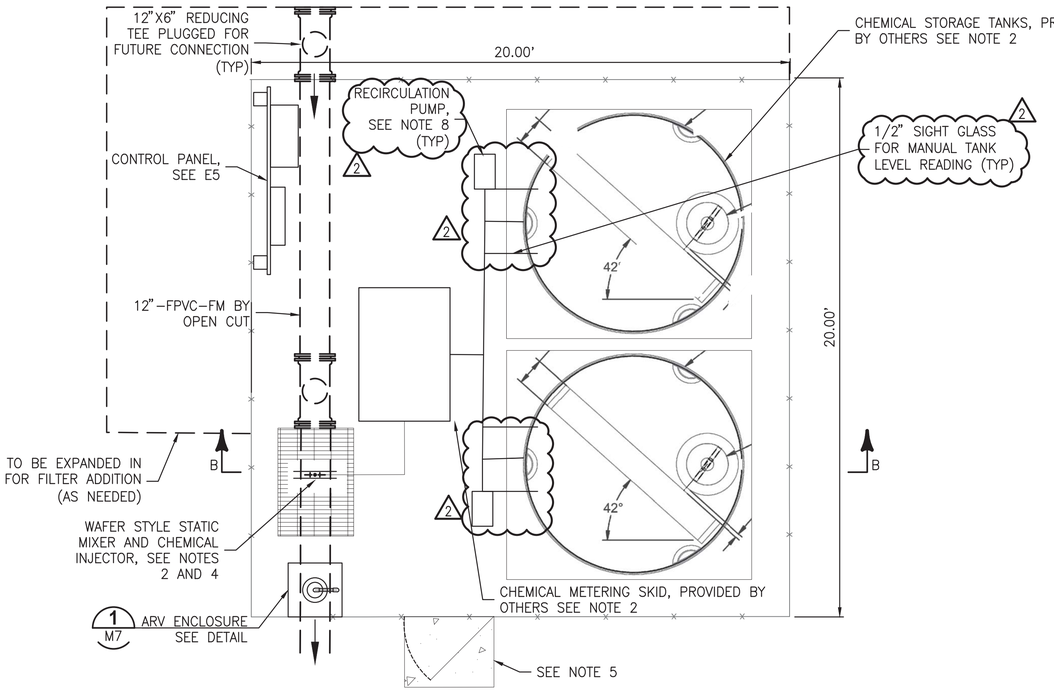
RECHARGE PUMP BUILDING PLAN

NTS



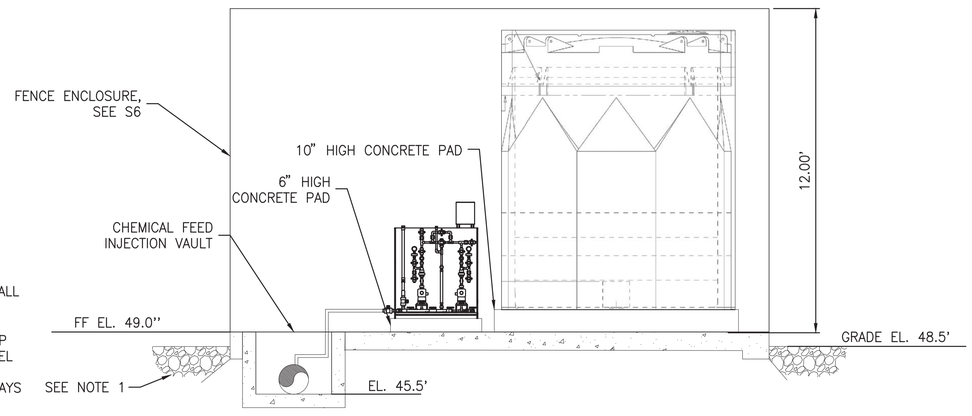
RECHARGE PUMP BUILDING SECTION A-A

NTS



CHEMICAL FEED ENCLOSURE PLAN

NTS



CHEMICAL FEED ENCLOSURE SECTION B-B

NTS

NOTES:

1. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
2. TEMPORARY CHEMICAL FEED SYSTEM, STORAGE TANKS, AND CHEMICAL SUPPLY SHALL BE AS PROVIDED BY ODYSSEY MANUFACTURING. CHEMICAL STORAGE TANKS EACH TO BE 102" DIAMETER, 123.75" TALL, 2,500 GALLON DUAL CONTAINMENT TANKS. PUMP SKID SHALL BE ENCLOSED DUPLEX BLUE PLANET CONTAINING TWO PROMINENT PUMPS. THE PUMP SKID SHALL BE CONSTRUCTED OF WHITE WELDED PVC SHEETS. EACH PUMP SHALL CONTAIN A PULSE DAMPENER, BACKPRESSURE OR ANTI-SIPHON VALVE, PRESSURE RELIEF VALVE, INLET AND OUTLET FLUSHING CONNECTIONS, INLET AND OUTLET ISOLATION VALVES, A DISCHARGE PRESSURE GAUGE, AND AN INLET STRAINER. THE SKID SHALL CONTAIN A COMMON CALIBRATION COLUMN WHICH SHALL BE VENTED BACK TO THE STORAGE TANKS. ALL PIPING ON THE SKID SHALL BE 1/2" SCH 80 PVC EXCEPT FOR THE INLET HEADER WHICH SHALL BE 1". PUMP SKID SHALL CONNECT TO SAF-T-FLO RETRACTABLE INJECTION QUILL MODEL EB-125-S-P-6-CE-E, OR ENGINEER APPROVED EQUAL, BY SAF-T-FLO FLEXIBLE HOSE ASSEMBLY, MODEL FHB-CLR-075-P-E, OR ENGINEER APPROVED EQUAL.
3. ON BEHALF OF SWFWMD AND MANATEE COUNTY, ODYSSEY MANUFACTURING TO COORDINATE REGISTRATION OF GROUND STORAGE TANKS IN ACCORDANCE WITH F.A.C. 62-762.401 30 DAYS BEFORE PLACED INTO SERVICE AND INSTALL REGISTRATION PLACARD ON EACH TANK.
4. WAFER STYLE STATIC MIXER SHALL BE WESTFALL MODEL 2800 .9 BETA, OR ENGINEER APPROVED EQUAL.
5. CONCRETE SLAB SHALL EXTEND TO ACCOMMODATE DOOR ACCESS.
6. ACCESS HATCH SHALL BE OFF-CENTER TO ACCOUNT FOR COMPRESSOR DIMENSIONS.
7. AHU-1 IS A WALL MOUNTED UNIT, SPLIT SYSTEM, AS MANUFACTURED BY MITSUBISH, MODEL MSZ/MUZ-GL12NA-UI (FOR INDOOR/OUTDOOR UNIT). SYSTEM SHALL BE 12,000 BTU, 208/230V, SINGLE PHASE, 60 HZ. INDOOR UNIT SHALL BE MOUNTED ON WALL WITH TOP OF UNIT LOCATED 4" BELOW CEILING. ROUTE REFRIGERANT AND CONDENSATE LINES THROUGH WALL SLEEVE TOGETHER. ROUTE CONDENSATE AND REFRIGERATION LINES DOWN WALL TO GRADE, SECURE TO WALL IN A MANNER THAT EXCEEDS LOCAL WIND CRITERIA. CONDENSING UNIT DISCHARGE SHALL FACE WALL MOUNTED ON PAD PER MANUFACTURERS INSTRUCTIONS.
8. RECIRCULATION PUMPS, VALVING, AND SIGHT GLASS SHALL BE AS PROVIDED BY ODYSSEY MANUFACTURING. PUMP SHALL BE FINISH THOMPSON MODWL 3 DB6P-E-FF-2-SR-M224 OR ENGINEER APPROVED EQUAL. 2

LTR.	DATE	REVISIONS	BY	APPRD.
2	JAN/2020	ADDENDUM 2-SBS RECIRC PUMP	JTK	SPM

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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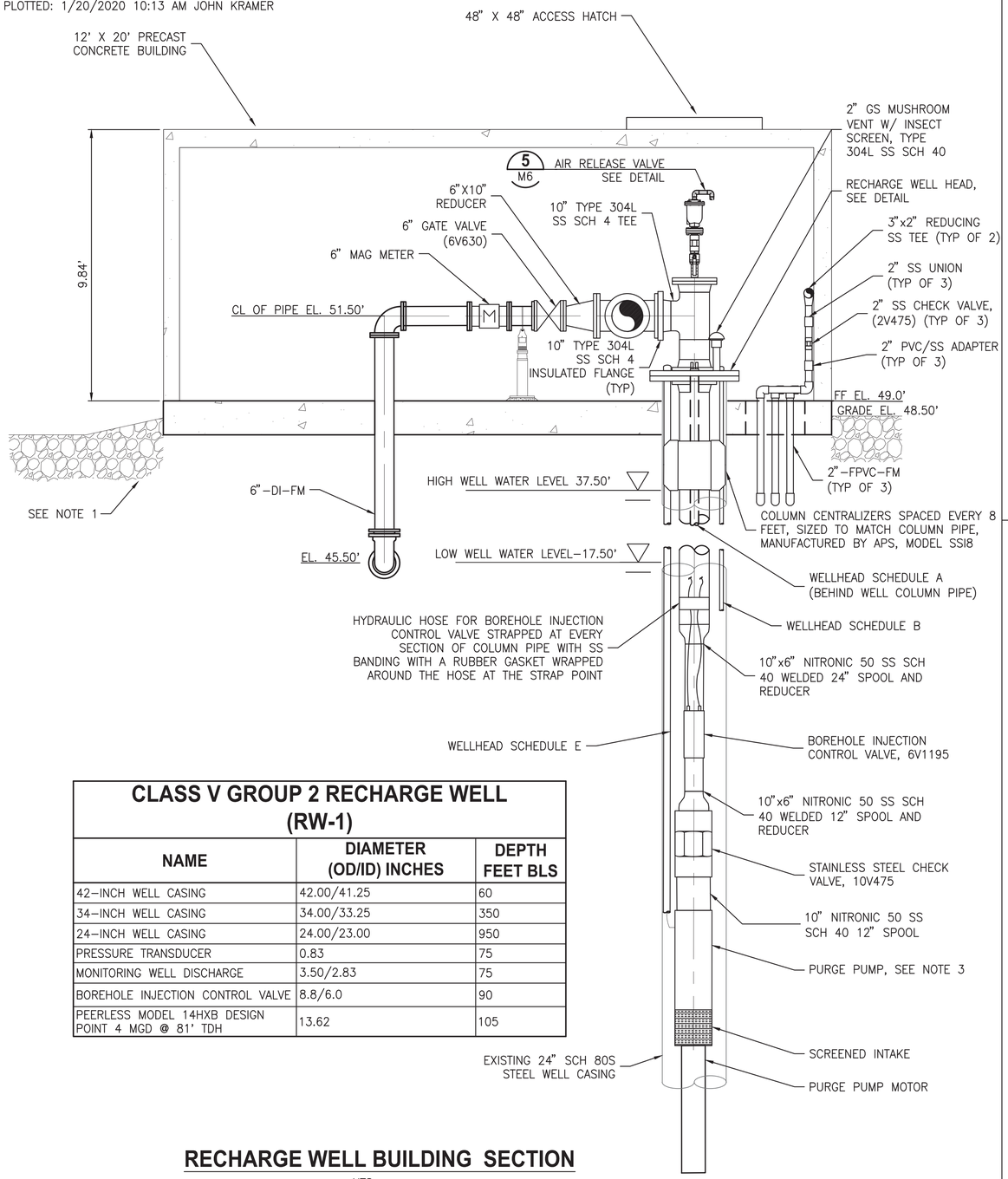
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MECHANICAL PLANS AND SECTIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: M2

BID SET



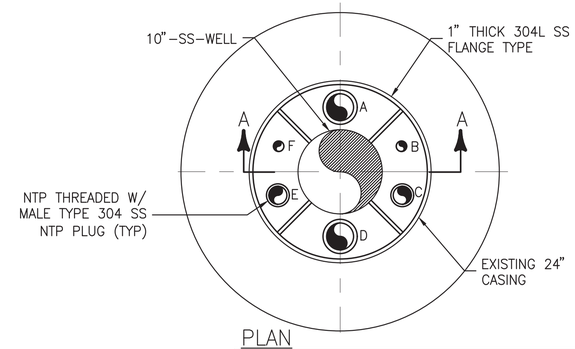
CLASS V GROUP 2 RECHARGE WELL (RW-1)

NAME	DIAMETER (OD/ID) INCHES	DEPTH FEET BLS
42-INCH WELL CASING	42.00/41.25	60
34-INCH WELL CASING	34.00/33.25	350
24-INCH WELL CASING	24.00/23.00	950
PRESSURE TRANSDUCER	0.83	75
MONITORING WELL DISCHARGE	3.50/2.83	75
BOREHOLE INJECTION CONTROL VALVE	8.8/6.0	90
PEERLESS MODEL 14HXB DESIGN POINT 4 MGD @ 81' TDH	13.62	105

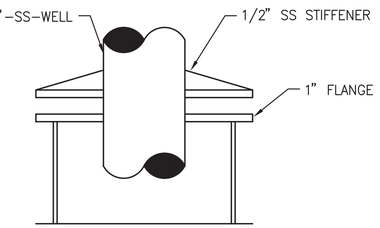
RECHARGE WELL BUILDING SECTION

NTS

NOTES:
1. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
2. CONCRETE SLAB SHALL EXTEND TO ACCOMMODATE DOOR ACCESS.
3. SUBMERSIBLE PURGE PUMP SHALL BE RATED AS REFERENCED IN THE ABOVE TABLE OR ENGINEER APPROVED EQUAL.



PLAN



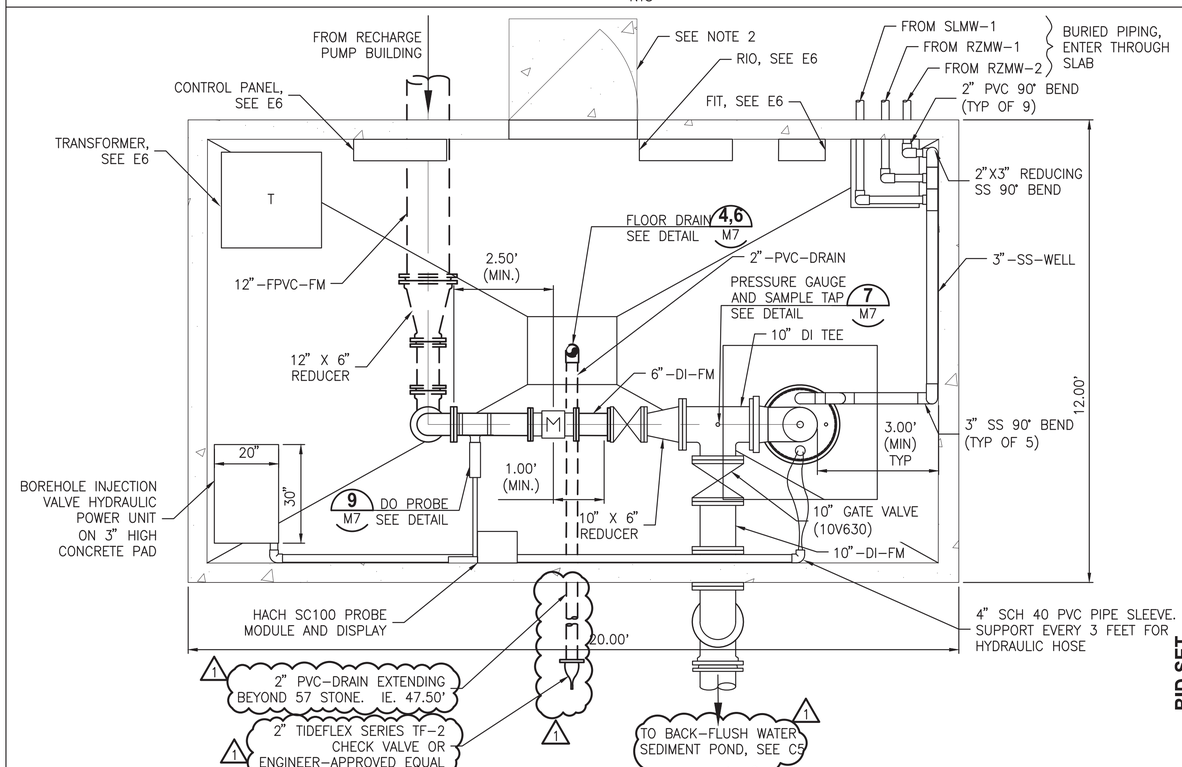
SECTION A-A

WELLHEAD SCHEDULE

LETTER	DIAMETER	PURPOSE	MATERIAL
A	3"	MONITORING WELL DISCHARGE	304L SS SCH 40
B	1"	PRESSURE TRANSDUCER	SCH 40 PVC
C	2"	VENT	304L SS SCH 40
D	3"	HYDRAULIC HOSE	N/A
E	2"	EQUIPMENT POWER CABLES	SCH 40 PVC
F	1"	LEVEL CALIBRATION PORT	N/A

RECHARGE WELL HEAD DETAIL

NTS



RECHARGE WELL BUILDING PLAN

NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.
1	JAN/2020	ADDENDUM 1-TEXT AND UTILITY ADJUST.	JTK	SPM

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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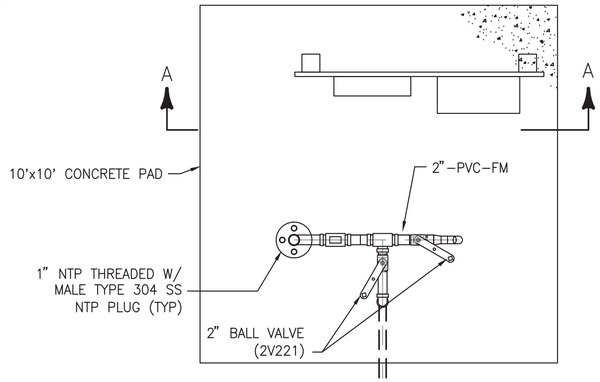
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE WELL BUILDING PLAN AND SECTION

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: M3



MONITORING WELL PLAN

NTS

SLMW-1		
NAME	**DIAMETER (OD/ID) INCHES**	**DEPTH FEET**
20-INCH WELL CASING	20.00/20.25	60
14-INCH WELL CASING	14.00/13.25	350
6-INCH WELL CASING	6.625/5.875	450
PRESSURE TRANSDUCER	0.84	100
GRUNDFOS MODEL 62S 10-3 DESIGN POINT 50 GPM @ 60' TDH	3.98	450

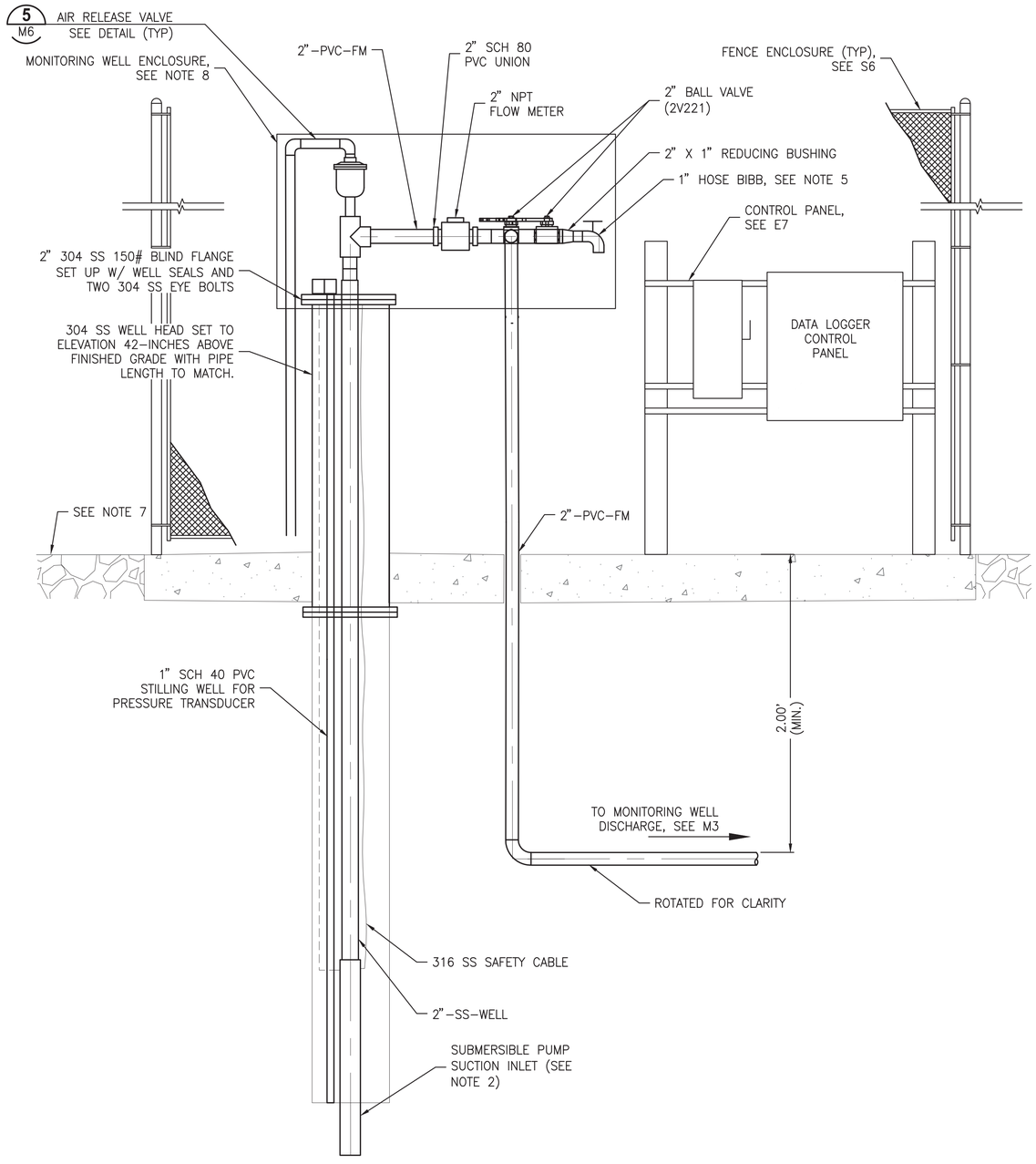
RZMW-1		
NAME	**DIAMETER (OD/ID) INCHES**	**DEPTH FEET**
20-INCH WELL CASING	20.00/20.25	60
14-INCH WELL CASING	14.00/13.25	350
6-INCH WELL CASING	6.625/5.875	950
PRESSURE TRANSDUCER	0.84	100
GRUNDFOS MODEL 62S 30-7 DESIGN POINT 50 GPM @115' TDH	3.98	950

RZMW-2		
NAME	**DIAMETER (OD/ID) INCHES**	**DEPTH FEET**
20-INCH WELL CASING	20.00/20.25	60
14-INCH WELL CASING	14.00/13.25	350
6-INCH WELL CASING	6.625/5.875	950
PRESSURE TRANSDUCER	0.84	100
GRUNDFOS MODEL 62S 50-9 DESIGN POINT 50 GPM @ 175' TDH	3.98	950

MONITORING WELL ENCLOSURE, SEE NOTE 8

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND ELEVATIONS.
2. THE SUBMERSIBLE SAMPLING PUMP SHALL BE RATED AS DEFINED IN THE RESPECTIVE TABLE, OR ENGINEER APPROVED EQUAL.
3. FIELD VERIFY PUMP CABLE LENGTH FROM MOTOR TO JUNCTION BOX PRIOR TO INSTALLATION (NO SPLICES WILL BE ACCEPTED).
4. STRAP PUMP CABLE TO PIPE COLUMN AT 5' INTERVALS WITH NYLON STRAPS.
5. PROVIDE 1" HEX SHOULDER STILL COCK HOSE BIBB WITH A TEE HANDLE. HOSE BIBB TO HAVE 3/4" MALE NPT THREADING HOSE BARB FOR SPLITTER CONNECTION FOR PURGE PIPING AND TUBING FOR FLOW-THROUGH CELL FOR FIELD SAMPLING.
6. ENSURE WATER TIGHT SEALING. PROVIDE STRAIGHT MALE CORD CONNECTOR.
7. ALL MONITORING WELLS SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
8. MONITORING WELL ENCLOSURE SHALL BE PER THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT STANDARDS. CONTRACTOR SHALL COORDINATE WITH DISTRICT-SUPPLIED CONTACT FROM DAY METAL PRODUCTS.
9. CONTRACTOR TO INSTALL OWNER-PROVIDED TRANSDUCER AND DATA LOGGER FOR EACH OF THE THREE (3) MONITORING WELLS.



MONITORING WELL SECTION A-A

NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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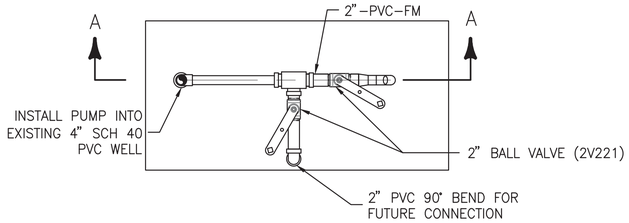
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MONITORING WELL PLAN AND SECTION

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: M4



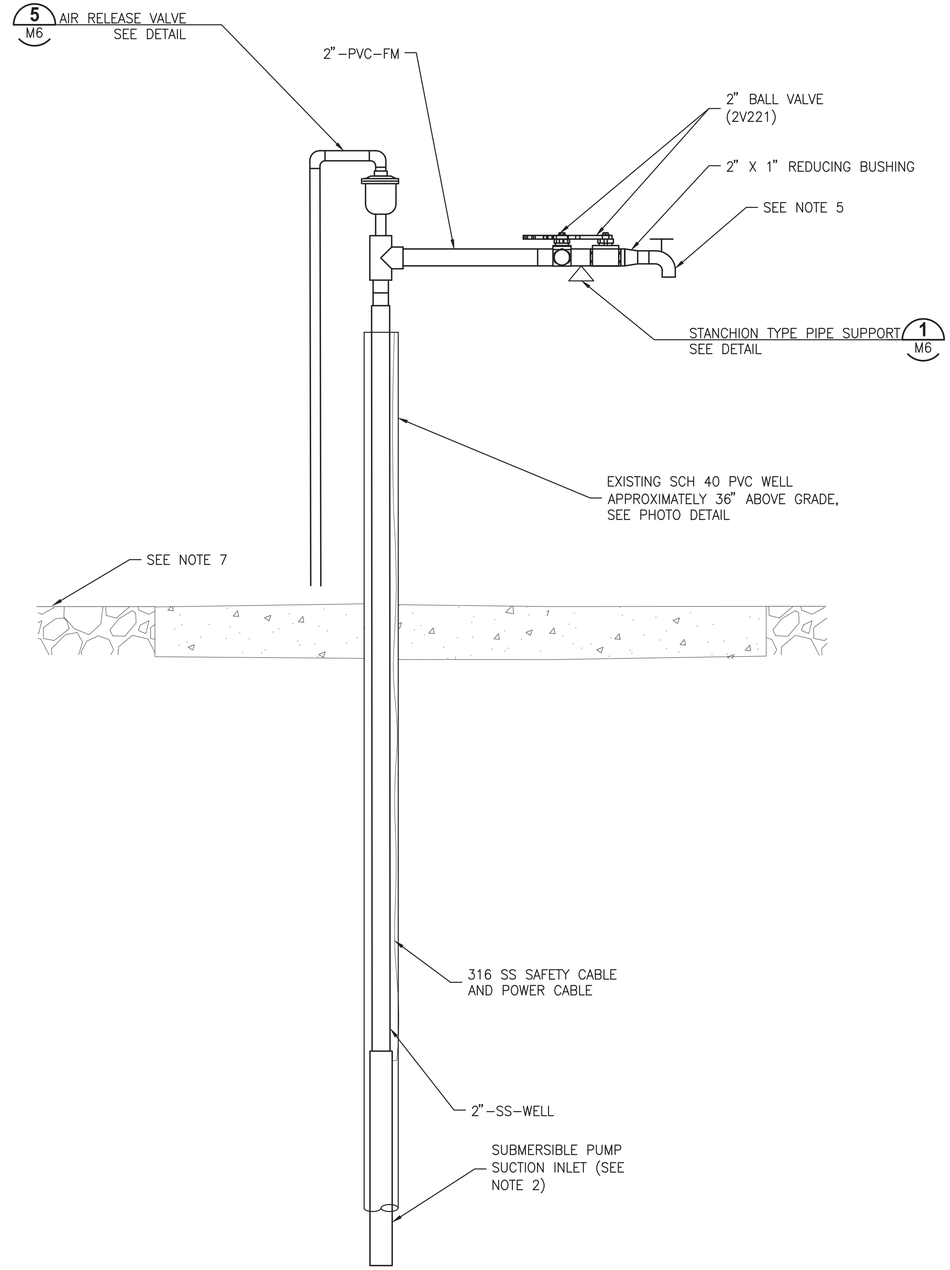
SUPPLY WELL PLAN

NTS

SUPPLY WELL PHOTO DETAIL

NTS

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND ELEVATIONS.
2. THE SUBMERSIBLE SAMPLING PUMP SHALL BE 50' BLS FOR THE SUPPLY WELL. PUMP SHALL BE GRUNDFOS 22 SQ15–220 SERIES, WITH DESIGN POINT 20 GPM @ 254' TDH, OR ENGINEER APPROVED EQUAL.
3. FIELD VERIFY PUMP CABLE LENGTH FROM MOTOR TO JUNCTION BOX PRIOR TO INSTALLATION (NO SPLICES WILL BE ACCEPTED).
4. STRAP PUMP CABLE TO PIPE COLUMN AT 5' INTERVALS WITH NYLON STRAPS.
5. PROVIDE 1" HEX SHOULDER STILL COCK HOSE BIBB WITH A TEE HANDLE. HOSE BIBB TO HAVE MALE NPT THREADING FOR 1" FEMALE HOSE CONNECTION.
6. ENSURE WATER TIGHT SEALING. PROVIDE STRAIGHT MALE CORD CONNECTOR.
7. THE SUPPLY WELL SHALL HAVE A 12–INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.



SUPPLY WELL SECTION A-A

NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
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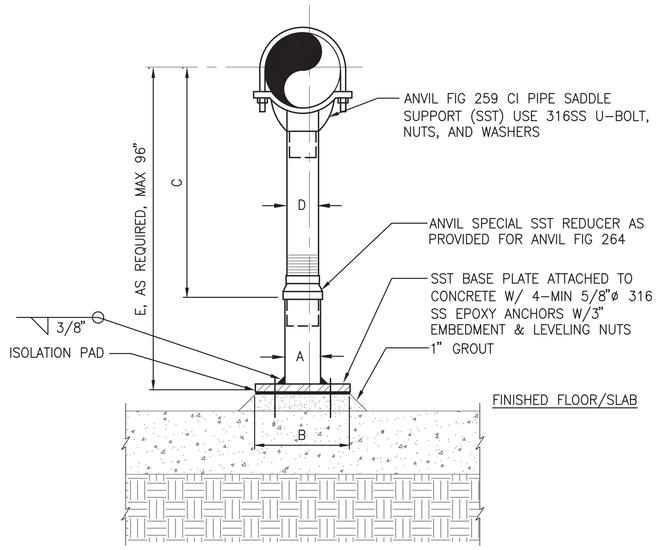
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SUPPLY WELL PLAN AND SECTION

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: M5

SAVED: 10/1/2019 6:06 PM CAUTODESK Y:\19850–SWFWMD\PROJECTS\041–01_FLATFORD SWAMP AQUIFER RECHARGE\CAD\DWGS\MECH\1985004101–M05.DWG

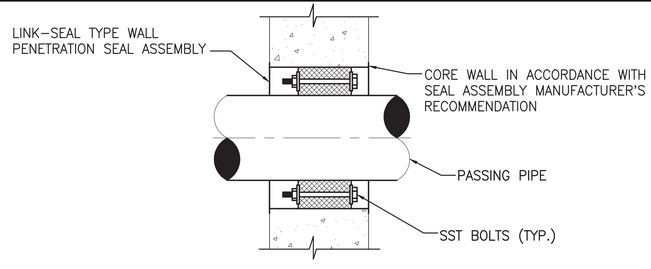


TYPICAL PIPE SUPPORT DIMENSION TABLE

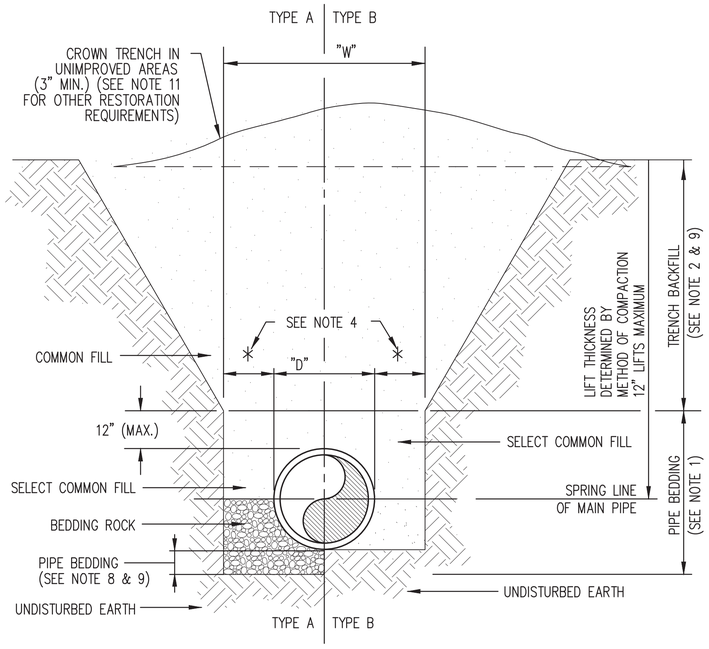
PIPE SIZE	A	B	C		D
			MIN	MAX	
INCHES					
6	4	9	10 1/2	15 1/4	3
12	4	9	15	19 3/4	3
24	6	13 1/2	23 3/4	28 1/4	4

NOTES:
1. SST (304 TYP) PIPE SUPPORT AND SST (304 TYP) BASE PLATE (WITH STAINLESS STEEL FASTENING HARDWARE).
2. ALL HARDWARE SHALL BE 316 SS.
3. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, KORFUND KORPAD 40 UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
4. FOR BASE, AND COMPONENT DIMENSIONS, SEE PIPE SUPPORT DIMENSION TABLE ABOVE. ALL DIMENSIONS IN INCHES.
5. SEE PLANS AND SECTIONS FOR PIPE CENTERLINE ELEVATION REQUIREMENTS (DIMENSION "E").
6. BASE PLATES SHALL BE SQUARE AND BE (SST) 1/2-INCH THICK FOR PIPE SIZES THROUGH 10-INCH. FOR ALL LARGER PIPES BEING SUPPORTED, THE BASE PLATES SHALL BE 3/4-INCH (SST) THICK OR USE COMPANION FLANGE THREADED TO PIPE (SST).
7. FOR PIPE SUPPORTS 2 1/2", 3", AND 3 1/2" USE ANVIL FIG 191. USE 3X 3X 3/8 WASHER W/ 3/4" HOLE AND BOTTOM SECTION OF TYPICAL PIPE SUPPORT.
8. THE ANVIL MODEL NUMBERS PROVIDE THE QUALITY AND SIZING OF THE REQUIRED SUPPORTS, BUT NOT THE MATERIAL. THE MATERIAL IS TO BE 304 OR 316 STAINLESS STEEL. SUPPORTS SHALL BE FABRICATED OF SST AS REQUIRED AND THIS IS TYPICAL FOR ALL SUPPORTS AND HANGERS SHOWN IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

STANCHION TYPE SUPPORT DETAIL 1
NTS

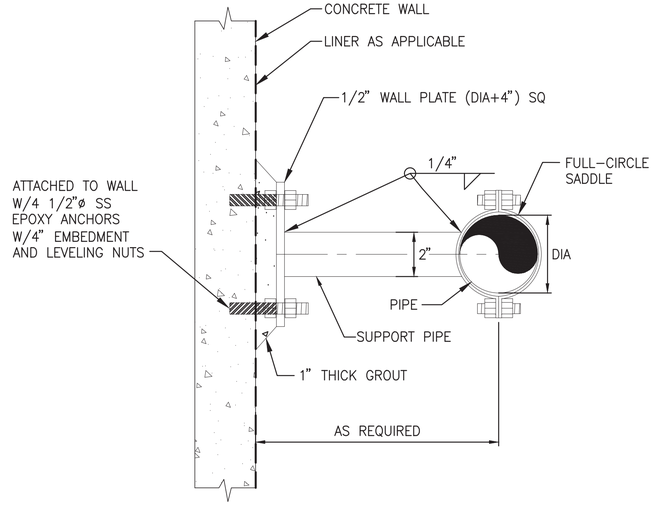


CONCRETE PENETRATION / SEAL DETAIL 2
NTS



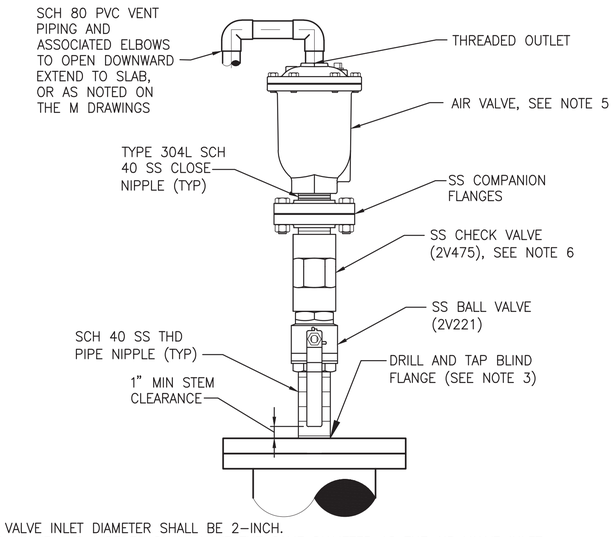
BEDDING AND TRENCHING DETAIL 3
NTS

BEDDING & TRENCHING NOTES:
1. PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180. COMPACTION SHALL BE 98% WITHIN 2' OF FINISHED ELEVATION UNDER ALL ROADWAYS, AND TO 2 LF BEHIND CONCRETE CURBS OR THE EDGE OF PAVEMENT.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180. COMPACTION SHALL BE 98% WITHIN 2' OF FINISHED ELEVATION UNDER ALL ROADWAYS, AND TO 2 LF BEHIND CONCRETE CURBS OR THE EDGE OF PAVEMENT.
3. USE TYPE A BEDDING TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
4. 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
5. ALL NECESSARY MEASURES SHALL BE TAKEN TO KEEP THE TRENCH AS DRY AS POSSIBLE DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. REFER TO LAND DEVELOPMENT CODE FOR SHEETING AND BRACING IN EXCAVATIONS.
8. GRAVITY PIPING SHALL UTILIZE TYPE A BEDDING. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER LESS THAN 15", AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
9. THE ENGINEER MAY APPROVE ALTERNATE METHODS OF TRENCH BACKFILL COMPACTION ON A CASE BY CASE SITUATION.
10. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. THE CITY SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
11. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN THE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.



NOTES:
1. ALL HARDWARE, PLATE, SADDLE, PIPE SUPPORT, ETC, SHALL BE 316 SERIES SS.
2. SUPPORT PIPE SHALL BE SCH 40.

WALL-MOUNTED PIPE SUPPORT DETAIL 4
NTS



NOTES:
1. AIR VALVE INLET DIAMETER SHALL BE 2-INCH.
2. BALL VALVE AND NIPPLES SHALL HAVE THE SAME DIAMETER AS THE AIR VALVE INLET.
3. VERIFY SIZE OF VALVE PRIOR TO ORDERING ANCILLARY PARTS, DRILLING OR TAPPING.
4. EXTEND VENT TO 6" AFF, PROVIDE SS BUG SCREEN, AND S.S. UNI-STRUT SUPPORT, FOR RECHARGE PUMP BUILDING EXTEND VENT TO WET WELL AS SHOWN.
5. FOR MONITORING WELLS RZMW-1, RZMW-2, SLMW-1, AND SUPPLY WELL INSTALL COMBINATION ARV/VACUUM VALVES AT WELL HEAD.
6. CHECK VALVE ONLY REQUIRED AT RECHARGE WELL HEAD, AT CHEMICAL FEED, AND AT RECHARGE WELL PUMP BUILDING LOCATIONS

AIR RELEASE VALVE DETAIL 5
NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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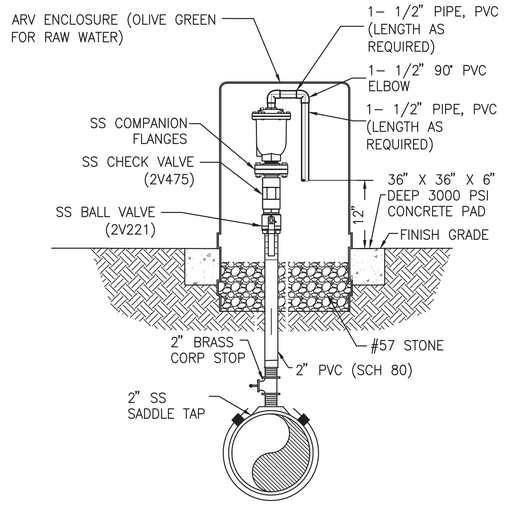
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

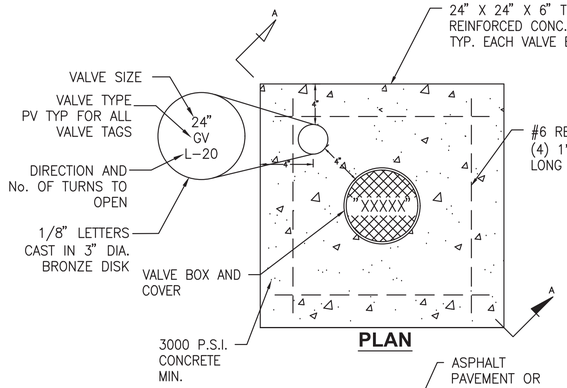
MECHANICAL DETAILS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

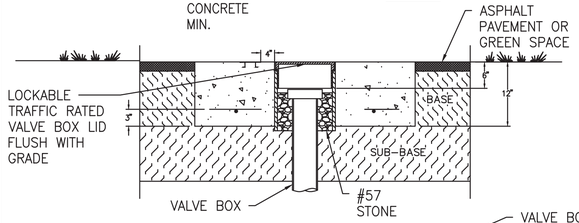
PROJECT NO: 19850-041-01
DATE: SEP. 2019
INDEX NO:
DWG NO: M6

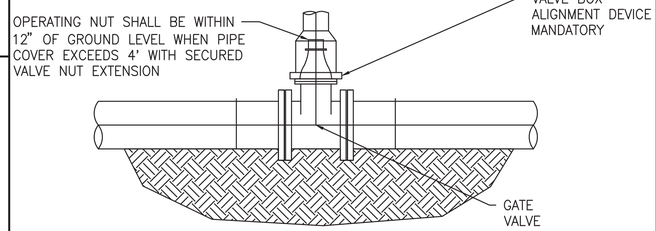


ARV ENCLOSURE DETAIL 1
NTS



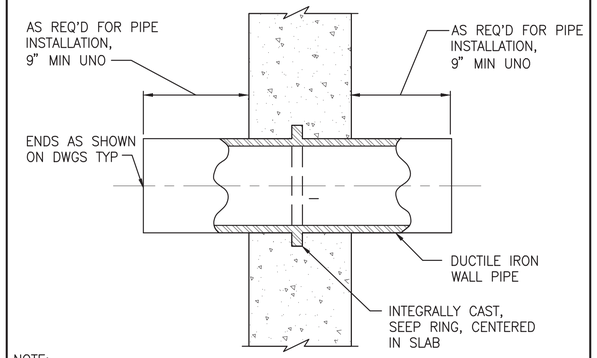
PLAN





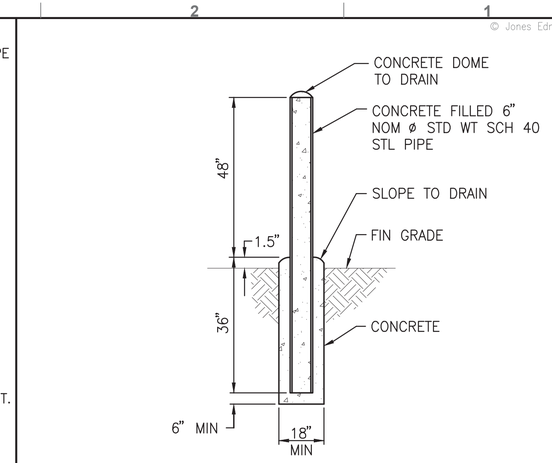
SECTION A-A

VALVE BOX AND COVER DETAIL 3
NTS



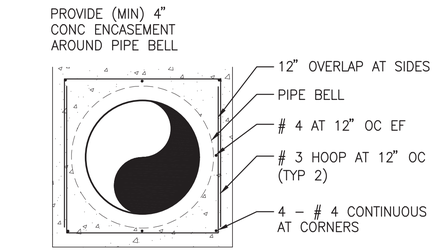
NOTE:
1. COAT WALL PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.

WALL PIPE DETAIL 5
NTS

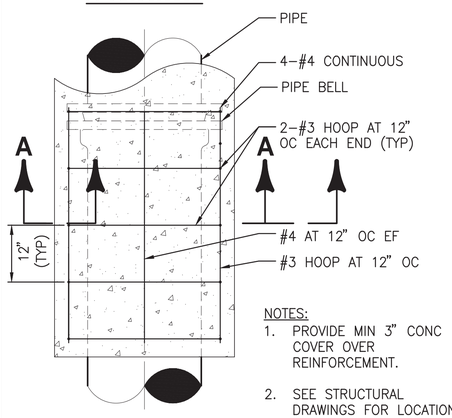


NOTES:
A. ACTUAL INSTALLATION LOCATION OF EACH BOLLARD SHALL BE AS SHOWN ON THE DRAWINGS OR AS DIRECTED IN THE FIELD.
B. PAINT ALL MATERIALS OSHA SAFETY YELLOW.

BOLLARD DETAIL 8
NTS



SECTION A-A



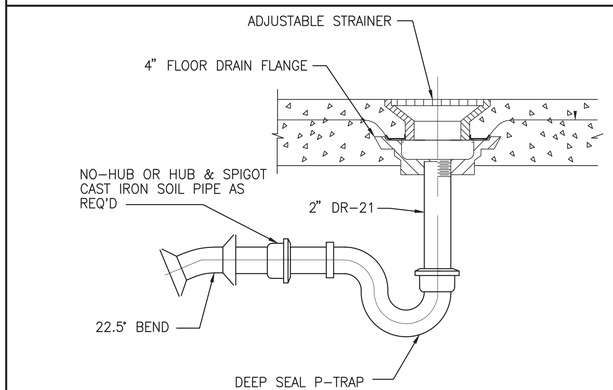
PLAN

NOTES:
1. PROVIDE MIN 3" CONC COVER OVER REINFORCEMENT.
2. SEE STRUCTURAL DRAWINGS FOR LOCATIONS WHERE PIPE ENCASEMENT IS TIED TO THE SLAB.

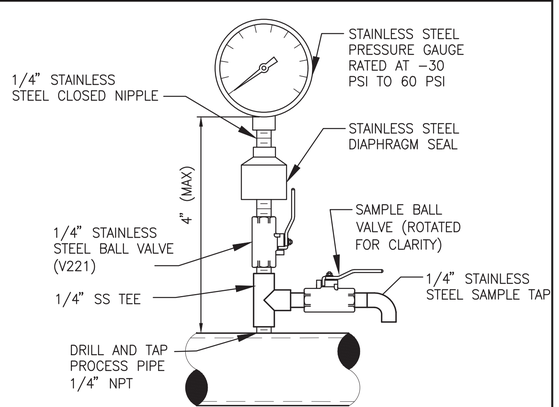
TYPICAL CONCRETE ENCASEMENT DETAIL 2
NTS

NOTES:
1. FLOOR DRAIN SHALL BE JOSAM MODEL N 30004–ARE–Z OR EQUAL WITH EPOXY COATING AND NO–HUB SPIGOT OUTLET.
2. RUBBER PIPE CONNECTOR SHALL B FERNCO, INC. SERIES 1051 OR EQUAL. ALL CLAMPS AND HARDWARE SHALL B AISI TYPE 304 SS.

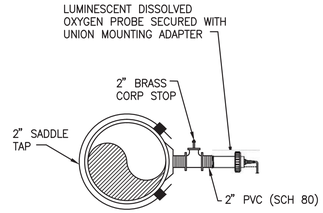
FLOOR DRAIN DETAIL 6
NTS



FLOOR DRAIN WITH P-TRAP 4
NTS



PRESSURE GAUGE AND SAMPLE TAP 7
NTS



NOTES:
1. PROBE BASIS OF DESIGN IS HACH LUMINESCENT DISSOLVED OXYGEN PROBE (LDO2) WITH UNION MOUNTING ADAPTER (HACH PART 9257000), THREADING THE NPT INTO THE 2" STAINLESS STEEL SADDLE TAP IN PLACE OF TEE.
2. PROBE SHALL BE INSTALLED HORIZONTAL AND PARALLEL TO THE FINISHED FLOOR.

DO PROBE DETAIL 9
NTS

BID SET

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MECHANICAL DETAILS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850–041–01
DATE: SEP. 2019
INDEX NO:
DWG NO: M7

ABBREVIATION LEGEND

A	AMPS	LSL	LEVEL SWITCH LOW
AFF	ABOVE FINISHED FLOOR	LT	LEVEL TRANSDUCER
AIC	AMPERE INTERRUPTING CURRENT	MCB	MAIN CIRCUIT BREAKER
AIT	ANALYZER INDICATING TRANSMITTER	MCC	MOTOR CONTROL CENTER
A/C	AIR CONDITIONING	MCP	MASTER CONTROL PANEL
BIV	BOREHOLE INJECTION CONTROL VALVE	MFR	MANUFACTURER
CV	CONTROL VALVE	MLO	MAIN LUGS ONLY
CAH	CONDUCTIVITY ALARM HIGH	MOV	MOTOR OPERATED VALVE
CB	CIRCUIT BREAKER	MSB	MAIN SWITCHBOARD
DN	DOWN	MTD	MOUNTED
DO	DO ELEMENT	NS	VIBRATION SWITCH
EG	EQUIPMENT GROUND	O.C.	ON CENTER
EWH	ELECTRIC WATER HEATER	P	POLE
EX	EXISTING	PT	PRESSURE TRANSDUCER
FCV	FLOW CONTROL VALVE	PLC	PROGRAMMABLE LOGIC CONTROLLER
FE	FLOW ELEMENT	PS	PRESSURE SWITCH
FIT	FLOW INDICATING TRANSMITTER	PM	POWER MONITOR
FOC	FIBER OPTIC CONVERTER	R	RELOCATED
FS	FLOW SWITCH	REM	REMOTE
FV	FLOW VALVE	RIO	REMOTE INPUT/OUTPUT CABINET
GALV	GALVANIZED	RTD	RESISTANCE TEMPURATURE SWITCH
GC	GROUND CONDUCTOR	SS	STAINLESS STEEL
GF	GROUND FAULT	SI	SHAFT TACHOMETER SENSOR
GND	GROUND	SPD	SURGE PROTECTION DEVICE
HOA	HAND OFF AUTOMATIC	SWS	SEAL WATER SOLENOID
HP	HORSE POWER	TSP	TWISTED SHIELDED PAIR
HTR	HEATER	UPS	UNINTERRUPTABLE POWER SOURCE
I/O	INPUT/OUTPUT	VFD	VARIABLE FREQUENCY DRIVES
JB	JUNCTION BOX	WP	WEATHER PROOF
LCP	LOCAL CONTROL PANEL	LE	LEVEL ELEMENT
LOC	LOCAL	LIT	LEVEL INDICATING TRANSMITTER
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS GROUND FAULT PROTECTION FEATURES		
LSH	LEVEL SWITCH HIGH		

LUMINAIRE SCHEDULE

SYMBOL	DESCRIPTION	VOLTS	FIXTURE WATTAGE	LAMPS	MOUNTING
A	4' LENSED STRIPLIGHT FIXTURE LITHONIA LIGHTING NO. ZL1N–L48–3000LM–MVOLT–40K–80CRI HUBBELL METALUX	MVOLT	25	LED	SURFACE
B	4' STRIP (VAPOR–TIGHT) FIXTURE LITHONIA NO. FEM–L48–3000LM–LPAFL–WD–MVOLT–40K–80CRI HUBBELL METALUX	MVOLT	23	LED	SURFACE
C	WALL PACK LIGHT FIXTURE LITHONIA NO. TWH LED–P1–40K–T3M–MVOLT–PE–SF–DBLXD HUBBELL METALUX	MVOLT	27	LED	SURFACE

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
	POWER (DISTRIBUTION) PANELBOARD, VOLTAGE AS NOTED	M.H. 6'–6" MIN. TO TOP
	POWER PANELBOARD, VOLTAGE AS NOTED	M.H. 6'–6" MIN. TO TOP
	BRANCH PANEL	M.H. 6'–6" MIN. TO TOP
	EQUIPMENT CONTROL PANEL	M.H. 6'–6" MIN. TO TOP
S	SINGLE POLE SWITCH (20A, 120/277)	M.H. 40" MIN. TO BOTTOM
	DUPLEX RECEPTACLE (20A, 125V)	M.H. 18" TO CENTERLINE
	RACEWAY CONCEALED IN WALL OR ABOVE CEILINGS	SEE SPECIFICATIONS
	RACEWAY CONCEALED UNDER FLOOR OR BELOW GRADE	SEE SPECIFICATIONS
	RACEWAY EXPOSED ON WALL OR CEILING	SEE SPECIFICATIONS
L1A–1,3	HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO WIRE CIRCUIT. A GREATER NUMBER OF WIRES IS INDICATED AS SHOWN: EG (3 WIRES & EQUIPMENT GROUND), (4 WIRES & EQUIPMENT GROUND), ETC.	SEE SPECIFICATIONS
UP DN	RACEWAY RISER, UP OR DOWN AS NOTED.	SEE SPECIFICATIONS
	JUNCTION BOX OR OUTLET BOX, 4"x2 1/8" DEEP BOX UNLESS OTHERWISE NOTED	SEE SPECIFICATIONS
3	MOTOR, NUMERAL INDICATES HORSEPOWER	BY OTHER DIVISION
	NON–FUSIBLE SAFETY SWITCH	SEE SPECIFICATIONS
T	DRY TYPE TRANSFORMER	FLOOR OR AS NOTED

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE RUBBER MATS AND PLYWOOD COVERS FOR ALL OWNERS EQUIPMENT SUSCEPTIBLE TO DAMAGE.
2. ALL WORK SHALL BE PERFORMED DURING TIME PERIODS ACCEPTABLE TO THE OWNER. SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
3. THE CONTRACTOR SHALL PERFORM ALL TEMPORARY WORK NECESSARY TO MAINTAIN CONTINUITY OF ELECTRICAL SERVICE WHEN CONNECTION IS MADE TO EXISTING SYSTEMS AND FACILITIES. EXISTING SERVICE SHALL NOT BE INTERRUPTED WITHOUT PRIOR CONSENT OF THE OWNER'S REPRESENTATIVE AND MAY BE INTERRUPTED ONLY AT AND FOR THE SPECIFIED TIME DESIGNATED BY OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL BE GUIDED BY THE OWNER'S REPRESENTATIVE AT ALL TIMES IN MATTERS AFFECTING THE EXISTING FACILITIES.
4. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL ENSURE THAT ALL SYSTEMS OPERATE AS DESIGNED AND REQUIRED AND SHALL REVIEW THEIR OPERATION WITH THE OWNER. COMPLETE SET OF AS–BUILT DRAWINGS SHALL BE COMPILED (BY THE CONTRACTOR) AND ISSUED (1 EACH) TO THE ENGINEER AND BUILDING MAINTENANCE PERSONNEL UPON COMPLETION OF CONSTRUCTION AND TESTING.
5. ALL ELECTRICAL AND INSTRUMENTATION WIRING AND CONDUIT SHALL BE INSTALLED BELOW GRADE AND SHALL NOT CROSS SIDEWALKS OR WALKWAYS. ABOVE GRADE WHERE POSSIBLE.

GENERAL DEMOLITION NOTES:

1. REMOVE AND/OR RELOCATE ALL CONDUIT WIRE, OUTLET BOXES, ETC. WHICH ARE MADE UNNECESSARY BECAUSE OF DEMOLITION/NEW CONSTRUCTION. VERIFY LOCATIONS AND QUANTITIES OF ELECTRICAL EQUIPMENT AND WIRING AT THE SITE. CONDUIT TO BE REMOVED OR ABANDONED SHALL BE REMOVED COMPLETELY IF POSSIBLE. WHERE (ABOVE GRADE) REMOVAL IS NOT POSSIBLE, CONDUIT SHALL BE CAPPED AND TAGGED AS SPARE. WHERE (BELOW GRADE) REMOVAL IS NOT POSSIBLE, CONDUIT SHALL BE CUT BELOW THE SURFACE AND CAPPED. ALL MATERIALS REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR. PATCH CONCRETE FLOOR TO MATCH EXISTING.
2. ANY DEMOLITION OR REMOVAL INDICATED IS SHOWN TO PROVIDE THE GENERAL EXTENT OF DEMOLITION. THIS INFORMATION IS NOT A RECORD DRAWING OF EXISTING CONDITIONS.
3. ANY DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT (AS INDICATED IN NOTES 1 & 2 ABOVE) SHALL BE CONFIRMED AND APPROVED BY OWNER BEFORE EXISTING EQUIPMENT IS DISCONNECTED AND REMOVED.

LIGHTNING PROTECTION SYSTEM

CONTRACTOR SHALL FURNISH AND INSTALL CLASS I LIGHTNING PROTECTION SYSTEM ON RECHARGE WELL PUMP BUILDING, CHEMICAL FEED AREA AND RECHARGE PUMP BUILDING. ALL MATERIALS SHALL BE COPPER. SYSTEM SHALL COMPLY WITH ALL UL & NFPA REQUIREMENTS AND OBTAIN A UL "MASTER LABEL" CERTIFICATION.

BID SET

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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

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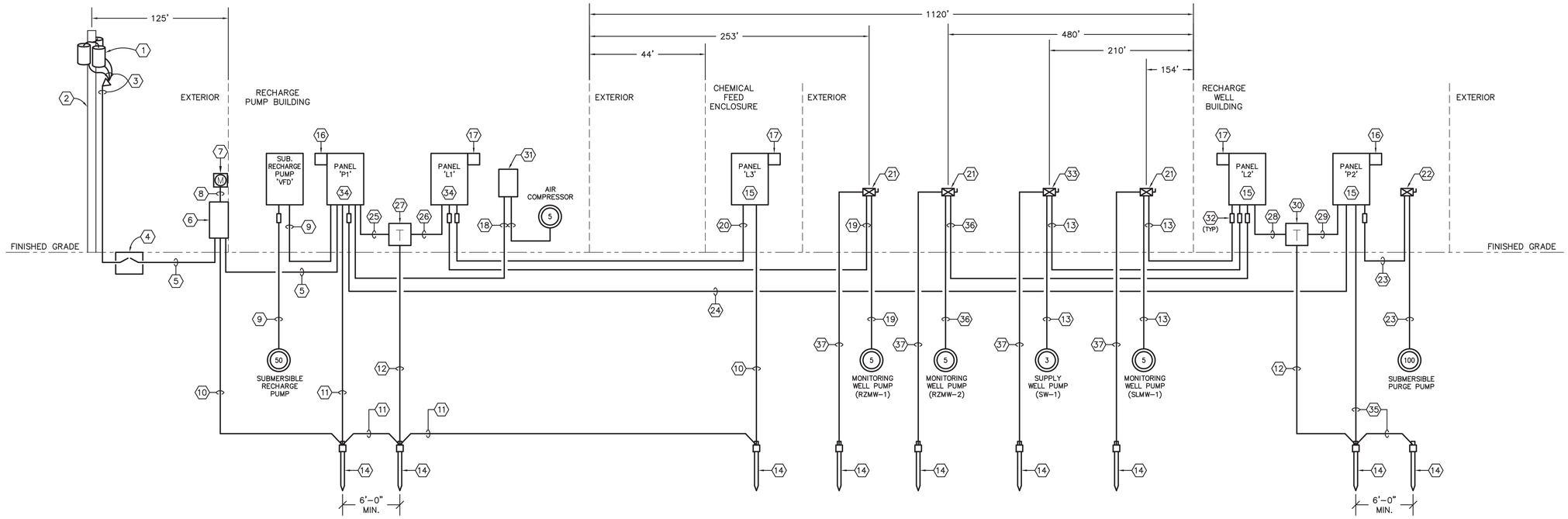
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ELECTRICAL SYMBOL LEGEND, ABBREVIATION LEGEND AND LUMINAIRE SCHEDULE

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: E1

SAVED: 10/1/2019 4:07 PM RICHARD.BARBEITO P:\–6299\6231\ELEC\6231–E1.DWG



POWER ONE-LINE DIAGRAM

NOTES:

1. PEACE RIVER ELECTRIC TRANSFORMERS WITH 480/277., 3ø, 4W. SECONDARY SCA: 18,042 AMPS. COORDINATE SERVICE WITH KENDELL COKER AT (863) 767–4660.
2. NEW PEACE RIVER ELECTRIC POWER POLE.
3. SECONDARY CONDUCTORS AND CONDUIT BY PEACE RIVER ELECTRIC.
4. FLUSH AT–GRADE HANDHOLE PER PEACE RIVER ELECTRIC'S REQUIREMENTS. COORDINATE WITH PEACE RIVER ELECTRIC. HANDHOLE IS OWNERSHIP LINE. PEACE RIVER ELECTRIC WILL MAKE CONNECTIONS. FURNISHED AND INSTALLED BY CONTRACTOR.
5. 2 SETS OF 4–350 MCM – 3 1/2"C.
6. CT METERING CABINET.
7. METER SOCKET AND CAN PER PEACE RIVER ELECTRIC'S REQUIREMENTS
8. 1" EMPTY CONDUIT.
9. 3 NO. 2 AND 1 NO. 6 E.G. – 1 1/4"C.
10. NO. 6 AWG COPPER GROUND CONDUCTOR.
11. NO. 2/0 AWG COPPER GROUND CONDUCTOR.
12. NO. 4 AWG COPPER GROUND CONDUCTOR.
13. 3 NO. 10 AND 1 NO. 10 E.G. – 3/4"C.
14. 3/4" X 20'–0" COPPERWELD GROUND ROD.
15. NEMA 4X (316 STAINLESS STEEL). SEE PANEL SCHEDULES.
16. SURGE PROTECTION DEVICE (PQ PROTECTION # PQC200) 480/277V., 3ø, 4W. OR PRE–APRPROVED EQUIVALENT. CONNECT WITH 4 NO. 6 AND 1 NO. 8 E.G. – 3/4" C. MAX LENGTH 18" WITH NO SHARP BENDS.
17. SURGE PROTECTION DEVICE (PQ PROTECTION # PQC100) 120/240V., 3ø, 4W. OR PRE–APRPROVED EQUIVALENT. CONNECT WITH 4 NO. 10 AND 1 NO. 10 E.G. – 3/4" C. MAX LENGTH 18" WITH NO SHARP BENDS.
18. 3 NO. 12 AND 1 NO. 12 E.G. – 3/4"C.
19. 3 NO. 8 AND 1 NO. 8 E.G. – 1"C.
20. 4 NO. 3 AND 1 NO. 6 E.G. – 1 1/4"C.
21. 30A, 3P, SIZE 1, COMBINATION MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE. A ON–OFF SWITCH SHALL BE MOUNTED IN FRONT COVER.
22. 400A, 3P, SIZE 4, COMBINATION MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE. A HAND–OFF–AUTOMATICH, HOA SWITCH SHALL BE MOUNTED IN FRONT COVER.
23. 3 NO. 2/0 AND 1 NO. 4 E.G. – 2"C.
24. 2 SETS OF 4–500 MCM AND 1 NO 1/0 E.G. – 3 1/2"C.
25. 3 NO. 4 AND 1 NO 4 G.C. – 1 1/4"C.
26. 4 NO. 2/0 AND 1 NO 4 E.G. – 2"C.
27. 45KVA, 480–120/208V, 3ø, 4W., DRY TYPE TRANSFORMER.
28. 3 NO. 6 AND 1 NO 6 G.C. – 1"C.
29. 4 NO. 2 AND 1 NO 6 E.G. – 1 1/2"C.
30. 30KVA, 480–120/208V, 3ø, 4W., (NEMA 3R) DRY TYPE TRANSFORMER.
31. AIR COMPRESSOR CONTROL PANEL WITH MOTOR STARTER.
32. PROVIDE AND INSTALL "SEAL–OFF" FITTINGS ON ALL CONDUITS ENTERING AND LEAVING BUILDING.
33. 30A, 3P, SIZE 0, COMBINATION MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE. A ON–OFF SWITCH SHALL BE MOUNTED IN FRONT COVER.
34. SEE PANEL SCHEDULES.
35. NO. 1/0 AWG COPPER GROUND CONDUCTOR.
36. 3 NO. 4 AND 1 NO. 6 E.G. – 1 1/4"C.
37. NO. 8 AWG COPPER GROUND CONDUCTOR.

BID SET

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

POWER ONE-LINE DIAGRAM

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: E2

SAVED: 10/1/2019 4:07 PM RICHARD.BARBEITO P:\–6299\6231\ELEC\6231–E2.DWG

GRAPHIC SCALE

0 50 100 200

SCALE IN FEET

– N –

NOTES:

1. NEW OVERHEAD PRIMARY UTILITY CONDUCTORS BY PEACE RIVER ELECTRIC.
2. NEW UNDERGROUND SERVICE ENTRANCE CONDUCTORS.
3. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE PUMP BUILDING (PANEL 'L1') TO CHEMICAL FEED ENCLOSURE (PANEL 'L3').
4. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE PUMP BUILDING (PANEL 'L1') TO MONITORING WELL RZMW–1.
5. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE WELL BUILDING (PANEL 'L2') TO MONITORING WELL RZMW–2.
6. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE WELL BUILDING (PANEL 'L2') TO SUPPY WELL SW–1 AND MONITORING WELL SLMW–1.
7. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE PUMP BUILDING (PANEL 'P1') TO RECHARGE WELL BUILDING (PANEL 'P2').
8. SEE POWER ONE–LINE DIAGRAM ON SHEET E2 FOR CONDUIT AND CONDUCTOR SIZES.
9. NEW UNDERGROUND 2"C. WITH NEW 12 PAIR FIBER OPTIC CABLE FROM RECHARGE PUMP BUILDING (CONTROL PANEL 'MCP') TO CHEMICAL FEED ENCLOSURE (CONTROL PANEL 'RIO–CHEM').
10. NEW UNDERGROUND 2"C. WITH NEW 12 PAIR FIBER OPTIC CABLE FROM RECHARGE PUMP BUILDING (CONTROL PANEL 'MCP') TO RECHARGE WELL BUILDING (CONTROL PANEL 'RIO–RW').
11. NEW OVERHEAD UTILITY POLE WITH POLE MOUNTED TRANSFORMERS BY PEACE RIVER ELECTRIC.
12. NEW UTILITY HANDHOLE.
13. SEE MONITORING WELL DETAIL ON SHEET E7.
14. NEW DATALOGGER CONTROL PANEL (POWER). 4 NO. 10 AND 1 NO. 10 E.G. – 3/4"C. PANELBOARD 'L1' LOCATED IN RECHARGE PUMP BUILDING. SEE MONITORING WELL DETAIL ON DRAWING E7.
15. NEW DATALOGGER CONTROL PANEL (POWER). 4 NO. 10 AND 1 NO. 10 E.G. – 3/4"C. PANELBOARD 'L2' LOCATED IN RECHARGE WELL BUILDING. SEE MONITORING WELL DETAIL ON E7.
16. 2 NO. 16 TSP (4–20 Ma) – 3/4"C. TO CONTROL PANEL 'MCP'. CONTROL PANEL 'MCP' LOCATED IN RECHARGE PUMP BUILDING.
17. 2 NO. 16 TSP (4–20 Ma) – 3/4"C. TO CONTROL PANEL 'RIO–RW'. CONTROL PANEL 'RIO–RW' LOCATED IN RECHARGE WELL BUILDING.

BID SET

CARASTRO & ASSOCIATES, INC.
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TELEPHONE: (813) 874–9494 WWW.CARASTRO.COM

ELECTRICAL SITE PLAN

SCALE: 1"=100'–0"

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
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JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

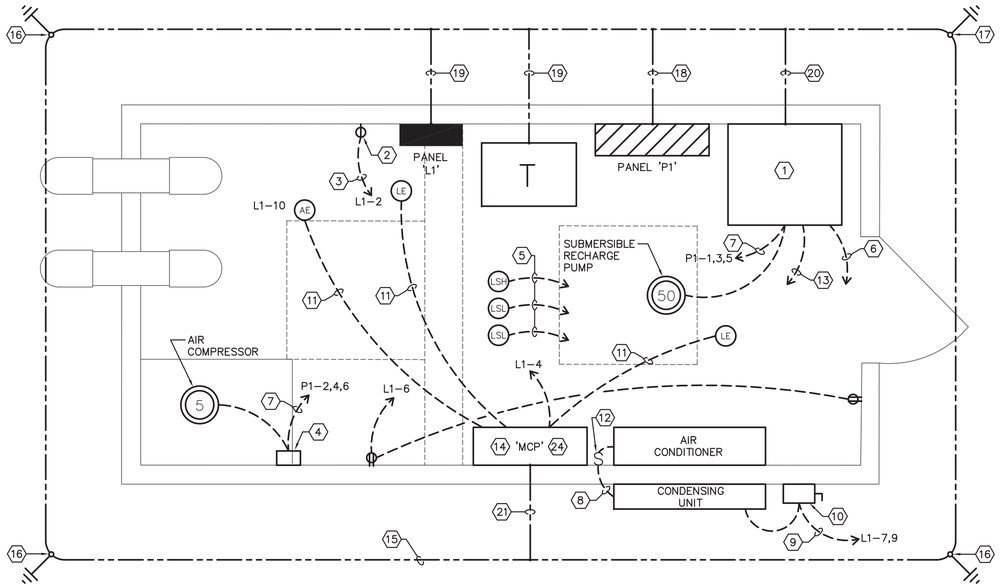
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ELECTRICAL SITE PLAN

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

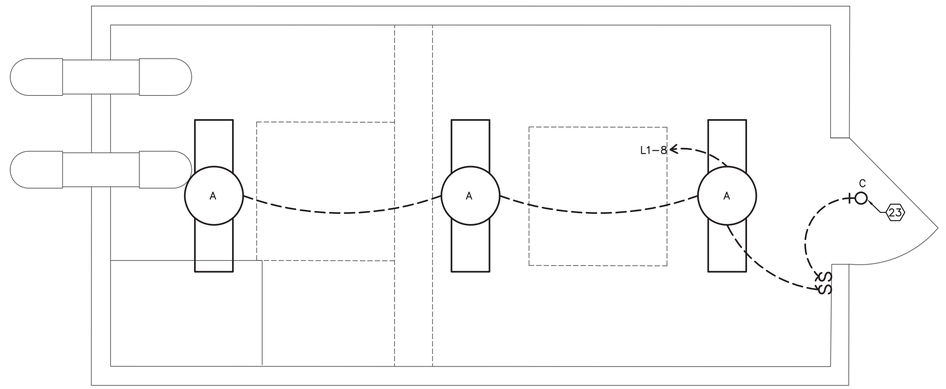
PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: E3

SAVED: 10/1/2019 4:08 PM RICHARD.BARBEITO P:\–6299\6231\ELEC\6231–E3.DWG



RECHARGE PUMP BUILDING - POWER PLAN

SCALE: 1/2"=1'–0"



RECHARGE PUMP BUILDING - LIGHTING PLAN

SCALE: 1/2"=1'–0"

NOTES:

1. 460 VOLT, 12–PULSE, VFD DRIVE FOR SUBMERSIBLE WELL PUMP.
2. 50A., 5–50R RECEPTACLE FOR PORTABLE TRASH PUMP. PORTABLE TRASH PUMP TO INCLUDE 5–50P PLUG. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH PUMP MANUFACTURER.
3. 2 NO. 8 AND 1 NO. 10 E.G. – 3/4"C.
4. AIR COMPRESSOR CONTROL PANEL.
5. 2 NO. 12 – 3/4"C. TO CONTROL PANEL 'MCP'.
6. 8 NO. 14 – 3/4"C. TO CONTROL PANEL 'MCP'.
7. SEE POWER ONE–LINE DIAGRAM FOR ADDITIONAL INFORMATION.
8. CONNECT BACK TO TERMINAL BLOCK LOCATED IN CONDENSING UNIT. USE 2 NO. 12 AND 1 NO. 12 E.G. – 3/4"C.
9. 3 NO. 10 AND 1 NO. 10 E.G. – 3/4"C. (ENTIRE CIRCUIT).
10. 30A., 2–POLE, NEMA 4X (304 STAINLESS STEEL) DISCONNECT SWITCH
11. MANUFACTURER SUPPLIED CABLE(S) IN 3/4"C. TO CONTROL PANEL 'MCP'.
12. 120 VOLT (MOTOR RATED) TOGGLE TYPE DISCONNECT SWITCH.
13. 3/4" CONDUIT WITH CAT6 (ETHERNET) CABLE FROM NEW VFD TO NEW CONTROL PANEL 'MCP'.
14. NEW MASTER CONTROL PANEL 'MCP'.
15. NO. 4/0 BARE COPPER CONDUCTOR FOR GROUND GRID.
16. NEW 5/8" X 20'–0" COPPER GROUND ROD.
17. NEW 5/8" X 20'–0" COPPER GROUND ROD WITH EXTERIOR TEST POINT.
18. NO. 1/0 GROUND CONDUCTOR IN 1"C TO GROUND GRID.
19. NO. 4 GROUND CONDUCTOR IN 1"C TO GROUND GRID.
20. NO. 6 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.
21. NO. 8 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.
22. 8 NO. 14 – 3/4"C. TO CONTROL PANEL 'MCP'.
23. LIGHT FIXTURE TO BE MOUNTED ABOVE DOOR.
24. CONTRACTOR TO FURNISH AND INSTALL PRESSURE TRANSDUCER, DATA LOGGER, COMMUNICATION EQUIPMENT, ETC. FOR A COMPLETE SYSTEM.

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'–0"

BID SET

CARASTRO & ASSOCIATES, INC.
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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

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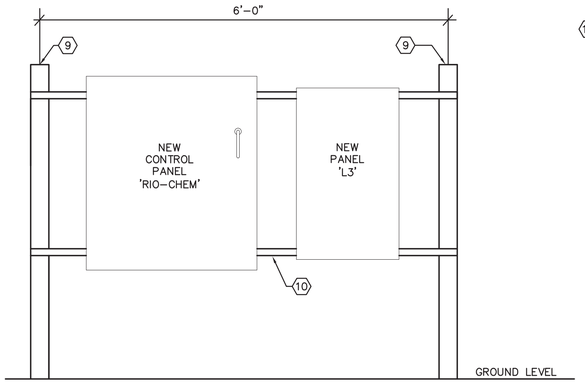
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE PUMP BUILDING
ELECTRICAL PLANS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

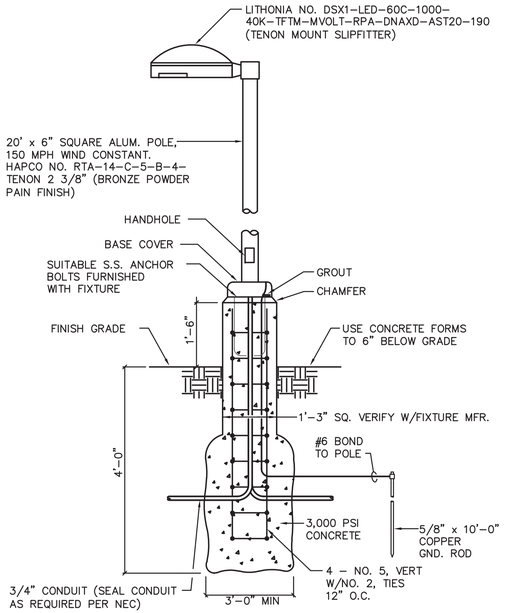
PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: E4

SAVED: 10/1/2019 4:37 PM RICHARD.BARBEITO P:\–6299\6231\ELEC\6231–E4.DWG



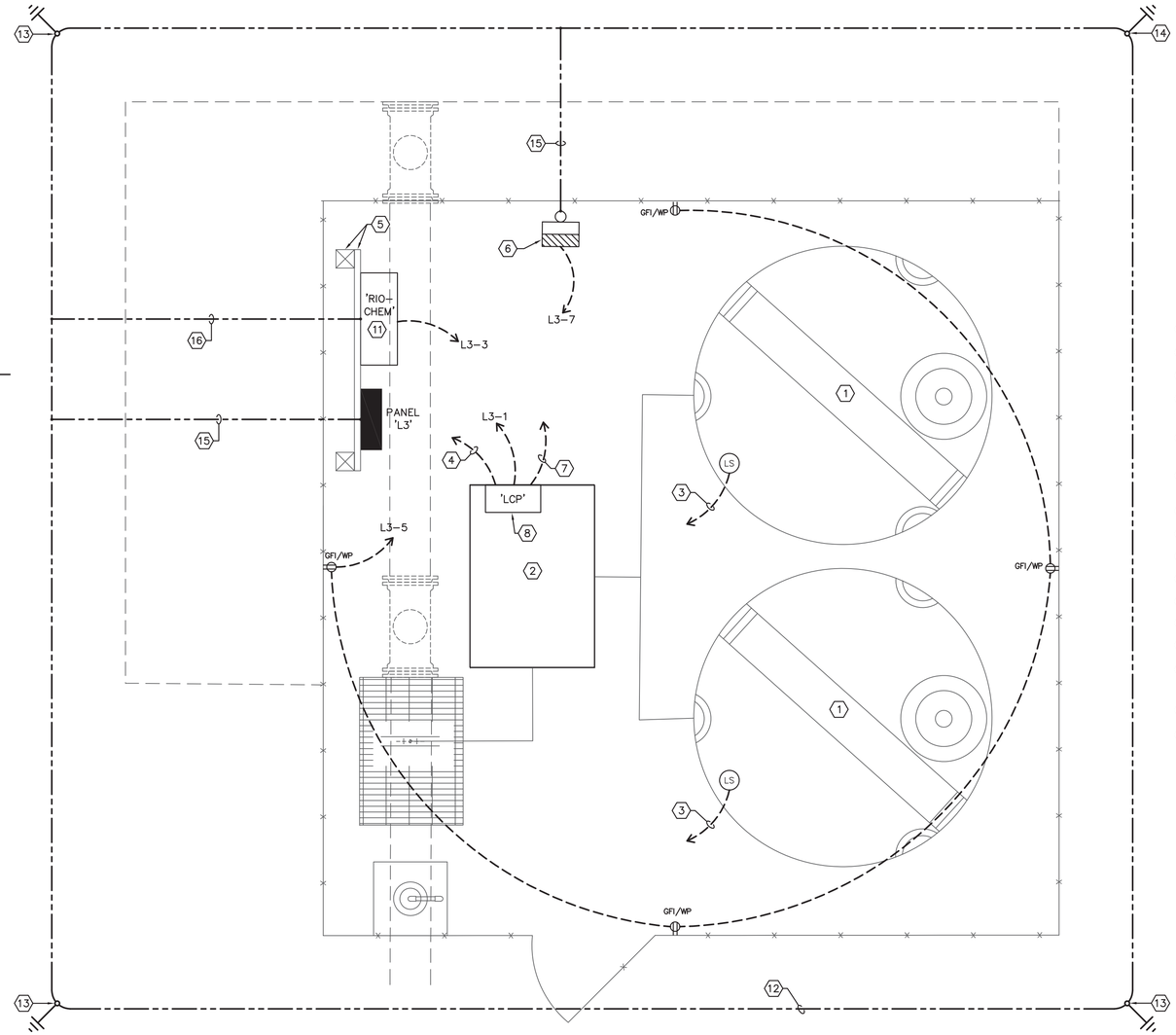
ELECTRICAL ELEVATION DETAIL

SCALE: NONE



POLE MOUNTED LIGHT FIXTURE DETAIL

SCALE: NONE



CHEMICAL FEED ENCLOSURE - ELECTRICAL PLAN

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

GENERAL NOTES:

1. COORDINATE ALL LOCATIONS OF PROPOSED EQUIPMENT WITH ENGINEER AND OWNER PRIOR TO INSTALLATION.

NOTES:

1. DUAL CONTAINMENT CHEMICAL STORAGE.
2. CHEMICAL FEED METERING SKID.
3. 2 NO. 12 – 3/4"C. TO CONTROL PANEL 'RIO-CHEM'.
4. 4 NO. 16 TSP (4-20 mA) – 3/4"C. TO CONTROL PANEL 'RIO-CHEM'.
5. NEW CONCRETE POST AND UNISTRUT SUPPORT SYSTEM. SEE ELECTRICAL ELEVATION LAYOUT THIS SHEET.
6. NEW POLE MOUNTED LIGHT LOCATION, REFER TO DETAIL. COORDINATE LOCATION WITH OWNER.
7. 16 NO. 14 – 1"C. TO CONTROL PANEL 'RIO-CHEM'.
8. CHEMICAL FEED METERING LOCAL CONTROL PANEL.
9. 10'-0" CONCRETE 6"X6" POSTS. 6' ABOVE FINISHED GRADE.
10. 2 1/2"X2 1/2"X1/4" ALUMINUM ANGLE. (TYPICAL).
11. NEW CONTROL PANEL 'RIO-CHEM'.
12. NO. 4/0 BARE COPPER CONDUCTOR FOR GROUND GRID.
13. NEW 5/8" X 20'-0" COPPER GROUND ROD.
14. NEW 5/8" X 20'-0" COPPER GROUND ROD WITH EXTERIOR TEST POINT.
15. NO. 6 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.
16. NO. 8 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.

BID SET

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'-0"

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LTR.	DATE	REVISIONS	BY	APPRD.

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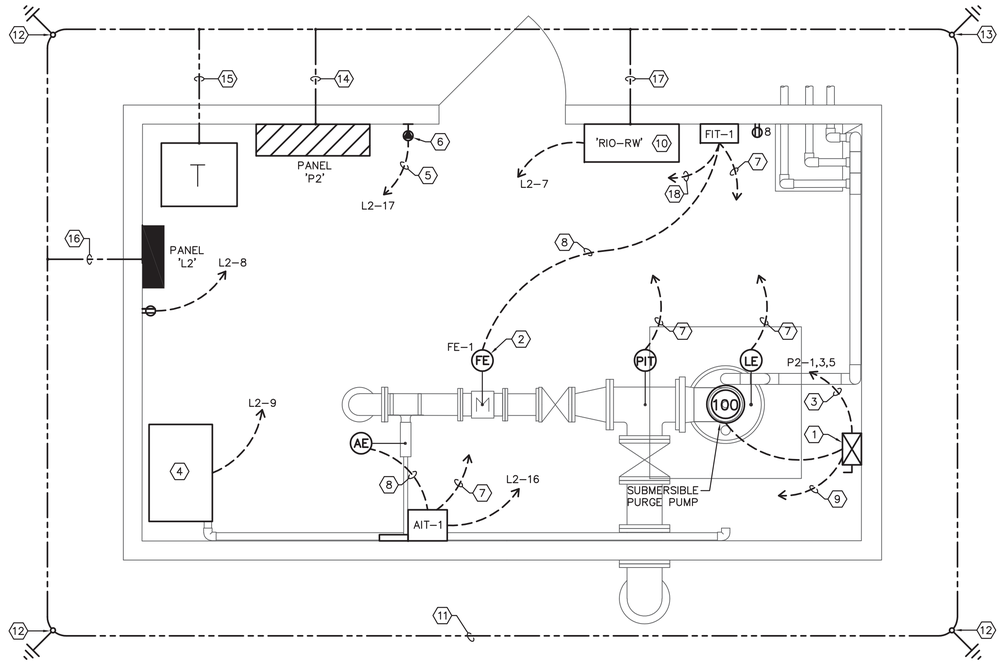
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CHEMICAL FEED ENCLOSURE
ELECTRICAL PLANS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

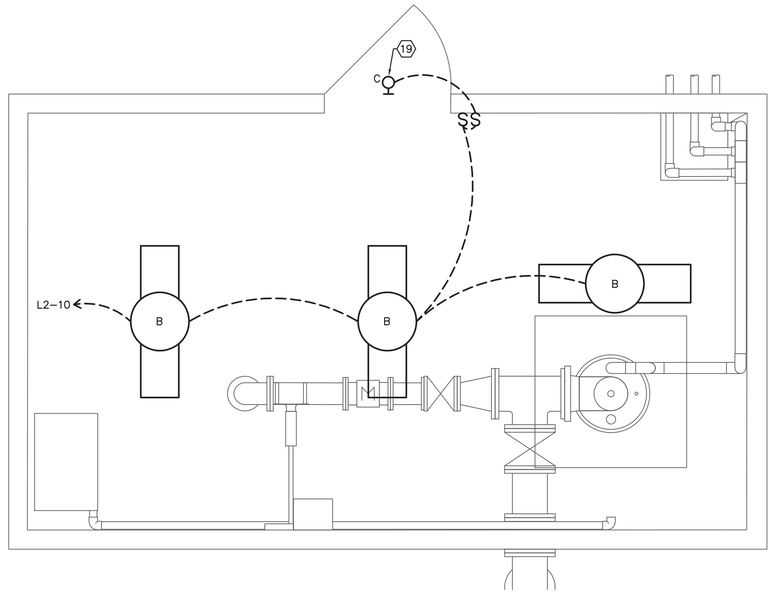
PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: E5

SAVED: 10/1/2019 4:46 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E5.DWG



RECHARGE WELL BUILDING - POWER PLAN

SCALE: 1/2"=1'–0"



RECHARGE WELL BUILDING - LIGHTING PLAN

SCALE: 1/2"=1'–0"

NOTES:

1. COMBINATION MOTOR STARTER FOR SUBMERSIBLE PURGE PUMP.
2. MAGNETIC FLOW METER – FLOW ELEMENT. ENDRESS & HOUSER PROMAG W400.
3. SEE POWER ONE–LINE DIAGRAM FOR ADDITIONAL INFORMATION.
4. HYDRAULIC POWER UNIT FOR BOREHOLE INJECTION CONTROL VALVE LEVEL INDICATION.
5. 2 NO. 10 AND 1 NO. 10 E.G. – 3/4"C.
6. 30A., RECEPTACLE FOR FUTURE EQUIPMENT.
7. 2 NO. 16 TSP (4–20mA) – 3/4"C. TO CONTROL PANEL 'RIO–RW'.
8. MANUFACTURER SUPPLIED CABLE(S) IN 3/4"C.
9. 10 NO. 12 – 3/4"C. TO CONTROL PANEL 'RIO–RW'.
10. NEW CONTROL PANEL 'RIO–RW'.
11. NO. 4/0 BARE COPPER CONDUCTOR FOR GROUND GRID.
12. NEW 5/8" X 20'–0" COPPER GROUND ROD.
13. NEW 5/8" X 20'–0" COPPER GROUND ROD WITH EXTERIOR TEST POINT.
14. NO. 1/0 GROUND CONDUCTOR IN 1"C TO GROUND GRID.
15. NO. 4 GROUND CONDUCTOR IN 1"C TO GROUND GRID.
16. NO. 6 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.
17. NO. 8 GROUND CONDUCTOR IN 3/4"C TO GROUND GRID.
18. 2 NO. 12 AND 1 NO. 12 E.G. – 3/4"C. TO CONTROL PANEL 'RIO–RW'.
19. LIGHT FIXTURE TO BE MOUNTED ABOVE DOOR.

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'–0"

BID SET

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LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE WELL BUILDING - ELECTRICAL PLANS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: E6

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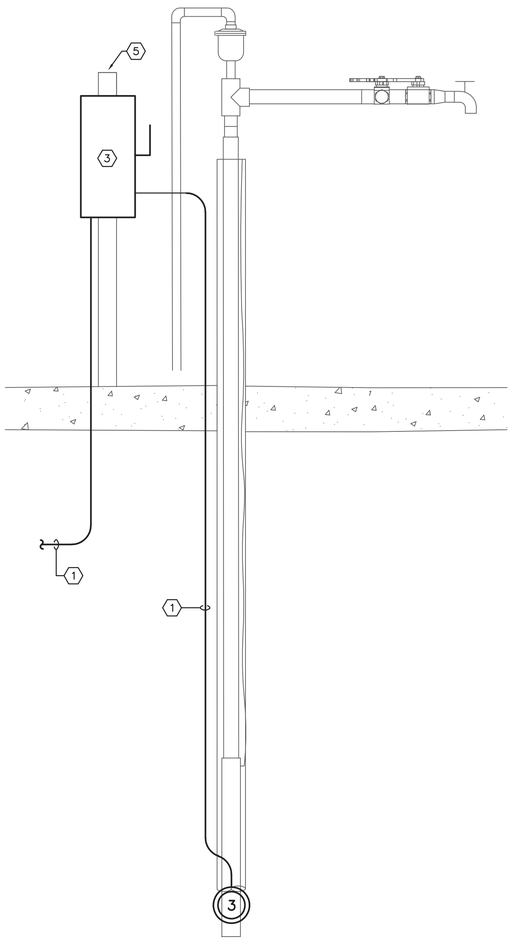
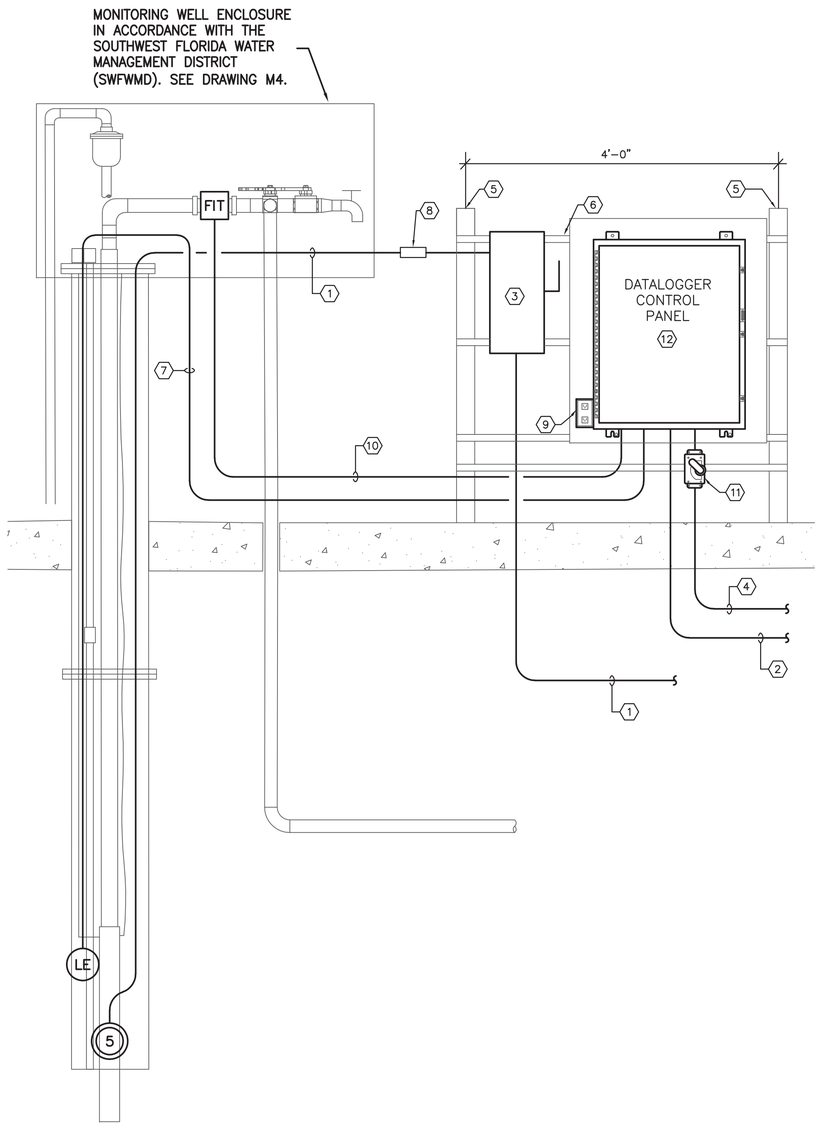


SUPPLY WELL DETAIL - ELECTRICAL

NOT TO SCALE



MONITORING WELL DETAIL - ELECTRICAL

NOT TO SCALE (TYPICAL FOR RZMW–1, RZMW–2 AND SLMW–1)

GENERAL NOTES:

1. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH 'SWFWMD TYPICAL DATA GROUND SITE INSTALLATION DIAGRAM'.

NOTES:

1. SEE POWER ONE–LINE DIAGRAM FOR CONDUIT AND CONDUCTOR SIZES.
2. TO NEAREST CONTROL PANEL 'CP1' OR 'CP2'.
3. SEE POWER ONE–LINE DIAGRAM FOR COMBINATION MOTOR STARTER SIZE.
4. NEW 120 VOLT CIRCUIT (POWER). SEE ELECTRICAL SITE PLAN AND PANEL SCHEDULE FOR ADDITIONAL INFORMATION.
5. 10'–0" CONCRETE 6"X6" POST. 6' ABOVE FINISHED GRADE.
6. 2 1/2"X2 1/2"X1/4" ALUMINUM ANGLE. (TYPICAL).
7. MANUFACTURER SUPPLIED CABLE(S) IN 3/4"C.
8. FURNISH AND INSTALL CONDUIT SEAL–OFF FITTING.
9. FURNISH AND INSTALL 120 VOLT (GFI) DUPLEX RECEPTACLE. DUPLEX RECEPTACLE ENCLOSURE TO BE PRECAST ALUMINUM WITH ALUMINUM (IN–USE) WEATHERPROOF COVERPLATE.
10. 2 NO.16 TSP (4–20mA) IN 3/4"C.
11. NEW 120 VOLT TOGGLE TYPE DISCONNECT SWITCH. FURNISH AND INSTALL NEW PRECAST ALUMINUM (1GANG) JUNCTION BOX AND ALUMINUM (WEATHERPROOF) COVER PLATE.
12. DISTRICT (OWNER) WILL PROVIDE CAMPBELL SCIENTIFIC TRANSDUCERS, DATA LOGGERS, AND THE WIFI FOR ALL (3) MONITORING WELLS.

BID SET

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LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MONITORING WELL DETAIL - ELECTRICAL

PROJECT NO:	DATE:
19850–041–01	SEPT 2019
INDEX NO:	DWG NO:
	E7

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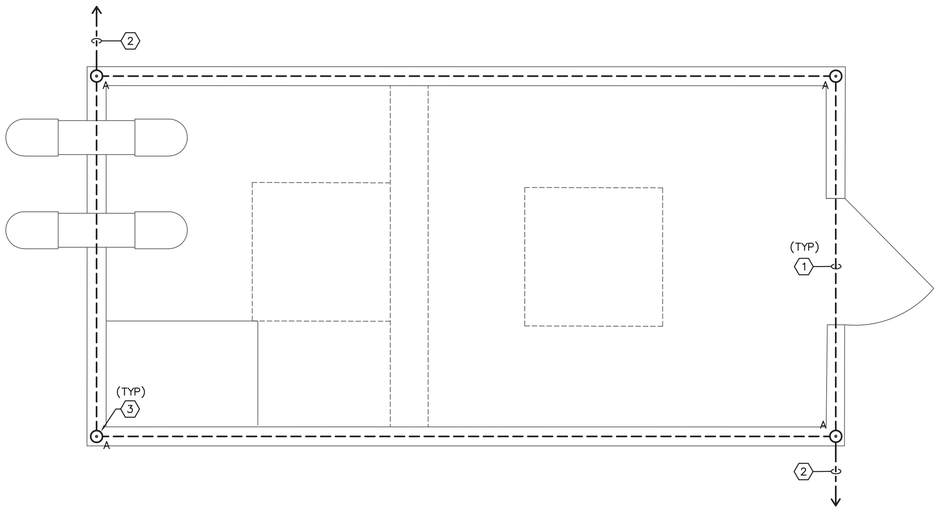
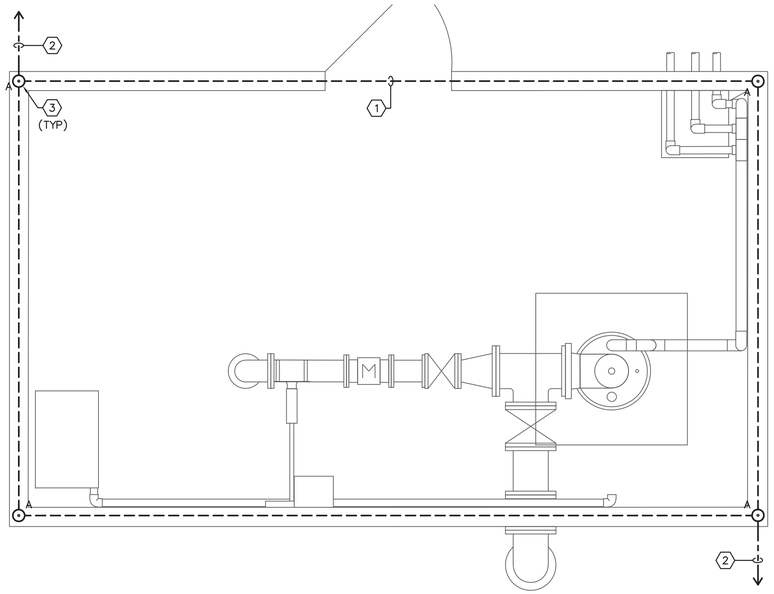


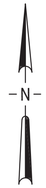
RECHARGE PUMP BUILDING - LIGHTNING PROTECTION PLAN

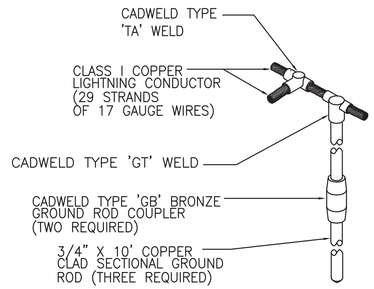
SCALE: 1/2"=1'-0"



RECHARGE WELL BUILDING - LIGHTNING PROTECTION PLAN

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





GROUND ROD DETAIL

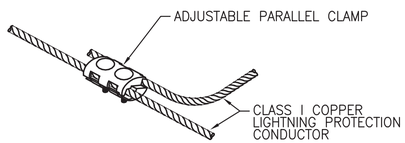
NOT TO SCALE

NOTES:

1. NO. 29X, CLASS I COPPER LIGHTNING CONDUCTOR RUN EXPOSED ON ROOF. FASTEN EVERY 3 FEET MAX.
2. DOWN CONDUCTOR RUN IN 3/4 INCH PVC CONDUIT ON EXTERIOR FACE OF BUILDING TO (CLASS I) COPPER GROUND RING CONDUCTOR. INSTALL 36 INCHES BELOW FINISHED GRADE. SEE POWER PLANS E4 & E6 FOR GROUND RING LOCATIONS.
3. 1/2" X 24" SOLID COPPER BLUNT TIP AIR TERMINAL WITH BASE. SEE DETAIL 'A'.

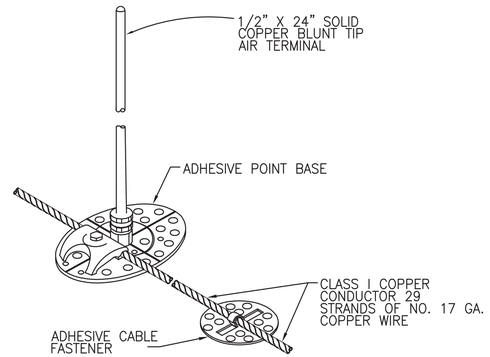
LIGHTNING PROTECTION AND GROUNDING SYSTEM GENERAL NOTES:

1. THE COMPLETED INSTALLATION SHALL MEET THE REQUIREMENTS OF THE LATEST ACCEPTED EDITION OF THE NATIONAL FIRE PROTECTION ASSOCIATION'S "STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS" (NFPA 780) AND THE "INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS, UL 96A" OF UNDERWRITERS LABORATORIES INC. THE MASTER LABEL SHALL BE FURNISHED TO THE OWNER UPON COMPLETION.
2. COPPER LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL NOT BE MOUNTED TO ALUMINUM SURFACES. ALUMINUM COMPONENTS SHALL BE USED TO AVOID ELECTROLYTIC CORROSION.
3. GROUNDED METAL BODIES WITHIN 6' SHALL BE BONDED TO THE SYSTEM IN ACCORDANCE WITH THOSE REQUIREMENTS.
4. UNDERGROUND METALLIC PIPING ENTERING THE BUILDING SHALL BE BONDED TO THE NEAREST DOWN CONDUCTOR OR GROUND ELECTRODE.
5. ADHESIVE USED WITH ADHESIVE AIR TERMINAL BASES AND CONDUCTOR FASTENERS SHALL BE COMPATIBLE WITH ROOFING MEMBRANE – VERIFY WITH ROOFING CONTRACTOR.
6. THE DESIGNS SHOWN FOR THESE SYSTEMS ARE SCHEMATIC AND ARE INTENDED TO SHOW BASIC SYSTEM DESIGN. CONTRACTOR SHALL VERIFY DIMENSIONS AND SITE CONDITIONS AND PROVIDE SYSTEMS THAT COMPLY WITH CODE REQUIREMENTS.
7. AIR TERMINALS ARE TO BE LOCATED AS SHOWN. THEY ARE TO BE A MAXIMUM OF 24" FROM THE ROOF EDGE AND PROJECT A MINIMUM OF 10" ABOVE THE PROTECTED EDGE. THE SPACING BETWEEN AIR TERMINALS SHALL NOT EXCEED 20'. AIR TERMINALS THAT EXTEND 24" ABOVE THE PROTECTED EDGE SHALL NOT EXCEED A SPACING GREATER THAN 25', EXCEPT FOR MID-ROOF AREAS (50' MAX.).
8. LIGHTNING CONDUCTORS ARE TO MAINTAIN A HORIZONTAL OR DOWNWARD PATH, AND ALL BENDS IN THE CONDUCTOR SHALL HAVE A RADIUS OF NOT LESS THAN 8" AND SHALL NOT BE LESS THAN 90°.
9. ATTACH ALL EXPOSED ROOF, DOWN LEAD, AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
10. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 36 INCHES BELOW GRADE AND 6'-0" FROM FOUNDATION WALL.
11. ALL MATERIAL TO BE UNDERWRITER'S LABORATORIES APPROVED WITH LABELS ON CONDUCTORS @ 10'-0" INTERVALS AND LABELS ON AIR TERMINALS.
12. PVC CONDUITS CONTAINING LIGHTNING PROTECTION SYSTEM CONDUCTORS SHALL BE FREE OF ALL METAL SUPPORTS AND CLAMPS. USE NON-METALLIC STRAYS AND FASTENERS.
13. ALL ABOVE GRADE BONDING CONNECTIONS UNLESS OTHERWISE NOTED SHALL BE STAINLESS STEEL OR SOLID COPPER. NO STEEL CADMIUM PLATED MATERIALS WILL BE ACCEPTED.
14. UPON COMPLETION OF LIGHTNING PROTECTION AND GROUNDING SYSTEMS, FURNI8SH U.L. MASTER LABEL AND INSTALL ON EXTERIOR WALL OF BUILDING WHERE DIRECTED BY OWNER.
15. NO ROOF PENETRATIONS WILL BE ALLOWED.



ABOVE GRADE SPICE DETAIL

NOT TO SCALE



AIR TERMINAL DETAIL 'A'

NOT TO SCALE

BID SET

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'-0"

CARASTRO & ASSOCIATES, INC.
CONSULTING ENGINEERS EB-0001160
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LTR.	DATE	REVISIONS	BY	APPRD.

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324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE PUMP AND RECHARGE WELL BUILDING LIGHTNING PROTECTION PLANS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: E8

SAVED: 9/27/2019 1:43 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E8.DWG

PANELBOARD: **P1**

SERVICE: 277 / 480 V, 3Φ, 4W — MAIN: 600 A MCB — FEED THRU LUGS: NO — MOUNT: SURFACE — ENCLOSURE: NEMA 1 — AIC: 42,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C		A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	SUBMERSIBLE RECHARGE PUMP (50 HP)	MTR	125	3	17.24				3.54			20	3	MTR	AIR COMPRESSCR CONTROL PANEL	2
3	↓	MTR	I	I		17.24				3.54		I	I	MTR	↓	4
5	↓	MTR	↓	↓			17.24				3.54	↓	↓	MTR	↓	6
7	SPACE	--	--	1								--	1	--	SPACE	8
9	SPACE	--	--	1								--	1	--	SPACE	10
11	SPACE	--	--	1								--	1	--	SPACE	12
13	SPACE	--	--	1								--	1	--	SPACE	14
15	SPACE	--	--	1								--	1	--	SPACE	16
17	SPACE	--	--	1								--	1	--	SPACE	18
19	SPACE	--	--	1								--	1	--	SPACE	20
21	SPACE	--	--	1								--	1	--	SPACE	22
23	SPACE	--	--	1								--	1	--	SPACE	24
25	SPACE	--	--	1								--	1	--	SPACE	26
27	SPACE	--	--	1								--	1	--	SPACE	28
29	SPACE	--	--	1								--	1	--	SPACE	30
31	L1	PNL	70	3	9.61							--	1	--	SPACE	32
33	I	PNL	I	I		5.56						--	1	--	SPACE	34
35	↓	PNL	↓	↓			3.50					--	1	--	SPACE	36
37	SPD (SURGE PROTECTION DEVICE)	--	60	3					40.34			400	3	PNL	P2	38
39	I	--	I	I						40.71		I	I	PNL	I	40
41	↓	--	↓	↓							38.69	↓	↓	PNL	↓	42

TOTAL KVA Phase A 70.73 Phase B 67.05 Phase C 63.0

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	1.6	1.25	1.6	2.0		* PER NEC 215.3
RECEPTACLES (REC)	6.2	*	6.2	6.2		* PER NEC 220.44
AC (NON COINCID)(AC NC)	2.3	1.0	2.3	2.3		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	84.33	1.0	84.3	84.3		
LARGEST MOTOR	98.76	1.25	98.8	123.5		* PER NEC 430.24
MISCELLANEOUS (MISC)	7.6	1.0	7.6	7.6		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	200.8		200.8	225.8	**271.6** AMPS	

PANELBOARD: **L1** ⟨2⟩

SERVICE: 120 / 208 V, 3Φ, 4W — MAIN: 150 A MCB — FEED THRU LUGS: NO — MOUNT: SURFACE — ENCLOSURE: NEMA 1 — AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C		A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	MONITORING WELL PUMP 'RZMW-1'	MTR	35	3	2.02				4.20			50	1	REC	RECEPTACLE - PORTABLE TRASH PUMP	2
3	I	MTR	I	I		2.02				1.20		20	1	MISC	CONTROL PANEL 'MCP'	4
5	↓	MTR	↓	↓			2.02				0.36	20	1	REC	RECEPTACLES	6
7	AIR CONDITIONING & CONDENSING UNIT	AC NC	30	2	1.14				0.77			20	1	LTG	LIGHTING	8
9	↓	AC NC	↓	↓		1.14						20	1		SPARE	10
11	DATALOGGER (RZMW-1)	MISC	20	1			0.40					20	1		SPARE	12
13	DATALOGGER (RZMW-1) RECEPTACLE	REC	20	1	0.18							20	1		SPARE	14
15	SPARE	--	20	1								20	1	--	SPARE	16
17	SPARE	--	20	1									1	--	SPACE	18
19	SPACE	--		1									1	--	SPACE	20
21	SPACE	--	--	1								--	1	--	SPACE	22
23	SPACE	--	--	1									1	--	SPACE	24
25	SPACE	--	--	1								--	1	--	SPACE	26
27	SPACE	--	--	1								--	1	--	SPACE	28
29	SPACE	--	--	1								--	1	--	SPACE	30
31	SPACE	--	--	1								--	1	--	SPACE	32
33	SPACE	--	--	1								--	1	--	SPACE	34
35	SPACE	--	--	1								--	1	--	SPACE	36
37	L3	PNL	100	3	1.30							30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	I	PNL	I	I		1.20						I	I	--	I	40
41	↓	PNL	↓	↓			0.72					↓	↓	--	↓	42

TOTAL KVA Phase A 9.61 Phase B 5.56 Phase C 3.5

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.9	1.25	0.9	1.1		* PER NEC 215.3
RECEPTACLES (REC)	5.5	*	5.5	5.5		* PER NEC 220.44
AC (NON COINCID)(AC NC)	2.3	1.0	2.3	2.3		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	0.00	1.0	0.0	0.0		
LARGEST MOTOR	6.06	1.25	6.1	7.6		* PER NEC 430.24
MISCELLANEOUS (MISC)	4.0	1.0	4.0	4.0		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	18.7		18.7	20.4	**56.6** AMPS	

PANELBOARD: **L3** ⟨2⟩

SERVICE: 120 / 208 V, 3Φ, 4W — MAIN: 100 A MCB — FEED THRU LUGS: NO — MOUNT: SURFACE — ENCLOSURE: NEMA 4X (STAINLESS STEEL) — AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C		A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	CHEMICAL METERING PUMP SKID	MISC	20	1	1.20							30	1		FUTURE FILTERS	2
3	CONTROL PANEL 'RIO-CHEM'	MISC	20	1		1.20						20	1	--	SPARE	4
5	RECEPTACLES (REC)	REC	20	1			0.72					20	1	--	SPARE	6
7	LIGHTING (LTG)	LTG	20	1	0.10							20	1	--	SPARE	8
9	SPARE	--	20	1								--	1	--	SPACE	10
11	SPARE		20	1								--	1	--	SPACE	12
13	SPARE	--	20	1								--	1	--	SPACE	14
15	SPACE	--	--	1								--	1	--	SPACE	16
17	SPACE	--		1								--	1	--	SPACE	18
19	SPACE	--		1								--	1	--	SPACE	20
21	SPACE	--	--	1								--	1	--	SPACE	22
23	SPACE	--		1								--	1	--	SPACE	24
25	SPACE	--	--	1								--	1	--	SPACE	26
27	SPACE	--	--	1								--	1	--	SPACE	28
29	SPACE	--	--	1								--	1	--	SPACE	30
31	SPACE	--	--	1								--	1	--	SPACE	32
33	SPACE	--	--	1								--	1	--	SPACE	34
35	SPACE	--	--	1								--	1	--	SPACE	36
37	SPACE	--	--	1								30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	SPACE	--	--	1								I	I	--	I	40
41	SPACE	--	--	1								↓	↓	--	↓	42

TOTAL KVA Phase A 1.30 Phase B 1.20 Phase C 0.7

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.1	1.25	0.1	0.1		* PER NEC 215.3
RECEPTACLES (REC)	0.7	*	0.7	0.7		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	0.00	1.0	0.0	0.0		
LARGEST MOTOR	0.00	1.25	0.0	0.0		* PER NEC 430.24
MISCELLANEOUS (MISC)	2.4	1.0	2.4	2.4		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	3.2		3.2	3.2	**9.0** AMPS	

NOTES:

⟨1⟩ CIRCUIT BREAKER TO INCLUDE TERMINATION LUGS TO SUPPORT LARGER CONDUCTORS. SEE POWER ONE-LINE DIAGRAM.

⟨2⟩ PANELBOARD CONTAINS HI-LEG ON (B-PHASE). DO NOT CONNECT 120 VOLT CIRCUIT ON (B-PHASE) LEG.

BID SET

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CONSULTING ENGINEERS EB-0001160
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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PANEL SCHEDULES

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: E9

SAVED: 9/27/2019 1:44 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E9.DWG

PANELBOARD: **P2**

SERVICE: 277 / 480 V, 3Φ, 4W | MAIN: 400 A MCB (1) | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 42,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	SUBMERSIBLE PURGE PUMP	MTR	225	3	32.89						--	1	--	SPACE	2
3	"	MTR	"	"		32.89					--	1	--	SPACE	4
5	"	MTR	"	"			32.98				--	1	--	SPACE	6
7	SPACE	--	--	1							--	1	--	SPACE	8
9	SPACE	--	--	1							--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	SPACE	--	--	1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--	--	1							--	1	--	SPACE	36
37	L2	PNL	50	3	7.45						30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	"	PNL	"	"		7.82					"	"	--	"	40
41	"	PNL	"	"			5.71				"	"	--	"	42

TOTAL KVA Phase A 40.34 Phase B 40.71 Phase C 38.7

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.7	1.25	0.7	0.9		* PER NEC 215.3
RECEPTACLES (REC)	0.7	*	0.7	0.7		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	15.93	1.0	15.9	15.9		
LARGEST MOTOR	98.76	1.25	98.8	123.5		* PER NEC 430.24
MISCELLANEOUS (MISC)	3.6	1.0	3.6	3.6		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	119.7		119.7	144.6	**173.9** AMPS	

PANELBOARD: **L2** (2)

SERVICE: 120 / 240 V, 3Φ, 4W | MAIN: 100 A MCB | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	MONITORING WELL PUMP (RZMW-2)	MTR	35	3	2.02			2.02			35	3	MTR	MONITORING WELL PUMP (SLMW-1)	2
3	"	MTR	"	"		2.02			2.02		"	"	MTR	"	4
5	"	MTR	"	"			2.02			2.02	"	"	MTR	"	6
7	CONTROL PANEL 'RIO-ASR'	MISC	20	1	1.20			0.36			20	1	REC	RECEPTACLES	8
9	BOREHOLE INJ. VALVE CONTROL PANEL	MISC	20	1		1.20			0.73		20	1	LTG	LIGHTING	10
11	SUPPLY WELL PUMP (SW-1)	MTR	20	3			1.27				20	1		SPARE	12
13	"	MTR	"	"	1.27						20	1		SPARE	14
15	"	MTR	"	"		1.27			0.40		20	1	MISC	DO PROBE MODULE & DISPLAY (AIT-1)	16
17	RECEPTACLE	REC	30	1							20	1		SPARE	18
19	DATALOGGER (SLMW-1)	MISC	20	1	0.40							1		SPACE	20
21	DATALOGGER (RZMW-2) RECEPTACLE	REC	20	1		0.18						1	--	SPACE	22
23	DATALOGGER (RZMW-2)	MISC	20	1			0.40					1	--	SPACE	24
25	DATALOGGER (RZMW-2) RECEPTACLE	REC	20	1	0.18							1	--	SPACE	26
27	SPARE	--	20	1							--	1	--	SPACE	28
29	SPARE	--		1								1	--	SPACE	30
31	SPARE	--		1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--		1							--	1	--	SPACE	36
37	SPD (SURGE PROTECTION DEVICE)	--	30	3							--	1	--	SPACE	38
39	"	--	"	"							--	1	--	SPACE	40
41	"	--	"	"							--	1	--	SPACE	42

TOTAL KVA Phase A 7.45 Phase B 7.82 Phase C 5.7

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.7	1.25	0.7	0.9		* PER NEC 215.3
RECEPTACLES (REC)	0.7	*	0.7	0.7		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	9.87	1.0	9.9	9.9		
LARGEST MOTOR	6.06	1.25	6.1	7.6		* PER NEC 430.24
MISCELLANEOUS (MISC)	3.6	1.0	3.6	3.6		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	21.0		21.0	22.7	**54.6** AMPS	

NOTES:

(1) CIRCUIT BREAKER TO INCLUDE TERMINATION LUGS TO SUPPORT LARGER CONDUCTORS. SEE POWER ONE-LINE DIAGRAM.

(2) PANELBOARD CONTAINS HI-LEG ON (B-PHASE). DO NOT CONNECT 120 VOLT CIRCUIT ON (B-PHASE) LEG.

BID SET

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PANEL SCHEDULES

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: E10

SAVED: 9/27/2019 1:45 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E10.DWG

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	DISTRIBUTED CONTROL–NORMALLY ACCESSIBLE TO OPERATOR
	DISCRETE INSTRUMENT – FIELD MOUNTED
	DISCRETE INSTRUMENT – PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR ①
	DISCRETE INSTRUMENT – AUXILLARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR ①
	INSTRUMENTS SHARING COMMON HOUSING
	INSTRUMENT FURNISHED WITH SPECIFIC FIELD COMPONENT (EG. PUMP, NLOWER, VALVE, CONVEYOR, ETC)
I	CONTROL INTERLOCK
A	CONTROL SYSTEM I/O INTERFACE – ANALOG SIGNAL TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.
D	CONTROL SYSTEM I/O INTERFACE – DISCRETE SIGNAL TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.
	DIAPHRAGM SEAL
FO — FO	FIBER OPTIC CABLE
ENET — ENET	ETHERNET CABLE
A — A	ANALOG CABLE

PROCESS DEVICE SYMBOLS

	REDUCER OR ENLARGER
	PRIMARY ELEMENT VENTURI TUBE
M	PRIMARY ELEMENT MAGNETIC FLOWMETER
	PRIMARY ELEMENT ULTRASONIC DOPPLER FLOWMETER
	PRIMARY ELEMENT PARSCHALL FLUME
	PRIMARY ELEMENT ORIFICE PLATE
	PRIMARY ELEMENT WEIR FLOWMETER
	PRIMARY ELEMENT TURBINE OR PROPELLER TYPE METER
	PRIMARY ELEMENT PITOT TUBE
	PRIMARY ELEMENT ROTAMETER
	PRIMARY ELEMENT ULTRASONIC TRANSIT TIME METER
	PRIMARY ELEMENT ULTRASONIC DOPPLER METER
	PRIMARY ELEMENT ULTRASONIC FLOW OR LEVEL METER
	FLOAT SWITCH
	DRAIN
	CHEMICAL INJECTION POINT
	MIXER

PROCESS DEVICE SYMBOLS (CONTINUED)

	VALVE: GLOBE OR OTHER IN–LINE TYPE, UNLESS OTHERWISE INDICATED.
	BUTTERFLY VALVE
	CHECK VALVE WITH FLOW DIRECTION AS INDICATED
	PLUG VALVE
REGULATED SIDE	PRESSURE REGULATING VALVE – SELF CONTAINED
	FLOW CONTROL GATE OR GATE VALVE
	CENTRIFUGAL BLOWER
	POSITIVE DISPLACEMENT BLOWER
	CENTRIFUGAL PUMP
M	SUBMERSIBLE PUMP
M	DIAPHRAGM PUMP & MOTOR
	DISC FLOW OR PROGRESSIVE CAVITY PUMP
	VERTICAL PUMP
M	MOTOR – MAY BE ELECTRIC, HYDRAULIC, OR PNEUMATIC ARROW DENOTES VARIABLE SPEED

ABBREVIATIONS

AIT	ANALYSIS INDICATING TRANSMITTER
AFD	ADJUST FREQUENCY DRIVE
BC	BYPASS CONTACTOR
BFI	BLOWN FUSE INDICATOR
C	CONTACTOR
CB	CIRCUIT BREAKER
CPT	CONTROL POWER TRANSMFORMER
CR	CONTROL RELAY
CRI	CONTROL RELAY, INTRINSIC
CRL	CONTROL RELAY, LATCH
DFR	DRIVE FAIL RELAY
DI	DIGITAL INDICATOR
DUP	DUPLEXOR
DRR	DRIVE RUN RELAY
DSC	DISCONNECT SWITCH
ETM	ELAPSED TIME METER
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FSR	FLOAT SWITCH RELAY
FU	FUSE
GRD	GROUND
HS	HAND SWITCH
IC	ISOLATION CONTACTOR
ISO	SIGNAL ISOLATOR/BOOSTER
LT	PILOT LIGHT
LE	LEVEL ELEMENT/TRANSDUCER
LIT	LEVEL INDICATING TRANSMITTER
LS	LEVEL SWITCH
M	MOTOR STARTER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MSP	MAIN SURGE PROTECTOR
OL	OVERLOAD
PB	PUSH BUTTON
PDB	POWER DISTRIBUTION BLOCK
PI	PRESSURE INDICATOR (PRESSURE GAUGE)
PIT	PRESSURE INDICATING TRANSMITTER
RIO	REMOTE I/O PANEL
POT	POTENTIOMETER
PM	PHASE MONITOR
PS	POWER SUPPLY
RCR	RUN COMMAND RELAY
RES	RESISTOR
S	SWITCH
SP	SURGE PROTECTOR
SS	SELECTOR SWITCH
SSRV	SOLID STATE REDUCED VOLTAGE STARTER
TB	TERMINAL BOARD, TERMINAL BLOCK
TC	TIME CLOCK
TR	TIME DELAY RELAY
TS	TEMPERATURE SWITCH
VFD	VARIABLE FREQUENCY DRIVE
XFMR	TRANSFORMER
ZS	LIMIT SWITCH

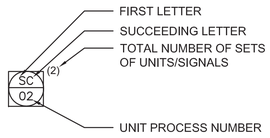
GENERAL NOTES

1. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS & ABBREVIATIONS MAY NOT APPLY TO THIS SPECIFIC PROJECT
2. THIS LEGEND APPLIES TO INSTRUMENTATION DIAGRAMS ONLY, & ITS SYMBOLS MAY NOT BE APPLICABLE TO NON–INSTRUMENTATION DRAWINGS
3. THIS LEGEND SHEET & THE INSTRUMENTATION DIAGRAMS & I –DRAWINGS ARE GENERALLY BASED ON THE INSTRUMENT SOCIETY OF AMERICA'S STANDARDS FOR PRACTICES IN INSTRUMENTATION SOME MODIFICATIONS, ADDITIONS, & ALTERATIONS MAY HAVE BEEN MADE TO ACCOMMODATE INDIVIDUAL PROJECT REQUIREMENTS
4. SOME PROCESS ITEMS (SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC.) WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE INSTRUMENTATION SHEETS.
5. SEE ELECTRICAL SHEETS & SPECIFICATIONS FOR ADDITIONAL CONTROL & INTERLOCK REQUIREMENTS FOR EQUIPMENT NOT SHOWN OR NOT PROVIDED BY THE INSTRUMENTATION SUPPLIER

INSTRUMENTATION IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		EMERGENCY	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		CLEANER	CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH OR OPEN
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW OR CLOSED
M	USER'S CHOICE	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RUN		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY, VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR TORQUE		WELL		
X	FAILURE	X AXIS			
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE, OR UNCLASSIFIED CONTROL ELEMENT	

INSTRUMENT IDENTIFICATION EXAMPLE



NETWORK DIAGRAM LEGEND

FIBER OPTIC CABLE	—·—·—·—
ETHERNET CABLE	—o—o—o—
MODBUS CABLE (RS–232)	—— - - ——
COAXIAL CABLE	- - - - - - - -

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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SYMBOLS & ABBREVIATIONS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
DWG NO: I1

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RECHARGE PUMP BUILDING (MCP)

ALLEN-BRADLEY COMPACTLOGIX PLC

OMNI ANTENNA

DATALOGGER

MODEM

SERIAL TO ETHERNET GATEWAY

SWITCH/MEDIA CONVERTER

50 µM DUPLEX MM PATCH CABLE

(LC)

(LC)

FIBER PATCH PANEL

50 µM 6-STRAND MM

50 µM 6-STRAND MM

(LC)

6" PANELVIEW PLUS 7

CHEMICAL FEED ENCLOSURE (RIO-CHEM)

FIBER PATCH PANEL

(LC)

50 µM DUPLEX MM PATCH CABLE

(LC)

MEDIA CONVERTER

ALLEN-BRADLEY POINT I/O

RECHARGE WELL BUILDING (RIO-RW)

6" PANELVIEW PLUS 7

ALLEN-BRADLEY POINT I/O

FIBER PATCH PANEL

(LC)

50 µM DUPLEX MM PATCH CABLE

(LC)

SWITCH/MEDIA CONVERTER

MONITORING WELL (RZMW-1)

OMNI ANTENNA

DATALOGGER

MODEM

MONITORING WELL (RZMW-2)

OMNI ANTENNA

DATALOGGER

MODEM

MONITORING WELL (SLMW-1)

OMNI ANTENNA

DATALOGGER

MODEM

LEGEND

- FIBER OPTIC CABLE
- ETHERNET CABLE
- MODBUS CABLE (RS-232)
- COAXIAL CABLE

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

NETWORK DIAGRAM

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: I2

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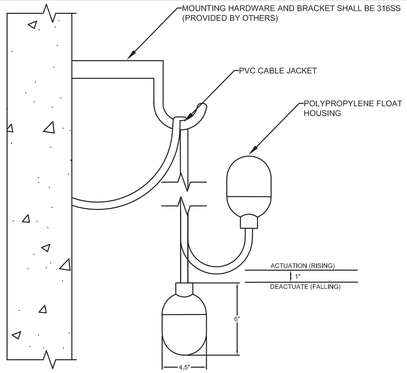
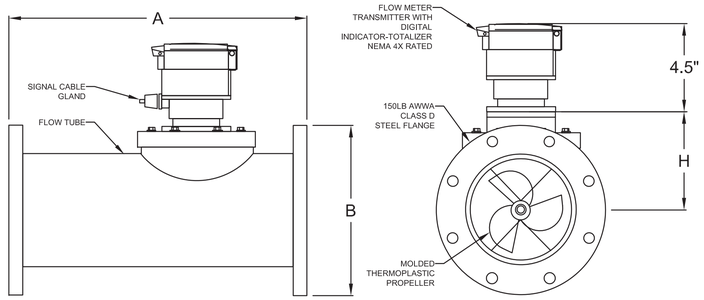


BRACKET MOUNT FLOAT DETAIL
N.T.S

NOTES:
1. SWITCHES SHALL BE MOUNTED AND ORIENTED IN ACCORDANCE WITH THE MANUFACTURER REQUIREMENTS
2. WETTED MATERIALS SHALL BE CHEMICALLY INERT TO THE PROCESS
3. CABLES SHALL BE RATED WATERTIGHT AND FOR CONTINUOUS UV EXPOSURE WITHOUT DEGRADATION
4. SUSPENDED FLOATS SHALL BE INTERNALLY WEIGHTED
5. SEE DRAWING M6 FOR INFORMATION REGARDING CONCRETE PENETRATIONS/SEALS.
6. FLOATS SHALL BE ANCHOR SCIENTIFIC ROTO FLOAT

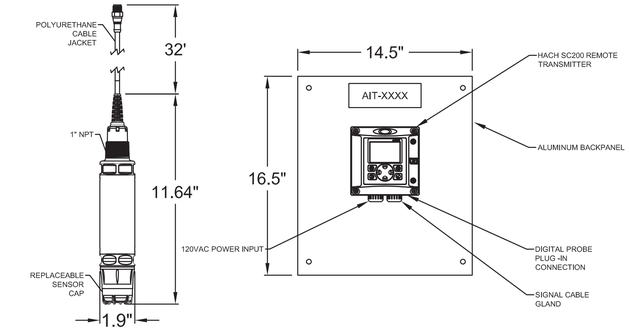
FLOAT SWITCH SCHEDULE		
TAG	LOCATION	ELEVATION
LSL-03A	CHEM TANK NO. 1	1' TANK BOTTOM
LSL-03B	CHEM TANK NO. 2	1' TANK BOTTOM
LS-02	SUBMERSIBLE PUMP WETWELL	1.5' AFF
LSL-02	SUBMERSIBLE PUMP WETWELL	3' AFF
LSH-02	SUBMERSIBLE PUMP WETWELL	14' AFF



MONITORING WELL PROPELLER TYPE FLOW METER DETAIL
N.T.S

NOTES:
1. REFER TO CONTRACT DRAWINGS FOR PROCESS PIPING SIZE AND MATERIAL
2. WETTED MATERIALS SHALL BE CHEMICALLY INERT TO THE PROCESS
3. TRANSMITTER REQUIRES LOOP POWER
4. COORDINATE WITH MANUFACTURER TO ENSURE PROPER UPSTREAM AND DOWNSTREAM REQUIREMENTS FOR THE FLOW TUBE ARE MET
5. PROPELLER FLOW METER SHALL BE A 2" WATER SPECIALTIES ML-04

PROPELLER FLOW METER SCHEDULE					
SIZE	LOCATIONS	FLOW RANGE	A	B	H
2"	SLMW-1, RZMW-1, RZMW-2	40-160 GPM	18.25"	6"	5.25"



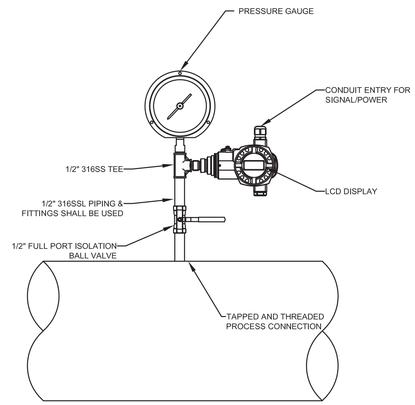
LDO2 PROBE DETAILS

REMOTE TRANSMITTER DETAILS

DISSOLVED OXYGEN ANALYZER DETAIL
N.T.S

NOTES:
1. REFER TO MECHANICAL DRAWING M7 FOR PROBE MOUNTING DETAILS
2. 120VAC POWER FOR TRANSMITTER SHALL BE PROVIDED RIO-RW
3. PROBE COMES EQUIPPED WITH 32' CABLE. PROVIDE HACH DIGITAL EXTENSION CABLE IF REQUIRED
4. TRANSMITTER SHALL BE A HACH SC200 CONTROLLER WITH LDO2 PROBE (9020000) AND UNION MOUNT KIT (9253000)

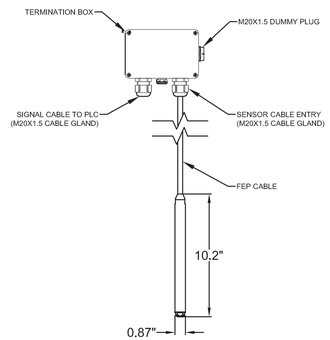
DO ANALYZER SCHEDULE		
TAG	LOCATION	RANGE
AE/AIT-01	RECHARGE WELL PIPING	0-40 PPM



PRESSURE TRANSMITTER AND GAUGE ASSEMBLY DETAIL
N.T.S

NOTES:
1. ORIENTATION OF TRANSMITTER LCD AND GAUGE SHALL BE FOR EASY VIEWING OR MAINTENANCE.
2. REFER TO CONTRACT DRAWINGS FOR PROCESS PIPING SIZE AND MATERIAL.
3. WETTED MATERIALS SHALL BE CHEMICALLY INERT TO THE PROCESS.
4. PRESSURE GAUGE SHALL BE ASHCROFT TYPE 1279 DURAGAUGE WITH PLUS PERFORMANCE, 0-
5. PRESSURE TRANSMITTER SHALL BE AN ENDRESS & HAUSER CERABAR S PMP71, 0-150 PSI

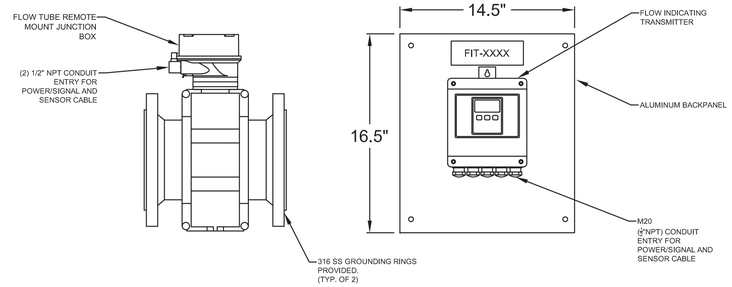
PRESSURE ASSEMBLY SCHEDULE		
TAG	LOCATION	RANGE
PI/PIT-01	RECHARGE WELL PIPING	0-150 PSI



SUBMERSIBLE LEVEL TRANSDUCER DETAIL
N.T.S

NOTES:
1. PROBE SHALL COME EQUIPPED WITH FEP CABLE. SHORTABLE. COORDINATE WITH CONTRACTOR ON PROPER CABLE LENGTH AND RANGE
2. SUSPENSION CLAMP AND TERMINAL BOX SHALL BE PROVIDED.
3. SEE DRAWING M6 FOR INFORMATION REGARDING CONCRETE PENETRATIONS/SEALS.
4. SUBMERSIBLE LEVEL TRANSDUCER SHALL BE AN ENDRESS & HAUSER FMX21 WATERPILOT

SUBMERSIBLE LEVEL TRANSDUCER SCHEDULE		
TAG	LOCATION	RANGE
LE-02A	RECHARGE PUMP INTAKE SCREEN WETWELL	0-14 FT
LE-02B	RECHARGE PUMP WETWELL	0-14 FT
LE-01	RECHARGE WELL	0-75 FT



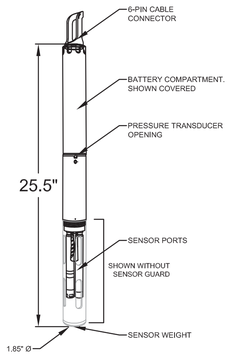
FLOW TUBE

REMOTE TRANSMITTER DETAILS

RECHARGE WELL MAGNETIC FLOW METER INSTALLATION DETAIL- REMOTE MOUNT
N.T.S

NOTES:
1. REFER TO CONTRACT DRAWINGS FOR PROCESS PIPING SIZE AND MATERIAL
2. MAGNETIC FLOW METER COMES EQUIPPED WITH TWO 316 SS GROUND RINGS GROUNDING RINGS REQUIRED FOR METALLIC AND NON-METALLIC PIPE INSTALLATIONS
3. CONNECT GROUND GRID CONDUCTOR TO TRANSMITTER GROUND SCREW
4. COORDINATE WITH MANUFACTURER TO ENSURE PROPER UPSTREAM AND DOWNSTREAM REQUIREMENTS FOR THE FLOW TUBE ARE MET
5. MAGNETIC FLOW METER SHALL BE A 6" ENDRESS & HAUSER PROMAG W 400 WITH REMOTE TRANSMITTER
6. 120V POWER SHALL BE SUPPLIED BY RIO-RW
7. REFER TO MANUFACTURER LITERATURE FOR PROPER GROUNDING AND FLOW TUBE LAY LENGTHS

MAGNETIC FLOW METER SCHEDULE		
TAG	LOCATION	RANGE
FE/FIT-01	RECHARGE WELL	0-1500 GPM



TURBIDITY ANALYZER CARRIER PROBE DETAIL
N.T.S

NOTES:
1. CARRIER PROBE HAS THE ABILITY TO HOUSE UP TO 4 SENSORS
2. ANALYZER PROBE REQUIRES (2) D-CELL BATTERIES
3. SIGNAL OUTPUT ADAPTER REQUIRED TO CONVERT SIGNAL TO SDI-12 (599820)
4. COORDINATE WITH CONTRACTOR TO SELECT APPROPRIATE LENGTH OF 6-PIN SENSOR CABLE WITH FLYING LEAD
5. PROVIDE MANUFACTURER'S STRAIN RELIEF AND MOUNT PER DRAWING M1
6. TURBIDITY ANALYZER SHALL BE YSI EXO1 SONDE (599501-00) WITH EXO TURBIDITY SENSOR (599101-01) AND CONDUCTIVITY/TEMPERATURE SENSOR (599870), TEMPERATURE COMPENSATION REQUIRED FOR ACCURATE TURBIDITY READINGS

TURBIDITY ANALYZER SCHEDULE		
TAG	LOCATION	RANGE
AE-02	RECHARGE PUMP WETWELL	0-200 NTU/FNU

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

INSTRUMENT DETAILS

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: SEPT 2019
INDEX NO:
DWG NO: I3

HMI

CHEMICAL FEED (RIO-CHEM)

TANK 2 LOW LEVEL LAL — LOW LEVEL TANK 2 D

TANK 1 LOW LEVEL LAL — LOW LEVEL TANK 1 D

FAULT YA, IN HAND YC, IN REMOTE YC, RUNNING YI, CONTROL SS YC, SPEED REF. SI, SPEED COMMAND SC

TYPICAL FOR EACH OF PUMPS 1 AND 2

PUMP FAIL D, PUMP IN REMOTE D, PUMP RUN STATUS D, PUMP START/STOP D, CHEMICAL FLOW SPEED REF A, CHEMICAL FLOW SPEED CONTROL A

LSL 03A

2,500 GALLON TANK NO. 1

LSL 03B

2,500 GALLON TANK NO. 2

LOCAL CONTROL PANEL

FEED PUMP SP1: M, 1", ½", PRV, PI 03A, BPV, ½"

FEED PUMP SP2: M, 1", ½", PRV, PI 03B, BPV, ½"

DUPLEX SKID

TO CHEMICAL FEED INJECTION VAULT

FROM GRAVITY INTAKE STRUCTURE — 24" — 24"

12-STRAND MM FIBER OPTIC (FO FO FO FO)

RECHARGE PUMP (MCP)

TURBIDITY AI, LEVEL LI, WATER PRESENSE YI, LOW LEVEL LAL, HIGH LEVEL LAH, LEVEL LI

TURBIDITY *, WELL SCREEN LEVEL A, WATER PRESENSE D, LOW LEVEL D, EMERGENCY HIGH LEVEL D, WELL LEVEL A

*SEE NOTE 1

SDI-12 ×5

LSH 02, LSL 02, LS 02, AE 02, LE 02A, LE 02B

**

**SEE NOTE 3

RECHARGE PUMP

FAULT YA, IN HAND YC, IN REMOTE YC, RUNNING YI, CONTROL SS YC, SPEED REF. SI, SPEED COMMAND SC

PUMP FAIL D, PUMP IN HAND D, PUMP IN REMOTE D, PUMP RUN STATUS D, PUMP CONTROL D, PUMP SPEED A, PUMP SPEED CONTROL A

ENET ×7

ARV

CV 6"

TO RECHARGE WELL BUILDING

VFD

12-STRAND MM FIBER OPTIC (FO FO FO)

RECHARGE WELL (RIO-RW)

RUNNING YI, OL YA, IN REMOTE YC, CONTROL SS YC

RUNNING D, OVERLOAD D, IN REMOTE D, PUMP CONTROL D

DO AI, FLOW FI, PRESSURE PI, LEVEL LI

DISSOLVED OXYGEN A, WELL FLOW A, PRESSURE A, WELL LEVEL A

AIT 01, AE 01, FIT 01, FE 01, PI 01, PIT 01, ARV

6", 10"

TO BACK-FLUSH WATER POND

BOREHOLE INJECTION CONTROL VALVE HPU **

**SEE NOTE 3

24"

PURGE PUMP **

LE 01

FROM RECHARGE PUMP BUILDING

MOTOR STARTER

CHEMICAL FEED ENCLOSURE

RECHARGE PUMP BUILDING

RECHARGE WELL BUILDING

NOTES

1. SDI-12 SIGNAL FROM TRUBIDITY AE SHALL GO TO DATALOGGER IN MCP AND DISPLAYED AND RECORDED BY THE PLC ALARM AT HIGH TURBIDITY.
2. MONITORING WELL SIGNALS SHALL BE MONITORED BY THEIR RESPECTIVE DATALOGGER AND ARE NOT SHOWN AS THEY ARE NOT A PART OF THE MCP PLC SYSTEM.
3. STATIC INTAKE SCREEN, PURGE PUMP, AND BOREHOLE INJECTION CONTROL VALVE INSTRUMENTATION AND CONTROLS DETAILED FURTHER IN SPECIFICATION SECTIONS 01330, INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS, 11450, BOREHOLE INJECTION CONTROL VALVE SYSTEM, AND 11400, STATIC INTAKE SCREEN.

LTR.	DATE	REVISIONS	BY	APPRD.
2	JAN/2020	ADDENDUM 2–INSTRUMENTATION REF.	JTK	SPM

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PROCESS P&ID

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: SEPT 2019
INDEX NO:
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