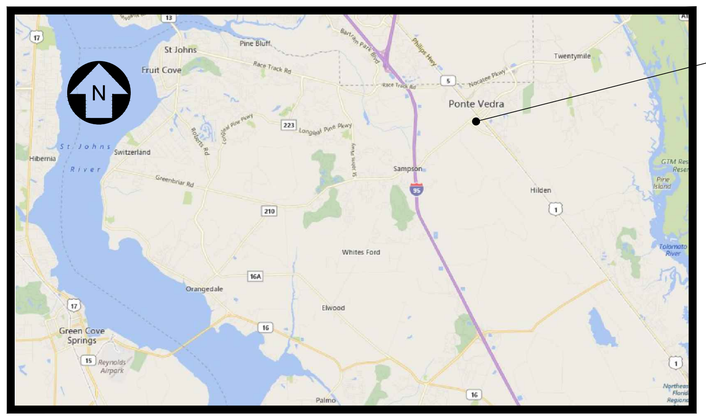
CONSTRUCTION DRAWINGS
FOR
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS – PHASE II

PREPARED FOR:

JEA
Building Community®

APRIL 2020
ISSUED FOR BID
JEA PROJECT NO.: 8004340
Mott MacDonald PROJECT NO.: 502398244



PROJECT LOCATION
106 COUNTY ROAD 210 W
ST JOHNS, FL 32259

LOCATION MAP
SCALE: NTS

MOTT MACDONALD
Mott MacDonald Florida, LLC

Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783
10245 Centurion Pkwy. N., Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090

IFB BID NO.:
BID DUE DATE:
TIME OF RECEIPT:
TIME OF OPENING:
BID PLACE: JEA CUSTOMER CARE
1ST FLOOR, ROOM 002
21 W. CHURCH STREET
JACKSONVILLE, FL

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ISSUED FOR BID

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REVISIONS

NO.	BY	DATE
6.		
5.		
4.		
3.		
2.		
1.		

DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community℠

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

INDEX OF DRAWINGS

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 1
DRAWING NO. G-2

NOT APPLICABLE	APPLICABLE	

SURVEY AND LOCATE DATA:

NOT APPLICABLE	APPLICABLE	NOTE
☒	☐	1. ALL ELEVATIONS ARE BASED ON U.S.C.&G.S. DATUM AND SHOWN IN FEET.
☐	☒	2. ELEVATIONS ARE BASED ON N.A.V.D. 1988.
☐	☒	3. LOCATION OF EXISTING UTILITIES OBTAINED BY SOFT DIG LOCATES WHERE SHOWN ON PLANS, OR INCLUDED WITH BID SPECS.
☐	☒	4. EXISTING WATER AND SEWER LINES ARE SHOWN AS PER FIELD LOCATES AND AS-BUILT PLANS.
☒	☐	5. UNDERGROUND UTILITIES WERE LOCATED UTILIZING GROUND PENETRATING RADAR (GPR) AND A DIGITAL LOCATOR. CONTRACTOR SHALL BE AWARE THAT IN SOME CASES UTILITIES HAVE BEEN LOCATED, AND SURVEY HAS BEEN COMPLETED ONLY ON ONE SIDE OF THE ROAD.
☒	☐	6. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF MANHOLES, CATCH BASINS, INLETS ETC. OR ALONG THE CENTER LINE OF FORCE MAINS AND WATER MAINS.
☐	☒	7. INVERT ELEVATIONS SHOWN ON DRAWINGS REFER TO THE CENTERLINE OF MANHOLES, UNLESS OTHERWISE INDICATED.
☐	☒	8. THE LOCATION OF ALL EXISTING SEWER AND WATER SERVICE LINES MAY NOT BE INDICATED ON THESE PLANS. THE LOCATION OF NEW SERVICES SHALL BE VERIFIED IN THE FIELD.
☐	☒	9. BENCHMARK DATA: SEE SHEET C-1 AND C-5.

PERMIT REQUIREMENTS (NOT ALL INCLUSIVE):

NOT APPLICABLE	APPLICABLE	NOTE
☐	☒	1. CONTRACTOR TO OBTAIN ALL REQUIRED RIGHT-OF-WAY PERMITS.
☒	☐	2. CONTRACTOR SHALL NOT OPEN CUT STREETS IN THE PROJECT AREA UNLESS SPECIFICALLY SHOWN ON PLANS
☐	☒	3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CONSUMPTIVE USE PERMIT (C.U.P.) THROUGH THE ST. JOHNS WATER MANAGEMENT DISTRICT SHOULD DEWATERING ACTIVITIES BE REQUIRED.
☐	☒	4. THE DEPARTMENT OF TRANSPORTATION, RAILROAD COMPANIES AND ST JOHNS COUNTY ARE TO BE NOTIFIED IN ADVANCE OF CONSTRUCTION PER THEIR RESPECTIVE PERMIT CONDITIONS.
☐	☒	5. ALL WORK SHALL BE IN ACCORDANCE WITH BID DOCUMENTS, JEA WATER AND SEWER STANDARDS, DETAILS AND MATERIALS MANUAL, REV. 01/19 OR MOST RECENT REVISION AND ALL APPLICABLE STATE AND LOCAL REGULATIONS.
☒	☐	6. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS AND SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED.
☐	☒	7. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.
☐	☒	8. TREE PROTECTION SHALL BE IN ACCORDANCE WITH ST JOHNS COUNTY AND/OR AS DETAILED ON SPECIFIC PLAN SHEETS. NO TRIMMING OF OVERHANGING TREE LIMBS WILL BE ALLOWED. USE SMALLER EQUIPMENT IF NECESSARY.
☒	☐	9. THE CONTRACTOR SHALL LOCATE THE DRAINAGE INLET STRUCTURES IN THE PROJECT AREA AND ERECT SEDIMENTATION CONTROL DEVICES AS NECESSARY PER THE CITY OF JACKSONVILLE STORMWATER POLLUTION PREVENTION PLAN.
☐	☒	10. CONTRACTOR TO COORDINATE WORK WITH OTHER UTILITIES DURING CONSTRUCTION.

EXISTING UTILITY PROTECTION:

1. IN ORDER TO REDUCE THE DISRUPTION AND COST OF UTILITY DAMAGES OCCURRING IN THE ST JOHNS COUNTY RIGHT-OF-WAY AND EASEMENTS, THE CONTRACTOR SHALL PREVENT DAMAGES TO EXISTING UTILITIES CAUSED BY HIS WORK THROUGH FIELD VERIFICATION OF THE LOCATION OF THE EXISTING UTILITIES. IN THE CASE OF OPEN EXCAVATION, VERIFICATION MAY BE PERFORMED DURING THE CONTRACTORS WORK. IN THE CASE OF DIRECTIONAL DRILLING, VERIFICATION SHALL TAKE PLACE PRIOR TO MOBILIZATION OF THE DRILLING EQUIPMENT.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES AS NEEDED TO AVOID CONTACT. EXISTING UTILITIES SHALL BE EXPOSED USING DETECTION EQUIPMENT OR OTHER ACCEPTABLE MEANS. SUCH METHODS MAY INCLUDE BUT SHALL NOT BE LIMITED TO "SOFT DIG" EQUIPMENT AND GROUND PENETRATING RADAR (GPR). THE EXCAVATOR SHALL BE HELD LIABLE FOR DAMAGES CAUSED TO THE COUNTY'S/JEA'S INFRASTRUCTURE AND THE EXISTING FACILITIES OF OTHER UTILITY COMPANIES.
3. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

PRE-CONSTRUCTION SURVEY:

1. PRIOR TO COMMENCING WORK (INCLUDING ANY DEWATERING, EXCAVATION, AND CLEARING), THE CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITIONS OF THE STRUCTURES USING PROFESSIONAL GRADE PHOTOGRAPHY AND VIDEOS (INCLUDE CLOSE UP VIEWS). NO WORK SHALL BEGIN UNTIL SURVEY DOCUMENTATION HAS BEEN SUBMITTED TO THE OWNER'S REPRESENTATIVE. FULL PAYMENT WILL NOT BE MADE UNTIL SURVEY DOCUMENTATION HAS BEEN COMPLETED AND SUBMITTED.

INSTALLATION NOTES:

NOT APPLICABLE	APPLICABLE	NOTE
☒	☐	1. CONTRACTOR TO REHABILITATE ALL MANHOLES ON PIPE BURST SEWERS VIA COATING/LINING PER JEA SPECIFICATION 446-2, UNLESS OTHERWISE NOTED ON THE PLANS.
☒	☐	2. CONTRACTOR TO RENEW, REHABILITATE, REPLACE OR REINSTALL AS APPLICABLE ALL SERVICE LATERALS TO R.O.W. LINE.
☐	☒	3. CONTRACTOR TO INSTALL SEWER SERVICE PIPING A MINIMUM OF 60 INCHES BELOW GRADE. WHERE NEW SANITARY SEWER MAIN IS LESS THAN 5 FEET DEEP, THE SEWER SERVICE PIPE SHALL BE INSTALLED AS DEEP AS POSSIBLE.
☒	☐	4. WHEN THE DISTANCE BETWEEN A POWER POLE AND THE TRENCH IS LESS THAN THE TRENCH DEPTH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH JEA ELECTRICAL PERSONNEL TO SECURE POWER POLES. THE CONTACTS FOR JEA ARE AS FOLLOWS: NORTHSIDE~EAST of US-1 MIKE CORBITT @ 665-7991 (mobile 662-0635) NORTHSIDE~WEST of US-1 ANDY YEAGER @ 665-7998 (mobile 662-0622) NORTHSIDE~BACKUP ALAN AINSLEY @ 665-7303 (mobile 662-6557) SOUTHSIDE~SOUTH of BEACH BLVD. TOM KERNS @ 665-6847 (mobile 860-1687) SOUTHSIDE~NORTH of BEACH BLVD. DERYL BASFORD @ 665-6855 (mobile 662-0616) SOUTHSIDE~BACKUP EDDIE GALES @ 665-6855 (mobile 662-0616) A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED FOR AN OUTSIDE MEETING WITH JEA ELECTRICAL TO DISCUSS THE REQUIRED WORK. ADDITIONAL TIME WILL BE REQUIRED BY JEA ELECTRICAL FOR ANY REQUIRED WORK TO BE ACCOMPLISHED.
☐	☒	5. ALL NEW STORM DRAIN PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.
☐	☒	6. THE DESIGN FOR THE PROJECT IS BASED UPON THE "OPEN-CUT" METHOD OF CONSTRUCTION. IF USING ALTERNATIVE MEANS OR METHODS, THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE STANDARDS FOR THAT MEANS OR METHOD.
☐	☒	7. THE CONTRACTOR SHALL MINIMIZE SERVICE INTERRUPTIONS AT SERVICE CONNECTIONS. THE MEANS AND METHODS SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. NO EXISTING ACTIVE SERVICE SHALL BE LEFT INTERRUPTED AT THE END OF THE WORK DAY.
☐	☒	8. CONTRACTOR SHALL PROVIDE ADDITIONAL CORPORATION STOPS FOR FILLING AND DRAINING PURPOSES DURING CONSTRUCTION AS NEEDED. CORPORATION STOPS ARE TO BE PLUGGED AND LEFT IN PLACE. INDICATE CORPORATION STOP LOCATIONS ON RECORD DRAWINGS (AS-BUILTS).
☒	☐	9. WATER AND SEWER SERVICES SHALL BE TRANSFERRED TO THE NEW MAIN UPON COMPLETION AND F.D.E.P./J.E.A. CERTIFICATION, AND PRIOR TO THE EXISTING MAINS BEING ABANDONED.
☒	☐	10. IF EXISTING VALVES ARE IN UNPAVED AREAS AND ARE TO BE TAKEN OUT OF SERVICE, THEY SHALL BE CLOSED AND THE VALVE BOX AND COVER SHALL BE REMOVED. IF THE VALVES ARE UNDER PAVED AREAS, THEY SHALL BE CLOSED, THE VALVE BOX GROUT FILLED AND THE COVER REMOVED.
☒	☐	11. CONTRACTOR SHALL REPLACE EXISTING WATER METER BOXES WHEN DEEMED NECESSARY BY THE JEA INSPECTOR.
☒	☐	12. CONTRACTOR TO PROVIDE ADDITIONAL DEPTH OF BURY VIA PIPE JOINT DEFLECTION TO ACCOMMODATE VALVE SELECTION PER JEA STANDARDS.
☒	☐	13. WATER METERS MAY REQUIRE RELOCATION FOR CONSTRUCTION, CONTRACTOR SHALL CONTACT JEA METER DEPARTMENT AND RELOCATE WATER METERS AS NECESSARY.
☐	☒	14. PRIOR TO COMMENCING ANY EXCAVATION OR GRADING, THE CONTRACTOR SHALL OBTAIN ALL GEOTECHNICAL AND TOPOGRAPHIC SURVEY DATA AND LOCATIONS OF ABOVE GROUND AND UNDERGROUND UTILITIES. SHOULD THE CONTRACTOR DISCOVER ANY INACCURACIES, ERRORS OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER IN ORDER THAT PROPER ADJUSTMENTS CAN BE ANTICIPATED AND ORDERED.
☒	☐	15. SHEET PILING WILL BE REQUIRED ON ALL EXCAVATIONS DEEPER THAN 16 FEET.

UTILITY CONTACTS:

A. AT&T ~ GENERAL NUMBER — 904-519-2529
B. AT&T ~ ADAM DUGAN ~ NORTH DISTRICT — 904-781-0741
C. AT&T ~ BILL LAKE ~ SOUTH DISTRICT — 904-303-8754
D. CITY OF JACKSONVILLE ~ PUBLIC WORKS DEPT. — 904-255-8762
E. CITY OF JACKSONVILLE ~ TRAFFIC OPERATIONS — 904-387-8861
F. FLORIDA DEPT. OF TRANSPORTATION — 904-825-5036
G. JEA ~ WATER COLLECTION & DISTRIBUTION ~ RANDY ELLIS — 904-665-7133
H. JEA ~ SEWER COLLECTION & DISTRIBUTION ~ NATHANIAL ROUSE — 904-665-8183
I. JEA ~ GENERAL INFORMATION — 904-665-6000
J. JEA ~ PROJECT OUTREACH — 904-665-7500
K. JEA ~ POWER OUTAGES — 904-665-6000
L. JEA ~ SEWER PROBLEMS — 904-665-4802
M. JEA ~ WATER PROBLEMS — 904-665-4801
N. JEA ~ WATER & SEWER LOCATES — 904-665-8410
O. COMCAST ~ EMERGENCY HOTLINE — 904-380-6274
P. JACKSONVILLE TRANSIT AUTHORITY (JTA) ~ IVAN MITCHELL — 904-633-8523
Q. TECO/PEOPLES GAS ~ BEN MOBLEY — 904-545-8958
R. SUNSHINE ONE CALL — 811
S. FDOT - ITS - FOC ~ JOSH REICHERT — 904-360-5642
T. JEA ENVIRONMENTAL GROUP — 904 665-4517
U. COJ TRAFFIC MOT ~ RONNIE THIGPEN — 904-255-8704
V. COJ TRAFFIC SIGNALS ~ MASON BOYD — 904-255-7549
W. FLORIDA GAS TRANSMISSION ~ JACOB WALLACE — 325-494-0028
X. FLORIDA POWER AND LIGHT ~ CHRIS WRENN — 904-824-7659
Y. ST JOHNS COUNTY ~ RIGHT-OF-WAY PERMITTING ~ RICK MAULDIN — 904-209-0134
Z. ST JOHNS COUNTY ~ TRAFFIC SIGNALS ~ HANK MEIN — 904-209-0173

ISSUED FOR BID

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10245 Centurion Parkway North
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Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

NO.	BY	DATE	REVISIONS
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4.			
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2.			
1.	MM	APRIL 2020	CONFORMED DRAWING

DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA Building Community[sm]

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

GENERAL NOTES

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE
NO. SHEETS	105
SHEET NO.	2
DRAWING NO.	G-3

ABBREVIATIONS:

GENERAL

AC	ASBESTOS CEMENT	INT	INTERSECTION
AG	ALLEY GRATE	INV	INVERT
ARV	AIR RELEASE VALVE	IP	IRON PIPE
BL	BASE LINE	LT	LEFT
BM	BENCH MARK	MB	MAIL BOX
BC	BOTTOM OF CURVE	MH	MANHOLE
CB	CATCH BASIN	NC	NORMALLY CLOSED
CI	CAST IRON	NO	NORMALLY OPEN
CL	CENTER LINE	NTS	NOT TO SCALE
CEP	CITY ELECTRIC POLE	OE	OVERHEAD ELECTRIC
CONC	CONCRETE	OT	OVERHEAD TELEPHONE
CONST	CONSTRUCTION	PRM	PERMANENT REFERENCE MONUMENT
CMP	CORRUGATED METAL PIPE		
CMPA	CORRUGATED METAL PIPE ARCH	PS	PUMP STATION
CULV	CULVERT	PVC	POLYVINYL CHLORIDE
C&G	CURB & GUTTER	r	RADIUS
DBI	DITCH BOTTOM INVERT	R	RATE
DW OR DR	DRIVEWAY	RT	RIGHT
DI	DUCTILE IRON	R/W	RIGHT OF WAY
EOP	EDGE OF PAVEMENT	RD	ROOF DRAIN
ELEC	ELECTRICAL	SHC	SODIUM HYPOCHLORITE
ELEV	ELEVATION	SHGWT	SEASONAL HIGH GROUNDWATER TABLE
ERCP	ELLIPTICAL REINFORCED CONC. PIPE	SLGWT	SEASONAL LOW GROUNDWATER TABLE
		STA	STATION
EXP JT	EXPANSION JOINT	TC	TOP OF CURVE
FH	FIRE HYDRANT	TOS	TOP OF SLAB
FL	FLOW LINE	TYP	TYPICAL
FM	FORCE MAIN	UGE	UNDERGROUND ELECTRIC
GALV/GLV	GALVANIZED	UGT	UNDERGROUND TELEPHONE
G	GAS LINE	USC & GS	UNITED STATES COASTAL & GEODETIC SURVEY
GV	GATE VALVE		
GST	GROUND STORAGE TANK	VC	VITRIFIED CLAY
HDPE	HIGH DENSITY POLYETHYLENE PIPE	WM	WATER MAIN OR METER
		WV	WATER VALVE
HW	HEAD WALL	WLP	WOOD LIGHT POLE
HC	HIGH CURB	WPP	WOOD POWER POLE
		WTP	WATER TREATMENT PLANT

PROCESS FLOW STREAMS

D	DRAIN
DF	DIESEL FUEL
EX	EXHAUST
FILL	CHEMICAL FILL LINE
FM	FORCE MAIN OR FLOWMETER
OVF	OVERFLOW
PW	POTABLE WATER
RE	RECLAIMED WATER
SA	SUPPLEMENTAL AIR
SAN	SANITARY SEWER
SHC	SODIUM HYPOCHLORITE
SPL	SAMPLE LINE
SUC	SUCTION
SW	STORM WATER
V	VENT

PIPE MATERIALS

CI	CAST IRON
CPVC	CHLORINATED POLYVINYL CHLORIDE
DI	DUCTILE IRON
FRP	FIBERGLASS REINFORCED PLASTIC
GS	GALVANIZED STEEL
HDPE	HIGH DENSITY POLYETHYLENE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PVC	POLYVINYL CHLORIDE PRESSURE PIPE
RC	REINFORCED CONCRETE SEWER PIPE
RUB	RUBBER
SST	STAINLESS STEEL

PIPE JOINTS

BF	BLIND FLANGE
FLG	FLANGE
PE	PLAIN END
MJ	MECHANICAL JOINT
REST	RESTRAINED
TRD	THREADED

GENERAL NOTES:

1. THE CONTRACTOR SHALL STRICTLY FOLLOW DESIGN STANDARDS AS GIVEN IN "WATER AND SEWER STANDARD MANUAL" BY JEA, REV. 01/19 OR MOST RECENT REVISION FOR ALL UTILITY INSTALLATION EXCEPT AS OTHERWISE NOTED.
2. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
3. SUBMITTAL OF AS-BUILT SITE SURVEY, INCLUDING BENCHMARKS, IS REQUIRED PRIOR TO SCHEDULING FINAL INSPECTION. AS-BUILT SURVEY SHALL BE SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR IN THE STATE OF FLORIDA AND SHALL INCLUDE COORDINATES OF ALL NEW STRUCTURES, ALL PIPE FITTINGS AND VALVES 2-INCH AND LARGER AND ELEVATIONS OF ALL NEW STRUCTURES.
4. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 AND ARE BASED ON BENCHMARKS AS SHOWN ON THE SURVEY.
5. TOPOGRAPHIC SURVEY WAS PERFORMED BY:
   R.E. HOLLAND & ASSOCIATES, INC.
   9770 BAY MEADOWS ROAD
   SUITE 105
   JACKSONVILLE, FL 32256
   TEL: (904) 260-6300
6. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. BY SUBMITTING A BID, THE CONTRACTOR SHALL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE FEATURES AFFECTING HIS WORK.
7. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PHYSICALLY VERIFY LOCATION OF ALL UTILITIES, ABOVE AND BELOW GROUND AND NOTIFY JEA 72 HOURS PRIOR TO DIGGING IN ANY PORTION OF THE SITE.
8. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY UPON FINDING ANY CONFLICTS DURING CONSTRUCTION ON ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
9. THE CONTRACTOR SHALL NOTE ALL EXISTING UTILITIES ENCOUNTERED DURING EXCAVATION AND INCLUDE ON AS-BUILT DRAWINGS.
10. THE CONTRACTOR SHALL, BY REPAIR OR REPLACEMENT, RETURN TO EQUAL OR BETTER CONDITION ALL PAVEMENT, SIDEWALK, LAWNS, UTILITIES AND OTHER ITEMS DAMAGED BY THE CONSTRUCTION ACTIVITY.
11. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE THAT ADEQUATE EROSION AND SEDIMENTATION CONTROL ARE MAINTAINED AT ALL TIMES DURING THE PROJECT.
12. ALL BRUSH, STRIPPING OR UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. HOWEVER, NONE OF THE WASTE MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT PERMISSION OF THE OWNER.
13. NO REPRESENTATION IS MADE REGARDING BALANCED EARTHWORK. ANY EXCESS MATERIAL, OR MATERIAL NOT SUITABLE FOR USE AS BACKFILL, SHALL BE HAULED AWAY TO AN APPROVED DISPOSAL AT THE CONTRACTOR'S EXPENSE, AND WHERE NECESSARY, SUITABLE FILL AND BACKFILL SHALL BE PROVIDED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
14. CONTRACTOR SHALL PERFORM IN THE PRESENCE OF JEA AND THE ENGINEER A PRE-CONSTRUCTION VIDEO DOCUMENTING EXISTING CONDITIONS.
15. THIS PROJECT IS BEING CONSTRUCTED IN TWO PHASES. PHASE I IS FOR THE CONSTRUCTION OF THE TWO GSTs. PHASE II INCLUDED HEREIN IS FOR CONSTRUCTION OF ALL OTHER FACILITIES SHOWN, FINAL GRADING, AND LANDSCAPING AS SHOWN ON THE DRAWINGS.

GENERAL LEGEND

	EXISTING	PROPOSED
RIGHT OF WAY LINE		
CENTER LINE		
FENCE (HEIGHT & MAT'L. INDICATED)	x 6' CHAIN LINK x	x 6' CHAIN LINK x
DITCH OR SWALE		
DRAIN PIPE	D D	D
CATCH BASIN		
STORM DRAIN GRATE		
STORM SEWER (SIZE & MAT'L. INDICATED)	24" RCP	24" RCP
STORM SEWER, REPLACEMENT (IN CASE 10 TRENCH) SIZE, MAT'L. INDICATED		
STORM SEWER (SIZE & MAT'L. INDICATED)		
CULVERT W/ENDWALLS (SIZE & MAT'L. INDICATED)	18" CMP	18" CMP
WATER MAIN SIZE, TYPE INDICATED	W 6" W PVC	W W 6" PVC
WATER MAIN (IN CASE 10 TRENCH) SIZE, TYPE INDICATED		
GRAVITY SEWER SIZE, TYPE INDICATED	S 8" S PVC	S 8" PVC
SEWER FORCE MAIN SIZE, TYPE INDICATED	FM 10" PVC	FM 10" PVC
LINE VALVE		
CHECK VALVE		
FIRE HYDRANT		
VALVE (TYPE INDICATED)		
END CAP		
PLUG (AT END OF LINE)		
VALVE (TYPE INDICATED)		
REDUCER		
FIRE HYDRANT		OR
HOUSE CONNECTION (SEWER)	HC	1275 NHC
SPOT ELEVATION	+ (100.00) OR + 100.00	
MANHOLE - TYPE (IF INDICATED) E - ELECTRIC S - SANITARY D - STORM T - TELEPHONE		MH1
CLEAN OUT	C.O.	
SPRINKLER HEAD	SPR	
TEMPORARY SAMPLING TAP POINT (BACTERIOLOGICAL SAMPLING POINT)		SAMPLE TAP NO. TAP NO.
SILT HAY BARRIER		
SIDEWALK		

UTILITY SYMBOLS

ELECTRIC POLE OR S.B.T. POLE (WOOD)	PP OR PP (WITH LIGHT)
WOOD POWER POLE	WPP
ELECTRIC POLE OR S.B.T. POLE (CONC.)	PP OR PP (WITH LIGHT)
CONCRETE POWER POLE	CPP
GUY WIRE	
TRAFFIC SIGNAL POLE	TS
IRON PIPE	I.P.
OVERHEAD ELECTRIC	OHE
UNDERGROUND ELECTRIC	UGE
OVERHEAD TELEPHONE	OT
UNDERGROUND TELEPHONE	UGT
GAS MAIN (SIZE & MAT'L. INDICATED)	GAS
CABLE TELEVISION	CATV
FIBER OPTIC LINE	FO
UNDERGROUND CABLE (TYPE UNDETERMINED)	UG UG
WATER METER	WM
WATER METER WITH TOUCHREAD	WM(TR)
TELEPHONE BOX	T
CATV BOX	CATV
CONCRETE MONUMENT	CM
GAS VALVE	
SOIL BORING (NUMBER INDICATED)	B-1
SOFT DIG (NUMBER INDICATED)	SD1
TBM (TEMPORARY BENCHMARK)	
TREE, SIZE & TYPE INDICATED	12" O
MAIL BOX	MB
SIGN - TYPE INDICATED	OR SIGN
BUSH, SHRUB OR HEDGE	SHRUB
GRAVEL	
ASPHALT PAVEMENT OVERLAY	
INDICATES DRIVEWAY/SIDEWALK/ STRUCTURES/EQUIPMENT REMOVED	

LANDSCAPE AND DRAINAGE SYMBOLS

BUILDING OR STRUCTURE FOOTPRINT	
TREE, SIZE, AND TYPE	12" PINE
TREE TO BE REMOVED	
EDGE OF WOODS	
EDGE OF WETLANDS	

PIPE AND FITTING SYMBOLS

HARNESSED FLANGE ADAPTER COUPLING	HFAC
GATE VALVE	GV
CHECK VALVE	CV
BALL VALVE	BV
BUTTERFLY VALVE	BFV
ECCENTRIC REDUCER	ECC RED
HANDWHEEL	

BOUNDARY AND MARKER SYMBOLS

LIMITS OF DISTURBANCE	
FENCE	x x x x x x
GUARDRAIL	
SILT FENCE	/x/ /x/ /x/ /x/ /x/ /x/
PROPERTY LINE (PL)	
EASEMENT LINE	
TURNING POINT	
TRIANGULATION POINT	
BENCHMARK	

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Mott MacDonald Florida, LLC
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Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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1.	MM	APRIL 2020	CONFORMED DRAWING

DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

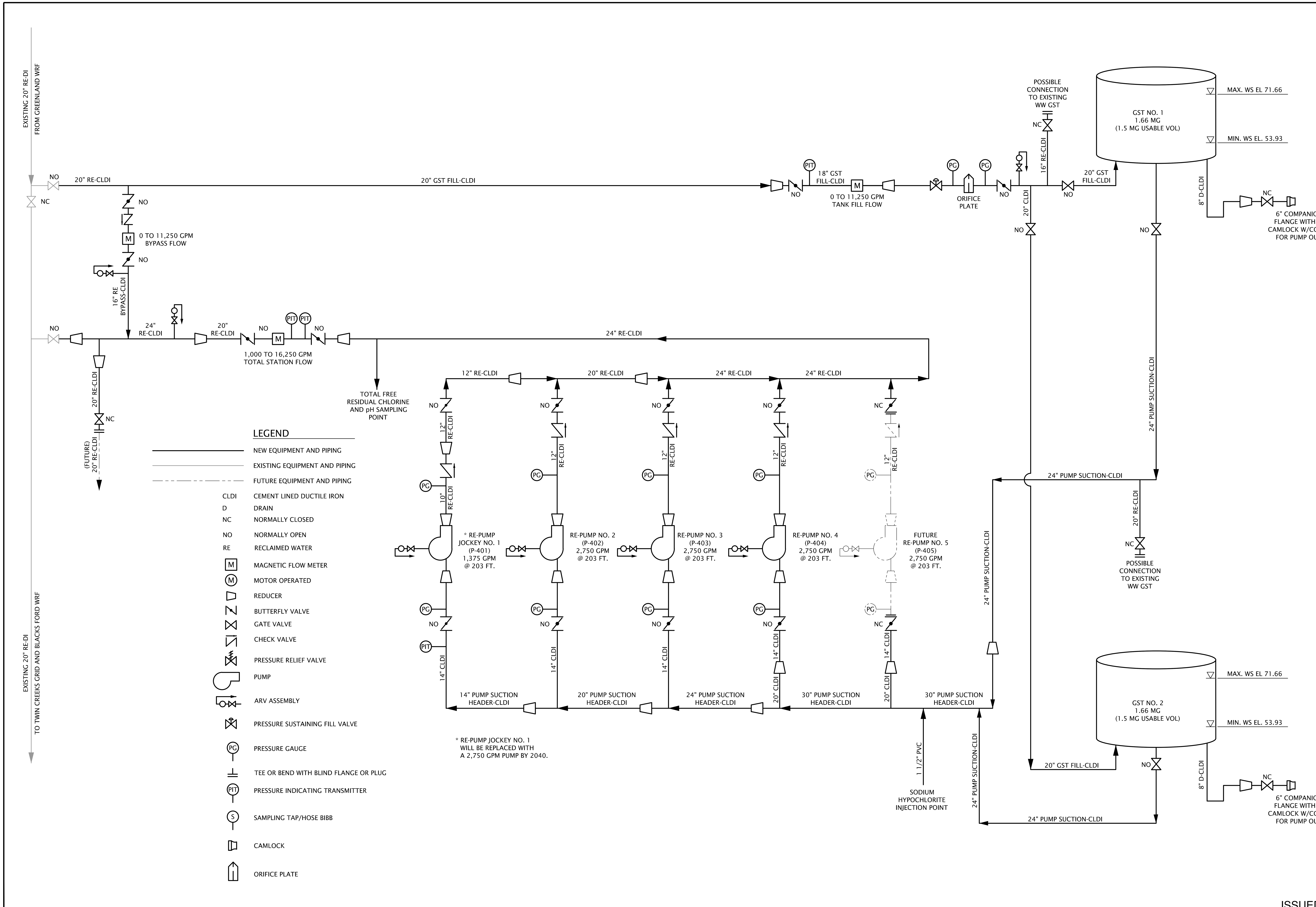
DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
ABBREVIATIONS, GENERAL LEGEND & SYMBOLS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE

NO. SHEETS 105
SHEET NO. 3
DRAWING NO. G-4


EXISTING 20" RE-DI FROM GREENLAND WRF
EXISTING 20" RE-DI TO TWIN CREEKS GRID AND BLACKS FORD WRF
20" RE-CLDI
20" GST FILL-CLDI
NO
NC
0 TO 11,250 GPM BYPASS FLOW
16" RE BYPASS-CLDI
24" RE-CLDI
20" RE-CLDI
1,000 TO 16,250 GPM TOTAL STATION FLOW
24" RE-CLDI
TOTAL FREE RESIDUAL CHLORINE AND pH SAMPLING POINT
(FUTURE) 20" RE-CLDI
18" GST FILL-CLDI
0 TO 11,250 GPM TANK FILL FLOW
ORIFICE PLATE
POSSIBLE CONNECTION TO EXISTING WW GST
16" RE-CLDI
20" GST FILL-CLDI
20" CLDI
GST NO. 1
1.66 MG
(1.5 MG USABLE VOL)
MAX. WS EL 71.66
MIN. WS EL. 53.93
8" D-CLDI
6" COMPANION FLANGE WITH 6" CAMLOCK W/COVER FOR PUMP OUT
24" PUMP SUCTION-CLDI
20" RE-CLDI
POSSIBLE CONNECTION TO EXISTING WW GST
12" RE-CLDI
20" RE-CLDI
24" RE-CLDI
24" RE-CLDI
10" RE-CLDI
* RE-PUMP JOCKEY NO. 1 (P-401) 1,375 GPM @ 203 FT.
RE-PUMP NO. 2 (P-402) 2,750 GPM @ 203 FT.
RE-PUMP NO. 3 (P-403) 2,750 GPM @ 203 FT.
RE-PUMP NO. 4 (P-404) 2,750 GPM @ 203 FT.
FUTURE RE-PUMP NO. 5 (P-405) 2,750 GPM @ 203 FT.
14" CLDI
20" CLDI
14" PUMP SUCTION HEADER-CLDI
20" PUMP SUCTION HEADER-CLDI
24" PUMP SUCTION HEADER-CLDI
30" PUMP SUCTION HEADER-CLDI
30" PUMP SUCTION HEADER-CLDI
* RE-PUMP JOCKEY NO. 1 WILL BE REPLACED WITH A 2,750 GPM PUMP BY 2040.
1 1/2" PVC
SODIUM HYPOCHLORITE INJECTION POINT
24" PUMP SUCTION-CLDI
20" GST FILL-CLDI
GST NO. 2
1.66 MG
(1.5 MG USABLE VOL)
MAX. WS EL 71.66
MIN. WS EL. 53.93
LEGEND
NEW EQUIPMENT AND PIPING
EXISTING EQUIPMENT AND PIPING
FUTURE EQUIPMENT AND PIPING
CLDI CEMENT LINED DUCTILE IRON
D DRAIN
NC NORMALLY CLOSED
NO NORMALLY OPEN
RE RECLAIMED WATER
MAGNETIC FLOW METER
MOTOR OPERATED
REDUCER
BUTTERFLY VALVE
GATE VALVE
CHECK VALVE
PRESSURE RELIEF VALVE
PUMP
ARV ASSEMBLY
PRESSURE SUSTAINING FILL VALVE
PRESSURE GAUGE
TEE OR BEND WITH BLIND FLANGE OR PLUG
PRESSURE INDICATING TRANSMITTER
SAMPLING TAP/HOSE BIBB
CAMLOCK
ORIFICE PLATE

ISSUED FOR BID

MOTT MACDONALD

REVISIONS

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1.		

DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PROCESS FLOW DIAGRAM

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 4
DRAWING NO. G-5

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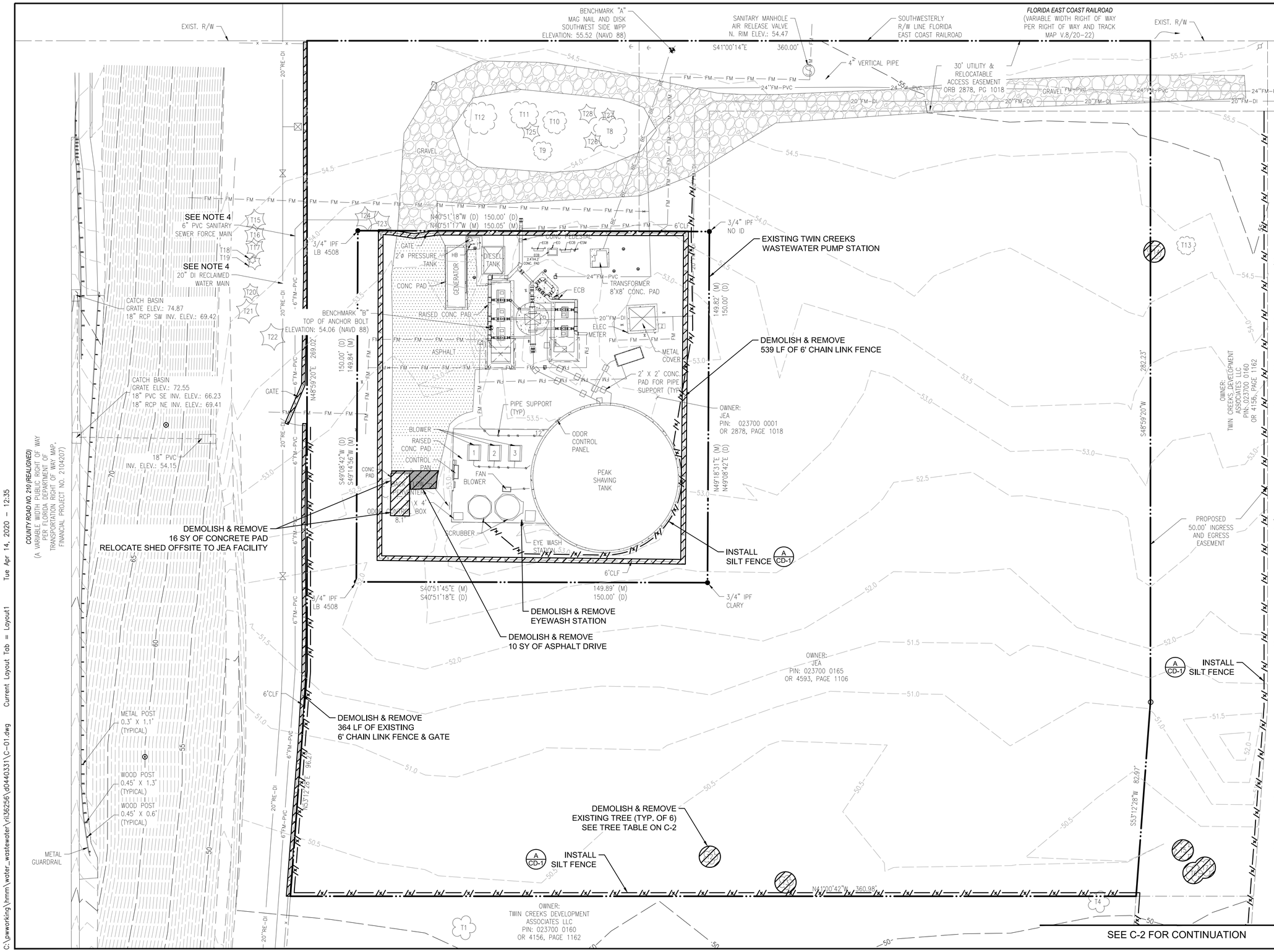
Xrefs Attached= JEA_SHT22x34_BOR [..\d0440358\JEA_SHT22x34_BOR.dwg]



GENERAL NOTES

1. ALL ASPHALT AND CONCRETE SHALL BE SAW CUT IN SMOOTH NEAT LINES AT EDGES TO REMAIN.
2. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
3. INLET PROTECTION SHALL BE INSTALLED AROUND ALL PROPOSED INLETS UNTIL FINAL STABILIZATION.
4. THE 6" PVC FORCE MAIN AND 20" DI RECLAIMED WATER MAIN SHOWN AS EXISTING ON THIS SHEET WILL BE INSTALLED BY OTHERS CONCURRENTLY WITH THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE DEVELOPER'S CONTRACTOR FOR LOCATION AND INSTALLATION OF ALL CONNECTION REFLECTED ON THESE PLANS.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTROL OF EROSION AND MAINTAINING SEDIMENT ON SITE. FAILURE TO ADEQUATELY CONTROL EROSION AND MAINTAIN SEDIMENT ON SITE MAY RESULT IN ENFORCEMENT ACTIONS AND/OR FINES. THE CONTRACTOR SHALL BEAR THE COSTS OF ANY ENFORCEMENT ACTIONS OR FINES.
2. EROSION CONTROL MEASURES SHOWN HEREIN SHALL BE CONSIDERED THE MINIMUM INSTALLATION REQUIREMENTS. CONTRACTOR SHALL PROVIDE ANY MATERIAL ITEM OR WORK EFFORT NECESSARY TO PREVENT EROSION AND MAINTAIN SEDIMENT ON SITE THROUGHOUT CONSTRUCTION AND UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED.

TREE NOTES:

1. NO HERITAGE TREES EXIST WITHIN THE IDENTIFIED LIMITS OF CLEARING.
2. ALL TREES LISTED ON THIS SHEET WHICH ARE INDICATED AS "PRESERVE" SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
3. ALL ADEQUATE TREE PROTECTION MEASURES AND BARRICADES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE AND MAINTAINED IN GOOD WORKING ORDER UNTIL PROJECT IS COMPLETE AND SITE BECOMES STABILIZED.

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10245 Centurion Parkway North
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Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0000783
MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER:	S. WHITE	
DRAWN BY:	C. RILEY	
DATE:	APRIL 2020	
CHECKED BY:	K. MORGAN	
DATE:	APRIL 2020	

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
EXISTING SITE, DEMOLITION &
EROSION CONTROL PLAN

PROJ. NO. 502398244		
DATE:	APRIL 2020	
SCALE:	1" = 20'	

NO. SHEETS	105
SHEET NO.	5
DRAWING NO.	C-1

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Xrefs Attached= JEA_SHT22x34_BOR [..\d0440358\JEA_SHT22x34_BOR.dwg]
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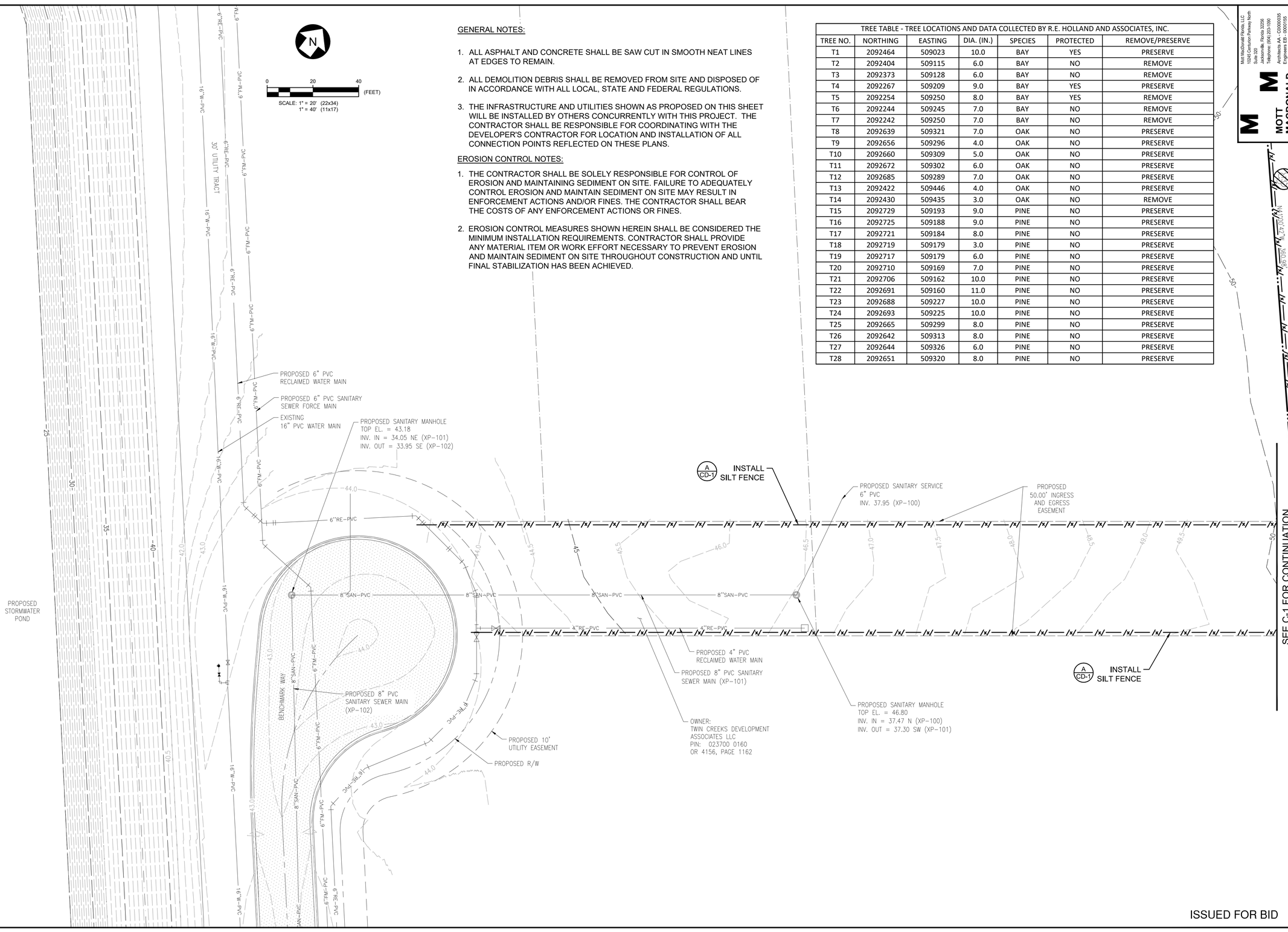
C-Layout-Xref [..\d0440333\C-Layout-Xref.dwg]



GENERAL NOTES:

1. ALL ASPHALT AND CONCRETE SHALL BE SAW CUT IN SMOOTH NEAT LINES AT EDGES TO REMAIN.
2. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
3. THE INFRASTRUCTURE AND UTILITIES SHOWN AS PROPOSED ON THIS SHEET WILL BE INSTALLED BY OTHERS CONCURRENTLY WITH THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE DEVELOPER'S CONTRACTOR FOR LOCATION AND INSTALLATION OF ALL CONNECTION POINTS REFLECTED ON THESE PLANS.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTROL OF EROSION AND MAINTAINING SEDIMENT ON SITE. FAILURE TO ADEQUATELY CONTROL EROSION AND MAINTAIN SEDIMENT ON SITE MAY RESULT IN ENFORCEMENT ACTIONS AND/OR FINES. THE CONTRACTOR SHALL BEAR THE COSTS OF ANY ENFORCEMENT ACTIONS OR FINES.
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TREE TABLE - TREE LOCATIONS AND DATA COLLECTED BY R.E. HOLLAND AND ASSOCIATES, INC.

TREE NO.	NORTHING	EASTING	DIA. (IN.)	SPECIES	PROTECTED	REMOVE/PRESERVE
T1	2092464	509023	10.0	BAY	YES	PRESERVE
T2	2092404	509115	6.0	BAY	NO	REMOVE
T3	2092373	509128	6.0	BAY	NO	REMOVE
T4	2092267	509209	9.0	BAY	YES	PRESERVE
T5	2092254	509250	8.0	BAY	YES	REMOVE
T6	2092244	509245	7.0	BAY	NO	REMOVE
T7	2092242	509250	7.0	BAY	NO	REMOVE
T8	2092639	509321	7.0	OAK	NO	PRESERVE
T9	2092656	509296	4.0	OAK	NO	PRESERVE
T10	2092660	509309	5.0	OAK	NO	PRESERVE
T11	2092672	509302	6.0	OAK	NO	PRESERVE
T12	2092685	509289	7.0	OAK	NO	PRESERVE
T13	2092422	509446	4.0	OAK	NO	PRESERVE
T14	2092430	509435	3.0	OAK	NO	REMOVE
T15	2092729	509193	9.0	PINE	NO	PRESERVE
T16	2092725	509188	9.0	PINE	NO	PRESERVE
T17	2092721	509184	8.0	PINE	NO	PRESERVE
T18	2092719	509179	3.0	PINE	NO	PRESERVE
T19	2092717	509179	6.0	PINE	NO	PRESERVE
T20	2092710	509169	7.0	PINE	NO	PRESERVE
T21	2092706	509162	10.0	PINE	NO	PRESERVE
T22	2092691	509160	11.0	PINE	NO	PRESERVE
T23	2092688	509227	10.0	PINE	NO	PRESERVE
T24	2092693	509225	10.0	PINE	NO	PRESERVE
T25	2092665	509299	8.0	PINE	NO	PRESERVE
T26	2092642	509313	8.0	PINE	NO	PRESERVE
T27	2092644	509326	6.0	PINE	NO	PRESERVE
T28	2092651	509320	8.0	PINE	NO	PRESERVE

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MOTT MACDONALD

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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER:	S. WHITE
DRAWN BY:	C. RILEY
DATE:	APRIL 2020
CHECKED BY:	K. MORGAN
DATE:	APRIL 2020

JEA
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
EXISTING SITE, DEMOLITION & EROSION CONTROL PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

NO. SHEETS	105
SHEET NO.	6
DRAWING NO.	C-2

ISSUED FOR BID

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Xrefs Attached= JEA_SHT22x34_BOR [..\d0440358\JEA_SHT22x34_BOR.dwg]
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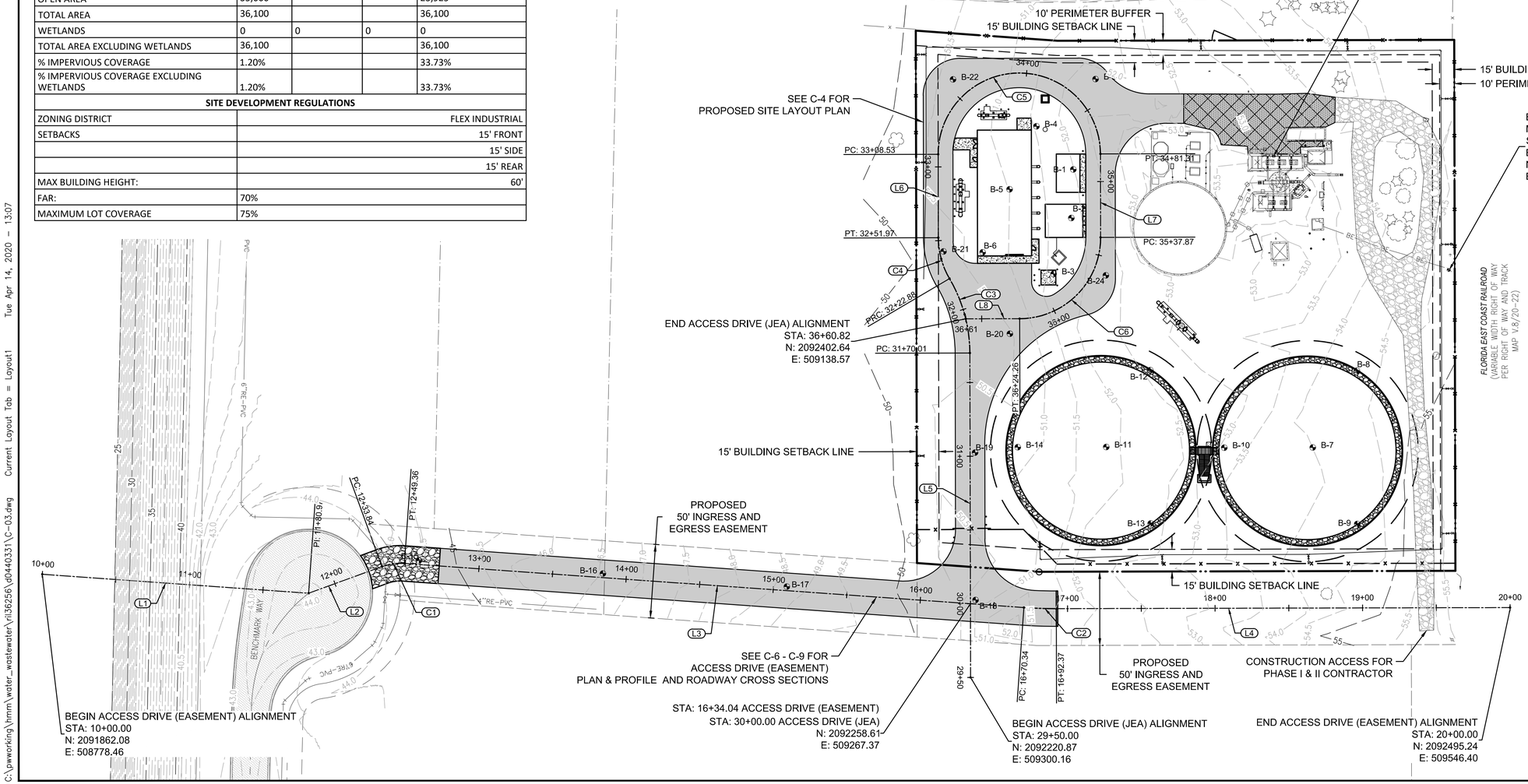
C-Layout-Xref [..\d0440333\C-Layout-Xref.dwg]

SITE CHARACTERISTICS				
COVERAGE TYPE	EXISTING (FT2)	DEMOLISHED (FT2)	PROPOSED (FT2)	POST DEVELOPMENT TOTALS (FT2)
JEA PARCELS				
BUILDINGS	94	94	3,702	3,702
TANK	3,025	0	22,620	25,645
CONCRETE	3,377	46	2,216	5,547
ASPHALT	3,245	99	17,944	21,090
GRAVEL	7,021	0	3,122	10,143
TOTAL IMPERVIOUS AREA	16,762	239	49,604	66,127
OPEN AREA	114,726			65,361
TOTAL AREA	131,488			131,488
WETLANDS	0	0	0	0
TOTAL AREA EXCLUDING WETLANDS	131,488			131,488
% IMPERVIOUS COVERAGE	12.75%			50.29%
% IMPERVIOUS COVERAGE EXCLUDING WETLANDS	12.75%			50.29%
50 FOOT ACCESS AND UTILITY EASEMENT				
BUILDINGS	0	0	0	0
TANK	0	0	0	0
CONCRETE	0	0	24	24
ASPHALT	0	0	10,539	10,539
GRAVEL	434	0	1,178	1,612
TOTAL IMPERVIOUS AREA	434	0	11,741	12,175
OPEN AREA	35,666			23,925
TOTAL AREA	36,100			36,100
WETLANDS	0	0	0	0
TOTAL AREA EXCLUDING WETLANDS	36,100			36,100
% IMPERVIOUS COVERAGE	1.20%			33.73%
% IMPERVIOUS COVERAGE EXCLUDING WETLANDS	1.20%			33.73%
SITE DEVELOPMENT REGULATIONS				
ZONING DISTRICT				FLEX INDUSTRIAL
SETBACKS				15' FRONT
				15' SIDE
				15' REAR
MAX BUILDING HEIGHT:				60'
FAR:	70%			
MAXIMUM LOT COVERAGE	75%			

LINE DATA						
LINE #	LENGTH	DIRECTION	START POINT	END POINT	BEGIN STA	END STA
L1	180.97	N 53° 12' 28" E	(2091862.077,508778.459)	(2091970.462,508923.381)	10+00.00	11+80.97
L2	52.87	N 29° 10' 45" E	(2091970.462,508923.381)	(2092016.625,508949.159)	11+80.97	12+33.84
L3	420.98	N 53° 12' 28" E	(2092028.216,508959.303)	(2092280.349,509296.433)	12+49.36	16+70.34
L4	307.63	N 49° 00' 03" E	(2092294.177,509313.572)	(2092495.997,509545.747)	16+92.37	20+00.00
L5	220.01	N 40° 59' 40" W	(2092220.871,509300.164)	(2092386.926,509155.844)	29+50.00	31+70.01
L6	56.56	N 40° 59' 40" W	(2092432.059,509088.570)	(2092474.747,509051.469)	32+51.97	33+08.53
L7	56.56	S 40° 59' 40" E	(2092546.905,509134.494)	(2092504.217,509171.595)	34+81.31	35+37.87
L8	36.56	S 49° 00' 20" W	(2092426.625,509166.162)	(2092402.644,509138.569)	36+24.26	36+60.82

CURVE DATA							
CURVE NO.	Δ	RADIUS	LENGTH	CHORD DISTANCE	CHORD BEARING	BEGIN STA	END STA
C1	024° 01' 43"	37.00	15.52	15.40	N 41° 11' 36" E	12+33.84	12+49.36
C2	004° 12' 25"	300.00	22.03	22.02	N 51° 06' 16" E	16+70.34	16+92.37
C3	030° 17' 50"	100.00	52.88	52.26	N 56° 08' 35" W	31+70.01	32+22.88
C4	030° 17' 50"	55.00	29.08	28.75	N 56° 08' 35" W	32+22.88	32+51.97
C5	180° 00' 00"	55.00	172.79	110.00	N 49° 00' 20" E	33+08.53	34+81.31
C6	090° 00' 00"	55.00	86.39	77.78	S 04° 00' 20" W	35+37.87	36+24.26



SOIL BORING TABLE			
NO.	NORTHING	EASTING	DEPTH
B-1	2092526.9202	509127.4781	20.00
B-2	2092501.1825	509148.0064	20.00
B-3	2092464.6431	509163.6786	20.00
B-4	2092532.7067	509089.4684	20.00
B-5	2092488.4769	509103.6192	20.00
B-6	2092444.2472	509117.7700	20.00
B-7	2092490.5871	509373.5691	80.00
B-8	2092549.4849	509362.1206	50.00
B-9	2092471.0530	509430.3004	50.00
B-10	2092451.2235	509328.2865	50.00
B-11	2092399.2323	509267.4825	80.00
B-12	2092458.1301	509256.0339	50.00
B-13	2092379.6982	509324.2137	50.00
B-14	2092359.8687	509222.1998	50.00
B-15	2092036.2380	508965.4536	10.00
B-16	2092111.1024	509065.5552	10.00
B-17	2092185.9667	509165.6568	10.00
B-18	2092262.7945	509268.3836	10.00
B-19	2092338.1521	509202.7127	10.00
B-20	2092414.5678	509167.8674	10.00
B-21	2092427.3275	509097.3373	10.00
B-22	2092519.7878	509025.8827	10.00
B-23	2092583.1292	509098.7631	10.00
B-24	2092487.0579	509191.1641	10.00

ISSUED FOR BID

Matt MacDonald Florida, LLC
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Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architect's AA - C000035
Engineers EB - 0000155
Surveyors LB - 0006783

NO.	BY	DATE	REVISIONS
6.			
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DESIGN ENGINEER: STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO. 58809

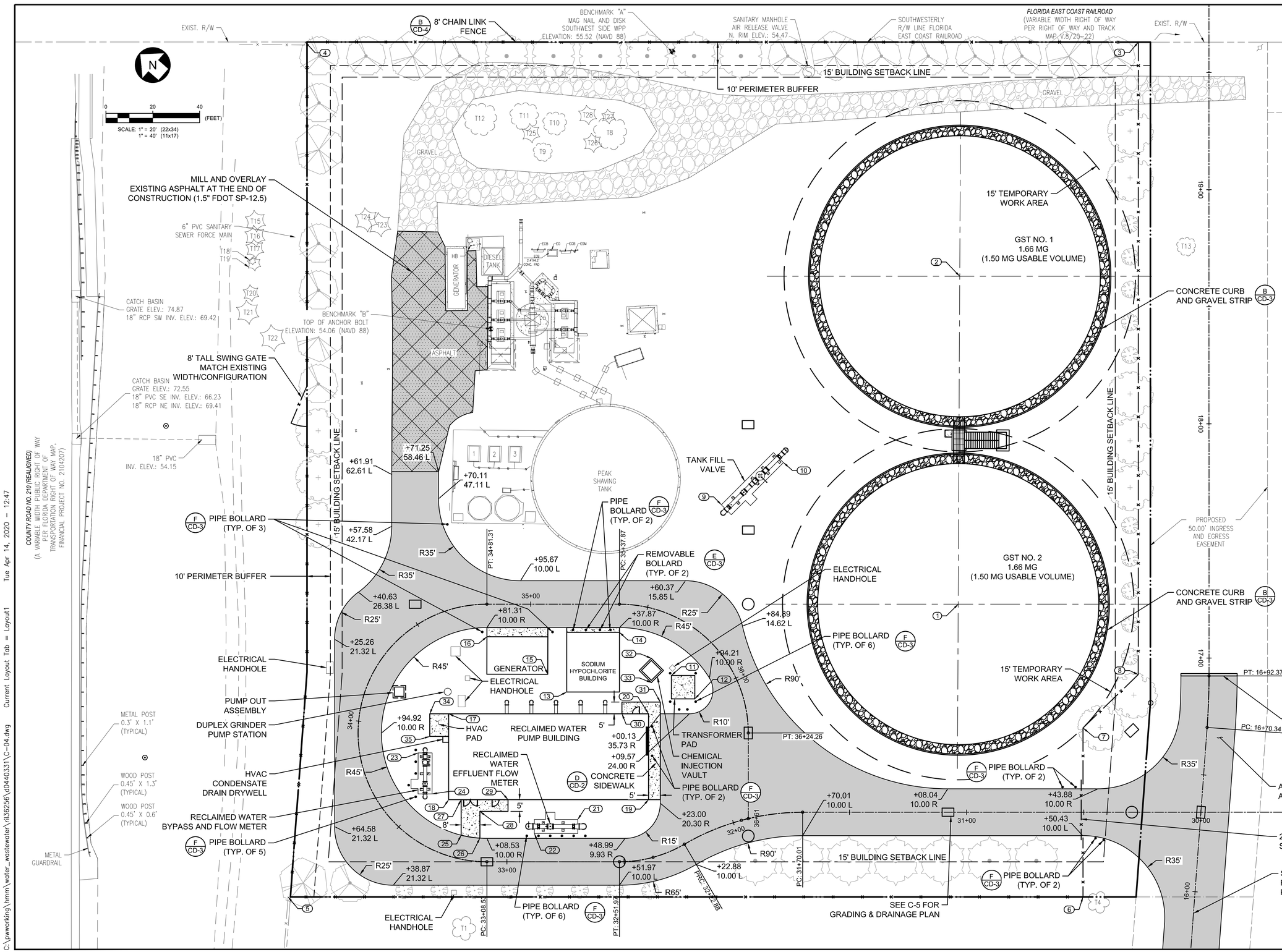
DESIGNER: S. WHITE
DRAWN BY: C. RILEY
DATE: APRIL 2020
CHECKED BY: K. MORGAN
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
PROJECT CONTROL & OVERALL SITE LAYOUT

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: 1" = 40'

NO. SHEETS 105
SHEET NO. 7
DRAWING NO. C-3



POINT TABLE		
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2	N: 2092486.40	E: 509372.55
3	N: 2092494.46	E: 509498.02
4	N: 2092762.91	E: 509264.78
5	N: 2092528.97	E: 508984.47
6	N: 2092272.87	E: 509207.05
7	N: 2092320.21	E: 509261.52
8	N: 2092317.34	E: 509294.17
9	N: 2092499.23	E: 509232.17
10	N: 2092491.04	E: 509263.18
11	N: 2092467.51	E: 509163.15
12	N: 2092453.40	E: 509162.17
13	N: 2092496.60	E: 509128.53
14	N: 2092496.35	E: 509162.54
15	N: 2092507.67	E: 509128.91
16	N: 2092537.80	E: 509124.00
17	N: 2092528.52	E: 509088.45
18	N: 2092504.47	E: 509060.78
19	N: 2092440.06	E: 509116.75
20	N: 2092464.12	E: 509144.43
21	N: 2092457.34	E: 509090.54
22	N: 2092467.41	E: 509073.90
23	N: 2092527.42	E: 509067.31
24	N: 2092511.44	E: 509058.00
25	N: 2092490.50	E: 509052.83
26	N: 2092483.63	E: 509057.13
27	N: 2092500.44	E: 509064.27
28	N: 2092491.13	E: 509065.75
29	N: 2092485.35	E: 509077.39
30	N: 2092472.70	E: 509136.97
31	N: 2092463.62	E: 509151.48
32	N: 2092478.79	E: 509163.10
33	N: 2092471.98	E: 509155.26
34	N: 2092534.62	E: 509083.15
35	N: 2092528.28	E: 509075.85

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MOTT MACDONALD

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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNED:	S. WHITE	
DRAWN BY:	C. RILEY	
DATE:	APRIL 2020	
CHECKED BY:	K. MORGAN	
DATE:	APRIL 2020	

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

PROPOSED SITE LAYOUT PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'
NO. SHEETS	105
SHEET NO.	8
DRAWING NO.	C-4

Xrefs Attached= JEA_SHT22x34_BOR [..\d0440358\JEA_SHT22x34_BOR.dwg]
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C-Layout-Xref [..\d0440333\C-Layout-Xref.dwg]
x-Yard_Piping [..\d0440333\X-Yard_Piping.dwg]
x-Site-Elec [..\d0466305\x-Site-Elec.dwg]
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C:\pwworking\hmm\water_wastewater\ri36256\d0440331\C-04.dwg Current Layout Tab = Layout1 Tue Apr 14, 2020 - 12:47

STRUCTURE TABLE						
STR. #	STATION	OFFSET / SIDE	NORTHING EASTING	DESCRIPTION	RIM EL.	CONNECTED PIPE
S-1	12+62.96	0.00	N: 2092036.36 E: 508970.20	FDOT TYPE E INLET	44.54	INV. (OUT) = 37.35 30" ADS-N-12WT (P-1) INV. (IN) = 37.35 30" RCP (P-3) INV. (IN) = 37.35 24" RCP (P-2)
S-2	14+00.00	0.00	N: 2092118.44 E: 509079.94	FDOT TYPE F INLET W/ 4'X4' TYPE J BOTTOM	46.61	INV. (OUT) = 40.88 30" RCP (P-3) INV. (IN) = 40.88 30" RCP (P-4) INV. (IN) = 43.35 6" ADS-N-12WT PERFORATED (P-17)
S-3	16+34.04	0.00	N: 2092258.61 E: 509267.37	FDOT TYPE F INLET W/ 4'X4' TYPE J BOTTOM	50.10	INV. (OUT) = 41.35 30" RCP (P-4) INV. (IN) = 41.85 24" RCP (P-5)
S-4	16+66.66	31.99 L	N: 2092303.77 E: 509274.32	FDOT TYPE F INLET	49.50	INV. (OUT) = 46.80 18" RCP (P-6) INV. (IN) = 47.00 6" ADS-N-12WT PERFORATED (P-19)
S-5	30+29.50	0.00 R	N: 2092280.88 E: 509248.01	FDOT TYPE P-8 MANHOLE	50.80	INV. (OUT) = 41.91 24" RCP (P-5) INV. (IN) = 42.41 18" RCP (P-7) INV. (IN) = 46.73 18" RCP (P-6)
S-6	31+07.96	0.00 R	N: 2092340.09 E: 509196.55	FDOT TYPE F INLET	50.80	INV. (OUT) = 42.57 18" RCP (P-7) INV. (IN) = 42.57 18" RCP (P-8)
S-7	31+95.28	7.22 L	N: 2092397.76 E: 509132.95	FDOT TYPE P-8 MANHOLE	51.55	INV. (OUT) = 42.74 18" RCP (P-8) INV. (IN) = 45.00 18" RCP (P-9) INV. (IN) = 42.74 18" RCP (P-11) INV. (IN) = 47.88 6" ADS-N-12WT PERFORATED (P-28)
S-8	32+51.97	0.00	N: 2092432.06 E: 509088.57	FDOT TYPE P-8 MANHOLE	51.50	INV. (OUT) = 47.11 18" RCP (P-9) INV. (IN) = 47.11 18" RCP (P-10)
S-9	33+08.53	0.00 L	N: 2092474.75 E: 509051.47	FDOT TYPE F INLET	51.07	INV. (OUT) = 47.22 18" RCP (P-10)
S-10	36+24.26	0.00 L	N: 2092426.62 E: 509166.16	FDOT TYPE F INLET	51.23	INV. (OUT) = 42.83 18" RCP (P-11) INV. (IN) = 42.83 18" RCP (P-12) INV. (IN) = 42.83 6" ADS-N-12WT PERFORATED (P-23)
S-11	35+81.07	22.78 L	N: 2092462.71 E: 509207.68	FDOT TYPE P-8 MANHOLE	52.85	INV. (OUT) = 42.94 18" RCP (P-12) INV. (IN) = 42.94 18" RCP (P-13) INV. (IN) = 42.94 18" RCP (P-15)
S-12	35+68.98	47.63 L	N: 2092483.46 E: 509231.56	FDOT TYPE F INLET	52.00	INV. (OUT) = 43.00 18" RCP (P-13) INV. (IN) = 47.30 18" RCP (P-14) INV. (IN) = 47.46 6" ADS-N-12WT PERFORATED (P-25)
S-13	35+59.61	87.64 L	N: 2092513.04 E: 509265.47	FDOT TYPE F INLET	52.50	INV. (OUT) = 47.52 18" RCP (P-14)
S-14	34+53.36	7.96 L	N: 2092570.03 E: 509114.39	FDOT TYPE F INLET	50.70	INV. (OUT) = 43.22 18" RCP (P-15) INV. (IN) = 47.87 6" ADS-N-12WT PERFORATED (P-27)
S-15	12+62.75	15.00 R	N: 2092024.22 E: 508979.01	FDOT TYPE P-8 MANHOLE	44.50	INV. (OUT) = 37.38 24" RCP (P-2) INV. (IN) = 41.67 6" ADS-N-12WT PERFORATED (P-16)

PIPE TABLE				
NAME	SIZE	MATERIAL	LENGTH	SLOPE
P-1	30"	ADS-N-12WT	201,87'	3,89%
P-2	24"	RCP	15,00'	0,20%
P-3	30"	RCP	137,04'	2,58%
P-4	30"	RCP	234,04'	0,20%
P-5	24"	RCP	29,50'	0,20%
P-6	18"	RCP	34,87'	0,20%
P-7	18"	RCP	78,46'	0,20%
P-8	18"	RCP	85,85'	0,20%
P-9	18"	RCP	56,09'	3,77%
P-10	18"	RCP	56,56'	0,20%
P-11	18"	RCP	44,00'	0,20%
P-12	18"	RCP	55,00'	0,20%
P-13	18"	RCP	31,65'	0,20%
P-14	18"	RCP	44,99'	0,50%
P-15	18"	RCP	142,20'	0,20%
P-16	6"	ADS-N-12WT PERFORATED	150,25'	1,40%
P-17	6"	ADS-N-12WT PERFORATED	21,21'	2,00%
P-18	6"	ADS-N-12WT PERFORATED	280,12'	1,57%
P-19	6"	ADS-N-12WT PERFORATED	29,95'	2,14%
P-20	6"	ADS-N-12WT PERFORATED	86,78'	0,20%
P-21	6"	ADS-N-12WT PERFORATED	72,44'	1,04%
P-22	6"	ADS-N-12WT PERFORATED	28,85'	0,69%
P-23	6"	ADS-N-12WT PERFORATED	27,34'	20,68%
P-24	6"	ADS-N-12WT PERFORATED	8,90'	0,22%
P-25	6"	ADS-N-12WT PERFORATED	28,32'	0,18%
P-26	6"	ADS-N-12WT PERFORATED	141,01'	0,20%
P-27	6"	ADS-N-12WT PERFORATED	57,28'	0,20%
P-28	6"	ADS-N-12WT PERFORATED	176,90'	0,20%

NOTE:

ALL PIPE RUNS SPECIFIED AS 6" ADS N-12WT SHALL BE FDOT TYPE II UNDERDRAIN AND SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL F ON CD-2

ISSUED FOR BID

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Architects AA - 0000035
Engineers EB - 0000155
Surveyors LB - 0000783
MOTT MACDONALD

NO.	BY:	DATE:	REVISIONS
6.			
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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER:	S. WHITE	
DRAWN BY:	C. RILEY	
DATE:	APRIL 2020	
CHECKED BY:	K. MORGAN	
DATE:	APRIL 2020	

JEA
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

GRADING & DRAINAGE PLAN

NO. SHEETS	105
SHEET NO.	9
DRAWING NO.	C-5
PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

0 20 40 (FEET)
SCALE: 1" = 20' (22x34)
1" = 40' (11x17)

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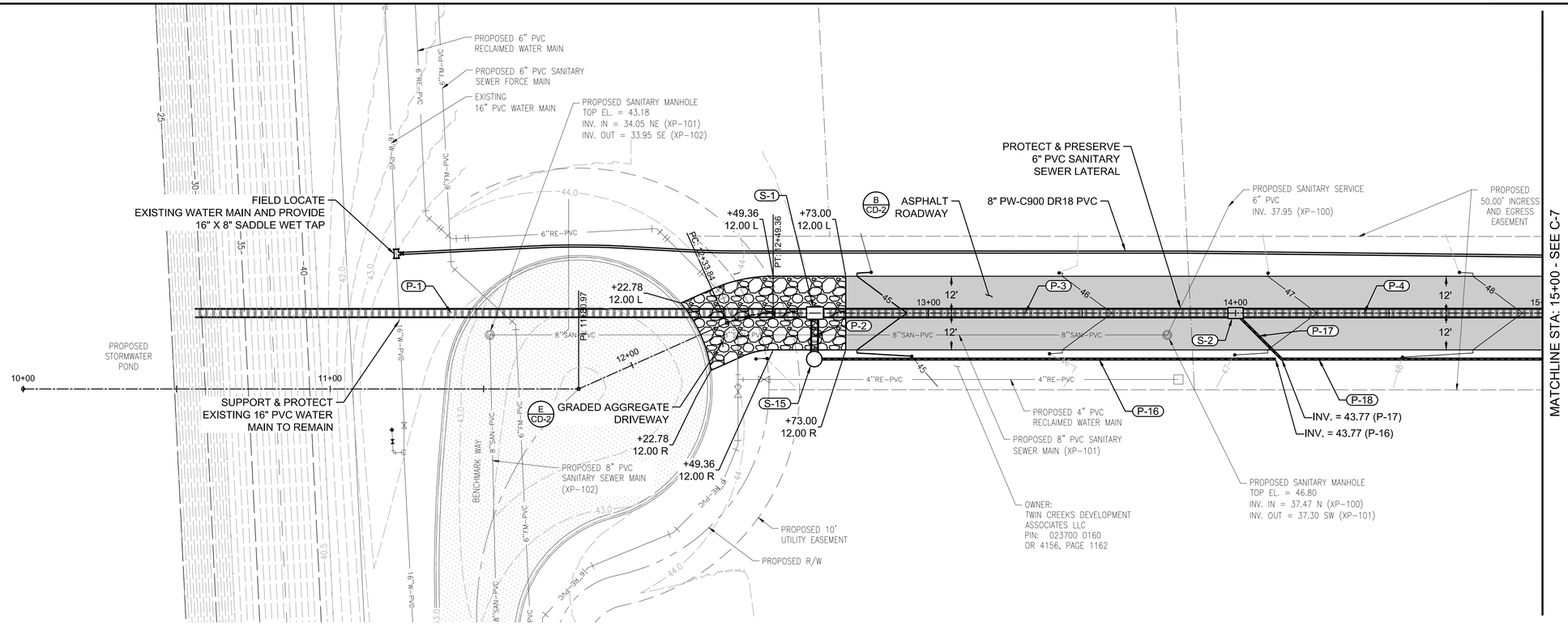
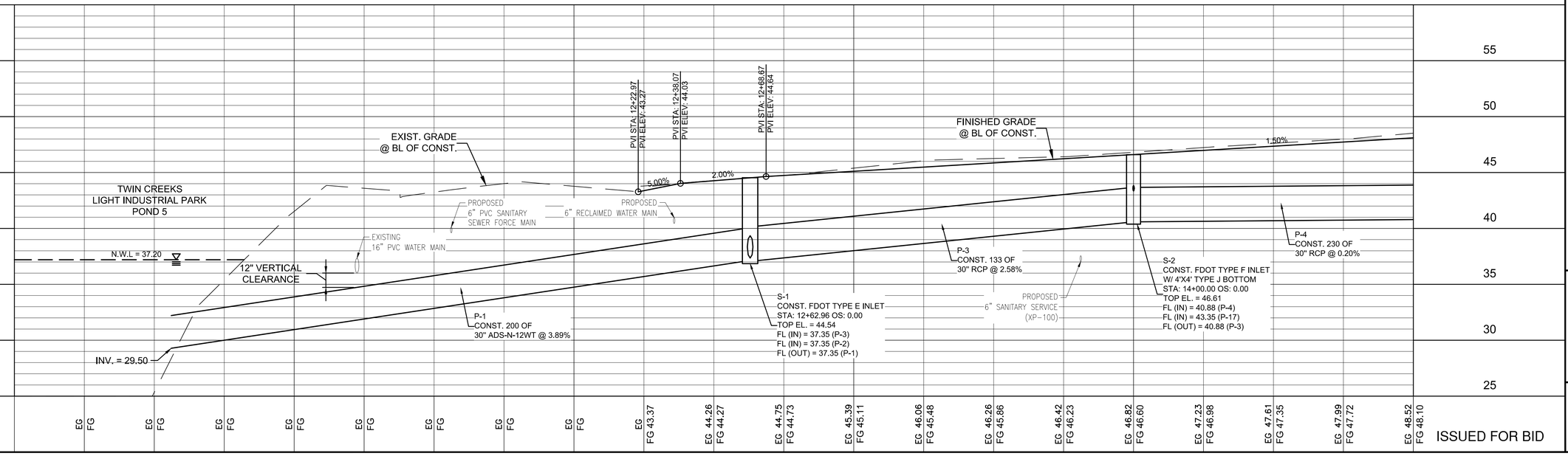


ACCESS DRIVE (EASEMENT)

HORZ SCALE: 1" = 20 FT. (22x34)
1" = 40 FT. (11x17)
VERT SCALE: 1" = 5 FT. (22x34)
1" = 10 FT. (11x17)



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10245 Centurion Parkway North
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Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

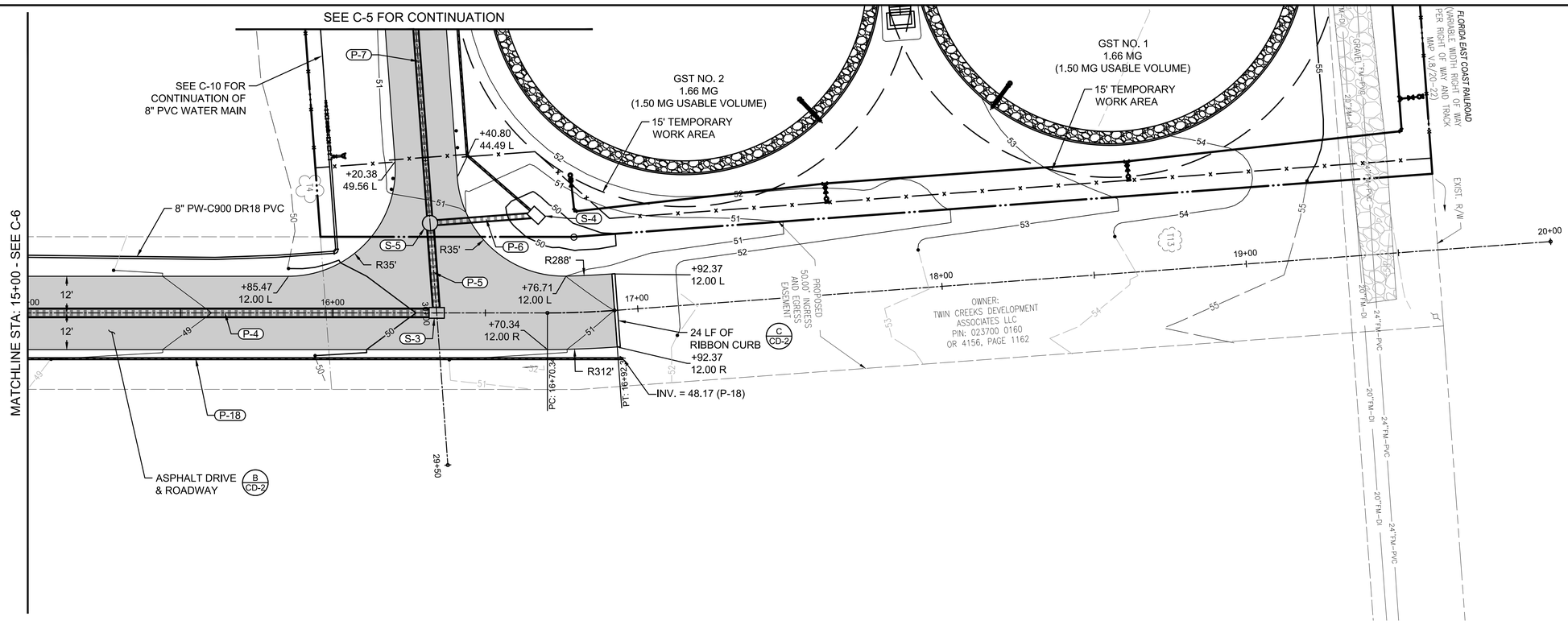
DESIGNER:	S. WHITE
DRAWN BY:	C. RILEY
DATE:	APRIL 2020
CHECKED BY:	K. MORGAN
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
PLAN & PROFILE
ACCESS DRIVE STA: 10+00 - 15+00

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

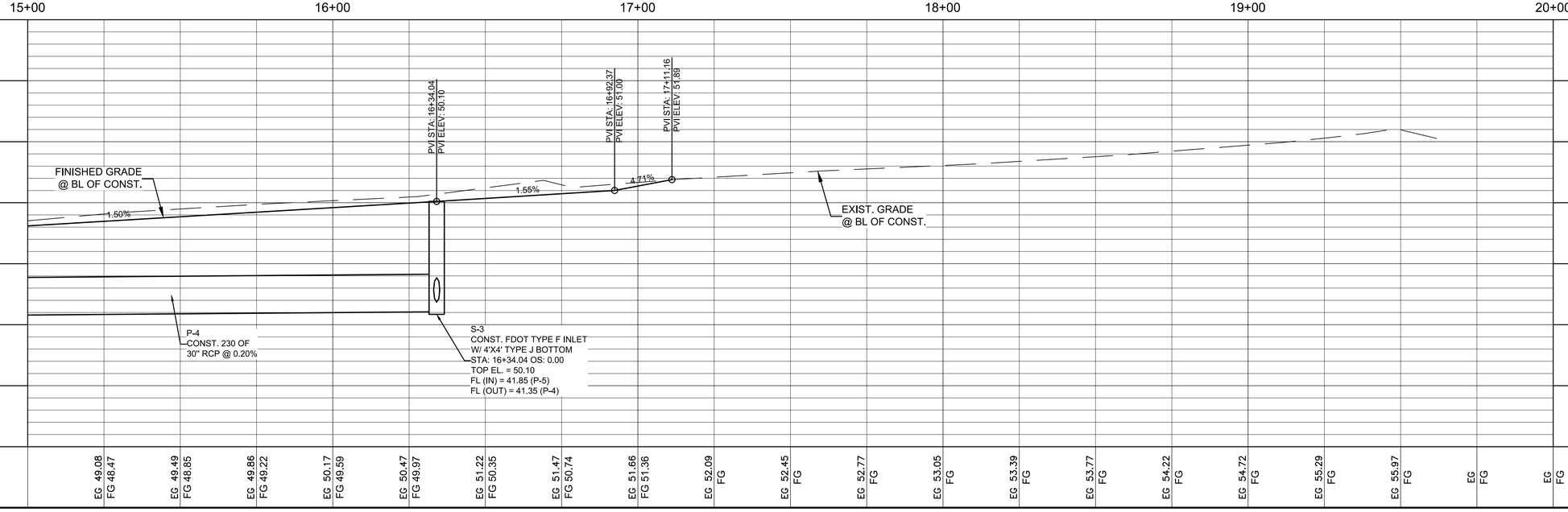
NO. SHEETS	105
SHEET NO.	10
DRAWING NO.	C-6



HORZ SCALE: 1" = 20 FT. (22x34)
1" = 40 FT. (11x17)

VERT SCALE: 1" = 5 FT. (22x34)
1" = 10 FT. (11x17)

ACCESS DRIVE (EASEMENT)



ISSUED FOR BID

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Telephone: (904) 293-1090
Architects #A - C000035
Engineers EB - 0000155
Surveyors LB - 0000783

NO.	BY	DATE	REVISIONS
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4.			
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1.			

DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER:	S. WHITE
DRAWN BY:	C. RILEY
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
PLAN & PROFILE
ACCESS DRIVE STA: 15+00 - 20+00

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

NO. SHEETS	105
SHEET NO.	11
DRAWING NO.	C-7

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C-Layout-Xref [..\d0440333\C-Layout-Xref.dwg]
X-Yard_Piping [..\d0440333\X-Yard_Piping.dwg]

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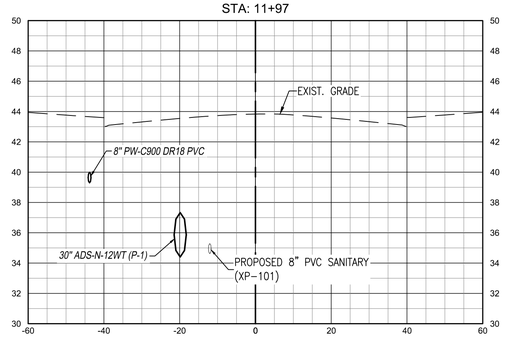

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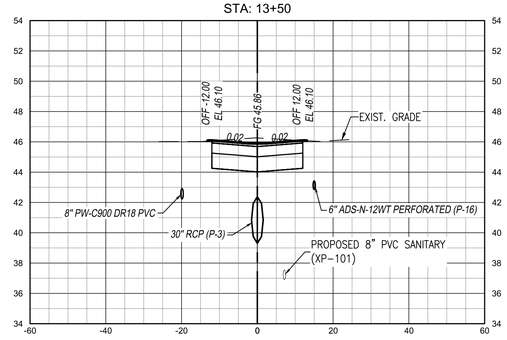

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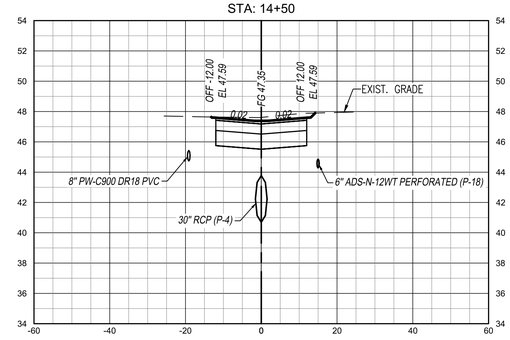

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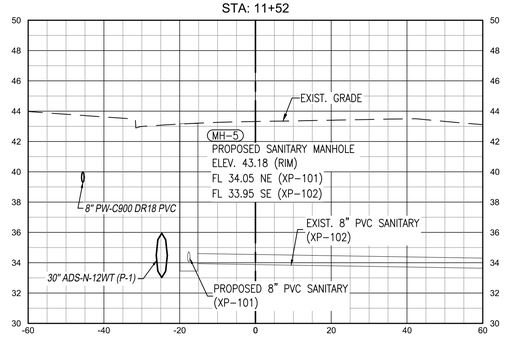

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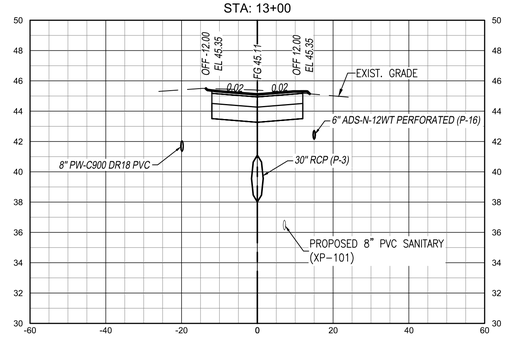

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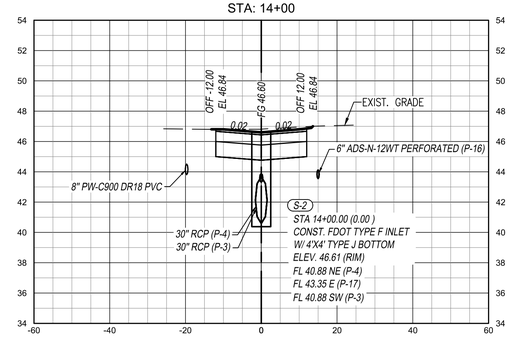

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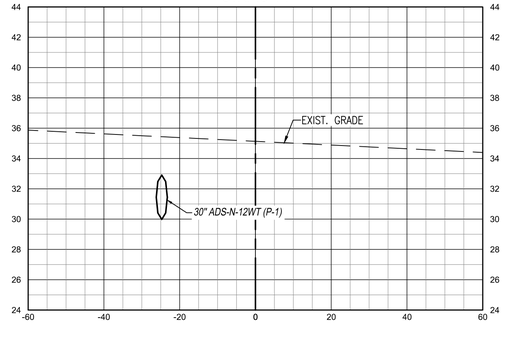

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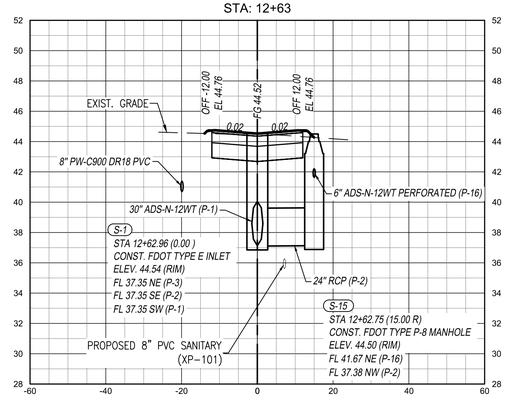

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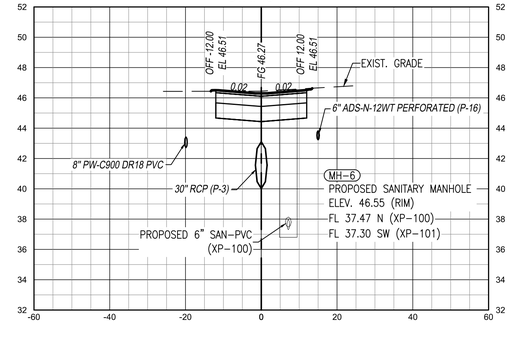

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Surveyors LB - 0000183

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER:	S. WHITE
DRAWN BY:	C. RILEY
DATE:	APRIL 2020
CHECKED BY:	K. MORGAN
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CROSS SECTIONS - ACCESS DRIVE

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	HORZ. 1" = 20' VERT. 1" = 5'

NO. SHEETS	105
SHEET NO.	12
DRAWING NO.	C-8

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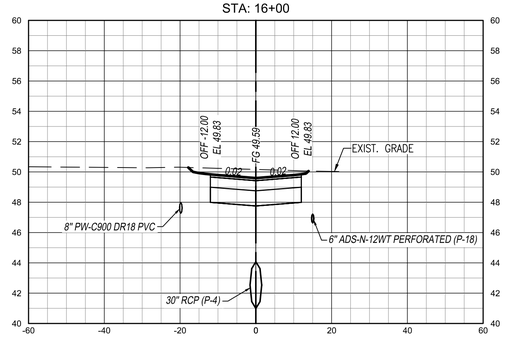

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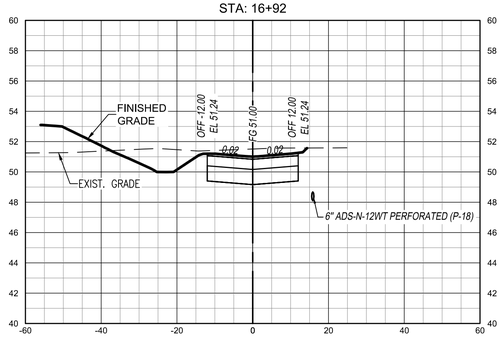

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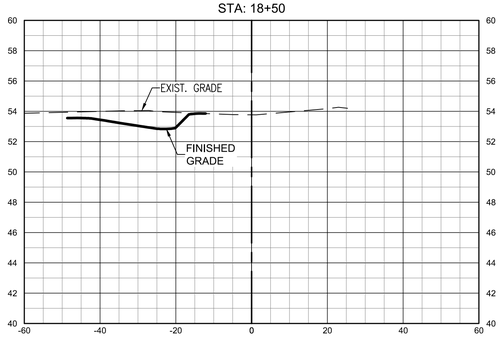

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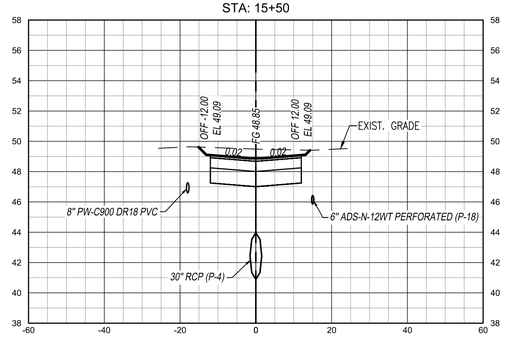

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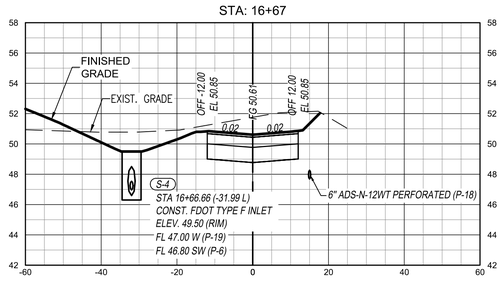

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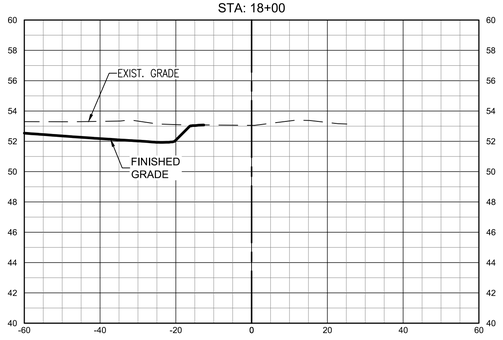

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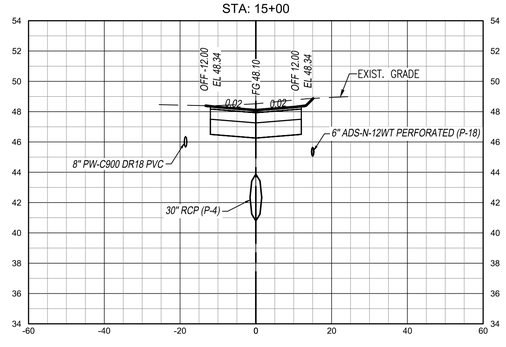

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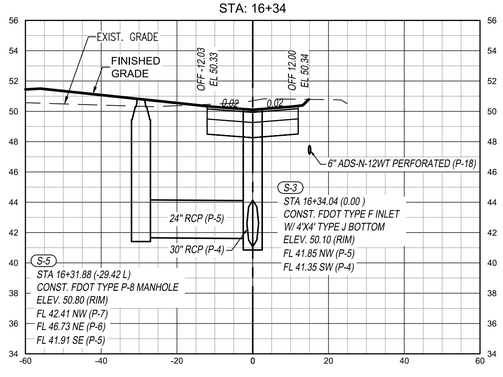

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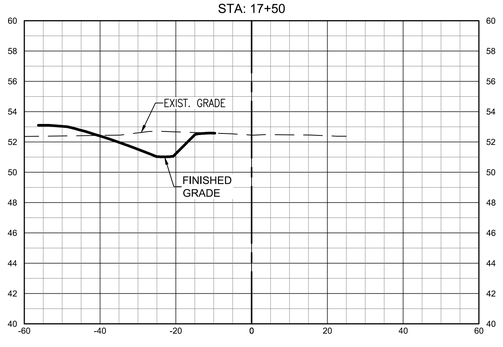

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architects AA - C000003S
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER: S. WHITE
DRAWN BY: C. RILEY
DATE: APRIL 2020
CHECKED BY: K. MORGAN
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CROSS SECTIONS - ACCESS DRIVE

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: HORZ. = 1" = 20'
VERT. = 1" = 5'

NO. SHEETS 105
SHEET NO. 13
DRAWING NO. C-9

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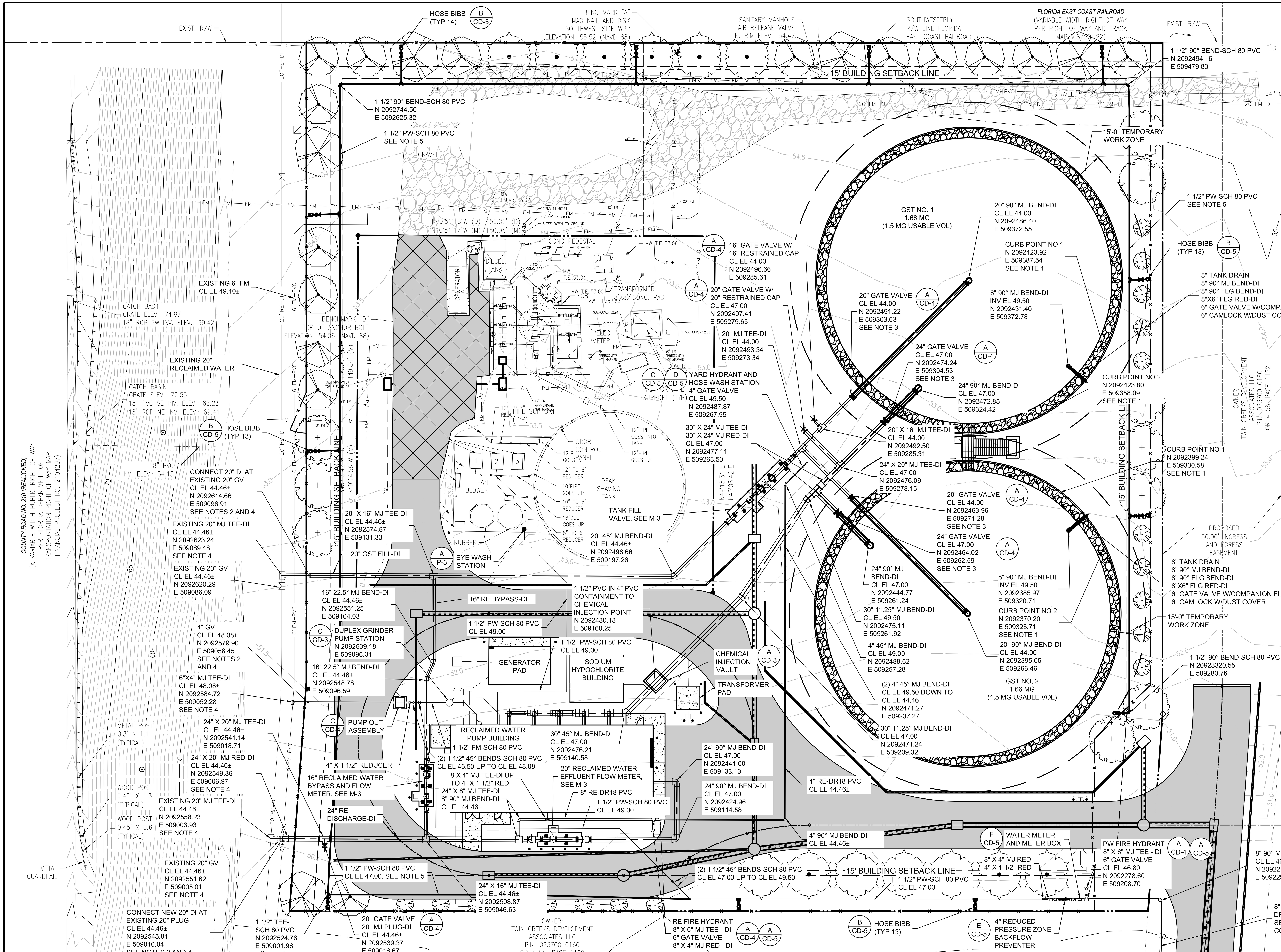

GRAPHIC SCALE

0 20 40 FT

SCALE: 1" = 20'-0"

NOTES:

1. RE-PUMP STATION CONTRACTOR SHALL INSTALL CONCRETE CURB AROUND EACH GST WITH A 2" DEEP DEPRESSION BETWEEN CURB POINT NO. 1 AND CURB POINT NO. 2 FOR A MINIMUM DEPRESSION LENGTH OF 30'.
2. RE-PUMP STATION CONTRACTOR SHALL FIELD VERIFY CONNECTION LOCATIONS PRIOR TO SUBMITTING YARD PIPING DRAWINGS.
3. TANK CONTRACTOR SHALL PROVIDE ALL PIPE, FITTINGS, AND VALVES TO THIS CONNECTION POINT. RE-PUMP STATION CONTRACTOR SHALL CONNECT TO VALVE AND INSTALL ALL REMAINING PIPING. CONNECTIONS TO THE TANKS SHALL NOT OCCUR UNTIL AFTER SETTLEMENT TESTING HAS BEEN ACCEPTED.
4. THE 6" PVC FM AND 20" DI RECLAIMED WATER MAIN ARE SHOWN AS EXISTING BUT WILL BE INSTALLED CONCURRENT WITH THIS PROJECT BY OTHERS. THE RE-PUMP STATION CONTRACTOR WILL HAVE TO COORDINATE WITH THE DEVELOPER. RE-PUMP STATION CONTRACTOR TO LOCATE AND INSTALL ALL CONNECTION POINTS.
5. CONTRACTOR SHALL FIELD RUN 1 1/2" PW PIPING FOR SPRINKLER HOSE BIBBS TO AVOID CONFLICTS WITH TREES AND EXISTING UTILITIES AND PROVIDE FITTINGS AS NEEDED.

ISSUED FOR BID

MOTT MACDONALD
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10245 Centurion Parkway North Suite 320
Jacksonville, Florida 32256
Telephone (904) 203-1090
Architects AA - C000000335
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Surveyors LB - 0000783

REVISIONS

NO.	BY	DATE
6		
5		
4		
3		
2		
1		

DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

YARD PIPING PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'
NO. SHEETS	105
SHEET NO.	14
DRAWING NO.	C-10

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C:\pwworking\mm\lwatt_w\d0440331\C-10.dwg
Current Layout Tab = Layout1 Thu Apr 16, 2020 - 16:14

GENERAL NOTES FOR SOIL EROSION AND SEDIMENT CONTROL:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO STATE STANDARDS.
3. PERMANENT VEGETATION TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A THICKNESS OF TWO (2) TO FOUR (4) INCHES MIXED WITH THE TOP TWO (2) INCHES OF SOIL, ACCORDING TO STATE STANDARDS.
5. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E. SLOPES GREATER THAN 3:1).
6. UNFILTERED DEWATERING IS NOT PERMITTED. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER.
7. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATION COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED IN ACCORDANCE WITH STATE STANDARDS FOR EROSION CONTROL.
8. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY.
9. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE NUMBER 2 (ABOVE).
10. ALL SEDIMENTATION STRUCTURES SHALL BE INSPECTED AND MAINTAINED REGULARLY.
11. ANY AREAS USED FOR THE CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILED MATERIALS (E.G. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.), SHALL BE ENTIRELY PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.

TEMPORARY SEEDING DETAILS

SEED BED PREPARATION
SOIL TO BE THOROUGHLY PULVERIZED BY DISK-HARROWING AND BE LOOSE AND REASONABLY SMOOTH. APPLY FERTILIZER AT A RATE OF 260 LBS/ACRE OF 16-16-16 OR EQUIVALENT, APPLY DOLOMITIC LIMESTONE AT A RATE OF 800 TO 1000 LBS./ACRE TO PROVIDE A SOIL pH OF 5.5 TO 6.5, LIME & FERTILIZER TO BE WORKED INTO THE TOPSOIL TO A DEPTH OF 4". ADD SANDY LOAM TOPSOIL TO A MINIMUM OF TWO (2) INCHES WHERE DIRECTED BY ENGINEER.

SEED MIXTURE
CONSISTING OF ANNUAL RYE (LOLIUM MULTIFLORUM) AT A RATE OF 174 LBS/ACRE.

SODDING

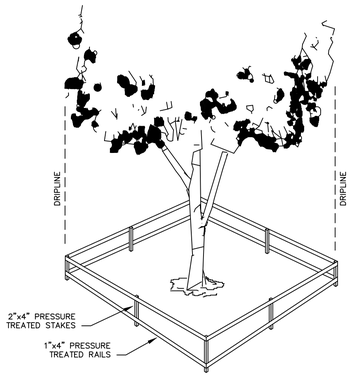
SOD SHALL BE WELL ROOT MATTED ARGENTINE BAHIA GRASS COMMERCIALLY CUT TO A MINIMUM DIMENSION OF 12" x 24" A MAXIMUM OF 72 HOURS PRIOR TO PLACEMENT. SOD SHALL BE LIVE, FRESH AND UNINJURED, REASONABLY FREE OF WEEDS AND OTHER GRASSES, WITH A HEAVY SOIL MAT ADHERING TO THE ROOT SYSTEM. SOD SHALL BE GROWN, CUT, AND SUPPLIED BY A STATE CERTIFIED GROWER.

TREE PROTECTION

1. DAMAGED TRUNKS OR EXPOSED ROOTS WILL BE PAINTED IMMEDIATELY WITH A COMMERCIAL GRADE OF "TREE PAINT".
2. TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE FLUSH TO TRUNK OR MAIN BRANCH AND THAT AREA PAINTED IMMEDIATELY WITH A COMMERCIAL GRADE OF TREE PAINT.

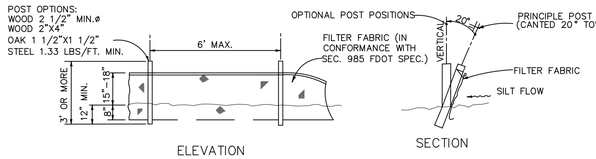
DUST CONTROL

1. ALL AREAS OF CLEARING AND EMBANKMENT AS WELL AS CONSTRUCTION HAUL ROADS SHALL BE TREATED AND MAINTAINED IN SUCH A MANNER AS TO MINIMIZE ANY DUST GENERATION.
2. DISTURBED AREAS SHALL BE MAINTAINED IN A ROUGH GRADED CONDITION AND TEMPORARILY SEEDED AND/OR MULCHED UNTIL PROPER WEATHER CONDITIONS EXIST FOR THE ESTABLISHMENT OF PERMANENT VEGETATION COVER.
3. IN EVENT OF EMERGENCY CONDITIONS, TILLAGE WILL BE SATISFACTORY FREE BEFORE SOIL BLOWING STARTS.

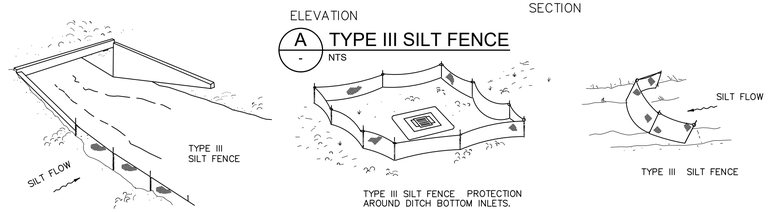


TREE BARRICADE SHALL BE IN PLACE AT THE OUTER EDGE OF THE DRIP LINE OF THE TREE PRIOR TO ANY LANDSCAPE DISTURBANCE.

F - TREE BARRICADE
NTS

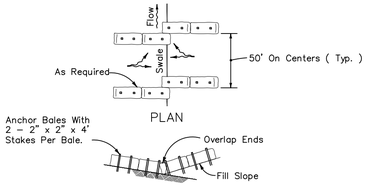


A - TYPE III SILT FENCE
NTS

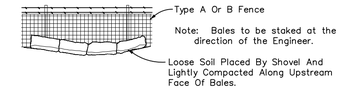


C - SILT FENCE APPLICATIONS
NTS

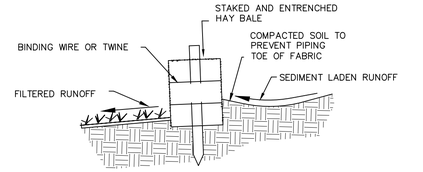
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.



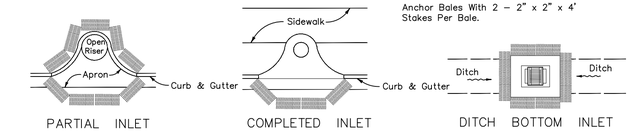
G - BARRIER FOR FILL SLOPES
NTS



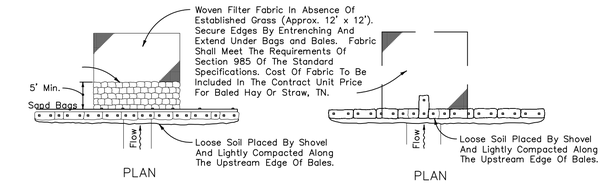
B - BALES BACKED BY FENCE
NTS



D - DETAIL OF PROPERLY INSTALLED HAY BALE
NTS



E - PROTECTION AROUND INLETS OR SIMILIAR STRUCTURES
NTS



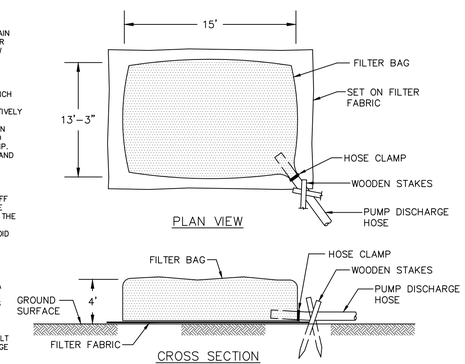
H - BARRIER FOR UNPAVED DITCHES
NTS

DESCRIPTION:
FILTER BAGS WILL BE USED AS AN EFFECTIVE FILTER MEDIUM TO CONTAIN SAND, SILT AND FINES WHEN TRENCH DEWATERING. THE WETLAND FILTER BAG CONTAINS THESE MATERIALS WHILE ALLOWING THE WATER TO FLOW THROUGH THE FABRIC.

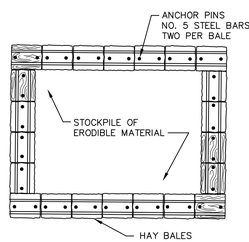
INSTALLATION:
WETLAND FILTER BAGS MAY REPLACE HAY BALE CORRALS DURING TRENCH DEWATERING, AT THE DISCRETION OF THE ENGINEER INSPECTOR. TO INSURE PROPER INSTALLATION, FILTER BAGS WILL BE PLACED ON RELATIVELY FLAT TERRAIN FREE OF BRUSH AND STUMPS TO AVOID RUPTURES AND PUNCTURES. PROPER INSTALLATION REQUIRES CUTTING A SMALL HOLE IN THE CORNER OF THE BAG, INSERTING THE PUMP DISCHARGE HOSE, AND THEN SECURING THE DISCHARGE HOSE TO THE BAG WITH A HOSE CLAMP. FILTER BAGS WILL BE PLACED AS FAR AWAY FROM FLOWING STREAMS AND WETLANDS AS POSSIBLE.

MAINTENANCE:
PRIOR TO REMOVING A BAG FROM THE HOSE, THE BAG WILL BE TIED OFF BELOW THE END OF THE HOSE ALLOWING THE BAG TO DRAIN. DRAINAGE WILL NOT BE ALLOWED THROUGH THE INLET HOLE. TO AVOID RUPTURE, THE BAGS WILL BE ATTENDED AND PUMPING RATES MONITORED. ONCE THE BAG IS INFLATED TO A HEIGHT OF 4 FEET, PUMPING WILL STOP TO AVOID RUPTURE. FILTER BAGS USED DURING CONSTRUCTION WILL BE BUNDLED AND REMOVED FOR PROPER DISPOSAL.

SPECIFICATION:
FILTER BAGS ARE CONSTRUCTED OF NON-WOVEN GEOTEXTILE FABRIC. A MAXIMUM OF ONE SIX INCH DISCHARGE HOSE WILL BE ALLOWED PER FILTER BAG. BAG CAPACITY WILL BE EXCEEDED BEYOND 2,000 GALLONS PER MINUTE. TYPICAL BAG DIMENSIONS ARE 15 FEET BY 13.25 FEET. TO HELP PREVENT PUNCTURES, GEOTEXTILE FABRIC WILL BE PLACED BENEATH THE FILTER BAG WHEN USED IN WOODED LOCATIONS. UNATTENDED FILTER BAGS WILL BE ENCIRCLED WITH A HAY BALE OR SILT FENCE CORRAL. HOSE CLAMPS WILL BE USED TO SECURE THE DISCHARGE HOSE, WIRE OR STRING WILL NOT BE USED.



I - FILTER BAG DETAILS FOR TRENCH DEWATERING OPERATIONS
NTS



J - MATERIAL STOCKPILE DETAIL
NTS

ISSUED FOR BID

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10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 205-1990

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
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1.			

DESIGN ENGINEER: STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO. 58809

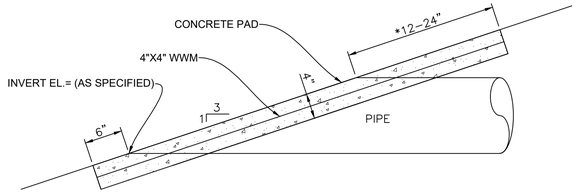
DESIGNER:	S. WHITE	
DRAWN BY:	C. RILEY	
DATE:	APRIL 2020	
CHECKED BY:	K. MORGAN	
DATE:	APRIL 2020	

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

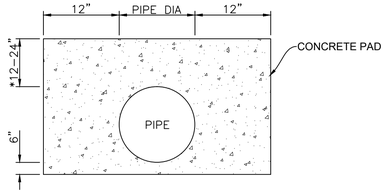
EROSION CONTROL DETAILS

PROJ. NO.	502398244	
DATE:	APRIL 2020	
SCALE:	NTS	
NO. SHEETS	105	
SHEET NO.	15	
DRAWING NO.	CD-1	

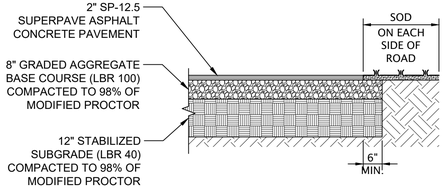


NOTE:
CUT DRAIN PIPE ENDS TO MITERED SECTIONS. COMPACT SOIL ADJACENT TO ENDS AND SOD ACCORDINGLY. ALSO, COMPACT SOIL LIFT COVERING DRAIN PIPES AND SOD ACCORDINGLY.

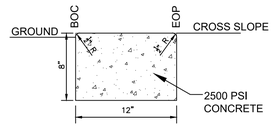
*= 6" TO 8" PIPE = 12" CONCRETE ABOVE PIPE
10" TO 12" PIPE = 18" CONCRETE ABOVE PIPE
14" TO 18" PIPE = 24" CONCRETE ABOVE PIPE



A - TYPICAL SECTION (MES)
NTS

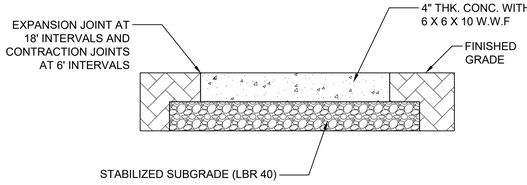


B - ASPHALT PAVEMENT
NTS



STANDARD
EOP
Elevation = EOP El.
BOC
Elevation = EOP El.

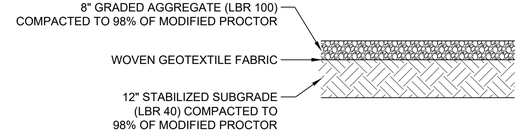
C - RIBBON CURB
NTS



NOTE:

WHERE THE SIDEWALK IS ADJACENT TO THE PAVEMENT, THE SIDEWALK SHALL ABUT THE PAVEMENT AND BE AT THE SAME ELEVATION.

D - SIDEWALK DETAIL
NTS



E - GRADED AGGREGATE DRIVEWAY
NTS

GENERAL NOTES

1. The underdrain pipe shall be either 4" smooth or 5" corrugated tubing unless otherwise shown in the plans. The size to be furnished will be based on the nominal internal diameter of a pipe with a smooth interior wall. Except when prohibited by the plans, the special provisions or this standard, pipe with a corrugated interior wall may be provided based on the following size equivalency.

   4" smooth interior equivalent to 5" corrugated interior
   5" smooth interior equivalent to 6" corrugated interior
   6" smooth interior equivalent to 8" corrugated interior
   8" smooth interior equivalent to 10" corrugated interior

2. Fine aggregate shall be quartz sand meeting the requirements of Sections 902-4 of the Standard Specifications.

3. Coarse aggregate shall be gravel or stone meeting the requirements of Sections 901-2 or 901-3. The gradation shall meet Section 901, Grades 4, 467, 5, 56 or 57 stone unless otherwise shown restricted in the plans.

4. Underdrain Type I, II, III and V shall be in accordance with Section 440.

5. Filter fabric shall be Type D-3 (See Specifications Section 985). The internal filter fabric of Type V underdrain shall have a permittivity of 0.7 /sec. and an AOS of #40 sieve.

6. When Type I is used, a filter fabric sock meeting Section 948 is required.

7. See Index 120-002 for the standard location of Type I, II, and III underdrain. The location of Type V underdrain and nonstandard locations of Type I, II, and III underdrain will be as detailed in the plans.

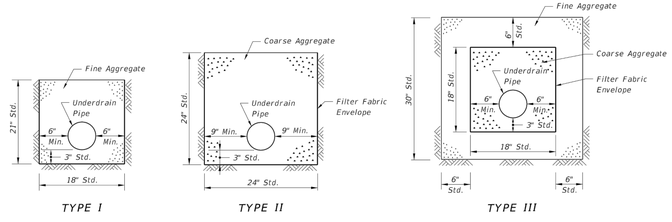
8. All filter fabric joints shall overlap a minimum of 1'. The internal filter fabric of Type V underdrain shall overlap into the coarse aggregate or the fine aggregate a minimum of 1'.

9. Underdrain outlet pipes shall be nonperforated and all bends shall be made using ⅛ (45 deg.) elbows. 90 deg. bends shall be constructed with two ⅛ elbows separated by at least 1' of straight pipe. Outlet pipes stubbed into inlets or other drainage structures shall be not less than 6" above the structure flow line. Outlet pipes discharging to grassed areas shall have concrete aprons, hardware cloth, and bordering sod as shown in Index 466-001 for Edgedrain outlets.

10. Pay Item shall be based on the size of the smooth interior products. The contract unit price for Underdrain, LF, shall include the cost of pipe, fittings, aggregate, sock, filter fabric, underdrain cleanouts, and concrete aprons.

    The contract unit price for Underdrain Outlet Pipe, LF, shall be full compensation for trench excavation, pipe and fittings, concrete aprons, hardware cloth for concrete aprons, stubbing into drainage structures, backfill in place, and disposal of excess materials.

    The contract unit price for Underdrain Inspection Box, EA. shall be for the number completed and accepted.



DESIGN NOTES

1. The type of underdrain should be selected to meet design water removal rate and soil conditions. Caution is prescribed in the use of these typical sections since special designs may be required to satisfy project conditions.

2. Type I underdrain is intended for minimum water removal conditions.

3. Type II underdrain is intended for moderate water removal conditions. Where reactive conditions may create chemical clogging, the use of an inert material and/or elimination of the filter fabric may be necessary.

4. Type III underdrain is intended for maximum water removal conditions. Filter fabric is required between the coarse aggregate or fine aggregate including those described in general notes 2 and 3. Design note 3 applies for reactive conditions.

5. Type V underdrain is intended for use in detention basins and other locations which require a filtration system. The standard fine aggregate specified for Type V underdrain conforms to filtration gradation requirements of Chapter 62-25 FAC.

6. The designer should detail in the plans, the location of: (a) Type V underdrain, (b) nonstandard locations of Type I, II, and III underdrain, (c) underdrain inspection boxes, (d) cleanouts for Type V underdrain, and (e) underdrain outlet pipes.

7. The designer should specify the flow line elevations at the beginning, bends, junctions and ends of underdrain pipes and outlet pipes.

8. The designer should evaluate whether an external filter fabric envelope is required around underdrain Types I and III. When required, fabric shall be specified in the plans.

LAST REVISION	DESCRIPTION:			
11/01/17	REVISION	FY 2018-19 STANDARD PLANS	UNDERDRAIN	INDEX 440-001 / SHEET 1 of 2

F - UNDERDRAIN DETAILS
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
STEVEN D. WHITE, P.E.
FLORIDA REGISTRATION NO.
58809

DESIGNER: S. WHITE
DRAWN BY: C. RILEY
DATE: APRIL 2020
CHECKED BY: K. MORGAN
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CIVIL DETAILS

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NTS

NO. SHEETS 105
SHEET NO. 12
DRAWING NO. CD-2

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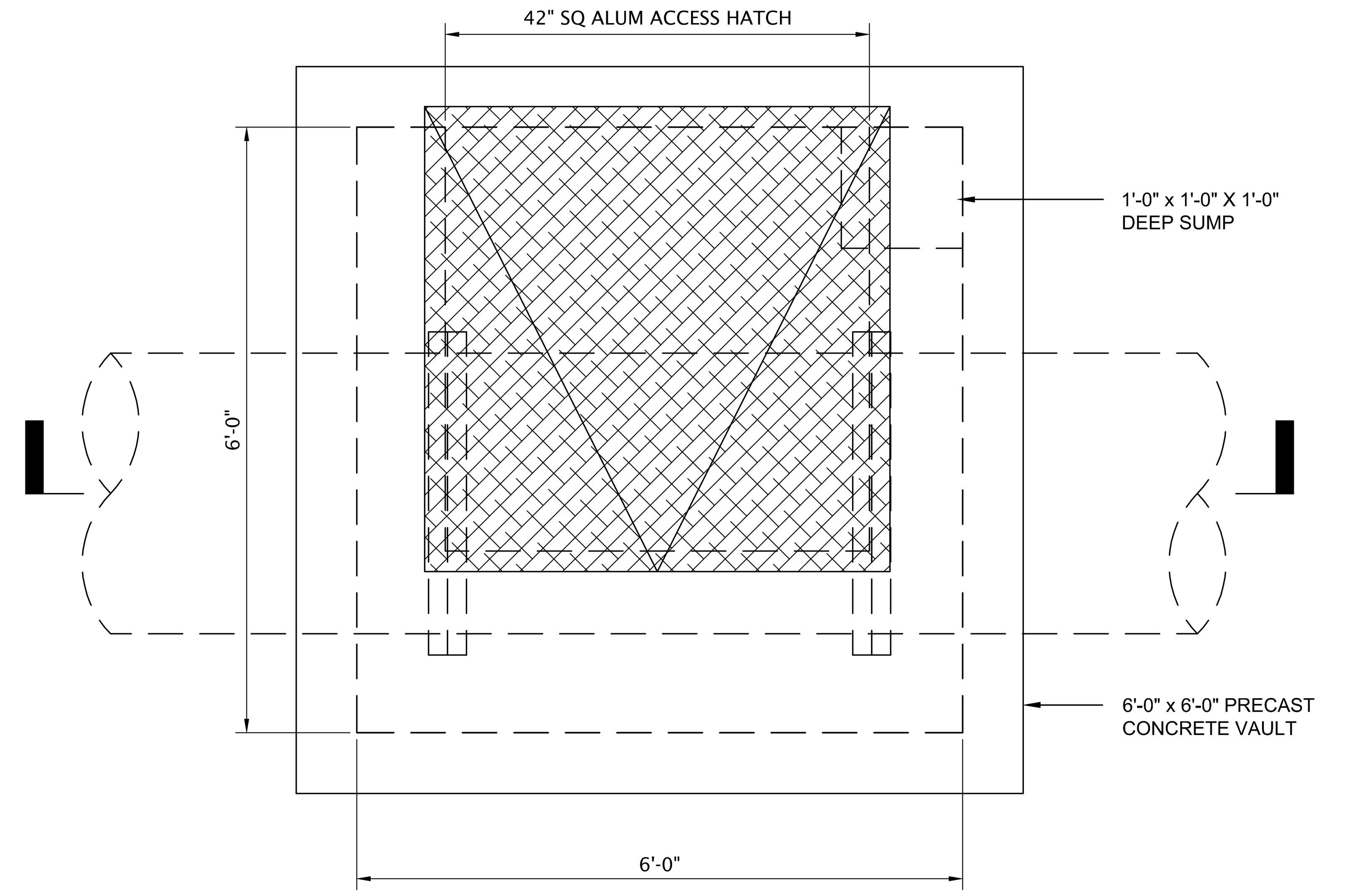
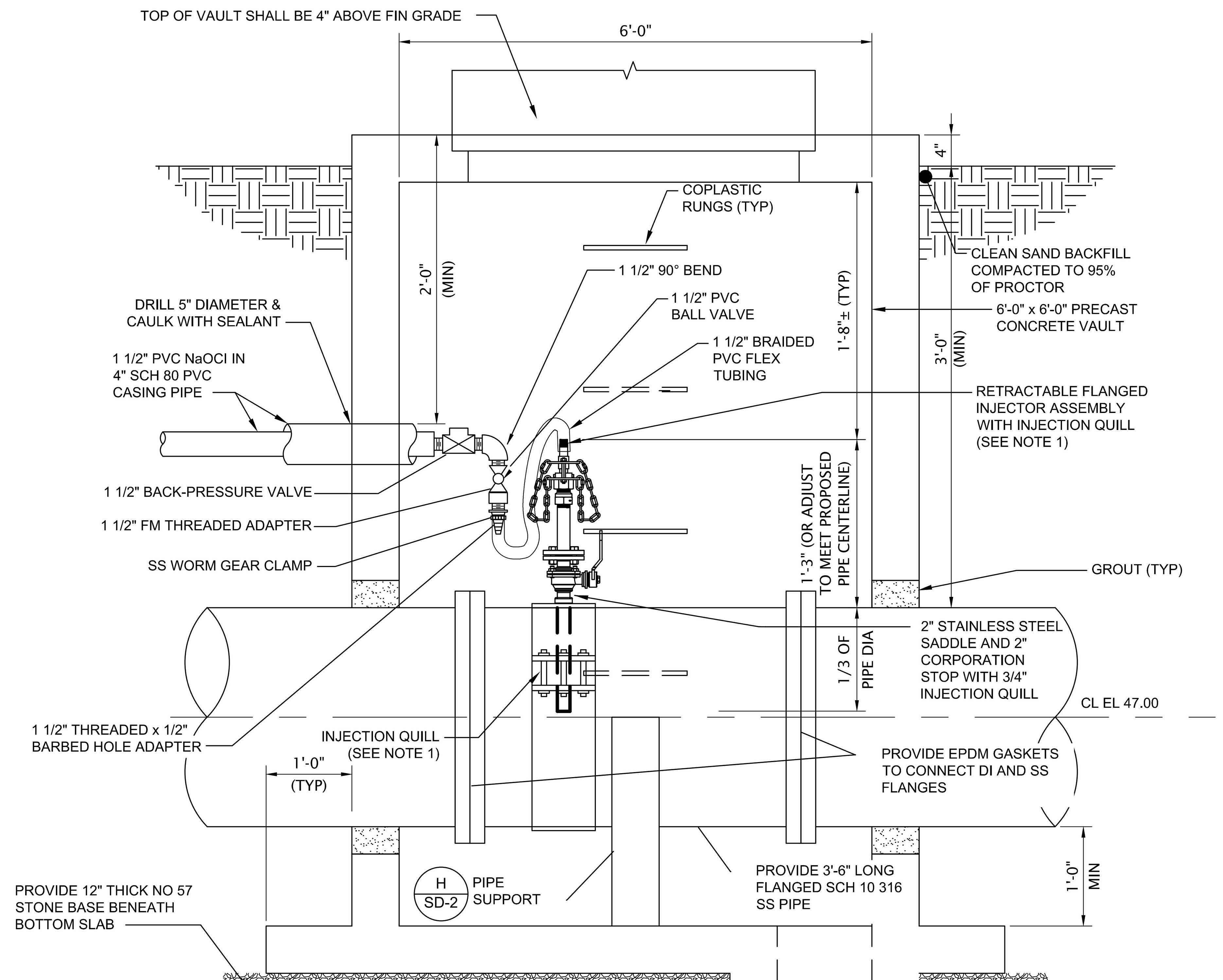
Xrefs Attached= JEA_SHT22x34_BOR [..\d0440358\JEA_SHT22x34_BOR.dwg]



PLAN

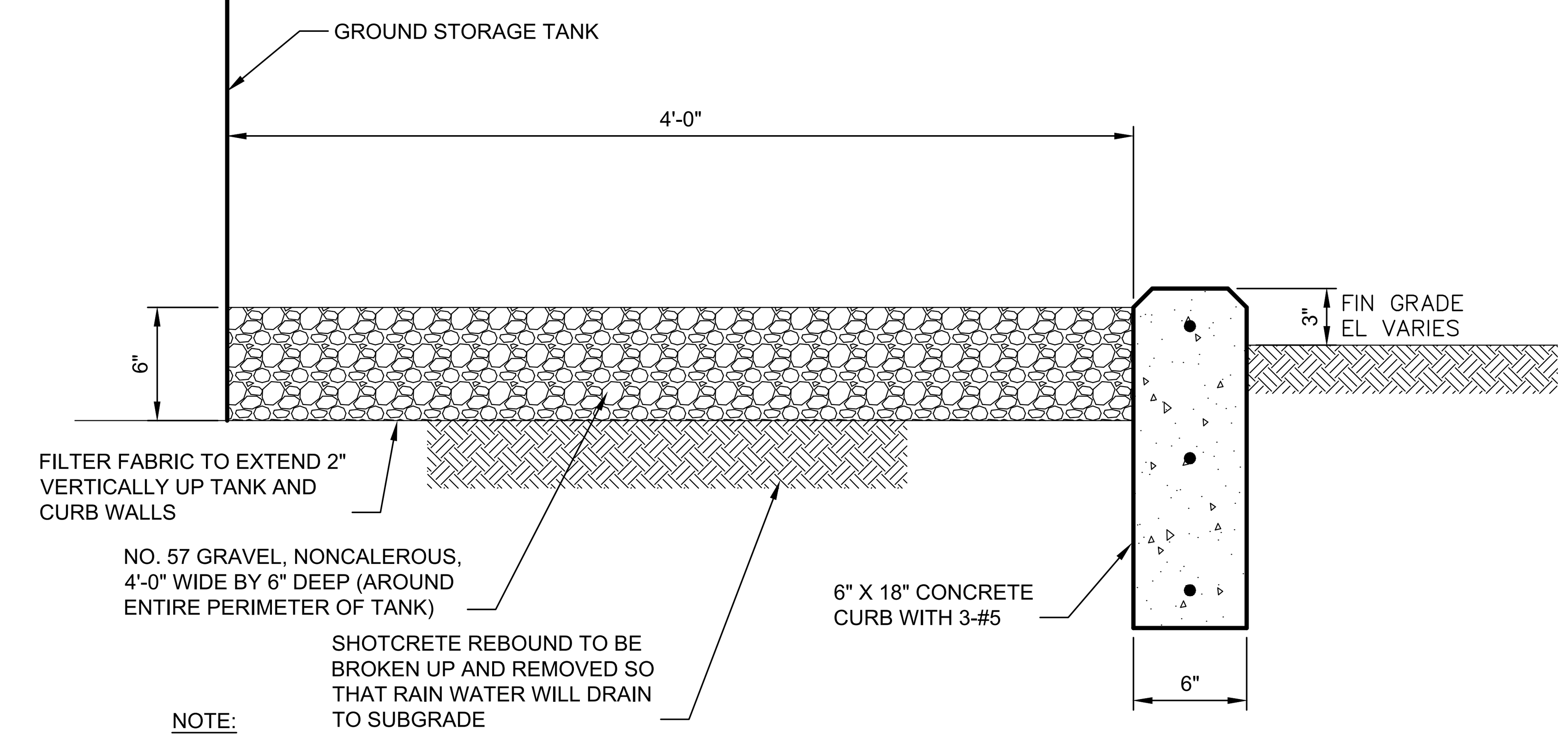


NOTES:

1. RETRACTOR INJECTOR ASSEMBLY SHALL BE MANUFACTURED BY SAF-T-FLO OR ENGINEER APPROVED EQUAL. MATERIALS OF CONSTRUCTION SHALL BE COMPATIBLE WITH 15% SODIUM HYPOCHLORITE AND BE CAPABLE OF WITHSTANDING LINE PRESSURE OF 25 PSI. THE VALVE MUST INCLUDE AN ACCEPTABLE SAFETY DEVICE TO PREVENT ACCIDENTAL RELEASE OF SOLUTION TUBE WHILE UNDER MAXIMUM WATER MAIN PRESSURE AND/OR SURGE CONDITIONS. SOLUTION TUBE SHALL BE 1 1/2-INCH DIAMETER PVC. A BALL CHECK VALVE SHALL BE INCLUDED TO PREVENT BACKPRESSURE FROM THE MAIN FROM ENTERING CHEMICAL FEED SYSTEM. SEALS SHALL BE VITON. A 316 STAINLESS STEEL SAFETY CHAIN SHALL BE INCLUDED TO PREVENT WITHDRAWAL OF SOLUTION TUBE PAST CORPORATION STOP. SAFETY CHAIN LENGTH SHALL BE PRESET BY MANUFACTURER FOR CLOSURE OF THE CORPORATION STOP BEFORE WITHDRAWAL OF SOLUTION TUBE.
2. INJECTION QUILL SHALL NOT BE INSTALLED DIRECTLY ON THE CROWN OF THE PIPE AND SHALL BE SLIGHTLY OFFSET SO AS NOT TO CREATE A WEAK SPOT IN LENGTH OF THE PIPE.
3. ALL PVC PIPE SHALL BE SCHEDULE 80.
4. CONTRACTOR SHALL SUBMIT COORDINATION DRAWINGS SHOWING CLEAR DIMENSIONS BETWEEN THE INSTALLED INJECTION QUILL, CONCRETE STRUCTURE, AND ACCESS HATCH.

SECTION

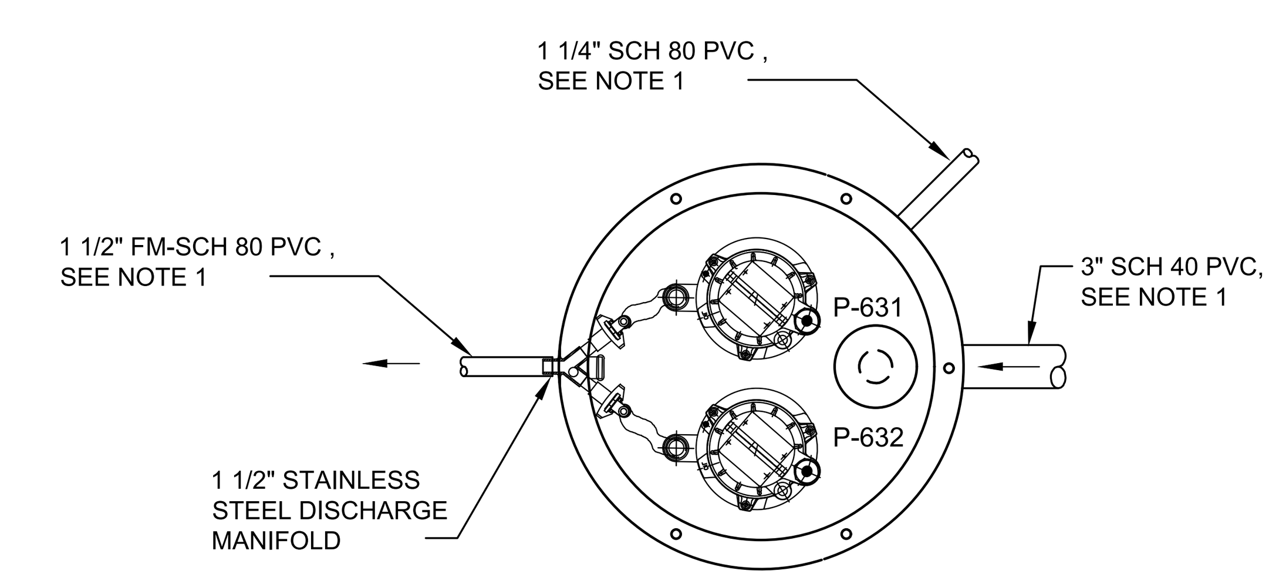
A - CHEMICAL INJECTION QUILL VAULT DETAIL
NTS



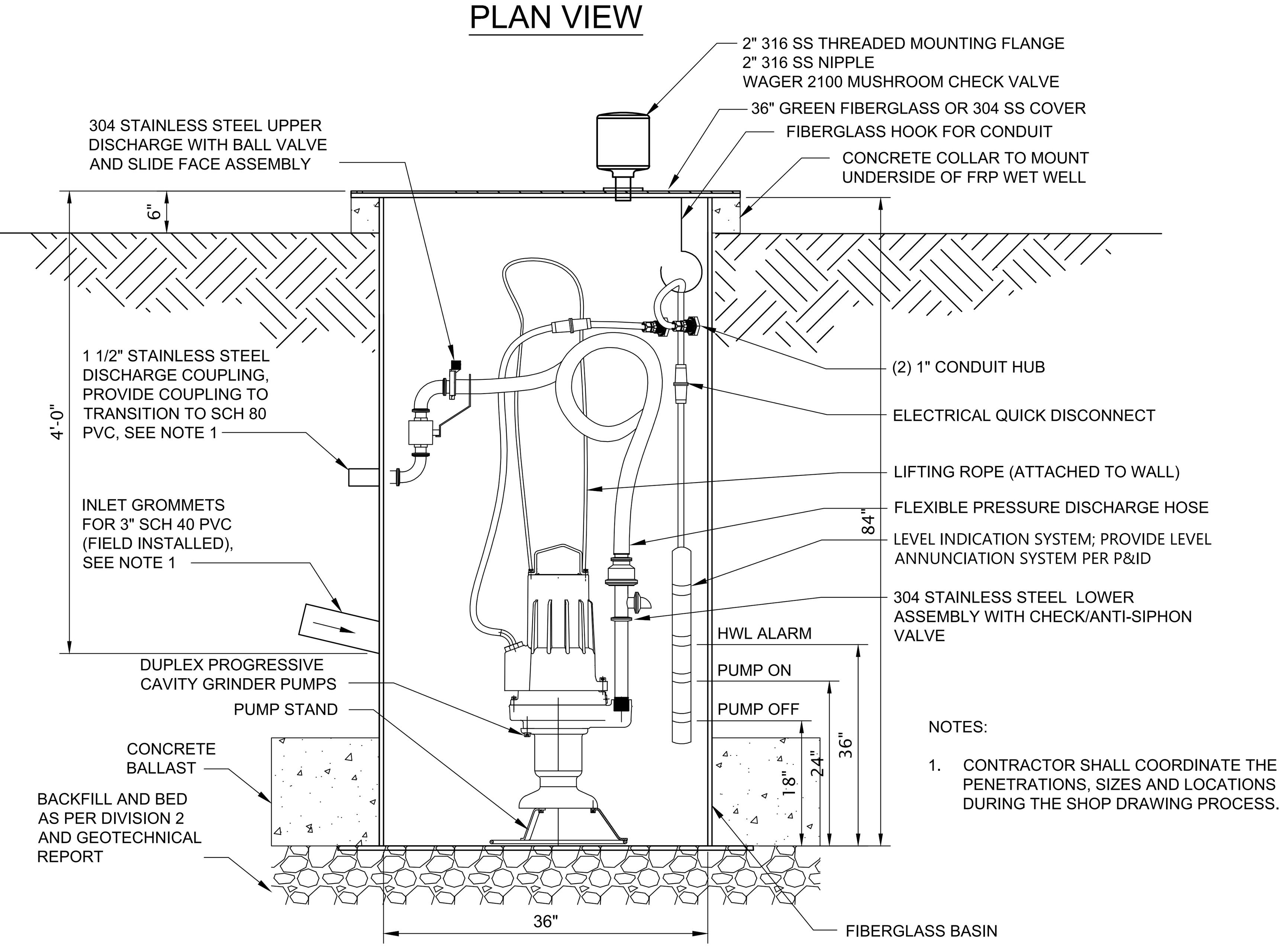
NOTE:

1. THE RE-PUMP STATION CONTRACTOR SHALL PROVIDE THE FINAL GRADING, GRAVEL STRIP, AND CURB. THE TANK CONTRACTOR SHALL REMOVE ALL SHOTCRETE REBOUND.

B - GRAVEL STRIP AND CURB
NTS



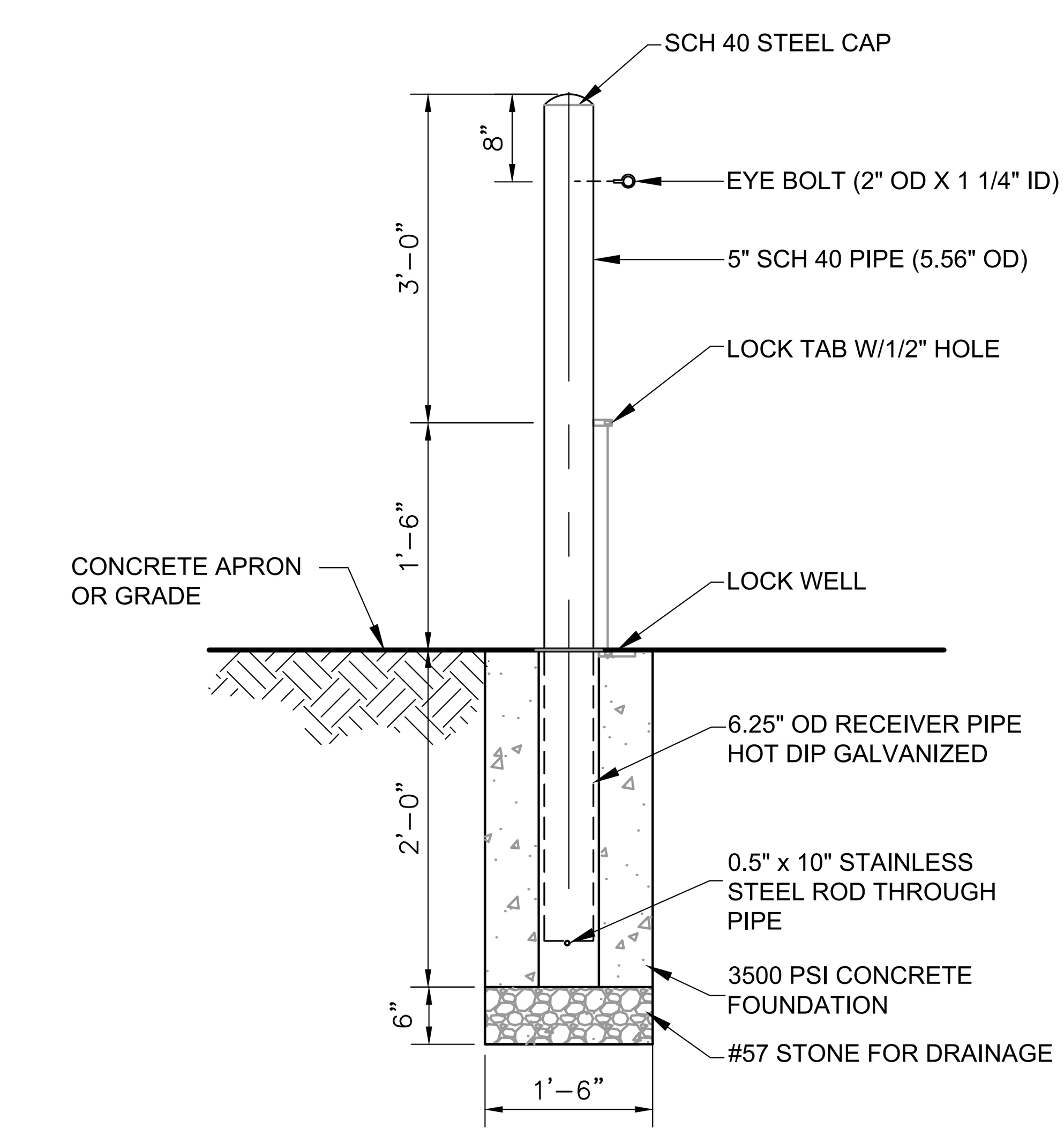
PLAN VIEW



NOTES:

1. CONTRACTOR SHALL COORDINATE THE PENETRATIONS, SIZES AND LOCATIONS DURING THE SHOP DRAWING PROCESS.

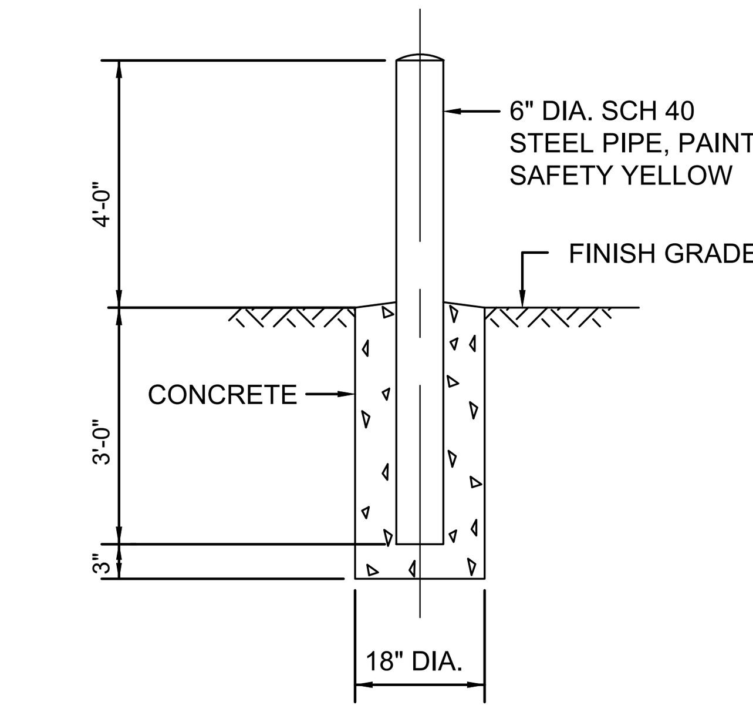
C - DUPLEX GRINDER PUMP STATION
NTS



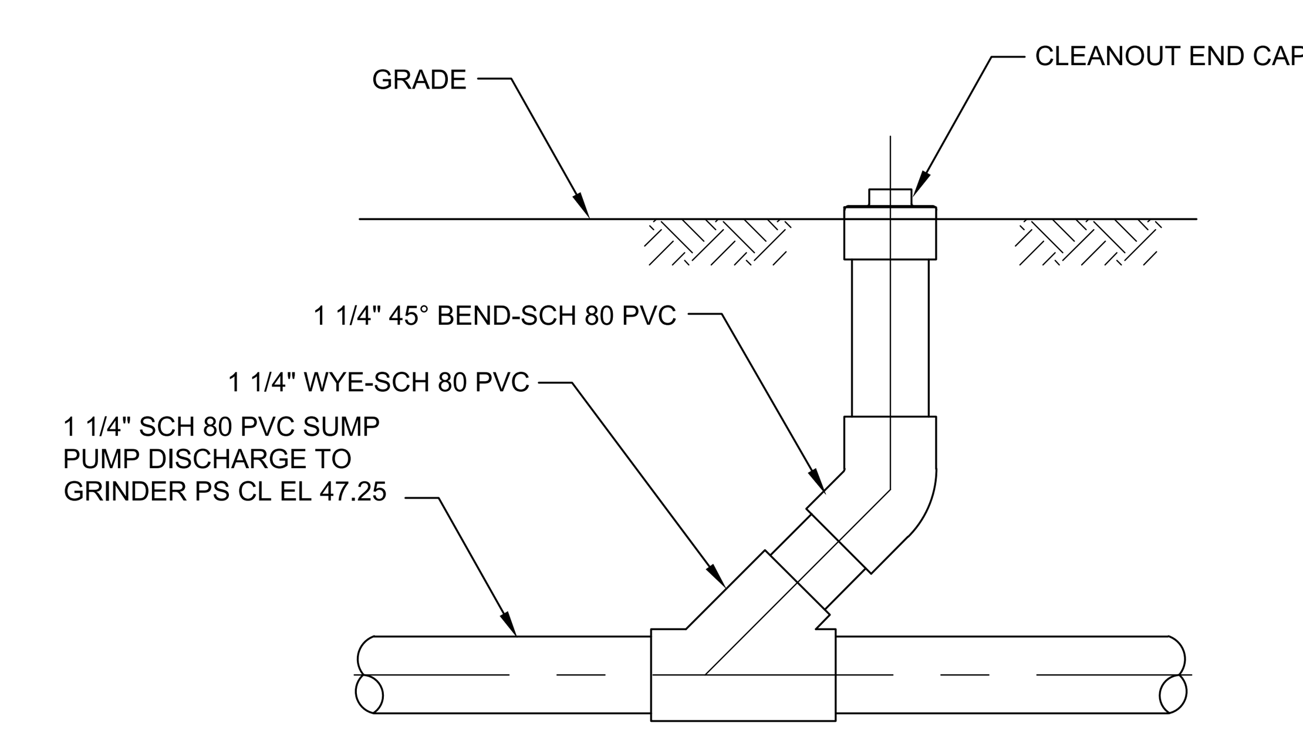
NOTE:

1. BOLLARDS SHALL BE "FAIRWEATHER" MODEL B-2 OR APPROVED EQUAL.
2. FURNISH BOLLARDS WITH 4-MIL POWDER COATING FACTORY FINISH. COLOR SHALL BE SAFETY YELLOW.

E - REMOVABLE BOLLARD
NTS



F - PIPE BOLLARD
NTS



G - CLEANOUT
NTS

ISSUED FOR BID

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Telephone (904) 203-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

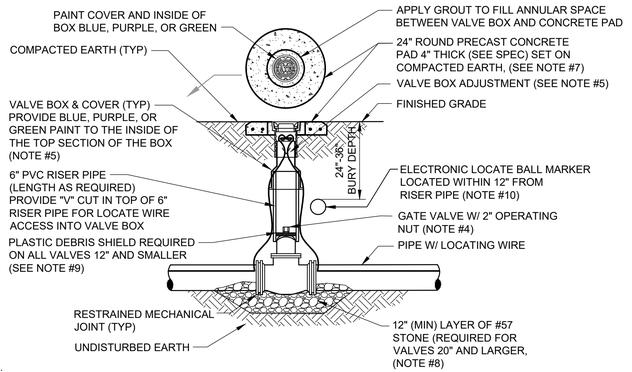
JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CIVIL DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS	105
SHEET NO.	17
DRAWING NO.	CD-3



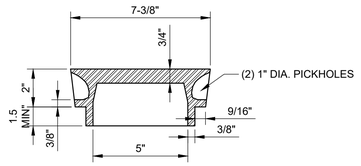
NOTES:

1. FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
2. LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAILW-44).
3. A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST/ADJACENT/(ASPHALT IF NO CURB) TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED BLUE WATER/PURPLE RECLAIMED.
4. IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT. OUTSIDE OF PAVED AREAS (GRASS), INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT. OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 24" LONG PIG-TAIL AT THE TOP SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.
6. BRASS IDENTIFICATION TAG INDICATING "WATER", "SEWER", OR "REUSE", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE. PROVIDE A ¼" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH LINES.
7. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/2 - #4 REBAR AROUND PERIMETER, MAY BE USED.
8. GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF GRAVEL IS 12" UNDER THE VALVE UP TO ⅓ THE OVERALL HEIGHT OF THE VALVE.
9. FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.
10. ALL VALVES SHALL BE INSTALLED WITH AN ELECTRIC LOCATE MARKER. MARKER SHALL BE 4" DIA. COLOR CODED BALL MARKER (3M-1403XR FOR WATER AND 1408XR FOR RECLAIMED WATER).

A VALVE AND VALVE BOX

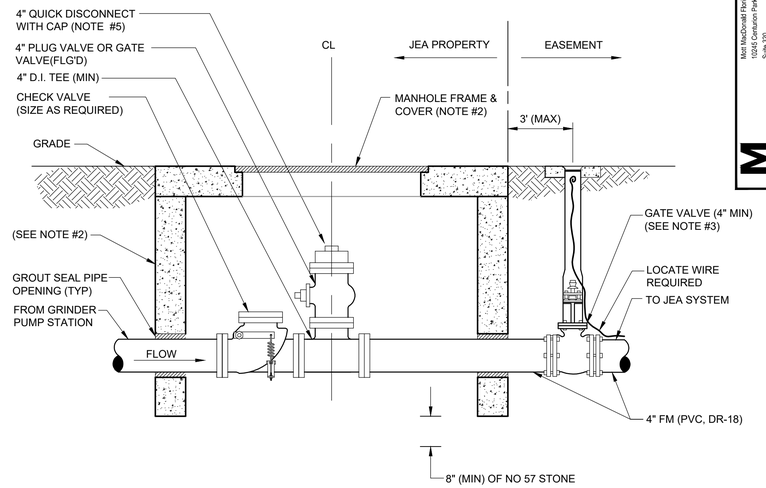
- NTS — PLATE W-16 AND W-18 JANUARY 2019

HEAVY DUTY RATING



NOTES:

1. PAINT TOP OF THE COVER WITH ENAMEL PAINT (BLUE COLOR) FOR WATER.
2. FOR "REUSE" PAINT TOP PANTONE PURPLE.
3. FOR "SEWER" PAINT TOP GREEN.
4. LID WEIGHT: APPROX. 12 LBS.

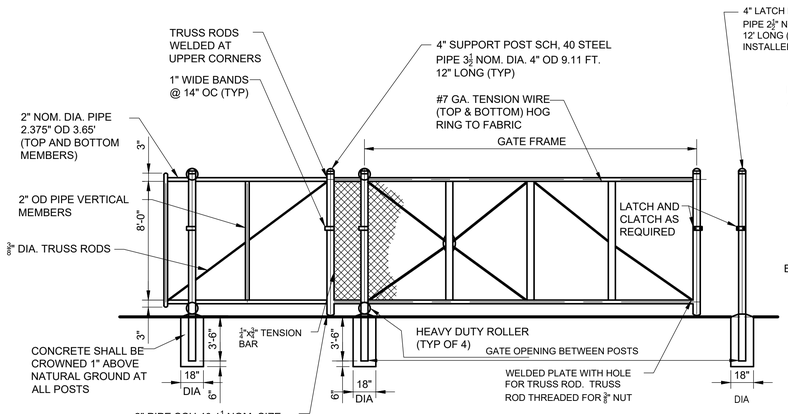


NOTES :

1. SEWER PUMP-OUT BOX SHALL BE CONSTRUCTED ON JEA PROPERTY AND LOCATED AT THE FDOT R/W LINE. THE PREFERRED CONSTRUCTION LAYOUT IS SHOWN ABOVE.
2. ASSEMBLY TO BE ENCLOSED WITHIN A 48"x48" (MIN) PRECAST CONCRETE BOX WITH OPEN BOTTOM W/H-20 TRAFFIC LOADING COVER OR TYPE "C" MANHOLE OPEN BOTTOM WITH FRAME AND COVER (NON-JEA LOGO TYPE COVER).
3. A JEA APPROVED GATE VALVE (4" MIN) SHALL BE PROVIDED AT THE R/W LINE FOR ALL FORCE MAIN PIPING WHICH EXCEEDS 15' LINEAR FEET WITHIN THE CITY R/W AREA. THE GATE VALVE AT THE R/W LINE IS NOT REQUIRED WHERE THE CONNECTION (CONNECTION AT JEA MAIN) IS LOCATED ON THE SAME SIDE OF THE STREET AS THE PUMP-OUT BOX (SHORT-SIDE SERVICE) AND CONSIST OF 15 LINEAR FEET OR LESS WITHIN THE CITY R/W AREA.
4. NO CONNECTIONS PERMITTED INTO JEA FORCE MAINS WHICH ARE GREATER THAN 12" SIZE UNLESS THE CONNECTION IS FROM A MASTER PUMP STATION (441GPM, MIN.)
5. QUICK DISCONNECT WITH CAP SHALL BE ALUMINUM AND BE POSITIONED DIRECTLY UNDER CENTER OF MANHOLE LID FOR ACCESS.

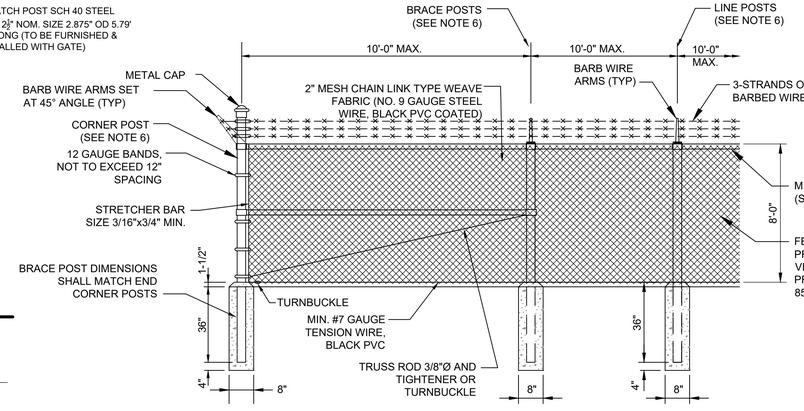
C PRIVATE PUMP OUT ASSEMBLY

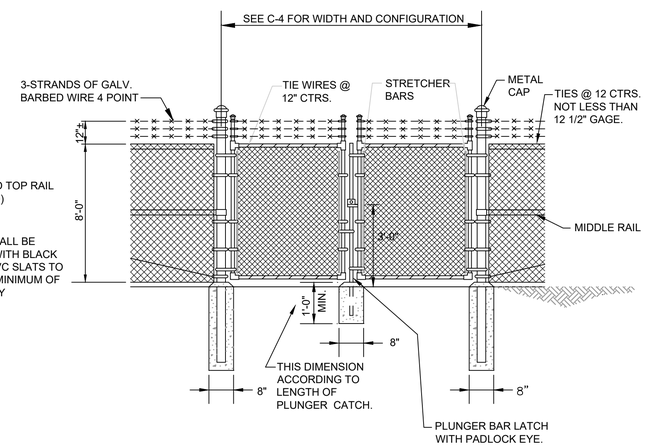
- NTS — PLATE S-46



GATE OPENING	GATE FRAME	BACK FRAME
26'	26'–3"	13'

CANTILEVERED SLIDE GATE





SWING GATES

NOTES:

1. FENCE SHALL BE INSTALLED AS INDICATED ON THE SITE PLAN.
2. GATE POST SHALL BE 4" O.D. PVC COATED GALVANIZED STEEL PIPE. CORNER POST TO BE 3" O.D. PVC COATED GALVANIZED STEEL PIPE. LINE POST TO BE 2 1/2" O.D. PVC COATED GALVANIZED STEEL PIPE.
3. ALL FENCE SHALL BE GROUNDED IN ACCORDANCE WITH JEA GROUNDING STANDARDS.
4. BONDING WIRE BETWEEN GATE POST IS NOT REQUIRED WHERE EXISTING ROAD PAVING OR RAILROAD TRACKS WOULD MAKE INSTALLATION IMPRACTICAL.
5. ALL FENCING SHALL BE IN ACCORDANCE WITH JEA SPECIFCATION NO. 492.
6. EMBEDDED CONCRETE PORTION OF FENCE POST SHALL HAVE MASTIC SEAL OR EQUAL COATING TO A MINIMUM OF 6" ABOVE FINISH GRADE.
7. FENCE FABRIC SHALL BE KNUCKLED ON TOP AND TWIST ON BOTTOM.
8. ALL FENCING, RAILS, POSTS, BRACKETS, BOLTS ETC. WILL BE PVC COATED.
9. TOP RAIL SHALL BE FITTED WITH COUPLINGS OR WEDGED FOR CONNECTING THE LENGTHS INTO A CONTINUOUS RUN. COUPLING SHALL BE MIN 6" LONG WITH MIN 0.07 WALL THICKNESS, AND SHALL ALLOW FOR EXPANSION AND CONTRACTION.

B FENCE AND GATE DETAILS

- NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
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Jacksonville, Florida 32256
Telephone (904) 363-1400
Architects AA - C000000305
Engineers EB - 0000165
Surveyors LB - 0000783
MOTT MACDONALD

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6.			
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3.			
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DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

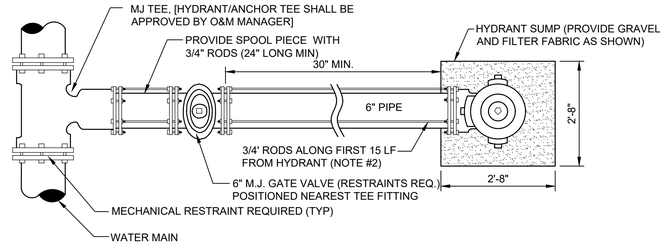
DESIGNER:	L. TRACEY	D.		C.	
DRAWN BY:	B. LEE	D.		C.	
DATE:	APRIL 2020	D.		C.	
CHECKED BY:	D. KECK	D.		C.	
DATE:	APRIL 2020	D.		C.	

JEA Building Community sm

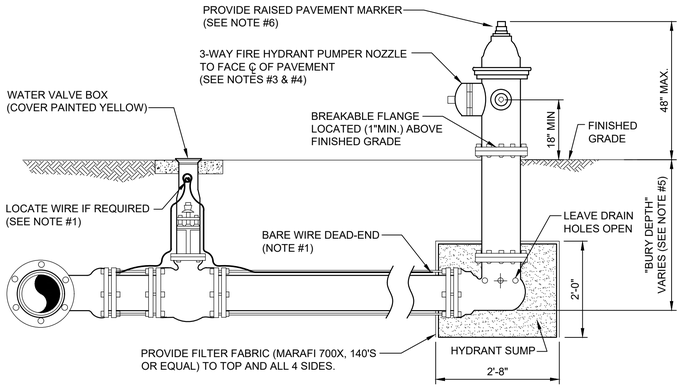
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CIVIL DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED
NO. SHEETS	105
SHEET NO.	18
DRAWING NO.	CD-4



PLAN



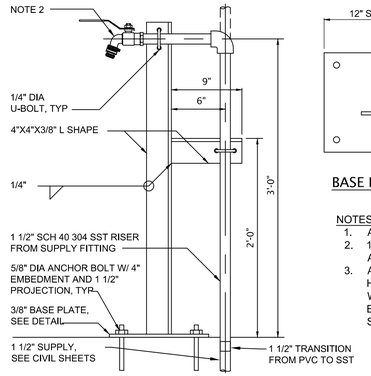
SECTION

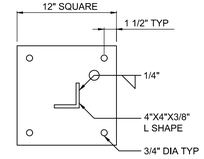
NOTES:

1. LOCATE WIRE IS ONLY REQUIRED IF THE DISTANCE BETWEEN VALVE AND HYDRANT IS OVER 15 LINEAR FEET IF REQUIRED, THE WIRE SHALL BE ROUTED FROM THE VALVE TO THE HYDRANT AS SHOWN ABOVE. THE END OF THE WIRE SHALL BE SECURED TO THE PIPE MAIN. SEE SECTION 350, LOCATE WIRE INSTALLATION PARAGRAPH.
2. FIRE HYDRANTS SHALL BE INSTALLED BETWEEN BACK OF CURB AND FACE OF SIDEWALK AND NOT WITHIN SWALE/DITCH AREAS. THE DISTANCE RANGE FROM EDGE OF ADJACENT PAVEMENT, BACK OF CURB AND FACE OF SIDEWALK SHALL BE IN COMPLIANCE WITH LOCAL COUNTY FIRE DEPARTMENT RULES AND AS APPROVED BY JEA AND APPLICABLE PERMITTING AGENCIES. DISTANCE SHALL BE MEASURED TO THE CLOSEST PART OF THE FIRE HYDRANT (I.E. THE PUMPER NOZZLE). THE MAXIMUM DISTANCE (BACK OF CURB) SHALL BE IN COMPLIANCE WITH LOCAL COUNTY FIRE DEPARTMENT RULES AND AS APPROVED BY JEA. FOR OTHER LOCATION LIMITATIONS SEE PLATES W-10 AND W-11. IF PIPING BETWEEN TEE AND HYDRANT IS LONGER THAN 80 LF, AN ADDITIONAL 6" GATE VALVE IS REQUIRED AT THE HYDRANT LOCATION (PROVIDE 30" SEPARATION). ALL PIPING, VALVES AND FITTINGS ALONG THE HYDRANT BRANCH MAIN WHICH IS WITHIN 15 LF OF THE HYDRANT SHALL BE RESTRAINED UTILIZING ONLY TWO 3/4" DIA (THREADED ENDS) STEEL RODS AND EYE BOLTS (NO JOINT RESTRAINT DEVICES REQUIRED), A SPLIT SERRATED RING WITH RESTRAINT EARS (EBAA 15 PF06 or EQUAL) MAYBE USED IN THIS ASSEMBLY. ALL OTHER JOINTS ALONG THE HYDRANT BRANCH MAIN OUTSIDE OF THE FIRST 15 LF SHALL INCLUDE JOINT RESTRAINTS.
3. OPERATION OF THE FIRE HYDRANT SHALL BE EITHER FULL OPEN POSITION OR TOTALLY CLOSED POSITION. THE HYDRANT SHALL NOT BE UTILIZED TO THROTTLE OUTLET FLOW.
4. PRIOR TO PROJECT FINAL INSPECTION, THE HYDRANT AND ALL ABOVE GROUND PIPING SHALL BE RE-OILED, GREASED AND REPAINTED (RUS- KIL ENAMEL-INTERNATIONAL YELLOW OR EQUAL). PRIVATELY OWNED AND MAINTAINED FIRE HYDRANTS SHALL BE PAINTED RED. RECLAIMED WATER HYDRANT SHALL BE PAINTED PANTONE PURPLE.
5. FIRE HYDRANTS SHALL BE ORDERED WITH PROPER "BURY DEPTH" TO MEET ACTUAL FIELD CONDITIONS. THIS IS ESPECIALLY IMPORTANT FOR BRANCH LINES WHICH TEE-OFF A 12" OR LARGER WATER MAIN. UNLESS APPROVED OTHERWISE BY JEA, THE INSTALLATION OF (45°) BENDS IS NOT ACCEPTABLE WHEN UTILIZED TO CORRECT AN IMPROPERLY FURNISHED HYDRANT. THE USE OF HYDRANT EXTENSIONS SHOULD BE MINIMIZED.
6. BLUE REFLECTIVE MARKERS SHALL BE INSTALLED IN SUCH A MANNER THAT THE REFLECTIVE FACE OF THE MARKER IS PERPENDICULAR TO A LINE PARALLEL TO THE ROADWAY CENTERLINE. THE BLUE REFLECTIVE MARKERS SHALL BE PLACED IN THE CENTER OF THE TRAVEL LANE, DIRECTLY ACROSS FROM AND ADJACENT TO EACH FIRE HYDRANT.
7. AS PER DEP RULE 62-610.469, RECLAIMED WATER HYDRANTS SHALL BE LABELED AS NON-POTABLE WATER WITH SIGNS STATING "DO NOT DRINK" IN ENGLISH AND SPANISH. CONTRACTOR SHALL PROVIDE FREE STANDING SIGNS FOR RECLAIMED WATER FIRE HYDRANTS.

A - FIRE HYDRANT INSTALLATION USING MECHANICAL JOINT TEE

NTS PLATE W-13





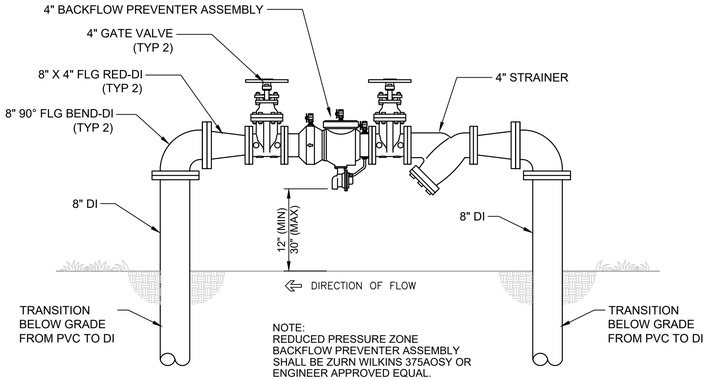
BASE PLATE DETAIL

NOTES:

1. ALL ANCHORS SHALL BE 316 SST.
2. 1 1/2" SST BALL VALVE HOSE BIBB W/LEVER HANDLE. ANTI-SIPHON VACUUM BREAKER.
3. AS PER DEP RULE 62-610.469, RECLAIMED WATER HOSE BIBBS SHALL BE LABELED AS NON-POTABLE WATER WITH SIGNS STATING "DO NOT DRINK" IN ENGLISH AND SPANISH. CONTRACTOR SHALL PROVIDE SIGNS FOR ALL RECLAIMED WATER HOSE BIBBS.

B - FREE-STANDING HOSE BIBB

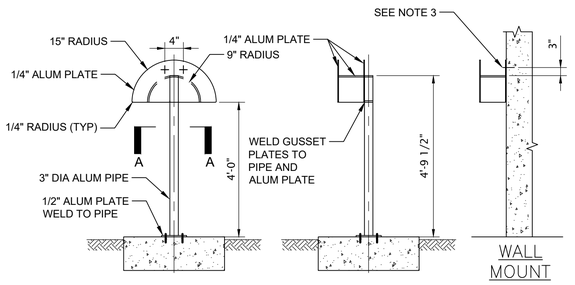
NTS

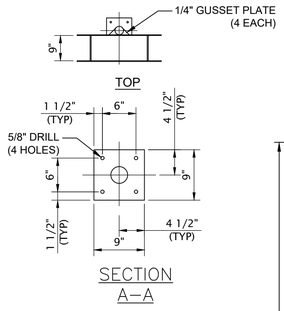


NOTE:
REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY SHALL BE ZURN WILKINS 375AOSY OR ENGINEER APPROVED EQUAL.

E - REDUCED PRESSURE ZONE BACKFLOW PREVENTER

NTS



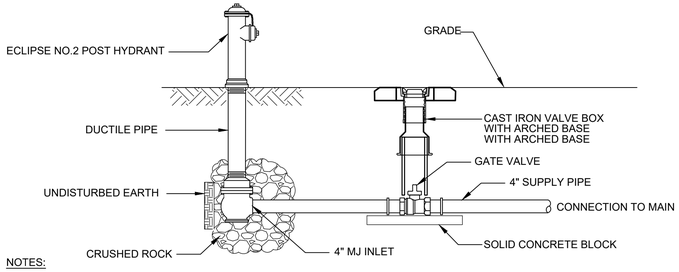


NOTES:

1. CONTRACTOR SHALL PROVIDE 1 1/2" REINFORCED RUBBER HOSES FOR EACH WASH HOSE STATION. THE YARD HYDRANT WASH HOSE STATION SHALL HAVE A 100' HOSE AND ALL OTHER WASH HOSE STATIONS SHALL HAVE 50' HOSES. EACH HOSE SHALL HAVE A BRASS SPRAY NOZZLE.
2. ALL ANCHORS SHALL BE 316 SST.
3. ANCHOR WASH HOSE STATION TO WALL WITH SST HARDWARE.

C - WASH HOSE STATION

NTS

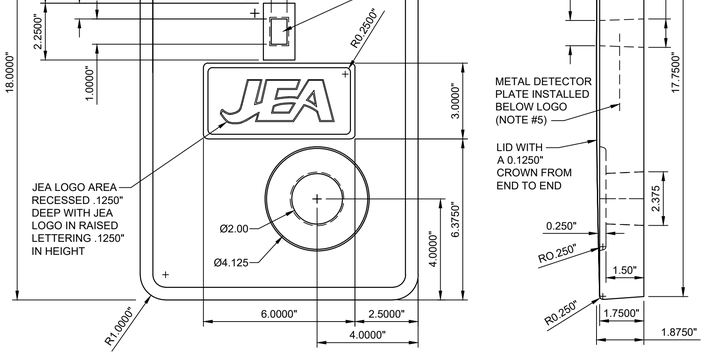


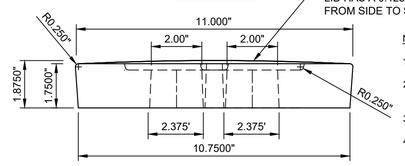
NOTES:

1. YARD HYDRANTS SHALL BE ECLIPSE NO. 2 POST HYDRANTS AS MANUFACTURED BY JOHN C. KUPFERLE FOUNDRY CO., ST. LOUIS, MO. OR EQUAL.
2. HYDRANTS SHALL BE SELF-DRAWING, NON-FREEZING, COMPRESSION TYPE WITH 1.25" MAIN VALVE OPENING.
3. HYDRANTS SHALL HAVE A 3" IRON RISER WITH A CAST IRON STOCK TOP AND A NON - TURNING OPERATING ROD, PRINCIPAL INTERIOR OPERATING PARTS SHALL BE BRASS AND REMOVABLE FROM THE HYDRANT FOR SERVING WITHOUT EXCAVATING THE HYDRANT.
4. HYDRANTS SHALL BE SET IN A 4 CUBIC FT CRUSHED STONE TO ALLOW FOR PROPER DRAINAGE OF THE HYDRANT. RECOMMENDATIONS OF THE AWWA SHOULD BE FOLLOWED WHEN INSTALLING THE HYDRANT.
5. ALL JOINTS SHALL BE RESTRAINED.
6. AS PER DEP RULE 62-610.469, RECLAIMED WATER YARD HYDRANTS SHALL BE LABELED AS NON-POTABLE WATER WITH SIGNS STATING "DO NOT DRINK" IN ENGLISH AND SPANISH. CONTRACTOR SHALL PROVIDE FREE STANDING SIGNS FOR RECLAIMED WATER YARD HYDRANTS.

D - YARD HYDRANT

NTS





NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. COLOR SHALL BE OFF-WHITE, NON-POROUS, SAND TEXTURED SATIN FINISH.
3. ALL TOPS SHALL MEET A-8 (ASTM C857) LOAD RATING.
4. THE LID SHALL BE CERTIFIED BY CELLNET TECHNOLOGY INC AND SENSUS METERING SYSTEMS TO BE RF COMPATIBLE WITH THE SENSUS MTU.
5. METAL DETECTOR PLATE SHALL BE DETECTABLE BY JEA MAGNETIC LOCATE EQUIPMENT.

F - WATER METER BOX POLYMER COVER MODEL NO. 37 - TWO HOLE

NTS PLATE W-3A

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone (904) 363-1400
Architects AA - C000005
Engineers EB - 0000165
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

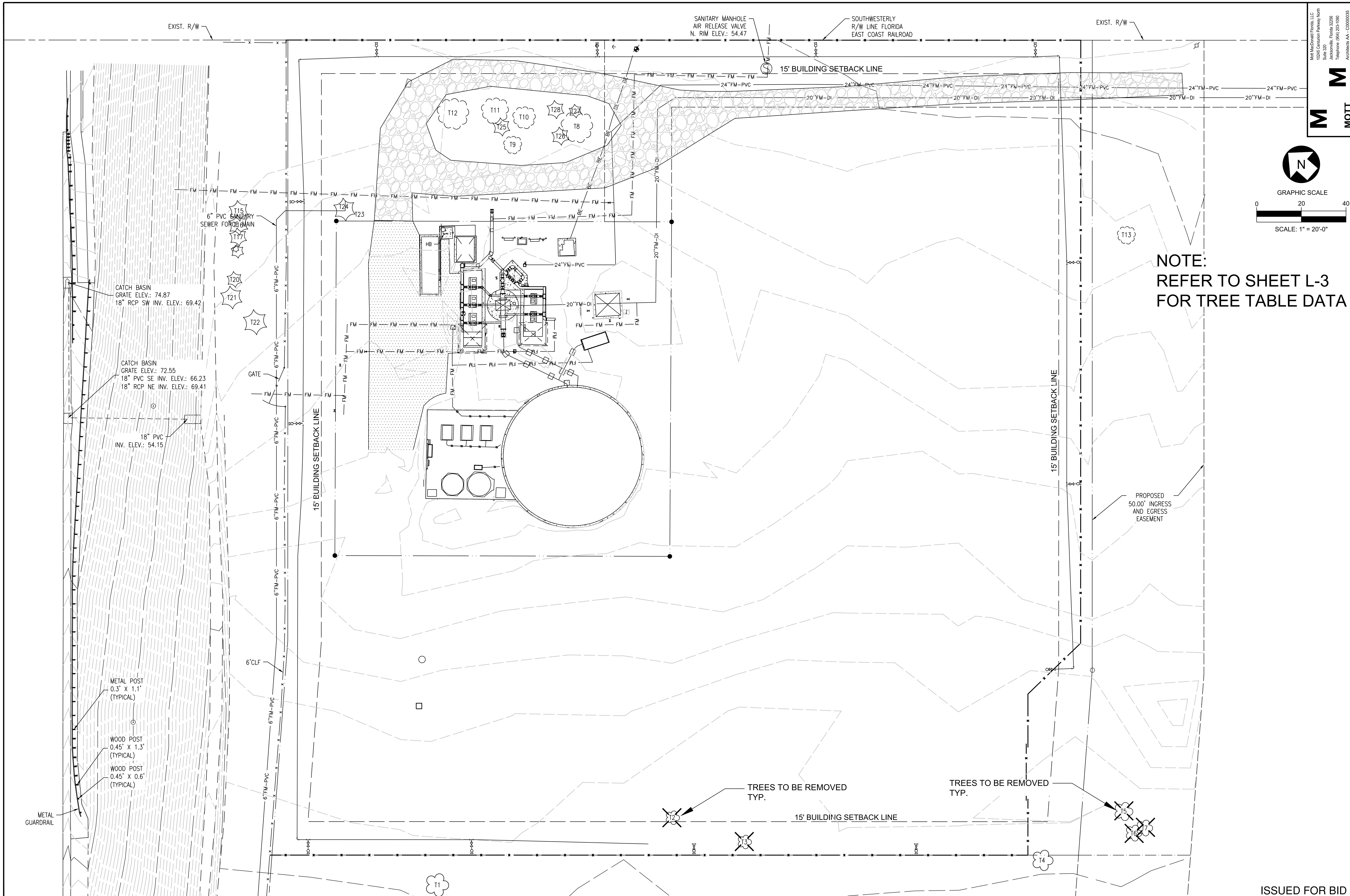
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CIVIL DETAILS

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. -
DRAWING NO. CD-5


EXIST. R/W
SANITARY MANHOLE
AIR RELEASE VALVE
N. RIM ELEV.: 54.47
SOUTHWESTERLY
R/W LINE FLORIDA
EAST COAST RAILROAD
15' BUILDING SETBACK LINE
24"FM-PVC
20"FM-DI
T12
T11
T10
T28
T27
T8
T25
T26
T9
T15
T24
T23
6" PVC SANITARY
SEWER FORCE MAIN
T17
T20
T21
T22
T13
CATCH BASIN
GRATE ELEV.: 74.87
18" RCP SW INV. ELEV.: 69.42
CATCH BASIN
GRATE ELEV.: 72.55
18" PVC SE INV. ELEV.: 66.23
18" RCP NE INV. ELEV.: 69.41
18" PVC
INV. ELEV.: 54.15
GATE
HB
6"FM-PVC
NOTE:
REFER TO SHEET L-3
FOR TREE TABLE DATA
GRAPHIC SCALE
0
20
40 FT
SCALE: 1" = 20'-0"
PROPOSED
50.00' INGRESS
AND EGRESS
EASEMENT
6"CLF
METAL POST
0.3" X 1.1"
(TYPICAL)
WOOD POST
0.45" X 1.3"
(TYPICAL)
WOOD POST
0.45" X 0.6"
(TYPICAL)
METAL
GUARDRAIL
TREES TO BE REMOVED
TYP.
T2
T3
T4
T5
T6
T7
T1
ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
LADD B. ROBERTS, RLA
FLORIDA REGISTRATION NO.
LA 6666692

DESIGNER:	L. ROBERTS
DRAWN BY:	J. PETRICH
DATE:	APRIL 2020
CHECKED BY:	L. ROBERTS
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE I

TREE IMPACT PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

NO. SHEETS	105
SHEET NO.	20
DRAWING NO.	L-1

EXIST. R/W

SANITARY MANHOLE
AIR RELEASE VALVE
N. RIM ELEV.: 54.45

SOUTHWESTERLY
R/W LINE FLORIDA
EAST COAST RAILROAD

(1) EASTERN RED CEDAR

(2) EASTERN RED CEDAR

EXIST. R/W

15' BUILDING SETBACK LINE

(1) LIVE OAK

50' HOSE BIBB RANGE TYP.

(1) EASTERN RED CEDAR

(3) EASTERN RED CEDAR

(3) LONGLEAF PINE

(4) SOUTHERN MAGNOLIA

(1) LIVE OAK

(2) SOUTHERN MAGNOLIA

(5) CABBAGE PALM

6" PVC SANITARY SEWER FORCE MAIN

CATCH BASIN
GRATE ELEV.: 74.87
18" RCP SW INV. ELEV.: 69.42

CATCH BASIN
GRATE ELEV.: 72.55
18" PVC SE INV. ELEV.: 66.23
18" RCP NE INV. ELEV.: 69.41

18" PVC
INV. ELEV.: 54.15

15' TEMPORARY WORK AREA

GST NO. 1
1.66 MG
(1.50 MG USABLE VOLUME)

GATE

(3) MAGNOLIA GRANDIFLORA

TANK FILL VALVE

(3) SOUTHERN MAGNOLIA

(5) CABBAGE PALM

PROPOSED 50.00' INGRESS AND EGRESS EASEMENT

RECLAIMED WATER BYPASS AND FLOW METER

(4) LONGLEAF PINE

GENERATOR

SODIUM HYPOCHLORITE BUILDING

PROPOSED 8' CHAIN LINK FENCE WITH SLATS (100% OPACITY) PER ENGINEERING DETAILS TYP.

(2) SOUTHERN MAGNOLIA

HVAC PAD

RECLAIMED WATER PUMP BUILDING

RECLAIMED WATER EFFLUENT FLOW METER

METAL POST
0.3' X 1.1'
(TYPICAL)

WOOD POST
0.45' X 1.3'
(TYPICAL)

WOOD POST
0.45' X 0.6'
(TYPICAL)

METAL GUARDRAIL

(1) CABBAGE PALM

(1) EASTERN RED CEDAR

(1) LIVE OAK

(9) CABBAGE PALM

(7) LONGLEAF PINE

IRRIGATION HOSE BIBB TYP.

ISSUED FOR BID

GRAPHIC SCALE
0 20 40 FT
SCALE: 1" = 20'-0"

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 253-1090
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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1.			

DESIGN ENGINEER
LADD B. ROBERTS, RLA
FLORIDA REGISTRATION NO.
LA 6666692

DESIGNER:	L. ROBERTS
DRAWN BY:	J. PETNCH
DATE:	APRIL 2020
CHECKED BY:	L. ROBERTS
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE I

LANDSCAPE PLAN

NO. SHEETS	105
SHEET NO.	21
DRAWING NO.	L-2

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

Xrefs Attached= JEA_SHT22x34_BOR [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\JEA_SHT22x34_BOR.dwg]
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x-Yard_Piping [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\x-Yard_Piping.dwg]
C-Section-Xref [_\d0440333\C-Section-Xref.dwg]
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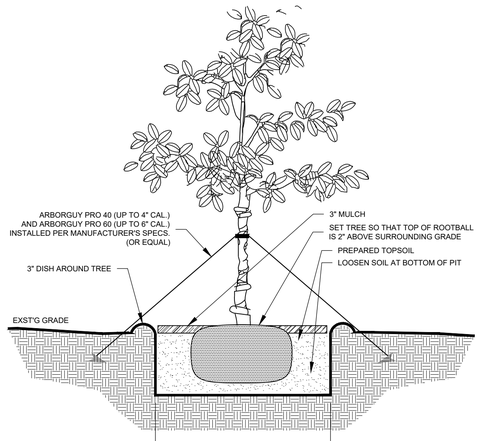
TREE TABLE - TREE LOCATIONS AND DATA COLLECTED BY R.E. HOLLAND AND ASSOCIATES, INC.						
TREE NO.	NORTHING	EASTING	DIA. (IN.)	SPECIES	PROTECTED	REMOVE/PRESERVE
T1	2092464	509023	10.0	BAY	YES	PRESERVE
T2	2092404	509115	6.0	BAY	NO	REMOVE
T3	2092373	509128	6.0	BAY	NO	REMOVE
T4	2092267	509209	9.0	BAY	YES	PRESERVE
T5	2092254	509250	8.0	BAY	YES	REMOVE
T6	2092244	509245	7.0	BAY	NO	REMOVE
T7	2092242	509250	7.0	BAY	NO	REMOVE
T8	2092639	509321	7.0	OAK	NO	PRESERVE
T9	2092656	509296	4.0	OAK	NO	PRESERVE
T10	2092660	509309	5.0	OAK	NO	PRESERVE
T11	2092672	509302	6.0	OAK	NO	PRESERVE
T12	2092685	509289	7.0	OAK	NO	PRESERVE
T13	2092422	509446	4.0	OAK	NO	PRESERVE
T14	2092430	509435	3.0	OAK	NO	REMOVE
T15	2092729	509193	9.0	PINE	NO	PRESERVE
T16	2092725	509188	9.0	PINE	NO	PRESERVE
T17	2092721	509184	8.0	PINE	NO	PRESERVE
T18	2092719	509179	3.0	PINE	NO	PRESERVE
T19	2092717	509179	6.0	PINE	NO	PRESERVE
T20	2092710	509169	7.0	PINE	NO	PRESERVE
T21	2092706	509162	10.0	PINE	NO	PRESERVE
T22	2092691	509160	11.0	PINE	NO	PRESERVE
T23	2092688	509227	10.0	PINE	NO	PRESERVE
T24	2092693	509225	10.0	PINE	NO	PRESERVE
T25	2092665	509299	8.0	PINE	NO	PRESERVE
T26	2092642	509313	8.0	PINE	NO	PRESERVE
T27	2092644	509326	6.0	PINE	NO	PRESERVE
T28	2092651	509320	8.0	PINE	NO	PRESERVE

SJC LANDSCAPE CALCULATIONS

TREE DISPOSITION/MITIGATION CALCULATIONS	Removed		Required		Provided
PROTECTED TREE IMPACTS	Cal. Inches		Inches		Inches
PROTECTED TREES 1:1	34		34		34
TREE PRESERVATION CREDITS (ON-SITE)					
PRESERVED TREES FOR CREDIT					Inches
TREES PRESERVED					0
TOTAL MITIGATION PROVIDED					34
MITIGATION SURPLUS/DEFICIT					0
REQUIRED TREE INCHES PER ACRE	**Site Area (Acres)**		**Inches per Acre**		**Required In.**
REQUIRED INCHES	2.94	X	80	=	235.2
PROVIDED INCHES					267
REQUIRED TREE INCES SURPLUS/DEFICIT					31.8
SJC TREE BANK FUND	**Inches**		**Cost Per Inch**		**Total**
Mitigation Inches	0	X	$25.00	=	$0.00
Required Tree Inches	0	X	$25.00	=	$0.00
TOTAL TREE BANK FUND PAYMENT					**$0.00**

REQUIRED LANDSCAPE			Required		Provided
TREES (Buffer Planting)					
"B" SCREENING REQUIREMENT					
North East (PL) = 365 lf / 1 tree per 20 lf			18		18
North West (PL) = 360 lf / 1 tree per 20 lf			18		18
South East (PL) = x361 lf / 1 tree per 20 lf			18		18
South West (PL) = 365 lf / 1 tree per 20 lf			18		18
	TOTAL		**72**		**72**

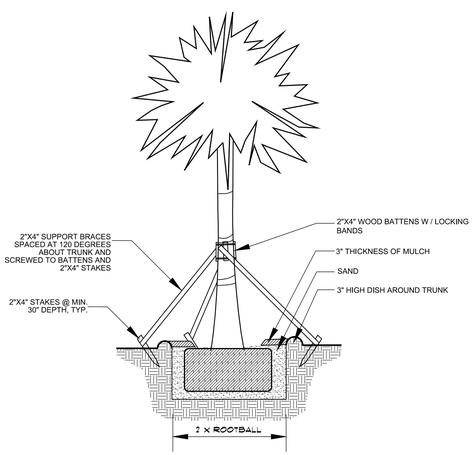
*The perimeter shall have an 8' chainlink fence with slats-100% opacity
**Utility conflicts preclude planting around 100% of perimeter, REQUIRED BUFFER SCREENING CANNOT BE MET
***Interior landscaping not applicable, non-public interior is 100% screened via 8' fence per engineering plans.



TREE PLANTING DETAIL

ALL TREES ARE TO BE POSITIONED VERTICALLY REGARDLESS OF THE SLOPE OF THE GROUND IN WHICH THEY ARE PLANTED. WATER RINGS ARE TO BE CONSTRUCTED AT RIGHT ANGLES TO THE TREE OR SHRUB OR IN A MANNER IN WHICH THEY WILL MOST EFFECTIVELY SERVE THE PURPOSE OF RETAINING WATER AT THE BASE OF THE PLANT.

THE ROOTBALL OF THE TREE SHOULD BE POSITIONED IN THE HOLE SO THAT THE FINISHED GRADE OF THE BACKFILL SOIL AND LANDSCAPE SOIL IS 2" LOWER THAN THE TOP OF THE ROOTBALL. MULCH SHOULD COVER THE EDGE OF THE ROOTBALL, DO NOT MULCH ON TOP OF ROOTBALL.



PALM PLANTING DETAIL

PLANT SCHEDULE

QUAN.	SPACING	BOTANICAL NAME	COMMON NAME	SPECIFICATIONS	INCHES	CANOPY TREE	NATIVE
TREES							
13	20 ' O.C.	Juniperus virginiana	Eastern Red Cedar	45 gal., 3" cal, 10' min. ht., 28" min. spr.	39"	Yes	Yes
14	20 ' O.C.	Magnolia grandiflora 'DD Blanchard'	Southern Magnolia	45 gal., 3" cal, 10' min. ht., 54" min. spr.	42"	Yes	Yes
17	20 ' O.C.	Pinus palustris	Longleaf Pine	45 gal., 3" cal, 10' min. ht., 28" min. spr.	51"	Yes	Yes
5	20 ' O.C.	Quercus virginiana	Live Oak	45 gal., 3" cal, 10' min. ht., 54" min. spr.	15"	Yes	Yes
20	Per Plan	Sabal palmetto	Cabbage Palm	16' Clear Trunk (6" Value Ea.)	120"	No	Yes
				TOTAL INCHES:	267"		
SOD NOTE: See Civil Plans for sod species and limits .							

SUPPLEMENTARY LANDSCAPE NOTES:

1) PLANT WARRANTY: CONTRACTOR SHALL REPLACE, AT HIS / HER EXPENSE, ANY PLANTS OR TURF THAT DETERIORATE OR DIE DUE TO THE CONTRACTOR'S NEGLEGENCE, OR HIS / HER EMPLOYEES', ACTIONS. THIS DOES NOT INCLUDE LOSSES DUE TO DAMAGE FROM ACTS OF GOD, VANDALISM OR HUMAN ABUSE OTHER THAN THAT CAUSED BY THE CONTRACTOR. WARRANTY PERIOD SHALL BE NO LESS THAN ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. A CERTIFICATE SHALL BE GIVEN TO OWNER STATING THE EXACT DATE FOR THE END OF THEIR WARRANTY PERIOD PRIOR TO FINAL PAYMENT OF WORK.
2) TREES SHALL NOT BE PLANTED CLOSER THAN 7.5' FROM THE CENTERLINE OF UNDERGROUND UTILITIES.
3) ALL DISTURBED AREAS WITHIN THE LIMITS OF CONSTRUCTION WHICH ARE NOT OTHERWISE INDICATED SHALL BE SODDED WITH ARGENTINE BAHIA SOD, UNLESS OTHERWISE NOTED IN THESE OR THE ENGINEERING PLANS.
4) SABAL PALMS ARE BEING UTILIZED IN HIGH QUANTITY IN RESPONSE TO SITE AND UTILITY CONSTRAINTS.

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 265-1090
Architects AA - C0000315
Engineers EB - 0000155
Surveyors LB - 0000183
MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER: LADD B. ROBERTS, RLA
FLORIDA REGISTRATION NO. LA 6666692

DESIGNER: L. ROBERTS
DRAWN BY: J. PETRICH
DATE: APRIL 2020
CHECKED BY: L. ROBERTS
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE I

LANDSCAPE DETAILS AND SCHEDULES

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: 1" = 20'

NO. SHEETS 105
SHEET NO. 22
DRAWING NO. L-3

Xrefs Attached= JEA_SHT22x34_BOR [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\orchive\JEA_SHT22x34_BOR.dwg]
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SECTION 02950
TREES, PLANTS AND GROUND COVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Extent of landscape development work is shown on drawings and in schedules.

B. Sodding of areas disturbed during construction exclusive of paved areas.

C. Transplanting of existing trees, palms and plant material. (none are currently proposed for this project)

D. Prior to construction activities, all trees, palms and plant material to be relocated will be tagged by Architect. (none are currently proposed for this project)

E. Watering of planted materials

1.02 RELATED SECTIONS

A. Section 02100 - Site Grading

B. Section 441 - Grassing (JEA Water & Wastewater Standards)

1.03 SUBMITTALS

A. Comply with provisions of General Conditions

B. Certificates of inspection as required by governmental authorities and manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.

C. Vendor's certified statement for each grass seed mixture required, stating botanical and common name, percentage by weight, and percentages of purity, germination, and weed seed for each grass seed species.

D. Soil test reports.

E. Maintenance Instructions: Typewritten instructions recommending procedures to be established by Owner for maintenance of landscape work for one full year. Submit prior to expiration of required maintenance periods.

F. Provide reproducible As-Built drawing after final acceptance by owner.

1.04 QUALITY ASSURANCE

A. Landscape work shall be performed by a single firm specializing in landscape work.

B. Obtain agronomic soils tests for all planting areas. Tests shall be performed by an approved agronomic soils testing laboratory and shall include fertility and suitability analysis with written recommendations for soil amendments, fertilizer, and chemical conditioner application rates for soil preparation, planting backfill mix, and post maintenance fertilization program. Submit a copy of soils test to Architect.

C. Obtain soil test from existing stockpiled topsoil, if any, to determine type and amount of amendments needed for areas that are to receive stockpiled topsoil.

D. Ship landscape materials with certificates of inspection as required by governmental authorities. Comply with governing regulations applicable to landscape materials.

E. Substitutions: Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability and proposal for use of equivalent material to Architect. When authorized, adjustment of contract amount will be made.

F. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable or as further specified.

G. Topsoil: Fine sand or loamy fine sand indigenous to the area suitable for plant growth that is free of weeds, roots, stumps, rocks larger than ½inch diameter, organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as limerock, concrete, and asphalt pieces. Deliver in normally moist condition, neither muddy nor wet.

H. Trees and Shrubs: Plant names indicated are to comply with "Standard Plant Names" as adopted by latest edition of American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged. Provide healthy, vigorous stock grown under climactic conditions similar to conditions in locality of project; free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions or disfigurement. ALL PLANTS TO BE FLORIDA #1 OR BETTER.

I. Sizes: Comply with sizing and grading standards of latest edition of American Standard for Nursery Stock. A plant shall be dimensional as it stands in its natural position. Stock furnished shall be at least minimum size indicated. Larger stock is acceptable at no additional cost unless a written change order is issued.

J. Inspection: Landscape Architect reserves the right to inspect trees and shrubs either at place of growth or at site before planting for compliance with requirements for name, variety, size and quality.
1. Such approval shall not impair the right of inspection and rejection upon delivery at the site during the progress of work.

1.05 DELIVERY, STORAGE AND HANDLING

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

B. Trees and Shrubs: Provide container grown or balled and burlapped trees and shrubs. Do not use trees or shrubs which have been in cold storage or heeled-in. Do not prune prior to delivery. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.

C. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. Cover plants transported on open vehicles with a protective covering to prevent wind burn. If planting is delayed more than six hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.

D. Do not remove container grown stock from containers until planting time.

E. Label at least one tree and one shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

1.06 PROJECT REQUIREMENTS

A. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.

B. Utilities: Determine location of underground and above ground utilities and perform work in manner which will avoid possible damage. Hand excavate, as required, to minimize possibility of damage to underground utilities. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.

C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions or obstructions, notify Architect before planting.

D. Planting Schedule: Prepare a proposed planting schedule. Schedule dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance until final completion of work under contract.

E. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Landscape Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.07 WARRANTY

A. Warranty trees and shrubs, for a period of one year after date of acceptance, against defects including death and unsatisfactory growth except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Contractor's control.

B. Warranty shall not include damage or loss of trees, plants or ground covers caused by fires, floods, severe freezes not typical to the region, winds over 75 mph or acts of vandalism.

C. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during warranty period. Plant missing trees, shrubs and ground covers. Make replacements during growth season following end of warranty period. Furnish and plant replacements which comply with requirements shown and specified. Also, replace trees and shrubs which are in doubtful condition at end of warranty period. Only one replacement shall be required at end of warranty period, except for losses or replacements due to failure to comply with specified requirements.

PART 2 PRODUCTS

2.08 TOPSOIL

A. Topsoil for landscape work is not available at site and shall be furnished as specified.

B. Provide new topsoil which is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter and free of roots, stumps, stones larger than 1/2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth.
1. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at project site.
2. Obtain topsoil only from naturally well-drained sites where topsoil occurs in a depth of not less than four inches; do not obtain from bogs or marshes.

2.09 SOIL AMENDMENTS

A. Lime: Natural limestone containing not less than 85 percent of total carbonates, ground so that not less than 90 percent passes a 10 mesh sieve and not less than 50 percent passes a 100 mesh sieve.

B. Peat Humus: FS Q-P-166 and with texture and pH range suitable for intended use, or Florida muck.

C. Bone Meal: Commercial, raw, finely ground; 4 percent nitrogen and 20 percent phosphoric acid.

D. Superphosphate: Soluble mixture of treated minerals; 20 percent available phosphoric acid.

E. Commercial Fertilizer: Complete fertilizer of neutral character with some elements derived from organic sources and containing following percentages of available plant nutrients:
1. Trees and Shrubs: Minimum 10 percent available phosphoric acid, from 3 percent to 5 percent total nitrogen, and from 3 percent to 5 percent soluble potash.
2. Lawns: Minimum 4 percent phosphoric acid, minimum 2 percent potassium, and percentage of nitrogen required to provide not less than one pound of actual nitrogen per 1,000 sq.ft. of lawn area. Provide nitrogen in a form that will be available to lawn during initial period of growth.
3. Palm Fertilizer - Slow release "Palm Special" granular fertilizer which includes trace elements of iron, magnesium and manganese.

F. Sand: Clean, washed builders sand free of salt, weeds, sticks and other debris.

G. Organic Soil Amendment: Pinebark chunks smaller in size but not greater than 3/4 inches in diameter.

2.10 PLANT MATERIALS - GENERAL

A. Name and Variety: Provide plant materials true to name and variety established by American Joint Committee on Horticultural Nomenclature "Standardized Plant Names".

B. Quality: Provide trees, shrubs and other plants complying with recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as further specified.

C. Provide plants typical of their species or variety with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers and all other forms of infestation. Plants shall have a fully developed form without voids and open spaces.

D. Dig balled and burlapped plants with firm, natural balls of earth sufficient in diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of plant. Provide ball sizes complying with latest edition of American Standard for Nursery Stock. Cracked or loose balls are not acceptable.

E. Provide tree species true to normal species, character and habit. Single trunk trees will not be acceptable with "Y" shape trunk in the main leader. Culls will not be acceptable.

F. Plants planted in rows shall be matched in form.

G. Plants larger than those specified in the plant list may be used and are acceptable in most instances, but should be verified by Owner.

H. The height of trees, measured from the crown of the ball to the top of the top branch, shall not be less than the minimum size designated in the plant list prior to topping and pruning.

I. Coniferous trees shall be branched to the ground.

2.11 CONTAINER GROWN STOCK

A. Stock shall be grown in container for sufficient length of time for root system to have developed to hold its soil together, firm and whole.

B. No plants shall be loose in the container.

C. Container stock shall not be pot bound.

2.12 SHRUBS AND SMALL PLANTS

A. Requirements for spread and height are indicated in plant list.

B. Measurements for height shall be taken from ground level to the average height of top of plant and not the longest branch.

C. Single stemmed or thin plants will not be acceptable.

D. Side branches shall be generous, well-twigged and, the plant as a whole, well-bushed to ground.

E. Plants shall be in moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

F. Provide plants established and well-rooted in removable containers or integral peat pots and with less than minimum number and length of runners required by ANSI Z60.1 for post size shown or listed.

2.13 FERTILIZER

A. Plant fertilizer Type A, commercial type, containing at least 12 percent nitrogen, 12 percent phosphoric acid, and 12 percent potash and whose composition is at least 50 percent organic so as to provide a continuous time released character.
1. Preferred Type: Pelletized or briquette form, such as Agriform tablets for use in planting shrubs and trees on an individual basis.
2. Granular Type A to be incorporated into topsoil of planting beds, annual beds and ground cover beds.

2.14 MULCH

A. For Use in Backfill Mixtures: Well-shredded pine bark or native hardwood not larger than 1/2 inch in width.

B. Bed and Tree Dressing Mulch:
1. Premium pine straw; furnish in bales free of sticks and rubbish.

2.15 ACCESSORIES

A. Topsoil: Fertile, friable, natural, of loamy character, without a mixture of subsoil material, shall be obtained from a well-drained arable site, or from on-site stockpile, being reasonably free from clay lumps, coarse sands, stones, roots, sticks and other foreign materials, with a acidity range of between Ph 6.0 and 6.8.

B. Peat Moss: Brown to black in color, weed and seed free, granulated, raw peat or baled peat, containing not more than 9 percent mineral on a dry basis.

C. Water: Free of substances harmful to plant growth.

D. Stakes for Tree Staking: Common and acceptable in region of project.

E. Guying Wire: 10 or 12 gage galvanized wire.

F. Turnbuckles: Galvanized steel or aluminum of size and gage required to provide tensile strength equal to that of guying wire. Turnbuckles opening shall be at least 3 inches to allow for periodic adjustments.

G. Staking and Guying Hose: Two-ply reinforced garden hose not less than 1/2 inch inside diameter.

H. Erosion Control Fabric: Supergro or equal.

I. Twine: Two-ply jute material.

J. Soil Separator: Heat resistant filter fabric, water permeable and unaffected by freezing and thawing.

K. Drainage Fill: AASHTO M43#6; 3/8 inch to 3/4 inch clean, uniformly graded stone.

L. Erosion Control Fabric: Dewit Weed Barrier or equal.

2.16 ANTI-DESICCANT

A. Emulsion type, film-forming agent designed to permit transpiration but retard excessive loss of moisture from plants.

B. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.

C. Acceptable Manufacturers:
1. Dow Chemical Company; Dowax.
2. Nursery Specialty Products, Inc.; Wilt-Proof.

2.17 PLANTING SOIL MIXTURE

A. Mix: 1/3 parts organic soil amendment to 1/3 parts "Florida Muck" or equivalent to 1/3 parts clean, washed builders sand.

B. Add soil amendments as recommended by soil test in quantities necessary to bring soil mixture to pH rating of between 5.5 and 6.0. Minerals used for pH correction shall be commercially produced for this purpose.

C. For pit and trench type backfill, mix planting soil prior to backfilling and stockpile at site.

D. For ground cover and other planting beds, mix planting soil mixture either prior to planting or apply on surface of topsoil and mix thoroughly before planting.
1. Mix lime with dry soil prior to mixing of fertilizer.
2. Prevent lime from contacting roots of acid-loving plants.
3. Apply phosphoric acid fertilizer, other than that constituting a portion of complete fertilizers, directly to subgrade before applying planting soil and tilling.

E. For palms, plant in existing suitable soil or a mixture of 75% sand and 25% perlite.

PART 3 EXECUTION

3.18 EXAMINATION

A. Examine subgrade, verify elevations, observe conditions under which work is to be performed, and correct unsatisfactory conditions before proceeding with the work or notify Landscape Architect if adverse conditions are discovered which will inhibit plant growth.

3.19 PREPARATION

A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Landscape Architect's acceptance before start of planting work. Make minor adjustments as may be requested.

B. In planting beds, where plants are spaced 3 feet on center or less, work soil amendments as required by soils test. Remove stones over 1-1/2 inches in any dimension, stick, rubbish and other extraneous matter. Use a cutimulcher or other similar equipment to work amendments into soil.

3.20 PLANTERS

A. Place minimum 4 inch layer of gravel in bottom of planters and fill with planting soil mixture. Place soil in lightly compacted layers to an elevation 1-1/2 inches below top of planter allowing for natural settlement. For interior planters, soil mixture shall be a sterile mixture used for interior plantings such as Metromix or equal.

3.21 EXCAVATION - TREES AND SHRUBS

A. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.

B. Bare Root Trees and Shrubs: Make excavations minimum 1'-0" wider than root spread and deep enough to allow for setting of roots on a layer of compacted planting soil mixture and with collar set at same grade as in nursery but 2 inches below finished grade at site. Allow for 9 inch setting layer of planting soil mixture.

C. Balled and Burlapped (B&B) Trees and Shrubs: Make excavations minimum twice as wide as ball diameter and equal to ball depth.

D. Container Grown Stock: Excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

E. Ground Cover Beds: Provide a minimum 10 inches depth, 2 inches of which will be higher than surrounding grade.

F. Annual Beds: Provide minimum of 8 inches in depth, 2 to 5 inches of which shall be higher than surrounding grade.

G. Dispose of subsoil removed from landscape excavations. Do not mix with planting soil or use as backfill.

H. Fill excavations for trees and shrubs with water and allow to percolate out before planting.

3.22 PLANTING TREES AND SHRUBS

A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. When set, place additional planting soil mixture around sides and base and eliminate voids and air pockets. Lay back burlap to expose top of root ball to soil mixture. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Remove burlap from sides of balls; retain on bottoms.

B. Set bare root stock on cushion of planting soil mixture. Spread roots, carefully work backfill around roots by hand, and puddle with water until backfill layers are completely saturated. Plumb before backfilling and maintain plumb while working backfill around roots and placing layers above roots. Set collar one inch to two inches below adjacent finish landscape grades. Spread cut roots without tangling or turning up to surface. Cut injured roots clean, do not break.

C. Set container grown stock as specified for balled and burlapped stock, except cut cans on two sides with an approved can cutter. Remove sides of wooden boxes after partial backfilling so as not to damage root balls.

D. Dish top of planting soil mixture to allow for mulching.
1. For spring planting, provide additional backfill berm around edge of excavations to form shallow saucer to collect water.

E. Mulch pits, trenches and planted areas. Provide not less than the following thickness of mulch and work into top of planting soil mixture and finish level with adjacent.
1. Provide 3 inch thickness of mulch.

F. Apply anti-desiccant using power spray to provide an adequate film overtrunks, branches, stems, twigs and foliage.
1. If deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.

G. Do not prune except to remove damaged branches or as directed by landscape architect.

H. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

I. Paint cuts over 1/2 inch in size with standard tree paint or compound covering exposed, living tissue. Use paint which is waterproof, antiseptic, adhesive, elastic and free of kerosene, coal tar, creosote, and other substances harmful to plants. Do not use shellac.

J. Guy and stake trees immediately after planting, as indicated.

3.23 PLANTING PALMS

A. Set stock as indicated in bed. Stake palms as necessary to maintain plumb or at angle shown. Brace with three 2" x 6" wood braces toenailed to three 2" x 6" x 24" battens which are securely banded at two points to palm at a point 2/3 trunk height. Pad trunk with 20 layers of burlap under battens. Place braces 120 degrees apart and secure underground by 2" x 6" x 24" stakes.

B. Water palm thoroughly immediately after planting.

C. Set Date palms a minimum of 4' in the ground. Aerial roots may not extend more than 6 inches above the final finished grade of the palm.

3.24 PLANTING GROUND COVER

A. Space plants as shown or scheduled.

B. Work planting soil mixture around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soil.

C. Mulch areas between ground cover plants; place not less than 2 inches thick.

3.25 TRANSPLANTING EXISTING TREES, PALMS AND SHRUBS

A. Refer to Article entitled, Planting Trees and Shrubs.

B. Pruning: Prior to transplanting operations, prune existing branches back 1/3 on trees and shrubs. On existing palms, prune back existing fronds and tie a minimum of four fronds around central growth heart area.

C. Handle plants so that roots are adequately protected at all times.

D. Plant shall not be bound with rope or wire, at any time, that would damage bark, break branches, or destroy its natural shape.

E. Plant transplanted plants immediately after digging.

F. Plants shall be moved with firm, natural balls of soil with minimum ball size conforming to requirements of ANSI Z60.1 Standard for Nursery Stock.

G. Underground Obstruction: If underground construction, utilities or obstructions are encountered in excavation of planting areas or pits, other locations for plant material will be selected by Architect. Changes in locations shall be made without additional cost to Owner.

3.26 WATERING

A. General: Water plants sufficiently to keep roots moist, but not saturated and as needed for the healthy growth and to prevent wilting. (The Agriculture Extension Service recommends watering daily for at least one month after installation during the growing season when there is no rain) Following rainfall, delay watering until all free moisture has drained from the soil.

B. After initial watering, where plants are not covered by an automatic irrigation system, provide temporary watering using water bags and / or a temporary irrigation system / hose bibbs that will provide to each plant, during each watering, the volume of water shown in the Table 1 and 2.

C. If water bags are used to water trees and palms, place water bag around the trunk and fill with water in accordance with manufacturer's instructions to provide a slow water drip of at least 4 hours. Fill water bag with each subsequent watering. Water bags shall be Tree Gator Original or equal.

D. If a temporary irrigation system is used, connect the system to a water truck or other water source and pump water until the specified volume of water in Tables 1 and 2 is delivered to each plant. Apply at a rate that will allow the water to soak into the root ball without runoff.

E. Maintain each water bag or temporary irrigation system in working condition throughout the installation and maintenance period and until final acceptance. Immediately repair or replace each water bag or temporary irrigation system that is damaged, stolen or malfunctioning.

F. Apply the volume of water shown in Table 1, each time trees and palms are watered (3 gallons/ caliper inch minimum). The Contractor shall be responsible for monitoring and adjusting hydration as necessary to assure optimum growing conditions.

3.27 MAINTENANCE

A. Begin maintenance immediately after planting. Maintain trees, shrubs and other plants until final acceptance but in no case less than 30 days after planting.

B. Maintain trees, shrubs and other plants by pruning, cultivating and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

C. Verify watering of trees, plants and ground cover beds within the first 24 hours of initial planting and not less than twice per week until final acceptance.

D. For Date Palms, drench the root zone 2-4 times for the first 4 months after planting with a fungicide labeled for landscape use on soil borne root fungal pathogens. Apply a light surface application of a slow-release "palm special" granular fertilizer at the margins of the root ball 3 months after planting. Apply a foliar spray of soluble micronutrients. When new leaves are evident from the crown, begin a maintenance program for fertilization 3 times a year.

3.28 CLEANING AND PROTECTION

A. During landscape work, store materials and equipment where directed.

B. Keep pavements clean and work area in an orderly condition.

C. Protect landscape work and materials from damage due to landscape operations, operations by other contractors, trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work.

3.29 INSPECTION AND ACCEPTANCE

A. When landscape work is completed, including maintenance, upon request Architect will make an inspection to determine acceptability.

B. Landscape work may be inspected for acceptance in parts agreeable to Architect, provided work offered for inspection is complete including maintenance and area comprises one complete unit or area of substantial size.

C. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

END OF SECTION

TREEGATOR® ORIGINAL
SLOW RELEASE WATERING BAG
FOR SHADE TREES

BENEFITS:
- *Ideal for newly planted shade or street trees.*
- *Reduces transplant and drought shock.*
- *100% water absorption with no run-off.*
- *Install and fill in minutes with no tools required.*
- *Deep water saturation with every fill.*
- *Fill just 1 to 2 times per week, or as needed.***
- *Promotes deep root growth.*
- *Non-invasive design will not harm existing landscape.*
- *Can be used with nutrient / chemical additives.***
- *Zip multiple bags together to accommodate large trees.*
- *Made in the U.S.A. with a 5-year limited warranty.*

SUGGESTED WATER BAG OR APPROVED EQUAL

Table 1 Water Volume for New Trees and Palms

Single Trunk	Multi-Trunk	Min. Water Volume per Application
2" Cal.	8'-10'	6 Gal.
3" Cal.	10'-12'	9 Gal.
4" Cal.	12'-14'	12 Gal.
5" Cal.	14'-16'	15 Gal.
6" Cal.	-	18 Gal.
Each Palm	-	12 Gal.

Table 2 Water Volume for New Shrubs & Groundcovers

Plant Size	Min. Water Volume per Application
1 Gallon	1 quart
3 Gallon	2 quarts
7 Gallon	1 Gallon
15 Gallon	2 Gallons

NOTE: ALL PROPOSED LANDSCAPING SHALL BE WATERED BY HOSE BIBS AND / OR WATERING BAGS AT VOLUMES SPECIFIED ABOVE.

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 253-1090
Architects AA - C0000315
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
LADD B. ROBERTS, RLA
FLORIDA REGISTRATION NO.
LA 6666692

DESIGNER: L. ROBERTS
DRAWN BY: J. PETNCH
DATE: APRIL 2020
CHECKED BY: L. ROBERTS
DATE: APRIL 2020

NO. SHEETS 105
SHEET NO. 23
DRAWING NO. L-4

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: 1" = 20'

JEA
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE I

LANDSCAPE SPECIFICATIONS

Xrefs Attached= JEA_SHT22x34_BOR [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\JEA_SHT22x34_BOR.dwg]
V-Survey-Xref [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\V-Survey-Xref.dwg]
x-Yard_Piping [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\X-Yard_Piping.dwg]
C-Section-Xref [.\d0440333\C-Section-Xref.dwg]
C-Layout-Xref [G:\9999\jp\Ladd Roberts\JEA_Twin Creeks\CAD\archive\C-Layout-Xref.dwg]
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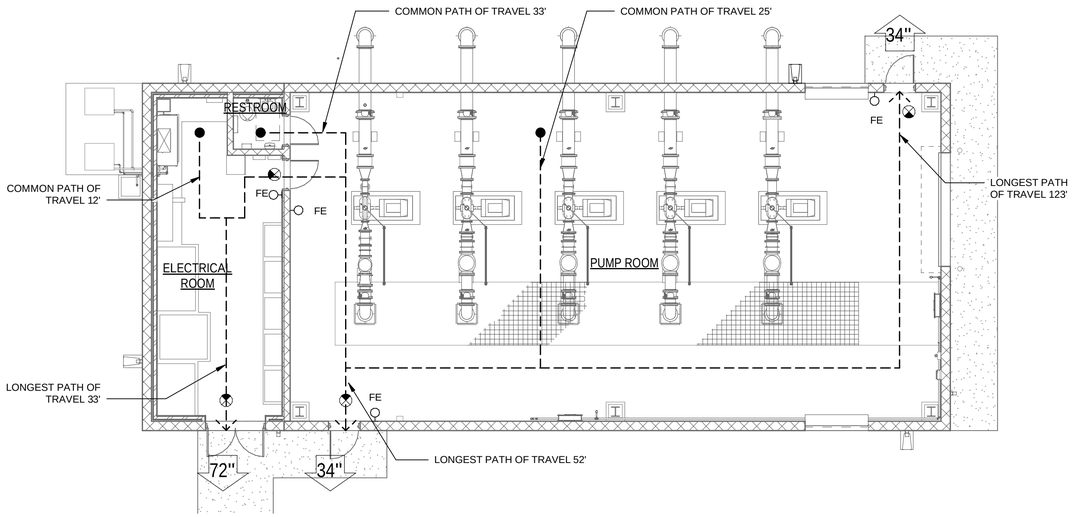

N

LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"

5 0 5 10 15
SCALE IN FEET

BUILDING CODE SUMMARY

GENERAL INFORMATION
Name of Project: JEA TWIN CREEKS RECLAIMED WATER RE-PUMP STATION
Address: 106 COUNTY ROAD 210 W.
ST. JOHNS, FL. 32259

Proposed Use: F2
Owner or Authorized Agent: JEA

CODES REVIEWED:
2017 FLORIDA BUILDING CODE, 6th EDITION. BUILDING (FBC-B)
2017 FLORIDA BUILDING CODE, 6th EDITION. MECHANICAL (FBC-M)
2017 FLORIDA BUILDING CODE, 6th EDITION. PLUMBING (FBC-P)
2017 FLORIDA FIRE PREVENTION CODE, 6th EDITION. (FFPC)
2014 NATIONAL ELECTRICAL CODE

RE-PUMP AND ELECTRICAL BUILDING

BUILDING CLASSIFICATION OCCUPANCY - SECTION 306.4 CONSTRUCTION - SECTION 602.2	GROUP F-2 SPECIAL PURPOSE FACTORY INDUSTRIAL TYPE II B (UNSPRINKLERED)	
BUILDING HEIGHTS AND AREAS TABLE 503	MAX. AREA 23,000 SF MAX. HEIGHT 55 FEET MAX. STORIES 3	ACTUAL 2,784 SF ACTUAL 22 FEET ACTUAL 1
OCCUPANT LOAD TABLE 1004.1 EXCEPTION 1	5 EMPLOYEES MAXIMUM FOR MAINTENANCE (BUILDING IS OCCUPIED FOR PERIODIC MAINTENANCE ONLY AND IS OTHERWISE "UNOCCUPIED").	
EXITS PER SPACE SECTION 1015	REQUIRED 1 TOTAL THIS BUILDING	ACTUAL 3 3
MAX. TRAVEL DISTANCE TABLE 1016.1	MAXIMUM 200 FEET	ACTUAL 123 FEET
FIRE SEPARATION DISTANCE	TYPE II B > 30 FEET FROM OTHER BLDG. AND PROPERTY LINE = 0 HR.	
FIRE RESISTANCE RATING TABLE 602	0 HR. RATING FOR EXTERIOR WALLS	
STAIRS	N/A	
RAMPS	N/A	
HAZARDOUS CHEMICALS INTERIOR STORAGE	N/A	
EXTERIOR STORAGE	N/A	
SPRINKLERS REQUIRED	NO	

LIFE SAFETY LEGEND

34" — EXIT - WITH CLEAR EGRESS WIDTH

TRAVEL DISTANCE 57'- 6" +/- — TRAVEL DISTANCE TO AN EXIT

FE — FIRE EXTINGUISHER SEE SPEC SECTION 10520

EX — EXIT LIGHT

ISSUED FOR BID

MOTT MACDONALD
FLORIDA, LLC
10200 Centurion Parkway North
Suite 200
Jacksonville, Florida 32256
Telephone: (904) 293-1090

Architects AA - C0000035
Engineers EB - 0000035
Surveyors LB - 0000035

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ARCHITECT
Thomas A. Jarman
FLORIDA REGISTRATION NO.
AR0016110

DESIGNER: T. Jarman
DRAWN BY: J. Earl
DATE: APRIL 2020
CHECKED BY: B. Fritz
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CODE SUMMARY AND LIFE SAFETY PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 24
DRAWING NO. A-1

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ABBREVIATION SCHEDULE

A

ABV	ABOVE
AC	AIR CONDITIONING
ACC	ACCESS
ACOUS	ACOUSTIC
ACR	ACRYLIC
ACU	AIR CONDITIONING UNIT
A D	AREA DRAIN
ADD	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT
ADJT	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AGG	AGGREGATE
AHU	AIR HANDLING UNIT
ALSF	ALUM STOREFRONT
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT
ASPH	ASPHALT
AUTO	AUTOMATIC
AUX	AUXILLIARY

B

BD	BOARD
BEL	BELOW
BIT	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
B.M.	BENCH MARK
BR	BRONZE
BRDG	BRIDGING
BRG	BEARING
BSMNT	BASEMENT
BRK	BRICK
BRKT	BRACKET
BS	BOTH SIDES
BT	BOLT
BTWN	BETWEEN
BTM	BOTTOM
B U	BUILT UP
BVLD	BEVELED
BW	BOTH WAYS

C

CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CFL	COUNTERFLASHING
CG	CORNER GUARD
CH	COAT HOOK
CHAM	CHAMFER
CI	CAST IRON
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CK	CAULK
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CLS	CLOSURE
CMU	CONCRETE MASONRY UNIT
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
COMP	COMPRESSED
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORR	CORRUGATED
CPR	COPPER
CRS	COURSE
CRS	COLD ROLLED STEEL
CSMT	CASEMENT
CTD	COATED
CTL	CONTROL
CTR	COUNTER

D

D	DRAIN
D A	DOUBLE ACTING
DBL	DOUBLE
DEG	DEGREE
DEM	DEMOLISH
DEP	DEPRESSED
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVIDER
DKG	DECKING
DMT	DEMOUNTABLE
DN	DOWN
DO	DITTO
DP	DAMPPROOFING
DR	DOOR
D S	DOWNSPOUT
DT	DRAIN TILE
DT A	DOVETAIL ANCHOR
DTL	DETAIL
DWR	DRAWER
DWG	DRAWING

E

EF	EXHAUST FAN
E.F.S.	EXTERIOR FINISH SYSTEM
E.I.F.S.	EXTERIOR INSUL & FINISH SYSTEM
EL	ELEVATION
ELEV	ELEVATOR
EMERG	EMERGENCY
ENC	ENCLOSURE
ENGR	ENGINEER
ENT	ENTRANCE
EP	ELECTRICAL PANELBOARD
EQ	EQUAL
EST	ESTIMATE
EWC	ELECTRIC WATER COOLER
EX	EXIT SIGN
EXIST	EXISTING
EXP	EXPANSION
EXPO	EXPOSED
EXT	EXTERIOR
EXTR	EXTRUDE

F

F	FACE
FA	FIRE ALARM
FAS	FASTEN
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FGL	FIBERGLASS
FHC	FIRE HOSE CABINET
FH	FIRE HYDRANT
FIN	FINISH
FL	FLOOR
FLUR	FLUORESCENT
FLX	FLEXIBLE
FN	FENCE
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FP	FIREPROOF
FR	FRAME
FRP	FIBER REINFORCED PANEL
FT	FEET
FTG	FOOTING
FURN	FURNISH
FURR	FURRING
FUT	FUTURE

G

GA	GAUGE
GALV	GALVANIZED
GCMU	GLASS CONC MASONRY UNIT
GEN	GENERAL
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GI	GALVANIZED IRON
GL	GLASS
GR	GRADE
GRN	GRANITE
GRL	GRAVEL
GRT	GROUT
G S T	GLAZED STRUCTURAL TILE
GWB	GYPSUM WALLBOARD
GYP	GYPSUM

H

H	HIGH
HB	HOSE BIBB
HC	HANDICAPPED
HD	HEAD
HDNR	HARDENER
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HEX	HEXAGONAL
HK	HOOK
HM	HOLLOW METAL
HORIZ	HORIZONTAL
H PT	HIGH POINT
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING / VENTILATION / AC
HWH	HOT WATER HEATER

I

I	INCLUDE
IC	INTERCOM
ID	INSIDE DIAMETER
ILLUM	ILLUMINATED
IND	INDICATE
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
IP	IRON PIPE

J

JAN	JANITOR
JB	JUNCTION BOX
JST	JOIST
JT	JOINT

K

K O	KNOCK OUT
K PL	KICK PLATE

L

L	LENGTH
LAM	LAMINATE
LAV	LAVATORY
LB	POUND
LF	LINEAR FEET
LH	LEFT HAND
LIN	LINEAR
LKR	LOCKER
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LT	LIGHT
LTL	LINTEL
LVL	LEVEL
LVR	LOUVER
LW	LIGHTWEIGHT

M

M	MEN
MACH	MACHINE
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MBR	MEMBER
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFD	MANUFACTURED
MFR	MANUFACTURER
M H	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLD	MOLDING
M O	MASONRY OPENING
MOD	MODULAR
MOV	MOVABLE
MR	MIRROR
MRB	MARBLE
MSL	MEAN SEA LEVEL
MTL	METAL
MTD	MOUNTED
MUL	MULLION
MWK	MILLWORK

N

N	NORTH
NAT	NATURAL
NIC	NOT IN CONTRACT
NL	NAILABLE
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE

O

OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OPPOSITE HAND
OHD	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OZ	OUNCE

P

PAR	PARALLEL
PB	PANIC BAR
PCC	PRECAST CONCRETE
PE	PORCELAIN ENAMEL
PERF	PERFORATE
PERIM	PERIMETER
PERP	PERPENDICULAR
PG	PAGE
PIP	POURED IN PLACE
PK	PARK
PLAS	PLASTER
PLYWD	PLYWOOD
PNT	PAINT
PNL	PANEL
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRF	PREFORMED
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSC	PRESSURE TREATED CONCRETE
PT	PRESSURE TREATED
PTC	POST TENSIONED CONCRETE
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT

Q

QT	QUARRY TILE

R

R	RADIUS
RECD	RECEIVED
REF	REFERENCE
REINF	REINFORCEMENT
RES	RESILIENT
REQD	REQUIRED
RFL	REFLECTED
RL	RAILING
RWC	RAINWATER CONDUCTOR
RWD	REDWOOD

S

S	SOUTH
SC	SCALE
SCR	SCREW
SCHED	SCHEDULE
SCN	SCREEN
SEAL	SEALANT
SECT	SECTION
S F	SQUARE FEET
SF GL	SAFETY GLASS
SHWR	SHOWER
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
SM	SMOOTH
SPKR	SPEAKER
SPEC	SPECIFICATIONS
SPRLR	SPRINKLER
SKL	SKYLIGHT
SQ	SQUARE
S S	SANITARY SEWER
S STL	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SW	SWITCH
SYM	SYMMETRICAL
SYN	SYNTHETIC
SYS	SYSTEM

T

T/B	TOP AND BOTTOM
TEL	TELEPHONE
TER	TERRAZZO
THK	THICK
THRESH	THRESHOLD
T&G	TONGUE AND GROOVE
TMPD	TEMPERED
TOC	TOP OF CONCRETE
TOL	TOLERANCE
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TR	THREAD
T/R	TOP OF RAIL
TV	TELEVISION
TYP	TYPICAL

U

UC	UNDERCUT
UL	UNDERWRITERS LABORATORIES
UNF	UNFINISHED
UTIL	UTILITY
UR	URINAL

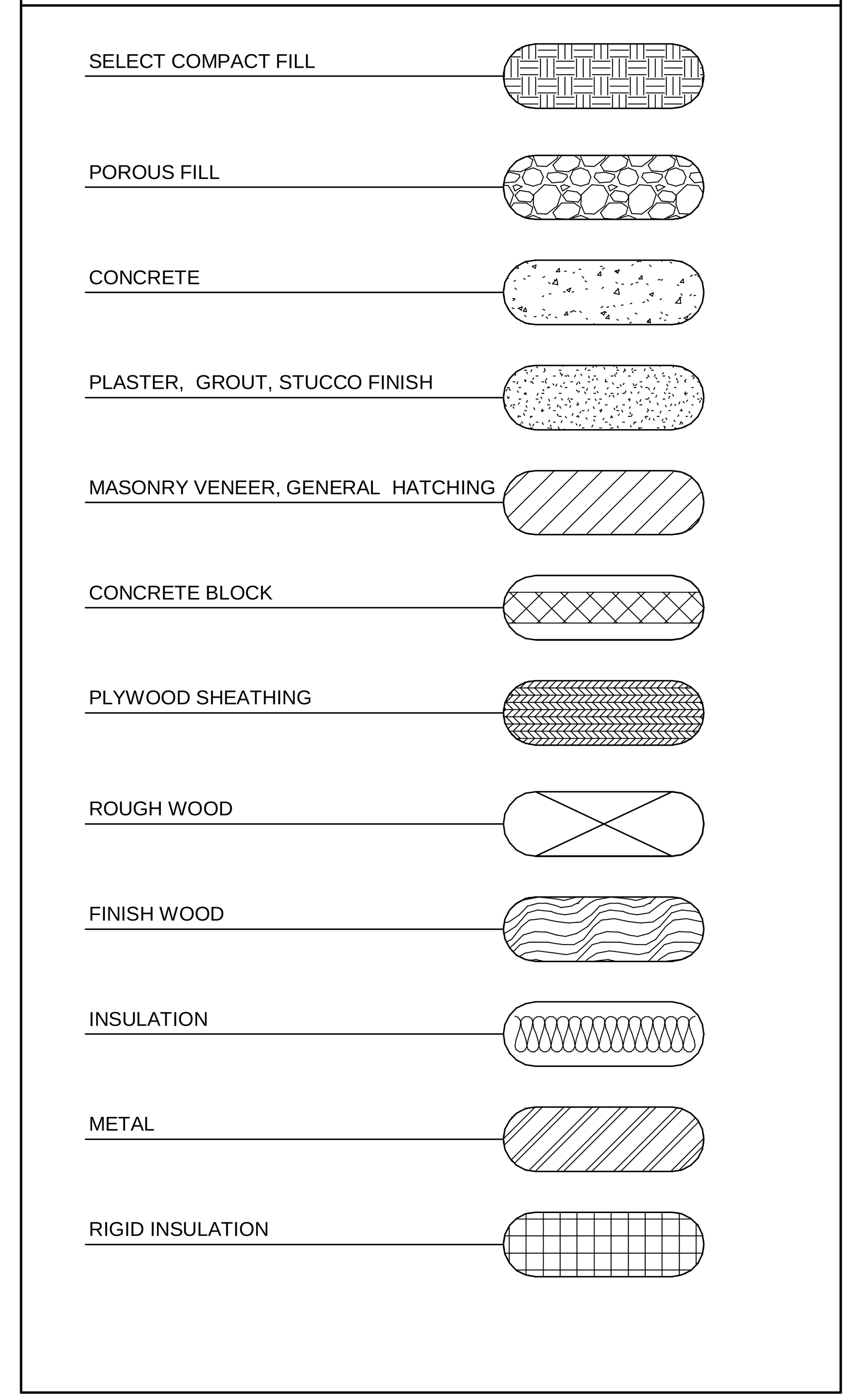
V

VAR	VARNISH
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VENT	VENTILATION
VERT	VERTICAL
VEST	VESTIBULE
VRM	VERMICULITE
VTR	VENT THROUGH ROOF

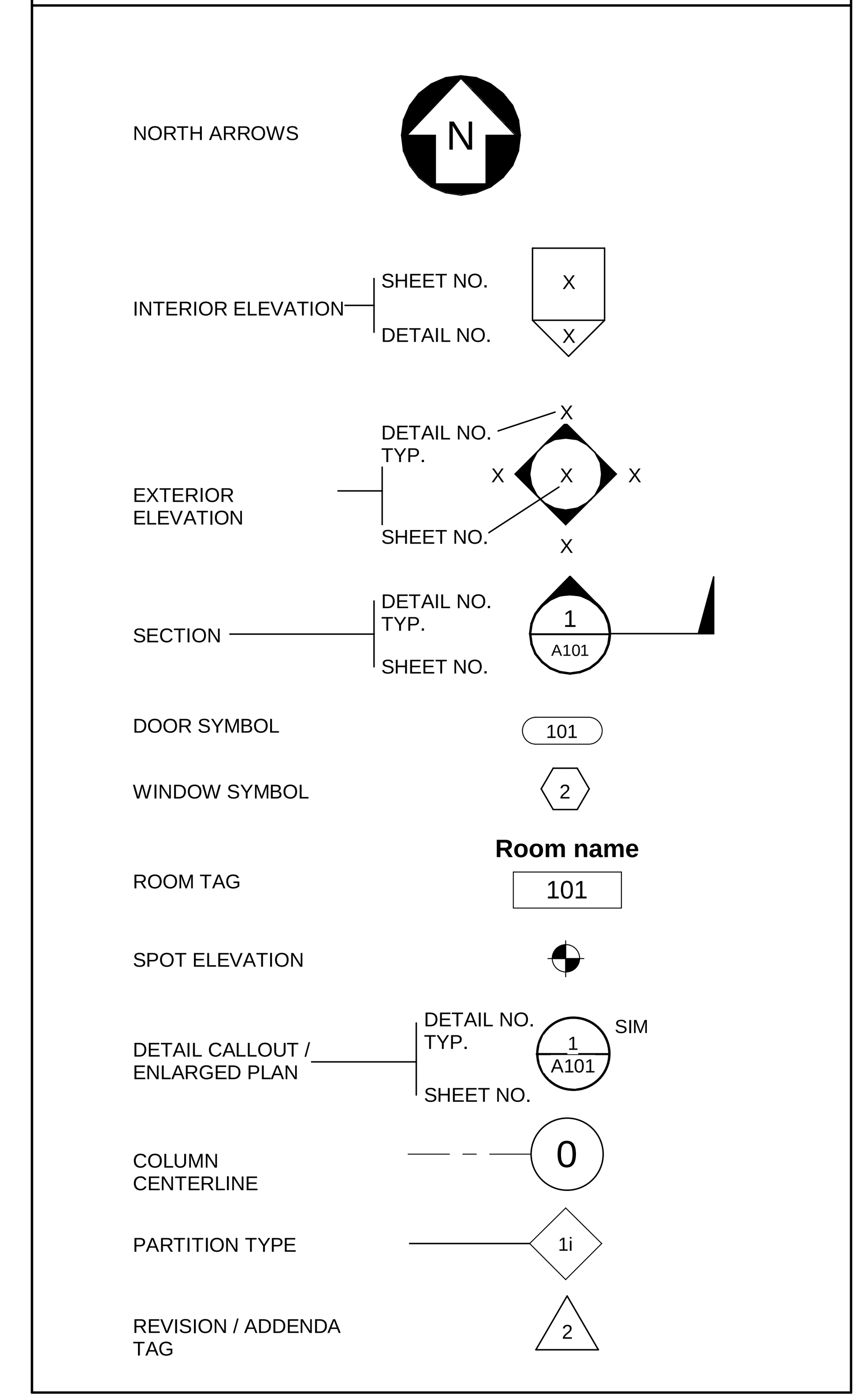
W

W	WIDE FLANGE
W	WEST, WIDE, WATER
W/	WITH
WC	WATER CLOSET
WD	WOOD
WGT	WEIGHT
WH	WALL HYDRANT
WIN	WINDOW
WOM	WOMEN
W/O	WITHOUT
WP	WATERPROOFING
WWF	WELDED WIRE FABRIC

HATCH LEGEND



SYMBOLS LEGEND



ARCHITECTURAL GENERAL NOTES

1. METHOD FOR DIMENSIONING WALLS AND OPENINGS.
   - MASONRY WALLS FACE TO FACE.
   - INTERIOR FRAME WALLS FACE OF STUDS.

   UNLESS NOTED OTHERWISE
2. ALL INTERIOR PARTITIONS SHALL BE DENOTED BY A SYMBOL OR A DETAIL UNLESS NOTED OTHERWISE.
3. GENERAL CONTRACTOR SHALL COORDINATE THE LOCATION OF REQUIRED BLOCKING IN WALLS TO RECEIVE TOILET ACCESSORIES ETC.
4. PROVIDE MOISTURE RESISTANT GYPSUM BOARD ON RESTROOM WALLS
5. THE WORD "ALIGN" INDICATES ALIGN FINISH FACE TO WALLS UNLESS NOTED OTHERWISE.
6. REFER TO CIVIL, PROCESS, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON ARCHITECTURAL DRAWINGS.
7. DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS APPLY ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE ARCHITECT OR ENGINEER.
8. ALL MATERIAL AND PAINT COLORS TO BE SELECTED BY JEA.

ISSUED FOR BID

MOTT MACDONALD

REVISIONS

NO.	BY	DATE
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2		
1		

DESIGN ARCHITECT: Thomas A. Jarman
FLORIDA REGISTRATION NO. AR0016110

DESIGNER: T. Jarman
DRAWN BY: J. Earl
DATE: APRIL 2020
CHECKED BY: B. Fritz
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

ARCHITECTURAL LEGENDS AND ABBREVIATIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 25
DRAWING NO. A-2

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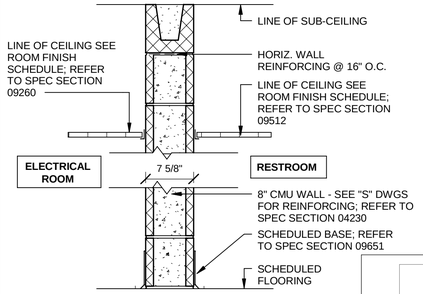
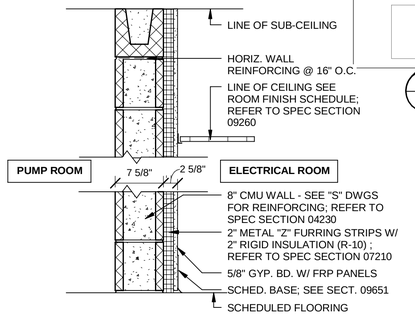
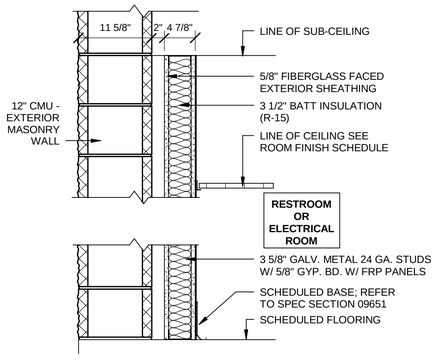


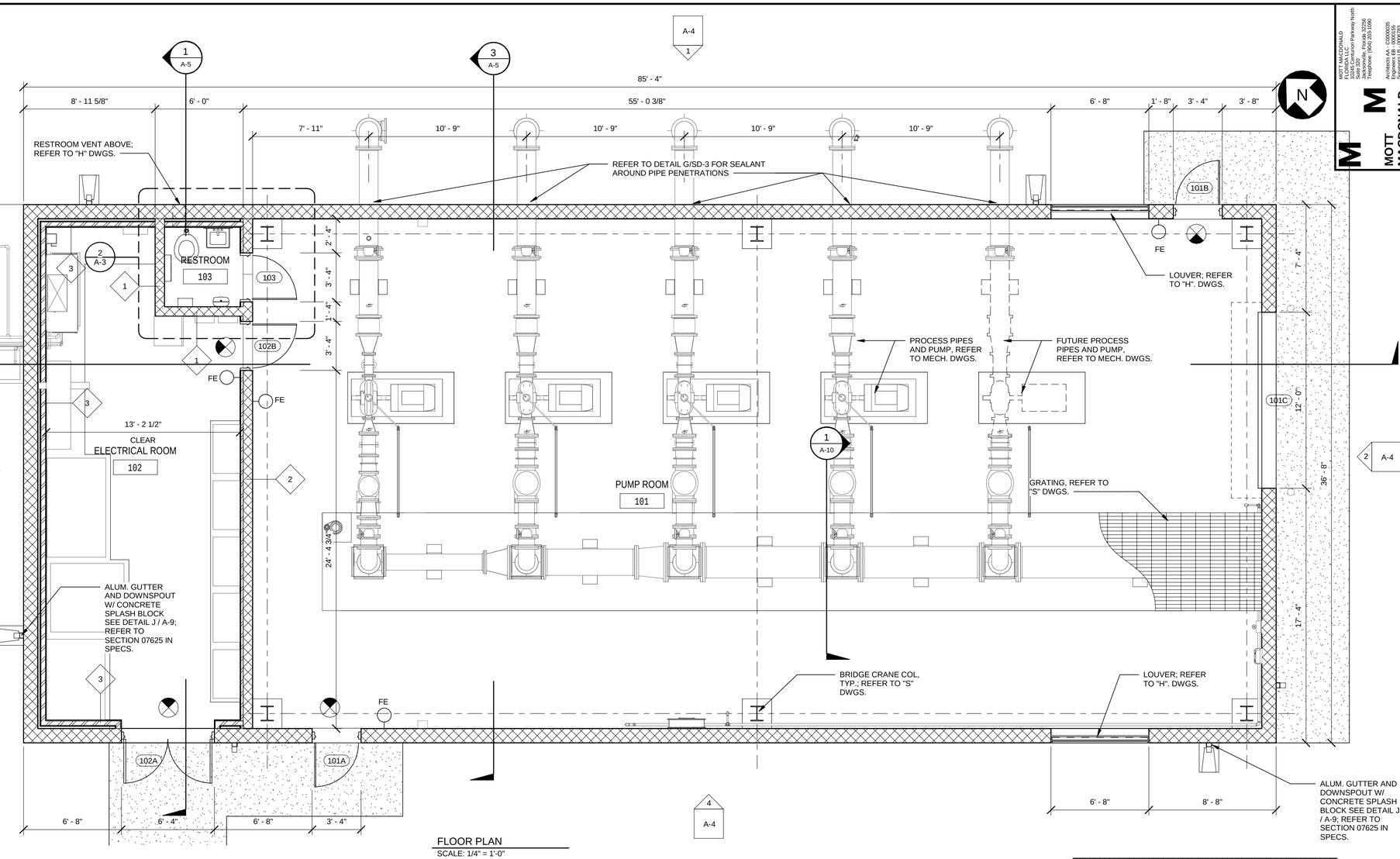
1 CMU WALLS (INTERIOR)
1"=1'-0"



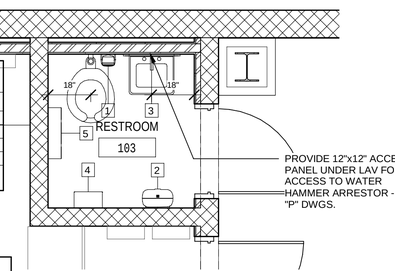
2 CMU WALLS (INTERIOR)
1"=1'-0"



3 STUD WALLS
1"=1'-0"



FLOOR PLAN
SCALE: 1/4" = 1'-0"
1 0 1 5 10
SCALE IN FEET



2 ENLARGED RESTROOM
3/8" = 1'-0"
1 0 1 2 3 4 5
SCALE IN FEET

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FINISHES			
		FLOOR	BASE	WALL	CEILING
101	PUMP ROOM	ACRYLIC COATED CONC.; SEE SPECS.	-	PAINT	EXPOSED STRUCT.
102	ELECTRICAL ROOM	ACRYLIC COATED CONC.; SEE SPECS.	6" RESILIENT BASE	FRP	GYP. BD. PAINTED
103	RESTROOM	ACRYLIC COATED CONC.; SEE SPECS.	6" RESILIENT BASE	FRP	ACT

TOILET ACCESSORIES SCHEDULE

SYMBOL	DESCRIPTION	MODEL	REMARKS
1	SOAP DISPENSER	GOJO FMX-12 - BLACK - SKU5155-06	
2	HAND TOWEL DISPENSER	TORK ELEVATION MATIC MODEL 5510282	
3	MIRROR 24"x 36"	BRADLEY #740	MNT. BOT. @ 40" A.F.F.
4	HAND DRYER	XLERATOR XL-W	
5	TOILET PAPER DISPENSER	TORK TWIN JUMBO BATH TISSUE DISPENSER Article : 247549a color:black, SC1007328622393	

NOTE:
SEE SPEC SECTION 10281 FOR MORE INFORMATION ON TOILET ACCESSORIES.

DOOR SCHEDULE

NO.	ROOM NAME	DOOR				FRAME			HDWRE	HEAD	JAMB	THR'S	COMMENTS
		SIZE	DR MTRL.	DR ELEV.	DR FIN.	FR ELEV.	FR FIN.	FR MTRL.					
101A	PUMP ROOM	3'-0" x 7'-2" x 1 3/4"	FRP	D2	MFG	A	MFG	ALUM	1	A / A-9	B / A-9	C / A-9	
101B	PUMP ROOM	3'-0" x 7'-2" x 1 3/4"	FRP	D2	MFG	A	MFG	ALUM	1	A / A-9	B / A-9	C / A-9	
101C	PUMP ROOM	12' x 10'	GALV. METAL	D4	PAINT	N/A	PAINT	GALV. METAL	3	F / A-9	G / A-9	H / A-9	
102A	ELECTRICAL ROOM	6'-0" x 7'-2" x 1 3/4"	FRP	D3	MFG	B	MFG	ALUM	2	A / A-9	B / A-9	C / A-9	
102B	ELECTRICAL ROOM	3'-0" x 7'-2" x 1 3/4"	FRP	D1	MFG	A	MFG	ALUM	4	D / A-9	E / A-9	-	
103	RESTROOM	3'-0" x 7'-2" x 1 3/4"	FRP	D2	MFG	A	MFG	ALUM	5	D / A-9	E / A-9	-	

NOTE: SEE SPEC SECTION 08710 FOR DOOR HARDWARE

ISSUED FOR BID

MOTT MACDONALD
Mott MacDonald LLC
10200 Centurion Parkway North
Suite 200
Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0000152

NO.	BY	DATE	REVISIONS
6.			
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DESIGN ARCHITECT
Thomas A. Jarman
FLORIDA REGISTRATION NO.
AR0016110

DESIGNER: T. Jarman
DRAWN BY: J. Earl
DATE: APRIL 2020
CHECKED BY: B. Fritz
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

FLOOR PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 26
DRAWING NO. A-3

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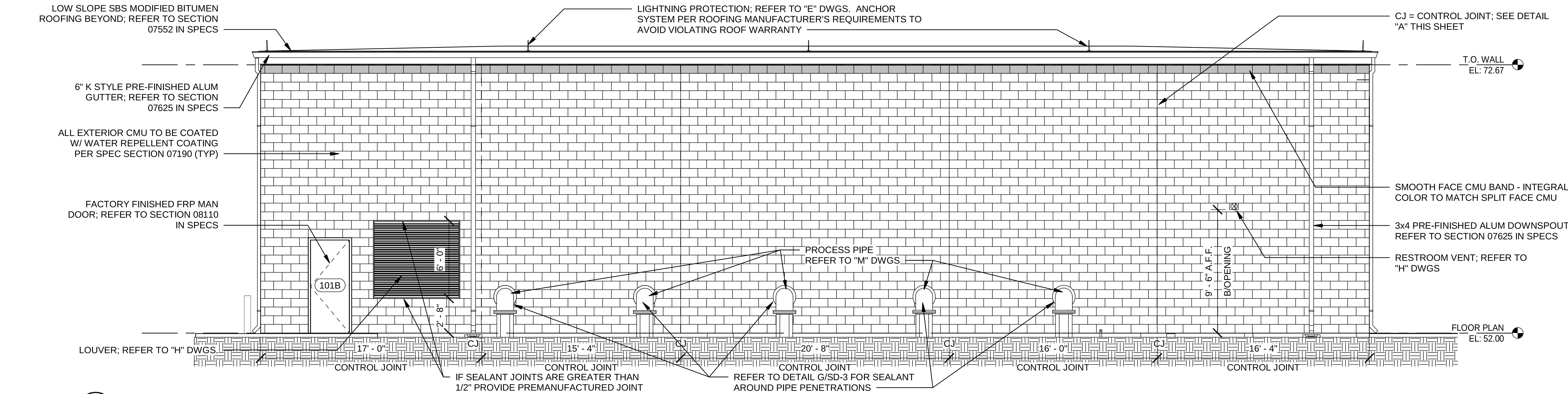
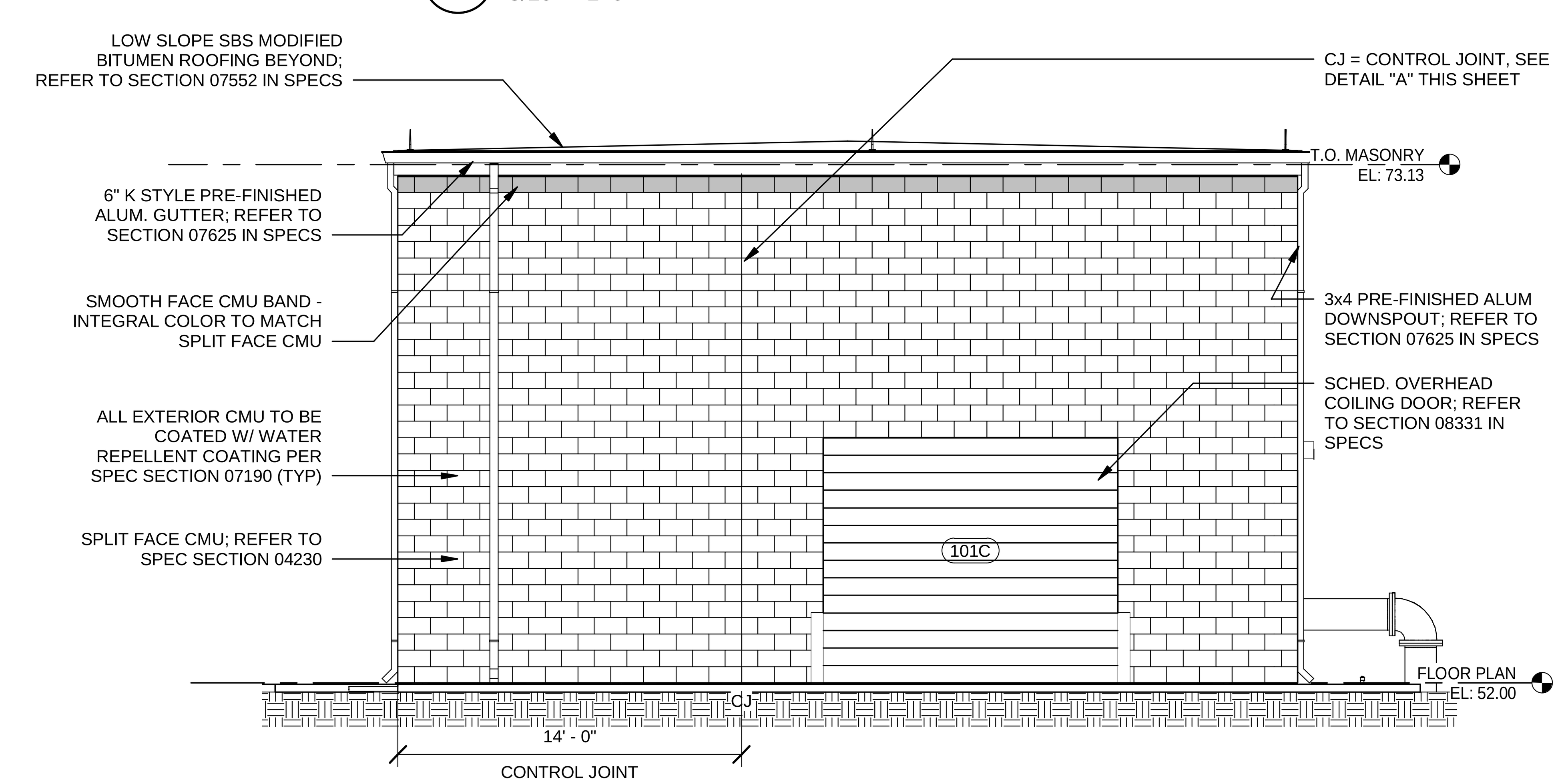


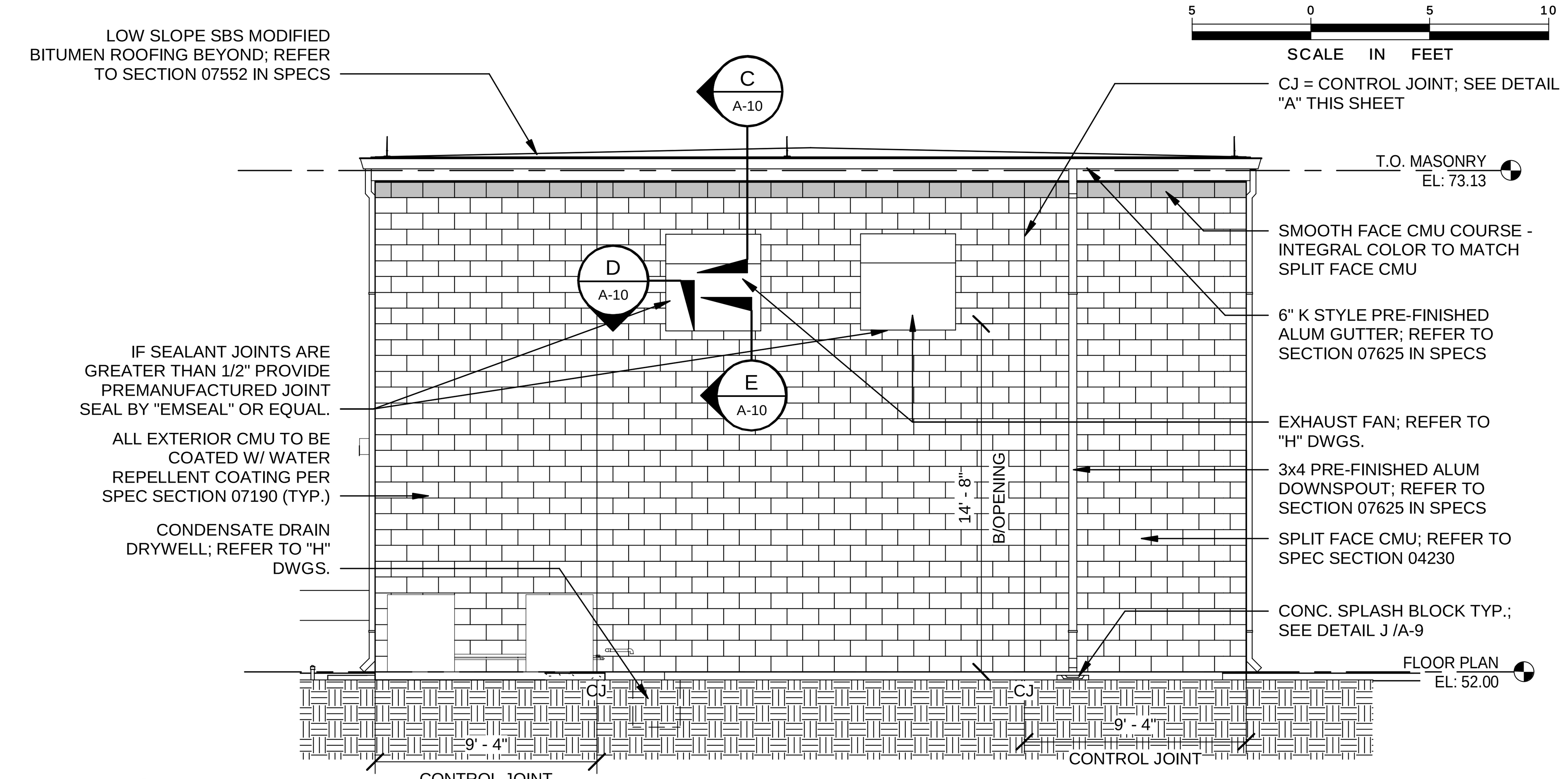
1 NORTHEAST ELEVATION
3/16" = 1'-0"

SCALE IN FEET



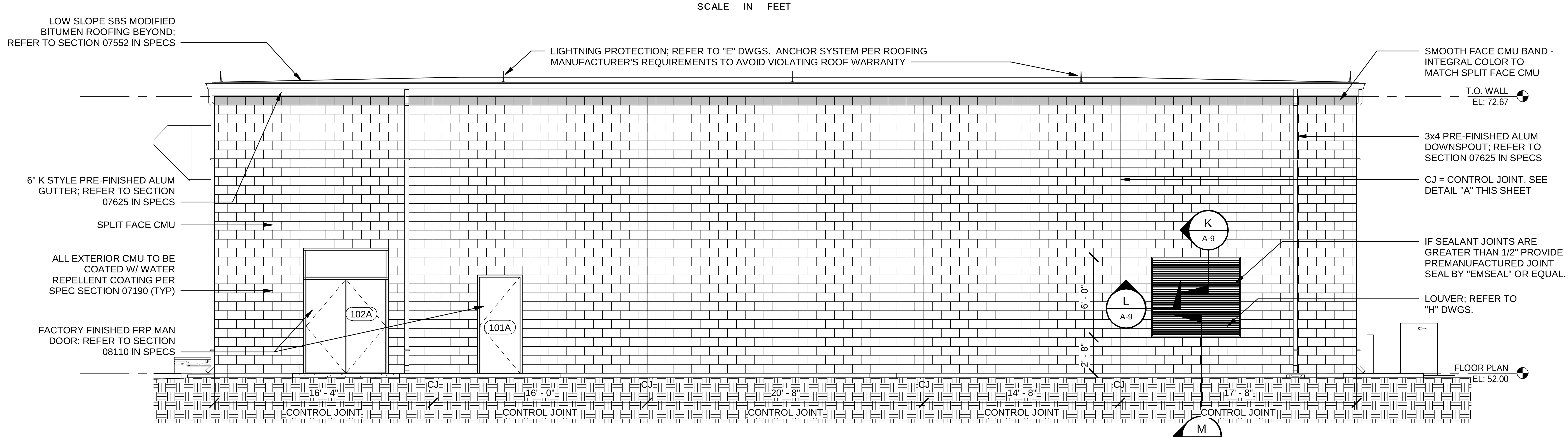
2 SOUTHEAST ELEVATION
3/16" = 1'-0"

SCALE IN FEET



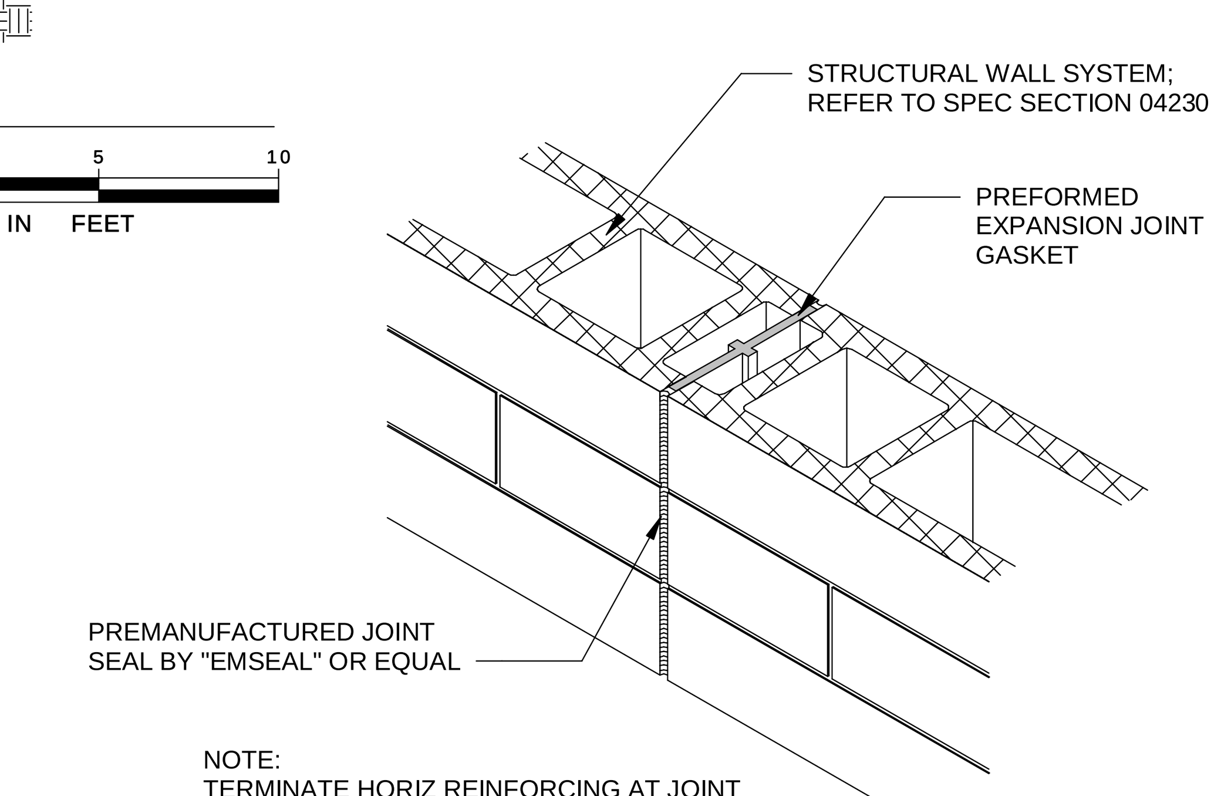
3 NORTHWEST ELEVATION
3/16" = 1'-0"

SCALE IN FEET



4 SOUTHWEST ELEVATION
3/16" = 1'-0"

SCALE IN FEET



A CONTROL JOINT DETAIL (CJ) - SW
3/4" = 1'-0"

SCALE IN FEET

GENERAL EXTERIOR ELEVATION NOTES:

1. REFER TO ROOF PLAN FOR LOCATION OF GUTTERS AND DOWNSPOUTS.
2. REFER TO SHEET A-3 FOR DOOR SCHEDULE.
3. ALL CMU STORED ON SITE PRIOR TO CONSTRUCTION SHALL BE PROTECTED FROM GETTING WET.
4. ALL EXTERIOR CMU SHALL BE CAREFULLY PROTECTED DURING CONSTRUCTION TO AVOID THE INTERIOR BLOCK CAVITIES BECOMING WET DURING CONSTRUCTION.

ISSUED FOR BID

MOTT MACDONALD

REVISIONS

NO.	BY	DATE
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DESIGN ARCHITECT
Thomas A. Jarman
FLORIDA REGISTRATION NO. AR0016110

DESIGNER: T. Jarman
DRAWN BY: J. Earl
DATE: APRIL 2020
CHECKED BY: B. Fritz
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

EXTERIOR ELEVATIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 27
DRAWING NO. A-4

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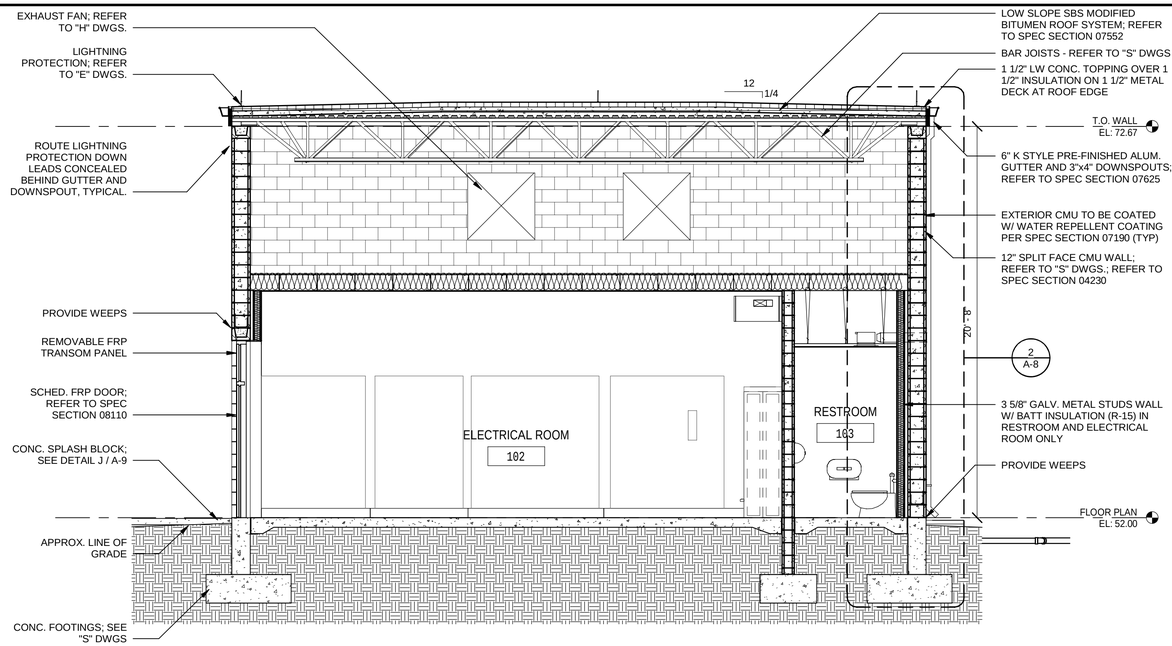
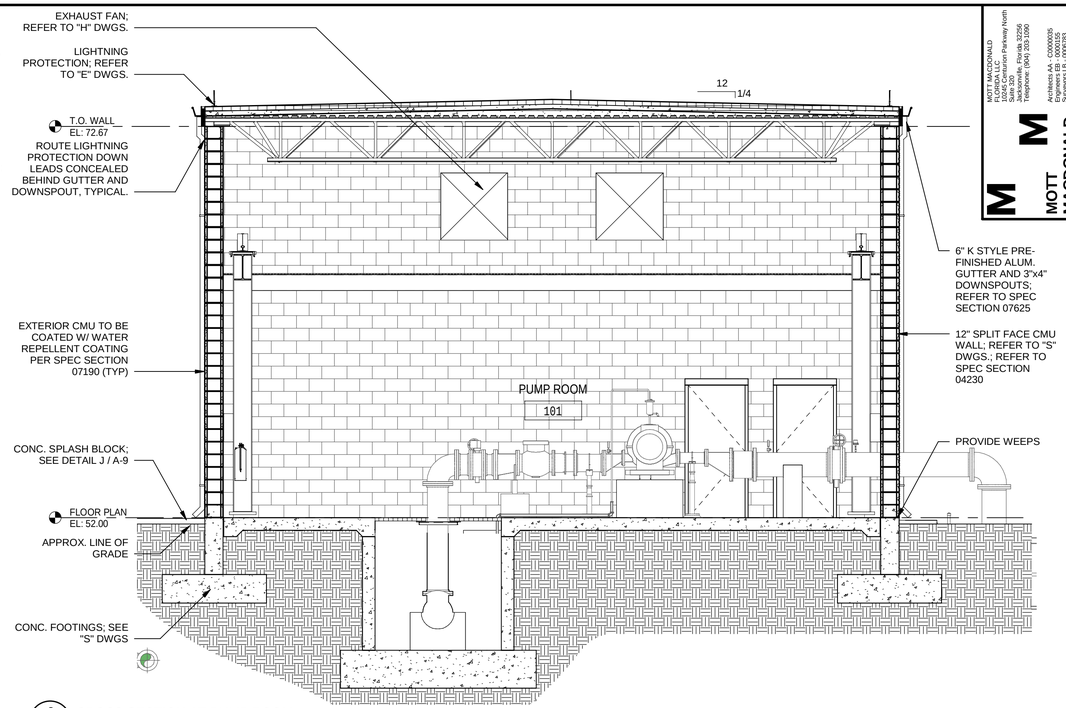


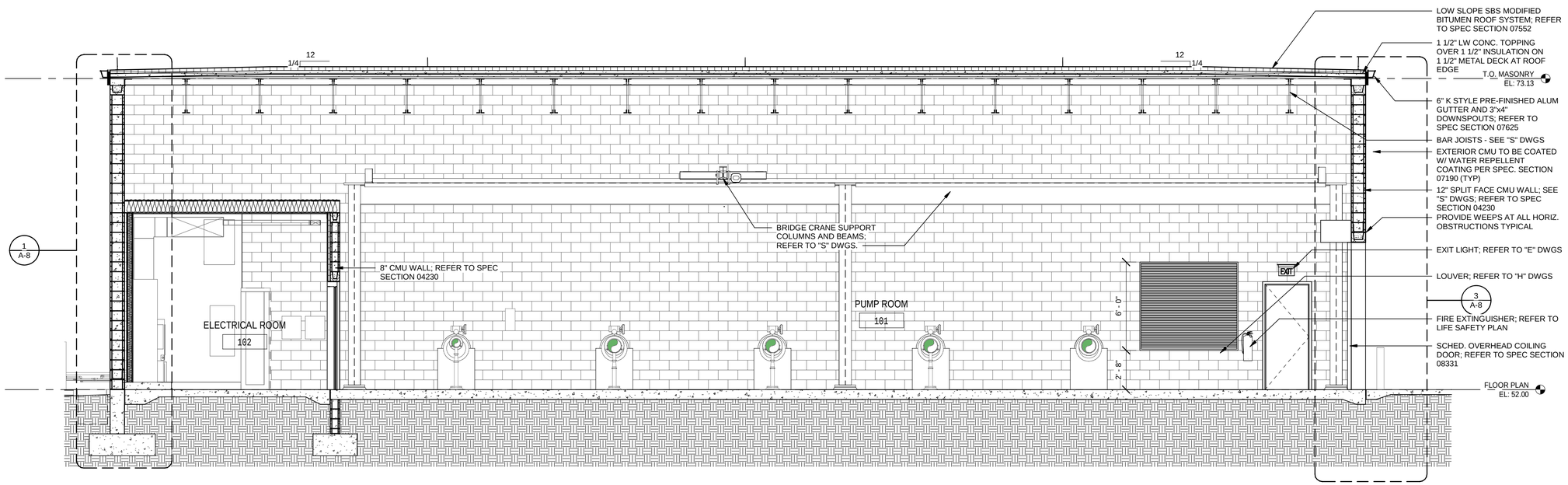
1 - CROSS SECTION AT ELECTRICAL ROOM
1/4" = 1'-0"

SCALE IN FEET 1 0 1 5 10



3 - CROSS SECTION AT PUMP ROOM
1/4" = 1'-0"

SCALE IN FEET 1 0 1 5 10



2 - LONGITUDINAL SECTION
1/4" = 1'-0"

SCALE IN FEET 1 0 1 5 10

ISSUED FOR BID

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10200 Centurion Parkway North
Jacksonville, Florida 32256
Telephone: (904) 293-1090

Architects AA - C00000035
Engineers EB - 0000035
Surveyors LB - 0000035

NO.	BY	DATE	REVISIONS
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DESIGN ARCHITECT
Thomas A. Jarman
FLORIDA REGISTRATION NO.
AR0016110

DESIGNER:	T. Jarman
DRAWN BY:	J. Earl
DATE:	APRIL 2020
CHECKED BY:	B. Fritz
DATE:	APRIL 2020

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TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

BUILDING SECTION

PROJ. NO.:	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS	105
SHEET NO.	28
DRAWING NO.	A-5

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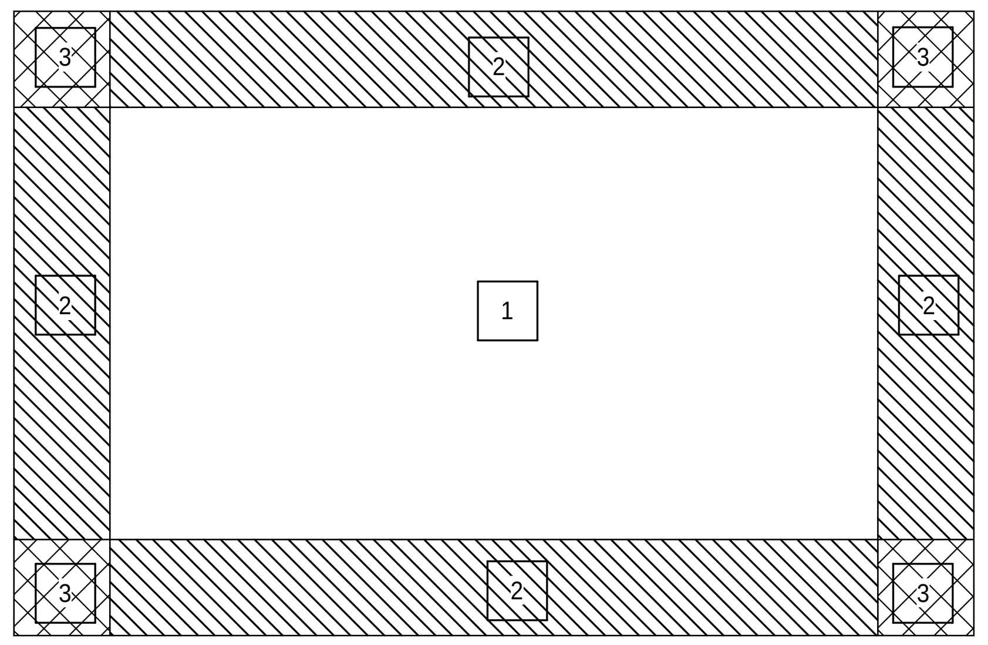
GENERAL ROOF NOTES:

1. ALL ROOF PENETRATIONS SHALL HAVE ROOF FLASHINGS PER NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA) STANDARD FLASHING DETAILS AS DESCRIBED IN SPECIFICATIONS.
2. ALL GUTTER AND DOWNSPOUTS SHALL BE ALUMINUM WITH SPECIFIED FINISH, UNLESS NOTED OTHERWISE.
   GUTTER (6" K TYPE)
   DOWNSPOUT (3"x4")
3. REFER TO SPECIFICATIONS FOR MINIMUM ACCEPTABLE NRCA STANDARD FLASHING DETAILS OF ROOF PENETRATION AND EAVE DETAILS.



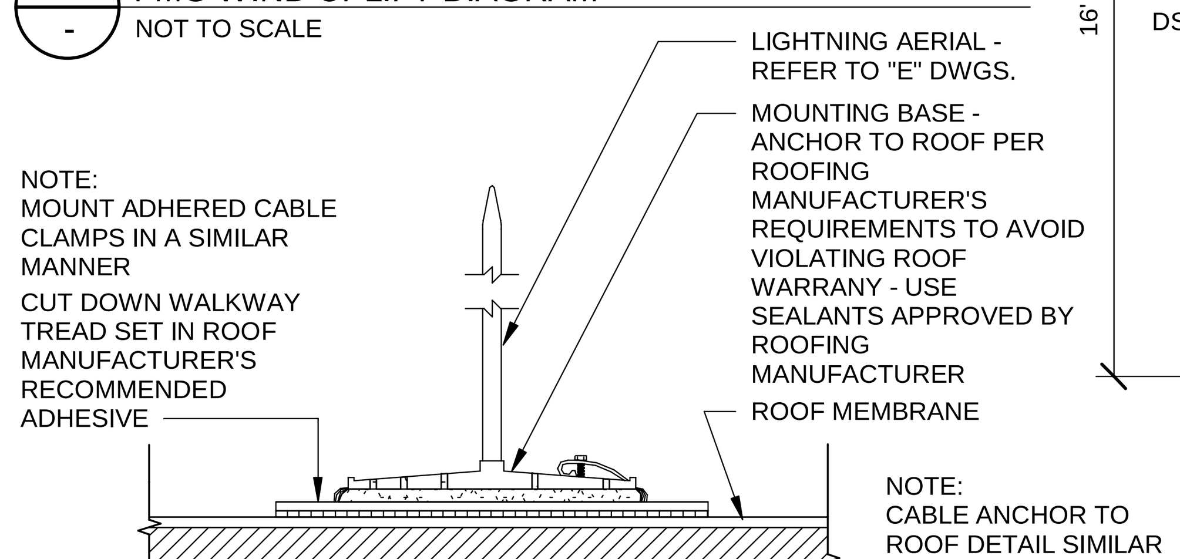
WIND UPLIFT ZONES AND RATINGS

ZONE	FMG RATING
1 - FIELD	1 - 120
2 - PERIMETER	1 - 165
3 - CORNERS	1 - 240

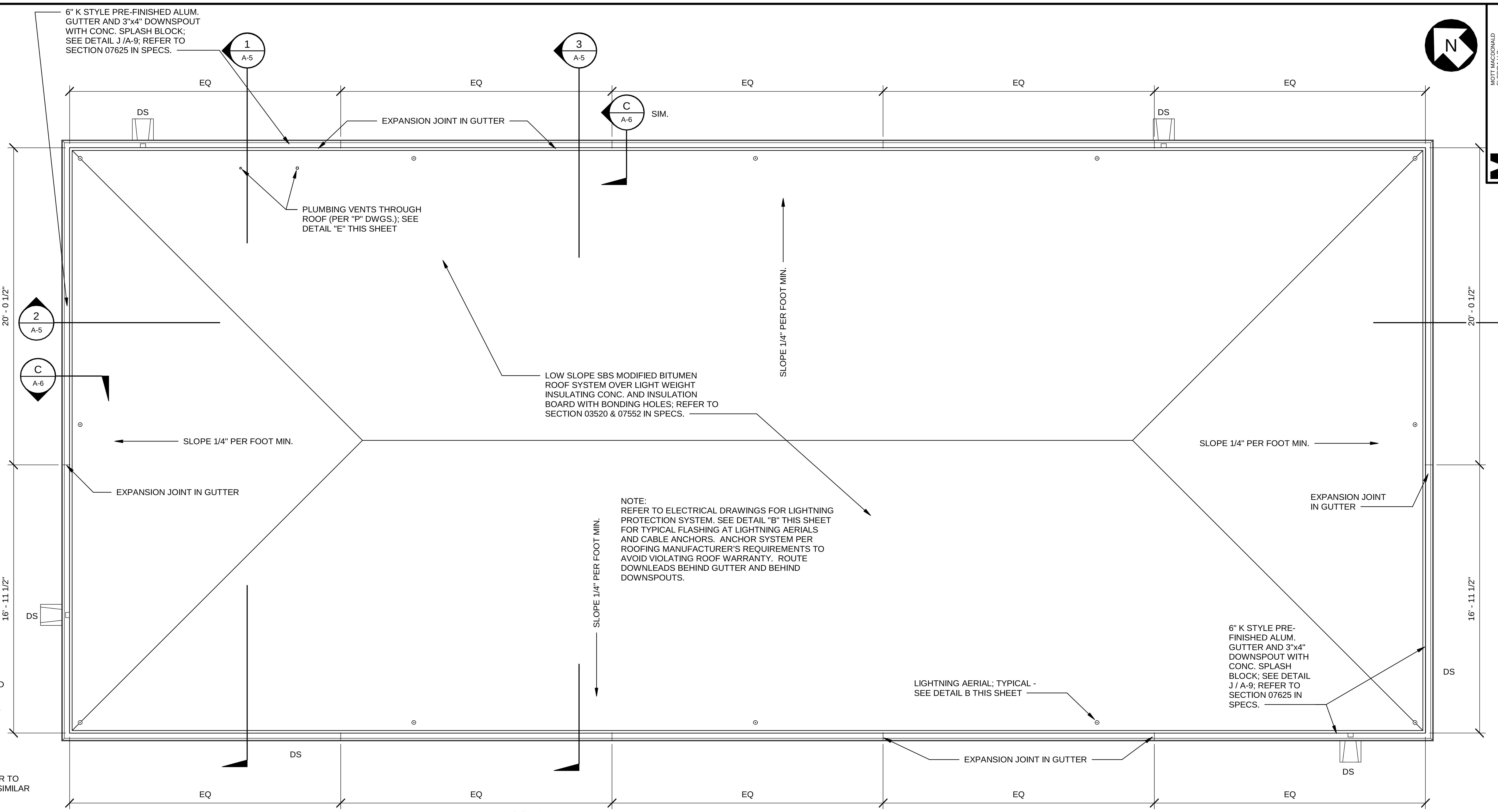
PER FACTORY MUTUAL GLOBAL (FMG) DATA SHEET 1-28: "WIND DESIGN" (2009/2011) FOR ROOF DECK SECUREMENT AND ABOVE-DECK ROOF COMPONENTS.

NOTE:
APPROVED ROOF SYSTEM SHALL MEET OR EXCEED THE FACTORY MUTUAL GLOBAL RATINGS FOR WIND UPLIFT ZONES.

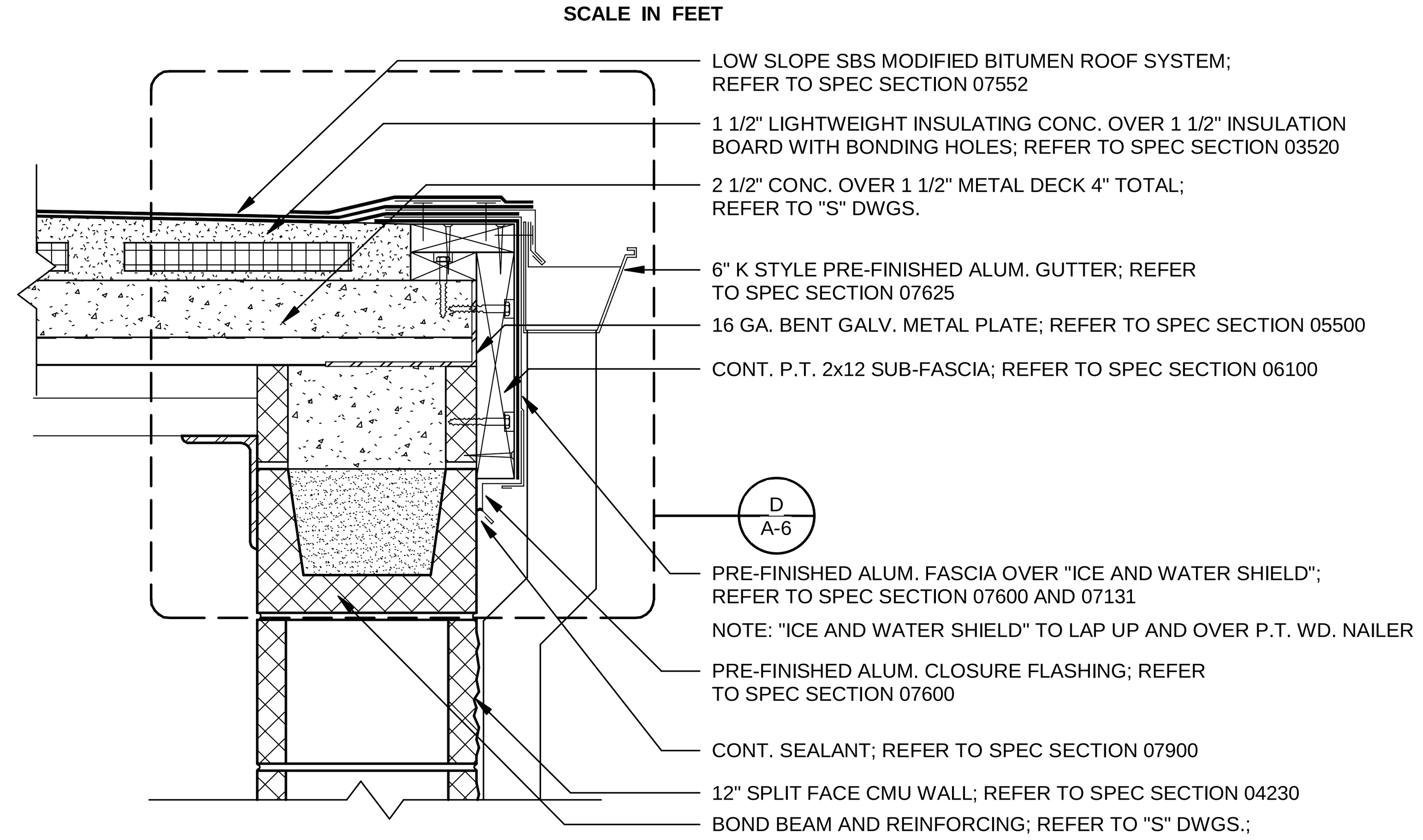
A / - FMG WIND UPLIFT DIAGRAM
NOT TO SCALE



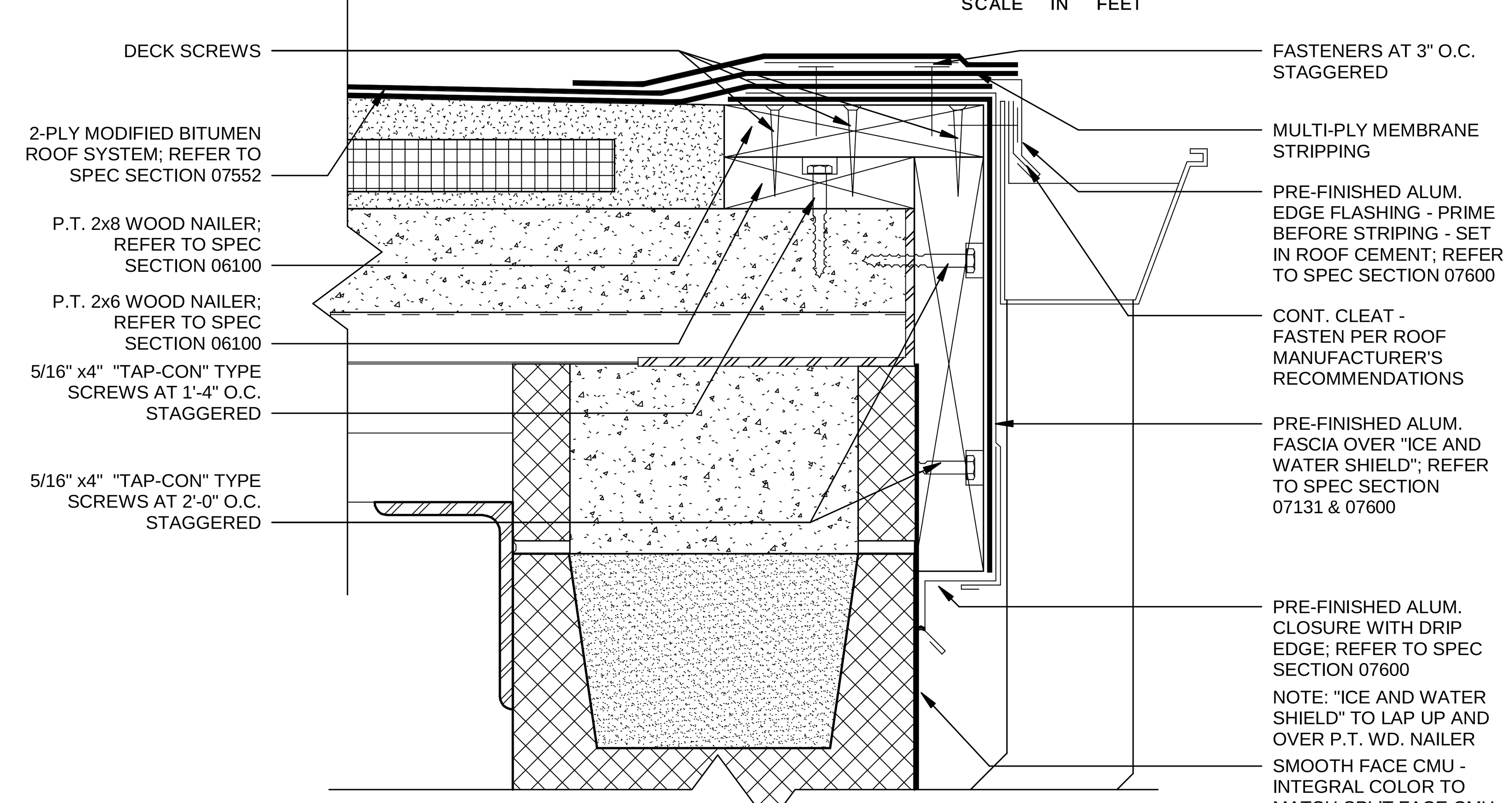
B / - TYPICAL LIGHTNING AERIAL FLASHING
3" = 1'-0"
SCALE IN FEET



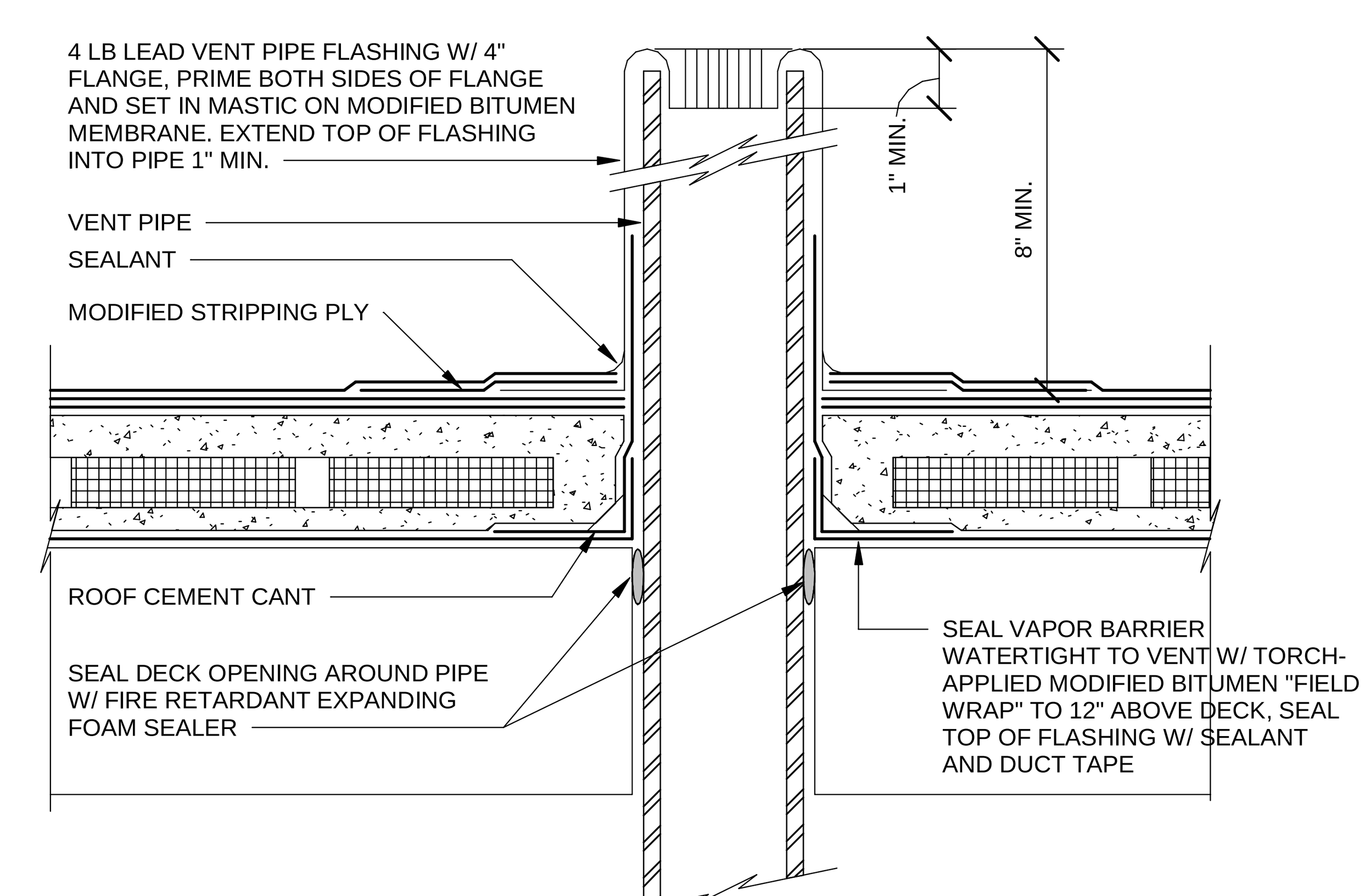
ROOF PLAN
SCALE: 1/4" = 1'-0"
SCALE IN FEET



C / - ROOF EDGE DETAIL
1 1/2" = 1'-0"
SCALE IN FEET



D / - GUTTER DETAIL
3" = 1'-0"
SCALE IN FEET



E / - TYPICAL ROOF VENT DETAIL
3" = 1'-0"
SCALE IN FEET

ISSUED FOR BID

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10245 Centurion Parkway North Suite 320
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Telephone: (904) 203-1990
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

REVISIONS

NO.	BY	DATE
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DESIGN ARCHITECT
Thomas A. Jarman
FLORIDA REGISTRATION NO.
AR0016110

DESIGNER:	T. Jarman
DRAWN BY:	J. Earl
DATE:	APRIL 2020
CHECKED BY:	B. Fritz
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

ROOF PLAN

PROJ. NO.:	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS	105
SHEET NO.	29
DRAWING NO.	A-6

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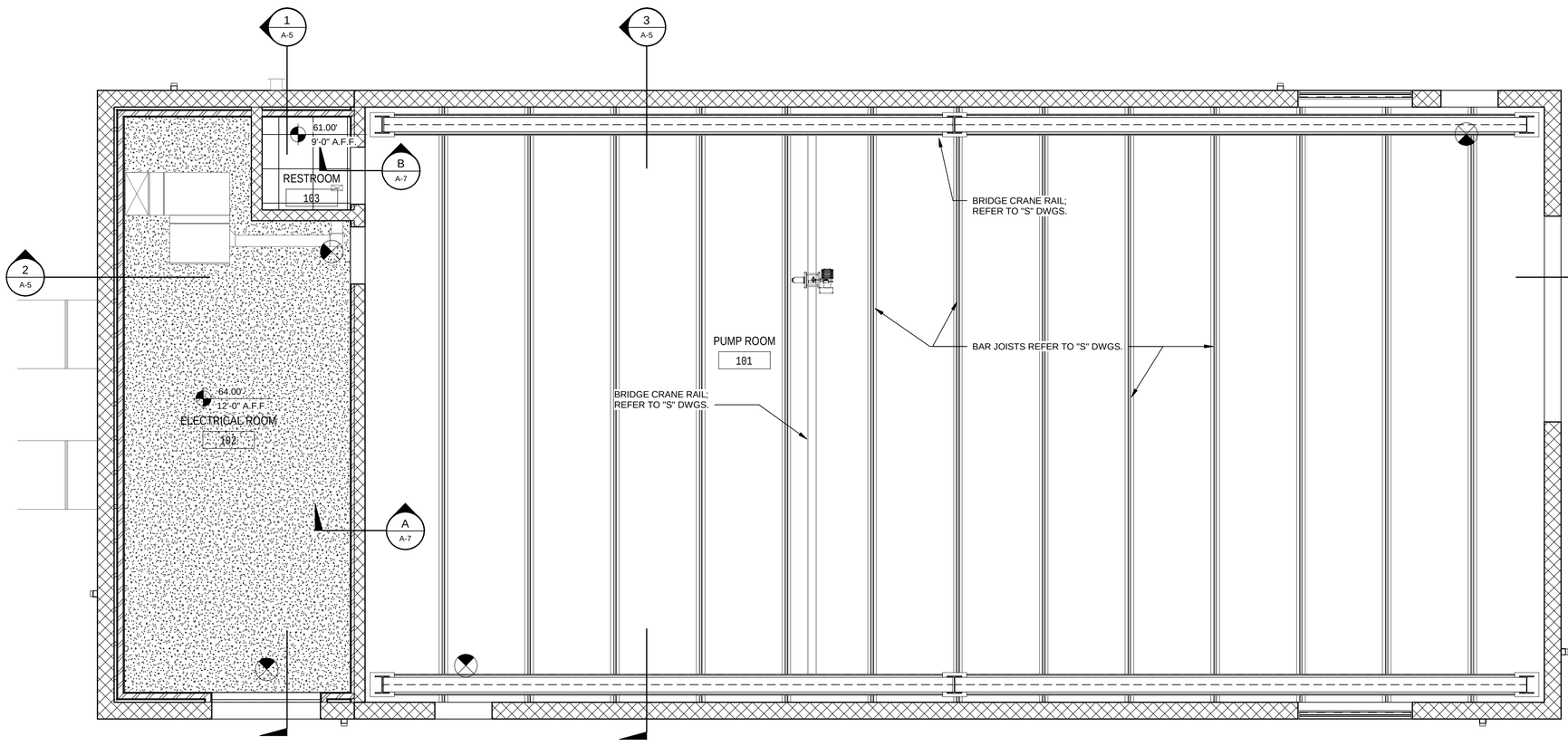
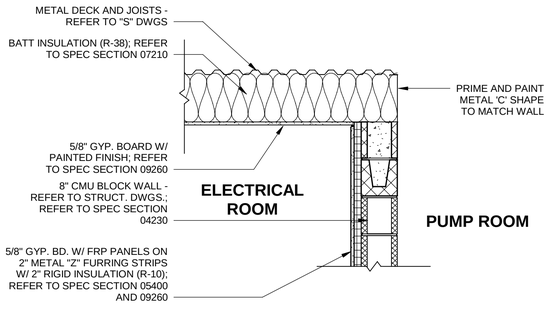


REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

SCALE IN FEET 1 0 1 5 10

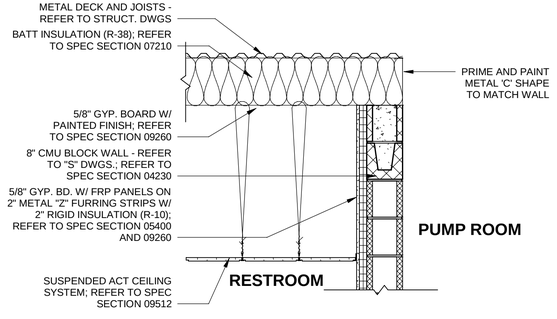
CEILING LEGEND

- ACT-1: 2'x2' SUSPENDED CEILING GRID; REFER TO SPEC SECTION 09512
- PAINTED GYP. BD. CEILING ON METAL SUSPENSION SYSTEM; REFER TO SPEC SECTION 09260
- ABSOLUTE / XX.XX / X'-X" A.F.F. / RELATIVE — CEILING HEIGHT SPOT ELEVATION
- HEADER AT DOOR, WINDOW OR CASED OPENING
- EMERGENCY EXIT LIGHT; REFER TO "E" DWGS



A - DT - CEILING AT ELEC ROOM
3/4" = 1'-0"

SCALE IN FEET 1 0 1 2 3



B - DT - CEILING AT RESTROOM
3/4" = 1'-0"

SCALE IN FEET 1 0 1 2 3

REFLECTED CEILING NOTES:

1. REFER TO HVAC AND ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES.
2. COORDINATE FINAL SIZE AND LOCATION OF ANY ACCESS PANELS IN GYPSUM BOARD CEILINGS WITH ELECTRICAL, MECHANICAL, PLUMBING AND HVAC DRAWINGS.
3. COORDINATE FINAL TYPE AND LOCATION OF ALL LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.

ISSUED FOR BID

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10200 Centurion Parkway North
Suite 200
Jacksonville, Florida 32256
Telephone: (904) 293-1090
Architects AA - C0000035
Engineers EB - 0000035
Surveyors LB - 0000035

NO.	BY	DATE	REVISIONS
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JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

REFLECTED CEILING PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS: 105
SHEET NO.: 30
DRAWING NO.: A-7

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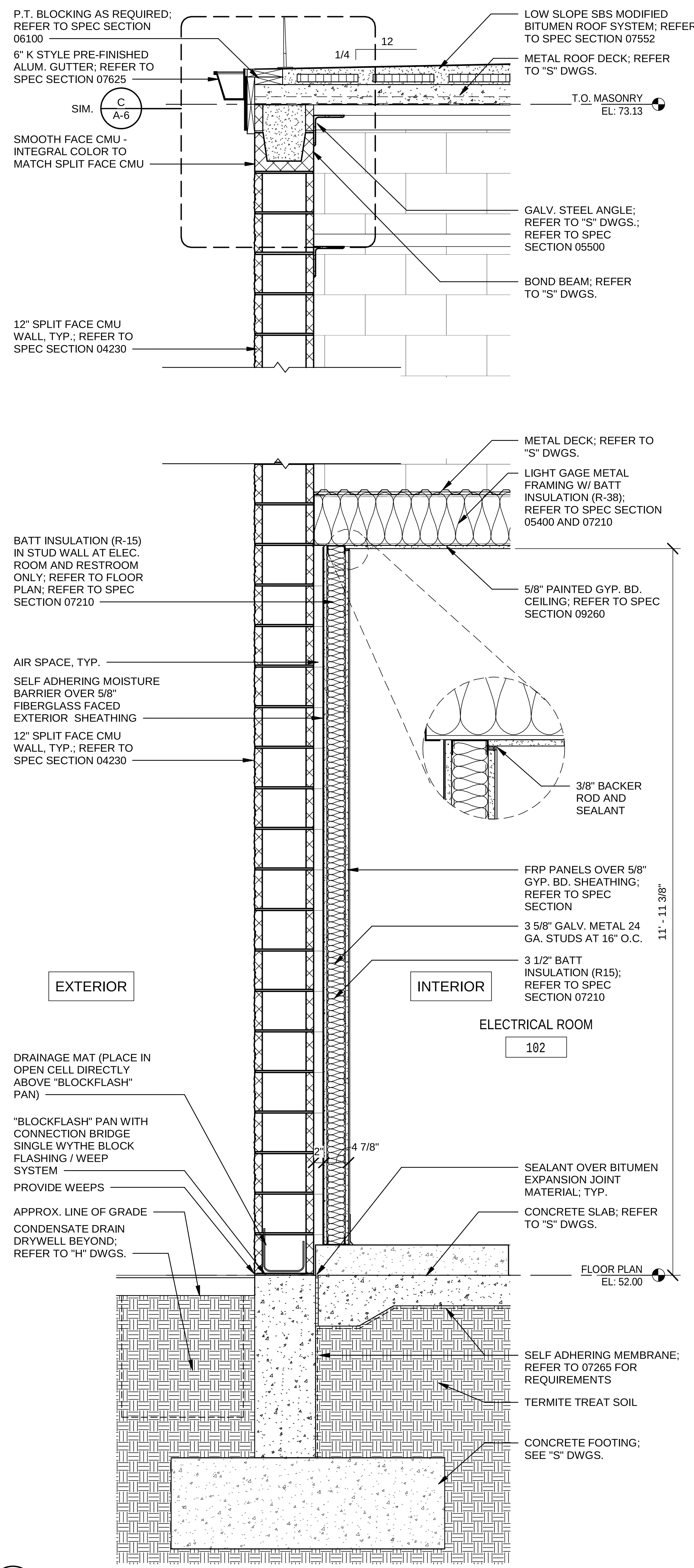
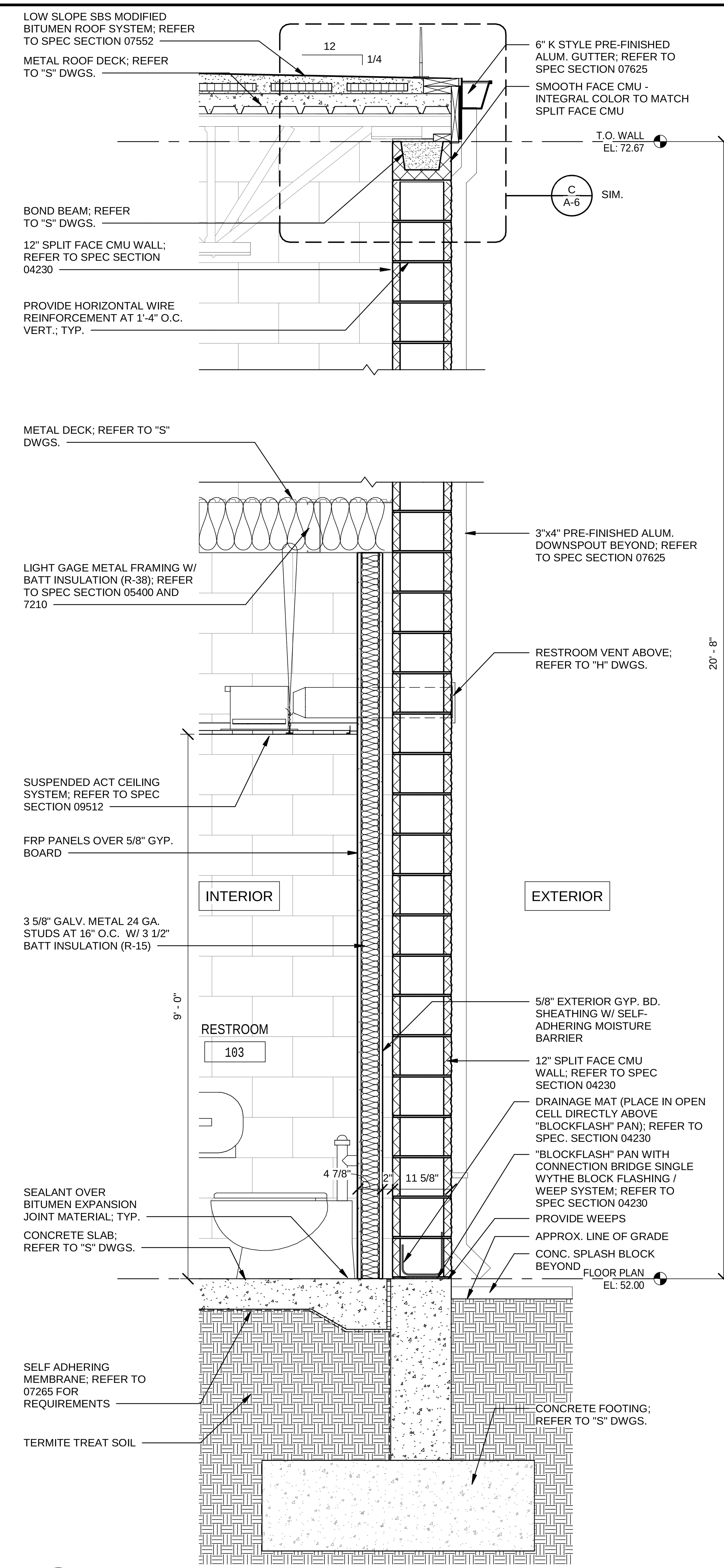


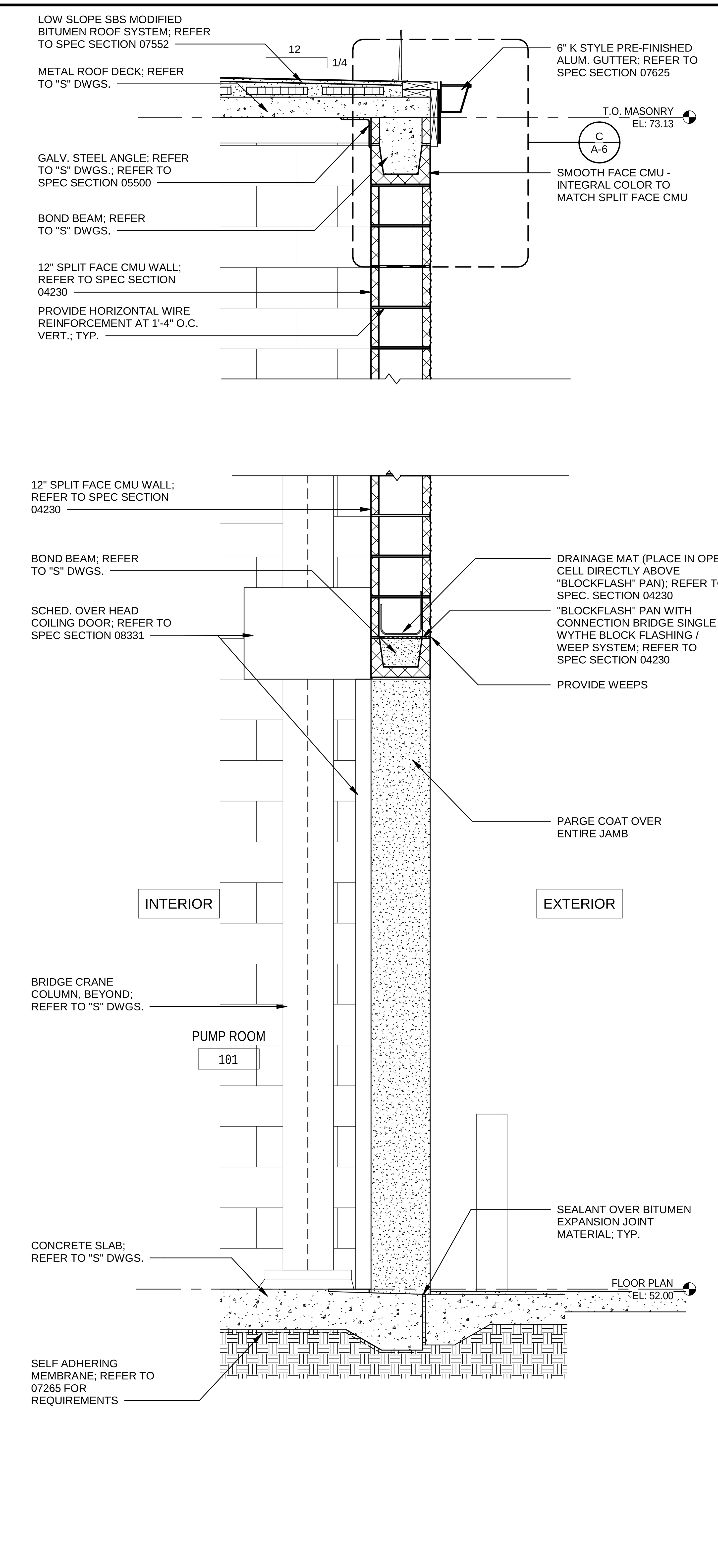
1 WALL SECTION AT ELECTRICAL ROOM
- 3/4" = 1'-0"

SCALE IN FEET



2 WALL SECTION AT RESTROOM
- 3/4" = 1'-0"

SCALE IN FEET



3 WALL SECTION AT PUMP ROOM
- 3/4" = 1'-0"

SCALE IN FEET

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MOTT MACDONALD

REVISIONS

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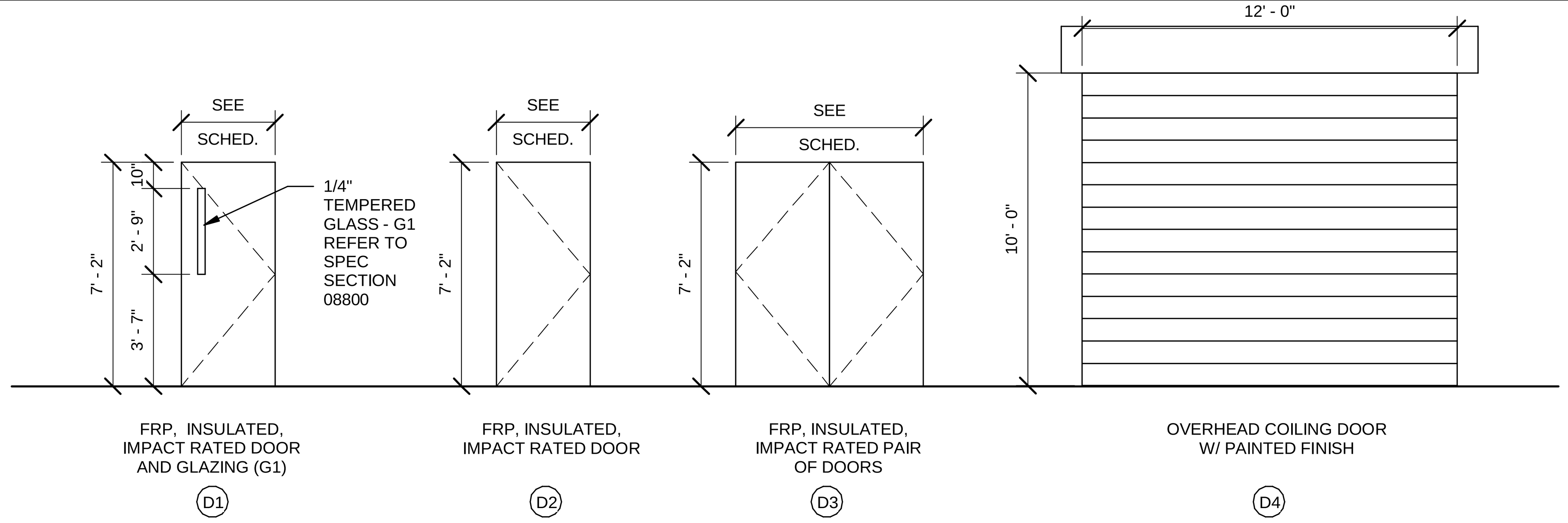
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

WALL SECTIONS

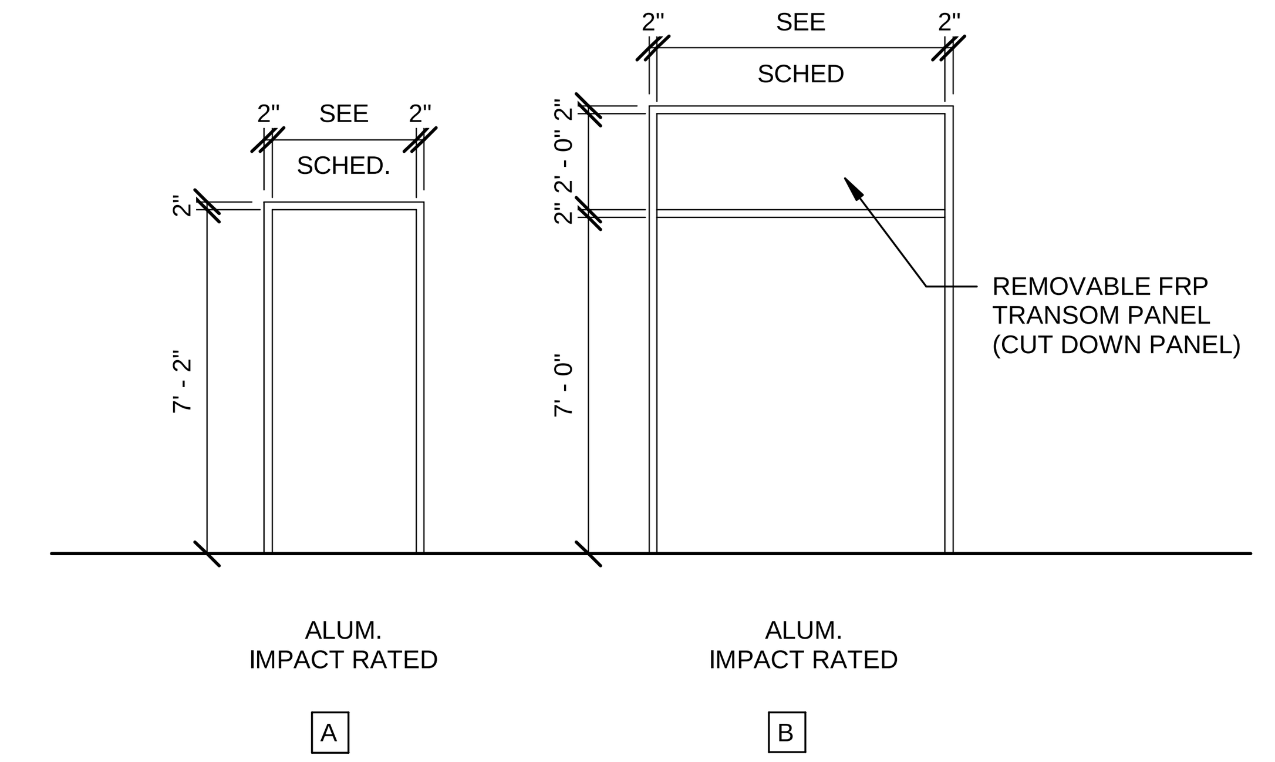
PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 31
DRAWING NO. A-8



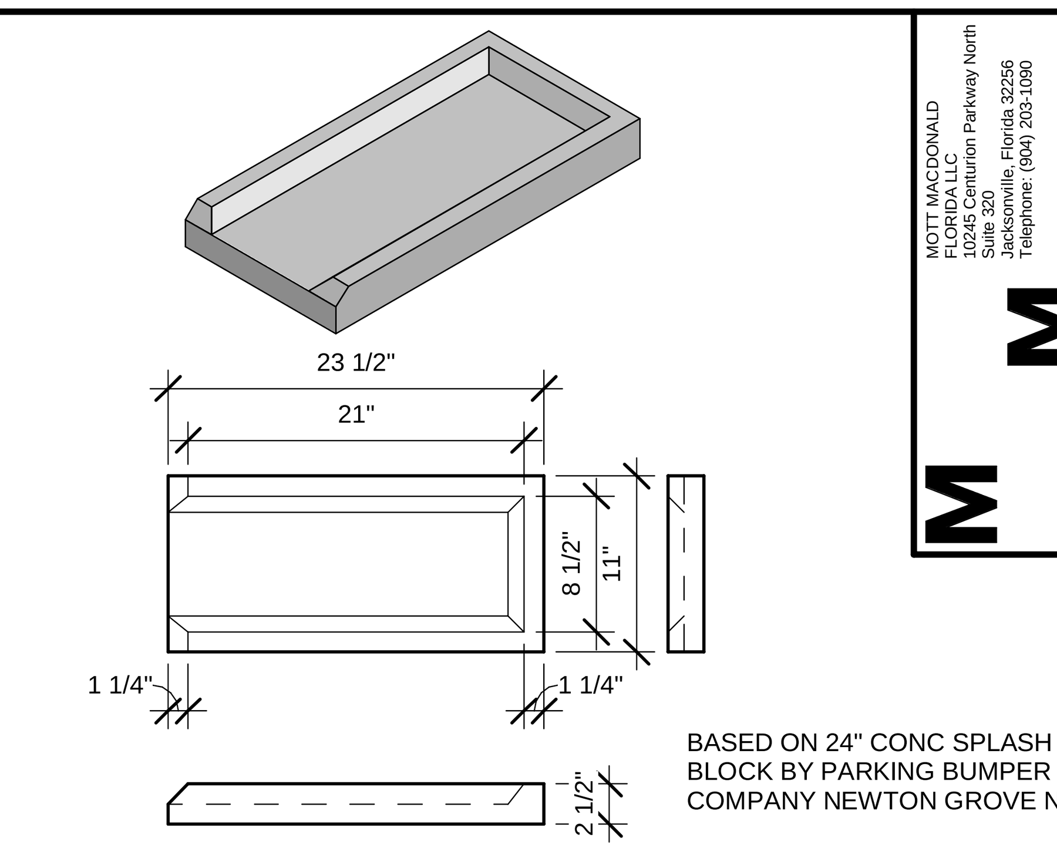
GRAPHIC DOOR SCHEDULE
SCALE: 1/4" = 1'-0"

SCALE IN FEET

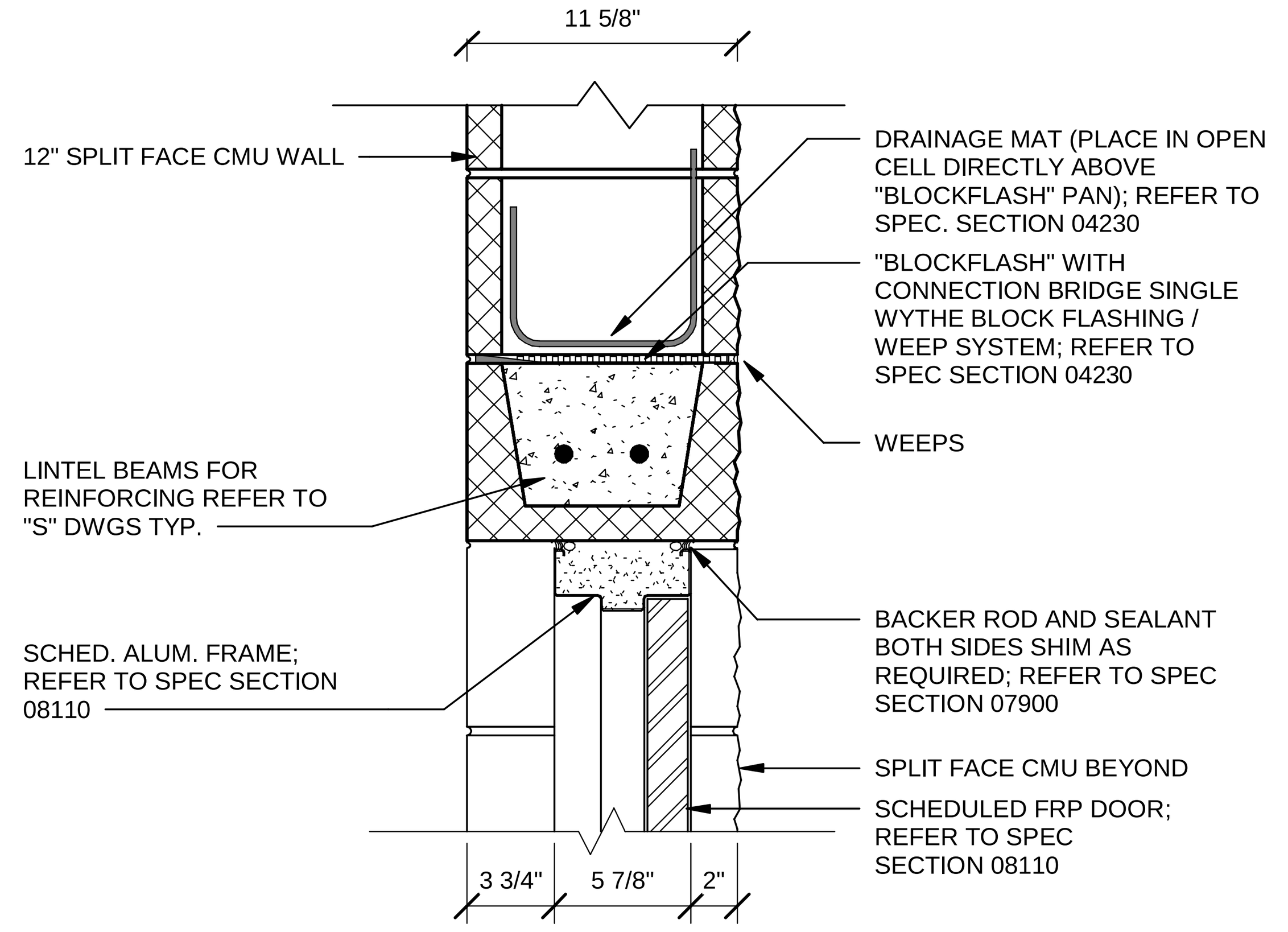


GRAPHIC DOOR FRAME SCHEDULE
SCALE: 1/4" = 1'-0"

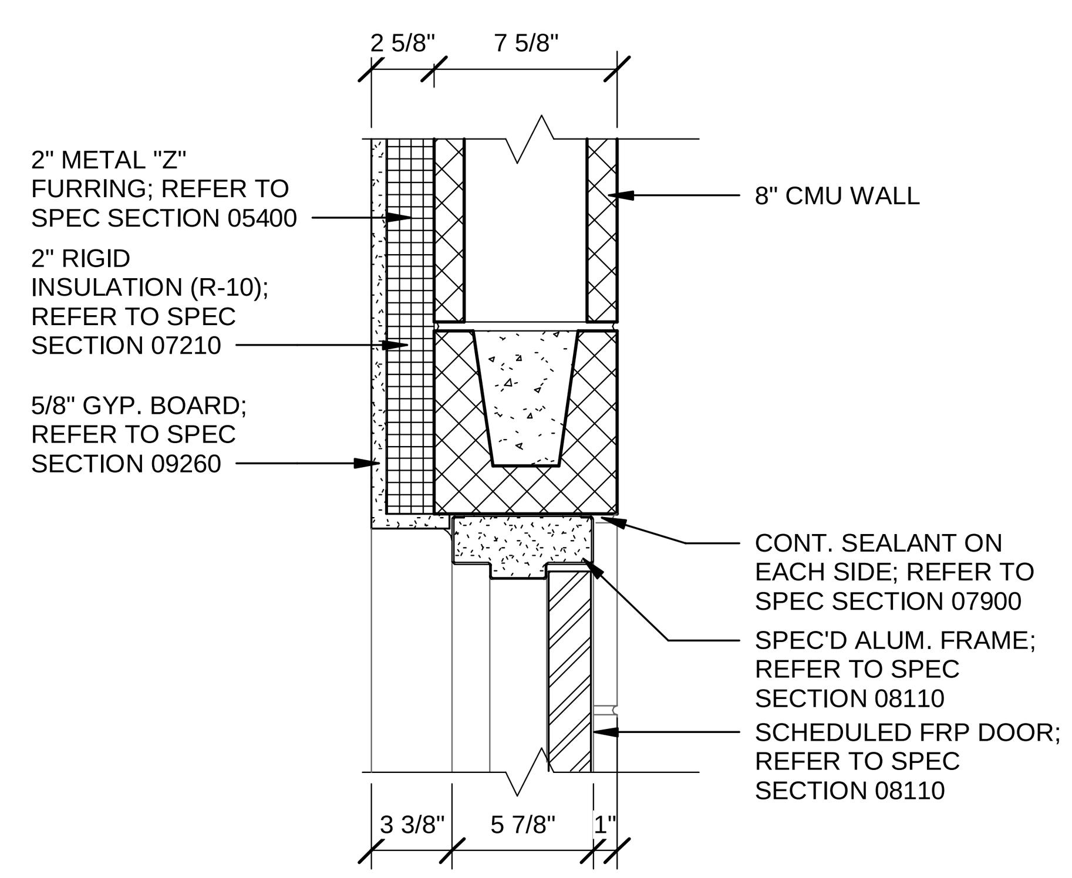
SCALE IN FEET



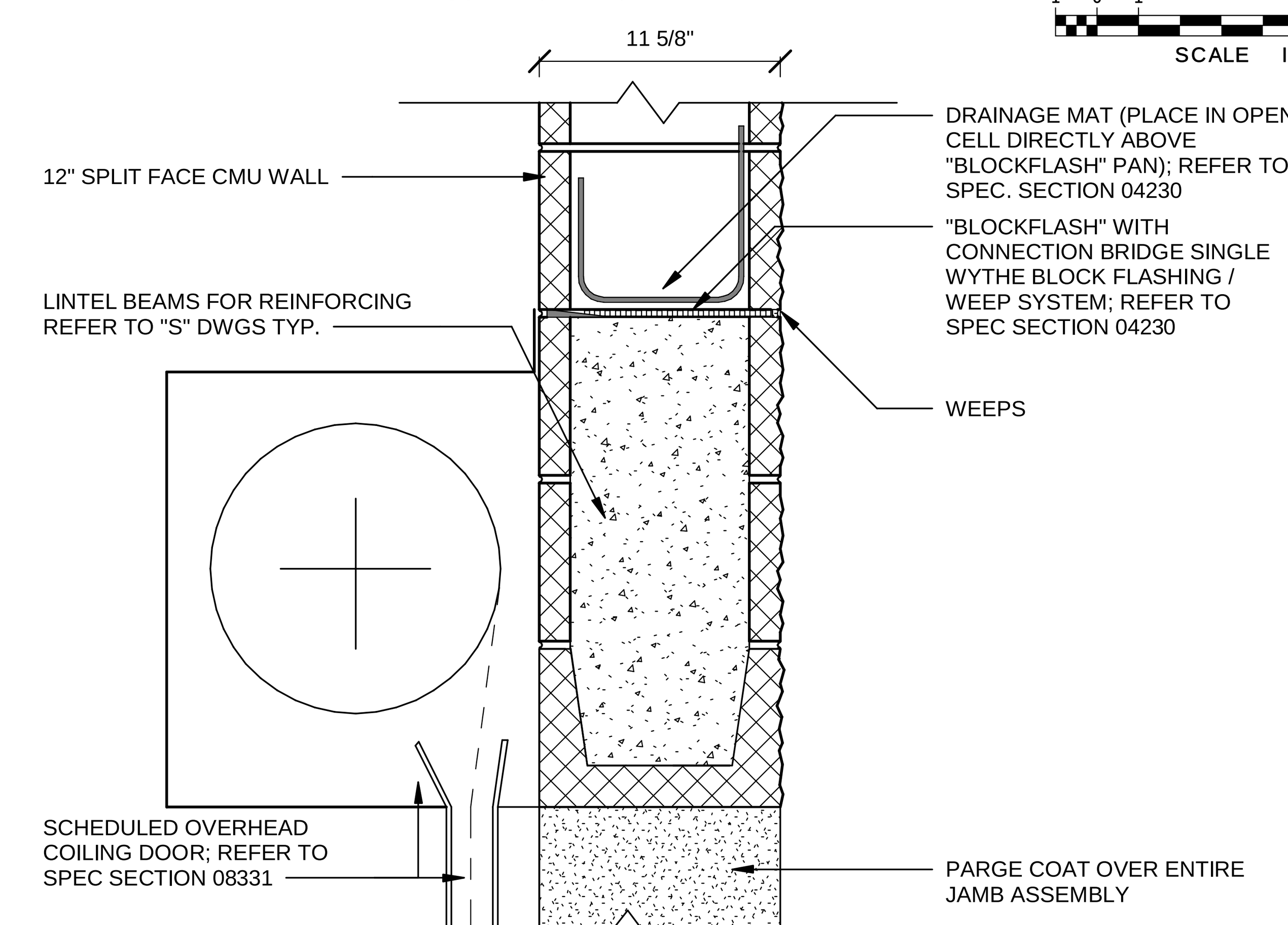
J - SPLASH BLOCK DETAIL



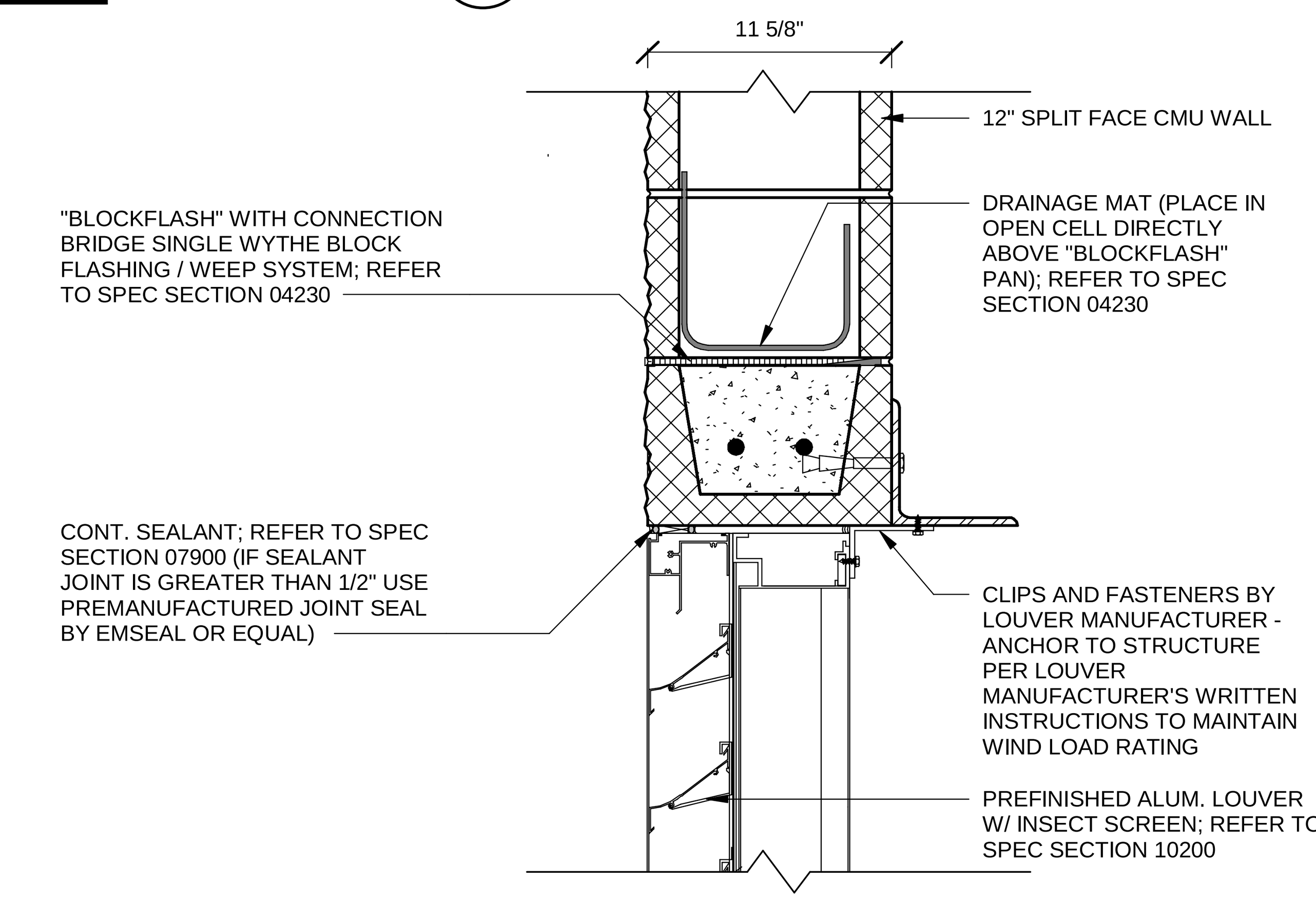
A - DOOR HEAD DETAIL - EXTERIOR
1 1/2" = 1'-0"



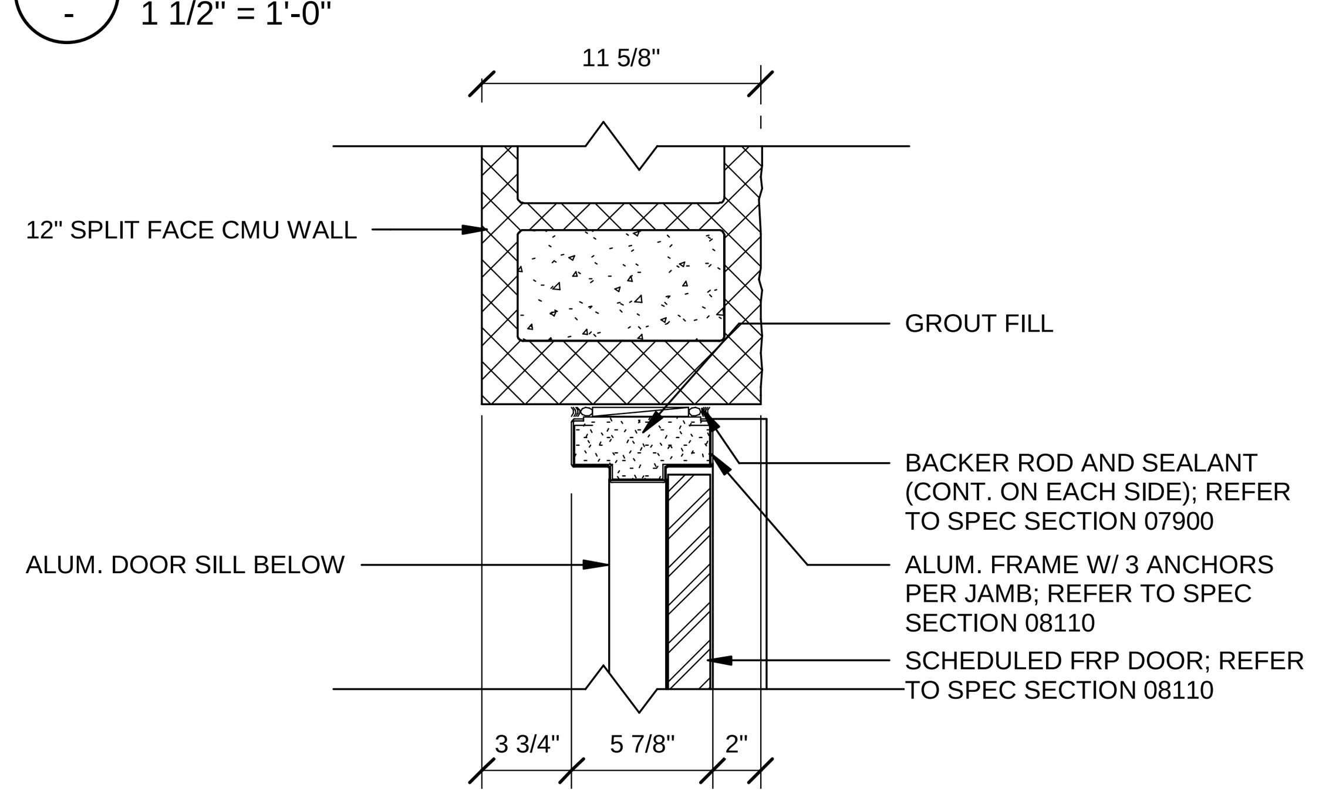
D - DOOR HEAD DETAIL - INTERIOR
1 1/2" = 1'-0"



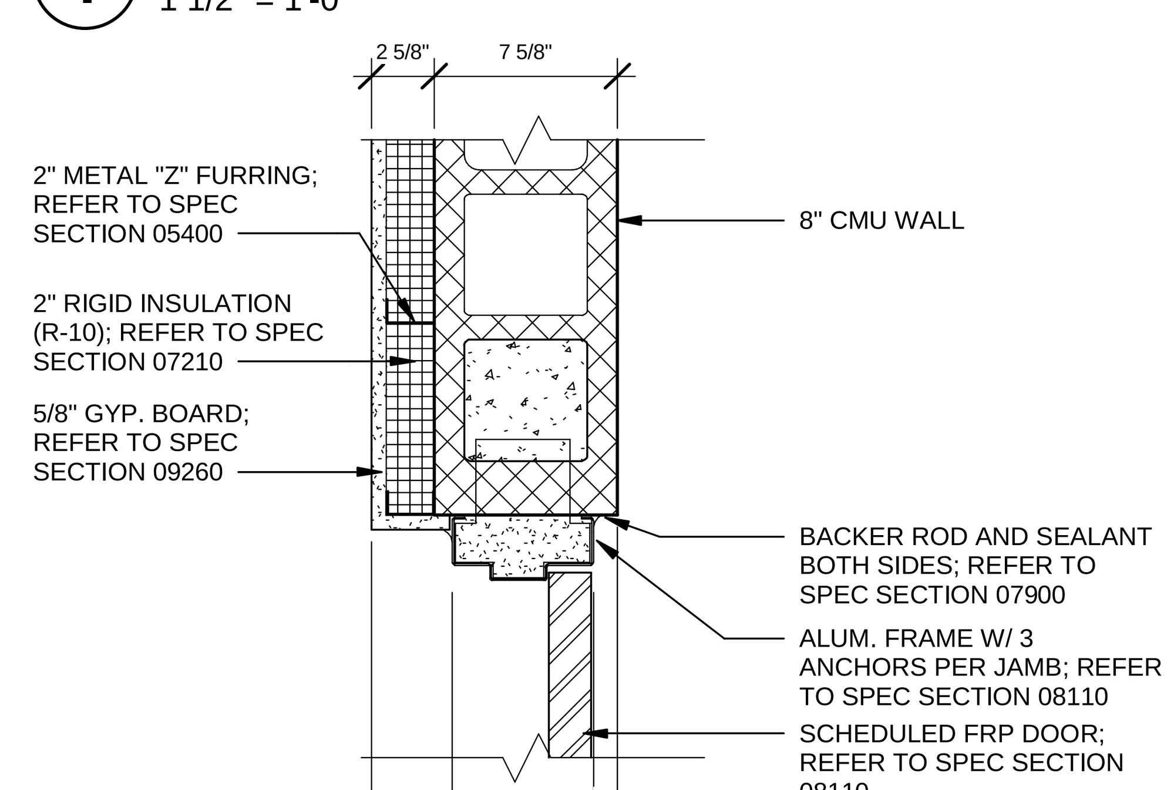
F - OVERHEAD DOOR HEAD DETAIL
1 1/2" = 1'-0"



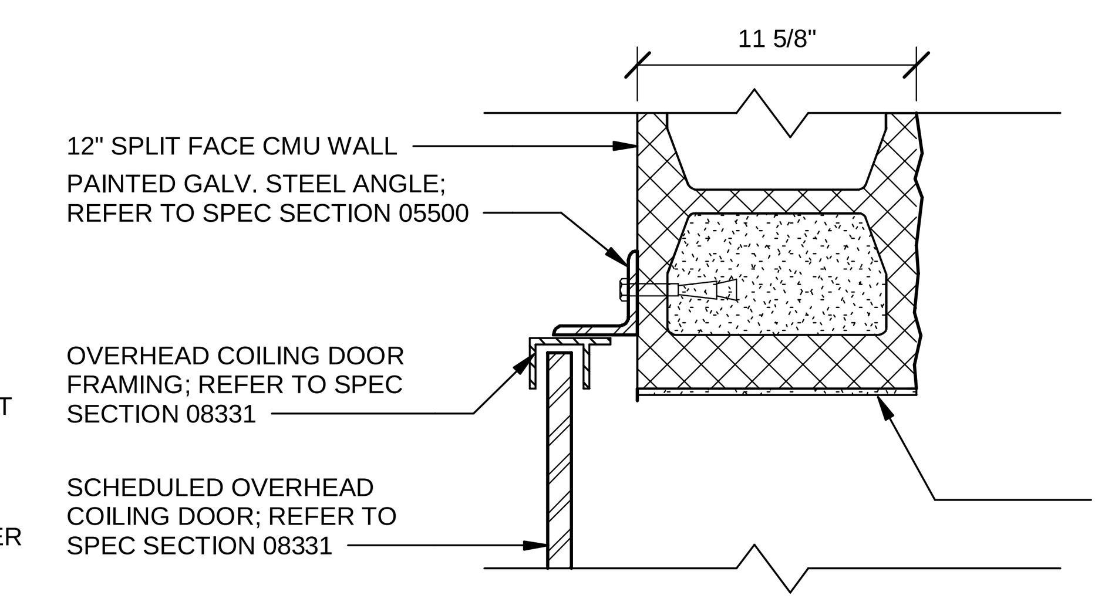
K - LOUVER HEAD DETAIL
1 1/2" = 1'-0"



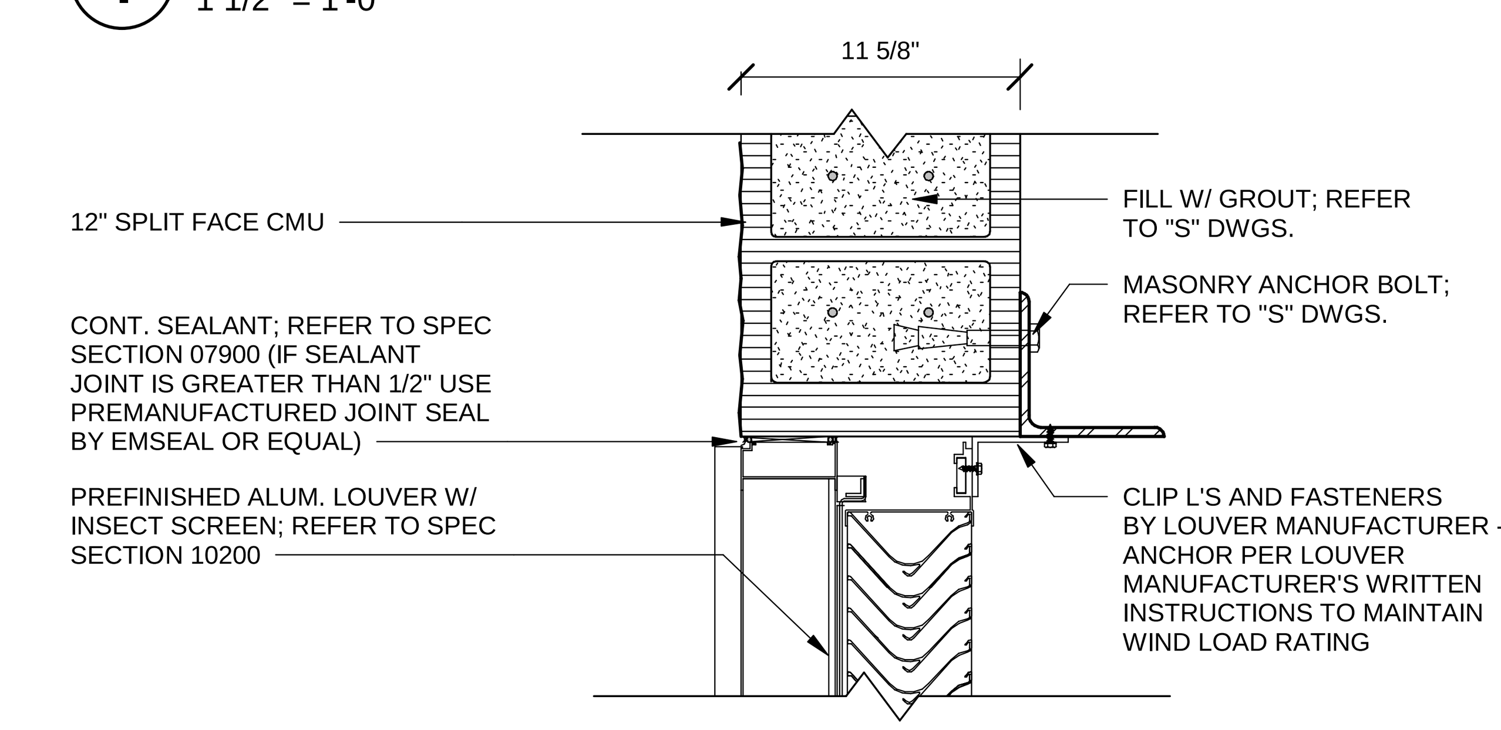
B - DOOR JAMB DETAIL - EXTERIOR
1 1/2" = 1'-0"



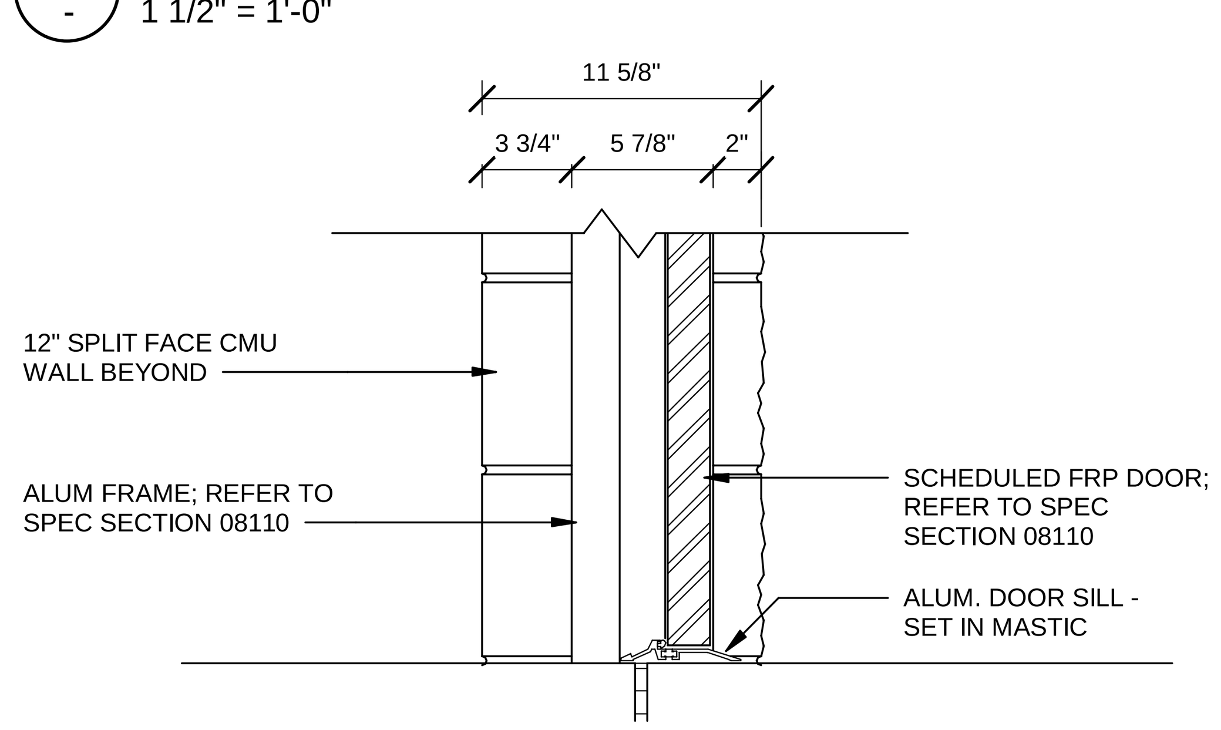
E - DOOR JAMB DETAIL - INTERIOR
1 1/2" = 1'-0"



G - OVERHEAD DOOR JAMB DETAIL
1 1/2" = 1'-0"

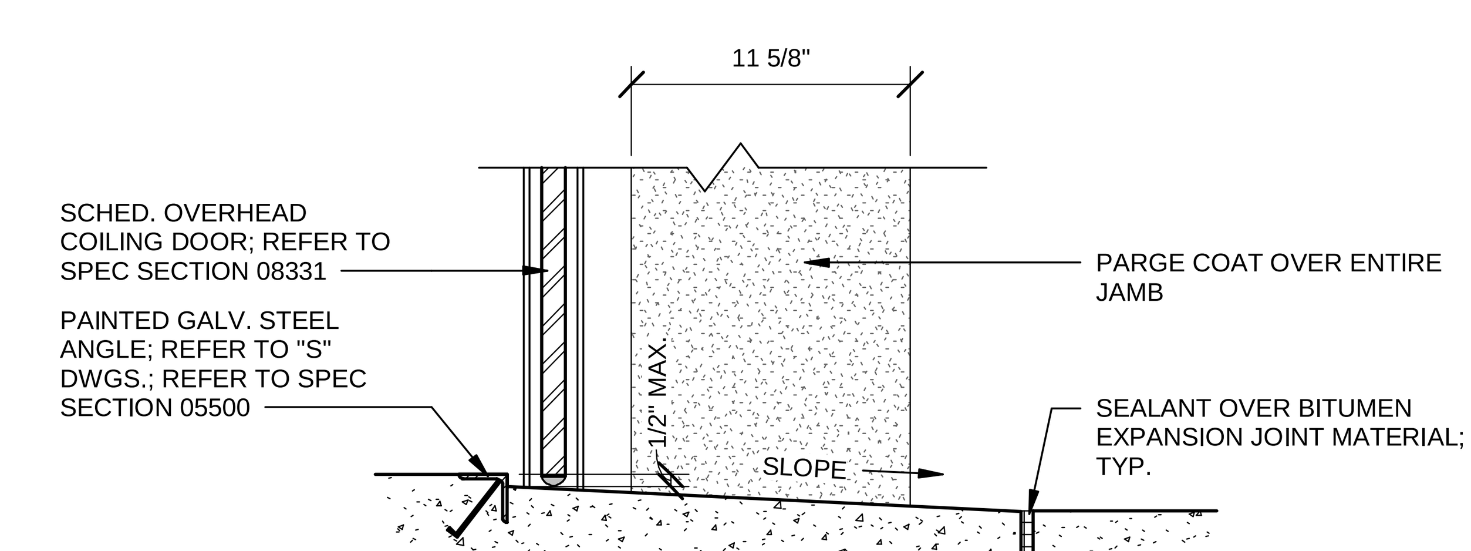


L - LOUVER JAMB DETAIL
1 1/2" = 1'-0"

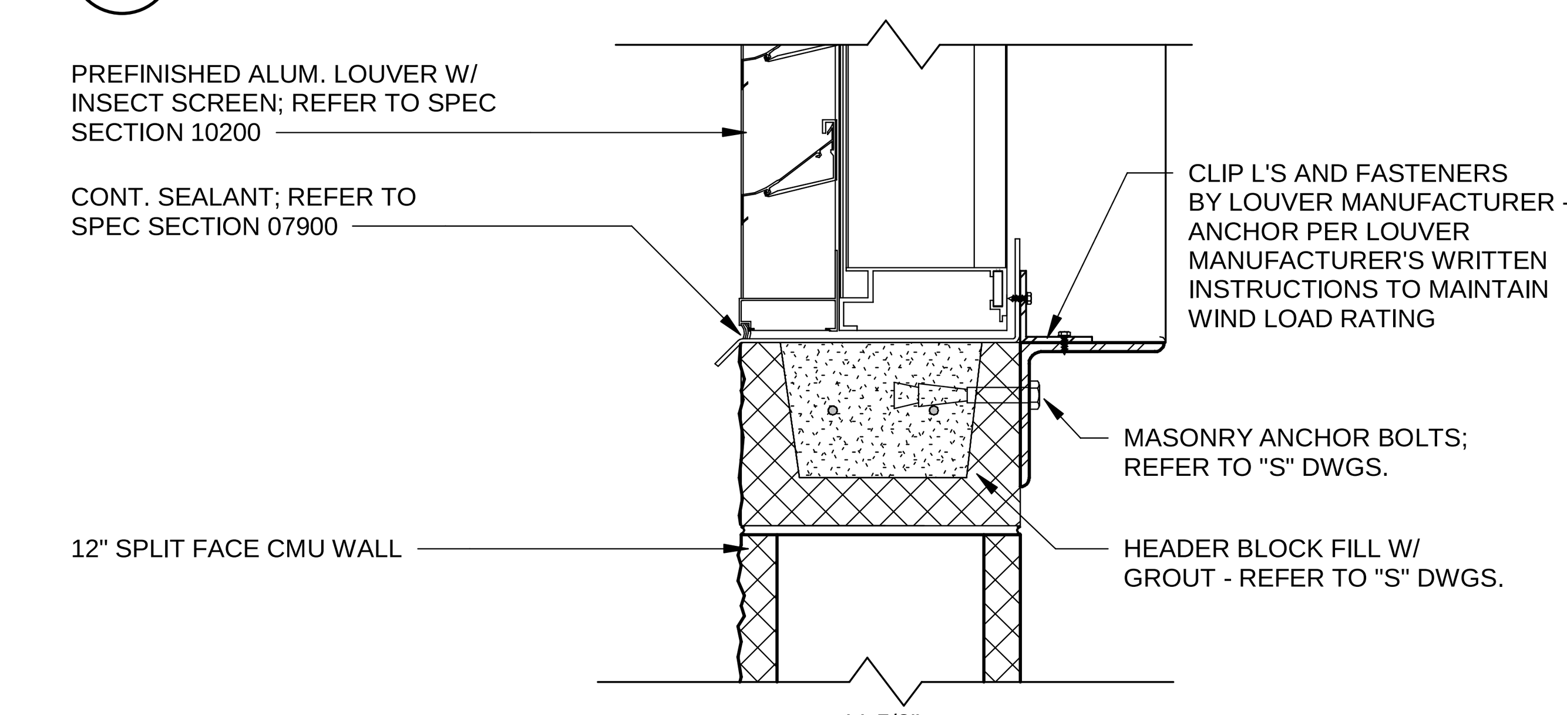


C - DOOR SILL DETAIL - EXTERIOR
1 1/2" = 1'-0"

SCALE IN FEET



H - OVERHEAD DOOR SILL DETAIL
1 1/2" = 1'-0"



M - LOUVER SILL DETAIL
1 1/2" = 1'-0"

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Engineers EB - 0000155
Surveyors LB - 0006783

REVISIONS

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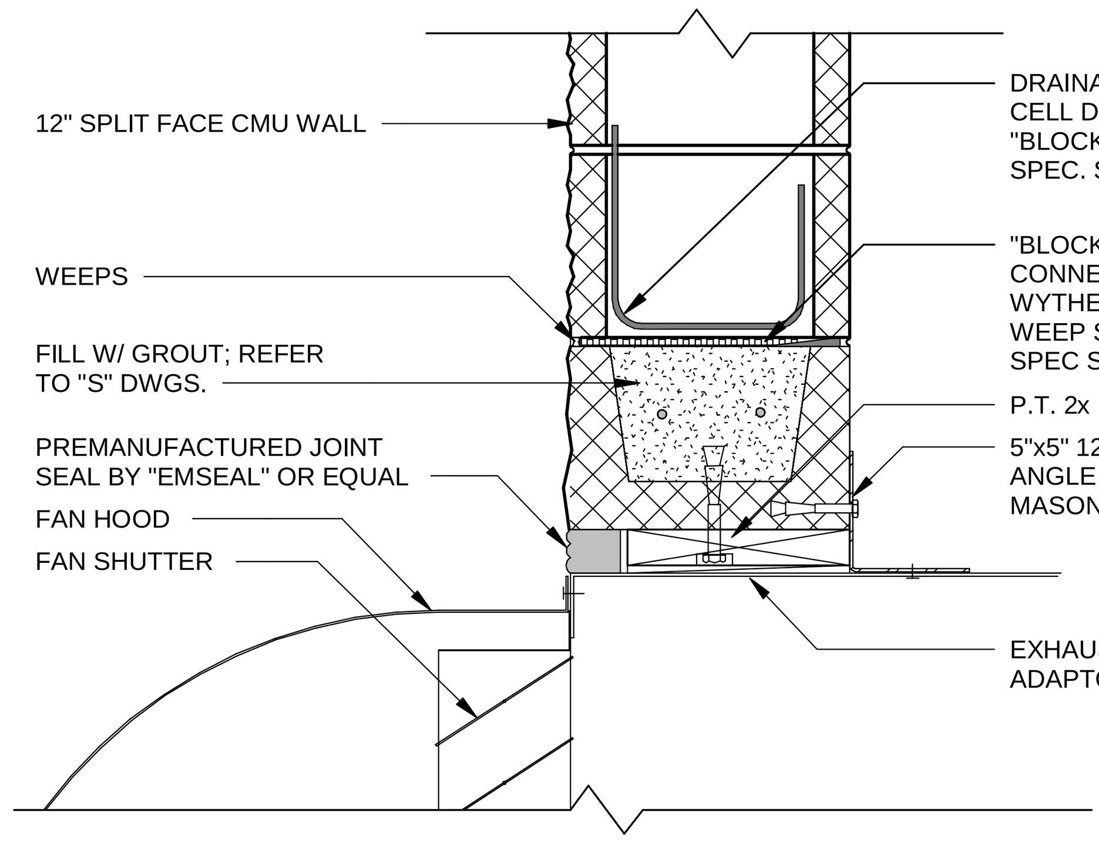
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

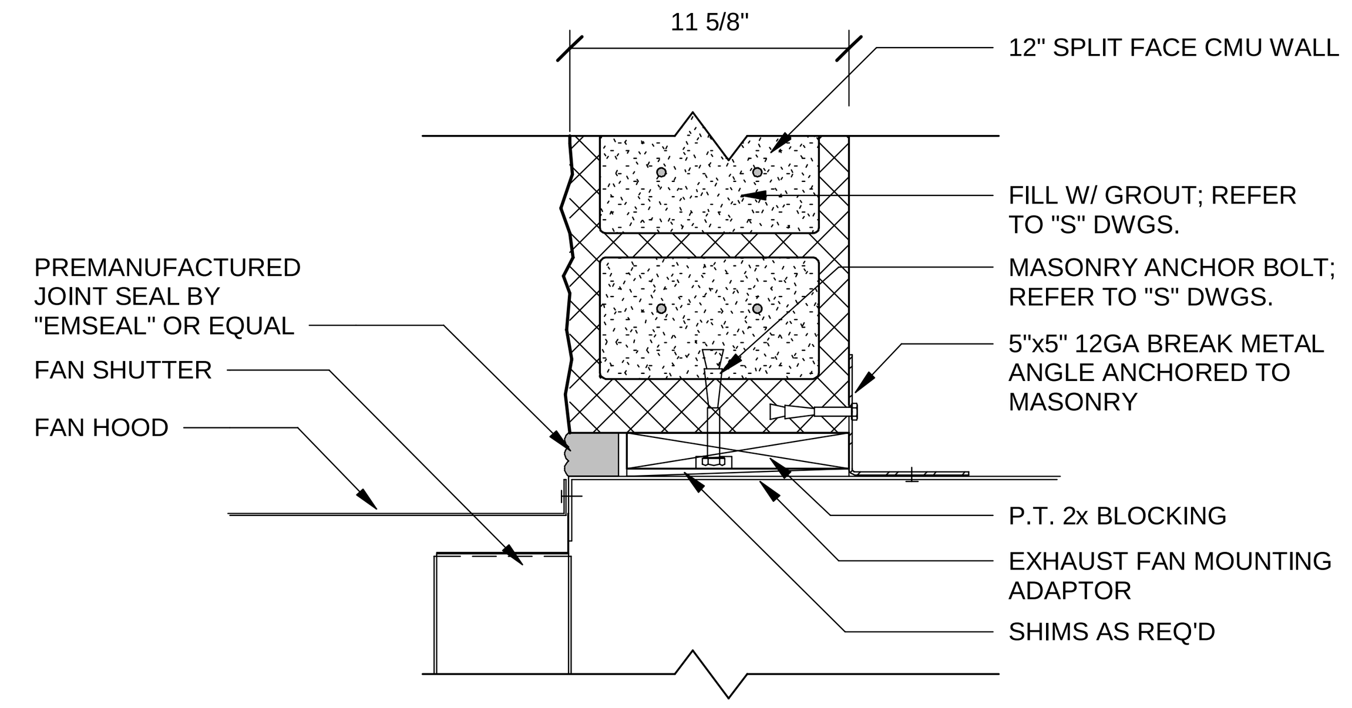
DOOR AND LOUVER DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 32
DRAWING NO. A-9



C
-
EXHAUST FAN HEAD DETAIL
1 1/2" = 1'-0"
SCALE IN FEET



D
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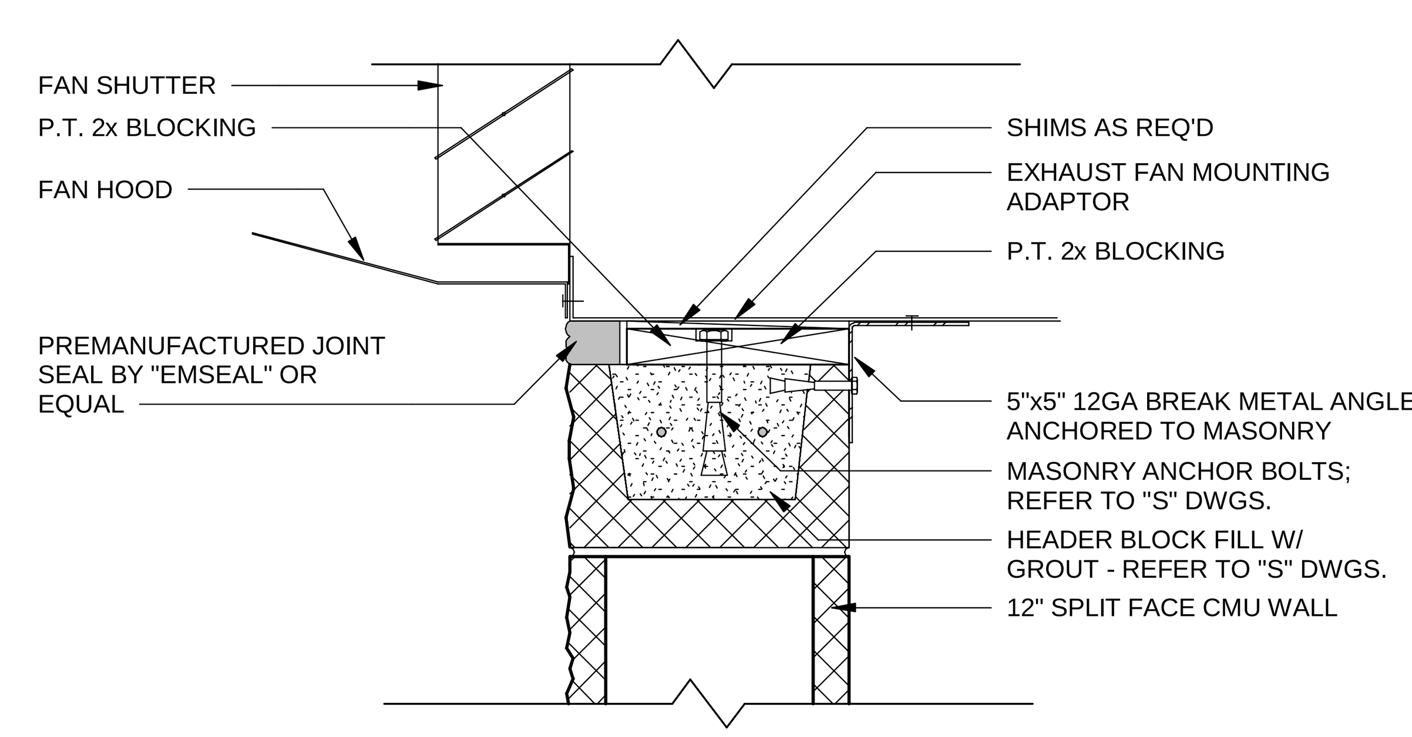
EXHAUST FAN JAMB DETAIL
1 1/2" = 1'-0"
SCALE IN FEET



E
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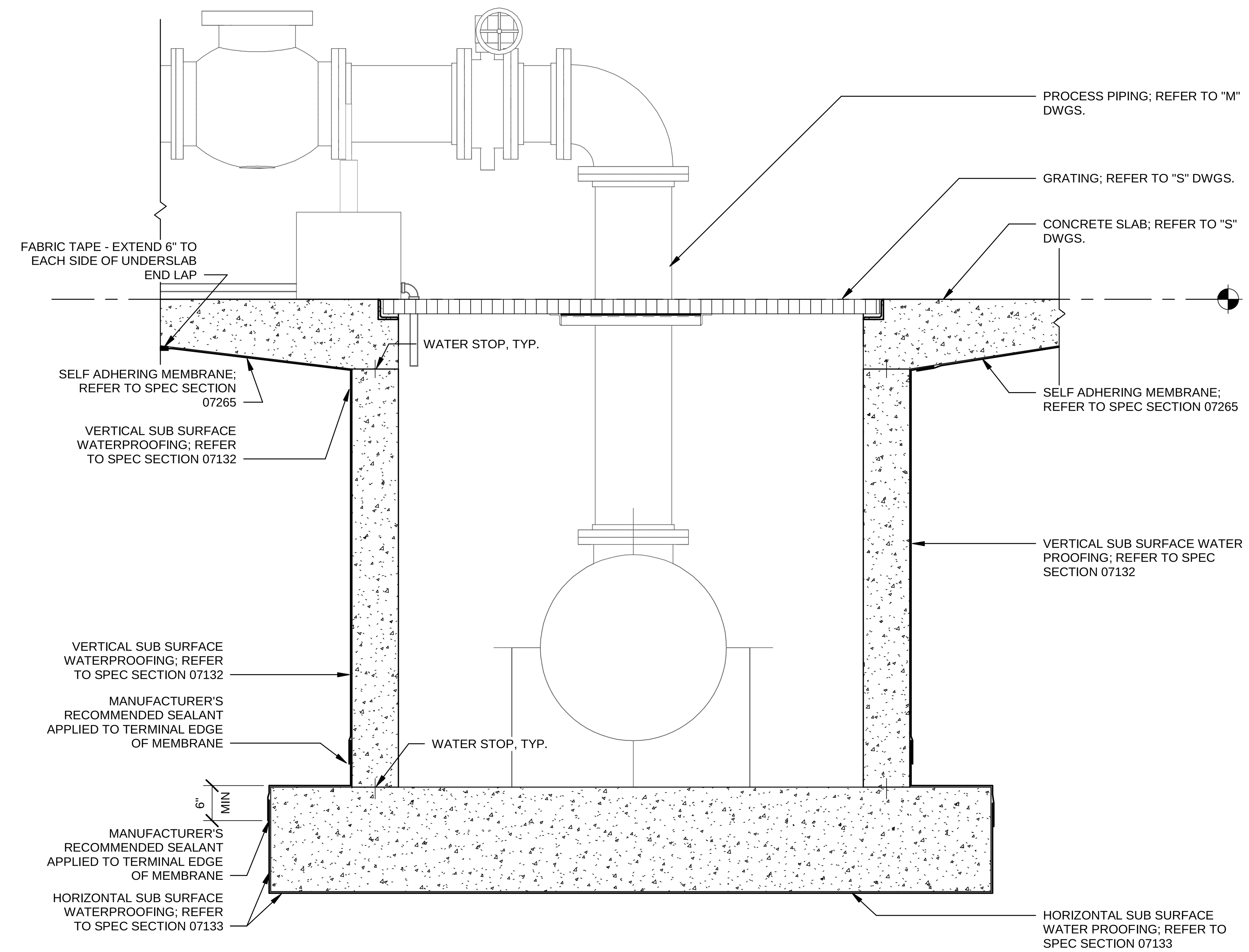
EXHAUST FAN SILL DETAIL
1 1/2" = 1'-0"
SCALE IN FEET



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SECTION AT TRENCH
3/4" = 1'-0"
SCALE IN FEET

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TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

MISCELLANEOUS DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 33
DRAWING NO. A-10

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GENERAL

1. TO THE BEST OF OUR KNOWLEDGE, THE STRUCTURAL PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE 6TH EDITION FLORIDA BUILDING CODE (2017).
2. THE STRUCTURAL DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DOCUMENTS. USE THESE NOTES IN CONJUNCTION WITH THE SPECIFICATIONS. IF A CONFLICT EXISTS, THE MORE STRINGENT GOVERNS.
3. COMPLY WITH REQUIREMENTS OF THE FLORIDA BUILDING CODE, OSHA, AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.
4. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR BIDDING.
5. REVIEW ALL CONTRACT DOCUMENTS, DIMENSIONS AND SITE CONDITIONS AND COORDINATE WITH FIELD DIMENSIONS AND PROJECT SHOP DRAWINGS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES IN WRITING TO ARCHITECT/ ENGINEER. DO NOT CHANGE SIZE OR DIMENSIONS OF STRUCTURAL MEMBERS WITHOUT WRITTEN INSTRUCTIONS FROM THE STRUCTURAL ENGINEER OF RECORD.
6. ANY DISCREPANCIES, OMISSIONS OR VARIATIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS DISCOVERED DURING THE BIDDING PERIOD SHALL BE IMMEDIATELY COMMUNICATED IN WRITING TO THE ARCHITECT / ENGINEER.
7. PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. EACH CONTRACTOR SHALL PROTECT HIS WORK, ADJACENT PROPERTY AND THE PUBLIC. EACH CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.
9. DO NOT SCALE DRAWINGS; USE DIMENSIONS.
10. REFER TO ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS IN STRUCTURE NOT SHOWN ON STRUCTURAL DRAWINGS.
11. DETAILS LABELED "TYPICAL DETAILS" OR "TYP" ON THE DRAWINGS APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMLAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE ARCHITECT / ENGINEER.
12. BUILDING DESIGN LOADS AND CRITERIA:

A. MINIMUM FLOOR LIVE LOADS

- GROUND FLOOR	300 PSF
- TANK STAIRS	100 PSF

B. ROOF/ CEILING

-LIVE LOAD	
BOOSTER PUMP STATION (BPS)	20 PSF
BPS LIGHT GAGE CEILING	50 PSF
SODIUM HYPOCHLORITE PEMB	20 PSF
-WIND UPLIFT	REFER TO UPLIFT PLAN

C. WIND CRITERIA (FBC), REFER TO GENERAL NOTE 13, BELOW

-BASIC WIND SPEED	142 MPH UON. GENERATOR = 150 MPH
-EXPOSURE	C
-RISK CATEGORY	III
-ENCLOSURE CLASSIFICATION	ENCLOSED UON; PEMB- PARTIALLY ENCLOSED GENERATOR - SIGN

D. STEEL BAR JOISTS LOADS:

-MAX BOTTOM CHORD DL	15 PSF
-MAX TOP CHORD DL	96 PSF
-TOP CHORD LL	20 PSF
-MIN BOTTOM CHORD DL:	5 PSF
-MIN TOP CHORD DL:	49 PSF
-SEE ROOF PLAN FOR ADDITIONAL LOADS	

E. SEISMIC CRITERIA

-IMPORTANCE FACTOR:	1.25
-SPECTRAL RESPONSE ACCELERATIONS (S_s, S_1):	0.105, 0.055
-SITE CLASS:	D
-SPECTRAL RESPONSE COEFFICIENTS (S_{ds}, S_{d1}):	0.112, 0.087
-SEISMIC DESIGN CATEGORY:	B
-SEISMIC - FORCE - RESISTING SYSTEM:	
BOOSTER PUMP STATION (BPS)	ORDINARY REINF CMU SHEAR WALLS
GST & FUEL TANK:	FLAT BOTTOM TANK
PEMB:	STEEL ORDINARY MOMENT FRAMES
GENERATOR:	EQUIPMENT BASE
-RESPONSE MODIFICATION FACTOR, R	
BPS & GST & FUEL TANK:	2.0
GENERATOR:	2.5
PEMB:	3.5
-SEISMIC RESPONSE COEFFICIENT	
BPS & GST & FUEL TANK	0.070
GENERATOR:	0.056
PEMB:	0.040
-ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE

13. ALL WIND FORCES SHALL BE DETERMINED ACCORDING TO THE PROVISIONS OF THE FBC USING THE MINIMUM WIND CRITERIA STATED IN NOTE 12, ABOVE. INCLUDE ALL APPROPRIATE SHAPE, HEIGHT, AND GUST FACTORS FOR THE MAIN WIND FORCE RESISTING SYSTEM AND COMPONENTS AND CLADDING. TO CALCULATE THE MAXIMUM NET UPLIFT, USE 60% OF THE SUPERIMPOSED DEAD LOADS.
14. CONTRACTOR SHALL PROVIDE ALL CODE REQUIRED PRODUCT APPROVAL NUMBERS TO THE GOVERNING BUILDING AGENCY. REFER TO WIND UPLIFT DIAGRAM & WIND LOADING CRITERIA FOR REQUIRED WIND LOADS. SIGNED & SEALED CALCULATIONS SHALL BE SUBMITTED FOR ALL PRODUCTS AS REQUIRED BY THE PRODUCT APPROVAL DOCUMENTATION.
15. "REF" IS THE ABBREVIATION FOR REFERENCE. WHEN PLACED NEXT TO A DIMENSION OR ELEVATION IT INDICATES THAT THE DIMENSION OR ELEVATION HAS BEEN DETERMINED FROM OTHER SOURCES SUCH AS EXISTING DRAWINGS. THE CORRECTNESS OF REFERENCE DATA IS NOT VERIFIED. THE CONTRACTOR SHALL VERIFY THE CORRECTNESS OF ALL REFERENCED DATA INDEPENDENTLY.

SHOP DRAWING REQUIRING ENGINEERING INPUT BY SPECIALTY ENGINEER

1. SPECIALTY ENGINEER:
   - A. DEFINITION - A FLORIDA REGISTERED PROFESSIONAL ENGINEER WHO SPECIALIZES IN AND WHO UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT.
   - B. SHALL BE:
     1. AN EMPLOYEE OR OFFICER OF A FABRICATOR.
     2. AN EMPLOYEE OR OFFICER OF AN ENTITY SUPPLYING COMPONENTS TO A FABRICATOR.
     3. AN INDEPENDENT CONSULTANT RETAINED BY THE FABRICATOR OR HIS SUPPLIER.
2. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS WITH INPUT BY A SPECIALTY ENGINEER, BUT ARE NOT LIMITED TO: JOISTS, WINDOWS, ROOF SYSTEMS, GLAZED OPENINGS, LOUVERS, DOORS AND ANY EXTERIOR ANCILLARY STRUCTURES.
3. THE SPECIALTY ENGINEER OR MANUFACTURER SHALL DESIGN, PROVIDE, AND INSTALL THEIR COMPONENTS AND THE COMPONENT CONNECTIONS TO THE PRIMARY STRUCTURE PER THE WIND CRITERIA STATED IN THESE NOTES OR THE CURRENT GOVERNING BUILDING CODES, WHICHEVER IS MORE STRINGENT.
4. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
5. SHOP DRAWINGS AND CALCULATIONS MUST BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE SPECIALTY ENGINEER.
6. CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A SPECIALTY ENGINEER.
7. REVIEW OF THE SUBMITTAL BY THE STRUCTURAL ENGINEER OF RECORD OF IS LIMITED TO VERIFYING THE FOLLOWING:
   - A. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
   - B. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE SPECIALTY ENGINEER.
   - C. THAT THE SPECIALTY ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE.)
   - D. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE.)
8. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED AND WILL BE RETURNED TO CONTRACTOR MARKED REVISE AND RESUBMIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS WHICH MAY RESULT.

SOIL PREPARATION AND COMPACTION

1. THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER OF RECORD SHALL BE FOLLOWED. GEOTECHNICAL ENGINEER OF RECORD REPORT: MAE PROJECT#: 0103-0017; DATED: NOVEMBER 13, 2019.
2. SOIL COMPACTION SHALL BE FIELD CONTROLLED BY A SOILS ENGINEER OR TESTING LABORATORY.
3. EXCAVATE EXISTING SOIL TO BOTTOM OF FOOTINGS. ALL DELETERIOUS MATERIAL MUST BE COMPLETELY REMOVED.
4. ALL EXISTING UTILITIES & ORGANICS (INCLUDING STUMPS AND ROOTS) SHALL BE COMPLETELY REMOVED PRIOR TO FILL OPERATIONS.
5. SOIL COMPACTION, FILL, AND ITS REPLACEMENT SHALL BE FIELD CONTROLLED BY THE TESTING AGENCY OR GEOTECHNICAL ENGINEER OF RECORD. THE TESTING AGENCY SHALL RANDOMLY SELECT ALL TEST LOCATIONS.
6. THE CONTRACTOR SHALL DETERMINE WHETHER DE-WATERING WILL BE REQUIRED BASED ON ACTUAL GROUND WATER CONDITIONS AT THE TIME OF CONSTRUCTION. GROUNDWATER AT THE SITE WAS ENCOUNTERED BETWEEN 1'-7" AND 5'-10" BELOW EXISTING GRADE.

SHALLOW FOUNDATIONS

1. THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER OF RECORD SHALL BE FOLLOWED. GEOTECHNICAL ENGINEER OF RECORD REPORT: MAE PROJECT#: 0103-0017; DATED: NOVEMBER 13, 2019. GROUNDWATER AT THE SITE WAS ENCOUNTERED BETWEEN 1'-7" AND 5'-10" BELOW EXISTING GRADE.
2. DO NOT EXCAVATE FOR ANY PURPOSE WITHIN ONE FOOT OF THE ANGLE OF REPOSE OF ANY SOIL BEARING FOOTING OR FOUNDATION UNLESS SUCH FOOTING OR FOUNDATION IS FIRST PROPERLY PROTECTED AGAINST SETTLEMENT.
3. CENTER FOOTINGS UNDER THE SUPPORTED COLUMNS OR WALLS UNLESS OTHERWISE NOTED ON PLANS.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ACCUMULATED WATER FROM EXCAVATION AND DEWATERING OPERATIONS IN SUCH A WAY AS NOT TO CAUSE INCONVENIENCE TO THE WORK AND DAMAGE TO THE STRUCTURAL ELEMENTS. THE CONTRACTOR SHALL FIELD VERIFY GROUND WATER DEPTHS PRIOR TO CONSTRUCTION.

SLABS ON GRADE

1. PREPARE SUBGRADE AS PER THE RECOMMENDATION OUTLINED IN THE GEOTECHNICAL REPORT INCLUDED IN THE SPECIFICATIONS.
2. CHAIR WIRE FABRIC DURING CONCRETE PLACEMENT TO INSURE PROPER POSITION IN SLAB.
3. USE POLYETHYLENE SHEETING BETWEEN SOIL AND CONCRETE SLAB AS INDICATED IN SECTION 07265.
4. PLACE CRACK CONTROL JOINTS AS INDICATED IN THE STANDARD DETAILS IN ALL FLOATING SLABS ON GRADE. DO NOT EXCEED A 2 TO 1 WIDTH TO LENGTH RATIO. CONTRACTOR SHALL SUBMIT A CONTROL JOINT LAYOUT FOR ENGINEER'S REVIEW UPON REQUEST.
5. RECESS SLABS ON GRADE FOR FLOOR FINISHES PER ARCHITECTURAL DRAWINGS.

REINFORCED CONCRETE

1. USE STRUCTURAL CONCRETE AND CONCRETING PRACTICES CONFORMING TO ACI-316 AND 301 AND PROPORTION CONCRETE IN ACCORDANCE WITH ACI-318 CH. 4 AND MEETING A MIN. ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

   PUMP STATION, SODIUM HYPO CHLORITE & MISCELLANEOUS CONCRETE PADS:

-FOOTINGS & WALLS:	4000 PSI
-SLABS:	4000 PSI
-CMU FILL:	3000 PSI
-ALL OTHER CONCRETE:	4000 PSI

   * PROVIDE CURRENT (MAXIMUM 1 YEAR OLD) STATISTICAL DATA FOR EACH CONCRETE MIX DESIGN SUBMITTED.

2. WHERE CONCENTRATION OF REINFORCING STEEL HINDERS PROPER CONSOLIDATION OF CONCRETE, USE CONCRETE CONTAINING A SUPERPLASTICIZING (N.R.W.R.) ADMIXTURE, ASTM C494 TYPE F. SLUMP AFTER ADDITION OF SUPERPLASTICIZER SHALL BE 7" ±1".
3. IF CONCRETE IS PUMPED, SLUMP MAY BE INCREASED TO 6" AT THE TRUCK. USE A MINIMUM 4-INCH PUMP, UNLESS PRE-APPROVED BY ENGINEER. TAKE CONCRETE SAMPLES FOR SLUMP AT TRUCK AND AT DISCHARGE END. TAKE CONCRETE SAMPLES FOR CYLINDER TESTING AT DISCHARGE END OF THE PUMP HOSE.
4. PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318 CH. 6.4 AND SUBMIT SHOP DRAWINGS SHOWING LOCATIONS AND DIRECTION OF CONCRETE PLACEMENT FOR STRUCTURAL ENGINEER'S REVIEW. PROVIDE KEY WAYS AND ADEQUATE DOWELS IN ALL CONSTRUCTION JOINTS.
5. PROVIDE REINFORCING STEEL ERECTOR WITH A SET OF STRUCTURAL PLANS FOR FIELD USE. INSPECT REINFORCING STEEL PLACING FROM STRUCTURAL PLANS.
6. USE ASTM A-615 GR. 60 FOR ALL REINFORCING STEEL, CONFORM TO ACI-301, ACI-315, ACI-318, AND CRSI "MANUAL OF STANDARD PRACTICE". ALL REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE WITH BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH THE ABOVE REQUIREMENTS. PROVIDE CLASS 'B' LAP SPLICE FOR CONTINUOUS BARS, UNLESS OTHERWISE NOTED. LAP BOTTOM STEEL OVER SUPPORTS AND TOP STEEL AT MID SPAN UNLESS OTHERWISE SPECIFIED. HOOK DISCONTINUOUS ENDS OF ALL TOP BARS AND ALL BARS IN WALLS, UNLESS OTHERWISE NOTED.
7. PLACE REINFORCING STEEL SUCH THAT BARS ADJACENT TO CONCRETE SURFACES & COLD JOINTS MEET MIN CLEAR COVER REQUIREMENTS, BUT DO NOT EXCEED THOSE REQUIREMENTS. USE THE FOLLOWING MINIMUM CLEAR COVER OVER REINFORCING:

	BOTTOM	TOP	SIDES
FOOTINGS	3"	3"	3"
BUILDING SLABS ON GRADE	2"	1 1/2"	2"
INDIVIDUAL EXTERIOR EQUIPMENT PADS	3"	1 1/2"	2"
TRENCH WALLS	1 1/2"	1 1/2"	1 1/2"
PIERS	-	1 1/2"	2"

8. HORIZONTAL BARS SHALL BE MADE CONTINUOUS WITH HOOKS AROUND CORNERS.
9. USE PLAIN, COLD-DRAWN ELECTRICALLY-WELDED STEEL WIRE FABRIC CONFORMING TO ASTM A185. SUPPLY IN FLAT SHEETS ONLY. LAP SPLICES SHALL BE MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET AND SHALL BE NOT LESS THAN TWICE THE SPACING OF THE CROSS WIRES PLUS TWO (2) INCHES.
10. SLEEVE ALL PIPES THROUGH SLABS INDIVIDUALLY, UNLESS APPROVED BY ENGINEER.
11. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATING REINFORCING STEEL. DO NOT REPRODUCE THE STRUCTURAL DRAWINGS FOR USE AS SHOP DRAWINGS.
12. PROVIDE CLASS 'B' LAP SPLICE AT SUPPORTS AND HOOK DISCONTINUOUS ENDS AT THE FAR FACE OF SUPPORTS FOR ALL BEAMS UNLESS OTHERWISE NOTED.
13. REINFORCING PLACED IN LOCATIONS WHERE PROPER COVER CANNOT BE ACHIEVED SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A767 WITH 2 OUNCES OF ZINC COATING PER SQUARE FOOT OF SURFACE AREA MINIMUM.
14. ALL EXPOSED CONCRETE AND GROUT EDGES SHALL HAVE 3/4", 45° CHAMFER, UNLESS OTHERWISE NOTED.

ANCHORS AND REINFORCING STEEL

1. SUBSTITUTION OF ANCHORS SPECIFIED BELOW FOR CAST-IN-PLACE EMBEDDED ANCHORS SHALL BE PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.
2. HOT DIPPED GALVANIZED STEEL ANCHORS FOR PUMP BASES SHALL BE DRILLED AND EPOXIED OR CAST-IN-PLACE. CONTRACTOR SHALL COORDINATE ANCHOR BOLT QUANTITY, BOLT DIAMETER AND BOLT LOCATIONS ON THE FOUNDATION WITH THE PUMP MANUFACTURER REQUIREMENTS.
3. ALLOWABLE WORKING LOADS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS, BUT NOT MORE THAN ACCEPTED BY APPROVING AGENCY. NO INCREASE FOR WIND OR SEISMIC LOADS IS PERMITTED.
4. PROVIDE A MINIMUM OF TWO FASTENERS PER CONNECTION.
5. INSTALL AND MAINTAIN A MINIMUM EMBEDMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, OR AS SPECIFIED ON DRAWING, WHICHEVER IS GREATER, BUT WITH AN EMBEDMENT OF NOT LESS THAN 6 BOLT-DIAMETERS.
6. UNLESS NOTED, ANCHOR SPACING AND ANCHOR EDGE DISTANCE SHALL BE ACCORDING TO THE MANUFACTURER'S MOST CURRENT PUBLICATION IN ORDER TO DEVELOP MAXIMUM WORKING LOADS.
7. DO NOT EXCEED MANUFACTURER'S MAXIMUM RECOMMENDED TIGHTENING TORQUE.
8. ALL ANCHORS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND UNDER MANUFACTURER CERTIFIED SUPERVISION IN ORDER TO DEVELOP THE MOST CURRENT PUBLISHED WORKING LOADS.
9. EXPANSION ANCHORS: USE STAINLESS STEEL WEDGE-TYPE EXPANSION ANCHORS SUCH AS HILTI KWIK BOLT III OR ENGINEERED APPROVED EQUIVALENT.
10. ADHESIVE ANCHORING SYSTEMS:
    - A. USE AN EPOXY OR POLYESTER RESIN ADHESIVE SUCH AS HILTI RE 500, SIMPSON SET OR ACCEPTED ALTERNATE.
    - B. DIAMETER OF HOLE SHALL BE AS RECOMMENDED BY MANUFACTURER FOR THE PARTICULAR PRODUCT SPECIFIED IN THE DRAWINGS.
    - C. ALL EPOXIED ANCHORING SHALL BE OBSERVED BY A MANUFACTURER'S AUTHORIZED REPRESENTATIVE OR SHALL BE TESTED AFTER INSTALLATION AT CONTRACTOR'S EXPENSE. A MINIMUM OF 10% OF EACH DAY'S APPLICATIONS AND NO LESS THAN 2 SHALL BE TESTED BY APPLYING A TENSION LOAD OF 3000 POUNDS TO THE EMBEDDED ANCHOR. IF A TEST APPLICATION FAILS, ALL APPLICATIONS FOR THAT DAY SHALL BE TESTED. TESTING PROCEDURES AND RESULTS SHALL BE SUBMITTED TO APPROVED BY ENGINEER.
11. POWDER ACTUATED FASTENERS: USE POWDER ACTUATED FASTENING SYSTEMS SUCH AS HILTI, RED HEAD, RAMSET, OR AN ACCEPTED ALTERNATE HAVING ICBO, OR SBCCI APPROVAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, BUT NOT LESS THAN 1 1/8" INCHES IN CONCRETE, UNLESS OTHERWISE NOTED.

METAL DECK

1. USE VULCRAFT OR ENGINEER APPROVED EQUIVALENT GALVANIZED STEEL DECK UNITS FORMED OF GAGE STEEL SHEETS AS SPECIFIED ON THE DRAWINGS AND CONFORMING TO THE SPECIFICATIONS UNLESS OTHERWISE NOTED.
2. STEEL DECK SHALL SPAN A MINIMUM OF THREE (3) SPANS.
3. DECK SHALL BE PLACED AT THE PERIMETER WITH COMPLETE RIB BEARING ON THE SUPPORTS PROVIDED.
4. ALL ROOF DECK FASTENERS SHALL BE MINIMUM #12 HEX WASHER HEAD (HWH) THREADED FASTENER OR EQUIVALENT. REFER TO PLAN FOR FASTENER SIZE.
5. CONNECT DECK TO THE PRIMARY STRUCTURE AS SPECIFIED ON THE DRAWINGS.
6. CEILING, DUCTS, AND LIGHT FIXTURES MAY BE HUNG FROM THE DECK. DO NOT HANG ANY OTHER ITEMS FROM THE ROOF DECK. NO SINGLE CONNECTION LOAD SHALL EXCEED 60 POUNDS AND NO UNIFORM LOAD SHALL EXCEED 10 PSF.
7. METAL DECK CLOSURE, EDGE, OR TRANSITION PLATES SHALL BE PROVIDED AT ALL OPENINGS, EDGES, CHANGES IN DECK SLOPES, AND CHANGES IN DECK DIRECTION.
8. METAL DECK AND ATTACHED PLATES SHALL BE GALVANIZED WITH A MINIMUM G-90 ZINC FINISH, 0.9 OUNCE/SF.

SEALANTS

1. HORIZONTAL JOINT SEALANT SHALL BE A TRAFFIC BEARING, TWO COMPONENT, POLYURETHANE BASED, SELF LEVELING ELASTOMERIC SEALANT SUCH AS SIKAFLEX-2C SL OR APPROVED EQUIVALENT. SEALANT SHALL BE GRAY IN COLOR TO MATCH TOPPING UNLESS OTHERWISE NOTED.
2. VERTICAL JOINT SEALANT SHALL BE A TWO COMPONENT, POLYURETHANE BASED, NON SAGGING ELASTOMERIC SEALANT SUCH AS SIKAFLEX-2C NS OR APPROVED EQUIVALENT. PROVIDE SEALANT COLOR AS REQUIRED BY ARCHITECT.

TEMPORARY BRACING

1. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS REQUIRED DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL RETAIN AT THE CONTRACTOR'S EXPENSE A REGISTERED STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT TO DESIGN AND INSPECT ALL TEMPORARY SHORING AND BRACING. SIGNED, SEALED AND DATED DESIGN CALCULATIONS SHALL BE SUBMITTED FOR REVIEW WHEN REQUESTED.

CONCRETE MASONRY UNITS

1. ALL MASONRY DESIGN SHALL CONFORM TO ACI 530 AND 530.1.
2. REINFORCED MASONRY WALL DESIGN IS BASED ON INSPECTED MASONRY AS REQUIRED BY ACI 530.1 SPECIFICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A QUALITY CONTROL AND INSPECTION PROGRAM TO INSURE THAT ALL MASONRY WALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONTRACT DOCUMENTS. REFER TO SPECIFICATION FOR THE MINIMUM REQUIREMENTS FOR THIS PROGRAM.
3. ALL MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES ACI 530.1/ASCE6/TMS602)" PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE, EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
4. CONSTRUCT REINFORCED AND UNREINFORCED MASONRY AS NOTED ON THE PLANS AND DETAILS AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE "REINFORCED UNIT MASONRY" SPECIFICATION.
5. USE CONCRETE MASONRY UNITS CONFORMING TO ASTM C90. PROVIDE F'M OF 1500 PSI (UNIT STRENGTH 1900 PSI) FOR ALL REINFORCED MASONRY WALLS. PERFORM COMPRESSIVE STRENGTH COMPLIANCE BY PRISM TEST METHOD. USE ONLY MASONRY UNITS THAT ARE A MIN. OF 50% SOLID. REFER TO THE SPECIFICATIONS FOR TESTING FREQUENCIES.
6. USE TYPE "S" MORTAR IN ACCORDANCE WITH ASTM C270. USE FULL-BEDDED JOINTS FOR ALL MASONRY UNITS. REMOVE MORTAR PROTRUDING INTO CELL CAVITIES THAT ARE TO BE REINFORCED AND GROUTED. ALLOW A MIN. OF 24 HOURS FOR MORTAR TO CURE BEFORE PLACING GROUT. REFER TO THE SPECIFICATIONS FOR TESTING REQUIREMENTS.
7. USE ALL GROUT CONFIRMING TO ASTM C476 WITH A MIN. COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS, TESTED IN ACCORDANCE WITH ASTM C1019, AGGREGATE TO CONFORM TO ASTM C404 FOR FINE GROUT, AND SLUMP OF 8" TO 11" AT POINT OF DISCHARGE. TEST SAMPLES FOR COMPRESSIVE STRENGTH. REFER TO THE SPECIFICATION FOR TESTING REQUIREMENTS.
8. REFER TO THE MASONRY DETAILS FOR REINFORCING REQUIREMENTS.
9. FOR UNREINFORCED WALLS USE STANDARD TRUSS-TYPE MASONRY HORIZONTAL REINFORCING IN EVERY OTHER COURSE OF MASONRY; EXTEND INTO TIE COLUMNS.
10. USE ASTM A615 GRADE 60 REINFORCING STEEL.
11. IN HIGH-LIFT GROUTING USE A MAXIMUM LIFT OF 5'-0" WITH MIN. HALF HOUR MAX. ONE HOUR BETWEEN LIFTS. VIBRATE EACH LIFT AND RECONSOLIDATE PREVIOUS LIFT AFTER PLACING NEXT LIFT.
12. WHERE ANCHOR BOLTS ARE SET IN MASONRY WALL, FILL BLOCK CELLS WITH GROUT FOR BOLTED COURSE, ONE OURSE ABOVE AND TWO COURSES BELOW ANCHOR ELEVATION.
13. USE PRESSURE-TREATED WOOD FOR ALL WOOD IN CONTACT WITH MASONRY.
14. UNLESS OTHERWISE NOTED, PROVIDE LINTELS OR HEADERS OVER ALL MASONRY OPENINGS NOT FLUSH WITH STRUCTURAL FRAME. LINTELS OR HEADERS TO BEAR MIN. 16 INCHES EACH SIDE OF OPENING. REFER TO TYPICAL DETAILS.
15. COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR MASONRY LAYOUT & LOCATIONS OF OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

ISSUED FOR BID

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NO.	BY	DATE	REVISIONS
6.			
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1.			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community℠

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

STRUCTURAL NOTES

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 34
DRAWING NO. S-1

STEEL JOISTS AND JOISTS GIRDERS

1. THE ENGINEER OF RECORD DELEGATES DESIGN RESPONSIBILITY FOR THE PREPARATION, FABRICATION, AND ERECTION DRAWINGS TO A SPECIALTY ENGINEER. SUBMIT STEEL JOISTS SHOP DRAWING TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE SIGNED, DATED, AND SEALED BY A SPECIALTY ENGINEER LICENSED IN THE STATE OF FLORIDA PRIOR TO SUBMITTING FOR REVIEW.

2. ALL JOISTS SHALL BE DESIGNED AND FABRICATED BY THE MANUFACTURER, AND ERECTED IN ACCORDANCE WITH STEEL JOIST INSTITUTE, LATEST REVISION.

3. STEEL JOIST MANUFACTURER SHALL SUBMIT ERECTION AND SHOP DRAWINGS SHOWING JOIST LOCATIONS, BRIDGING, CONNECTIONS AND DETAILS, JOIST TO JOIST CONNECTIONS, SPECIAL & EXTENDED ENDS. SLOPED SEATS & ACCESSORIES REQUIRED FOR THE INSTALLATION OF JOISTS.

4. JOISTS SHALL BE STORED ON WOOD SLEEPERS ON DRY, LEVEL GROUND. PERMANENTLY DEFORMED OR OTHERWISE DAMAGED JOISTS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR SHALL SUPPLY THE STEEL JOIST FABRICATOR SPRINKLER DRAWINGS. THE STEEL JOIST FABRICATOR SHALL DESIGN THEIR PRODUCTS FOR THE LOADING IMPOSED BY SPRINKLER MAIN SUPPLY LINES AND BRANCHES. THE STEEL JOIST FABRICATOR SHALL BE SOLELY RESPONSIBLE FOR THE ADEQUACY OF THE JOIST DESIGN TO ACCOMMODATE SUCH IMPOSED LOADS. IF SPRINKLER DRAWINGS ARE NOT AVAILABLE, THE JOIST FABRICATOR SHALL USE A DESIGN LOAD OF 3 PSF APPLIED AS A UNIFORM OR CONCENTRATED LOADS WHICH CAN BE SUPPORTED BY THEIR SYSTEMS.

6. LH-SERIES JOIST STRUCTURAL STEEL SHALL BE ASTM A572, GRADE 50 (FY = 50,000 PSI) UNLESS NOTED OTHERWISE.

7. ALL JOIST SHALL RECEIVE A COAT OF GRAY RUST INHIBITIVE PRIMER. REFER TO SECTION 09900 FOR INTERIOR STRUCTURAL STEEL COATING REQUIREMENTS.

8. THE STEEL JOIST MANUFACTURER SHALL INVESTIGATE THE JOISTS FOR A MINIMUM NET UPLIFT IN ACCORDANCE WITH THE STRUCTURAL NOTES AND FURNISH THE BRIDGING AND ATTACHMENTS NECESSARY TO ENSURE PROPER JOIST PERFORMANCE UNDER UPLIFT FORCES AND FORCES DUE TO ERECTION PER SJI SPECIFICATIONS AND OSHA REQUIREMENTS.

9. THE JOIST SPECIALTY ENGINEER SHALL COORDINATE REQUIRED CAMBER TO ACCOUNT FOR POSSIBLE INCREASED SECTION PROPERTIES DUE TO THE WIND UPLIFT DESIGN.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A STRAIGHT AND UNIFORM ROOF SYSTEM. PROVIDE SMOOTH TRANSITIONS BETWEEN ADJACENT JOISTS AND BETWEEN JOIST AND ADJACENT WALLS. WALLS THAT EXTEND TO THE ROOF DECK SHALL BE CONSTRUCTED AND COORDINATED TO MATCH FINAL IN-PLACE JOIST PROFILES OR SHIM AS REQUIRED.

11. STEEL JOIST BEARING AT EXTERIOR WALLS SHALL BE DESIGNED TO RESIST 2,500 POUNDS LATERAL FORCE PERPENDICULAR TO LONG SPAN JOISTS APPLIED AT THE TOP OF THE JOIST.

12. UNLESS NOTED, LH-SERIES STEEL JOIST SHALL HAVE 5" DEEP BEARING JOIST SEAT DEPTHS.

13. UNLESS OTHERWISE NOTED OR AS REQUIRED BY DESIGN OF JOIST MANUFACTURER, LH-SERIES STEEL JOISTS SHALL BE CONNECTED TO STEEL BY 1/4" WELD, 4" LONG EACH SIDE.

14. HORIZONTAL BRIDGING SHALL BE AN ANGLE AT TOP AND BOTTOM, DESIGNED FOR L/R LESS THAN OR EQUAL TO 300. A SINGLE LINE OF BOTTOM CHORD BRIDGING MUST BE PROVIDED AT THE ENDS OF STEEL ROOF JOISTS NEAR THE FIRST BOTTOM CHORD PANEL POINT FOR WIND UPLIFT.

15. DIAGONAL BRIDGING SHALL BE AN ANGLE DESIGNED FOR L/R LESS THAN OR EQUAL TO 200.

16. UNLESS NOTED, 2ND AND 3RD JOIST SPACES FROM WALLS AND 1ST AND 2ND JOIST SPACES FROM DISCONTINUOUS TRANSITIONS SHALL HAVE CROSS BRIDGING (TO BE ALIGNED WITH HORIZONTAL BRIDGING).

17. JOIST BRIDGING SHALL NOT BE USED TO SUPPORT EQUIPMENT, PIPING, CONDUITS, DUCTWORK, ETC.

18. WHERE FIELD WELDING IS REQUIRED AT TOP OR BOTTOM CHORDS OF JOISTS, TEMPORARILY SHORE AT EACH SIDE OF WELDING LOCATION.

19. MECHANICAL/ELECTRICAL SUPPORTS:

   A. COORDINATE ALL SUPPORTS WITH MECHANICAL DRAWINGS AND COMPLY WITH MECHANICAL SPECIFICATIONS.

   B. LOCATE ALL ATTACHMENTS AS CLOSE TO PANEL POINTS AS POSSIBLE.

   C. DISTRIBUTE LOADS UNIFORMLY ALONG JOISTS.

   D. ALL SUPPORTS SHALL BE ATTACHED SO AS TO APPLY CONCENTRIC LOADS TO THE JOISTS AND JOIST MEMBERS. NO ECCENTRIC LOADS SHALL BE APPLIED WHICH MAY CAUSE THE JOISTS OR INDIVIDUAL MEMBERS TO ROTATE AND BUCKLE.

   E. DO NOT ALTER ANY PART OF ANY JOIST WITHOUT WRITTEN APPROVAL FROM THE SPECIALTY ENGINEER. CUTTING, DRILLING, OR NOTCHING ANY MEMBER OF THE JOIST IS PROHIBITED WITHOUT WRITTEN PRIOR APPROVAL. IN NO WAY SHALL THE INTEGRITY OF THE JOISTS BE ADVERSELY ALTERED BY ATTACHING PIPE SUPPORTS OR ANY OTHER ATTACHMENTS.

STRUCTURAL STEEL

1. ALL STEEL WORK (INCLUDING FABRICATION AND ERECTION) SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION, 14TH EDITION AND PROJECT SPECIFICATIONS, USE THE FOLLOWING:

   A. STRUCTURAL STEEL WIDE FLANGE AND WT SECTIONS: ASTM A992 Fy=50KSI

   B. CHANNELS, ANGLES, PLATES, AND MISCELLANEOUS STEEL: ASTM A36, Fy=36KSI

   C. COLD-FORMED STEEL TUBING: ASTM A500 GRADE B, Fy=46KSI

   D. STEEL PIPE: ASTM A53, TYPE E OR S GRADE B, Fy=35KSI

2. THE CONNECTIONS FOR ANY PORTION OF THE STRUCTURE NOT INDICATED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR'S SPECIALTY ENGINEER. THESE CONNECTIONS SHALL BE DESIGNED FOR THE FORCES INDICATED ON THE STRUCTURAL DRAWINGS. WHERE FORCES ARE NOT SHOWN ON THE DRAWINGS, EACH END CONNECTION SHALL BE DESIGNED FOR ONE-HALF THE TOTAL LOAD SHOWN IN THE APPROPRIATE AISC "ALLOWABLE LOADS ON BEAMS" TABLES.

3. USE STRUCTURAL STEEL THAT IS FULLY WELDABLE WITHIN GRADES AND FROM ANY GRADE TO ANY OTHER GRADE. WELD ALL SHOP CONNECTIONS, UNLESS OTHERWISE NOTED.

4. ALL SHOP AND FIELD WELDING SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1, LATEST EDITION, PUBLISHED BY THE AMERICAN WELDING SOCIETY (AWS). USE ELECTRODES CONFORMING TO AWS D1.1, E70 SERIES, UNLESS OTHERWISE NOTED. SHOW ALL SHOP WELDS ON THE FABRICATION DRAWINGS AND ALL FIELD WELDS ON THE ERECTION DRAWINGS.

5. ALL SHOP AND FIELD WELDERS, WELDING OPERATORS, AND TACKERS SHALL BE CERTIFIED ACCORDING TO AWS PROCEDURE FOR THE WELDING PROCESS AND WELDING POSITION USED. ALL RECORDS OF SUCH CERTIFICATION SHALL BE FILED AT THE JOB SITE AND MADE AVAILABLE TO THE ENGINEER UPON REQUEST.

6. ALL JOINT WELDING PROCEDURES TO BE USED SHALL BE PREPARED BY THE FABRICATOR OR CONTRACTOR AS WRITTEN PROCEDURE SPECIFICATIONS. ALL RECORDS SHALL BE FILED AT THE JOB SITE & MADE AVAILABLE TO THE ENGINEER UPON REQUEST. ALL JOINT WELDING PROCEDURES SHALL BE QUALIFIED PRIOR TO USE ACCORDING TO AWS PROCEDURES.

7. ANCHOR BOLTS:

   A. PUMP ANCHOR BOLTS / THREADED RODS SHALL BE SHALL BE F1554 GRADE 36 HOT DIPPED GALVANIZED STEEL WITH HEAVY HEX NUTS AND HARDENED STEEL WASHERS.

   B. PIPE SUPPORT ANCHOR BOLTS / THREADED RODS SHALL MATCH MATERIAL TYPE (F1554 GRADE 36 HOT DIPPED GALVANIZED STEEL BOLTS FOR CARBON STEEL PIPE SUPPORTS AND STAINLESS STEEL GRADE 316 BOLTS FOR STAINLESS STEEL PIPE SUPPORTS). PIPE SUPPORT ANCHOR BOLTS / THREADED RODS SHALL HAVE HEAVY HEX NUTS AND HARDENED STEEL WASHERS.

   C. ANY ANCHOR BOLTS / THREADED ROD NOT LISTED ABOVE SHALL BE STAINLESS STEEL GRADE 316 MATERIAL WITH HEAVY HEX NUTS AND HARDENED STEEL WASHERS,

   D. HARDENED STEEL WASHERS SHALL BE REGULAR SERIES, TYPE B, PLAIN, HARDENED WASHERS COMPLYING WITH ANSI B18.22.1 USING A325 CARBON STEEL AND 316 STAINLESS STEEL PLATE WITHOUT ANY BREAK OR GAP.

   E. ANCHOR BOLTS SHALL BE THREADED FOR FULL PROJECTION ABOVE ROUGH CONCRETE UNLESS OTHERWISE NOTED.

   F. TIGHTEN ANCHOR BOLTS AS FOLLOWS:
      BRING ALL ANCHOR BOLTS TO A SNUG TIGHT CONDITION OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A PERSON USING AN ORDINARY SPUD WRENCH.

   G. BASE PLATES SHALL BE GROUTED IMMEDIATELY AFTER FINAL ANCHOR BOLT TIGHTENING.

8. GROUT UNDER BASE PLATES SHALL BE HIGH STRENGTH, NON-SHRINK AND NON-METALLIC AS MANUFACTURED BY FIVE STAR, MASTER BUILDERS, SIKA OR APPROVED EQUIVALENT.

9. CUT, DRILL, OR PUNCH HOLES PERPENDICULAR TO METAL SURFACES. DO NOT FLAME CUT HOLES OR ENLARGE HOLES BY BURNING.

10. SPLICING OF STRUCTURAL STEEL MEMBERS IN THE FIELD OR IN THE SHOP IS PROHIBITED EXCEPT WHERE INCLUDED ON THE DRAWINGS.

11. DO NOT PAINT STEEL SURFACES IN CONTACT WITH CONCRETE. DO NOT APPLY FINISH COAT AND LIMIT PRIME COAT TO 2 MILS AT FAYING SURFACES OF SLIP CRITICAL BOLTED CONNECTIONS, SURFACES TO BE WELDED AND TOP SURFACES OF BEAMS AND TRUSSES TO RECEIVE STEEL STUDS AND/OR SUPPORTING METAL FLOOR AND ROOF DECKING. USE PRIMER WHICH HAS A MIN. CLASS A SLIP COEFFICIENT (0.33).

12. REFER TO ARCHITECTURAL PLANS FOR FIREPROOFING OF STRUCTURAL STEEL MEMBERS, REFER TO SPECIFICATIONS FOR PAINTING OF STRUCTURAL STEEL.

13. SUBMIT STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR REVIEW BEFORE FABRICATION. ALL STRUCTURAL STEEL SHOP DRAWINGS, REQUIRING INPUT FROM A SPECIALTY ENGINEER, SHALL BE SIGNED AND SEALED PRIOR TO SUBMITTAL. DO NOT REPRODUCE THE STRUCTURAL DRAWINGS FOR USE AS SHOP DRAWINGS.

14. PROVIDE TEMPORARY BRACING AS NECESSARY TO INSURE A STABLE STRUCTURE DURING CONSTRUCTION.

15. NO CUTTING OF SECTIONS, FLANGES, WEBS, OR ANGLES SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

16. FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATIONS AND "CODE OF STANDARD PRACTICE".

17. IMMEDIATELY AFTER ERECTION ALL FRAMING MEMBERS AND WELDS SHALL BE TOUCHED UP WITH A PAINT COMPATIBLE WITH THE SHOP PAINT OR COATING.

MISCELLANEOUS STEEL

1. FOR MISCELLANEOUS STEEL NOT SHOWN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS.

2. EDGE ANGLES, CLIP ANGLES, PLATES, BARS, AND OTHER MISCELLANEOUS ROLLED SHAPES SHALL BE ASTM A-36 STRUCTURAL STEEL, UNLESS OTHERWISE NOTED.

3. THE PROVISIONS OF THE ABOVE STRUCTURAL STEEL SECTION SHALL ALSO APPLY TO MISCELLANEOUS STEEL.

ALUMINUM

1. ALL ALUMINUM ITEMS SHALL BE ALLOY 6061-T6 WITH TEMPER T6 CONFORMING TO ASTM B209 AND B308. REFER TO ARCHITECTURAL FOR FINISH.

2. WELDING OF ALUMINUM SHALL USE GAS TUNGSTEN ARC OR GAS METAL ARC WELDING WITH NO POSTWELD HEAT TREATMENT. THE FILLER WIRE SHALL BE 5556.

3. ALUMINUM IN CONTACT WITH CONCRETE, GROUT, OR DISSIMILAR METALS SHALL BE COATED WITH A CHROMATE CONVERSION COATING.

4. STEEL FASTENERS OR HARDWARE IN CONTACT WITH ALUMINUM SHALL BE AISI 316 STAINLESS STEEL.

PIPING, PIPELINE APPURTENANCES, VALVE, SUPPORTS, HANGERS, STRUTS, BLOCKING AND ANCHORAGE NOTES

1. CONTRACTOR SHALL REFER TO THE APPLICABLE DIVISIONS OF THE SPECIFICATIONS FOR SUPPORTS, BLOCKING, ANCHORAGE, AND RESTRAINING OF ALL PIPE, VALVES AND PIPING APPURTENANCES.

2. CONTRACTOR SHALL REVIEW WITH THE ENGINEER ALL LOCATION AND ARRANGEMENT OF PIPING OPENINGS, PIPE SLEEVES, TRENCHES, AS REQUIRED TO COMPLETE HIS WORK AND SHALL NOT PROCEED WITH INSTALLATION OF SAME UNTIL SUCH HAS BEEN REVIEWED AND WILL NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE CONCRETE MEMBERS.

3. CONTRACTOR SHALL PROVIDE AND COORDINATE THE INSTALLATION OF ALL ITEMS TO BE EMBEDDED IN THE CONCRETE SYSTEM AND SHALL COOPERATE SO AS NOT TO DELAY THE CONSTRUCTION WORK. SUCH ITEMS SHALL INCLUDE PIPES, SLEEVES, BOLTS, STRUTS, HANGERS AND FITTINGS, ETC., THAT ARE TO BE EMBEDDED IN THE CONCRETE SYSTEM.

REFERENCE DATUM AND FLOOD DATA

1. ELEVATIONS INDICATED ON PUMP STATION BUILDING PLANS AND DETAILS ARE NAVD ELEVATIONS. COORDINATE ADDITIONAL ELEVATIONS WITH CIVIL DRAWINGS.

2. PROJECT IS LOCATED IN FLOOD ZONE:

   A. TWIN CREEKS SITE: FLOOD ZONE X

ALUMINUM PLATFORM @ GENERATOR

1. DESIGN OF ALUMINUM PLATFORM FOR GENERATOR SHALL BE DELEGATED TO A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA.

2. PLATFORM SHALL BE 6061-T6 ALUMINUM.

3. PLATFORM SHALL BE DESIGNED TO MEET THE LOADING REQUIREMENTS ON S-1.

4. THE PLATFORM SHALL BE SUPPLIED BY THE GENERATOR SUPPLIER.

LIGHT GAGE STUD FRAMING:

1. ALL LIGHT GAGE FRAMING SHALL BE GALVANIZED MINIMUM 33 KSI WITH THE FOLLOWING MINIMUM EFFECTIVE PROPERTIES OR APPROVED EQUIVALENT.
   A. CEILING JOISTS- 10" CSS 14 GA LIGHT GAGE STUDS
   B. CEILING TSB- 10" x 14 GA TRACK
   C. CEILING JOISTS PROPERTIES - 10", 14 GA, I_x = 18.442 IN^4, S_x = 3.643 IN^3

STANDARD STRUCTURAL ABBREVIATIONS

AB	ANCHOR BOLT	PC	PRECAST
ADD	ADDITIVE	PREFAB	PREFABRICATED
ADD'L	ADDITIONAL	PROJ	PROJECTION
ALT	ALTERNATE/ALTERNATIVE	REF	REFERENCE
ALUM	ALUMINUM	REINF	REINFORCING
ACI	AMERICAN CONCRETE	REQ'D	REQUIRED
	INSTITUTE	RW	RETAINING WALL
AISC	AMERICAN INSTITUTE OF	RD	ROOF DRAIN
	STEEL CONSTRUCTION	REV	REVISION
AISI	AMERICAN IRON AND	SCHED	SCHEDULE
	STEEL INSTITUTE	SP, SP'S	SPACE/SPACES
ASTM	AMERICAN SOCIETY OF	SPECS	SPECIFICATIONS
	TESTING MATERIALS	SLV	SHORT LEG VERTICAL
AWS	AMERICAN WELDING SOCIETY	SIM	SIMILAR
ARCH	ARCHITECTURAL	STD	STANDARD
BP	BASE PLATE	STIFF	STIFFENER
BM	BEAM	STRUCT	STRUCTURAL
BRG	BEARING	SYM	SYMMETRICAL
BLK	BLOCK	THD	THREAD/THREADED
B/	BOTTOM OF	THK	THICK
BLDG	BUILDING	T/	TOP OF
BTWN	BETWEEN	TD	TURNDOWN SLAB
BOT	BOTTOM	T&B	TOP AND BOTTOM
CIP	CAST IN PLACE	TS	THICKENED SLAB
C TO C	CENTER TO CENTER	TYP	TYPICAL
CLR	CLEAR/CLEARANCE	UON	UNLESS OTHERWISE NOTED
COL	COLUMN	VERT	VERTICAL
CONC	CONCRETE	VIF	VERIFY IN FIELD
CB	CONCRETE BEAM	WWF	WELDED WIRE FABRIC
CMU	CONCRETE MASONRY UNIT	W	WIDE FLANGE
CONT	CONTINUOUS	w/	WITH
CONN	CONNECTION	w/O	WITHOUT
CJ	CONSTRUCTION JOINT	WP	WORK POINT
DET	DETAIL	@	AT
DIM	DIMENSION	C	CHANNEL
DWG	DRAWING	K	KIP (1,000 LBS)
EA	EACH	Sx	SECTION MODULUS
EE	EACH END	Ix	MOMENT OF INERTIA
EF	EACH FACE	±	PLUS OR MINUS
ES	EACH SIDE		
EW	EACH WAY	℄	CENTERLINE
ELEC	ELECTRICAL		
ENGR	ENGINEER	DIA	DIAMETER
EQ SP	EQUAL SPACED		
EL:	ELEVATION		ELEVATION
EJ	EXPANSION JOINT		
EXIST	EXISTING		MASONRY CONTROL JOINT
EXP	EXPANSION		(REFER TO PLAN FOR
EXT	EXTERIOR		LOCATIONS)
FD	FLOOR DRAIN		
FDN	FOUNDATION	PL	PLATE
FF	FINISH FLOOR		
FIN FL	FINISH FLOOR		
FS	FAR SIDE		
FTG	FOOTING		
GA.	GAGE/GAUGE		
GALV	GALVANIZE		
GL	GRID LINE		
HORIZ	HORIZONTAL		
HP	HIGH POINT		
HT	HEIGHT		
ID	INSIDE DIAMETER		
IF	INSIDE FACE		
JT	JOINT		
JST	JOIST		
KWY	KEYWAY		
LDG	LANDING		
LT	LIGHT		
LT WT	LIGHT WEIGHT		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LP	LOW POINT		
MAX	MAXIMUM		
MID	MIDDLE		
MANUF	MANUFACTURER		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
M.O.	MASONRY OPENING		
MATL	MATERIAL		
MECH	MECHANICAL		
MPH	MILES PER HOUR		
MTL	METAL		
NS	NEAR SIDE		
NIC	NOT IN CONTACT		
NTS	NOT TO SCALE		
NO., #	NUMBER		
OC	ON CENTER		
OD	OUTSIDE DIAMETER		
OF	OUTSIDE FACE		
OPNG	OPENING		
PLY	PLYWOOD		

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Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B/ PERRY
DATE: APRIL 2020

JEA sm
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

STRUCTURAL NOTES

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 35
DRAWING NO. S-2

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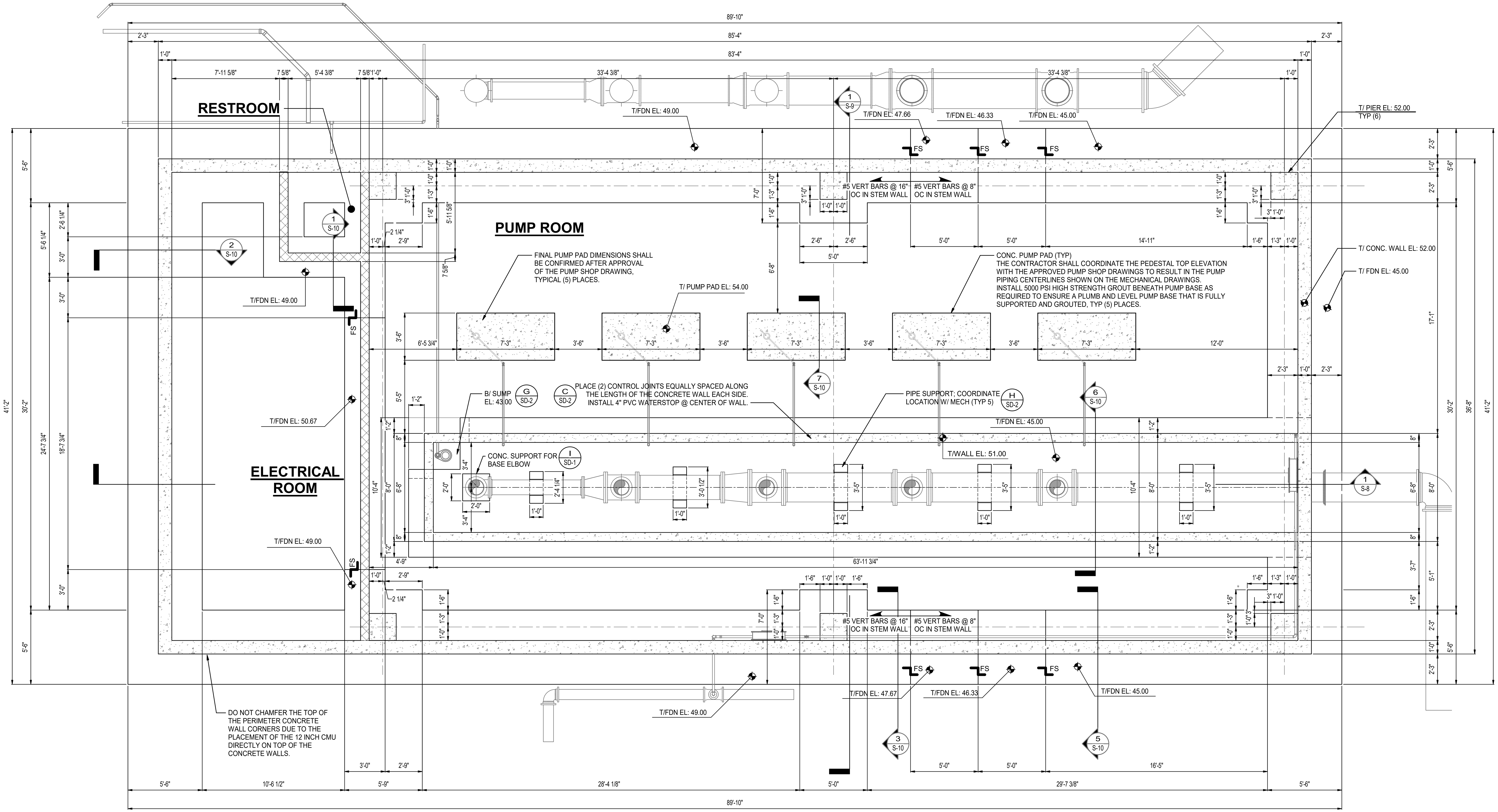

T/FDN @ ELEV: 49.00'

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

LEGEND

- 8" CMU WALL. REFER TO ARCH DWGS. FOR CMU WALL TYPES.
- CONC WALL
- CONC PIERS AND EQUIPMENT FOUNDATION
- FS FOOTING STEP (A / SD-2)

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DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II
FOUNDATION PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 36
DRAWING NO. S-3

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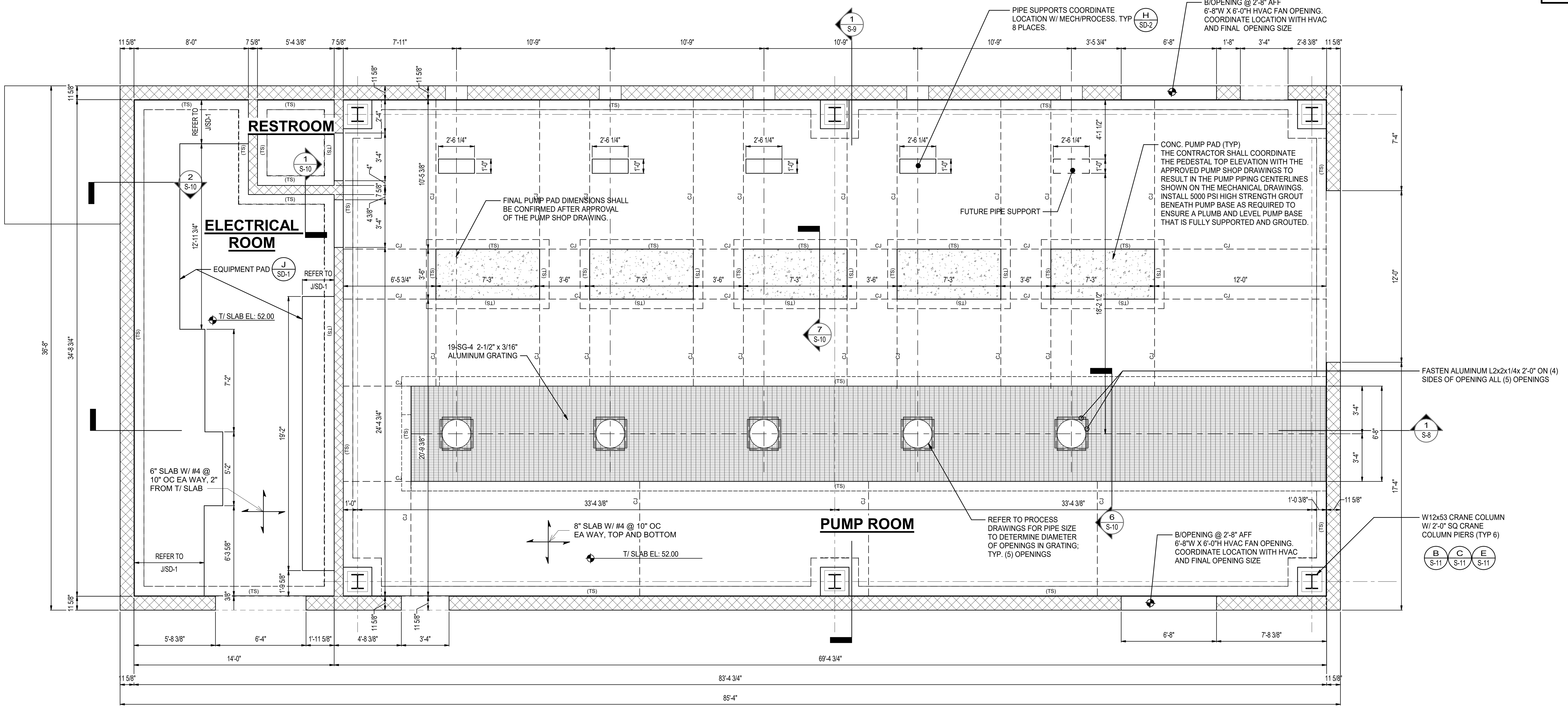

T/SLAB PLAN @ ELEV: 52.00'

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

LEGEND

- 12" SPLIT FACE CMU WALL. REFER TO ARCH. DWGS. FOR SMOOTH/SPLIT FACE ARRANGEMENT
- GRATING
- 8" CMU WALL. REFER TO ARH. DWGS. FOR WALL TYPES.
- CONC WALL
- CONC PIERS AND EQUIPMENT FOUNDATIONS
- CJ — SLAB CONTROL JOINT REFER TO D/SD-1
- (TS) THICKENED SLAB REFER TO A/SD-1

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REVISIONS

NO.	BY	DATE
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DESIGN ENGINEER
CHAD E. LYNER, P.E.
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DESIGNER: C. LYNER
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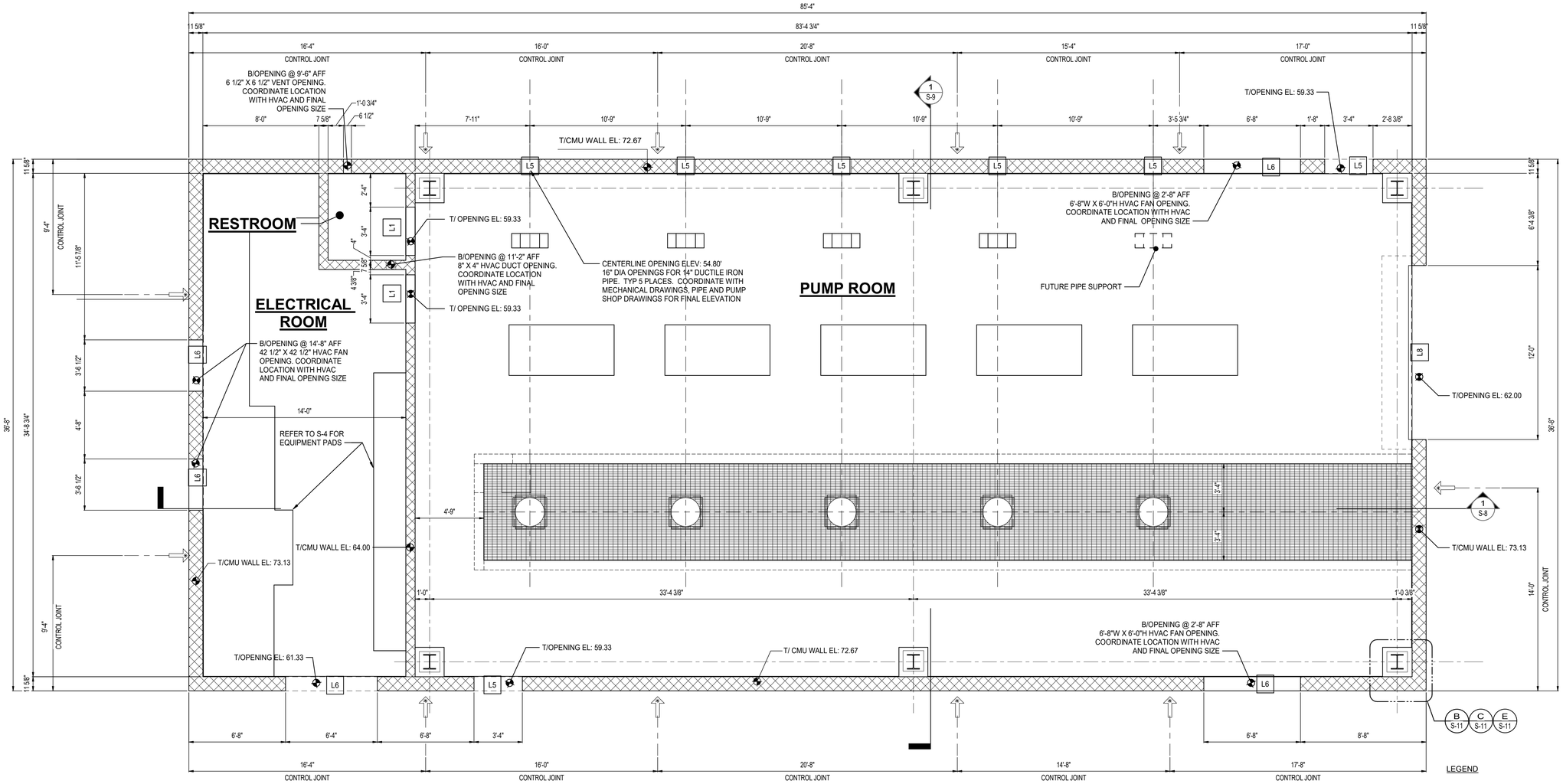
TWIN CREEKS RECLAIMED WATER RE- PUMP STATION IMPROVEMENTS - PHASE II

SLAB PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 37
DRAWING NO. S-4



LEGEND

- 12" SPLIT FACE CMU WALL. REFER TO ARCH. DWGS FOR SMOOTH/SPLIT FACE ARRANGEMENT
- GRATING. REFER TO S-4.
- 8" CMU WALL. REFER TO ARCH DWG WALL TYPES
- CONC WALL
- CONC PIERS AND EQUIPMENT FOUNDATION
- L# — CMU LINTEL #, REFER TO SD-3 FOR LINTEL REQUIREMENTS
- DENOTES MASONRY CONTROL JOINT, FULL HEIGHT OF WALL (SPACE @ 24' - 0" O.C. MAX); REFER TO D / SD-3

CMU WALL PLAN CUT@ ELEV:54.80'

0 1' 2' 4' 8'
SCALE: 1/4" = 1'-0"

NOTE:
TOP OF CMU WALL ELEVATIONS AS NOTED ON PLAN

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NO.	BY	DATE	REVISIONS
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DATE: APRIL 2020

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TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

CMU WALL PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 38
DRAWING NO. S-5

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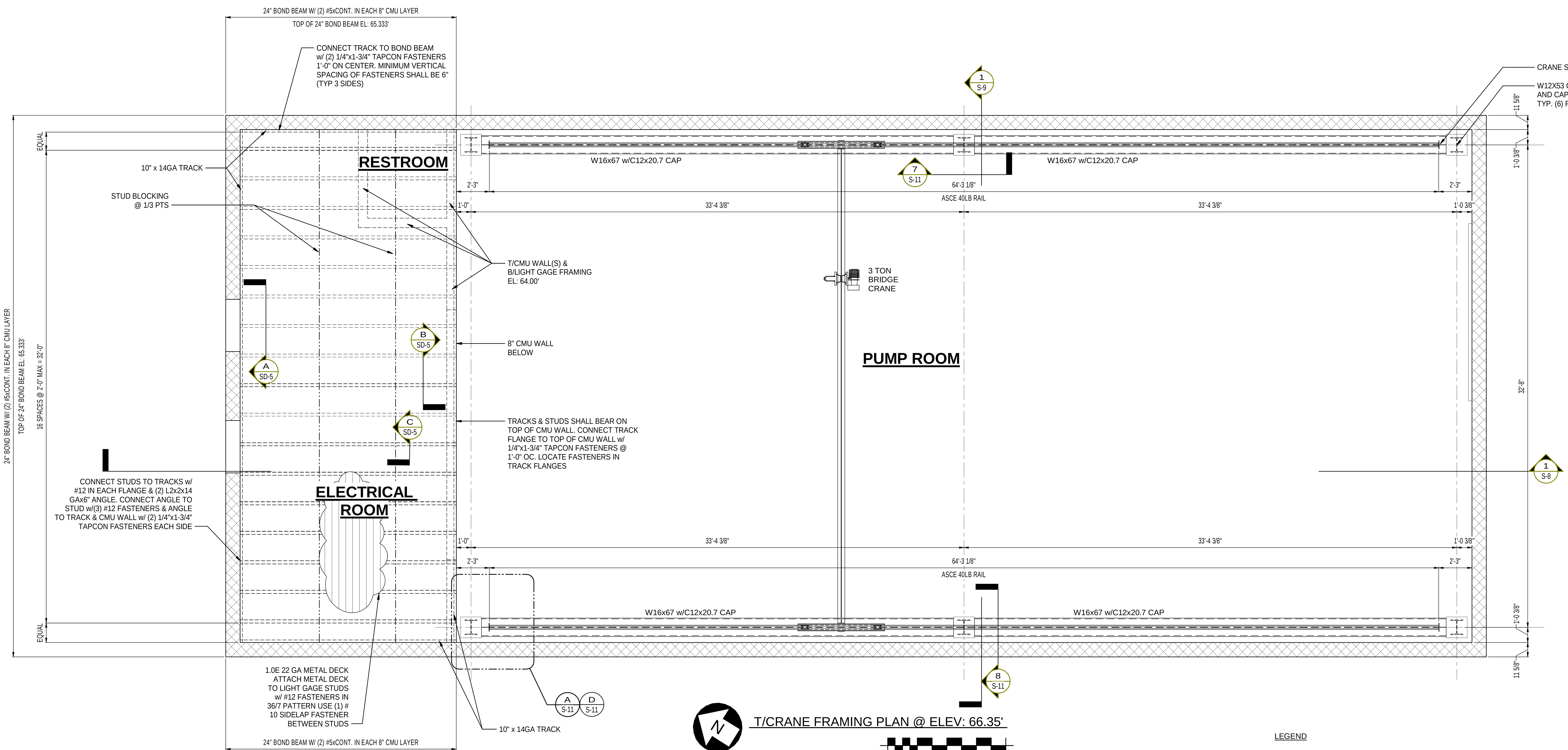

T/CRANE FRAMING PLAN @ ELEV: 66.35'

0 1' 2' 4' 8'
SCALE: 1/4" = 1'-0"

LEGEND

12" SPLIT FACE CMU WALL. REFER TO ARCH DWG FOR SMOOTH/SPLIT FACE ARRANGEMENT.

LIGHT GAUGE BEAMS; REFER TO GENERAL NOTES

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66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

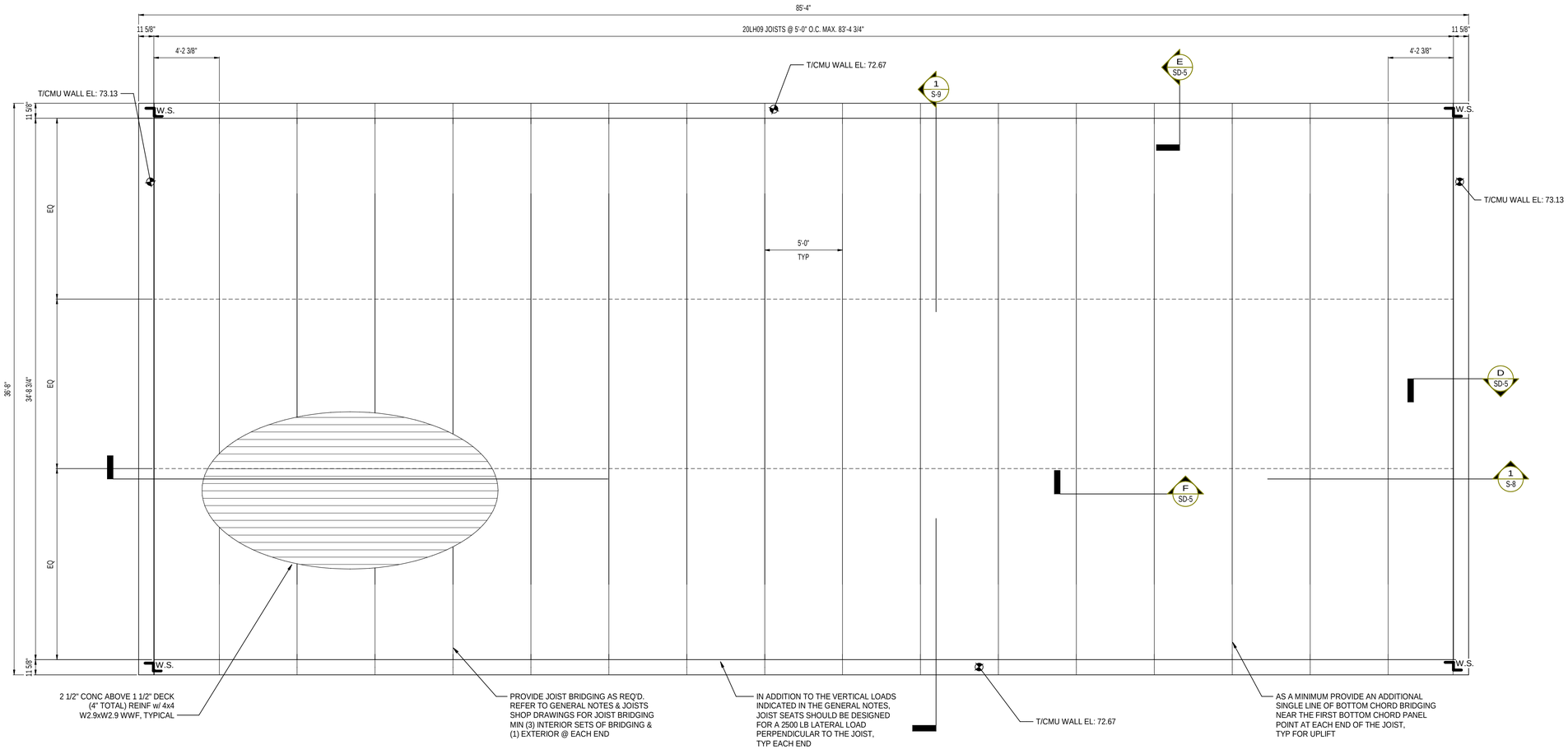
JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

CRANE FRAMING PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 39
DRAWING NO. S-6



T/ROOF @ ELEV: 73.13'

0 1' 2' 4' 8'

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

NOTES:

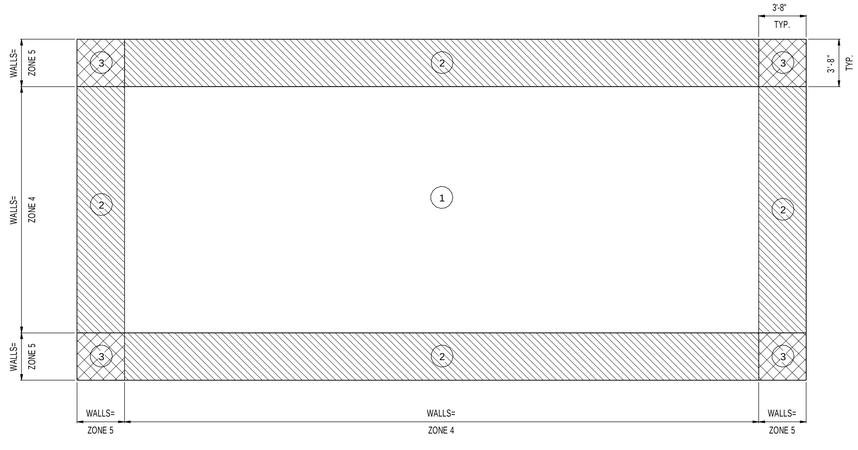
1. T/CMU WALL @ JOIST BEARING: 72.67'.
2. CMU WALL PARALLEL w/ JOISTS: 73.13'.
3. T/JOIST BEARING ELEV: 72.67'
4. MAXIMUM JOISTS SPACING SHALL BE 5'-0" ON CENTER.
5. FRAME ALL OPENINGS LARGER THAN 12" w/ L4x4x5/8".
6. BRIDGING SHOWN IS MINIMUM REQUIRED. ADDITIONAL BRIDGING MAY BE REQUIRED BY JOIST MANUFACTURER.
7. METAL GALVANIZED DECK SHALL BE VULCRAFT 1.5 C18 OR EQUIVALENT. ATTACH TO ALL JOISTS, BEAMS AND PERIMETER EDGE ANGLES WITH #12 TEK HWH FASTENERS (OR EQUIVALENT) USING 36/7 PATTERN. ((1) SCREW IN EACH FLUTE) OR 6" MAXIMUM ON CENTER. USE (4) #10 TEK HWH FASTENERS BETWEEN SUPPORTS. ATTACH TO GROUTED CMU OR CONCRETE USING 1/4" DIAMETER x 2 1/2" TAPCON FASTENERS @ 4" ON CENTER.
8. JOIST SEATS SHALL BE 5".
9. ⌟⌜ W.S. = WALL STEP

WALL PRESSURES			
ZONE	EFFECTIVE AREA (SF)	PRESSURE(PSF)	
		POS	NEG
4	10	26.4	-28.7
	20	25.2	-27.5
	50	23.7	-25.9
	100	22.5	-24.7
	200	21.3	-23.5
	500	19.7	-21.9
5	10	26.4	-35.4
	20	25.2	-33.0
	50	23.7	-29.9
	100	22.5	-27.5
	200	21.3	-25.1
	500	19.7	-21.9

ROOF PRESSURES			
ZONE	EFFECTIVE AREA (SF)	PRESSURE(PSF)	
		POS	NEG
1	10	11.9	-29.4
	20	11.2	-28.6
	50	10.2	-27.6
	100	9.5	-26.9
	200	9.5	-26.9
	500	9.5	-26.9
2	10	11.9	-49.3
	20	11.2	-44.0
	50	10.2	-37.1
	100	9.5	-31.9
	200	9.5	-31.9
	500	9.5	-31.9
3	10	11.9	-74.2
	20	11.2	-61.4
	50	10.2	-44.6
	100	9.5	-31.9
	200	9.5	-31.9
	500	9.5	-31.9

WIND NOTES:

1. WALL SECTION 5 EXTENDS FROM THE BUILDING CORNERS A DISTANCE OF 3'-8". WALL SECTION 4 IS THE REMAINDER OF THE WALL
2. COMPONENT AND CLADDING PRESSURES SHOWN ABOVE ARE ALLOWABLE PRESSURES AND MAY NOT BE REDUCED.



WIND UPLIFT DIAGRAM

ISSUED FOR BID

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NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
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CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

ROOF FRAMING PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 40
DRAWING NO. S-7

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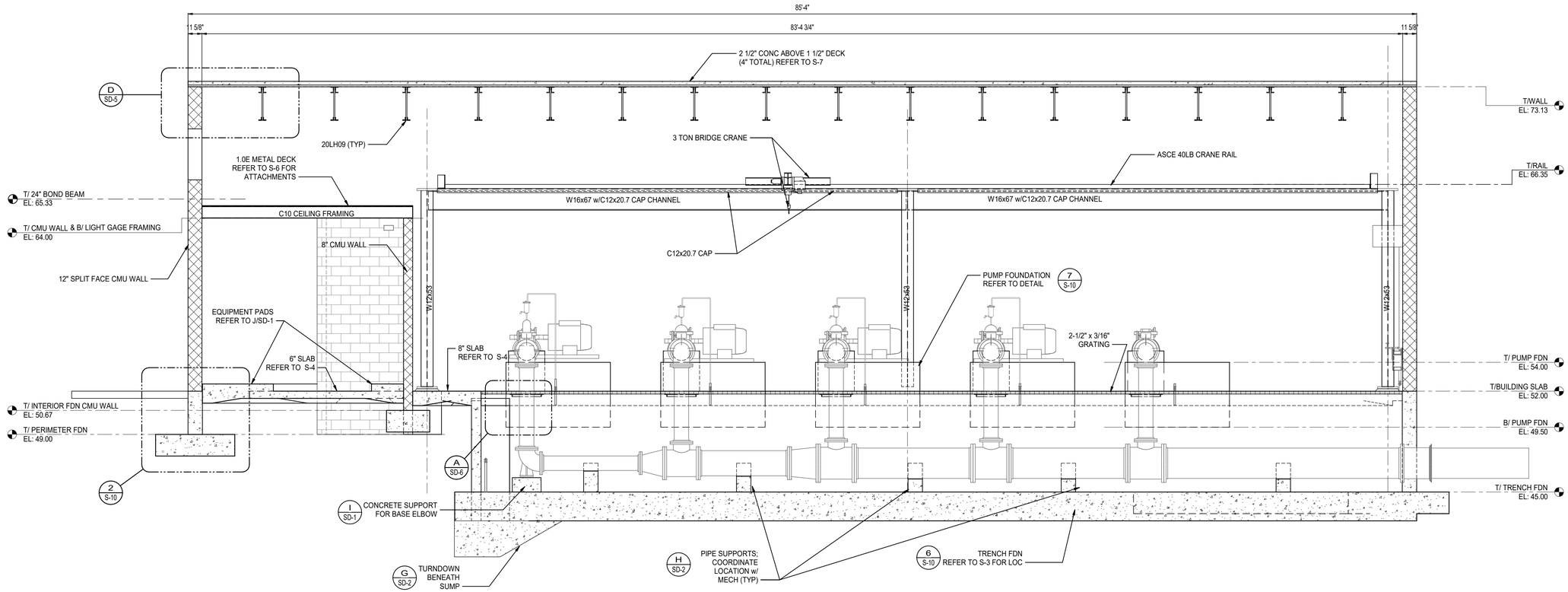

1 S-3 LONGITUDINAL BUILDING SECTION

1/4" = 1'-0"

0 1' 2' 4' 8'

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

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TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

LONGITUDINAL BUILDING SECTION

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 41
DRAWING NO. S-3

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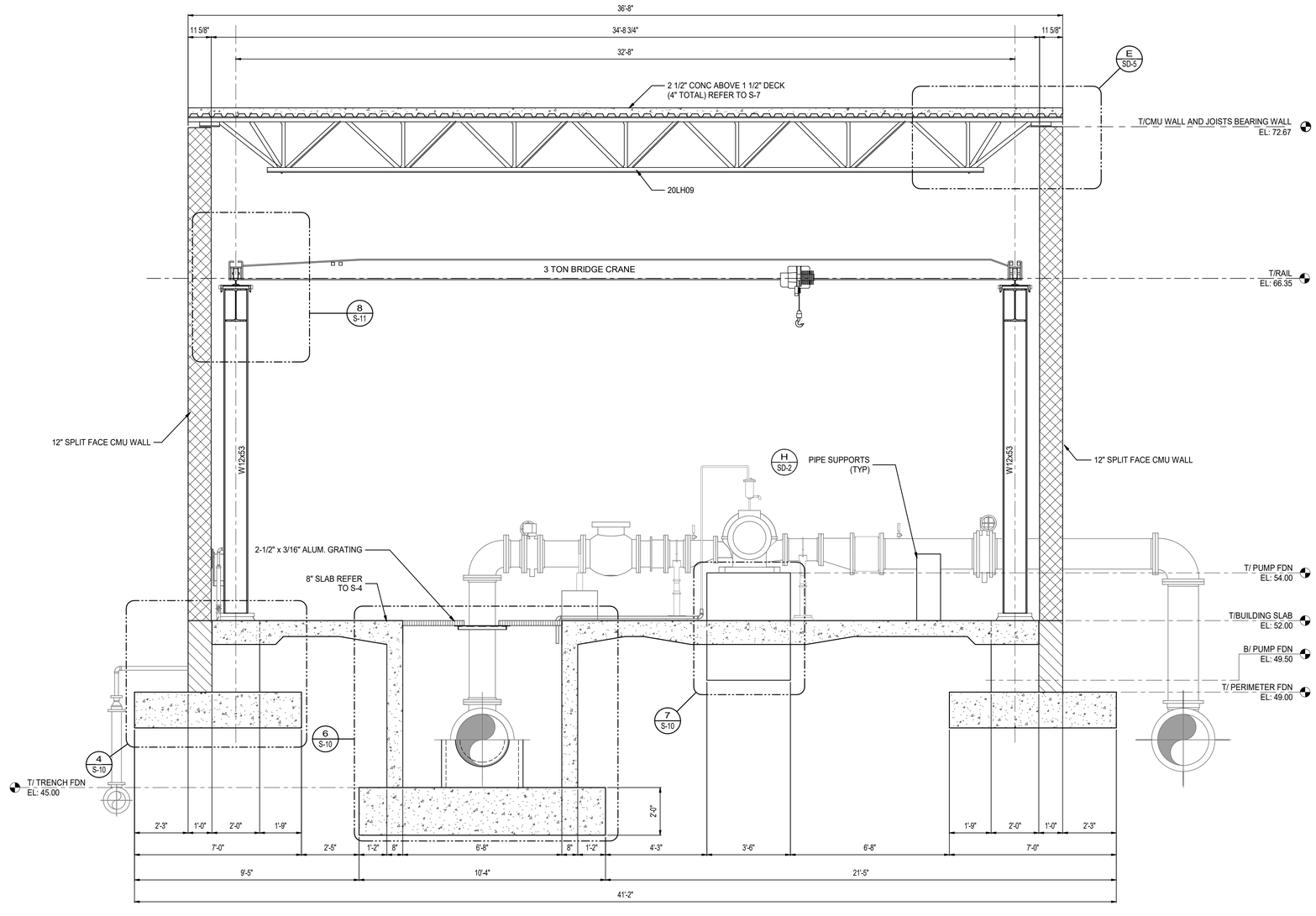

1 S-3 LATERAL BUILDING SECTION

3/8" = 1'-0"

0 6" 1' 2' 3' 4' 5' 6'

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

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TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

LATERAL BUILDING SECTION

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 42
DRAWING NO. S-3

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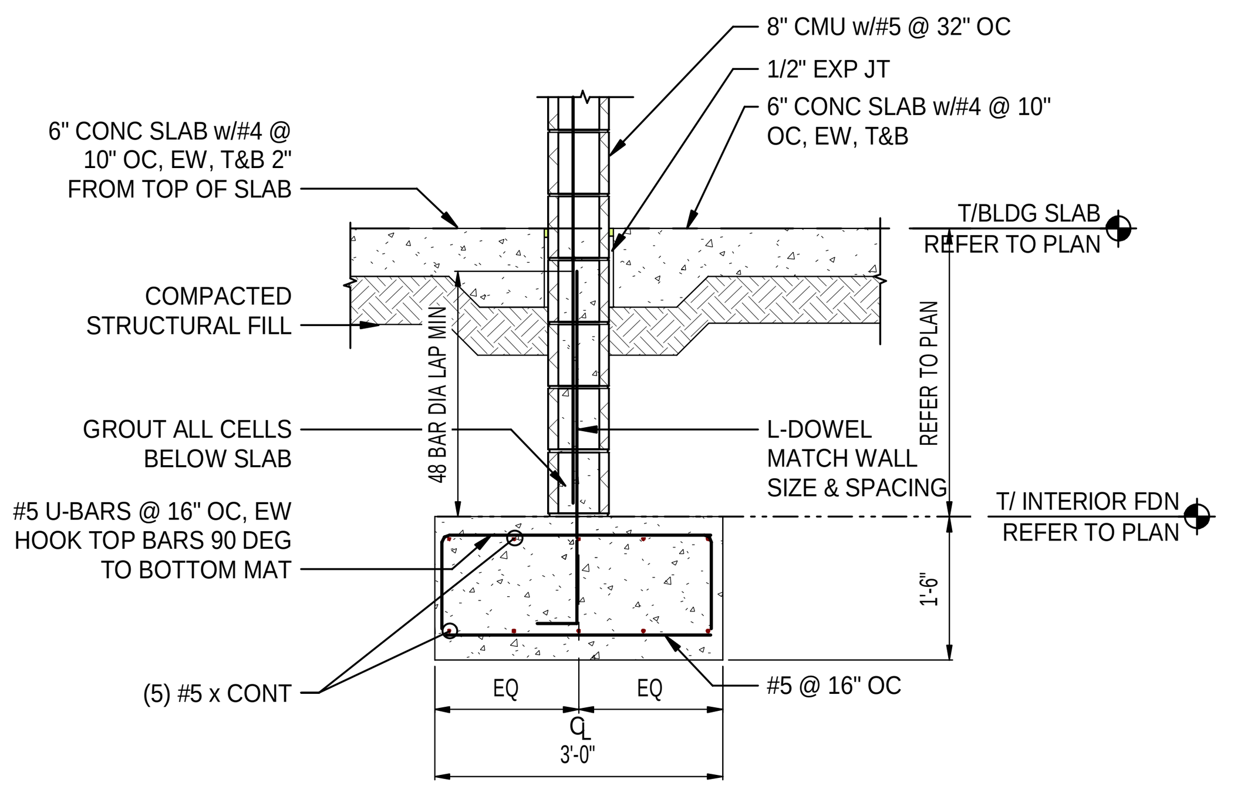
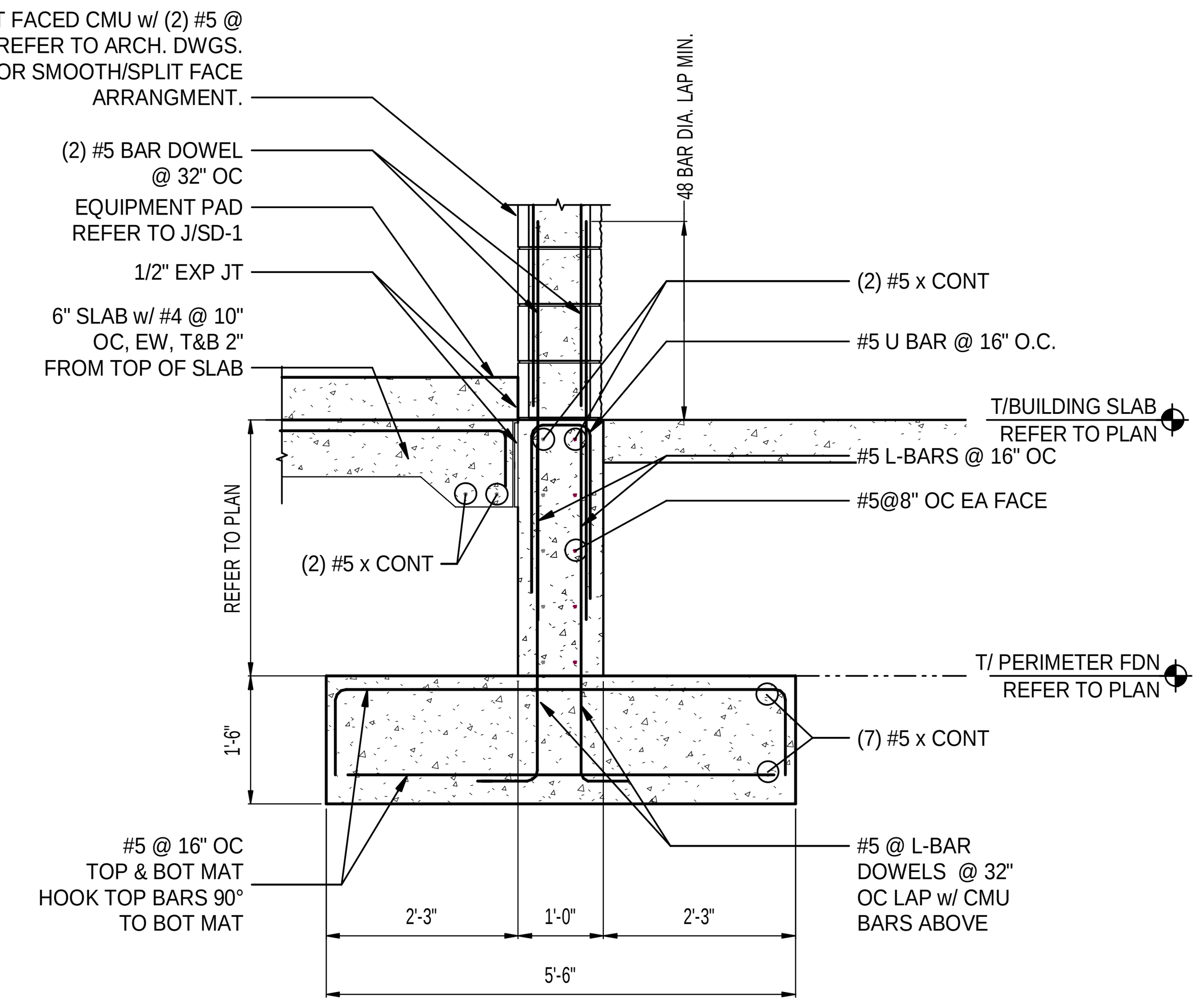
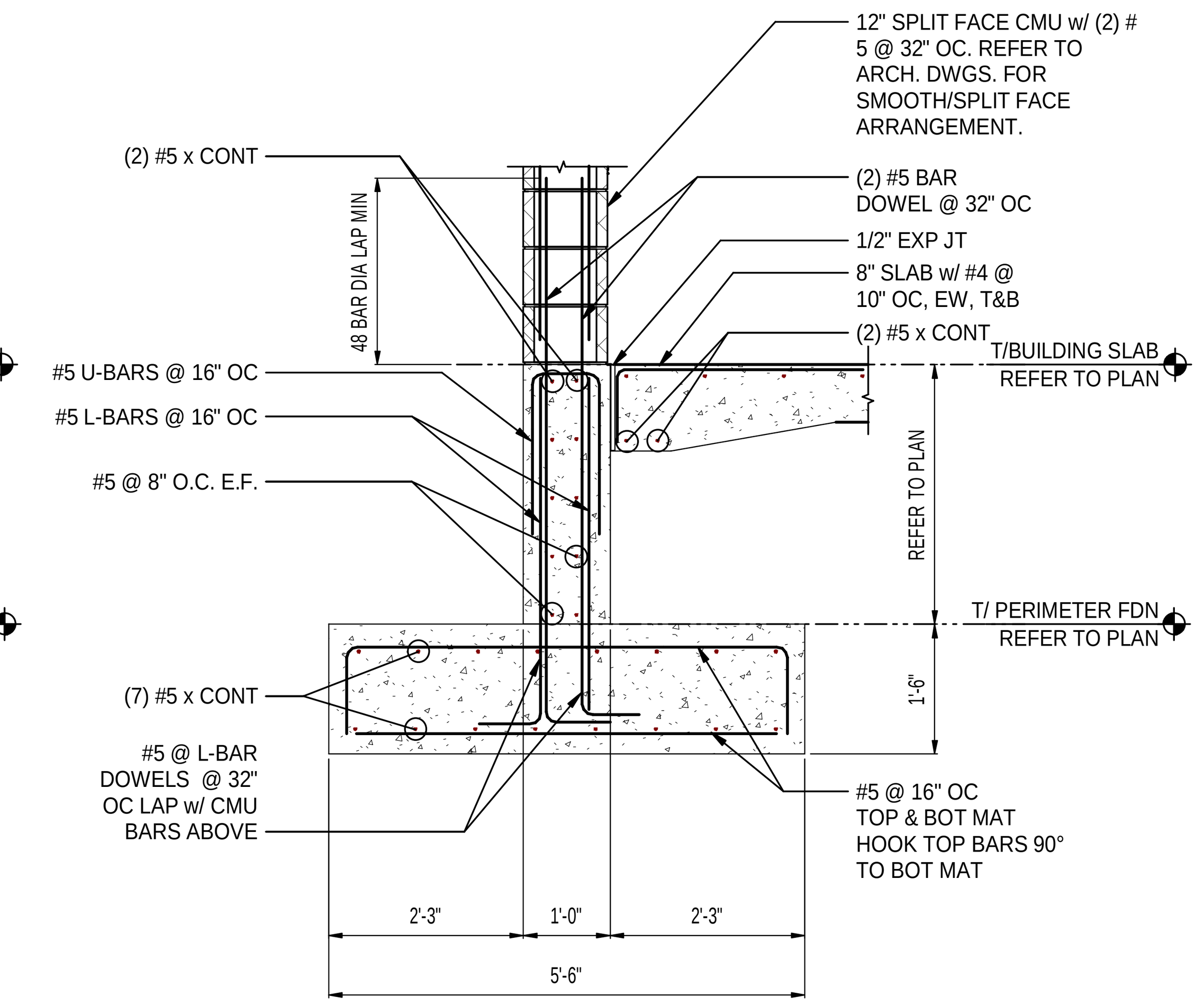


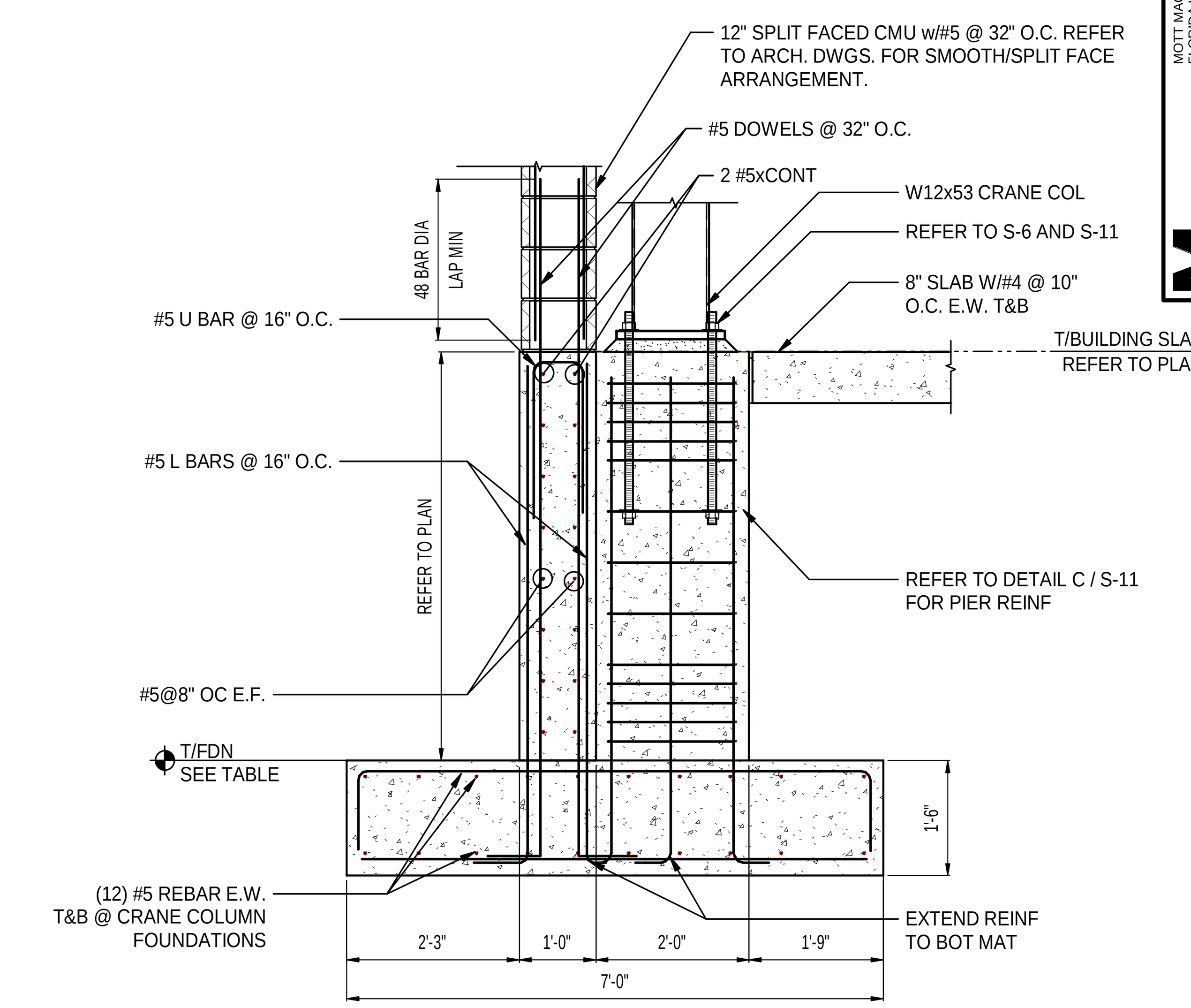
1 **INTERIOR CMU WALL FOOTING**
1/2" =1'-0"



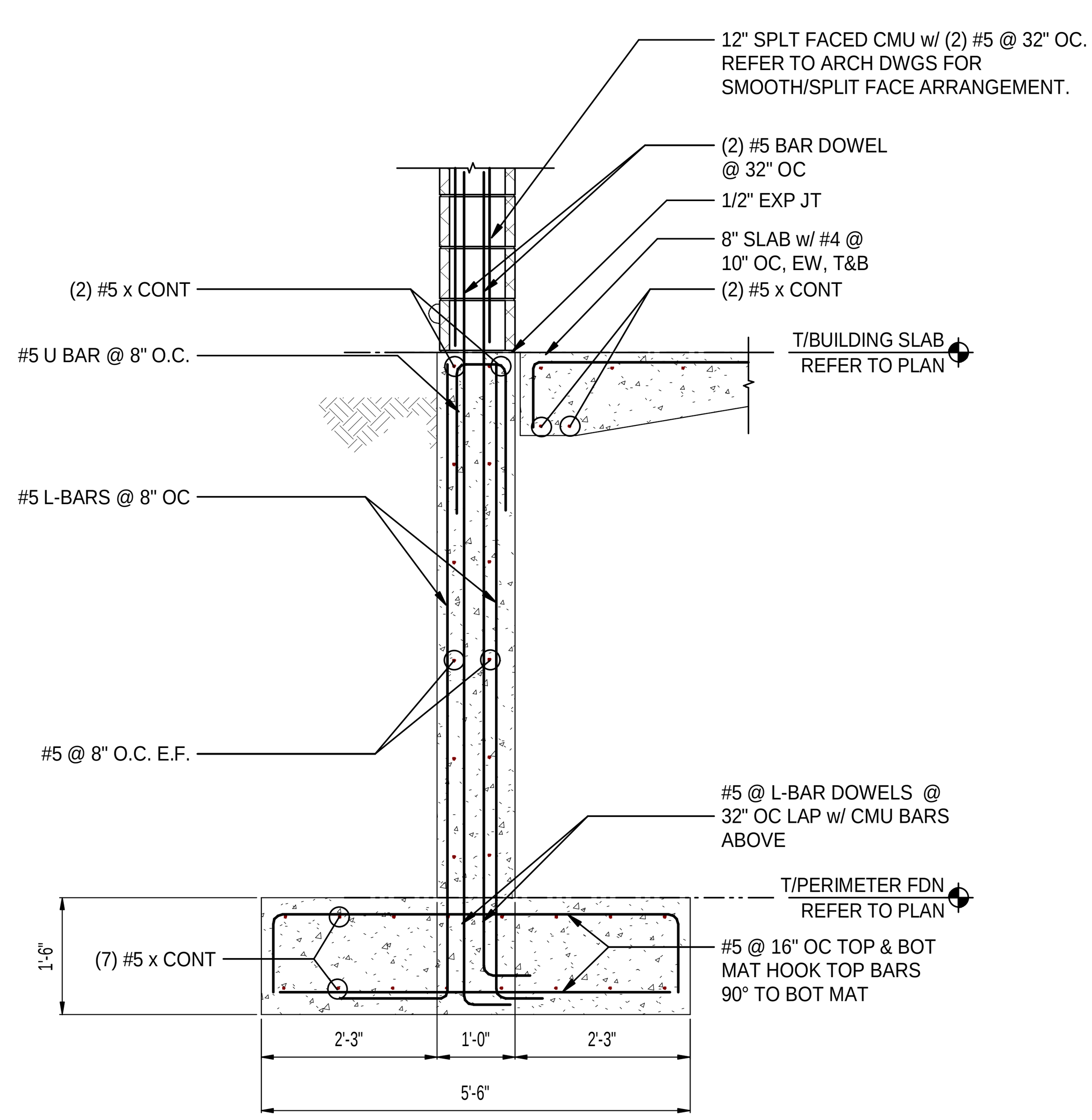
2 **EXTERIOR WALL FOUNDATION AT ELECTRICAL ROOM**
1/2" =1'-0"



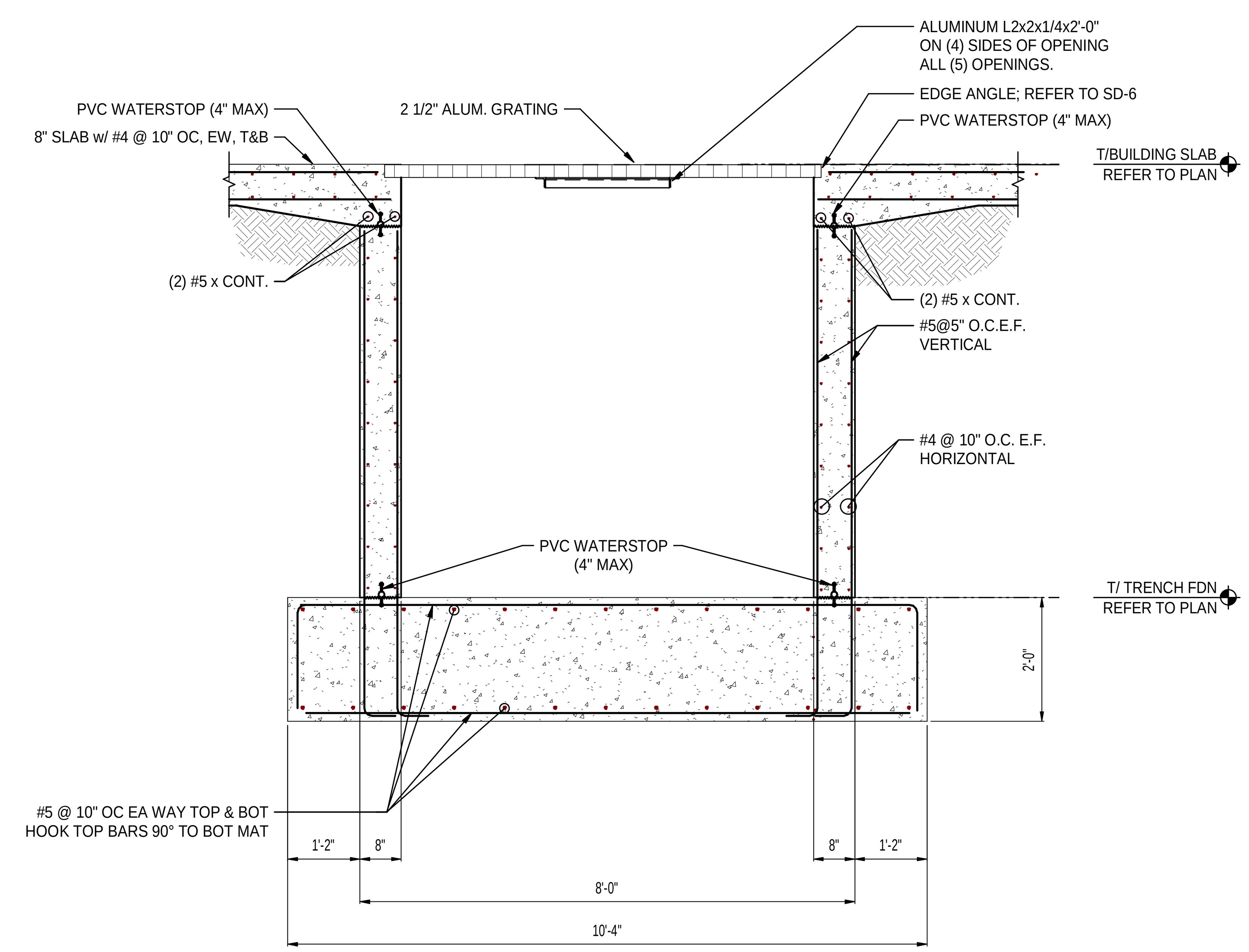
3 **EXTERIOR WALL FOUNDATION AT PUMP ROOM**
1/2" =1'-0"



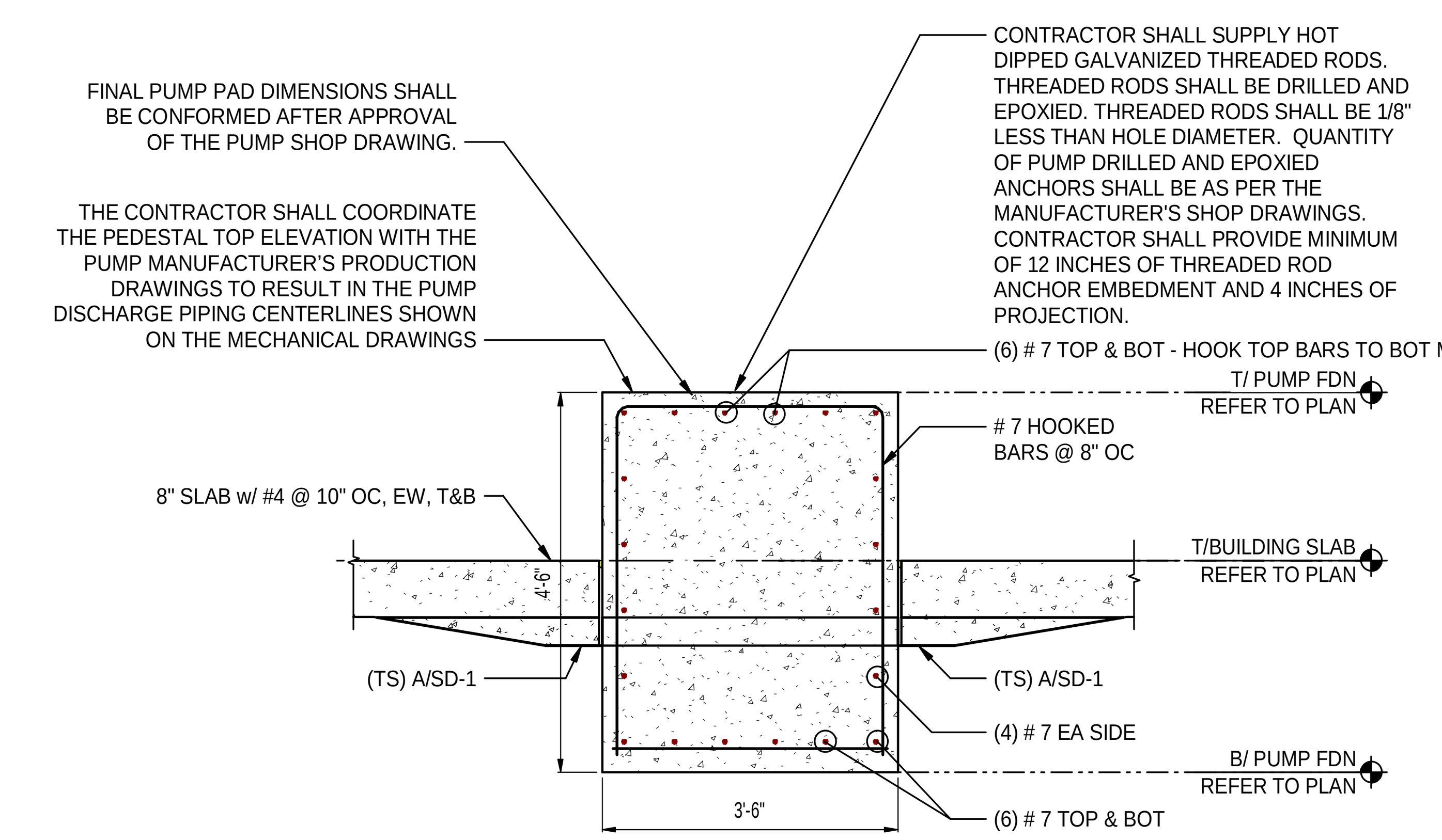
4 **SECTION @ CRANE COLUMN AND EXTERIOR WALL FOUNDATION**
1/2" =1'-0"



5 **EXTERIOR WALL FOUNDATION AT PUMP ROOM**
1/2" =1'-0"



6 **SECTION @ TRENCH**
1/2" =1'-0"



7 **SECTION @ PUMP FOUNDATION**
1/2" =1'-0"

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MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1990
Architects AA - C0000026
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

REVISIONS		
NO.	BY	DATE
6		
5		
4		
3		
2		
1		

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

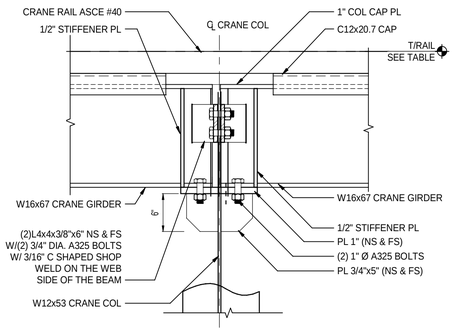
TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

FOUNDATION DETAILS

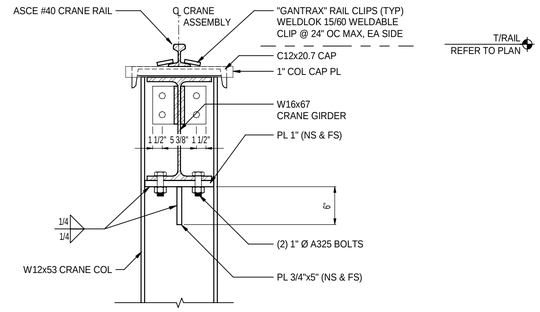
PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 43
DRAWING NO. S-10

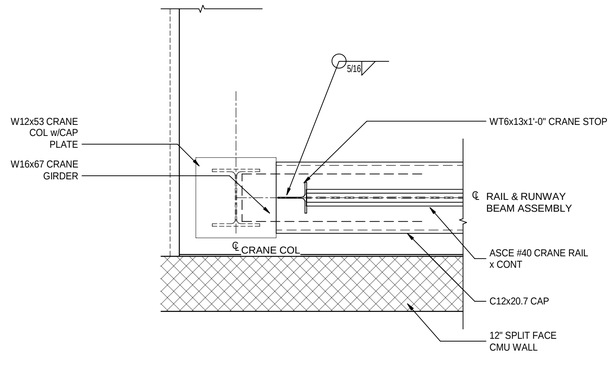
ISSUED FOR BID



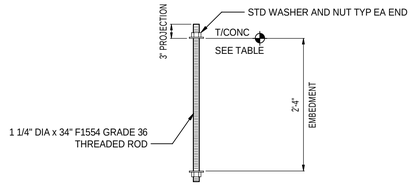
7 - CRANE ELEVATION AT COLUMN
1" = 1'-0"



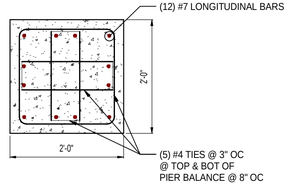
8 - CRANE SECTION AT COLUMN
1" = 1'-0"



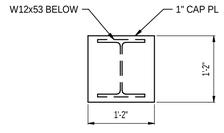
A - CRANE STOP DETAIL
3/4" = 1'-0"



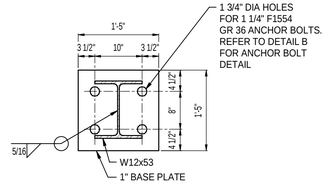
B - TYPICAL ANCHOR BOLT AT CRANE COLUMN BASE PLATE
3/4" = 1'-0"



C - SECTION @ CRANE PIER
3/4" = 1'-0"



D - CRANE CAP PLATE PLAN
3/4" = 1'-0"



E - TYPICAL CRANE COLUMN BASE PLATE
3/4" = 1'-0"

COMPONENT	BPS (FT)
B/SUMP PIT	43.00
T/TRENCH FDN	45.00
T/ PERIMETER FDN	VARIES, REFER TO PLAN
T/ INTERIOR FDN CMU WALL	VARIES, REFER TO PLAN
B/ PUMP FDN	49.50
T/ SLAB PUMP ROOM	52.00
T/ EXTERIOR CONC WALL	52.00
T/ PUMP FDN	54.00
EXISTING GRADE	SEE CIVIL
T/ RAIL	66.35
T/ CMU WALL TRUSS BEARING	72.67
T/ CMU WALL PARALLEL W/ JOISTS	73.13

ELEVATION TABLE

ISSUED FOR BID

MOTT MACDONALD
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Suite 300
Jacksonville, Florida 32256
Telephone: (904) 293-1090

Architects AA - C0000035
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Surveyors LB - 0000150

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

CRANE DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 44
DRAWING NO. S-11

4/13/2020 2:26:44 PM

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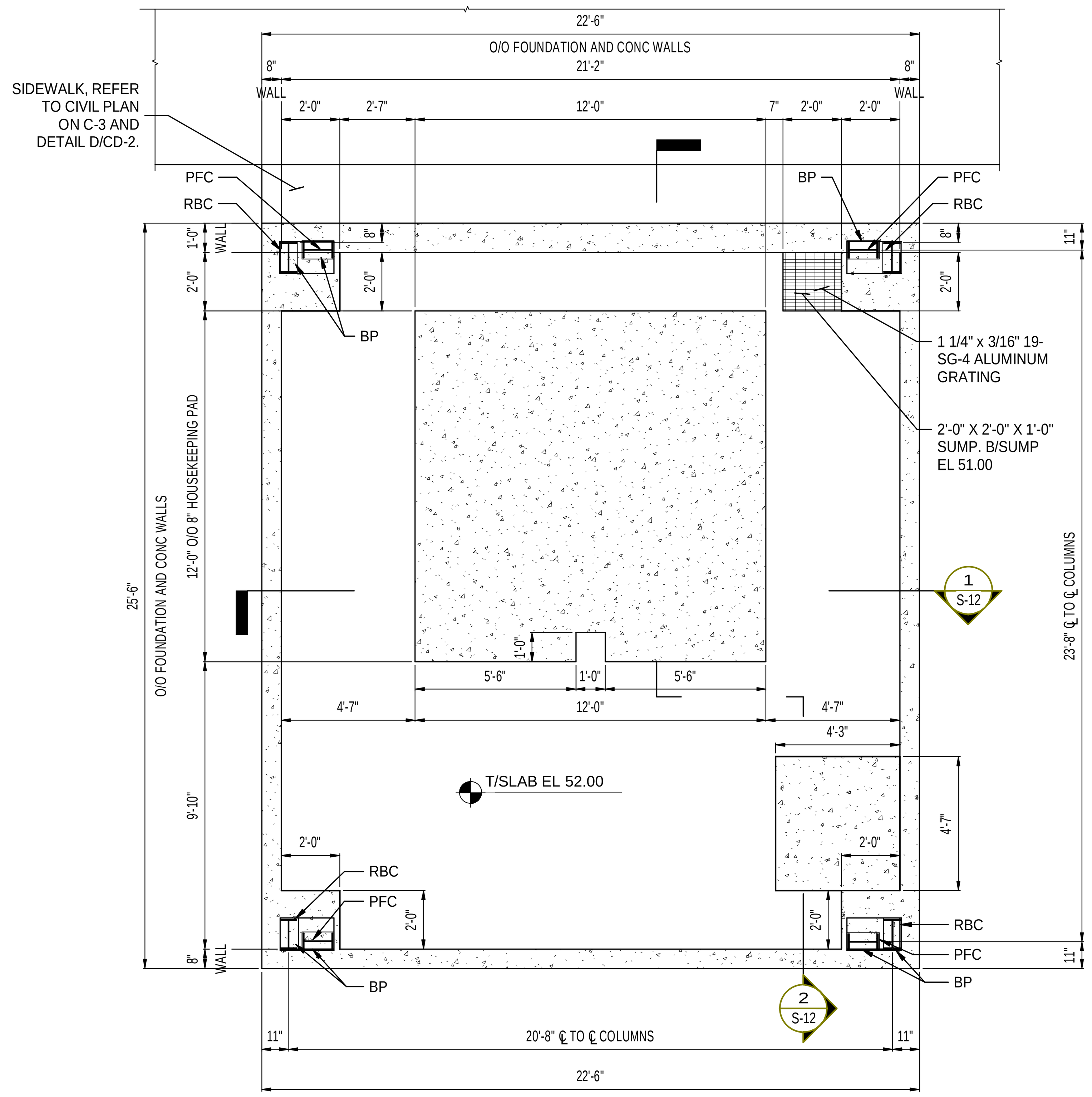
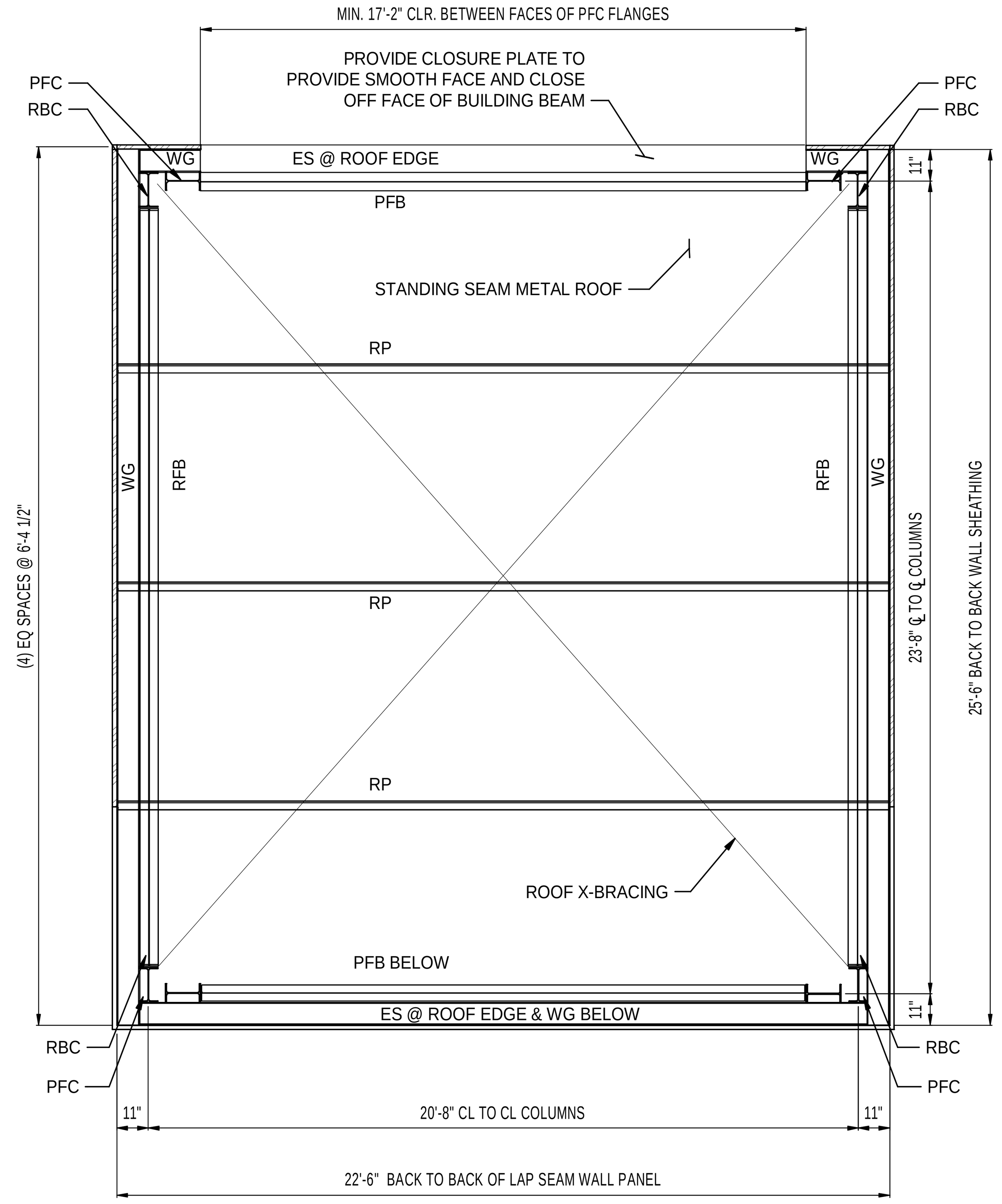
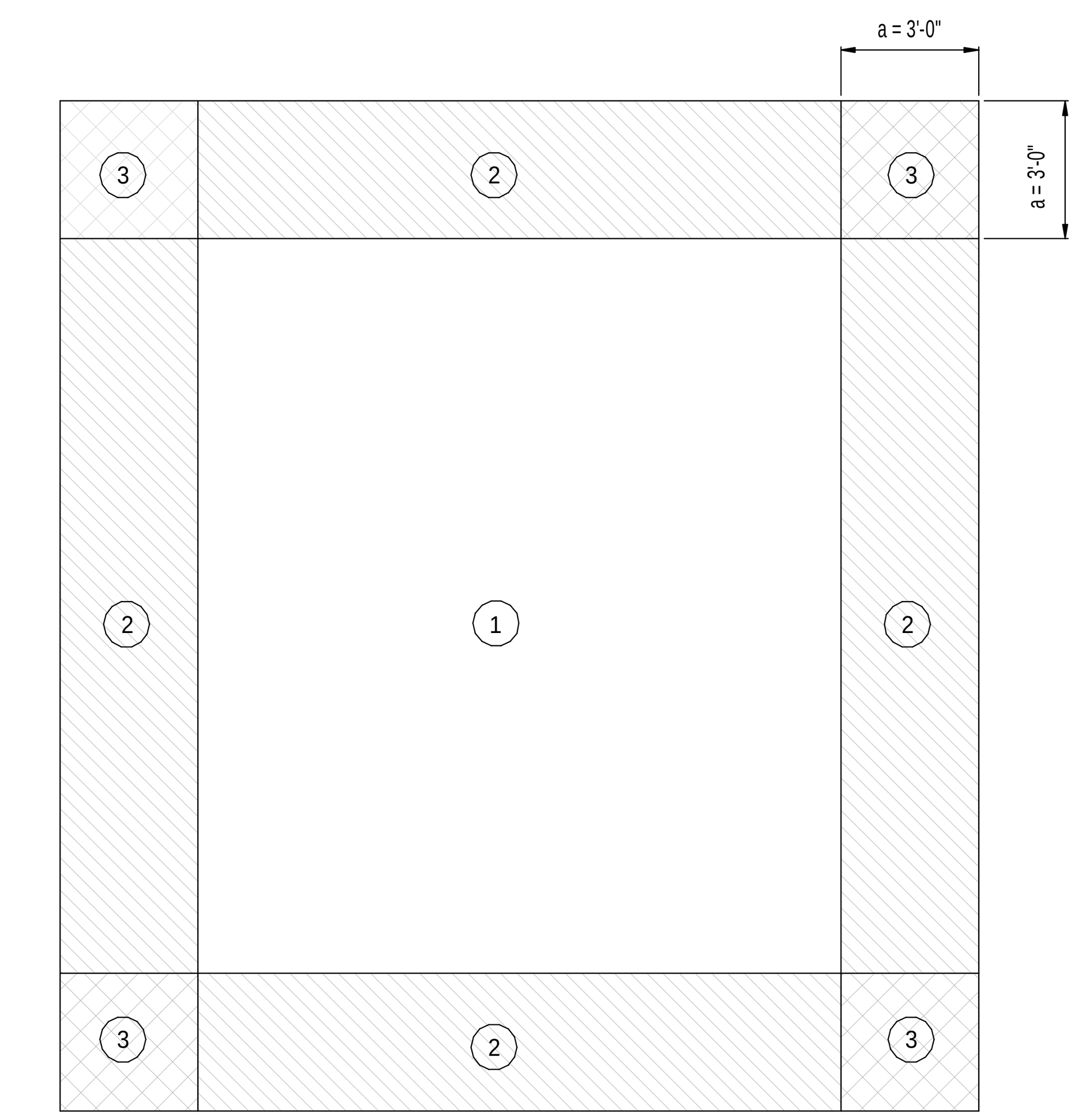


FOUNDATION AND SLAB PLAN
1/4" = 1'-0"

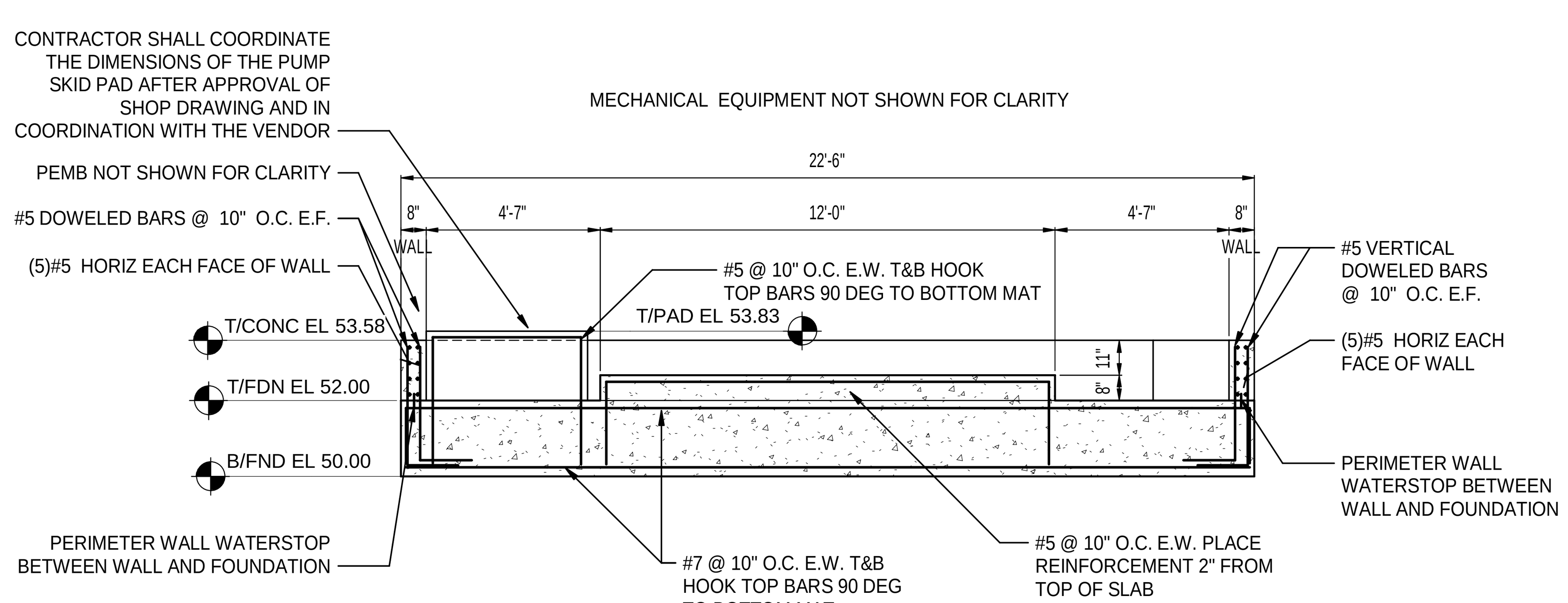


ROOF PLAN
1/4" = 1'-0"

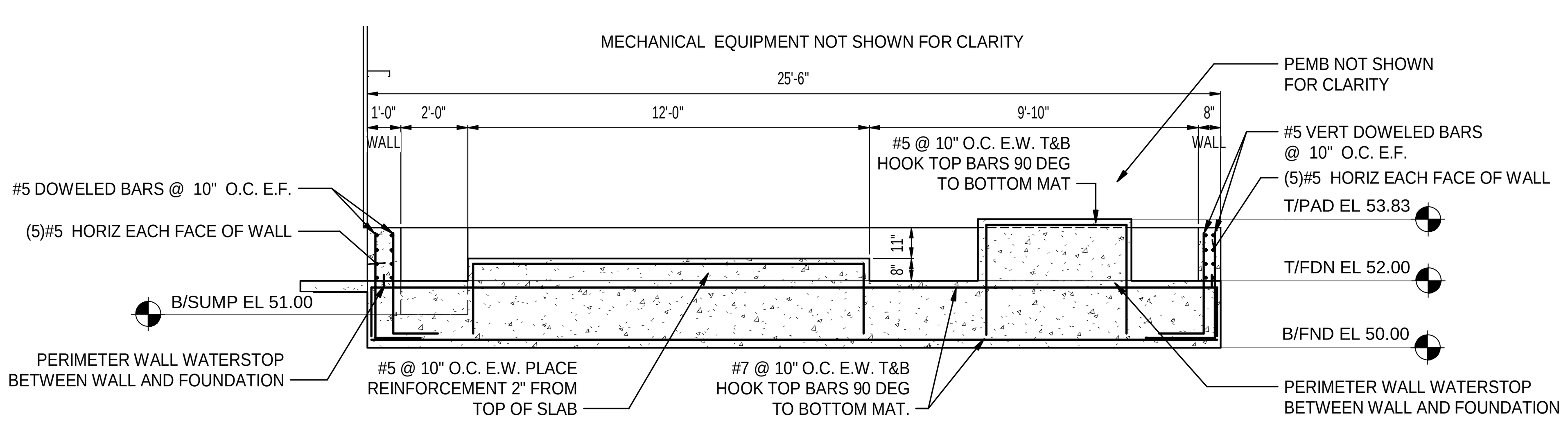


1. WALL SECTION EXTENDS FROM THE CORNERS OF THE BUILDING 3'-0". THE BALANCE OF THE WALL SECTION IS ZONE 4.
2. COMPONENT AND CLADDING PRESSURES SHOWN BELOW ARE ALLOWABLE STRESS PRESSURES AND MAY NOT BE REDUCED BY 0.6.

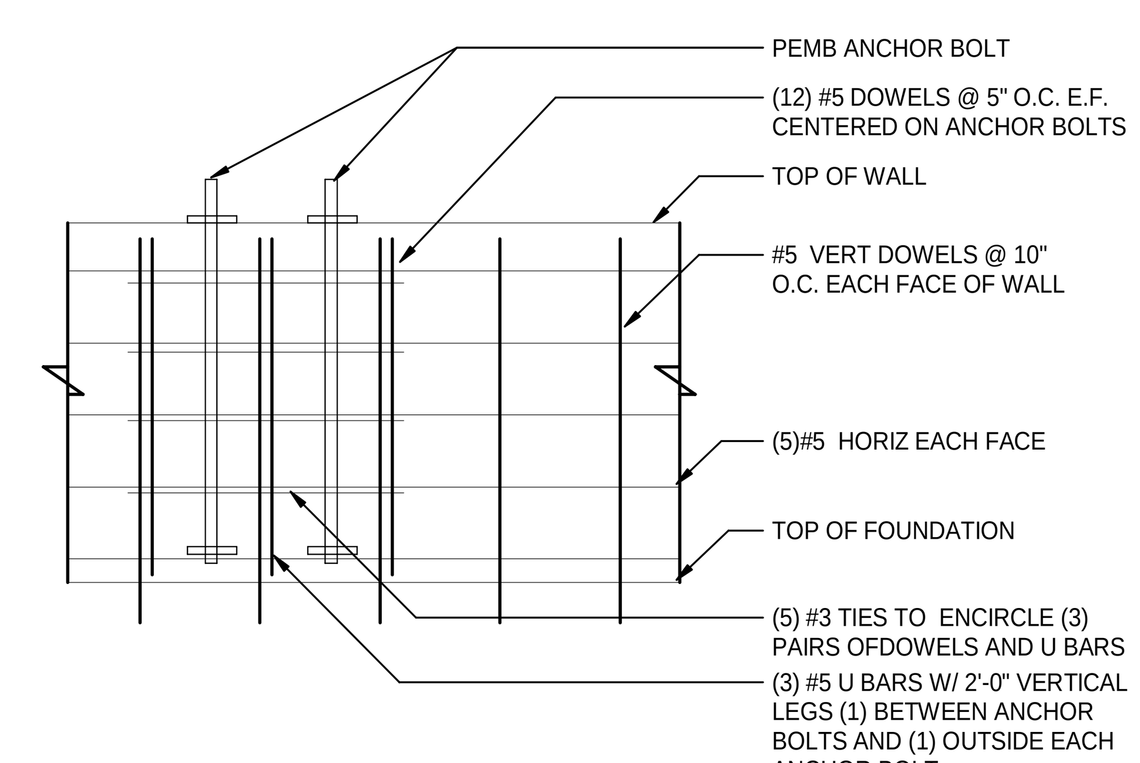
ROOF UPLIFT PLAN
1/4" = 1'-0"



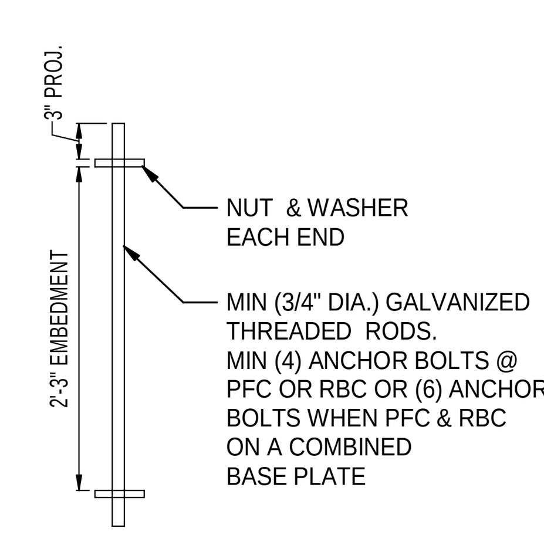
1 - LATERAL FOUNDATION SECTION
1/4" = 1'-0"



2 - LONGITUDINAL FOUNDATION SECTION
1/4" = 1'-0"



WALL REINFORCING @ ANCHOR BOLTS
3/4" = 1'-0"



ANCHOR BOLT DETAILS
3/4" = 1'-0"

ROOF PRESSURES				
ZONE	EFFECTIVE AREA (FT²)	PRESSURE (PSF)		
		POSITIVE	NEGATIVE	ROOF OVERHANG
1	10	20.5	-37.5	-41.1
	20	19.8	-36.7	-40.4
	50	18.9	-35.8	-39.4
	100	18.1	-35.0	-38.7
2	10	20.5	-56.8	-41.1
	20	19.8	-51.7	-40.4
	50	18.9	-45.0	-39.4
	100	18.1	-39.9	-38.7
3	10	20.5	-81.0	-67.7
	20	19.8	-68.6	-53.1
	50	18.9	-52.2	-33.9
	100	18.1	-39.9	-19.3

WALL PRESSURES			
ZONE	EFFECTIVE AREA (FT²)	PRESSURE (PSF)	
		POSITIVE	NEGATIVE
4	10	33.7	-35.9
	20	32.6	-34.7
	50	31.0	-33.2
	100	29.9	-32.0
5	10	33.7	-42.4
	20	32.6	-40.1
	50	31.0	-37.0
	100	29.9	-34.7

SODIUM HYPOCHLORITE = PARTIALLY ENCLOSED BUILDING

ROOF AND WALL PRESSURES

PRE-ENGINEERED METAL BUILDING (PEMB) LEGEND
1. BEA = BASE EDGE ANGLE
2. BP = BASE PLATE
3. ES = EAVE STRUT
4. LSWP = LAP SEAM WALL PANEL
5. PFB = PORTAL FRAME BEAM
6. PFC = PORTAL FRAME COLUMN
7. RBC = RIGID BENT COLUMN
8. RFB = RIGID FRAME BENT
9. RP = ROOF PURLIN
10. SSMR = STANDING SEAM METAL ROOF. REFER TO SECTION 13419.
11. WG = WALL GIRT
12. REFER TO SECTION 09900 FOR ROOFING & SIDING GALVANIZING REQUIREMENTS.
13. REFER TO SECTION 09900 FOR KYNAR FINISH ON ROOFING.

PEMB LEGEND

1. ROOF MAX. DL = 12 PSF
2. ROOF MIN. DL = 5 PSF
3. ROOF LIVE LOAD = 20 PSF
4. WIND SPEED = REFER TO S-1
5. WIND LOAD C&C PRESSURES = REFER TO S-12
6. SEISMIC REQUIREMENTS = REFER TO S-1

PEMB LOADING CRITERIA

ALL INTERIOR CONCRETE SURFACES OF THE SODIUM HYPOCHLORITE CONTAINMENT STRUCTURE SHALL BE COATED. COATING SHALL BE APPLIED ON THE SLAB AND TANK AND PUMP PADS FROM THE TOP OF FOUNDATION TO THE TOP EDGE OF THE CONCRETE WALL. REFER TO SECTION 09900 FOR COATING REQUIREMENTS.

SODIUM HYPOCHLORITE CONCRETE COATING

0 6" 1' 2' 3'
SCALE: 3/4" = 1'-0"

0 1' 2' 4' 8'
SCALE: 1/4" = 1'-0"

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Engineers EB - 0000155
Surveyors LB - 0006783

REVISIONS
NO.	DATE	BY	REVISIONS
6			
5			
4			
3			
2			
1			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community℠

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II
SODIUM HYPOCHLORITE STORAGE AND FEED
SYSTEM PLAN & DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 45
DRAWING NO. S-12

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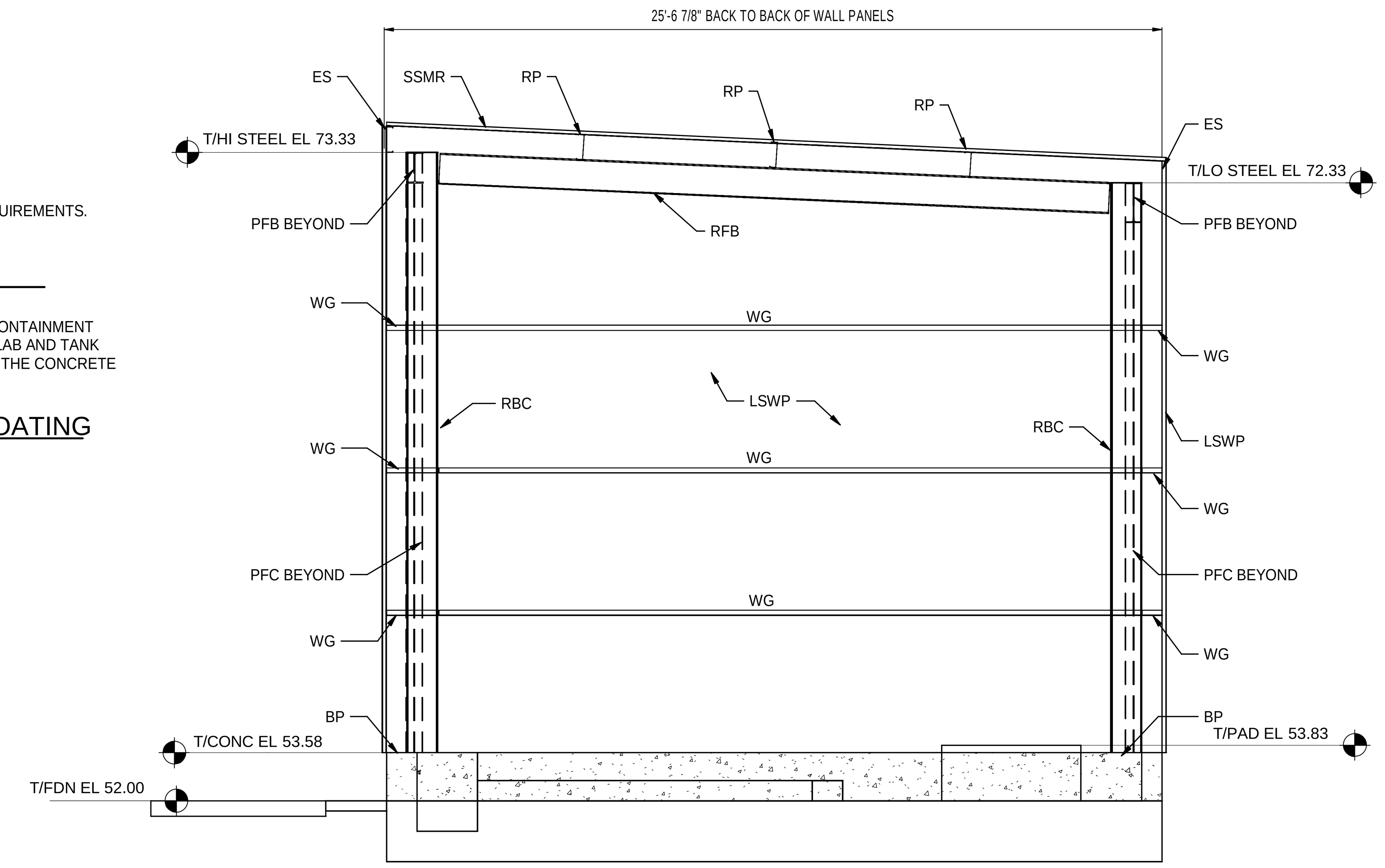
PRE-ENGINEERED METAL BUILDING(PEMB) LEGEND

1. BEA = BASE EDGE ANGLE
2. BP = BASE PLATE
3. ES = EAVE STRUT
4. LSWP = LAP SEAM WALL PANEL
5. PFB = PORTAL FRAME BEAM
6. PFC = PORTAL FRAME COLUMN
7. RBC = RIGID BENT COLUMN
8. RFB = RIGID FRAME BENT
9. RP = ROOF PURLIN
10. SSMR = STANDING SEAM METAL ROOF. REFER TO SECTION 13419.
11. WG = WALL GIRT
12. REFER TO SECTION 09900 FOR ROOFING & SIDING GALVANIZING REQUIREMENTS.
13. REFER TO SECTION 09900 FOR KYNAR FINISH ON ROOFING.

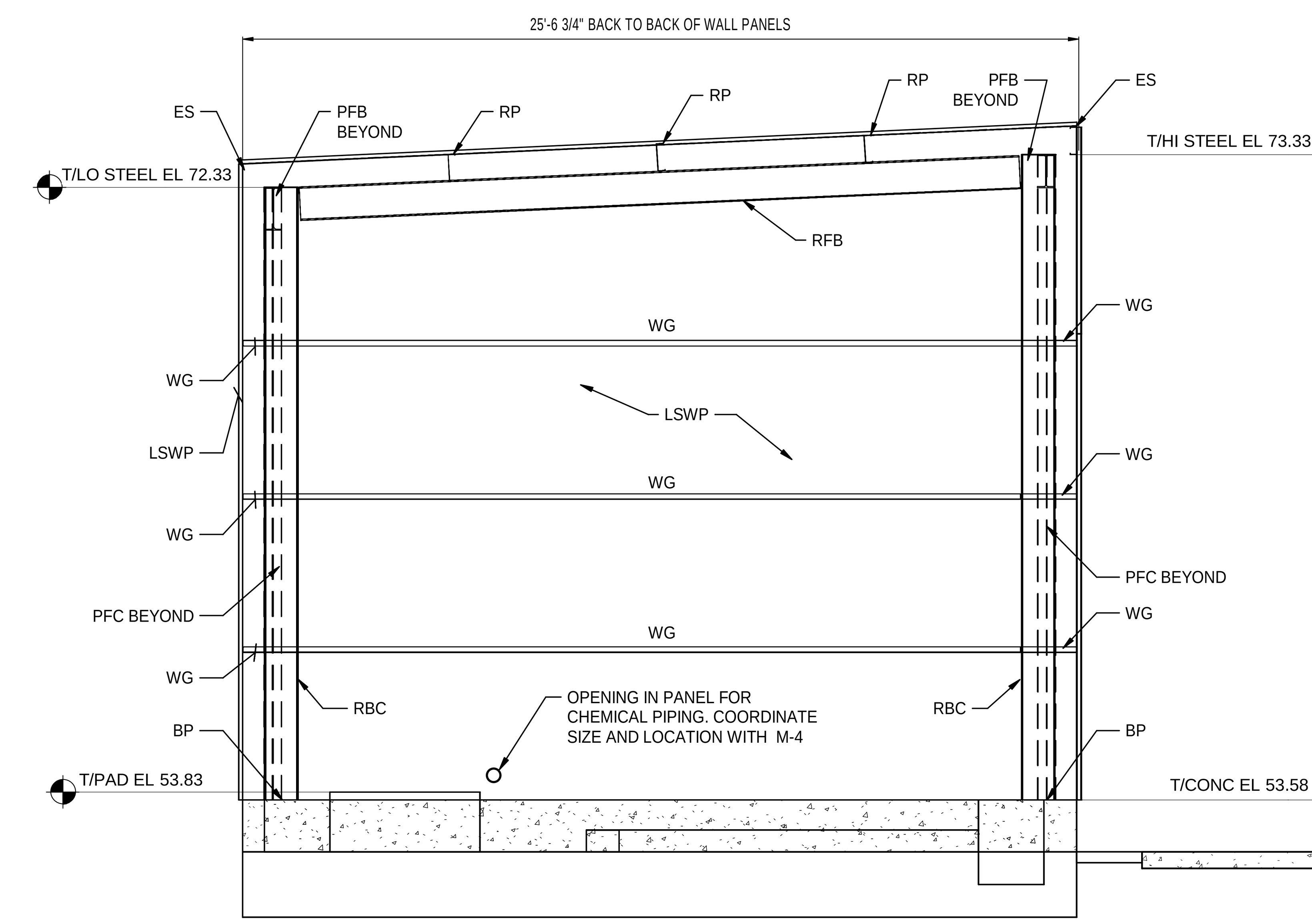
PEMB LEGEND

ALL INTERIOR CONCRETE SURFACES OF THE SODIUM HYPOCHLORITE CONTAINMENT STRUCTURE SHALL BE COATED. COATING SHALL BE APPLIED ON THE SLAB AND TANK AND PUMP PADS FROM THE TOP OF FOUNDATION TO THE TOP EDGE OF THE CONCRETE WALL. REFER TO SECTION 09900 FOR COATING REQUIREMENTS.

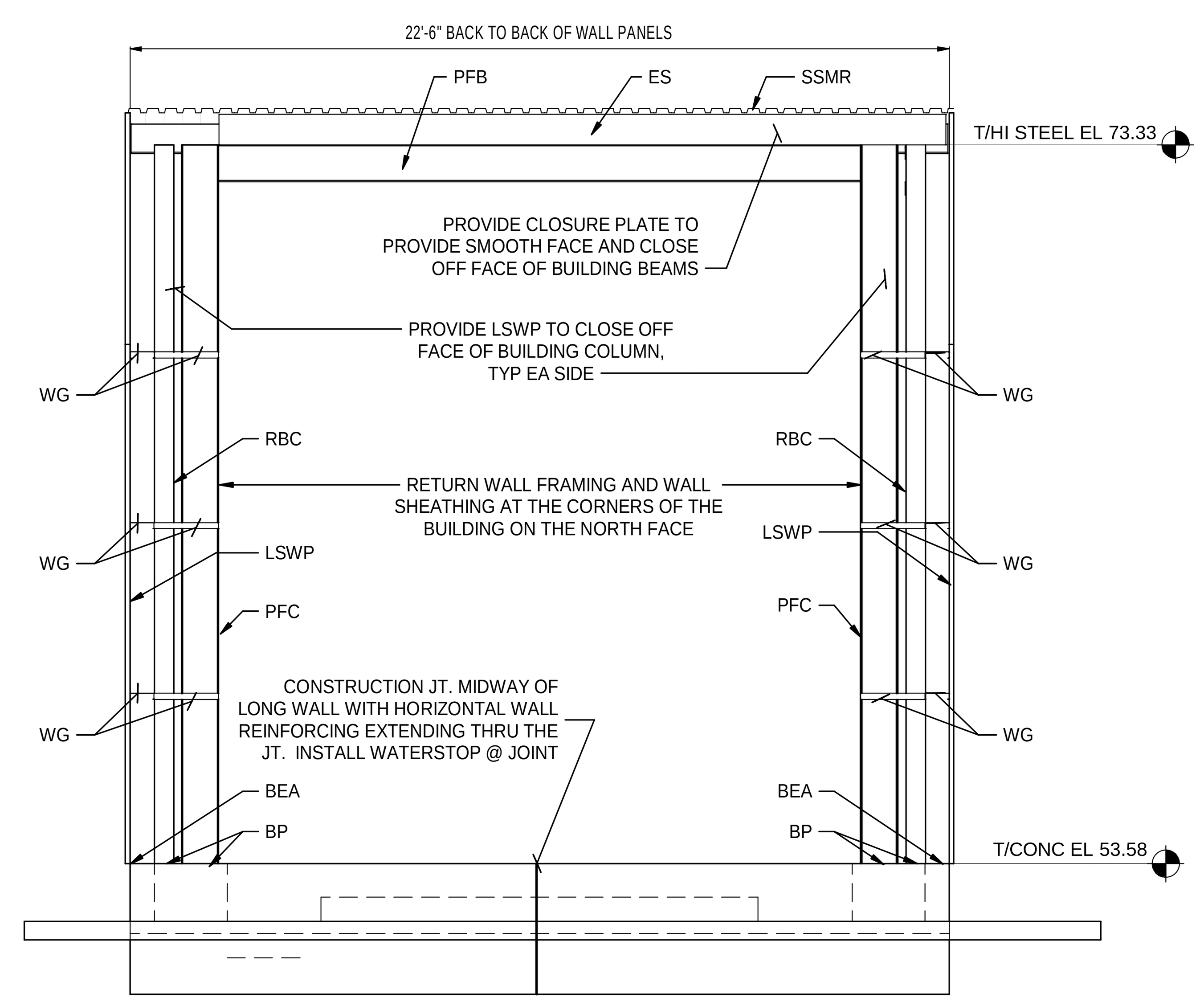
SODIUM HYPOCHLORITE CONCRETE COATING



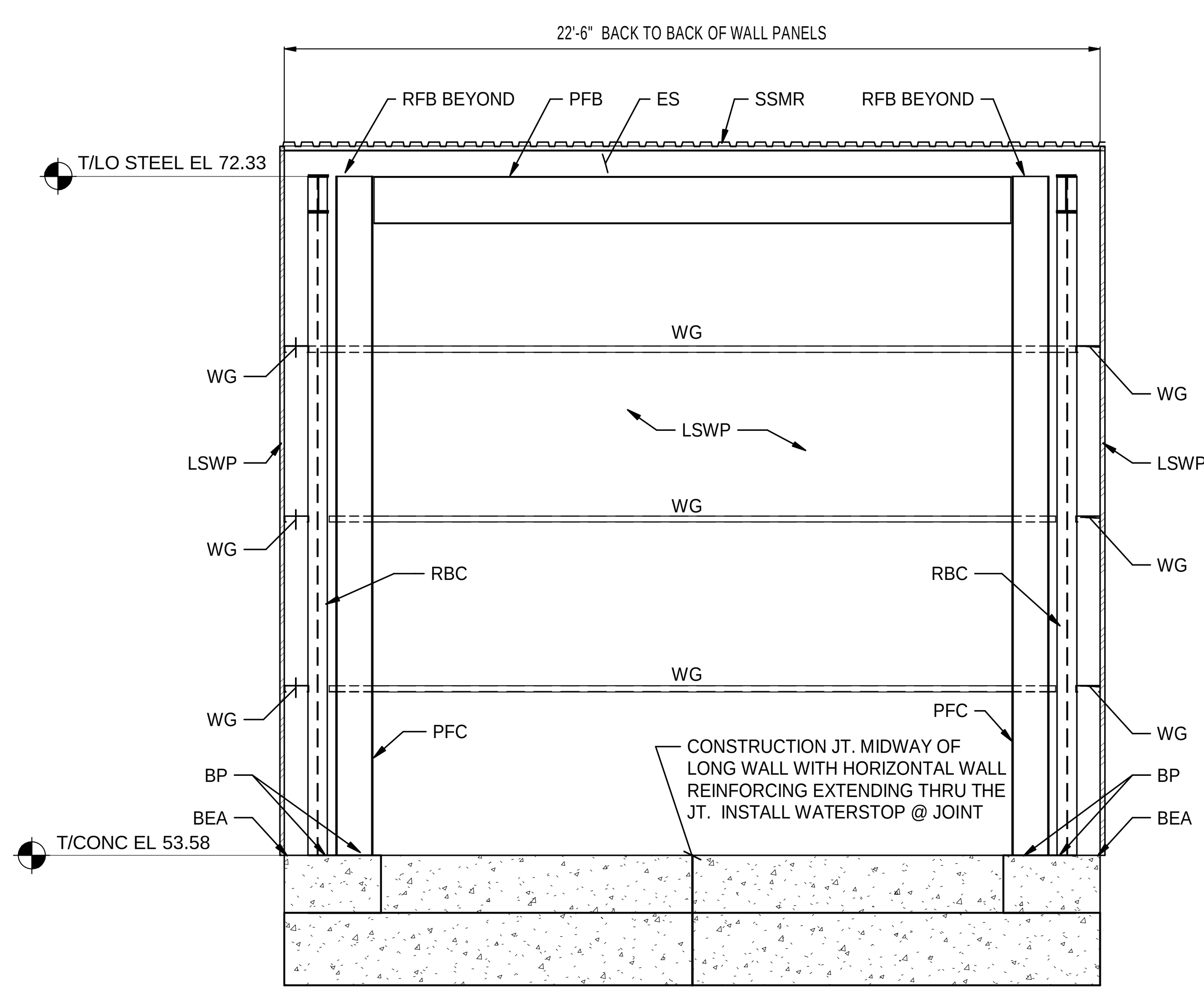
WEST FRAMING ELEVATION
1/4" = 1'-0"



EAST FRAMING ELEVATION
1/4" = 1'-0"



NORTH FRAMING ELEVATION
1/4" = 1'-0"



SOUTH FRAMING ELEVATION
1/4" = 1'-0"

ISSUED FOR BID

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10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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1.			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM CANOPY SECTIONS AND ELEVATIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 46
DRAWING NO. S-13

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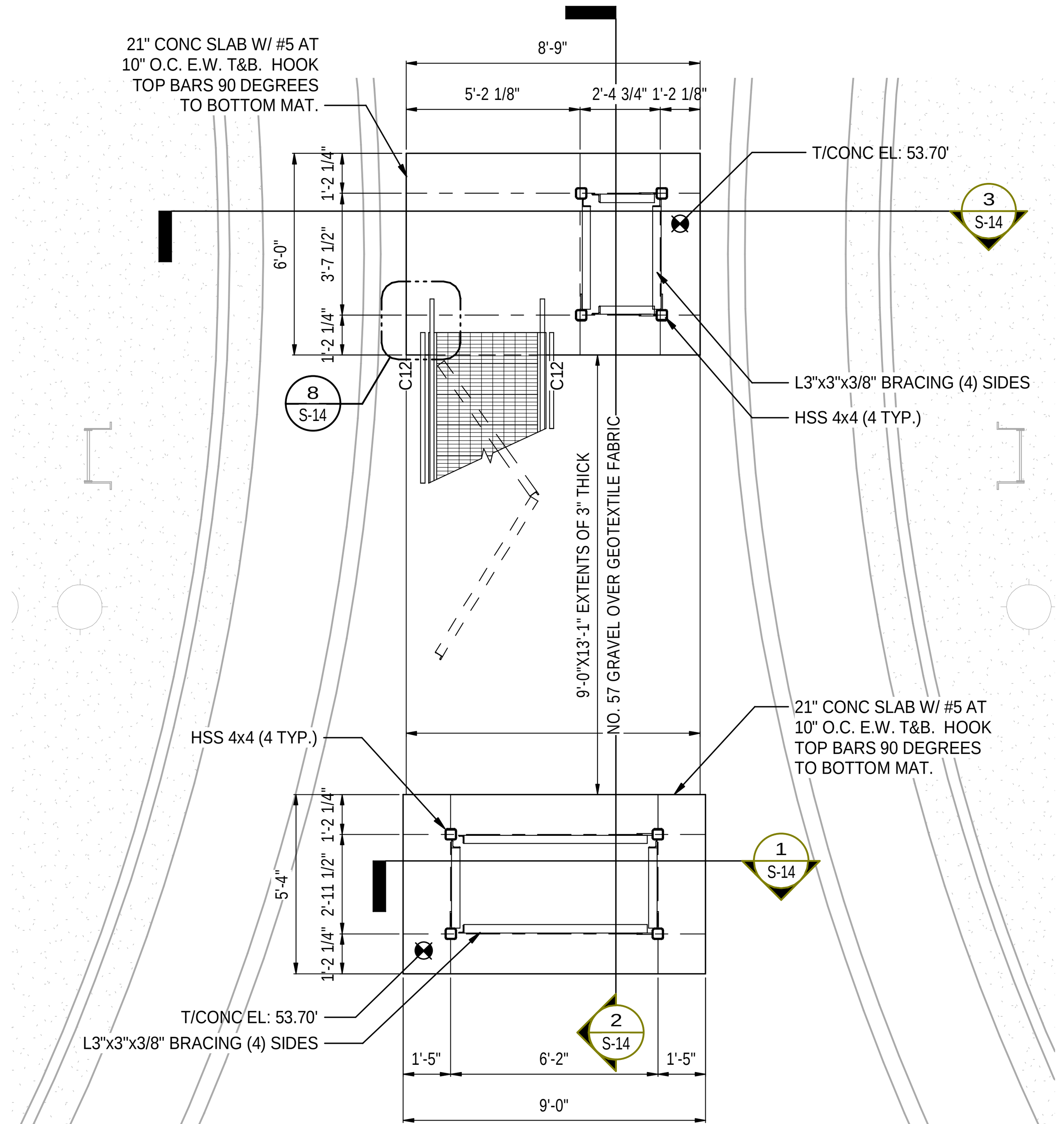
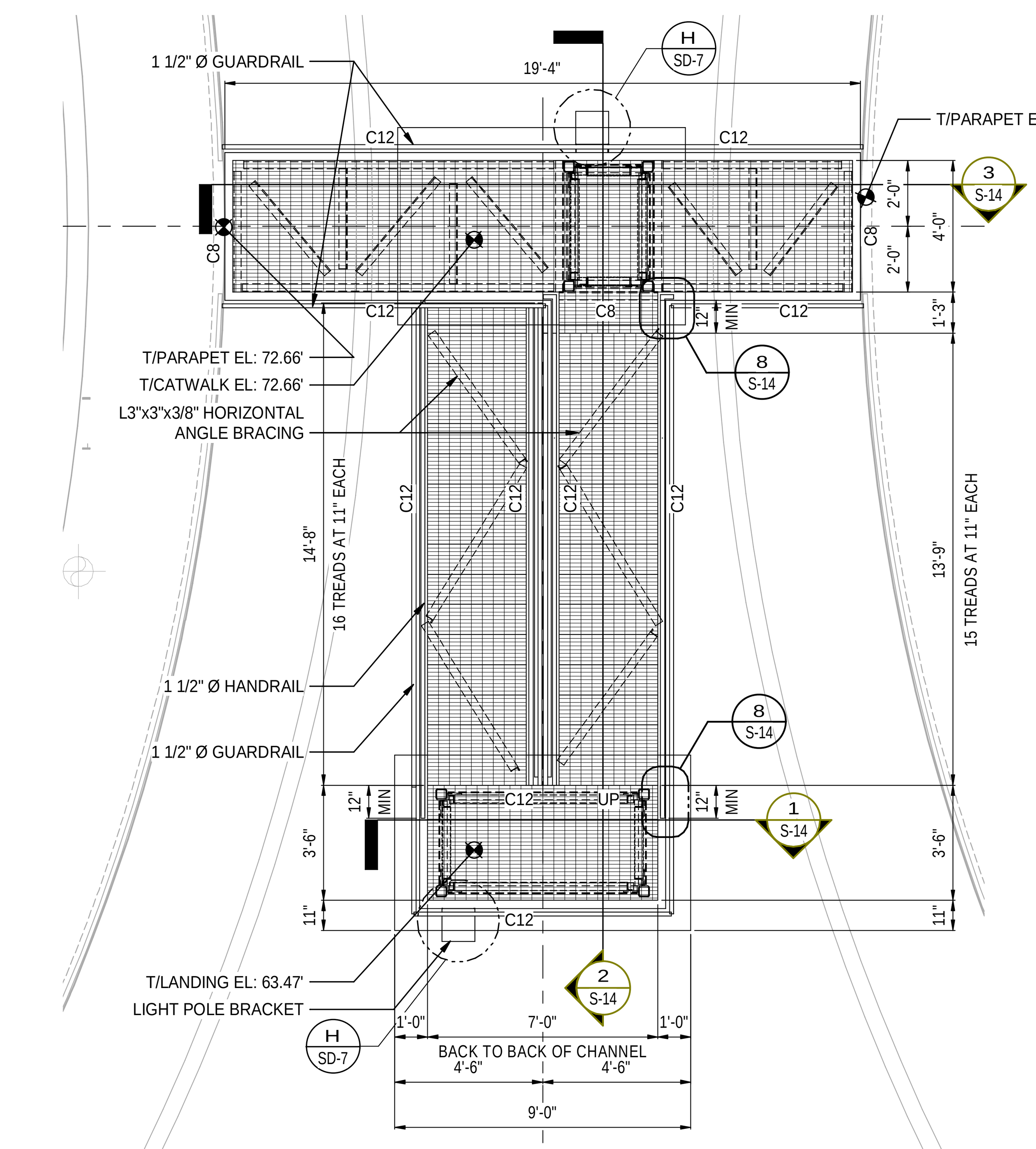
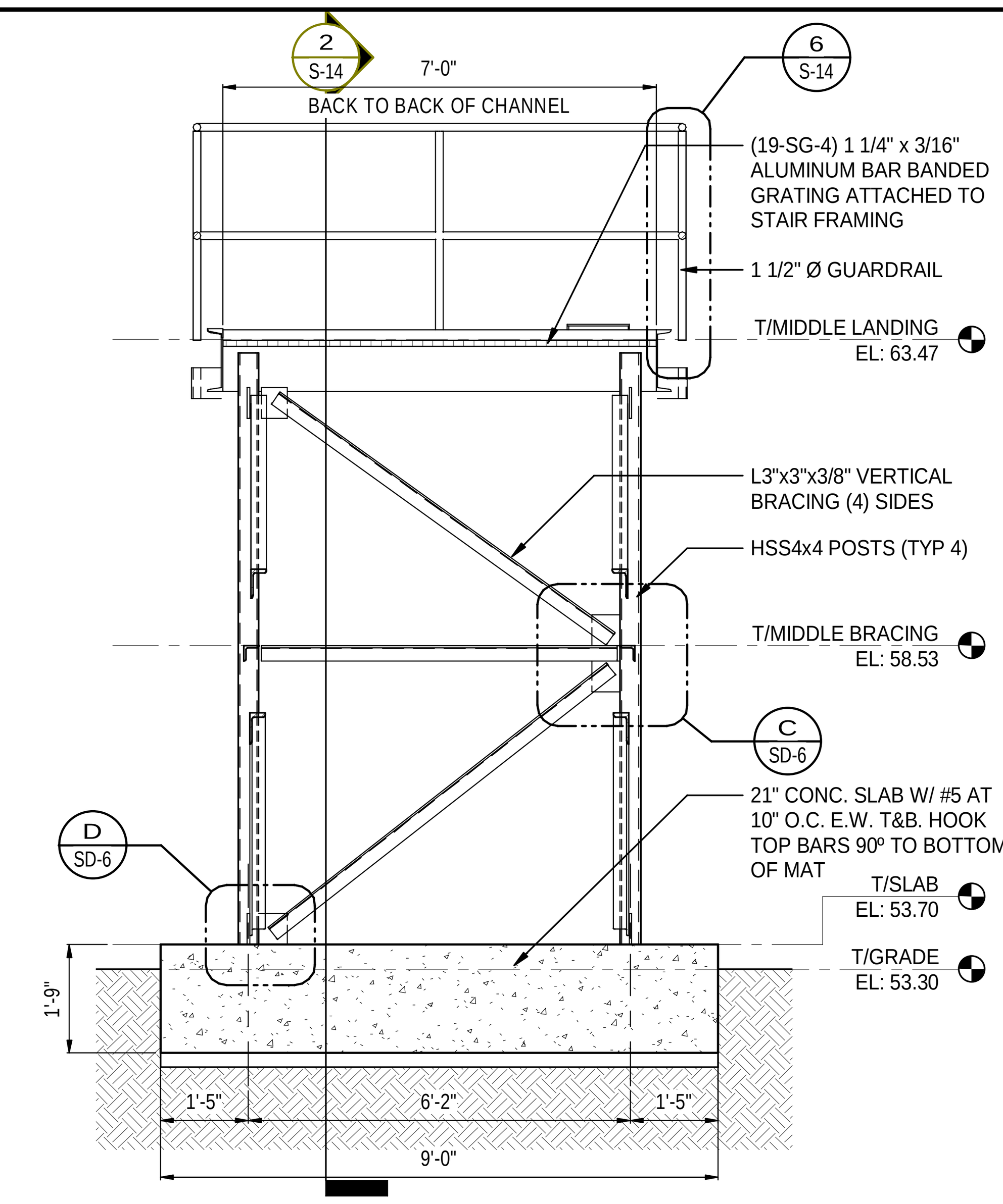


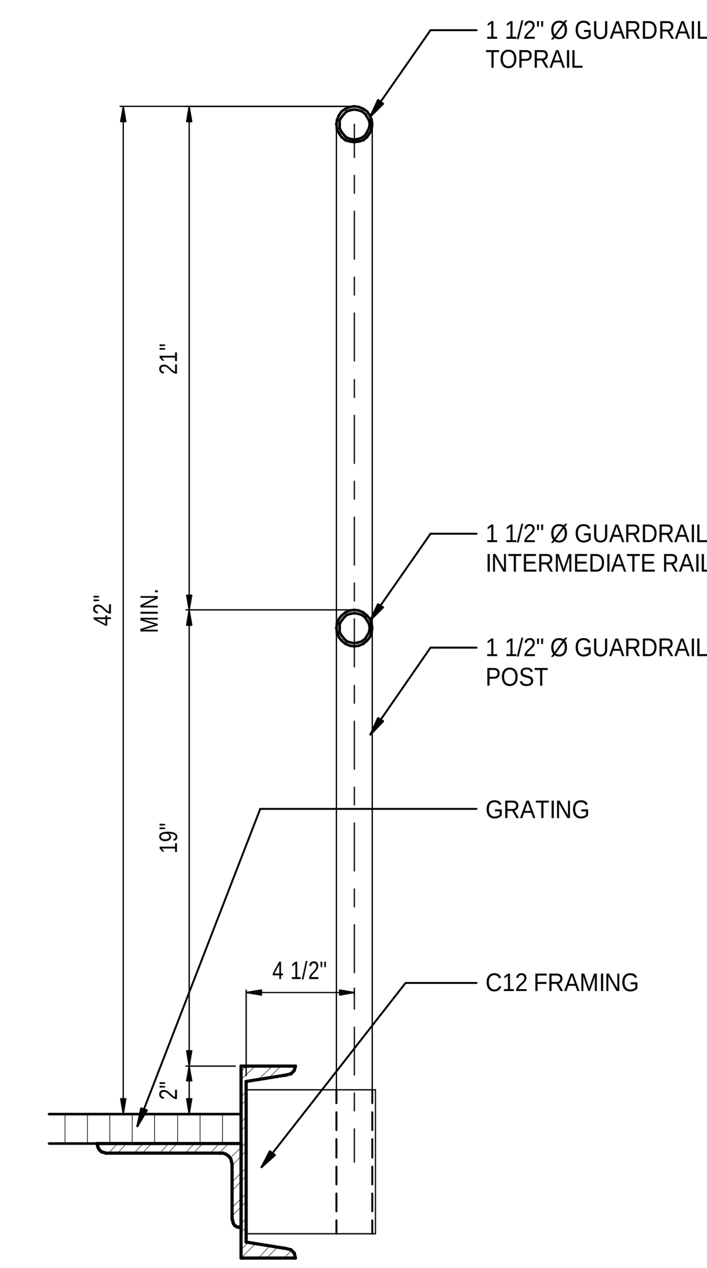
GST NO. 1 & 2 STAIR FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



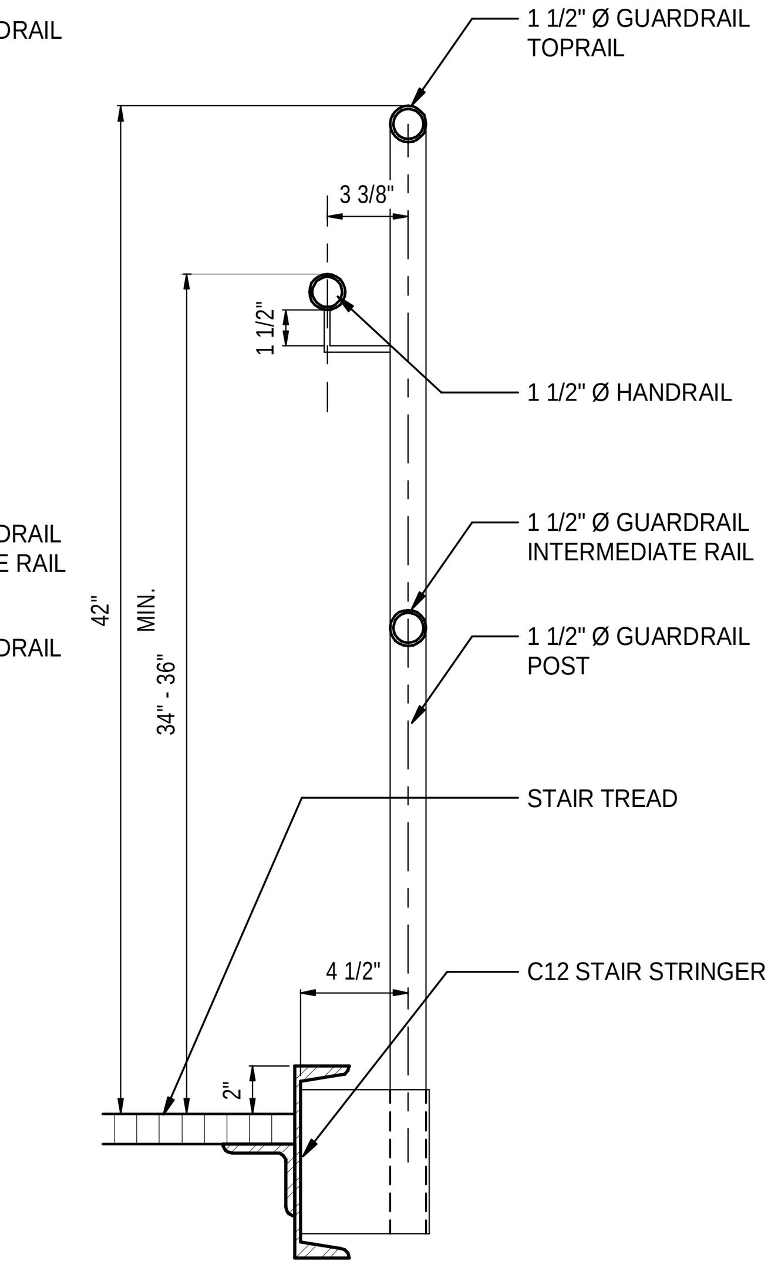
GST 1 & 2 STAIR PLAN
SCALE: 1/4" = 1'-0"



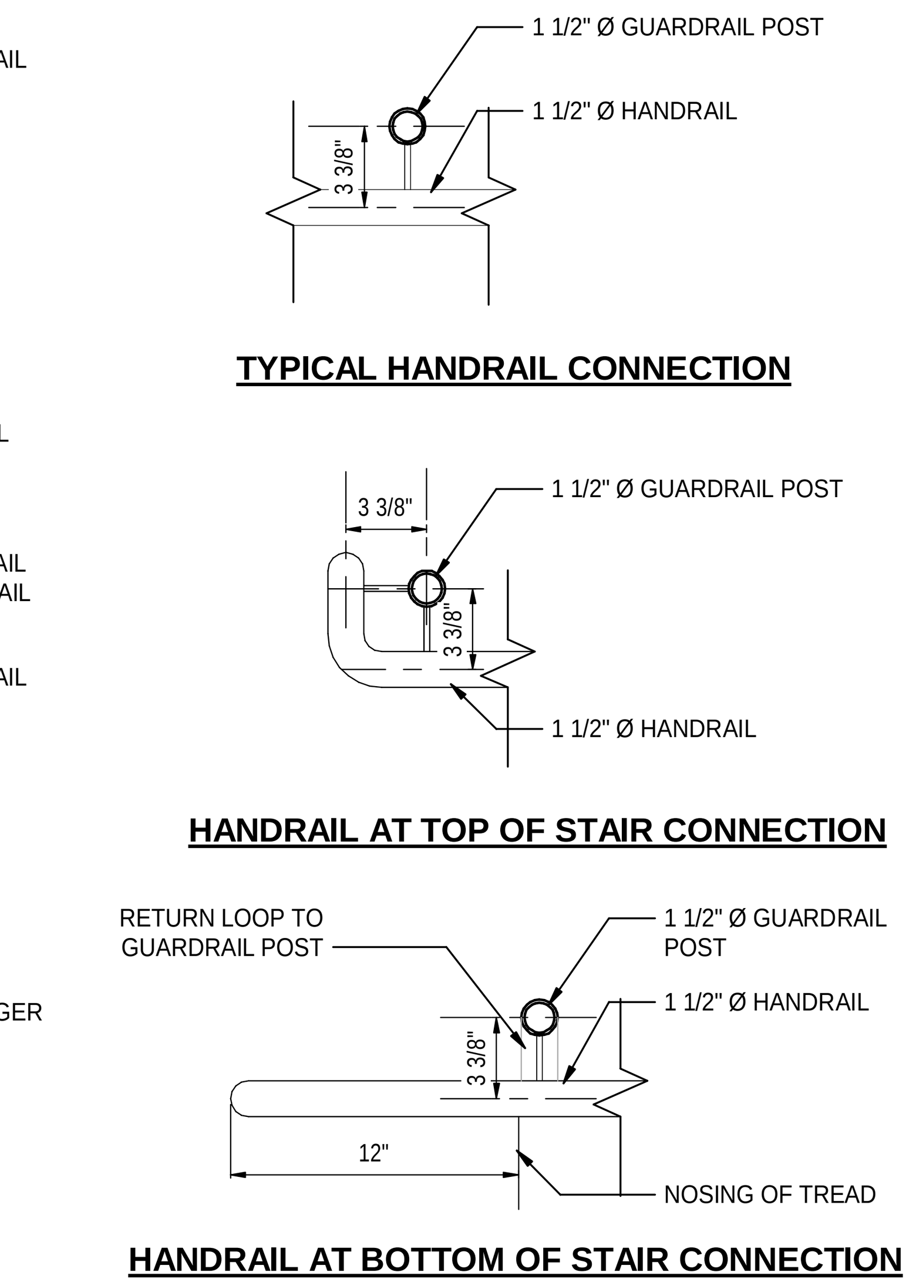
1 STAIR SECTION AT MIDDLE LANDING
3/8" = 1'-0"



6 GUARDRAIL DETAIL
1 1/2" = 1'-0"



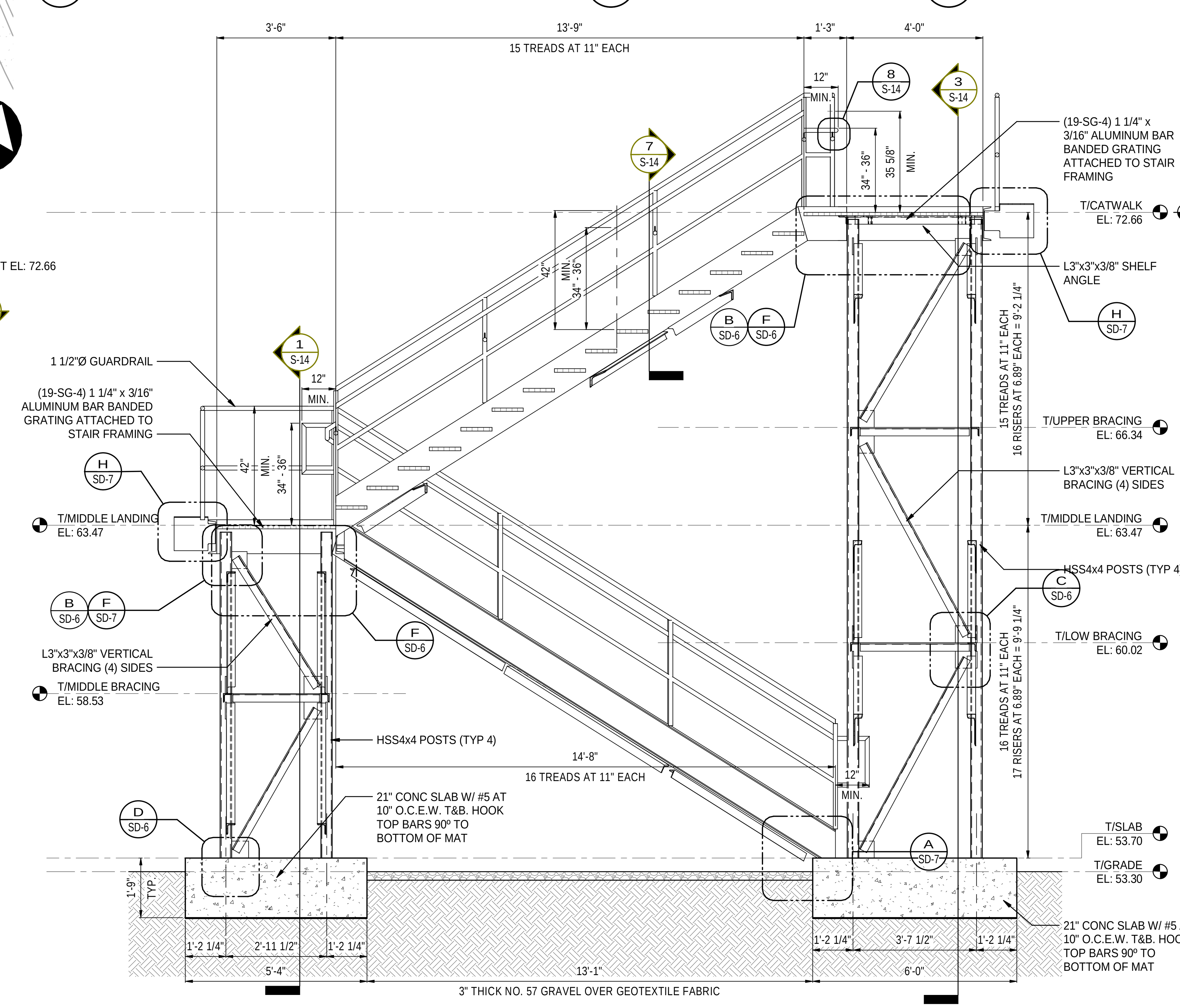
7 GUARDRAIL / HANDRAIL DETAIL
1 1/2" = 1'-0"



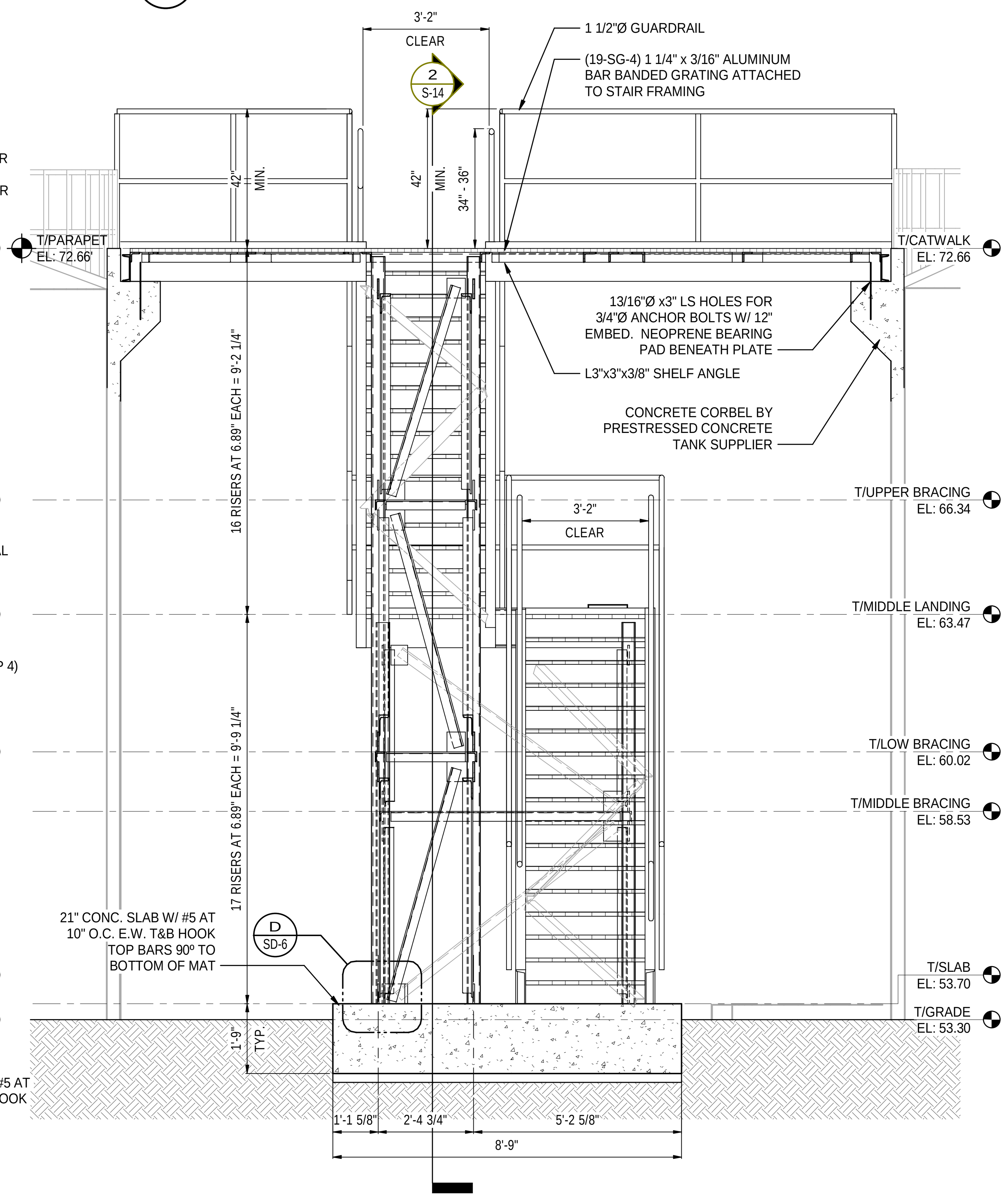
8 HANDRAIL CONNECTION DETAILS
1 1/2" = 1'-0"

ALUMINUM STAIR COMPONENTS

1. ALUMINUM STAIR STRINGERS: C12x10.4
2. ALUMINUM STAIR POSTS: HSS4x4x3/8
3. ALUMINUM GRATING: 19-SG-4 (1 1/4"x3/16")
4. ALUMINUM GUARDRAIL: 1 1/2"Ø SCHEDULE 40
5. ALUMINUM HANDRAIL: 1 1/2"Ø SCHEDULE 40
6. ALL COMPONENTS SHALL BE 6061-T6



2 LONGITUDINAL STAIR SECTION
3/8" = 1'-0"



3 STAIR SECTION AT UPPER LANDING
3/8" = 1'-0"

MOTT MACDONALD

MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1990

NO.	DATE	BY	REVISIONS
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DESIGN ENGINEER: CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE- PUMP STATION IMPROVEMENTS - PHASE II
STAIR PLANS AND SECTIONS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 47
DRAWING NO. S-14

ISSUED FOR BID

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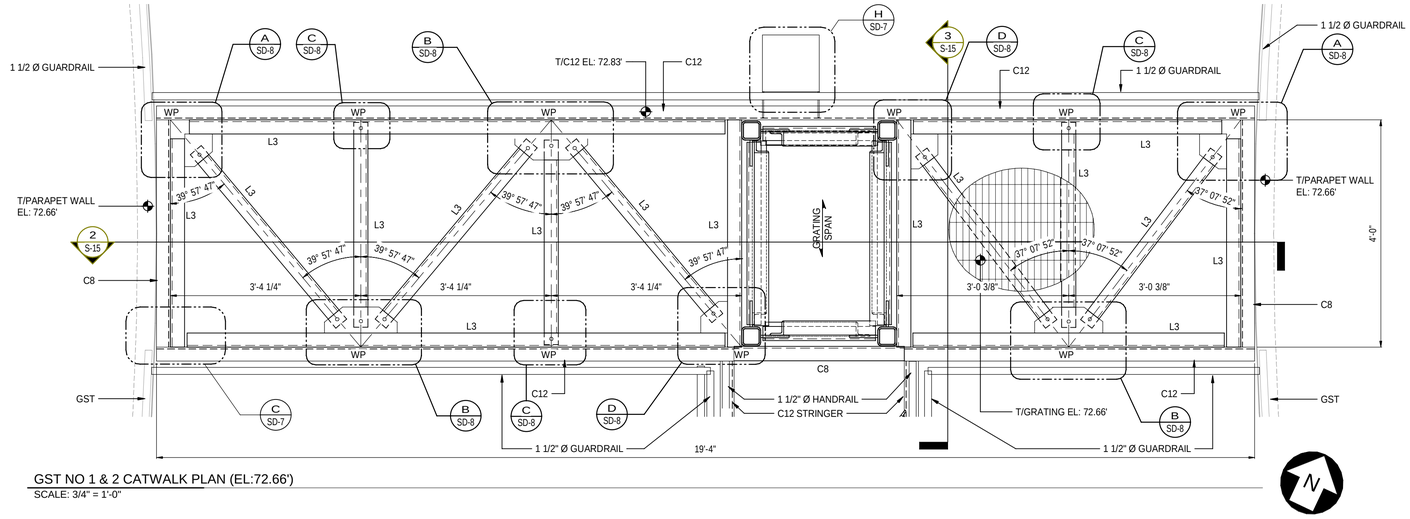

GST NO 1 & 2 CATWALK PLAN (EL:72.66')

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

ALUMINUM CATWALK COMPONENTS

1. CATWALK STRINGERS: C12x10.4
2. CATWALK STRINGER AT STAIR: C8x6.48
3. HORIZONTAL / DIAGONAL BRACING: L3"x3"x3/8"
4. ANGLE SHELF SUPPORT FOR GRATING: L3"x3"x3.8"
5. ALUMINUM GUARDRAIL: 1 1/2"Ø SCHEDULE 40
6. ALL COMPONENTS SHALL BE 6061-T6

2 / - LONGITUDINAL SECTION AT CATWALK

3/4" = 1'-0"

3 / - TRANSVERSE SECTION AT CATWALK

3/4" = 1'-0"

ISSUED FOR BID

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Suite 200
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Architects AA - C0000035
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Surveyors LB - 0000035

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DESIGN ENGINEER
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DESIGNER: C. LYNER
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JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II
CATWALK PLAN AND DETAILS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 44
DRAWING NO. S-15

4/13/2020 2:30:52 PM

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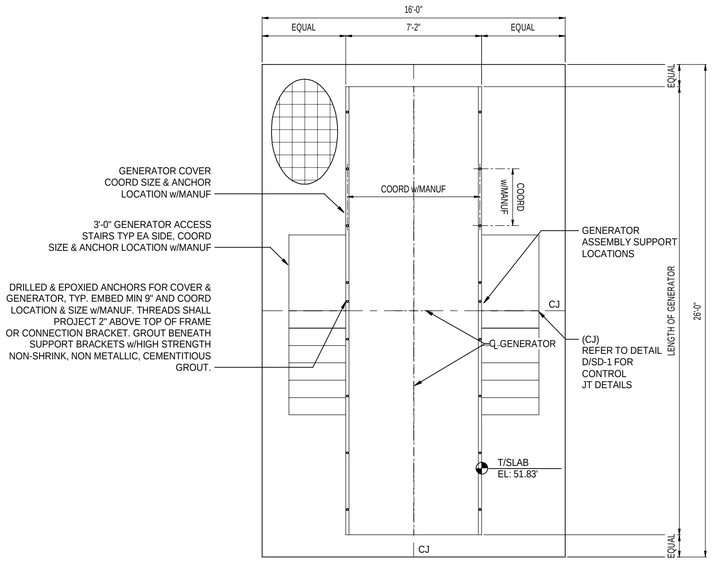
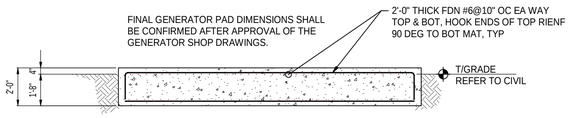
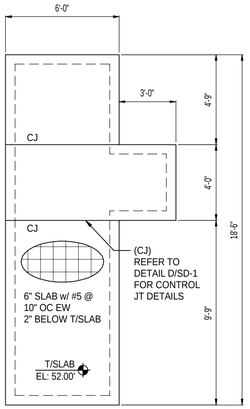


PLAN



SECTION

A GENERATOR FOUNDATION PLAN
1/4" = 1'-0"



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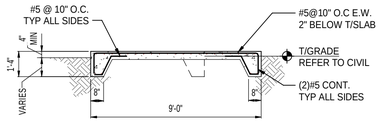
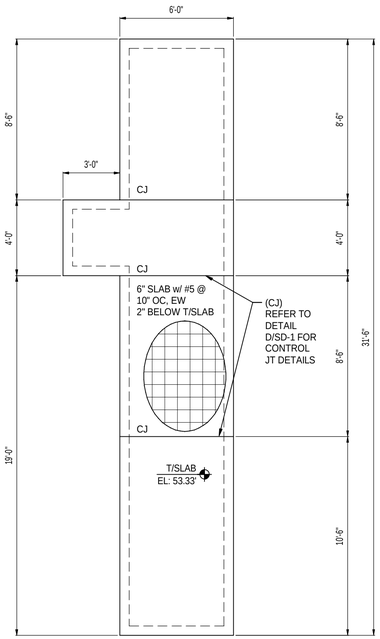
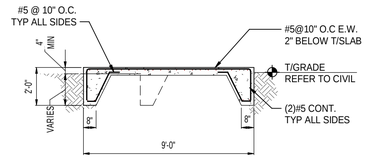


SECTION

B RECLAIMED WATER EFFLUENT FLOW METER PAD
1/4" = 1'-0"

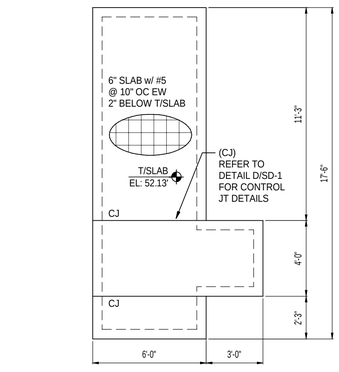


PLAN

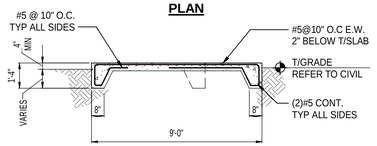


SECTION

C TANK FILL VALVE PAD
1/4" = 1'-0"



PLAN



SECTION

D RECLAIMED WATER BYPASS AND FLOW METER PAD
1/4" = 1'-0"

0 1' 2' 4' 8'
SCALE: 1/4" = 1'-0"

ISSUED FOR BID

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10200 Centurion Parkway North
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Telephone: (904) 233-1090

Architects AA - C0000035
Engineers EB - 0000035
Surveyors LB - 0000035

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

MISCELLANEOUS SLAB AND FOUNDATIONS DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 49
DRAWING NO. S-145

4/13/2020 2:26:46 PM

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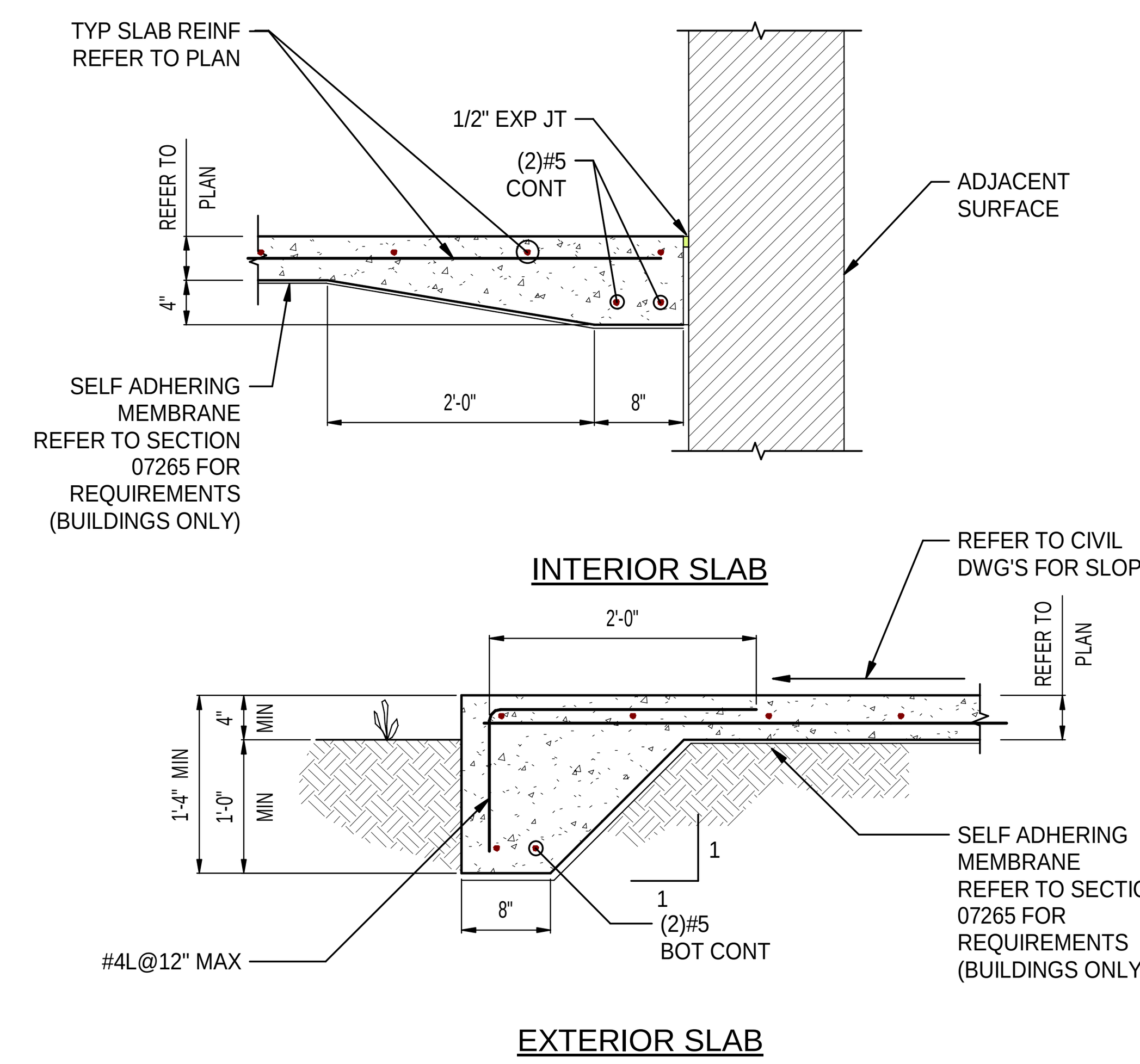
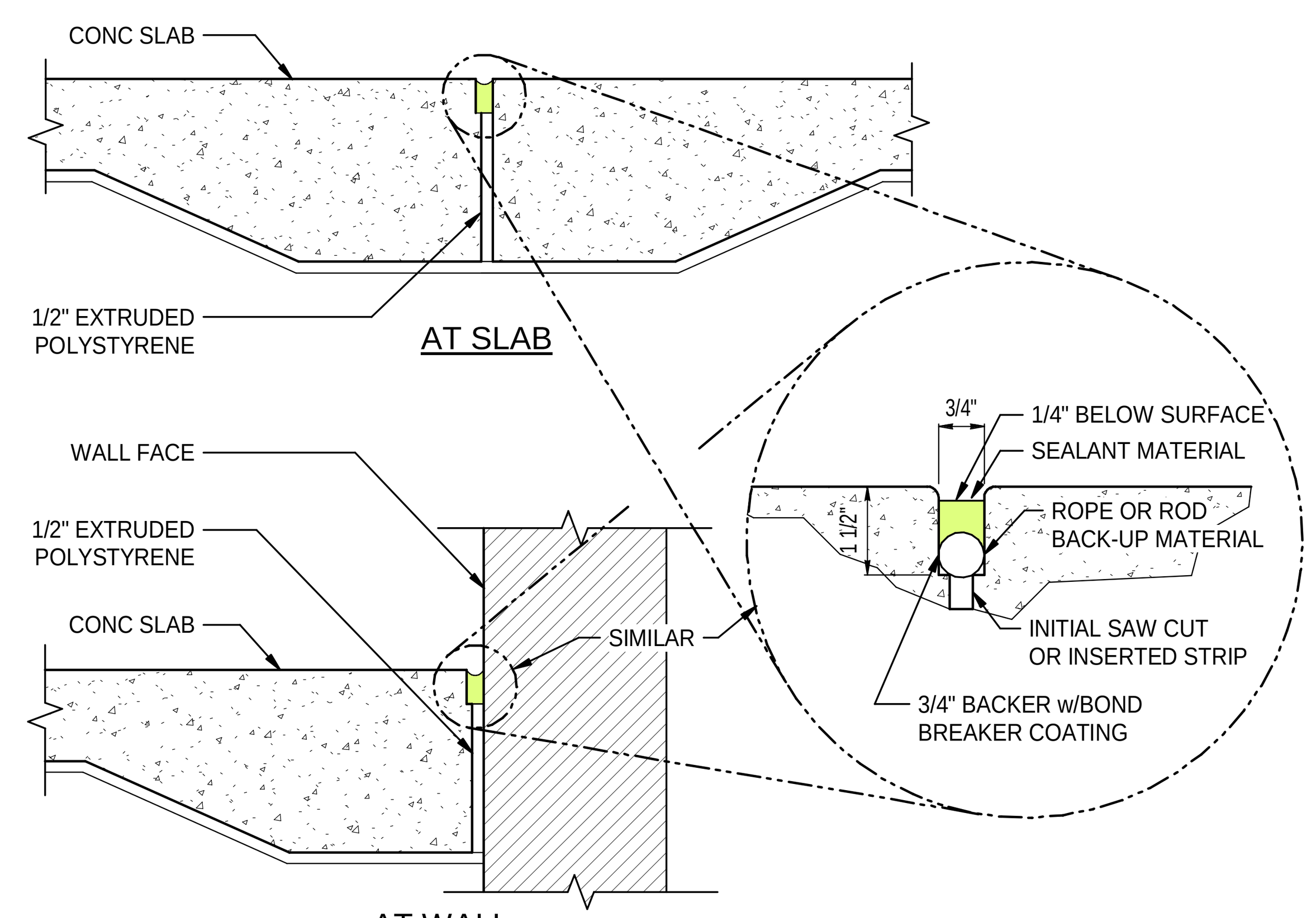


A - TURNDOWN AT SLAB EDGE
3/4" = 1'-0"



NOTE:
SEALANT MATERIAL SHALL BE A FIELD MOLDED SEALANT OF ONE OF THE FOLLOWING TYPES:

1. HOT APPLIED THERMOPLASTIC ASPHALT - RUBBER COMPOUNDS MEETING ASTM D1190.
2. HOT POURED ELASTOMERIC TYPE SEALANTS - MEETING ASTM D3406.
3. COLD APPLIED, MASTIC SINGLE OR MULTIPLE - COMPONENT SEALANTS MEETING ASTM D1850.

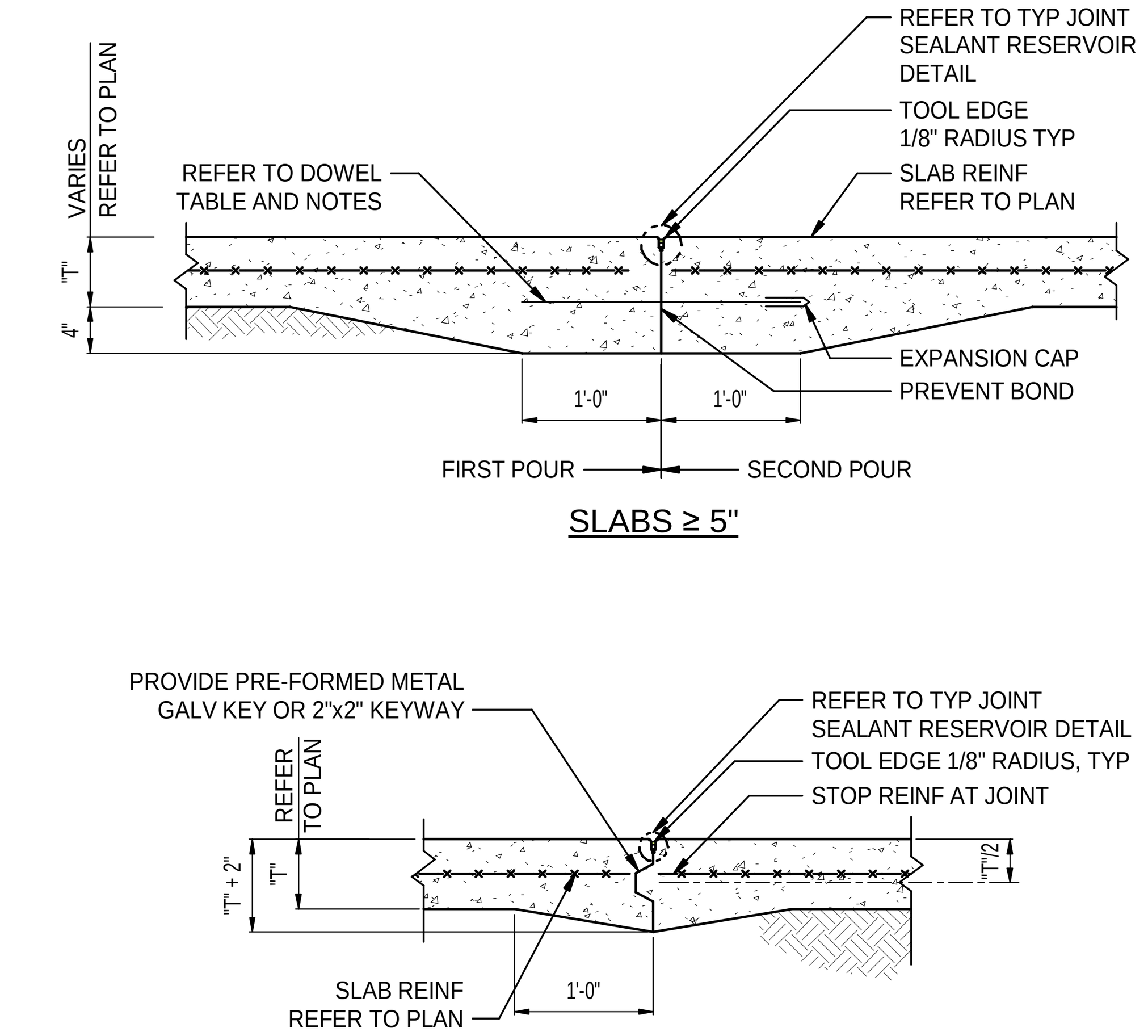
B - TYPICAL SLAB 1/2" EXPANSION JOINT (EJ)
1 1/2" = 1'-0"

DOWEL TABLE

"T" SLAB DEPTH (INCHES)	DIAMETER (INCHES)	TOTAL LENGTH (INCHES)	CENTER TO CENTER SPACING (IN)
5	5/8	12	12
6	3/4	14	12
7	7/8	14	12
8	1	14	12
9	1 1/8	16	12
10	1 1/4	18	12
11	1 3/8	18	12
12	1 1/2	20	12

DOWEL NOTES:

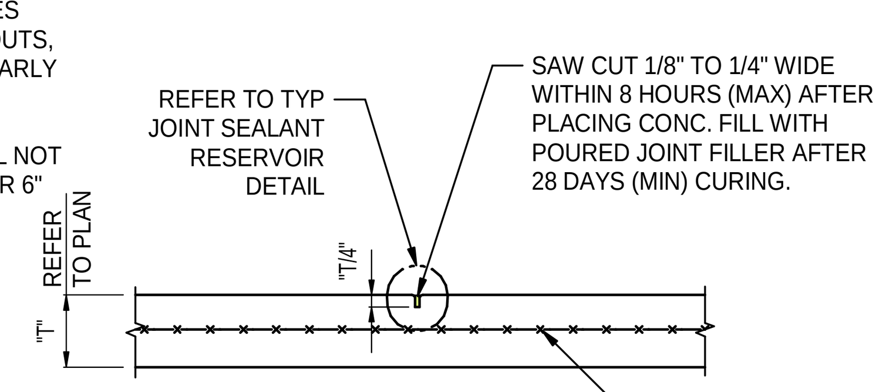
1. DOWELS SHALL BE PLAIN ROUND BARS EQUIVALENT TO ASTM A615 WITH A CORROSION RESISTANT COATING.
2. ONE-HALF (1/2) OF EACH BAR SHALL BE COVERED WITH ONE COAT TAR. PLACE EXPANSION CAP ON COATED SIDE.
3. DOWELS SHALL BE PLACED PARALLEL TO THE CENTERLINE AND SURFACE OF THE SLAB. TOLERANCE OF THE PLACEMENT SHALL BE ±1/4".



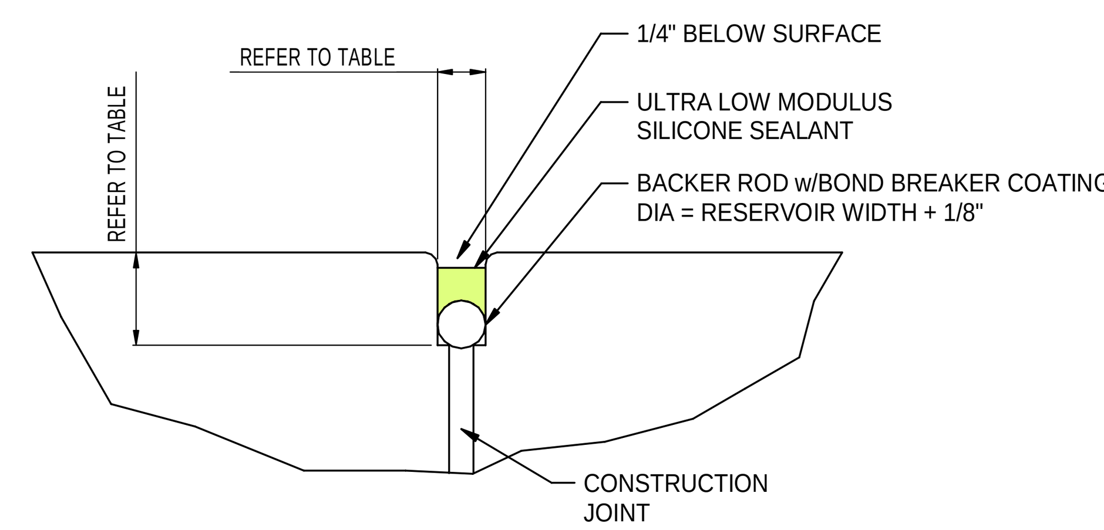
C - TYPICAL SLAB ON GRADE CONSTRUCTION JOINT
3/4" = 1'-0"

NOTES:

1. PLACE CONTROL JOINTS AT CHANGES IN SLAB WIDTH, AT COLUMN BLOCKOUTS, COLUMN CENTERLINES, & AT REGULARLY SPACED INTERVALS.
2. MAXIMUM SPACING OF JOINTS SHALL NOT EXCEED 8'-0" FOR 4" SLABS, 12'-0" FOR 6" SLABS, AND 16'-0" FOR 8" SLABS, IN EITHER DIRECTION.
3. DO NOT EXCEED A 2 TO 1 WIDTH TO LENGTH RATIO.
4. USE CONSTRUCTION JOINTS WHEN THERE IS A BREAK IN SLAB POURING OPERATIONS EXCEEDING 30 MINUTES.



D - TYPICAL SLAB ON GRADE CONTROL JOINT (CJ)
3/4" = 1'-0"

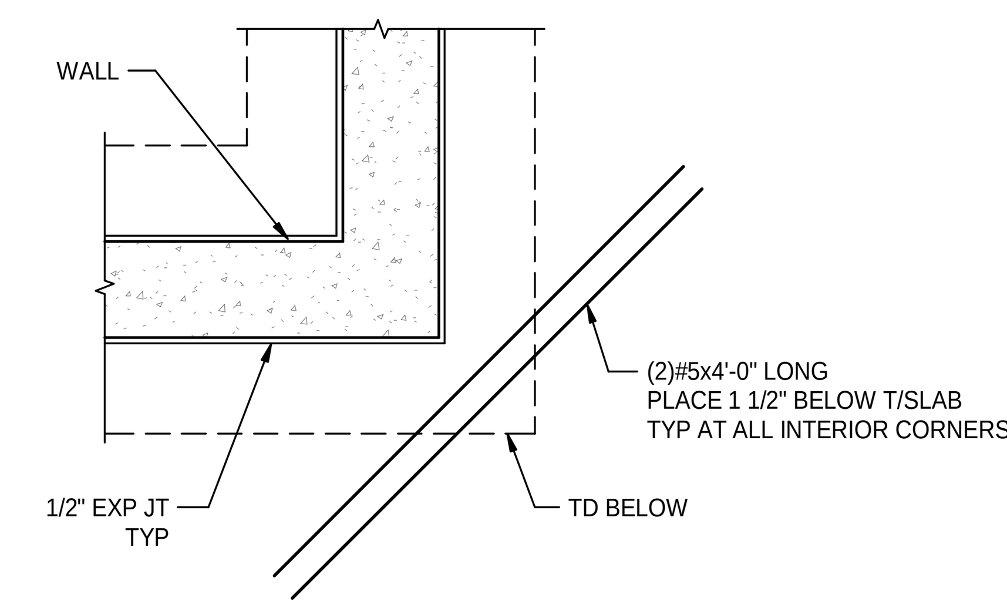


JOINT SPACING	SEALANT RESERVOIR SHAPE WIDTH	SEALANT RESERVOIR SHAPE DEPTH
15'-0" OR LESS	5/8"	3/4"
20'-0"	5/8"	3/4"
30'-0"	5/8"	3/4"
40'-0"	5/8"	1"

NOTE:
SEALANT MATERIAL SHALL BE A FIELD MOLDED SEALANT OF ONE OF THE FOLLOWING TYPES:

1. HOT APPLIED THERMOPLASTIC ASPHALT - RUBBER COMPOUNDS MEETING ASTM 1190.
2. HOT POURED ELASTOMERIC TYPE SEALANTS - MEETING ASTM D3406.
3. COLD APPLIED, MASTIC SINGLE OR MULTIPLE - COMPONENT SEALANTS METTING ASTM D1850.

E - TYPICAL JOINT SEALANT RESERVOIR
3/4" = 1'-0"

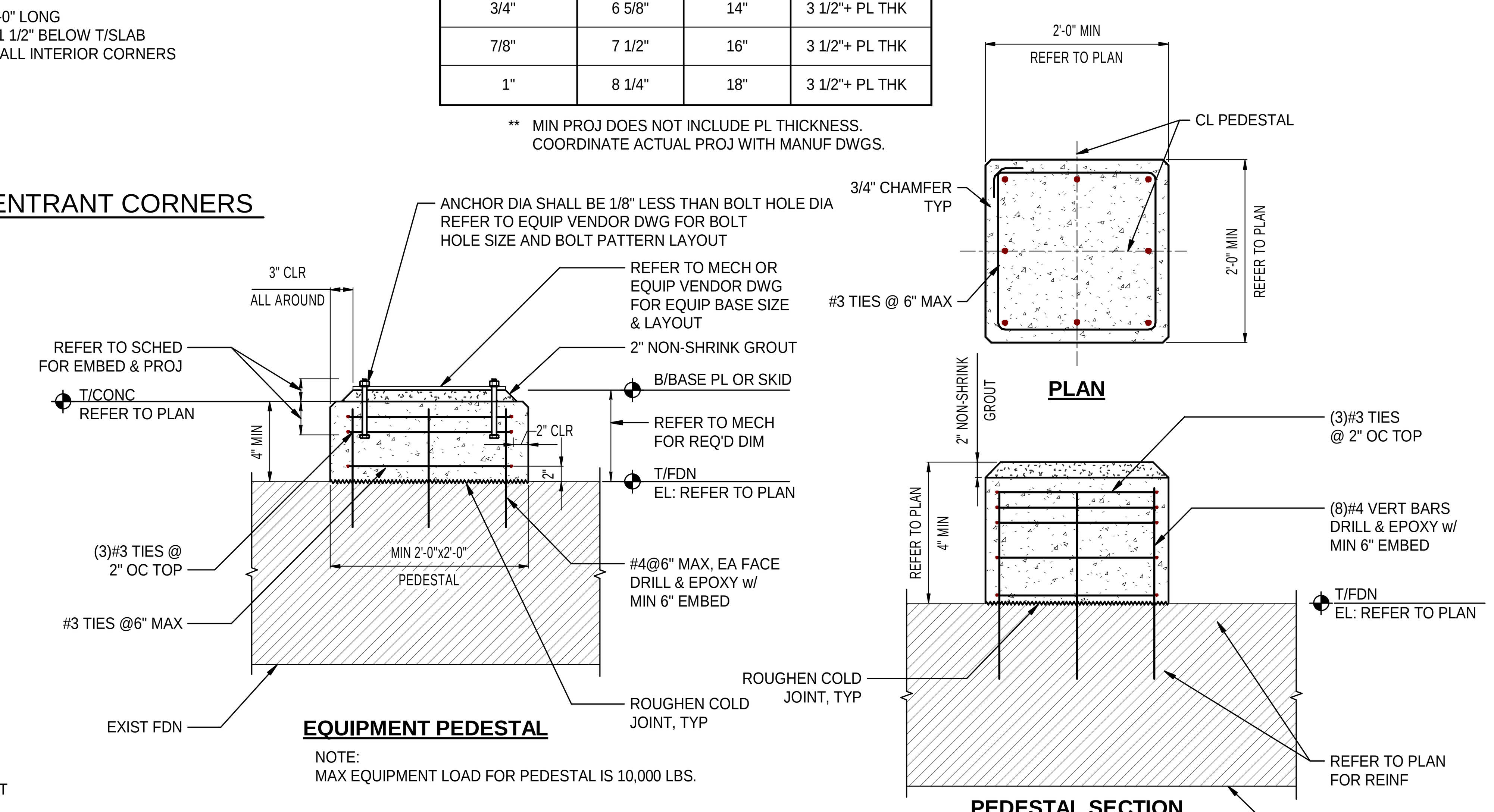


F - ADDITIONAL SLAB REINF AT ALL RE-ENTRANT CORNERS
3/4" = 1'-0"

ANCHOR BOLT SCHEDULE

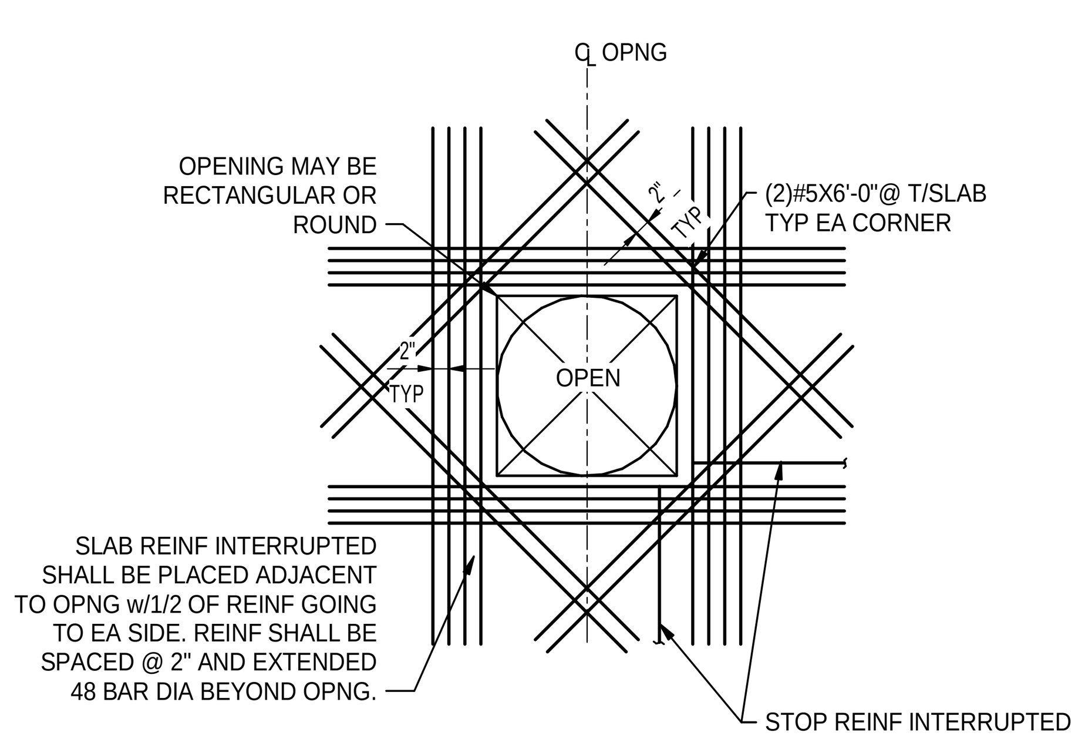
ANCHOR DIA	MINIMUM EMBEDMENT EPOXY & GROUT	MINIMUM EMBEDMENT CAST IN PLACE	MINIMUM PROJECTION **
3/8"	3 1/2"	9"	3"+ PL THK
1/2"	4 1/4"	9"	3"+ PL THK
5/8"	5"	12"	3 1/2"+ PL THK
3/4"	6 5/8"	14"	3 1/2"+ PL THK
7/8"	7 1/2"	16"	3 1/2"+ PL THK
1"	8 1/4"	18"	3 1/2"+ PL THK

** MIN PROJ DOES NOT INCLUDE PL THICKNESS. COORDINATE ACTUAL PROJ WITH MANUF DWGS.

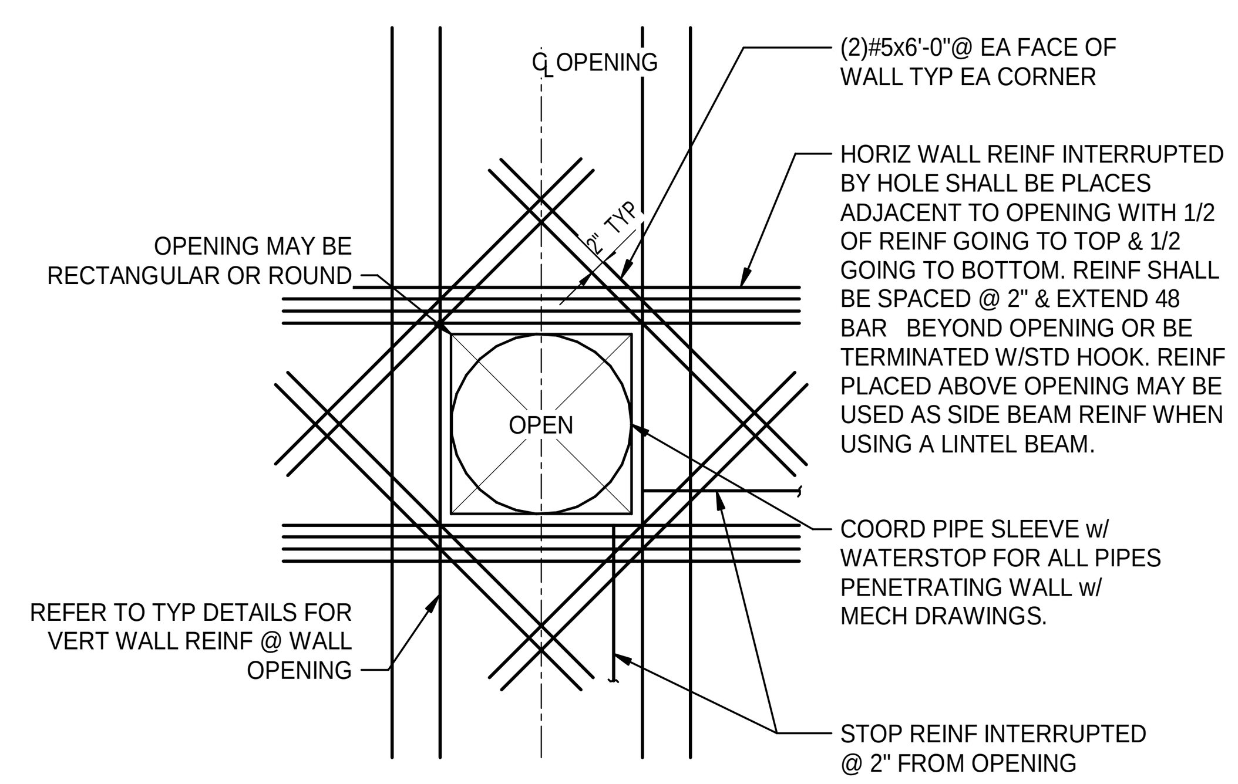


NOTE:
MAX EQUIPMENT LOAD FOR PEDESTAL IS 10,000 LBS.

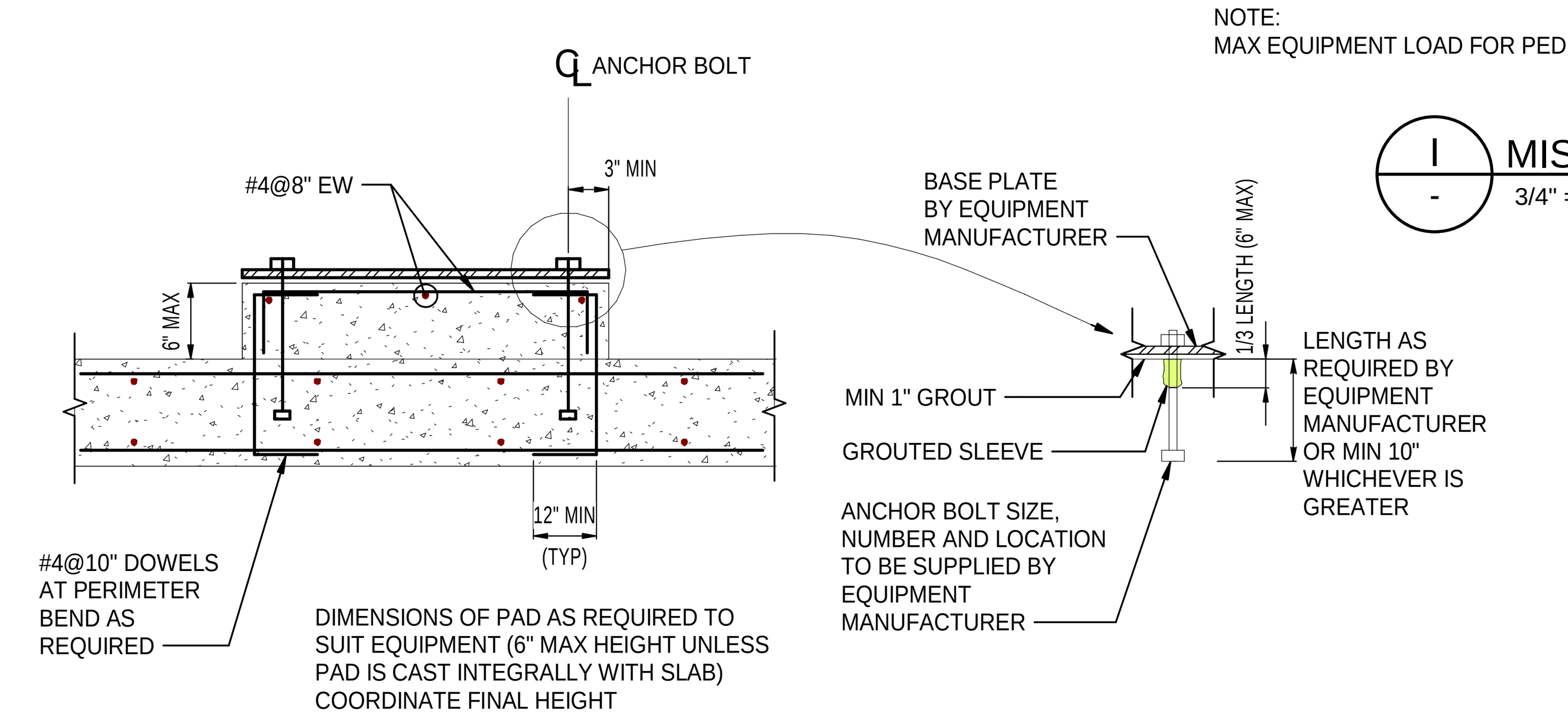
I - MISCELLANEOUS PIPE ELBOW SUPPORT
3/4" = 1'-0"



G - ADDITIONAL REINF AT SLAB OPENING
1/2" = 1'-0"



H - ADDITIONAL REINF AT OPENING IN CONCRETE WALL
1/2" = 1'-0"



J - EQUIPMENT PAD
1" = 1'-0"

0 3" 6" 9" 1' 1'-6"
SCALE: 1 1/2" = 1'-0"

0 6" 1' 2' 3'
SCALE: 3/4" = 1'-0"

ISSUED FOR BID

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Architects AA - C000035
Engineers EB - 0000535
Surveyors LB - 0006783

REVISIONS

NO.	BY	DATE
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DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

CONCRETE DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 50
DRAWING NO. SD-1

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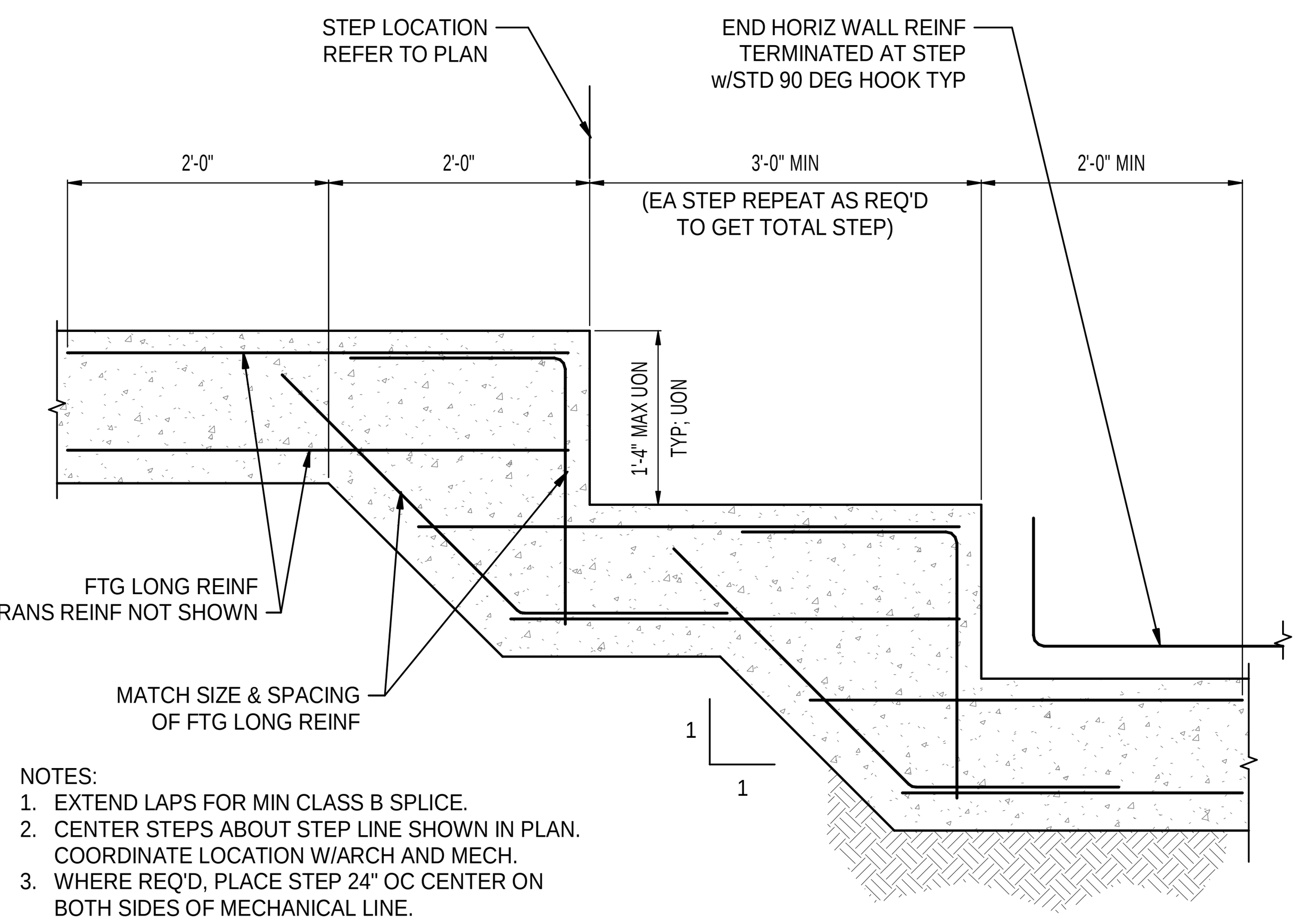
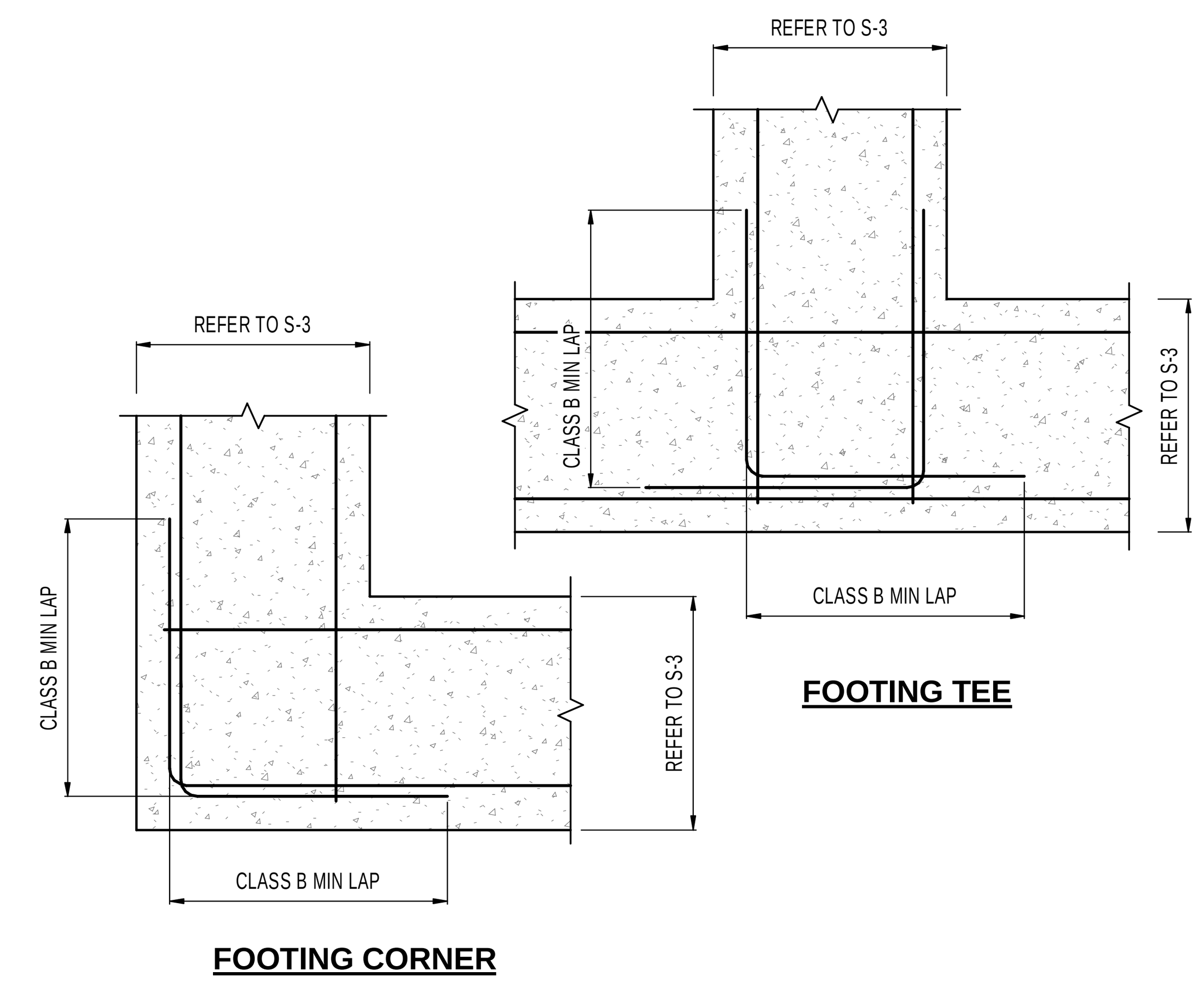
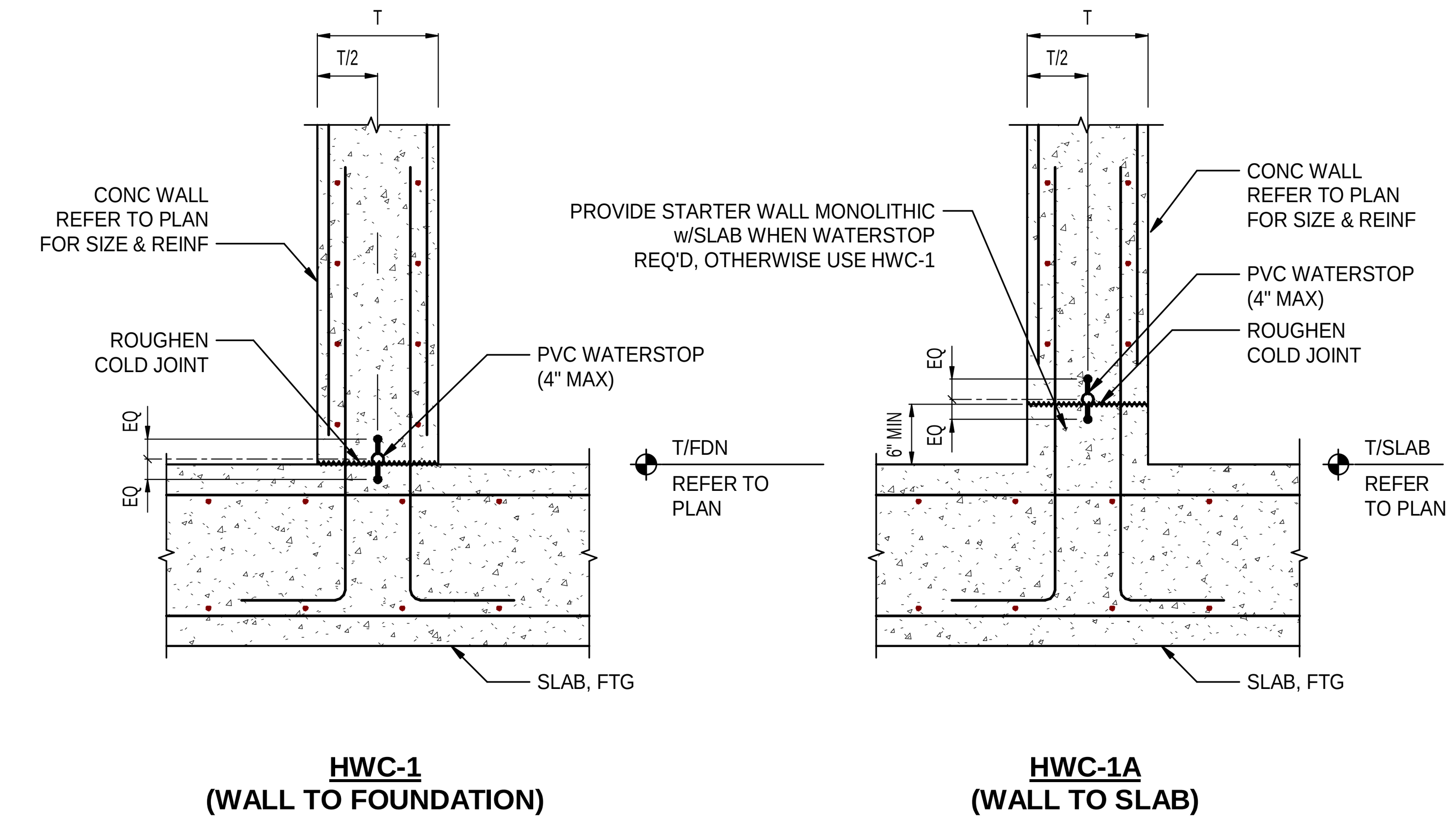


NOTES:
1. EXTEND LAPS FOR MIN CLASS B SPLICE.
2. CENTER STEPS ABOUT STEP LINE SHOWN IN PLAN. COORDINATE LOCATION W/ARCH AND MECH.
3. WHERE REQ'D, PLACE STEP 24" OC CENTER ON BOTH SIDES OF MECHANICAL LINE.

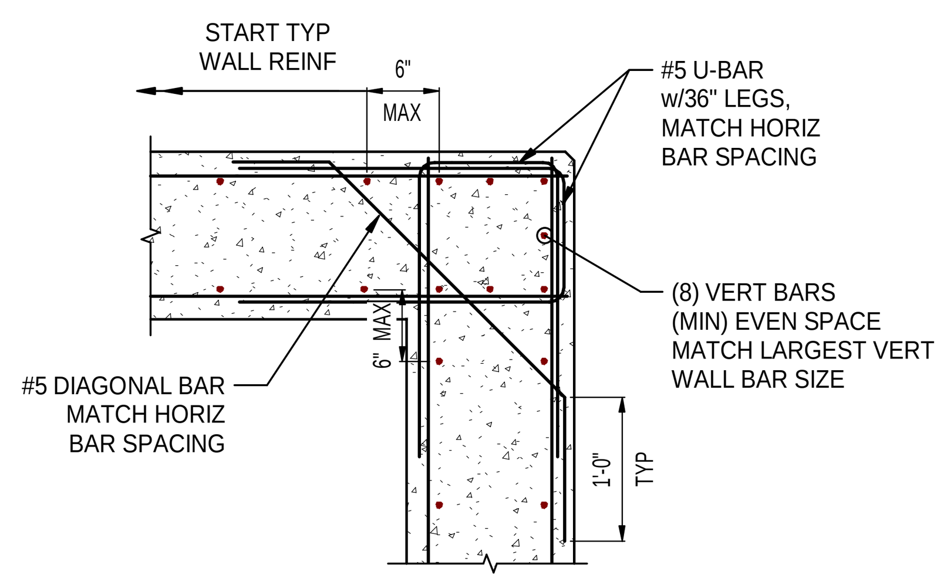
A TYPICAL FOOTING STEPS
3/4" = 1'-0"



B REINFORCING AT FOOTING TEES AND CORNERS
3/4" = 1'-0"

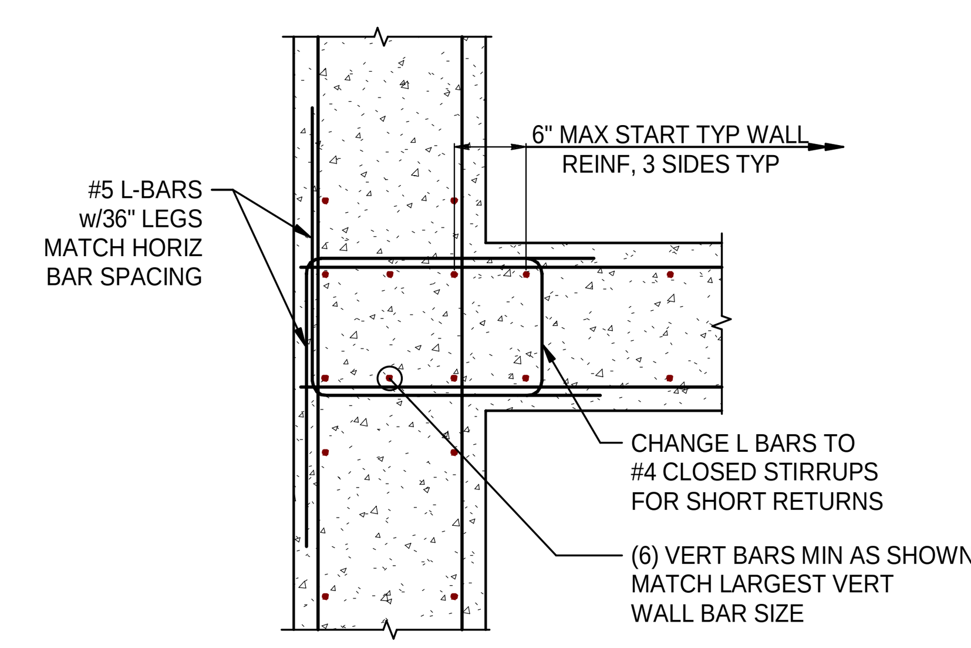


C WATERSTOP DETAILS
3/4" = 1'-0"



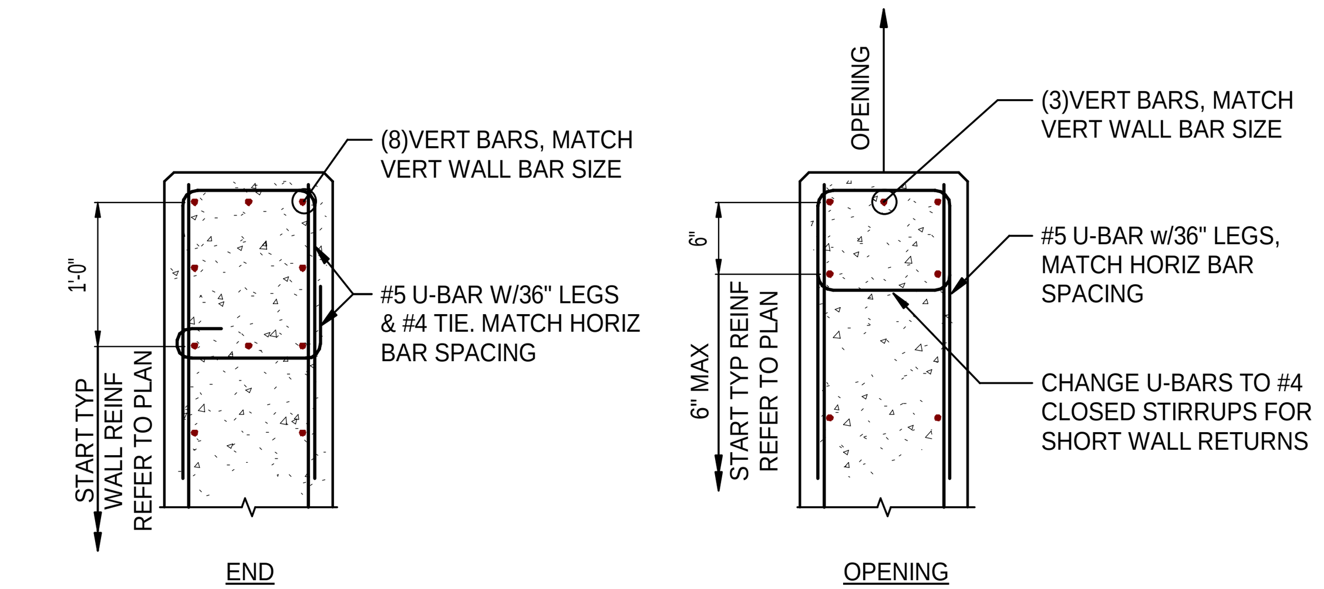
NOTE:
USE THIS DETAIL FOR WALLS THICKER THAN 10" UON.

D WALL CORNER
3/4" = 1'-0"



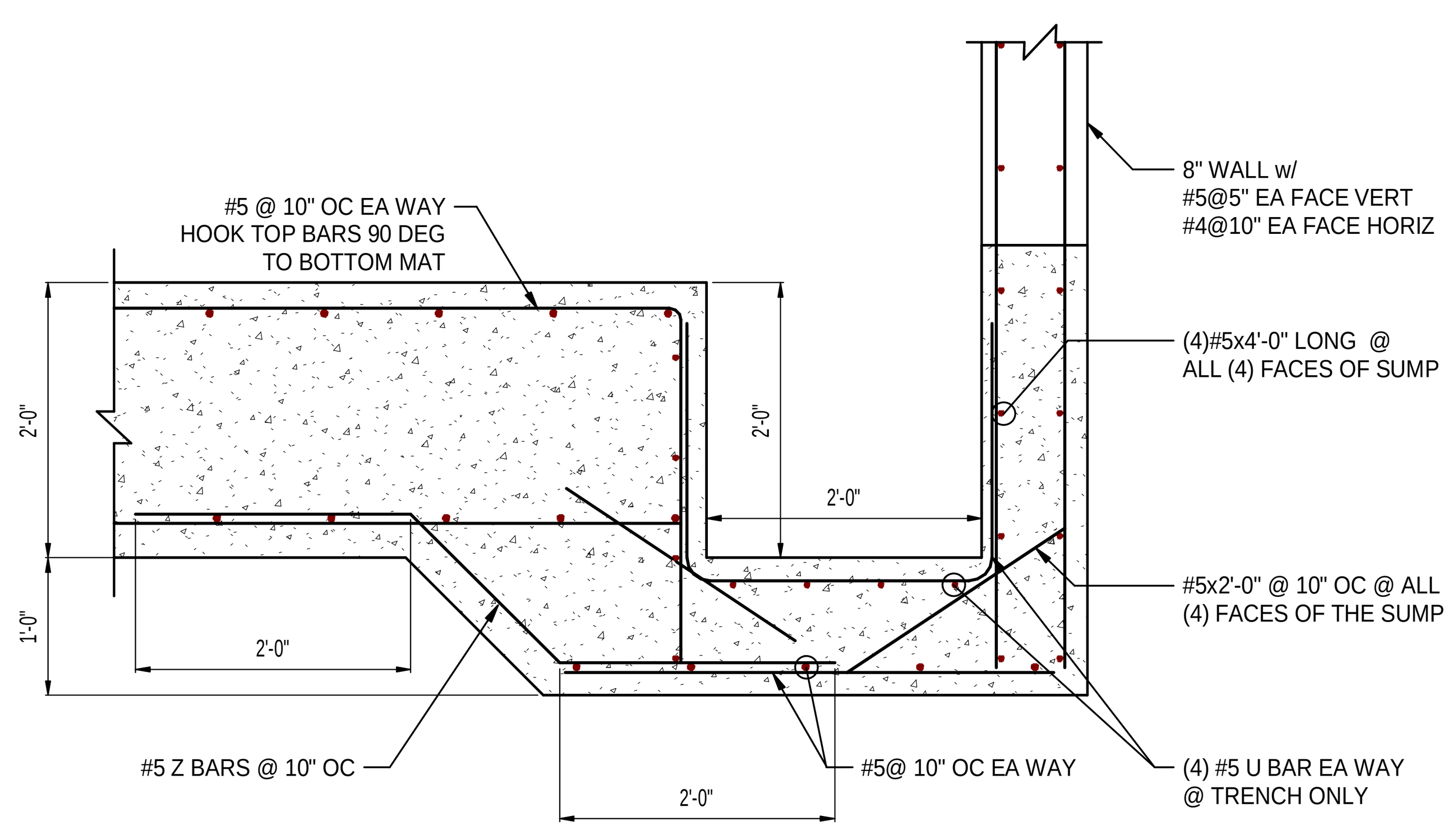
NOTE:
USE THIS DETAIL FOR WALLS THICKER THAN 10" UON.

E WALL TEE
3/4" = 1'-0"

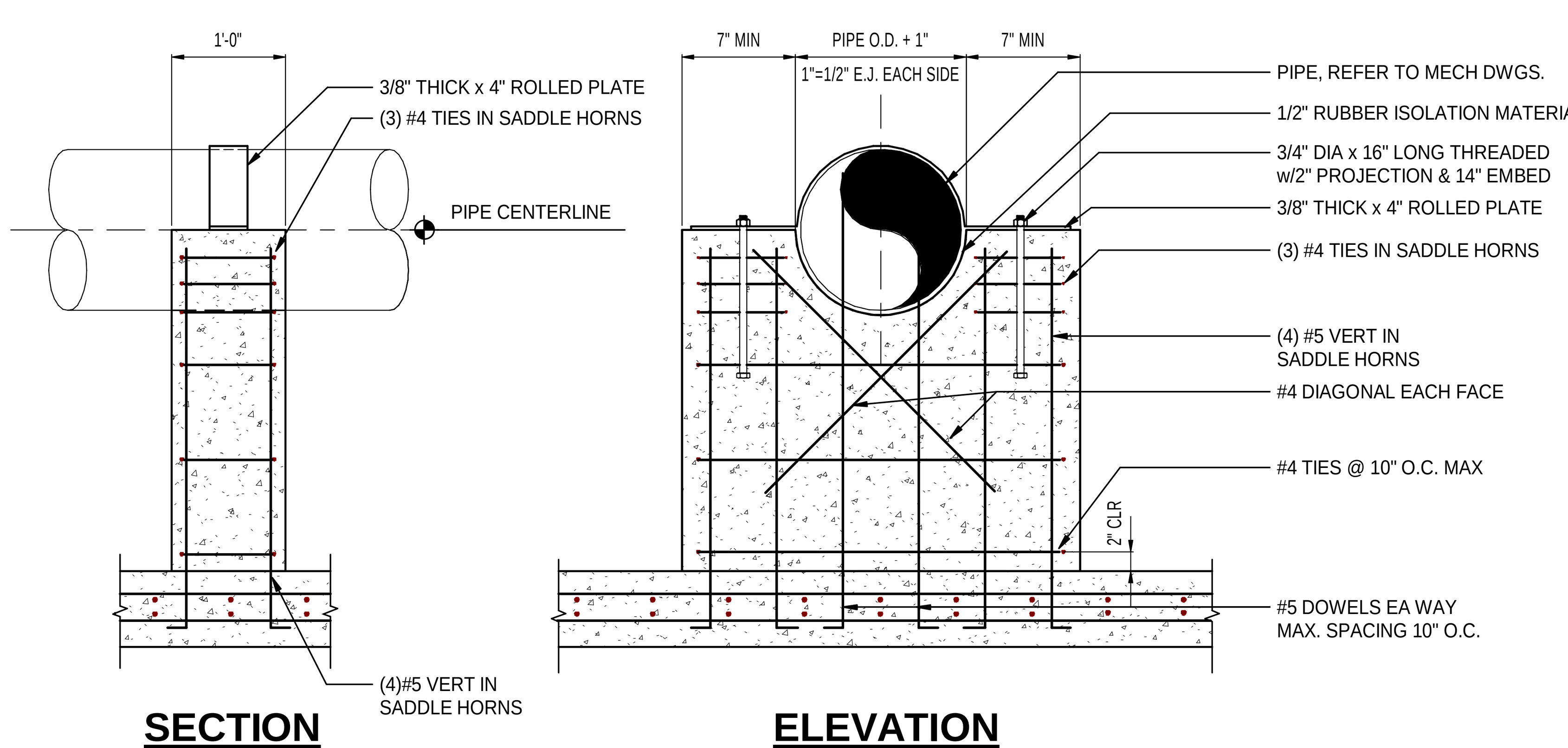


NOTE:
USE THIS DETAIL FOR WALLS THICKER THAN 10" UON.

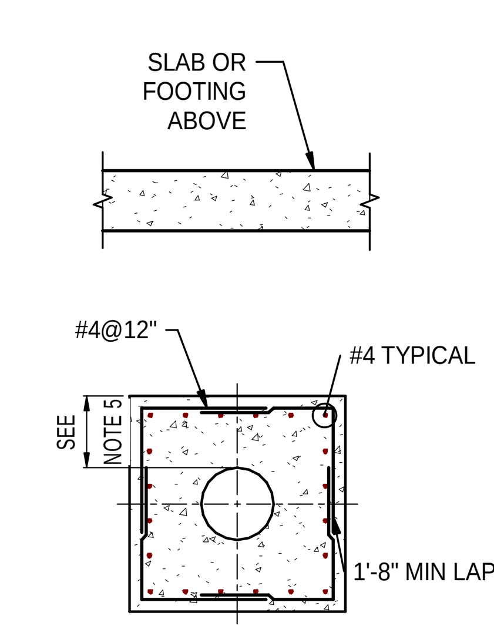
F WALL END OR OPENING
3/4" = 1'-0"



G SUMP DETAIL
3/4" = 1'-0"



H TYPICAL PIPE SUPPORT
3/4" = 1'-0"



PIPE ENCASEMENT NOTES:

1. ALL PIPE SHALL BE PRESSURE TESTED BEFORE CONCRETE PLACEMENT.
2. ALL BELOW GRADE PIPES SHALL BE SUPPORTED ON CONCRETE BLOCKS PRIOR TO CASTING OF CONCRETE BEDDING. SIZE AND SPACING OF CONCRETE BLOCK SUPPORTS SHALL BE PER PIPE MANUFACTURER.
3. FOR ALL PIPES 12-INCH DIAMETER AND LARGER, ENCASEMENT SHALL BE CAST IN TWO POURS. INITIAL CAST SHALL BE CURED FOR 12 HOURS BEFORE CASTING THE SECOND POUR.
4. ENCASE ALL PIPES BELOW SLABS AND FOOTINGS. EXTEND ENCASEMENT 3'-0" BEYOND EDGE OF SLAB OR FOOTING.
5. ENCASEMENT FOR 6" DIAMETER AND SMALLER PIPES SHALL BE 6" MINIMUM. FOR PIPE DIAMETERS GREATER THAN 6", ENCASEMENT SHALL BE 12" MINIMUM.
6. MINIMUM BAR SPACING AROUND PERIMETER = 6" INCHES ON CENTER.

I CONCRETE PIPE ENCASEMENT
3/4" = 1'-0"

0 6" 1' 2' 3'
SCALE: 3/4" = 1'-0"

ISSUED FOR BID

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Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	REVISIONS	BY	DATE
6			
5			
4			
3			
2			
1			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

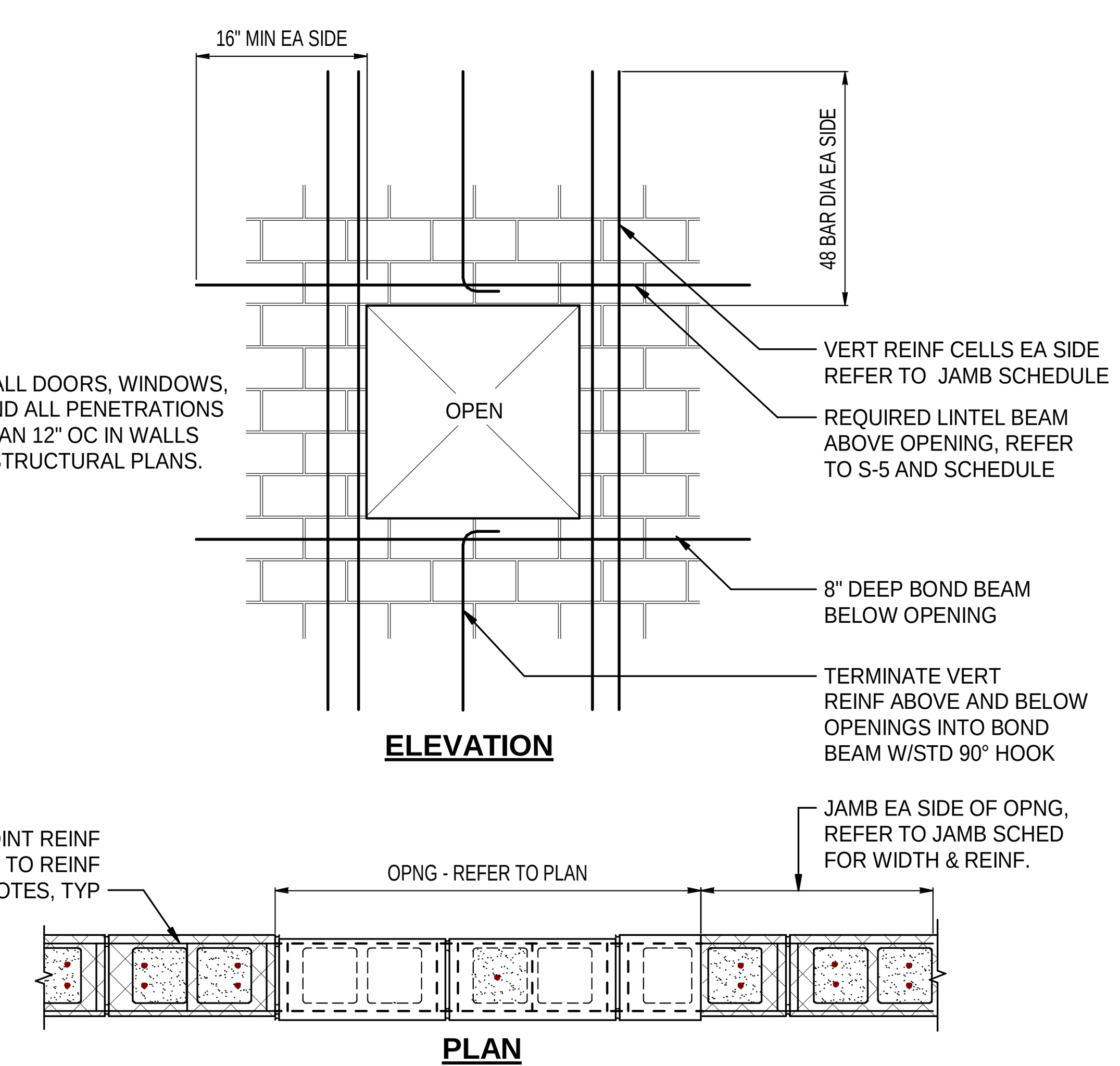
CONCRETE DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 51
DRAWING NO. SD-2

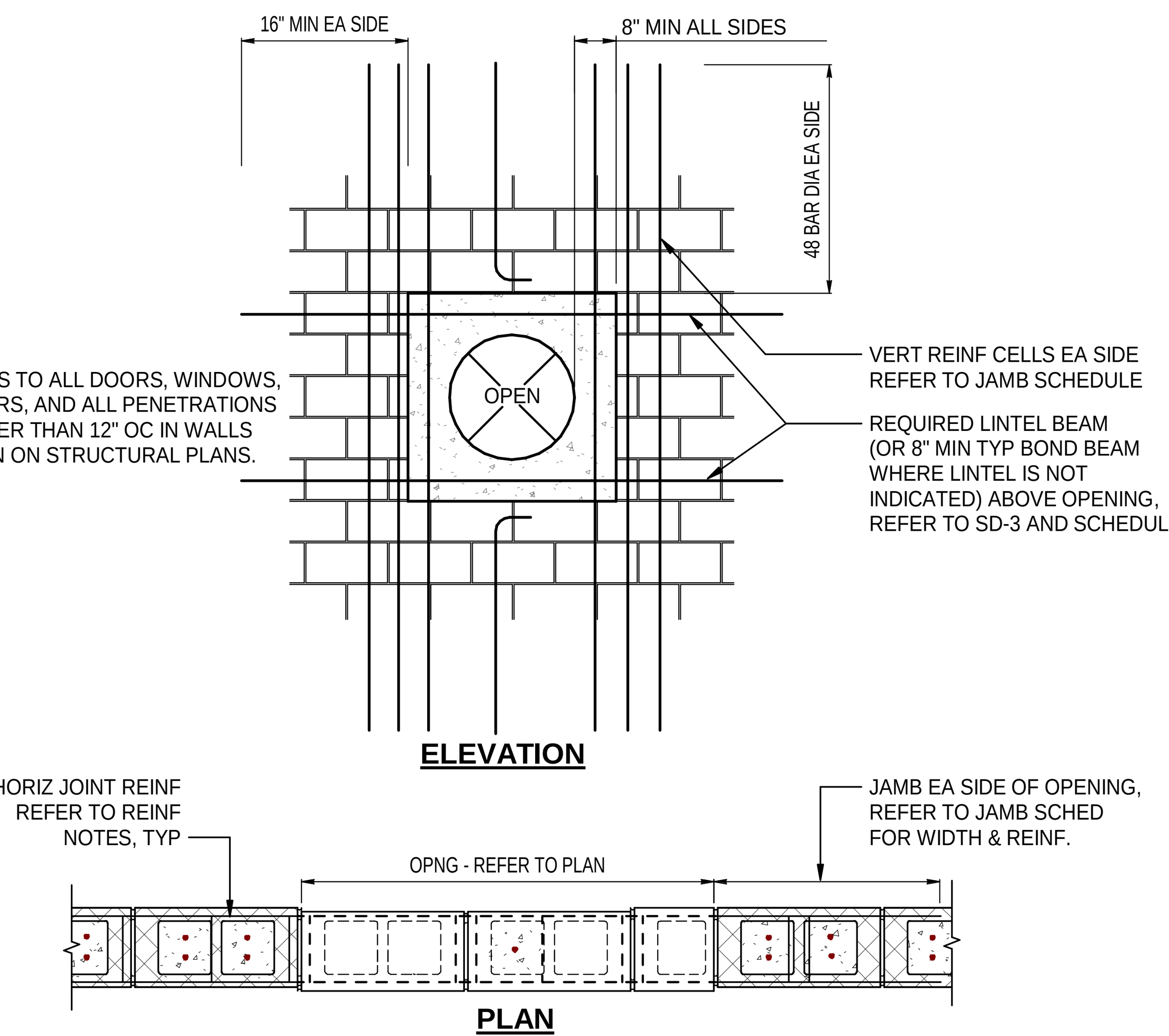
1. REFER TO SHEET S-1 AND S-2 FOR ADDITIONAL NOTES.
2. DOWEL ALL CMU REINFORCEMENT IN FOOTINGS AND EXTEND INTO UPPERMOST BOND BEAM WITH 90 DEGREE HOOKS.
3. FILL ALL CELLS CONTAINING REINFORCEMENT AND ADDITIONAL CELLS AS INDICATED WITH 3,000 PSI PEA GRAVEL CONCRETE.
4. PROVIDE FOUR (4) FILLED CELLS OF TYPICAL WALL REINFORCING AT INTERSECTIONS, (3) FILLED CELLS OF TYPICAL WALL REINFORCING AT CORNERS, AND TWO (2) FILLED CELLS OF TYPICAL WALL REINFORCING AT EACH SIDE OF OPENINGS AND ENDS OF WALLS. PROVIDE (5) FILLED CELLS OF TYPICAL WALL REINFORCING AT CORNERS OF STAIRWELL AND ELEVATOR WALLS, UNLESS OTHERWISE NOTED.
5. FOR REINFORCEMENT ADJACENT TO INTERIOR CMU WALL OPENINGS, COORDINATE WITH JAMB SCHEDULE SHOWN ON THIS SHEET.
6. ALL CONCRETE MASONRY UNITS SHALL BE PLACED IN RUNNING BOND.
7. TYPICAL 8" CMU WALL REINFORCEMENT:
   A. REINFORCE WITH VERTICAL BARS: #5 @ 32" ON CENTER WITH ADDITIONAL REINFORCING AS INDICATED IN NOTE 4.
   B. PROVIDE 16" CMU BOND BEAM WITH (2)#5 CONTINUOUS REINFORCING BARS AT TOP OF ALL WALLS AND AT ROOF.
   C. PLACE THE REINFORCING IN THE CENTER OF THE WALL, UNLESS OTHERWISE NOTED.
8. TYPICAL 12" CMU WALL REINFORCEMENT:
   A. DOUBLE REINFORCE WITH VERTICAL BARS #5@32" ON CENTER WITH ADDITIONAL REINFORCING AS INDICATED IN NOTE 4
   B. PROVIDE 16" CMU BOND BEAM WITH (2)#5 CONTINUOUS AT TOP OF ALL WALLS
   C. PLACE THE REINFORCEMENT SO CENTERLINE OF REINFORCING IS 1 1/2" OFF INTERIOR FACE OF CMU CAVITIES.
9. HORIZONTAL JOINT REINFORCING IN ALL BLOCK WALLS SHALL BE STANDARD (9GA SIDE AND CROSS RODS) LADDER TYPE WALL REINFORCING @ 16". ALL WALLS PERPENDICULAR TO EXTERIOR WALLS SHALL HAVE ADDITIONAL PREFABRICATED "T" OR "L" JOINT REINFORCING AS INDICATE IN TYPICAL CMU DETAILS.
10. GROUT STOP SHALL BE A FIBERGLASS MESH CONFORMING TO ASTM STANDARD D1668-73, TYPE 207.
11. SPLICE ALL BARS 48 BAR DIAMETER, UNLESS OTHERWISE NOTED.
12. USE (1) TOP & BOTTOM CORNER BAR (MATCH TYPICAL REINFORCING) WITH 48 BAR DIAMETER LONG LEGS EACH WAY IN ALL BOND BEAM CORNERS & INTERSECTIONS. PLACE AT EXTERIOR FACE, UNLESS OTHERWISE NOTED.
13. THE LOWEST VERTICAL BAR IN ALL BLOCK WALLS SHALL HOOK 90 DEGREES INTO THE FOOTING OR SLAB WITH A MINIMUM 8" LEG UNLESS THE VERTICAL REINFORCING PASSES THRU THE SLAB TO A CONTINUOUS WALL BELOW.
14. THE HIGHEST VERTICAL BAR IN ALL BLOCK WALLS SHALL HOOK 90 DEGREES INTO THE UPPERMOST BOND BEAM WITH A MINIMUM 8" LEG UNLESS THE VERTICAL REINFORCING PASSES THRU THE SLAB TO A CONTINUOUS WALL ABOVE. IF THE WALL IS CAPPED WITH A SLAB, EXTEND 90 DEGREE HOOKS INTO THE SLAB AND LAP WITH THE VERTICAL WALL REINFORCING.
15. REFER TO DETAILS B AND C FOR ADDITIONAL REINFORCING AT WALL OPENINGS. OPENINGS LESS THAN 8"x8" OR 8" DIAMETER SHALL BE EXEMPT FROM THIS REQUIREMENT PROVIDED THAT ANY PORTION OF OPENING IS NOT LOCATED WITHIN A REINFORCED CELL.
16. CONDUIT PLACED IN REINFORCED CELLS SHALL BE LIMITED TO (1) CONDUIT PER REINFORCED OR FILLED CELL. MAXIMUM CONDUIT SIZE SHALL NOT EXCEED 1" OUTSIDE DIAMETER.

A TYPICAL CMU WALL REINFORCING NOTES
3/4" = 1'-0"



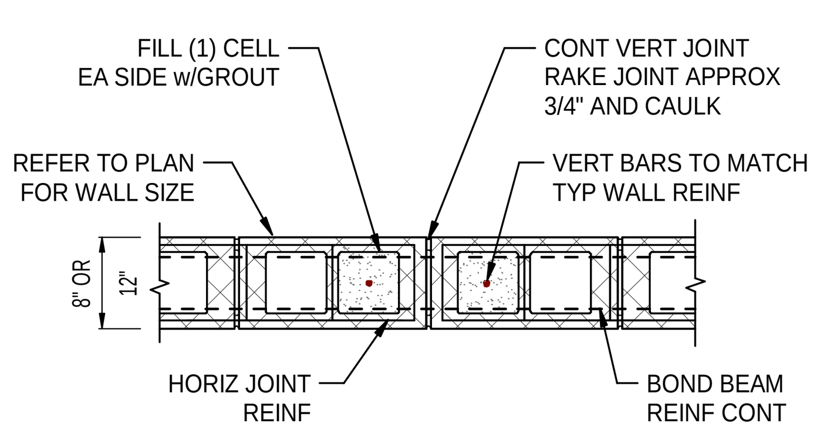
NOTE:
APPLIES TO ALL DOORS, WINDOWS, LOUVERS, AND ALL PENETRATIONS GREATER THAN 12" OC IN WALLS SHOWN ON STRUCTURAL PLANS.

B SQUARE OPENING IN MASONARY WALL
3/4" = 1'-0"



NOTE:
APPLIES TO ALL DOORS, WINDOWS, LOUVERS, AND ALL PENETRATIONS GREATER THAN 12" OC IN WALLS SHOWN ON STRUCTURAL PLANS.

C CIRCULAR OPENING IN MASONRY WALL
3/4" = 1'-0"



NOTES:
1. CMU CONTROL JOINTS ARE NOT TO EXCEED 24', TYP U.O.N.
2. THE JOINTS SHALL BE LOCATED A MIN OF 24" FROM DOOR OR WINDOW OPENINGS TO MISS LINTELS.
3. THE TYP HORIZONTAL JOINT REINF SHALL BE TERMINATED 2" FROM EACH SIDE OF JOINT. ALL BOND BEAM REINF SHALL CONTINUE THRU THE JOINT.
4. WALL SEGMENTS THAT EXCEED 24' AND DO NOT CONTAIN CONTROL JOINTS MUST BE REINFORCED WITH TYP HORIZ BOND BEAMS SPACED AT 5'-0" MAX VERT.

D TYPICAL CMU CONTROL JOINT DETAIL
-
3/4" = 1'-0"

8" & 12" EXTERIOR CMU JAMB SCHEDULE	
OPENING SIZE "W"	JAMB WIDTH & REINF
3'-4"	8" w/(2) #5 EA CELL
≤ 7'-4"	16" w/(2) #5 EA CELL
≤ 12'-0"	24" w/(2) #5 EA CELL

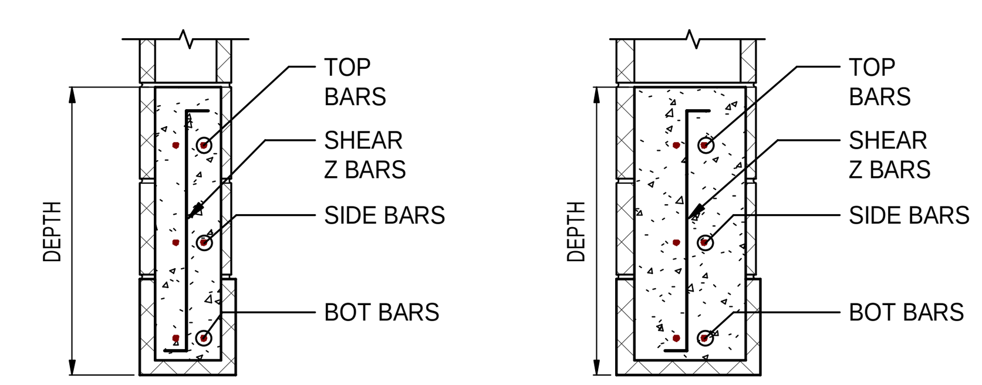
8" INTERIOR CMU JAMB SCHEDULE	
OPENING SIZE "W"	JAMB WIDTH & REINF
3'-4"	8" w/(1) #5 EA CELL
≤ 7'-4"	16" w/(1) #5 EA CELL
≤ 11'-8"	16" w/(2) #5 EA CELL

NOTE:
1. REFER TO DETAIL E/SD-4 FOR REINF PLACEMENT IN DOUBLE REINFORCED CELLS ((2) BARS EA CELL).
2. REFER TO CMU WALL NOTES FOR TYPICAL REINFORCING
3. APPLIES TO ALL OPENINGS INCLUDING BUT NOT LIMITED TO DOORS, WINDOWS, LOUVERS, DUCT PENETRATIONS, ETC.

E TYPICAL CMU JAMB SCHEDULE
-
3/4" = 1'-0"

CMU LINTEL DESIGNATION

WALL TYPE	WALL SIZE	LINTEL SPAN				
		≤ 3'-4"	LESS THAN 7'-4"	LESS THAN 11'-8"	LESS THAN 14'-8"	LESS THAN 18'-0"
INTERIOR	8" CMU	1	2	3	4	4
EXTERIOR	12" CMU	5	6	7	8	8



8" CONCRETE MASONRY UNIT (CMU)

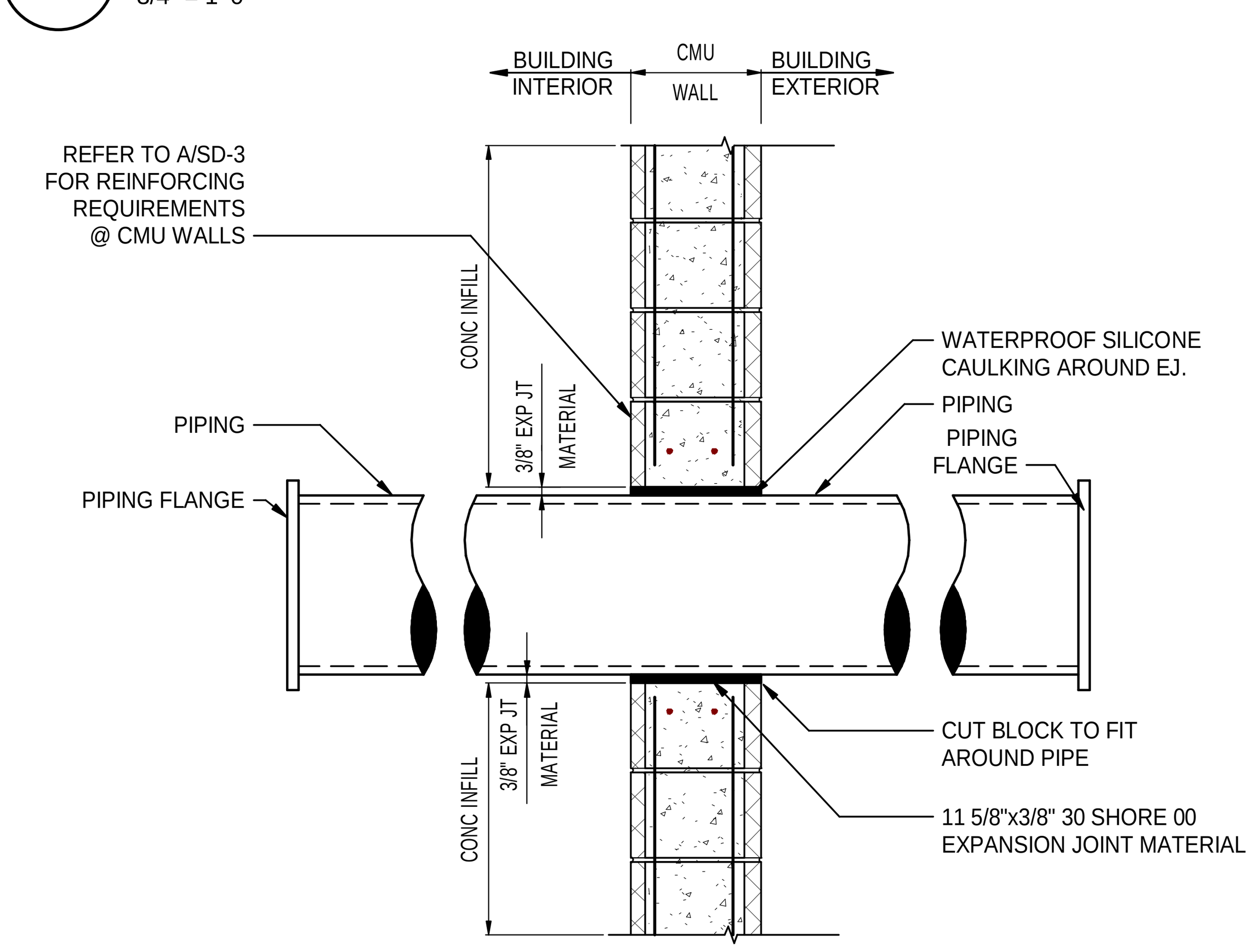
12" CONCRETE MASONRY UNIT (CMU)

LINTEL BEAM SCHEDULE

DESIGNATION	SIZE (WIDTH x DEPTH)	REINFORCING			
		TOP BARS	BOT BARS	SIDE BARS	SHEAR
1	8"x8" CMU	-	(2)#5	-	-
2	8"x16" CMU	(2)#5	(2)#5	-	-
3	8"x24" CMU	(2)#5	(2)#5	(2)#5	-
4	8"x32" CMU	(2)#5	(2)#5	(4)#5	-
5	12"x8" CMU	-	(2)#6	-	-
6	12"x16" CMU	(2)#6	(2)#6	-	-
7	12"x24" CMU	(2)#6	(2)#6	(2)#6	-
8	12"x32" CMU	(2)#6	(2)#6	(2)#6	-

LINTEL NOTES:
1. PROVIDE 16" MINIMUM BEARING FOR CMU AND CONCRETE LINTELS.
2. SHORE LINTELS UNTIL WALL ABOVE IS COMPLETED AND ALL CELLS ARE FILLED.
3. EXTEND TOP & BOT REINF 48 BAR DIA MIN. BEYOND JAMB @ EACH END OR TERMINATE W/STD HOOK.
4. BOTTOM BLOCK SHALL BE SOLID FACE LINTEL BLOCK WHEN FINISH BLOCK IS EXPOSED.

F TYPICAL LINTEL SCHEDULE
-
3/4" = 1'-0"



G TYPICAL PIPING PENETRATION DETAIL @ EXTERIOR OF CMU
-
3/4" = 1'-0"

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ISSUED FOR BID

MOTT MACDONALD
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10245 Centurion Parkway North
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Jacksonville, Florida 32256
Telephone: (904) 203-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

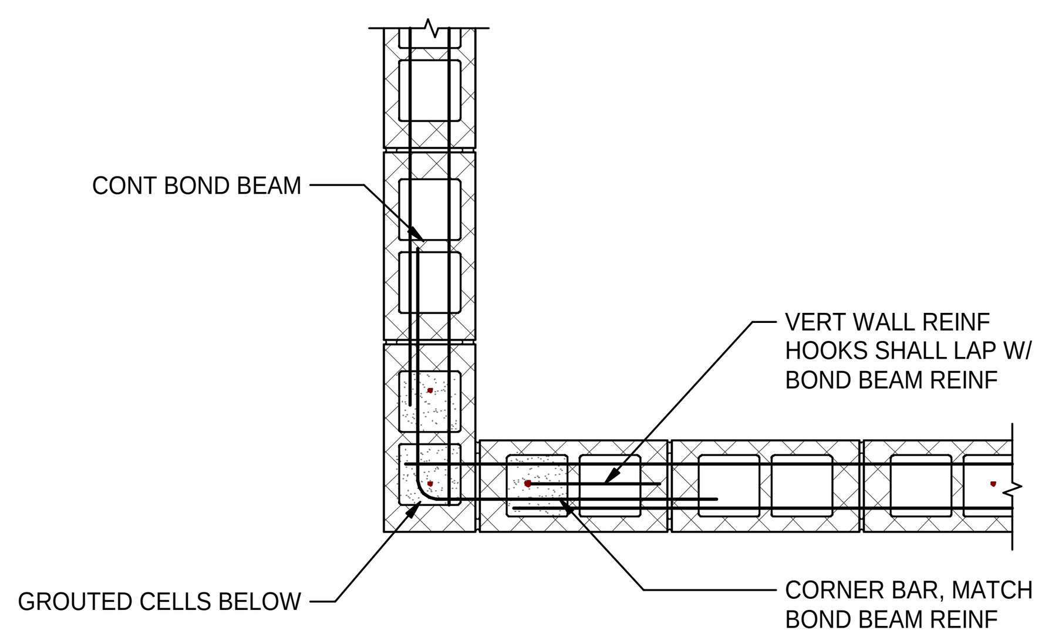
JEA sm
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

MASONRY DETAILS

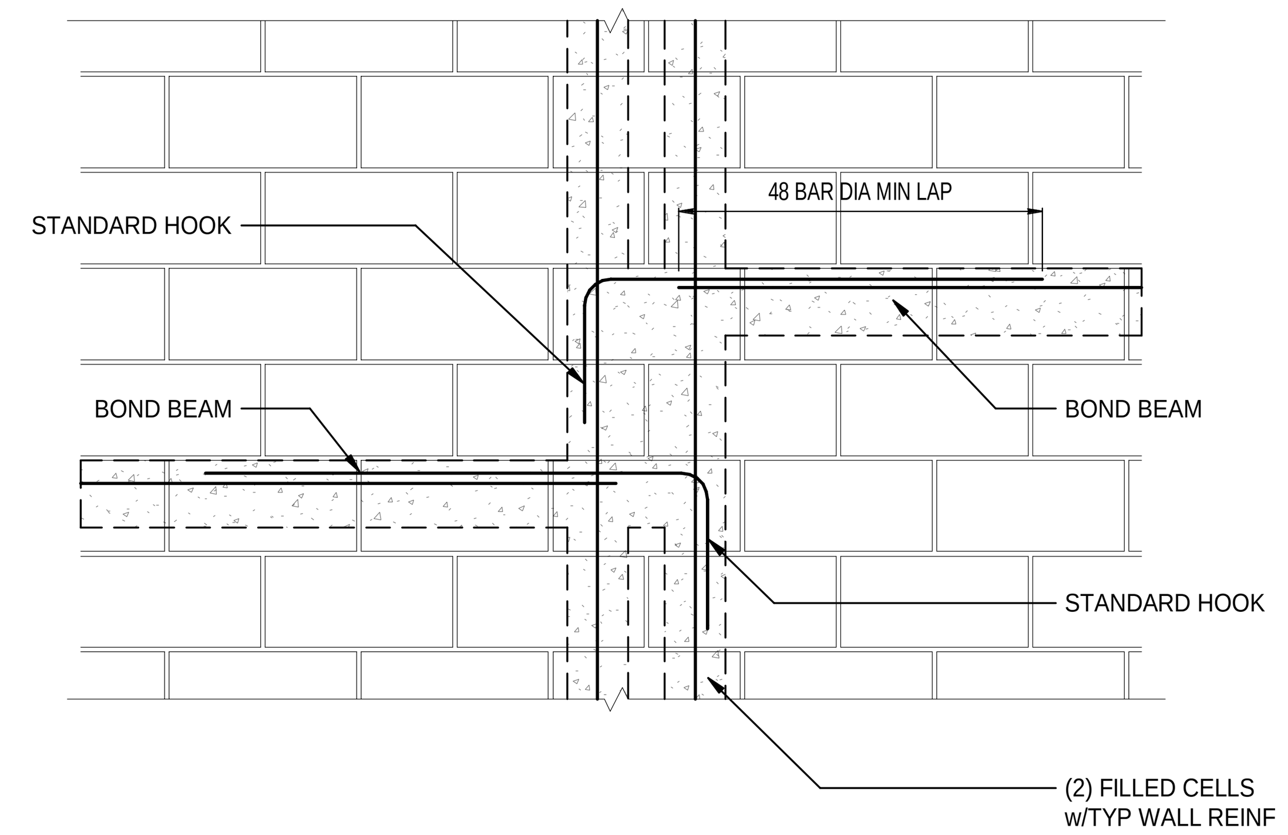
PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 52
DRAWING NO. SD-3

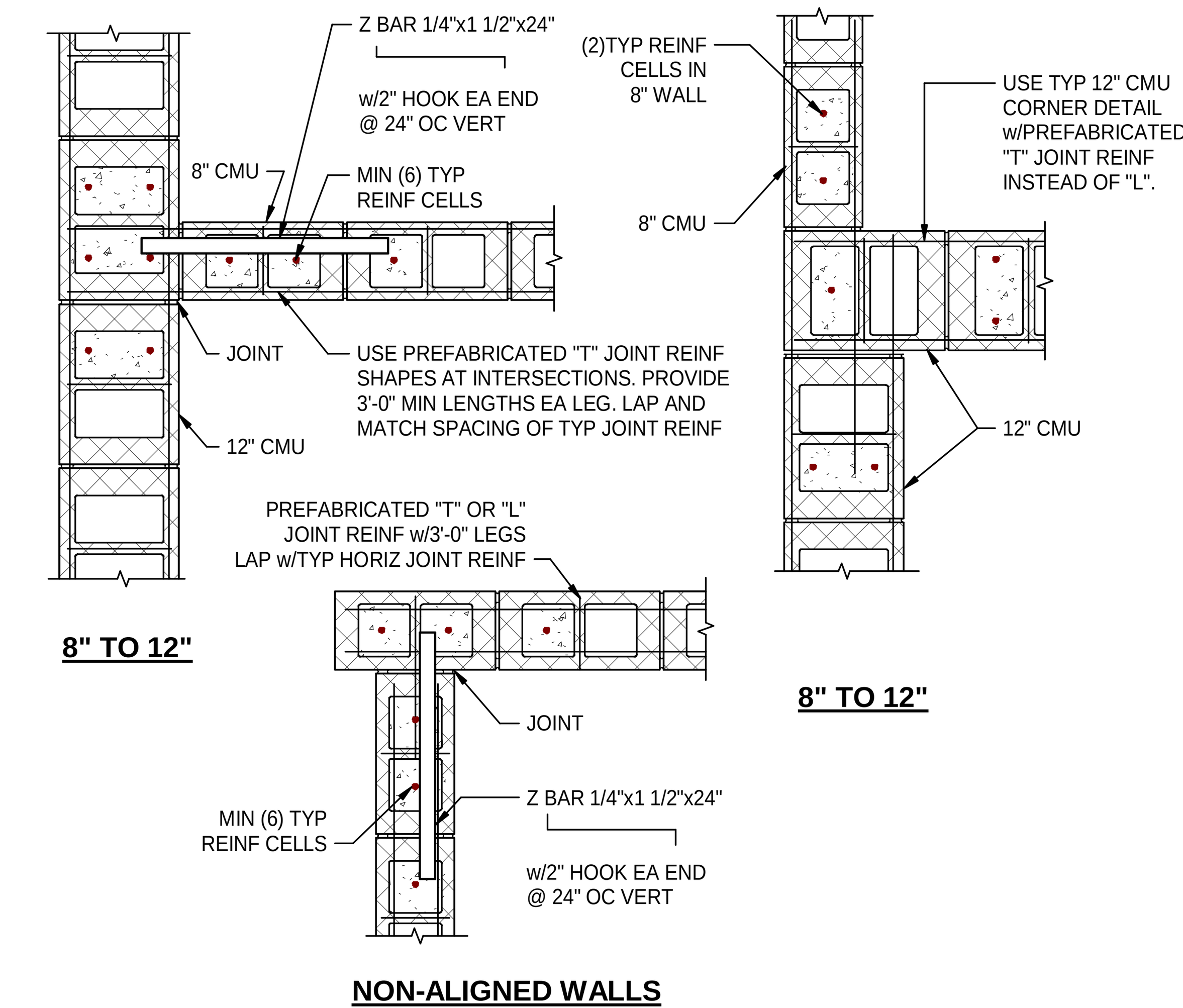


NOTES
1. ALL LAPS SHALL BE 48 BAR DIA MIN.
2. SIMILAR FOR BOND BEAMS WITH (1) HORIZ BAR

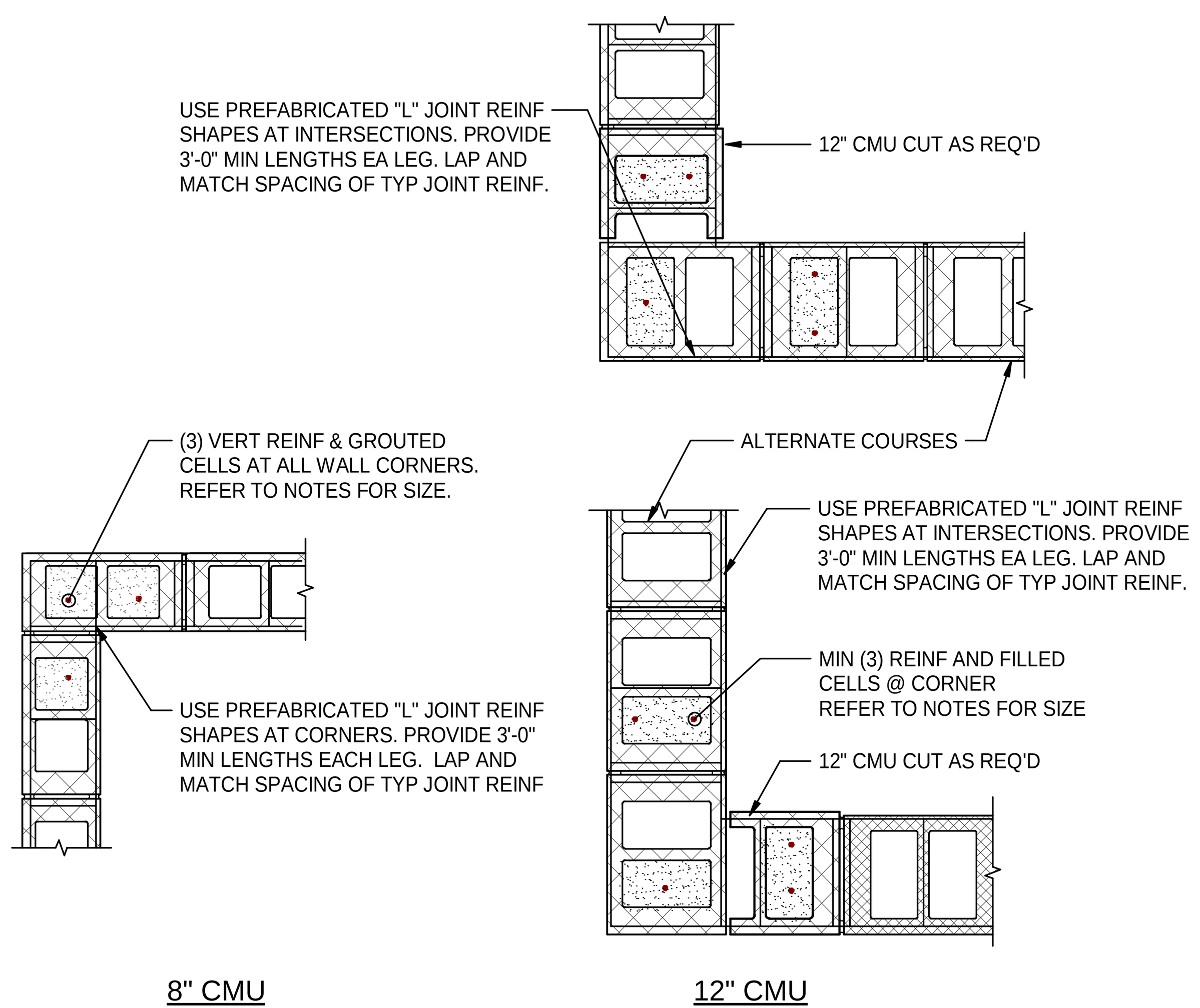
A BOND BEAM CORNER REINFORCING DETAIL
- 3/4" = 1'-0"



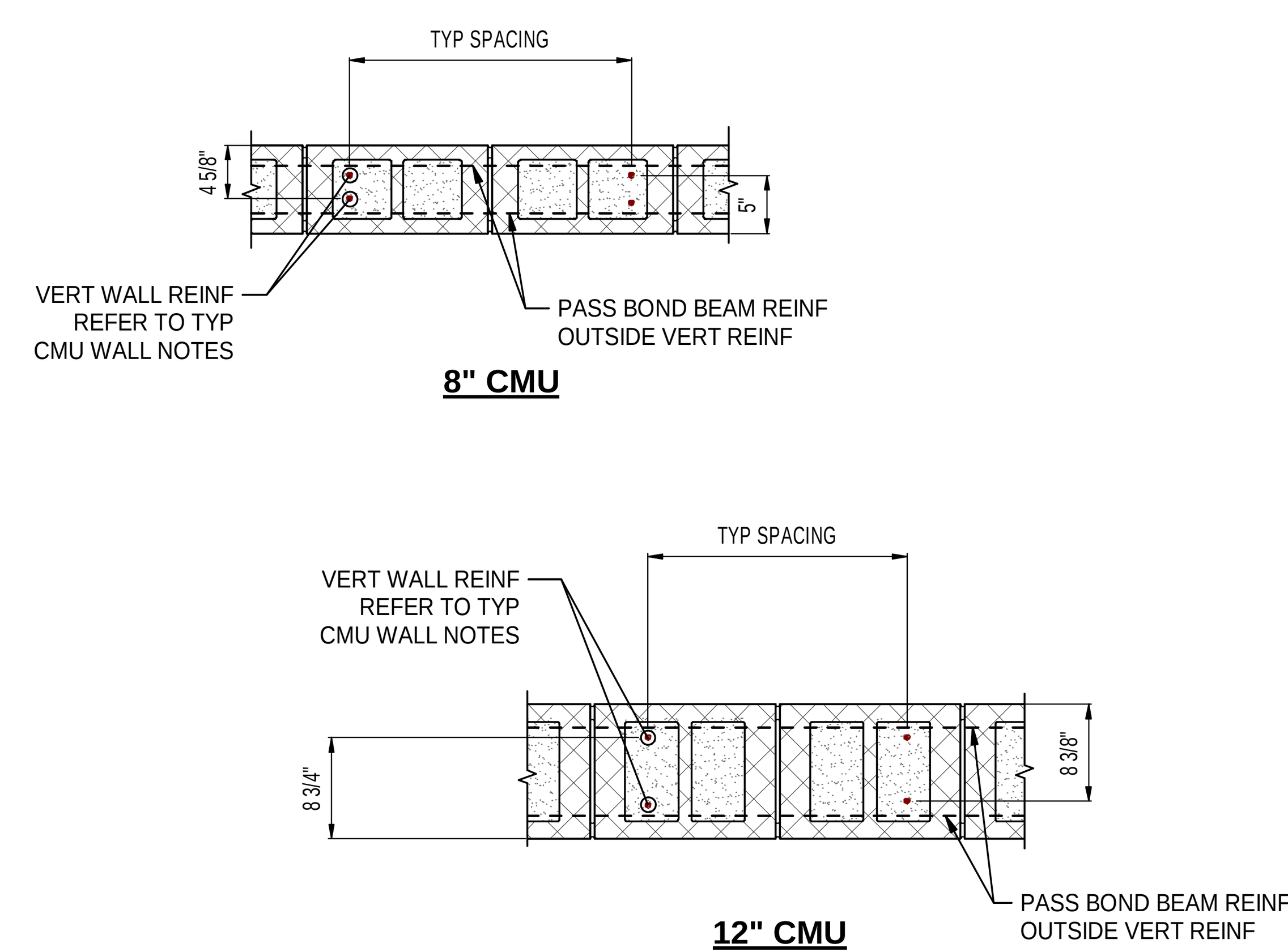
B CHANGES IN BOND BEAM ELEVATION
- 3/4" = 1'-0"



C NON-TOOTHED CMU WALL INTERSECTIONS
- 3/4" = 1'-0"



D TYPICAL CMU WALL CORNERS
- 3/4" = 1'-0"



NOTE:
DOUBLE REINF WALLS ARE INDICATED BY CALLING FOR (2) BARS @ TYP SPACING.

E DOUBLE REINF CMU WALL DETAIL
- 3/4" = 1'-0"

0 6" 1' 2' 3'
SCALE: 3/4" = 1'-0"

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MOTT MACDONALD
MOTT MACDONALD FLORIDA LLC

REVISIONS
NO. | BY | DATE
6 5 4 3 2 1

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

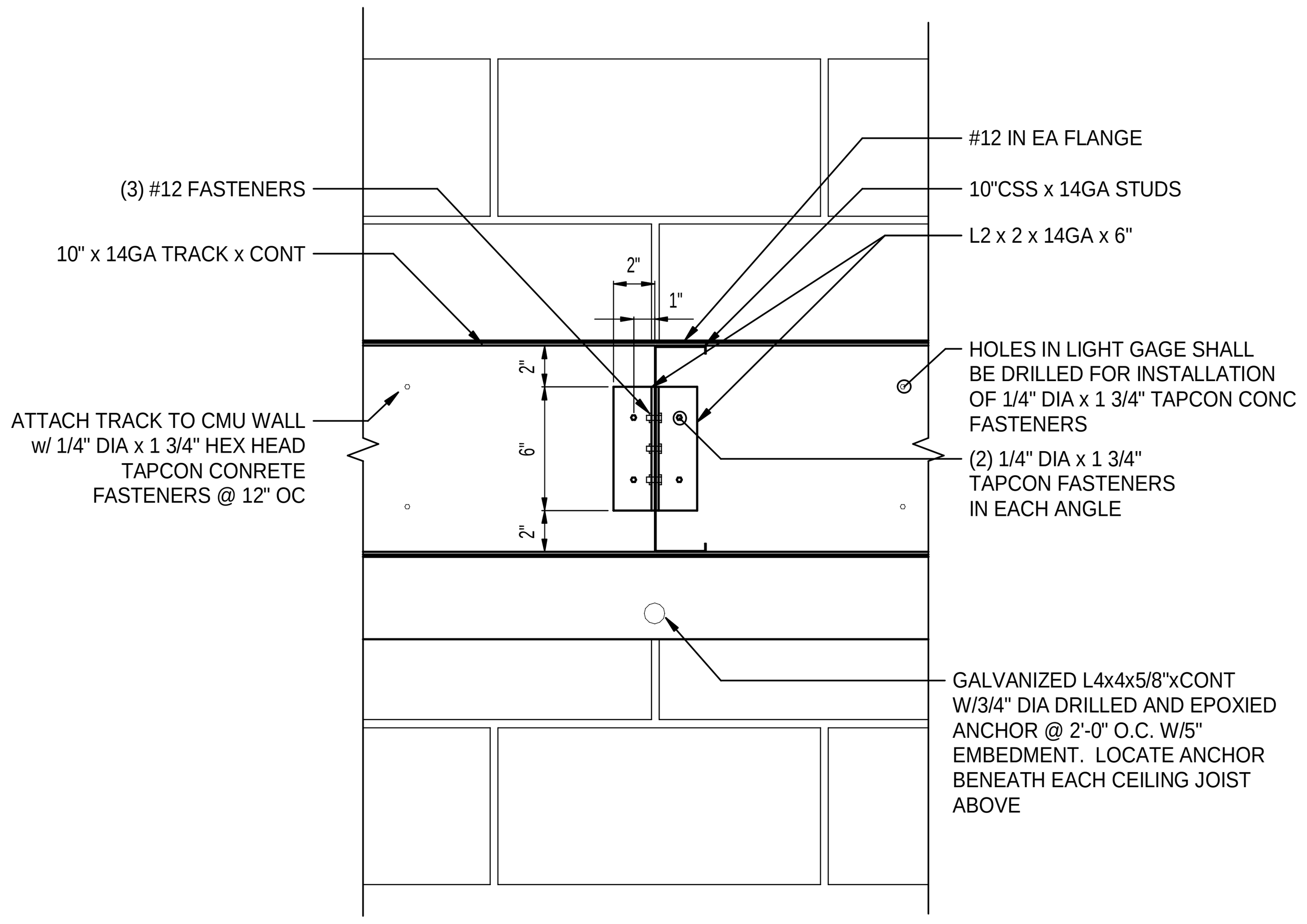
DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

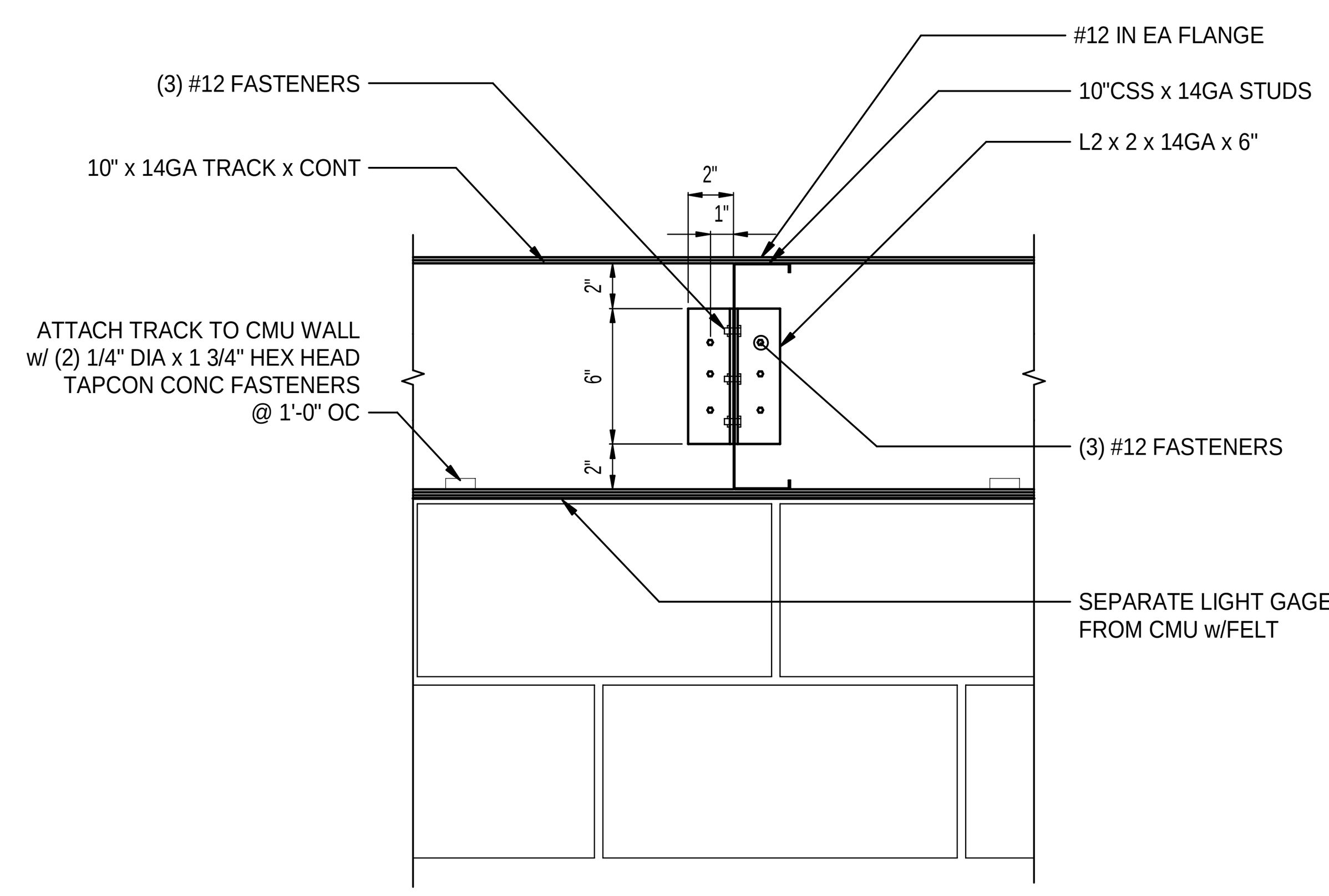
TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II
MASONRY DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

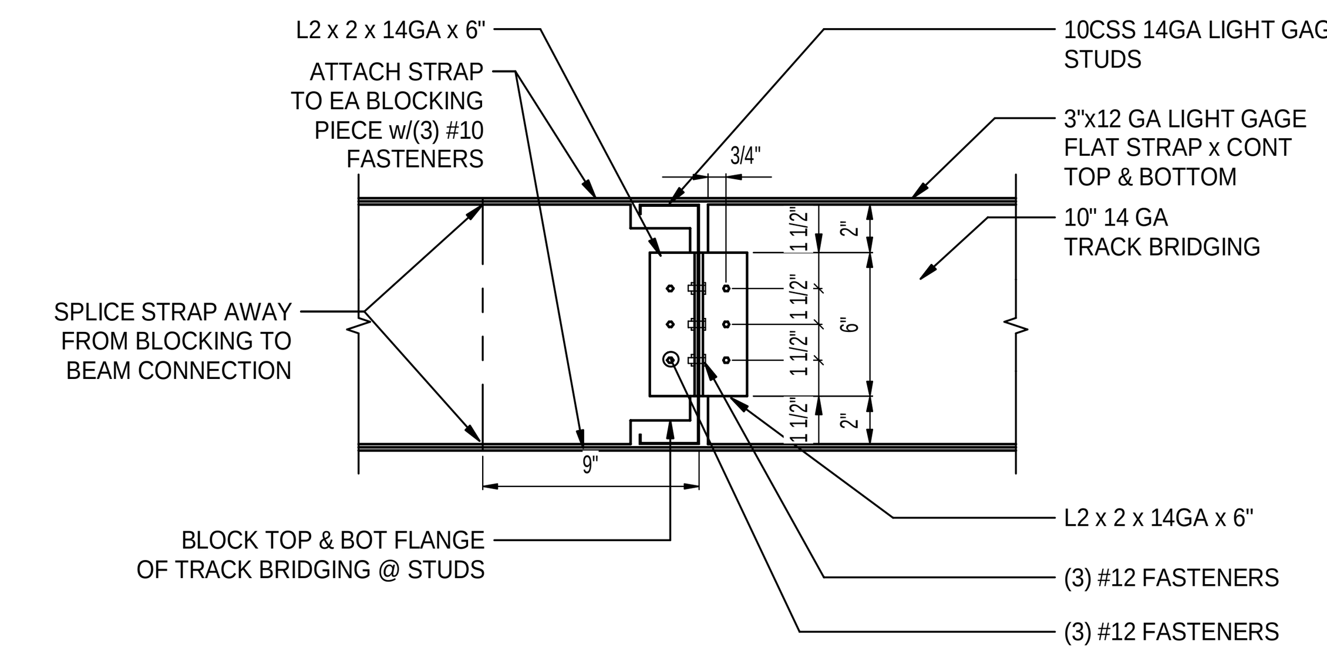
NO. SHEETS 105
SHEET NO. 53
DRAWING NO. SD-4



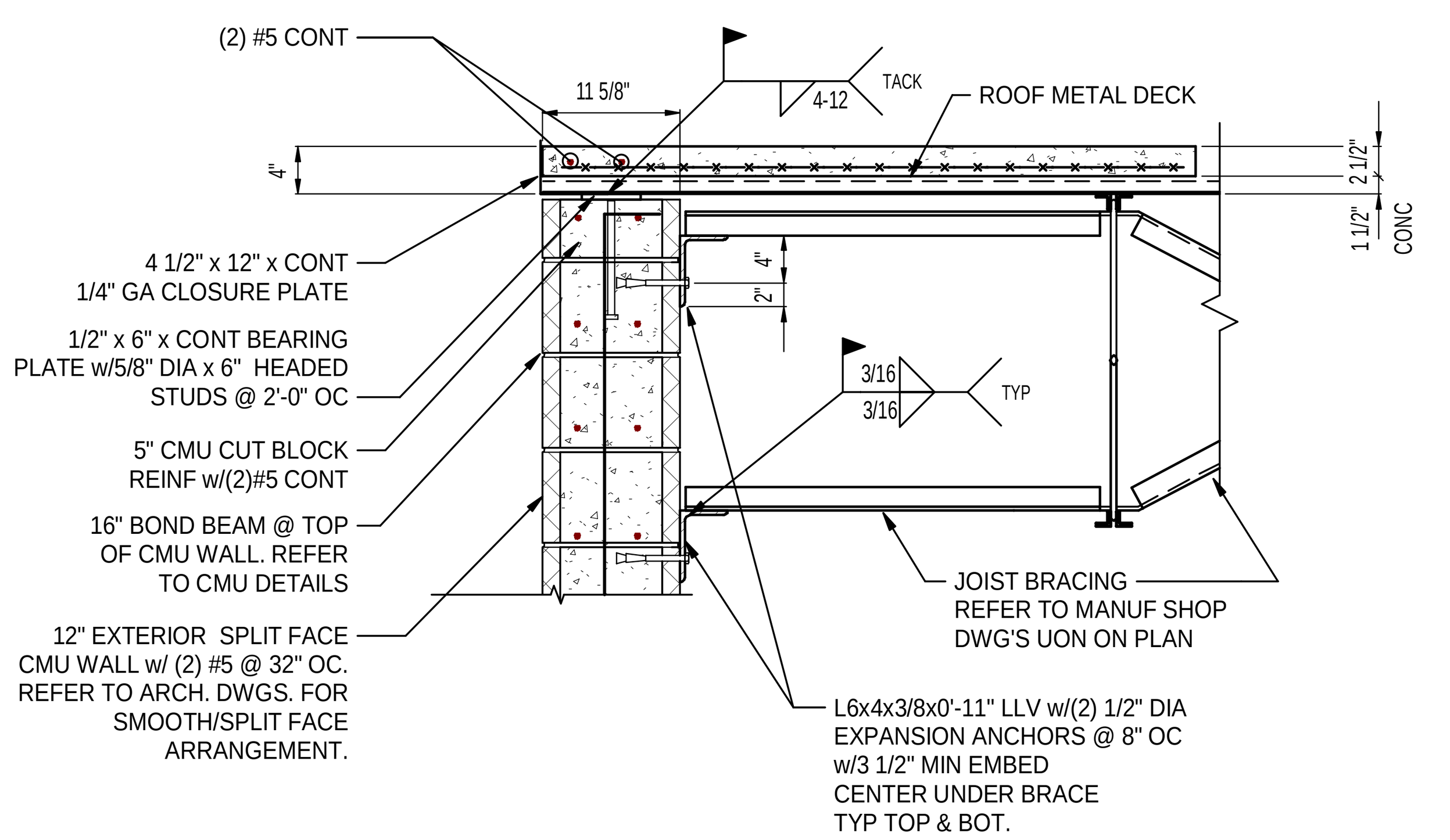
A CONNECTION OF STUD & TRACK TO CMU
1 1/2" = 1'-0"



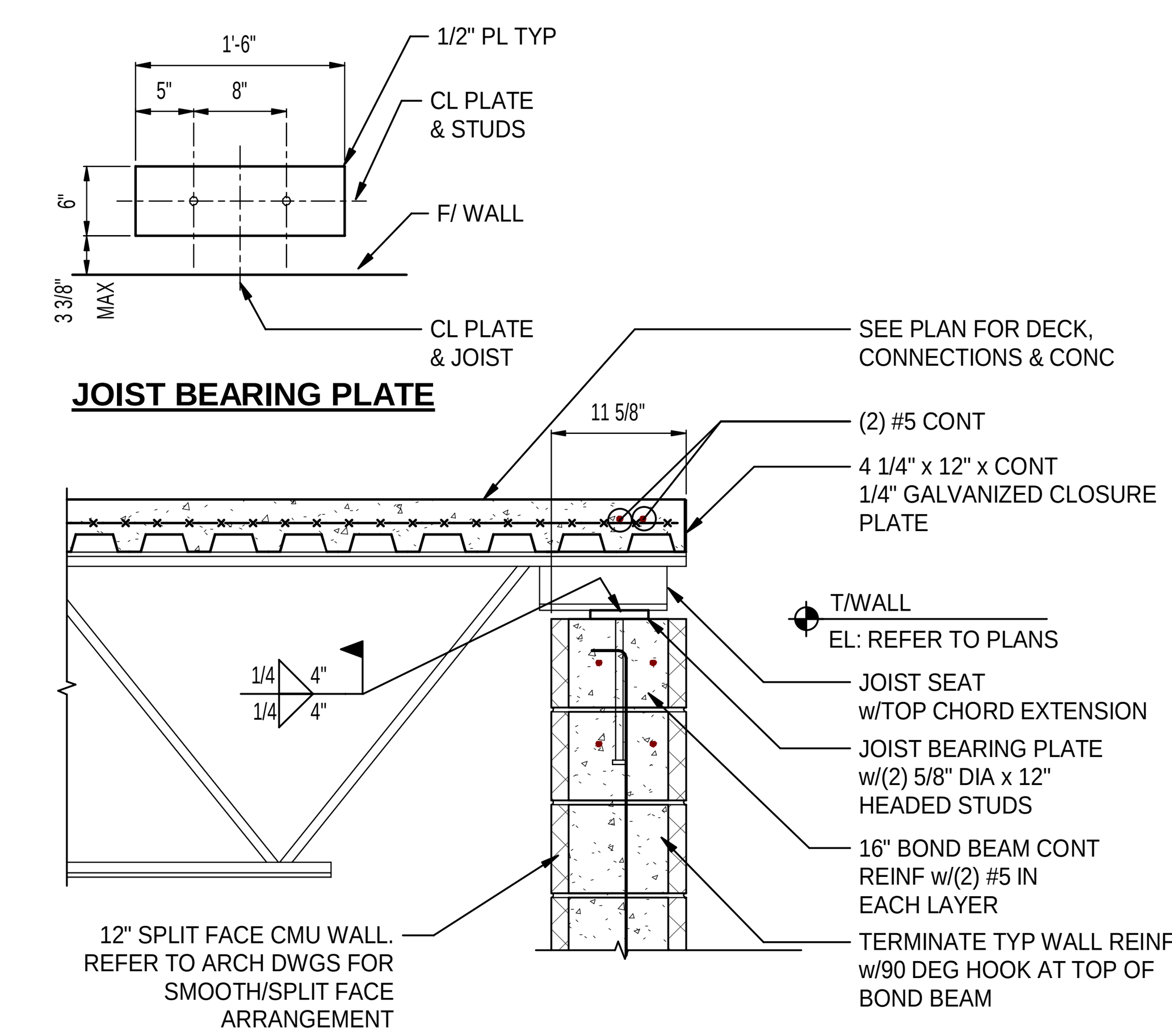
B CONNECTION OF STUD & TRACK TO TOP OF CMU WALL
1 1/2" = 1'-0"



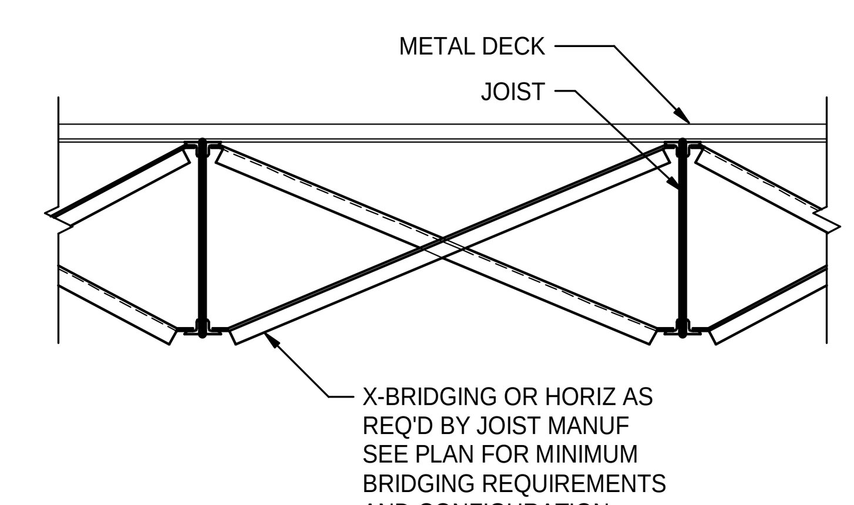
C LIGHT GAGE BLOCKING DETAIL
1 1/2" = 1'-0"



D ROOF DECK & JOIST BRIDGING AT EXTERIOR WALL
3/4" = 1'-0"



E ROOF JOIST TO EXTERIOR CMU WALL
3/4" = 1'-0"



F TYPICAL JOIST BRIDGING
3/4" = 1'-0"

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NO.	DATE	BY	
6			
5			
4			
3			
2			
1			

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

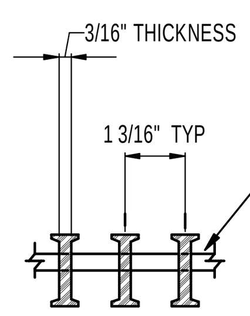
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

STEEL AND ROOF DETAILS

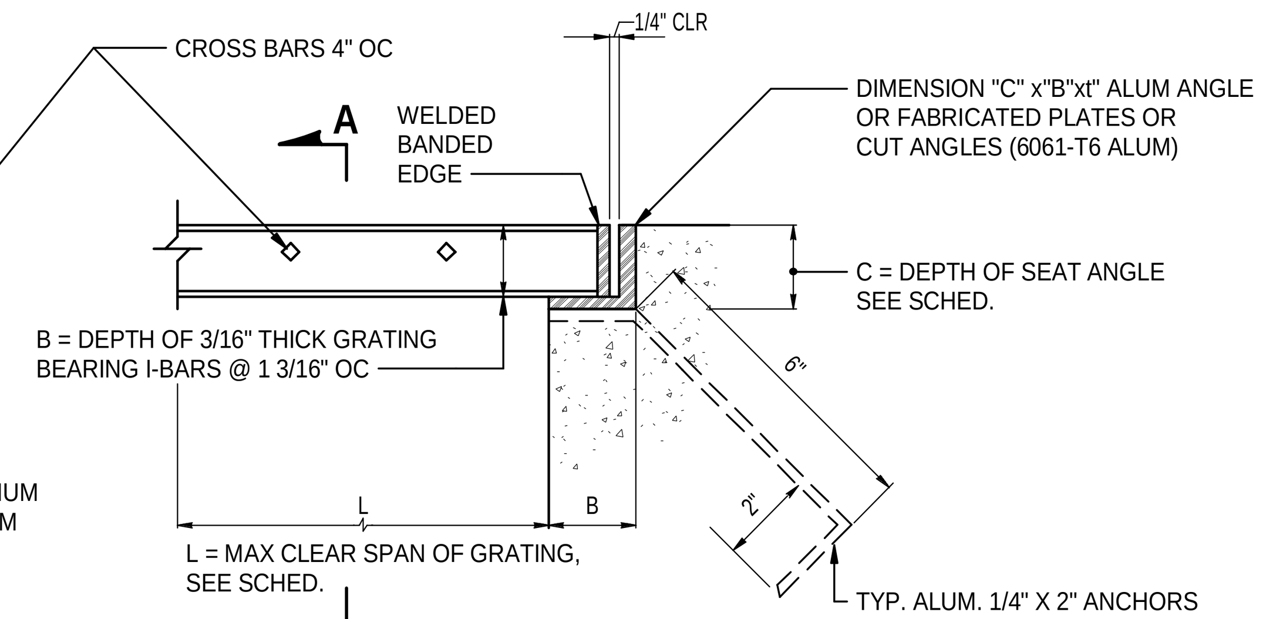
PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 54
DRAWING NO. SD-5

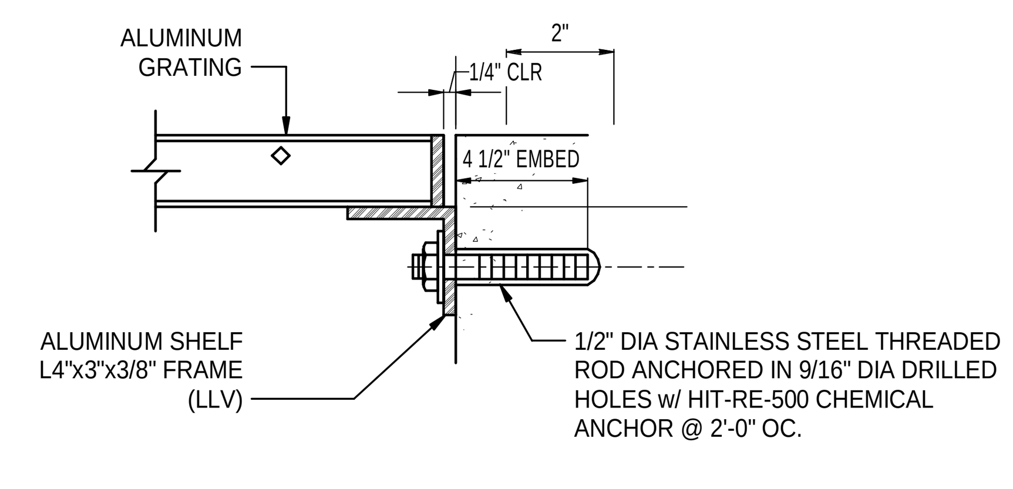


SECTION A-A

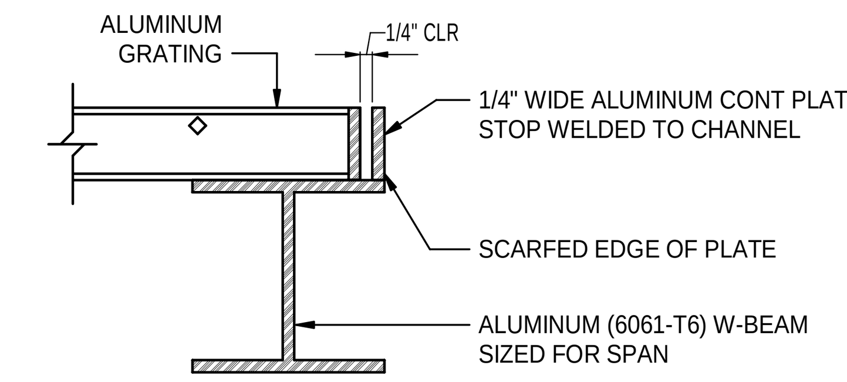
BEARING BARS - 6061-T6 ALUMINUM
CROSS BARS - 6061-T6 ALUMINUM



DETAIL 1



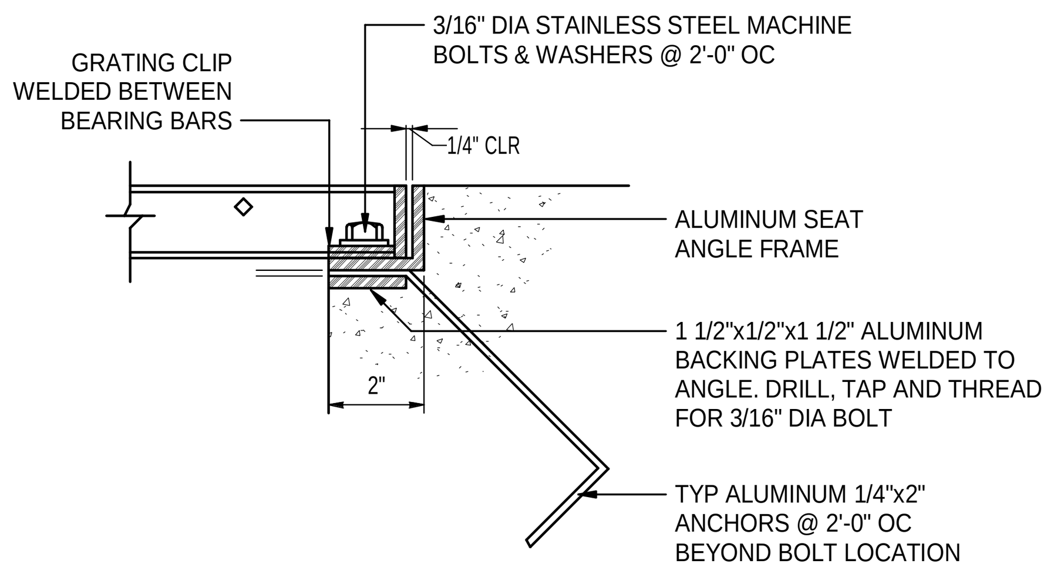
DETAIL 2



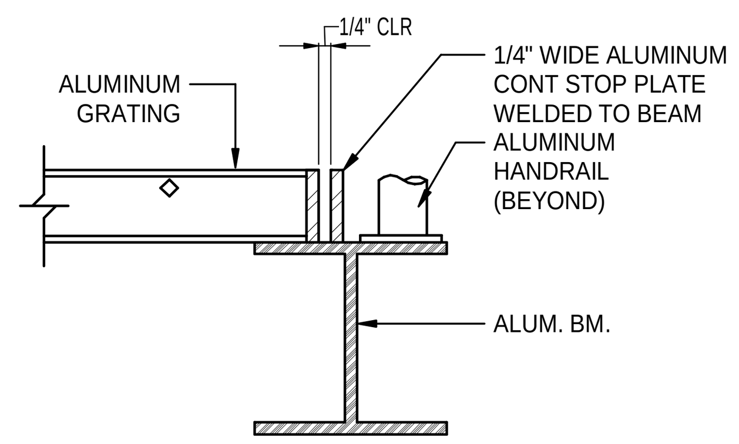
DETAIL 3

GRATING NOTES:

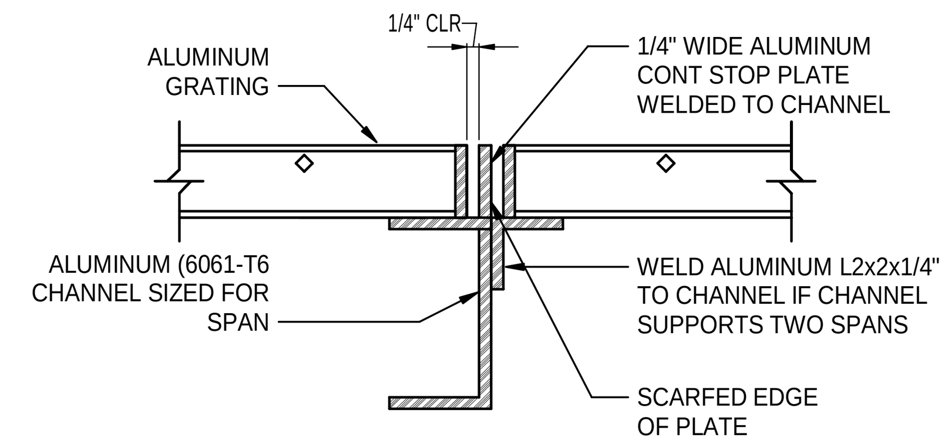
1. TRENCH GRATING SHALL BE RECTANGULAR BANDED ALUMINUM GRATING W/ 2 1/2" x 3/16" BEARING BARS @ 1 3/16" ON CENTER AND CROSS BARS @ 4" ON CENTER. ALL GRATING SHALL BE BANDED.
2. THE GRATING SHALL MEET THE FOLLOWING CRITERIA
   * UNIFORM LIVE LOAD: 300 PSF
   * CONCENTRATED LIVE LOAD: 1100 LB (LBS PER FT OF GRATING WIDTH)
   * MAXIMUM DEFLECTION: 0.705" UNDER 300 PSF LOADING
   * GRATING SELF WEIGHT PER SF: 5.79 PSF
3. SUMP PUMP AND PIPING GRATING SHALL BE RECTANGULAR BANDED ALUMINUM GRATING W/ 1 1/4" x 3/16" BEARING BARS @ 1 3/16" ON CENTER AND CROSS BARS @ 4" ON CENTER.
4. THE SUMP GRATING SHALL MEET THE FOLLOWING CRITERIA:
   * UNIFORM LIVE LOAD: 300 PSF
   * CONCENTRATED LIVE LOAD: 980 LB (LBS PER FT OF GRATING WIDTH)
   * MAXIMUM DEFLECTION: 0.115" UNDER 300 PSF LOADING
   * GRATING SELF WEIGHT: 3.01 PSF
5. GRATING SHALL BE FASTENED TO THE SUPPORTING STRUCTURE WITH GRATING SADDLE CLIPS.
6. ALL OPENINGS LARGER THAN 4" SHALL BE BANDED.
7. GRATING PLANK WIDTHS SHALL NOT EXCEED 2'-0".
8. GRATING PLANK AND ALUMINUM DIAMOND PLATE MATERIAL: 6061-T6 (35,000 PSI)
9. DEPTH OF GRATING AS SHOWN IN SCHEDULE, UNLESS OTHERWISE NOTED ON PLANS.
10. PROVIDE FOR THERMAL EXPANSION IN FRAMES, GRATINGS & PLATES.
11. ALL GRATING TO BE SINGLE SPAN UNLESS OTHERWISE NOTED.
12. MINIMUM GRATING BEARING WIDTH TO BE 1".
13. MINIMUM (2) HOLD DOWN CLIPS PER GRATING PANEL.
14. ALL GRATING SHALL BE BANDED.



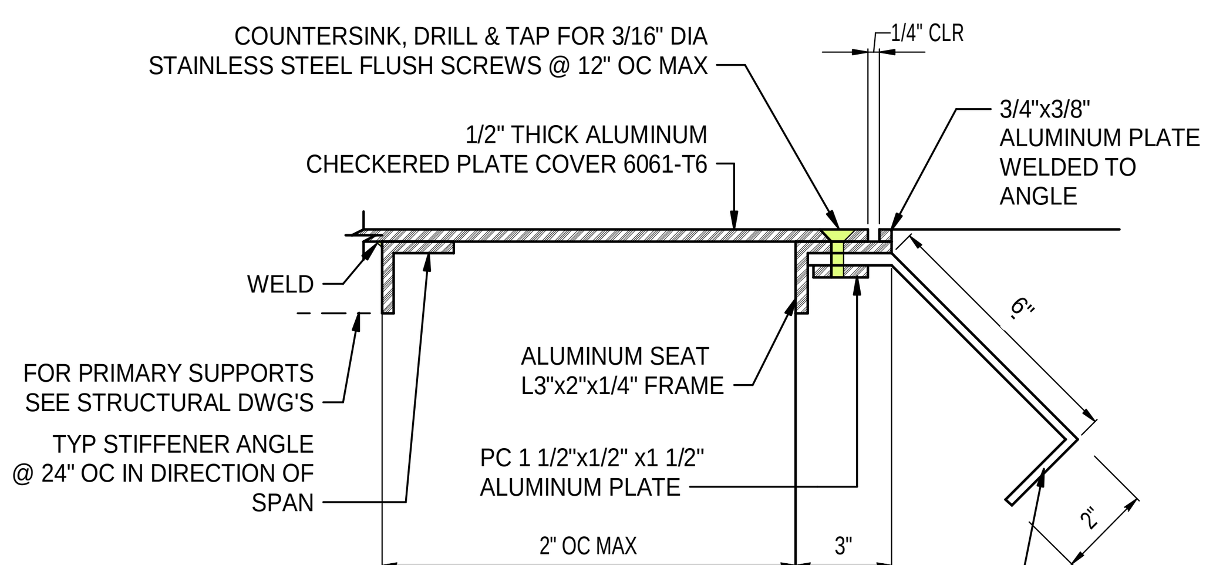
DETAIL 4



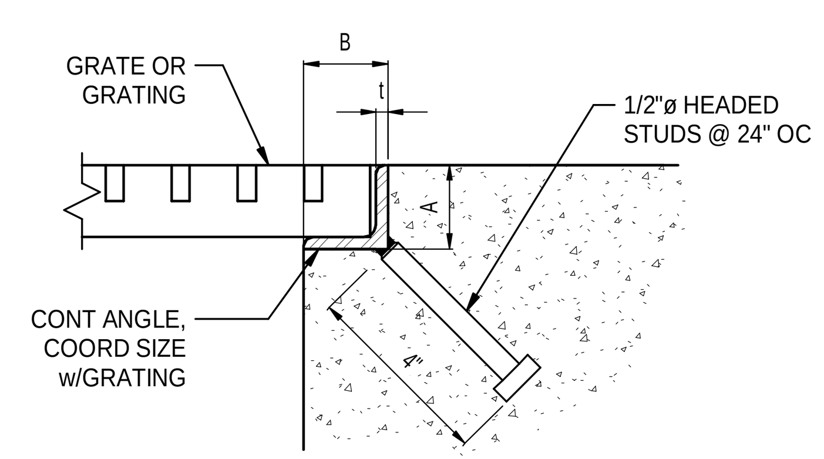
DETAIL AT BEAM



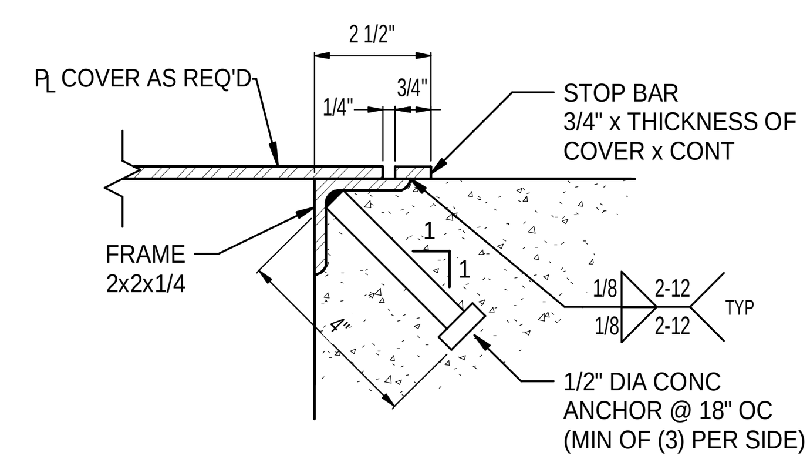
DETAIL AT BEAM (CHANNEL)



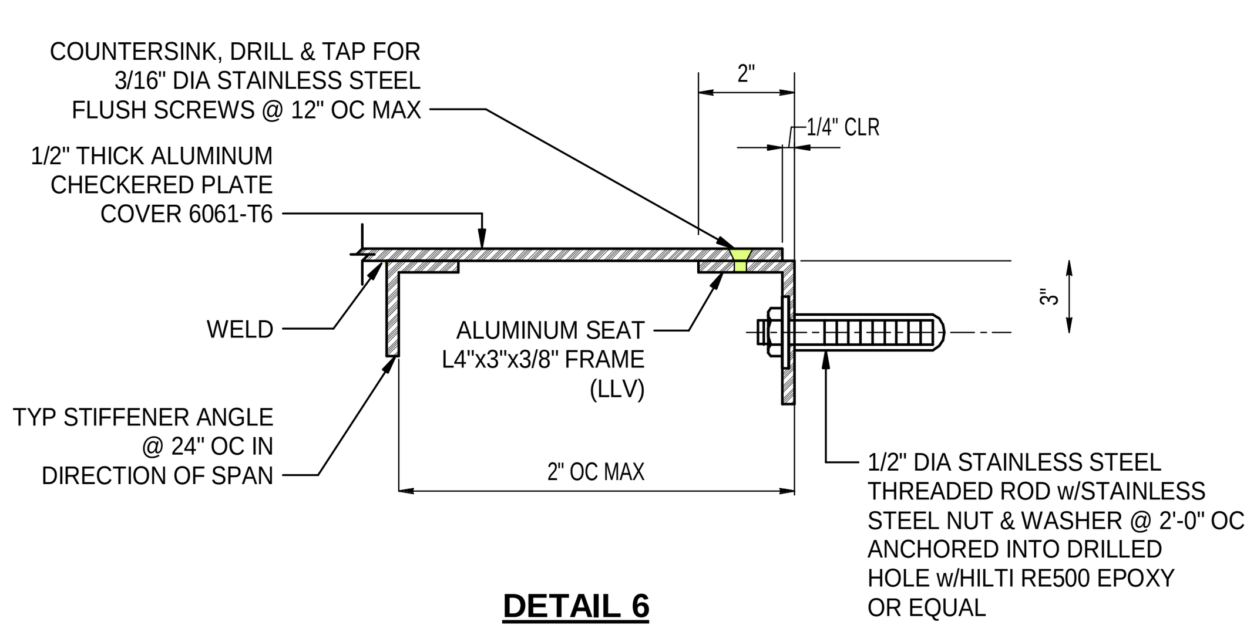
DETAIL 5



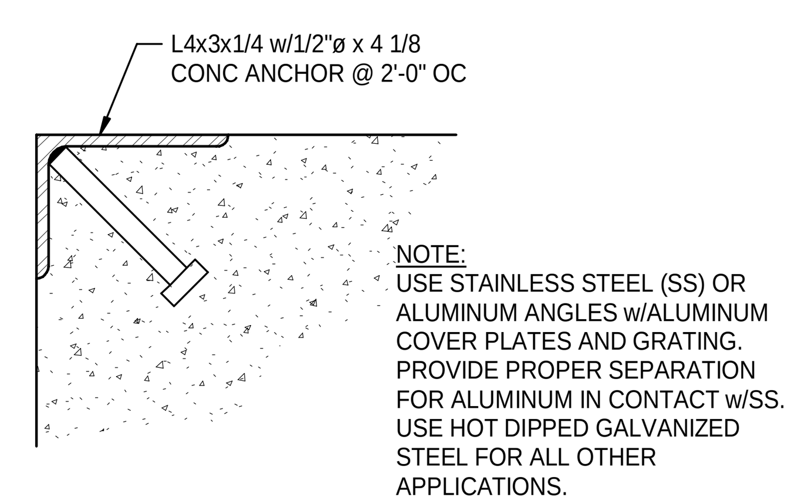
CONCRETE GRATING SETTING ANGLE



EMBEDDED ANGLE AT CONCRETE OPENINGS WITH CHECKERED PLATE COVER



DETAIL 6



NOTE:
USE STAINLESS STEEL (SS) OR ALUMINUM ANGLES w/ALUMINUM COVER PLATES AND GRATING. PROVIDE PROPER SEPARATION FOR ALUMINUM IN CONTACT w/SS. USE HOT DIPPED GALVANIZED STEEL FOR ALL OTHER APPLICATIONS.

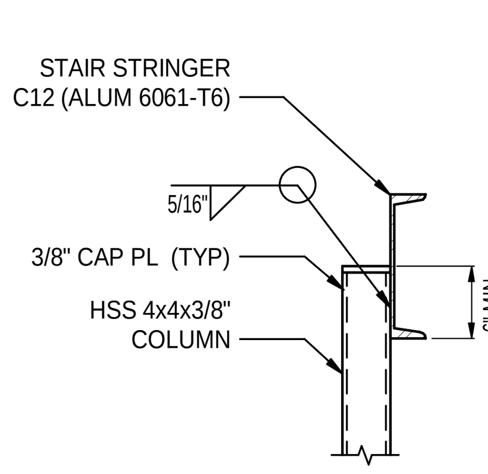
ANGLE AT EDGE OF CONCRETE

GRATING SIZE	"A"	"B"	"t"
1"	1 1/4"	11/4"	1/4"
1 1/4"	1 1/2"	1 1/2"	1/4"
1 1/2"	1 3/4"	1 3/4"	1/4"
1 3/4"	2"	2"	1/4"
2"	2 1/2"	2 1/2"	1/2"
2 1/4"	2 1/2"	2 1/2"	1/2"
2 1/2"	3"	3"	1/2"

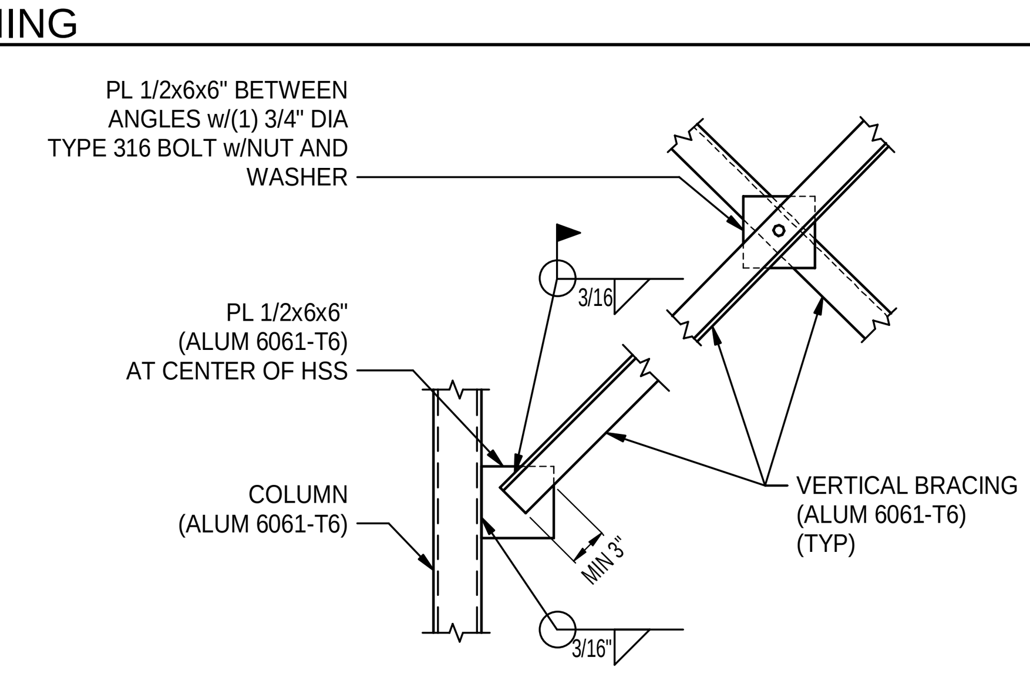
SCHEDULES OF TYPICAL GRATING AND SEAT ANGLE SIZES

MAXIMUM SPAN OF GRATING L	DEPTH OF 3/16" THICK GRATING BEARING BARS B	DEPTH OF SEAT ANGLE FRAME C	MIN. WT/S FT.
2'-6"	1"	1 1/4"	2.7
3'-0"	1 1/4"	1 1/2"	3.3
3'-6"	1 1/2"	1 3/4"	4.0
4'-0"	1 3/4"	2"	4.6
4'-6"	2"	2 1/2"	5.3
5'-3"	2 1/4"	2 1/2"	5.9
6'-0"	2 1/2"	3"	6.5

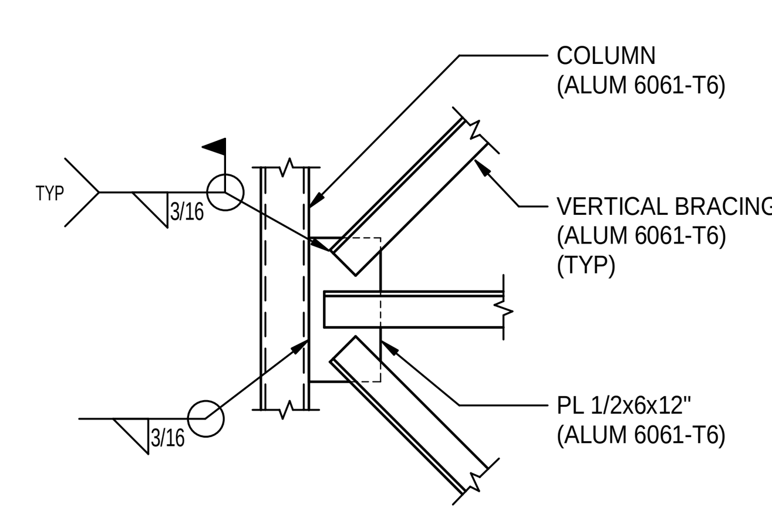
A ALUMINUM GRATING & PLATE FRAMING
- 3/4" = 1'-0"



B TYPICAL HSS TO STRINGER
- 3/4" = 1'-0"

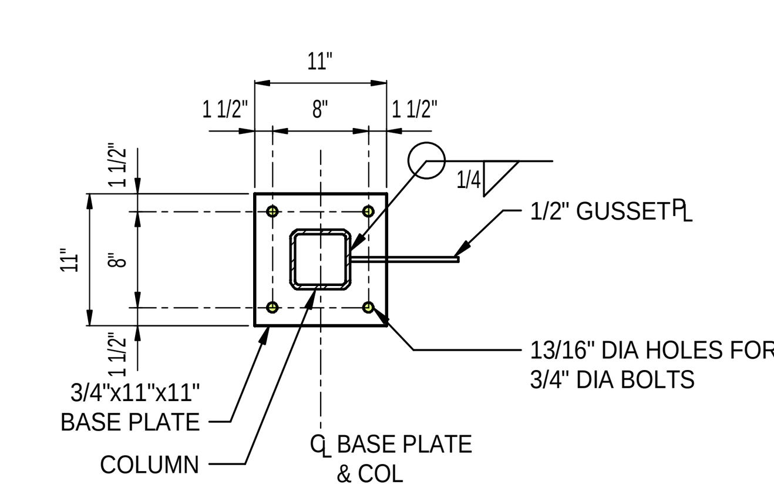


ELEVATION FOR X-BRACE CONNECTION

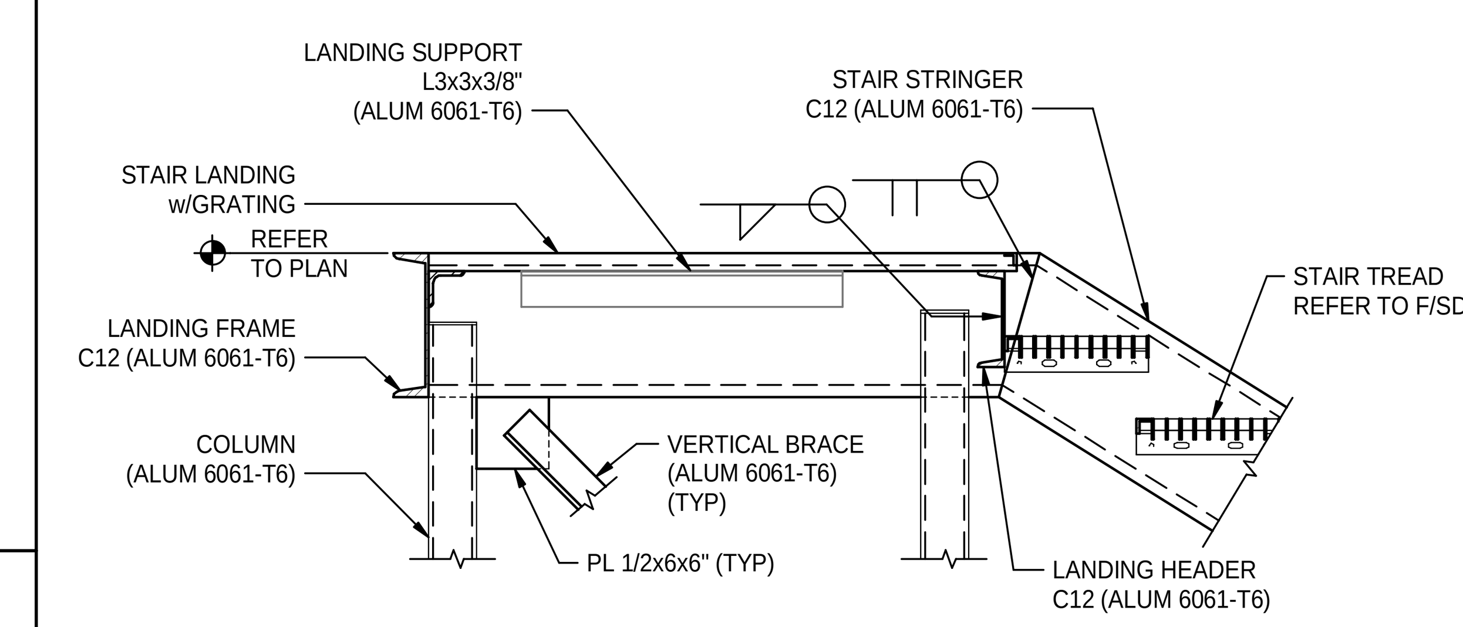


ELEVATION FOR K-BRACE CONNECTION

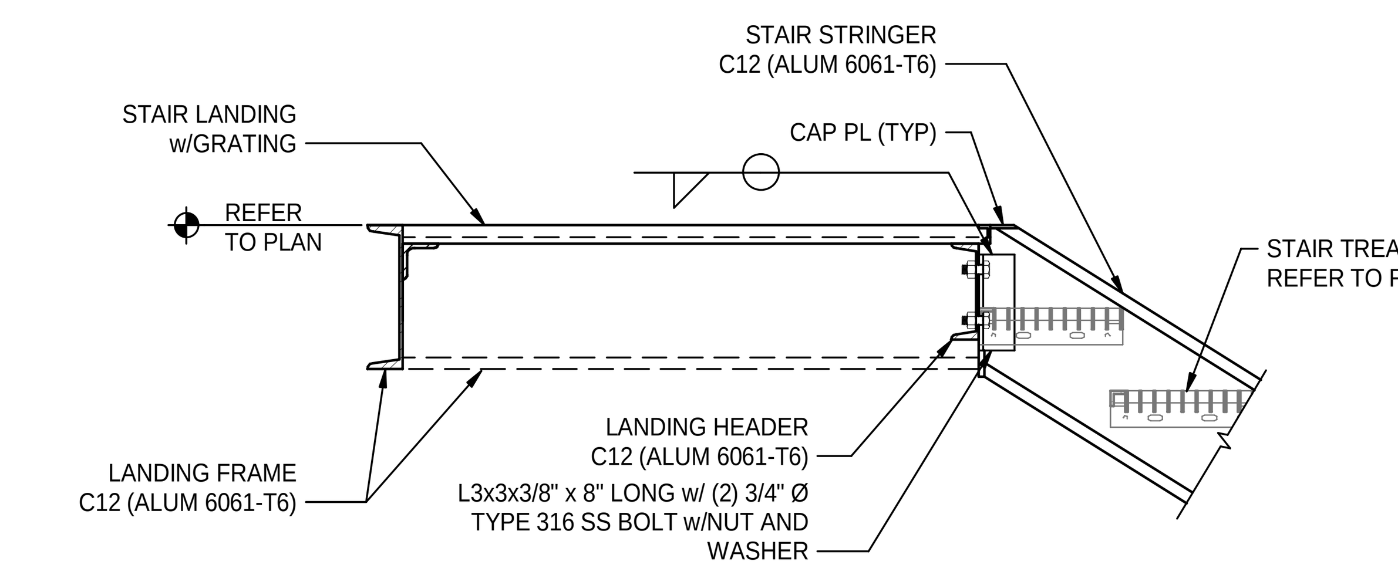
C TYPICAL VERTICAL BRACING
- 3/4" = 1'-0"



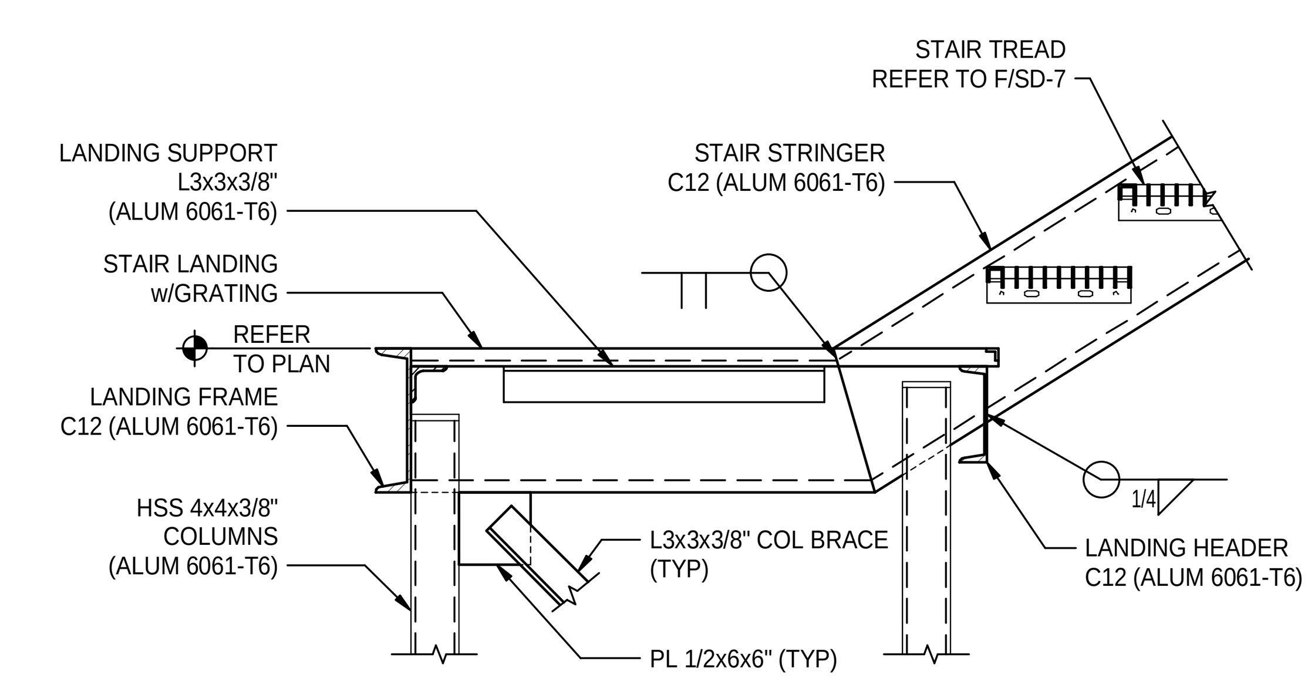
D TYPICAL COLUMN BASE PLATE DETAIL
- 3/4" = 1'-0"



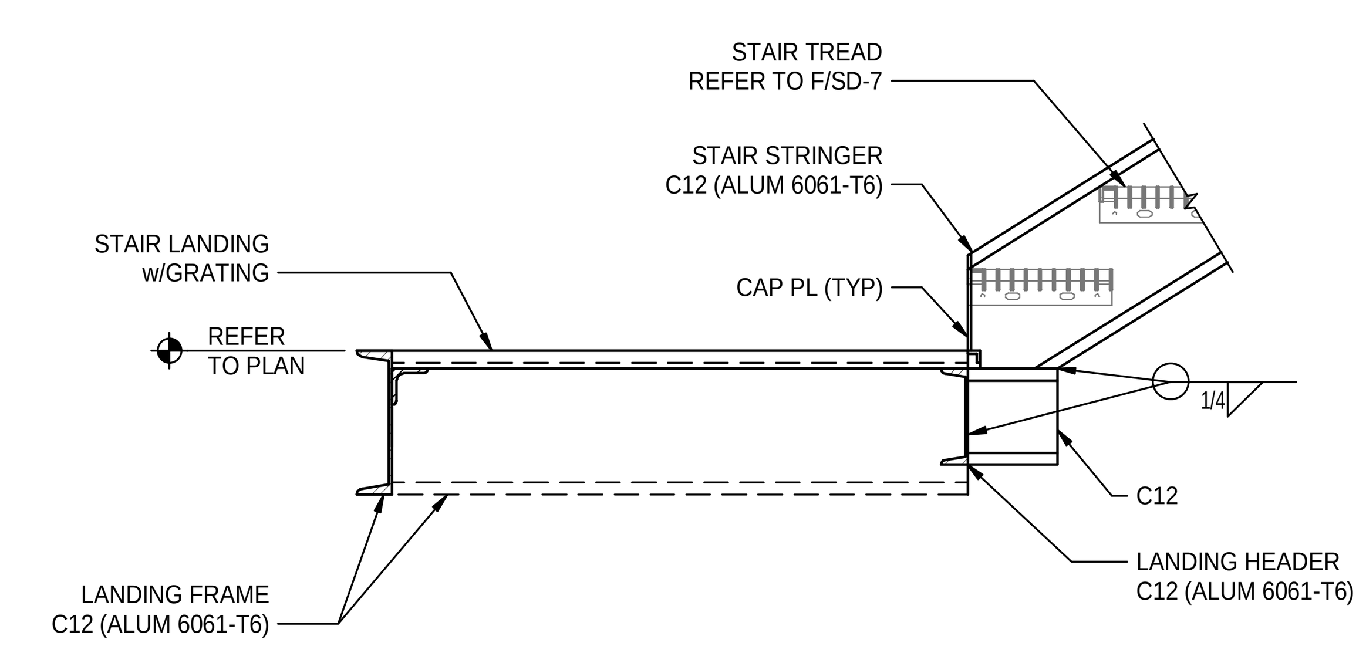
E OUTSIDE DOWNWARD STRINGER TO PLATFORM FRAMING
- 3/4" = 1'-0"



F INSIDE DOWNWARD STRINGER TO PLATFORM FRAMING
- 3/4" = 1'-0"



G OUTSIDE UPWARD STRINGER TO PLATFORM FRAMING
- 3/4" = 1'-0"



H INSIDE UPWARD STRINGER TO PLATFORM FRAMING
- 3/4" = 1'-0"

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MOTT MACDONALD
REVISIONS
NO. | BY | DATE
DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277
DESIGNER: J. EARL
DRAWN BY: C. LYNER
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020
JEA Building Community

TWIN CREEKS RECLAIMED WATER RE- PUMP STATION IMPROVEMENTS - PHASE II

STAIR DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED
NO. SHEETS 105
SHEET NO. 55
DRAWING NO. SD-6

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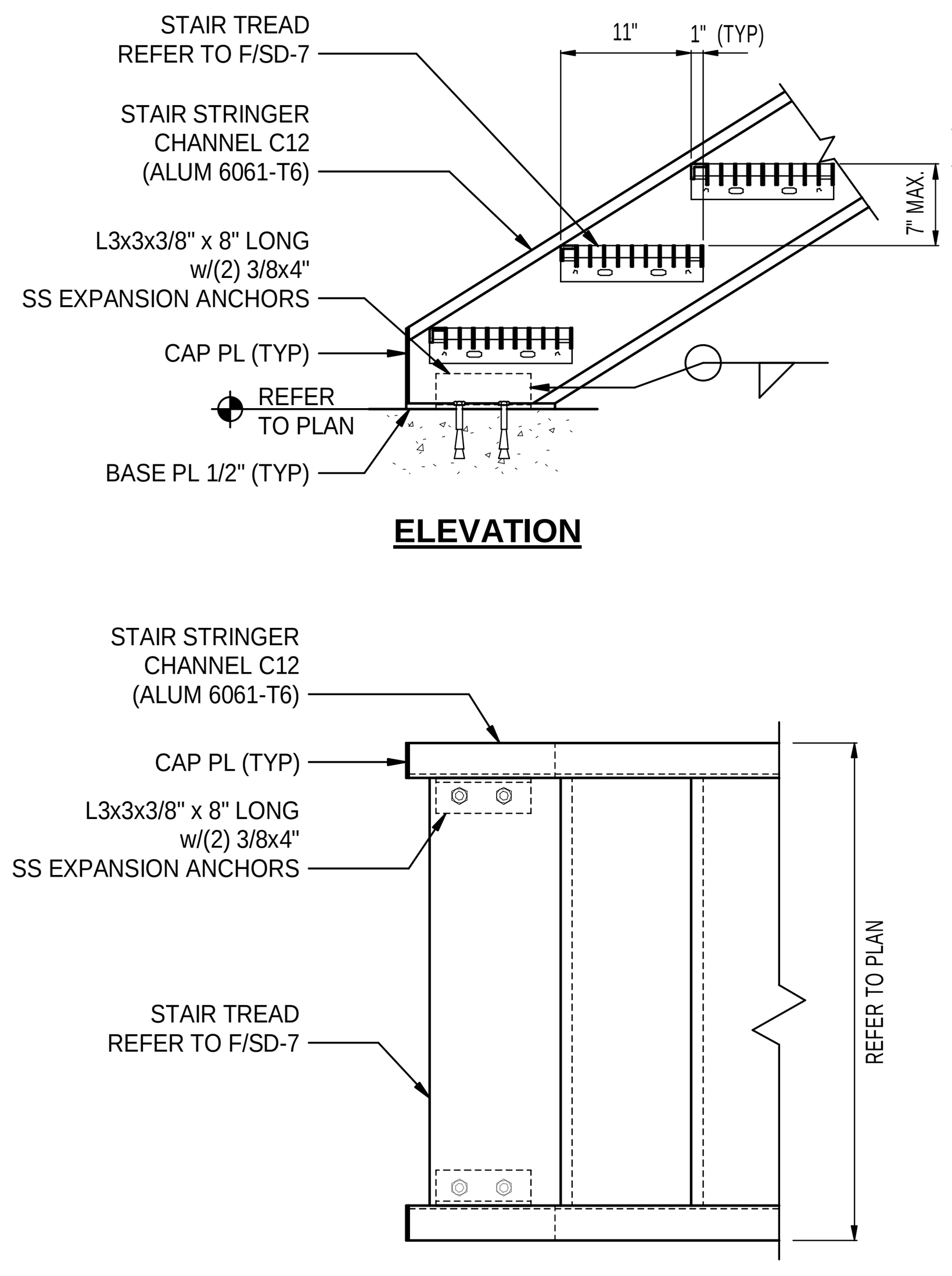
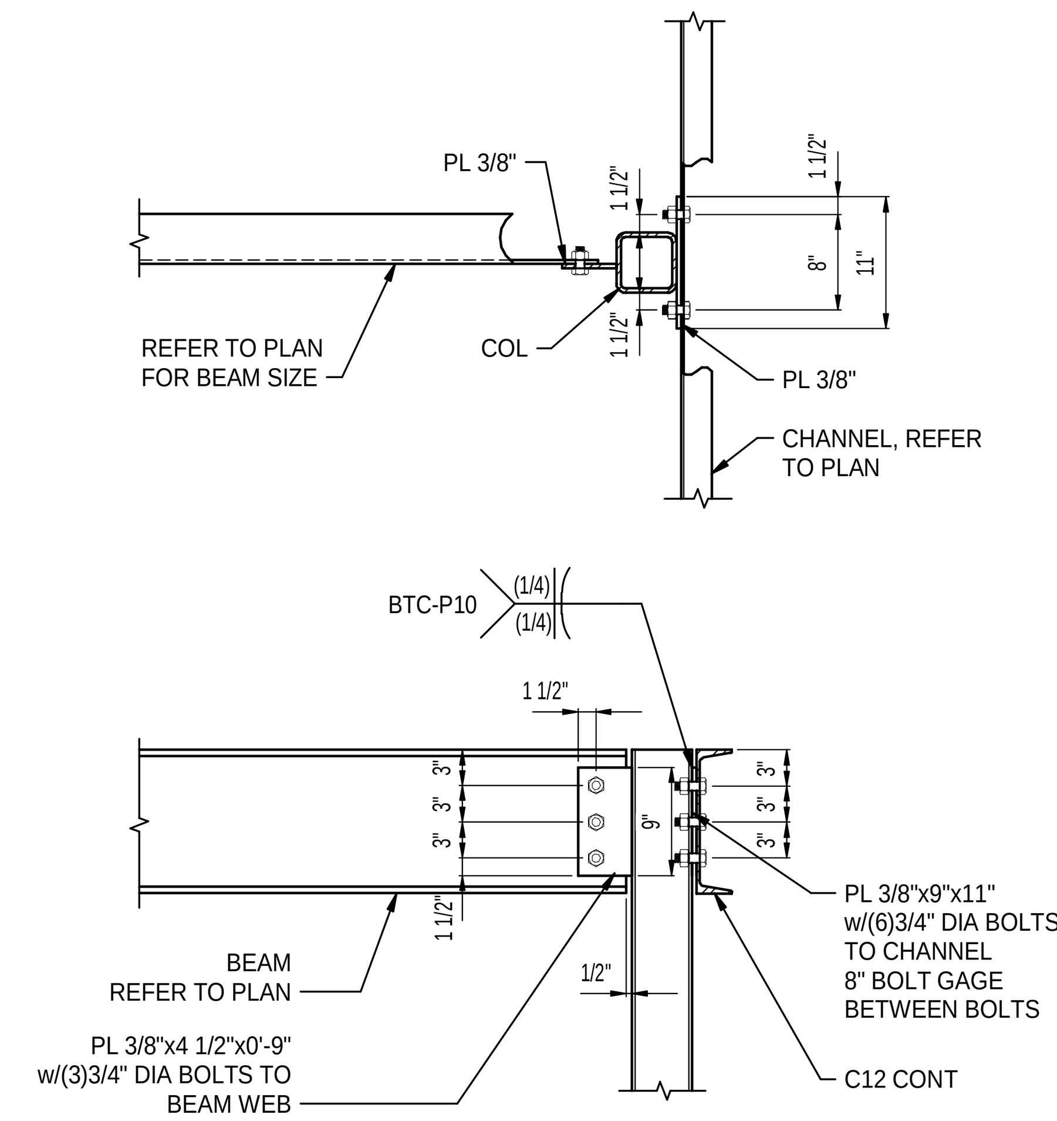
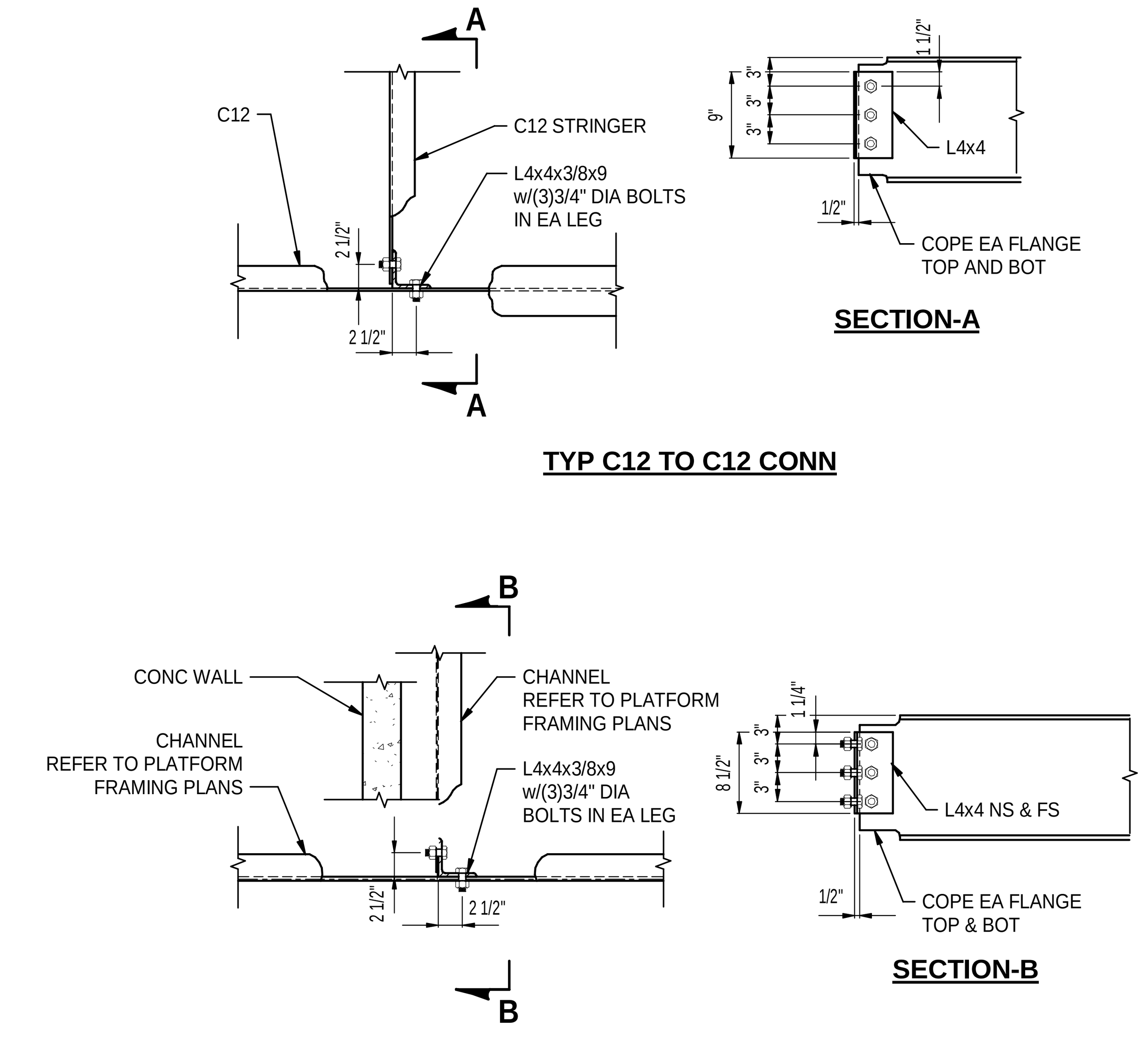


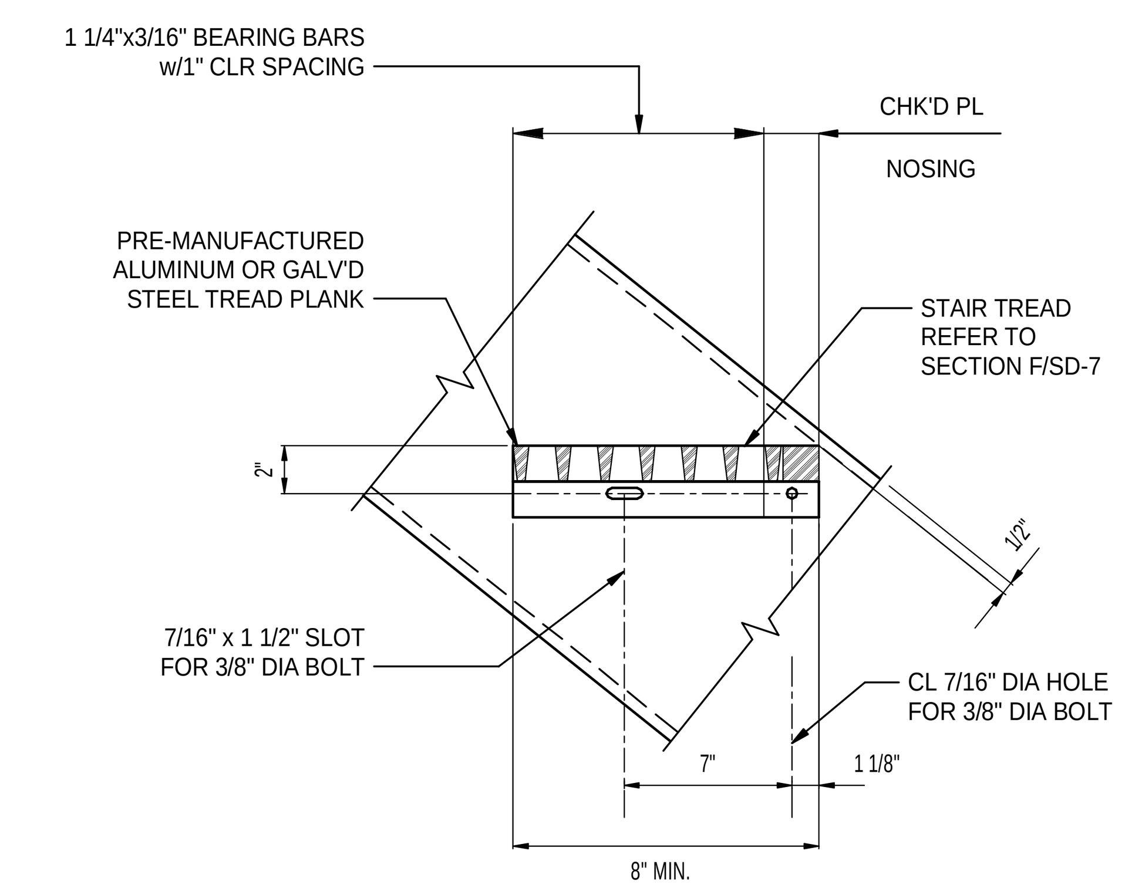
A STRINGER CONCRETE CONNECTION
3/4" = 1'-0"



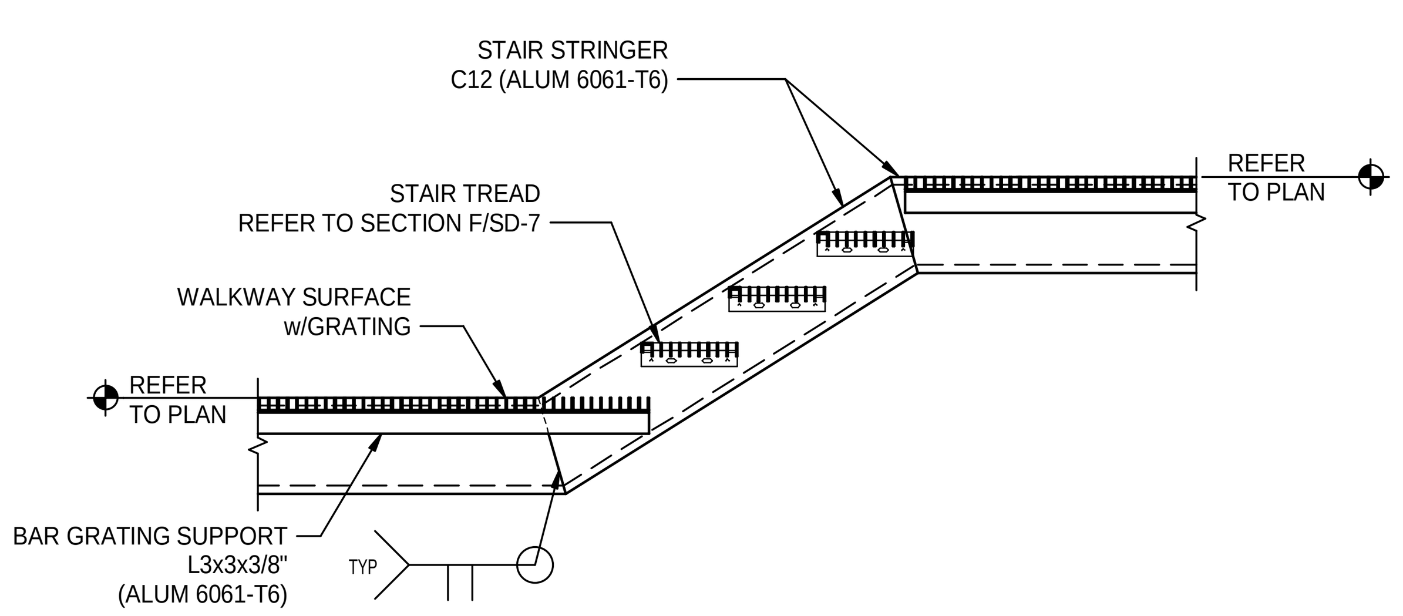
B TYPICAL SHEAR TAB CONNECTION
3/4" = 1'-0"



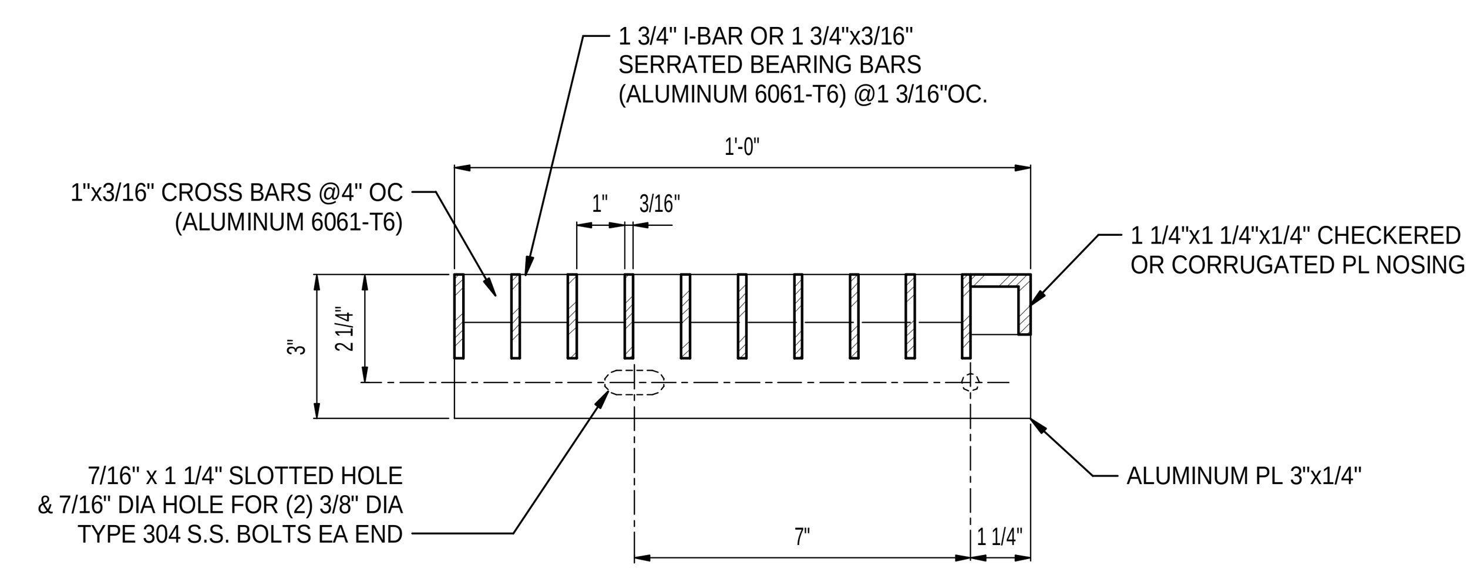
C TYPICAL CHANNEL TO CHANNEL CONNECTIONS
3/4" = 1'-0"



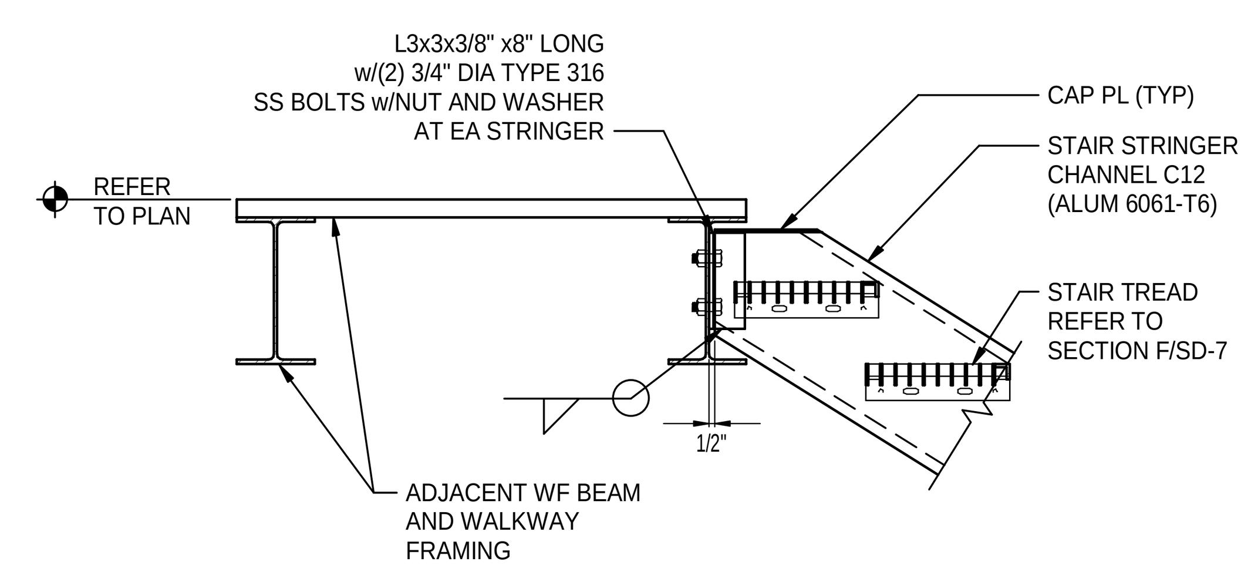
D TYPICAL GRATING TREAD TO STRINGER
1 1/2" = 1'-0"



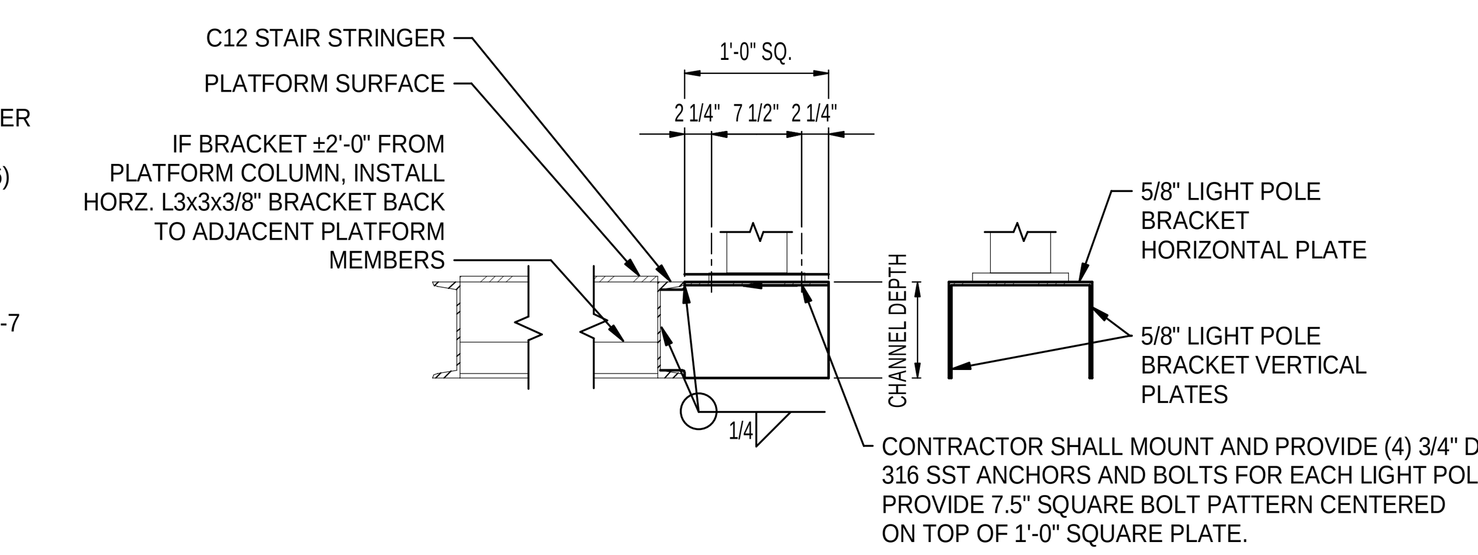
E EXTERIOR KNUCKLED STRINGER PROFILE
1/2" = 1'-0"



F ALUMINUM TREAD
3" = 1'-0"



G TYPICAL STRINGER TO BEAM
3/4" = 1'-0"



H LIGHT POLE BRACKET DETAIL @ PLATFORM
3/4" = 1'-0"

ALL COMPONENTS SHALL BE 6061-T6 ALUMINUM

STAIR AND ELEVATED WALKWAY

STAIR POST	HSS 4x4x3/8"
STRINGERS	C12x10.4
VERTICAL BRACING	L3x3x3/8" MIN. UON.
LANDING HEADER	C12x10.4
LANDING FRAME	C12x10.4

I STAIR COMPONENTS
1 1/2" = 1'-0"

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ISSUED FOR BID

MOTT MACDONALD
FLORIDA LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1990
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

REVISIONS

NO.	BY	DATE
6		
5		
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3		
2		
1		

DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: J. EARL
DRAWN BY: C. LYNER
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

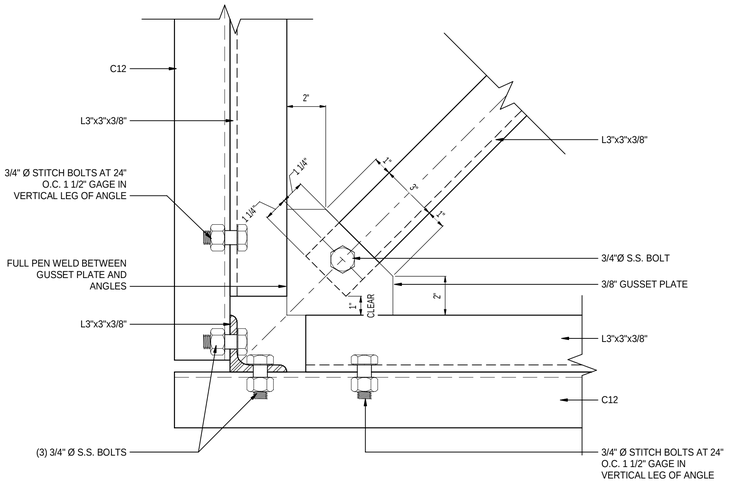
JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

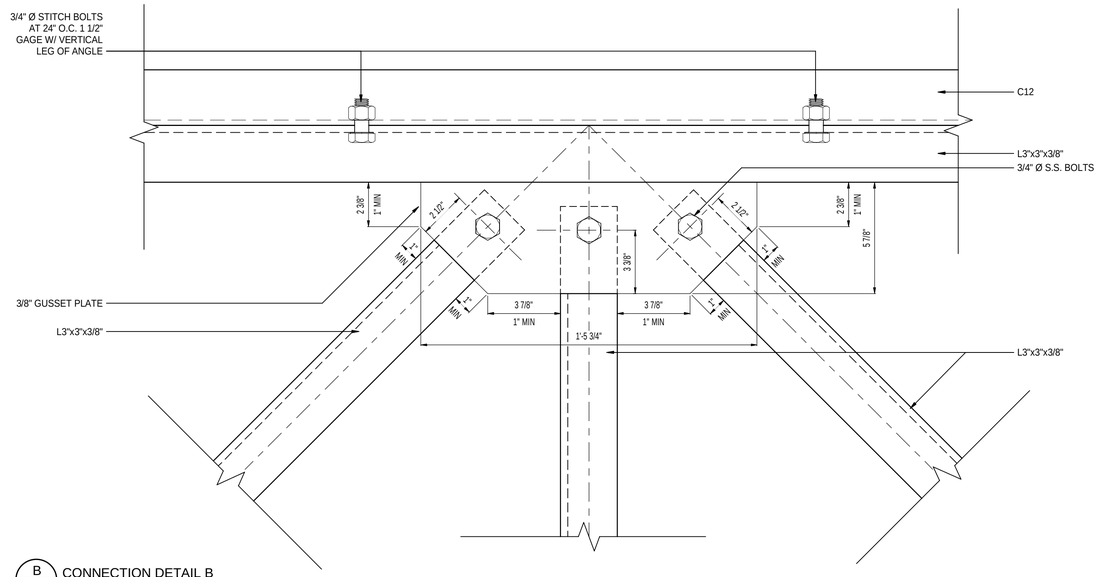
STAIR DETAILS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

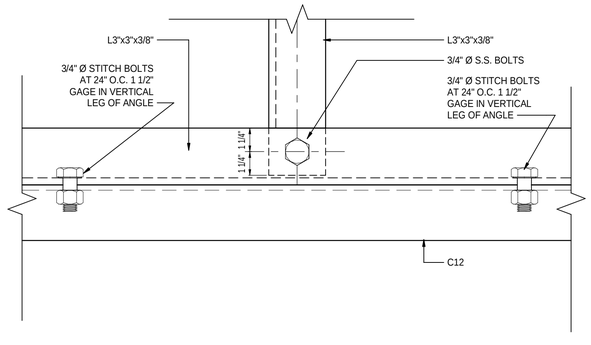
NO. SHEETS 105
SHEET NO. 56
DRAWING NO. SD-7



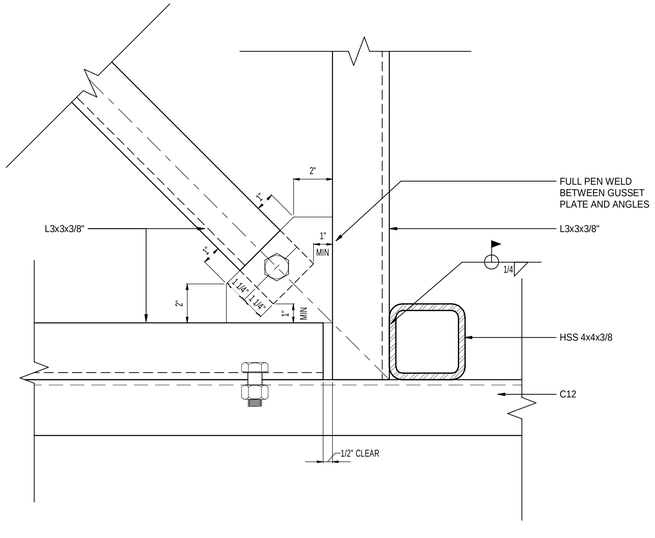
A
-
CONNECTION DETAIL A
3" = 1'-0"



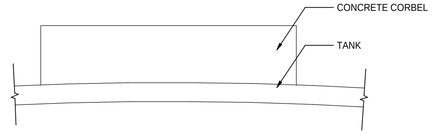
B
-
CONNECTION DETAIL B
3" = 1'-0"



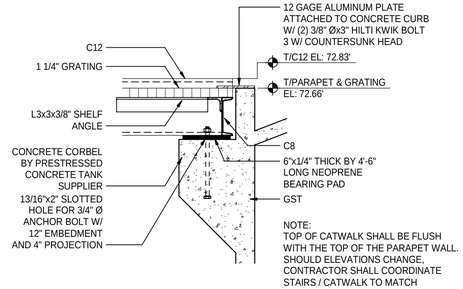
C
-
CONNECTION DETAIL C
3" = 1'-0"



D
-
CONNECTION DETAIL D
3" = 1'-0"



PLAN



SECTION

E
-
CONNECTION DETAIL E
3/4" = 1'-0"

ISSUED FOR BID

MOTT MACDONALD
MOTT MACDONALD, LLC
10200 Centurion Parkway North
Suite 200
Jacksonville, Florida 32256
Telephone: (904) 293-1090
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Engineers EB - 00000035
Surveyors LB - 0000030

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO.
66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

CATWALK DETAILS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 57
DRAWING NO. SD-8

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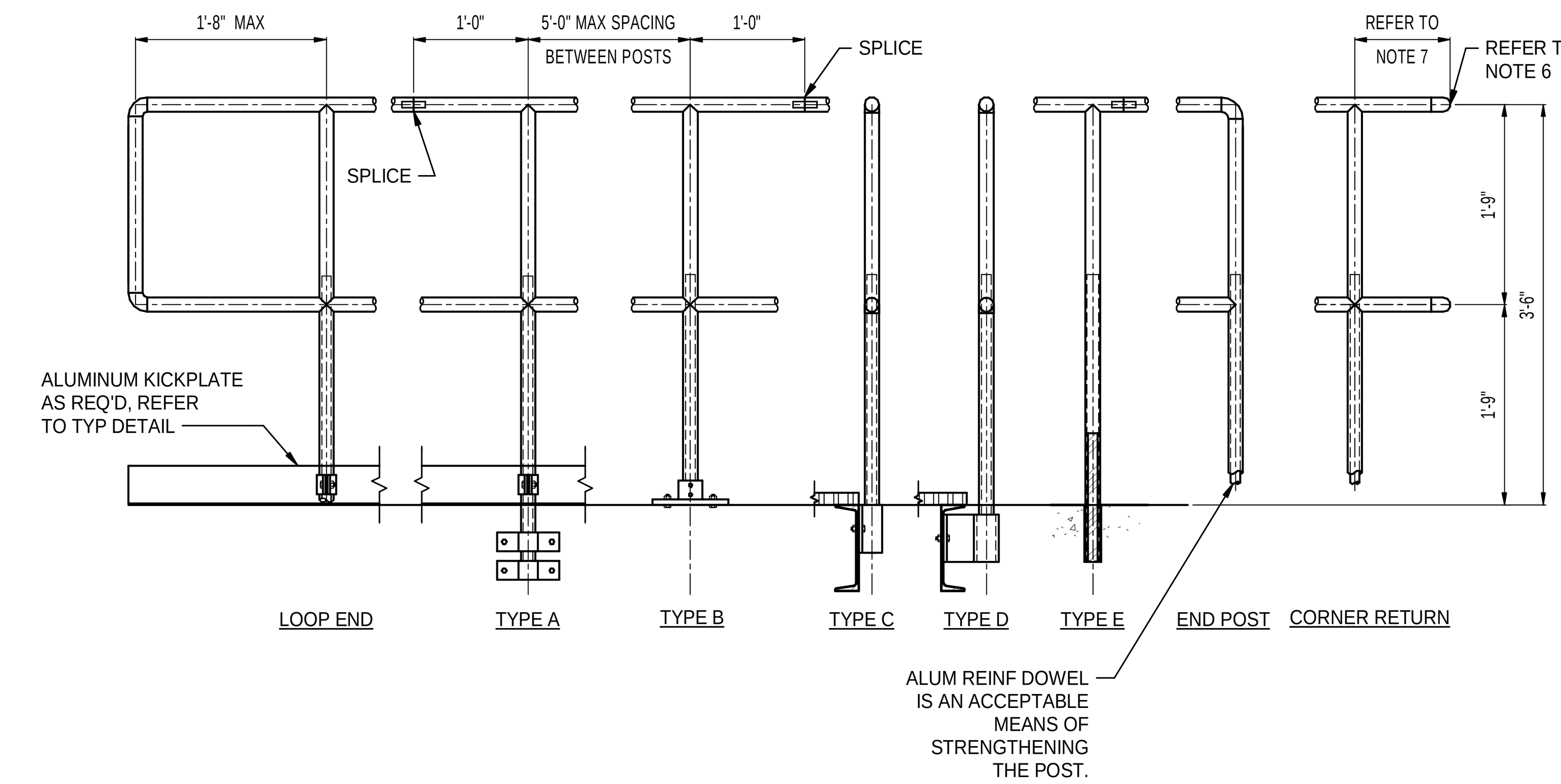
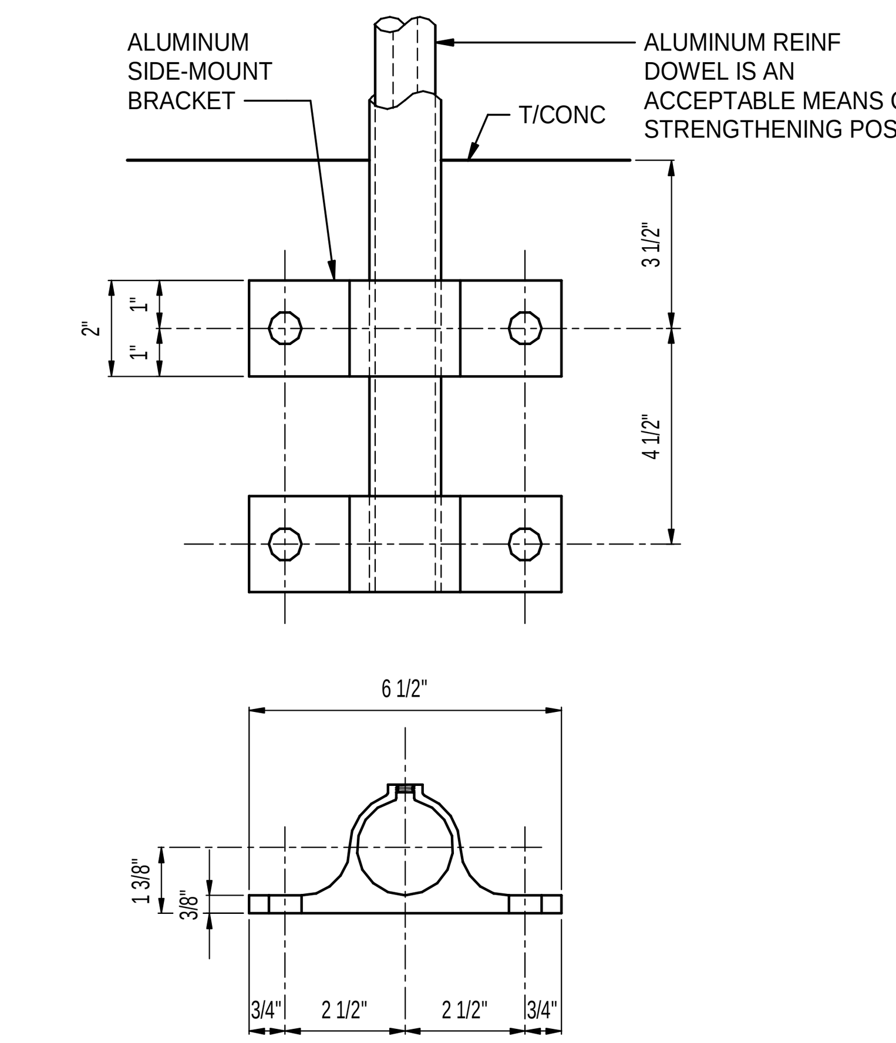
GUARDRAIL NOTES

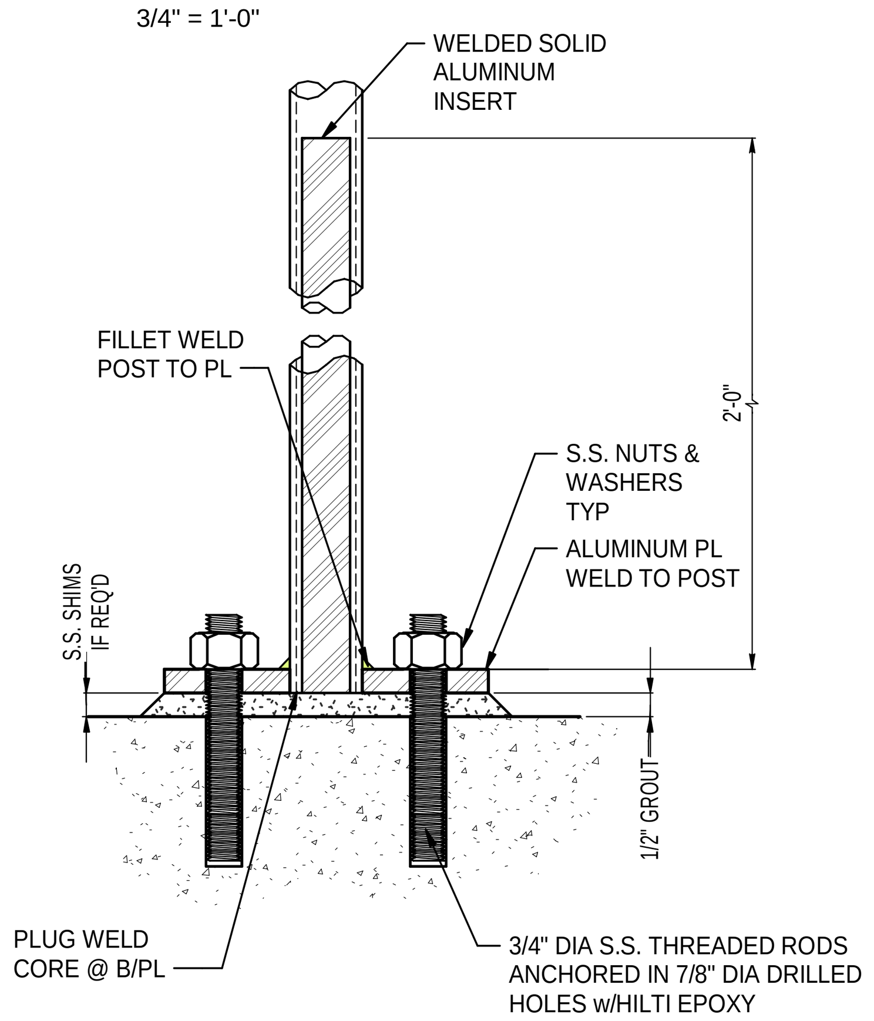
1. GUARDRAIL SHALL BE THE PRODUCT OF A COMPANY NORMALLY ENGAGED IN THE MANUFACTURE OF PIPE RAILING. RAILING SHALL BE SHOP ASSEMBLED IN LENGTHS NOT TO EXCEED 24'-0" FOR FIELD ERECTION.
2. GUARDRAILS AND STAIR RAILS SHALL BE DESIGNED TO WITHSTAND A 200# CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT ON THE TOP RAIL. GUARDRAILS AND STAIR RAILS SHALL ALSO BE DESIGNED TO WITHSTAND A LOAD OF 50#/FT APPLIED HORIZONTALLY TO THE TOP RAIL. THE 200# LOAD WILL NOT BE APPLIED SIMULTANEOUSLY WITH THE 50#/FT LOAD. IN ADDITION, THE GUARDRAIL SHALL BE DESIGNED TO WITHSTAND A LOAD OF 100#/FT APPLIED VERTICALLY DOWNWARD TO THE TOP RAIL AND SIMULTANEOUSLY WITH THE 50#/FT HORIZONTAL LOAD. THE 100#/FT VERTICAL LOAD DOES NOT APPLY TO STAIR RAILS.
3. THE MANUFACTURER SHALL SUBMIT CALCULATIONS TO THE ENGINEER FOR REVIEW. TESTING OF BASE CASTINGS OR BASE EXTRUSIONS BY AN INDEPENDENT LAB OR MANUFACTURER'S LAB (IF MANUFACTURER'S LAB MEETS THE REQUIREMENTS OF THE ALUMINUM ASSOCIATION) WILL BE AN ACCEPTABLE SUBSTITUTE FOR CALCULATIONS. CALCULATIONS WILL BE REQUIRED FOR REVIEW OF ALL OTHER DESIGN ASPECTS.
4. POST SPACING SHALL BE A MAXIMUM OF 5'-0". POSTS AND RAILINGS SHALL BE A MINIMUM OF 1 1/2" SCHEDULE 40 ALUMINUM PIPE ALLOY 6083-T6 ASTM-B-429 OR ASTM-B-221. THE GUARDRAIL MANUFACTURER SHALL SHOW THAT THEIR POSTS ARE OF ADEQUATE STRENGTH TO MEET THE LOADING REQUIREMENTS. IF THE MANUFACTURER'S POSTS ARE NOT OF ADEQUATE STRENGTH, THE MANUFACTURER MAY REDUCE THE POST SPACING OR ADD REINFORCING DOWELS OR MAY DO BOTH IN ORDER TO MEET LOADING REQUIREMENTS.
5. THE GUARDRAIL SHALL BE MADE OF PIPES JOINTED TOGETHER WITH COMPONENT FITTINGS. SAMPLES OF ALL COMPONENTS, BASES, TOE PLATE AND PIPE MUST BE SUBMITTED FOR REVIEW. COMPONENTS THAT ARE POP-RIVETED OR GLUED AT THE JOINTS WILL NOT BE ACCEPTABLE. ALL COMPONENTS MUST BE MECHANICALLY FASTENED WITH STAINLESS STEEL HARDWARE.
6. POSTS SHALL NOT INTERRUPT THE CONTINUATION OF THE TOP RAIL AT ANY POINT ALONG THE RAILING, INCLUDING CORNERS AND END TERMINATIONS (OSHA 1910.23). THE TOP SURFACE OF THE TIP RAILING SHALL BE SMOOTH AND SHALL NOT BE INTERRUPTED IN PROJECTING FITTINGS.
7. THE MIDRAIL AT THE CORNER RETURN SHALL BE ABLE TO WITHSTAND A 200# LOAD WITHOUT LOOSENING. THE MANUFACTURER IS TO DETERMINE THIS DIMENSION FOR THEIR SYSTEM. PROVIDE PHYSICAL TESTS FROM A LABORATORY TO CONFIRM COMPLIANCE.
8. EXPANSION BOLTS SHALL BE SPACED 10 DIA APART AND 5 DIA EDGE DISTANCE FOR A REDUCTION IN PULLOUT STRENGTH. A SAFETY FACTOR OF 4 SHALL BE USED ON EXPANSION BOLT PULLOUT VALUES PUBLISHED BY THE MANUFACTURER. EXPANSION BOLTS SHALL BE STAINLESS STEEL TYPE 303 WEDGE BOLTS AND SHALL BE FURNISHED BY THE GUARDRAIL MANUFACTURER.
9. KICK PLATE SHALL CONFORM TO OSHA STANDARDS. KICK PLATE SHALL BE A MINIMUM OF 4" HIGH AND SHALL BE AN EXTRUSION THAT ATTACHED TO THE POSTS WITH CLAMPS WHICH WILL ALLOW FOR EXPANSION AND CONTRACTION BETWEEN POSTS. KICK PLATES SHALL BE SET 1/4" ABOVE THE WALKING SURFACE. KICK PLATES SHALL BE PROVIDED ON GUARDRAILS AS REQUIRED BY OSHA AND/OR AS SHOWN ON DRAWINGS. KICK PLATES SHALL BE SHIPPED LOOSE IN STOCK LENGTHS WITH PRE-MANUFACTURED CORNERS FOR FIELD INSTALLATION.
10. OPENINGS IN THE RAILING SHALL BE GUARDED BY A SELF-CLOSING GATE: (OSHA 1910.23). SAFETY CHAINS SHALL NOT BE USED UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS.
11. FINISH SHALL BE ALUMINUM ASSOCIATION M10-C22-A41 (215-41). THE PIPE SHALL BE PLASTIC WRAPPED. THE PLASTIC WRAP IS TO BE REMOVED AFTER ERECTION.
12. ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT, OR DISSIMILAR METALS SHALL BE COATED WITH A CHROMATE CONVERSION COATING.
13. GUARDRAILS SHALL BE IN ACCORDANCE WITH OSHA REGULATION 29CFR 1910 AND 6TH EDITION FLORIDA BUILDING CODE (2017).



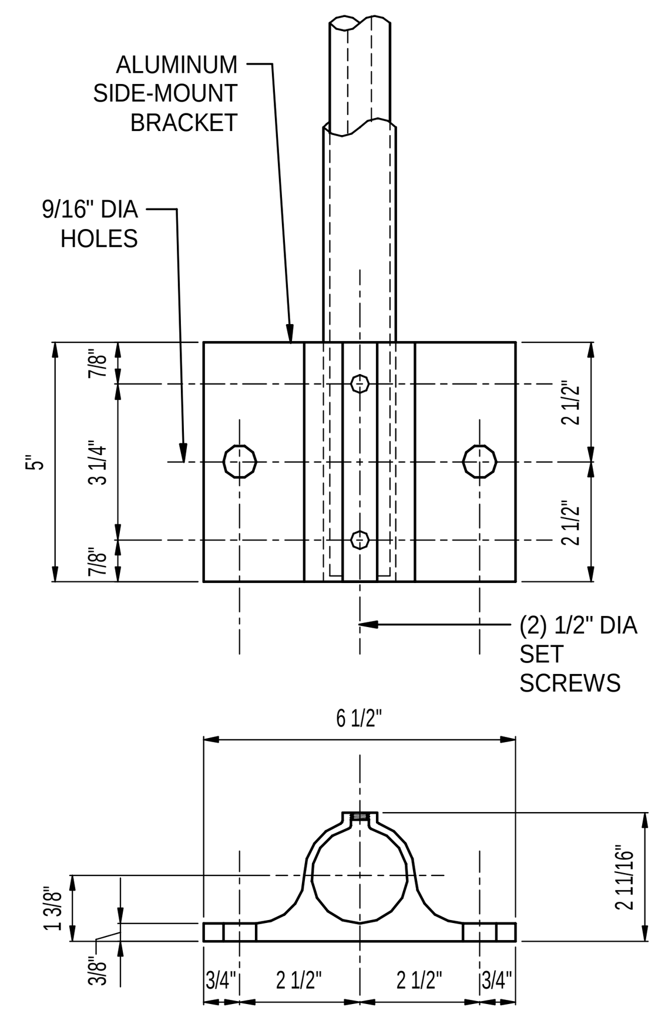


A TYPE A
3" = 1'-0"

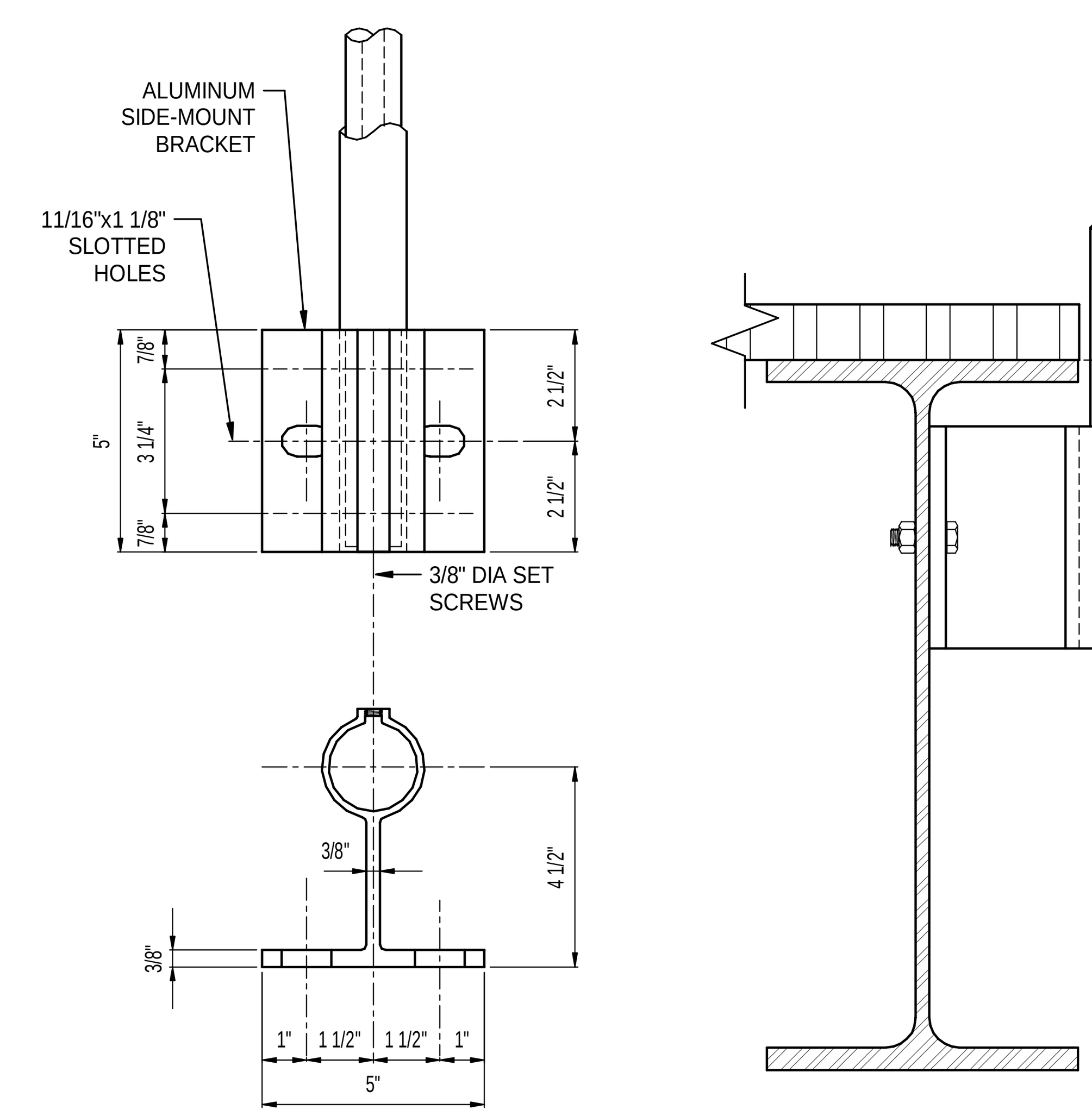
ALUMINUM GUARDRAIL NOTES
3/4" = 1'-0"



B TYPE B
3" = 1'-0"



C TYPE C
3" = 1'-0"



D TYPE D
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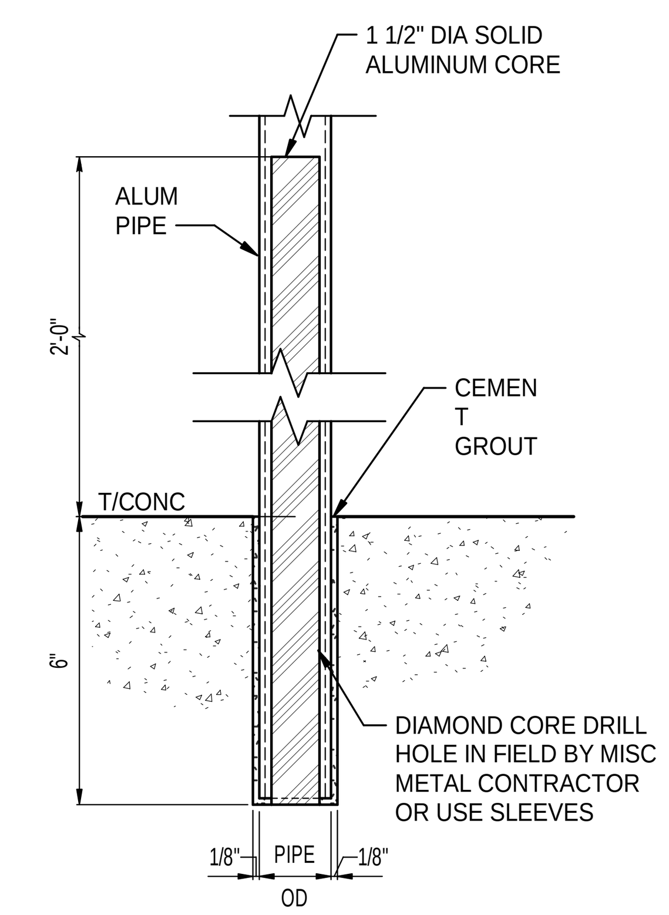

E TYPE E
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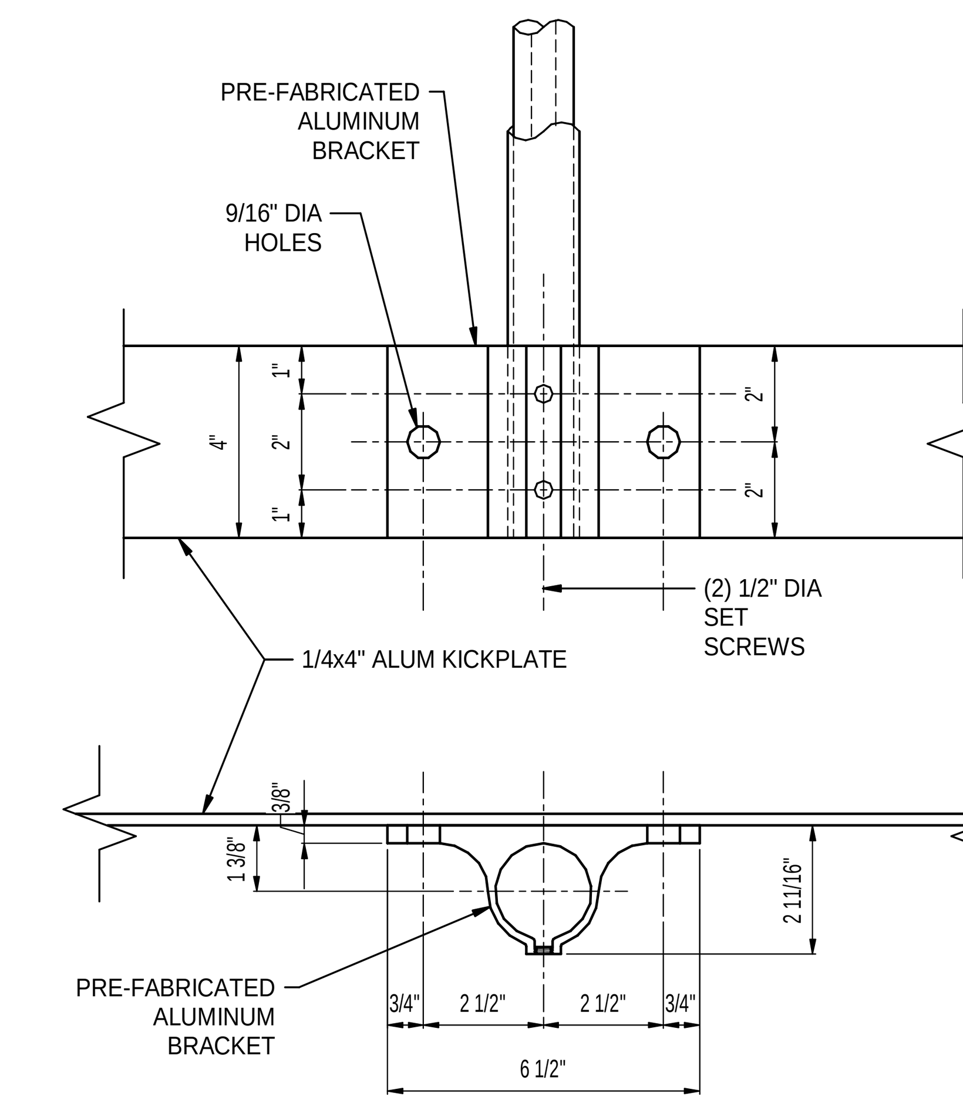
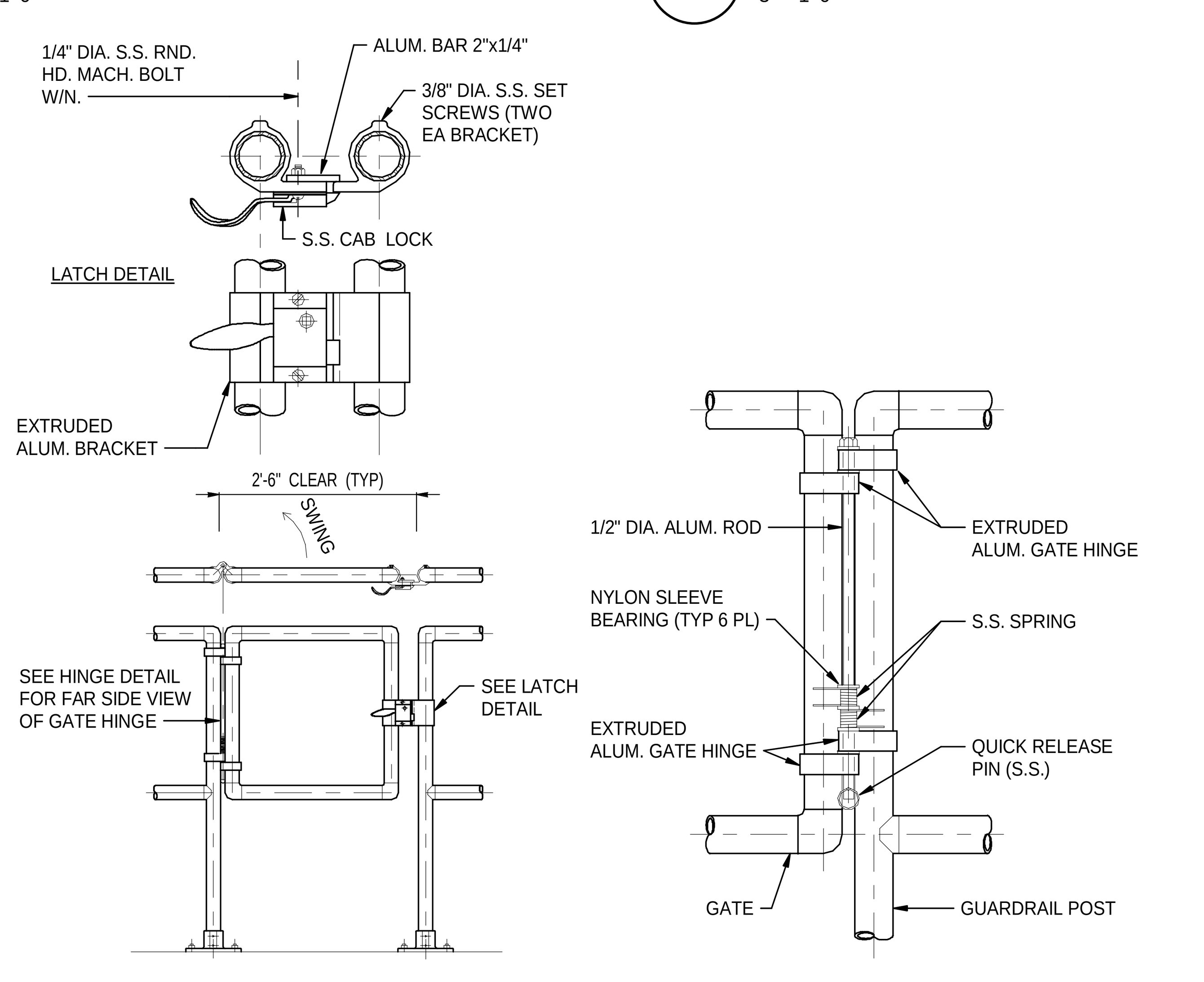
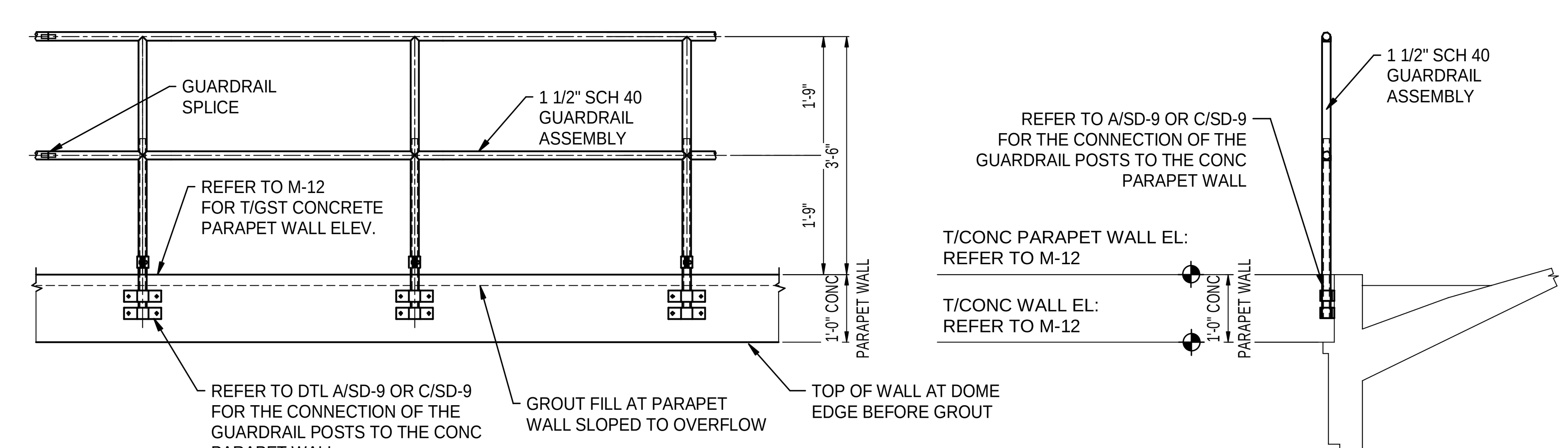


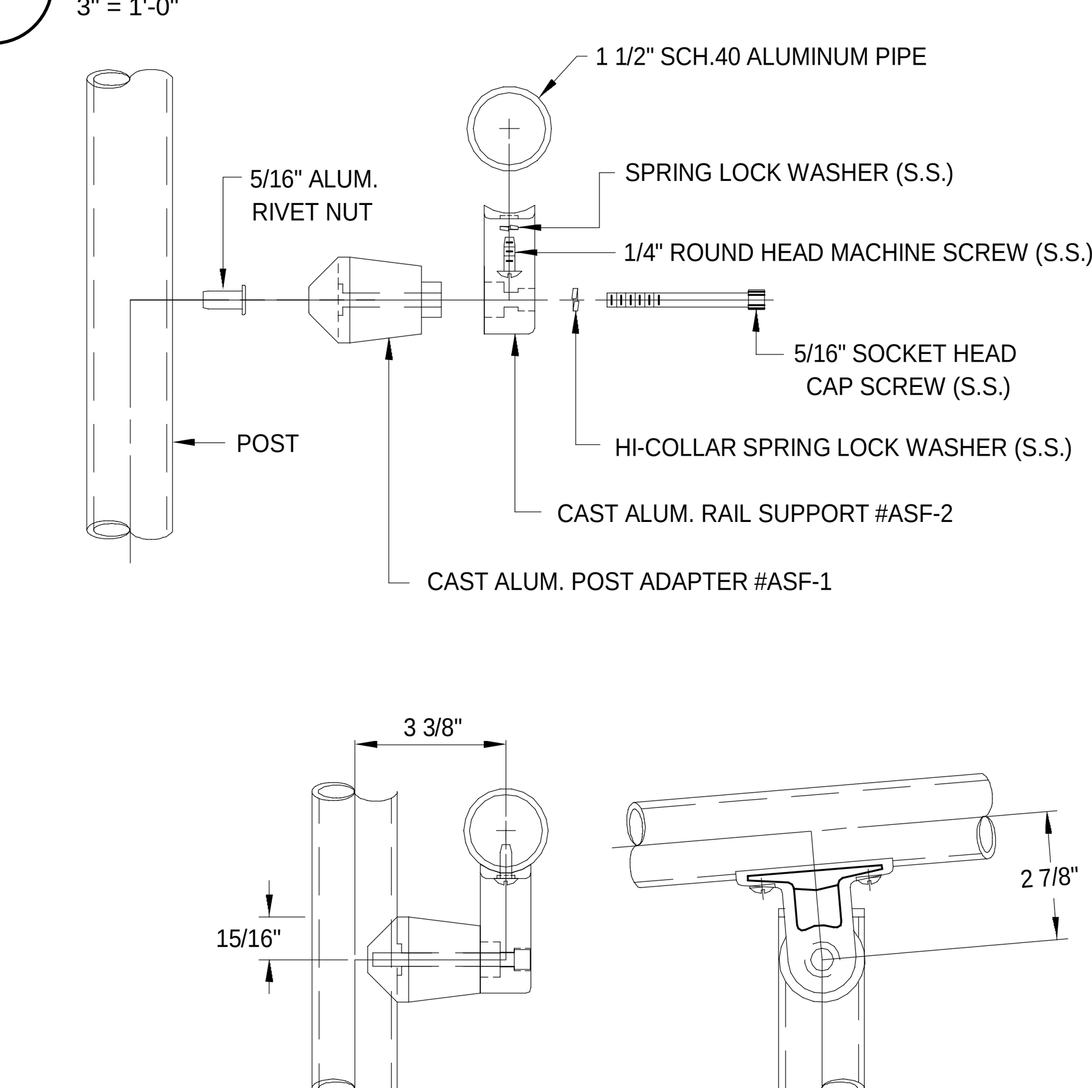
F KICKPLATE DETAIL
3" = 1'-0"



G TYPICAL GATE DETAIL
3" = 1'-0"



H PERIMETER GST GUARDRAIL DETAIL AT CONC PARAPET WALL
1/2" = 1'-0"



I HANDRAIL CONNECTION DETAILS
1 1/2" = 1'-0"

ISSUED FOR BID

MOTT MACDONALD
MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1990
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0006763

REVISIONS

NO.	BY	DATE	REVISIONS
6			
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DESIGN ENGINEER
CHAD E. LYNER, P.E.
FLORIDA REGISTRATION NO. 66277

DESIGNER: C. LYNER
DRAWN BY: J. EARL
DATE: APRIL 2020
CHECKED BY: B. PERRY
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE- PUMP STATION IMPROVEMENTS - PHASE II

GUARDRAIL DETAILS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 58
DRAWING NO. SD-9

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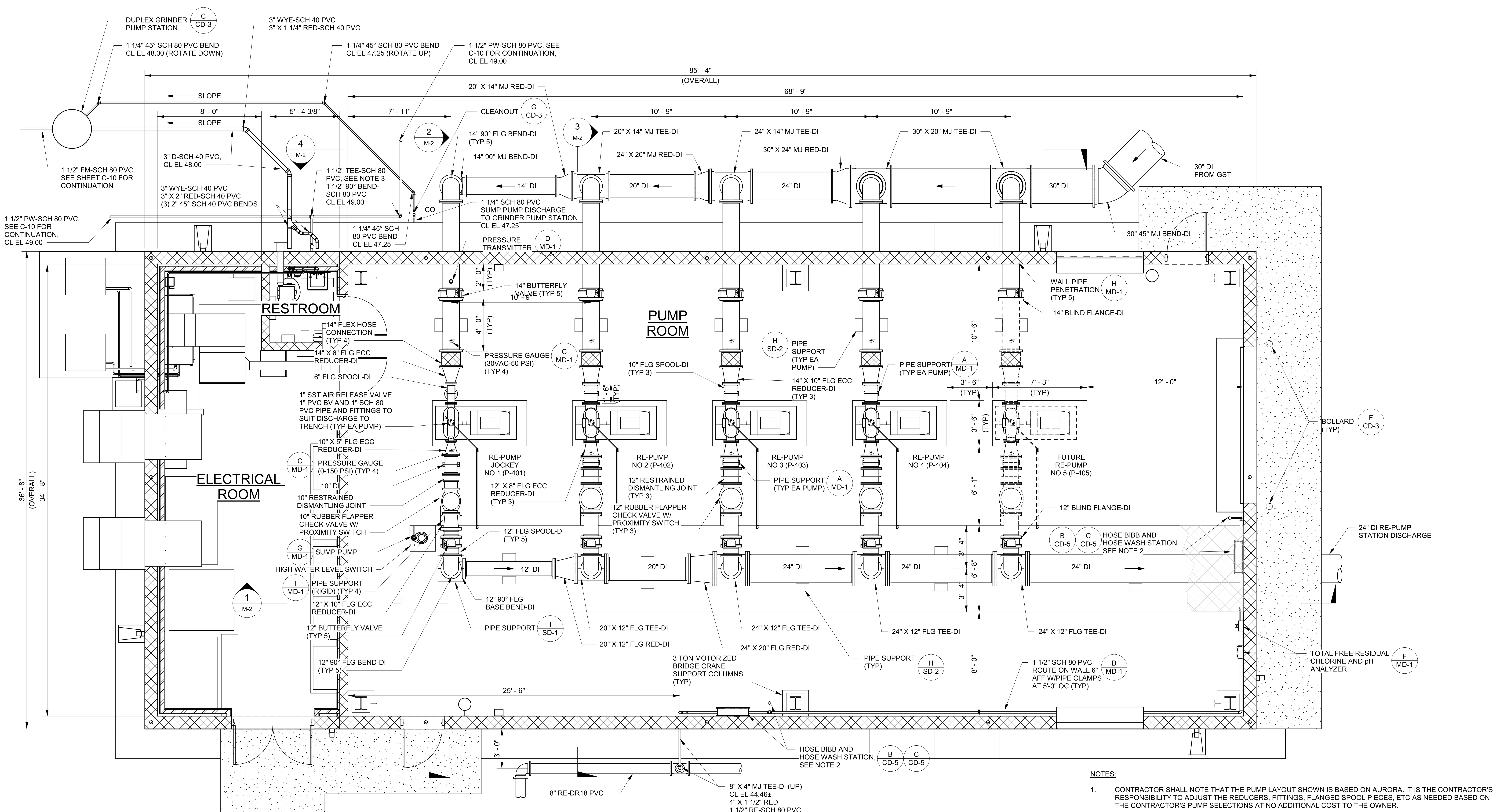


PUMP ROOM PLAN

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

NOTES:

1. CONTRACTOR SHALL NOTE THAT THE PUMP LAYOUT SHOWN IS BASED ON AURORA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADJUST THE REDUCERS, FITTINGS, FLANGED SPOOL PIECES, ETC AS NEEDED BASED ON THE CONTRACTOR'S PUMP SELECTIONS AT NO ADDITIONAL COST TO THE OWNER.
2. AS PER DEP RULE 62-610.469, RECLAIMED WATER HOSE BIBBS SHALL BE LABELED AS NON-POTABLE WATER WITH SIGNS STATING "DO NOT DRINK" IN ENGLISH AND SPANISH. CONTRACTOR SHALL PROVIDE SIGNS FOR ALL RECLAIMED WATER HOSE BIBBS.
3. ROUTE POTABLE WATER MAIN TO BATHROOM ABOVE BUILDING PERIMETER FOUNDATION.

ISSUED FOR BID

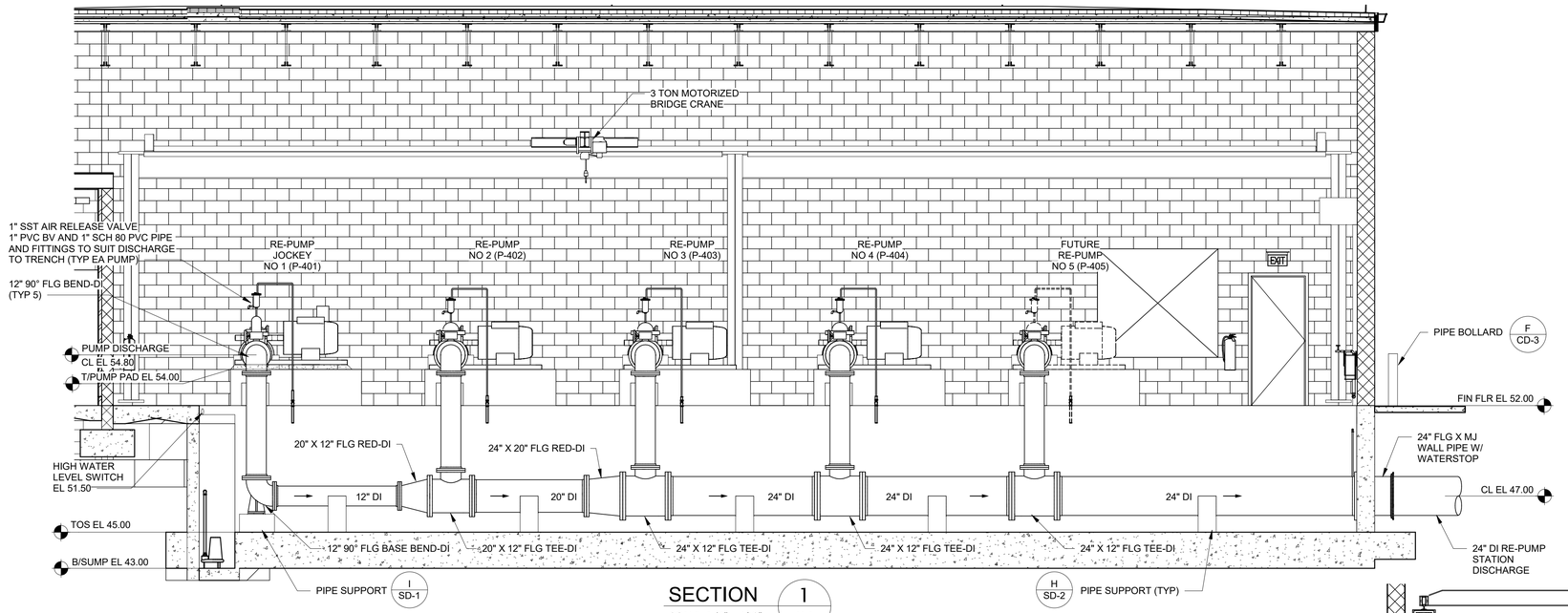
MOTT MACDONALD
MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North Suite 320 Jacksonville, Florida 32256 Telephone: (904) 203-1090
Architects AA - C0000035 Engineers EB - 0000155 Surveyors LB - 0006783
DESIGN ENGINEER: LESLIE S. SAMEL, P.E. FLORIDA REGISTRATION NO. 68763
DESIGNER: L. TRACEY
DRAWN BY: B. LEE DATE: APRIL 2020
CHECKED BY: D. KECK DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

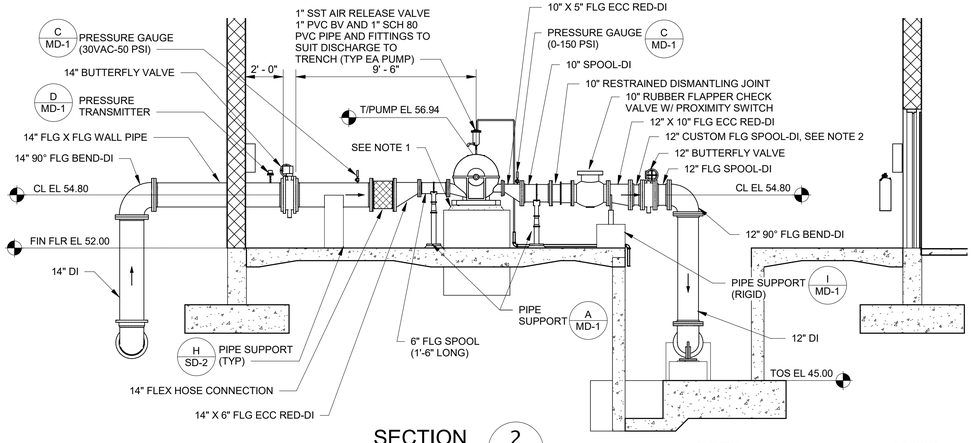
PUMP ROOM PLAN

PROJ. NO.:	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED
NO. SHEETS	105
SHEET NO.	59
DRAWING NO.	M-1

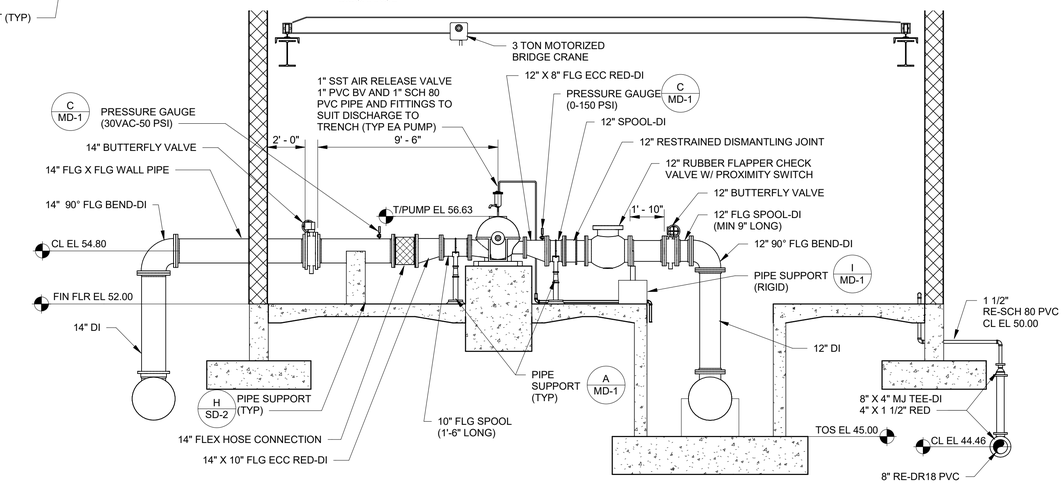


SECTION 1 (M-1)
SCALE: 1/4" = 1'-0"

0 2 4 8
SCALE: 1/4" = 1'-0"



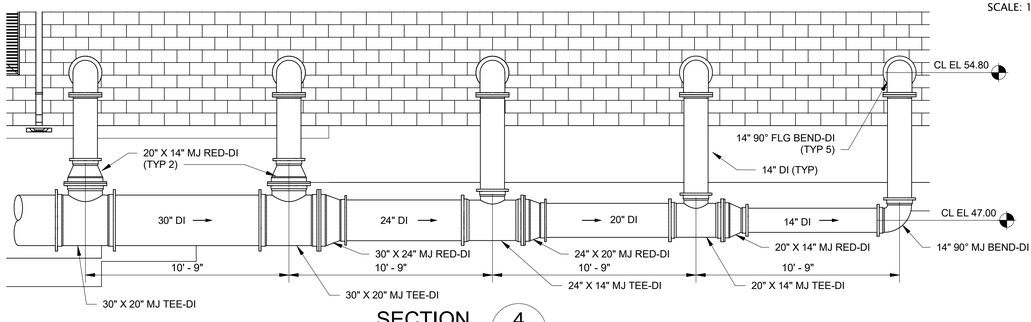
SECTION 2 (M-1)
SCALE: 1/4" = 1'-0"



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

NOTES:

1. ALL PUMP SUCTION AND DISCHARGE PIPING CENTERLINES SHALL BE THE SAME. CONTRACTOR SHALL PROVIDE GROUT UNDER THE BASE OF THE JOCKEY RE-PUMP TO MAINTAIN ALL CENTERLINE ELEVATIONS SHOWN.
2. INSTALLATION OF THE JOCKEY PUMP WILL REQUIRE THE CONTRACTOR TO PROVIDE A CUSTOM FLANGED SPOOL PIECE TO BE FABRICATED TO ENSURE THE PIPING ARRANGEMENT CAN BE INSTALLED AS SHOWN.



SECTION 4 (M-1)
SCALE: 1/4" = 1'-0"

ISSUED FOR BID

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1715 North Westshore Blvd
10245 Centurion Parkway North
Suite 300
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Surveyors LB - 0000150

MOTT MACDONALD

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DESIGN ENGINEER
LESLIE S. SAMEL P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY D. KECK
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

PUMP ROOM SECTIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 60
DRAWING NO. M-2

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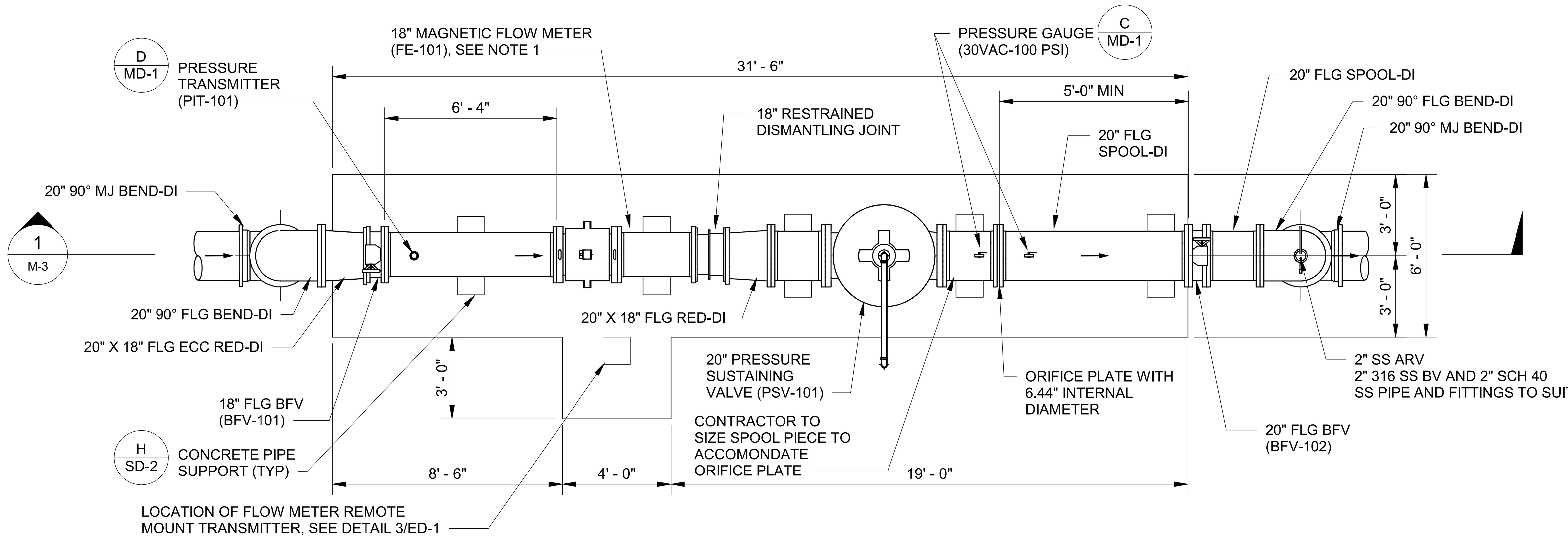
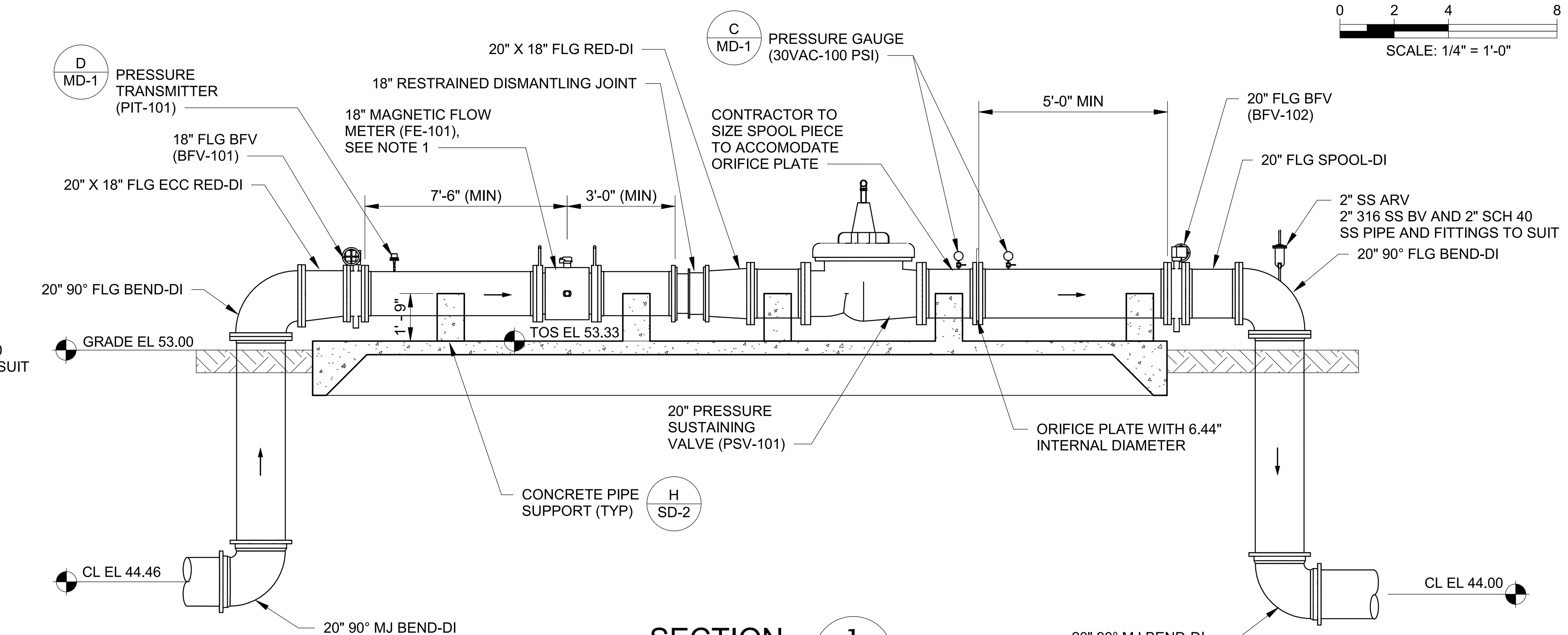


TANK FILL VALVE PLAN

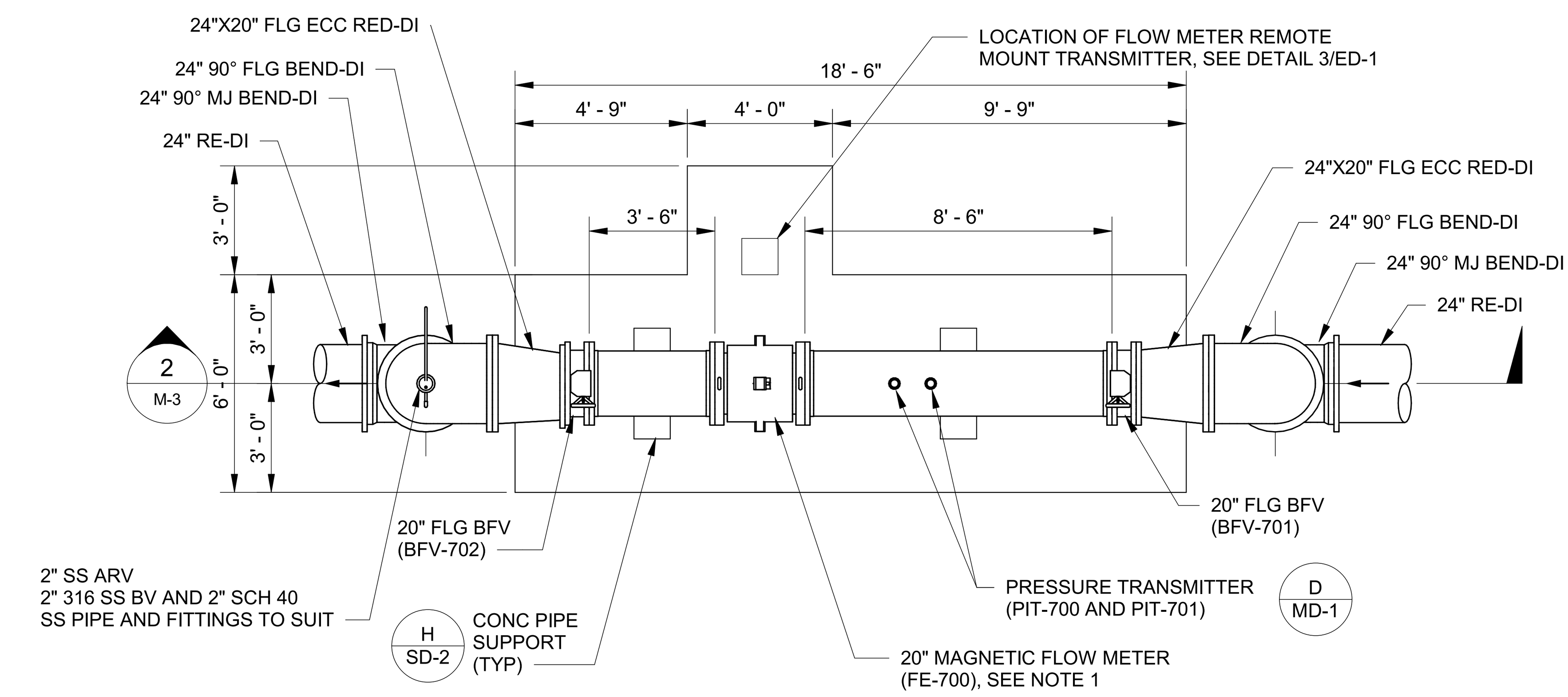
SCALE: 1/4" = 1'-0"



SECTION 1

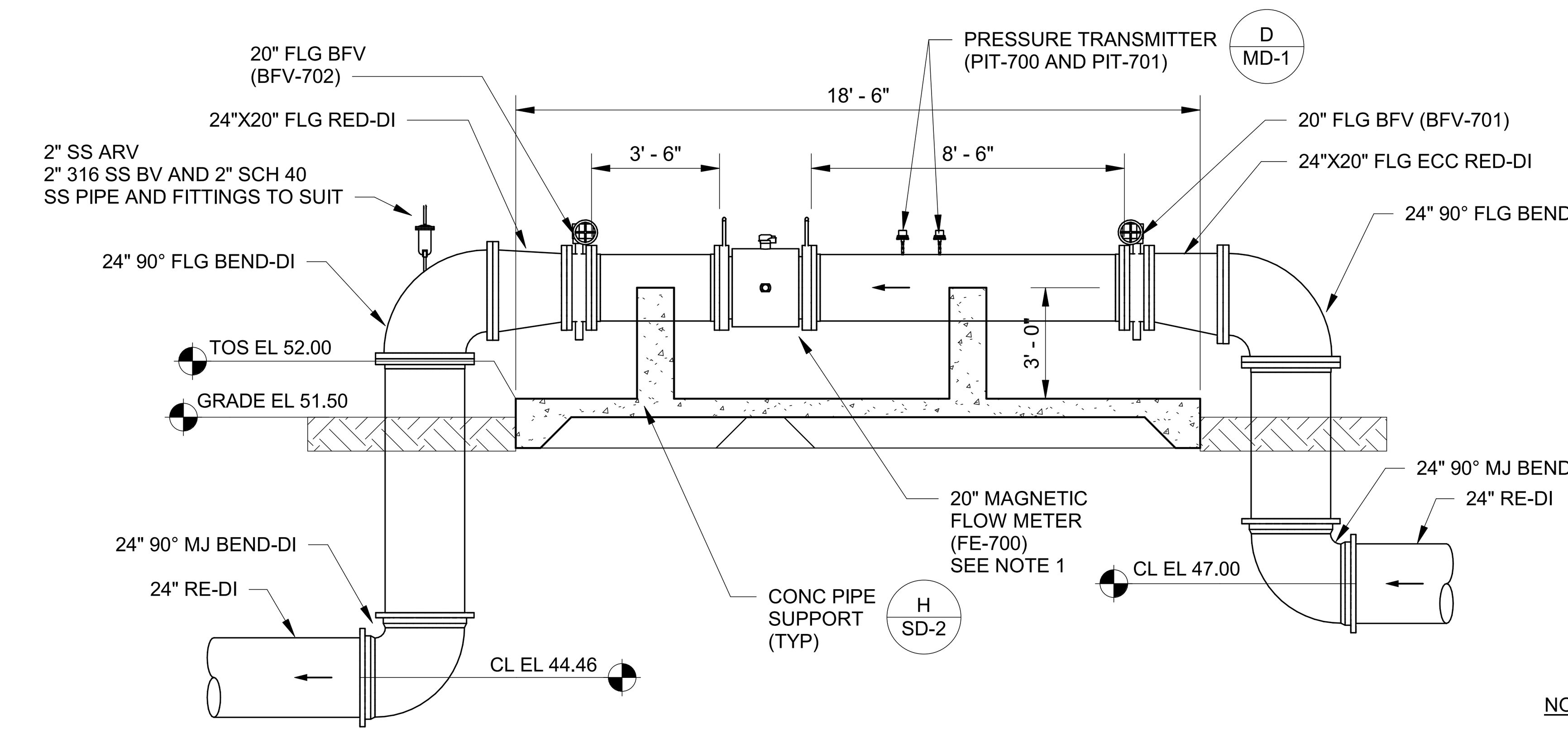
M-3

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



RECLAIMED WATER EFFLUENT FLOW METER PLAN

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



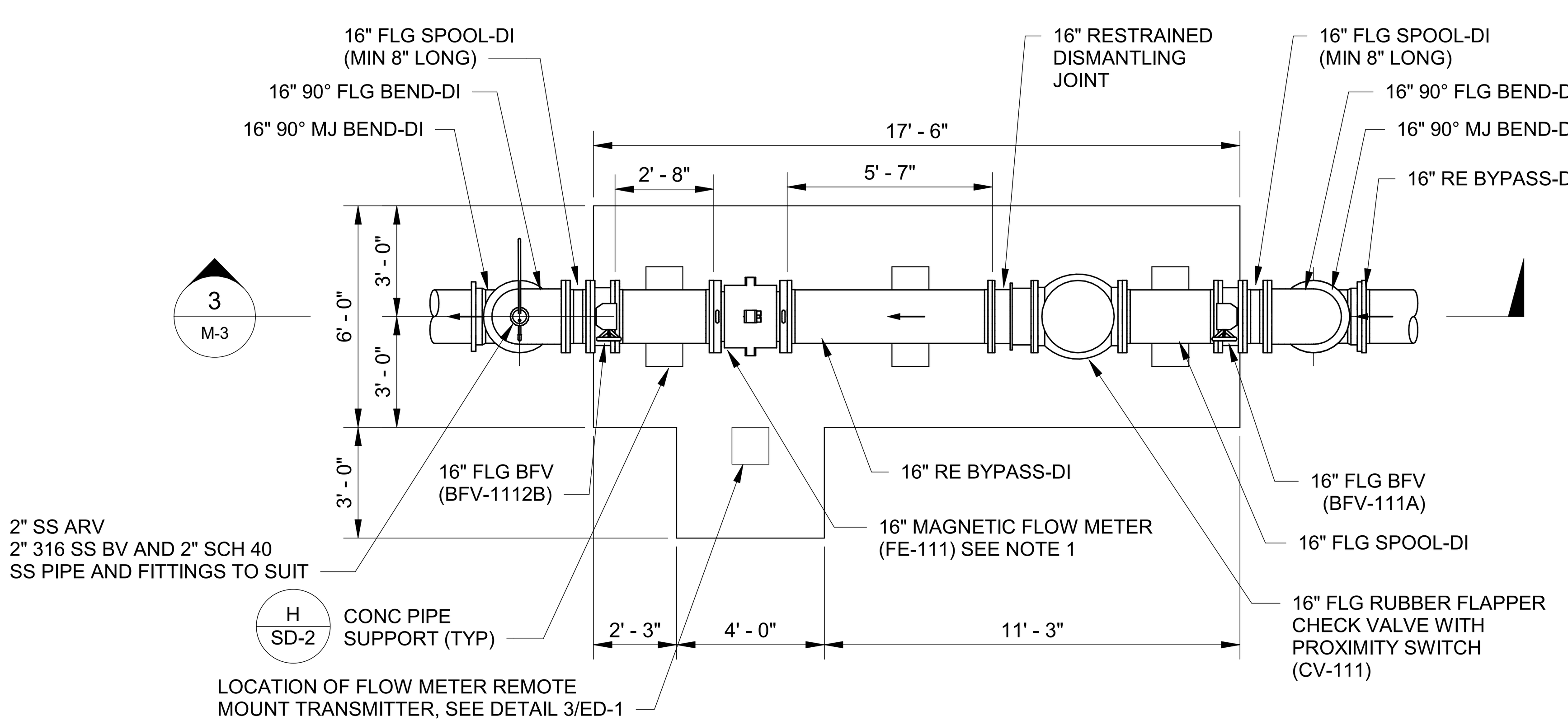
SECTION 2

M-3

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

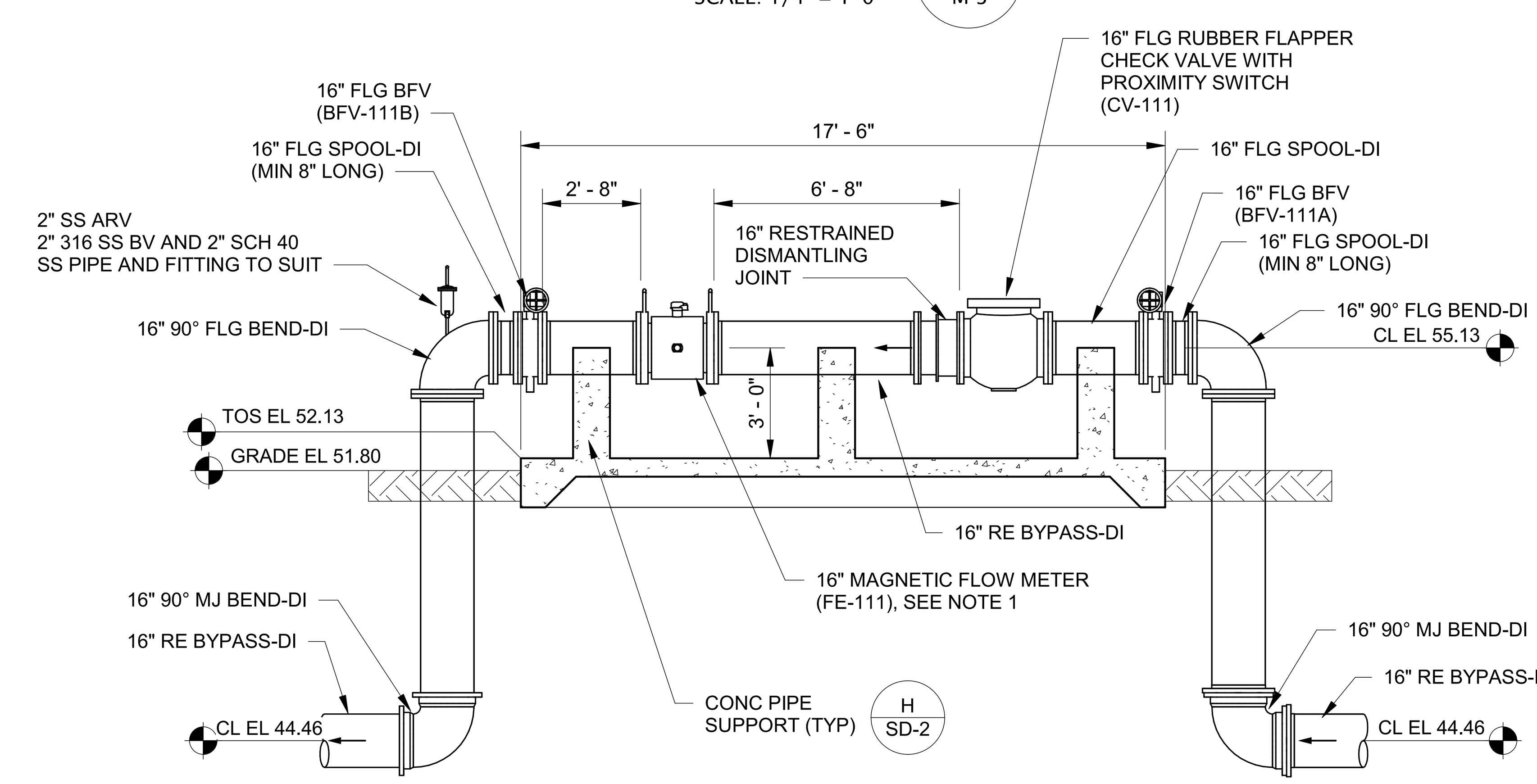
NOTES:

1. CONTRACTOR SHALL PROVIDE A FLANGED FUSION-BOND EPOXY COATED DUCTILE IRON SPOOL PIECE THE LENGTH OF THE FLOW METER SO THE METER CAN BE TAKEN OUT OF ASSEMBLY AND SPOOL PIECE INSTALLED FOR FLOW METER MAINTENANCE.



RECLAIMED WATER BYPASS AND FLOW METER PLAN

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



SECTION 3

M-3

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

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

MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North
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Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE S. SAMEL P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

TANK FILL VALVE, RE EFFLUENT FLOW METER AND RE BYPASS PLANS AND SECTIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 61
DRAWING NO. M-3

ISSUED FOR BID

4/16/2020 3:29:14 PM

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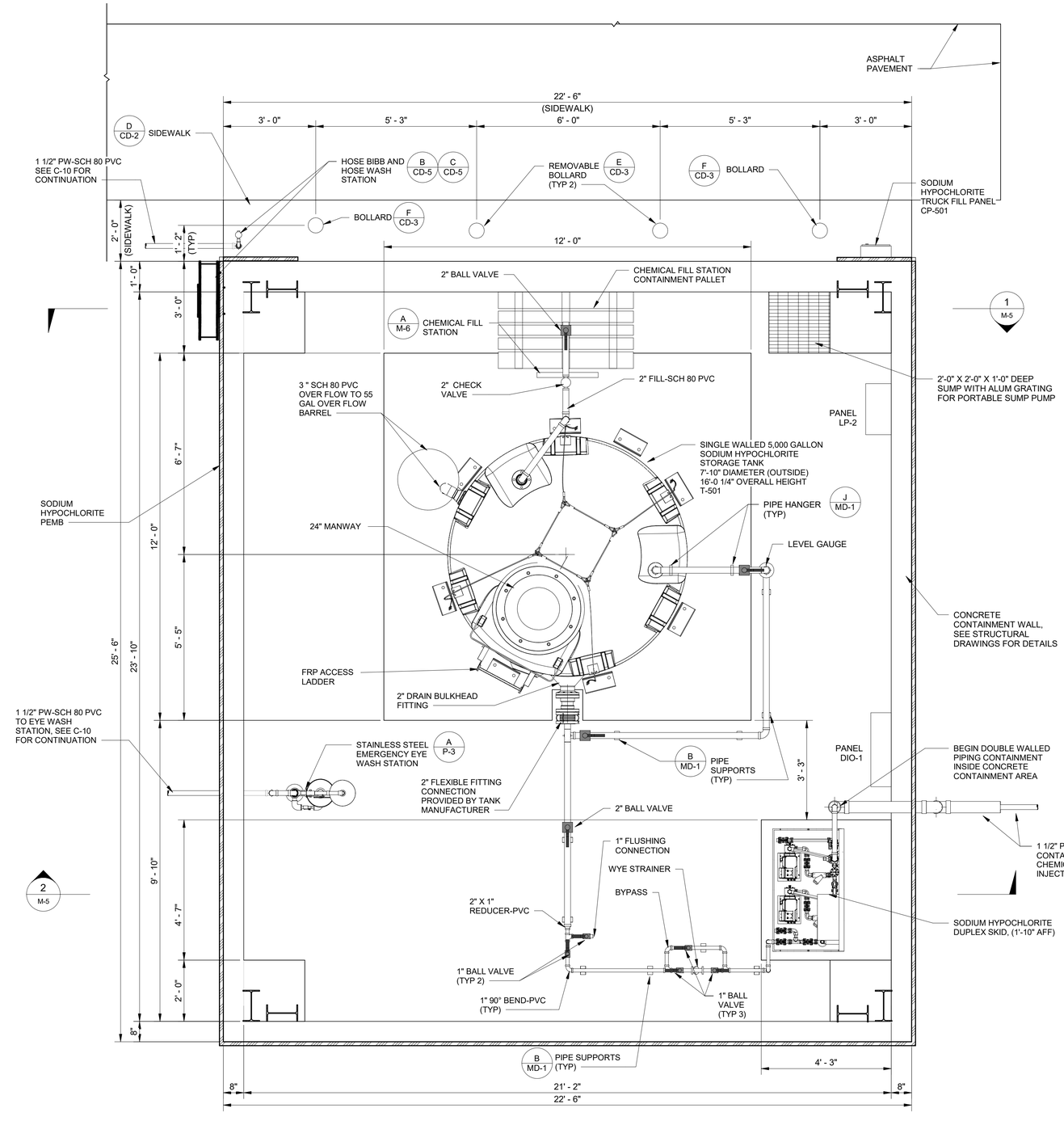

PLAN
SCALE: 1/2" = 1'-0"

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

NOTES:

1. SEE STRUCTURAL DRAWINGS FOR PEMB DETAILS.

ISSUED FOR BID

MOTT MACDONALD
FLORIDA, LLC
10405 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 233-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0000150

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

SODIUM HYPOCHLORITE SYSTEM PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 62
DRAWING NO. M-4

4/13/2020 4:14:16 PM

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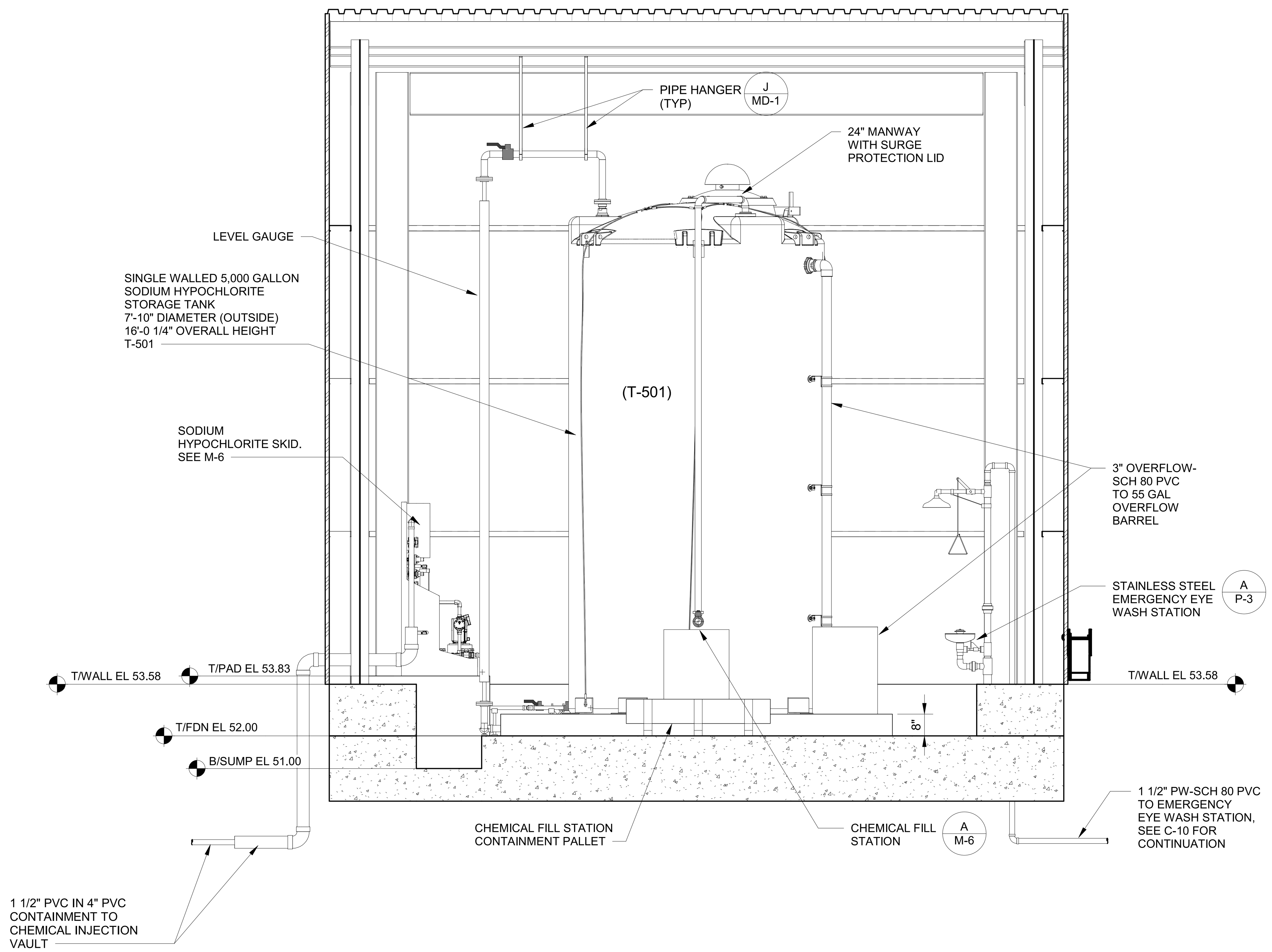
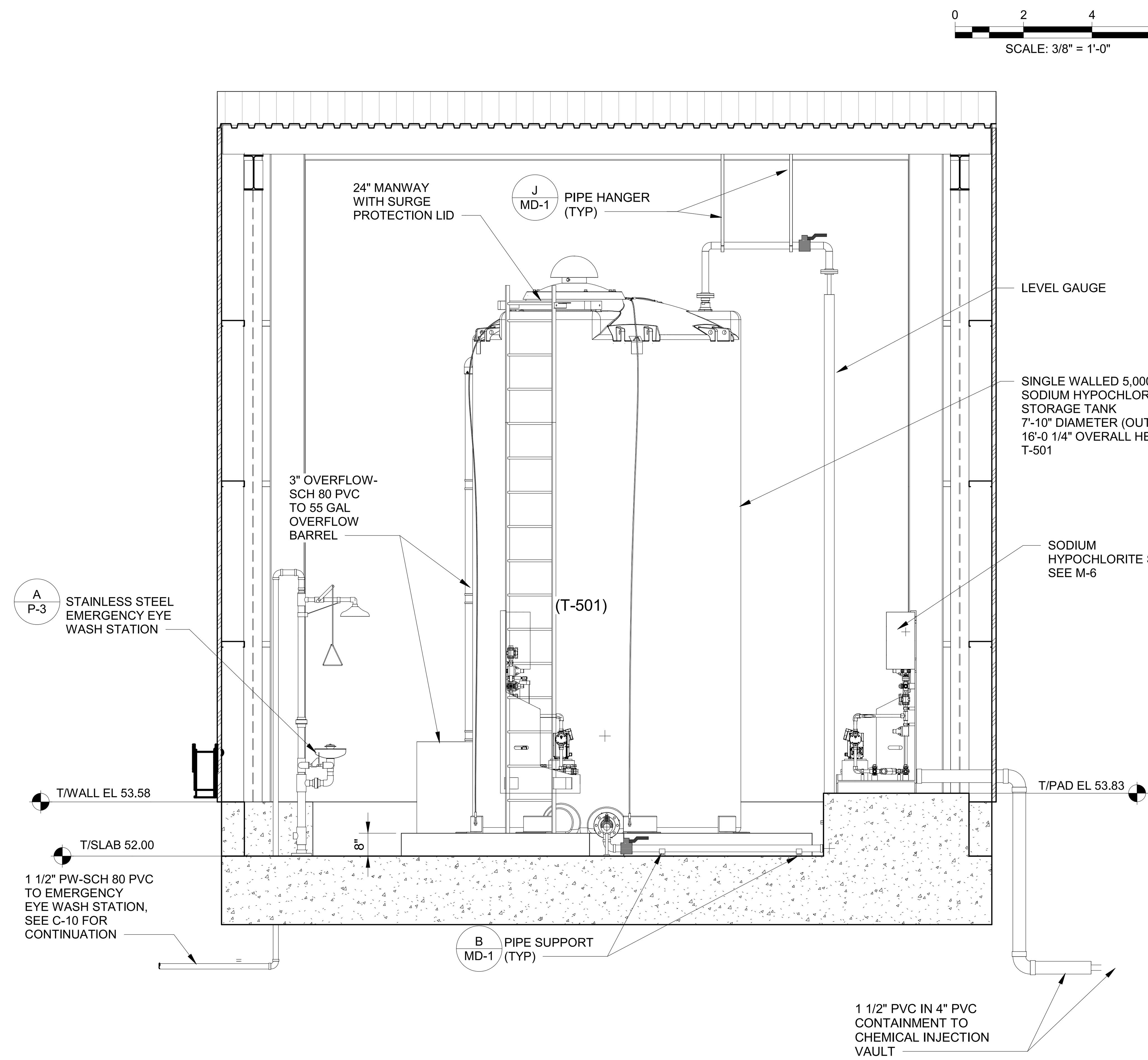
4/13/2020 4:15:47 PM



SECTION 1 M-4
SCALE: 3/8" = 1'-0"



SECTION 2 M-4
SCALE: 3/8" = 1'-0"

ISSUED FOR BID

MOTT MACDONALD
FLORIDA LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

M M MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE, S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
SODIUM HYPOCHLORITE SYSTEM SECTIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 63
DRAWING NO. M-5

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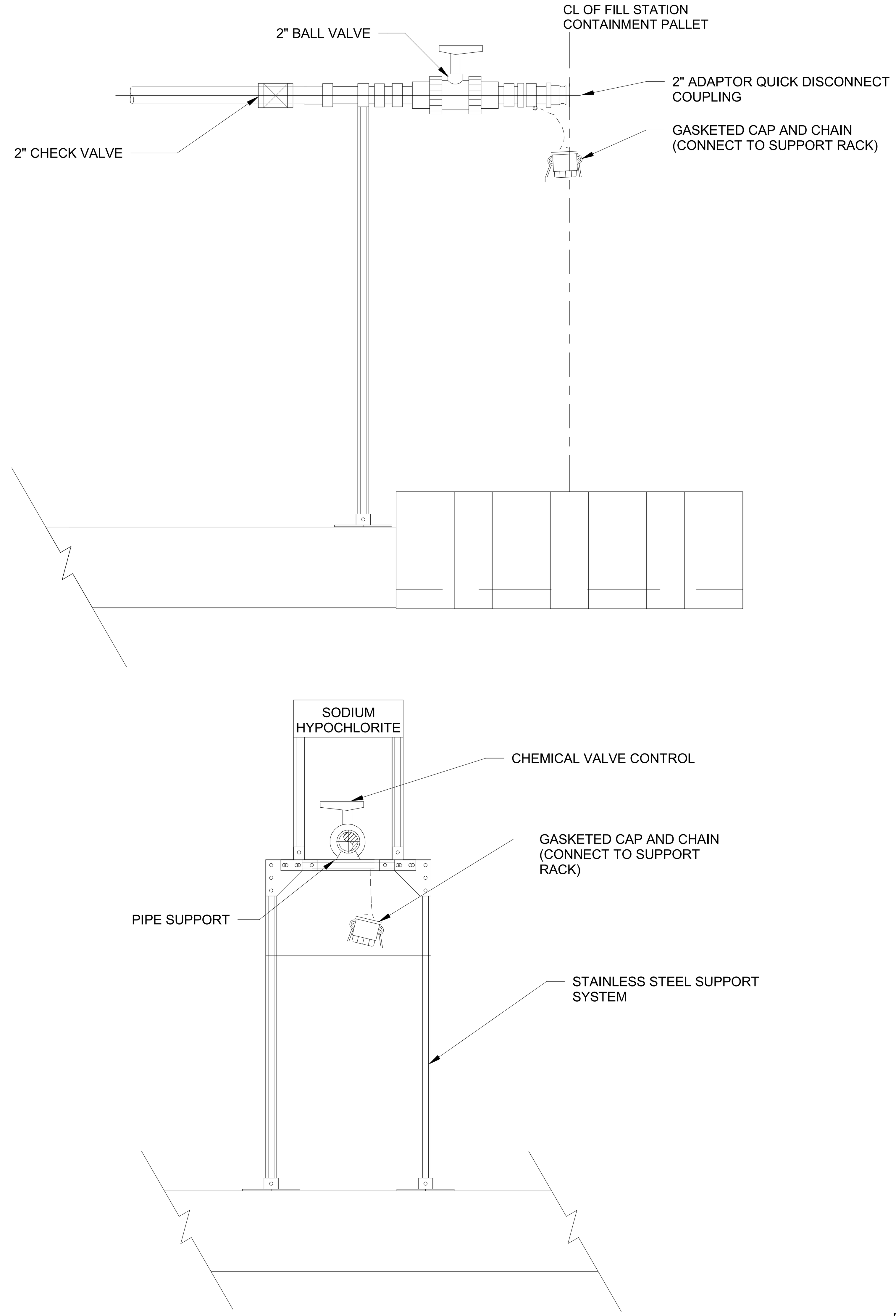
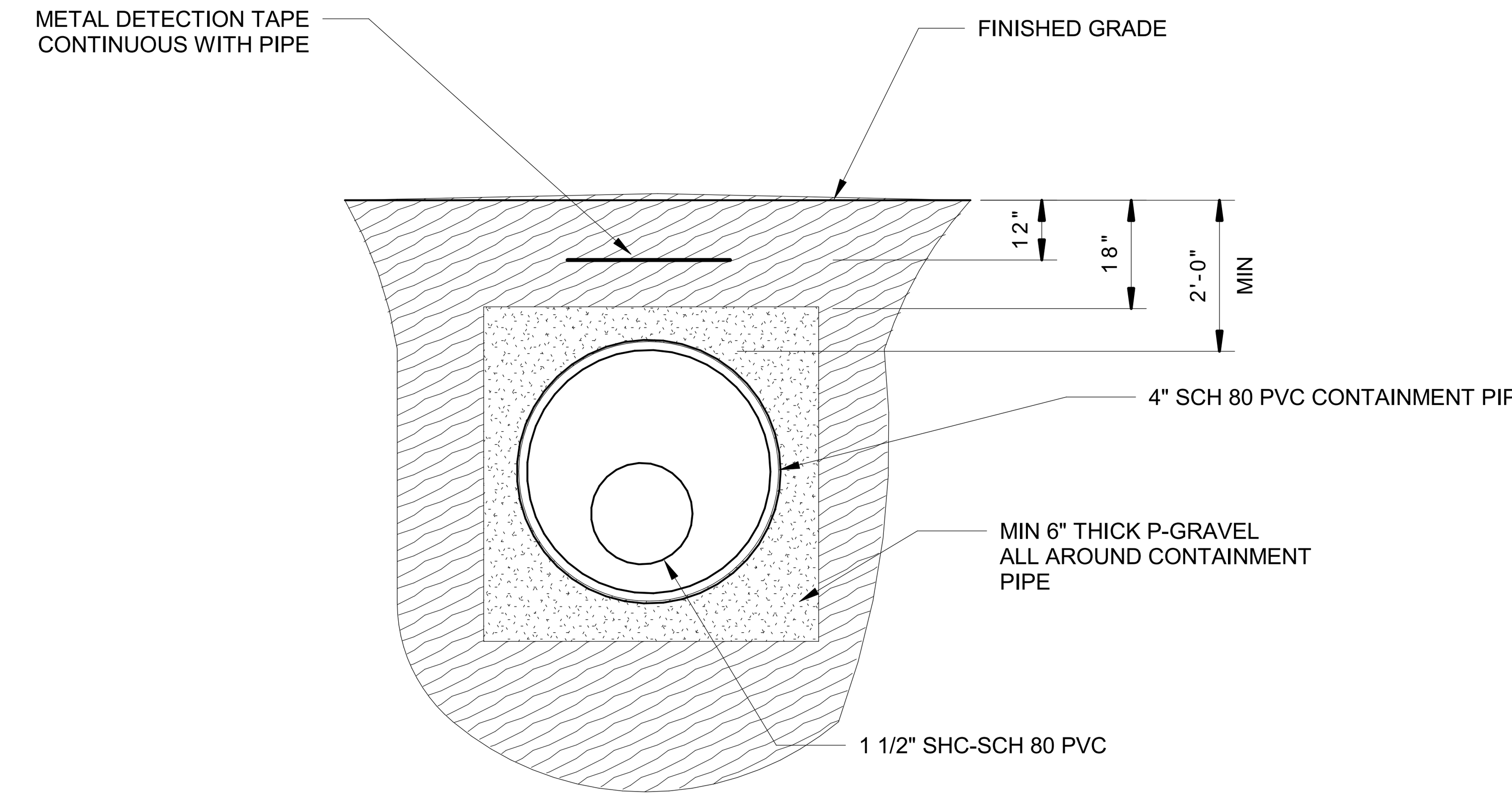


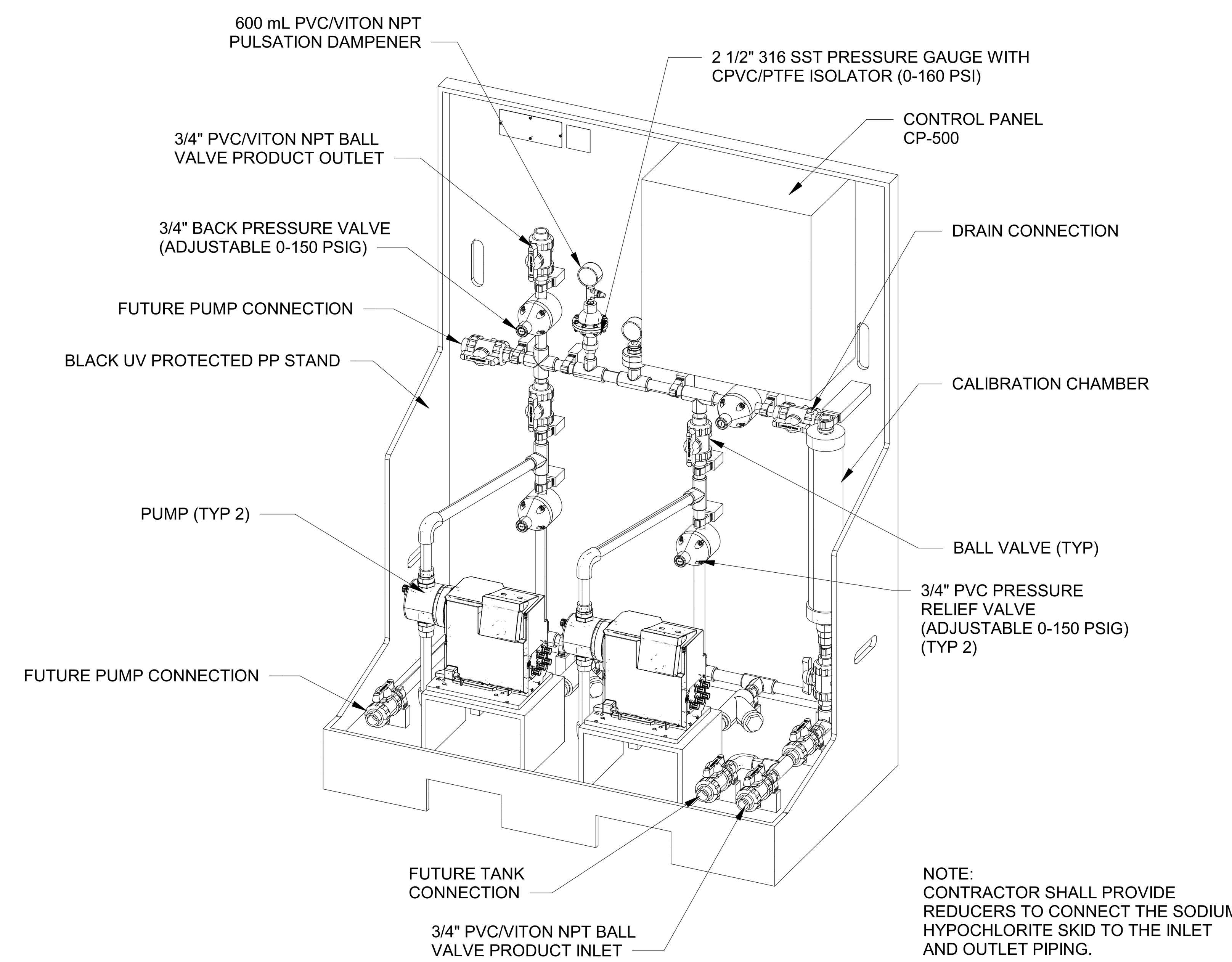
A TYPICAL FILL STATION DETAIL

NTS



B CHEMICAL CARRIER PIPE DETAIL

NTS



NOTE:
CONTRACTOR SHALL PROVIDE REDUCERS TO CONNECT THE SODIUM HYPOCHLORITE SKID TO THE INLET AND OUTLET PIPING.

ISOMETRIC VIEW

SODIUM HYPOCHLORITE SKID SCHEMATIC

ISSUED FOR BID

4/14/2020 10:19:38 AM

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MOTT MACDONALD

MOTT MACDONALD
FLORIDA LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

REVISIONS

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DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

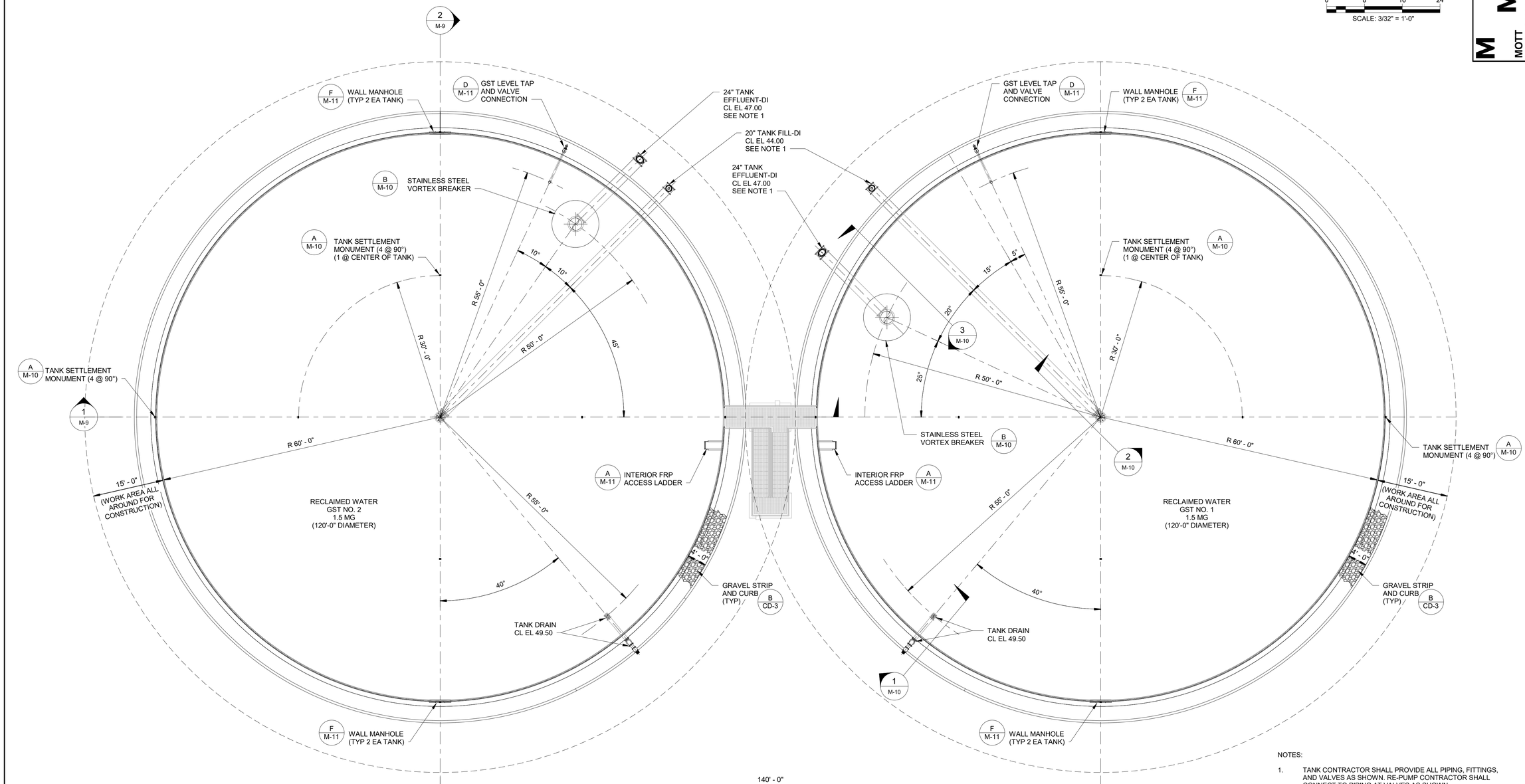
JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

SODIUM HYPOCHLORITE SYSTEM DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 64
DRAWING NO. M-6



PLAN - FLOOR

3/32" = 1'-0"

0 8 16 24

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

NOTES:

1. TANK CONTRACTOR SHALL PROVIDE ALL PIPING, FITTINGS, AND VALVES AS SHOWN. RE-PUMP CONTRACTOR SHALL CONNECT TO PIPING AT VALVES AS SHOWN.

ISSUED FOR BID

MOTT MACDONALD
FLORIDA, LLC
10245 Centurion Parkway North
Suite 300
Jacksonville, Florida 32256
Telephone: (904) 233-1090

Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0000155

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

GROUND STORAGE TANK SLAB
PLAN - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 65
DRAWING NO. A4.7

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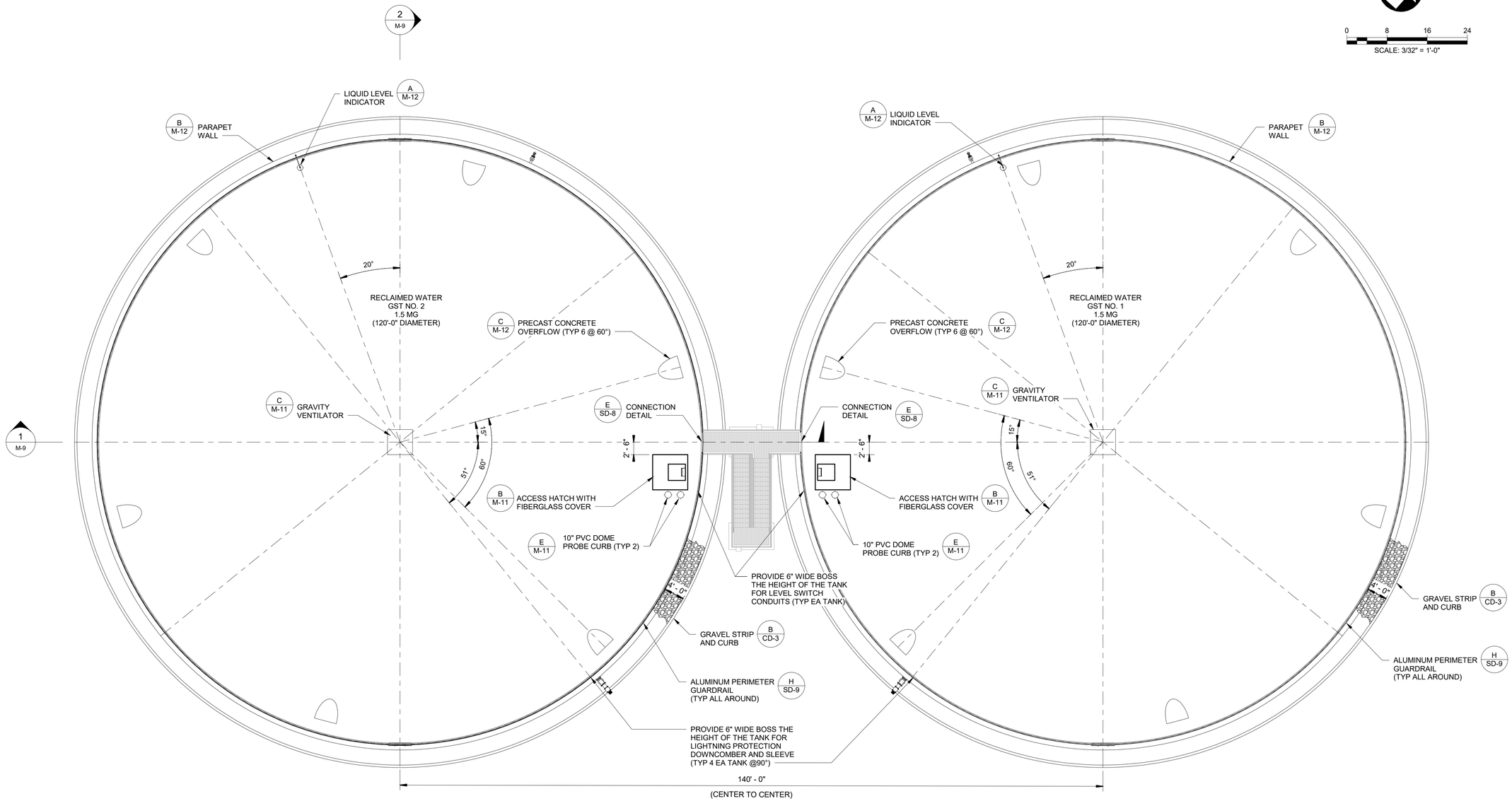

PLAN - TOP

3/32" = 1'-0"

0 8 16 24

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

ISSUED FOR BID

4/13/2020 10:38:41 AM

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MOTT MACDONALD
FLORIDA, LLC
10405 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 233-1090

Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0000150

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
LESLIE S. SAMEL P.E.
FLORIDA REGISTRATION NO.
68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

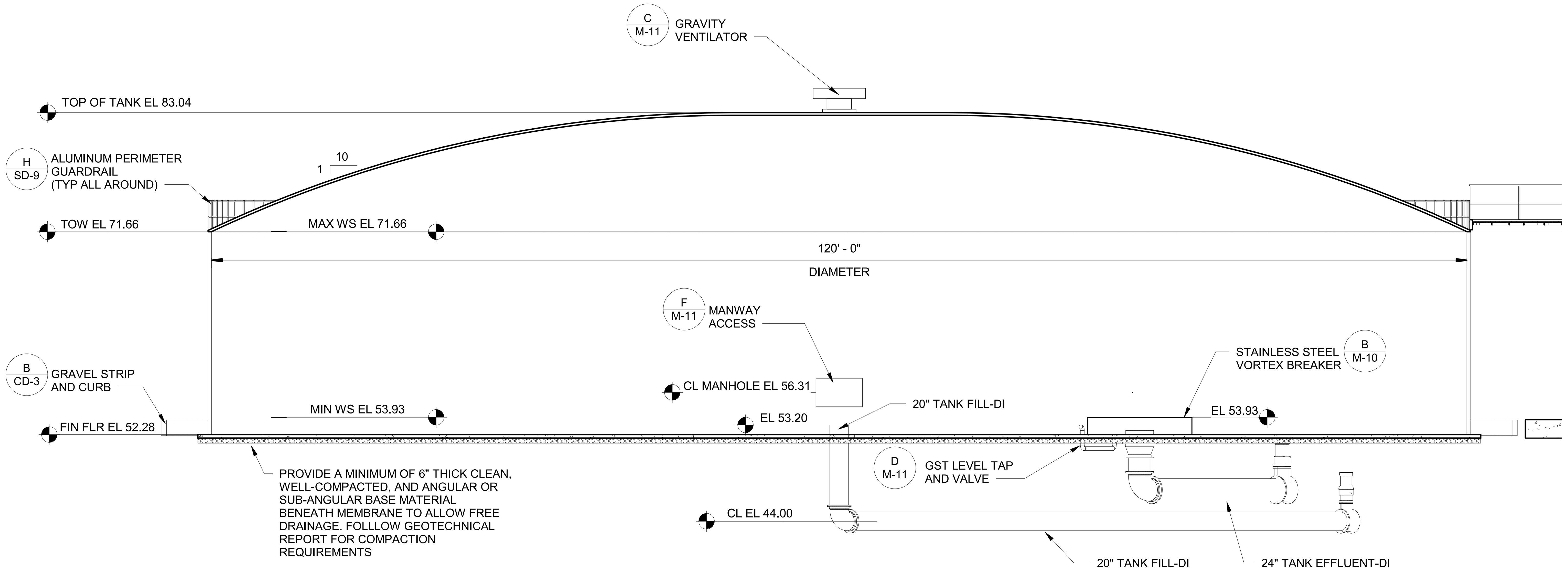
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

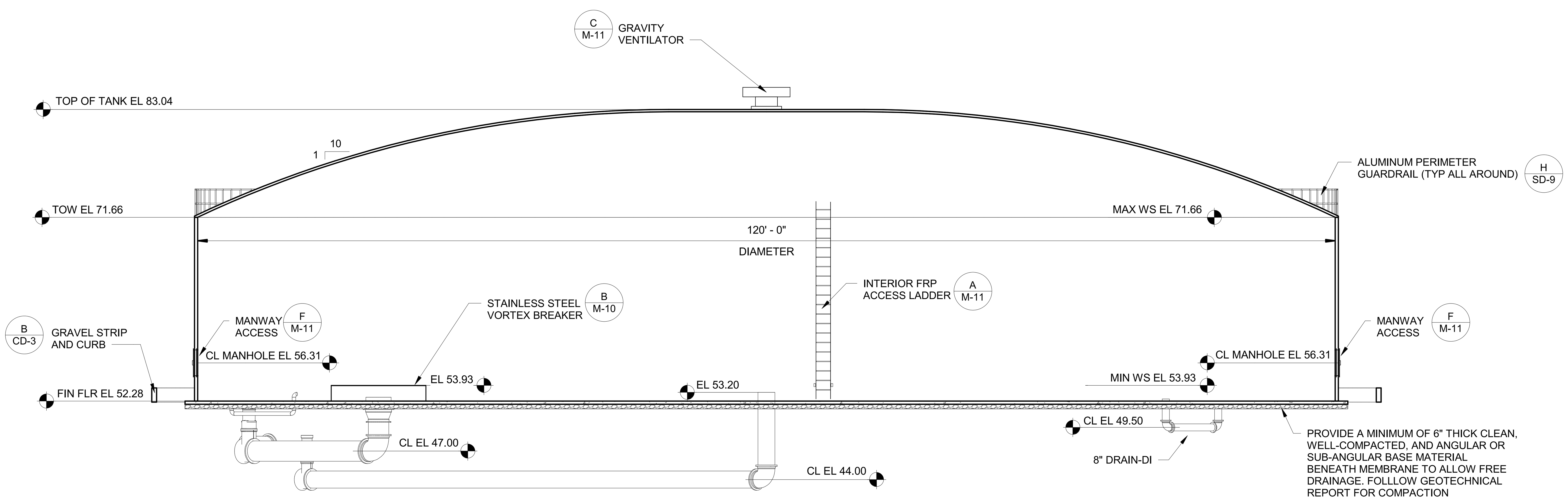
GROUND STORAGE TANK
ROOF PLAN - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 68
DRAWING NO. M-8



SECTION 1
SCALE: 1/8" = 1'-0" M-7



SECTION 2
SCALE: 1/8" = 1'-0" M-7

0 8 16 24
SCALE: 3/32" = 1'-0"

NOTES:

1. ALL PIPING BENEATH THE GROUND STORAGE TANK SHALL BE CONCRETE ENCASED AS PER DETAIL I ON SHEET SD-2.

MOTT MACDONALD
MOTT MACDONALD FLORIDA LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1590
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

REVISIONS

NO.	BY	DATE
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DESIGN ENGINEER
LESLIE S. SAMEL P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

GROUND STORAGE TANK SECTIONS - (BID IN PHASE I)

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 67
DRAWING NO. M-9

ISSUED FOR BID

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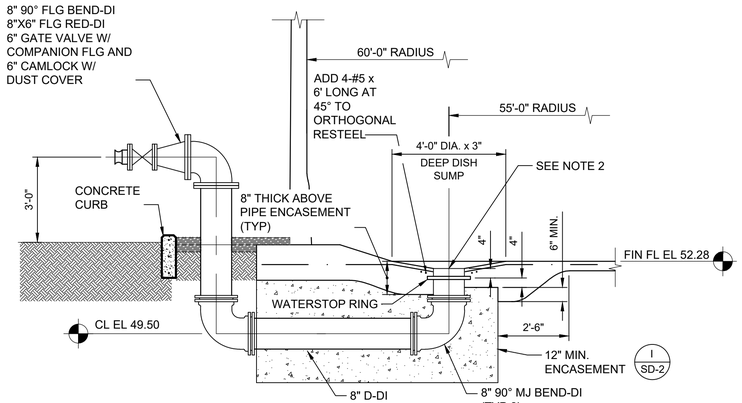
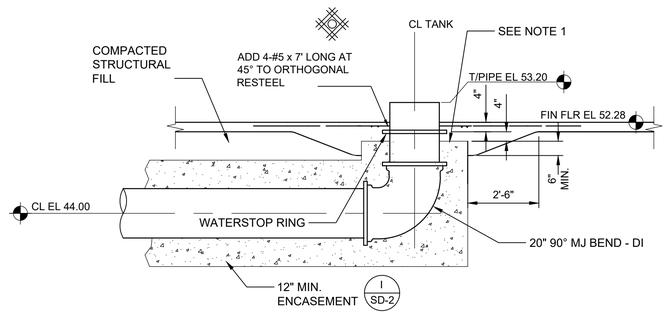


NOTES:

1. ALL DRAIN PIPING, FITTINGS, AND VALVES SHALL BE PROVIDED BY THE TANK CONTRACTOR.
2. IN ALL AREAS OF THICKENED TANK SLAB, DOUBLE FLOOR REINFORCEMENT SHALL BE ADDED.

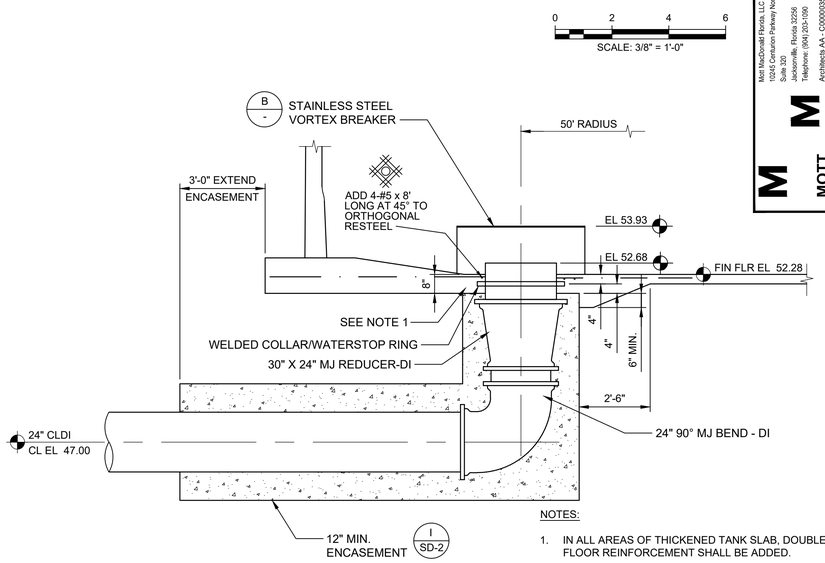
1 - 8" DRAIN SECTION
NTS



NOTES:

1. IN ALL AREAS OF THICKENED TANK SLAB, DOUBLE FLOOR REINFORCEMENT SHALL BE ADDED.

2 - 20" TANK FILL
NTS



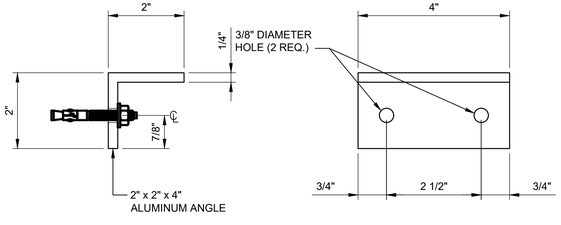
NOTES:

1. IN ALL AREAS OF THICKENED TANK SLAB, DOUBLE FLOOR REINFORCEMENT SHALL BE ADDED.

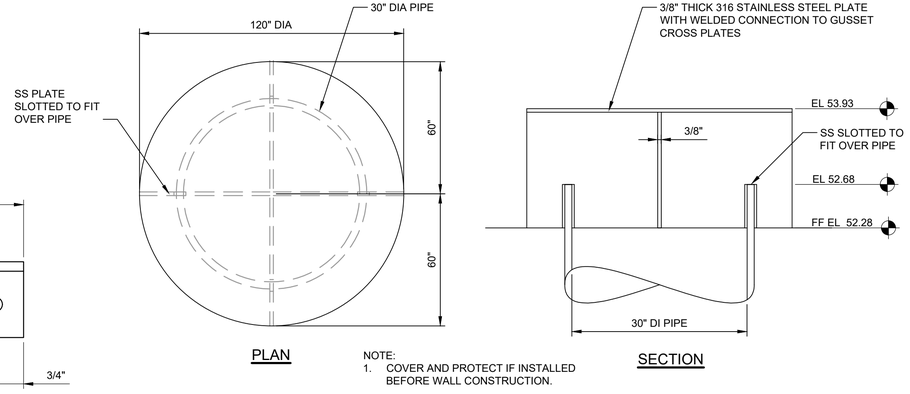
3 - 24" TANK EFFLUENT WITH ANTI-VORTEX PLATE
NTS

NOTES:

1. USE (2) 1/4" x 2 1/4" 316 SS EXPANSION ANCHORS, EACH MONUMENT.
2. ALL ALUMINUM IN DIRECT CONTACT WITH CONCRETE SHALL BE COATED WITH A MINIMUM 8.0 MIL DRY THICKNESS SERIES 46-465 H.B. TNEMECOL OR EQUAL.



A - TANK SETTLEMENT MONUMENT
NTS



NOTE:
1. COVER AND PROTECT IF INSTALLED BEFORE WALL CONSTRUCTION.

B - STAINLESS STEEL VORTEX BREAKER
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 363-1400
Architects AA - C000000305
Engineers EB - 0000165
Surveyors LB - 0006783
MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
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DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO.
68763

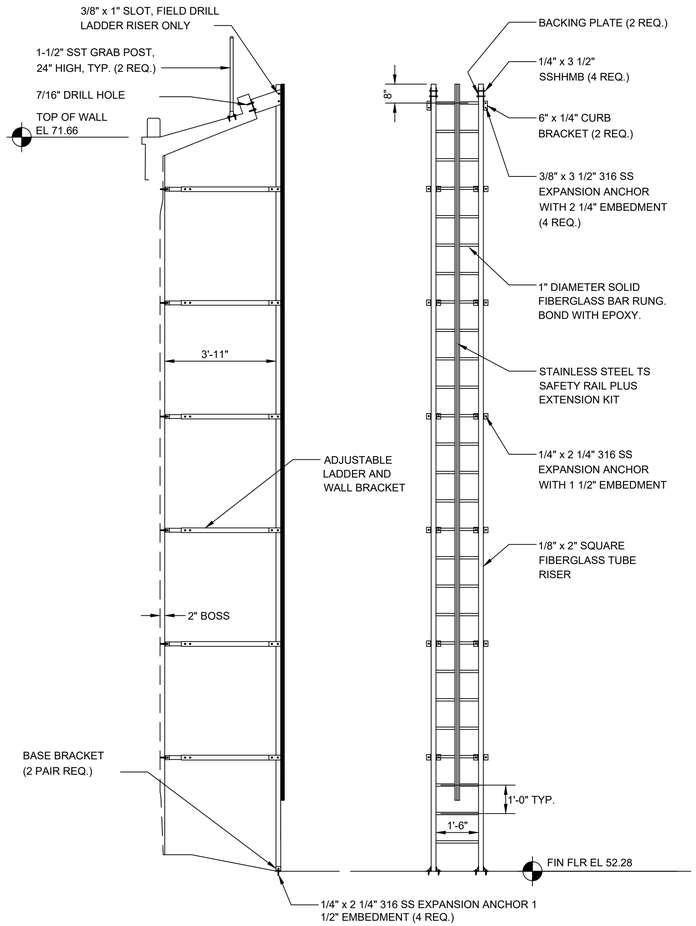
DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
GROUND STORAGE TANK
SECTIONS AND DETAILS - (BID IN PHASE I)

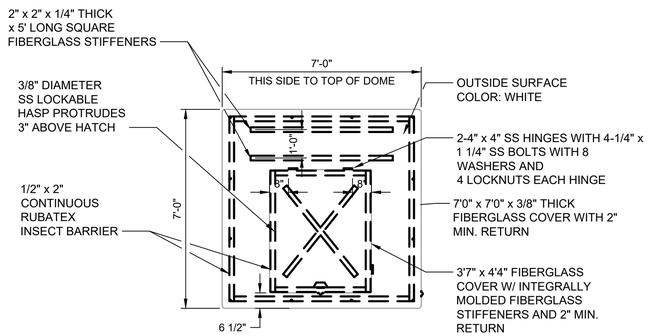
PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED

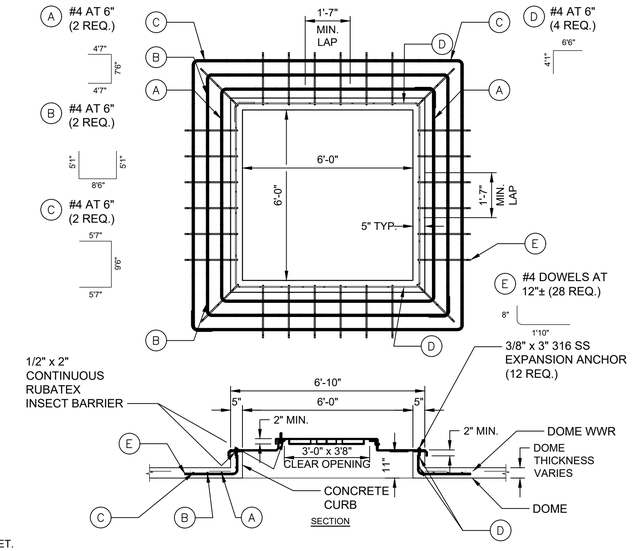
NO. SHEETS	105
SHEET NO.	68
DRAWING NO.	M-10



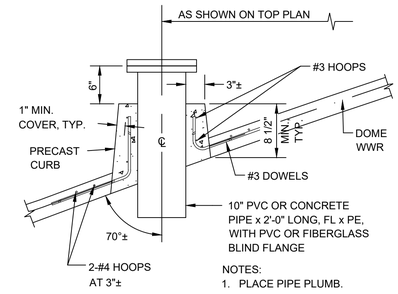
NOTES:
1. 1/4" x 2" FLAT BAR FIBERGLASS CROSS BRACE TO BE PROVIDED FOR BRACING WALL BRACKET SUPPORTS ON EVERY BRACKET.
2. ALL RUNGS SHALL BE NON-SLIP.

A - INTERIOR FRP LADDER W/ STAINLESS STEEL TS SAFETY RAIL
NTS



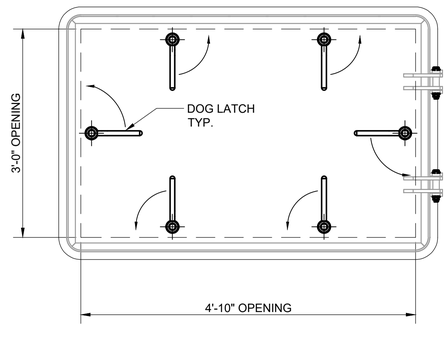


B - ACCESS HATCH WITH FIBERGLASS COVER DETAIL
NTS



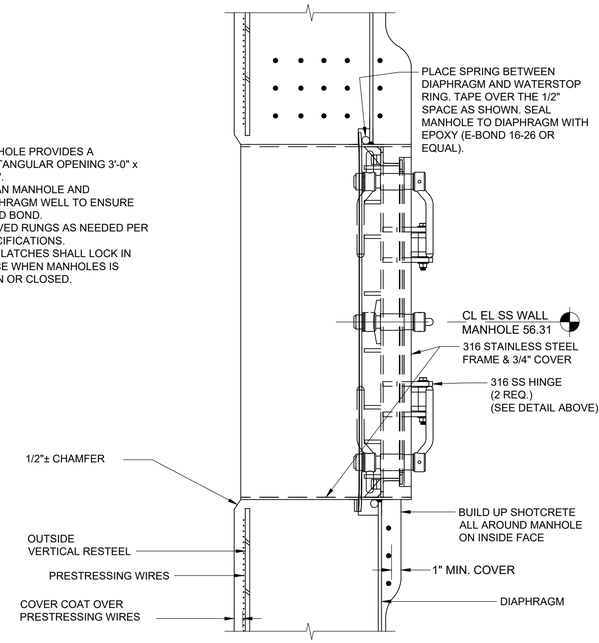
NOTES:
1. PLACE PIPE PLUMB.

E - TYPICAL PVC DOME PROBE CURB
NTS



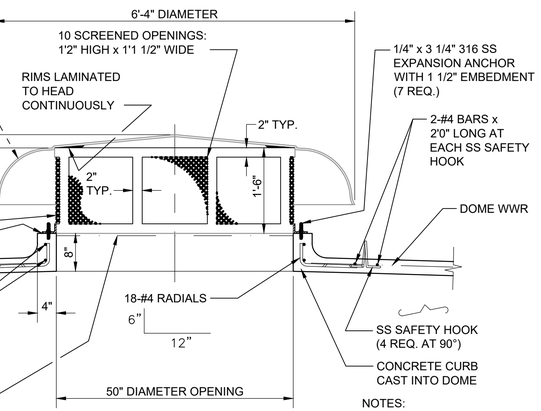
ELEVATION

NOTES:
1. MANHOLE PROVIDES A RECTANGULAR OPENING 3'-0" x 4'-10".
2. CLEAN MANHOLE AND DIAPHRAGM WELL TO ENSURE GOOD BOND.
3. PROVED RUNGS AS NEEDED PER SPECIFICATIONS.
4. DOG LATCHES SHALL LOCK IN PLACE WHEN MANHOLES IS OPEN OR CLOSED.



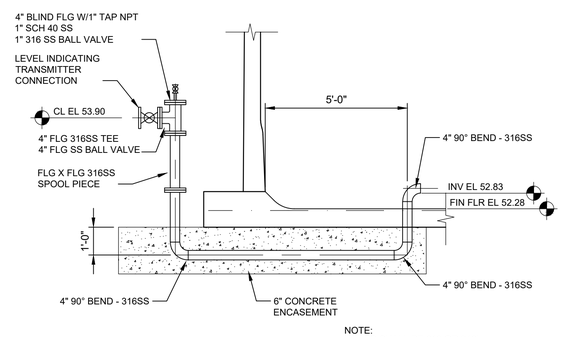
SECTION

F - STAINLESS STEEL WALL MANHOLE (2 REQ'D PER GST)
NTS



NOTES:
1. MAXIMUM LOAD RATING FOR SS SAFETY HOOK, IN ANY DIRECTION: 3100 LBS UNFACTORED LOAD.

C - GRAVITY VENTILATOR
NTS



NOTE:
ALL SS SHALL BE 316 OR 316L.

D - GROUND STORAGE TANK LEVEL TAP AND VALVE
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 363-1400
Architect's FA - C00000305
Engineers EB - 0000165
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

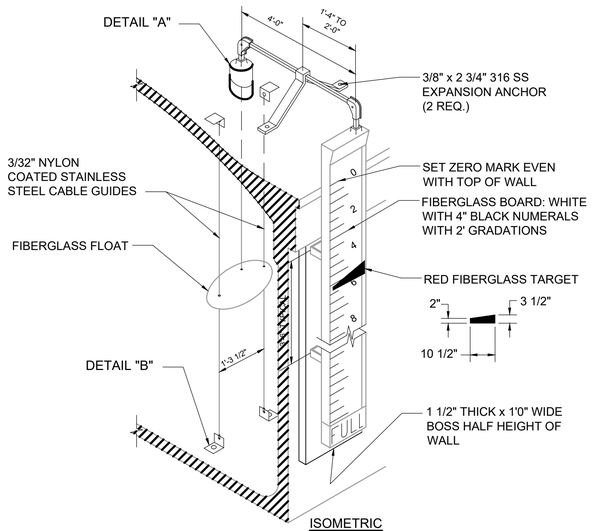
DESIGNER: L. TRACEY
DRAWN BY: B. LEE
DATE: APRIL 2020
CHECKED BY: D. KECK
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
GROUND STORAGE TANK
DETAILS - (BID IN PHASE I)

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 69
DRAWING NO. M-11



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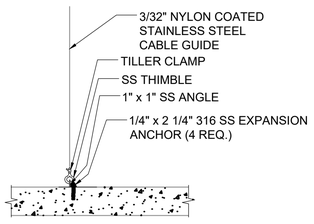
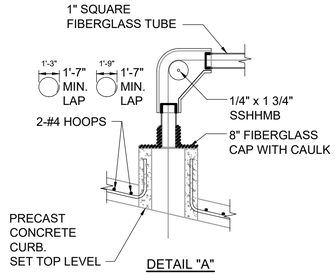
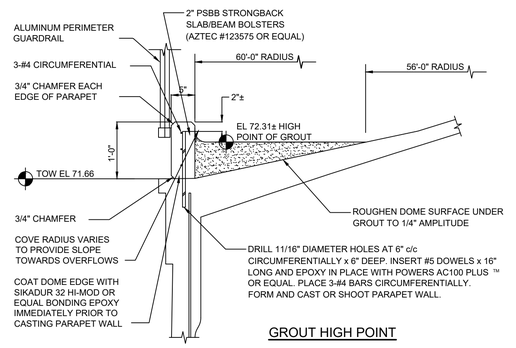


DETAIL "B" TYPICAL TOP AND BOTTOM

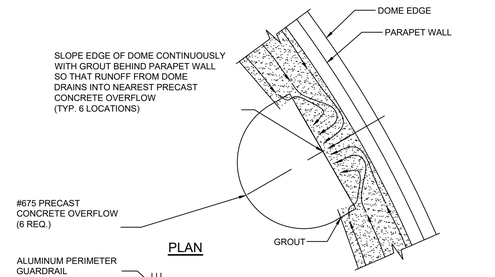


DETAIL "A"

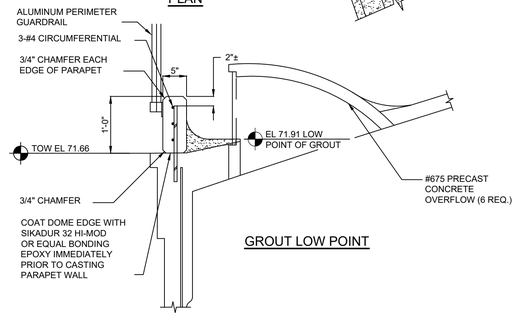
A
-
FIBERGLASS LIQUID LEVEL INDICATOR
NTS



GROUT HIGH POINT

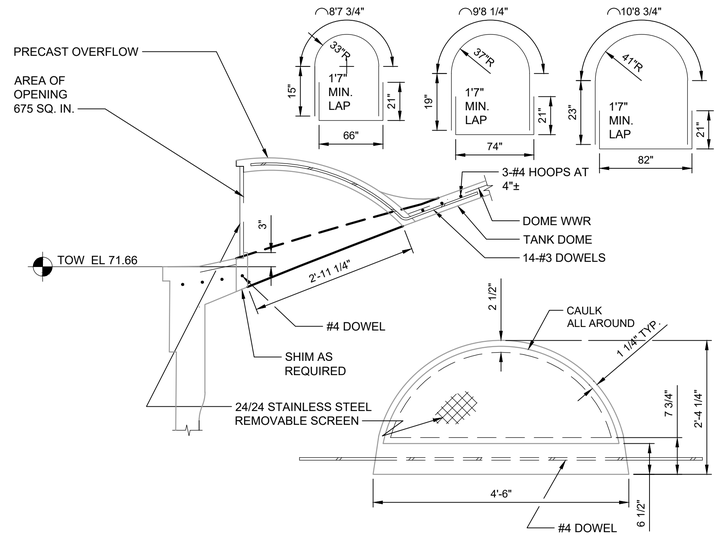


PLAN



GROUT LOW POINT

B
-
PARAPET WALL
NTS



C
-
PRECAST CONCRETE OVERFLOW
SCALE: 3/4" = 1'-0"

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone (904) 363-1400
Architects AA - C000035
Engineers EB - 0000165
Surveyors LB - 0006783

MOTT MACDONALD

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DESIGN ENGINEER: LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

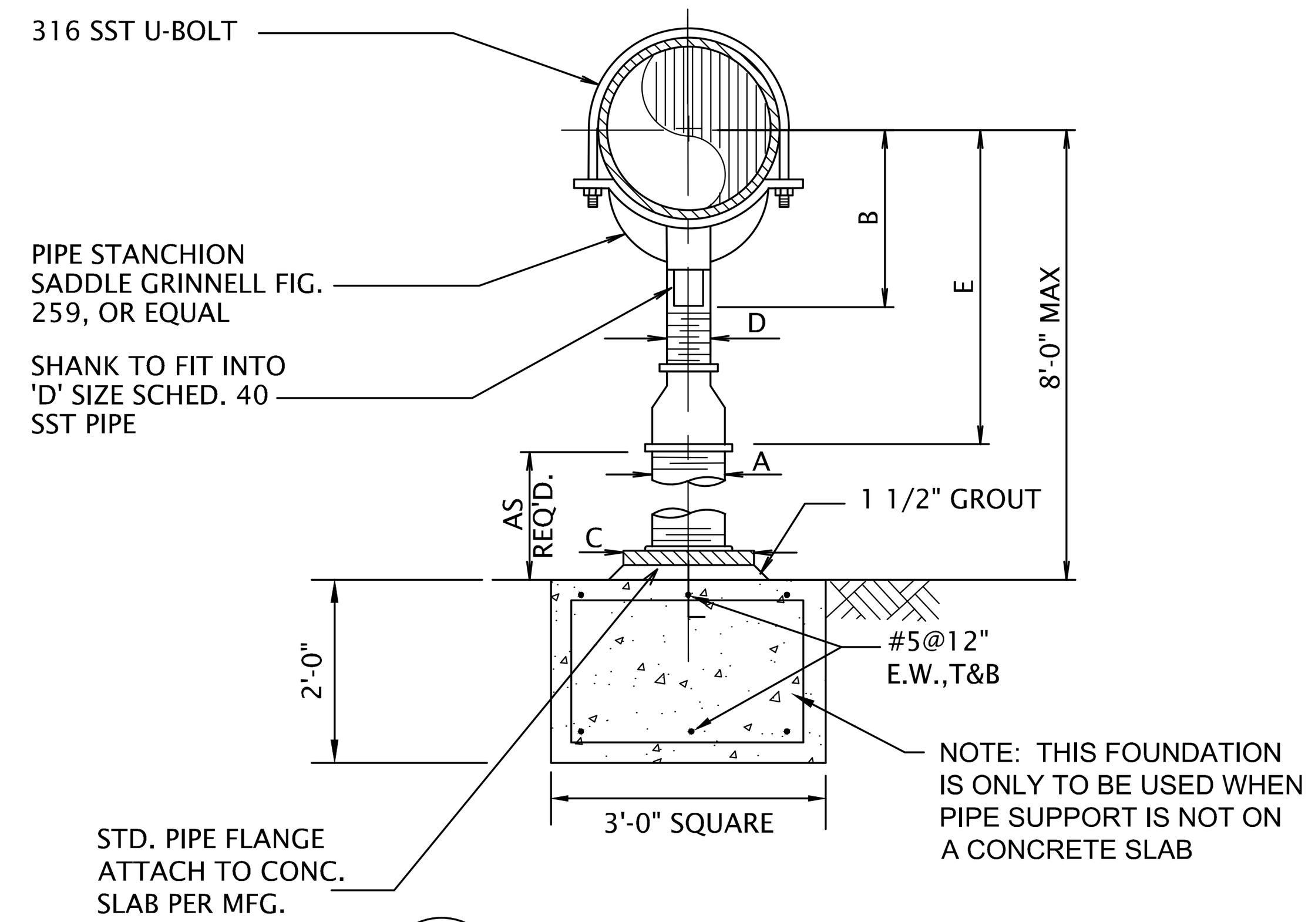
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
GROUND STORAGE TANK
DETAILS - (BID IN PHASE I)

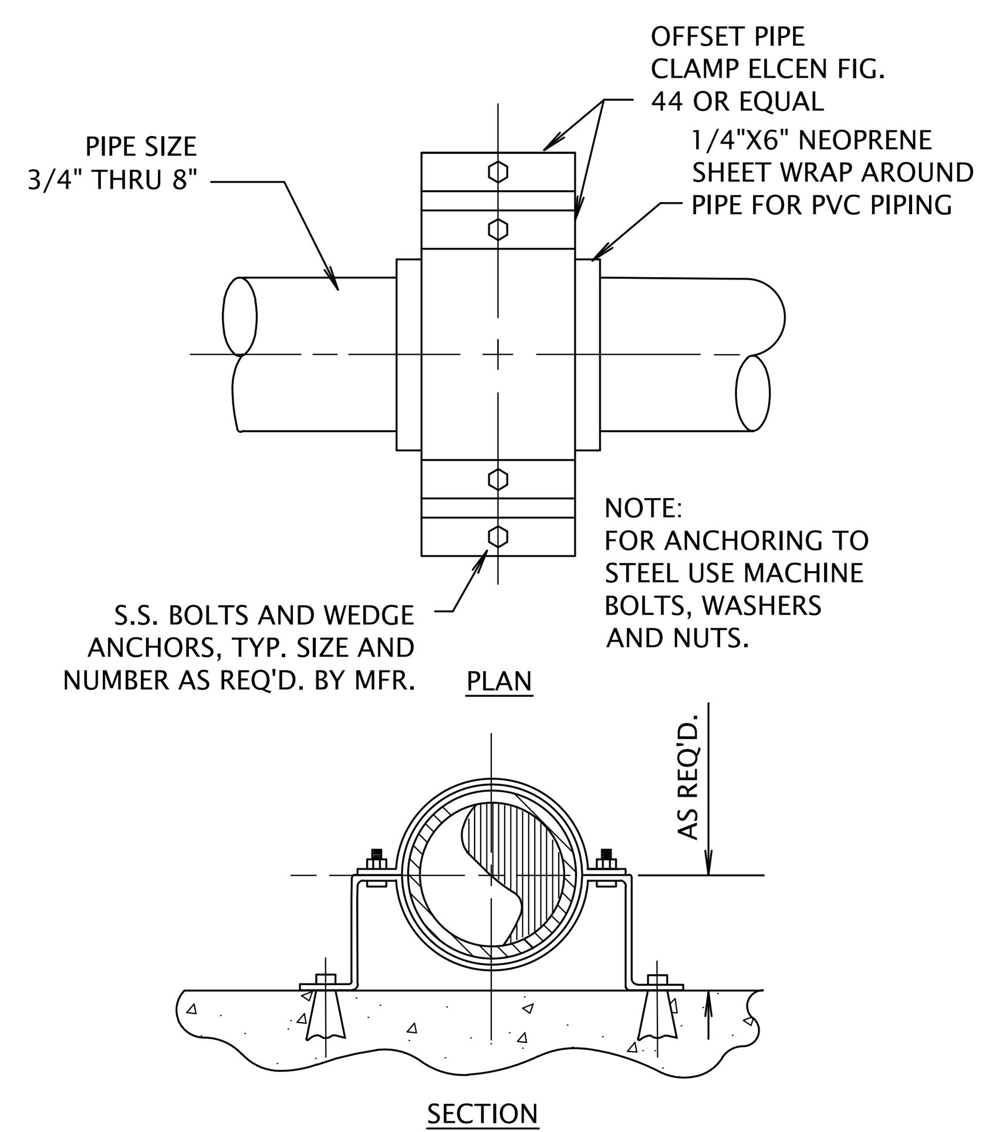
PROJ. NO.	50239244
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS	105
SHEET NO.	70
DRAWING NO.	M-12

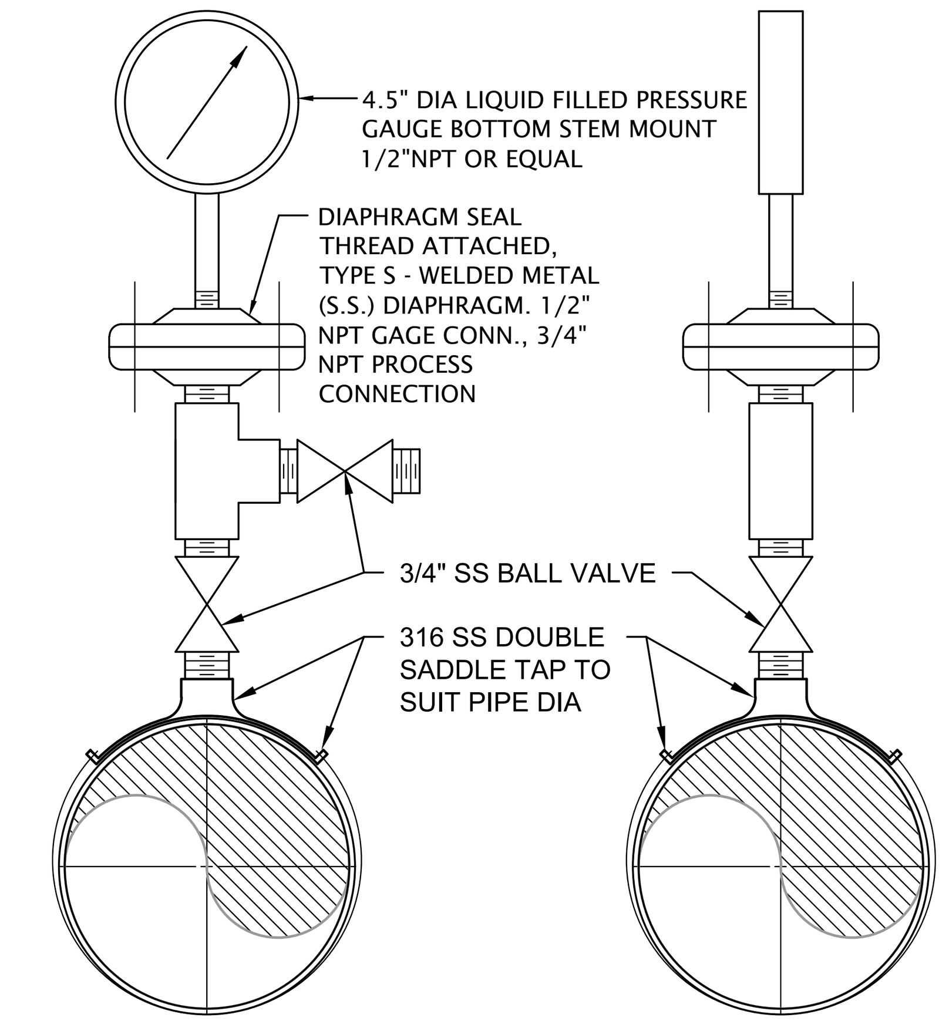
PIPE SIZE	A	B	C	D	E	
					MIN.	MAX.
2 1/2"	2 1/2"	3 1/2"	9"	1 1/2"	8"	13"
3"	2 1/2"	3 3/4"	9"	1 1/2"	8 1/4"	13 1/4"
3 1/2"	2 1/2"	4"	9"	1 1/2"	8 1/2"	13 1/2"
4"	3"	4 1/4"	9"	2 1/2"	9 1/4"	14"
5"	3"	4 7/8"	9"	2 1/2"	10"	14 3/4"
6"	3"	5 1/2"	9"	2 1/2"	10 1/2"	15 1/4"
8"	3"	6 7/8"	9"	2 1/2"	11 3/4"	16 1/2"
10"	3"	8 1/2"	9"	2 1/2"	13 1/2"	18 1/4"
12"	3"	9 15/16"	9"	2 1/2"	15"	19 3/4"
14"	4"	10 15/16"	11"	3"	16 1/4"	20 3/4"
16"	4"	12 3/8"	11"	3"	17 3/4"	22 1/4"
18"	6"	13 7/8"	13 1/2"	3 1/2"	19 1/2"	24"
20"	6"	15 3/8"	13 1/2"	3 1/2"	21"	25 1/2"
24"	6"	17 15/16"	13 1/2"	4"	23 3/4"	28 1/4"
30"	6"	21 5/16"	13 1/2"	4"	27"	31 1/2"
32"	6"	22 1/2"	13 1/2"	4"	28 1/4"	32 3/4"
36"	6"	24 1/2"	13 1/2"	4"	30 1/4"	34 3/4"



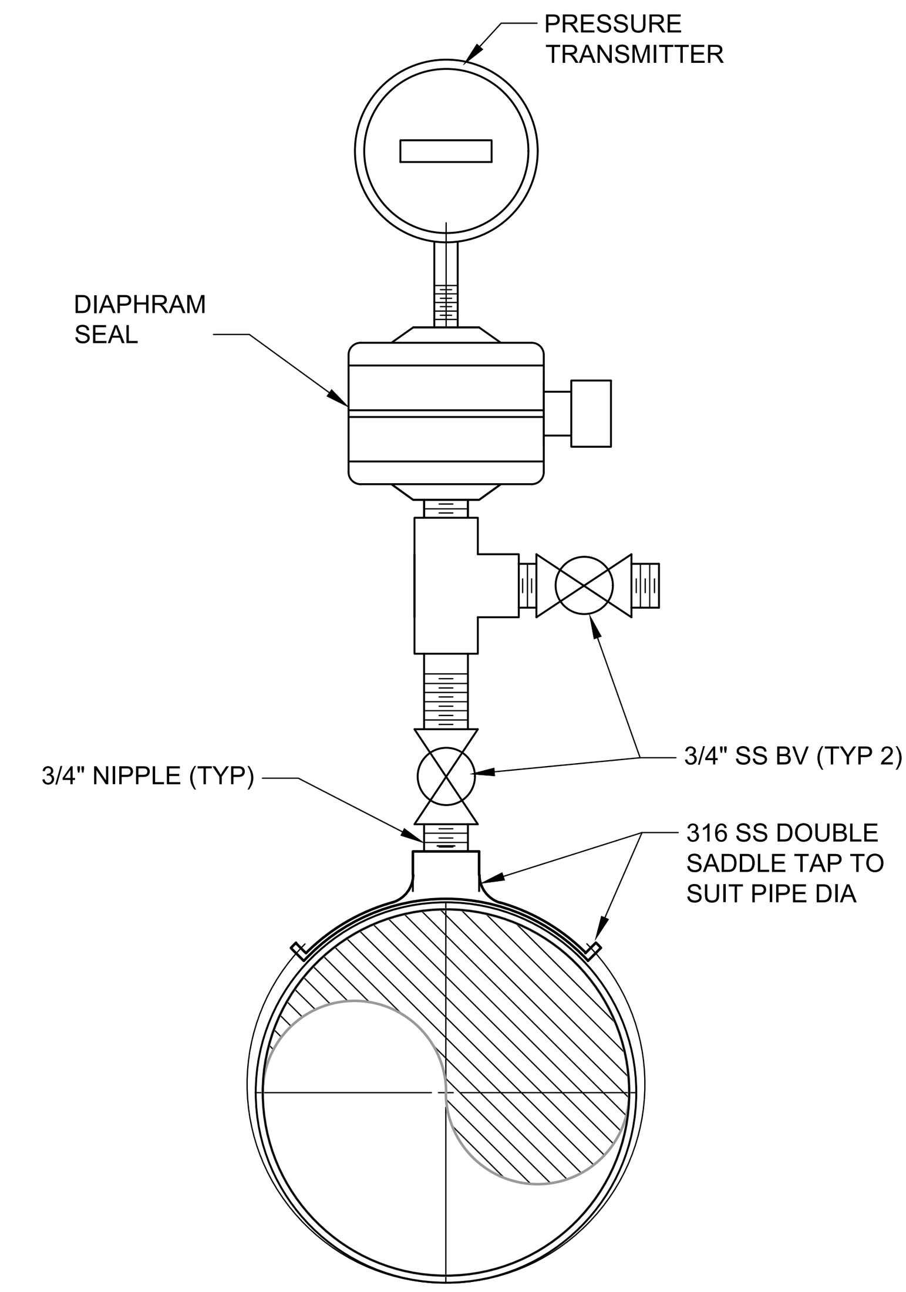
A PIPE SUPPORT
NTS NTS



B PIPE CLAMP
- NTS

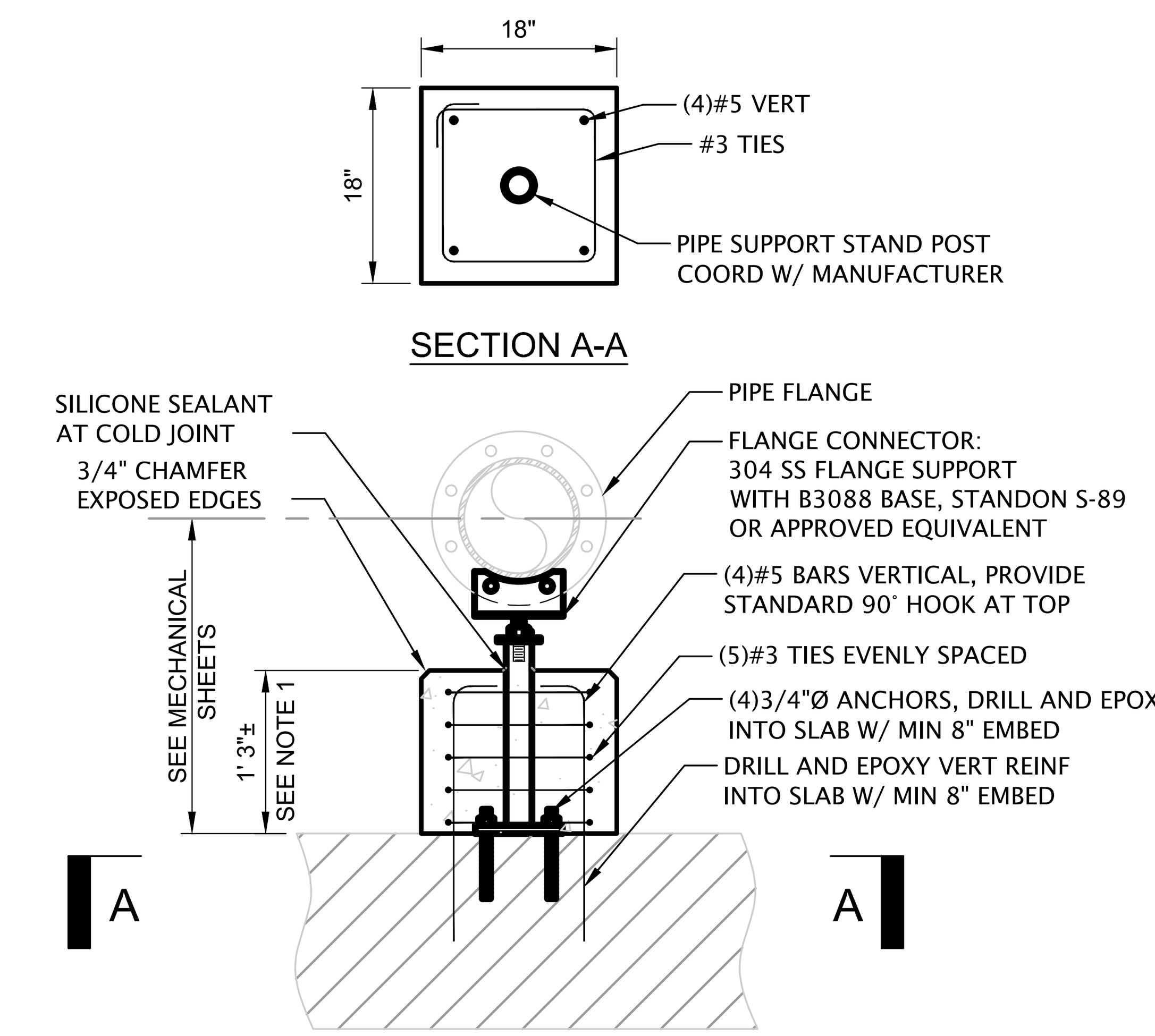


C PRESSURE GAUGE
- NTS



NOTES:
1. ALL PIPING, FITTINGS AND VALVES SHALL BE 316 STAINLESS STEEL.
2. CONFIRM QUICK DISCONNECT COUPLING SIZE W/ OWNER.

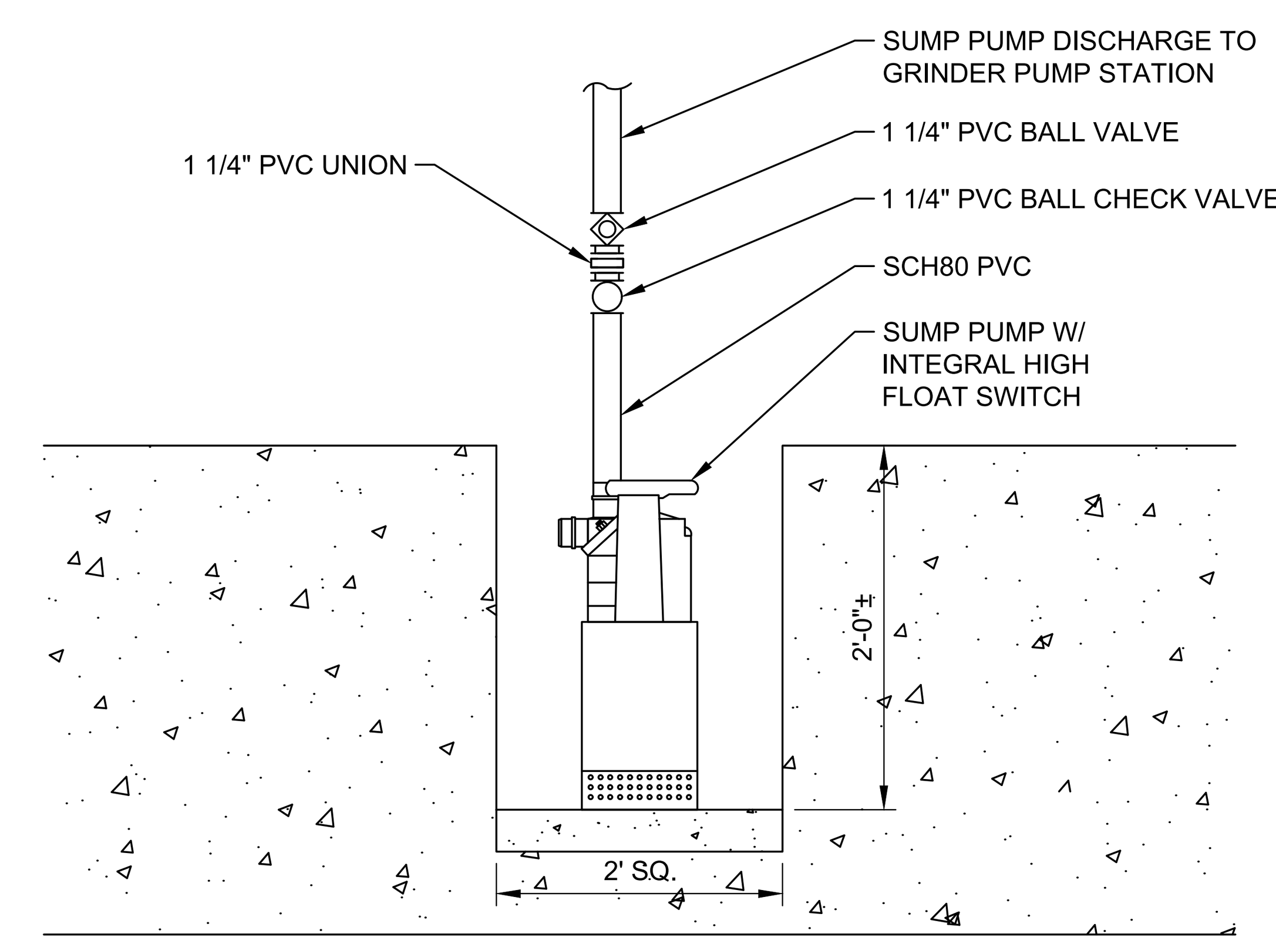
D PIT CONNECTION
- NTS



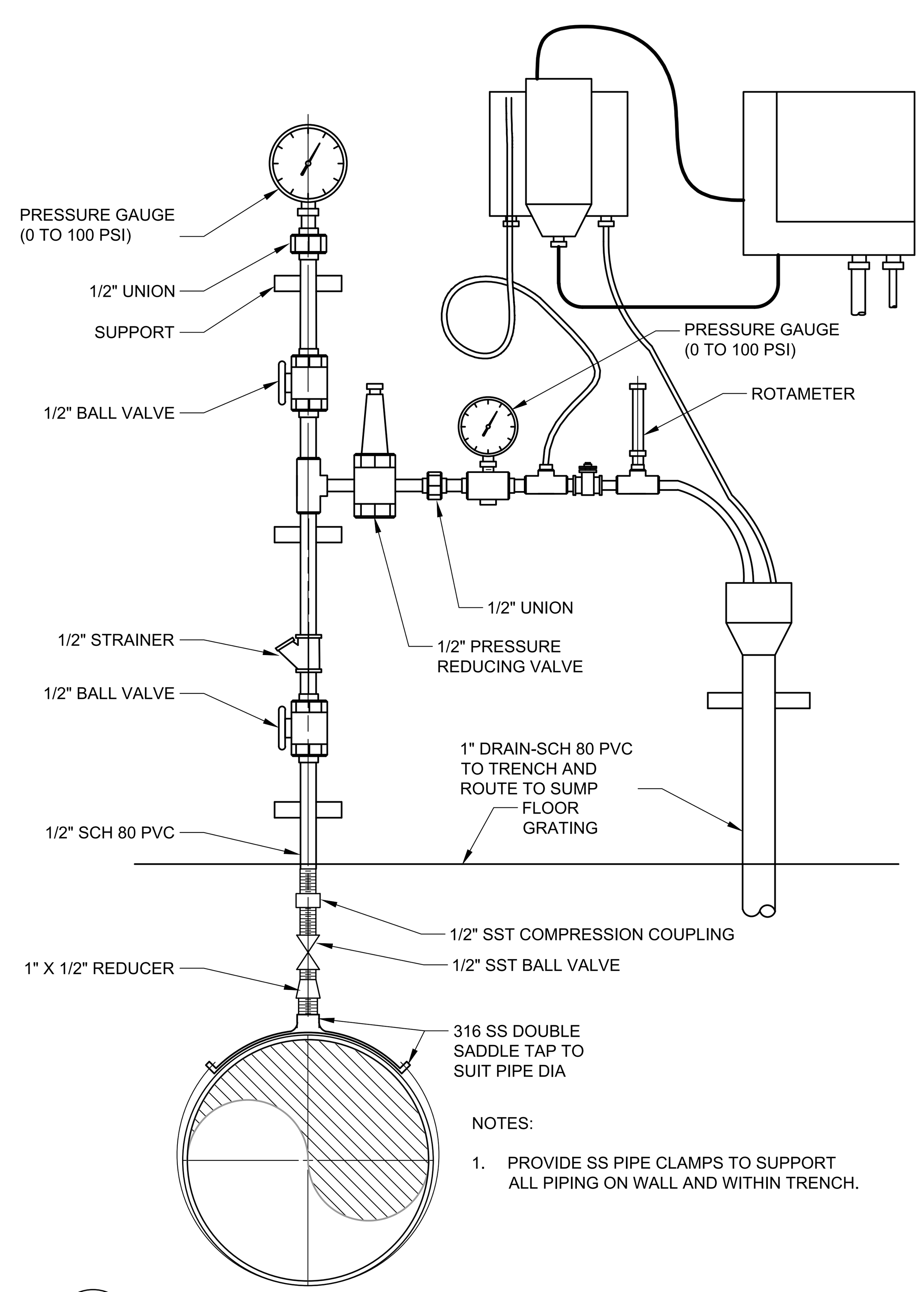
NOTES:
1. COORDINATE WITH PIPE SUPPORT TO ALLOW ADEQUATE CLEARANCE FOR SUPPORT ADJUSTMENT MECHANISMS.
2. USE HILTI RE500 EPOXY OR APPROVED EQUIVALENT. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR EPOXY INSTALLATION.

(RIGID TYPE)

I PIPE SUPPORT (RIGID)
- NTS

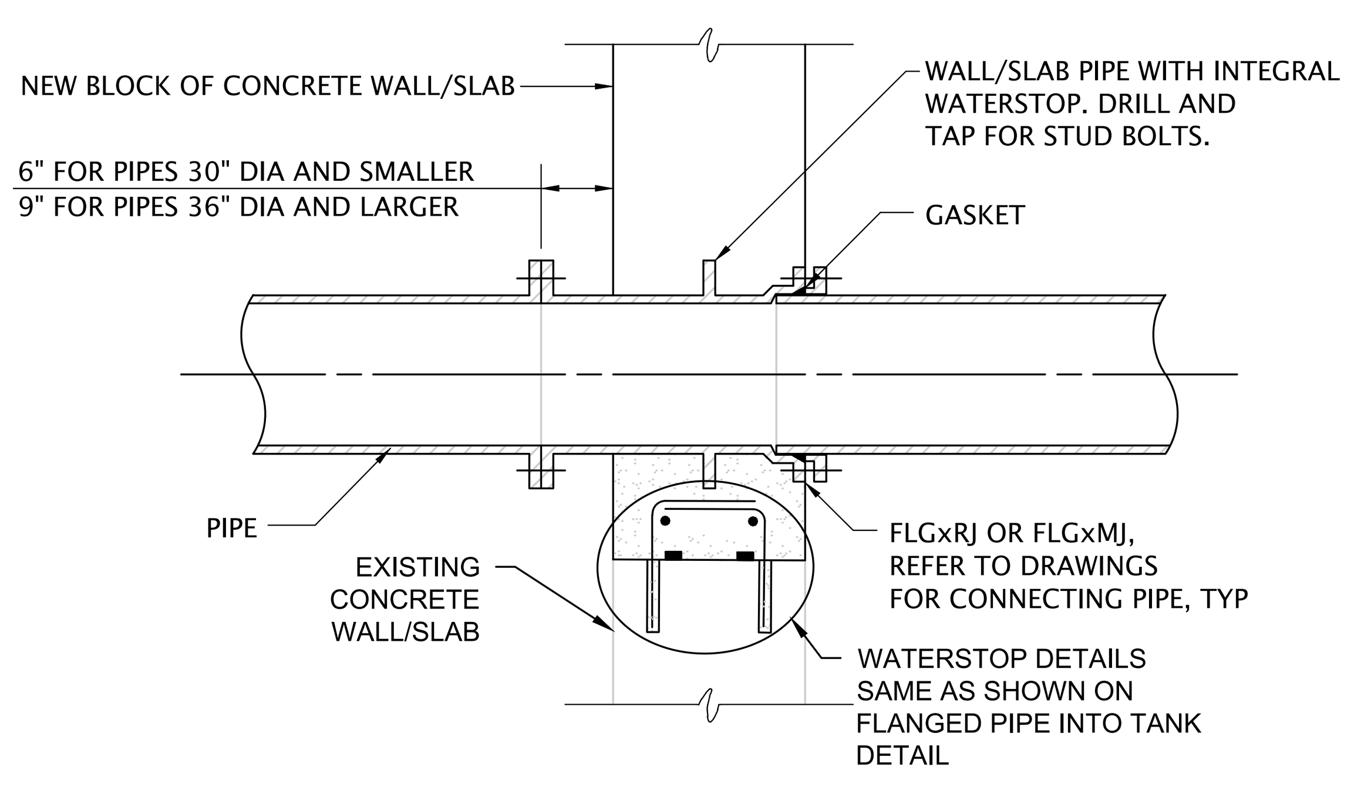


G SUMP PUMP DETAIL
- NTS



NOTES:
1. PROVIDE SS PIPE CLAMPS TO SUPPORT ALL PIPING ON WALL AND WITHIN TRENCH.

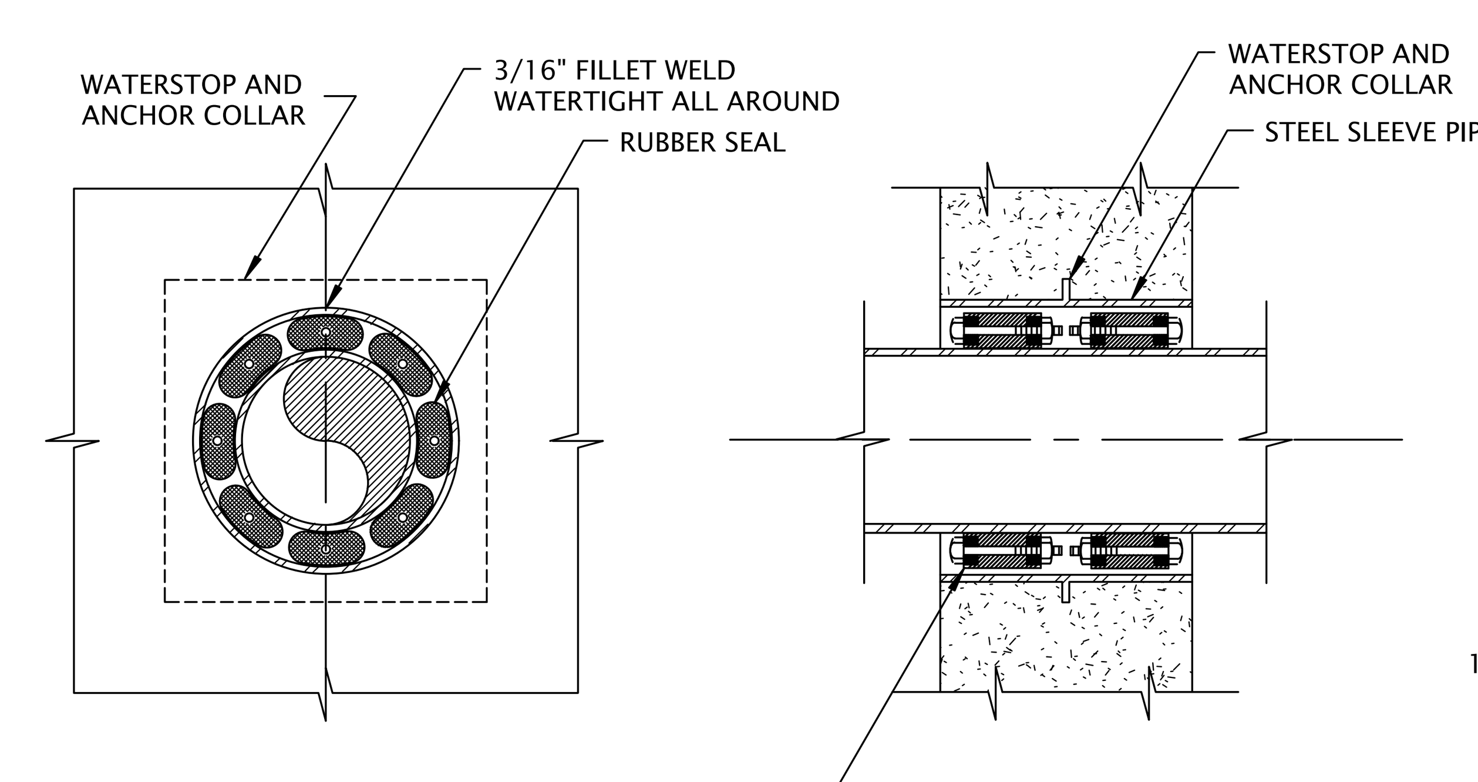
F TOTAL RESIDUAL CHLORINE and pH ANALYZER
- NTS



PIPE THROUGH WALL/SLAB

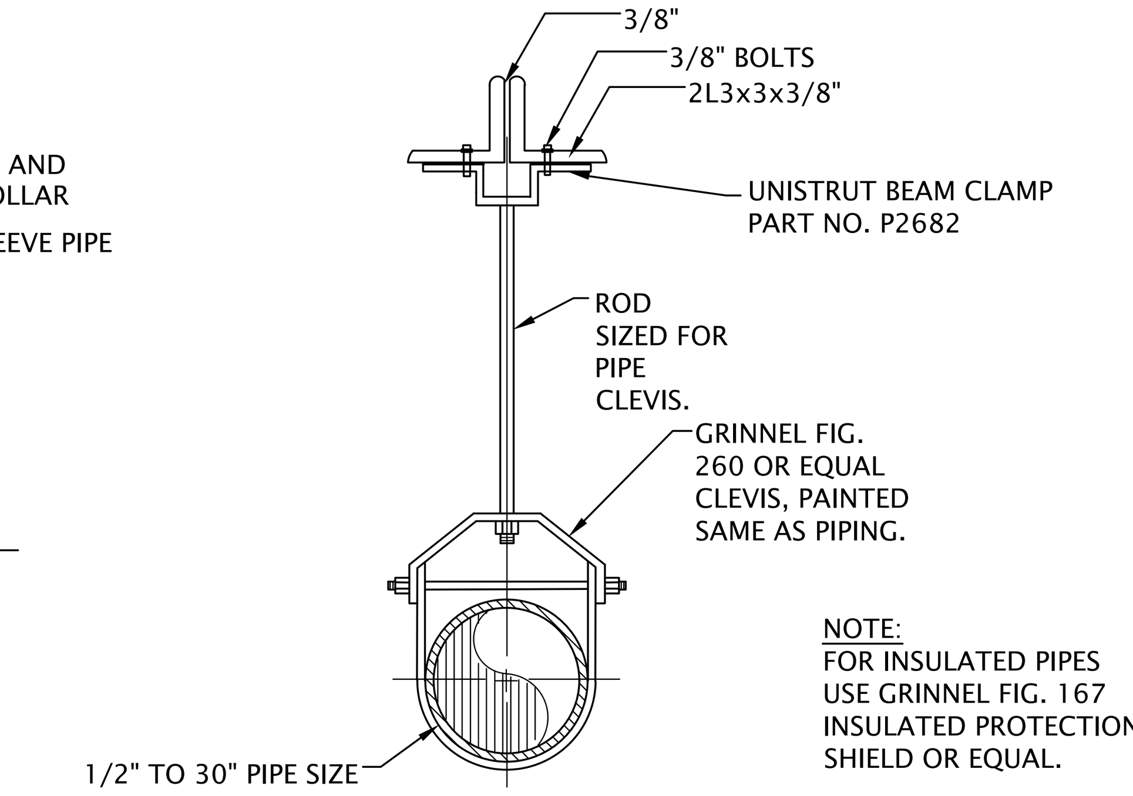
NOTES:
1. ALL WALL PIPES SHALL BE CAST UNLESS OTHERWISE NOTED.
2. PROVIDE PIPE JOINT WITHIN TWO (2) FEET OF EXTERIOR FACE OF WALL AT CONNECTION TO ALL NEW AND EXISTING STRUCTURES OR MANHOLES.

E WALL/SLAB PENETRATION
- NTS



FOR SLAB PENETRATION, EXTEND SLEEVE 2" MIN. ABOVE FINISHED FLOOR. SEE DETAIL E THIS SHEET.

H DOUBLE LINK-SEAL WALL/SLAB PENETRATION
- NTS



NOTE:
FOR INSULATED PIPES USE GRINNEL FIG. 167 INSULATED PROTECTION SHIELD OR EQUAL.

J 304 SS PIPE SUPPORT
- NTS

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NO.	BY	DATE	REVISIONS
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1.			

DESIGN ENGINEER
LESLIE S. SAMEL, P.E.
FLORIDA REGISTRATION NO. 68763

DESIGNER:	L. TRACEY
DRAWN BY:	B. LEE
DATE:	APRIL 2020
CHECKED BY:	D. KECK
DATE:	APRIL 2020

JEA sm Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

MECHANICAL DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS 105
SHEET NO. 71
DRAWING NO. MD-1

HVAC LEGEND

Symbol	Description
	NEW WORK
GBBD	GRAVITY BACK DRAFT DAMPER
SD	DUCT MOUNTED SMOKE DETECTOR
	MANUAL VOLUME DAMPER
	FIRE DAMPER WITH ACCESS DOOR
	COMBINATION FIRE / SMOKE DAMPER WITH ACCESS DOOR
(CFM)	CEILING MOUNTED SUPPLY DIFFUSER, 360° AIR PATTERN, WITH NOTED AIR FLOW
RR CFM	CEILING MOUNTED RETURN OR EXHAUST REGISTER
RG CFM	CEILING MOUNTED RETURN OR EXHAUST GRILLE
	SUPPLY DUCT ELBOW WITH TURNING VANES (PLAN, UP, DOWN)
	RETURN OR EXHAUST DUCT ELBOW WITH TURNING VANES (PLAN, UP, DOWN)
TG	TRANSFER GRILLE
U/D	1" UNDERCUT DOOR
OAC	OPENING IN WALL ABOVE CEILING
SIZE DG	DOOR GRILLE
FS	FLOW SENSOR
FT	FLOW RATE TRANSFER ASSEMBLY
H	HUMIDITY SENSOR
SP	STATIC PRESSURE TRANSMITTER ASSEMBLY
TH	WALL MOUNTED THERMOSTAT, MOUNT 5'-0" ABOVE FINISHED FLOOR
T	WALL MOUNTED TEMPERATURE SENSOR, MOUNT 5'-0" ABOVE FINISHED FLOOR
	INDICATES POINT OF CONNECTION BETWEEN NEW AND EXISTING
	INDICATES POINT OF DISCONNECTION

HVAC ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMP	AMPERE
APD	AIR PRESSURE DROP
ARCH	ARCHITECTURAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BCPR	BRANCH CIRCUIT PROTECTION RATING
B/D	BELT DRIVE
BDD	BACK DRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG.	BUILDING
BSA	BOARD OF STANDARDS AND APPEALS
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CD	CONDENSATE DRAIN
CF	CIRCULATING FAN
CFM	CUBIC FEET PER MINUTE
CO	CARBON MONOXIDE
CONT.	CONTINUATION
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CU	CONDENSING UNIT
CU. FT.	CUBIC FEET
CUH	CABINET UNIT HEATER
Cv	CONTROL VALVE FLOW COEFFICIENT
CW	DOMESTIC COLD WATER
DB	DRY BULB
dBA	DECIBELS
DD	DIRECT DRIVE
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFT	ENTERING FLUID TEMPERATURE
EL	ELEVATION
ELEC.	ELECTRICAL
ER	EXHAUST REGISTER
ERV	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
EXH.	EXHAUST
°F	DEGREE, FAHRENHEIT
FC	FAN COIL
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
FSD	COMBINATION FIRE / SMOKE DAMPER
FT	FEET
FT. WG.	FEET OF WATER COLUMN GAUGE
G	GAS
GA.	GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
H	HEIGHT
HP	HORSEPOWER
HR	HOURS
HZ	HERTZ
IN.	INCHES
IN. WG.	INCHES OF WATER COLUMN GAUGE
I.V.D.	INLET VANE DAMPER
kW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET
LFT	LEAVING FLUID TEMPERATURE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPERES
LV	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBCA	MINIMUM BRANCH CIRCUIT AMPACITY
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPERES
MD	MOTORIZED DAMPER
MECH.	MECHANICAL
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NFA	NET FREE AREA
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
O.C.	ON CENTER
OSA	OUTSIDE SUPPLY AIR
P	PUMP
PD	PRESSURE DROP
PH	PHASE
PRESS.	PRESSURIZATION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
QTY	QUANTITY
RA	RETURN AIR
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RLA	RUNNING LOAD AMPERES
RM	ROOM
R.O.	ROOF OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS.	SENSIBLE
SF	SUPPLY FAN
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SQ	SQUARE
SQ. FT.	SQUARE FEET
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
TEF	TOILET EXHAUST FAN
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
V	VOLT
VAV	VARIABLE AIR VOLUME TERMINAL UNIT
VD	VOLUME DAMPER
VIF	VERIFY IN FIELD
VFD	VARIABLE FREQUENCY DRIVE
W	WIDTH
W/	WITH
WB	WET BULB
W.C.	WATER COLUMN
WG	WATER GAUGE
WMS	WIRE MESH SCREEN

GENERAL NOTES

1. DUE TO THE SMALL SCALE OF THE DRAWINGS THE DUCTWORK AND PIPING SHOWN ARE DIAGRAMMATIC. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS TO AVOID CONFLICTS WITH STRUCTURAL ELEMENTS, LIGHTING FIXTURES, PLUMBING AND SPRINKLER PIPING.
2. DUE TO TIGHT SPACE CONDITIONS, COORDINATION OF DUCT, PIPE, CONDUITS AND STRUCTURAL MEMBER LOCATIONS IS CRITICAL. GENERAL CONTRACTOR SHALL PREPARE COORDINATION DRAWINGS TO BE SIGNED BY ALL TRADES. COORDINATION DRAWINGS SHOULD INCLUDE ALL DUCTWORK, PIPING, LIGHTING FIXTURES, ETC. OBTAIN ENGINEER'S APPROVAL PRIOR TO DUCTWORK AND PIPING INSTALLATION.
3. PRIOR TO ORDERING OR FABRICATING ANY NEW EQUIPMENT, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES. EQUIPMENT LOCATIONS AND CONNECTION SIZES SHALL BE DERIVED FROM THE MANUFACTURER'S CERTIFIED DRAWINGS FOR THE SPECIFIC EQUIPMENT THAT WILL ACTUALLY BE FURNISHED AND INSTALLED FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.
4. THE DETAILS INDICATED ON THE DRAWINGS AS TYPICAL SHALL APPLY TO ALL SIMILAR CONDITIONS UNLESS NOTED SPECIFICALLY OTHERWISE.
5. PROVIDE ALL NECESSARY DUCT TRANSITIONS FROM THE INDICATED DUCT SIZE TO THE ACTUAL EQUIPMENT DUCT COLLAR SIZE.
6. ALL DUCT ELBOWS SHALL BE EITHER VANED OR LONG RADIUS ELBOWS.
7. PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO EQUIPMENT.
8. PROVIDE ADJUSTABLE AIR VOLUME DAMPERS AT ALL DUCT BRANCHES, AND IN THE DUCTS TO CEILING DIFFUSERS, SUPPLY, AND RETURN/EXHAUST REGISTERS.
9. ALL DUCTWORK DIMENSIONS ARE CLEAR INSIDE DIMENSIONS.
10. ALL SPACE TEMPERATURE SENSORS (THERMOSTATS) SHALL BE MOUNTED AT 5'-0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
11. WHEN PIPES, DUCTS AND OTHER HANGING ITEMS ARE SUPPORTED FROM THE STRUCTURAL ELEMENTS, THE CONTRACTOR SHALL PROVIDE THE MISCELLANEOUS STEEL NECESSARY TO SUPPORT PIPING, DUCTWORK AND MECHANICAL EQUIPMENT.
12. SHOULD DISCREPANCIES OCCUR BETWEEN CONTRACT DRAWINGS AND CONTRACT SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS IN CONJUNCTION WITH APPLICABLE LOCAL CODES, STANDARDS, RULES, LAWS, ETC. SHALL APPLY.

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REVISIONS

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DESIGN ENGINEER
JACK C. WANG, P.E.
FLORIDA REGISTRATION NO.
81017

DESIGNER: J. WANG
DRAWN BY: D. GONZALEZ
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

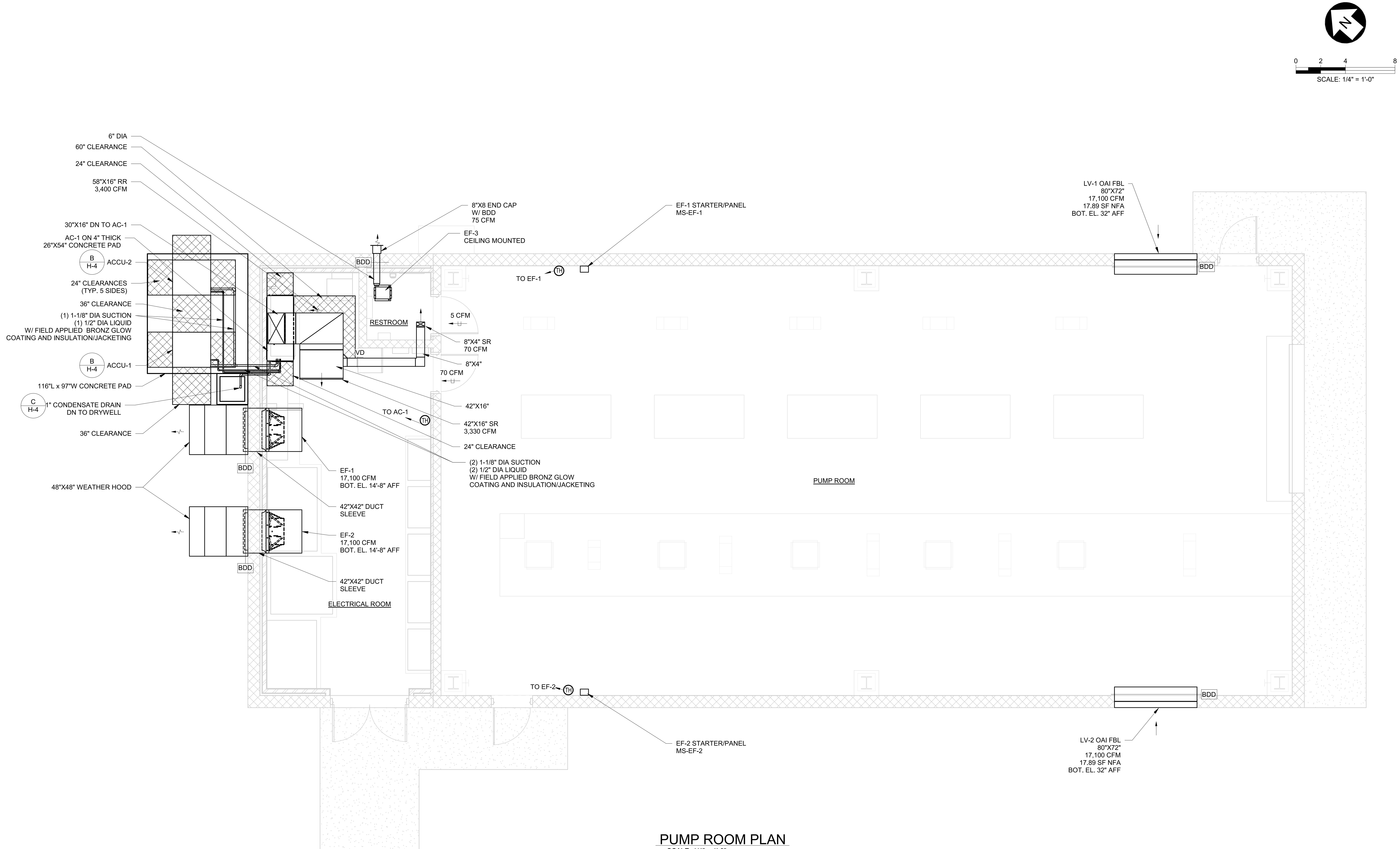
JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

HVAC LEGEND, SYMBOLS, ABBREVIATIONS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 72
DRAWING NO. H-1



PUMP ROOM PLAN

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

ISSUED FOR BID

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DESIGN ENGINEER: JACK WANG, P.E.
FLORIDA REGISTRATION NO. 81017

DESIGNER: J. WANG
DRAWN BY: D. GONZALEZ
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

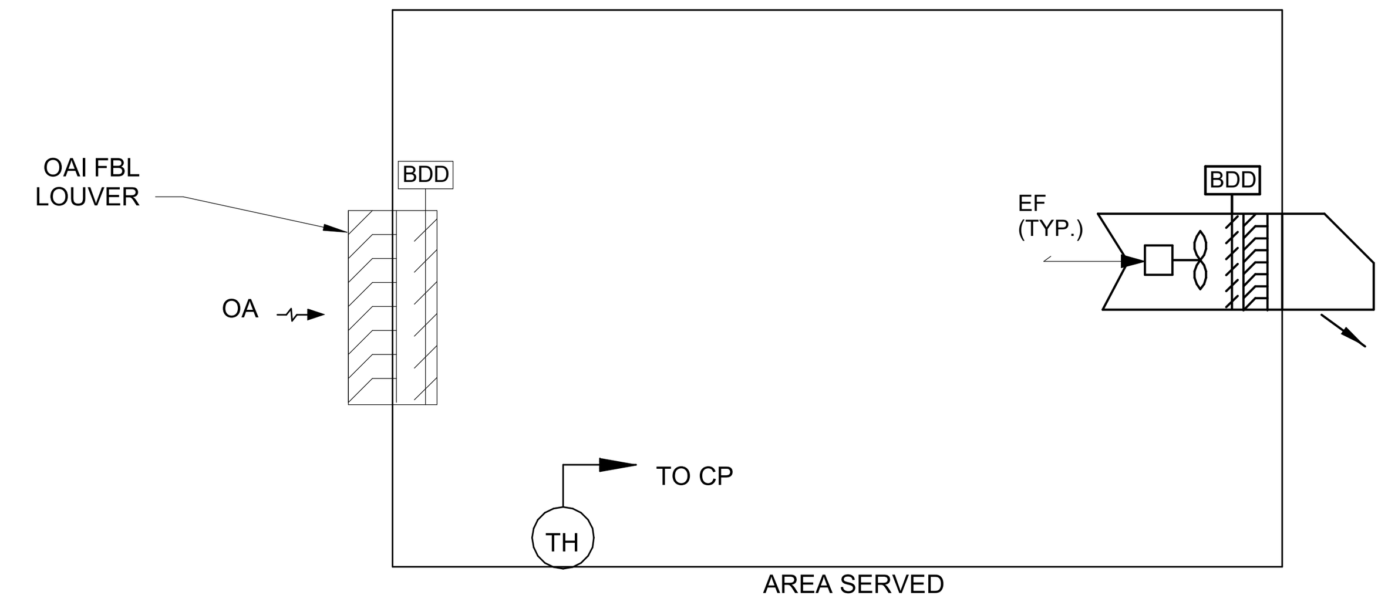
JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PUMP ROOM PLAN

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS: 105
SHEET NO.: 73
DRAWING NO.: H-2



FAN INTERLOCK SCHEDULE

UNIT NO.	LOCATION	AREA SERVED	INTERLOCKS		NOTES
			WITH	CONTROL	
EF-1	PUMP ROOM	PUMP ROOM	NONE	INLINE H-O-A/ THERMOSTAT	1, 2
EF-2	PUMP ROOM	PUMP ROOM	NONE	INLINE H-O-A/ THERMOSTAT	1, 2
EF-3	RESTROOM	RESTROOM	NONE	LIGHT SWITCH	1, 2

GENERAL NOTES

1. TYPICAL SYSTEM MAY HAVE MORE THAN ONE UNIT. PROVIDE ADDITIONAL H-O-A SWITCH, PANEL LIGHTS, MOTOR OPERATED DAMPER, SMOKE DETECTOR AND REQUIRED CONTROLS FOR THE UNIT SHOWN AND FOR EACH ADDITIONAL UNIT.
2. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS AND NEC REQUIREMENTS (LATEST EDITION).

VENTILATION SEQUENCE OF OPERATION

GENERAL:

1. COORDINATE POWER AND WIRING WITH OTHER TRADES.

INTERLOCKS:

1. AS SHOWN IN FAN INTERLOCK SCHEDULE.

FAN OPERATION:

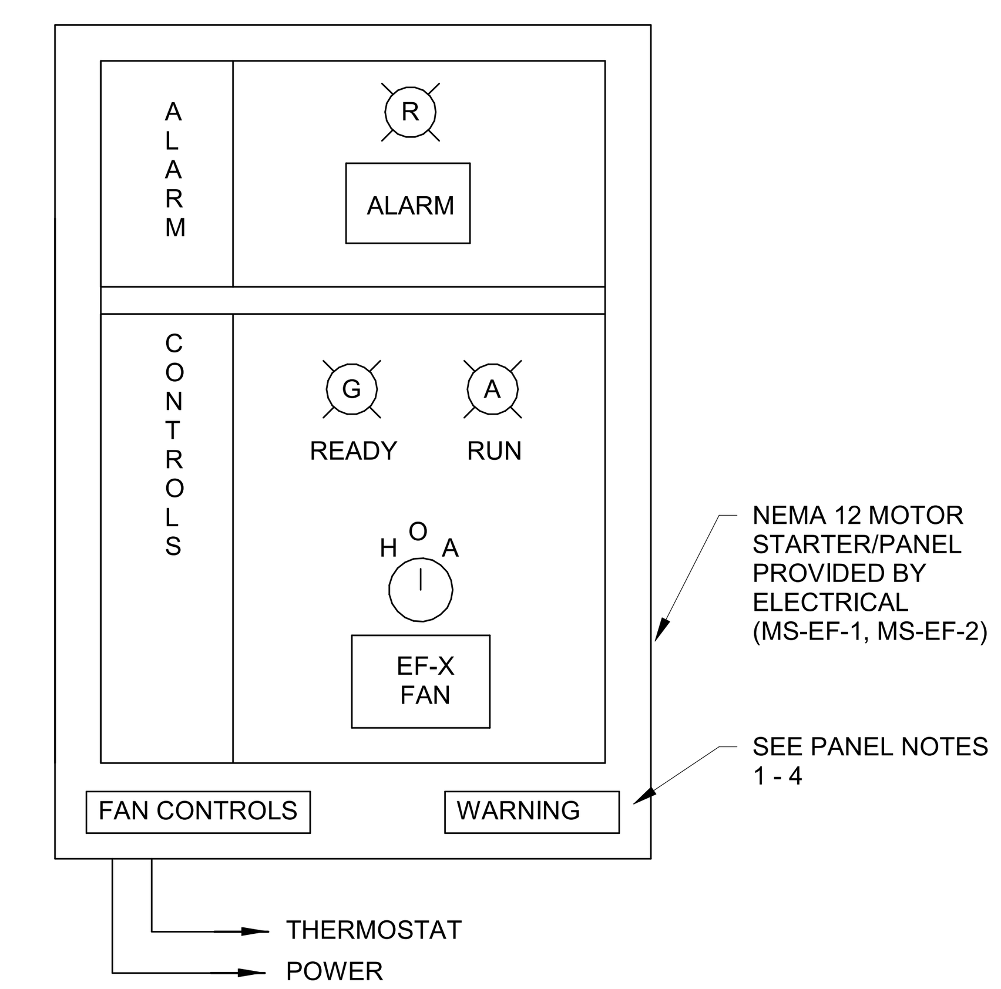
EF-1, EF-2: FANS SHALL OPERATE VIA HAND-OFF-AUTO SWITCH/THERMOSTAT.

HAND POSITION: FANS SHALL START.

OFF POSITION: FANS SHALL DEACTIVATE .

AUTO POSITION: FAN SHALL BE CONTROLLED BY THE ROOM THERMOSTAT. THERMOSTAT SHALL HAVE AN (ADJUSTABLE) SETPOINT OF 95 F THAT SHALL ACTIVATE THE FAN. THE FAN SHALL RUN UNTIL THE THERMOSTAT IS SATISFIED.

EF-3: FANS SHALL OPERATE VIA ON-OFF LIGHT SWITCH.



LEGEND

PROPELLER FAN

DAMPER, PARALLEL

LOUVER

BDD BACK DRAFT DAMPER

C/P CONTROL PANEL
EA EXHAUST AIR
OA OUTSIDE AIR
RA RETURN AIR
SA SUPPLY AIR

TH THERMOSTAT

PANEL NOTES

1. PLACE A RED WARNING SIGN CONSPICUOUSLY ON THE FACE OF EACH HVAC CONTROL PANEL WHICH READS AS FOLLOWS:

WARNING
THIS PANEL IS CONNECTED TO MULTIPLE SOURCES OF POWER

2. ALL PANELS SHALL BE NEMA 12.
3. PROVIDE EQUIPMENT NUMBER UNDER EACH OPERATING CONTROL.
4. EXHAUST FANS STARTER/PANEL SHALL BE PROVIDED BY ELECTRICAL.

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NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
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DESIGNER: J. WANG
DRAWN BY: D. GONZALEZ
DATE: APRIL 2020
CHECKED BY: M. LAPLUSA
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION
IMPROVEMENTS - PHASE II

HVAC CONTROLS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 74
DRAWING NO. H-3

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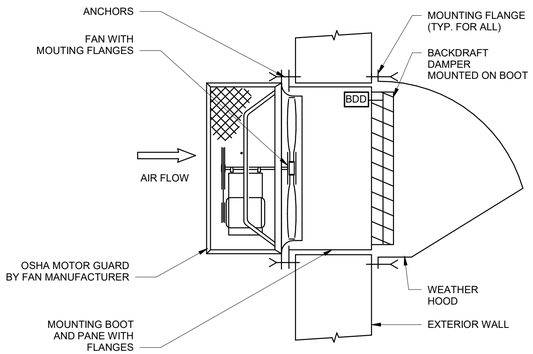
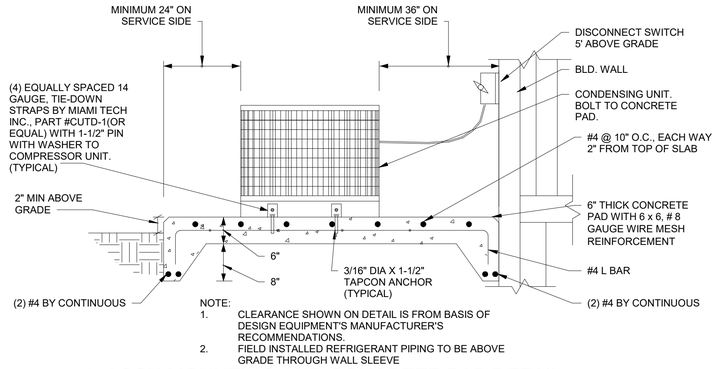


NOTES:

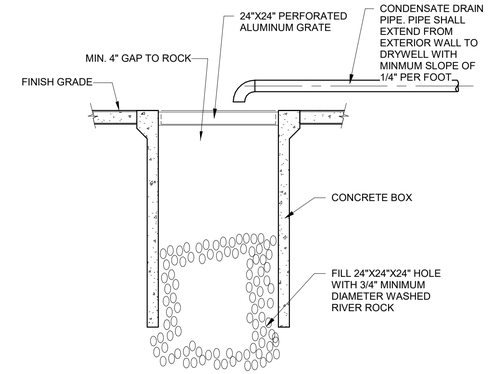
1. PROVIDE ALL ADDITIONAL SUPPLEMENTARY STEEL, SHIMS, WOOD BLOCKING, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.

A WALL MOUNTED FAN DETAIL
NOT TO SCALE

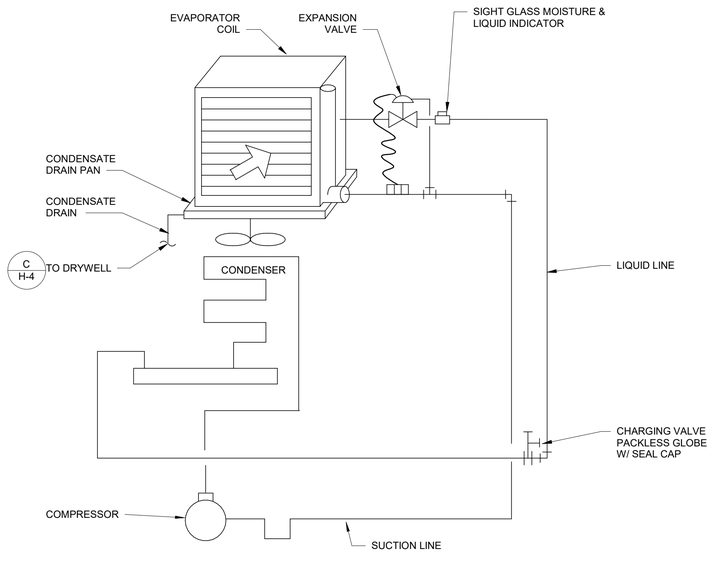


NOTE:
1. CLEARANCE SHOWN ON DETAIL IS FROM BASIS OF DESIGN EQUIPMENT'S MANUFACTURER'S RECOMMENDATIONS.
2. FIELD INSTALLED REFRIGERANT PIPING TO BE ABOVE GRADE THROUGH WALL SLEEVE

B ACCU MOUNTING AND CONCRETE PAD DETAIL
NOT TO SCALE



C CONDENSATE DRAIN DETAIL
NOT TO SCALE



D REFRIGERANT PIPING SCHEMATIC DIAGRAM
NOT TO SCALE

NOTES:

PIPING ROUTING SHALL BE DESIGNED TO:

1. MINIMIZE THE ACCUMULATION OF LIQUID REFRIGERANT IN THE COMPRESSOR CRANKCASE.
2. RETURN OIL TO THE COMPRESSOR AT SAME RATE AT WHICH IT LEAVES.

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DESIGN ENGINEER
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FLORIDA REGISTRATION NO.
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DESIGNER: J. WANG
DRAWN BY: D. GONZALEZ
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION
IMPROVEMENTS - PHASE II

HVAC DETAILS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 75
DRAWING NO. H-4

4/14/2020 8:10:40 AM

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AIR CONDITIONING UNIT SCHEDULE

TAG No.	LOCATION	AREA SERVED	MANUFACTURER	MODEL NO.	CAPACITY MBH		FAN DATA				DX COOLING COIL			FILTER AREA SF	ELECTRIC HEATING COIL		ELECTRICAL DATA			NOTES
					TOTAL	SENSIBLE	QUANTITY	CFM (EA)	HP (EA)	ESP	AREA SF	ROWS	MAX. FACE VELOCITY FPM		KW	CONTROL STAGES	VOLTAGE	MCA	MOP	
AC-1	ELECTRICAL ROOM	ELECTRICAL ROOM	TRANE	TWE12044BAA00AA0	111.3	107.7	1	3000	2.00	0.75	11	4	319.0	11.1	5.0	1	460/3/60	14.0	15	1-14

NOTES:
1. CAPACITY AT 80 DEGREES F DB, 67 DEGREES F WB, 50% RH
2. FOR AIR COOLED CONDENSER SEE SEPARATE SCHEDULE
3. DUCT SMOKE DETECTORS FOR SUPPLY/RETURN
4. 6" MOUNTING SUBBASE
5. RUBBER FLOOR ISOLATOR/DRIP PANEL KIT
6. NEMA 12 DISCONNECT SWITCH
7. CONTROLS TRANSFORMER
8. FACTORY PACKAGED ELECTRIC HEATING COIL
9. SIGHT GLASS IN EACH CIRCUIT
10. HEAD PRESSURE CONTROL ACCESSORY
11. HONEYWELL T-6 PRO SERIES THERMOSTAT
12. 2-STAGE AIRFLOW
13. PROVIDE BRONZ-GLOW TECHNOLOGIES FACTORY DIP COATING OF EVAPORATOR & CONDENSER COILS, AND ALL COPPER TUBING AND REFRIGERATION COMPONENTS. SPECIFY PLATINUM COLOR.
14. 6" THICK CONCRETE PAD-SEE DWGS FOR SIZES

AIR COOLED CONDENSING UNIT SCHEDULE

TAG	LOCATION	AREA SERVED	UNIT SERVED	MANUFACTURER	MODEL	AMBIENT TEMP. (F)	HEAT REJECTION BTU/HR.	CIRCUITS	COMPRESSOR		CONDENSER FAN		ELECTRICAL DATA			NOTES
									QTY.	RLA EACH	QTY.	HP EACH	MCA	MOP	V/PH/HZ	
ACCU-1	GRADE	ELECTRICAL ROOM	AC-1	TRANE	4TTA7060A4000A	95	60,000	1	1	7.6	1	1/4	10	15	460/3/60	1 - 9
ACCU-2	GRADE	ELECTRICAL ROOM	AC-1	TRANE	4TTA7060A4000A	95	60,000	1	1	7.6	1	1/4	10	15	460/3/60	1 - 9

NOTES:
1. OUTDOOR CONDENSING UNIT WITH CONCRETE PAD
2. NEMA 3R DISCONNECT SWITCH
3. RUBBER ISOLATION PADS
4. ANTI-SHORT CYCLE TIMER
5. LOW AMBIENT KIT
6. SERVICE PANEL VALVE COVER
7. EXTREME CONDITION MOUNT KIT
8. PROVIDE BRONZ-GLOW TECHNOLOGIES FACTORY DIP COATING OF EVAPORATOR & CONDENSER COILS, AND ALL COPPER TUBING AND REFRIGERATION COMPONENTS. SPECIFY PLATINUM COLOR.
9. CONCRETE PAD-SEE DWGS FOR SIZE

FAN SCHEDULE

TAG	LOCATION	AREA SERVED	MANUFACTURER	MODEL	FAN TYPE	DRIVE	AIR FLOW CFM	EXT SP IN. WC.	FAN RPM	OPERATING POWER HP	MOTOR				WEIGHT LBS	NOTES
											TYPE	RPM	HP	V/PH/Hz		
EF-1	SIDEWALL	PUMP ROOM	HARTZELL	A02SH	PROPELLER	DIRECT	17,100	0.760	1,160	3.10	TEFC	1,160	5	460/3/60	450	1-7
EF-2	SIDEWALL	PUMP ROOM	HARTZELL	A02SH	PROPELLER	DIRECT	17,100	0.760	1,160	3.10	TEFC	1,160	5	460/3/60	450	1-7
EF-3	CEILING	RESTROOM	GREENHECK	SP-B150	INLINE	DIRECT	75	0.500	753	-	ODP	-	128W	115/1/60	16	1, 8-16

NOTES:
1. NEMA 12 DISCONNECT SWITCH
2. ALUMINUM MOUNTING BOOT/PANEL (CUSTOM)
3. ALUMINUM MOTOR GUARD
4. ALUMINUM WEATHERHOOD W/BIRDSCREEN
5. ALUMINUM BACKDRAFT DAMPER
6. ALL ALUMINUM CONSTRUCTION INCLUDING ACCESSORIES
7. HONEYWELL T-6 PRO SERIES THERMOSTAT
8. MOTOR W/THERMAL OVERLOAD
9. UL 507 LISTED
10. SPEED CONTROLLER, INTERNALLY MOUNTED
11. LED LIGHTED GRILLE W/PRISMATIC LENS
12. ROUND HOODED WALL CAP
13. SWITCH W/PILOT LIGHT
14. ROUND DUCT CONNECTION
15. SPRING VIBRATION ISOLATION KIT
16. ALUMINUM WHEEL

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REVISIONS

NO.	BY	DATE
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DESIGN ENGINEER
JACK C. WANG, P.E.
FLORIDA REGISTRATION NO. 81017

DESIGNER: J. WANG
DRAWN BY: D. GONZALEZ
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

HVAC SCHEDULES

PROJ. NO.: 50239824
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 76
DRAWING NO. H-5

4/14/2020 8:10:40 AM

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PLUMBING SYMBOLS

- DOMESTIC COLD WATER
- DOMESTIC HOT WATER PIPING
- VENT PIPING
- S — SANITARY PIPING (ABOVEGROUND)
- S — SANITARY PIPING BELOW GROUND
- PIPE DOWN
- PIPE UP
- PIPE RISE
- GATE VALVE OR BALL VALVE
- TRAP
- CHECK VALVES
- FD — FLOOR DRAIN
- RD OR AD — ROOF DRAIN/AREA DRAIN
- SHOWER HEAD
- PIPE REDUCER
- PIPE UNION
- TEMPERATURE & PRESSURE RELIEF VALVE
- DIRECTION OF FLOW
- HOSE BIBB
- CLEANOUT
- CLEANOUT DECK PLATE
- PIPE CAP
- FLOOR DRAIN
- RPZA — RPZA
- TRAP PRIMER

A / X X X — IDENTIFICATION TARGET:
A = DETAIL NUMBER
XXX = SHEET NUMBER ON WHICH DETAIL IS LOCATED

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
C.L. ℄	CENTER LINE
CFH	CUBIC FEET PER HOUR
CW	DOMESTIC COLD WATER
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DN.	DOWN
DWH	DOMESTIC WATER HEATER
DWG.	DRAWING
EL	ELEVATION
FD	FLOOR DRAIN
FIN.	FINISH
FL.	FLOOR
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
INV EL	INVERT ELEVATION
LAV	LAVATORY
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RPZA	REDUCED PRESSURE ZONE ASSEMBLY
S/SAN	SANITARY
SL	SLEEVE
TYP	TYPICAL
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET

GENERAL PLUMBING NOTES

1. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED FOR THE PERFORMANCE OF WORK AND PAY ALL FEES IN CONNECTION THEREWITH.
2. CONTRACTOR SHALL CHECK AND VERIFY THE EXACT LOCATION OF ALL PIPE PENETRATIONS, PIPE ELEVATIONS, AREA DRAINS, ETC.
3. PROVIDE SHUT OFF VALVES AND UNIONS/FLANGES AT BASE OF ALL RISERS, MAINS, ALL BRANCHES AND ALL FIXTURE/EQUIPMENT CONNECTIONS IN ORDER TO ISOLATE FOR MAINTENANCE PURPOSES.
4. PROVIDE AN ACCESS DOOR FOR VALVES, AND ANY OTHER EQUIPMENT AND ACCESSORIES THAT REQUIRE ACCESS FOR MAINTENANCE OR OPERATION WHICH ARE LOCATED BEHIND WALLS AND PARTITIONS OR CONCEALED IN HUNG CEILINGS. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE PLUMBING WORK WITH ALL OTHER TRADES AND VERIFY DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO BEGINNING WORK. NO ADDITIONAL COSTS WILL BE ACCEPTED IF ATTRIBUTED TO FAILURE TO COORDINATE OR VERIFY.
6. ALL PLUMBING LINES SHOWN ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW EXACT LOCATIONS. THE CONTRACTOR SHALL INSTALL PIPING SYSTEM TO MINIMIZE LENGTH OF RUNS AND AVOID INTERFERENCES.
7. ALL PIPING BELOW GRADE SHALL BE INSTALLED TO CLEAR FOUNDATION WALL AND FOOTINGS AND SHALL NOT BE INSTALLED BELOW FOOTINGS.
8. THE CONTRACTOR SHALL PROVIDE SEAL SLEEVES INSTALLED IN FIRE-RATED WALLS, CEILINGS AND FLOORS WITH FIRE-PROOF MATERIAL EQUAL TO THE RATING OF THE RESPECTIVE WALLS, CEILINGS AND FLOORS.
9. INSTALL PIPING AS STRAIGHT AND DIRECT AS POSSIBLE FORMING RIGHT ANGEL OR PARALLEL LINES WITH BUILDING WALLS, NEATLY SPACED, RISERS PLUMB AND TRUE, AND AVOID INTERFERENCE WITH OTHER CONSTRUCTION.
10. ALL PIPE SLEEVES SHALL BE COORDINATED WITH GENERAL CONTRACTOR FOR SIZE, LOCATION AND ELEVATION.

PIPING SCHEDULE

SYSTEM	MATERIAL	JOINTS	STANDARDS
DOMESTIC HOT & COLD WATER PIPING (INDOOR)	CPVC	SOLVENT CEMENT	REFER TO SPECIFICATION 15140
DOMESTIC WATER SERVICE (BELOW GRADE)	SCHEDULE 80 PVC	REFER TO SPECIFICATION 15064	REFER TO SPECIFICATION 15064
SANITARY & VENT PIPING	PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTINGS	PRIMER AND SOLVENT CEMENT	REFER TO SPECIFICATION 15150

REMARKS:
1. VALVES FOR SYSTEMS SHALL MEET THE SAME MATERIAL, TEMPERATURE AND PRESSURE REQUIREMENTS OF THE PIPING ASSOCIATED SYSTEM.
2. PLASTIC PIPING JOINTS SHALL NOT BE THREADED TO FITTINGS, VALVES OR EQUIPMENT WITHOUT THE USE OF PLASTIC BUSHINGS WITH BRASS THREADED INSERTS.
3. SEE DIV 15 SPECIFICATIONS FOR MORE DETAILS

WATER HEATER SCHEDULE

TAG NO.	LOCATION	TYPE	POWER (KW)	AMPS	VOLTS	PHASE	TEMPERATURE RISE	GPM	MANUFACTURER	MODEL
DWH-1	RESTROOM 103	TANKLESS	3.0	15	208	1	41°	0.5	EEMAX	SPEX3208T

PLUMBING FIXTURE SCHEDULE

TAG	TYPE	WASTE	VENT	HOT WATER	COLD WATER	TYPE	MANUFACTURER, MODEL (OR APPROVED EQUAL)	ACCESSORIES
WC	WATER CLOSET	3"	2"	–	1"	VITREOUS CHINA, FLOOR MOUNTED, REAR OUTLET AND MANUAL FLUSH VALVE	AMERICAN STANDARD 3312.001	SLOAN ROYAL FLUSH VALVE #111-1.6
LAV	LAVATORY	2"	1-1/2"	1/2"	1/2"	VITREOUS CHINA, WALL MOUNTED, AND SINGLE LEVEL FAUCET	AMERICAN STANDARD 0355.012	CHICAGO FAUCETS # 2200-4E2805ABCP

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DESIGN ENGINEER
JACK C. WANG, P.E.
FLORIDA REGISTRATION NO. 81017

DESIGNER: C. KEOUGH
DRAWN BY: D. STICCO
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

JEA Building Community[sm]

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PLUMBING LEGEND, NOTES, SYMBOLS, ABBREVIATIONS AND SCHEDULES

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 77
DRAWING NO. P-1

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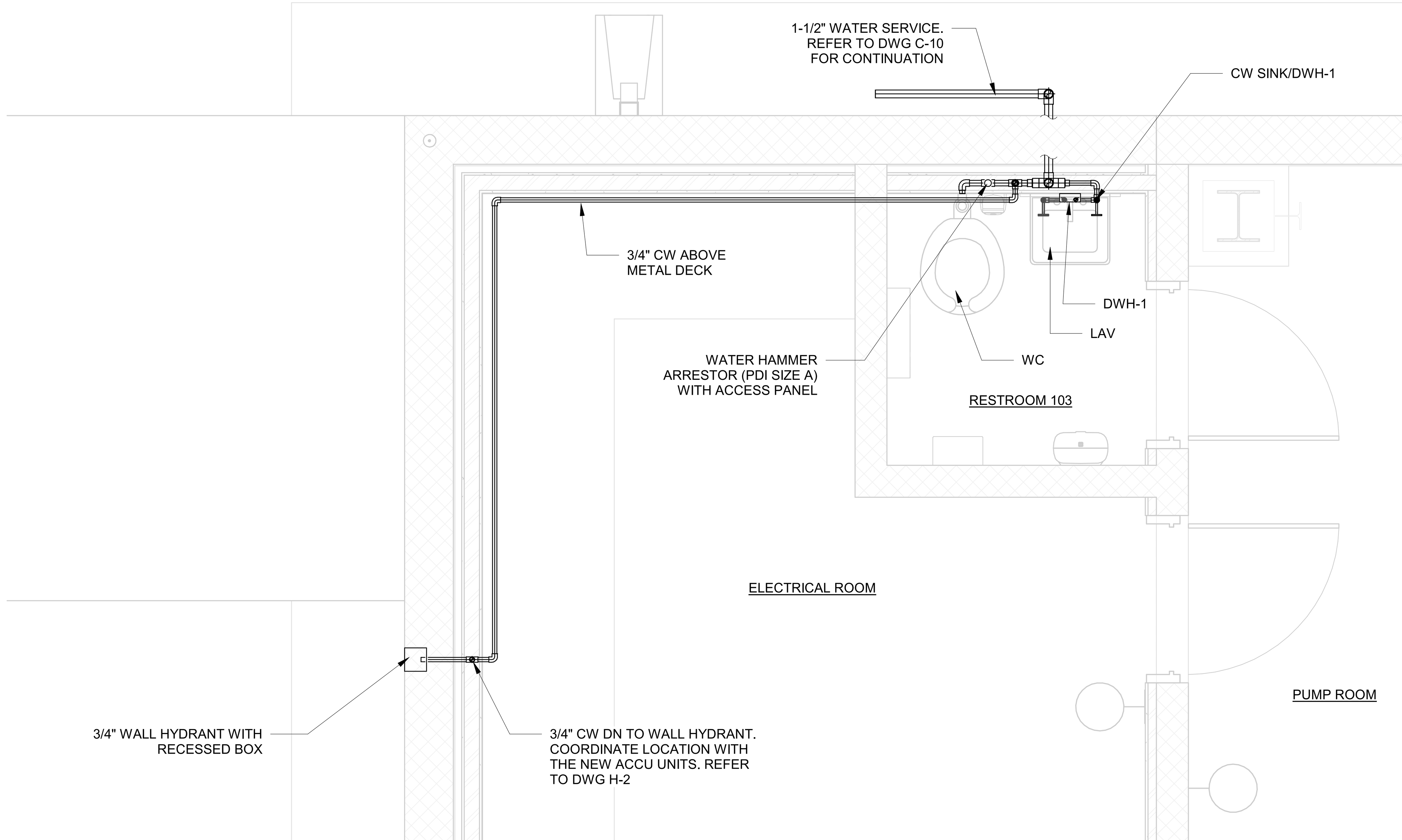
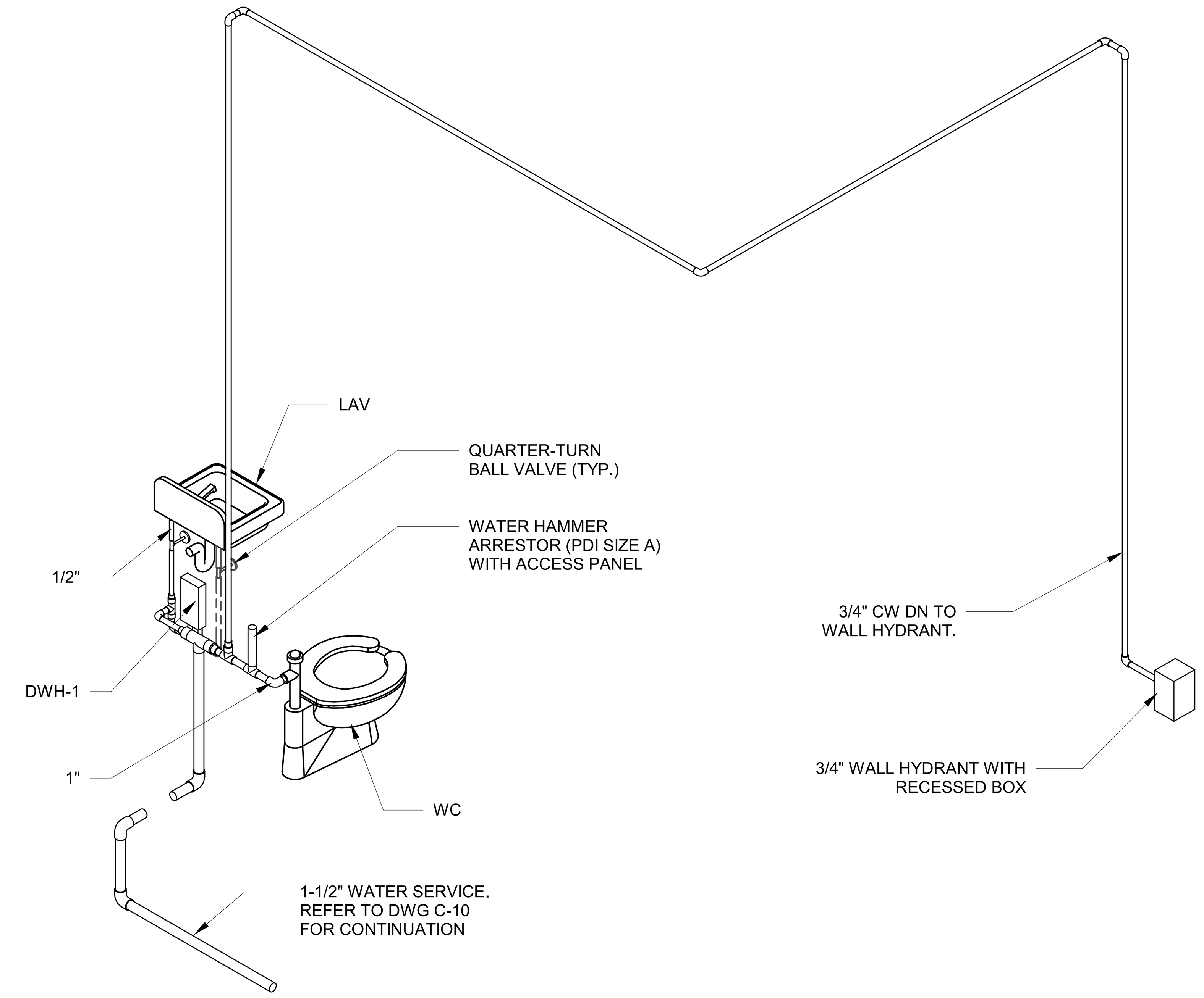
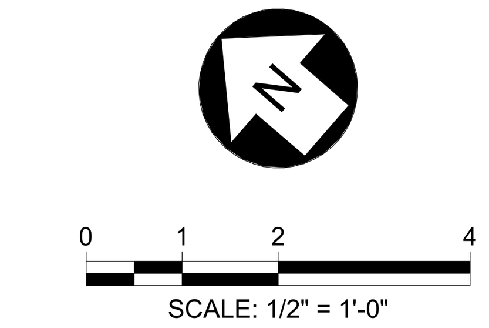


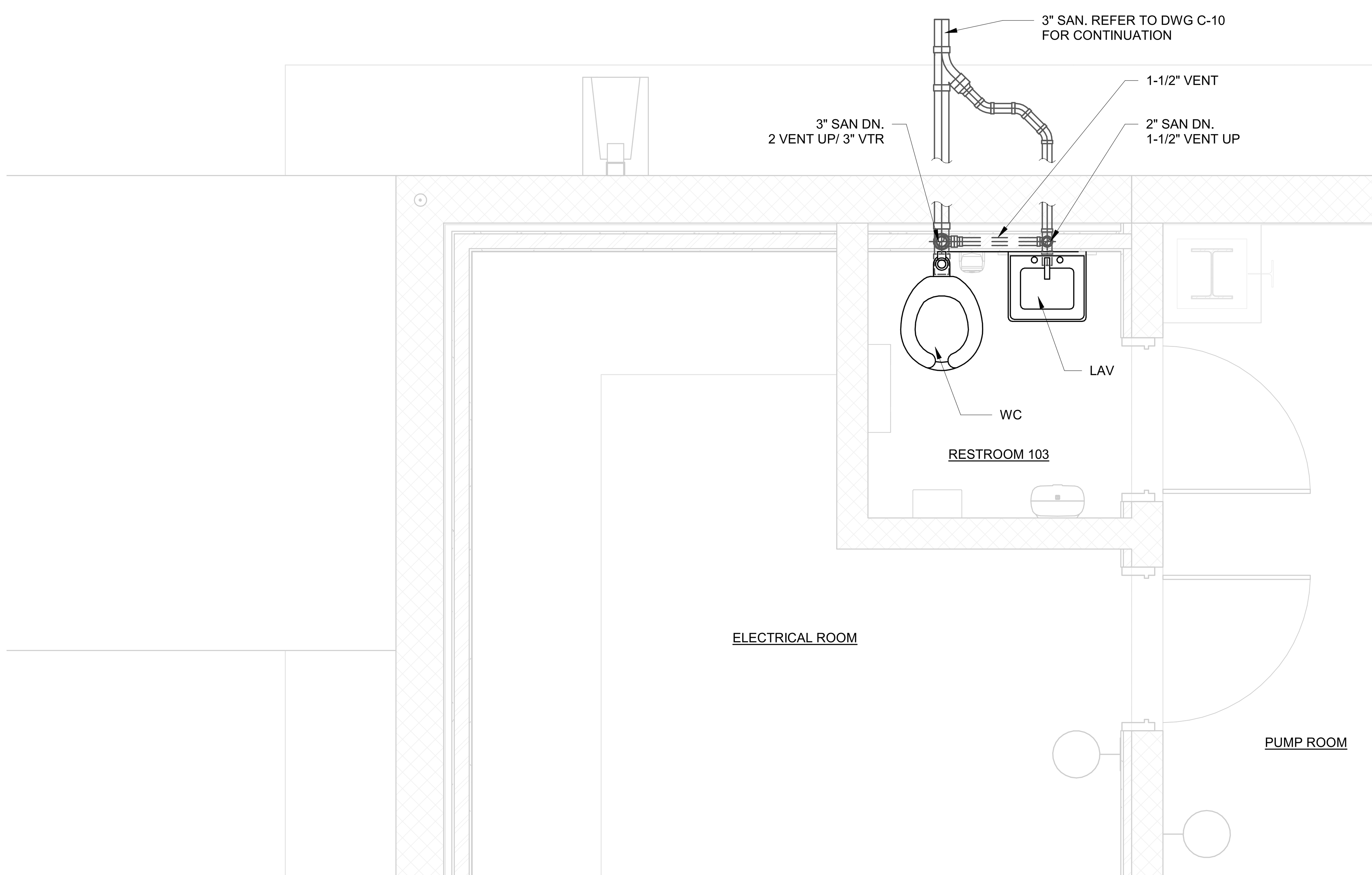
DOMESTIC WATER PARTIAL PLAN

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



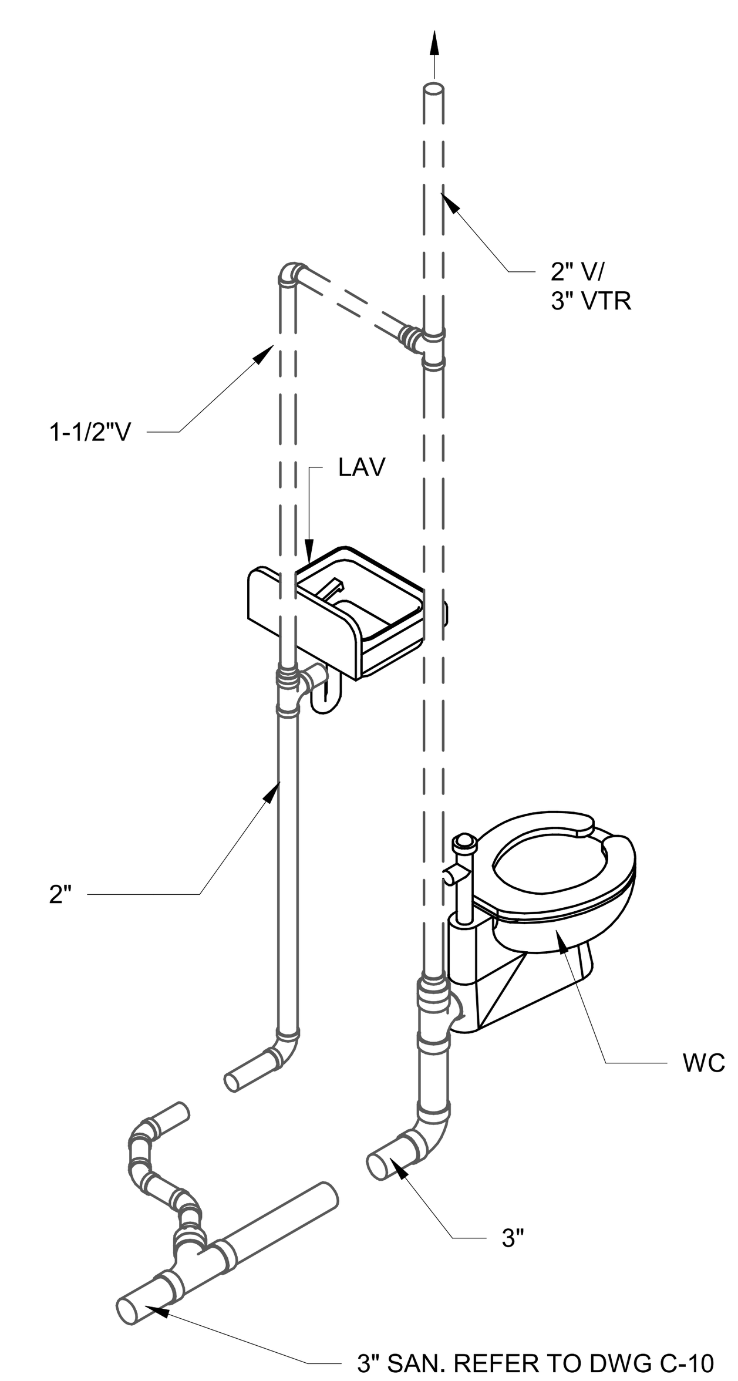
DOMESTIC WATER RISER DIAGRAM



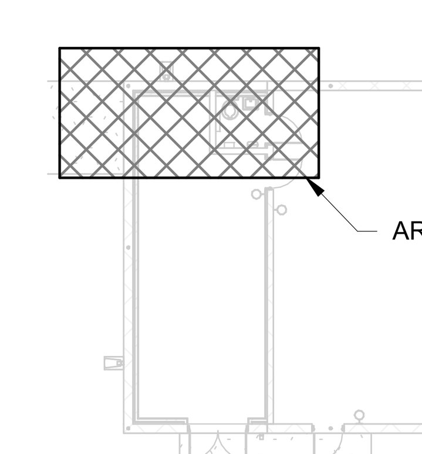


SANITARY PARTIAL PLAN

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



SANITARY RISER DIAGRAM



KEY PLAN

SCALE: 1" = 20'-0"

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REVISIONS		
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DRAWN BY: D. STICCO
DATE: APRIL 2020
CHECKED BY: M. LAPILUSA
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PUMP ROOM PARTIAL PLANS AND RISER DIAGRAMS

PROJ. NO.: 502398244
DATE: APRIL 2020
SCALE: AS NOTED

NO. SHEETS 105
SHEET NO. 78
DRAWING NO. P-2

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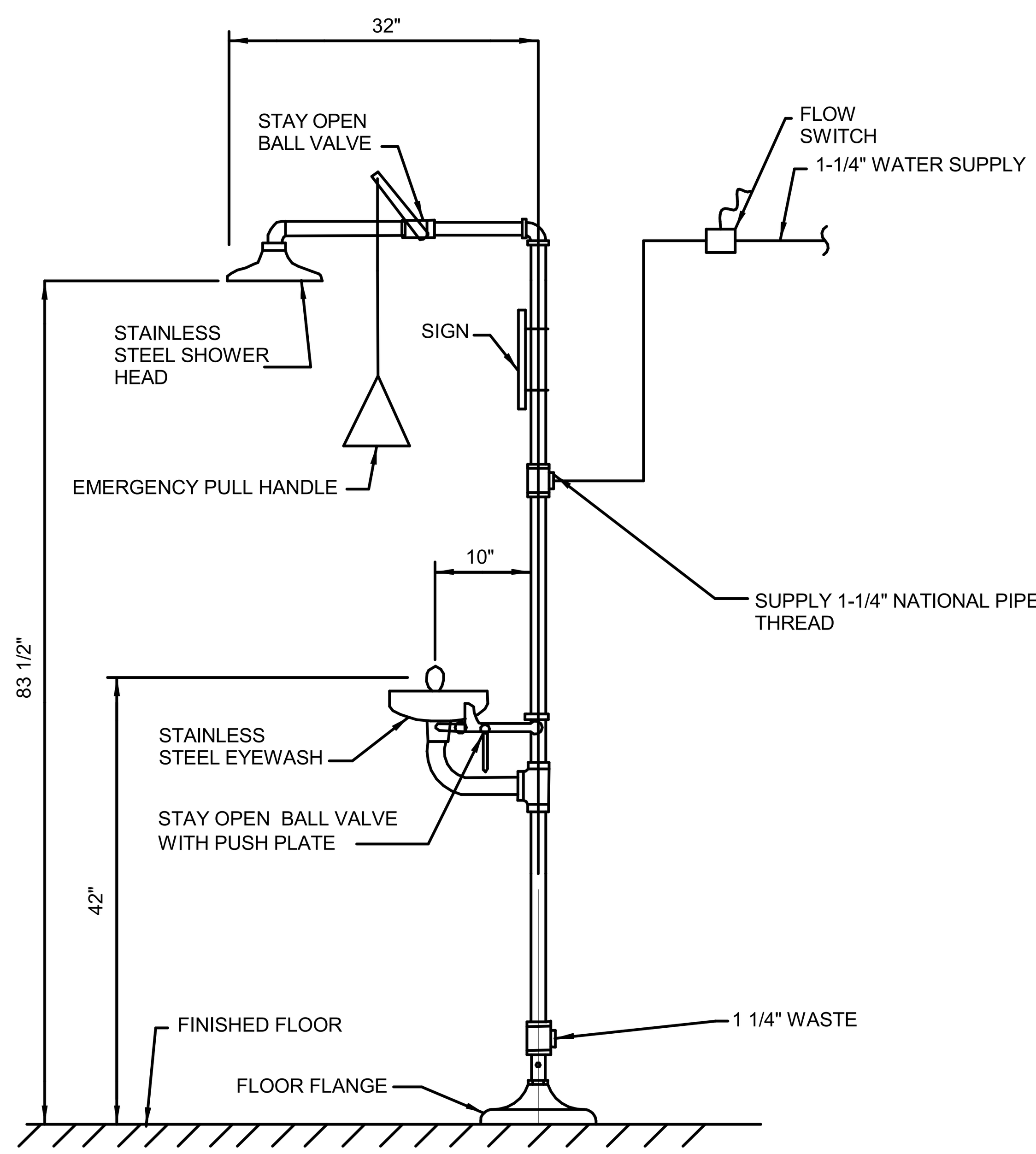
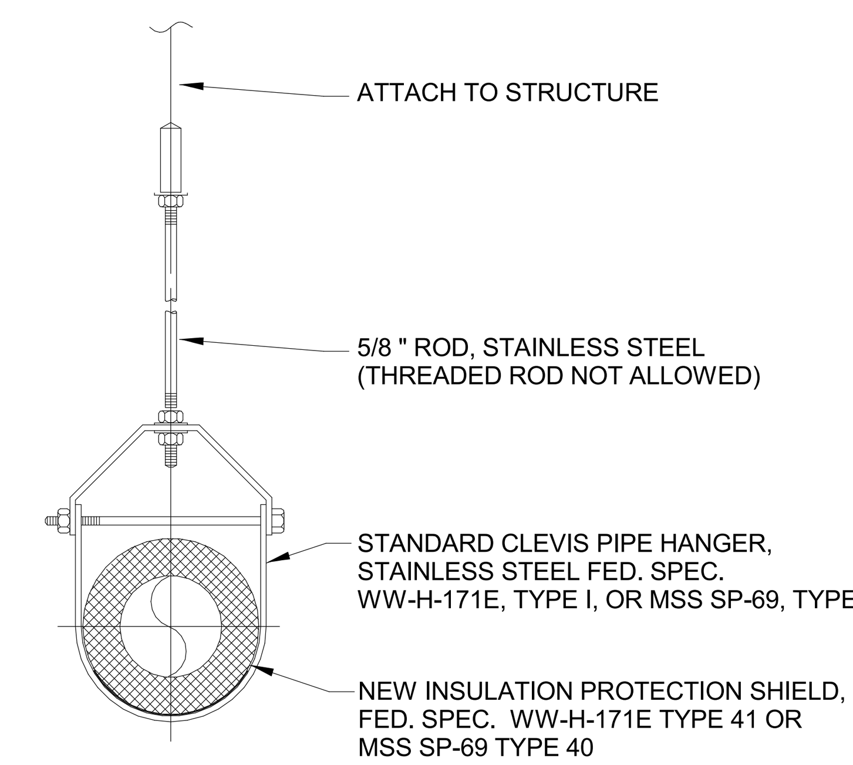
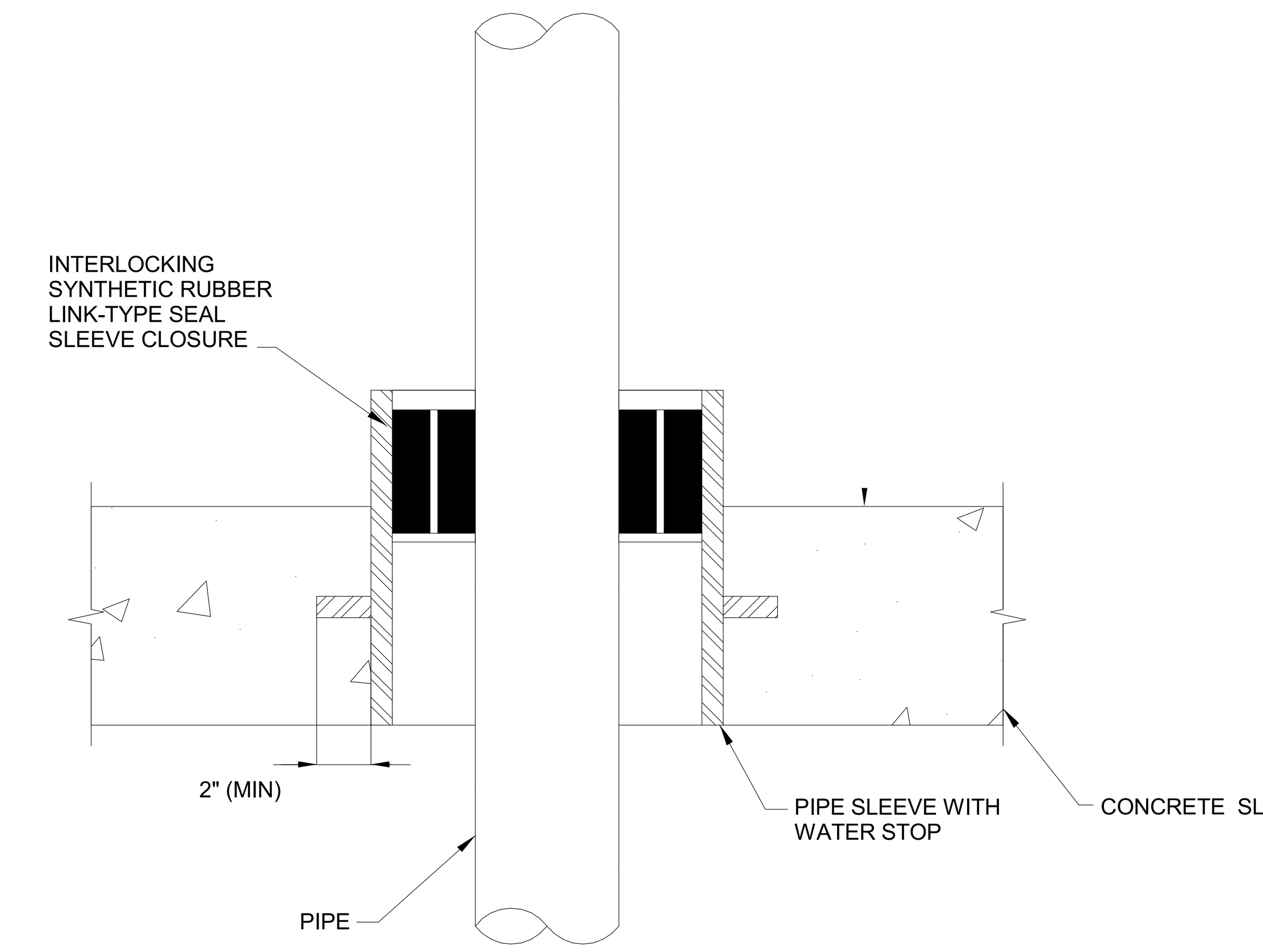


A - EMERGENCY EYEWASH SHOWER DETAIL
NTS



B - CEILING HUNG CLEVIS HANGER FOR INSULATED PIPE
NTS



C - SLEEVE CLOSURE THROUGH CONCRETE SLAB
NTS

NOTES:

1. REFER TO MECHANICAL PROCESS DRAWINGS FOR LOCATION OF EMERGENCY EYEWASH/ SHOWERS
2. PROVIDE INSULATION AND ALUMINUM JACKETING ON EXPOSED PIPING TO OUTDOOR EMERGENCY EYEWASH AND SHOWERS.

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DESIGNER:	C. KEOUGH
DRAWN BY:	D. STICCO
DATE:	APRIL 2020
CHECKED BY:	M. LAPILUSA
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION
IMPROVEMENTS - PHASE II

PLUMBING DETAILS

PROJ. NO.:	50239824
DATE:	APRIL 2020
SCALE:	AS NOTED

NO. SHEETS	105
SHEET NO.	79
DRAWING NO.	P-3

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, N.F.P.A., O.S.H.A. REGULATIONS AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES WHICH HAVE JURISDICTION.
2. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR CONDUIT IS SHOWN, EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL, OR PERFORMING ANY WORK. ANY DEPARTURE FROM CONCEPT SHOWN ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND/OR REQUIRED FOR THE FULL INTEGRITY OF THE CONTRACT SHALL BE FURNISHED, INSTALLED AND CONNECTED BY THE CONTRACTOR, EXCEPT WHERE EQUIPMENT SHOWN IS IDENTIFIED AS "EXISTING" OR OTHERWISE NOTED ON THE DRAWINGS.
3. UNLESS OTHERWISE NOTED, EQUIPMENT AND MATERIALS TO BE PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAD BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT/MATERIAL.
4. THE CONTRACTOR SHALL SUBMIT DETAILED EQUIPMENT LAYOUT PLANS, SECTIONS, AND MOUNTING DETAILS SHOWING PROPOSED LOCATION OF ALL EQUIPMENT AND REQUIRED WORKING/SERVICE CLEARANCES PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL VISIT THE PROJECT SITE AND EXAMINE AND CONFIRM EXISTING CONDITIONS. ALL CHANGES SHALL BE PRESENTED DURING SHOP DRAWING SUBMITTALS FOR ENGINEER'S APPROVAL.
6. CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE BONDED TO ENCLOSURES AND SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC, IF SIZE IS NOT SHOWN ON THE CONTRACT DRAWINGS.
7. THE CONTRACTOR SHALL PROVIDE CONDUIT FITTINGS, CONNECTORS, CLAMPS, HARDWARE, HANGERS, AND SUPPORTS AS NECESSARY FOR A COMPLETE INSTALLATION.
8. THE CONTRACTOR SHALL PROVIDE TAGS FOR EQUIPMENT, CONDUITS, AND CABLES THAT ARE INSTALLED UNDER THIS CONTRACT. TAG IDENTIFICATIONS SHALL BE IN ACCORDANCE WITH CONTRACT DRAWINGS. TAGS FOR CONDUITS SHALL BE AS DESCRIBED IN SPECIFICATIONS.
9. UNUSED OPENINGS IN CONDUITS, BOXES, DISCONNECT SWITCHES, CABINETS, AND PANEL BOARDS SHALL BE CAPPED OR PLUGGED.
10. UPDATE EXISTING PANELBOARD DIRECTORIES TO REFLECT THE CIRCUITING IN EXISTING PANELBOARDS AFFECTED BY THIS ALTERATION.
11. CONTRACTOR SHALL PROVIDE THE NECESSARY MATERIALS, LABOR AND ATTENDANCE FOR THE OPERATION OF TEMPORARY LIGHT AND CONSTRUCTION POWER AS REQUIRED DURING WORKING HOURS FOR THE ENTIRE CONSTRUCTION PERIOD.
12. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ANY EXISTING CIRCUITS AFFECTED BY THIS ALTERATION. RECONNECT ALL ALTERED OR REROUTED WORK TO ITS FULLY FUNCTIONAL STATE PRIOR TO ALTERATION.
13. PROVIDE ALL NECESSARY TEMPORARY WIRING TO MAINTAIN EXISTING INSTALLATIONS WHICH MUST REMAIN IN SERVICE DURING CONSTRUCTION PERIOD.
14. ALL BRANCH CIRCUITS OVER 75 FEET IN LENGTH SHALL BE PROVIDED WITH #10 CONDUCTOR, UNLESS OTHERWISE NOTED.
15. SCHEDULE ALL DISCONNECTION AND INTERRUPTIONS OF ELECTRICAL SERVICE, COMMUNICATIONS AND SUPERVISORY SYSTEMS WITH THE OWNER AND ENGINEER.
16. CONTRACTORS SHALL FOLLOW ALL OWNER SITE SAFETY WORK PROCESSES AND PROCEDURES, FOR EXAMPLE, WORK PERMITS, SAFETY TASK ANALYSIS, LOCKOUT TAGOUT (LOTO), LOCK, TAG AND TRY, AND RED TAG, ETC.
17. CONTRACTORS SHALL COORDINATE ALL WORK ACTIVITIES WITH OPERATIONS, MAINTENANCE, AND OTHER CONTRACTORS.

ABBREVIATIONS

A OR AMP	AMPERES
ACT	ABOVE COUNTER TOP (6")
ADJ	ADJACENT
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AM	AMMETER
APPROX	APPROXIMATELY
AS	AMMETER SELECTION SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP
ATC	AUTOMATIC TRANSFER CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BOD	BOTTOM OF DUCT BANK
C, CDT	CONDUIT
C, /C	CONDUCTOR
CB	CIRCUIT BREAKER
CCR	CONSTANT CURRENT REGULATORS
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CO	COMPANY
COL	COLUMN
CNTL	CONTROL
CSLD	CONTINUOUS STATISTICAL LEAK DETECTION
CT	CURRENT TRANSFORMER
CBL	CABLE
D	DEPTH
DIA	DIAMETER
DS OR DISC	DISCONNECT SWITCH
DWG(S)	DRAWING(S)
ELEC	ELECTRIC, ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ESTOP	EMERGENCY STOP
EX, EXIST.	EXISTING
EXP	EXPLOSION PROOF
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
ETC	ET CETERA
F	FUSE
FCR	FLOAT CONTROL RELAY
FL, FLR	FLOOR
FT	FEET
G OR GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFI	GROUND FAULT INTERRUPTING
H-O-A	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATION & AIR
IG	ISOLATED GROUND
ISBR	INTRINSICALLY SAFE BARRIER RELAY
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH
IR	INFRARED
ISCA	INSTANTANEOUS SHORT CIRCUIT AVAILABLE
JB OR J	JUNCTION BOX
kVA	KILOVOLT - AMPS
kW	KILOWATTS
kWH	KILOWATT-HOUR
L	LENGTH
LA	LIGHTNING ARRESTOR
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAX	MAXIMUM
MCB OR MB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MFR	MANUFACTURER
MH OR MTG	MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSCP	MASTER STATION CONTROL PANEL
MTD	MOUNTED
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MFRS ASSOCIATION
NF	NON-FUSIBLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
No.	NUMBER
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O.C.	ON CENTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
O/F	OVERFILL
OHE	OVERHEAD ELECTRICAL
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
P	POLE
PERM	PERMANENT
PFC	POWER FACTOR CAPACITOR
PH, Ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
PNL	PANEL
PR	PAIR
PVC	POLYVINYLCHLORIDE CONDUIT
PWR	POWER
R&R	REMOVE AND RELOCATE

ABBREVIATIONS

R	RELOCATE
RE	RELOCATED
RECEPT	RECEPTACLE
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SCCA	SHORT CIRCUIT CURRENT AVAILABLE
SF	SEAL FITTING
SH	SHIELDED
SS	STAINLESS STEEL
SPD	SURGE PROTECTION DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
TWIS	TWISTED INDIVIDUAL SHIELD
TWOS	TWISTED OUTER SHIELD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
UV	ULTRAVIOLET
V	VOLTS
VA	VOLT AMPS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VMS	VOLTMETER SELECTOR SWITCH
W	WATT
W/	WITH
W/O	WITHOUT
WM	WATTMETER
WP	WEATHER PROOF
XFMR	TRANSFORMER

ONE-LINE DIAGRAM

CONNECTION TO ELECTRICAL UTILITY. VOLTAGE, PHASES AS INDICATED

M — UTILITY METER

G XX kW YY V — GENERATOR
- 'XX' DESIGNATES POWER RATING
- 'YY' DESIGNATES VOLTAGE

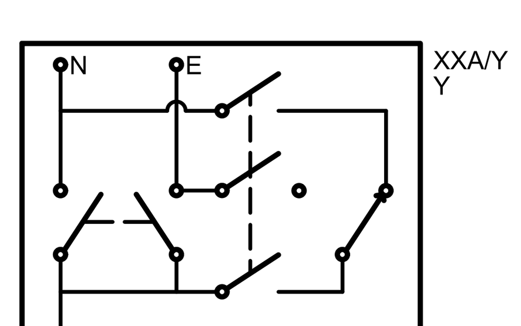
X:Y Z — CURRENT TRANSFORMER (CT).
'X:Y' INDICATES RATIO
'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)

X:Y (Z) — POTENTIAL TRANSFORMER (PT).
'X:Y' INDICATES RATIO
'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)

XFMR XX kVA YY-ZZV R% — TWO WINDING TRANSFORMER, PHASES AS DETERMINED BY OCPD
-'Z' INDICATES % IMPEDANCE ANSI STANDARD IF NOT SPECIFIED
-'WW' INDICATES STRUCTURE DESIGNATION
-'XX' INDICATES POWER RATING
-'YY' INDICATES PRIMARY VOLTAGE
-'QQ' INDICATES SECONDARY VOLTAGE WINDINGS AS INDICATED
-'Δ' INDICATES DELTA CONNECTION
-'Y' INDICATES WYE CONNECTION WITH GROUNDED NEUTRAL

XX kVA YY-ZZV Z% / XFMR:W — THREE WINDING TRANSFORMER
-'W' INDICATES STRUCTURE DESIGNATION
-'XX' INDICATES POWER RATING (BY WINDING)
-'YY' INDICATES VOLTAGE RATING (BY WINDING)
-'Z' INDICATES IMPEDANCE (BY WINDING)
-'Δ' INDICATES DELTA CONNECTION
-' ' INDICATES WYE CONNECTION Y WITH GROUNDED NEUTRAL

WTS XXA Y — TRANSFER SWITCH
- 'W' INDICATES
A: AUTOMATIC
M: MANUAL
-'XX' INDICATES RATING IN AMPS
- 'Y' INDICATES NUMBER OF POLES



BYPASS ISOLATION TRANSFER SWITCH
-'XX' INDICATES AMPERE RATING
-'Y' INDICATES NUMBER OF POLES

ONE-LINE DIAGRAM

XXA/Y — SWITCH
-'XX' INDICATES AMPERE RATING
-'Y' INDICATES NUMBER OF POLES

52 XXAT YYAF — MEDIUM & HIGH VOLTAGE CIRCUIT BREAKER
- 'XX' INDICATES TRIP RATING IN AMPS
- 'YY' INDICATES FRAME RATING

XXAT/W YYAF Z — LOW VOLTAGE MOLDED CASE CIRCUIT BREAKER.
- 'XX' INDICATES TRIP RATING IN AMPS (IF TRIP INTEGRAL)
- 'YY' INDICATES FRAME RATING, ID SPECIFIED
- 'W' INDICATES NUMBER OF POLES (3 UNLESS OTHERWISE NOTED)
- 'Z' DESIGNATES TYPE:
BLANK: THERMAL MAGNETIC
LSI: ELECTRONIC TRIP
MCP: MOTOR CIRCUIT PROTECTOR
GFI: GROUND FAULT INTERRUPTING

XXA Z — FUSE
- 'XX' INDICATES TRIP RATING IN AMPS
- 'Z' INDICATES CLASSIFICATION (IF SPECIFIED)

ANGLED BRACKETS INDICATE DRAWOUT DEVICE

XX — PROTECTIVE RELAY, METERING, OR INTERLOCKING DEVICE.
'XX' DESIGNATIONS:
A: AMMETER
V: VOLTMETER
PF: POWER FACTOR
K: KIRK KEY INTERLOCK
I: ELECTRICAL INTERLOCK
ST: SHUNT TRIP
25: SYNCHRONISM CHECK
27: UNDER VOLTAGE
46: CURRENT UNBALANCE
47: PHASE-SEQUENCE VOLTAGE
50: INSTANTANEOUS OVERCURRENT
51: TIME OVERCURRENT
52: AC CIRCUIT BREAKER
55: POWER FACTOR
59: OVER VOLTAGE
64: GROUND PROTECTIVE RELAY
81: FREQUENCY
86: LOCKING OUT RELAY
* SPECIFIC MINIMUM FUNCTIONS TO BE LISTED BY ANSI/IEEE DEVICE NUMBERS

X — FULL VOLTAGE NON REVERSING CONTACTOR
'X' DESIGNATES NEMA SIZE OR:
BC: BYPASS CONTACTOR
OC: OUTPUT ISOLATION CONTACTOR
IC: INPUT ISOLATION CONTACTOR

XXA/Y — LIGHTING CONTACTOR
-'XX' DESIGNATES AMPERE RATING
-'Y DESIGNATES NUMBER OF POLES

XXA/Y — LIGHTING CONTACTOR
-'XX' DESIGNATES AMPERE RATING
-'Y DESIGNATES NUMBER OF POLES

X — MOTOR OVERLOAD.
RATED FOR DEVICE PROTECTING. CLASS 20 UNLESS OTHERWISE INDICATED.
-'X' DESIGNATES TYPE:
T-THERMAL
E-ELECTRONIC.

F R X — FULL VOLTAGE REVERSING CONTACTOR
-'X' DESIGNATES NEMA SIZE.
-'F' INDICATES FORWARD CONTACTOR.
-'R' INDICATES REVERSING CONTACTOR.

H L X — TWO SPEED STARTER
-'X' DESIGNATES NEMA SIZE.
-'H' INDICATES HIGH SPEED CONTACTOR.
-'L' INDICATES LOW SPEED CONTACTOR.

X Y% — REDUCED VOLTAGE AUTOTRANSFORMER
-'X' DESIGNATES NEMA SIZE.
-'Y' INDICATES TAP PERCENTAGE.

VFD XXA — VARIABLE FREQUENCY DRIVE.
-'XX' INDICATES MINIMUM AMP RATING (IF NOT SPECIFIED, VFD TO MATCH HORSEPOWER RATING OF MOTOR SUPPLIED).

RVSS XXA — REDUCED VOLTAGE SOFT START.
-'XX' INDICATES MINIMUM AMP RATING (IF NOT SPECIFIED, RVSS TO MATCH HORSEPOWER RATING OF MOTOR SUPPLIED).

ONE-LINE DIAGRAM

XXA/Y — NON-FUSED DISCONNECT SWITCH
- 'XX' DESIGNATES AMPERE RATING OF DISCONNECT.
- 'Y' DESIGNATES NUMBER OF POLES

XXA/Y — FUSED DISCONNECT SWITCH
- 'XX' DESIGNATES AMPERE RATING OF FUSE. DISCONNECT AMPERE RATING TO BE EQUAL TO FUSE RATING OR THE NEXT LARGEST TRADE SIZE.
- 'Y' DESIGNATES NUMBER OF POLES

WW XX HP — INDUCTION MOTOR
-'WW' INDICATES EQUIPMENT DESIGNATION.
-'XX' INDICATES HORSEPOWER RATING.

WW XX HP — SYNCHRONOUS MOTOR
-'WW' INDICATES EQUIPMENT DESIGNATION.
-'XX' INDICATES HORSEPOWER RATING.

'X' — PANELBOARD
- 'X' INDICATES STRUCTURE DESIGNATION.

UPS — UNINTERRUPTIBLE POWER SUPPLY.

SPD — SURGE SUPPRESSION DEVICE.

'XX' — LIGHTNING ARRESTORS
- 'XX' INDICATES
IC: INTERMEDIATE CLASS
DC: DISTRIBUTION CLASS
SC: STATION CLASS

EARTH GROUND

Z% — LINE OR LOAD REACTOR.
'Z' DESIGNATES % IMPEDANCE.

XXkVAR — CAPACITOR
- 'XX' INDICATES kVAR RATING

ZZ — RESISTOR
- 'ZZ' INDICATES IMPEDANCE IN OHMS

MISCELLANEOUS ELECTRICAL EQUIPMENT, SUCH AS PANEL, ETC. EQUIPMENT TYPE AND RATINGS TO BE INDICATED.

ELECTRICAL EQUIPMENT BOUNDARY. INDICATES MULTIPLE DEVICES ENCLOSED WITHIN BORDER ARE LOCATED WITHIN THE SAME ENCLOSURE, OR MOUNTED TO SAME PANEL RACK.

XXA Y — PORTABLE POWER CONNECTION
-'XX' INDICATES AMPERE RATING
-'Y' DESIGNATES TYPE:
3: 3 WIRE + GROUND
4: 4 WIRE + GROUND

ELEMENTARY WIRING SCHEMATICS

PRESSURE SWITCH - NORMALLY OPEN.

PRESSURE SWITCH - NORMALLY CLOSED.

DIFFERENTIAL PRESSURE SWITCH - NORMALLY OPEN.

DIFFERENTIAL PRESSURE SWITCH - NORMALLY CLOSED.

TIME DELAY SWITCH - TIMER ON DELAY (CLOSES AFTER TIMER EXPIRES).

TIMER DELAY SWITCH - TIMER OFF DELAY (OPENS AFTER TIMER EXPIRES).

VIBRATION SWITCH - NORMALLY OPEN

VIBRATION SWITCH - NORMALLY CLOSED

X — PANEL MOUNTED INDICATOR LIGHT
"X" INDICATES COLOR:
A - AMBER
G - GREEN
R - RED
W - WHITE
B - BLUE

ELEMENTARY WIRING SCHEMATICS

X — COIL CONTACTS. VOLTAGE AS INDICATED ON SCHEMATICS
"X" DESIGNATES:
C - CONTROL RELAY
LC - LIGHTING CONTACTOR
M - MOTOR CONTACTOR
T - TIME DELAY RELAY

SOLENOID COIL.

NORMALLY OPEN CONTACT.

NORMALLY CLOSED CONTACT.

LIMIT SWITCH - NORMALLY OPEN.

LIMIT SWITCH - NORMALLY CLOSED.

LIMIT SWITCH - NORMALLY OPEN, HELD CLOSED.

LIMIT SWITCH - NORMALLY CLOSED, HELD OPEN.

LIQUID LEVEL (FLOAT) SWITCH - NORMALLY OPEN.

LIQUID LEVEL (FLOAT) SWITCH - NORMALLY CLOSED.

FLOW SWITCH - NORMALLY OPEN.

FLOW SWITCH - NORMALLY CLOSED.

TEMPERATURE SWITCH - NORMALLY OPEN.

TEMPERATURE SWITCH - NORMALLY CLOSED.

X TB# — TERMINAL BLOCK.
"X" INDICATES TERMINAL NUMBER.
"#" INDICATES TERMINAL BLOCK NUMBER

X TB# X TB# — EXTERNALLY MOUNTED DEVICE. DASHED LINE INDICATES WIRING EXTERNAL TO PANEL.

00X X00 — SELECTOR SWITCH.
"X" INDICATES SWITCH POSITION.
TOTAL DIGITS PER LINE INDICATES NUMBER OF SWITCH POSITIONS (THREE SHOWN).

MOMENTARY PUSH BUTTON - NORMALLY OPEN

MOMENTARY PUSH BUTTON - NORMALLY CLOSED

REMOTE SHUTDOWN/STOP - NORMALLY CLOSED

KEY SWITCH

RTM — NON RESETTABLE RUN TIME METER.

BATTERY - VOLUME AND AMP HOURS AS INDICATED.

DC+ AC AC DC-COM — FULL WAVE RECTIFIER.

HORN ELEMENT.

R — EXTERNALLY MOUNTED ALARM LIGHT.

PHOTOCELL.

X — PANEL MOUNTED INDICATOR LIGHT 'PUSH TO TEST' TYPE.
"X" INDICATES COLOR:
A - AMBER
G - GREEN
R - RED
W - WHITE
B - BLUE

ISSUED FOR BID

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REVISIONS		
NO.	BY	DATE
6.		
5.		
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3.		
2.		
1.		

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II
ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE
NO. SHEETS	105
SHEET NO.	80
DRAWING NO.	E-1

LIGHTING

- CEILING MOUNTED FIXTURE. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- FIXTURE PROVIDING EMERGENCY ILLUMINATION. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- CEILING MOUNTED DOWNLIGHTING FIXTURE. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- SURFACE MOUNT OR SUSPENDED FIXTURE INDUSTRIAL STRIP TYPE FIXTURE XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- WALL MOUNTED FIXTURE. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- TRACK LIGHTING. LENGTH AND NUMBER OF FIXTURES AS INDICATED ON PLANS.. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- TWIN HEAD EMERGENCY BATTERY UNIT. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- CEILING MOUNTED REMOTE BATTERY HEADS. AIMING AS INDICATED. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- WALL MOUNTED REMOTE BATTERY HEADS. AIMING AS INDICATED. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- EXIT SIGN; CEILING MOUNTED; ARROWS AS INDICATED. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- EXIT SIGN; WALL MOUNTED; ARROWS AS INDICATED. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- EXIT SIGN WITH EMERGENCY HEADS; ARROWS AS INDICATED. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE.
- POLE MOUNTED LIGHT FIXTURE. 'XX' DESIGNATES FIXTURE TYPE AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE. ONLY SINGLE FIXTURE SHOWN.
- $XX — WALL SWITCH. 'XX' DESIGNATES:
  - NO SUBSCRIPT DENOTES SINGLE POLE
  - 3 - 3 WAY SWITCH
  - 4 - 4 WAY SWITCH
  - D - DIMMER
  - K - KEY OPERATED
  - L - WITH PILOT LIGHT
  - M - MOTOR RATED
  - O - OCCUPANCY MOTION SENSOR W/OVERRIDE
  - T - TIMER
  - AS - DENOTES OCCUPANCY OVERRIDE
  - CR - CORROSION RESISTANT
  - EP - EXPLOSION PROOF
  - TS - TIME SWITCH
  - WP - WEATHERPROOF
- LC — LIGHTING CONTROL POWER PACK
- CEILING MOUNTED SENSOR. 'X' DESIGNATES SENSOR AS SPECIFIED IN THE SENSOR SCHEDULE.
- WALL MOUNTED OCCUPANCY SENSOR. 'X' DESIGNATES SENSOR AS SPECIFIED IN THE SENSOR SCHEDULE.

ALL DEVICES/PLATES TO BE IN OWNERS CHOICE OF COLORS.

GENERAL

- LINETYPE FOR FUTURE WORK

RACEWAYS

- OHE — OVERHEAD ELECTRICAL
- CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS
- CONDUIT RUN BELOW GRADE OR IN SLAB
- CONDUIT RUN EXPOSED PARALLEL OR PERPENDICULAR TO BUILDING LINES
- HOMERUN TO PANELBOARD ANY CIRCUIT WITHOUT FURTHER DESIGNATION 2#12, 1#12 GRD. MINIMUM CONDUIT SIZE SHALL BE 3/4"
- FLEXIBLE CONDUIT
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONDUIT CAPPED
- EXPLOSIONPROOF CONDUIT SEAL
- CONDUIT EXPANSION FITTING
- HH — HAND HOLE (DRAWN TO SCALE ON PLANS)
- MH — MAN HOLE (DRAWN TO SCALE ON PLANS)
- PB — PULL BOX (DRAWN TO SCALE ON PLANS)
- CABLE TRAY (DRAWN TO SCALE ON PLANS)
- W-XXXX-YY — CABLE/CONDUIT TAG. DESIGNATIONS:
  - FOR 'W': H - POWER (>5kVAC)
  - M - POWER (601-4999VAC)
  - P - POWER (241-600VAC)
  - L - POWER (51-240VAC)
  - D - DC POWER
  - C - CONTROL (TO A STARTER)
  - I - INSTRUMENTATION (TO A PLC)
  - E - EMERGENCY SHUT DOWN
  - F - FIBER OPTIC COMMUNICATIONS
  - O - OTHER COMMUNICATIONS
  - FOR 'XXXX': EQUIPMENT REFERENCE
  - FOR 'YY': ALPHANUMERIC SUFFIX AS NEEDED
- CONCRETE ENCASED

GROUNDING & LIGHTNING PROTECTION

- CONNECTION TO GROUND GRID. MECHANICAL OR CADWELD CONNECTION AS NOTED.
- GROUND ROD.
- GROUND TEST STATION.
- GROUND ANODE.
- VEHICLE GROUNDING STATION.
- G — GROUNDING GRID OR COUNTERPOISE SYSTEM CONDUCTOR.
- LIGHTING PROTECTION AIR TERMINAL.
- LIGHTNING PROTECTION DISSIPATION AIR TERMINAL.
- L — LIGHTNING PROTECTION SYSTEM CONDUCTOR.
- LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR.

OUTLETS AND RECEPTACLES

- DUPLEX RECEPTACLE, MOUNT 18" AFF UNLESS OTHERWISE NOTED.
- QUADPLEX RECEPTACLE, MOUNT 18" AFF UNLESS OTHERWISE NOTED.
- SINGLE OUTLET RECEPTACLE, MOUNT 18" AFF UNLESS OTHERWISE NOTED.
- SPECIAL PURPOSE RECEPTACLE, MOUNT 18" AFF UNLESS OTHERWISE NOTED.

FOR ALL RECEPTACLES, 'XX' DESIGNATES:
- AC - INSTALL 6" ABOVE COUNTER / BACKSPLASH (GFI REQUIRED).
- CLG - CEILING MOUNT
- CR - CORROSION RESISTANT
- EP - EXPLOSION PROOF
- GF - GROUND FAULT
- WP - WEATHERPROOF

- MULTI-RECEPTACLE ASSEMBLY WITH RECEPTACLES AS INDICATED.
- J — JUNCTION BOX
- FLOOR MOUNTED DUPLEX RECEPTACLE.
- FLOOR MOUNTED BOX POWER AND TELCOM RECEPTACLES.

ALL DEVICES/PLATES TO BE IN OWNERS CHOICE OF COLORS.

COMMUNICATIONS

- WALL MOUNTED DATA OUTLET. 18" AFF UNLESS OTHERWISE NOTED.
- FLOOR MOUNTED DATA OUTLET. 'X' DESIGNATES: F - FLUSH; S - SURFACE
- WALL MOUNTED TELEPHONE OUTLET. 18" AFF UNLESS OTHERWISE NOTED.
- FLOOR MOUNTED TELEPHONE OUTLET. 'X' DESIGNATES: F - FLUSH; S - SURFACE
- WALL MOUNTED TELEPHONE/DATA COMBINATION OUTLET. 18" AFF UNLESS OTHERWISE NOTED.
- FLOOR MOUNTED TELEPHONE/DATA COMBINATION OUTLET. 'X' DESIGNATES: F - FLUSH; S - SURFACE
- B — BLUE INDICATOR LIGHT FOR EMERGENCY CALL BOX.
- C — EMERGENCY CALL BOX.
- L — LANE USE SIGNAL. 18" X 18" LED TYPE WITH GREEN "↑" AND RED "X".

HVAC

- T — THERMOSTAT
- R — AMBIENT TEMPERATURE TRANSMITTER
- UNIT HEATER
- LOSS OF VENTILATION WARNING DEVICE.
- AFS — AFS
- MD — MOTORIZED DAMPER

FIRE ALARM

- EVAC — VOICE EVACUATION PANEL
- FAA — FIRE ALARM ANNUNCIATOR PANEL
- FACP — FIRE ALARM CONTROL PANEL
- F — FIRE ALARM MANUAL PULL STATION
- S — FIRE ALARM SMOKE DETECTOR
- H — HEAT DETECTOR
- SD — FIRE ALARM DUCT SMOKE DETECTOR
- FIRE ALARM STROBE LIGHT W/ BUZZER WALL MOUNTED
- F — FIRE ALARM SPEAKER/STROBE LIGHT COMBINATION WALL MOUNTED
- H — HORN UNIT ONLY
- ST FA — FIRE ALARM STROBE CEILING MOUNTED
- R — FIRE ALARM RELAY
- FE — FIRE EXTINGUISHER.
- FS — FIRE ALARM FLOW SWITCH
- PS — LOW PRESSURE SWITCH
- TS — FIRE ALARM TAMPER SWITCH
- TB — FIRE ALARM TELEPHONE BASE
- SP WP — MASS NOTIFICATION SPEAKER/STROBE LIGHT COMBINATION (WEATHER PROOF) WALL MOUNTED
- SPT — MASS NOTIFICATION SPEAKER/STROBE COMBINATION CEILING MOUNTED
- SP — MASS NOTIFICATION SPEAKER CEILING MOUNTED

SECURITY

GENERAL DEVICE ARRANGEMENT

M / T (SPECIFIC TO DEVICE)

M:	
P - PEDESTAL	W - WALL
M- MULLION	F - FLUSH
T - TURNSTILE	C - CEILING
D - DESK	R - RACK
S - SURFACE	H - HIDDEN

ACCESS CONTROL

- CARD ACCESS READER
  - B - BARCODE; W - WIEGAND; P - PROXIMITY; M - MAG STRIPE
  - F - ELEVATOR FLOOR C...; H - ELEVATOR HALL CAL...; T - TOKEN; S - SMART CARD
- BIOMETRICS ACCESS CONTROL DEVICE
  - H - HAND GEOMETRY
  - F - FINGER PRINT
  - V - VOICE
  - R - EYE RETINA
  - I - EYE IRIS
- KEYPAD DEVICE
- CARD READER WITH KEYPAD
  - S - SMART CARD
- CARD READER WITH TIME AND ATTENDANCE
- AUTO MONITORING SWITCH

ANNUNCIATION DEVICES

- AUDIO DEVICE
  - T: Z - BUZZER; B - BELL; C - CHIME; H - HORN; S - SPEAKER
  - L - LISTEN-IN; K - KLAXON; M - MICROPHONE; S - SOUNDER

MISCELLANEOUS

- MOTION DETECTOR
  - T: M - MICROWAVE; IR - INFRARED; U - ULTRASONIC; X - REQUEST-FOR-EXIT; D - DUAL TECHNOLOGY
- BI-STATIC BEAM SENSOR F: TX - TRANSMIT; RX - RECEIVE
  - T: M - MICROWAVE; IR - INFRARED
- CCTV CAMERA. MOUNTING AS INDICATED ON PLANS. 'X' DESIGNATES:
  - F - FIXED TYPE
  - PTZ - PAN TILT ZOOM
  - T: S - SCOOP/WEDGE; B - BOARD; C - CORNER; E - ENVIRONMENTAL; D - DOME
- ALARM LIGHT

DOOR AND LOCKING HARDWARE

- ELECTRONIC LOCK
  - M - MAGNETIC
  - IR - INFRARED
  - H - HYBRID
  - S - STRIKE
  - D - DEADBOLT
  - L - LATCH SET

ISSUED FOR BID

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REVISIONS

NO.	BY	DATE
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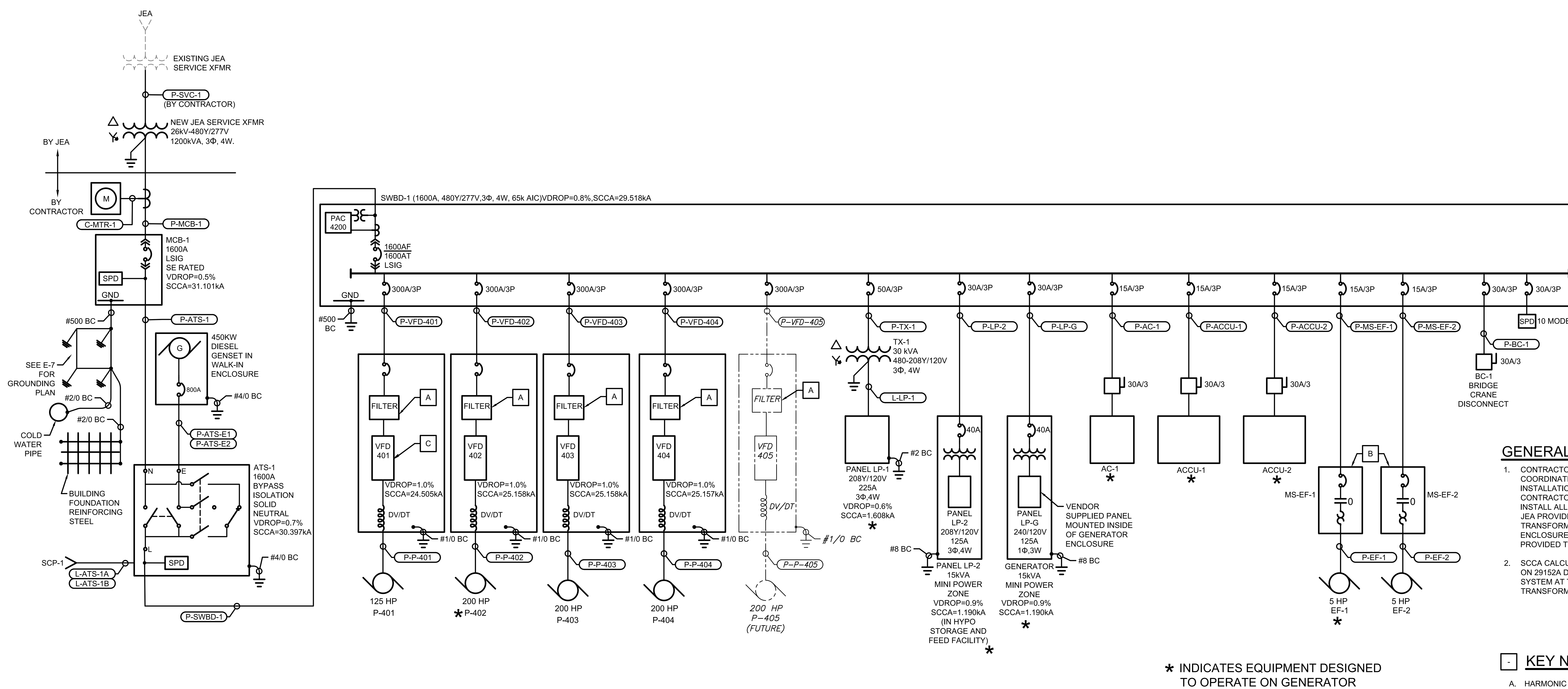
DESIGN ENGINEER: FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859
DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II
ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 81
DRAWING NO. E-2



GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ELECTRIC SERVICE INSTALLATION WITH JEA. CONTRACTOR WILL FURNISH AND INSTALL ALL RACEWAYS, INSTALL JEA PROVIDED PRECAST TRANSFORMER PAD AND METER ENCLOSURE, AND INSTALL JEA PROVIDED TRANSFORMER.
2. SCCA CALCULATIONS ARE BASED ON 29152A DELIVERED BY THE JEA SYSTEM AT THE SERVICE TRANSFORMER SECONDARIES.

KEY NOTES

A. HARMONIC FILTER PER RESULTS OF HARMONIC SYSTEM STUDY BY MFR. SEE SPECIFICATIONS.

B. COMBINATION SIZE 0 MOTOR STARTER, NEMA 12, HOA. THERMOSTATICALLY CONTROLLED IN AUTO. REFER TO 'H' DRAWINGS.

C. VFD IS 200 HP SIZED FOR FUTURE PUMP UPGRADE. VFD SETTINGS SHALL BE MODIFIED FOR CURRENT MAX 125 HP JOCKEY PUMP.

			CONNECTED LOAD IN KVA					FEEDER CALCULATIONS				FUTURE FEEDER CALCULATIONS					
EQUIPMENT	Φ	UTILIZATION VOLTAGE	EXISTING	TO BE REMOVED	PROPOSED	TOTAL PROJECT	MAXIMUM MOTOR LOAD (kVA)	MINIMUM FEEDER kVA (NOTE 1)	MINIMUM FEEDER AMPS (NOTE 1)	LESS NON-COINCIDENT kVA (NOTE 2)	LESS NON-COINCIDENT AMPS (NOTE 2)	PLANNED CONNECTIONS (kVA)	MAXIMUM MOTOR LOAD (kVA)	MINIMUM FEEDER KVA (NOTE 1)	MINIMUM FEEDER AMPS (NOTE 1)	LESS NON-COINCIDENT KVA (NOTE 2)	LESS NON-COINCIDENT AMPS (NOTE 2)
MCB-1	3	480	0	0	832	832	200	901	1084	302	364	200	200	1101	1324	302	364
SWBD-1	3	480	0	0	832	832	200	901	1084	302	364	200	200	1101	1324	302	364
LP-1	3	208	0	0	30	30	0	38	104	38	104	0	0	38	104	38	104
LP-2	3	208	0	0	15	15	0	19	52	19	52	0	0	19	52	19	52
LP-G	3	208	0	0	15	15	0	19	52	19	52	0	0	19	52	19	52
SYSTEM	3	480	0	0	832	832	200	901	1084	302	364	200	200	1101	1324	302	364

NOTES:

1. VALUE IS BASED ON THE REQUIREMENTS OF NFPA 70-2014, 430.24. ALL NON-MOTOR LOADS HAVE BEEN CONSIDERED CONTINUOUS.

2. NON-COINCIDENT LOADS REMOVE LOADS LISTED AS "STANDBY" FROM THE CALCULATIONS.
THESE MOTORS SHALL NOT RUN FOR THIS VALUE TO BE CONSIDERED FOR THE MINIMUM FEEDER AMPS IN ACCORDANCE WITH NFPA 70-2014 ARTICLE 220.60.
USE CAUTION WHEN APPLYING THIS FACTOR.

ISSUED FOR BID

MOTT MACDONALD
Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 00001155
Surveyors LB - 00006783

REVISIONS

NO.	BY	DATE
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3.		
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1.		

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PROPOSED ONE-LINE DIAGRAM

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 82
DRAWING NO. E-3

FEEDER MARK	# OF SETS	CONDUIT SIZE	CONDUCTOR IN EACH SET	FROM	TO	NOTES
C-AIT-401	1	1"		SCP-1	AIT-401	CONTAINS C-AIT-401-A / B
C-AIT-401-A	1	-	2#14, 1#14G	SCP-1	AIT-401	
C-AIT-402-B	1	-	1-2PR#18 TWIS	SCP-1	AIT-401	
C-ATS-1	1	1"	10#14, 1#14G	GCP-1	ATS-1	
C-ATS-2	1	1"	10#14, 1#14G	ATS-1	SCP-1	
C-CAM-1	1	1"	PULLSTRING	RACK-1	SECURITY CAMERA J-BOX	
C-CP-500	1	1"	20#14, 1#14G	DIO-1	CP-500	
C-CP-501	1	1"		DIO-1	CP-501	CONTAINS C-CP-501-A / B
C-CP-501-A	1	-	2#14, 1#14G	DIO-1	CP-501	
C-CP-501-B	1	-	1-2PR#18 TWIS	DIO-1	CP-501	
C-CR-001	1	1"	PULLSTRING	DCP-1	GATE ENTRY KEY PAD	
C-CR-002	1	1"	PULLSTRING	DCP-1	GATE EXIT KEY PAD	
C-D-101A	1	1"	PULLSTRING	DCP-1	JB, DOOR 101A	
C-D-102A	1	1"	PULLSTRING	DCP-1	JB, DOOR 102A	
C-D-102B	1	1"	PULLSTRING	DCP-1	JB, DOOR 102B	
C-DCP-1	1	1"	PULLSTRING	RACK-1	DCP-1	
C-DT-10	1	1"		GCP-1	GIO-1	CONTAINS C-DT-10-A / B
C-DT-10-A	1	-	4#14, 1#14G	GCP-1	GIO-1	
C-DT-10-B	1	-	1-2PR#18 TWIS	GCP-1	GIO-1	
C-EF-1	1	1"	4#14, 1#14G	MS-EF-1	SCP-1	
C-EF-2	1	1"	4#14, 1#14G	MS-EF-2	SCP-1	
C-FACP-1	1	1"	PULLSTRING	RACK-1	FACP-1	
C-GC-001	1	2"	PULLSTRING	DCP-1	GATE CONTROLLER	
C-GEN-1	1	1-1/2"	30#14, 1#14G	GCP-1	GIO-1	
C-LS-100	1	1"	6#14, 1#14G	RIO-1	GST-100	LSH-100, LSLL-100
C-LS-200	1	1"	6#14, 1#14G	RIO-1	GST-200	LSH-200, LSLL-200
C-LSHH-611	1	1"	2#14, 1#14G	SCP-1	LSHH-611	
C-MCB-1	1	1"	6#14, 1#14G	SCP-1	MCB-1	
C-MTR-1	1	1"	PULLSTRING	SERVICE TRANSFORMER	SERVICE METER	
C-OHD-1	1	1"	2#14, 1#14G	SCP-1	OHD-1	
C-P-401	1	1"		VFD-401	P-401	CONTAINS C-P-401-A / B
C-P-401-A	1	-	4#14, 1#14G	VFD-401	P-401	TSH / REMOTE STOP
C-P-401-B	1	-	2#12, 1#12G	VFD-401	P-401	MOTOR SPACE HTR
C-P-402	1	1"		VFD-402	P-402	CONTAINS C-P-402-A / B
C-P-402-A	1	-	4#14, 1#14G	VFD-402	P-402	TSH / REMOTE STOP
C-P-402-B	1	-	2#12, 1#12G	VFD-402	P-402	MOTOR SPACE HTR
C-P-403	1	1"		VFD-403	P-403	CONTAINS C-P-403-A / B
C-P-403-A	1	-	4#14, 1#14G	VFD-403	P-403	TSH / REMOTE STOP
C-P-403-B	1	-	2#12, 1#12G	VFD-403	P-403	MOTOR SPACE HTR
C-P-404	1	1"		VFD-404	P-404	CONTAINS C-P-404-A / B
C-P-404-A	1	-	4#14, 1#14G	VFD-404	P-404	TSH / REMOTE STOP
C-P-404-B	1	-	2#12, 1#12G	VFD-404	P-404	MOTOR SPACE HTR
C-P-405	1	1"	PULLSTRING	VFD-405	P-405	FUTURE CKTS
C-PSV-101	1	1"		RIO-1	PSV-101	CONTAINS C-PSV-101-A / B
C-PSV-101-A	1	-	4#14, 1#14G	RIO-1	PSV-101	
C-PSV-101-B	1	-	1-2PR#18 TWIS	RIO-1	PSV-101	
C-SWBD-1	1	1"	6#14, 1#14G	SCP-1	SWBD-1	BREAKER STATUS
C-VCP-630	1	1"	12#14, 1#14G	SCP-1	VCP-630	
C-VFD-401	1	1"		SCP-1	VFD-401	CONTAINS C-VFD-401-A / B
C-VFD-401-A	1	-	4#14, 1#14G	SCP-1	VFD-401	
C-VFD-401-B	1	-	1-2PR#18 TWIS	SCP-1	VFD-401	
C-VFD-402	1	1"		SCP-1	VFD-402	CONTAINS C-VFD-402-A / B
C-VFD-402-A	1	-	4#14, 1#14G	SCP-1	VFD-402	
C-VFD-402-B	1	-	1-2PR#18 TWIS	SCP-1	VFD-402	
C-VFD-403	1	1"		SCP-1	VFD-403	CONTAINS C-VFD-403-A / B
C-VFD-403-A	1	-	4#14, 1#14G	SCP-1	VFD-403	
C-VFD-403-B	1	-	1-2PR#18 TWIS	SCP-1	VFD-403	
C-VFD-404	1	1"		SCP-1	VFD-404	CONTAINS C-VFD-404-A / B
C-VFD-404-A	1	-	4#14, 1#14G	SCP-1	VFD-404	
C-VFD-404-B	1	-	1-2PR#18 TWIS	SCP-1	VFD-404	
C-VFD-405	1	1"	PULLSTRING	SCP-1	VFD-405	FUTURE CKTS
C-ZSC-111	1	1"	2#14, 1#14G	SCP-1	ZSC-111	
C-ZSC-401	1	1"	2#14, 1#14G	SCP-1	ZSC-401	
C-ZSC-402	1	1"	2#14, 1#14G	SCP-1	ZSC-402	
C-ZSC-403	1	1"	2#14, 1#14G	SCP-1	ZSC-403	
C-ZSC-404	1	1"	2#14, 1#14G	SCP-1	ZSC-404	
C-ZSC-405	1	1"	PULLSTRING	SCP-1	ZSC-405	FUTURE CKTS
I-AIT-401	1	1"	1-CAT6	RACK-1	AIT-401	
I-ATS-1	1	3/4"	1-CAT6	RACK-1	ATS-1	
I-CP-500A	1	1"	2-2PR#18 TWIS	DIO-1	CP-500	
I-CP-500B	1	1"	1-'PROFINET	DIO-1	CP-500	
I-DIO-1	1	1"	1-PROFINET	SCP-1	DIO-1	
I-DT-10	1	3/4"	1-2PR#18 TWIS	EFG-8000	GCP-1	
I-FACP-1	1	3/4"	1-CAT6	RACK-1	FACP-1	
I-FIT-101	1	1"	1-'PROFINET	RIO-1	FIT-101	
I-FIT-111	1	1"	1-'PROFINET	SCP-1	FIT-111	
I-FIT-700	1	1"	1-'PROFINET	SCP-1	FIT-700	
I-FS-1	1	1"	4#14, 1#14G	SCP-1	FS-1	
I-FS-2	1	1"	4#14, 1#14G	DIO-1	FS-2	
I-GCP-1	1	1"	1-CAT6	RACK-1	GCP-1	
I-GIO-1	1	1"	1-'PROFINET	SCP-1	GIO-1	
I-LIT-100	1	1"	1-2PR#18 TWIS	RIO-1	LIT-100	
I-LIT-200	1	1"	1-2PR#18 TWIS	RIO-1	LIT-200	

FEEDER MARK	# OF SETS	CONDUIT SIZE	CONDUCTOR IN EACH SET	FROM	TO	NOTES
C-AIT-401	1	1"		SCP-1	AIT-401	CONTAINS C-AIT-401-A / B
I-LT-501	1	3/4"	1-2PR#18 TWIS	DIO-1	LT-501	
I-P-401	1	1"	PULLSTRING	SCP-1	P-401	SPARE
I-P-402	1	1"	PULLSTRING	SCP-1	P-402	SPARE
I-P-403	1	1"	PULLSTRING	SCP-1	P-403	SPARE
I-P-404	1	1"	PULLSTRING	SCP-1	P-404	SPARE
I-P-405	1	1"	PULLSTRING	SCP-1	P-405	SPARE
I-PIT-101	1	1"	1-2PR#18 TWIS	RIO-1	PIT-101	
I-PIT-401	1	1"	1-2PR#18 TWIS	SCP-1	PIT-401	
I-PIT-591	1	3/4"	1-2PR#18 TWIS	DIO-1	PIT-591	
I-PIT-700	1	1"	1-2PR#18 TWIS	SCP-1	PIT-700	
I-PIT-701	1	1"	1-2PR#18 TWIS	SCP-1	PIT-701	
I-RIO-1	1	2"	1-12STR OF	SCP-1	RIO-1	
I-SCP-1	1	1-1/2"		SCP-1	RACK-1	CONTAINS I-SCP-1-A / B
I-SCP-1-A	1		1-12STR OF	SCP-1	RACK-1	
I-SCP-1-B	2		1-CAT6	SCP-1	RACK-1	
I-SEC-1	1		1-CAT6	RACK-1 (CORPORATE SWITCH)	RACK-1 (SECURITY SWITCH)	
I-SVC-1	1	2"	1-12STR OF	WW LIFT STATION CONTROL PANEL	RACK-1	
I-SWBD-1	1	3/4"	1-CAT6	SCP-1	SWBD-1	
I-TT-101	1	3/4"	1-2PR#18 TWIS	SCP-1	TT-101	
I-VFD-401	1	1"	1-'PROFINET	SCP-1	VFD-401	
I-VFD-402	1	1"	1-'PROFINET	SCP-1	VFD-402	
I-VFD-403	1	1"	1-'PROFINET	SCP-1	VFD-403	
I-VFD-404	1	1"	1-'PROFINET	SCP-1	VFD-404	
I-VFD-405	1	1"	PULLSTRING	SCP-1	VFD-405	FUTURE CKT
L-AIT-401	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	AIT-401	
L-ATS-1	1	1"		SCP-1	ATS-1	CONTAINS L-ATS-1-A / B
L-ATS-1-A	1		1#12, 1#12N, 1#12G	SCP-1	ATS-1	120VAC
L-ATS-1-B	1		1#10, 1#10N, 1#10G	SCP-1	ATS-1	24VDC POWER
L-CP-500	1	1"	1#12, 1#12N, 1#12G	PANEL LP-2	CP-500	
L-CP-501	1	1"	1#12, 1#12N, 1#12G	DIO-1	CP-501	
L-DCP-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-1	DCP-1	
L-DIO-1	1	1"	1#12, 1#12N, 1#12G	SCP-1	DIO-1	
L-DWH-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-1	DWH-1	
L-FACP-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-1	FACP-1	
L-FIT-101	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	FIT-101	
L-FIT-111	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	FIT-111	
L-FIT-700	1	1"	1#12, 1#12N, 1#12G	PANEL LP- 1	FIT-700	
L-GC-001	1	1"	1#8, 1#8N, 1#8G	PANEL LP-1	GATE CONTROLLER	
L-GIO-1	1	1"	1#12, 1#12N, 1#12G	SCP-1	GIO-1	
L-GST-LTS	1	1"	1#10, 1#10N, 1#10G	PANEL LP-1	GST LIGHTS	
L-GST-REC	1	1"	1#10, 1#10N, 1#10G	PANEL LP-1	GST REC	
L-HD-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-1	HD-1	
L-HT-1	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	PSV-101	
L-LP-1	1	2-1/2"	3#4/0, 1#4/0N, 1#4/0G	LP-1 TRANSFORMER TX-1	PANEL LP-1	
L-OHD-1	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	OHD-1	
L-P-621	1	1"	1#12, 1#12N, 1#12G	PANEL LP-1	P-621	
L-P-631	1	1"	PER MFR	VCP-630	P-631	
L-P-632	1	1"	PER MFR	VCP-630	P-632	
L-RACK-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-1	RACK-1	RECEPT IN RACK-1
L-RIO-1	1	1"	2#12, 1#12G	SCP-1	RIO-1	
L-SCP-1	1	1"		PANEL LP-1	SCP-1	CONTAINS L-SCP-1-A / B
L-SCP-1-A	1		1#12, 1#12N, 1#12G	PANEL LP-1	SCP-1	
L-SCP-1-B	1		1#10, 1#10N, 1#10G	PANEL LP-1	SCP-1	
L-TT-101	1	3/4"	1#12, 1#12N, 1#12G	SCP-1	TT-101	
L-VCP-630	1	1"	1#10, 1#10N, 1#10G	PANEL LP-1	VCP-630	
P-AC-1	1	1"	1#12, 1#12N, 1#12G	SWBD-1	AC-1	
P-ACCU-1	1	1"	1#10, 1#10N, 1#10G	SWBD-1	ACCU-1	
P-ACCU-2	1	1"	1#10, 1#10N, 1#10G	SWBD-1	ACCU-2	
P-ATS-1	4	4"	3#600, 1#600N, 1#600G	MCB-1	ATS-1	
P-ATS-E1	2	4"	3#600, 1#600N, 1#600G	GENERATOR (VIA MH-1)	ATS-1	
P-ATS-E2	2	4"	PULLSTRING	MH-1	ATS-1	FUTURE CKTS
P-BC-1	1	1"	3#10, 1#10G	SWBD-1	BC-1	
P-EF-1	1	1"	3#10, 1#10G	SWBD-1	MS-EF-1	
P-EF-2	1	1"	3#10, 1#10G	SWBD-1	MS-EF-2	
P-LP-2	1	1"	3#8, 1#8G	SWBD-1	PANEL LP-2	
P-LP-G	1	1"	3#8, 1#8G	SWBD-1	PANEL LP-G	
P-MCB-1	4	4"	3#600, 1#600N, 1#600G	NEW JEA TRANSFORMER	MCB-1	
P-MS-EF-1	1	1"	3#10, 1#10G	EF-1	MS-EF-1	
P-MS-EF-2	1	1"	3#10, 1#10G	EF-2	MS-EF-2	
P-P-401	1	4"	3#350, 3#6G VFD	VFD-401	P-401	
P-P-402	1	4"	3#350, 3#6G VFD	VFD-402	P-402	
P-P-403	1	4"	3#350, 3#6G VFD	VFD-403	P-403	
P-P-404	1	4"	3#350, 3#6G VFD	VFD-404	P-404	
P-P-405	1	4"	PULLSTRING	VFD-405	P-405	FUTURE CKT
P-SVC-1	2	4"	PULLSTRING	EXISTING JEA TRANSFORMER	NEW JEA TRANSFORMER	
P-SWBD-1	4	4"	3#600, 1#600N, 1#600G	ATS-1	SWBD-1	
P-TX-1	1	1"	3#8, 1#8G	SWBD-1	LP-1 TRANSFORMER TX-1	
P-VFD-401	1	1"	3#350, 1#350G	SWBD-1	VFD-401	
P-VFD-402	1	1"	3#350, 1#350G	SWBD-1	VFD-402	
P-VFD-403	1	1"	3#350, 1#350G	SWBD-1	VFD-403	
P-VFD-404	1	1"	3#350, 1#350G	SWBD-1	VFD-404	
P-VFD-405	1	1"	PULLSTRING	SWBD-1	VFD-405	FUTURE CKT

ISSUED FOR BID

MOTT MACDONALD

REVISIONS

NO.	BY	DATE
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4.		
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1.		

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

CONDUIT AND CONDUCTOR SCHEDULES

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 83
DRAWING NO. E-4

SWBD-1

SWBD-1			LOCATION:	PUMP BUILDING ELECTRICAL ROOM	
OPTIONS					
VOLTS L-L: 480	MAIN OVERCURRENT: 1600A MCB	BUS MATERIAL: Cu	MOUNTING: SURFACE		
VOLTS L-N: 277	MAIN BUS RATING: 1600A	NEUTRAL SIZE: 100%	ENCLOSURE TYPE: NEMA 1		
PHASE: 3	MINIMUM A.I.C.: 65kA		GROUND: EQUIPMENT		
WIRE: 4					

CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1					67777	135554			67777					2
3	300	3		VFD-401	67777		135554		67777	VFD-402		3	300	4
5					67777			135554	67777					6
7					67777	135554			67777					8
9	300	3		VFD-403	67777		135554		67777	VFD-404		3	300	10
11					67777			135554	67777					12
13					67777	75721			7944					14
15	100	3		VFD-405(FUTURE)	67777		73081		5304	LP-1 PANEL TRANSFORMER TX-1		3	50	16
17					67777			73367	5590					18
19					2240	3840			1600					20
21	25	3		AC-1	2240		3840		1600	ACCU-1		3	30	22
23					2240			3840	1600					24
25					1600	2416			816					26
27	20	3		ACCU-2	1600		2416		816	EF-1		3	30	28
29					1600			2416	816					30
31					816	1770			954					32
33	20	3		EF-2	816		1616		800	PANEL LP-2		3	40	34
35					816			816	0					36
37					5000	6392		654	1392					38
39	40	3		GENERATOR PANEL LP-G	5000		6392	1766	1392	BRIDGE CRANE BC-1		3	30	40
41					5000			0	1392					42
				TOTAL CONNECTED LOAD (VA) PER PHASE:		361247	358453	353967						
				CONNECTED LOAD (AMPS) PER PHASE		1304	1294	1278						
				TOTAL CONNECTED LOAD (VA):		1073667								
				TOTAL CONNECTED LOAD (AMPS):		1291								

NOTES:
1. PROVIDE MFG STANDARD INTERNAL SPD UNIT
2.

LP-1

LP-1			LOCATION:	PUMP BUILDING ELECTRICAL ROOM
OPTIONS				
VOLTS L-L: 208	MAIN OVERCURRENT: 225A MCB	BUS MATERIAL: Cu	MOUNTING: SURFACE	
VOLTS L-N: 120	MAIN BUS RATING: 225A	NEUTRAL SIZE: 100%	ENCLOSURE TYPE: NEMA 1	
PHASE: 3	MINIMUM A.I.C.: 18kA		GROUND: SEPARATELY DERIVED	
WIRE: 4				

CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	20	1		AIT-401	400	760			360	SCP-1		1	20	2
3	20	1		PUMP RM REC 1	900		1260		360	GST REC		1	20	4
5	20	1		ELEC / REST REC	720			1014	294	GST LTS		1	20	6
7	20	1		SPARE		1200			1200	SCP-1		1	30	8
9	20	1		SPARE			360		1200	HEAT TRACE PSV-101		1	20	10
11	20	1		ELEC / REST LTS	1028			1028		SPARE		1	20	12
13	20	1		PUMP RM LTS	824	824				SPARE		1	20	14
15	20	1		EXIT LTS	64		424		360	FIT-101		1	20	16
17	20	1		EXTERIOR LTS	288			648	360	FIT-111		1	20	18
19	20	1		ROLL UP DOOR	420	420				SPARE		1	20	20
21	20	1		SUMP PUMP P-621			360		360	FIT-700		1	20	22
23	20	1		FACP	200			200		SPARE		1	20	24
25	20	1		PUMP RM REC 2	540	1740			1200					26
27	20	1		DOOR CONT PNL	200		1400		1200	VCP-630		3	20	28
29	20	1		HD-1				1200	1200					30
31	20	2		DWH-1	1500	1500								32
33					1500		1500			SPARE		3	20	34
35	30	2		GATE CONTROLLER	1500			1500						36
37					1500	1500								38
39	30	2		SPARE			0			SPARE		3	30	40
41								0						42
				TOTAL CONNECTED LOAD (VA) PER PHASE:		7944	5304	5590						
				CONNECTED LOAD (AMPS) PER PHASE		66	44	47						
				TOTAL CONNECTED LOAD (VA):		18838								
				TOTAL CONNECTED LOAD (AMPS):		52								

NOTES:
1. PROVIDE MFG STANDARD INTERNAL SPD UNIT
2.

LP-2

LP-2			LOCATION:	HYPO STORAGE AND FEED FACILITY
OPTIONS				
VOLTS L-L: 208	MAIN OVERCURRENT: 40A MCB	BUS MATERIAL: Cu	MOUNTING: SURFACE	
VOLTS L-N: 120	MAIN BUS RATING: 125A	NEUTRAL SIZE: 100%	ENCLOSURE TYPE: NEMA 3RX	
PHASE: 3	MINIMUM A.I.C.: 18kA			
WIRE: 4			GROUND: 0	

CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	20	1		OVERHEAD LTS.	594	594				SPARE		1	20	2
3	20	1		CP-500	800		800			SPARE		1	20	4
5	20	1		SPARE				0		SPARE		1	20	6
7	20	1		REC	360	360								8
9	20	1		SPARE			0			SPARE		3	30	10
11	20	1		SPARE				0						12
13				SPACE		0								14
15				SPACE			0			SPARE		3	40	16
17				SPACE				0						18
				TOTAL CONNECTED LOAD (VA) PER PHASE:		954	800	0						
				CONNECTED LOAD (AMPS) PER PHASE		8	7	0						
				TOTAL CONNECTED LOAD (VA):		1754								
				TOTAL CONNECTED LOAD (AMPS):		5								

NOTES:
1. PROVIDE MFG STANDARD INTERNAL SPD UNIT
2. MINI POWER ZONE WITH 15kVA, 480-208Y / 120V INTEGRAL TRANSFORMER

LP-G

LP-G			LOCATION:	GENERATOR ENCLOSURE
OPTIONS				
VOLTS L-L: 240	MAIN OVERCURRENT: 40A MCB	BUS MATERIAL: Cu	MOUNTING: SURFACE	
VOLTS L-N: 120	MAIN BUS RATING: 125A	NEUTRAL SIZE: 100%	ENCLOSURE TYPE: NEMA 1	
PHASE: 1	MINIMUM A.I.C.: 18kA			
WIRE: 3			GROUND: 0	

CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE	PHASE	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	20	1		GEN ENCL LTS	360	540		180	GEN ENCL RECT		1	20	2
3	20	1		GEN BATT CHARGER	600		960	360	GEN CTRL PNL		1	20	4
5	20	1		JACKET WTR HTR	800	800			SPARE		1	20	6
7	20	1		SPARE			0		SPARE		1	20	8
9	20	1		SPARE		0			SPARE		1	20	10
11				SPACE			0		SPACE				12
13				SPACE		0			SPACE				14
15				SPACE			0		SPACE				16
17				SPACE		0			SPACE				18
				TOTAL CONNECTED LOAD (VA) PER PHASE:		1340	960						
				CONNECTED LOAD (AMPS) PER PHASE		11	8						
				TOTAL CONNECTED LOAD (VA):		2300							
				TOTAL CONNECTED LOAD (AMPS):		10							

NOTES:
1. PROVIDE MFG STANDARD INTERNAL SPD UNIT
2. MINI POWER ZONE WITH 15kVA, 480-120 / 240V INTEGRAL TRANSFORMER

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MOTT MACDONALD

REVISIONS

NO.	BY	DATE
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DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community sm

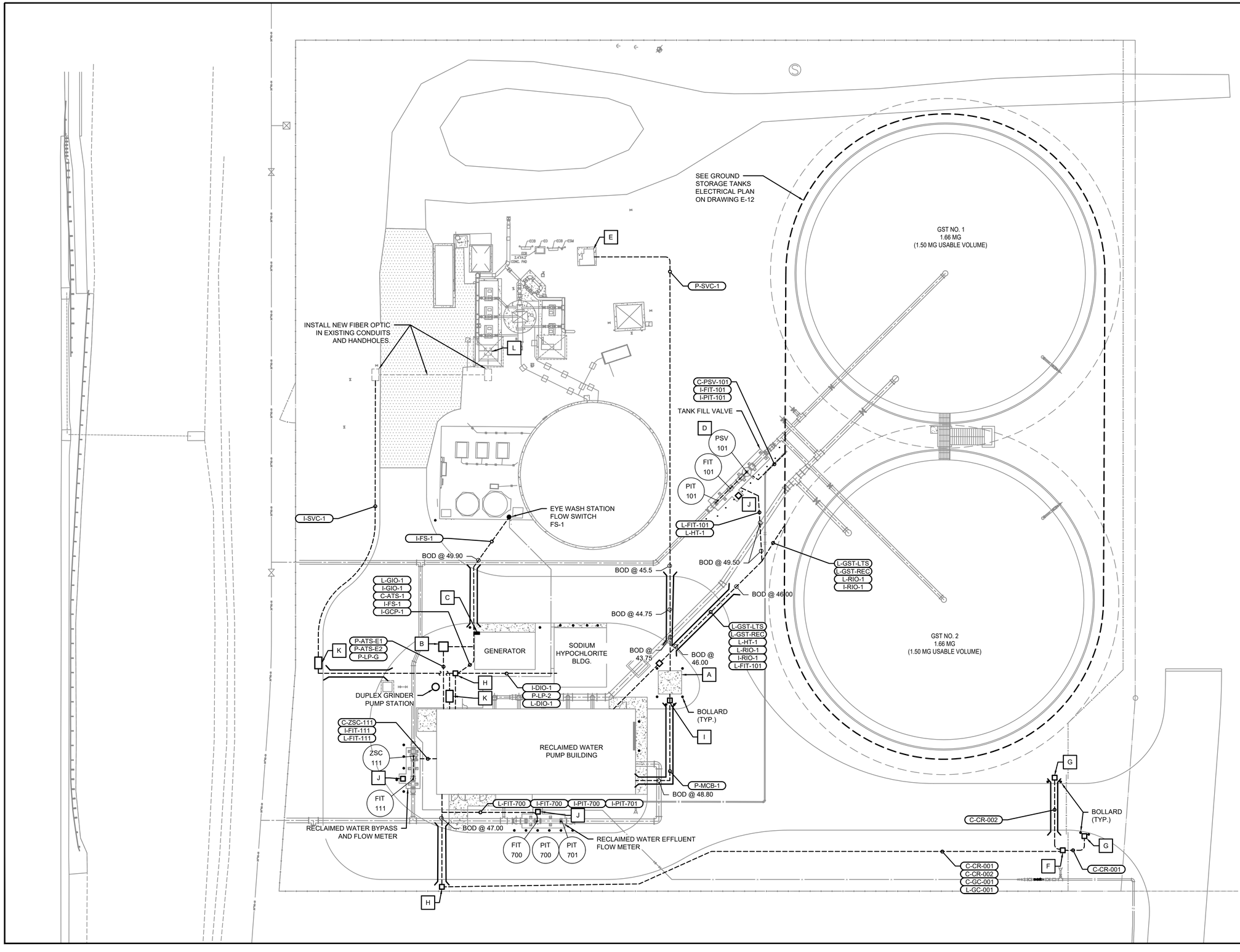
TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

PANEL SCHEDULES

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 84
DRAWING NO. E-5

ISSUED FOR BID



0 20 40 (FEET)

SCALE: 1" = 20' (22x34)
1" = 40' (11x17)

KEY NOTES:

A. NEW JEA TRANSFORMER.

B. MANHOLE MH-1. DEADEND & CAP SPARE GENERATOR FEEDER CONDUITS FROM ATS FOR FUTURE USE.

C. GIO-1. COORDINATE LOCATION OF GIO-1 & GENERATOR AREA CONDUIT RISERS IN FIELD W/APPROVED GENERATOR SHOP DRAWINGS.

D. INSTALL ELECTRIC HEAT TRACE ON PSV-101.

E. EXISTING JEA TRANSFORMER.

F. GATE CONTROLLER.

G. APPROXIMATE LOCATION OF CARD READER, INSTALL BOLLARDS AS INDICATED.

H. 2' X 2' X 2' ELECTRICAL HANDHOLES. 480V POWER SHALL BE ROUTED THROUGH POWER HANDHOLES. 120V POWER, CONTROL & INSTRUMENTATION SHALL BE ROUTED THROUGH CONTROL HANDHOLES (TYPICAL).

I. JEA ELECTRIC METER CABINET & TRANSFORMER PAD FURNISHED BY JEA FOR INSTALLATION BY CONTRACTOR.

J. FLOW METER REMOTE MOUNT TRANSMITTER SHALL BE MOUNTED IN THE NORTH OR SOUTH DIRECTION ACCORDING TO DETAIL 3, SHEET ED-1.

K. FIBER HANDHOLES SHALL BE A 3' X 5' X 3' FIBER HANDHOLE DEDICATED FOR INCOMING JEA FIBER SERVICE. COORDINATE LOCATION IN FIELD W/JEA.

L. FIBER INTERCONNECTION POINT.

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DATE:	APRIL 2020	
CHECKED BY:	A. GIBBS	
DATE:	APRIL 2020	

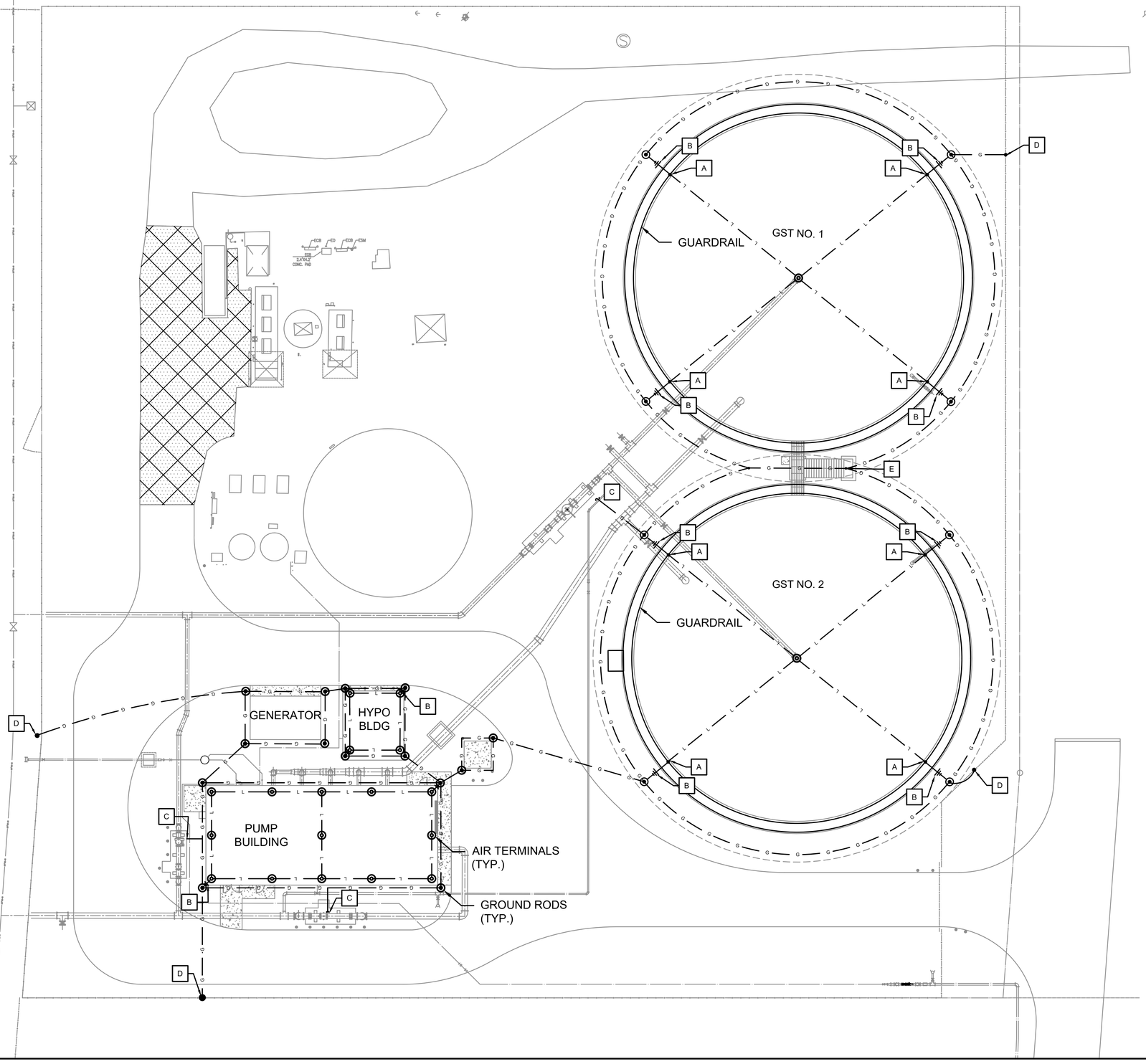
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

ELECTRICAL SITE PLAN

PROJ. NO.	502398244	
DATE:	APRIL 2020	
SCALE:	1" = 20'	

NO. SHEETS	105	
SHEET NO.	85	
DRAWING NO.	E-6	



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N

0 20 40 (FEET)

SCALE: 1" = 20' (22x34)
1" = 40' (11x17)

KEY NOTES:

A. BOND LIGHTNING PROTECTION TO GUARDRAIL, TYPICAL 4 LOCATIONS PER TANK. GUARDRAIL SHALL BE BONDED AS REQUIRED TO ALLOW USE AS LIGHTNING PROTECTION CONDUCTOR.

B. LIGHTNING PROTECTION DOWNCOMER IN PVC CONDUIT PAINTED TO MATCH INSTALLATION SURFACE. TYPICAL (2) LOCATIONS PER STRUCTURE AND (4) LOCATIONS PER TANK. COORDINATE LOCATION OF DOWN CONDUCTOR WITH BUILDING GUTTER LOCATIONS FOR CONCEALMENT.

C. EXTEND GROUND GRID TO WATER EQUIPMENT PADS FOR CONNECTION TO INSTRUMENTS.

D. EXTEND GROUND GRID TO PROPOSED FENCE LINE IN (4) LOCATIONS.

E. BOND GROUND GRID TO STAIR PLATFORM IN (2) LOCATIONS. BOND W/REMOTE I/O PANEL IN (1) LOCATION.

REFERENCE DRAWINGS:

ED-2 GROUNDING DETAILS
ED-3 LIGHTNING PROTECTION DETAILS
E-12 GST ELECTRICAL PLANS

ISSUED FOR BID

DESIGNER:	F. WELLS
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CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

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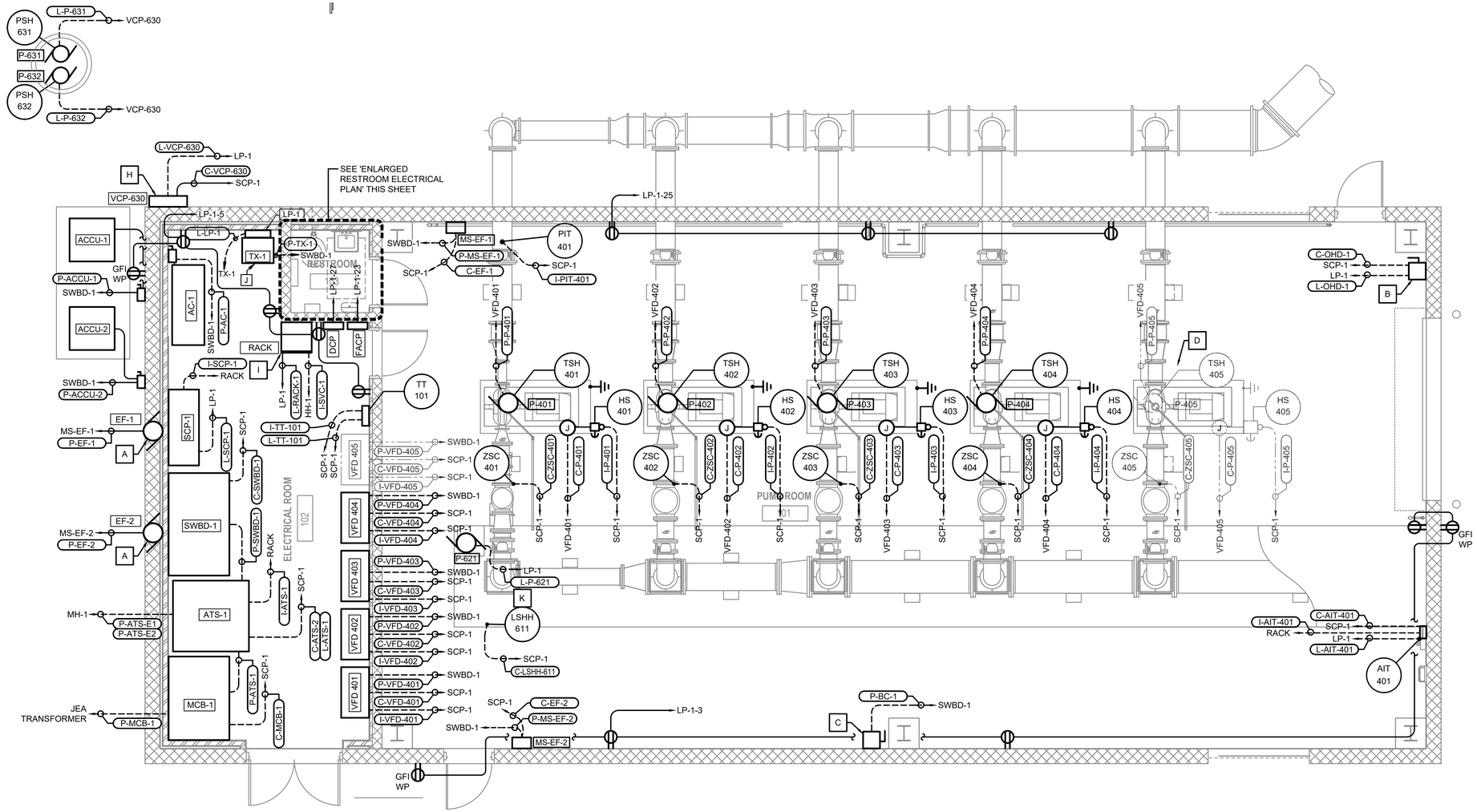
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

SITE LIGHTNING PROTECTION & GROUNDING PLAN

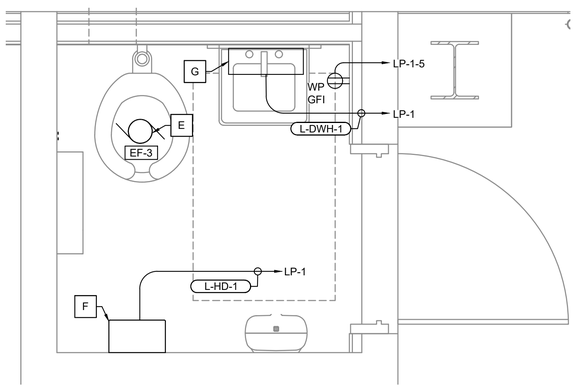
PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1" = 20'

NO. SHEETS	105
SHEET NO.	98
DRAWING NO.	E-7



TWIN CREEKS PUMP BUILDING ELECTRICAL PLAN

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



ENLARGED RESTROOM ELECTRICAL PLAN

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

GRAPHIC SCALE
6" 0 1 2'
SCALE: 3/4" = 1'-0"

GENERAL NOTES

1. PROVIDE 3' WIDE ELECTRICAL SAFETY MATS AROUND EACH PIECE OF INTERIOR ELECTRICAL EQUIPMENT WITH A VOLTAGE TO GROUND GREATER THAN 50 VOLTS. MATS SHALL BE: 1/4" THICK, TYPE 11 CLASS 2, RECOMMENDED MAX VOLTAGE OF 17,000 VOLTS AC RMS. MATS SHALL MEET OZONE, FLAME AND OIL RESISTANCE REQUIREMENTS.
2. ATS-1 HAS 18" WIREWAY AND TOP HAT FOR CABLE ROUTING.

KEY NOTES:

A. EF-1, EF-2 AND LOCAL DISCONNECTS MOUNTED ABOVE ELECTRICAL ROOM CEILING AT ~14'-8" AFF.

B. DISCONNECT/CONTROLLER FOR OVERHEAD DOOR OHD-1. FIELD COORDINATE FINAL LOCATION AND CONNECTION.

C. DISCONNECT FOR BRIDGE CRANE BC-1. FIELD COORDINATE FINAL LOCATION AND CONNECTION W/VENDOR APPROVED SHOP DRAWINGS.

D. ALL SPARE CONDUITS SHALL BE CAPPED & FLUSH WITH FINISHED FLOOR ELEVATION.

E. WIRE EF-3 INTO RESTROOM LIGHTING CIRCUIT.

F. EXCELERATOR HAND DRYER HD-1.

G. POINT OF USE WATER HEATER DWH-1.

H. PROVIDE SEAL OFF FITTINGS AT VCP-630 FOR CONDUITS ENTERING FROM GRINDER WET WELL.

I. RACK SHALL BE CHATSWORTH #FN1A-111B-C22-B OR ENGINEER APPROVED EQUAL.

J. TX-1 SHALL BE MOUNTED ON EXTERIOR WALL ABOVE PANEL LP-1 W/ A SUPPLIER APPROVED MOUNTING BRACKET SIMILAR TO EATON WMB05.

K. LSHH-611 MOUNTED TO DISCHARGE TRENCH WALL AT 0'-6" FROM TOP OF TRENCH WALL.

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DESIGN ENGINEER: FRANK E. WELLS, P.E.
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DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

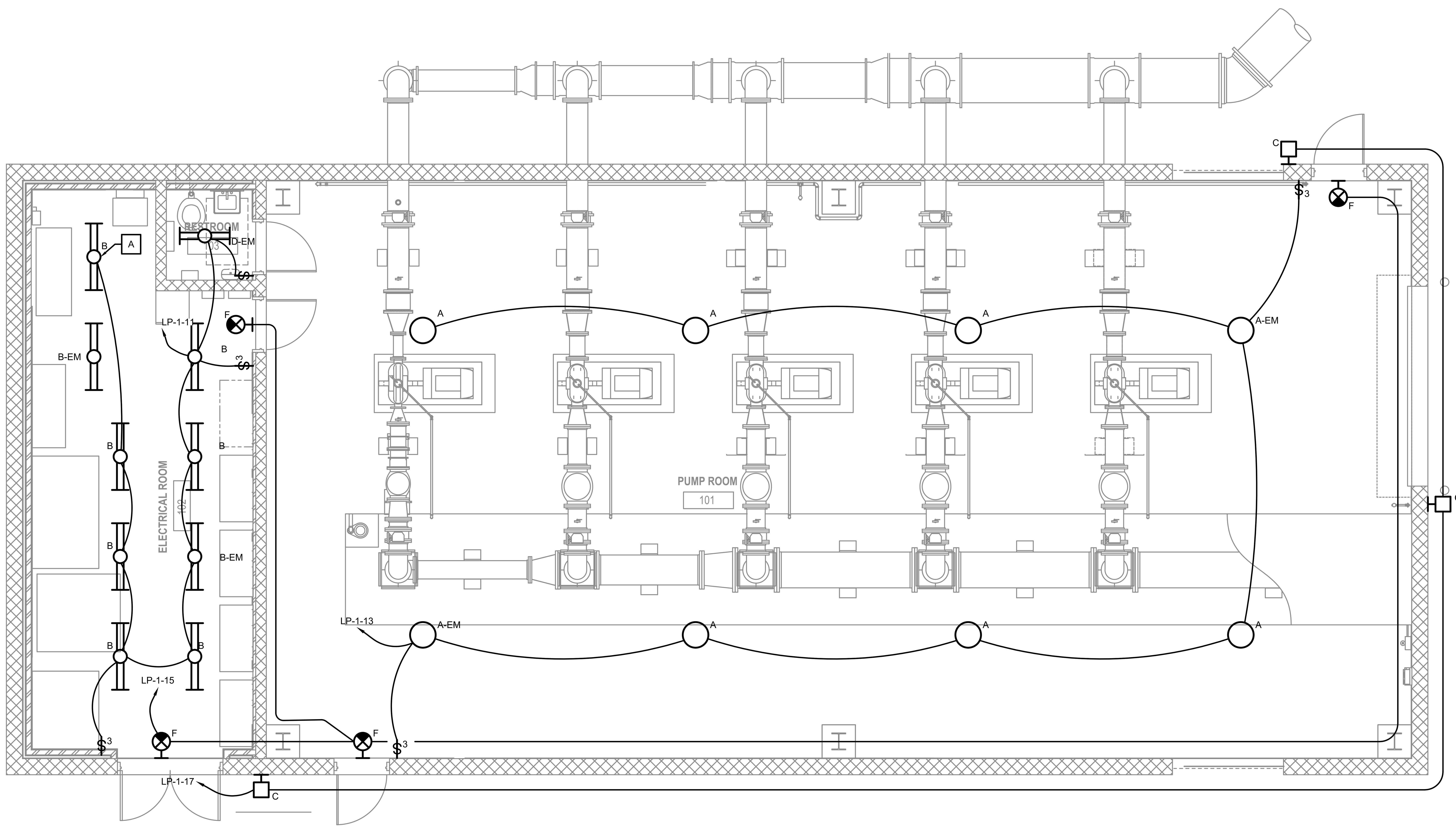
JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

PUMP BUILDING ELECTRICAL PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS SHOWN

NO. SHEETS	105
SHEET NO.	87
DRAWING NO.	E-8



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

GENERAL NOTES

1. PROVIDE OCCUPANCY SENSOR SWITCH, WSD OR EQUIVALENT, IN RESTROOM PER ENERGY CONSERVATION CODE.

KEY NOTES:

A. LIGHT FIXTURE AT AIR HANDLER UNIT SHALL BE SUPPORTED FROM DUCT WORK HANGERS AT APPROXIMATELY 10'-0".

TWIN CREEKS PUMP BUILDING LIGHTING PLAN

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

LIGHTING DESIGN CRITERIA								
APPLICATION	HORIZONTAL TARGETS			VERTICAL TARGETS			UNIFORMITY TARGETS	
	E (fc)	TYPE	ELEV.	E (fc)	TYPE	ELEV.	MAX:MIN	AVG:MIN
PUMP ROOM	20	AVG	FLOOR	15	AVG	5' AFF	5:1	N/A
ELECTRICAL ROOM	50	AVG	FLOOR	20	AVG	4' AFF	3:1	N/A
RESTROOM	15	AVG	FLOOR	20	AVG	5' AFF	N/A	2:1
HYPO STORAGE & FEED FACILITY	20	AVG	FLOOR	10	AVG	5' AFF	5:1	N/A

NOTES:

1. DESIGN CRITERIA ARE BASED ON THE IES LIGHTING HANDBOOK, 10TH EDITION.

LIGHTING FIXTURE SCHEDULE							
MARK	MFR.	CATALOG NUMBER.	LAMPS-NUMBER/TYPE	FIXTURE WATTS	TOTAL LLF	MOUNTING	REMARKS
A	LITHONIA	JCBL-15000LM-40K-80CRI-ACCR-ACRDRP	LED	103	0.8	PENDANT	NOTE 5
B	LITHONIA	ZL1N-L48-7000LM-FST-MVOLT-40K-80CRI	LED	52.07	0.8	SURFACE	
C	LITHONIA	TWH-20C-1000-40K-T3M-MVOLT-DLL127F1.5JU	LED	72	N/A	WALL	
D	LITHONIA	CLX-L36-5250LM-HEF-FDL-MVOLT-40K-80CRI	LED	73	N/A	SURFACE	
E	LITHONIA	VAP-8000LM-PCL-WD-MVOLT-40K-80CRI	LED	99	0.8	18'-0" AFF	HYPO BLDG
F	LITHONIA	LUXC-W-1-RW	LED	16	N/A	TOP	EXIT SIGN
G	LITHONIA	MR1-LED-42C-700-30K-SR5-120-RPA-DNAXD	LED	98	0.8	POLE	

NOTES:

1. THE FIXTURES LISTED ABOVE ARE THE BASIS OF DESIGN. TO SUPPLY EQUIVALENT FIXTURES PROVIDE THE FOLLOWING WITH SHOP DRAWINGS: 1) COMPLETE PRODUCT SPECIFICATION SHEETS MARKED WITH CATALOG NUMBER AND FIXTURE TYPE, 2) CALCULATION REPORTS SHOWING THE DESIGN CRITERIA HAS BEEN MET, 3) A SUMMARY OF ALL ALTERATIONS DEVIATING FROM THE BASIS OF DESIGN, 4) ELECTRONIC COPIES OF THE IES FILES USED, 5) WRITTEN VERIFICATION THAT THE SUBMITTED FIXTURES MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. EQUIVALENT FIXTURES SHALL BE VERIFIED BY THE ENGINEER FOR ADEQUACY DURING THE SUBMITTAL REVIEW PHASE. THE CONTRACTOR SHALL STILL BEAR THE RESPONSIBILITY OF PROVIDING AND INSTALLING FIXTURES THAT MEET THE DESIGN CRITERIA, AT NO ADDITIONAL COST.
2. FIXTURE WATTAGE IS BASED ON THE TOTAL INPUT POWER AS LISTED BY THE MANUFACTURERS DATA FOR THE LAMP(S) AND BALLAST (DRIVERS) SELECTED.
3. COORDINATE MOUNTING REQUIRMENTS AS SHOWN ON THE PLAN. PROVIDE DROP CHAINS AS REQUIRED.
4. FIXTURES ON PLAN VIEW WITH "-EM" SUFFIX INDICATE REQUIREMENT FOR INCLUSION OF EMERGENCY BATTERY PACK WITH HIGHEST LUMEN OUTPUT.
5. PROVIDE TYPE JCBL WITH CAST HOOK AND CORD WITH 120V RECEPTACLE. SUSPEND AT LEAST 6" ABOVE TOP OF BRIDGE CRANE WITH 3/4" HOOK AT BOTTOM OF PENDANT AND TYPE ALC FLEXIBLE HANGER

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DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

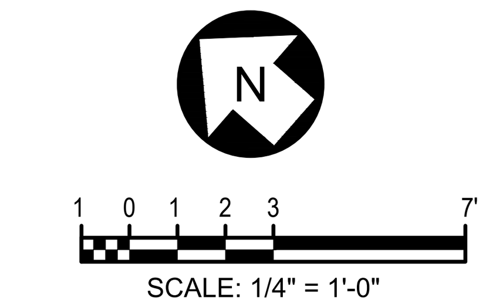
JEA Building Community℠

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

PUMP BUILDING LIGHTING PLAN

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: 1/4"=1'-0"

NO. SHEETS 105
SHEET NO. 88
DRAWING NO. E-9

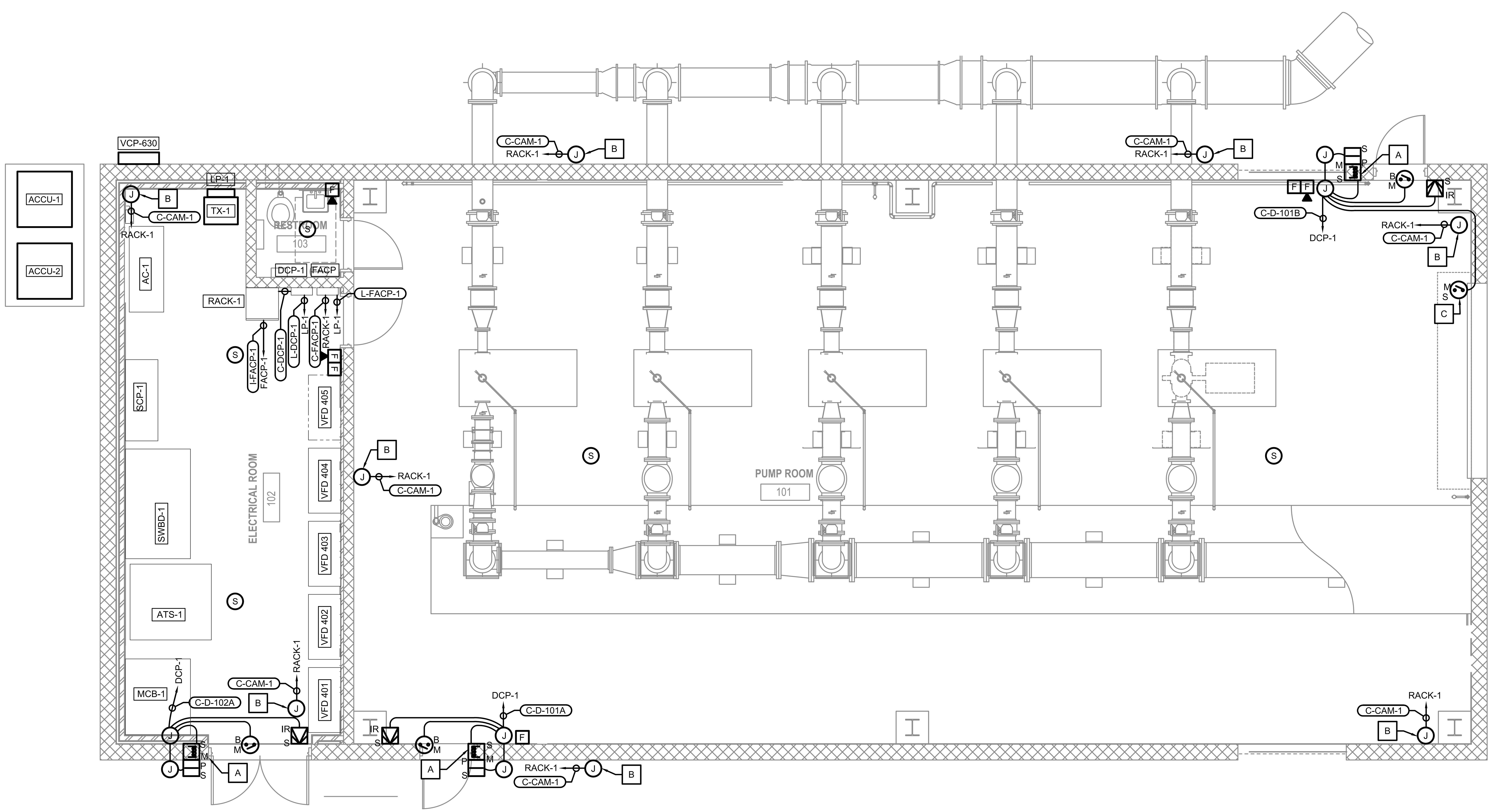


KEY NOTES:

A. COORDINATE CONDUIT THRU DOOR FOR ELECTRONIC LOCK SET.

B. SINGLE GANG JUNCTION BOX MOUNTED NEAR SECURITY CAMERA.

C. FLOOR JUNCTION FOR OHD-1 MAGNETIC STRIKE PLATE.



TWIN CREEKS PUMP BUILDING FIRE ALARM & SECURITY PLAN

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

SECURITY NOTES

1. CONTRACTOR SHALL INSTALL ONLY THE CONDUIT AND JUNCTION BOXES FOR SECURITY DEVICES. THE SECURITY DEVICES AND THE ASSOCIATED LOW VOLTAGE WIRING SHALL BE INSTALLED BY A PRE-SELECTED CONTRACTOR SELECTED BY JEA SECURITY SERVICES. COORDINATE WITH JEA SECURITY SERVICES AND HIS CONTRACTOR AS REQUIRED FOR THE APPROPRIATE DOOR HARDWARE REQUIRED.
2. SECURITY CAMERA CONDUITS AND ACCESS DOOR CONTROL CONDUITS CANNOT BE COMBINED.
3. CONTRACTOR SHALL COORDINATE AND REFERENCE JEA TYPICAL SECURITY DETAILS FOR REQUIREMENTS.
4. SECURITY & ACCESS CONTROL CONDUITS & JUNCTION BOXES SHALL BE CONCEALED IN WALLS.

FIRE ALARM NOTES

1. FIRE ALARM CONTRACTOR SHALL PROVIDE AND INSTALL A FULLY OPERATIONAL FIRE PROTECTION SYSTEM.
2. ALL WORK SHALL BE IN ACCORDANCE WITH FBC, NFPA 13, NFPA 72, NEC AND LOCAL AUTHORITY HAVING JURISDICTION.
3. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND MAKING PLAN REVISIONS AS DIRECTED AND REQUIRED.
4. OWNER WILL PROVIDE A COMMUNICATIONS LINE FOR THE FIRE ALARM CONTROL PANEL.
5. CONTRACTOR TO PROVIDE 3/4"C FROM ALL FIRE ALARM DEVICES TO FIRE ALARM CONTROL PANEL WITH CONDUCTOR AS REQUIRED.
6. EXHAUST FANS SHALL SHUTDOWN ON SMOKE DETECTION IN PUMP ROOM VIA SHUTDOWN RELAYS HARDWIRED TO EXHAUST FAN STARTERS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DETAILED FIRE ALARM DESIGN REQUIRED BY FLORIDA LAW.
8. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED FIRE ALARM INSTALLATION DRAWINGS BY A FLORIDA P.E. (THE FLORIDA P.E. WILL ACT AS A DELEGATE ENGINEER FOR THE DESIGN OF THE FIRE ALARM SYSTEM).
9. THE DEVICES SHOWN ON THE PLANS REPRESENT THE MINIMUM NUMBER OF REQUIRED DEVICES.
10. THE DELEGATE ENGINEER OF RECORD FOR THE FIRE ALARM SYSTEM SHALL COMPLY WITH FLORIDA STATUTE 61G15-33.006.
11. FIRE ALARM CONTROL PANEL SHALL BE POTTER AFC-50 WITH COMPATIBLE POTTER DEVICES TO MATCH JEA FACILITIES STANDARDS.

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DESIGN ENGINEER: FRANK E. WELLS, P.E.
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DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
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CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Community

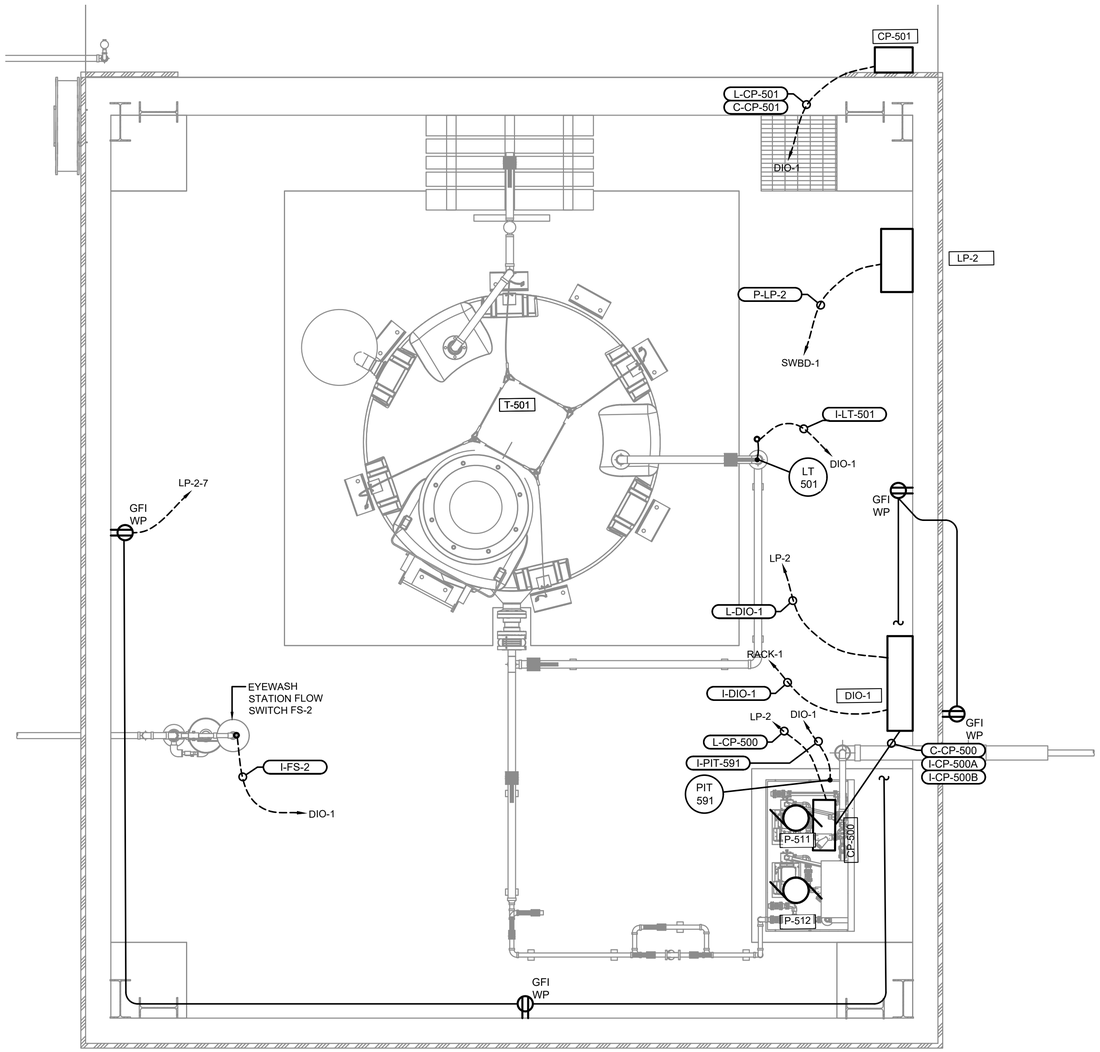
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
PUMP BUILDING FIRE ALARM & SECURITY PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1/4"=1'-0"
NO. SHEETS	105
SHEET NO.	89
DRAWING NO.	E-10

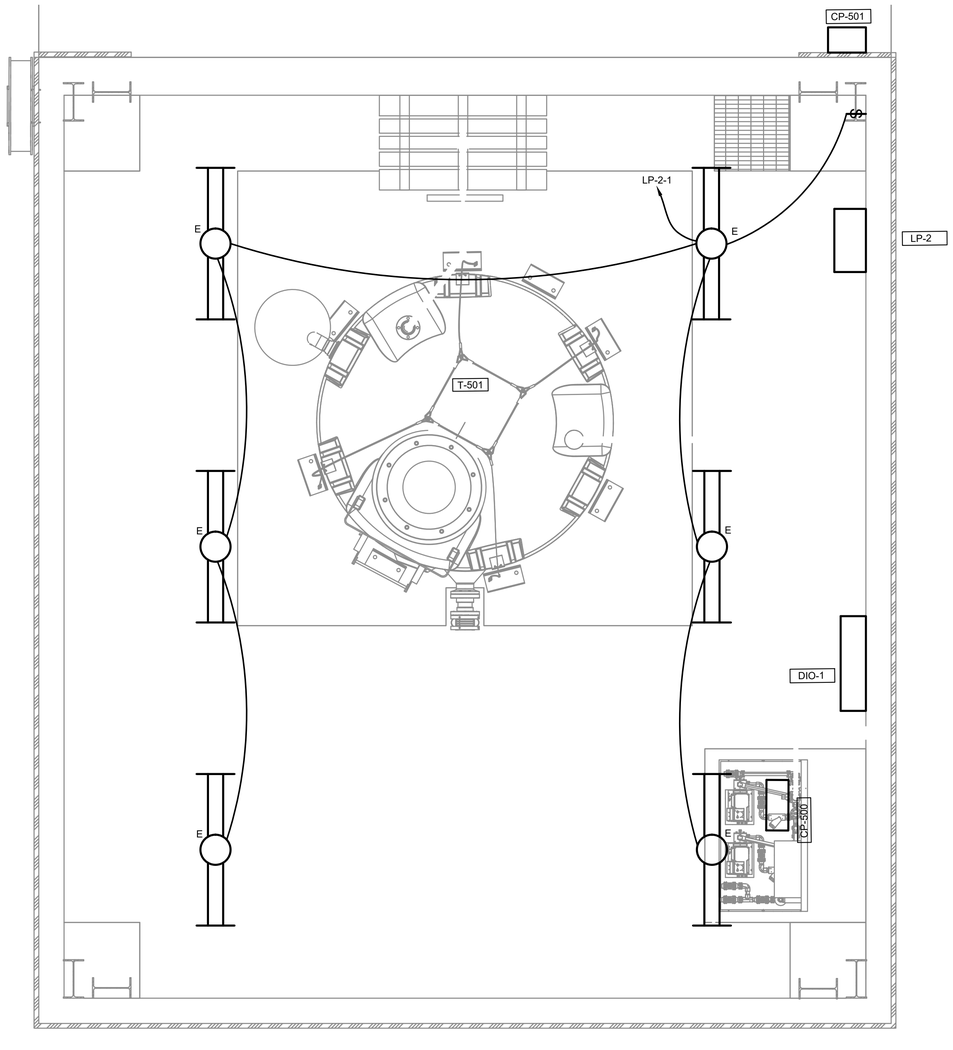
GENERAL NOTES:

1. REFER TO DRAWING E-9 FOR FIXTURE SCHEDULE AND DESIGN CRITERIA.

GRAPHIC SCALE
12" 0 1 3'
SCALE: 1/2" = 1'-0"



HYPO BLDG ELECTRICAL LAYOUT
SCALE: 1/2" = 1'-0"



HYPO BLDG LIGHTING LAYOUT
SCALE: 1/2" = 1'-0"

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FLORIDA REGISTRATION NO.
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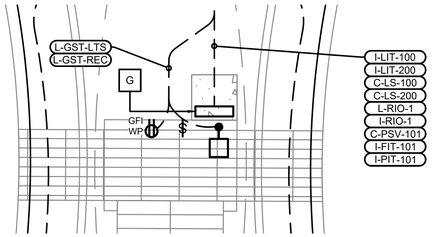
DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA
Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
SODIUM HYPOCHLORITE
ELECTRICAL & LIGHTING PLAN

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	1/2"=1'-0"

NO. SHEETS	105
SHEET NO.	90
DRAWING NO.	E-11



ENLARGED PLAN
SCALE: NTS

SCALE: 1" = 10' (22x34)
1" = 20' (11x17)

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED BY THE PHASE II CONTRACTOR, BUT REQUIRES COORDINATION WITH TANK ACCESSORIES AND THICKENED TANK BOSSES.

KEY NOTES:

A. BOND LIGHTNING PROTECTION TO GUARDRAIL. TYPICAL 4 LOCATIONS PER TANK. GUARDRAIL SHALL BE BONDED AS REQUIRED TO ALLOW USE AS LIGHTNING PROTECTION CONDUCTOR.

B. LIGHTNING PROTECTION DOWNCOMER IN PVC CONDUIT PAINTED TO MATCH INSTALLATION SURFACE. TYPICAL (4) LOCATIONS PER GST.

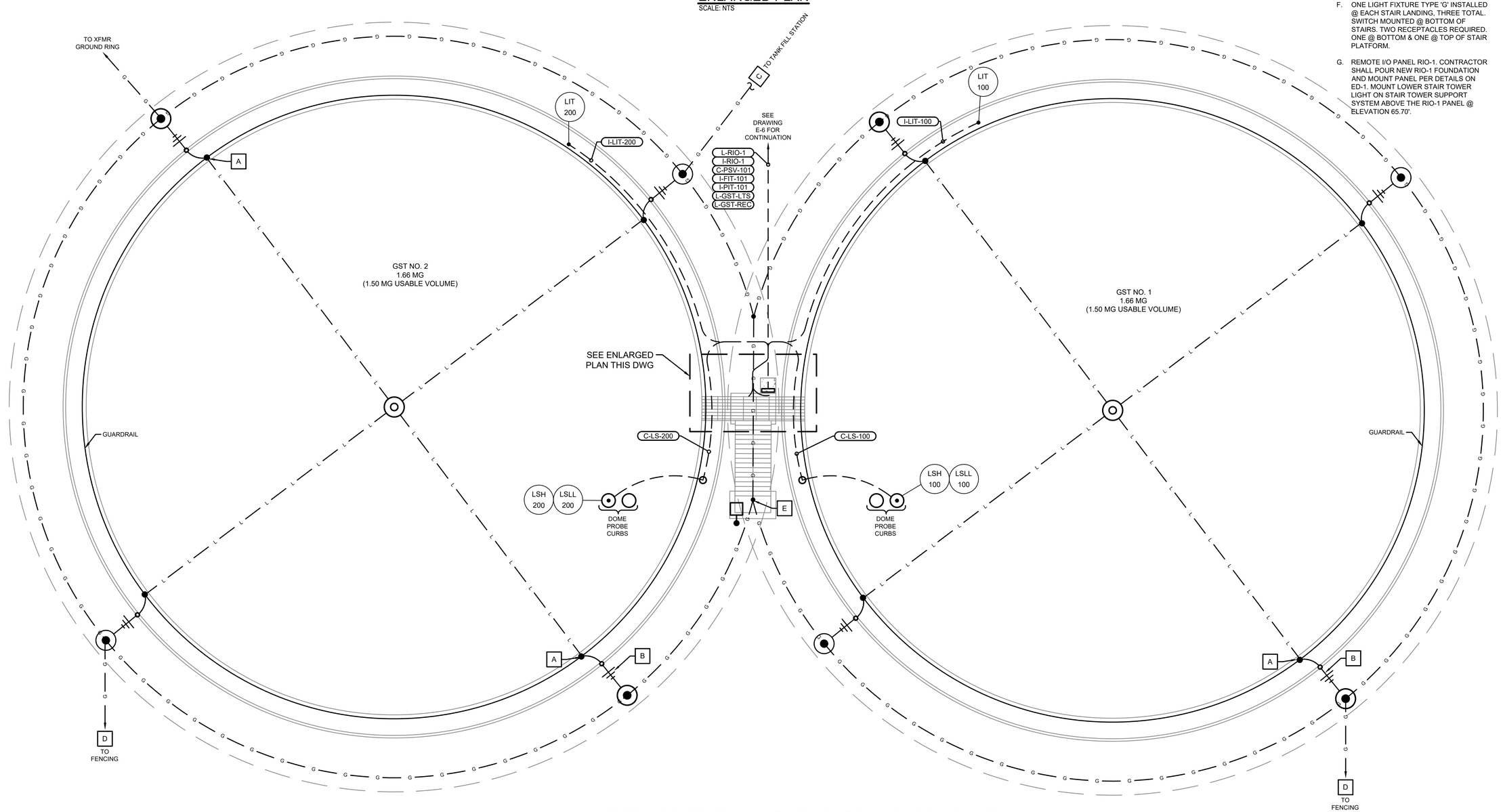
C. EXTEND GROUND GRID TO WATER EQUIPMENT PADS FOR CONNECTION TO INSTRUMENTS.

D. EXTEND GROUND GRID TO PROPOSED FENCE LINE IN (4) LOCATIONS.

E. BOND GROUND GRID TO STAIR PLATFORM IN (2) LOCATIONS.

F. ONE LIGHT FIXTURE TYPE 'G' INSTALLED @ EACH STAIR LANDING, THREE TOTAL. SWITCH MOUNTED @ BOTTOM OF STAIRS. TWO RECEPTACLES REQUIRED. ONE @ BOTTOM & ONE @ TOP OF STAIR PLATFORM.

G. REMOTE I/O PANEL RIO-1. CONTRACTOR SHALL POUR NEW RIO-1 FOUNDATION AND MOUNT PANEL PER DETAILS ON ED-1. MOUNT LOWER STAIR TOWER LIGHT ON STAIR TOWER SUPPORT SYSTEM ABOVE THE RIO-1 PANEL @ ELEVATION 65.70'.



GROUND STORAGE TANKS NO.1 & NO.2 ELECTRICAL PLANS
SCALE: 1" = 10'-0"

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1000
Architects AA - C000035
Engineers EB - 0000155
Surveyors LB - 0000783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

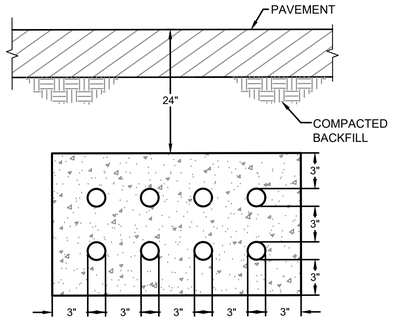
DESIGNED:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
GROUND STORAGE TANKS NO.1 & NO.2
ELECTRICAL PLANS

PROJ. NO. 502398244	DATE: APRIL 2020	SCALE: 1" = 10'-0"

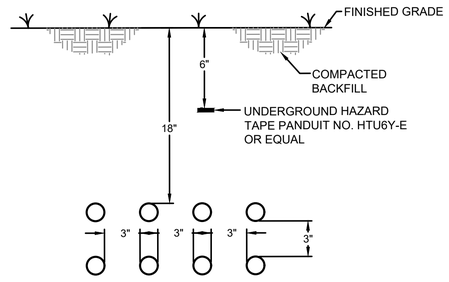
NO. SHEETS 105	SHEET NO. 91	DRAWING NO. E-12



NOTES:

1. CONCRETE SHALL BE 3000 PSI FIBER REINFORCED (RED IN COLOR).
2. CONDUITS INSTALLED UNDERGROUND SHALL BE PROVIDED WITH CARLON "SNAP-N-STAC" COMBO SPACERS DESIGNED TO PROVIDE 3" CONDUIT SEPARATION. SPACERS SHALL BE INSTALLED PER MFG. RECOMMENDATIONS.
3. CONDUIT SEPARATION MAY BE REDUCED TO 1-1/2" WITHIN 10' OF HANDHOLE/MANHOLE PROVIDED "FLOWABLE FILL" IS USED AROUND CONDUIT FOR COMPACTION.
4. POWER AND CONTROL DUCT BANKS SHALL BE SEPARATED BY A MIN. OF 12".

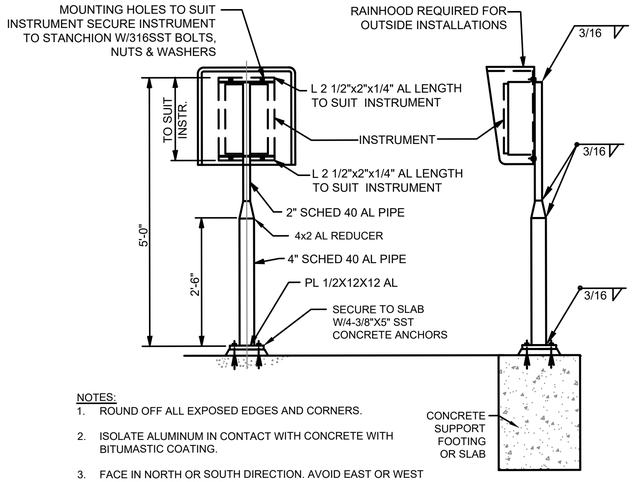
1 UNDER ROADWAY/DRIVEWAY PROTECTED CONDUIT INSTALLATION
NTS



NOTES:

1. CONDUITS INSTALLED UNDERGROUND SHALL BE PROVIDED WITH CARLON "SNAP-N-STAC" COMBO SPACERS DESIGNED TO PROVIDE 3" CONDUIT SEPARATION. SPACERS SHALL BE INSTALLED PER MFG. RECOMMENDATIONS.
2. CONDUIT SEPERATION MAY BE REDUCED TO 1-1/2" WITHIN 10' OF HANDHOLE/MANHOLE PROVIDED "FLOWABLE FILL" IS USED AROUND CONDUIT FOR COMPACTION.
3. POWER AND CONTROL DUCT BANKS SHALL BE SEPARATED BY A MIN. OF 12".

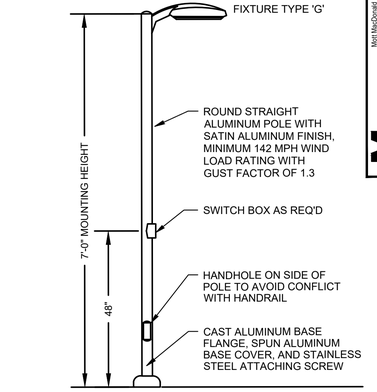
2 UNDERGROUND NON-PROTECTED CONDUIT INSTALLATION
NTS



NOTES:

1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.
2. ISOLATE ALUMINUM IN CONTACT WITH CONCRETE WITH BITUMASTIC COATING.
3. FACE IN NORTH OR SOUTH DIRECTION. AVOID EAST OR WEST FACING WHERE POSSIBLE.

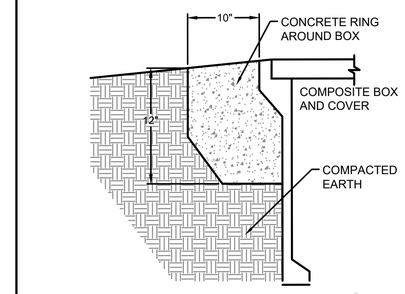
3 STANCHION SUPPORT FOR CASE MOUNTED INSTRUMENTS
NTS



NOTE:

1. REFER TO STRUCTURAL DRAWING SD-7, DETAIL 'H' FOR BASE MOUNTING.

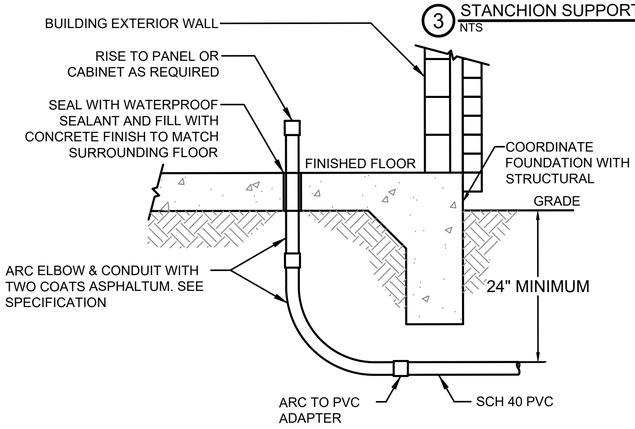
4 TYPICAL PLATFORM AREA LIGHT POLE DETAIL
NTS



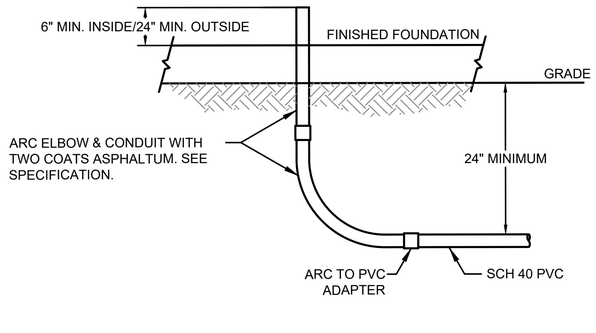
HANDHOLE NOTES:

1. CONCRETE ENCASEMENT TO BE 3,000 PSI FIBER REINFORCED.
2. HANDHOLES TO BE INSTALLED OVER 12" OF 3/4" BROKEN STONE OR GRAVEL ON COMPACTED SUBGRADE.
3. HANDHOLE SHALL BE 24"W X 24"L X 24"D MINIMUM, LARGER AS REQUIRED BY NEC. UL LISTED FOR TIER 15 HEAVY DUTY LOAD; HEAVY DUTY COVER WITH "ELECTRIC", "CONTROL" OR "TELCOM" LOGO.
4. CONDUIT SHALL BE RUN THROUGH HORIZONTALLY (STACK BOXES AS REQUIRED).

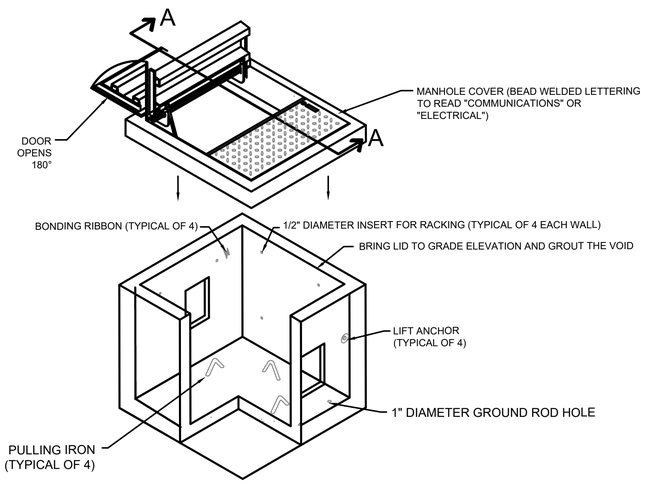
5 HANDHOLE DETAIL
NTS



6 TYPICAL CONDUIT INSTALLATION AT BUILDING DETAIL
NTS



7 TYPICAL U/G PVC CONDUIT INSTALLATION DETAIL
NTS



8 MANHOLE DETAIL
NTS

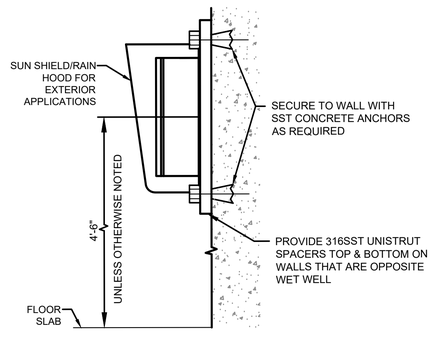
NOTES:

1. TOP ELEVATION OF MANHOLE COVER SHALL BE NO GREATER THAN 6" ABOVE FINISHED GRADE (SEE CIVIL GRADING PLAN)
2. CONTRACTOR TO SIZE MANHOLES PER NEC (MIN. SIZE 6' X 6' X 6').
3. MANHOLE SHALL BE PRECAST CONCRETE. PRECAST MFG RESPONSIBLE FOR ALL STRUCTURAL DESIGN REQUIREMENTS.
4. MANHOLE TO BE SET ON 12" OF 3/4" BROKEN STONE OR GRAVEL (COMPACT PER PRECAST MFG. REQUIREMENTS).

MANHOLE COVER SECTION A-A

COVERS SHALL HAVE FOLLOWING:

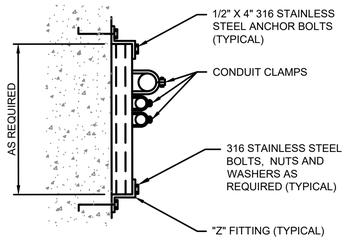
- PENTA HEAD BOLTS
- DIAMOND PLATE SLIP RESISTANT COVER
- 1" DIAMETER PICK HOLES FOR LIFTING
- BEAD WELDED LETTERING AS REQUIRED
- DIAMETER RECESSED DROP HANDLE
- HINGED DOORS
- HOT DIPPED GALVANIZING



NOTES:

1. INSTALLATION FOR CONCRETE WALL SHOWN. FOR CMU WALL USE SST TOGGLE BOLTS IN UNGROUTED CELLS AND SST WEDGE

9 WALL SUPPORT FOR CASE MOUNTED
NTS



NOTES:

1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. CHANNEL AND ALL SUPPORT DEVICES TO BE STAINLESS STEEL.
3. CHANNEL TO BE SPACED 5' MAXIMUM.

10 WALL SUPPORT FOR CONDUIT
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C00000535
Engineers EB - 00001155
Surveyors LB - 00006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

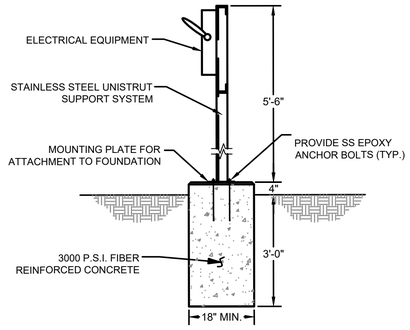
DESIGNED:	F. WELLS	
DRAWN BY:	H. ERSKINE	
DATE:	APRIL 2020	
CHECKED BY:	A. GIBBS	
DATE:	APRIL 2020	

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

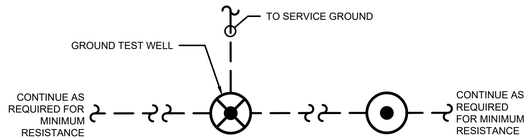
CONDUIT DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS SHOWN
NO. SHEETS	105
SHEET NO.	92
DRAWING NO.	ED-1

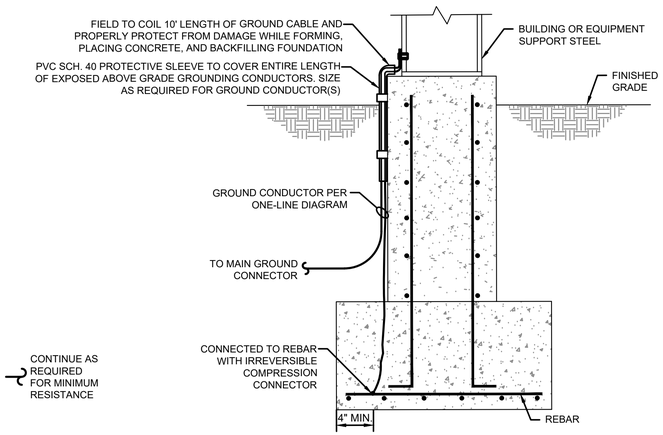


NOTES:
1. EQUIPMENT MOUNTING RACKS SHALL BE DESIGNED BY UNISTRUT TO WITHSTAND WIND LOAD PER STRUCTURAL PLANS WITH THE PROPOSED EQUIPMENT.

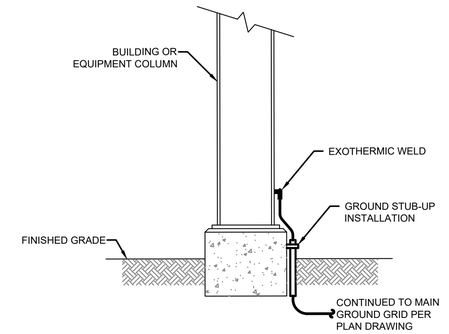
1 ELECTRICAL EQUIPMENT MOUNTING DETAIL
NTS



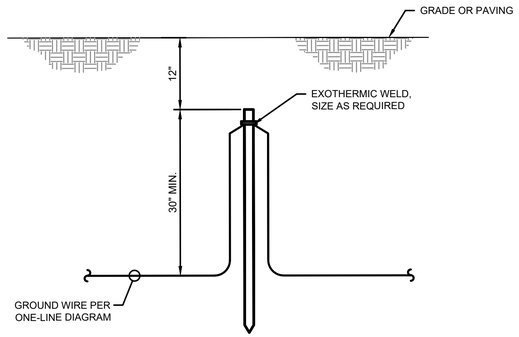
2 GROUND LOOP INSTALLATION
NTS



3 FOUNDATION GROUNDING
NTS

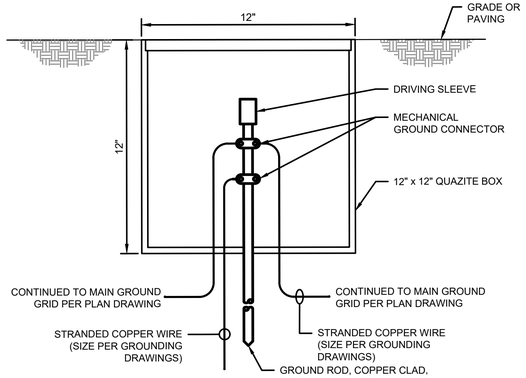


4 THERMAL GROUND FOR STRUCTURE OR BUILDING
NTS

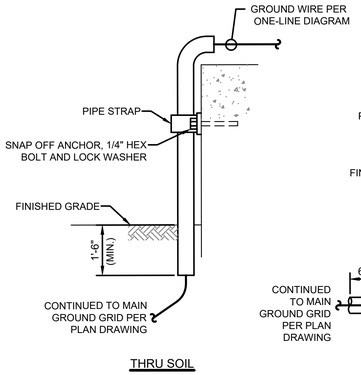


NOTE:
REFER TO SPECIFICATIONS FOR MINIMUM SYSTEM RESISTANCE TO GROUND. IF THIS RESISTANCE CANNOT BE MET WITH SINGLE 20' RODS, ADD ADDITIONAL SECTIONS TO RODS OR ADD NEW RODS AS REQUIRED SPACED WITH A DISTANCE EQUAL TO LENGTH OF GROUND ROD.

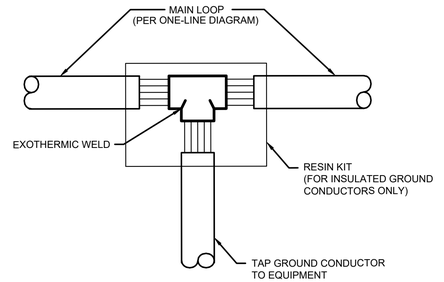
5 GROUND ROD ASSEMBLY
NTS



6 GROUND TEST WELL
NTS

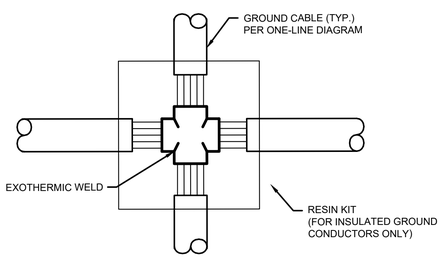


7 GROUND STUB UP INSTALLATION
NTS



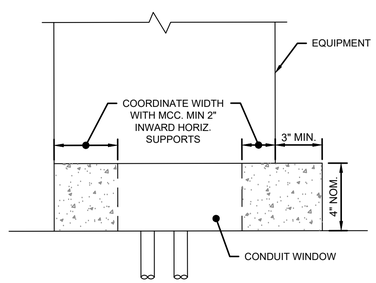
NOTE:
WHEN INSULATION IS REQUIRED PER THE ONE-LINE DIAGRAM, IT IS TO BE STRIPPED BACK ENOUGH FOR EXOTHERMIC WELD BUT NOT PAST RESIN MOLD.

8 GROUND LOOP & EQUIPMENT TAP - CADWELD
NTS



NOTE:
WHEN INSULATION IS REQUIRED PER THE ONE-LINE DIAGRAM, IT IS TO BE STRIPPED BACK ENOUGH FOR EXOTHERMIC WELD BUT NOT PAST RESIN MOLD.

9 MAIN GROUNDING LOOP 4 WAY TAP
NTS



10 FLOOR MOUNTED CONCRETE BASE
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone (904) 203-1090
Architects AA - C00000035
Engineers EB - 0000155
Surveyors LB - 0006783
MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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5.			
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DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

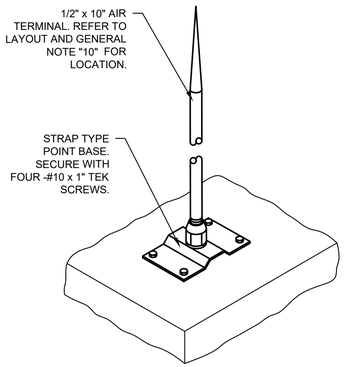
JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

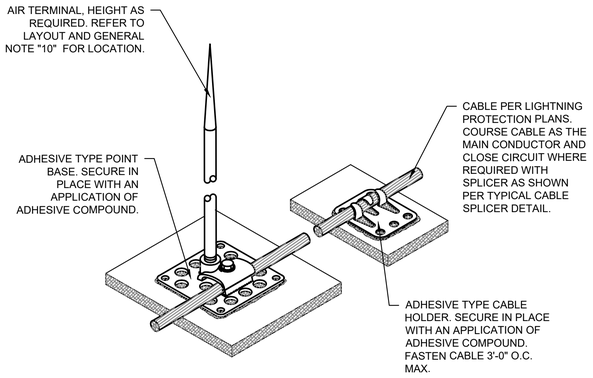
GROUNDING DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS SHOWN

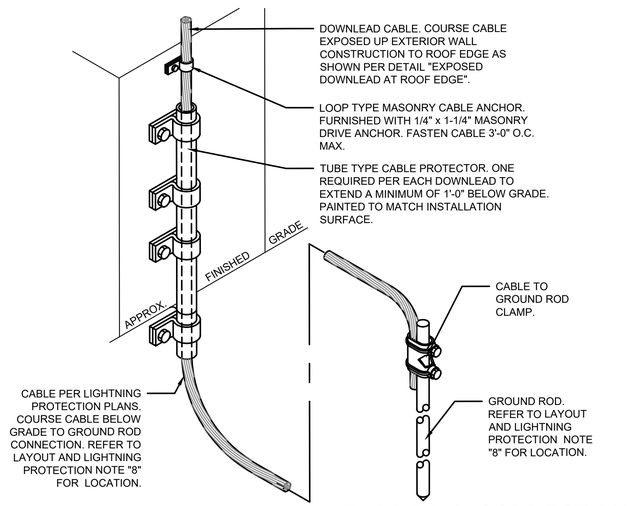
NO. SHEETS	105
SHEET NO.	93
DRAWING NO.	ED-2



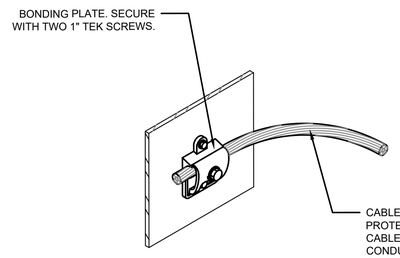
1 EQUIPMENT AIR TERMINAL
NTS



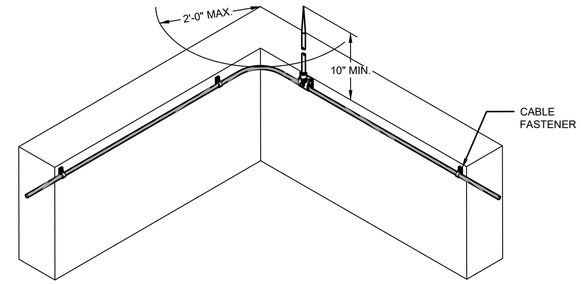
2 ADHESIVE AIR TERMINAL (PREFERRED)
NTS



3 EXPOSED DOWNLEAD TO GROUNDING CONNECTION
NTS

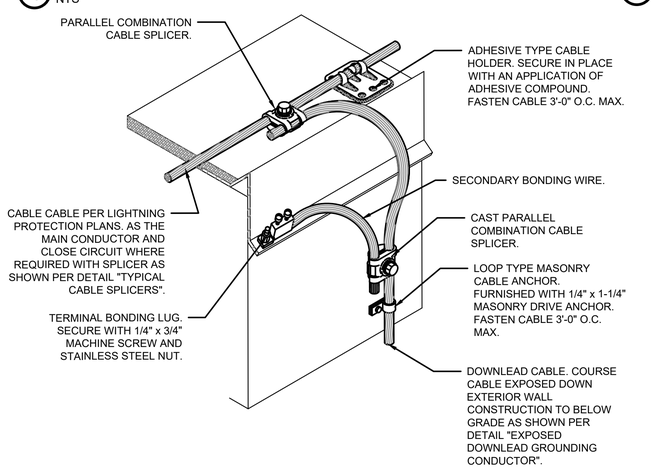


4 TYPICAL EQUIPMENT HOUSING BOND
NTS

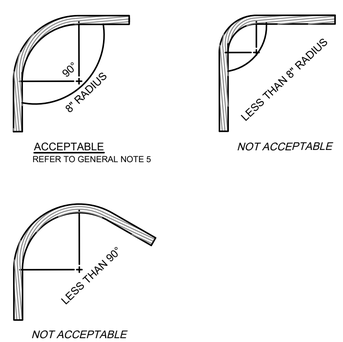


NOTE:
THIS DETAIL DEPICTS NO SPECIFIC AREA SHOWN ON THE LAYOUT. THIS DETAIL ILLUSTRATES TYPICAL AIR TERMINAL PLACEMENT FOR EITHER PARAPETS OR FLAT ROOFS.

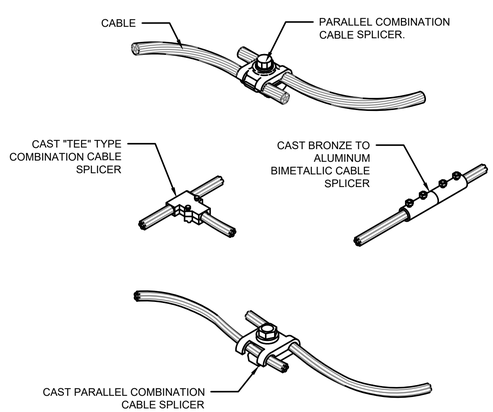
5 TYPICAL AIR TERMINAL PLACEMENT AT OUTSIDE CORNERS
NTS



6 EXPOSED DOWNLEAD AT ROOF EDGE
NTS



7 TYPICAL CABLE BEND REQUIREMENTS
NTS



8 TYPICAL CABLE SPLICERS
NTS

ISSUED FOR BID

LIGHTNING PROTECTION NOTES

1. THE DESIGN LAYOUT AND INSTALLATION DETAILS SHOWN HERON SHALL MEET THE REQUIREMENTS OF UNDERWRITERS' LABORATORIES STANDARD 96A FOR MASTER LABELED LIGHTNING PROTECTION SYSTEMS. THE ACTUAL MASTER LABEL WILL BE DELIVERED UPON COMPLETION OF INSTALLATION.
2. THE LIGHTNING PROTECTION INSTALLATION SHALL COMPLY IN ALL RESPECTS TO LIGHTNING PROTECTION INSTITUTE STANDARD 175. THE INSTALLATION SHALL BE MADE BY OR UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER. THE COMPLETED INSTALLATION WILL RECEIVE SYSTEM CERTIFICATION SUBMITTAL FOR LPI 176.
3. LIGHTNING PROTECTION SYSTEM SHALL BE DESIGNED BY A MEMBER OF THE LIGHTNING PROTECTION INSTITUTE. SYSTEM DESIGN SHALL BE SUBMITTED FOR REVIEW & APPROVAL. DESIGN SHALL MEET THE REQUIREMENTS OF NFPA 780, CURRENT EDITION.
4. METAL BODIES OF INDUCTANCE LOCATED ABOUT THE ROOF SUCH AS; METAL FLASHING GRAVEL STOPS, ROOF DRAINS, SOIL PIPE VENTS, INSULATION VENTS, LOUVERS AND DOOR FRAMES SITUATED WITHIN 6'-0" OF A LIGHTING CONDUCTOR OR BONDED METAL BODY SHALL BE INTERCONNECTED TO THE LIGHTING CONDUCTOR SYSTEM.
5. NO BEND OF A CONDUCTOR SHALL FORM A FINAL INCLUDED ANGLE OF LESS THAN 90° NOR SHALL HAVE A RADIUS OF BEND LESS THAN 8".
6. CONDUCTORS SHALL INTERCONNECT ALL AIR TERMINALS AND SHALL PROVIDE FOR A TWO WAY PATH FROM EACH AIR TERMINAL HORIZONTALLY OR DOWNWARD TO CONNECTIONS WITH GROUND TERMINALS.
7. ALL LIGHTNING PROTECTION CONDUCTORS SHALL BE FASTENED NOT MORE THAN 3'-0" MAXIMUM SPACING.
8. CONNECTIONS TO GROUND ROD OR GROUND LOOP CONDUCTOR SHALL BE MADE AT A POINT NOT LESS THAN 1'-0" BELOW GRADE AND 2'-0" AWAY FROM FOUNDATION WALL.
9. ACTUAL JOB-SITE CONDITIONS MAY NECESSITATE SLIGHT ALTERATIONS IN AIR TERMINAL AND GROUND ROD LOCATIONS.
10. AIR TERMINALS SHALL BE PLACED AT ALL UNPROTECTED OUTSIDE CORNERS AND LOCATED INTERMEDIATELY ON 20'-0" MAXIMUM SPACING AROUND THE ROOF PERIMETER OR RIDGE AND WITHIN 2'-0" OF OUTSIDE EDGE.
11. MIDROOF AIR TERMINALS SHALL BE PLACED ON 50'-0" MAXIMUM SPACING.
12. BOND ALL METALLIC PIPES INCLUDING WATER, FIRE, GAS, SEWER, STORM, ETC. WHICH ENTER THE STRUCTURE TO THE NEAREST DOWNLEAD, GROUND ROD OR GROUND LOOP.
13. BARE COPPER LIGHTNING PROTECTION MATERIALS SHALL NOT BE INSTALLED ON ALUMINUM ROOF OR SIDING OR OTHER ALUMINUM SURFACES AND VICE VERSA. ALUMINUM LIGHTNING PROTECTION MATERIALS SHALL NOT BE INSTALLED ON COPPER ROOFING OR COPPER SIDING OR OTHER COPPER SURFACES.
14. FOR SAKE OF CLARITY, WE HAVE NOT LABELED EACH INDIVIDUAL ITEM OF LIGHTNING PROTECTION MATERIALS ON THE ROOF PLAN. WE HAVE SHOWN INSTALLATION DETAILS AND HAVE CALLED OUT EACH OF THESE DETAILS ON THE ROOF PLAN ONLY AT RANDOM LOCATIONS.
15. THE LIGHTNING PROTECTION SYSTEM SHALL BE INSTALLED IN A NEAT AND INCONSPICUOUS MANNER SO THAT ALL COMPONENTS WILL BLEND IN WITH THE APPEARANCE OF THE BUILDING.
16. SEAL ENDS OF CONDUIT MOISTURE TIGHT WITH DUCT SEAL OR LEAD WEDGE.
17. ALL CONDUIT, CONDUIT FASTENERS AND MISCELLANEOUS STEEL SHALL BE MADE ELECTRICALLY CONTINUOUS THROUGHOUT CONSTRUCTION BY WELDING, CLIPPING, BOLTING OR OTHER APPROVED METHODS.
18. ALL REINFORCING, STRUCTURAL, FRAMING AND MISCELLANEOUS STEEL SHALL BE MADE ELECTRICALLY CONTINUOUS THROUGHOUT CONSTRUCTION BY WELDING, CLIPPING, BOLTING OR OTHER APPROVED METHODS.
19. TELEPHONE AND/OR ELECTRICAL SERVICE ENTRANCE GROUNDS SHALL BE INTERCONNECTED TO ONE LIGHTNING PROTECTION GROUND OR WATER PIPE.
20. ALL AREAS ILLUSTRATED IN THESE SUBMITTAL DOCUMENTS WHICH HAVE NOT BEEN PROVIDED WITH LIGHTNING PROTECTION COMPONENTS ARE PROTECTED FROM HIGHER ROOFS OR STRUCTURES. THESE AREAS FALL WITHIN A "ZONE OF PROTECTION" AS ESTABLISHED BY THE CURRENT EDITION OF THE CODE FOR PROTECTION AGAINST LIGHTNING "ANSI/NFPA" AND THE INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS AS PROVIDED BY STANDARD 96A OF UNDERWRITERS' LABORATORIES.
21. ALL ADHESIVE TYPE FITTINGS SHALL BE SET IN PLACE WITH AN APPLICATION OF COMPATIBLE ROOF CEMENT OR A/C NO. P899LN ADHESIVE COMPOUND BEFORE ROOF GRAVEL IS APPLIED.
22. ARRESTERS ARE REQUIRED ON ELECTRICAL SERVICE PANEL, DATA AND TELEPHONE LINE ENTRANCES BY THE ELECTRICAL CONTRACTOR OR BY VARIOUS UTILITY AGENCIES.

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MOTT MACDONALD

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNED:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

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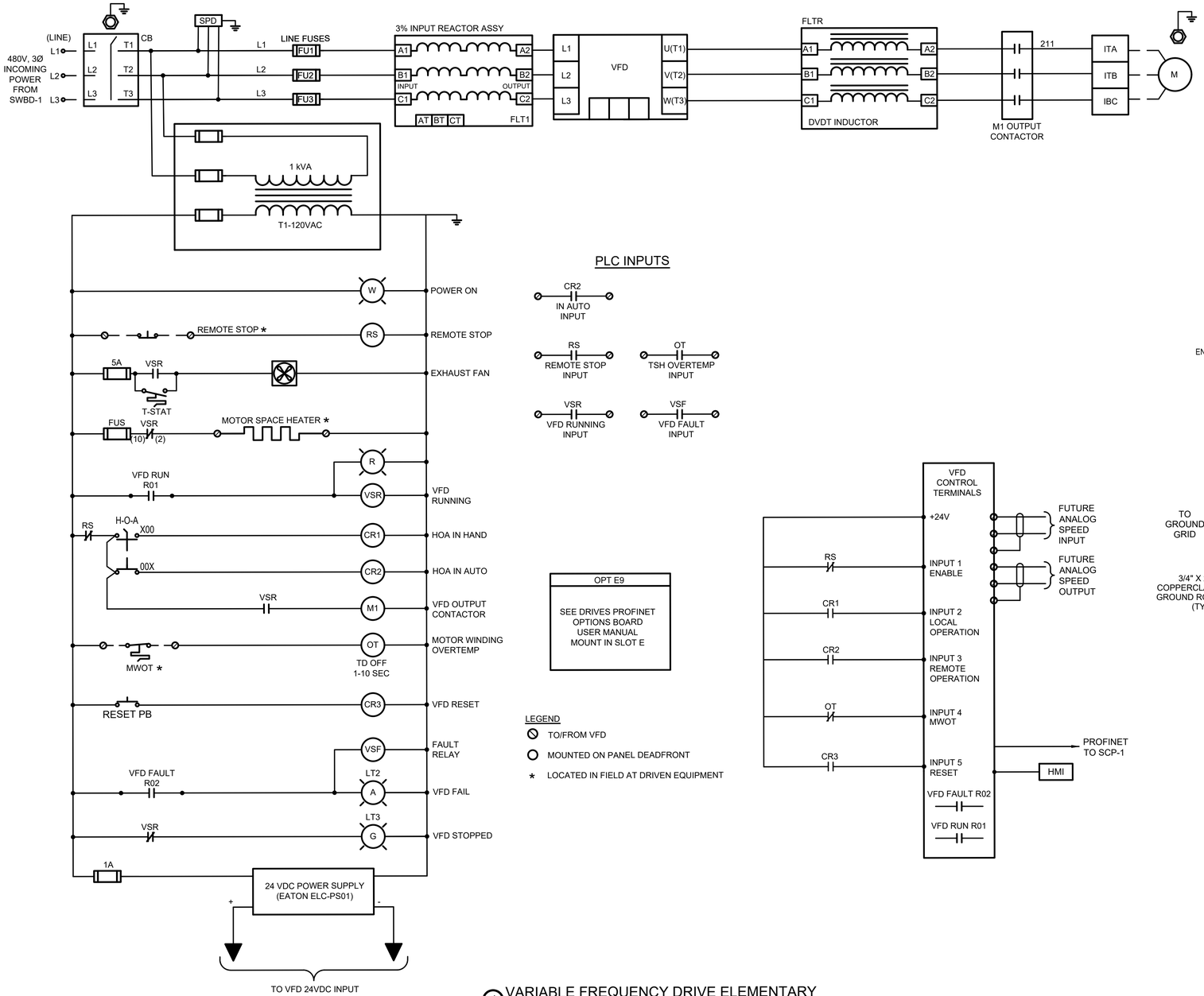
TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

LIGHTNING PROTECTION DETAILS

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	AS SHOWN

NO. SHEETS	105
SHEET NO.	94
DRAWING NO.	ED-3



PLC INPUTS

OPT E9

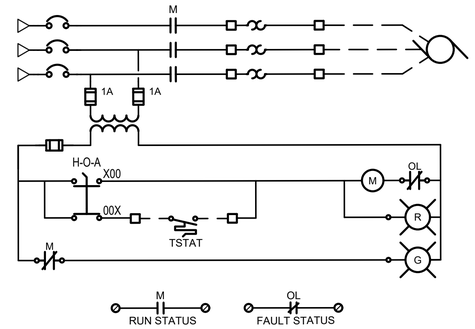
SEE DRIVES PROFINET OPTIONS BOARD USER MANUAL MOUNT IN SLOT E

LEGEND

- TO/FROM VFD
- MOUNTED ON PANEL DEADFRONT
- * LOCATED IN FIELD AT DRIVEN EQUIPMENT

1 VARIABLE FREQUENCY DRIVE ELEMENTARY

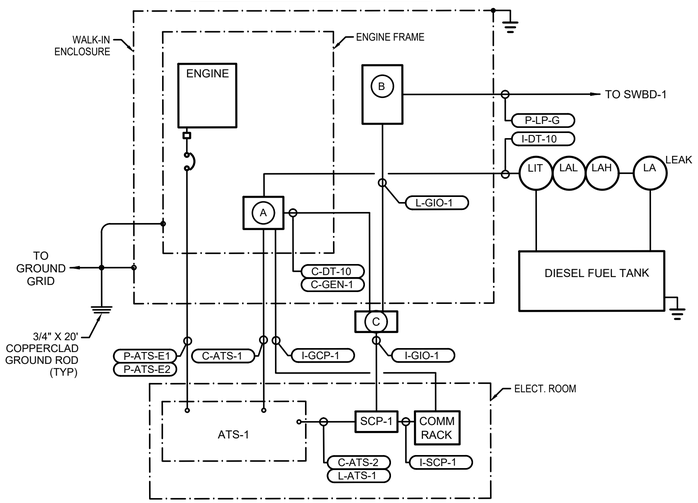
NO SCALE



2 EXHAUST FAN ELEMENTARY WIRING DIAGRAM

NTS

STANDBY DIESEL GENERATOR



GENERATOR EQUIPMENT LEGEND

- (A) GENERATOR CONTROL PANEL GCP-1.
- (B) MINI-POWER CENTER LP-G. 40A, 2P, 480V MAIN BREAKER. 15 kVA, 480-120/240V XFMR. 120/240V PANELBOARD, 24, 1P CKTS.
- (C) GENERATOR REMOTE I/O PANEL GIO-1.

NOTES

1. MINI-POWER CENTER PROVIDES POWER FOR BATTERY CHARGER, ENGINE HEATER, ALTERNATOR HEATER, ENCLOSURE LIGHTS AND RECEPTACLES AND GENERATOR REMOTE I/O PANEL PER SPECIFICATIONS.
2. THE FUEL STORAGE TANK SHALL BE EQUIPPED WITH A COMPLETE FUEL TANK LEVEL AND INTERSTITIAL LEAK MONITORING SYSTEM (SOLAR GAUGE MODEL EFG-8000-I).
3. THE STANDBY GENERATOR CONTROL PANEL SHALL BE EQUIPPED WITH A FUEL STORAGE TANK LEVEL MONITOR DATA CONVERTER (SOLAR GAUGE MODEL FGC-420.1) MOUNTED WITHIN THE GENERATOR CONTROL PANEL ENCLOSURE.

3 GENERATOR ELECTRICAL WIRING DIAGRAM

NTS

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TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

WIRING DETAILS

PROJ. NO.	502398244
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NO. SHEETS IN SET:	55
SHEET NO.	
DRAWING NO.	ED-4

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM OR PLC/DCS DISCRETE INPUT		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	BYPASS
C	CONDUCTIVITY (ELECTRICAL)			CONTROLLER	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			DRIVE (VFD)
E	VOLTAGE (EMF)		(PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE				
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		NOTIFY OR PLC/DCS DISCRETE INPUT	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RADIATION	REMOTE CONTROL	RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT, TORQUE, OR FORCE		WELL		
X	PLC COMMAND		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE			COMPUTE, CONVERT, RELAY	
Z	POSITION, DIMENSION, DIRECTION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTES:

1. SYMBOLS AND NOMENCLATURE ARE BASED ON ISA STANDARDS S5.1, S5.2, S5.4
2. SEE ASSOCIATED ELECTRICAL AND MECHANICAL SYMBOL SHEETS FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
3. POWER SUPPLIES FOR LOOPS OR SYSTEMS SHALL BE FURNISHED BY THE INSTRUMENTATION SUPPLIER TO MEET THE PARTICULAR CHARACTERISTICS (E.G. VOLTAGE AND CURRENT REQUIREMENTS) OF COMPONENTS IN EACH LOOP OR SYSTEM
4. X(S) REQUIRED FOR ALL EQUIPMENT TYPES LESS THAN FOUR CHARACTERS.

INSTRUMENT AND FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNT	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	NORMALLY INACCESSIBLE OR BEHIND THE PANEL DEVICES OR FUNCTIONS
DISCRETE INSTRUMENTS	XXX 000	XXX 000	XXX 000	XXX 000
SHARED DISPLAY, SHARED CONTROL (OIT, HMI)	XXX 000		XXX 000	XXX 000
PROGRAMMABLE LOGIC CONTROL	XXX 000	XXX 000	XXX 000	XXX 000
COMPUTER FUNCTION	XXX 000	XXX 000	XXX 000	XXX 000

XX — SUFFIX TO DIFFERENTIATE BETWEEN DIFFERENT INSTRUMENTATION DEVICES WITH THE SAME LOOP NUMBER AND INSTRUMENT IDENTIFICATION.

SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS OR SHARING A COMMON HOUSING

(ZZZ) — DESIGNATIONS OF CONTROL FUNCTIONS (ZZZ) ASSOCIATED WITH INSTRUMENT OR OTHER COMPONENTS.

AHC	-	AUTO/HOLD/CLOSE	OSC	-	OPEN/STOP/CLOSED
AM	-	AUTO/MANUAL	POT	-	POTENTIOMETER
DEV	-	DEVIATION	RE	-	RESET
MOA	-	MANUAL/OFF/AUTO	RL	-	RAISE/LOWER
HOR	-	HAND/OFF/REMOTE	RS	-	RUN/STOP
LOS	-	LOCKOUT STOP	RSL	-	RAISE/STOP/LOWER
LR	-	LOCAL/REMOTE	SD	-	SHUTDOWN
00	-	ON / OFF	SEL	-	SELECT
OC	-	OPEN/CLOSE	SP	-	SET POINT
			SR	-	START/RESET
			SS	-	STOP/START

XXX 000 (YY, ZZ) — PANEL MOUNTED PILOT LIGHT

DESIGNATIONS ASSOCIATED WITH PILOT LIGHTS:

FUNCTION (YY):	LENS/LAMP COLOR (ZZ):
F - FAULT	A - AMBER
R - RUNNING	G - GREEN
S - STOPPED	R - RED
## - PERCENT	W - WHITE

FYXX (*) — INSTRUMENT PANEL MOUNTED WITH COMPUTING OR CONVERTING FUNCTION

CONVERT (*/*)

E - VOLTAGE	H - HYDRAULIC
I - CURRENT	O - ELECTROMAGNETIC, SONIC
P - PNEUMATIC	R - RESISTANCE (ELECT.)
A - ANALOG	D - DIGITAL
B - BINARY	

COMPUTE (*)

Σ	SUMMING	Σ/n	AVERAGING
—	SUBTRACTOR	|:|	RATIO
X	MULTIPLYING	△	DIFFERENCE
÷	DIVIDING	>	HIGH SELECTING
n√	ROOT EXTRACTION	<	LOW SELECTING
P	PROPORTIONAL	⌐	INTEGRAL
R	DERIVATIVE	PID	PID

* ASTERISK IDENTIFIES FIELD INSTRUMENTS FURNISHED BY EQUIPMENT SUPPLIER

NON-ANALYTICAL FIELD INSTRUMENTS NOT IDENTIFIED BY SYMBOLS — XXX 000 (TT)

TT = R - RADAR
TD - THERMAL DISPERSION
RF - ADMITTANCE/CAPACITANCE

01103 / 01101 — BISECTED OCTAGON ADJACENT TO EQUIPMENT ITEM INDICATES THAT THE ELECTRICAL DEVICES (SWITCHES, CONTROL STATIONS, CONTROL PANELS, MCC COMPARTMENTS, WIRING, ETC.) OR SCADA DEVICES (I/O POINTS, HMI OBJECTS, ETC) FOR THE EQUIPMENT ITEM WITH THE LOOP NUMBER IN THE TOP OF THE HEXAGON ARE THE SAME AS THOSE FOR THE EQUIPMENT ITEM WITH THE LOOP NUMBER IN THE BOTTOM OF THE HEXAGON.

LINE SYMBOLS AND LEGEND

- DISCRETE ELECTRICAL SIGNAL (INPUTS) WITH INTERPOSING RELAYS (OUTPUTS)
- ANALOG ELECTRICAL SIGNAL WITH LIGHTNING SURGE ARRESTOR (INPUTS AND OUTPUTS)
- PROCESS/SIGNALS NOT CONNECTED (CROSSING)
- PROCESS/SIGNALS CONNECTED
- TERMINATION POINT(S) TO FUTURE EQUIPMENT
- FO FO FO — ETHERNET FIBER OPTIC CABLE
- CAT5 CAT5 — CAT 5 CABLE
- PRIMARY PROCESS (MAJOR)
- SECONDARY PROCESS (MINOR)
- XX BAR7 — MAIN FLOW STREAM
- XX BAR4 — SECONDARY FLOW STREAM
- XX BAR1 — OTHER FLOW STREAM

  CLOSED CONDUITS (DASHED LINE INDICATES ALTERNATE FLOW STREAM)
- XX — OPEN CHANNEL OR TANK FLOW STREAM

NOTE XX: FLOW STREAM IDENTIFICATION

- PACKAGE/SKID LIMITS
- INSTRUMENT OR PROCESS
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- SOFTWARE OR DATA LINK
- BSS — ELECTROMAGNETIC OR SONIC SIGNAL
- XX XX XX — INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

  XX = ES-ELECTRICAL SUPPLY HS-HYDRAULIC SUPPLY
  GS-GAS SUPPLY
  (REFER TO FLOW STREAM IDENTIFICATION FOR OTHER TYPES)
- NN/XX BCONT1 — FLOW STREAM NO. NN TO SHEET NO. XX
- NN/XX — SIGNAL NO. NN FROM SHEET NO. XX
- X BCONT5 X — SIGNAL CONTINUATION ON SAME DRAWING. X = 1,2,3,ETC.
- BCONT3 — FLOW STREAM TO OR FROM EQUIPMENT NOT SHOWN ON OTHER DRAWINGS

ABBREVIATIONS

AG	ABOVE GROUND
ALM	ALARM
APU	AUXILIARY POWER UNIT
A/M	AUTO-MANUAL SELECTOR
AS	AIR SUPPLY
ASV	ANTI-SURGE VALVE
ASC	ANTI-SURGE CONTROLLER
ATM	ATMOSPHERE
ATS	AUTO TRANSFER SWITCH
BD	BLOW DOWN
BF	BLIND FLANGE
BIF	BURIED ISOLATING FLANGE
BG	BELOW GROUND
CC	CORROSION COUPON
CE	CORROSION COUPON/PROBE
CL	CLOSE
CS	CONE STRAINER
CSC	CAR SEAL CLOSED
CSO	CAR SEAL OPEN
DE	DE-ENERGIZE
DR	DRYER REGULATOR
EFM	ELECTRONIC FLOW MEASUREMENT
EL	ELEVATION
ES	ELECTRIC SUPPLY
ESD	EMERGENCY SHUTDOWN
(F)	FURNISHED WITH EQUIPMENT
FB	FULL BORE
FI	FAIL INTERMEDIATE
FE	FLANGED END
FC	FAIL CLOSED
FO	FAIL OPEN
FOR	FORWARD OFF REVERSE
FL	FAIL LAST
F/S	FAST SLOW SELECTOR
GOV	GAS OPERATED VALVE
GS	GAS SUPPLY
HOA	HAND-OFF-AUTOMATIC SELECTOR
IC	INSPECTION CLOSURE
IJ	INSULATING JOINT
INS	INSULATING
LB	LINE BREAK
LC	LOCKED CLOSED
LDT	LINE DESIGNATION TABLE
LE	LEVEL ELEMENT
L/L	LEAD LAG SELECTOR
LO	LOCKED OPEN
LPC	LOW PRESSURE CONTROLLER
L/R	LOCAL-REMOTE SELECTOR
LSA	LIGHTNING SURGE ARRESTOR
LSP	LOWER SET POINT
MAOP	MAXIMUM ALLOWABLE OPERATING PRESSURE
MCC	MOTOR CONTROL CENTER
MOP	MAXIMUM OPERATING PRESSURE
MSCP	MASTER STATION CONTROL PANEL
MW	MANWAY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OP	OPEN
O/C	OPEN-CLOSE SELECTOR
OSC	OPEN-STOP-CLOSE SELECTOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLT-G	PILOT GAS
PG	POWER GAS
POS	POSITIONER
RA	REVERSE ACTING
RCP	REMOTE CONTROL PANEL
RCV	RECYCLE CONTROL VALVE
RO	RESTRICTION ORIFICE
ROC	FISHER ROC FLOW CONTROLLER
RTD	RESISTENCE TYPE TEMPERATURE ELEMENT
RTU	REMOTE TELEMETRY UNIT
RSP	RAISE SET POINT
SC	SAMPLE CONNECTION
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCP	STATION CONTROL PANEL
SIR	STATION INTERFACE RACK
SP	SET POINT
SPFB	SET POINT FEEDBACK
SR	STRESS RELIEF
SSD	STATION SHUTDOWN
S/S	START-STOP SELECTOR
STA	STATION
TBG	TUBING
TP	TIE-IN POINT
TS	TEMPORARY STRAINER
T/T	TANGENT TO TANGENT
TYP	TYPICAL
UCP	UNIT CONTROL PANEL
USD	UNIT SHUTDOWN
VFD	VARIABLE FREQUENCY DRIVE
VTA	VENT TO ATMOSPHERE
W/	WITH

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NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNED: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
INSTRUMENTATION LEGEND, ABBREVIATIONS AND NOTES

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 95
DRAWING NO. I-1

VALVES

- GATE VALVE (UNDEFINED VALVE)
- KNIFE GATE VALVE
- BALL VALVE
- PLUG VALVE
- GLOBE VALVE
- CHECK VALVE
- NEEDLE VALVE
- BUTTERFLY VALVE
- EXCESS FLOW VALVE
- ANGLE VALVE
- DOUBLE BLOCK & BLEED VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- BLOCK & BLEED VALVE (INSTRUMENT)
- PRESSURE RELIEF VALVE
- PRESSURE RELIEF VALVE
- VACUUM RELIEF VALVE
- PRESSURE AND VACUUM RELIEF VALVE
- WAFER-TYPE CHECK VALVE
- PUMP CONTROL VALVE
- BACKFLOW PREVENTOR
- PILOT OPERATED RELIEF VALVE
- RUPTURE DISC (PRESSURE)
- RUPTURE DISC (VACUUM)
- QUICK EXHAUST VALVE
- SHUTTLE VALVE
- SLUICE GATE
- AIR RELEASE VALVE
- PINCH VALVE
- BALL CHECK VALVE
- ROTARY VALVE
- DIAPHRAGM VALVE
- THROUGH PLUG VALVE

VALVE CONNECTIONS

- THREADED
- FLANGED
- SOCKET WELD
- BUTT WELD

ACTUATORS

- SOLENOID
- SOLENOID WITH MANUAL RESET
- MOTOR ACTUATOR
- GAS ACTUATOR VALVE
- GAS-HYDRAULIC ACTUATOR
- ELECTROHYDRAULIC
- VALVE ACTUATOR ELECTRO- PNEUMATIC CONVERTER
- ELECTRO-HYDRAULIC ACTUATOR
- AIR-HYDRAULIC ACTUATOR
- HAND CONTROL
- DIAPHRAGM ACTUATOR
- PISTON OPERATED VALVE
- DIAPHRAGM ACTUATOR VALVE W/MANUAL OVERRIDE
- PRESSURE REDUCING REGULATOR W/EXTERNAL PRESSURE TAP
- BACK PRESSURE REGULATOR
- PRESSURE-REDUCING REGULATOR
- 3-WAY TEMPERATURE REGULATOR SELF CONTAINED
- DIAPHRAGM ACTUATOR W/POSITIONER
- 3-WAY PILOT OPERATED VALVE VENTS WHEN DE-ENERGIZED
- PISTON OPERATOR, SINGLE ACTING
- PISTON OPERATOR, DOUBLE ACTING

FLOW METERS

- FLOW SIGHT GLASS
- ORIFICE PLATE IN QUICK-CHANGE FITTING
- TURBINE METER
- PITOT TUBE OR PITOT-VENTURI TUBE
- POSITIVE DISPLACEMENT METER
- FLOW CONDITIONER
- FLOW NOZZLE
- ROTAMETER
- VORTEX METER
- AVERAGING PITOT TUBE (ANNUBAR)
- MASS FLOW (CORIOLIS)
- ULTRASONIC METER
- VENTURI TUBE
- RESTRICTION ORIFICE FLANGE SET
- FLUME
- WEIR
- MAG METER

MISC - PIPING

- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- SWAGE
- FLANGE
- BLIND FLANGE (DRILL & TAP)
- UNION
- INSULATING FLANGES
- INSULATING UNION
- INSULATING JOINT
- SPECTACLE BLIND (OPEN)
- SPECTACLE BLIND (CLOSED)
- WELD CAP

MISC (CONT.)

- THREADED CAP
- THREADED PLUG (ON VALVE)
- HOSE CONNECTION
- PIG SIGNAL
- CLAPPER TYPE VENT (RAIN CAP)
- BLOW OFF CLOSURE
- GOOSE NECK VENT
- SPACER
- FILTER OR BASKET STRAINER
- STRAINER ("Y" TYPE)
- STRAINER ("T" TYPE)
- TS = TEMPORARY STRAINER
CS = CONE STRAINER
- EXPANSION JOINT
- EXPANSION LOOP
- FLEXIBLE CONNECTION
- TEST RING W/VALVE (BLEED RING)
- BLANKING CAP
- NOZZLE
- MULTIPLE COUPLINGS AROUND PIPE
- COUPLING
- PIPE TAP
- TIE-IN POINT
- IDENTIFIES CHANGE SUCH AS SPEC ID, INSULATION MATERIAL, (ABOVE/BELOW GRADE SHOWN)
- STEAM OR DRAIN TRAP
- FILTER-DRYER (INSTRUMENT)
- FILTER-DRYER W/REGULATOR(S) [INSTRUMENT]
- FILTER (INSTRUMENT)
- THREE PORT NEEDLE VALVE
- FIVE PORT NEEDLE VALVE
- HORN
- SPECIALTY ITEM (THIEF HATCH SHOWN)

MISC (CONT.)

- CORROSION COUPON
- EQUIPMENT CONNECTION POINT
X = CONNECTION ID PER VENDOR DRAWINGS
- OPEN DRAIN
- BARRED TEE
- STOPPLE
- NODE FOR PFD ONLY
CORRESPONDS TO LDT
- THICKNESS
- INSULATION FUNCTION & MATERIAL (TABLES 12 & 13)
- INSULATED & HEAT TRACED PIPE
- HEAT TRACE TYPE (TABLE 14) [ELECTRICAL TRACE SHOWN]
- ROTARY FEEDER

LEVEL MEASUREMENT DEVICES

- FLOAT SWITCH
- ULTRASONIC LEVEL TRANSDUCER

PUMPS/BLOWERS

- CENTRIFUGAL PUMP
- CENTRIFUGAL BLOWER FAN
- SCREW PUMP
- PISTON PUMP

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TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
INSTRUMENTATION LEGEND, ABBREVIATIONS AND NOTES

PROJ. NO.	502398244	
DATE:	APRIL 2020	
SCALE:	NO SCALE	

NO. SHEETS	105	
SHEET NO.	97	
DRAWING NO.	I-2	

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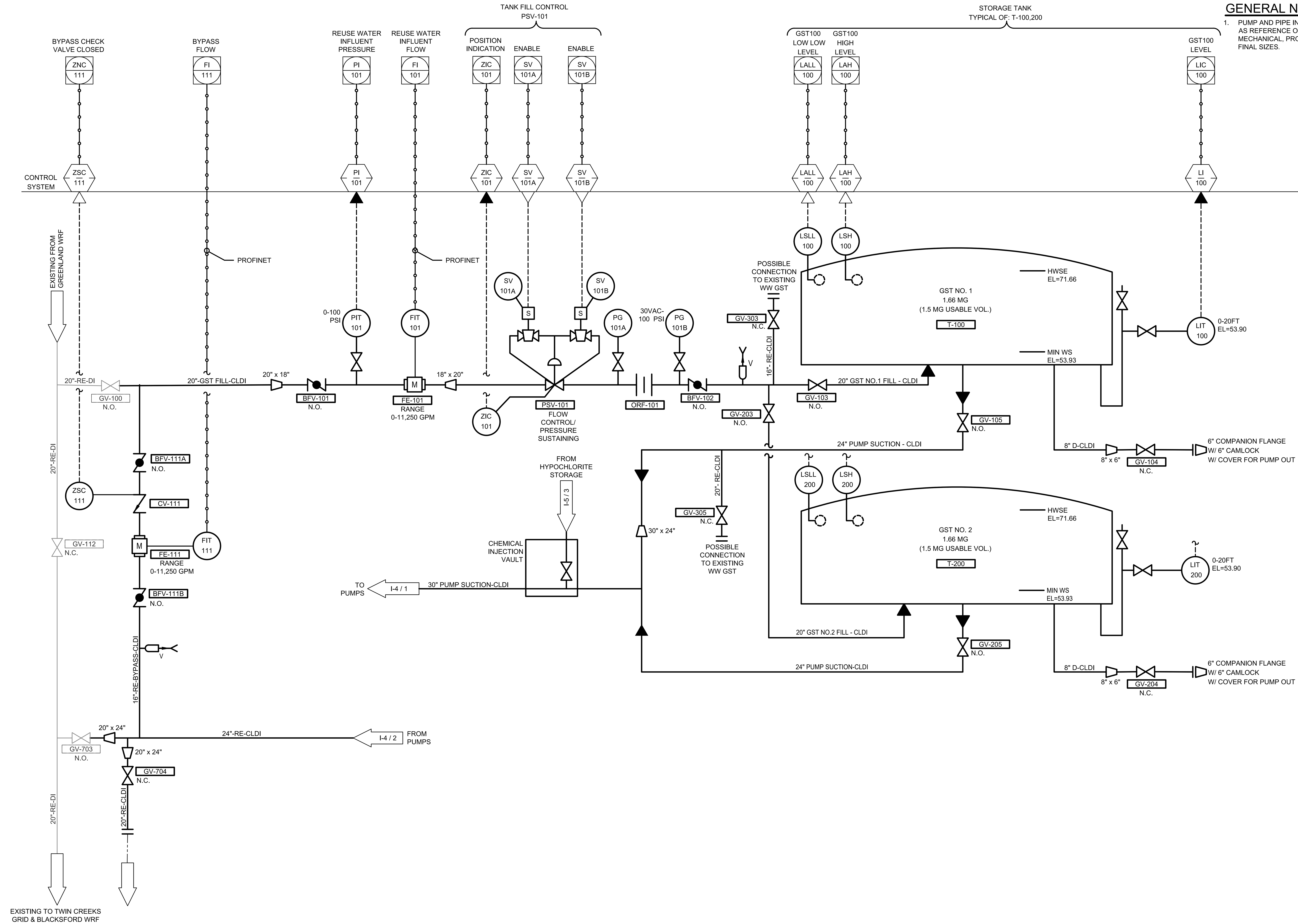

GENERAL NOTES

1. PUMP AND PIPE INFORMATION IS PROVIDED AS REFERENCE ONLY. REFER TO CIVIL, MECHANICAL, PROCESS DRAWINGS FOR FINAL SIZES.

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TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II GROUND STORAGE TANKS PROCESS & INSTRUMENTATION DIAGRAM

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 98
DRAWING NO. I-3

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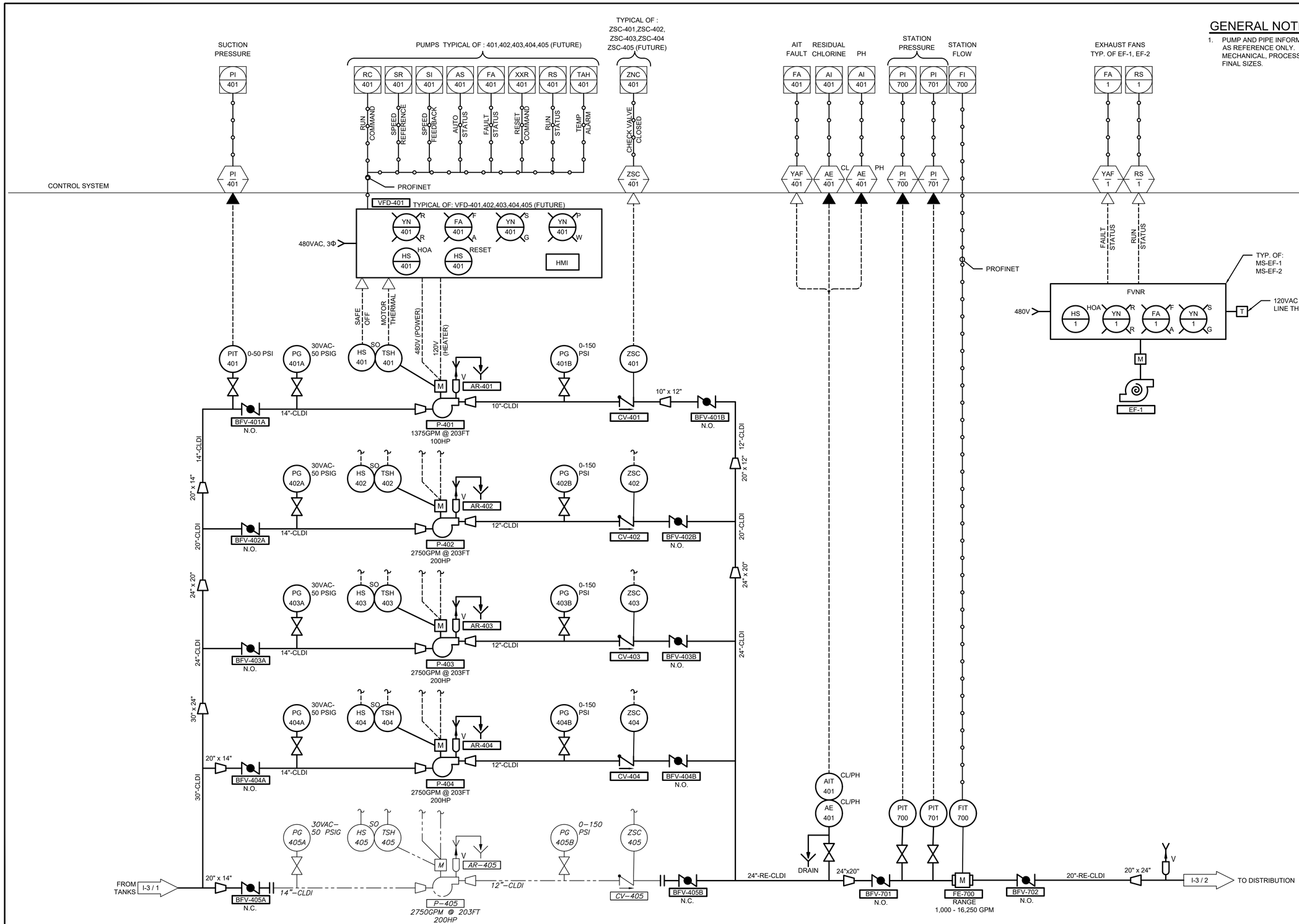

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1. PUMP AND PIPE INFORMATION IS PROVIDED AS REFERENCE ONLY. REFER TO CIVIL, MECHANICAL, PROCESS DRAWINGS FOR FINAL SIZES.

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone (904) 470-0405
Architects AA - C000165
Engineers EB - C000165
Surveyors LB - 0006783

NO.	BY	DATE	REVISIONS
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DESIGN ENGINEER: FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
PUMPS
PROCESS & INSTRUMENTATION DIAGRAM

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE

NO. SHEETS	105
SHEET NO.	99
DRAWING NO.	I-4

GENERAL NOTES

1. PUMP AND PIPE INFORMATION IS PROVIDED AS REFERENCE ONLY. REFER TO CIVIL, MECHANICAL, PROCESS DRAWINGS FOR FINAL SIZES.

SODIUM HYPOCHLORITE FEED PUMPS
TYPICAL OF: 511, 512

AS 511 — REMOTE STATUS
RS 511 — RUN STATUS
FA 511 — FAULT STATUS
SI 511 — SPEED FEEDBACK
RC 511 — RUN COMMAND
SR 511 — SPEED REFERENCE
PI 591 — HYPO PRESSURE
LIC 501 — HYPOCHLORITE TANK LEVEL
FA 501 — HYPOCHLORITE FAULT

SAFETY SHOWER FLOW SWITCH TYPICAL OF: FS-1, FS-2
FS 1

DISCHARGE TRENCH HIGH HIGH LEVEL
LAHH 611

GRINDER PUMP
TYPICAL OF: 631, 632

HIGH LEVEL — LAH 632
GRINDER RUN — YNR 631
GRINDER ALARM — YAF 631

CONTROL SYSTEM

CP-501 TRUCK FILL PANEL
120VAC, 1Φ
LI 501
YN 501 P W
HS 501 RESET ALARM
HORN/ STROBE

PROFINET

DIO-1 SODIUM HYPOCHLORITE CONTROL PANEL
120VAC, 1Φ
LOR HS 512
LOR HS 511
SP POT 512
SP POT 511
R YN 512
R YN 511
LIC 501
AS 511 — REMOTE STATUS
RS 511 — RUN STATUS
FA 511 — FAULT STATUS
SI 511 — SPEED FEEDBACK
RC 511 — RUN COMMAND
SR 511 — SPEED REFERENCE
PI 591
HMI

FS 1 — SAFETY SHOWER FLOW SWITCH FS-1

LAHH 611
LSHH 611
LSH/L 621
1-1/4" PVC
P-621 1/10HP, 1800RPM 20GPM@10FT
DISCHARGE TRENCH SUMP
CV-621
V-621

LAH 632
YNR 631
YAF 631
VCP-630
208VAC, 3Φ
208V, 3Ø

PSH 631
V-631
P-631 2HP, 1800RPM 12GPM@117.5FT
PSH 632
V-632
P-632 2HP, 1800RPM 12GPM@117.5FT
1 1/2" PVC
4" PVC
1 1/2"x4"
OFF SITE FM
RESTROOM DRAINS
3" PVC
GRINDER PUMP STATION

TANK LEVEL
LI 501
LT 501
6" VENT
3" PVC OVF-
SODIUM HYPOCHLORITE STORAGE TANK NO. 1 STORAGE TANK
T-501
FLUSHING CONNECTION
V-501
CV-501A
FILL
FILL
2" PVC
2" PVC
V-502
V-503
Y-STRAINER
V-504
1" PVC
V-505
1" PVC
V-506
V-511A
P-511 15.85GPH@20PSI 1/3HP
V-511B
3/4" PVC
3/4" PVC
PULSATION DAMPENER
PIT 591
PG 591
BPV-592 BACK PRESSURE VALVE
I-3 / 3
CHEMICAL INJECTION VAULT
DRAIN
GENIBUS VENDOR CABLES
120V, 1Ø
PROFINET
CP-500 HYPOCHLORITE PUMP CONTROLLER
120VAC, 1Φ
HYPOCHLORITE DISCHARGE PRESSURE
V-512A
P-512 15.85GPH@20PSI 1/3HP
V-512B
3/4" PVC

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Telephone: (904) 470-0405
Architects AA - 0000165
Engineers EB - 0000165
Surveyors LB - 0000783

MOTT MACDONALD

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DESIGN ENGINEER: FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO. 73859

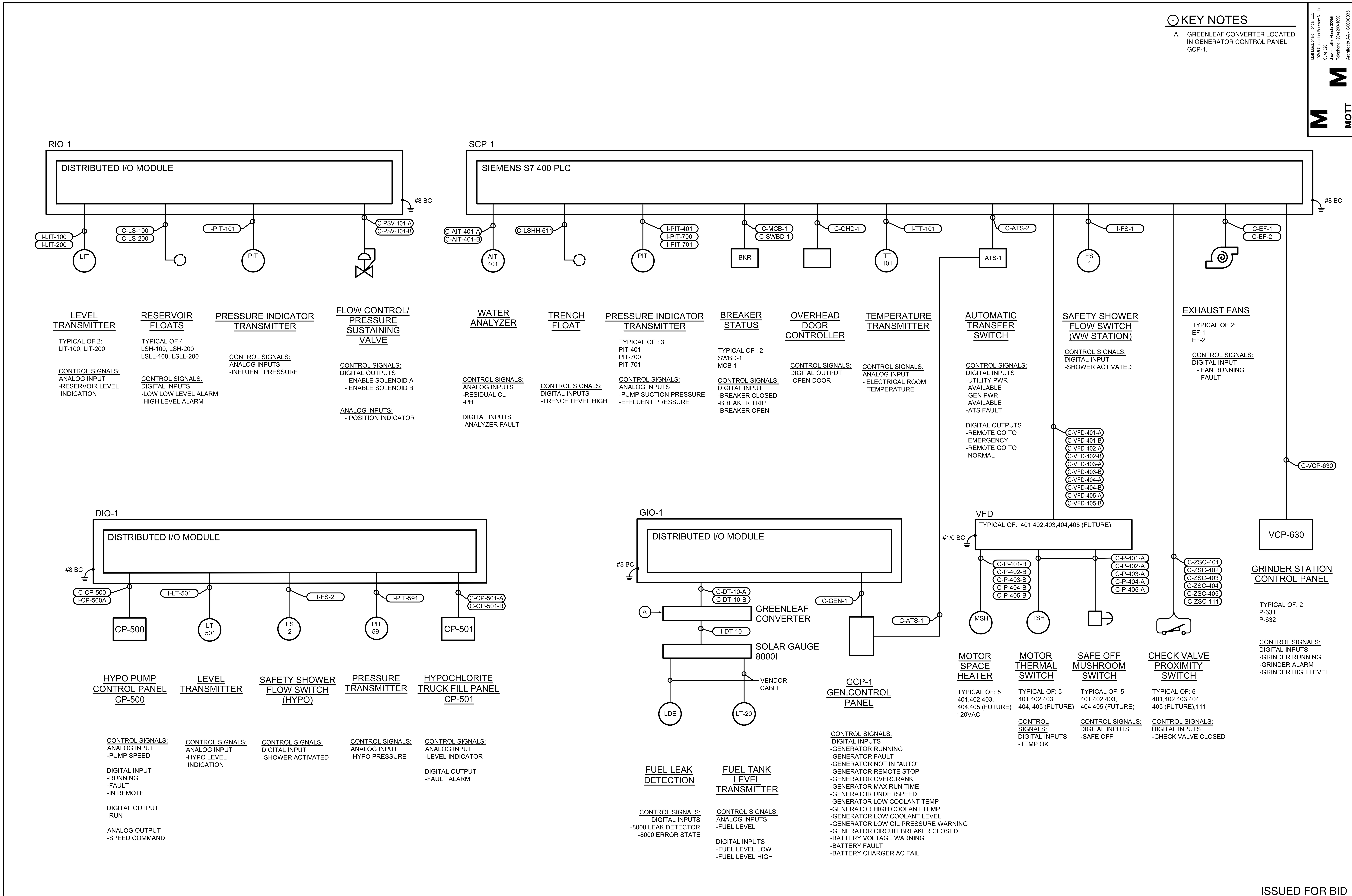
DESIGNER:	F. WELLS
DRAWN BY:	H. ERSKINE
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Communities

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II
HYPOCHLORITE & DRAINS
PROCESS & INSTRUMENTATION DIAGRAM

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE

NO. SHEETS	105
SHEET NO.	100
DRAWING NO.	I-5



ISSUED FOR BID

MOTT MACDONALD

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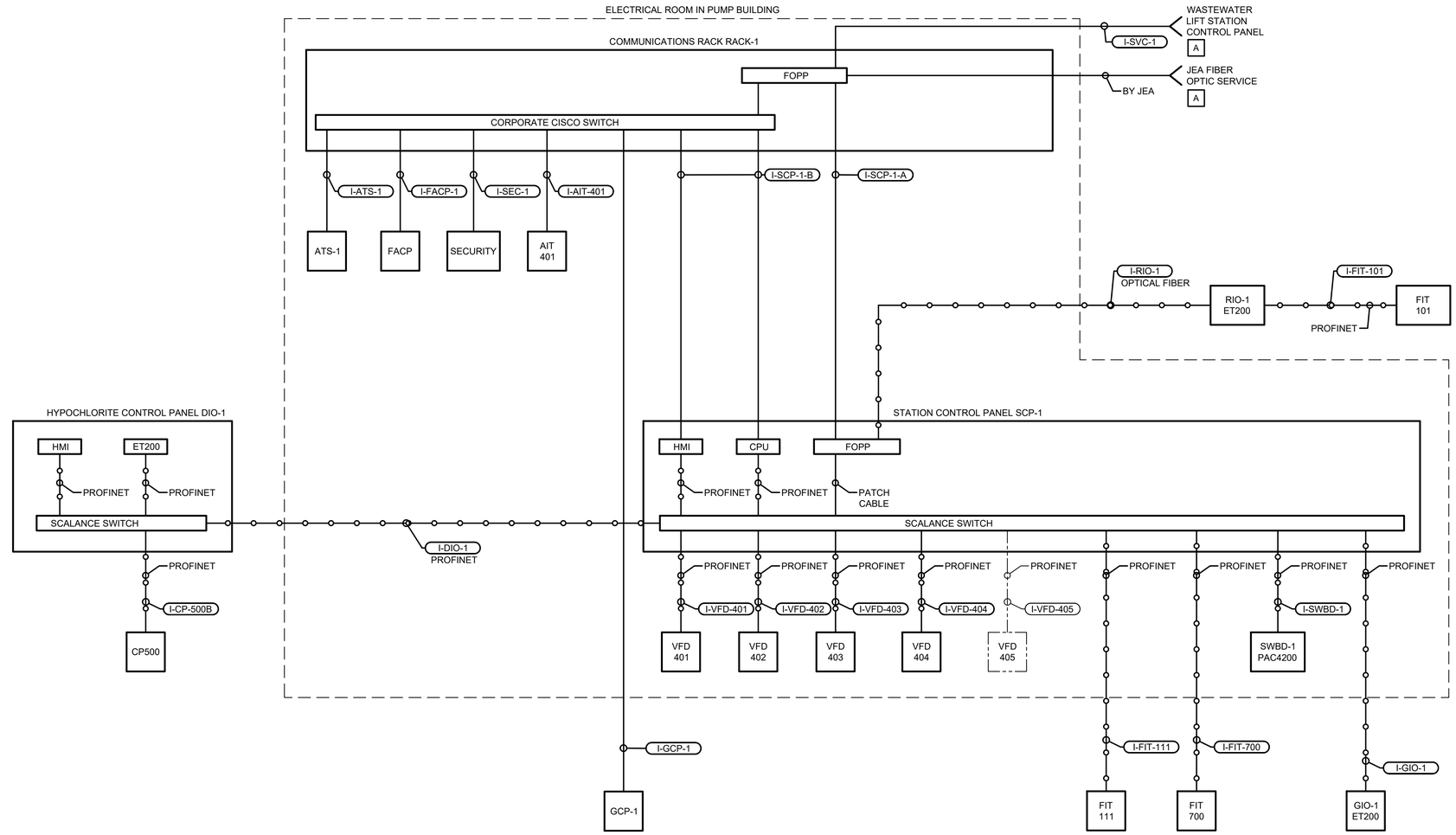
DATE:	APRIL 2020
CHECKED BY:	A. GIBBS
DATE:	APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER RE-PUMP STATION IMPROVEMENTS - PHASE II

CONTROL BLOCK DIAGRAM

PROJ. NO.	502398244
DATE:	APRIL 2020
SCALE:	NO SCALE
NO. SHEETS	105
SHEET NO.	101
DRAWING NO.	I-6



KEY NOTES

A. CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING AND TERMINATING 12CT MULTIMODE FIBER OPTIC CABLE FROM RACK-1 IN TWIN CREEKS RECLAIMED WATER REPUMP FACILITY ELECTRICAL ROOM TO EXISTING TWIN CREEKS WASTEWATER PUMP STATION CONTROL CABINET.

JEA SHALL BE RESPONSIBLE FOR CISCO SWITCH, FIBER PATCH PANELS, INCOMING FIBER OPTIC SERVICE, AND COMMISSIONING OF THE FIBER COMMUNICATIONS SYSTEM INCLUDING INTERCONNECTION COMMISSIONING OF THE WASTEWATER PUMP STATION FACILITY.

HARDWIRE I/O SUMMARY

ENCLOSURE	REV	SIGNAL TYPE	TOTAL COUNT	SPARE COUNT	SPARE %
SCP-1 ELEC ROOM		DO	4	1	25%
		DI	40	11	28%
		AO	4	4	100%
		AI	8	2	25%
GIO-1 GENSET		DO	0	0	0%
		DI	24	5	21%
		AO	0	0	0%
		AI	4	3	75%
DIO-1 HYPO AREA		DO	4	1	25%
		DI	16	9	56%
		AO	8	5	63%
		AI	8	4	50%
RIO-1 GST AREA		DO	4	2	50%
		DI	6	2	33%
		AO	0	0	0%
		AI	6	2	33%

NOTES:
1. SPARE COUNT INCLUDES DEDICATED SPARES
2. ONLY HARDWIRE SIGNALS SHOWN. SEE P&ID FOR PROFINET SIGNALS.

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DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
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DATE: APRIL 2020

JEA Building Community sm

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

NETWORK BLOCK DIAGRAM

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 102
DRAWING NO. I-7

EQUIPMENT TAG	ISA TAG	REV	HMI TAG (BY INTEGRATOR)	DESCRIPTION	SIGNAL TYPE	SIGNAL ACQUISITION	DISPLAY OR COMMAND ENERGIZED	DISPLAY OR COMMAND DE-ENERGIZED	HMI ALARM	DIAL OUT ALARM	TREND	HIST.	ENCLOSURE I/O WIRED	RACK	SLOT	POINT
T-501	LT-501			HYPO TANK HIGH LEVEL ALARM	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				CP-501			
T-501	LT-501			HYPO TANK LEVEL	AI	HARDWIRE	0-14.5 FT				X	X	CP-501			
PIT-591	PIT-591			HYPO DISCHARGE PRESSURE	AI	HARDWIRE	0-100 PSI				X	X	DIO-1			
P-511	AS-511			HYPO PUMP REMOTE STATUS	DI	HARDWIRE	IN AUTO	NOT IN AUTO					DIO-1			
P-512	AS-512			HYPO PUMP REMOTE STATUS	DI	HARDWIRE	IN AUTO	NOT IN AUTO					DIO-1			
P-511	FA-511			HYPO PUMP FAULT STATUS	DI	HARDWIRE	FAULT	OK	X				DIO-1			
P-512	FA-512			HYPO PUMP FAULT STATUS	DI	HARDWIRE	FAULT	OK	X				DIO-1			
P-511	RC-511			HYPO PUMP RUN COMMAND	DO	HARDWIRE	RUN	STOP					DIO-1			
P-512	RC-512			HYPO PUMP RUN COMMAND	DO	HARDWIRE	RUN	STOP					DIO-1			
P-511	RS-511			HYPO PUMP RUN STATUS	DI	HARDWIRE	RUNNING	STOPPED					DIO-1			
P-512	RS-512			HYPO PUMP RUN STATUS	DI	HARDWIRE	RUNNING	STOPPED					DIO-1			
P-511	SI-511			HYPO PUMP SPEED FEEDBACK	AI	HARDWIRE	0-100%				X	X	DIO-1			
P-512	SI-512			HYPO PUMP SPEED FEEDBACK	AI	HARDWIRE	0-100%				X	X	DIO-1			
P-511	SR-511			HYPO PUMP SPEED REFERENCE	AO	HARDWIRE	0-100%				X	X	DIO-1			
P-512	SR-512			HYPO PUMP SPEED REFERENCE	AO	HARDWIRE	0-100%				X	X	DIO-1			
T-501	LT-501			HYPO TANK HIGH LEVEL ALARM	DO	HARDWIRE	HIGH LEVEL	NORMAL	X				DIO-1			
T-501	LT-501			HYPO TANK LEVEL	AI	HARDWIRE	0-14.5 FT				X	X	DIO-1			
T-501	LT-501			HYPO TANK LEVEL TO CP-501	AO	HARDWIRE	0-14.5 FT				X	X	DIO-1			
FS-2	FS-2			HYPOCHLORITE EYEWASH FLOW SWITCH FS-2	DI	HARDWIRE	ALARM	OK	X				DIO-1			
				SPARE	AI	HARDWIRE							DIO-1			
				SPARE	AO	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	AI	HARDWIRE							DIO-1			
				SPARE	AO	HARDWIRE							DIO-1			
				SPARE	AO	HARDWIRE							DIO-1			
				SPARE	AO	HARDWIRE							DIO-1			
				SPARE	AO	HARDWIRE							DIO-1			
				SPARE	DO	HARDWIRE							DIO-1			
				SPARE	AI	HARDWIRE							DIO-1			
				SPARE	AI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
				SPARE	DI	HARDWIRE							DIO-1			
BC-1	AC-1			GEN. BATT. CHARGER - AC POWER FAIL	DI	HARDWIRE	AC FAILURE	OK	X				GIO-1			
BC-1	CO-1			GEN. BATT. CHARGER - FAULT	DI	HARDWIRE	FAULT	OK	X				GIO-1			
BC-1	BB-1			GEN. BATT. CHARGER - VOLTAGE WARNING	DI	HARDWIRE	WARNING	OK	X				GIO-1			
GEN-1	BC-1			GENERATOR BREAKER CLOSED	DI	HARDWIRE	CLOSED	OPEN	X				GIO-1			
GEN-1	CLL-1			GENERATOR COOLANT LEVEL LOW	DI	HARDWIRE	LOW COOLANT LEVEL	OK	X				GIO-1			
GEN-1	AF-1			GENERATOR FAULT STATUS	DI	HARDWIRE	FAULT	OK	X				GIO-1			
FT-8000	HL-8000			GENERATOR FUEL TANK HIGH LEVEL ALARM	DI	HARDWIRE	HIGH LEVEL	OK	X				GIO-1			
FT-8000	ER-8000			GENERATOR FUEL TANK LEAK DET. ERROR STATE	DI	HARDWIRE	ERROR	OK	X				GIO-1			
FT-8000	LDE-8000			GENERATOR FUEL TANK LEAK DETECTION	DI	HARDWIRE	LEAK	OK	X				GIO-1			
LT-20	LT-20			GENERATOR FUEL TANK LEVEL	AI	HARDWIRE	0-100%				X	X	GIO-1			
FT-8000	LL-8000			GENERATOR FUEL TANK LOW LEVEL ALARM	DI	HARDWIRE	LOW LEVEL	OK	X				GIO-1			
GEN-1	HCT-1			GENERATOR HIGH COOLANT TEMP	DI	HARDWIRE	COOLANT TEMP HIGH	OK	X				GIO-1			
GEN-1	LCT-1			GENERATOR LOW COOLANT TEMP	DI	HARDWIRE	COOLANT TEMP LOW	OK	X				GIO-1			
GEN-1	OPL-1			GENERATOR LOW OIL PRESSURE	DI	HARDWIRE	LOW OIL PRESSURE	OK	X				GIO-1			
GEN-1	MR-1			GENERATOR MAX RUNTIME	DI	HARDWIRE	MAX RUNTIME	OK	X				GIO-1			
GEN-1	NIA-1			GENERATOR NOT IN AUTO	DI	HARDWIRE	NOT IN AUTO	IN AUTO	X				GIO-1			
GEN-1	OC-1			GENERATOR OVERCRANK	DI	HARDWIRE	FAULT	OK	X				GIO-1			
GEN-1	RS-1			GENERATOR REMOTE STOP	DI	HARDWIRE	REMOTE STOP	OK	X				GIO-1			
GEN-1	RA-1			GENERATOR RUN STATUS	DI	HARDWIRE	RUNNING	STOPPED	X				GIO-1			
GEN-1	US-1			GENERATOR UNDERSPEED	DI	HARDWIRE	UNDERSPEED	OK	X				GIO-1			
				SPARE	AI	HARDWIRE							GIO-1			
				SPARE	AI	HARDWIRE							GIO-1			
				SPARE	AI	HARDWIRE							GIO-1			
				SPARE	DI	HARDWIRE							GIO-1			
				SPARE	DI	HARDWIRE							GIO-1			
				SPARE	DI	HARDWIRE							GIO-1			
				SPARE	DI	HARDWIRE							GIO-1			
				SPARE	DI	HARDWIRE							GIO-1			
ATS-1	ATS-1			ATS-1 - GENERATOR POWER AVAILABLE	DI	HARDWIRE	GEN. AVAIL						SCP-1			
ATS-1	ATS-1			ATS-1 - FAULT	DI	HARDWIRE	FAULT	OK	X				SCP-1			
ATS-1	ATS-1			ATS-1 - GO TO EMERGENCY	DO	HARDWIRE	IN EMERGENCY						SCP-1			
ATS-1	ATS-1			ATS-1 - GO TO NORMAL	DO	HARDWIRE	IN NORMAL						SCP-1			
ATS-1	ATS-1			ATS-1 - UTILTY POWER AVAILABLE	DI	HARDWIRE	UTIL. AVAIL.						SCP-1			
CV-111	ZSC-111			BYPASS CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
AIT-401	YAF-401			CHLORINE RESIDUAL FAULT ALARM	DI	HARDWIRE	ALARM	NORMAL	X				SCP-1			
CV-405	ZSC-405			FUTURE PUMP CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
P-631	YAF-631			GRINDER PUMP ALARM	DI	HARDWIRE	ALARM	OK	X				SCP-1			
P-632	YAF-632			GRINDER PUMP ALARM	DI	HARDWIRE	ALARM	OK	X				SCP-1			
P-632	LAH-632			GRINDER PUMP RUN LEVEL	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				SCP-1			

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JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

IO LIST

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 103
DRAWING NO. I-8

EQUIPMENT TAG	ISA TAG	REV	HMI TAG (BY INTEGRATOR)	DESCRIPTION	SIGNAL TYPE	SIGNAL ACQUISITION	DISPLAY OR COMMAND ENERGIZED	DISPLAY OR COMMAND DE-ENERGIZED	HMI ALARM	DIAL OUT ALARM	TREND	HIST.	ENCLOSURE I/O WIRED	RACK	SLOT	POINT
P-631	YNR-631			GRINDER PUMP RUNNING	DI	HARDWIRE	RUNNING	STOPPED					SCP-1			
P-632	YNR-632			GRINDER PUMP RUNNING	DI	HARDWIRE	RUNNING	STOPPED					SCP-1			
P-631	LAH-631			GRINDER STATION RUN LEVEL	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				SCP-1			
T-100	LIT-100			GST 100 TANK LEVEL	AI	HARDWIRE	0-36 FT				X	X	RIO-1			
T-100	LSH-100			GST 100 TANK LEVEL HIGH	DI	HARDWIRE	NORMAL	LOW LEVEL	X				RIO-1			
T-100	LSLL-100			GST 100 TANK LEVEL LOW LOW	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				RIO-1			
T-200	LIT-200			GST 200 TANK LEVEL	AI	HARDWIRE	0-36 FT				X	X	RIO-1			
T-200	LSH-200			GST 200 TANK LEVEL HIGH	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				RIO-1			
T-200	LSLL-200			GST 200 TANK LEVEL LOW LOW	DI	HARDWIRE	NORMAL	LOW LEVEL	X				RIO-1			
FS-1	FS-1			HYPOCHLORITE EYEWASH FLOW SWITCH FS-1	DI	HARDWIRE	ALARM	OK	X				SCP-1			
OHD-1	OC-1			OVERHEAD DOOR FLOOD OPEN COMMAND	DO	HARDWIRE	OPEN						SCP-1			
PSV-101	ZIC-101			PSV POSITION INDICATION	AI	HARDWIRE	0-100%				X	X	RIO-1			
PSV-101-A	SV-101-A			PSV SOLENOID A	DO	HARDWIRE	ENABLE	OFF					RIO-1			
PSV-101-B	SV-101-B			PSV SOLENOID B	DO	HARDWIRE	ENABLE	OFF					RIO-1			
CV-401	ZSC-401			PUMP CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
CV-402	ZSC-402			PUMP CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
CV-403	ZSC-403			PUMP CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
CV-404	ZSC-404			PUMP CHECK VALVE	DI	HARDWIRE	CLOSED	OPEN					SCP-1			
PIT-401	PIT-401			PUMP SUCTION PRESSURE	AI	HARDWIRE	0 - 50 PSI				X	X	SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
AIT-401-CL	AE-401-CL			STATION CHLORINE RESIDUAL	AI	HARDWIRE	0-5 PPM				X	X	SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
PIT-700	PIT-700			STATION DISCHARGE PRESSURE	AI	HARDWIRE	0-100 PSI				X	X	SCP-1			
PIT-701	PIT-701			STATION DISCHARGE PRESSURE	AI	HARDWIRE	0-100 PSI				X	X	SCP-1			
AIT-401-PH	AE-401-PH			STATION PH	AI	HARDWIRE	0-14				X	X	SCP-1			
PIT-101	PIT-101			TANK FILL SIDE PRESSURE	AI	HARDWIRE	0-50 PSI				X	X	RIO-1			
LSHH-611	LAHH-611			TRENCH HIGH LEVEL ALARM	DI	HARDWIRE	HIGH LEVEL	NORMAL	X				SCP-1			
EF-1	FA-1			EXHAUST FAN 1 FAULT STATUS	DI	HARDWIRE	FAULT	NORMAL	X				SCP-1			
EF-1	RS-1			EXHAUST FAN 1 RUN STATUS	DI	HARDWIRE	RUNNING	NOT RUNNING					SCP-1			
EF-2	FA-2			EXHAUST FAN 2 FAULT STATUS	DI	HARDWIRE	FAULT	NORMAL	X				SCP-1			
EF-2	RS-2			EXHAUST FAN 2 RUN STATUS	DI	HARDWIRE	RUNNING	NOT RUNNING					SCP-1			
TT-101	TT-101			ELECTRICAL ROOM TEMPERATURE	AI	HARDWIRE	32-122OF		X		X	X	SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
				SPARE	AI	HARDWIRE							SCP-1			
				SPARE	AO	HARDWIRE							SCP-1			
				SPARE	AO	HARDWIRE							SCP-1			
				SPARE	AO	HARDWIRE							SCP-1			
				SPARE	AO	HARDWIRE							SCP-1			
SWBD-1	SPD-1			SWITCHBOARD SPD FAULT STATUS	DI	HARDWIRE	FAULT	NORMAL	X				SCP-1			
SWBD-1	BC-1			SWBD-1 BREAKER CLOSED	DI	HARDWIRE	CLOSED	NOT CLOSED					SCP-1			
SWBD-1	BT-1			SWBD-1 BREAKER TRIPPED	DI	HARDWIRE	TRIPPED	NORMAL	X				SCP-1			
SWBD-1	BO-1			SWBD-1 BREAKER OPENED	DI	HARDWIRE	OPEN	NOT OPEN	X				SCP-1			
MCB-1	BC-1			MCB-1 BREAKER CLOSED	DI	HARDWIRE	CLOSED	NOT CLOSED					SCP-1			
MCB-1	BT-1			MCB-1 BREAKER TRIPPED	DI	HARDWIRE	TRIPPED	NORMAL	X				SCP-1			
MCB-1	BO-1			MCB-1 BREAKER OPENED	DI	HARDWIRE	OPEN	NOT OPEN	X				SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DI	HARDWIRE							SCP-1			
				SPARE	DO	HARDWIRE							SCP-1			
				SPARE	DO	HARDWIRE							SCP-1			
				SPARE	DO	HARDWIRE							SCP-1			
P-401	SO-401			PUMP MOTOR SAFE OFF	DI	HARDWIRE	NORMAL	REMOTE STOP	X				VFD-401			
P-401	TSH-401			PUMP MOTOR THERMAL	DI	HARDWIRE	NORMAL	HI TEMP	X				VFD-401			
P-402	SO-402			PUMP MOTOR SAFE OFF	DI	HARDWIRE	NORMAL	REMOTE STOP	X				VFD-402			
P-402	TSH-402			PUMP MOTOR THERMAL	DI	HARDWIRE	NORMAL	HI TEMP	X				VFD-402			
P-403	SO-403			PUMP MOTOR SAFE OFF	DI	HARDWIRE	NORMAL	REMOTE STOP	X				VFD-403			
P-403	TSH-403			PUMP MOTOR THERMAL	DI	HARDWIRE	NORMAL	HI TEMP	X				VFD-403			
P-404	SO-404			PUMP MOTOR SAFE OFF	DI	HARDWIRE	NORMAL	REMOTE STOP	X				VFD-404			
P-404	TSH-404			PUMP MOTOR THERMAL	DI	HARDWIRE	NORMAL	HI TEMP	X				VFD-404			
P-405	SO-405			FUTURE PUMP MOTOR SAFE OFF	DI	HARDWIRE	NORMAL	REMOTE STOP	X				VFD-405			
P-405	TSH-405			FUTURE PUMP MOTOR THERMAL	DI	HARDWIRE	NORMAL	HI TEMP	X				VFD-405			

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 0000155
Surveyors LB - 0006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

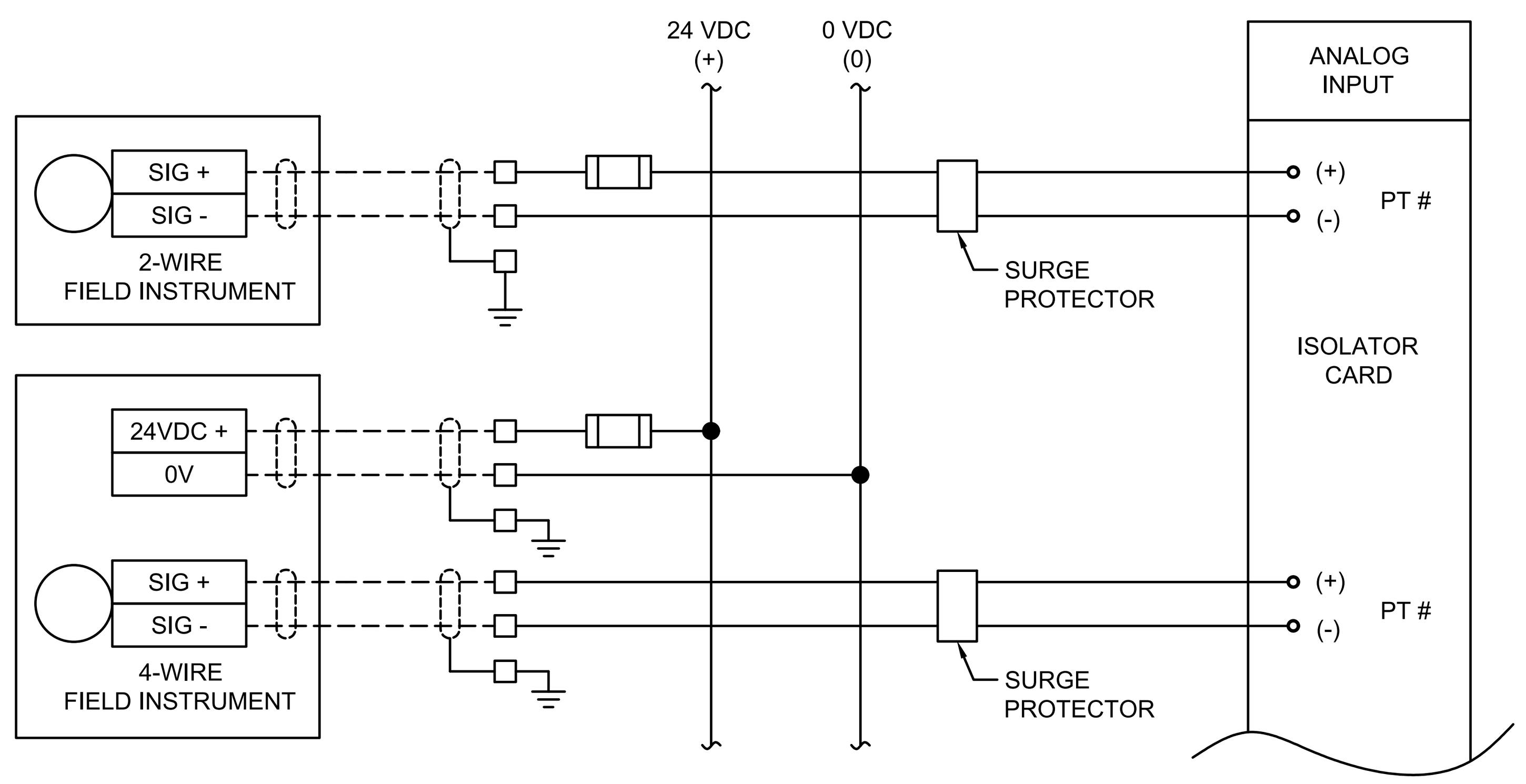
JEA Building Community[sm]

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

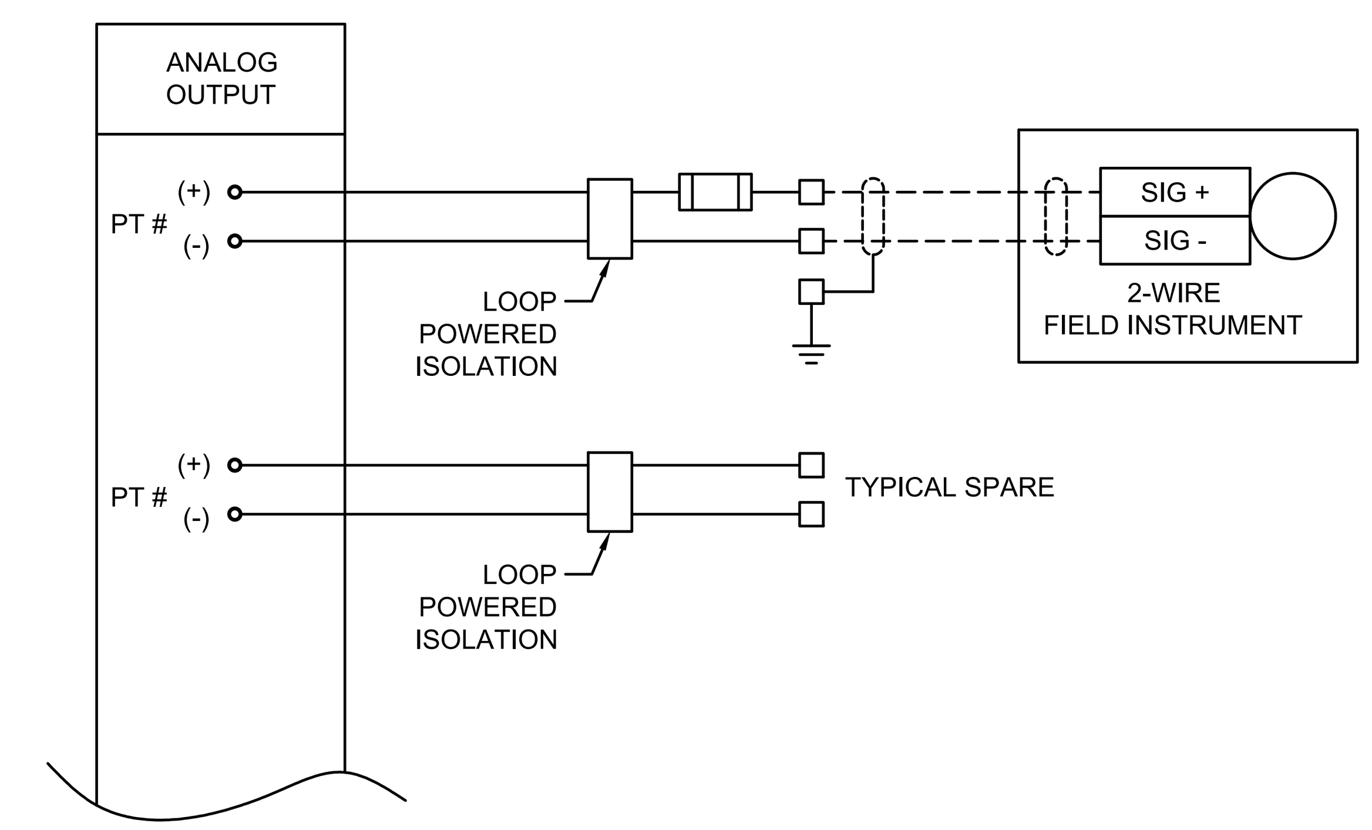
IO LIST

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

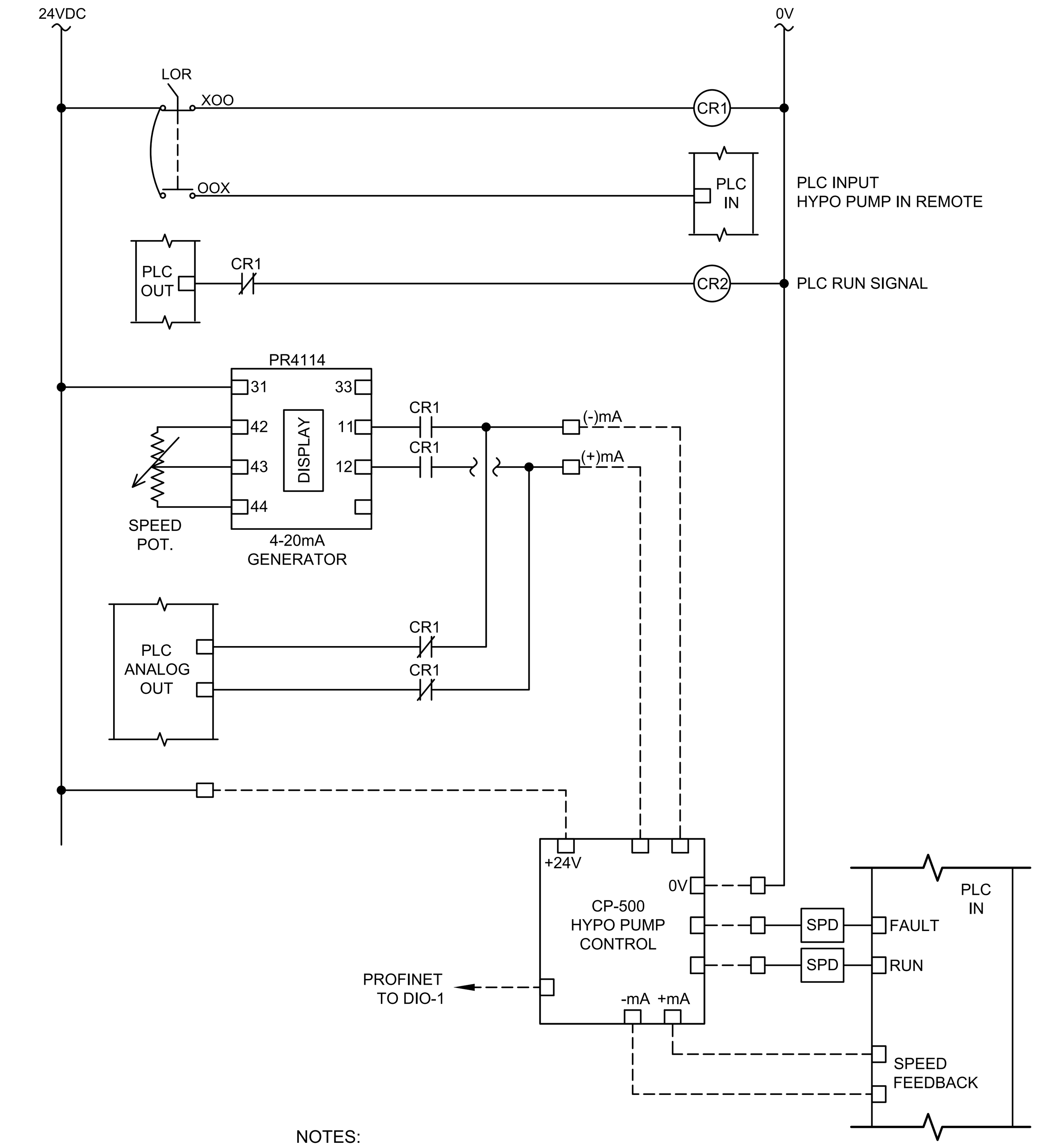
NO. SHEETS 105
SHEET NO. 104
DRAWING NO. I-9



1 TYPICAL ANALOG INPUTS FROM FIELD DEVICE
NTS

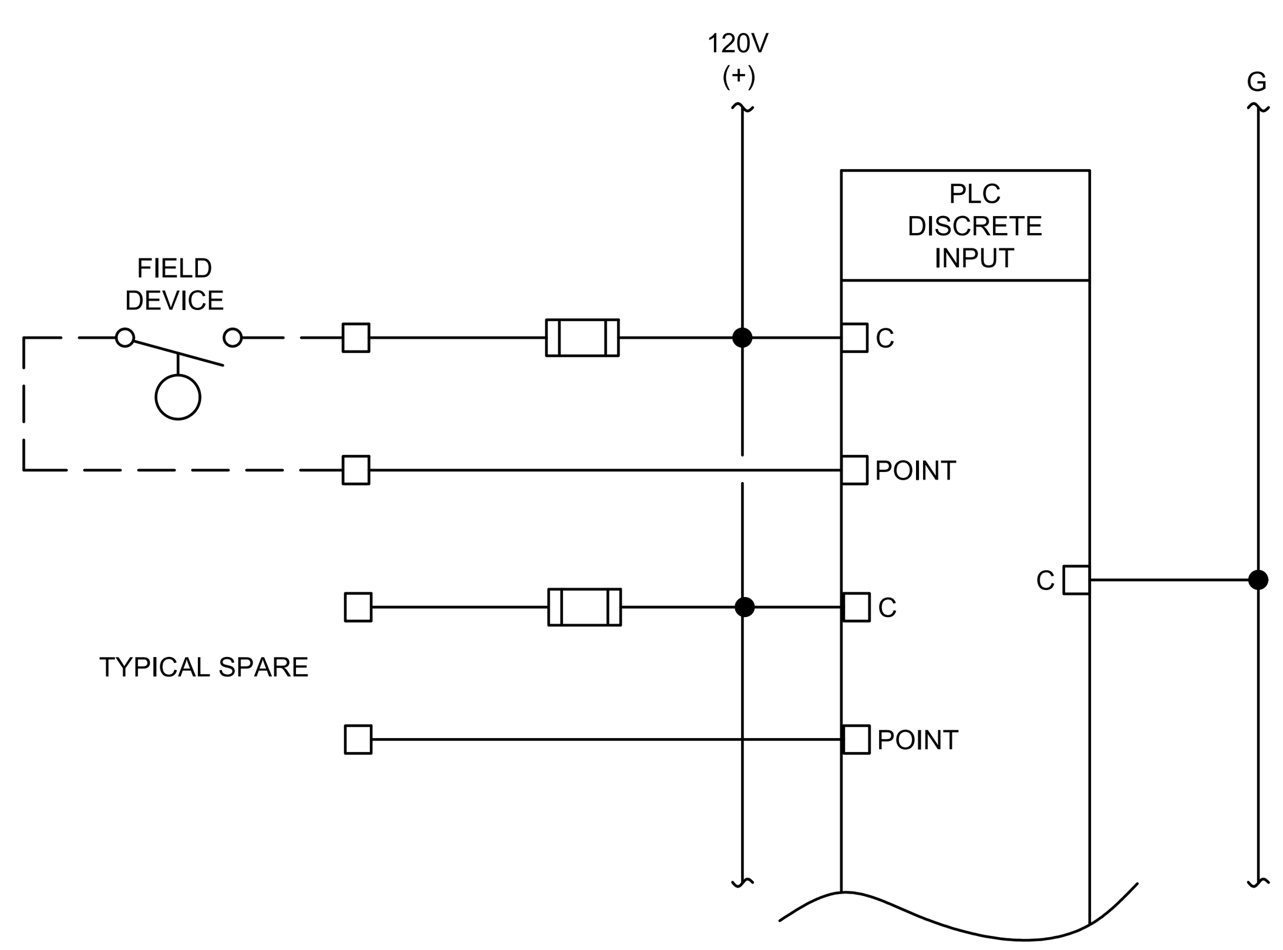


2 TYPICAL ANALOG OUTPUT TO FIELD DEVICE
NTS

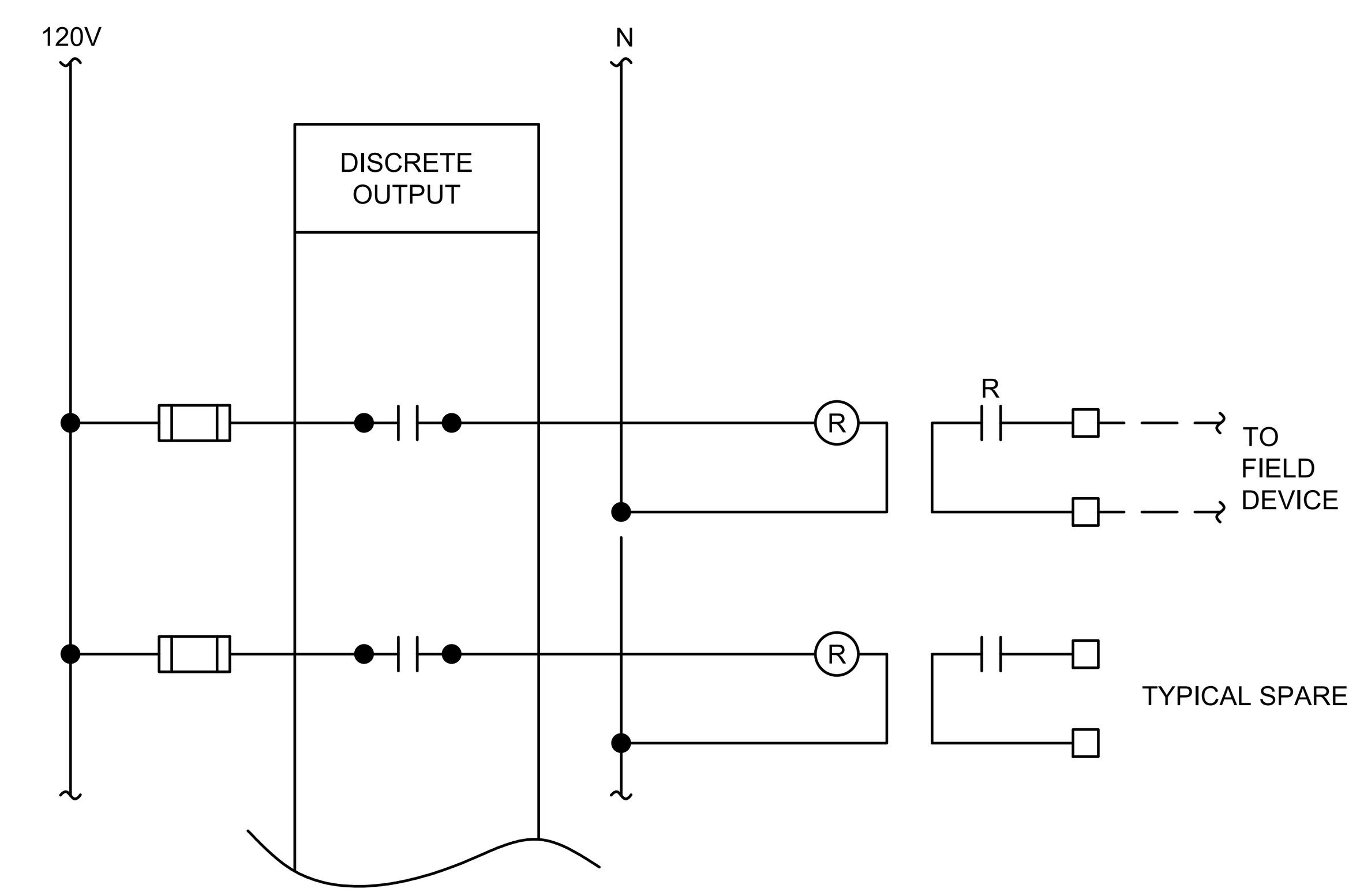


NOTES:
1. MOUNTED IN DIO-1.
2. TYPICAL OF P-511, P-512
3. CP-500 PROVIDED W/ HYPO PUMP SKID.

5 HYPO PUMP CONTROL DIAGRAM
NTS



3 ISOLATED DISCRETE INPUT FROM FIELD DEVICE
NTS



4 ISOLATED DRY CONTACT DISCRETE OUTPUT TO FIELD DEVICE
NTS

ISSUED FOR BID

Mott MacDonald Florida, LLC
10245 Centurion Parkway North
Suite 320
Jacksonville, Florida 32256
Telephone: (904) 203-1090
Architects AA - C0000035
Engineers EB - 00001155
Surveyors LB - 00006783

MOTT MACDONALD

NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

DESIGN ENGINEER
FRANK E. WELLS, P.E.
FLORIDA REGISTRATION NO.
73859

DESIGNER: F. WELLS
DRAWN BY: H. ERSKINE
DATE: APRIL 2020
CHECKED BY: A. GIBBS
DATE: APRIL 2020

JEA Building Community

TWIN CREEKS RECLAIMED WATER
RE-PUMP STATION IMPROVEMENTS - PHASE II

IO DETAILS

PROJ. NO. 502398244
DATE: APRIL 2020
SCALE: NO SCALE

NO. SHEETS 105
SHEET NO. 105
DRAWING NO. ID-1