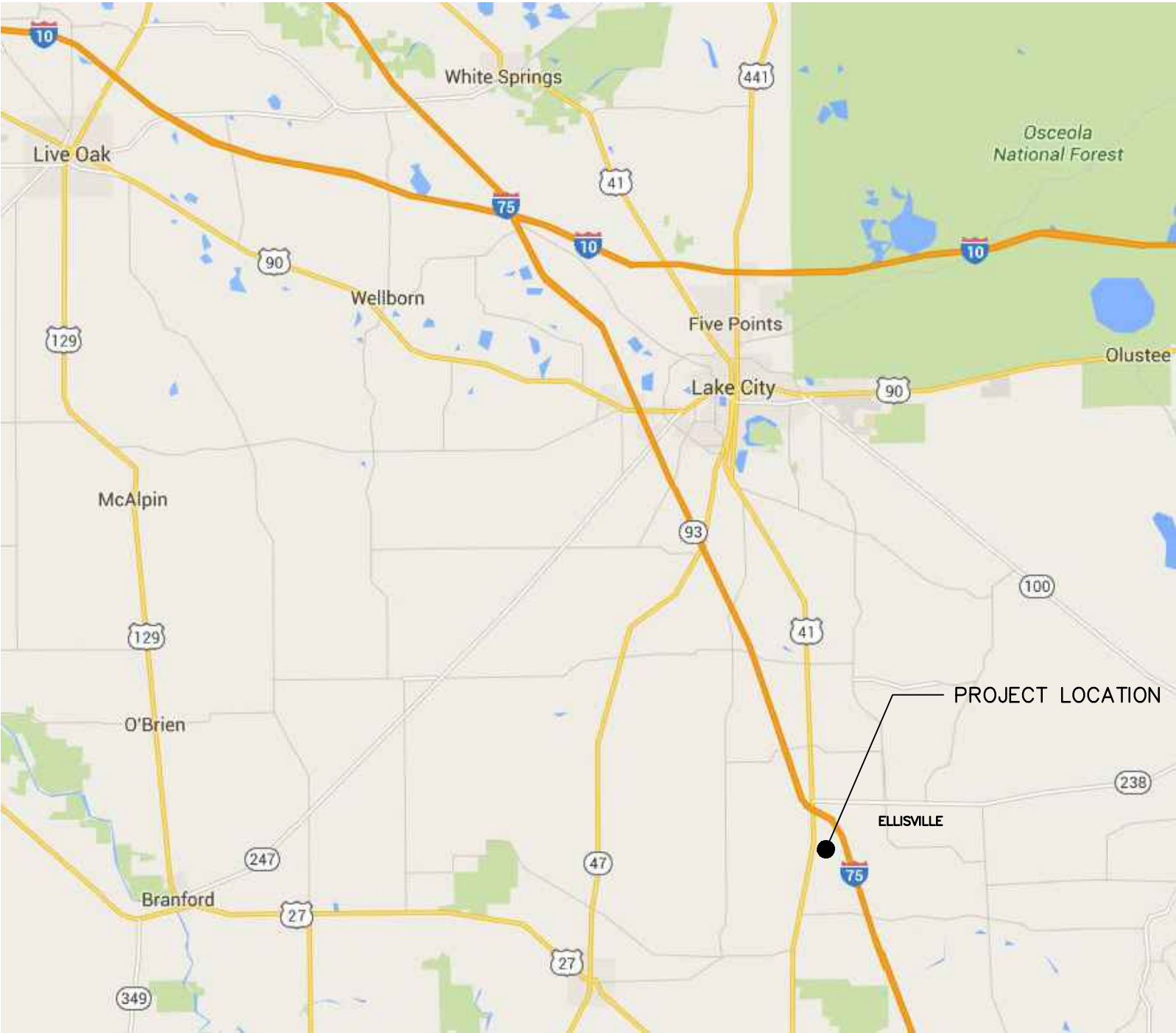


ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION

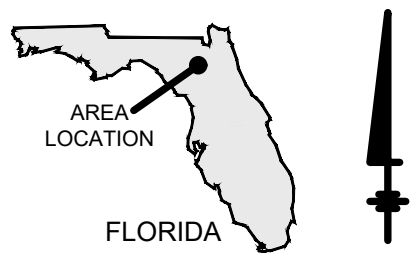
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DATE ISSUED / DATE REVISED
NOVEMBER 2021

COLUMBIA COUNTY, FLORIDA

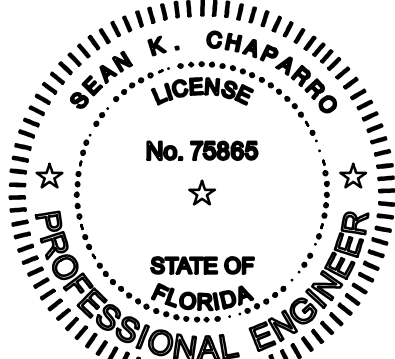


LOCATION MAP



PREPARED BY:
ARCADIS

CERTIFICATION OF
AUTHORIZATION NO. 7917
4300 WEST CYPRESS STREET, SUITE 450 TAMPA, FL 33607



Sean K
Chaparro

SEAN K. CHAPARRO, P.E.
FLORIDA P.E. # 75865

DATE

This item has been digitally signed
and sealed by Sean K. Chaparro, PE,
on 11/22/2021.

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any electronic copies.

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ENGINEER:
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CITY: DIV\GROUP: DB: LD: PIC: PM: TM: LYRON+OFF-REF- C:\Users\guzman\OneDrive - ARCADIS\Desktop\ELLISVILLE\GENERAL\G-02.dwg LAYOUT: G-02 SAVED: 11/19/2021 11:14 AM ACADVER: 24.05 (LMS TECH) PAGES: 11/19/2021 1:35 PM BY: GUZMAN, ANDREA

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH THE "COLUMBIA COUNTY WATER AND WASTEWATER SYSTEMS HANDBOOK" (LATEST EDITION), UNLESS OTHERWISE SHOWN IN THESE PLANS.
2. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA (SSOCOF) BY CALLING 811 OR 1-800-432-4770 AT LEAST 48 HOURS PRIOR TO EXCAVATION. ALL PROPOSED CONSTRUCTION SHALL BE WHITE-LINE PAINTED PRIOR TO CONTACTING SSOCOF.
3. FIELD VERIFY EXISTING CONDITIONS.
4. DETERMINING THE ACTUAL LOCATION OF ANY EXISTING UTILITY IS THE CONTRACTORS RESPONSIBILITY. BEFORE COMMENCING WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA. (PROVIDE 72 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION); THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER AND ENGINEER ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COSTS INCURRED BECAUSE OF THE CONTRACTOR'S OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. SCHEDULE AND EXECUTE ALL WORK INVOLVING EXISTING UTILITIES TO MINIMIZE INTERRUPTION OF SERVICES. WHENEVER SUCH INTERRUPTION IS NECESSARY FOR COMPLETION OF THE WORK, NOTIFY THE ENGINEER AND THE OWNER AT LEAST 72 HOURS IN ADVANCE. ALL WORK TO REPAIR/RESTORE UTILITY SERVICE SHALL BE PERFORMED AS REQUIRED BY THE APPROPRIATE UTILITY. IF IT IS NECESSARY TO SHORE, BRACE, OR SWING A UTILITY, CONTACT THE UTILITY COMPANY OR DEPARTMENT AFFECTED AND OBTAIN THEIR PERMISSION REGARDING THE METHOD TO USE FOR SUCH WORK. ALL COSTS RELATED TO SERVICE, MAINTENANCE, INTERRUPTION, REPAIR, RELOCATION AND RESTORATION ARE TO BE INCLUDED IN THE CONTRACTOR'S BID. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION SHALL BE PAID.
5. FIELD CONDITIONS MAY NECESSITATE SLIGHT ALIGNMENT AND/OR GRADE DEVIATIONS FROM THOSE WHICH ARE INDICATED ON THE PLANS. ANY DEVIATIONS OR ADJUSTMENTS SHALL FIRST BE APPROVED BY THE ENGINEER BEFORE BEING PERFORMED.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING, INCLUDING HORIZONTAL AND VERTICAL CONTROL OF WORK. ALL SURVEY WORK TO ESTABLISH THE HORIZONTAL AND VERTICAL CONTROL SHALL BE UNDER THE GUIDANCE AND DIRECT SUPERVISION OF A FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER, PER FLORIDA ADMINISTRATIVE CODE, CHAPTER 61G17-6, "MINIMUM TECHNICAL STANDARDS."
7. THE CONTRACTOR SHALL PRESERVE ALL CONTROL STAKES, BENCH MARKS, REFERENCE POINTS AND PROPERTY CORNERS. THE OWNER WILL GRANT NO CLAIM FOR DAMAGES OR LOSS OF TIME BY THE CONTRACTOR DUE TO LOSS OR DISTURBANCE OF SURVEY CONTROL POINTS. CONTROL STAKES, BENCH MARKS, REFERENCE POINTS AND PROPERTY CORNERS DISTURBED BY THE CONTRACTOR'S WORK SHALL BE REPLACED BY A FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER WHO WILL BE SELECTED BY AND PAID BY THE CONTRACTOR. THE OWNER WILL NOT MAKE FINAL PAYMENT TO THE CONTRACTOR UNTIL ALL DISTURBED OR DESTROYED PROPERTY CORNERS AND PERMANENT BENCH MARKS HAVE BEEN REPLACED BY THE FLORIDA REGISTERED SURVEYOR AND MAPPER. THE SURVEYOR SHALL CERTIFY THAT SUCH MARKERS HAVE BEEN REPLACED IN ACCORDANCE WITH THE STATE OF FLORIDA ADMINISTRATIVE CODE, CHAPTER 61G17-6, "MINIMUM TECHNICAL STANDARDS".
8. ALL TREES, SHRUBS, ETC., ALONG THE LINES OF CONSTRUCTION SHALL BE PROTECTED UNLESS SHOWN TO BE REMOVED. ANY DISTURBANCE TO THESE ITEMS SHALL REQUIRE APPROVAL OF THE ENGINEER.
9. RESTORE ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK TO A CONDITION EQUAL TO OR BETTER THAN EXISTED BEFORE COMMENCING CONSTRUCTION WORK, UNLESS SPECIFICALLY EXEMPTED BY THE DRAWINGS. THE CONTRACTOR SHALL RECONSTRUCT ALL FACILITIES TO PRE-CONSTRUCTION GRADES AND DIMENSIONS. THE ACQUISITION OF SUCH ADDITIONAL INFORMATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND AT HIS EXPENSE. WATER, FERTILIZE AND SUPPLY ALL ITEMS AND CARE NECESSARY TO MAINTAIN THE HEALTH OF ALL NEW VEGETATION AND VEGETATION REPLACED AT NO EXPENSE TO THE OWNER, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC MAINTENANCE IN ACCORDANCE WITH THE SPECIFICATIONS, U.S. DEPARTMENT OF TRANSPORTATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) SPECIFICATIONS AND OTHER GOVERNING AGENCY'S SPECIFICATIONS. IN THE EVENT OF A CONFLICT, THE MORE STRINGENT SPECIFICATION OR REQUIREMENT SHALL GOVERN. PROVIDE ALL NECESSARY BARRICADES, WARNING SIGNS, DELINEATORS, FLAGMEN, PILOT CARS, ETC., REQUIRED FOR TRAFFIC CONTROL AND/OR MAINTENANCE.
11. PROVIDE ANY TEMPORARY CONTROLS AND/OR STRUCTURES REQUIRED TO MAINTAIN SUITABLE AND SAFE WORKING CONDITIONS AT ALL TIMES. SUCH ITEMS SHALL BE REMOVED ONCE THAT PORTION OF WORK HAS BEEN COMPLETED.
12. UPON COMPLETION OF THE PROJECT, PROVIDE AN AS-BUILT SURVEY OF ALL IMPROVEMENTS IN AUTOCAD 2018 FORMAT. THE AS-BUILT SURVEY MUST BE PREPARED BY A FLORIDA REGISTERED SURVEYOR AND MAPPER IN ACCORDANCE WITH THE STATE OF FLORIDA ADMINISTRATIVE CODE, CHAPTER 61G17-6, "MINIMUM TECHNICAL STANDARDS". AS A MINIMUM, AS-BUILT DRAWINGS FOR PLANT AND PIPELINE CONSTRUCTION SHALL SHOW CONSTRUCTED HORIZONTAL AND VERTICAL LOCATIONS OF ALL BENDS, FITTINGS, VALVES AND STRUCTURES, AND ELEVATIONS AT ALL LOCATIONS WHERE PROPOSED DESIGN ELEVATIONS ARE SHOWN ON THE DRAWINGS. THE AS-BUILT SURVEY SHALL BE TIED INTO THE STATE PLANE COORDINATE SYSTEM.
13. SPECIAL EMPHASIS ON EXCAVATION SAFETY AND TRENCH CONSTRUCTION:

- A. OSHA'S EXCAVATION SAFETY STANDARDS 29, CFR PART 1926.650-652 SUBPART P, AS WELL AS FLORIDA'S TRENCH SAFETY ACT (FLORIDA STATUTE 90-96) ARE CONSIDERED AS COMPLIMENTARY TO THESE CONTRACT DOCUMENTS. IF THERE IS ANY DUPLICATION, REDUNDANCY OR CONFLICT BETWEEN THE STIPULATIONS OF THESE CONTRACT DOCUMENTS AND THOSE STANDARDS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
- B. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT EXCAVATIONS DO NOT ENDANGER WORKMEN, EXISTING STRUCTURES, UTILITIES, OR OTHER FACILITIES. IF SUCH CONDITIONS OCCUR WHICH MAY ENDANGER WORKMEN, EXISTING STRUCTURES, UTILITIES, OR OTHER FACILITIES, IMMEDIATELY INSTALL AND MAINTAIN ADEQUATE SHEETING AND BRACING PER OSHA SPECIFICATIONS. CEASE ALL WORK UNTIL THE SHEETING AND BRACING HAS BEEN PROPERLY AND COMPLETELY INSTALLED. INSTALL THE SHEETING AND BRACING IN A MANNER THAT WILL ALLOW REMOVAL WITHOUT INJURING OR ENDANGERING WORKMEN, THE WORK, ADJACENT STRUCTURES, AND THE LIKE. PROMPTLY AND COMPLETELY FILL ALL VOIDS CAUSED BY THE WITHDRAWAL OF SHEETING WITH SAND AND COMPACT TO A DEGREE EQUAL TO THE SURROUNDING SOIL. REMOVE THE SHEETING AS THE WORK PROGRESSES OR, AT THE DISCRETION OF THE ENGINEER, CUT THE SHEETING OFF BELOW FINISHED GRADE AND LEAVE IN PLACE.

14. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES.
15. ALL AFFECTED GRASSED AREAS SHALL BE RESTORED WITH THE APPLICATION OF ARGENTINE BAHIA SOD, HYDROMULCH SEEDING OR APPROVED EQUAL. ALL SLOPED AREAS TO BE SODDED. ANY SOD LAID ON A INCLINE SHALL BE PROPERLY PINNED. ALL SOD SHALL BE WATERED BY CONTRACTOR AS NEEDED UNTIL ESTABLISHED TO THE SATISFACTION OF THE ENGINEER. ALL DEAD AREAS SHALL BE REPLANTED IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER.
16. SECURITY OF CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS INDICATED ON THE CONTRACT DRAWINGS.
18. CONTRACTOR SHALL MAINTAIN 36" MINIMUM COVER OVER PROPOSED FORCE MAIN.
19. UNDER NO CIRCUMSTANCES SHALL PIPE BE LAID IN A WET TRENCH OR STRUCTURES BE CONSTRUCTED IN A WET EXCAVATION. DEWATERING SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.
20. IF NECESSARY, USE TEMPORARY SHEETING OR TRENCH BOXES TO MINIMIZE THE SIZE OF THE EXCAVATIONS AND TO PROTECT ADJACENT EXISTING ROADWAYS, UTILITIES AND OTHER FACILITIES.
21. BACKFILL ALL TRENCHES AT THE END OF EACH DAYS WORK. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT. THE ENDS OF ALL PIPE SHALL BE PLUGGED AT THE CLOSE OF EACH DAYS WORK.
22. PERFORM SURFACE RESTORATION IMMEDIATELY FOLLOWING SUCCESSFUL PRESSURE TESTING, INCLUDING ROADWAY, DRIVEWAY, LANDSCAPING, GRASSING OR OTHER. RESHAPE DITCHES TO EXISTING CONTOURS. SOD SHALL BE INSTALLED IN ALL AREAS DAMAGED BY CONSTRUCTION.

EROSION CONTROL NOTES

1. NO UNAUTHORIZED DISTURBANCE OF ANY WETLANDS WILL BE PERMITTED. TEMPORARILY INSTALL SILT FENCES, BARRIERS OR SYNTHETIC BALES IMMEDIATELY ADJACENT TO AND UPLAND FROM ALL EXISTING WETLANDS PRIOR TO CONSTRUCTION ACTIVITIES WHICH MIGHT IMPACT THE WETLANDS. REMOVE ALL WETLAND PROTECTION MEASURES AFTER THE PROJECT HAS BEEN ACCEPTED BY THE OWNER.
2. ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. CONSTRUCTION PRACTICES INCLUDE:

A. CONSTRUCT TEMPORARY SEDIMENTATION BASINS OR EARTHEN BERMS AT DOWN-GRADIENT ENDS OF NEWLY GRADED AREAS TO PROVIDE FOR SEDIMENT AND TURBIDITY REMOVAL.

B. TURBIDITY BARRIERS, SYNTHETIC BALES AND OTHER EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL CONSTRUCTION ACTIVITIES ARE COMPLETE AND THE POTENTIAL FOR EROSION IS ELIMINATED.
3. DO NOT EMPLOY SILT FENCES IN A MANNER TO CAUSE THEM TO ACT AS A DAM ACROSS PERMANENTLY FLOWING WATERCOURSES. USE SILT FENCES AT UPLAND LOCATIONS, AND TURBIDITY BARRIERS IN PERMANENT WATER BODIES, REGARDLESS OF WATER DEPTH.

SEQUENCE OF CONSTRUCTION

1. INSTALL AND MAINTAIN EROSION CONTROL STRUCTURES THROUGHOUT THE PROJECT DURATION. ALL EROSION CONTROL MEASURES MUST BE APPROVED BY THE ENGINEER BEFORE STARTING CONSTRUCTION. THE INSTALLATION MAY BE PHASED TO MATCH CONSTRUCTION.
2. EXCAVATE RAPID INFILTRATION BASINS (RIBS), INSTALL DISTRIBUTION PIPING, CONSTRUCT BERMS, ADD TOPSOIL AND SOD TO BERMS AND WATER TO ESTABLISH GROWTH. CONTRACTOR SHALL BE RESPONSIBLE FOR SOIL BALANCE INCLUDING REMOVAL OF SPOILS AND THE SUPPLY OF OFF-SITE FILL, AS REQUIRED TO COMPLETE THE WORK.
3. INSTALL WASTEWATER TREATMENT PLANT, YARD PIPING, AND COMPLETE CIVIL SITE WORK. FILL WITH WATER AND HYDRAULICALLY TEST WASTEWATER TREATMENT PLANT PRIOR TO THE INTRODUCTION OF WASTEWATER.
4. TRANSFER MULTIPLE LOADS OF RAS/WAS FROM EXISTING WASTEWATER TREATMENT PLANT TO NEW PLANT UNTIL MIXED LIQUOR CONCENTRATION IS 2500 TO 3000 MG/L. FEED PLANT MOLASSES AT CONTROLLED RATES FOR APPROXIMATELY 30 DAYS OR UNTIL MIXED LIQUOR CONCENTRATIONS IS STABILIZED TO THE SATISFACTION OF THE ENGINEER.
5. WITH TRAIN NO. 2 OPERATIONAL, SHUT DOWN TRAIN NO. 1 AND COMPLETE CHLORINE CONTACT CHAMBER INTERCONNECTION.
6. GRADE SITE TO GENTLY SLOPE TOWARD DRAINAGE DITCH.
7. UPON ESTABLISHMENT OF VEGETATION TO THE SATISFACTION OF THE ENGINEER, REMOVE ALL EROSION CONTROL MEASURES.

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Professional Engineer's Name SEAN K. CHAPARRO, P.E.		
Professional Engineer's No. 75865		
State FL	Date Signed	Project Mgr. SKC
Designed by SKC	Drawn by AGG	Checked by SKC
SEAN K. CHAPARRO P.E. NO. 75865		

Sean K Chaparro

Digitally signed by Sean K Chaparro
DN: cn = Sean K Chaparro, c = US, o = Florida, ou = ARCADIS, email = sean.k.chaparro@arcadis.com, serial = 2021.11.22.16:07:27 +0500

ARCADIS

ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

COLUMBIA COUNTY, FLORIDA
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION

GENERAL NOTES

ARCADIS Project No. 30028119.0000
Date NOVEMBER 2021
ARCADIS 4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125

G-02

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FLUID ABBREVIATIONS

A	AERATION
DW	DECANTED WATER
EF	EMERGENCY OVERFLOW
FE	FINAL EFFLUENT
ML	MIXED LIQUOR
MLR	MIXED LIQUOR RETURN
P	POLYMER
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RCW	RECLAIMED WATER
RW	RAW WATER
RWOF	RAW WATER OVERFLOW
S	SCUM
WAS	WASTE ACTIVATED SLUDGE

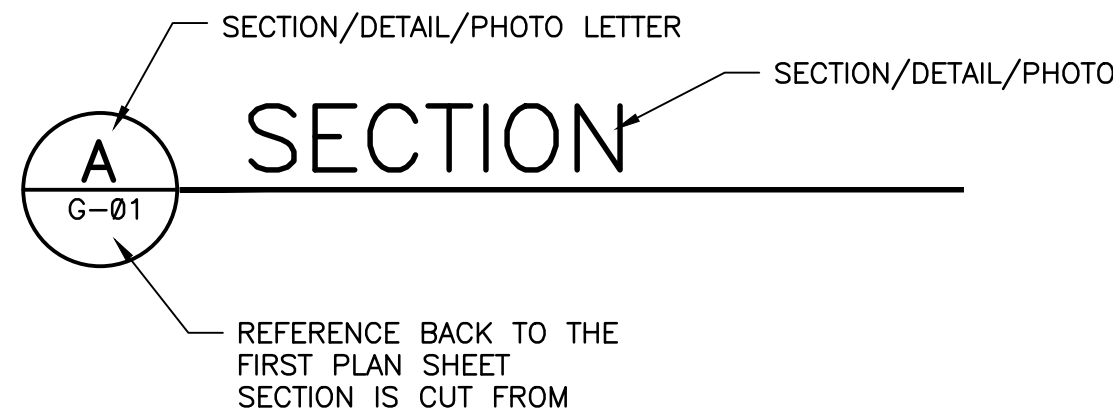
GENERAL, CIVIL, AND MECHANICAL ABBREVIATIONS

AB	ANCHOR BOLT	JST.	JOIST
ABAN.	ABANDONED	JT.	JOINT
ADD'L.	ADDITIONAL	K	KIP (1000 POUNDS)
ADJ.	ADJUSTABLE	KSF	KIPS PER SQUARE FOOT
AH	ACCESS HATCH	LFT	LINEAR FEET
ALUM.	ALUMINUM	LG.	LONG
ALT.	ALTERNATE	LLH	LONG LEG HORIZONTAL
APPROX.	APPROXIMATELY	LLV	LONG LEG VERTICAL
BC	BOTTOM OF CURB	L.P.	LOW POINT
BF	BLIND FLANGE	LR	LONG RADIUS
BITUM.	BITUMINOUS	LSH	LEVEL SWITCH HIGH
BL	BASELINE	LSLL	LEVEL SWITCH LOW LOW
BLDG.	BUILDING	MAS	MASONRY
BM	BENCH MARK	MAX.	MAXIMUM
BM.	BEAM	MCC	MOTOR CONTROL CENTER
BOP	BOTTOM OF PIPE	MFR.	MANUFACTURER
BOT.	BOTTOM	MGD	MILLION GALLONS PER DAY
BRG	BEARING	MH	MANHOLE
BRP	BUILDING REFERENCE POINT	MIN.	MINIMUM
CH	CENTERLINE	MJ	MECHANICAL JOINT
C/C	CENTER TO CENTER	MO	MASONRY OPENING
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NF	NEAR FACE
CHH	COMMUNICATION	NO	NORMALLY OPEN
CJ	HANDHOLE	NO., #	NUMBER
CL	CONSTRUCTION JOINT	O	OVERFLOW
CMH	COMMUNICATION MANHOLE	OC	ON CENTER
CO	CLEANOUT	OD	OUTSIDE DIAMETER
COL.	COLUMN	OF	OUTSIDE FACE
CONC.	CONCRETE	OPNG.	OPENING
CONT.	CONTINUED	OPP.	OPPOSITE
CPLG.	COUPLING	P/A	PLUG AND ABANDON
CR	CURVE RADIUS	PC	POINT OF CURVATURE
CW	CITY WATER	PCC	POINT OF COMPOUND CURVATURE
CY	CUBIC YARD(S)	PE	PLAIN END
DET.	DETAIL	PI	POINT OF INTERSECTION
DI	DUCTILE IRON	PI	PLATE OR PROPERTY LINE
DIA.	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DISCH.	DISCHARGE	PSI	POUNDS PER SQUARE INCH
DMH	DROP MANHOLE	PS	PUMP STATION
DN.	DOWN	PT	POINT OF TANGENCY
DO	DIESEL OIL	R	RADIUS
DRAIN	DRAIN	RCP	REINFORCED CONCRETE PIPE
DWG.	DRAWING	RED.	REDUCER
DWL.	DOWELS	REINF.	REINFORCEMENT OR REINFORCE
EA.	EACH	REQ'D.	REQUIRED
ECC	ECCENTRIC	RIB	RAPID INFILTRATION BASIN
EF	EACH FACE	RJ	RESTRAINED JOINT
EFF.	EFFLUENT	RM.	ROOM
EJ	EXPANSION JOINT	R.O.W	RIGHT OF WAY
EL.	ELEVATION	SAN	SANITARY
ELEC.	ELECTRIC	SCH	SCHEDULE
EMH	ELECTRICAL MANHOLE	SD	STORM DRAIN
EQ.	EQUAL	SHT.	SHEET
EW	EACH WAY	SLP	SLOPE
EX.	EXISTING	SPA.	SPACING
FD	FLOOR DRAIN	SPEC.	SPECIFICATION
FD CON	FIRE DEPARTMENT CONNECTION	SR	SHORT RADIUS
FDN.	FOUNDATION	SS	STAINLESS STEEL
FDND	FOUNDATION DRAIN	ST.	STREET
FF	FAR FACE	STA	STATION
FIN.	FINISHED	STD.	STANDARD
FLEX.	FLEXIBLE	STL.	STEEL
FLG.	FLANGE	STRUC.	STRUCTURAL
FLR.	FLOOR	SWK	SIDEWALK
FM	FORCE MAIN	T/C	TOP OF CONCRETE
FMH	FUTURE MANHOLE	TC	TOP OF CURB
FS	FLAT SIDE DOWN	TF	TOP OF FRAME
FSU	FLAT SIDE UP	T&B	TOP AND BOTTOM
FTG.	FOOTING	THK.	THICKNESS
FT.,'	FEET	TYP.	TYPICAL
FYH	FUTURE YARD HYDRANT	UON	UNLESS OTHERWISE NOTED
G	GAS	USG	UNITED STATES
GA.	GAGE OR GAUGE		STANDARD GAGE
GALV.	GALVANIZED	V	VALVE
GE	GROOVED END JOINT	VERT.	VERTICAL
GRD.	GROUND	W	WATER
GRAT.	GRATING	W/	WITH
HB	HOSE BIB	WP	WORK POINT
HDPE	HIGH DENSITY POLYETHYLENE	WPCF	WATER POLLUTION CONTROL FACILITY
HORIZ.	HORIZONTAL	WS	WATER STOP
HP	HIGH POINT	WV	WATER VALVE
HWL	HIGH WATER LEVEL	WWF	WELDED WIRE FABRIC
ID	INSIDE DIAMETER	WWTP	WASTEWATER TREATMENT PLANT
IF	INSIDE FACE	YH	YARD HYDRANT
IN	INLET	E	EAST
IN., "	INCHES	W	WEST
INF.	INFLUENT	N	NORTH
INV.	INVERT	S	SOUTH
		NE	NORTHEAST
		NW	NORTHWEST
		SE	SOUTHEAST
		SW	SOUTHWEST

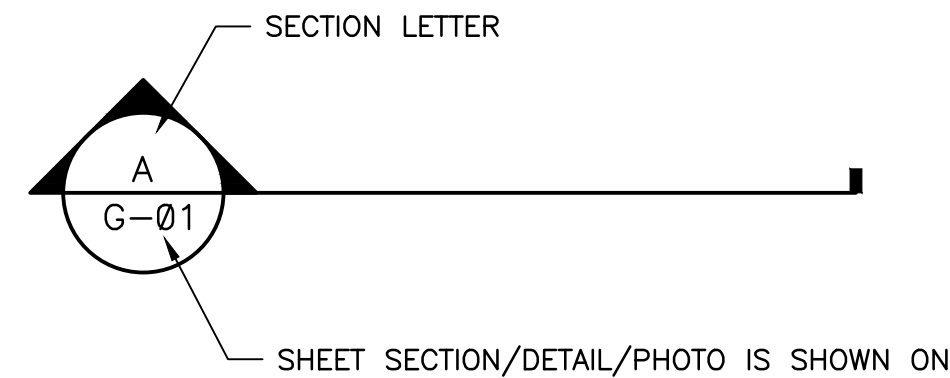
SEE STRUCTURAL, ELECTRICAL AND INSTRUMENTATION SHEETS FOR LIST OF MORE ABBREVIATIONS

TITLE MARKERS

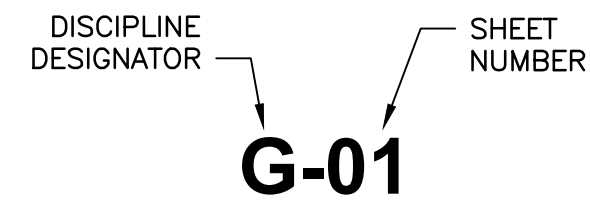
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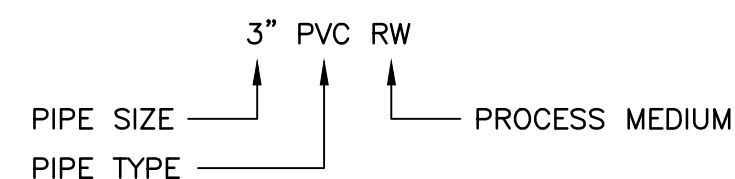
SECTION MARKERS



SHEET NUMBER IDENTIFICATION



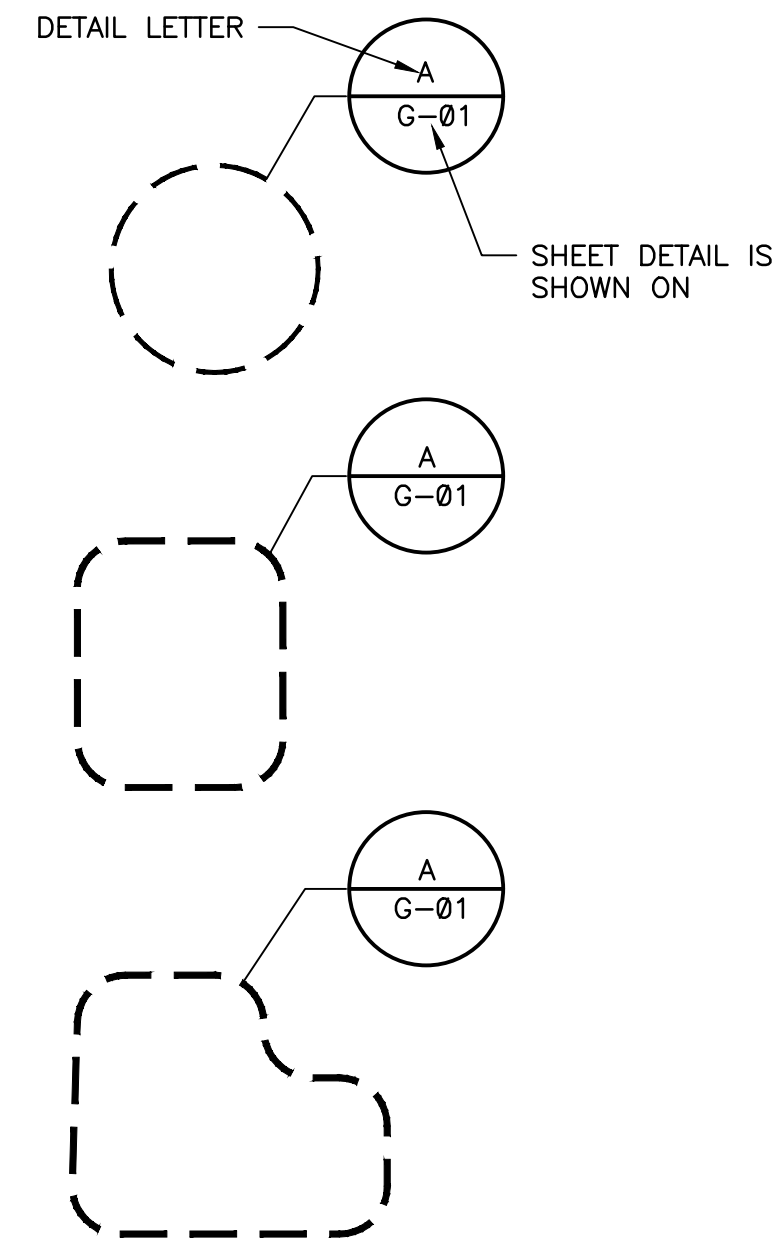
PIPE IDENTIFICATION



MATERIALS LEGEND

EXISTING	PROPOSED	EXISTING	PROPOSED	
				CONCRETE
				GROUT
				BRICK
				CONCRETE MASONRY UNIT
				INSULATION
				GLASS
				STEEL
				GRATING
				CHECKED PLATE
				RAILING

DETAIL MARKERS



LEGEND

EXISTING	PROPOSED	
		ABOVEGROUND WORK
		UNDERGROUND WORK
		FENCE LINE
		OVERHEAD ELECTRICAL LINE
		TELEPHONE LINE
		GAS LINE
		WATER LINE
		PROPOSED SILT FENCE
		GAS VALVE BOX
		VALVE BOX
		GRADE TO DRAIN
		STATIONING
		SPOT ELEVATION
		EDGE OF ROAD/CURB
		CATCH BASIN
		CONTOUR LINE
		GATE
		PROPERTY LINE
		MANHOLE
		ELECTRIC UTILITY POLE
		FLOW DIRECTION, PIPING, SLOPE
		PROJECT NORTH ARROW

NOTES:

- THE SYMBOLS AND ABBREVIATIONS LISTED ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED ARE NECESSARILY USED.
- SEE MECHANICAL LEGENDS FOR PROCESS EQUIPMENT VALVE SYMBOLS AND PIPE DESIGNATIONS.
- SEE ELECTRICAL LEGENDS FOR SYMBOLS AND CONDUIT DESIGNATIONS.

LEGEND

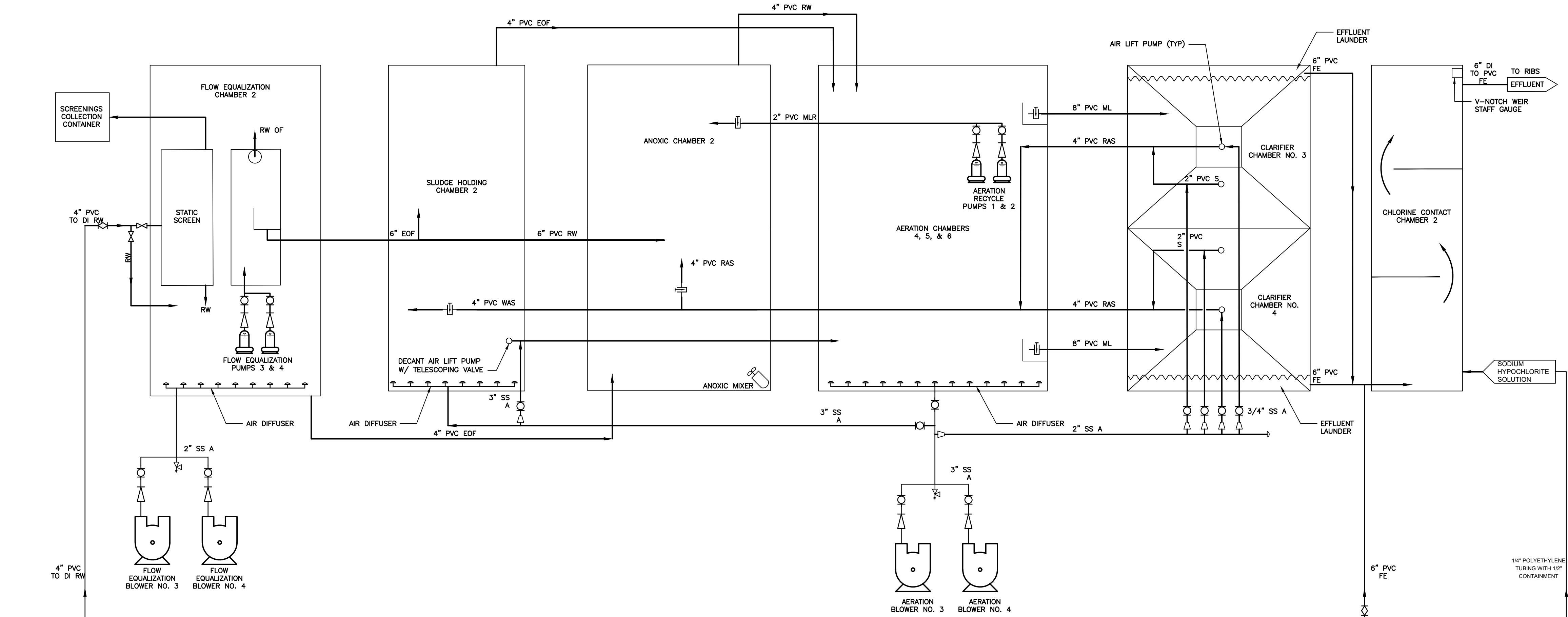
	GATE VALVE
	CHECK VALVE
	SAFETY RELIEF VALVE
	BALL VALVE
	PLUG VALVE
	KNIFE GATE

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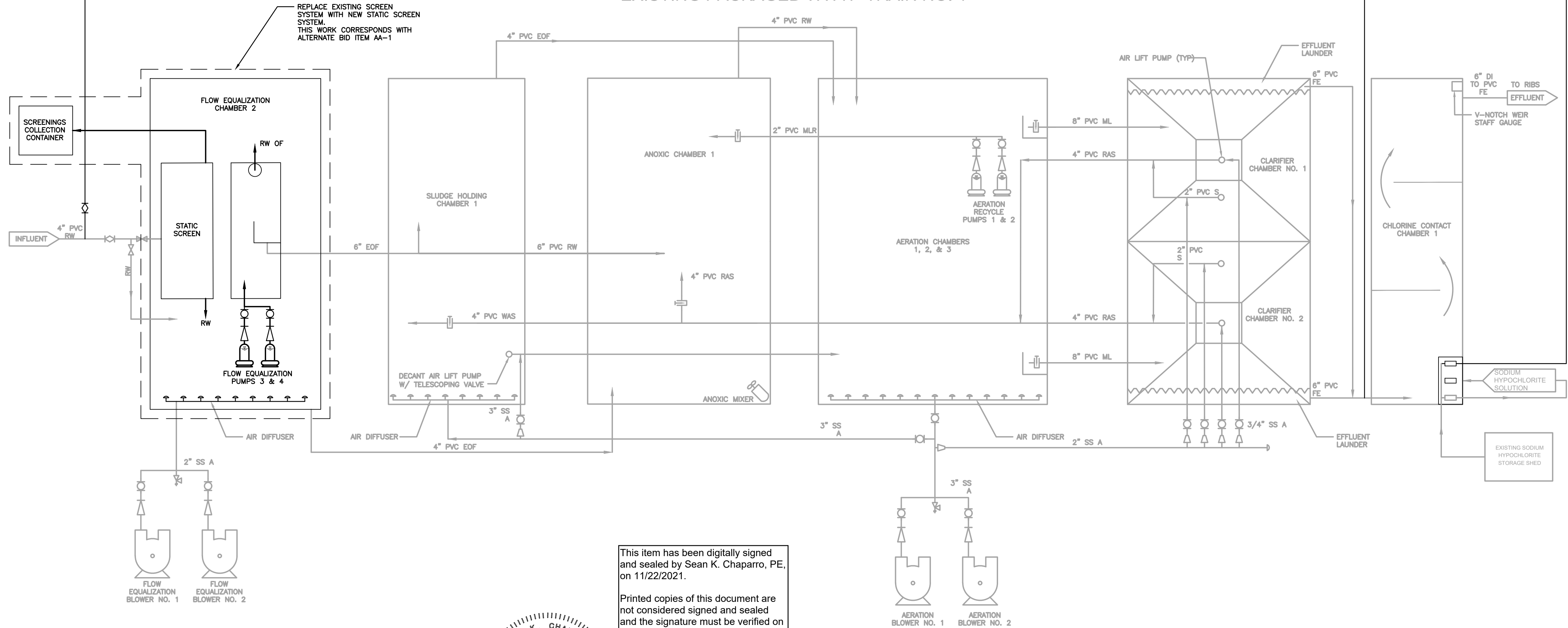
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PROPOSED PACKAGED WWTP TRAIN NO. 2

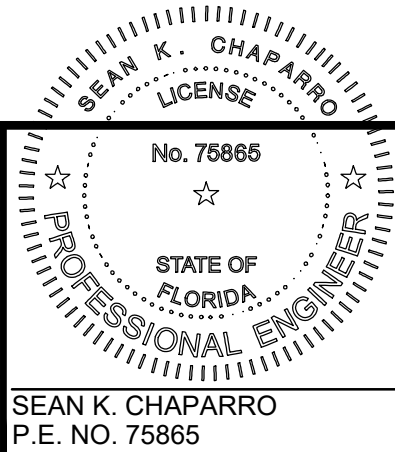


EXISTING PACKAGED WWTP TRAIN NO. 1



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Date: 2021.11.22 16:07:47 -0500

ARCADIS
ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

COLUMBIA COUNTY, FLORIDA
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION
PROCESS FLOW DIAGRAM

ARCADIS Project No.
30028119.0000

Date
NOVEMBER 2021

ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

G-04

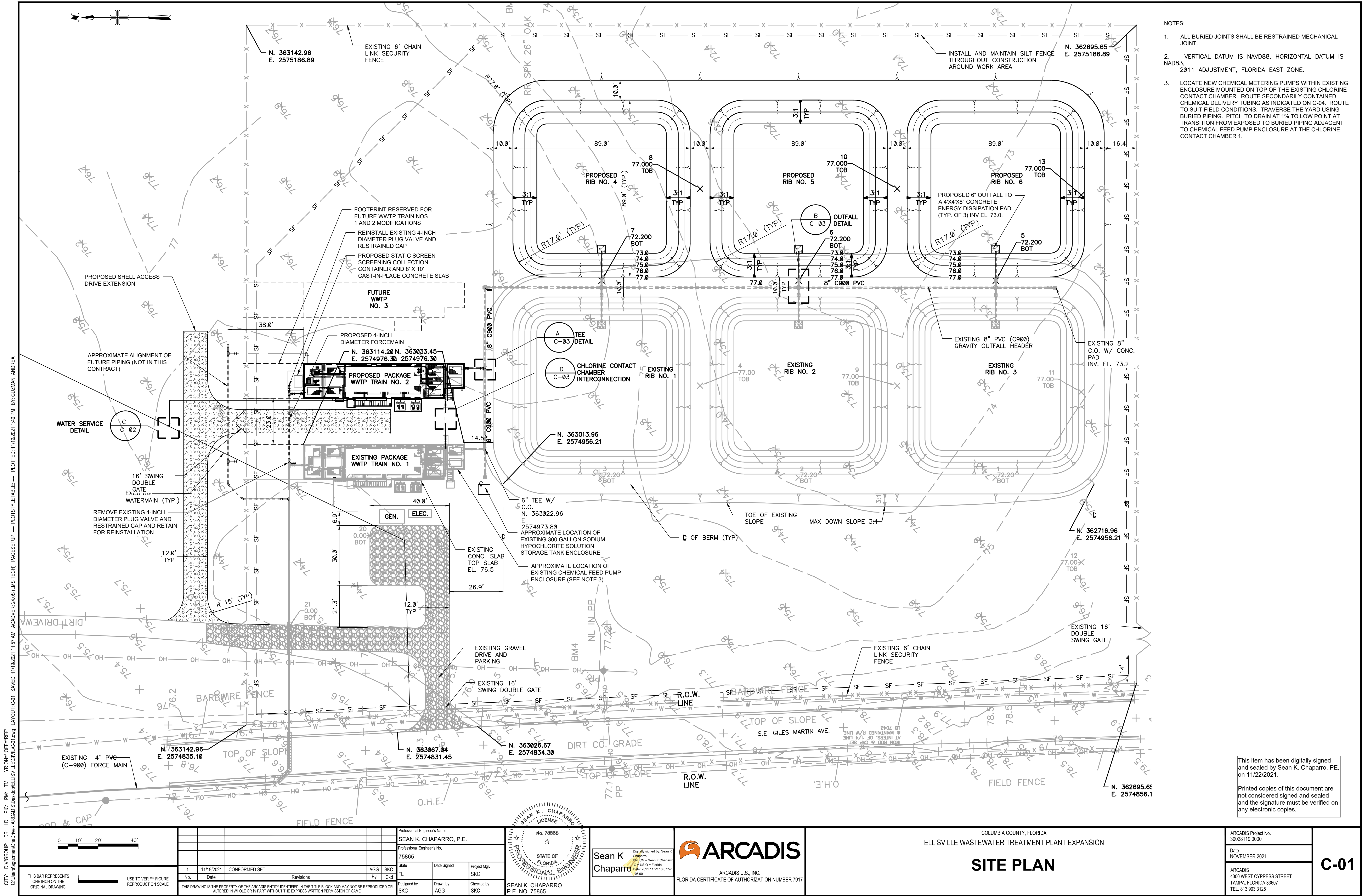
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Professional Engineer's Name SEAN K. CHAPARRO, P.E.		Professional Engineer's No. 75865	
No.	Date	CONFORMED SET	Revisions
1	11/19/2021		
State	Date Signed	Project Mgr.	
FL		SKC	
Designed by	Drawn by	Checked by	
SKC	AGG	SKC	

SEAN K. CHAPARRO
P.E. NO. 75865



- NOTES:
1. ALL BURIED JOINTS SHALL BE RESTRAINED MECHANICAL JOINT.
 2. VERTICAL DATUM IS NAVD88. HORIZONTAL DATUM IS NAD83, 2011 ADJUSTMENT, FLORIDA EAST ZONE.
 3. LOCATE NEW CHEMICAL METERING PUMPS WITHIN EXISTING ENCLOSURE MOUNTED ON TOP OF THE EXISTING CHLORINE CONTACT CHAMBER. ROUTE SECONDARILY CONTAINED CHEMICAL DELIVERY TUBING AS INDICATED ON G-04. ROUTE TO SUIT FIELD CONDITIONS. TRAVERSE THE YARD USING BURIED PIPING. PITCH TO DRAIN AT 1% TO LOW POINT AT TRANSITION FROM EXPOSED TO BURIED PIPING ADJACENT TO CHEMICAL FEED PUMP ENCLOSURE AT THE CHLORINE CONTACT CHAMBER 1.

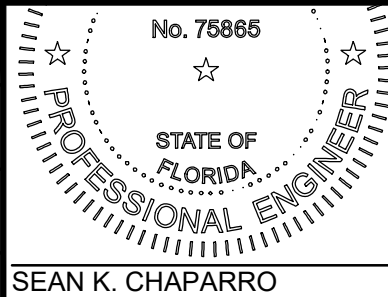
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Professional Engineer's No. 75865	
Date FL	Date Signed Project Mgr. SKC
Designed by SKC	Drawn by AGG
Checked by SKC	



Sean K. Chaparro
Chaparro
C of U.S. = Florida
Date: 2021.11.22 16:07:57
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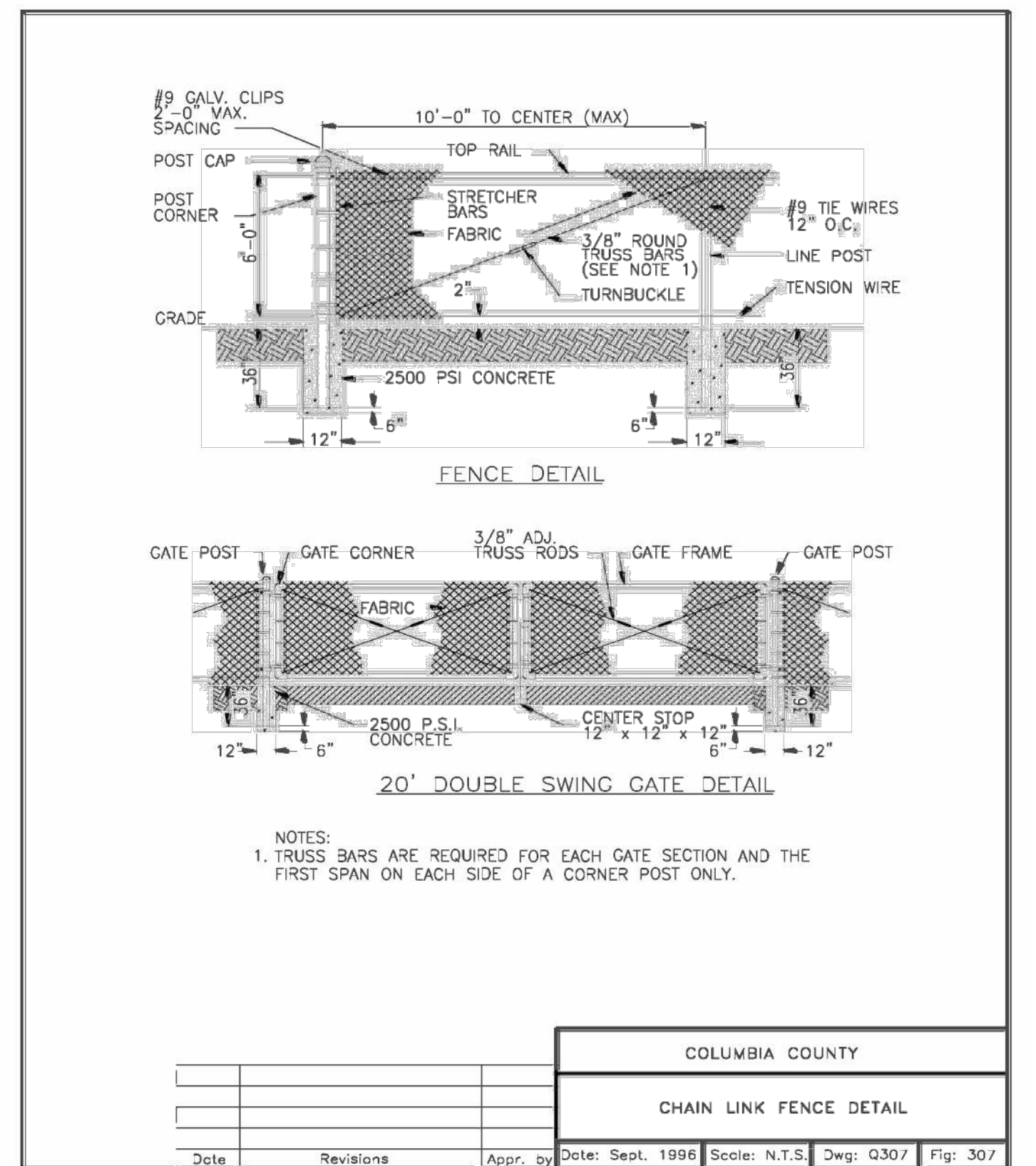
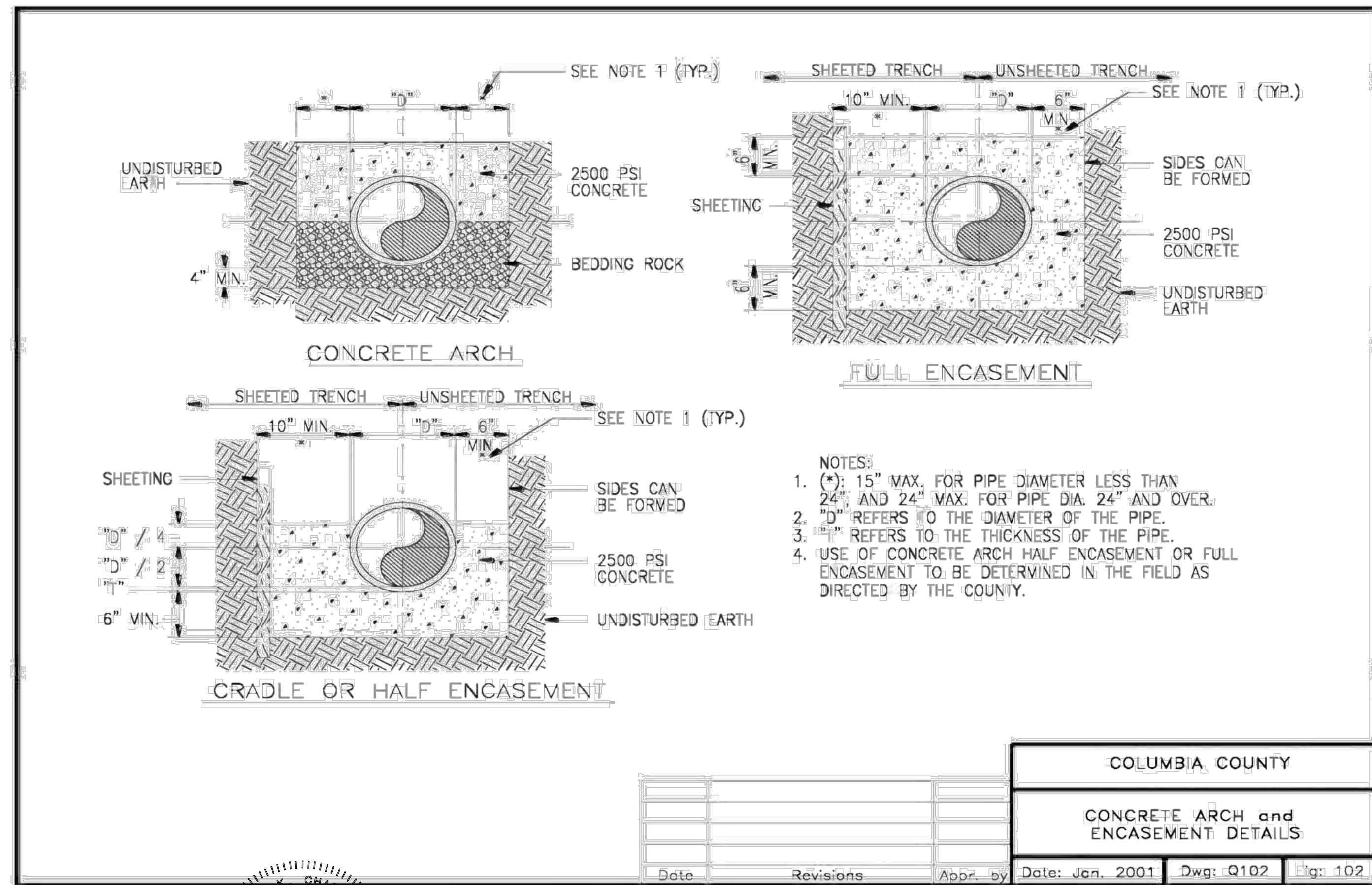
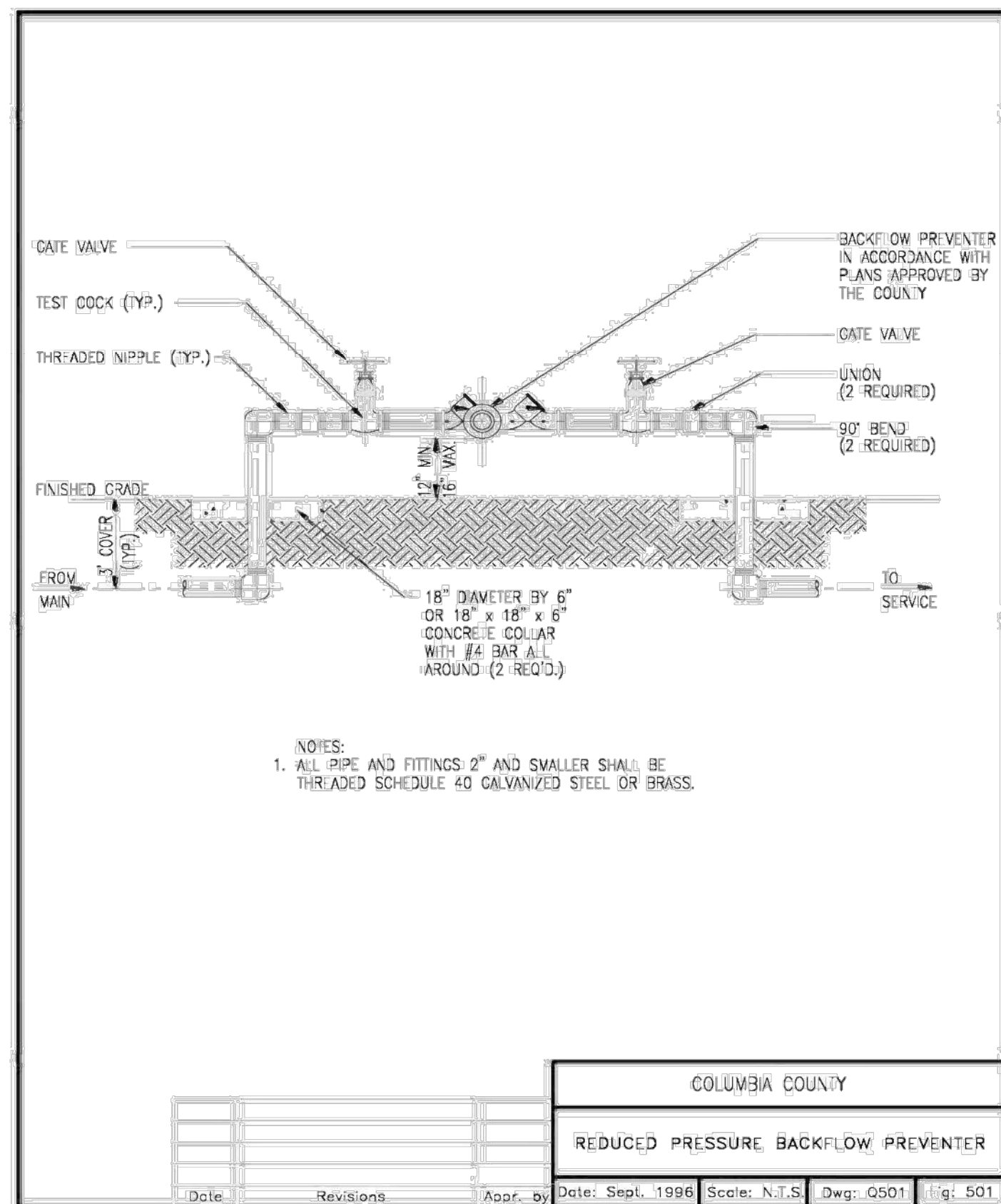
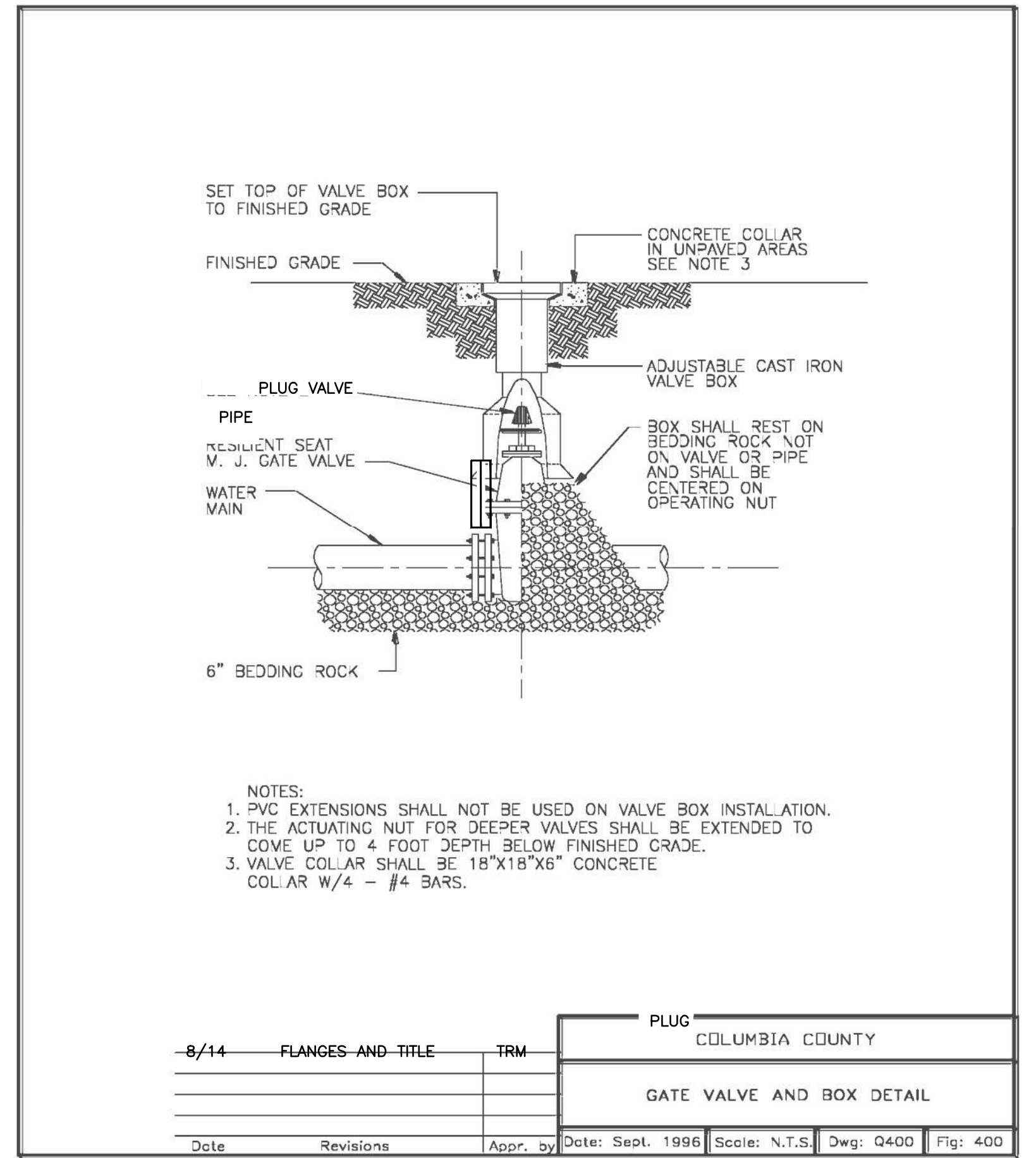
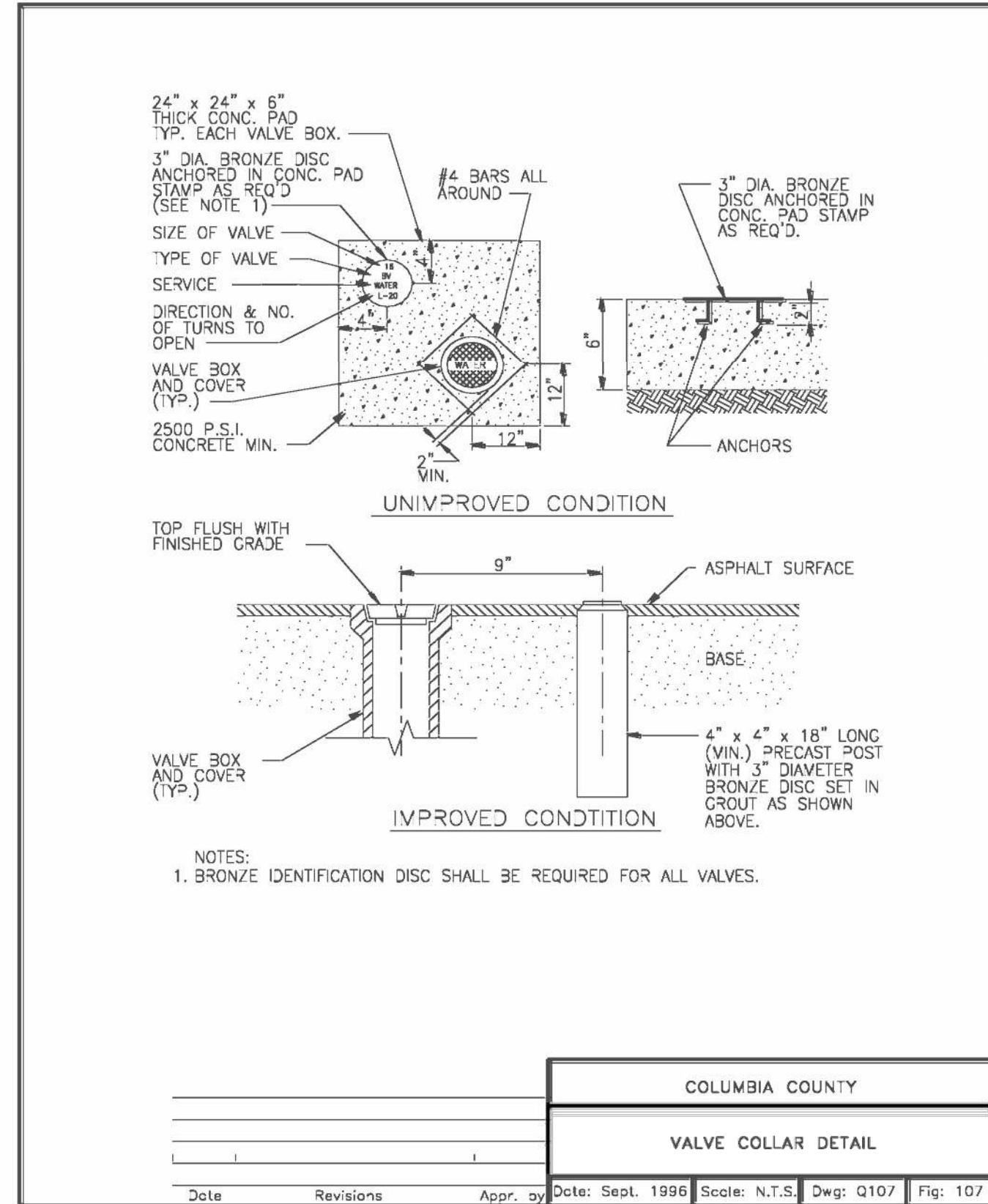
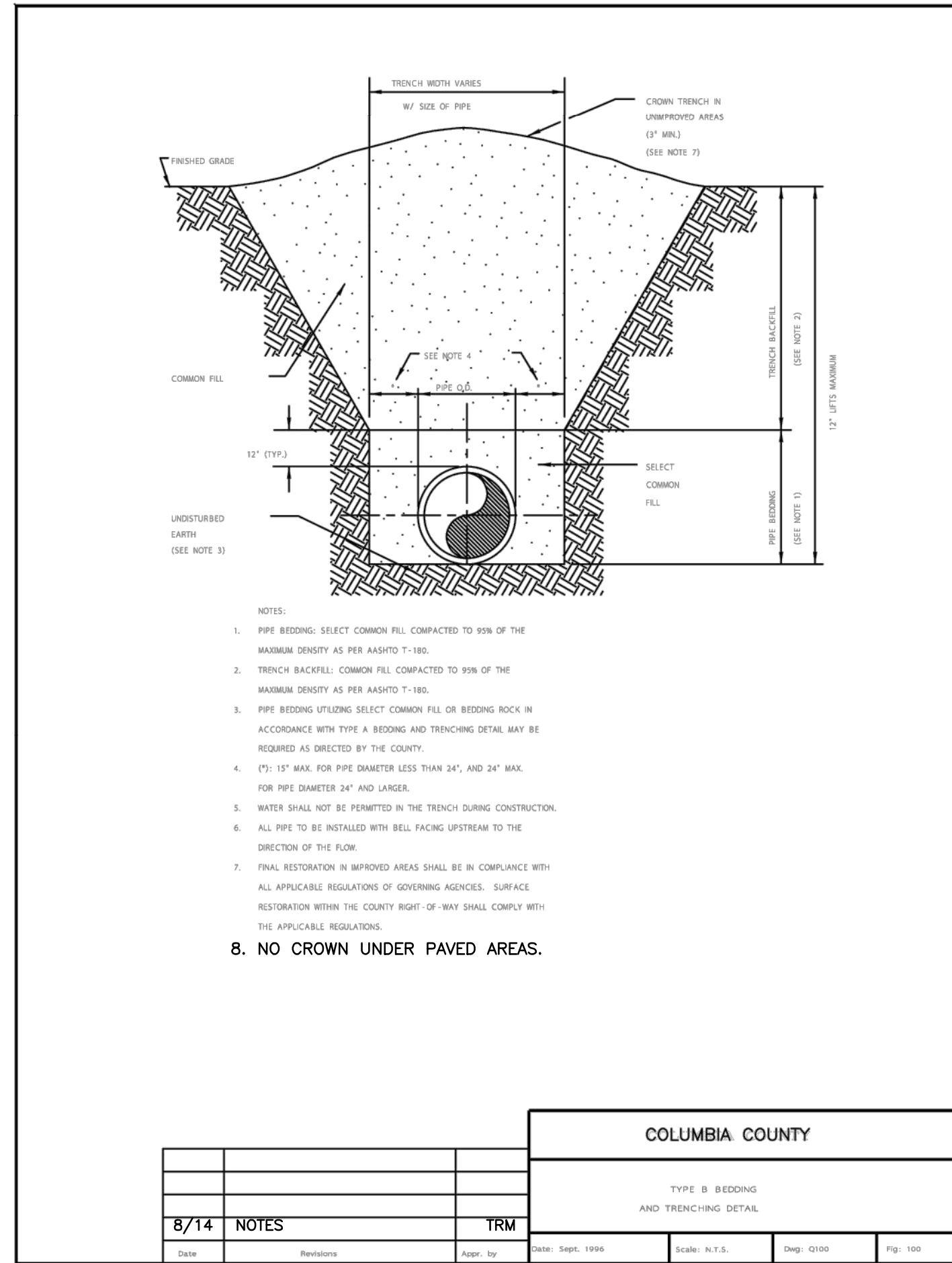
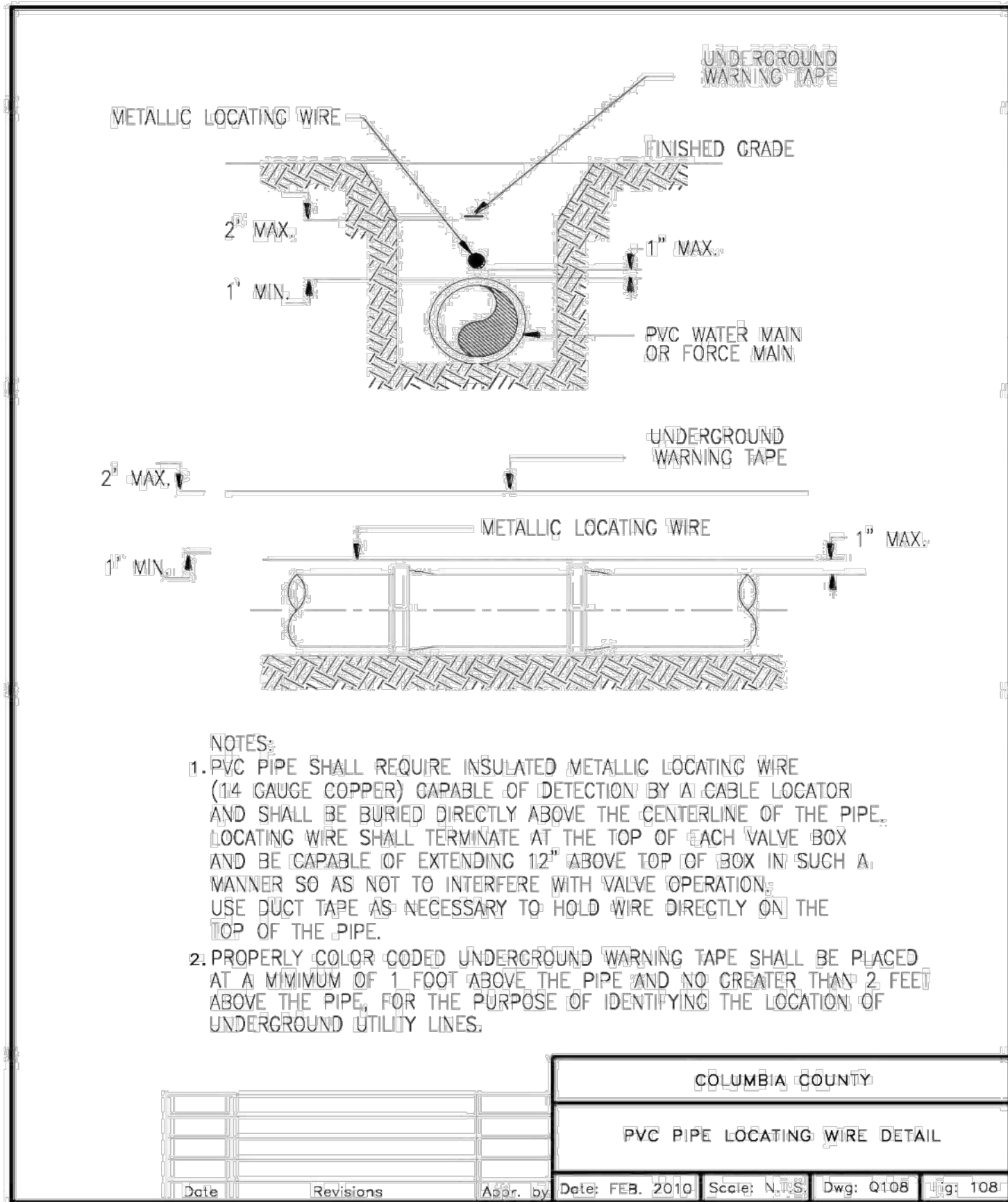
COLUMBIA COUNTY, FLORIDA
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION

SITE PLAN

ARCADIS Project No. 30028119.0000	
Date NOVEMBER 2021	
ARCADIS 4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125	

C-01

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Professional Engineer's Name		Professional Engineer's No.	
SEAN K. CHAPARRO, P.E.		75865	
State	Date Signed	Project Mgr.	SKC
FL			
Designed by	Drawn by	Checked by	SKC
SKC	AGG	SKC	

Sean K. Chaparro	
Digitally signed by: Sean K. Chaparro	CN = Sean K. Chaparro, C = US, O = Florida, Email = 2021.11.22.16:08:20.26507

ARCADIS	
ARCADIS U.S., INC.	FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

COLUMBIA COUNTY, FLORIDA	
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION	
CIVIL DETAILS II	

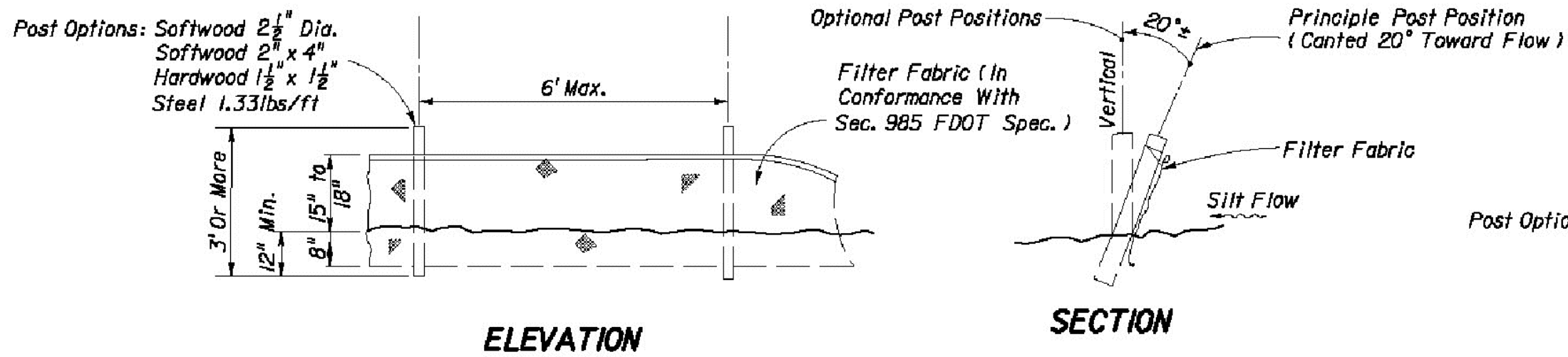
ARCADIS Project No.	
30028119.0000	
Date	NOVEMBER 2021
ARCADIS 4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL: 813.903.3125	

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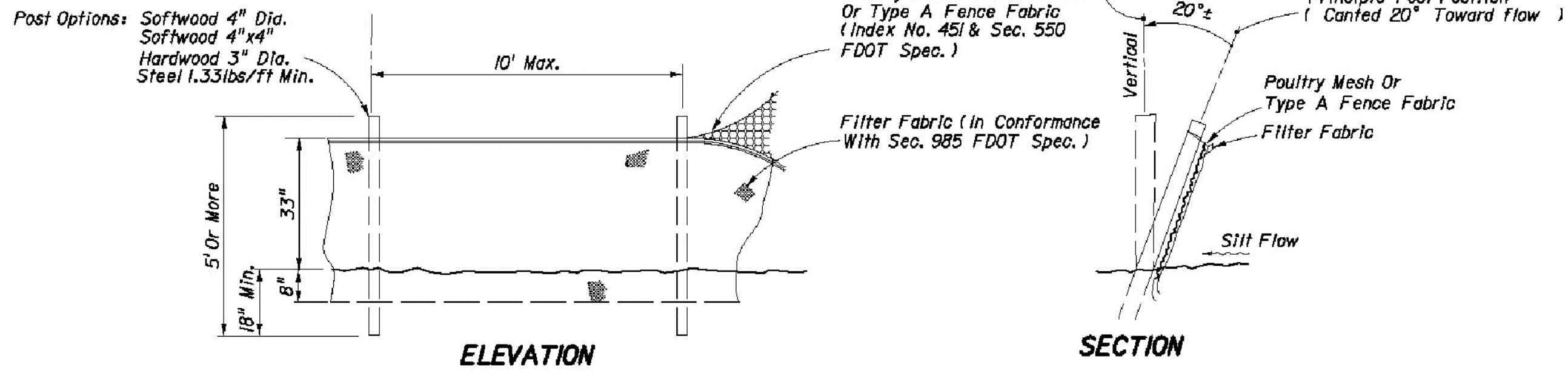
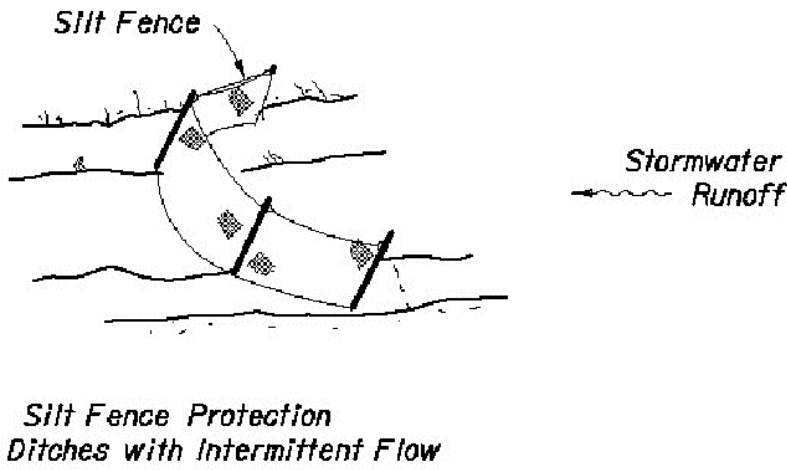
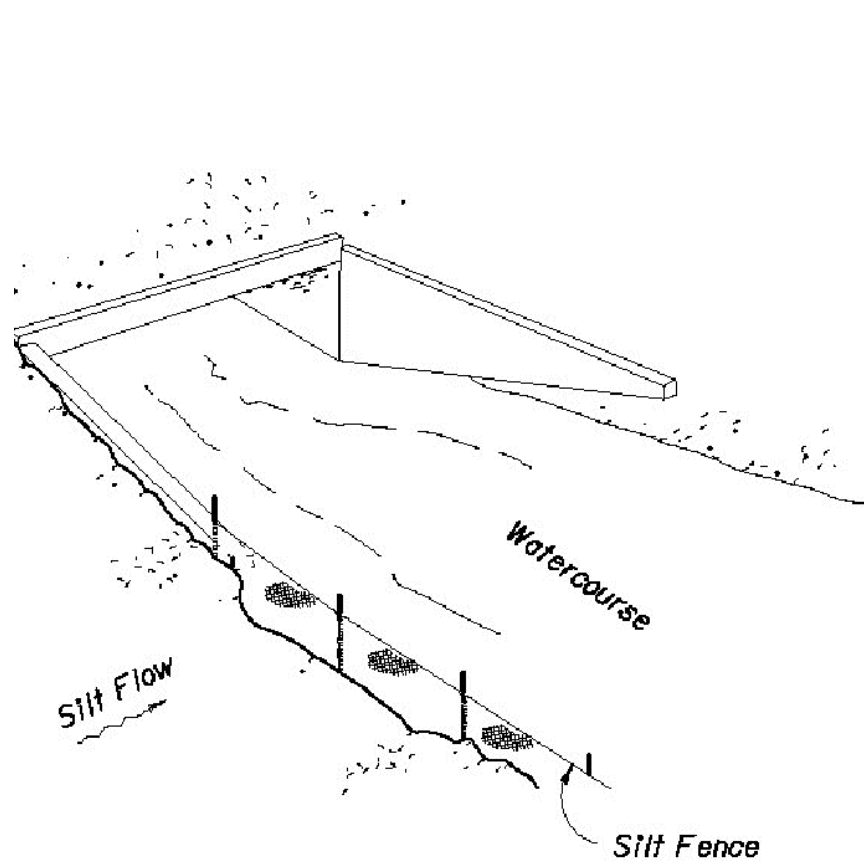
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ENVIRONMENTAL PROTECTION NOTES:

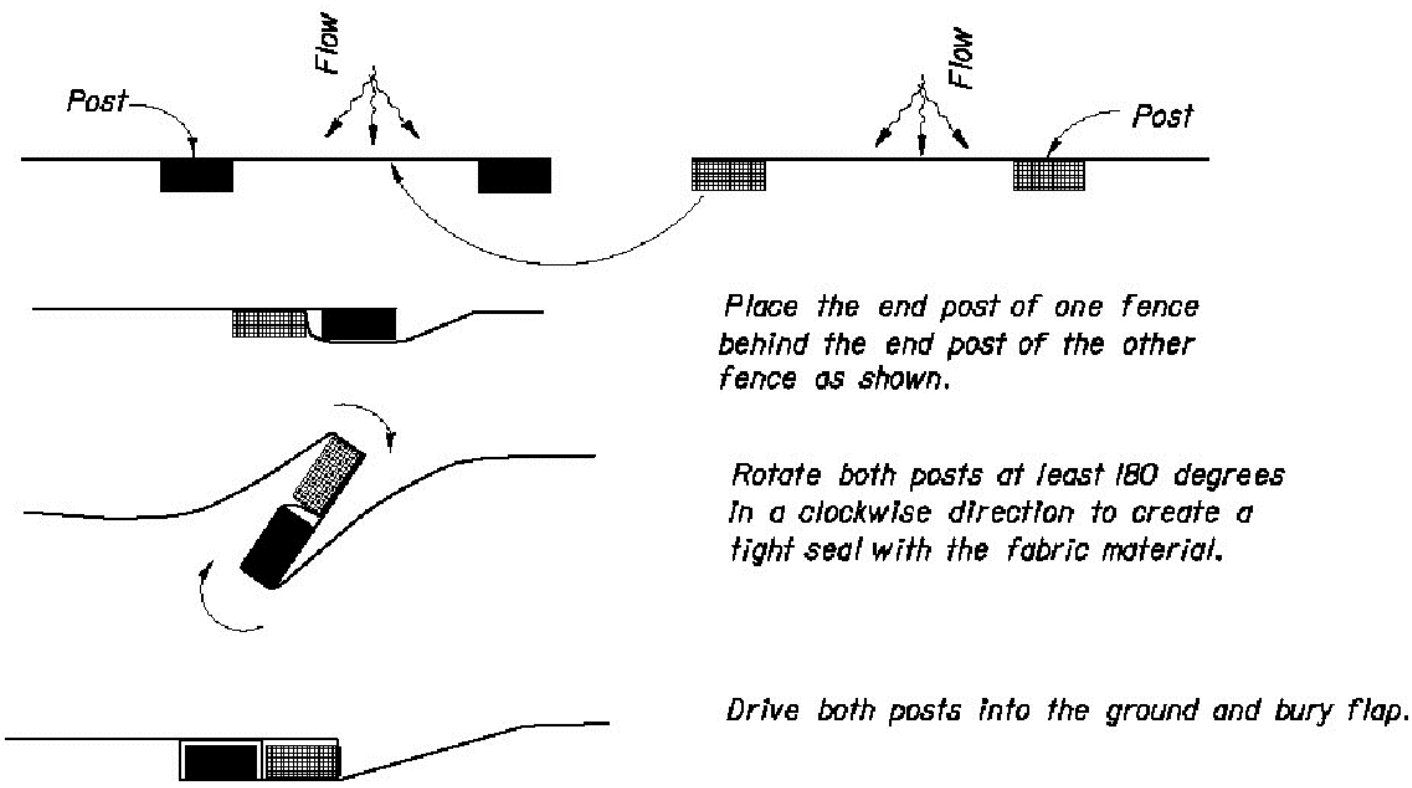
- SILT BARRIERS, SYNTHETIC BALES, STAKED SILT FENCES OR FLOATING SILT SCREENS SHALL BE USED AS SILT BARRIERS. SEE NOTE NO. 7 ON THIS SECTION. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL MONITOR AND MAINTAIN THESE SILT BARRIERS DAILY AND CHECK FOLLOWING EACH STORM EVENT. SHOULD THE SILT BARRIERS BECOME LOOSE OR DAMAGED DURING THE CONSTRUCTION PERIOD, CONTRACTOR SHALL RECONSTRUCT AND CORRECT THEM, OR REPLACE THEM WITH A DIFFERENT TYPE IF NECESSARY, AT NO COST TO THE OWNER.
- ALL WATER COLLECTED AND PUMPED DURING TRENCH DEWATERING ACTIVITIES SHALL BE DISPOSED OF ON UPLAND AREAS INTO DOUBLE STAKED HAY BALES. DISCHARGE LOCATIONS SHALL BE A MINIMUM OF 75 FEET FROM THE NEAREST WETLAND TO ALLOW FOR A MAXIMUM OVERLAND FILTRATION OF SOIL PARTICLES. ALL PERMITTING ASSOCIATED WITH CONTRACTOR'S DEWATERING ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXCAVATION ACROSS ALL WETLANDS WITHIN ESTABLISHED LIMITS OF CONSTRUCTION SHALL BE ACCOMPLISHED BY STRIPPING THE TOP 10 INCHES OF ORGANIC SURFICIAL SOILS FROM THE FULL WIDTH OF THE AREA TO BE DISTURBED AND STOCKPILING THESE SOILS ON UPLAND AREAS. THE REMAINING EXCAVATIONS NECESSARY FOR PIPE INSTALLATION THAT SHALL BE USED FOR BACKFILL SHALL BE TEMPORARILY PLACED ADJACENT TO THE PIPE TRENCH. THE EXCAVATED MATERIAL THAT SHALL NOT BE USED FOR BACKFILL SHALL BE STOCKPILED SEPARATELY FROM SURFICIAL SOILS ON UPLAND AREAS OUTSIDE OF JURISDICTIONAL AREAS DESIGNATED ON THE DRAWINGS AT A MINIMUM DISTANCE OF 200 FEET FROM A WETLAND. BACKFILLING OPERATIONS SHALL PROCEED SUCH THAT SURFICIAL SOILS SHALL BE REPLACED LAST AND SHALL BE SPREAD ACROSS THE ENTIRE DISTURBED WETLAND AREA TO HELP PROMOTE NATIVE VEGETATIVE GROWTH. SURFICIAL SOILS SHALL NOT BE LEFT STOCKPILED IN EXCESS OF TWO WEEKS. ALL WETLAND CROSSINGS THAT ARE DISTURBED DURING CONSTRUCTION, SHALL HAVE AN ADEQUATE AMOUNT OF FILL REMOVED SO THAT THE WETLAND IS RESTORED TO THE ORIGINAL LINE, GRADE AND PROPORTION AS INDICATED BY THESE DRAWINGS.
- EROSION PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH ANY AND ALL ENVIRONMENTAL REGULATIONS AND PERMIT CONDITIONS, IN ACCORDANCE WITH THE GENERAL CONDITIONS AND GENERAL REQUIREMENTS SECTIONS OF THE CONTRACT DOCUMENTS.
- BANKS SHALL BE PROTECTED FROM EROSION OR COLLAPSE DURING CONSTRUCTION. MATERIAL SHALL BE CAREFULLY PLACED FROM THE BANK AND NOT DUMPED FROM ABOVE IN AN UNCONTROLLED MANNER. EROSION CONTROL FABRIC SHALL BE USED FOR EROSION PROTECTION WHERE SOD SHALL NOT HOLD OR BECOME ESTABLISHED IN TIME TO PROTECT THE BANKS. UPON COMPLETION OF CONSTRUCTION, BANKS AND WATERWAYS SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONFIGURATION AND PROTECTED FROM EROSION.
- THESE ENVIRONMENTAL NOTES ARE APPLICABLE TO THE COMPLETE PROJECT. HOWEVER, THE CONTRACTOR SHALL TAKE EXTRA PRECAUTIONS WHERE SPECIFIC REFERENCES ARE MADE WITHIN THE DRAWINGS.
- SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12 INCHES OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE IMMEDIATELY REMOVED AND PLACED IN UPLAND AREAS.



TYPE III SILT FENCE



TYPE IV SILT FENCE



PLAN VIEW

JOINING TWO SILT FENCES

SILT FENCE APPLICATIONS

NOTES FOR SILT FENCES

- TYPE III SILT FENCE TO BE USED AT MOST LOCATIONS. WHERE USED IN DITCHES THE SPACING FOR TYPE III SILT FENCE SHALL BE IN ACCORDANCE WITH CHART 1, SHEET 1.
- TYPE IV SILT FENCE TO BE USED WHERE LARGE SEDIMENT LOADS ARE ANTICIPATED. SUGGESTED USE IS WHERE FILL SLOPE IS 1:2 OR STEEPER AND LENGTH OF SLOPE EXCEEDS 25 FEET. AVOID USE WHERE THE DETAINED WATER MAY BACK INTO TRAVEL LANES OR OFF THE RIGHT OF WAY.
- DO NOT CONSTRUCT SILT FENCES ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
- WHERE USED AS SLOPE PROTECTION, SILT FENCE IS TO BE CONSTRUCTED ON 0% LONGITUDINAL GRADE TO AVOID CHANNELIZING RUNOFF ALONG THE LENGTH OF THE FENCE.
- PERIMETER SILT FENCE SHALL BE TRENCHED 8-10 INCHES DEEP EXCEPT AROUND THE DRIPLINE OF LARGE TREES WHERE YOU SHOULD REFER TO THE TREE PROTECTION BARRIER DETAIL.

MAINTENANCE

- INSPECT SILT BARRIERS IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE A DAY DURING PERIODS OF PROLONGED RAINFALL. MAKE NEEDED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC ON A SILT BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND IF THE BARRIER IS STILL NEEDED, REPLACE THE FABRIC IMMEDIATELY.
- REMOVE SEDIMENT DEPOSITS AFTER EACH STORM EVENT.
- ANY SEDIMENT DEPOSITS IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, AND PREPARED FOR SEEDING OR SODDING.

STORMWATER NOTES:

- STORMWATER DESIGN SHALL COMPLY WITH PROPERTY OWNERS STORMWATER REQUIREMENTS.
- UNDER THE PROVISIONS OF THE CLEAN WATER ACT, AS AMENDED, FEDERAL LAW PROHIBITS DISCHARGES OF POLLUTANTS IN STORMWATER FROM CONSTRUCTION ACTIVITIES WITHOUT A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES). THE CONTRACTOR SHALL COMPLETE AND SUBMIT AN FDEP NOI FORM 62-621.300 (4) (b) TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES TO OBTAIN COVERAGE UNDER A CONSTRUCTION GENERAL PERMIT.

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GENERAL

- G-1 THESE NOTES ARE GENERAL AND SUPPLEMENTAL TO THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- G-2 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE 2020 FLORIDA BUILDING CODE (7TH EDITION) EXCEPT WHERE OTHER APPLICABLE CODES AND THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE.
- G-3 LIVE LOADS:
FLOOR LIVE LOAD = 250 PSF
STAIRS, WALKWAYS,
ELEVATED PLATFORMS: 100 PSF (U.O.N.)
PLATFORMS WITH EQUIPMENT: 150 PSF (U.O.N.)
- G-4 WIND DESIGN:
ULTIMATE DESIGN WIND SPEED = 130 MPH
EXPOSURE CATEGORY = C
RISK CATEGORY = III
- G-5 ALL DIMENSIONS INDICATED (*) ARE TO BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- G-6 EQUIPMENT ANCHOR BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- G-7 STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- G-8 IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE ENGINEER.
- G-9 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- G-10 NO BACKFILL SHALL BE PLACED AGAINST ANY WALL UNLESS ALL SUPPORTING ELEMENTS OF THE STRUCTURE HAVE BEEN CONSTRUCTED AND HAVE REACHED THE SPECIFIED MINIMUM CONCRETE STRENGTH.
- G-11 NO COLD WEATHER CONSTRUCTION OR HOT WEATHER CONSTRUCTION, AS DEFINED IN SPECIFICATIONS, IS PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- G-12 OPENINGS AND PENETRATIONS: THE CONTRACTOR SHALL SUBMIT COMPOSITE DRAWINGS INDICATING ALL FLOOR OPENINGS AND PENETRATIONS THROUGH STRUCTURAL MEMBERS REQUIRED TO ACCOMMODATE ALL OTHER WORK. THE CONTRACTOR SHALL FOLLOW THE TYPICAL FRAMING DETAILS AT OPENINGS AND REINFORCEMENT DETAILS AT PENETRATIONS THROUGH STRUCTURAL MEMBERS. ACCORDINGLY, THE CONTRACTOR SHALL SUBMIT SHOP DETAILS TO THE ENGINEER FOR REVIEW.

FOUNDATIONS

- F-1 ALL FOUNDATION WORK SHALL BE PER GEOTECHNICAL ENGINEERING REPORT FOR ELLISVILLE WWTP - NEW WATER STORAGE STRUCTURES, ISSUED BY CAL-TECH TESTING, INC.
- F-2 FOUNDATION WORK SHALL FOLLOW THE PROCEDURES RECOMMENDED IN THE GEOTECHNICAL REPORT.
- F-3 THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION TO EXISTING UNDERGROUND UTILITIES. VERIFY UTILITIES LOCATION BEFORE PROCEEDING WITH FOUNDATION EXCAVATION.
- F-4 ALL CONSTRUCTION OPERATIONS DEALING WITH EARTHWORK, EXCAVATIONS AND EXCAVATION BOTTOMS SHALL BE INSPECTED BY AN EXPERIENCED GEOTECHNICAL ENGINEER AT THE CONTRACTOR'S EXPENSE.
- F-5 SLAB AND FOUNDATIONS PARAMETERS:
A) MAXIMUM ALLOWABLE NET SOIL PRESSURE = 2000 PSF
B) MODULUS OF SUBGRADE REACTIONS FOR SLABS-ON-GRADE = 150 PSI/IN
- F-6 COMPACTED #57 STONE AND COMPACTED EXCAVATION BOTTOM AS SHOWN ON THE DRAWINGS SHALL BE UNDER THE ENTIRE FOUNDATION FOOTPRINT.

CONCRETE

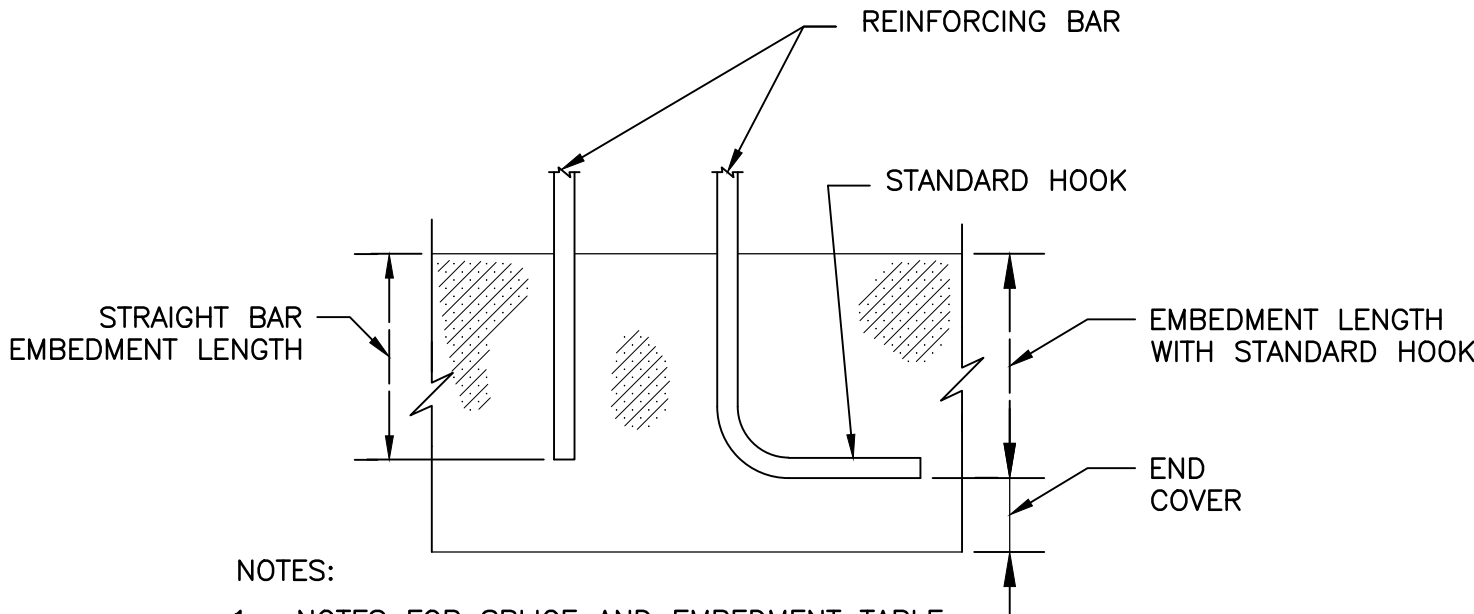
- C-1 CONCRETE 28-DAY COMPRESSIVE STRENGTH: 4500 PSI
- C-2 REINFORCEMENT: ASTM A615, GRADE 60, OR ASTM A706, GRADE 60 WHERE REINFORCEMENT IS TO BE WELDED.
- C-3 CONCRETE COVER FOR REINFORCING:
A) SURFACES CAST AGAINST EARTH 3"
B) SURFACE WITH EMBEDDED PVC WATERSTOP 3"
C) ALL OTHER SURFACES 2"
- C-4 CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. WHERE NOT SHOWN, CONSTRUCTION JOINTS SHALL BE LOCATED AT NO MORE THAN 40' ON CENTER. CONSTRUCTION JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER
- C-5 EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
- C-6 AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY ADHESIVE IN DRILLED HOLES AS SPECIFIED. DOWELS LOCATED CLOSER THAN 3" FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.
- C-7 WHERE DRILLED EPOXY ADHESIVE DOWELS ARE SHOWN TO BE PLACED INTO HARDENED CONCRETE, ADJUST THE DOWEL LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE DOWEL LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER.
- C-8 WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, THEY SHALL BE TERMINATED AT A VERTICAL CONSTRUCTION JOINT AS APPROVED BY THE ENGINEER.
- C-9 DOWELS, ANCHOR BOLTS, PIPES, AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- C-10 CONDUITS AND PIPES SHALL NOT BE EMBEDDED IN OR PASS THROUGH COLUMNS OR BEAMS UNLESS INDICATED OTHERWISE OR AUTHORIZED BY ENGINEER.
- C-11 ALL EXPOSED CORNERS SHALL HAVE A 3/4" CHAMFER OR A 1/2" RADIUS TOOLED CORNER.
- C-12 LAP SPLICES SHALL BE IN ACCORDANCE WITH THE TABLE SHOWN ON THIS DRAWING.

ABBREVIATIONS

AB	ANCHOR BOLTS	E	EAST	ID	INSIDE DIAMETER	R	RADIUS, RISER
ADD'L	ADDITIONAL	EA	EACH	IF	INSIDE FACE	REINF	REINFORCEMENT
AL	ALUMINUM	EF	EACH FACE	INV	INVERT	REQD	REQUIRED
ALT	ALTERNATE	EJ	EXPANSION JOINT	JT	JOINT	RM	ROOM
APPROX	APPROXIMATE	EL	ELEVATION	L	ANGLE (STRUCTURAL SHAPE)	RO	ROUGH OPENING
ARCH	ARCHITECTURAL	ELEC	ELECTRICAL	LL	LIVE LOAD	S	SOUTH
BAL	BALANCE	EMB	EMBEDMENT	LLH	LONG LEG HORIZ	SECT	SECTION
BL	BUILDING LINE	ENCL	ENCLOSURE	LLV	LONG LEG VERT	SH	SHEET
BLDG	BUILDING	EQ	EQUAL	LOC	LOCATION	SIM	SIMILAR
BM	BEAM	EQUIP	EQUIPMENT	LP	LOW POINT	SL	SLAB
BOT	BOTTOM	ES	EACH SIDE	LW	LONG WAY	SQ	SQUARE
BRG	BEARING	EW	EACH WAY	MAX	MAXIMUM	SS	STAINLESS STEEL
C	CHANNEL STRUCTURAL SHAPE	EW T&B	EACH WAY TOP & BOTTOM	MECH	MECHANICAL	STD	STANDARD
CANT'L	CANTILEVER	EXIST	EXISTING	MFR	MANUFACTURE, MANUFACTURER	STIR	STIRRUP
CJ	CONSTRUCTION JOINT	EXP	EXPANSION	MH	MANHOLE	STL	STEEL
CL	CLEAR	EXT	EXTERIOR	MID	MIDDLE	STRUCT	STRUCTURAL
COL	COLUMN	FB	FLOOR BEAM	MIN	MINIMUM	SW	SHORT WAY
COMP	COMPRESSIBLE	FDN	FOUNDATION	N	NORTH	T&B	TOP AND BOTTOM
CONC	CONCRETE	FF	FAR FACE	NF	NEAR FACE	TOC	TOP OF CONCRETE
CONN	CONNECTION	FIN	FINISH	#	NUMBER	THK	THICK
CONST	CONSTRUCTION	FL	FLOOR	NTS	NOT TO SCALE	T/	TOP OF
CONT	CONTINUOUS	FTG	FOOTING	OC	ON CENTER	T	TREAD
CSTG	CASTING	GA	GAUGE	OD	OUTSIDE DIAMETER	TYP	TYPICAL
C/C	CENTER TO CENTER	GALV	GALVANIZE	OF	OUTSIDE FACE	UON	UNLESS OTHERWISE NOTED
CTR	CENTER	GB	GRADE BEAM	OPNG	OPENING	VERT	VERTICAL
DET	DETAIL	GD	GRADE	OPP	OPPOSITE	W/	WITH
DIA	DIAMETER	GRTG	GRATING	PC	PRECAST CONCRETE	WP	WORKING POINT
DIAG	DIAGONAL	H	HIGH	PL	PLATE	WS	WATERSTOP
DIM	DIMENSION	HT	HEIGHT	PSF	POUNDS PER SQUARE FOOT	WWF	WELDED WIRE FABRIC
DL	DEAD LOAD	HORZ	HORIZONTAL	PVC	POLYVINYL CHLORIDE		
DN	DOWN	HP	HIGH POINT				
DP	DEEP	HS	HIGH STRENGTH				
DWG	DRAWING	HSS	HOLLOW STRUCTURAL SECTION				
DWL	DOWEL						

REINFORCING LAP SPlice & EMBEDMENT LENGTH							
BAR SIZE	MIN LAP LENGTH (IN)				MIN EMBEDMENT LENGTH (IN)		
	TOP BARS		OTHER BARS		STRAIGHT BARS		WITH STD HOOK
	CLASS		CLASS		TOP BARS	OTHER BARS	
	A	B	A	B			
SLABS & WALLS WITH 2" + COVER							
#3	16	21	12	16	16	12	6
#4	16	21	12	16	16	12	7
#5	20	25	15	19	20	15	9
#6	24	30	18	23	24	18	10
#7	33	43	25	33	33	25	12
#8	38	49	29	37	38	29	14
#9	49	63	37	48	49	37	15
#10	60	78	46	60	60	46	17
#11	75	97	57	74	75	57	19
SLABS & WALLS WITH < 2" COVER							
#3	16	21	12	16	16	12	8
#4	16	21	12	16	16	12	10
#5	20	25	15	19	20	15	12
#6	24	30	18	23	24	18	15
#7	38	49	29	37	38	29	17
#8	47	62	36	47	47	36	19
#9	58	76	44	58	58	44	22
#10	71	91	54	70	71	54	25
#11	85	110	65	84	85	65	27
BEAMS & COLUMNS WITH 3.75" CLEAR SPACING **							
#3	16	21	12	16	16	12	6
#4	16	21	12	16	16	12	7
#5	20	25	15	19	20	15	9
#6	24	30	18	23	24	18	10
#7	33	43	25	33	33	25	12
#8	39	51	30	39	39	30	14
#9	50	64	38	49	50	38	15
#10	60	78	46	60	60	46	17
#11	72	94	55	72	72	55	19

** FOR BAR CLEAR SPACING LESS THAN 3.75", ADD 46%
FOR BAR CLEAR SPACING LESS THAN 2.25", ADD 104%

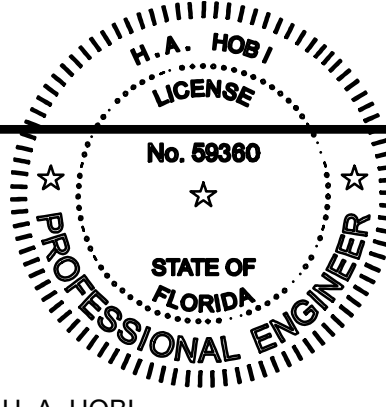


NOTES:

- NOTES FOR SPLICE AND EMBEDMENT TABLE:
A. THE MINIMUM LENGTH OF LAPS FOR SPLICES SHALL BE AS GIVEN IN THE TABLE FOR CLASS "B" LAPS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. PROVIDE CLASS "A" LAPS ONLY WHERE NOTED ON THE DRAWINGS.
B. THE SPLICE AND EMBEDMENT LENGTHS FOR WALLS AND SLABS ARE BASED ON A 5" MINIMUM ON CENTER BAR SPACING. SEE THE DRAWINGS FOR SPLICE AND EMBEDMENT WHERE BARS ARE SPACED CLOSER THAN 5".
C. HOOK EMBEDMENTS APPLY ONLY WHERE THE SIDE COVER (NORMAL TO THE HOOK PLANE) IS AT LEAST 2.5". THE COVERS REFERENCED ON THE TABLE ARE FROM THE HOOK EXTENSION TO THE FACE OF THE CONCRETE.
D. THE TABLE DOES NOT APPLY TO LIGHTWEIGHT CONCRETE OR EPOXY COATED REINFORCING BARS. SEE ACI 318 FOR APPROPRIATE ADDITIONAL MULTIPLIERS FOR THOSE CASES.
- WHERE SPLICES ARE REQUIRED BETWEEN BARS OF DIFFERENT SIZES, THE LAP LENGTH SHALL BE NO LESS THAN THE EMBEDMENT LENGTH OF THE LARGER BAR OR THE LAP LENGTH OF THE SMALLER BAR, WHICHEVER IS GREATER.
- VERTICAL REINFORCEMENT FOR CONCRETE SHALL BE SPLICED WITH DOWEL BARS OF THE SAME SIZE AND SPACING FROM THE FOUNDATION USING A STANDARD SPLICE LENGTH.
- DOWELS SHOWN EXTENDING FROM PREVIOUSLY PLACED CONCRETE SHALL EXTEND ONE SPLICE LENGTH BEYOND THE JOINT, UNLESS DIMENSIONED OTHERWISE. WHERE A DIMENSION IS PROVIDED, THE BAR SPLICING TO THE DOWEL SHALL END ONE SPLICE LENGTH FROM THE END OF THE DOWEL.

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HOUSAM HOBI
Digitally signed by HOUSAM HOBI
Date: 2021.11.22 15:28:18 -05'00'



ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION
STRCTURAL NOTES, LEGEND, AND ABBREVIATIONS

ARCADIS Project No.
30028119.0000

Date
NOVEMBER 2021

ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

S-01

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

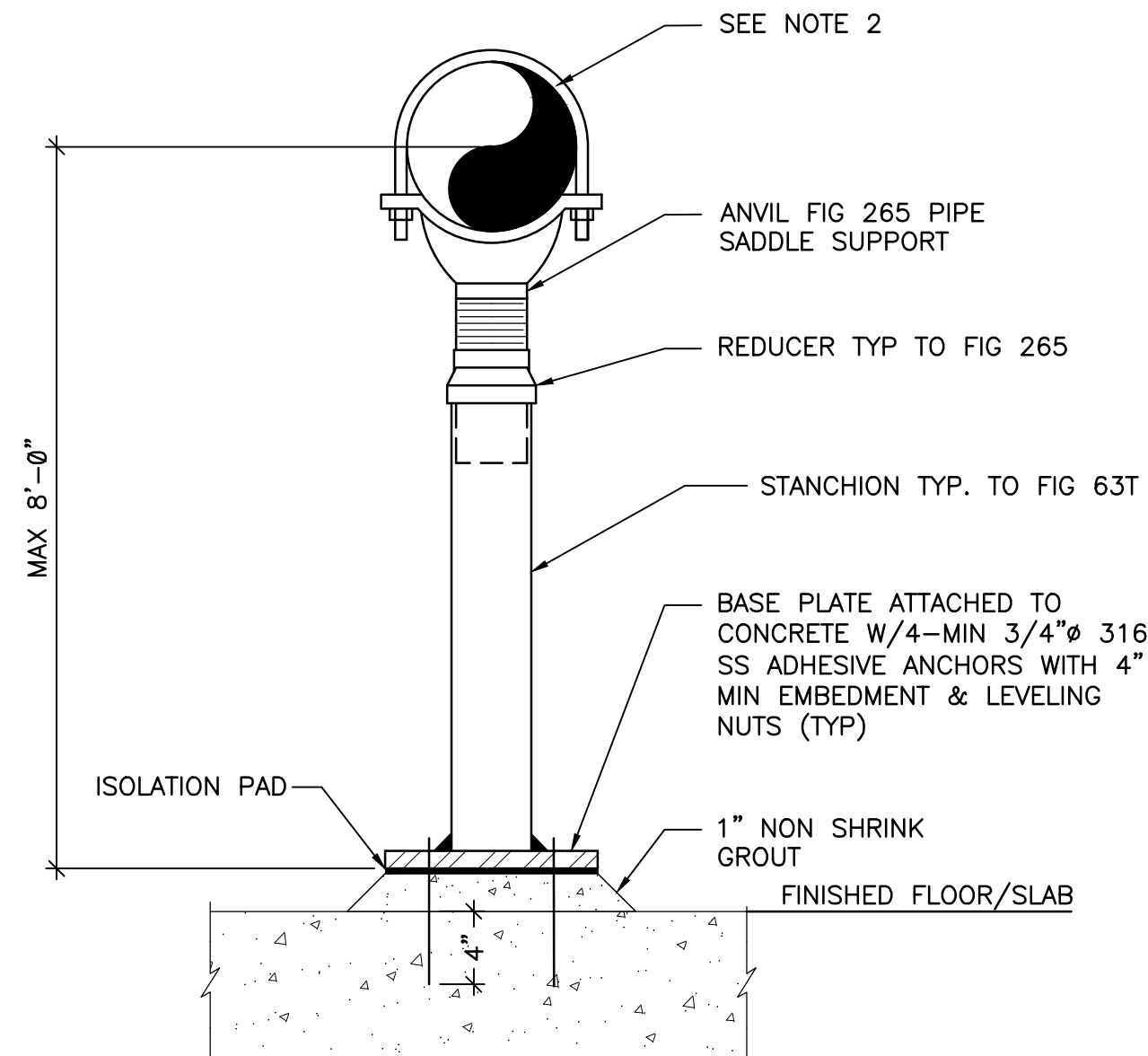
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No.	Date	Revisions	AGG	SKC
1	11/19/2021	CONFORMED SET		

Professional Engineer's Name H. A. HOBI, P.E.		
Professional Engineer's No. 59360		
State FL	Date Signed By	Project Mgr. SKC
Designed by HAH	Drawn by AGG	Checked by HAH

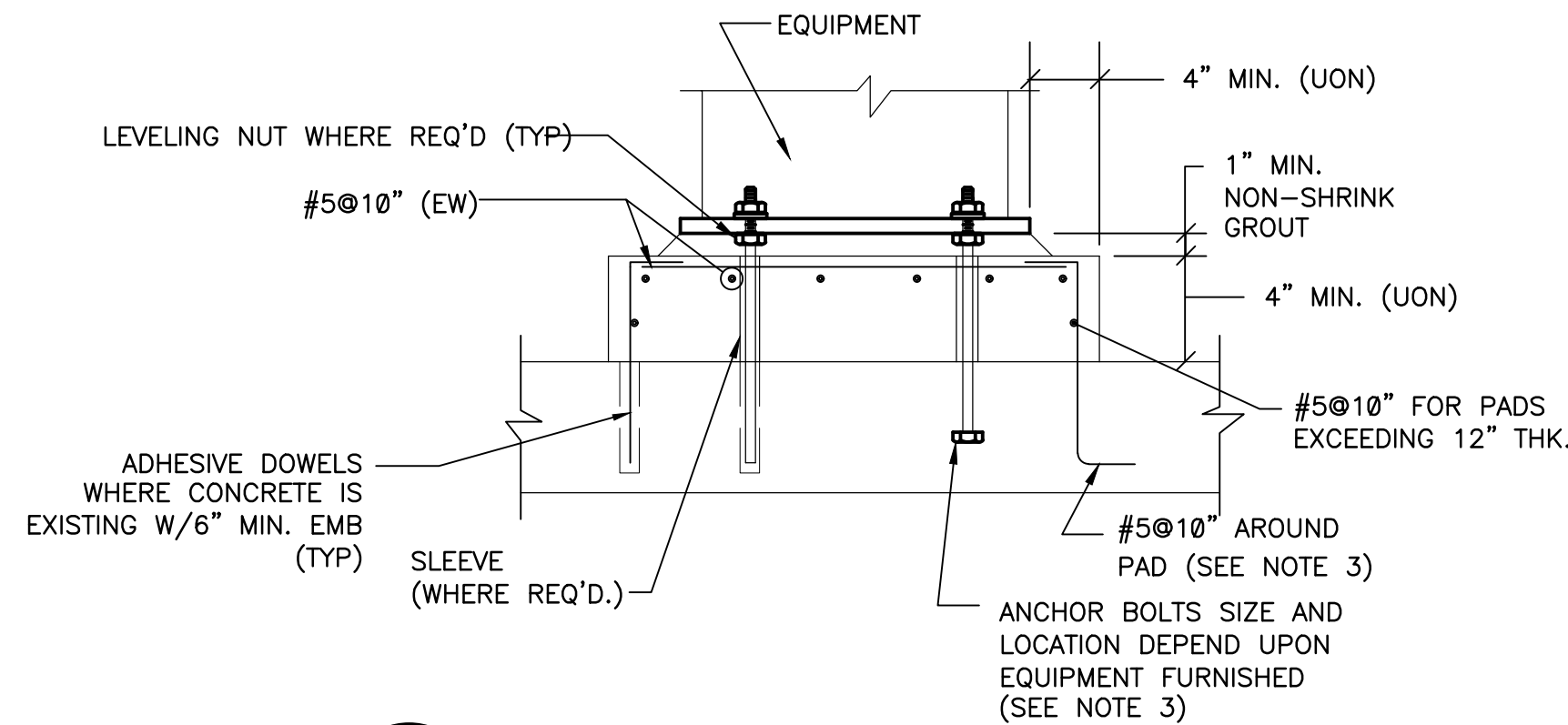
H. A. HOBI
P.E. NO. 59360



- NOTES:
1. MAXIMUM RECOMMENDED LOAD: 1,500 LBS.
 2. WELDED PIPE SUPPORT BRACKETS FOR SYSTEMS WEIGHING GREATER THAN 1,500 LBS: THE CONTRACTOR SHALL PROVIDE SHOP DRAWING AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
 3. PROVIDE 3"x1/4" NEOPRENE PAD BONDED TO PIPE.
 4. PIPE SUPPORT TO BE SS316.
 5. MAX SUPPORT SPACING 8'-0".

F ADJUSTABLE PIPE SUPPORT

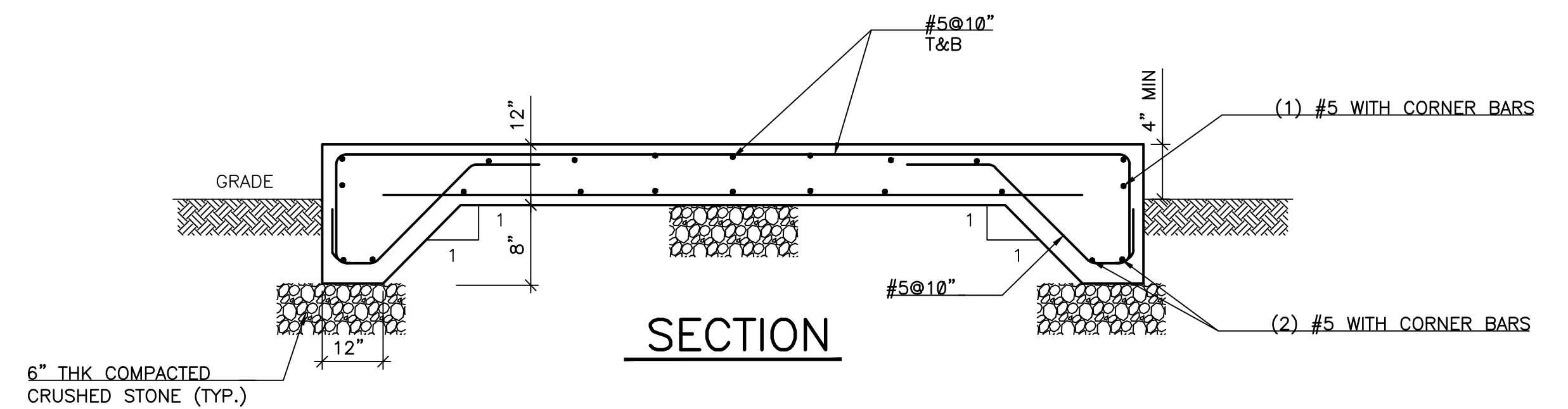
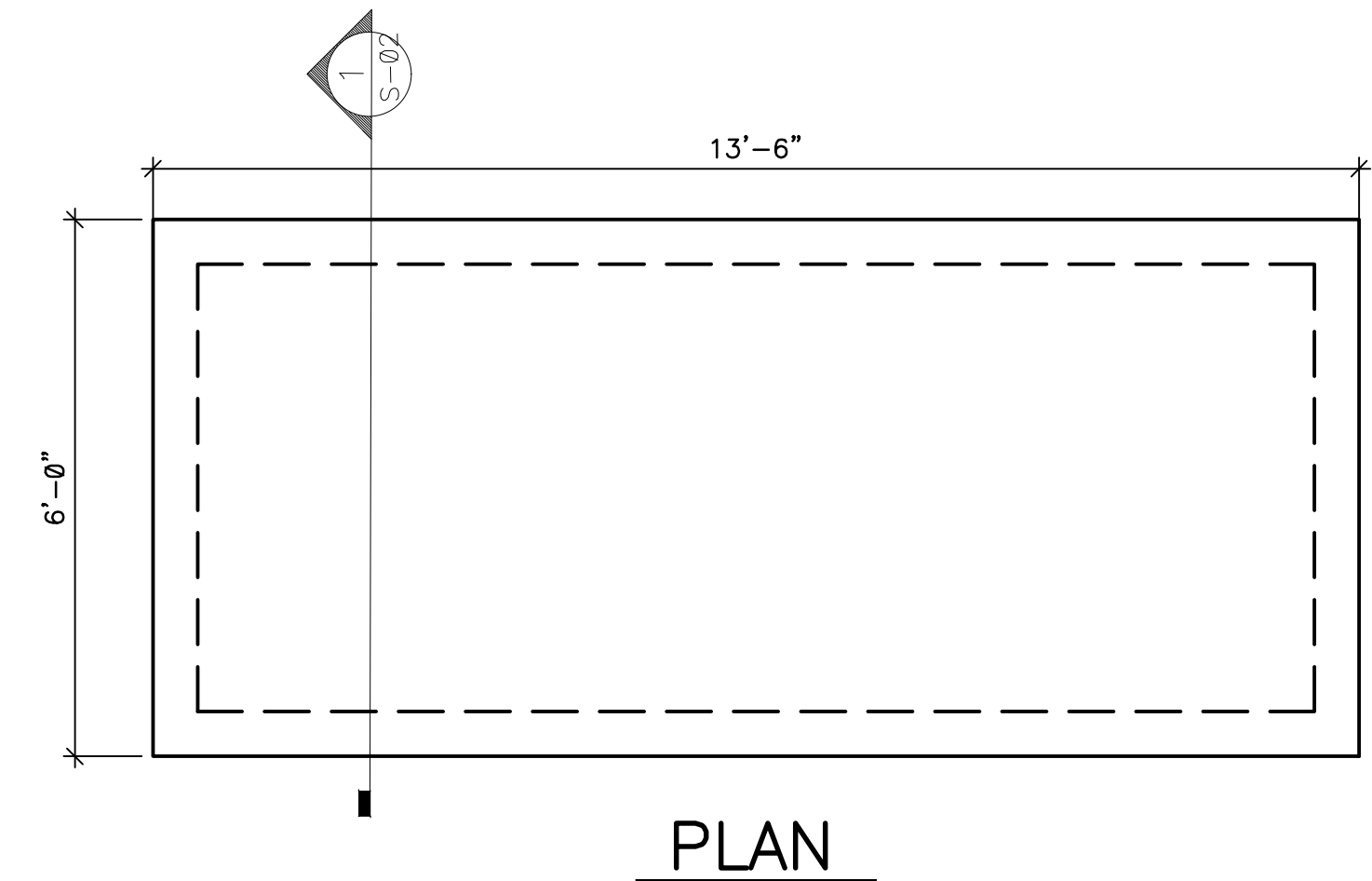
SCALE: NO SCALE



G TYPICAL EQUIPMENT PAD DETAIL

SCALE: NO SCALE

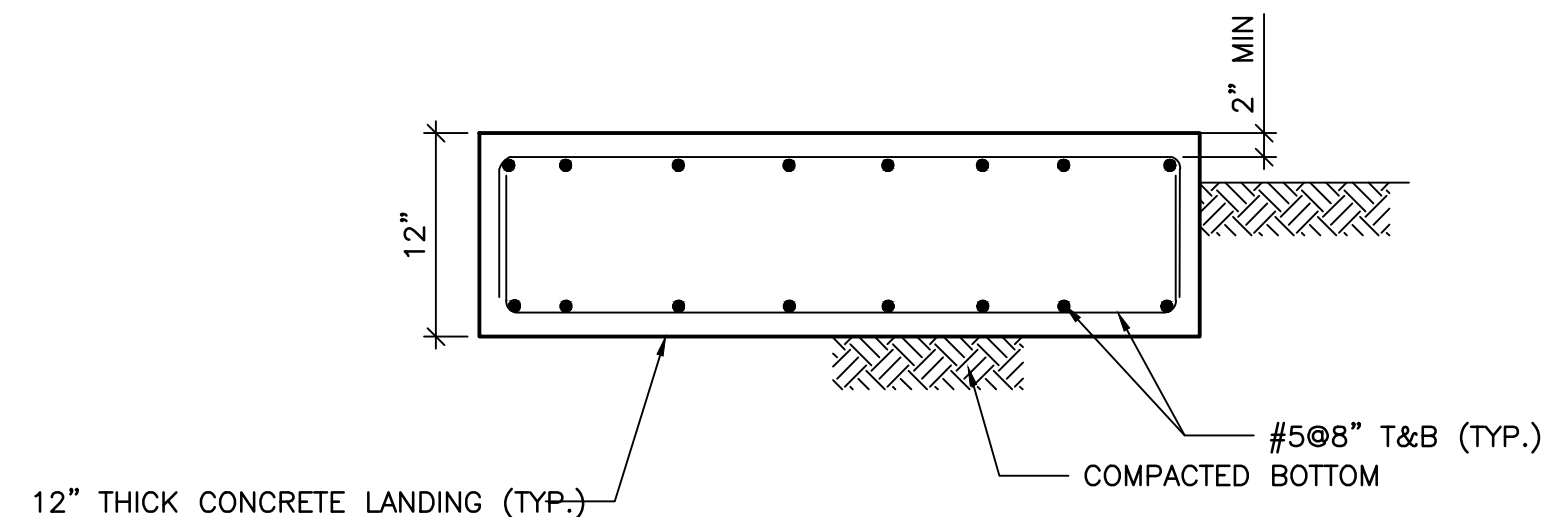
- NOTES:
1. PROVIDE TYP. 4" MINIMUM CONCRETE SUPPORT PAD FOR ALL EQUIPMENT UNLESS OTHERWISE NOTED.
 2. COORDINATE LOCATION AND SIZE OF PADS WITH OTHER DRAWINGS AND MANUFACTURER'S CERTIFIED DRAWINGS.
 3. FOR EXISTING SLABS, DRILL HOLE DIAMETER AND DEPTH IN EXISTING SLAB PER MANUFACTURER'S REQUIREMENTS FOR ADHESIVE ANCHORAGE SYSTEM USED.



1 TYPICAL BLOWER PAD DETAIL

SCALE: NO SCALE

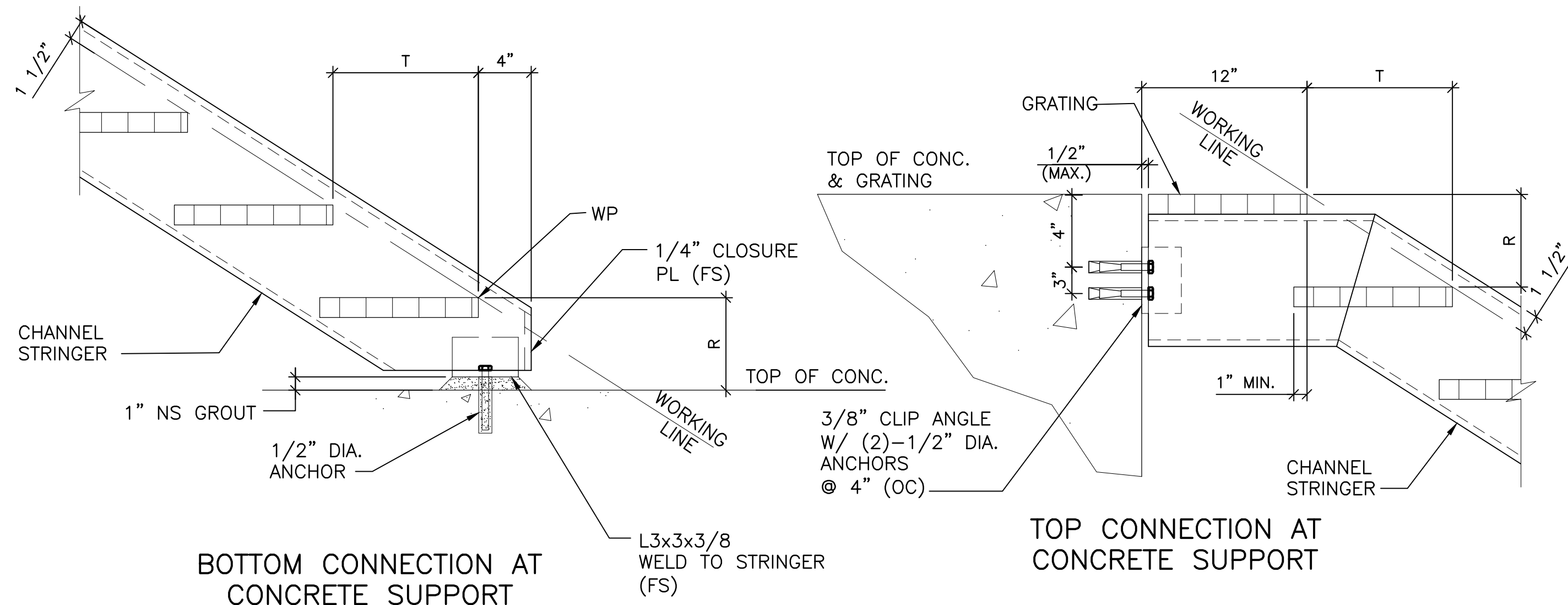
1. REFER MECHANICAL DRAWINGS FOR LENGTH AND WIDTH OF CONCRETE PAD.
2. PREPARE SUBBASE PER GEOTECHNICAL REPORT.
3. ANCHORAGE FOR EQUIPMENT IS MANUFACTURER AND/OR CONTRACTORS RESPONSIBILITY. PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR ANCHORAGE DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.



TYPICAL CONCRETE STAIR LANDING

SCALE: NO SCALE

1. REFER TO MECHANICAL DRAWINGS FOR LENGTH AND WIDTH OF CONCRETE STAIR LANDING.
2. PREPARE SUBBASE PER GEOTECHNICAL REPORT.

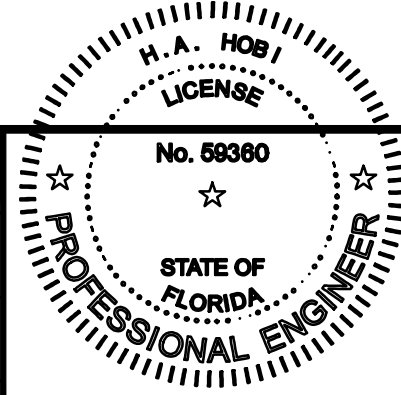


TYPICAL METAL STAIR DETAILS

- NOTES:
1. STAIR TREADS, GRATING AND STRUCTURAL SHAPES SHALL BE ALUMINUM.
 2. RAILING NOT SHOWN FOR CLARITY.

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Professional Engineer's Name H. A. HOBI, P.E.	Professional Engineer's No. 59360	Date Signed 11/19/2021	Project Mgr. SKC
State FL	By HAH	Drawn by AGG	Checked by HAH
Designed by HAH			

HOUSAM HOBI
Digitally signed by HOUSAM HOBI
Date: 2021.11.22 15:28:39 -0500

ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

STRUCTURAL DETAILS

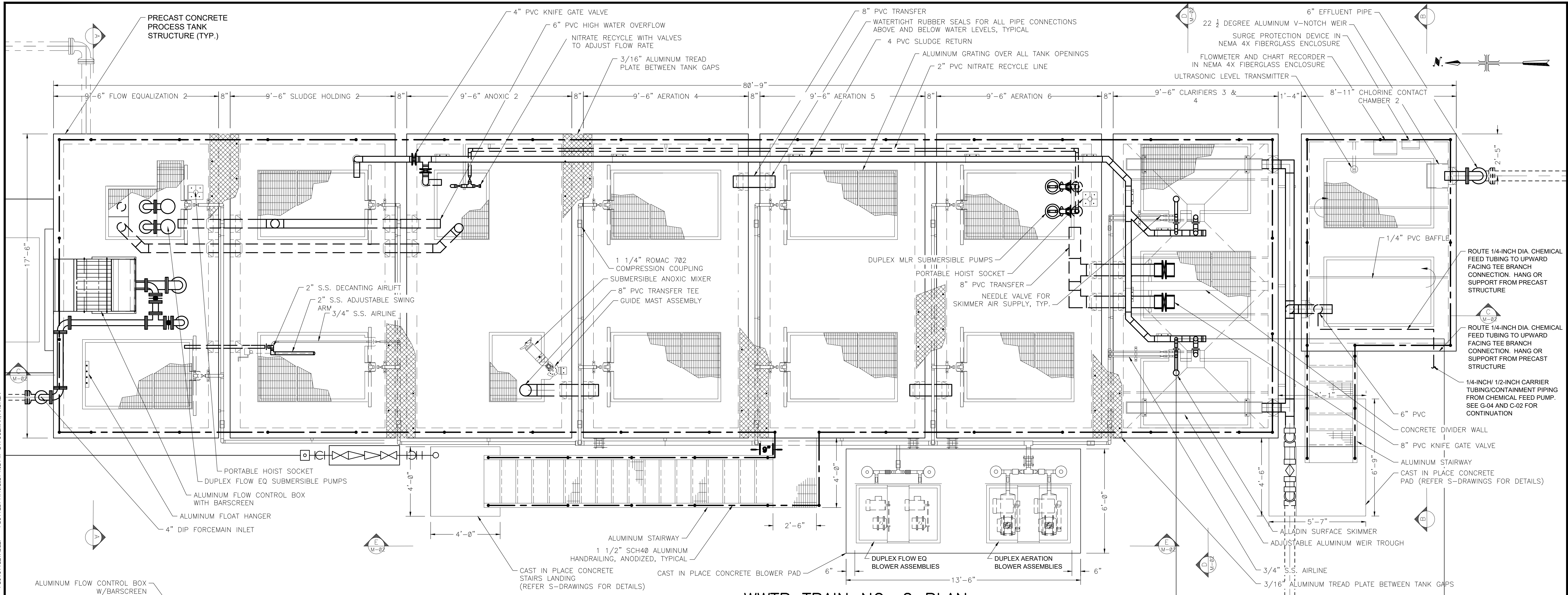
ARCADIS Project No.
30028119.0000

Date
NOVEMBER 2021

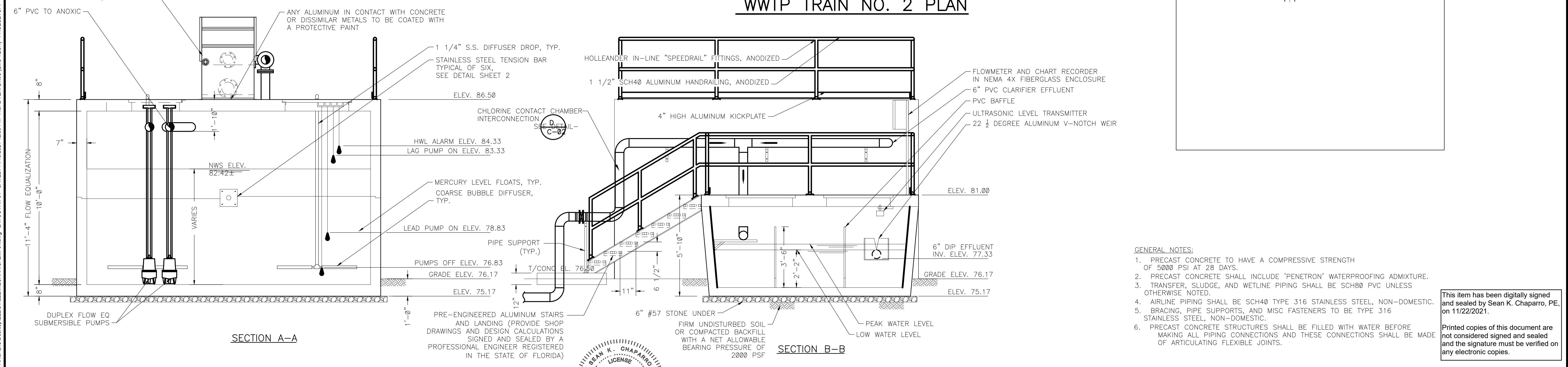
ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

S-02

CITY: DIV/GRP: DB: LD: PIC: PM: TM: LYR/ON-OFF-REF: C:\Users\guzman\OneDrive - ARCADIS\Documents\ELLISVILLE\MECHANICAL\M-01.dwg LAYOUT: M-01 SAVED: 11/19/2021 12:39 PM ACADVER: 24.05 (MS TECH) PAGES: 1 OF 1 PLOTTED: 11/19/2021 1:52 PM BY: GUZMAN, ANDREA



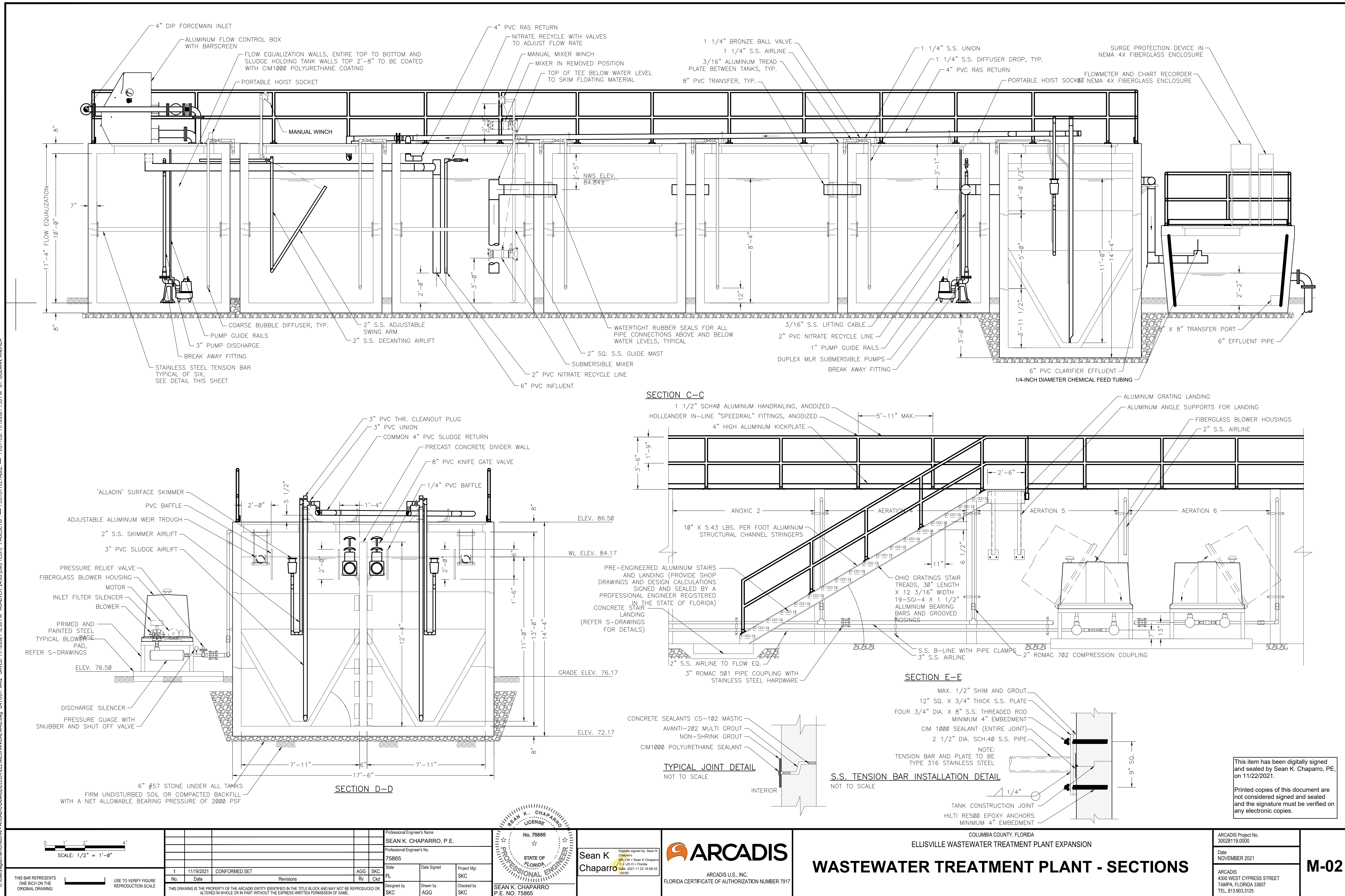
WWTP TRAIN NO. 2 PLAN



- GENERAL NOTES:
1. PRECAST CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
 2. PRECAST CONCRETE SHALL INCLUDE 'PENETRON' WATERPROOFING ADMIXTURE.
 3. TRANSFER, SLUDGE, AND WETLINE PIPING SHALL BE SCH80 PVC UNLESS OTHERWISE NOTED.
 4. AIRLINE PIPING SHALL BE SCH40 TYPE 316 STAINLESS STEEL, NON-DOMESTIC.
 5. BRACING, PIPE SUPPORTS, AND MISC FASTENERS TO BE TYPE 316 STAINLESS STEEL, NON-DOMESTIC.
 6. PRECAST CONCRETE STRUCTURES SHALL BE FILLED WITH WATER BEFORE MAKING ALL PIPING CONNECTIONS AND THESE CONNECTIONS SHALL BE MADE OF ARTICULATING FLEXIBLE JOINTS.

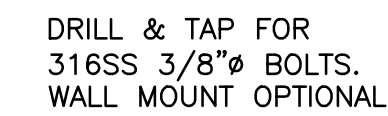
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		<table><tr><td>No.</td><td>1</td><td>Date</td><td>11/19/2021</td><td>CONFORMED SET</td><td>AGG</td><td>SKC</td></tr><tr><td>By</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Ckd</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		No.	1	Date	11/19/2021	CONFORMED SET	AGG	SKC	By							Ckd							<table><tr><td>Professional Engineer's Name</td><td>SEAN K. CHAPARRO, P.E.</td></tr><tr><td>Professional Engineer's No.</td><td>75865</td></tr><tr><td>State</td><td>FL</td></tr><tr><td>Date Signed</td><td></td></tr><tr><td>Project Mgr.</td><td>SKC</td></tr><tr><td>Designed by</td><td>SKC</td></tr><tr><td>Drawn by</td><td>AGG</td></tr><tr><td>Checked by</td><td>SKC</td></tr></table>		Professional Engineer's Name	SEAN K. CHAPARRO, P.E.	Professional Engineer's No.	75865	State	FL	Date Signed		Project Mgr.	SKC	Designed by	SKC	Drawn by	AGG	Checked by	SKC			<table><tr><td>Sean K Chaparro</td><td></td></tr><tr><td colspan="2">ARCADIS U.S., INC.</td></tr><tr><td colspan="2">FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917</td></tr></table>		Sean K Chaparro		ARCADIS U.S., INC.		FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917		COLUMBIA COUNTY, FLORIDA ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION WASTEWATER TREATMENT PLANT - PLAN AND SECTIONS		<table><tr><td>ARCADIS Project No.</td><td>30028119.0000</td></tr><tr><td>Date</td><td>NOVEMBER 2021</td></tr><tr><td>ARCADIS</td><td>4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125</td></tr></table>		ARCADIS Project No.	30028119.0000	Date	NOVEMBER 2021	ARCADIS	4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125	M-01	
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NOTE: SEE PLANS
FOR HOSE BIBB
SIZES



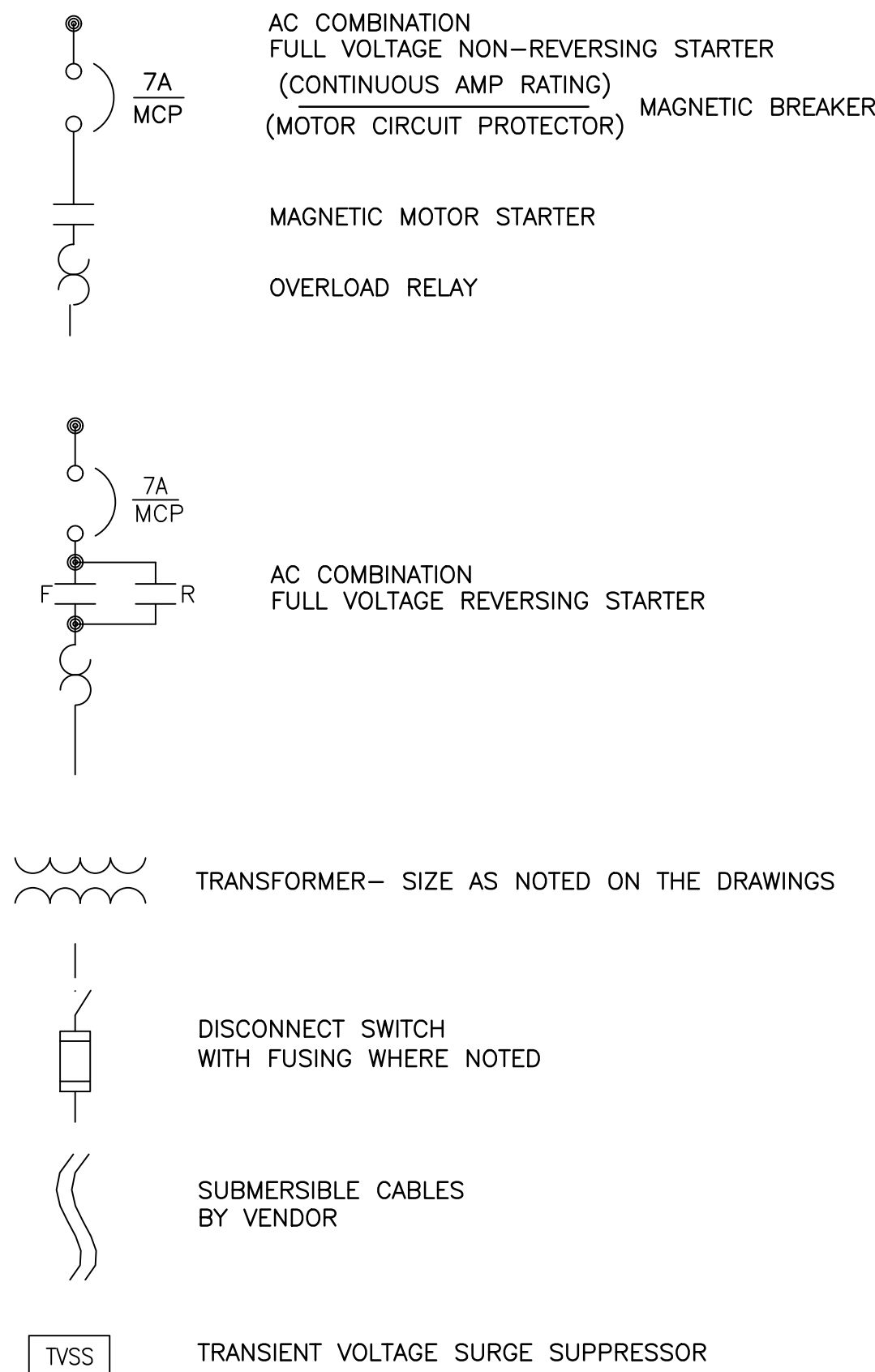
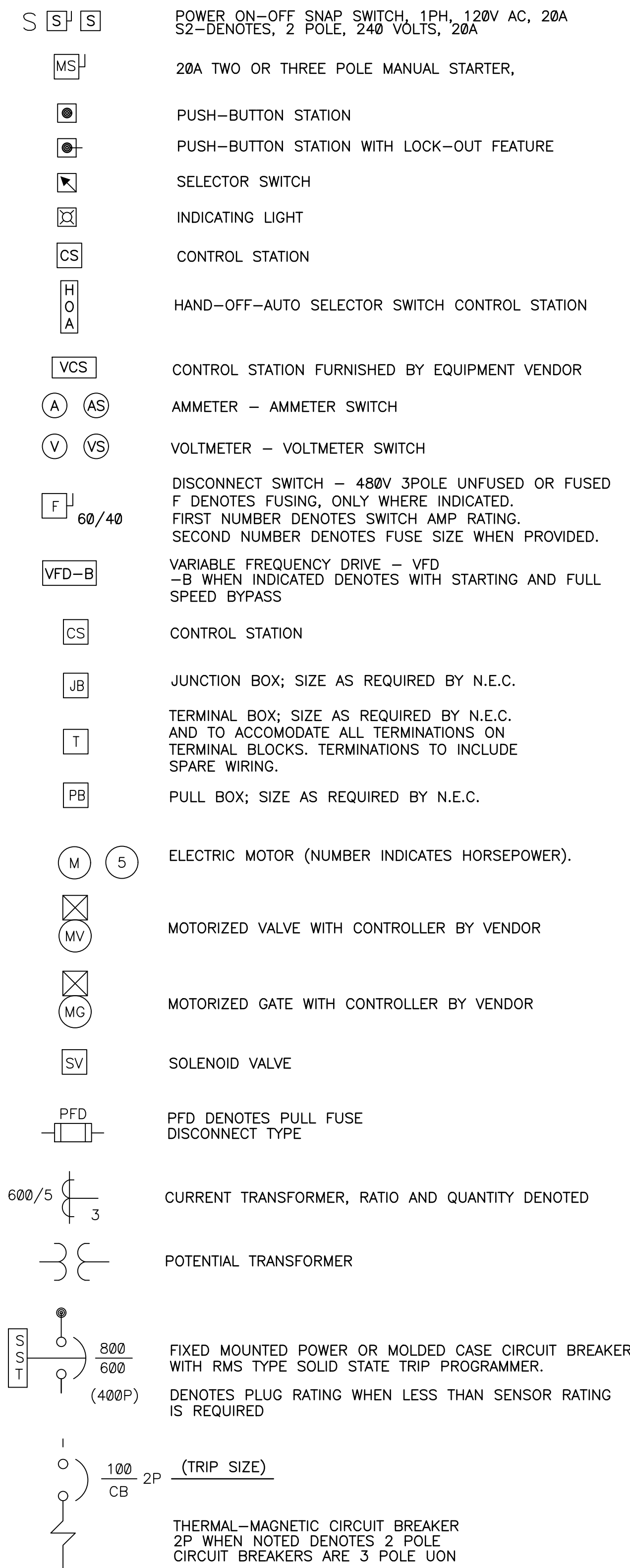
— 1/2"Ø S.S.
ANCHOR

1. HOSE RACK SHALL BE OF ALL WELDED CONSTRUCTION. MATERIAL SHALL BE MINIMUM OF 3/16 INCH THICK STEEL.
2. UTILITY STATIONS FASTENERS AND MOUNTING HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
3. USE ONLY GALVANIZED AND PVC PIPING AND STAINLESS STEEL VALVES FOR PLANT WATER SERVICE. NO BRASS OR BRONZE.

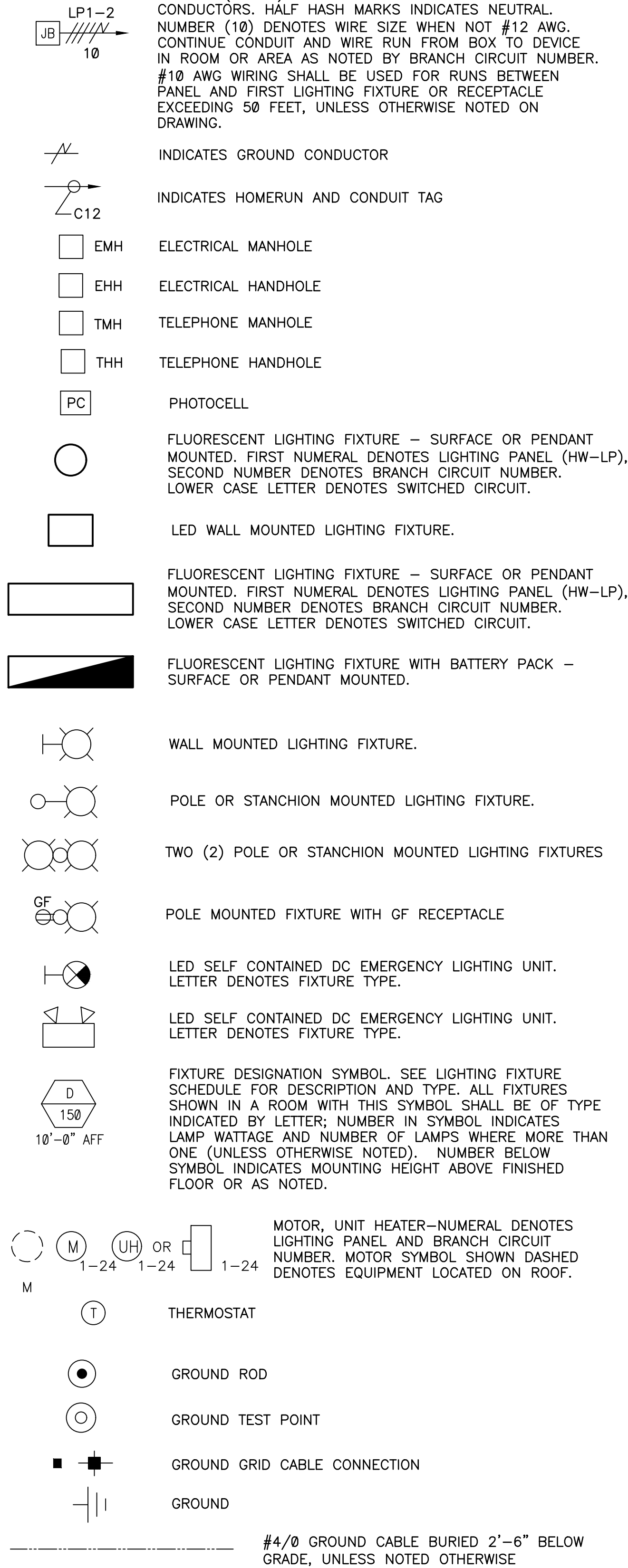
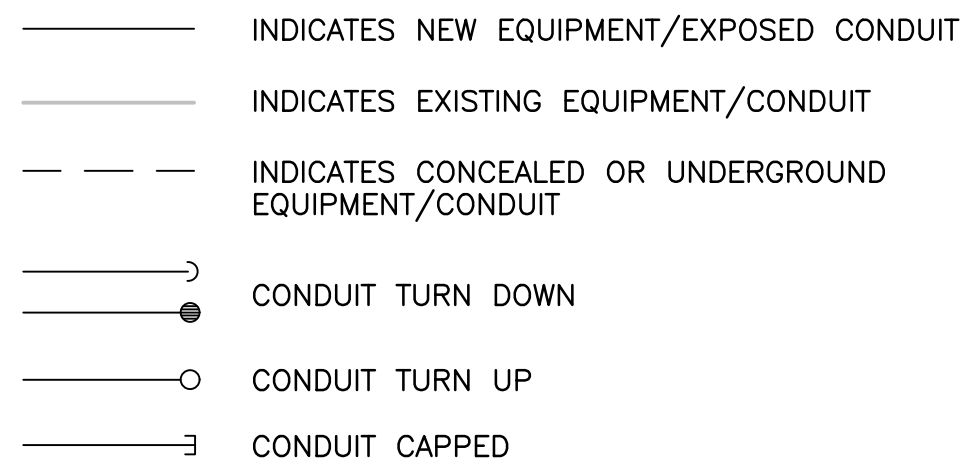
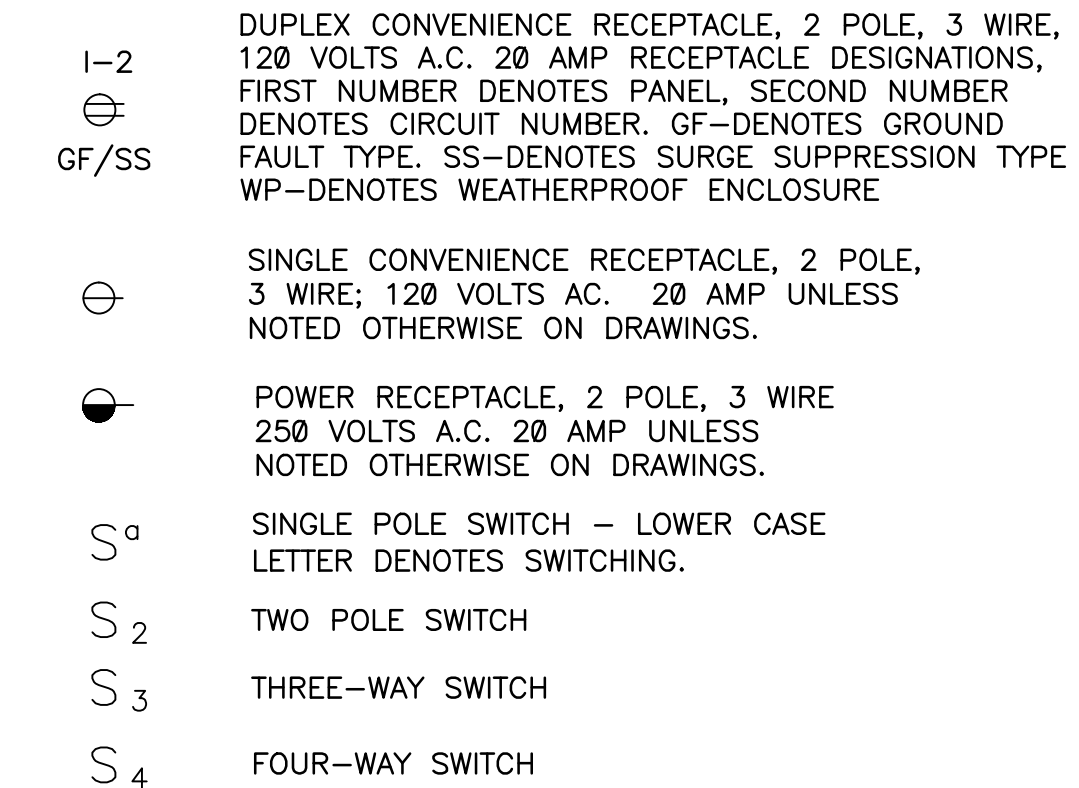
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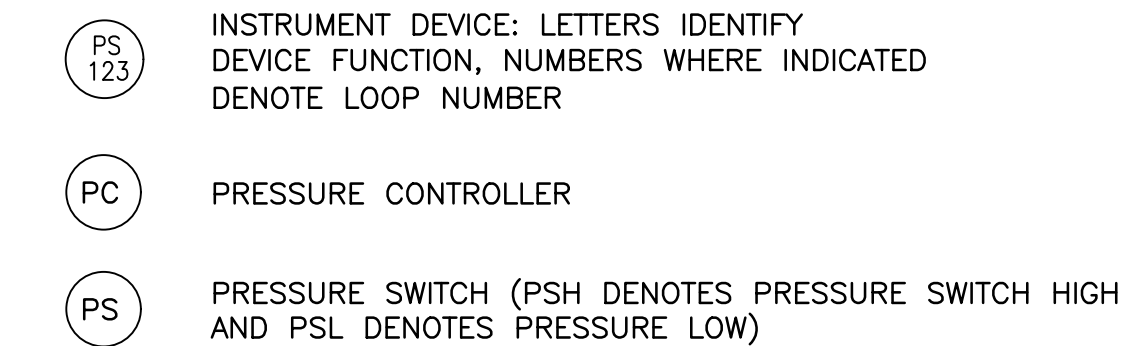
DIAGRAMS:



PLANS:



INSTRUMENTS:



ABBREVIATIONS:

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
C, CND	CONDUIT
CB	CIRCUIT BREAKER
CBV	CABLE BY VENDOR, INSTALLED BY CONTRACTOR
CKT	CIRCUIT
CNTRL	CONTROL
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
DB	DECIBEL
DC	DIRECT CURRENT
DN	DOWN
DISC	DISCONNECT
DPDT	DOUBLE POLE DOUBLE THROW
DS	DISCONNECT SWITCH
EC	EMPTY CONDUIT
EGH	ELECTRICAL HANDHOLE
EL, ELEV	ELEVATION
EMH	ELECTRICAL MANHOLE
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
EXIST	EXISTING
FDR	FEEDER
FIXT	FIXTURE
FT	FEET OR FOOT
FVNR	FULL VOLTAGE NON-REVERSING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
G, GND	GROUND
GFI	GROUND FAULT INTERRUPTOR
HH	HAND HOLE
HOA	HAND/OFF/AUTO
HZ	HERTZ
JB	JUNCTION BOX, CONDUIT, FITTING AS REQUIRED BY NEC, UNLESS OTHERWISE NOTED
KAIC	THOUSAND AMPERES INTERRUPTING CURRENT
KCMIL	THOUSAND CIRCULAR MILS
KVA	THOUSAND VOLT AMPERES
KW	KILOWATTS
LA	LIGHTNING ARRESTOR
LCP	LOCAL CONTROL PANEL
LS	LEVEL SWITCH
LTG	LIGHTING
M	MOTOR
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MIN	MINIMUM
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
NA	NON-AUTOMATIC
N/A	NOT APPLICABLE
NCTC	NORMALLY CLOSED, TIME CLOSE
NCTO	NORMALLY OPEN, TIME OPEN
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFCl	OWNER FURNISHED, CONTRACTOR INSTALLED
OL	OVERLOAD RELAY
PB	PUSH BUTTON
P/B	PULL BOX
PFC	POWER FACTOR CORRECTION CAPACITORS
PFD	PULL FUSE DISCONNECT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RECEP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SP	SPARE
SPD	SURGE PROTECTION DEVICE
SST	STAINLESS STEEL
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TEW	THERMOCOUPLE EXTENSION WIRE
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES:

1. THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR A GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
2. THE CONTRACTOR SHALL READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS. THIS INCLUDES BUT IS NOT LIMITED TO THE PLANS AND SPECIFICATIONS FOR ALL DISCIPLINES. THIS WILL ENSURE THAT HE UNDERSTANDS THE FULL SCOPE OF WORK AND IS ABLE TO CONVEY THE REQUIRED MATERIALS AND METHODS OF INSTALLATION TO THE HIS ESTIMATORS, SUPPLIERS AND INSTALLERS.
3. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS.
4. PROVIDE MEANS TO FURNISH AND INSTALL.
5. COORDINATE ALL AND ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION IN ORDER TO AVOID CONFLICTS DURING CONSTRUCTION.
6. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE FROM THESE DRAWINGS.
7. WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ANY ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN CONSENT FROM THE ENGINEER AND OWNER.
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENFORCED EDITION OF THE NATIONAL ELECTRIC CODE, NATIONAL ELECTRIC SAFETY CODE, LIFE SAFETY CODE, FLORIDA BUILDING CODE AND ALL LOCAL AND STATE CODES AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
9. MOUNTING HEIGHTS INDICATED ARE TO THE CENTER OF THE DEVICE U.O.N.

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CITY: DIV/GRP. DB: LD. PC: PM: Ttl: LYRON=OFF=REF
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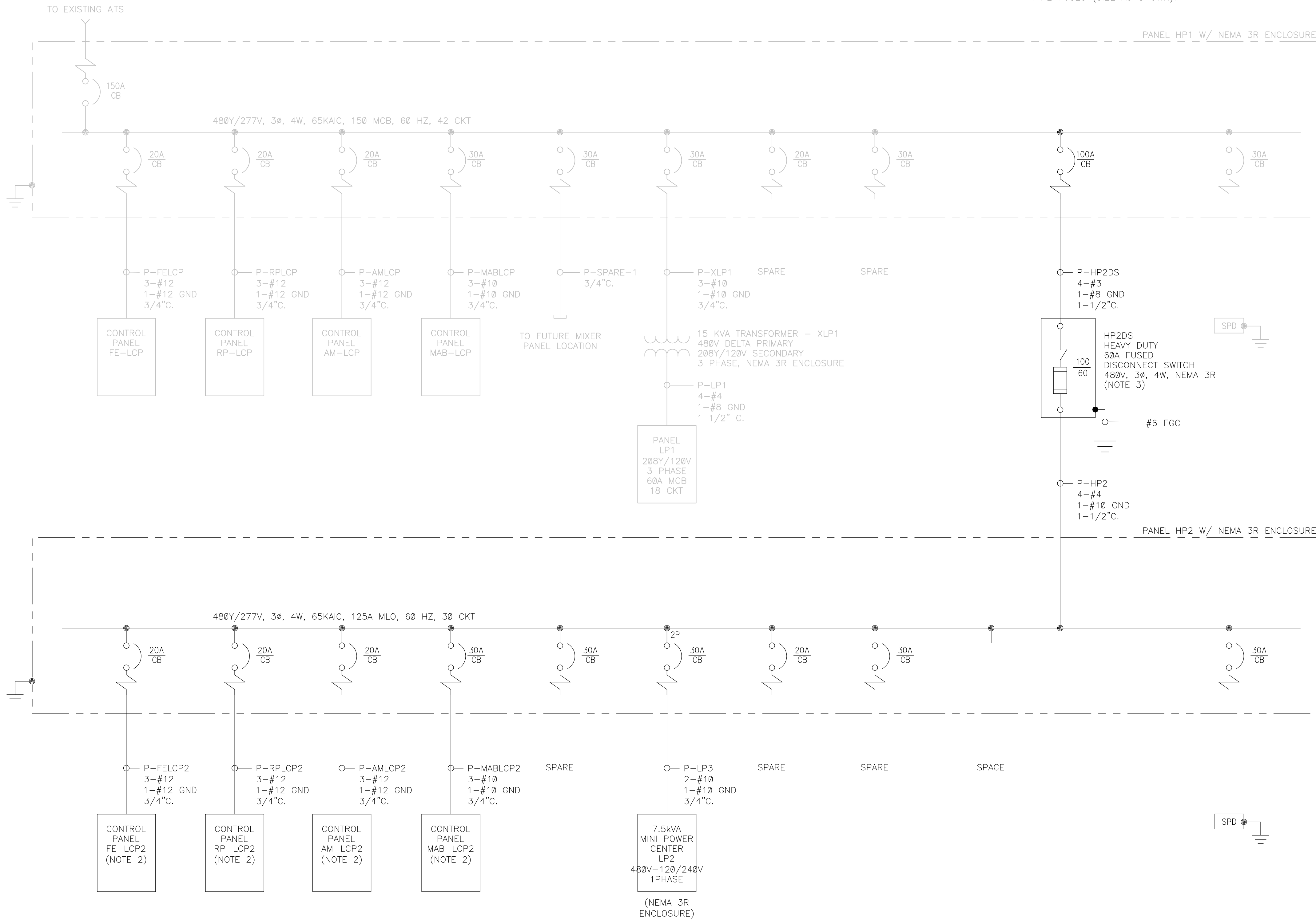
CONTROL PANEL FE-LCP2 LOAD CALC				
EQUIPMENT	(D) DUTY OR (S) STANDBY	HP/KVA	CONNECTED LOAD (A)	RUNNING LOAD (A)
FLOW EQUALIZATION BLOWER NO. 3	D	3 HP/3.99 KVA	4.80	4.80
FLOW EQUALIZATION BLOWER NO. 4	D	3 HP/3.99 KVA	4.80	4.80
FLOW EQUALIZATION PUMP NO. 3	D	0.5 HP/0.91 KVA	1.70	1.70
FLOW EQUALIZATION PUMP NO. 4	D	0.5 HP/0.91 KVA	1.70	1.70
CONTROL POWER XFMR	D	0.5 KVA	1.04	1.04
SUBTOTAL			14.04	14.04
25% OF LARGEST MOTOR				1.20
LOAD PER NEC 430.24				15.24

CONTROL PANEL AM-LCP2 LOAD CALC				
EQUIPMENT	(D) DUTY OR (S) STANDBY	HP/KVA	CONNECTED LOAD (A)	RUNNING LOAD (A)
ANOXIC MIXER 2	D	2.3 HP/2.83 KVA	3.40	3.40
CONTROL POWER XFMR	D	0.5 KVA	1.04	1.04
SUBTOTAL			4.44	4.44
25% OF LARGEST MOTOR				0.28
LOAD PER NEC 430.24				4.72

CONTROL PANEL RP-LCP2 LOAD CALC				
EQUIPMENT	(D) DUTY OR (S) STANDBY	HP/KVA	CONNECTED LOAD (A)	RUNNING LOAD (A)
RECYCLE PUMP NO. 3	D	0.75 HP/1.5 KVA	1.80	1.80
RECYCLE PUMP NO. 4	D	0.75 HP/1.5 KVA	1.80	1.80
CONTROL POWER XFMR	D	0.5 KVA	1.04	1.04
SUBTOTAL			4.64	4.64
25% OF LARGEST MOTOR				0.40
LOAD PER NEC 430.24				5.04

CONTROL PANEL MAB-LCP2 LOAD CALC				
EQUIPMENT	(D) DUTY OR (S) STANDBY	HP/KVA	CONNECTED LOAD (A)	RUNNING LOAD (A)
MAIN AIR BLOWER NO. 3	D	7.5 HP/9.15 KVA	11.00	11.00
MAIN AIR BLOWER NO. 4	S	7.5 HP/9.15 KVA	11.00	0.00
120V XFMR	D	0.5 KVA	1.04	1.04
SUBTOTAL			23.04	12.04
25% OF LARGEST MOTOR				2.75
LOAD PER NEC 430.24				14.79

PANEL HP2 LOAD CALC				
EQUIPMENT	CONNECTED LOAD (KVA)	CONNECTED LOAD (A)	DESIGN LOAD (KVA)	RUNNING LOAD (A)
CONTROL PANEL FE-LCP2	10.30	14.04	10.30	14.04
CONTROL PANEL AM-LCP2	3.33	4.44	3.33	4.44
CONTROL PANEL RP-LCP2	3.50	4.64	3.50	4.64
CONTROL PANEL MAB-LCP2	18.80	23.04	9.65	12.04
MINI POWER CENTER (LP3)	7.50	15.63	7.50	15.63
SUBTOTAL	43.43	61.79	34.28	41.23
25% SPARE CAPACITY			8.57	10.31
TOTAL			42.85	51.56



NOTES:

- CIRCUIT BREAKERS SHOWN ARE 3-POLE UON.
- LOCAL CONTROL PANEL(S) PROVIDED BY THE PACKAGED WASTEWATER TREATMENT VENDOR. CONNECTIONS FROM EACH CONTROL PANEL TO THE CONTROL STATIONS AND EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR. REFER TO SHEET E-04 FOR MORE INFORMATION ON QUANTITY AND SIZES. COORDINATE ALL FINAL CONNECTIONS PRIOR TO ROUGH-IN.
- PROVIDE 600V, DUAL ELEMENT, TIME DELAY, 200 KAIC, CLASS RK5 TYPE FUSES (SIZE AS SHOWN).

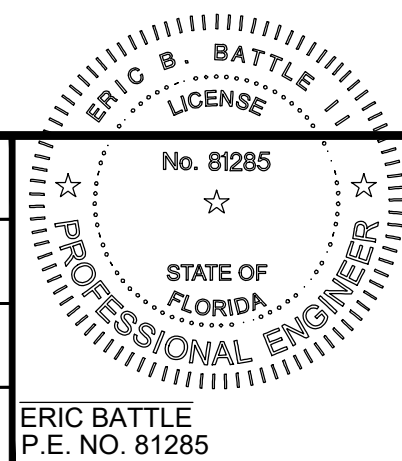
WASTEWATER TREATMENT PLANT TRAIN NO. 2 - ONE-LINE DIAGRAM

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No.	Date	Revisions	By Ckd
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Professional Engineer's Name ERIC BATTLE, P.E.	
Professional Engineer's No. 81285	
State FL	Date Signed
Designed by EB	Project Mgr. SKC
Drawn by VN	Checked by EB



Digitally signed by Eric B Battle II Date: 2021.11.22 15:35:29 -05'00'	
ARCADIS U.S., INC. FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917	

COLUMBIA COUNTY, FLORIDA ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION	
WASTEWATER TREATMENT PLANT - ONE-LINE DIAGRAM	
ARCADIS Project No. 30028119.0000	
Date NOVEMBER 2021	
ARCADIS 4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125	
E-02	

(*) CONTRACTOR SHALL INSTALL NEW 480V, 3P, CIRCUIT BREAKER SIZED AS SHOWN. CIRCUIT BREAKER MANUFACTURER, SERIES, AND KAIC RATING SHALL MATCH EXISTING.

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	RECEPTACLE	0.2	1.7	1	0.4			1	1.7	0.2	LIGHTING	20	2
3	20	FE/FIQR	0.1	0.8	1		0.3		1	1.7	0.2	RECEPTACLE (FEED PUMPS-TRAIN NO. 1)	20	4
5	20	GENERATOR BATTERY CHARGER	0.5	4.2	1			0.5	1			SPARE	20	6
7	20	GENERATOR BLOCK HEATER	1	8.3	1	1.0			1			SPARE	20	8
9	20	AUTODIALER	0.5	4.2	1		0.5		1			SPARE	20	10
11		<SPACE>			1			0.0	1			SPARE	20	12
13	20	SPARE			1	0.0			1			SPARE	20	14
15	20	SPARE			1		0.0		1			SPARE	20	16
17	20	SPARE			1			0.0	1			SPARE	20	18
PANEL LP1 LOCATION: Exterior WWTP Service BUILDING: N/A NOTES: EXISTING			TOTAL KVA			1.4	0.8	0.5	SERVICE CHARACTERISTICS VOLTS: 208Y/120 PHASE: 3 WIRE: 4 10k MIN AIC SYMM, FULLY RATED ASSEMBLY					
			GRAND CONNECTED TOTAL KVA			2.7								
A MLO _____ 60 A MCB _____														

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE		POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B						
1	20	RECEPTACLE	0.2	1.7	1	0.2		1			SPARE	20	2
3	20	FE/FIQR	0.1	0.8	1		0.3	1	1.7	0.2	LIGHTING	20	4
5	20	SPARE			1	0.0		1			SPARE	20	6
7	20	SPARE			1		0.0	1			SPARE	20	8
9		SPACE			1	0.0		1			SPACE		10
11		SPACE			1		0.0	1			SPACE		12
13		SPACE			1	0.0		1			SPACE		14
15		SPACE			1		0.0	1			SPACE		16
17		SPACE			1	0.0		1			SPACE		18
PANEL LP2 LOCATION Exterior WWTP Service BUILDING WWTP TRAIN NO. 2 NOTES: NEW MINI POWER CENTER			TOTAL KVA		0.2	0.3	SERVICE CHARACTERISTICS VOLTS: <u>240/120</u> <u>30</u> A MLO PHASE: <u>1</u> <u></u> A MCB WIRE: <u>3</u> 10k MIN AIC SYMM, FULLY RATED ASSEMBLY						
			GRAND CONNECTED TOTAL KVA		0.5								

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	CONTROL PANEL (FE-LCP)	3.27 3.52 3.52	12.4	3	4.2			3	3.8	0.89 1.14 1.14	CONTROL PANEL (RP-LCP)	20	2
7	20	CONTROL PANEL (AM-LCP)	0.61 0.86 0.86	2.8	3	3.7			3	11.6	3.05 3.30 3.30	CONTROL PANEL (MAB-LCP)	30	8
13	30	SPACE FOR FUTURE MXR PANEL	3.05 3.30 3.30	11.6	3	8.1			3	18.0	15	XLP1 (LP-1 PANEL XFMR)	30	14
19	20	SPARE			3	0.0			3			SPARE	30	20
25	100	HP2 PANEL (WWTP TRAIN NO. 2)	33	39.7	3	11.0			3			SPARE	30	26
31		SPACE			3	0.0			3			SPACE		32
37		SPACE			3	0.0			3			SPACE		38
PANEL HP1 LOCATION: Exterior WWTP Service BUILDING: WWTP TRAIN NO. 1 NOTES: EXISTING			TOTAL KVA			26.9	28.1	28.1	SERVICE CHARACTERISTICS VOLTS: 480Y/277 PHASE: 3 WIRE: 4 65k MIN AIC SYMM, FULLY RATED ASSEMBLY					
			GRAND CONNECTED TOTAL KVA			83.1								

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	CONTROL PANEL (FE-LCP2)	3.27 3.52 3.52	12.4	3	4.2			3	3.8	0.89 1.14 1.14	CONTROL PANEL (RP-LCP2)	20	2
7	20	CONTROL PANEL (AM-LCP2)	0.61 0.86 0.86	2.8	3	3.7			3	11.6	3.05 3.30 3.30	CONTROL PANEL (MAB-LCP2)	30	8
13	30	SPARE			3	3.8			2	15.6	7.5	MINI POWER CENTER (LP3)	30	14
19	20	SPARE			3	0.0			1			SPACE		18
							0.0		3			SPARE	30	20
25		SPACE			3	0.0			3			SPD	30	26
							0.0							

PANEL **HP2**

LOCATION: Exterior WWTP Service Building: WWTP TRAIN NO. 2

NOTES: NEW

TOTAL KVA	11.6	12.6	8.8
GRAND CONNECTED TOTAL KVA	33.0		

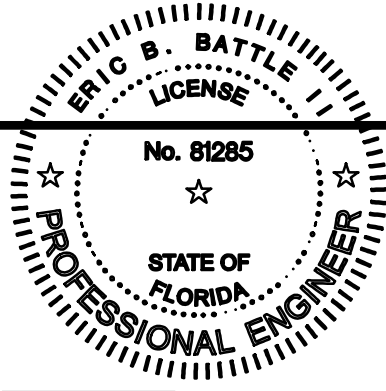
VOLTS: **480Y/277**
PHASE: 3
WIRE: 4
65k MIN AIC SYMM, FULLY RATED ASSEMBLY

SERVICE CHARACTERISTICS

60 A MLO
 A MCB

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ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

COLUMBIA COUNTY, FLORIDA
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION

PANELBOARD SCHEDULES

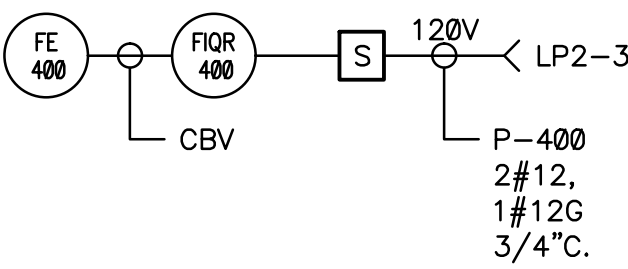
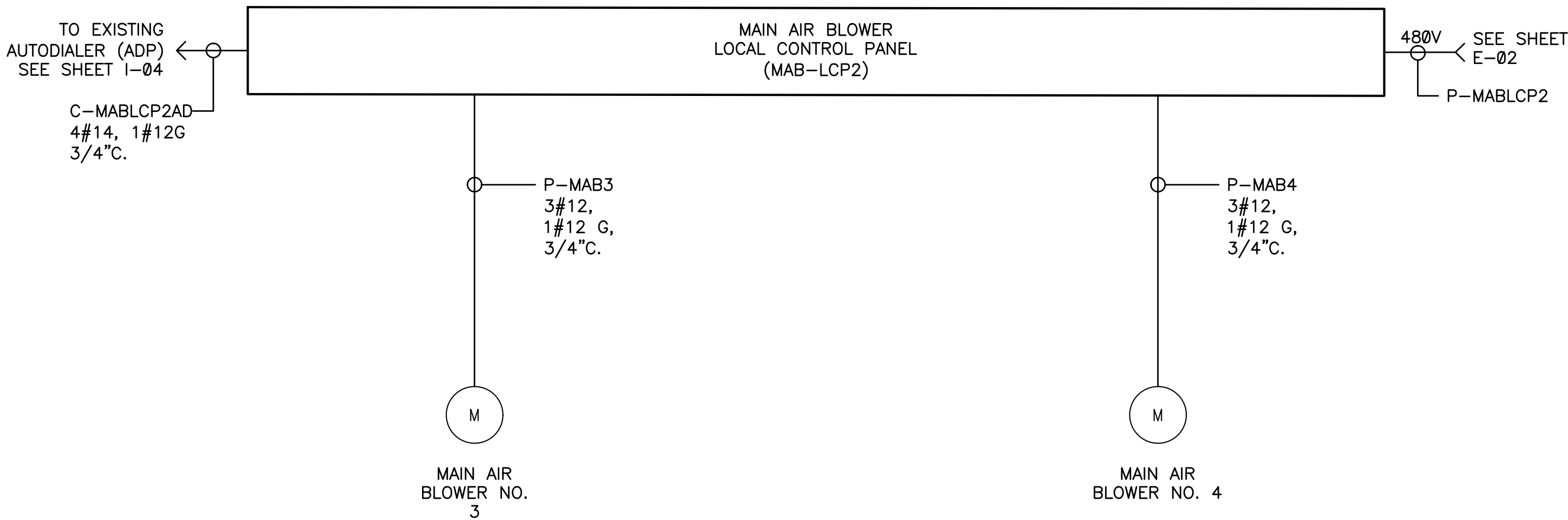
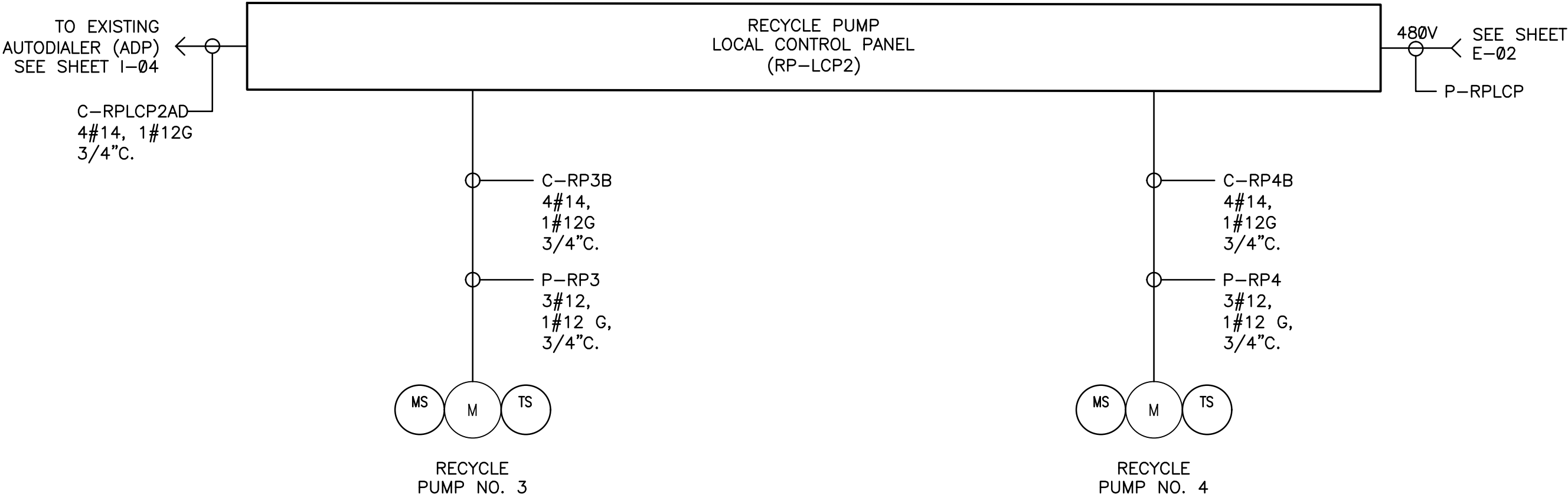
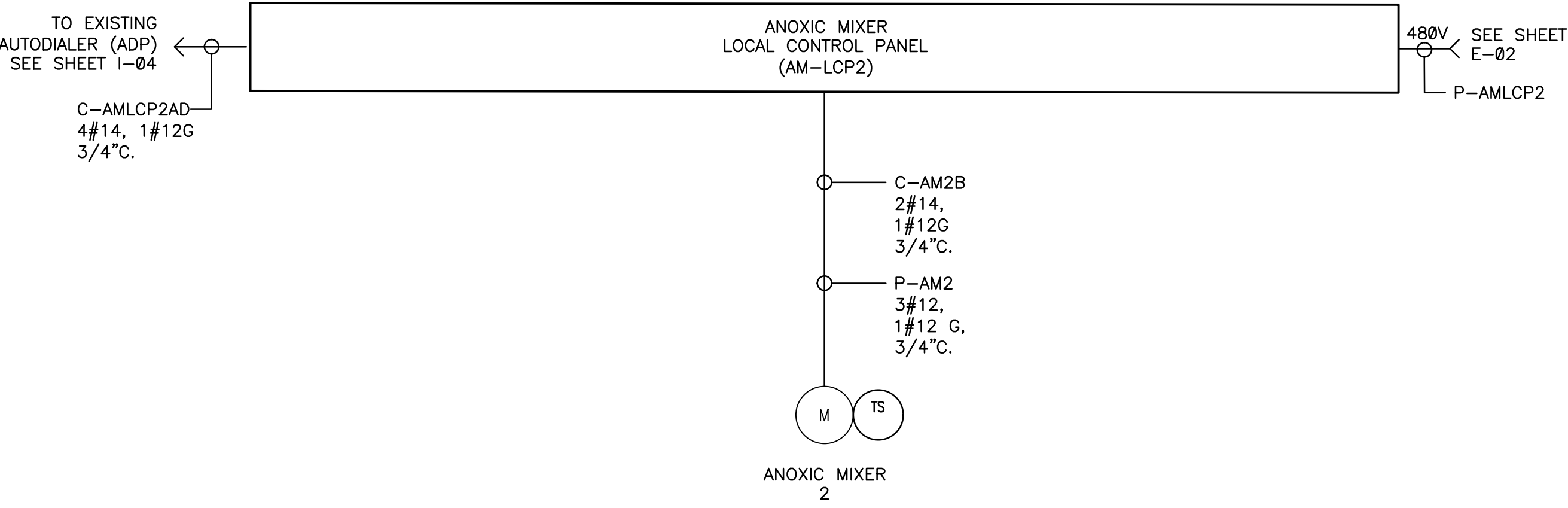
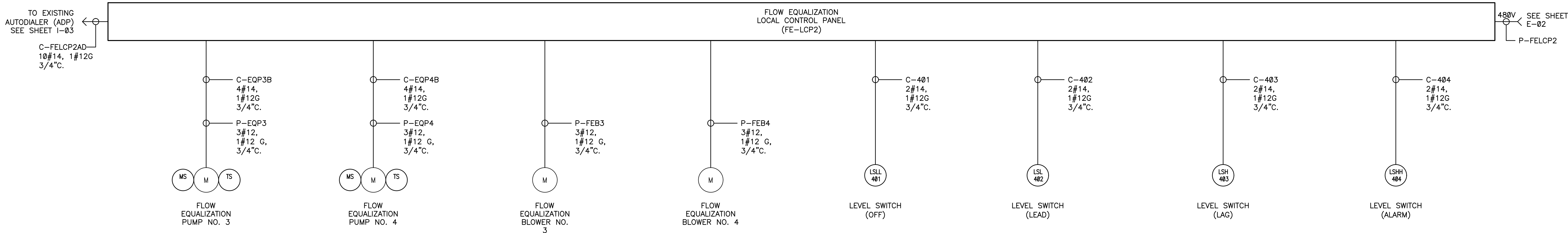
ARCADIS Project No.
30028119.0000

Date
NOVEMBER 2021

ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

E-03

- NOTE:
- JUNCTION BOXES / PULL BOXES ARE NOT SHOWN FOR CLARITY. CONTRACTOR SHALL FIELD INSTALL AND LOCATE NEW JUNCTION BOXES/PULL BOXES SIMILAR TO EXISTING PACKAGED WWTP TRAIN NO. 1.



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Revisions					By	Ckd

Professional Engineer's Name
ERIC BATTLE, P.E.
Professional Engineer's No.
81285
State
FL
Date Signed
Date: 2021.11.22 15:36:08-05:00
Project Mgr.
SKC
Designed by
EB
Drawn by
VN
Checked by
EB

ERIC B. BATTLE II
No. 81285
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ERIC B Battle II
Digitally signed by Eric B Battle II
Date: 2021.11.22 15:36:08-05:00

ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

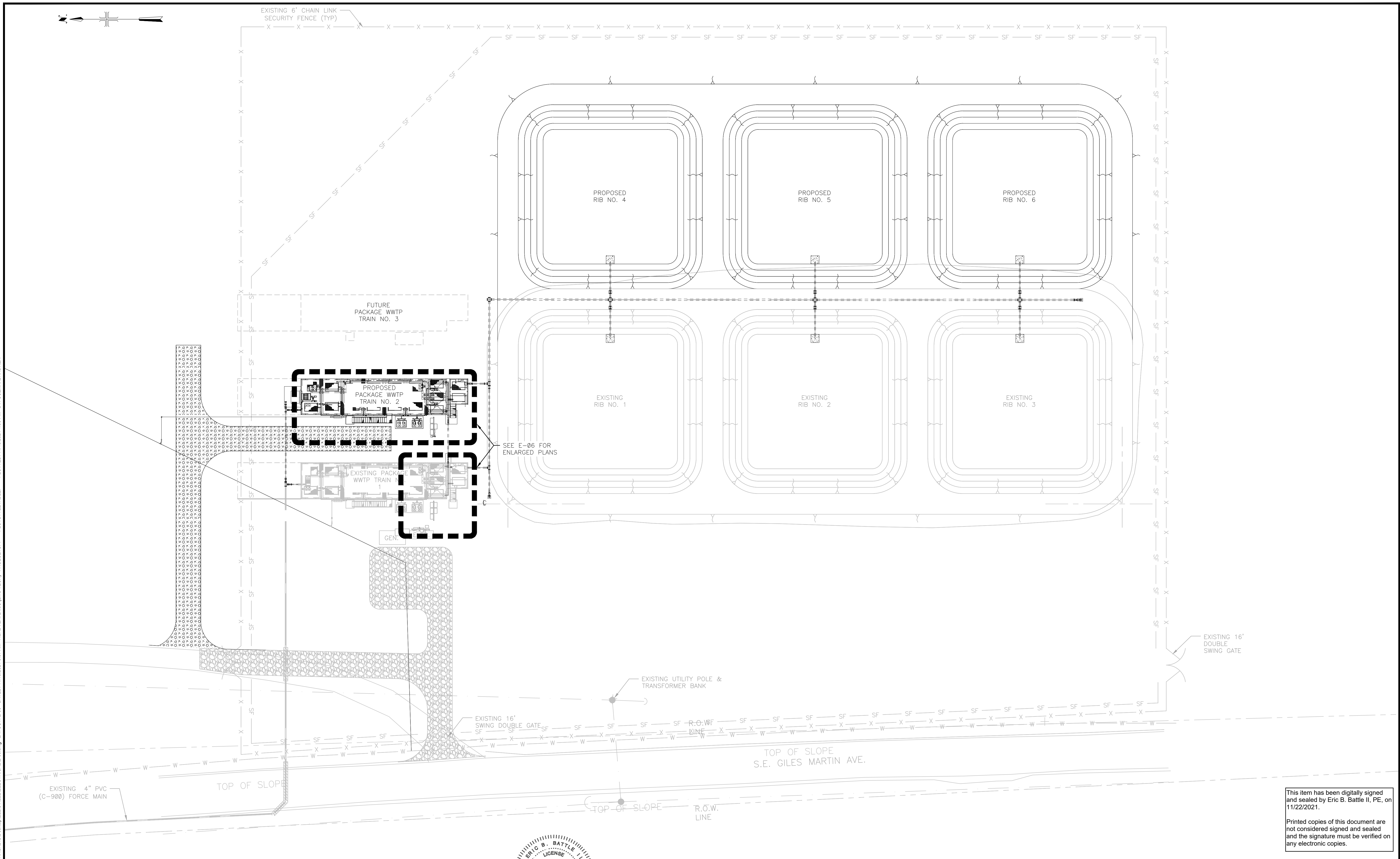
ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

ARCADIS Project No.
30028119.0000
Date
NOVEMBER 2021

ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION
WASTEWATER TREATMENT PLANT - INTERCONNECT DIAGRAMS

E-04

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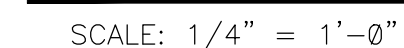
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		No.	Date	Revisions	AGG By	SKC Ckd																																
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GROUND

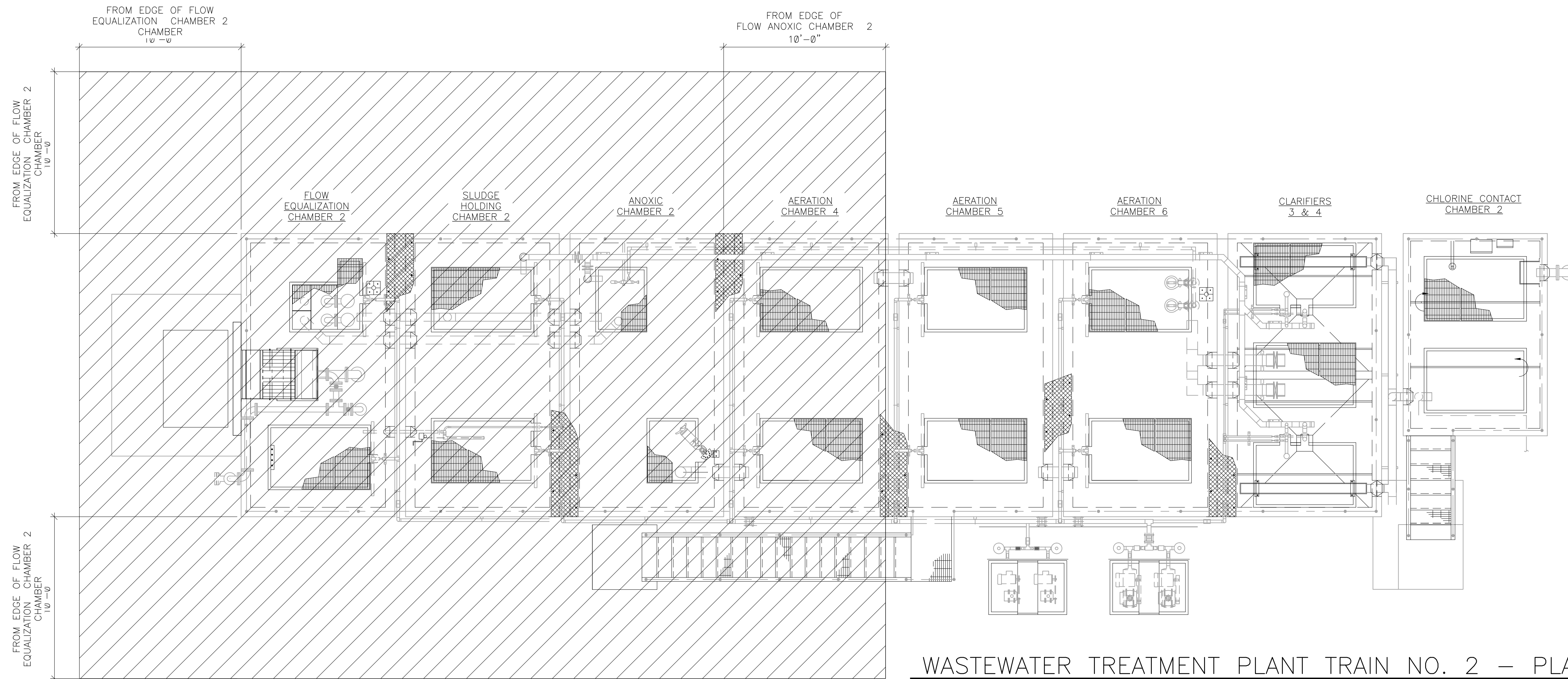


1. PROVIDE EQUIPMENT RACK PER DETAIL ON SHEET E-08 TO MOUNT THE ELECTRICAL SERVICE EQUIPMENT.
2. COORDINATE WITH THE SUPPLIER/INSTALLER OF THE PACKAGED WASTE WATER TREATMENT PLANT FOR OPTIMAL LOCATION OF ALL GROUNDING CONNECTIONS PRIOR TO INSTALLATION.
3. REFER TO SHEET E-07 FOR THE EXTENTS OF THE CLASS 1, DIVISION 2 AREA CLASSIFICATION.
4. CONNECT THE LIGHTING HOMERUN CIRCUIT THROUGH A 120V, WATERPROOF SNAP SWITCH AS DEFINED PER SPECIFICATION 26 27 26.23, SNAP SWITCHES.
5. PROVIDE A MINIMUM 18"x18"x12" DEEP, NEMA 4X JUNCTION BOX. MOUNT HEIGHT SHALL BE A MINIMUM 30" FROM THE PLATFORM LEVEL OF THE WASTE WATER TREATMENT PLANT TO THE BOTTOM OF THE JUNCTION BOX.
6. PROPOSED LOCATION OF FLOW ELEMENT TOTALIZER AT THE TOP OF THE PACKAGED WASTEWATER TREATMENT PLANT MOUNTED TO THE HAND RAIL STRUCTURE. COORDINATE EXACT LOCATION WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATE ALL REQUIREMENTS FOR MAXIMUM WIRING DISTANCE FROM THE TOTALIZER TO THE FLOW ELEMENT. SEE SHEET I-03 FOR DETAILS.
7. THE PACKAGED WASTE WATER TREATMENT PLANT SUPPLIER WILL PROVIDE UNISTRUT BRACING IN ORDER TO SUPPORT VERTICAL SECTIONS OF CONDUIT. REFER TO SHEET E-08 FOR MORE INFORMATION.
8. CONTRACTOR SHALL FIELD INSTALL AND LOCATE THE NEW REMOTE SELECTOR SWITCH CONTROL STATIONS & THE NEW REMOTE E-STOP SIMILAR TO EXISTING PACKAGED WWTP TRAIN NO. 1. REFER TO SHEET I-02 FOR EXACT CONFIGURATION OF EACH CONTROL STATION. TYPICAL FOR ALL UON.
9. CONTRACTOR SHALL DETERMINE THE BEST ROUTING IN THE FIELD FOR CONDUITS FROM/TO JUNCTION BOXES, PULL BOX, DISCONNECT SWITCH AND ELECTRICAL EQUIPMENT TO AVOID CONFLICTS BETWEEN PIPES AND BUILDING STRUCTURE.
10. CONTRACTOR SHALL DETERMINE THE SIZE OF PULL BOX COMPLYING WITH NEC 314.28 WITH A MINIMUM 11"x18"x12" DEEP, NEMA 4X PULL BOX.
11. CONTRACTOR SHALL DETERMINE THE SIZE OF HANDHOLES COMPLYING WITH NEC 314.29 WITH A MINIMUM 11"x18"x12" DEEP. SELECTED HANDHOLES SHALL HAVE ENCLOSURE AND COVER UL-LISTED COMPLYING WITH TEST PROVISIONS OF ANSI/SCTE 77 FOR TIER 15 MINIMUM APPLICATIONS.

TO NEW CONTROL PANELS THIS SHEET	TO DSHP2 DISCONNECT SWITCH THIS SHEET
---	--

TO NEW CONTROL PANELS THIS SHEET	TO DSHP2 DISCONNECT SWITCH THIS SHEET
---	--

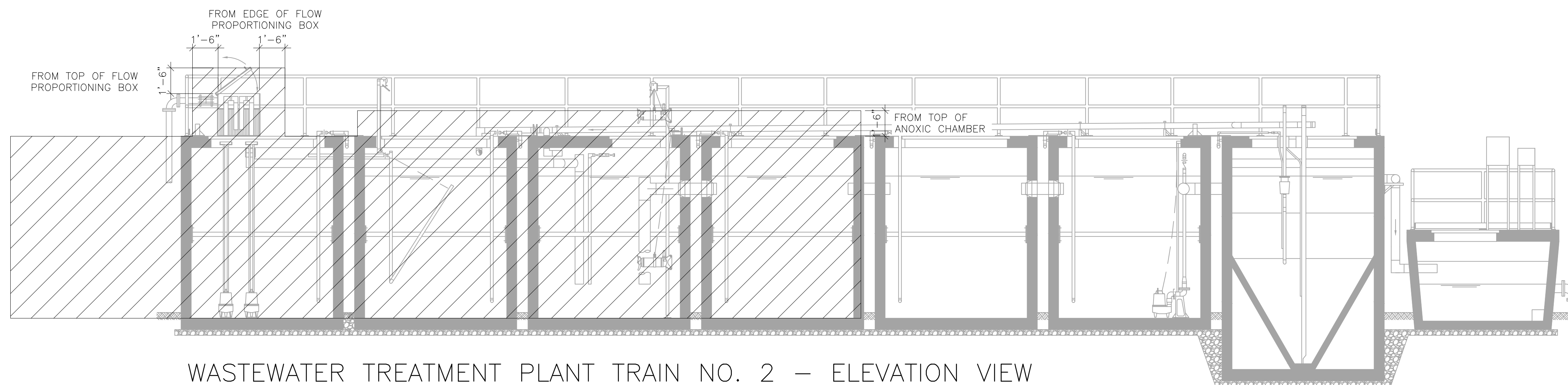
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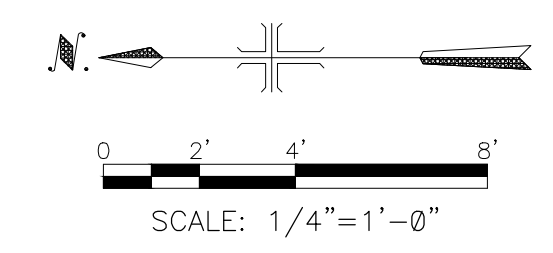
NOTES:
1. THIS DRAWING IS CONTINGENT UPON THE BASIS OF DESIGN FOR THE PACKAGED WASTEWATER TREATMENT PLANT. THE AREA CLASSIFICATION SHALL BE MODIFIED AS NECESSARY FOR ANY MANUFACTURER OTHER THAN THE BASIS OF DESIGN.

LEGEND:
CLASS 1, DIVISION 2 AREA

WASTEWATER TREATMENT PLANT TRAIN NO. 2 – PLAN VIEW

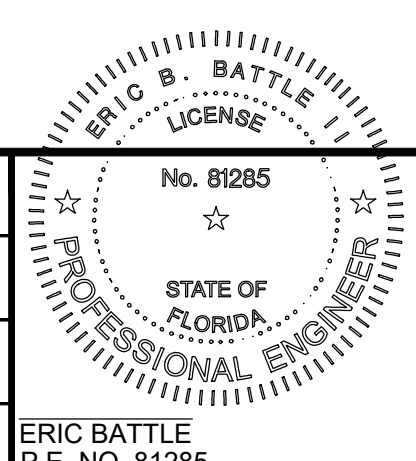


WASTEWATER TREATMENT PLANT TRAIN NO. 2 – ELEVATION VIEW



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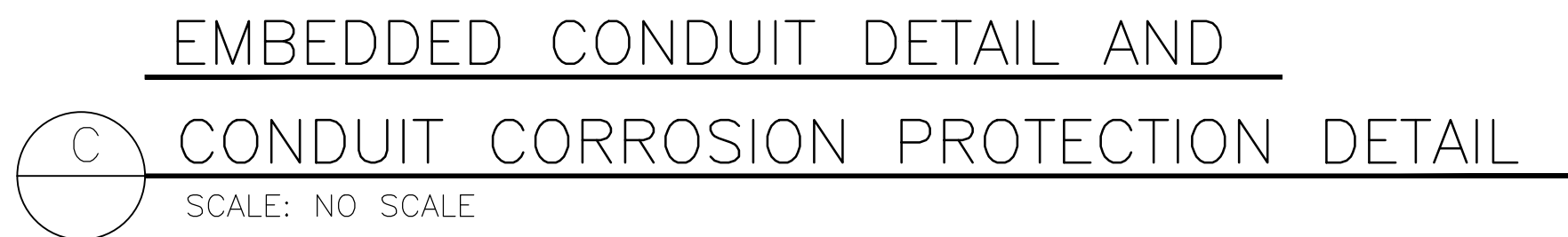
ERIC BATTLE II
P.E. NO. 81285

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Date: 2021.11.22 15:27:03-05'00'

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FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

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No.	Date	Revisions	By	Ckd	FL		SKC
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.				Designed by	Drawn by	Checked by	
				EB	VN	EB	
				Professional Engineer's Name ERIC BATTLE, P.E. Professional Engineer's No. 81285			
				COLUMBIA COUNTY, FLORIDA ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION			
				AREA CLASSIFICATION PLAN AND SECTION			
				ARCADIS Project No. 30028119.0000			
				Date NOVEMBER 2021			
				ARCADIS 4300 WEST CYPRESS STREET TAMPA, FLORIDA 33607 TEL. 813.903.3125			
				E-07			

A GROUNDING CONNECTIONS
SCALE: NO SCALE



This item has been digitally signed and sealed by Eric B. Battle II, PE, on 11/22/2021.

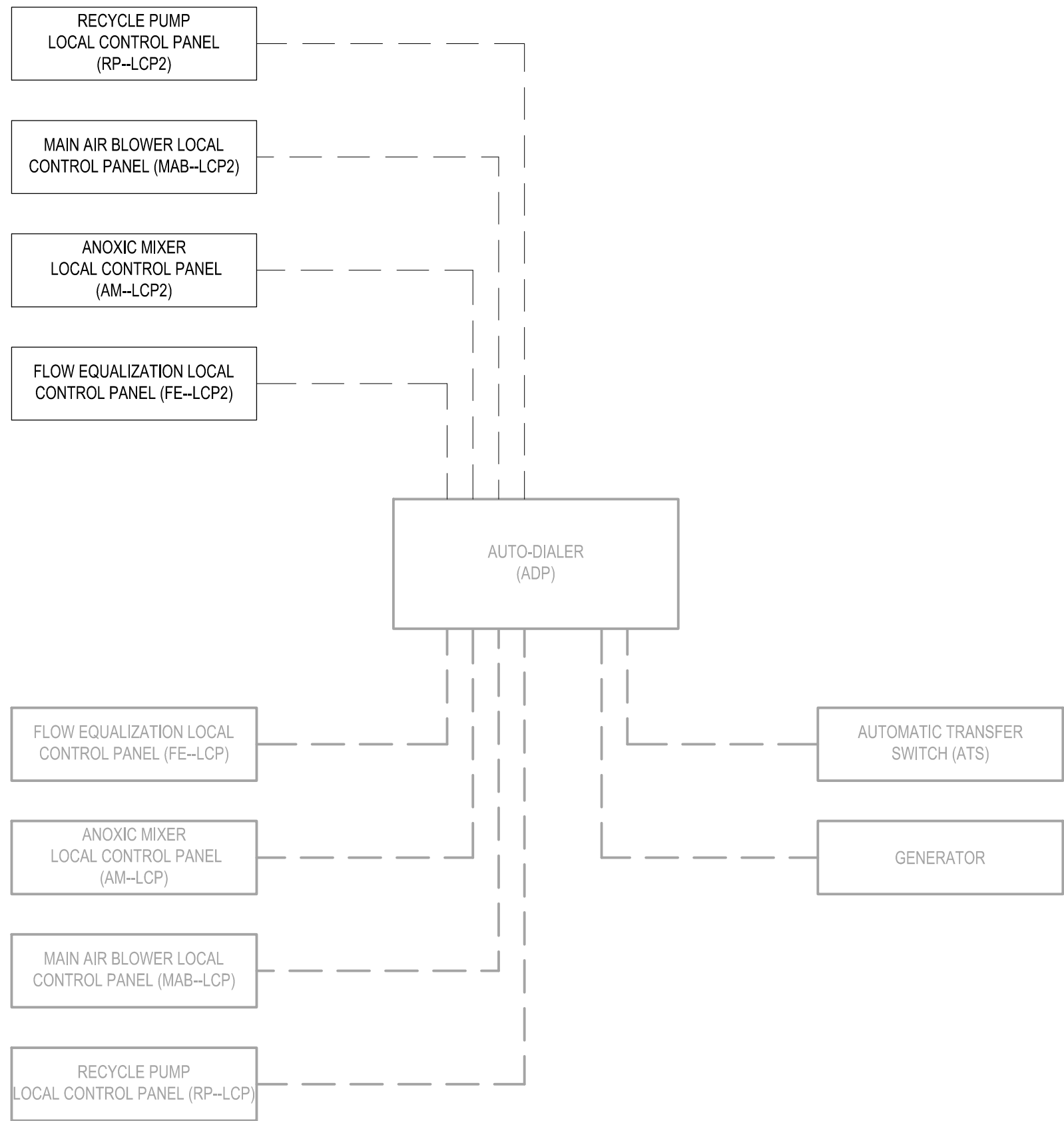
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 **ARCADIS**
ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

ELECTRICAL DETAILS

E-08

CITY: DIV\GROUP: DB: LD: PIC: PM: TM: LYRON+OFF+REF- C:\Users\aguzman\OneDrive - ARCADIS\Desktop\ELLISVILLE\INSTRUMENTATION\I-03.dwg LAYOUT: I-03 SAVED: 11/19/2021 1:07 AM ACADVER: 24.05 (LMS TECH) PAGES: 1 OF 1 PLOTTED: 11/19/2021 1:28 PM BY: GUZMAN, ANDREA

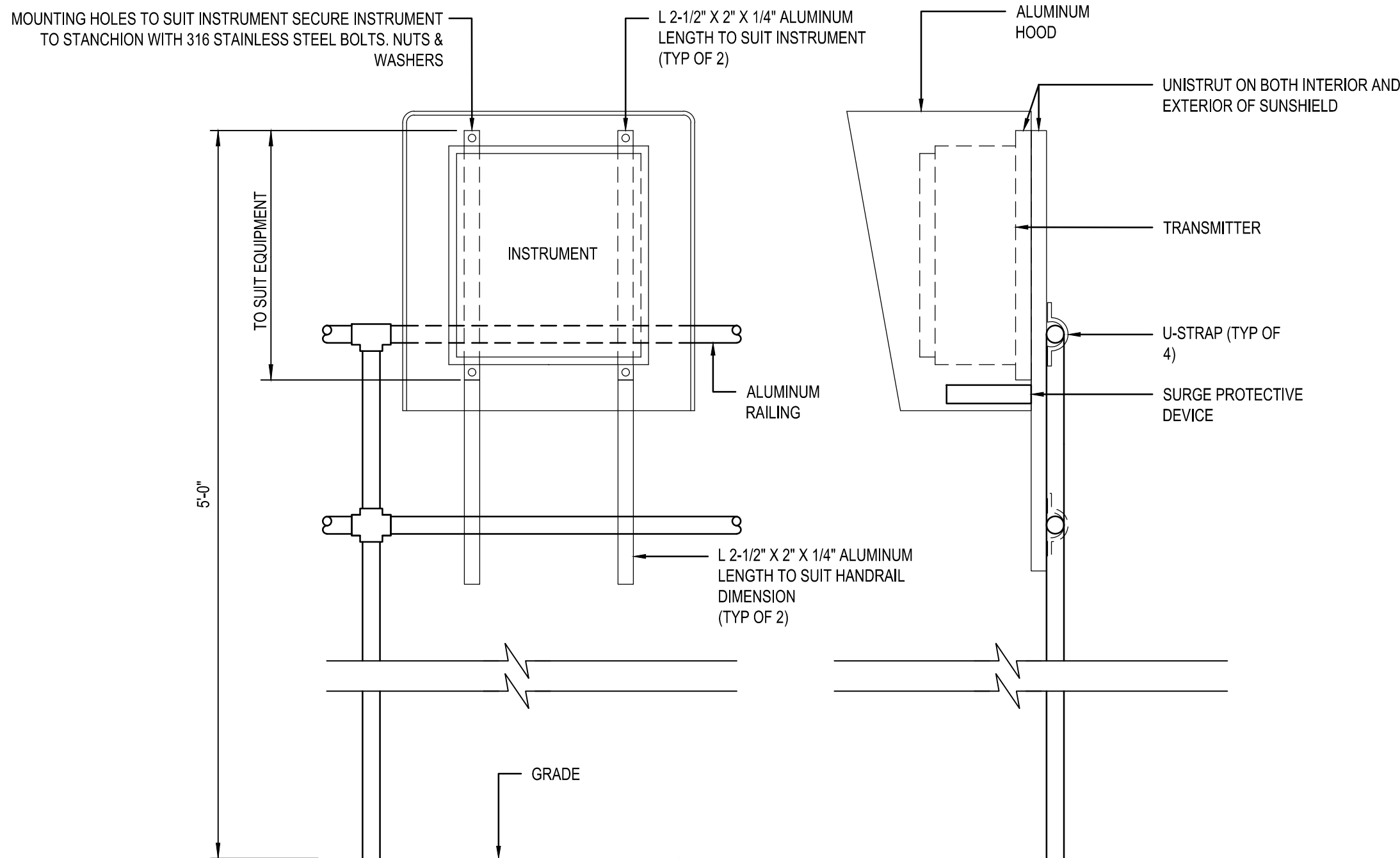


WWTP AUTO-DIALER NETWORK DIAGRAM

NOT TO SCALE

NOTES:

- REFER TO ELECTRICAL DRAWINGS FOR CONDUIT AND WIRING REQUIREMENTS.
- REFER TO SPECIFICATION SECTION 40 60 05 FOR AUTO DIALER INPUT/OUTPUT LIST.
- EXISTING PHONE LINE BY OWNER.



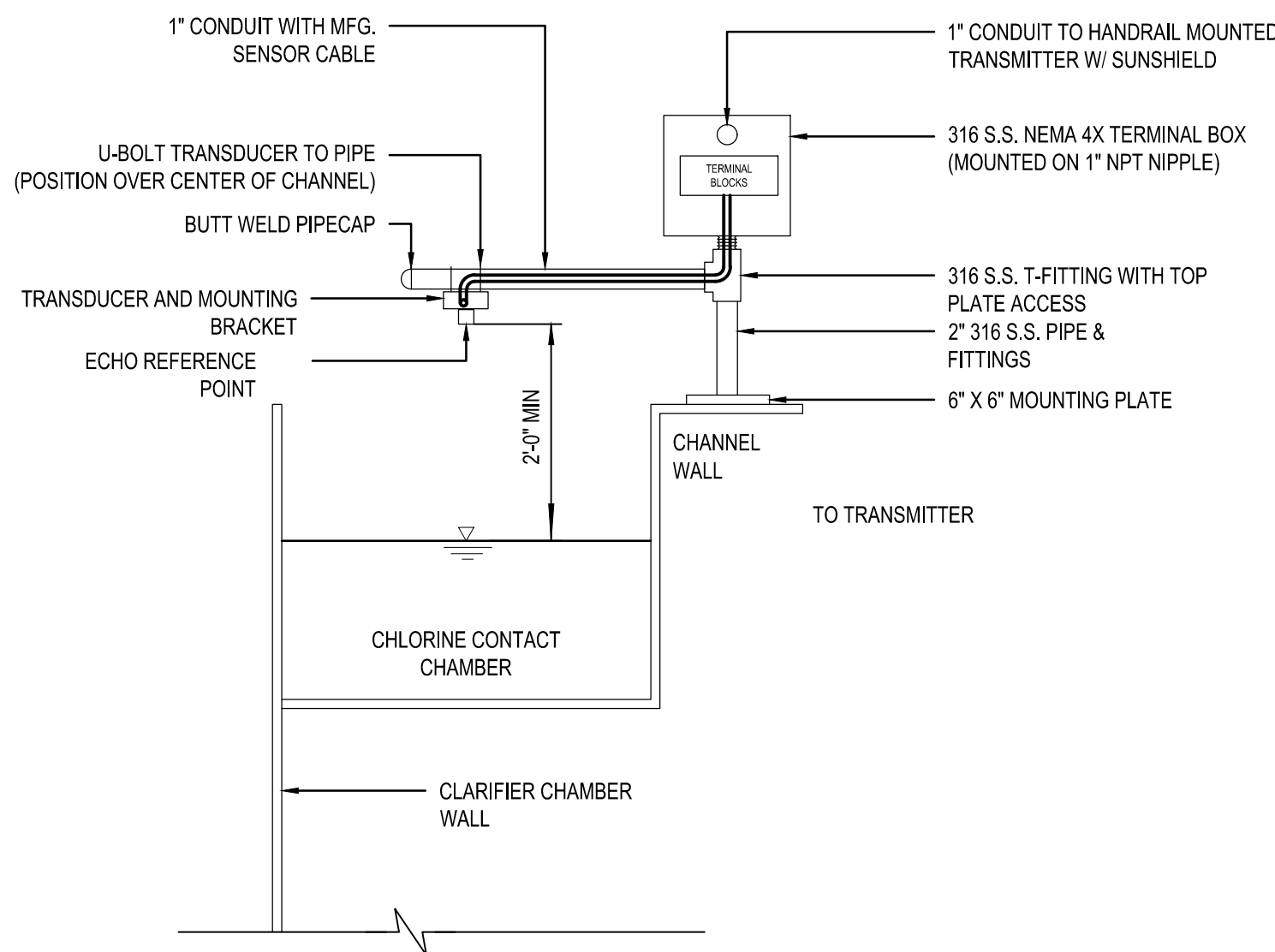
RAILING MOUNTING STAND FOR INSTRUMENTS

NOT TO SCALE

(ALL RAILING MOUNTED PANELS/TRANSMITTERS)

NOTES:

- SUN SHIELD SHALL BE AS PER DIV 40 SPECIFICATIONS.
- ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.



OPEN CHANNEL FLOW METER MOUNTING DETAIL

NOT TO SCALE

NOTES:

- ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.

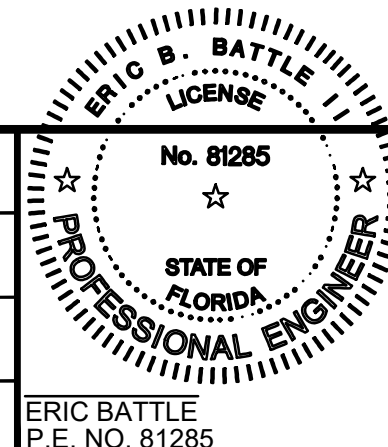
0 4' 8' 16'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY FIGURE REPRODUCTION SCALE.

No.	Date	Revisions	AGG	SKC
1	11/19/2021	CONFORMED SET		

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name ERIC BATTLE, P.E.	
Professional Engineer's No. 81285	
State FL	Date Signed 2021.11.22
Designed by EB	Drawn by VN
Checked by EB	Project Mgr. SKC



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Eric B Battle II
Digitally signed by Eric B Battle II
Date: 2021.11.22 15:38:20-05'00'



ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER 7917

COLUMBIA COUNTY, FLORIDA
ELLISVILLE WASTEWATER TREATMENT PLANT EXPANSION

NETWORK DIAGRAM AND INSTRUMENT DETAILS

ARCADIS Project No.
30028119.0000

Date
NOVEMBER 2021

ARCADIS
4300 WEST CYPRESS STREET
TAMPA, FLORIDA 33607
TEL. 813.903.3125

I-03