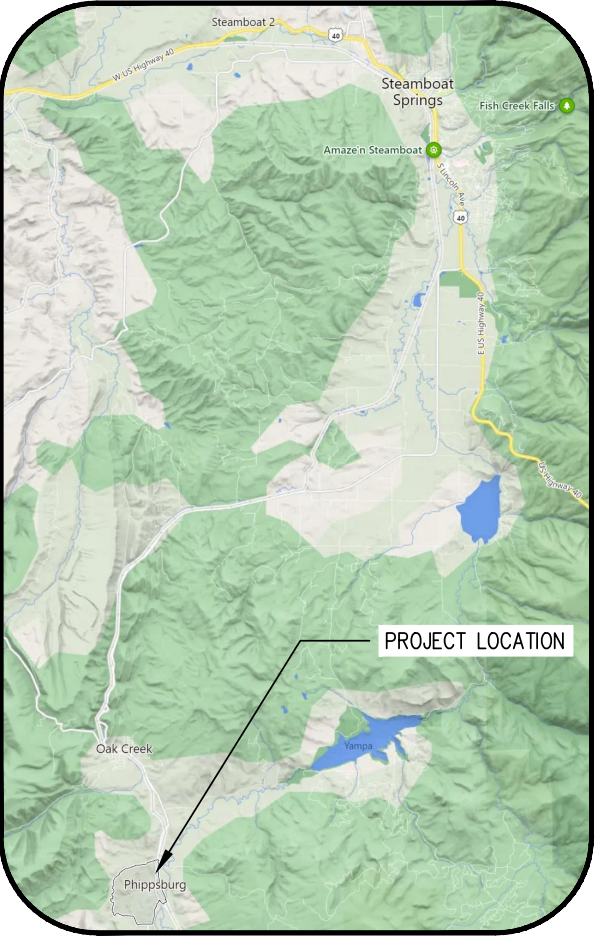


COMMUNITY OF PHIPPSBURG
WASTEWATER TREATMENT IMPROVEMENT PROJECT
FINAL DESIGN
OCTOBER 2023



LOCATION MAP
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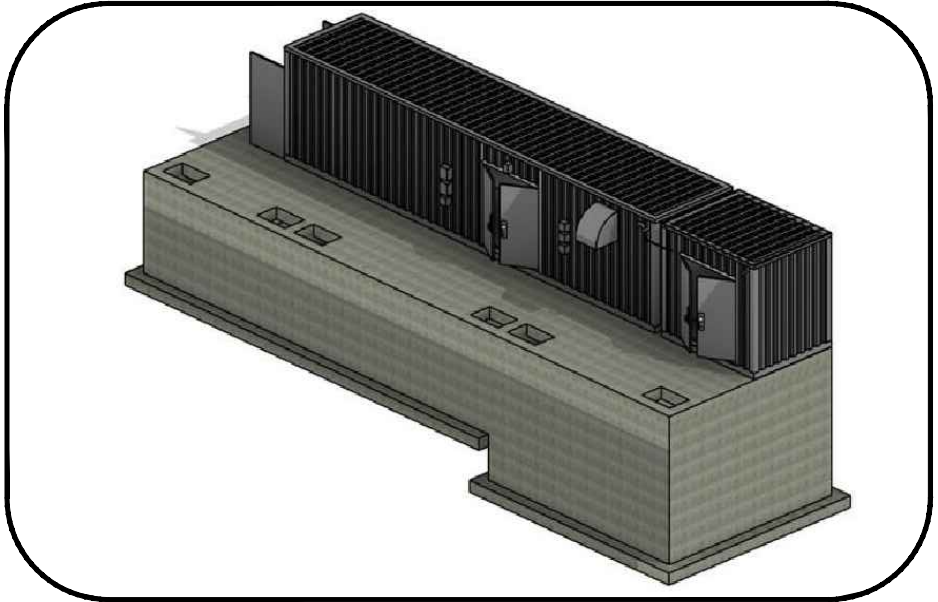


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SHEET INDEX	
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G2	ABBREVIATIONS & SYMBOLS
G3	GENERAL NOTES & REQUIREMENTS
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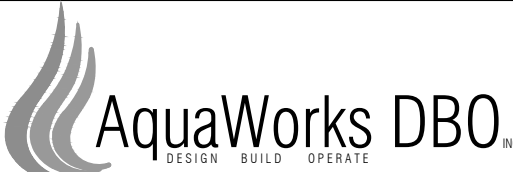
SHEET INDEX	
SHEET NUMBER	SHEET TITLE
PROCESS	
P1	BUILDING ISOMETRICS & INSTALLATION NOTES
P2	CONCRETE TANK LID PLAN
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P4	PROCESS PLAN
P5	PROCESS SECTION A
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STRUCTURAL	
S1	GENERAL STRUCTURAL NOTES
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S7	STRUCTURAL DETAILS
ELECTRICAL	
E1	ELECTRICAL NOTES & DETAILS
E2	ELECTRICAL LAYOUT
E3	ELECTRICAL ONE LINE & DETAILS



PROJECT ISOMETRIC
NTS



SITE PLAN
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1	2	3	4	5	6	7	8	9	10										
AB ABC AC ACOUS ACP ACTR AD ADDM ADJ AFF AFG AHU AL ALT AMT APPROX ARV ASME ASTM ASPH ASSY ATS AVG AVS	ANCHOR BOLT AGGREGATE BASE COURSE AIR CONDITIONING ACOUSTICAL ASPHALTIC CONCRETE ACTUATOR AREA DRAIN OR ACCESS DOOR ADDENDUM ADJUSTABLE ABOVE FINISHED FLOOR ABOVE FINISHED GRADE AIR HANDLING UNIT ALUMINUM ALTERNATE AMOUNT APPROXIMATE AIR RELIEF VALVE AMERICAN SOCIETY OF MECHANICAL ENGINEERS AMERICAN SOCIETY FOR TESTING AND MATERIALS ASPHALT ASSEMBLY AUTOMATIC TRANSFER SWITCH AVERAGE AUTOMATIC VALVE STATION	F/F FCA FD FDN FED FES FFE FIN FL FLL FLR FN FOC FPM FPS FPW FR FRP FSTNR FT FTG FUR	FACE TO FACE FLANGE COUPLING ADAPTER FLOOR DRAIN FOUNDATION FEDERAL FLARED END SECTION FINISH FLOOR ELEVATION FINISH FLANGE FLOW LINE FLOOR FENCE FACE OF CONCRETE FEET PER MINUTE FEET PER SECOND FIRE PROTECTION WATER SUPPLY FRAME FIBERGLASS REINFORCED PLASTIC FASTENER FEET FOOTING OR FITTING FURNACE	MG MGD MGMT MH MIN MISC MJ MO MRGYB MTG	MILLION GALLONS OR MILLIGRAMS MILLION GALLONS PER DAY MANAGEMENT MANHOLE MINIMUM MISCELLANEOUS MECHANICAL JOINTS MASONRY OPENING MOISTURE RESISTANT GYPSUM WALL BOARD MOUNTING	SA SALV SAN SB SCFM SCH SCRN SD SDR SECT SHLDR SHT SHTHG SIM SLV SM SP SPEC SQ SQ FT SQ IN SQ YD SS SST SST BT ST STA STD STL STL JST STL PL SUPP SUSP CLG SV SVC SW SWMP SYMM SYS	SUPPLY AIR SALVAGE SANITARY SPLASH BLOCK STANDARD CUBIC FEET PER MINUTE SCHEDULE SCREEN STORM DRAIN STANDARD DIMENSION RATIO SECTION SHOULDER SHEETING SHEATHING SIMILAR SLEEVE SMOOTH SPACING SPECIFICATION SQUARE SQUARE FEET SQUARE INCH SQUARE YARD SANITARY SEWER STAINLESS STEEL STAINLESS STEEL BOLT STREET STATION STANDARD STEEL STEEL JOIST STEEL PLATE SUPPLY SUSPENDED CEILING SOLENOID VALVE SERVICE SIDEWALK STORM WATER MANAGEMENT PLAN SYMMETRICAL SYSTEM	WTR WTRPRF X-SECT	WATER WATERPROOF(ING) CROSS SECTION	YCO YD YH	YARD CLEANOUT YARD DRAIN YARD HYDRANT								
B B&F BB BAF BC BE BF BFV BLDG BLK BM BMPS BOD BOT BP BS BSMT BU BV BCV BWL	BLOWER BELL & FLANGE BOND BEAM BAFFLE BACK OF CURB BELL END BOTTOM FACE BUTTERFLY VALVE BUILDING BLOCK BENCHMARK BEST MANAGEMENT PRACTICES BIOCHEMICAL OXYGEN DEMAND BOTTOM OR BOTTOM OF TANK BOOSTER PUMP BACKSIGHT BASEMENT BELL UP BALL VALVE BUTTERFLY CHECK VALVE BOTTOM WATER LEVEL	G GA GAL GALV GIP GRND GPD GPM GR BM GRC GRTG GSP GV GWB	GAS GAUGE GALLON GALVANIZED GALVANIZED IRON PIPE GROUND GALLONS PER DAY GALLONS PER MINUTE GRADE BEAM GALVANIZED RIGID CONDUIT GRATING GALVANIZED STEEL PIPE GATE VALVE GYPSUM WALL BOARD	OC OD OF OPNG OPP OPT	ON CENTER OUTSIDE DIAMETER OVER FLOW OPENING OPPOSITE OPTIONAL	P PA PAR PC PCO PCP PD PE PERM PERP PG PL PLBG PLYWD PNT POLY PORT POS PPM PRCST PREFAB PREFIN PRELIM PREP PROJ PROP PRS PRTV PRV PS PSF PSI PSIA PSIG PV PVMT PW	PUMP PIPE ANCHOR PARALLEL PORTLAND CEMENT PRESSURE CLEAN OUT PROGRESSING CAVITY PUMP PUMP DISCHARGE LINE PLAIN END PERMANENT PERPENDICULAR PRESSURE GAGE PLATE OR PROPERTY LINE PLUMBING PLYWOOD PAINT POLYETHYLENE PORTABLE POSITIVE PARTS PER MILLION PRECAST PREFABRICATED PREFINISHED PRELIMINARY PREPARATION PROJECT PROPERTY PRESSURE REDUCING STATION PRESSURE / TEMPERATURE RELIEF VALVE PRESSURE REDUCING VALVE PIPE SUPPORT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH ABSOLUTE POUNDS PER SQUARE INCH GAGE PLUG VALVE PAVEMENT POTABLE WATER	T T&B T&G T&P TB TBM TE TEMP TFA TFB TFF THD THK TJ TOB TOC TOE TOF TOT TP TR TSL TST TW TWL TYP	TEE TOP AND BOTTOM TONGUE AND GROOVE TEMPERATURE AND PRESSURE TOP OF BEAM TEMPORARY BENCH MARK TOP ELEVATION TEMPORARY TOP OF FOOTING TO FLOOR ABOVE TO FLOOR BELOW TOP OF FINISH FLOOR THREAD(ED) THICK TOP OF JOIST TOP OF BANK TOP OF CONCRETE THREADED ONE END TOP OF FOOTING TOTAL TOP OF PAVEMENT TOP OF RIM TOP OF SLAB TOP OF STEEL TOP OF WALL TOP WATER LEVEL TYPICAL	SECTION LETTER IDENTIFICATION SHEET WHERE THE SECTION OR ELEVATION IS DRAWN - INDICATES SAME DRAWING	SECTION OR ELEVATION MARKER ARROW INDICATES VIEWING ORIENTATION	SECTION OR ELEVATION TITLE	DETAIL 1/4"=1'-0"	DETAIL NUMBER IDENTIFICATION SHEETS WHERE THE DETAIL IS CALLED OUT - INDICATES SAME DRAWING	DETAIL TITLE	DETAIL MARKER	DETAIL NUMBER IDENTIFICATION SHEET WHERE THE DETAIL IS DRAWN - INDICATES SAME DRAWING		
C C/C CB CCW CDOOT CEB CIP CIMJ CISP CJ CL CLG CLR CMP CMU CO CONSTR CONT COR CP CPLG CR CTJ CTR CS CW CWL CY	CENTER TO CENTER CATCH BASIN COUNTER CLOCKWISE COLORADO DEPARTMENT OF TRANSPORTATION CONCRETE EQUIPMENT BASE CAST IRON PIPE CAST IRON MECHANICAL JOINT CAST IRON SOIL PIPE CONSTRUCTION JOINT CENTER LINE OR CHAIN LINK CEILING CLEAR CORRUGATED METAL PIPE CONCRETE MASONRY UNIT CLEAN OUT CONSTRUCTION CONTINUOUS CORNER CENTRIFUGAL PUMP COUPLING CONCRETE REDUCER CONTROL JOINT CENTER CAUSTIC SODA COLD WATER CONTROL WATER LEVEL CUBIC YARDS	INCL INCR ID IF INL INSTL INSTR INSUL INTR INV INV EL ISA ISO	INCLUDED INCREASER INSIDE DIAMETER INSIDE FACE INLET INSTALLATION INSTRUMENT INSULATION INTERIOR INVERT INVERT ELEVATION INSTRUMENT SOCIETY OF AMERICA ISOMETRIC	JST JTS	JOIST JOINTS	QAVG QMAX QPEAK QCV QTR QTY	AVERAGE DAILY FLOW MAXIMUM DAILY FLOW PEAK HOUR FLOW QUICK COUPLER VALVE QUARTER QUANTITY	UBC UE UG ULT UN UNG UNFIN UNIF UV	UNIFORM BUILDING CODE UNDERGROUND ELECTRIC UNDERGROUND ULTIMATE UNION UNDERGROUND NATURAL GAS UNFINISHED UNIFORM ULTRAVIOLET	VAC VB VCP VTR	VACUUM VALVE BOX VITRIFIED CLAY PIPE VENT THROUGH ROOF	SECTION LETTER IDENTIFICATION SHEET WHERE THE SECTION OR ELEVATION IS OUT OR CALLED OUT - INDICATES SAME DRAWING	SECTION OR ELEVATION MARKER ARROW INDICATES VIEWING ORIENTATION	SECTION OR ELEVATION TITLE	DETAIL 1/4"=1'-0"	DETAIL NUMBER IDENTIFICATION SHEETS WHERE THE DETAIL IS CALLED OUT - INDICATES SAME DRAWING	DETAIL TITLE		DETAIL MARKER
D DEMO DI DIA DIAG DIM DIP DIS DISP DL DMJ DN DR DWG DWL DWN DWV	DEMOLITION DEIONIZATION DIAMETER DIAGONAL DIMENSION DUCTILE IRON PIPE DISCHARGE DISPENSER DEAD LOAD DUCTILE MECHANICAL JOINT DOWN DRAIN DRAWING DOWEL DRAWN DRAIN WASTE AND VENT	L LAB LATL LAV LB(S) LCMU LF LKR LL LNG LOC LP LRG LT LT WT LWC LWL	LEFT OR LITER LABORATORY LATERAL LAVATORY POUND(S) LIGHTWEIGHT CONCRETE MASONRY UNIT LINEAR FOOT LOCKER LIVE LOAD OR LOW LEVEL LENGTH LOCATION LOW PRESSURE OR LIGHT POLE LARGE LIGHT LIGHT WEIGHT LIGHT WEIGHT CONCRETE LOW WATER LEVEL	JST JTS	JOIST JOINTS	QAVG QMAX QPEAK QCV QTR QTY	AVERAGE DAILY FLOW MAXIMUM DAILY FLOW PEAK HOUR FLOW QUICK COUPLER VALVE QUARTER QUANTITY	UBC UE UG ULT UN UNG UNFIN UNIF UV	UNIFORM BUILDING CODE UNDERGROUND ELECTRIC UNDERGROUND ULTIMATE UNION UNDERGROUND NATURAL GAS UNFINISHED UNIFORM ULTRAVIOLET	VAC VB VCP VTR	VACUUM VALVE BOX VITRIFIED CLAY PIPE VENT THROUGH ROOF	SECTION LETTER IDENTIFICATION SHEET WHERE THE SECTION OR ELEVATION IS OUT OR CALLED OUT - INDICATES SAME DRAWING	SECTION OR ELEVATION MARKER ARROW INDICATES VIEWING ORIENTATION	SECTION OR ELEVATION TITLE	DETAIL 1/4"=1'-0"	DETAIL NUMBER IDENTIFICATION SHEETS WHERE THE DETAIL IS CALLED OUT - INDICATES SAME DRAWING	DETAIL TITLE	DETAIL MARKER	DETAIL NUMBER IDENTIFICATION SHEET WHERE THE DETAIL IS DRAWN - INDICATES SAME DRAWING
E EA ECC EF EFF EJ EL EXIST OR (E) EXIST GR EXT EXTN	EACH ECCENTRIC EACH FACE OR ELECTRICAL FAN EFFLUENT EXPANSION JOINT ELEVATION EXISTING EXISTING GRADE EXTERIOR EXTENSION	MAINT MAN MATL MAX MCC MECH MED MFM MFR	MAINTENANCE MANUAL MATERIAL MAXIMUM MOTOR CONTROL CENTER MECHANICAL MEDIUM MAGNETIC FLOW METER MANUFACTURER	JST JTS	JOIST JOINTS	QAVG QMAX QPEAK QCV QTR QTY	AVERAGE DAILY FLOW MAXIMUM DAILY FLOW PEAK HOUR FLOW QUICK COUPLER VALVE QUARTER QUANTITY	UBC UE UG ULT UN UNG UNFIN UNIF UV	UNIFORM BUILDING CODE UNDERGROUND ELECTRIC UNDERGROUND ULTIMATE UNION UNDERGROUND NATURAL GAS UNFINISHED UNIFORM ULTRAVIOLET	VAC VB VCP VTR	VACUUM VALVE BOX VITRIFIED CLAY PIPE VENT THROUGH ROOF	SECTION LETTER IDENTIFICATION SHEET WHERE THE SECTION OR ELEVATION IS OUT OR CALLED OUT - INDICATES SAME DRAWING	SECTION OR ELEVATION MARKER ARROW INDICATES VIEWING ORIENTATION	SECTION OR ELEVATION TITLE	DETAIL 1/4"=1'-0"	DETAIL NUMBER IDENTIFICATION SHEETS WHERE THE DETAIL IS CALLED OUT - INDICATES SAME DRAWING	DETAIL TITLE	DETAIL MARKER	DETAIL NUMBER IDENTIFICATION SHEET WHERE THE DETAIL IS DRAWN - INDICATES SAME DRAWING
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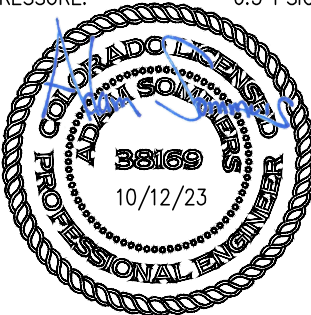
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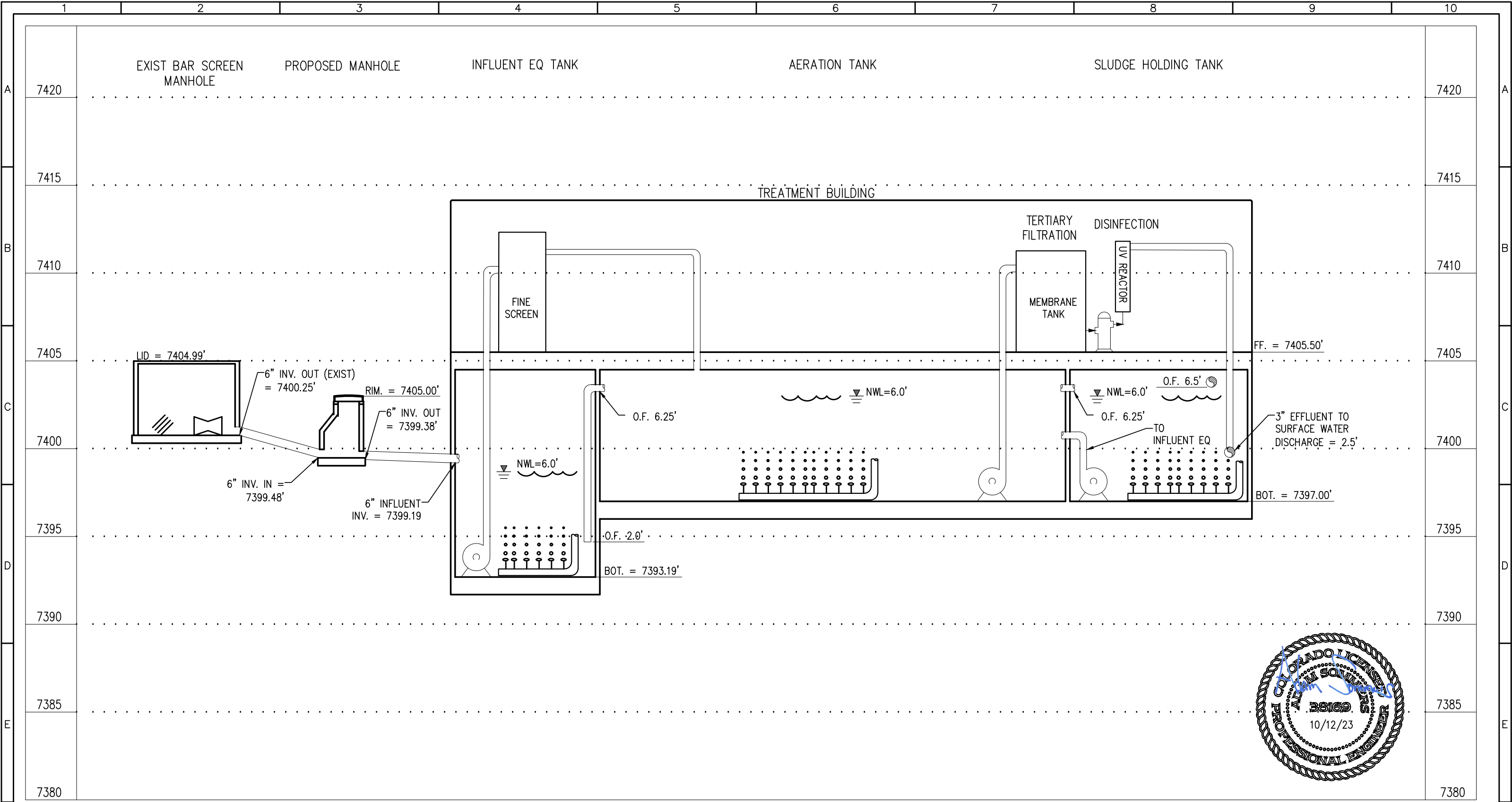
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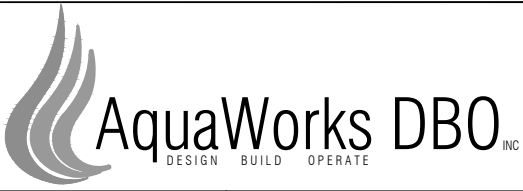
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A	DESIGN CRITERIA SUMMARY:			MAJOR EQUIPMENT SUMMARY:		MAJOR EQUIPMENT SUMMARY:		MAJOR EQUIPMENT SUMMARY:		MAJOR EQUIPMENT SUMMARY:											
	DESIGN FLOWS: MAX MONTH (DESIGN) FLOW: 30,000 GPD PEAK DAILY FLOW: 45,000 GPD PEAK INSTANTANEOUS FLOW: 51.7 GPM			SLUDGE BLOWER: QUANTITY: 1 DUTY, 1 SHARED STANDBY TAG NO.: B-0901 & B-3901 TYPE: REGENERATIVE MRF/MODEL: FPZ, SCL R30-MD-3-3 MOTOR: 3 HP POWER: 208-230/460V/3P/60HZ SPEED CONTROL: CONSTANT SPEED DESIGN FLOW: 36.2 SCFM DESIGN PRESSURE: 4.8 PSIG		AUTOMATIC FINE SCREEN: QUANTITY: 1 DUTY TAG NO.: SCR-0201 MFR/MODEL: MARATHON, NEWTERRA SCR-100 SCREEN/PERFORATION SIZE: 2 MM CAPACITY: 100 GPM MOTOR SIZE: 0.5 HP POWER: 208-230/460V/3P,50/60HZ		SLUDGE DECANT PUMP: QUANTITY: 2 DUTY TAG NO.: P-0901 & P-0902 TYPE: SUBMERSIBLE MFR/MODEL: BARNES 2SE544L CAPACITY: 50 GPM @ 20 FT MOTOR SIZE: 0.5 HP SPEED CONTROL: CONSTANT SPEED VOLTAGE/PHASE: 460V/3PH/60HZ		CIP SODIUM HYPOCHLORITE FEED SYSTEM: QUANTITY: 1 TAG NO.: P-6104 MFR/MODEL: XYLEM 04300545A CAPACITY: 4.5 GPH UP TO 45 PSI VOLTAGE & PHASE: 115V/1P/50-60HZ TANK CAPACITY: 55 GALLONS											
	DESIGN INFLUENT CONCENTRATIONS AND LOADING: AVERAGE BOD: 400 MG/L AVERAGE TSS: 400 MG/L AVERAGE TKN: 50 MG/L AVERAGE TP: 10 MG/L																				
	DESIGN EFFLUENT LIMITS: BOD: < 5 MG/L TSS: < 1 MG/L NH3-N: < 1 MG/L PH: 7-9			MEMBRANE BASIN BLOWERS: QUANTITY: 2 DUTY, 1 SHELF SPARE TAG NO.: B-0601 & B-0602 TYPE: REGENERATIVE MRF/MODEL: FPZ SCL R30-MD-3-3 MOTOR: 3.0 HP POWER: 208-230/460V/3P/60HZ SPEED CONTROL: CONSTANT SPEED DESIGN FLOW: 24.9 SCFM DESIGN PRESSURE: 6.7 PSIG		AEROBIC BASIN: QUANTITY: 1 ZONE TAG NO.: TNK-501 BASIN SIZE: 22.00 FT L X 14.75 FT W SIDE WATER DEPTH: 6.0 FT WORKING VOLUME: 14,569 GALLONS		ALUMINUM SULFATE CHEMICAL FEED SYSTEM: QUANTITY: 1 TAG NO.: P-6101 MFR/MODEL: PROMINENT BT4B1602PVT2000UD010A01 CAPACITY: 0.58 GPH @ 232 PSI MAX POWER: 17 W VOLTAGE/PHASE: 100-240V/50/60HZ FEED TANK CAPACITY: 55 GALLONS		CIP CITRIC ACID FEED SYSTEM: QUANTITY: 1 TAG NO.: P-6105 MFR/MODEL: XYLEM 04300545A CAPACITY: 4.5 GPH UP TO 45 PSI VOLTAGE & PHASE: 115V/1P/50-60HZ TANK CAPACITY: 55 GALLONS											
B	ACTIVATED SLUDGE DESIGN CRITERIA: SITE ELEVATION: 7,436 FEET MLSS TEMPERATURE: 10 CELSIUS HYDRAULIC RETENTION TIME: 7.75 HOURS @ MMF AEROBIC SRT: 15.1 DAYS F:M RATIO: 0.037 (OR 0.055 FOR F:MLVSS)					MBR MEMBRANE FEED PUMPS: QUANTITY: 2 DUTY, 1 SHARED SHELF SPARE TAG NO.: P-0501, P-0502 MFR/MODEL: BARNES 2SEV744L CAPACITY: 52.1 GPM @ 25.5FT MOTOR SIZE: 0.75 HP SPEED CONTROL: CONSTANT SPEED POWER: 460V/3PH/60HZ		CAUSTIC SODA FEED SYSTEM: QUANTITY: 1 TAG NO.: P-6102 MFR/MODEL: PROMINENT BT4B1602PVT2000UD010A01 CAPACITY: 0.58 GPH @ 232 PSI MAX POWER: 17 W VOLTAGE/PHASE: 100-240V/50/60HZ FEED TANK CAPACITY: 55 GALLONS		UV DISINFECTION SYSTEM: QUANTITY: 1 DUTY, 1 STANDBY TAG NO.: UV-0701 & UV-0702 MFR/MODEL: UVPURE HALLETT 1000W CAPACITY: 34.8 GPM POWER: 120V/1P/50-60HZ											
	MAJOR EQUIPMENT SUMMARY:			INFLUENT EQUALIZATION BASIN: QUANTITY: 1 TAG NO.: TNK-301 BASIN SIZE: 17.5 FT L X 14.75 FT W SIDE WATER DEPTH: 6.0 FT WORKING VOLUME: 11,588 GALLONS		MBR REACTOR BASIN: QUANTITY: 2 TAG NO.: TNK-601 & TNK-602 BASIN SIZE: 3.35 FT L X 5.39 FT SIDE WATER DEPTH: 6.89 FT WORKING VOLUME: 862 GALLONS		MICRO-C CHEMICAL FEED SYSTEM: QUANTITY: 1 TAG NO.: P-6103 MFR/MODEL: PROMINENT BT4B1602PVT2000UD010A01 CAPACITY: 0.58 GPH @ 232 PSI MAX POWER: 17 W VOLTAGE/PHASE: 100-240V/50/60HZ TANK CAPACITY: 55 GALLONS		INFLUENT FLOW MEASUREMENT: QUANTITY: 1 TYPE: FLUME (EXISTING) W/ ULTRASONIC LEVEL SENSOR MFR: MJK SHUTTLE, OR EQUAL											
	AEROBIC PROCESS BLOWERS: QUANTITY: 1 DUTY, 1 STANDBY TAG NO.: B-0501 & B-0502 TYPE: POSITIVE DISPLACEMENT MRF/MODEL: SUTORBILT 5L-RHC MOTOR: 20 HP POWER: 460V/3PH/60 HZ SPEED CONTROL: VFD DESIGN FLOW: 407.7 SCFM DESIGN PRESSURE: 4.2 PSI			INFLUENT EQUALIZATION TRANSFER PUMPS: QUANTITY: 1 DUTY, 1 STANDBY TAG NO.: P-0301 & P-0302 TYPE: SUBMERSIBLE MFR/MODEL: MYERS SX50-43 CAPACITY: 31.2 GPM @ 21.8 FT MOTOR: 0.5 HP SPEED CONTROL: CONSTANT SPEED POWER: 460V/3PH/60HZ		MEMBRANES: MEMBRANE TYPE: ZEEWEED 500S MEMBRANE SURFACE AREA: 300 FT2 (PER MODULE) MODULES/MEMBRANE TANK: 5 FLUX: 15.0 GFD				EFFLUENT FLOW MEASUREMENT: QUANTITY: 1 TAG NO.: FIT-0702 MFR/MODEL: IFM EFECTOR SM9601 SIZE: 1.5 INCH											
	INFLUENT EQ BLOWER: QUANTITY: 1 DUTY, 1 SHARED STANDBY TAG NO.: B-0301 & B-3901 TYPE: REGENERATIVE MRF/MODEL: FPZ, SCL R30-MD-3-3 MOTOR: 3 HP POWER: 208-230/460V/3P/60HZ SPEED CONTROL: CONSTANT SPEED DESIGN FLOW: 24.1 SCFM DESIGN PRESSURE: 6.5 PSIG					MBR PERMEATE PUMPS: QUANTITY: 2 DUTY, 2 STANDBY TAG NO.: P-0701 & P-0702; P-0704 & P-0705 MFR/MODEL: GOULDS 1ST1D9F4 CAPACITY: 17.4 GPM @ 52FT MOTOR SIZE: 0.75 HP SPEED CONTROL: VFD POWER: 230/460V/3PH/60HZ		MEMBRANE BACKWASH TANK: QUANTITY: 1 TAG NO.: TNK-801 TANK SIZE: 43 INCH DIA X 50 INCH TALL VOLUME: 240 GALLONS		PORTABLE HOIST: MFR/MODEL: HALLIDAY PRODUCTS D1A24C W/36" REACH QUANTITY: 1 HOIST SOCKET: HALLIDAY PRODUCTS EMBED STYLE SOCKET QUANTITY: 3											
C				SLUDGE HOLDING BASIN: QUANTITY: 1 TAG NO.: TNK-901 BASIN SIZE: 13.17 FT L X 14.75 FT W SIDE WATER DEPTH: 6.0 FT WORKING VOLUME: 8,719 GALLONS		MEMBRANE BACKPULSE PUMP: QUANTITY: 1 DUTY, 1 STANDBY TAG NO.: P-0801 & P-0802 MFR/MODEL: GOULDS 1ST2C9D4 CAPACITY: 11.6 GPM @18 FT MOTOR SIZE: 0.5 HP SPEED CONTROL: VFD POWER: 208-230/460V/3P/60HZ		AUTODIALER/ALARMS: ETHERNET CONNECTION TO CELLULAR HOTSPOT		PRIMARY POWER: PRIMARY POWER PROVIDER: XCEL SERVICE: 480 VOLT/3PH/60HZ/200 AMP PRIMARY SOURCE: EXISTING BURIED POWER LINES											
D	REV. No: DATE: BY: REVISION DESCRIPTION:			DRAWN BY: NM				PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: DESIGN CRITERIA & MAJOR EQUIPMENT SUMMARY											
				DESIGNED BY: AS				ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479		SCALE: NOT TO SCALE		SHEET: G4							
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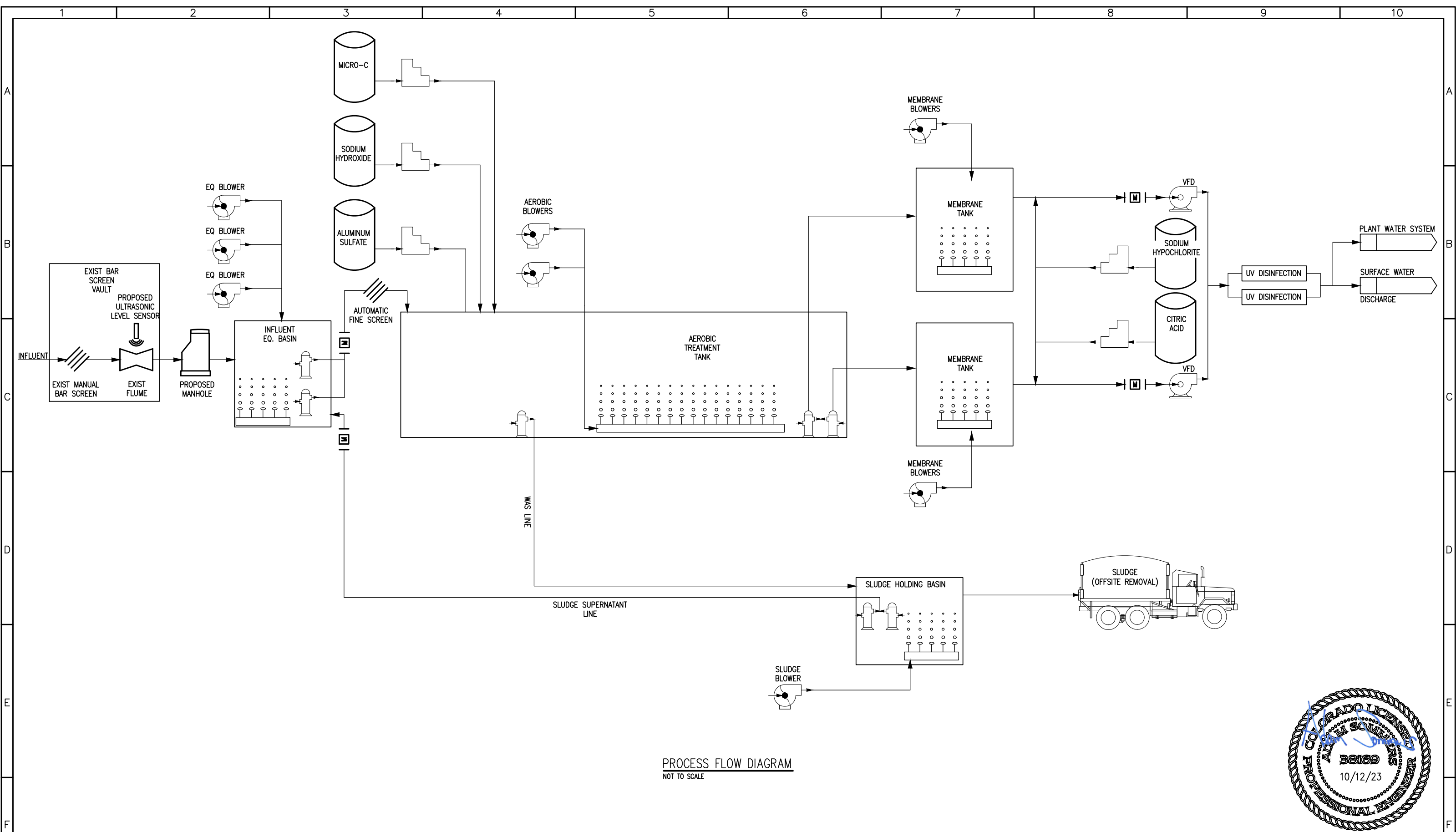


HYDRAULIC PROFILE
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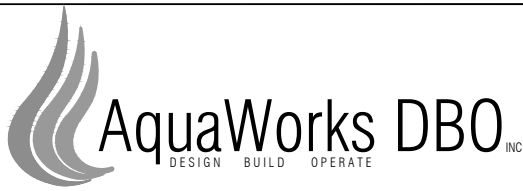


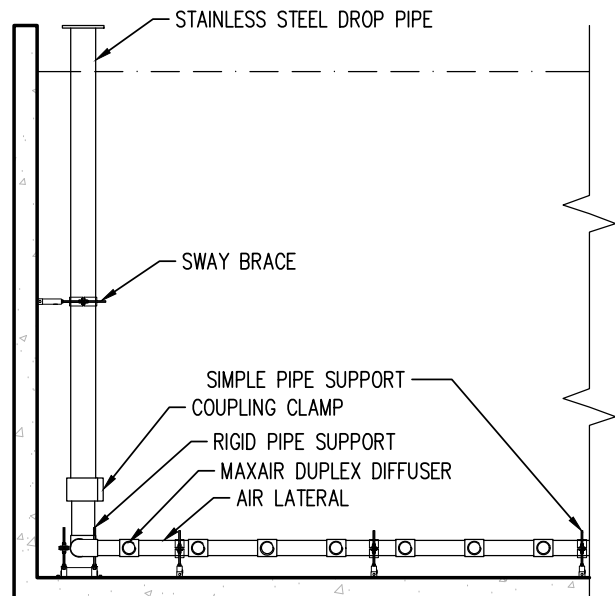
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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: NOT TO SCALE	SHEET: G5



PROCESS FLOW DIAGRAM
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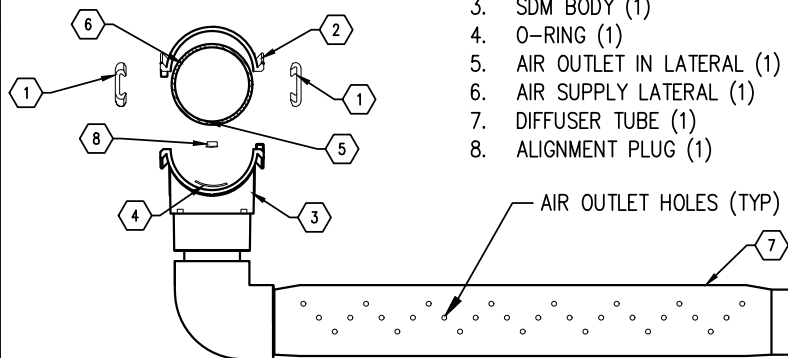
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					DESIGNED BY: AS			ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: NOT TO SCALE	SHEET: G6
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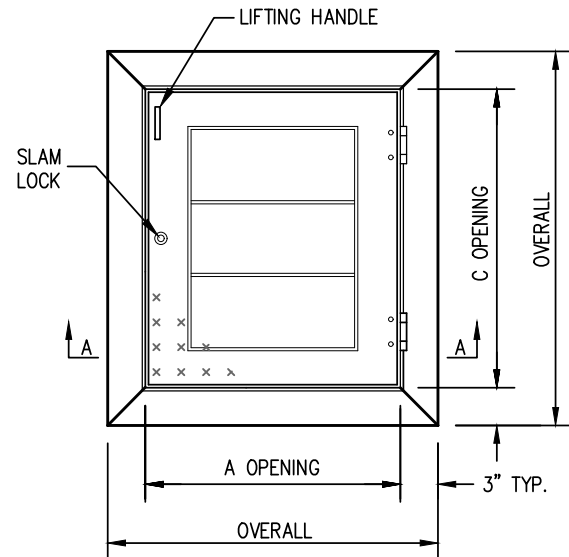
DIFFUSER ASSEMBLY DETAIL
NTS

DIFFUSER INSTALLATION LEGEND:

1. LOCKING WEDGE (2)
2. LOCKING LUG
3. SDM BODY (1)
4. O-RING (1)
5. AIR OUTLET IN LATERAL (1)
6. AIR SUPPLY LATERAL (1)
7. DIFFUSER TUBE (1)
8. ALIGNMENT PLUG (1)



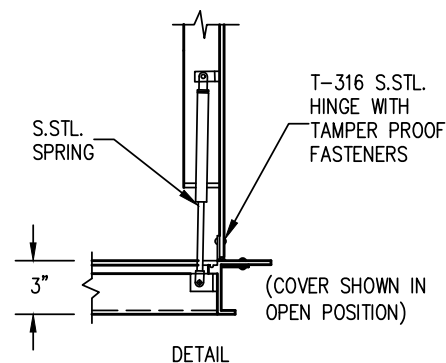
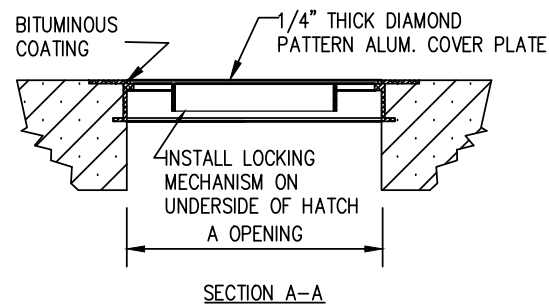
DIFFUSER INSTALLATION DETAIL
NTS



SERIES S1S ACCESS DOOR

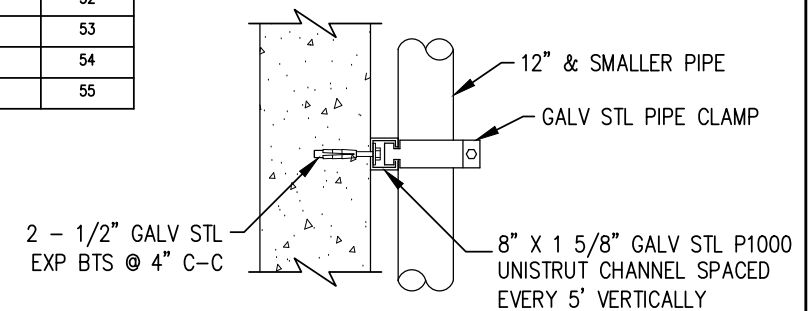
STANDARD FEATURES:

- 300 LBS. PER SQ. FT. LOAD RATING
- EXTRUDED ALUMINUM ANGLE FRAME
- SINGLE LEAF CONSTRUCTION
- AUTO-LOCK T-316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- BUILT-IN EPDM CUSHION/GASKET
- NON-OZONE DEPLETING BITUMINOUS COATING
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

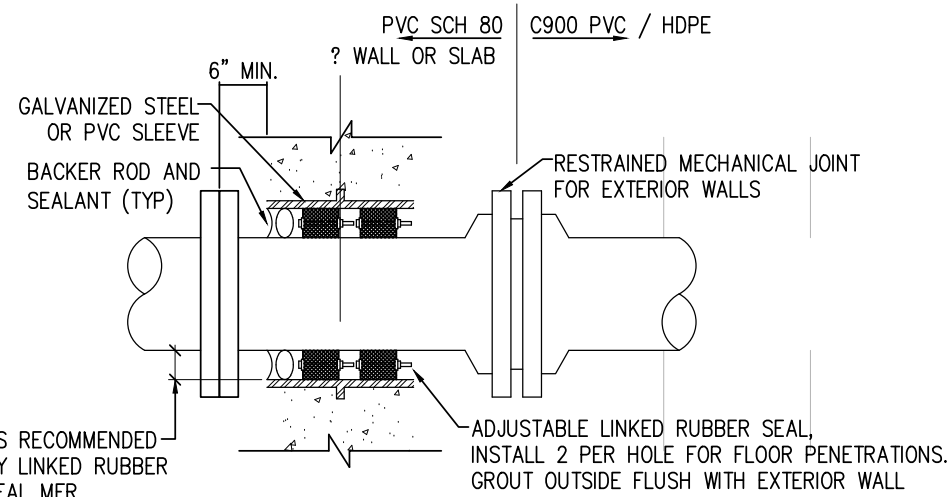


HATCH DETAIL
NTS

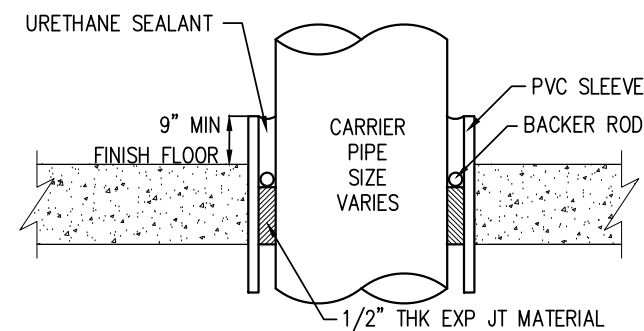
STANDARD SIZES				
QTY.	MODEL NO.	A DIM. INCHES	C DIM. INCHES	UNIT WT. LBS.
	SIS2424	24	24	37
	SIS2430	24	30	38
6	SIS2436	24	36	39
	SIS2442	24	42	40
	SIS2448	24	48	41
	SIS3030	30	30	42
	SIS3036	30	36	43
	SIS3042	30	42	44
	SIS3048	30	48	45
	SIS3054	30	54	46
	SIS3060	30	60	47
	SIS3636	36	36	48
	SIS3642	36	42	49
	SIS3648	36	48	50
	SIS3654	36	54	51
	SIS3660	36	60	52
	SIS3666	36	66	53
	SIS3672	36	72	54
	SIS4242	42	42	55



TYPICAL PIPE SUPPORT DETAIL
NTS



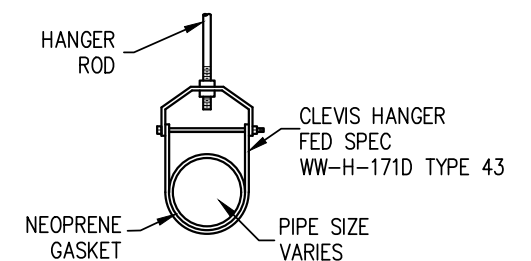
WALL PENETRATION DETAIL
NTS



NOTE:

1. FOR FOUNDATION WALL PENETRATION PROVIDE 1" ANNULAR SPACE AROUND CARRIER PIPE AND SEAL WITH URETHANE SEALANT ONLY TO PERMIT MOVEMENT

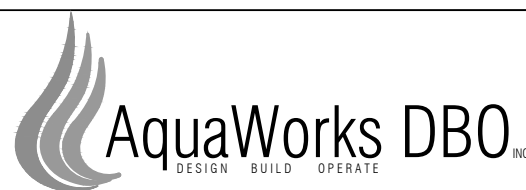
FLOOR PENETRATION DETAIL
NTS



PIPE SIZE	HANGER ROD DIA
2" & SMALLER	3/8"
2 1/2"	1/2"
3" & 4"	5/8"
6" THRU 12"	3/4"

PIPE HANGER SUPPORT DETAIL
NTS

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ROUTT COUNTY, COLORADO
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE: PROCESS DETAILS		
PROJECT NUMBER: #2479	SCALE: NTS	SHEET: G7

SERIES DB PORTABLE HOIST

- STANDARD FEATURES:
- TYPE-304 STAINLESS STEEL CONSTRUCTION
 - 30 FEET (9 METERS) OF 1/4" (7 MM) STAINLESS STEEL CABLE
 - GALVANIZED 1 TON HOOK
 - DUTTON-LAINSON MARINE GRADE BRAKE WINCH
 - ADJUSTABLE REACH IN 1" (25 MM) INCREMENTS
 - 3 YEAR GUARANTEE

- OPTIONS:
- TYPE-316 CONSTRUCTION
 - ADDITIONAL CABLE AVAILABLE (SPECIFY LENGTH)
 - STAINLESS STEEL WINCH
 - STAINLESS STEEL HOOK
 - OTHER REACHES AVAILABLE UPON REQUEST (CONSULT FACTORY)



www.HallidayProducts.com
Phone 800-298-1027
Fax 407-298-4534
Sales@HallidayProducts.com

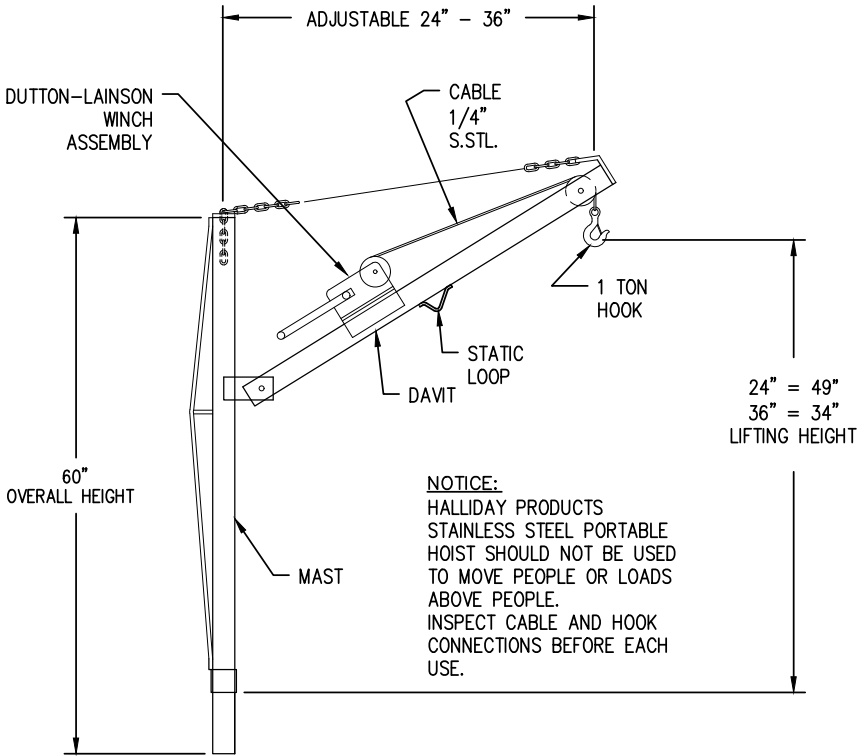
STANDARD SIZES:			
QTY.	MODEL NO.	MAX .LOAD LBS. (KG.)	UNIT WT. LBS. (KG.)
	D1B36C	300 (136)	73 (33)



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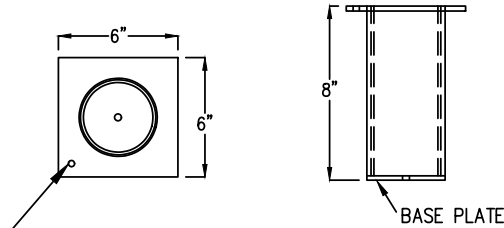
HOIST BASE LOCATIONS:

- 1) INFLUENT EQ PUMPS
- 2) SLUDGE TANK PUMPS
- 3) MBR FEED FORWARD PUMPS



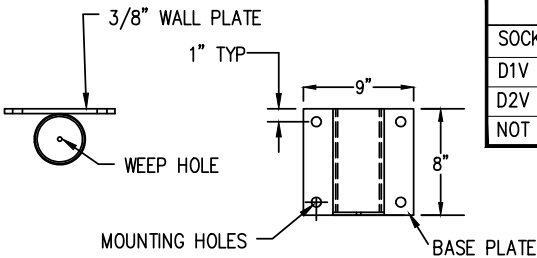
NOTICE:
HALLIDAY PRODUCTS
STAINLESS STEEL PORTABLE
HOIST SHOULD NOT BE USED
TO MOVE PEOPLE OR LOADS
ABOVE PEOPLE.
INSPECT CABLE AND HOOK
CONNECTIONS BEFORE EACH
USE.

PORTABLE HOIST 1
NTS G8



EMBED STYLE HOIST SOCKETS	
SOCKET MODEL #	FOR HOIST MODELS
D1S LINED	D1A AND D1B
D2S LINED	D2A AND D2B
D3S LINED	D3A AND D3B

EMBED STYLE HOIST SOCKETS



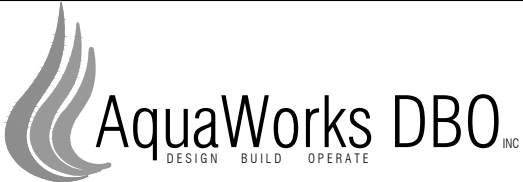
WALL STYLE HOIST SOCKETS	
SOCKET MODEL #	FOR HOIST MODELS
D1V LINED	D1A AND D1B
D2V LINED	D2A AND D2B
NOT AVAILABLE	D3A AND D3B

LIFT STATION HOIST SOCKET

HOIST BASE 2
NTS G8



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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: METALS DETAILS		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: NTS	SHEET: G8



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				DESIGNED BY: AS							
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							ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER:	SCALE:	SHEET:
									7830	1"=40'	C1

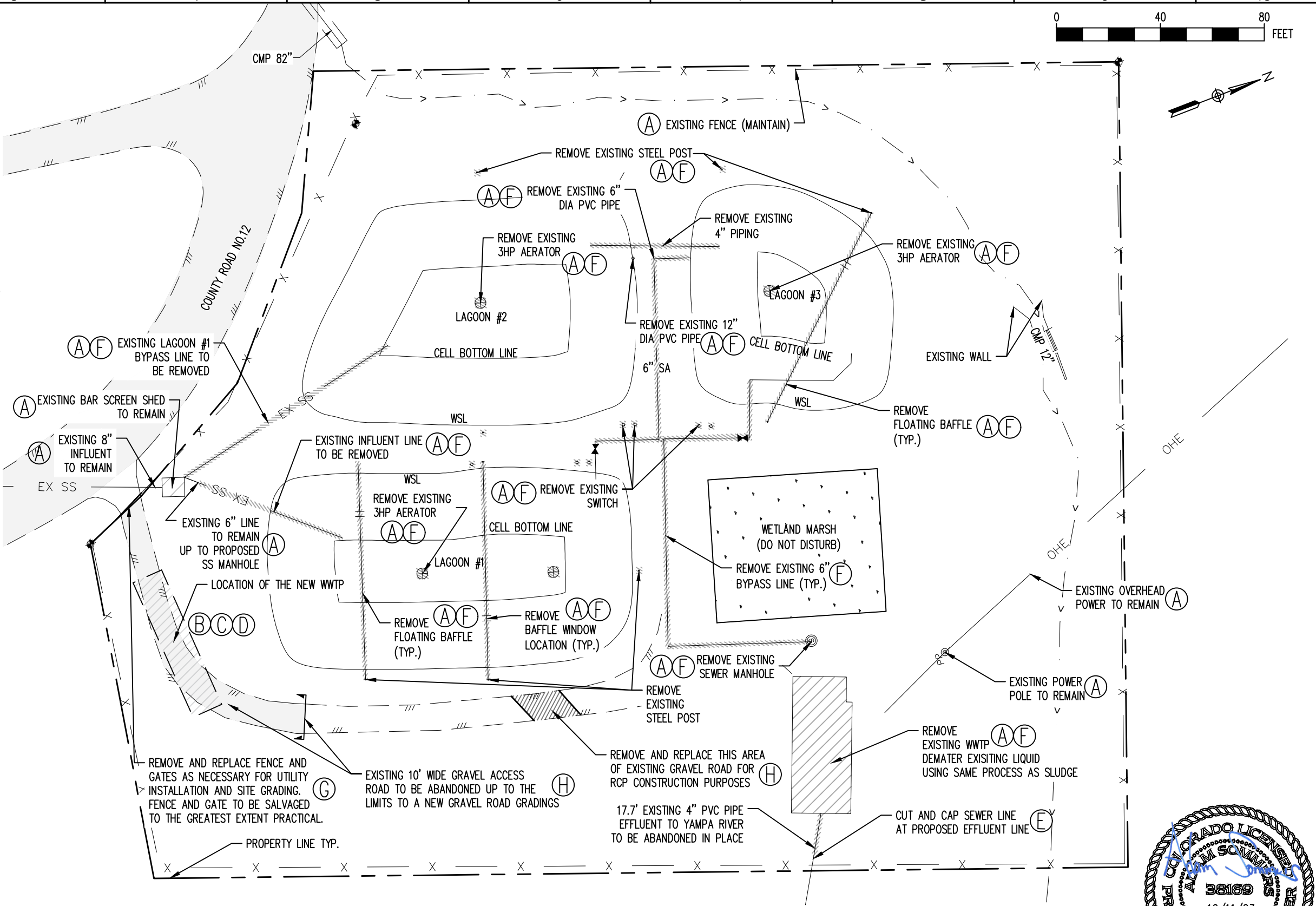


DEMOLITION NOTES:

1. SITE DEMOLITION TO BE COORDINATED WITH ENGINEER AND OWNER WITH RESPECT TO EQUIPMENT OR FACILITIES TO REMAIN IN SERVICE, TO BE REMOVED, OR TO BE ABANDONED IN PLACE.
2. THE CONTRACTOR IS NOT TO DAMAGE CURBS, WALKS OR PAVING WHICH IS NOT INCLUDED IN THE SITE PREPARATION OR DEMOLITION SHOWN ON THE PLANS. THE COST TO REPAIR ANY SUCH DAMAGE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. REMOVE AND DISPOSE OF ALL PAVING MATERIALS PROPERLY, INCLUDING BASE COURSE AND ANY OTHER DEBRIS ENCOUNTERED.
4. CONCRETE OR ASPHALT SAWCUTS SHALL BE CRISP CLEAN CUTS THAT ARE NEAT IN APPEARANCE. LOCATE ALL SAWCUTS AS REQUIRED PER DIRECTION OF THE ENGINEER.
5. ALL EXISTING SITE TREES AND VEGETATION ARE TO BE PROTECTED IN PLACE, UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE PLANS.
6. SITE REVEGETATION SHALL COMPLY WITH THE MUNICIPAL/COUNTY STANDARDS AND THE PROJECT REVEGETATION SPECIFICATION, AND LANDSCAPE PLAN, AS APPLICABLE.
7. THE CONTRACTOR SHALL REPLACE TO ORIGINAL CONDITION OR BETTER AT HIS EXPENSE ALL VEGETATION THAT IS DAMAGED BY CONSTRUCTION OPERATIONS.
8. THE CONTRACTOR IS TO ADHERE TO SPOT ELEVATIONS AND CONTOURS AS INDICATED ON THE GRADING PLAN. SPOT ELEVATIONS TAKE PRECEDENCE OVER CONTOURS WHERE CONFLICTING INFORMATION IS SHOWN.
9. ALL GRADES ARE TO BE APPROVED BY THE ENGINEER PRIOR TO PERMANENT PLANTING, SEEDING, AND FLAT WORK.
10. ALL AREAS SHALL BE GRADED TO ACHIEVE POSITIVE DRAINAGE, AS DEFINED IN THE SPECIFICATIONS.
11. EXCAVATIONS INCLUDES ALL MATERIAL ENCOUNTERED TO THE DEPTH INDICATED ON THE PLANS. EXCAVATE TO ALLOW FOR PROPER FILL MATERIAL, SLABS, VOIDS, FORMS, AND FOUNDATIONS, AND FOR THE REMOVAL OF UNSUITABLE MATERIALS. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING GRADING AND EXCAVATION.
12. ALL BEDDING, BACKFILL SUBGRADE CONSTRUCTION, AND EMBANKMENT SHALL BE CONSTRUCTED ACCORDING TO THE SPECIFICATIONS AND GEOTECHNICAL REPORT.
13. REFER TO GRADING PLAN FOR ALL SITE ELEVATIONS AND GRADING REQUIREMENTS.
14. REFER TO CIVIL DETAIL SHEETS FOR SITE DETAILS.
15. CONTRACTOR AND OWNER TO COORDINATE WITH UTILITY PROVIDERS FOR RELOCATION OF EXISTING INFRASTRUCTURE.
16. CONTRACTOR TO REMOVE EXISTING TANK FOUNDATION. APPROXIMATE AREA 300 SF.

SEQUENCING NOTES (NOT INCLUSIVE OF ALL ACTIVITIES):

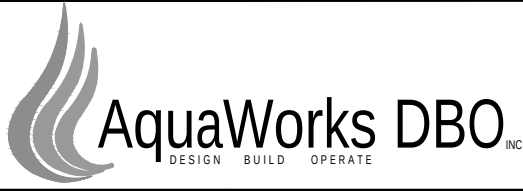
- A. EXISTING WWTP TO REMAIN IN OPERATION UNTIL NEW WWTP HAS COMPLETED CLEAN WATER TESTING AND IS READY TO RECIVE INFLUENT WASTEWATER. MAINTAIN EXISTING 8" AND 6" INFLUENT LINE AND 4" DISCHARGE LINE DURING CONSTRUCTION.
- B. CONSTRUCT NEW WWTP. INSTALL SITE PIPING.
- C. CLEAN WATER TEST NEW WWTP IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- D. COMMENCE WASTEWATER TREATMENT AT NEW FACILITY.
- E. ABANDON IN PLACE EXISTING WASTEWATER LINES PLUG AND CAP.
- F. REMOVE EXISTING INFLUENT LINE AND BYPASS LINE, EXISTING STEEL POST, EXISTING SWITCH, EXISTING SEWER MANHOLE, EXISTING FLOATING BAFFLE AND 3HP AERATOR.
- G. REMOVE AND REPLACE EXISTING FENCING AS SHOWN.
- H. REMOVE EXISTING GRAVEL ACCESS.



SITE DEMOLITION & SEQUENCING PLAN
1"=40'



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ROUTT COUNTY, COLORADO
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

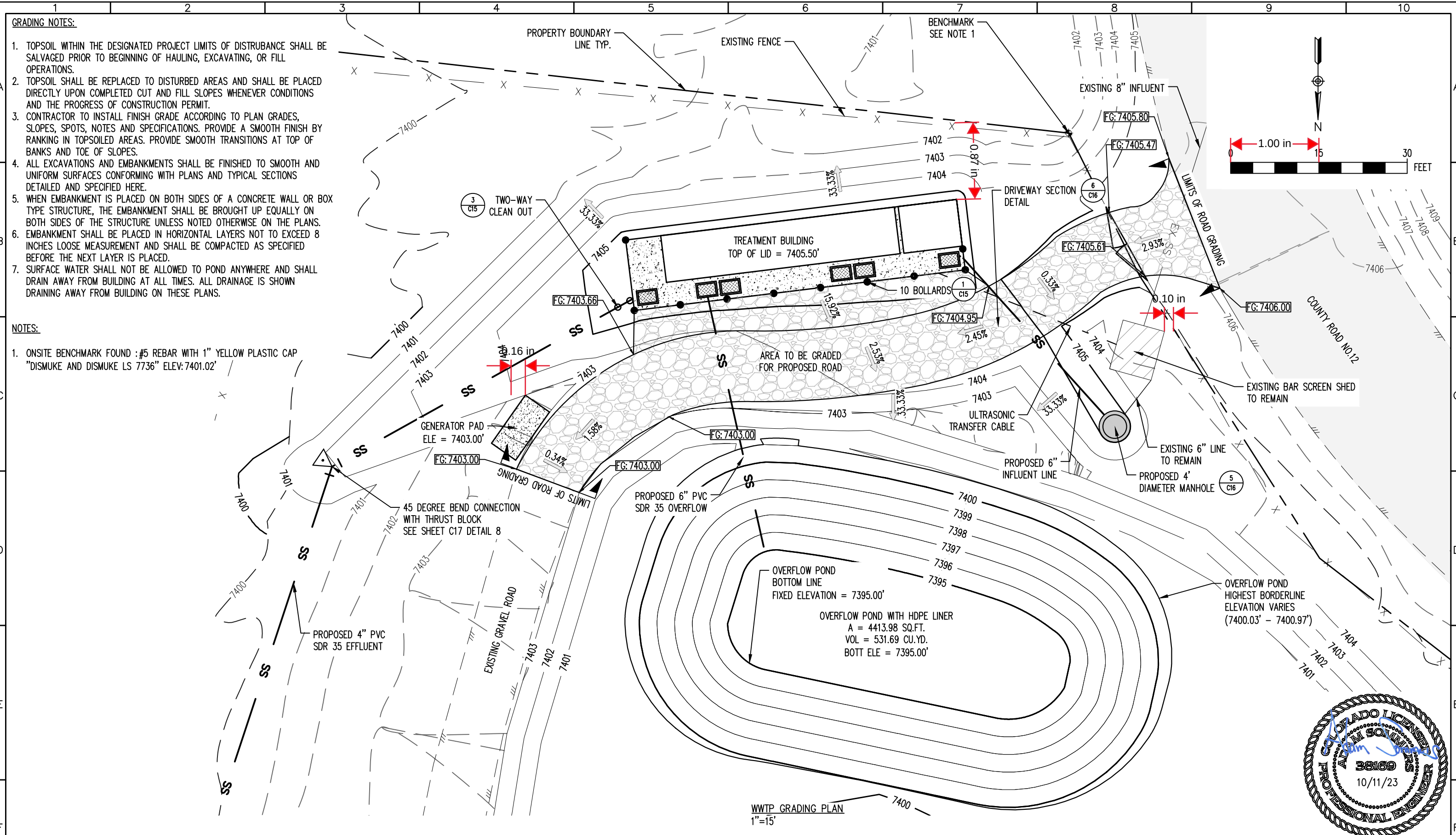
SHEET TITLE:		
SITE DEMOLITION & SEQUENCING PLAN		
PROJECT NUMBER:	SCALE:	SHEET:
7830	1"=40'	C3

GRADING NOTES:

1. TOPSOIL WITHIN THE DESIGNATED PROJECT LIMITS OF DISTURBANCE SHALL BE SALVAGED PRIOR TO BEGINNING OF HAULING, EXCAVATING, OR FILL OPERATIONS.
2. TOPSOIL SHALL BE REPLACED TO DISTURBED AREAS AND SHALL BE PLACED DIRECTLY UPON COMPLETED CUT AND FILL SLOPES WHENEVER CONDITIONS AND THE PROGRESS OF CONSTRUCTION PERMIT.
3. CONTRACTOR TO INSTALL FINISH GRADE ACCORDING TO PLAN GRADES, SLOPES, SPOTS, NOTES AND SPECIFICATIONS. PROVIDE A SMOOTH FINISH BY RANKING IN TOPSOILED AREAS. PROVIDE SMOOTH TRANSITIONS AT TOP OF BANKS AND TOE OF SLOPES.
4. ALL EXCAVATIONS AND EMBANKMENTS SHALL BE FINISHED TO SMOOTH AND UNIFORM SURFACES CONFORMING WITH PLANS AND TYPICAL SECTIONS DETAILED AND SPECIFIED HERE.
5. WHEN EMBANKMENT IS PLACED ON BOTH SIDES OF A CONCRETE WALL OR BOX TYPE STRUCTURE, THE EMBANKMENT SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE STRUCTURE UNLESS NOTED OTHERWISE ON THE PLANS.
6. EMBANKMENT SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 8 INCHES LOOSE MEASUREMENT AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED.
7. SURFACE WATER SHALL NOT BE ALLOWED TO POND ANYWHERE AND SHALL DRAIN AWAY FROM BUILDING AT ALL TIMES. ALL DRAINAGE IS SHOWN DRAINING AWAY FROM BUILDING ON THESE PLANS.

NOTES:

1. ONSITE BENCHMARK FOUND :#5 REBAR WITH 1" YELLOW PLASTIC CAP "DISMUKE AND DISMUKE LS 7736" ELEV:7401.02'



REV. No:	DATE:	BY:	REVISION DESCRIPTION:

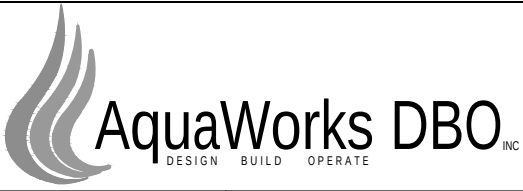
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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: 7830	SCALE: 1"=15'	SHEET: C4

GRADING NOTES:

1. TOPSOIL WITHIN THE DESIGNATED PROJECT LIMITS OF DISTURBANCE SHALL BE SALVAGED PRIOR TO BEGINNING OF HAULING, EXCAVATING, OR FILL OPERATIONS.
2. TOPSOIL SHALL BE REPLACED TO DISTURBED AREAS AND SHALL BE PLACED DIRECTLY UPON COMPLETED CUT AND FILL SLOPES WHENEVER CONDITIONS AND THE PROGRESS OF CONSTRUCTION PERMIT.
3. CONTRACTOR TO INSTALL FINISH GRADE ACCORDING TO PLAN GRADES, SLOPES, SPOTS, NOTES AND SPECIFICATIONS. PROVIDE A SMOOTH FINISH BY RANKING IN TOPSOILED AREAS. PROVIDE SMOOTH TRANSITIONS AT TOP OF BANKS AND TOE OF SLOPES.
4. ALL EXCAVATIONS AND EMBANKMENTS SHALL BE FINISHED TO SMOOTH AND UNIFORM SURFACES CONFORMING WITH PLANS AND TYPICAL SECTIONS DETAILED AND SPECIFIED HERE.
5. WHEN EMBANKMENT IS PLACED ON BOTH SIDES OF A CONCRETE WALL OR BOX TYPE STRUCTURE, THE EMBANKMENT SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE STRUCTURE UNLESS NOTED OTHERWISE ON THE PLANS.
6. EMBANKMENT SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 8 INCHES LOOSE MEASUREMENT AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED.
7. SURFACE WATER SHALL NOT BE ALLOWED TO POND ANYWHERE AND SHALL DRAIN AWAY FROM BUILDING AT ALL TIMES. ALL DRAINAGE IS SHOWN DRAINING AWAY FROM BUILDING ON THESE PLANS.

NOTES:

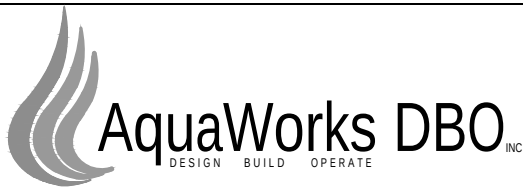
1. ONSITE BENCHMARK FOUND :#5 REBAR WITH 1" YELLOW PLASTIC CAP "DISMUKE AND DISMUKE LS 7736" ELEV:7401.02'

RESTORATION SEEDING SPECIFICATIONS:

REFER TO PROJECT SPECIFICATION MANUAL SECTION 32 92 00 FOR THE FOLLOWING ITEMS:

1. SOIL ANALYSIS
2. SEED AND MULCH SUBMITTALS
3. SITE PREPARATION AND PROTECTION
4. SOIL PREPARATION
5. SEEDING AND MULCHING
6. WARRANTY AND CONDITIONS

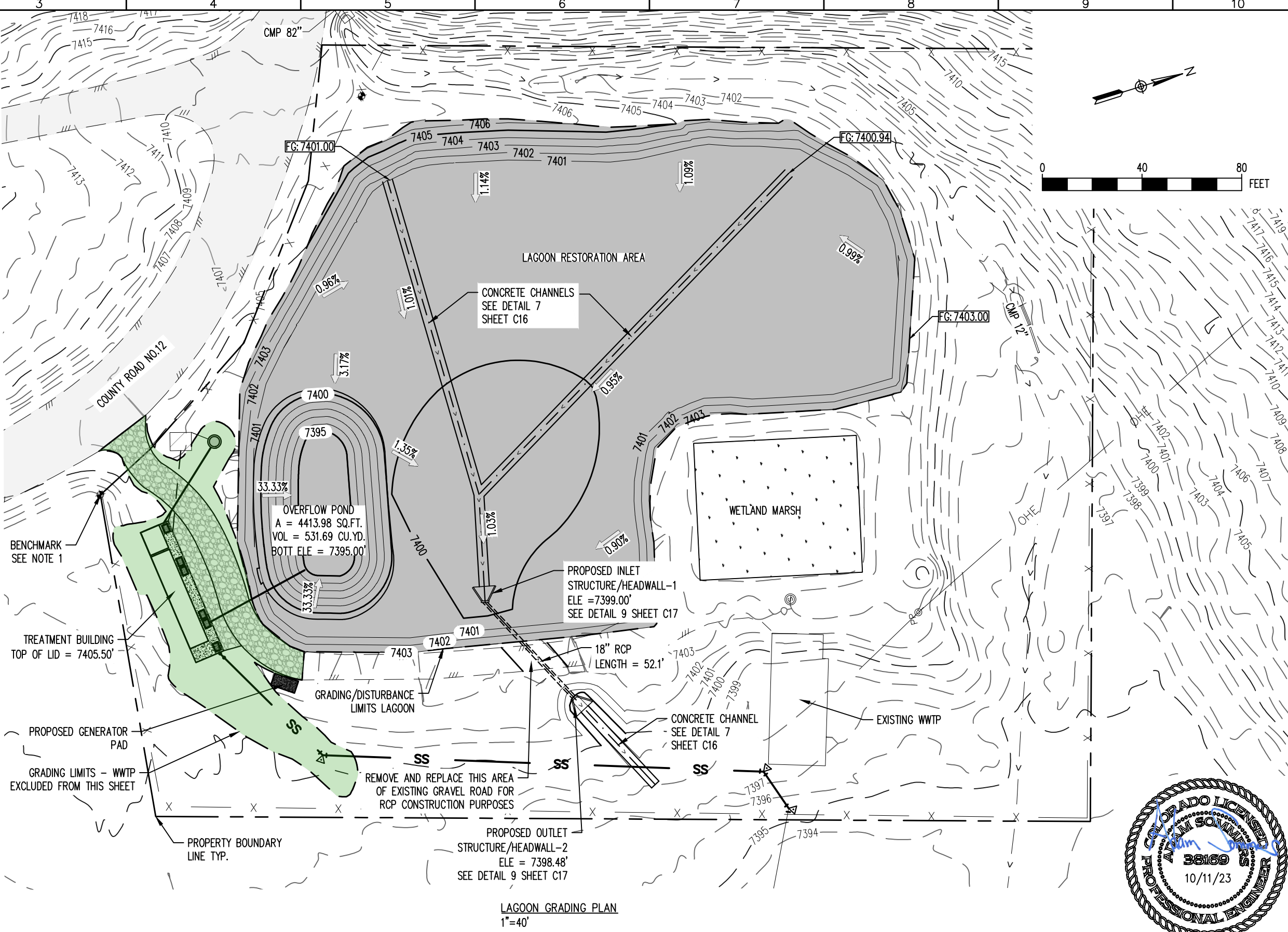
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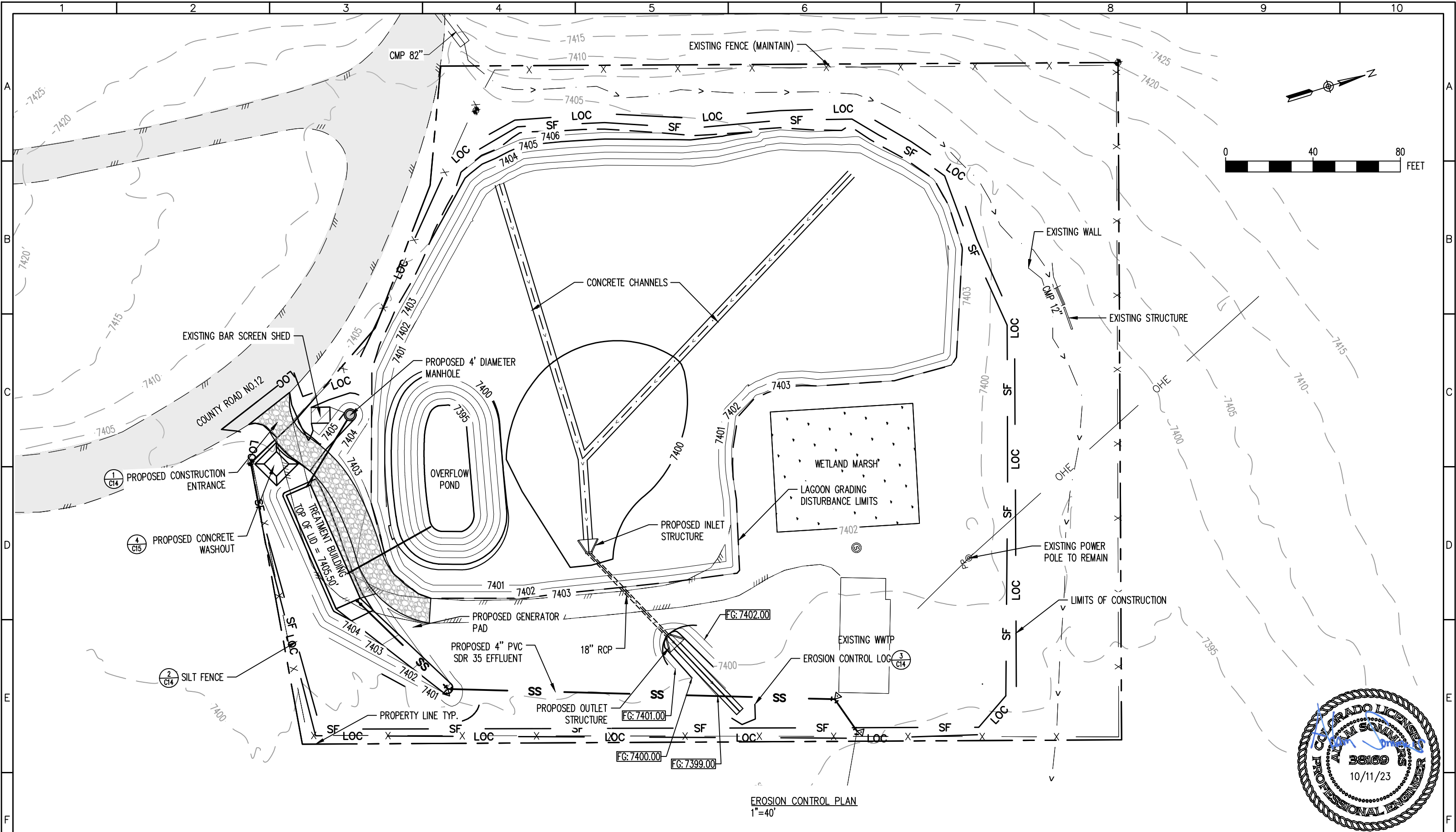


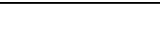
PROJECT: PHIPPSBURG COLORADO WWTP
COMMUNITY OF PHIPPSBURG
ROUTT COUNTY, COLORADO

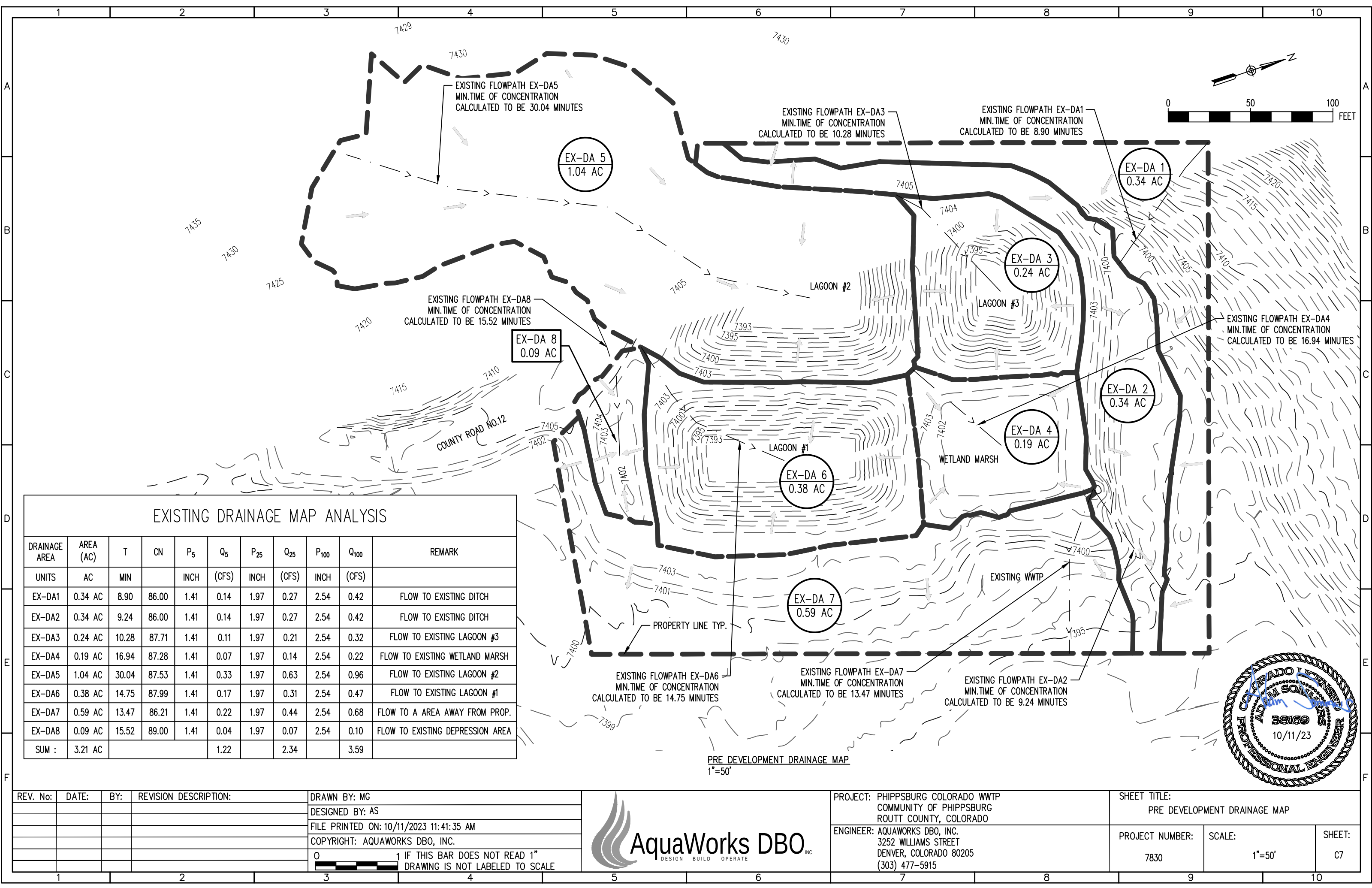
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE:		
LAGOON GRADING PLAN		
PROJECT NUMBER:	SCALE:	SHEET:
7830	1"=40'	C5





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				DESIGNED BY: AS					
				FILE PRINTED ON: 10/11/2023 11:41:30 AM		ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: 7830	SCALE: 1"=40'	SHEET: C6
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1	2	3	4	5	6	7	8	9	10



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ROUTT COUNTY, COLORADO

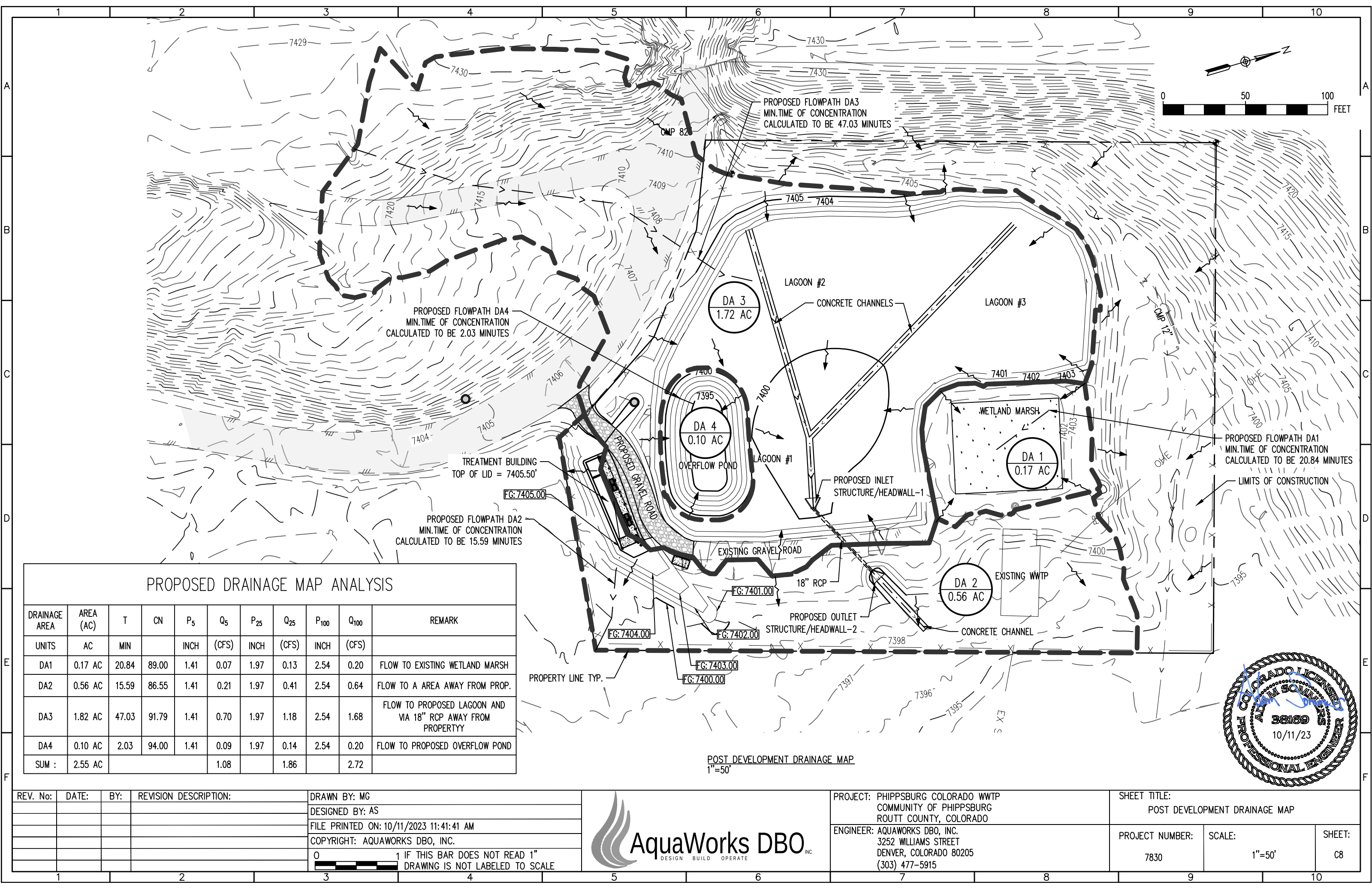
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE:
PRE DEVELOPMENT DRAINAGE MAP

PROJECT NUMBER:
7830

SCALE:
1"=50'

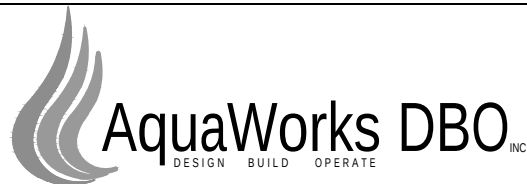
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C7



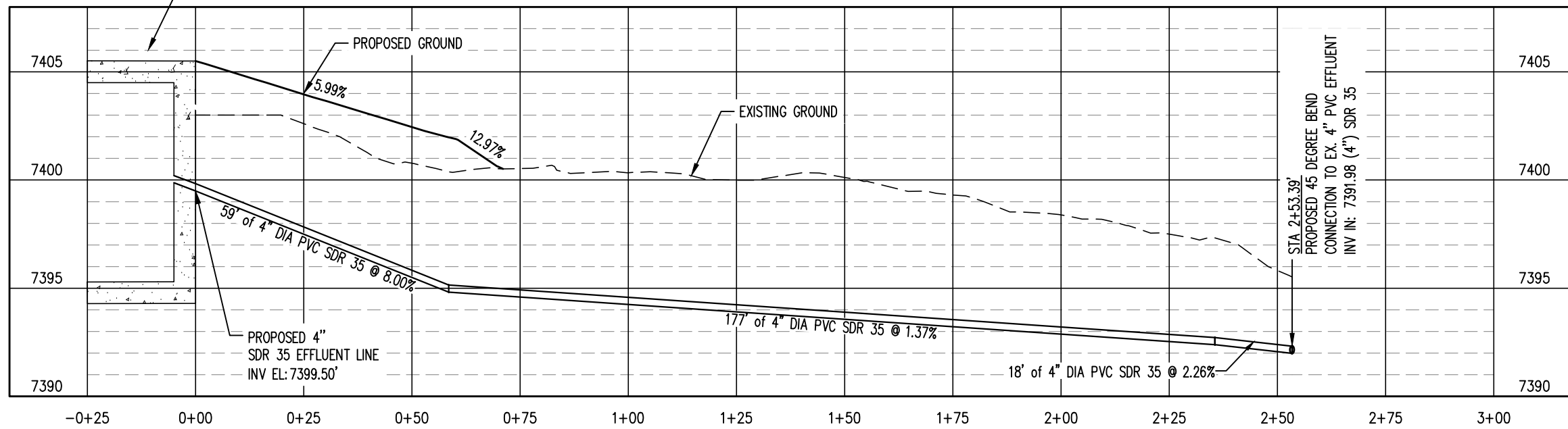
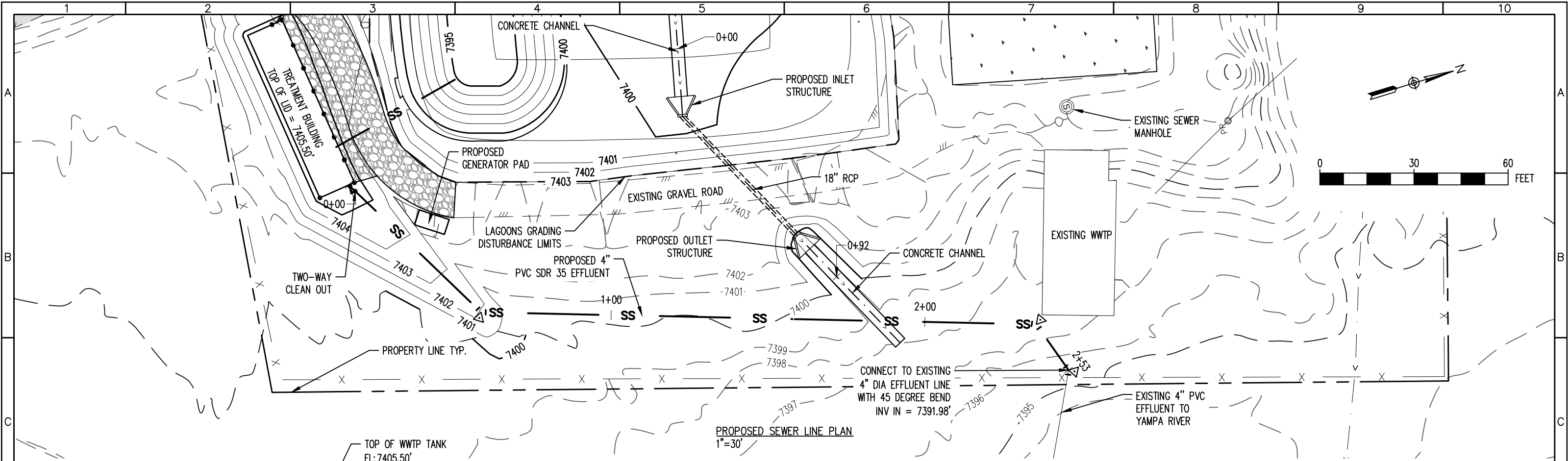
PROPOSED DRAINAGE MAP ANALYSIS

DRAINAGE AREA	AREA (AC)	T	CN	P ₅	Q ₅	P ₂₅	Q ₂₅	P ₁₀₀	Q ₁₀₀	REMARK
UNITS	AC	MIN		INCH	(CFS)	INCH	(CFS)	INCH	(CFS)	
DA1	0.17 AC	20.84	89.00	1.41	0.07	1.97	0.13	2.54	0.20	FLOW TO EXISTING WETLAND MARSH
DA2	0.56 AC	15.59	86.55	1.41	0.21	1.97	0.41	2.54	0.64	FLOW TO A AREA AWAY FROM PROP.
DA3	1.82 AC	47.03	91.79	1.41	0.70	1.97	1.18	2.54	1.68	FLOW TO PROPOSED LAGOON AND VIA 18" RCP AWAY FROM PROPERTY
DA4	0.10 AC	2.03	94.00	1.41	0.09	1.97	0.14	2.54	0.20	FLOW TO PROPOSED OVERFLOW POND
SUM :	2.55 AC				1.08		1.86		2.72	

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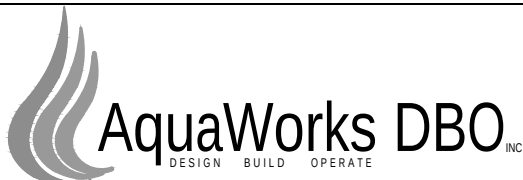


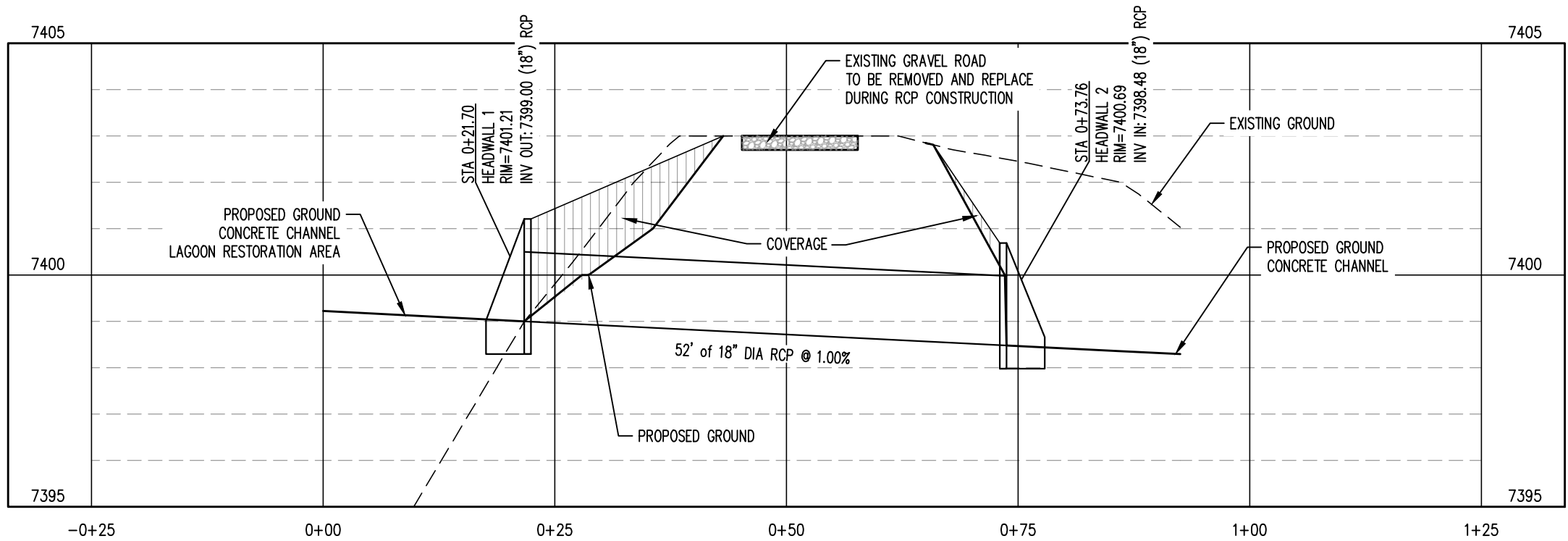
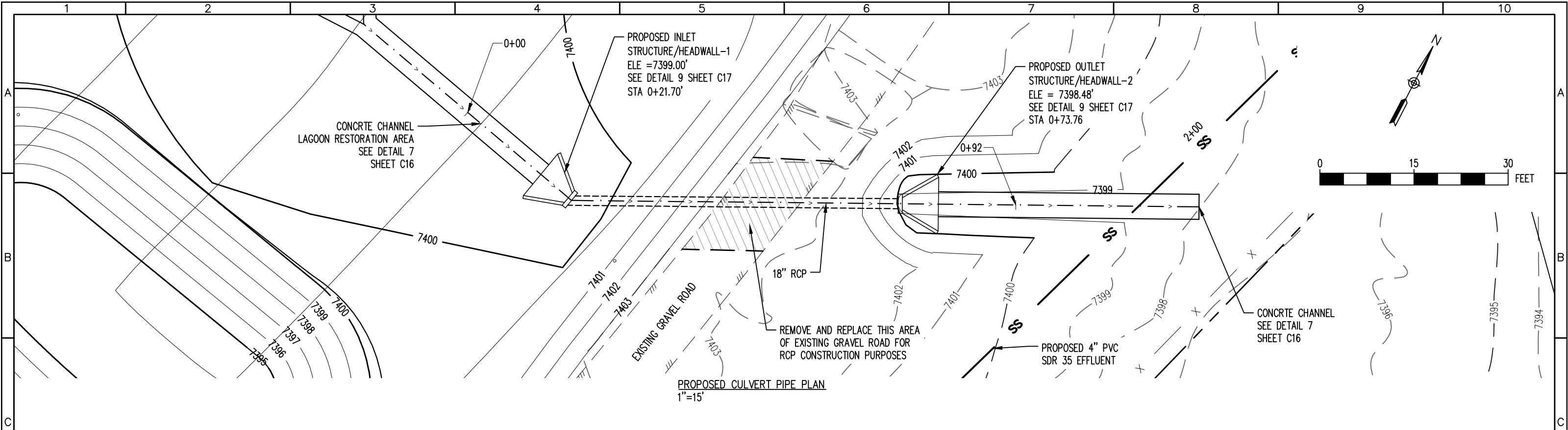
PROJECT: PHIPPSBURG COLORADO WWTP COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: POST DEVELOPMENT DRAINAGE MAP		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: 7830	SCALE: 1"=50'	SHEET: C8



PROPOSED SEWER LINE PROFILE
HORZ. SCALE: 1" = 30'
VERT. SCALE: 1" = 6'



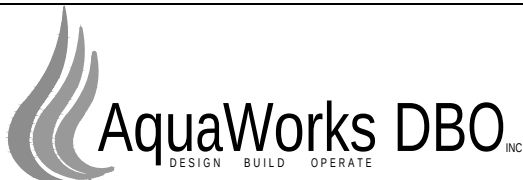
REV. No:	DATE:	BY:	REVISION DESCRIPTION:	DRAWN BY: MG		PROJECT: PHIPPSBURG COLORADO WWTP COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	SHEET TITLE: PROPOSED SEWER LINE PLAN AND PROFILE		
				DESIGNED BY: AS			PROJECT NUMBER: 7830	SCALE: H: 1" = 30' V: 1" = 6'	SHEET: C10
				FILE PRINTED ON: 10/11/2023 11:42:00 AM					
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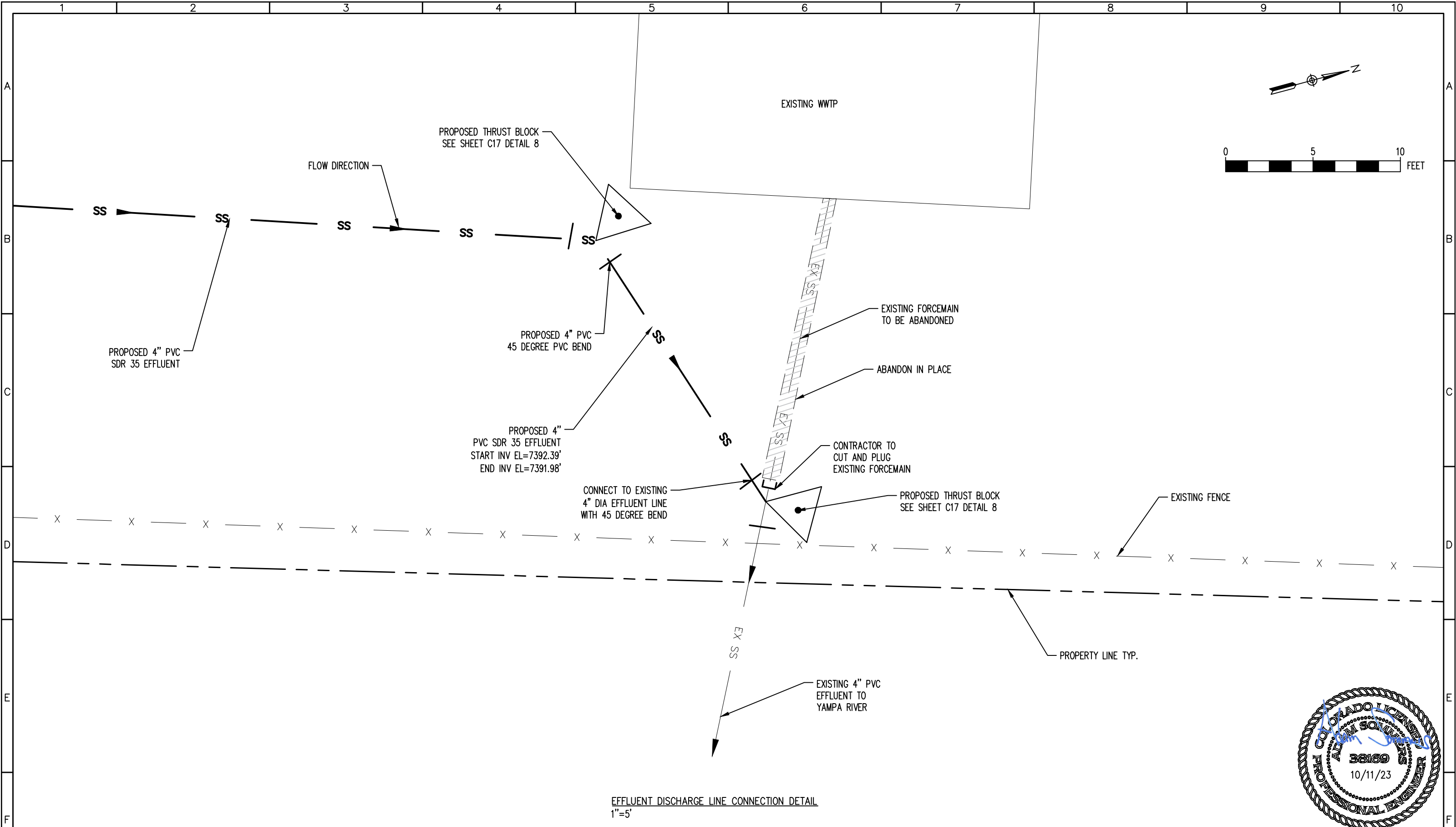
PROPOSED 18" RCP PROFILE
HORZ. SCALE: 1" = 15'
VERT. SCALE: 1" = 3'

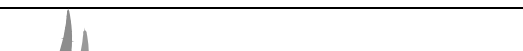


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PROJECT: PHIPPSBURG COLORADO WWTP COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: PROPOSED CULVERT PIPE PLAN AND PROFILE		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: 7830	SCALE: H:1" = 15' V:1" = 3'	SHEET: C11



REV. No:	DATE:	BY:	REVISION DESCRIPTION:	DRAWN BY: MG		PROJECT: PHIPPSBURG COLORADO WWTP COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO	SHEET TITLE: EFFLUENT DISCHARGE LINE CONNECTION DETAIL		
				DESIGNED BY: AS		ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: 7830	SCALE: 1"=5'	SHEET: C12
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1	2	3	4	5	6	7	8	9	10

BIOSOLIDS REMOVAL REQUIREMENTS:

APPLICABLE REGULATIONS:

ALL OF THE WORK PERFORMED BY CONTRACTOR SHALL COMPLY WITH APPLICABLE LAWS, RULES, REGULATIONS, AND CODES OF UNITED STATES AND THE STATE OF COLORADO AND WITH THE ORDINANCES, AND RULES AND REGULATIONS, REGULATORY AGENCIES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. U.S. - ENVIRONMENTAL PROTECTION AGENCY (EPA)
2. STATE OF COLORADO - DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE)
3. OCCUPATIONAL SAFETY AND HEALTH AGENCY - OSHA
4. FLORISSANT FIRE RESCUE
5. ROUTT COUNTY

BIOSOLIDS MANAGEMENT AND DISPOSAL:

BIOSOLIDS MUST BE COMPLETELY REMOVED FROM THE DECOMMISSIONED LAGOONS AND MANAGED IN ACCORDANCE WITH FEDERAL REQUIREMENTS IN 40 CFR 503 AND COLORADO BIOSOLIDS REGULATION 5 CCR 1002-64 (REGULATION 64). DISPOSAL OPTIONS FOR REMOVED BIOSOLIDS MUST ALSO CONFORM WITH FEDERAL REQUIREMENTS 40 CFR 503, 40 CFR 258, AND THE REQUIREMENTS OF THE COLORADO REGULATIONS PERTAINING THE SOLID WASTE SITES AND FACILITIES 6 CCR 1007-2, AS APPLICABLE.

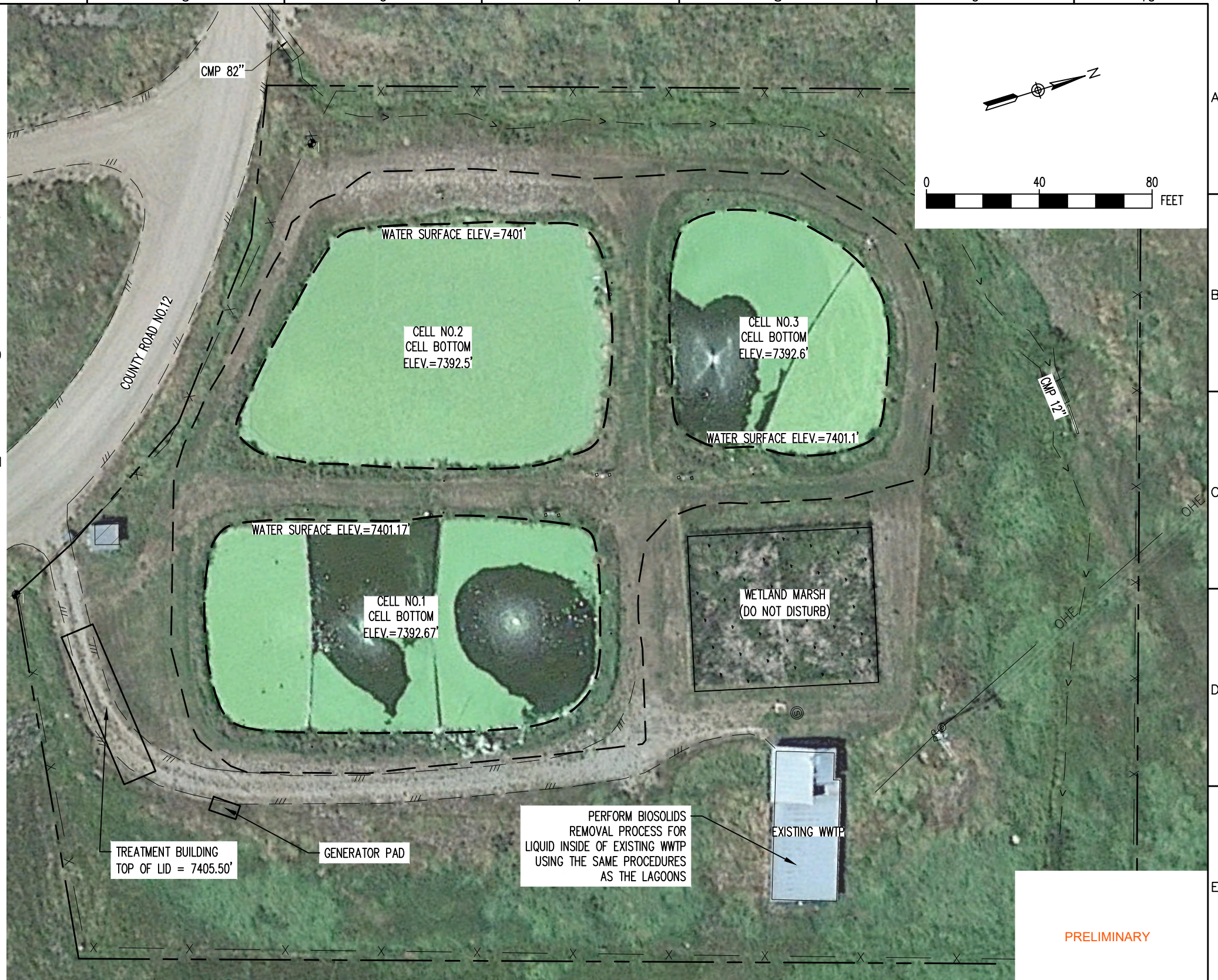
SOLID WASTE MANAGEMENT AND DISPOSAL:

WASTE MATERIALS AT A DECOMMISSIONED LAGOONS (E.G., CONCRETE, SITE PIPING, ETC.) MUST BE PROPERLY MANAGED IN ACCORDANCE WITH REGULATIONS PERTAINING TO THE SOLID WASTE SITES AND FACILITIES 6 CCR 1007-2 (SOLID WASTE REGULATIONS) AND THE SOLID WASTES DISPOSAL SITES AND FACILITIES ACT, TITLE 30, ARTICLE 20, PART 1, COLORADO REVISED STATUTES (CRS), AS AMENDED.

BIOSOLIDS DISPOSAL REQUIREMENTS:

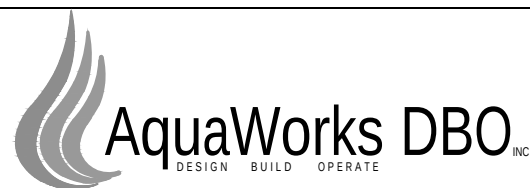
CONTRACTOR TO REMOVE ALL FLUID FROM PONDS AND LEGALLY DISPOSE OF LIQUID BY PROCESSING IT THROUGH THE EXISTING LAGOON SYSTEM. REMAINING BIOSOLIDS TO BE DEWATERED ON SITE. BIOSOLIDS CAKE TO BE HAULED OFFSITE. ESTIMATE VOLUME OF BIOSOLIDS IS 4,775.00 CUBIC YARDS.

PRIOR TO COMPLETION, CONTRACTOR TO PROVIDE OWNER RECORDS OF ALL THE PERMITS, TESTING RESULTS, AND CONSTRUCTION LOGS. CONTRACTOR TO CERTIFY THAT PROJECT WAS COMPLETED AS SPECIFIED AND CONFORMS TO APPLICABLE LAWS, RULES, AND REGULATIONS.



LAGOON CLOSURE PLAN
1"=40'

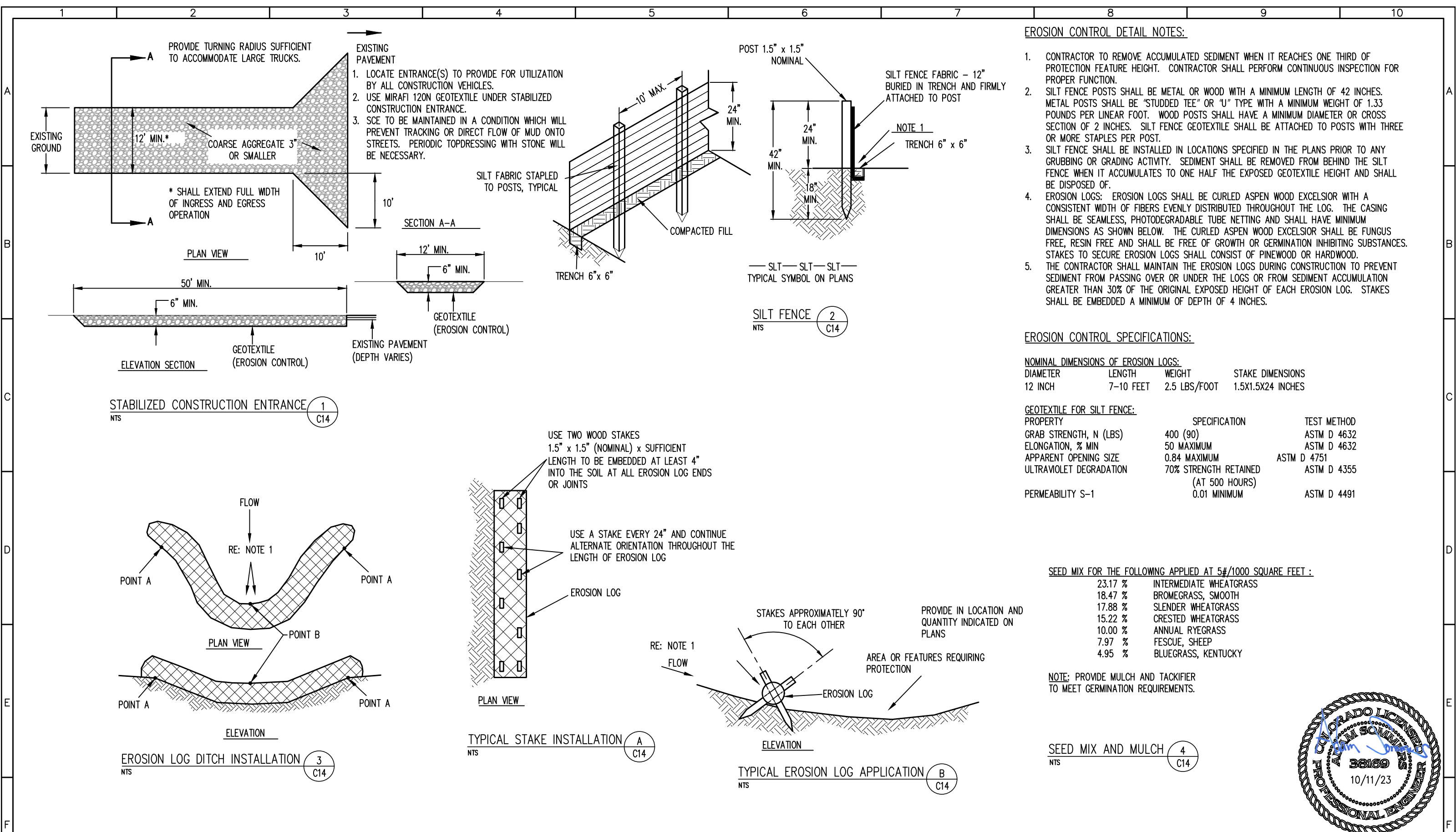
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PROJECT:	PHIPPSBURG COLORADO WWT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO
ENGINEER:	AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915

SHEET TITLE:	LAGOON CLOSURE PLAN
--------------	---------------------

PROJECT NUMBER:	SCALE:	SHEET:
7830	1"=40'	C13



- EROSION CONTROL DETAIL NOTES:**
1. CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE THIRD OF PROTECTION FEATURE HEIGHT. CONTRACTOR SHALL PERFORM CONTINUOUS INSPECTION FOR PROPER FUNCTION.
 2. SILT FENCE POSTS SHALL BE METAL OR WOOD WITH A MINIMUM LENGTH OF 42 INCHES. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION OF 2 INCHES. SILT FENCE GEOTEXTILE SHALL BE ATTACHED TO POSTS WITH THREE OR MORE STAPLES PER POST.
 3. SILT FENCE SHALL BE INSTALLED IN LOCATIONS SPECIFIED IN THE PLANS PRIOR TO ANY GRUBBING OR GRADING ACTIVITY. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT ACCUMULATES TO ONE HALF THE EXPOSED GEOTEXTILE HEIGHT AND SHALL BE DISPOSED OF.
 4. EROSION LOGS: EROSION LOGS SHALL BE CURLED ASPEN WOOD EXCELSIOR WITH A CONSISTENT WIDTH OF FIBERS EVENLY DISTRIBUTED THROUGHOUT THE LOG. THE CASING SHALL BE SEAMLESS, PHOTODEGRADABLE TUBE NETTING AND SHALL HAVE MINIMUM DIMENSIONS AS SHOWN BELOW. THE CURLED ASPEN WOOD EXCELSIOR SHALL BE FUNGUS FREE, RESIN FREE AND SHALL BE FREE OF GROWTH OR GERMINATION INHIBITING SUBSTANCES. STAKES TO SECURE EROSION LOGS SHALL CONSIST OF PINWOOD OR HARDWOOD.
 5. THE CONTRACTOR SHALL MAINTAIN THE EROSION LOGS DURING CONSTRUCTION TO PREVENT SEDIMENT FROM PASSING OVER OR UNDER THE LOGS OR FROM SEDIMENT ACCUMULATION GREATER THAN 30% OF THE ORIGINAL EXPOSED HEIGHT OF EACH EROSION LOG. STAKES SHALL BE EMBEDDED A MINIMUM OF DEPTH OF 4 INCHES.

EROSION CONTROL SPECIFICATIONS:

NOMINAL DIMENSIONS OF EROSION LOGS:

DIAMETER	LENGTH	WEIGHT	STAKE DIMENSIONS
12 INCH	7-10 FEET	2.5 LBS/FOOT	1.5X1.5X24 INCHES

GEOTEXTILE FOR SILT FENCE:

PROPERTY	SPECIFICATION	TEST METHOD
GRAB STRENGTH, N (LBS)	400 (90)	ASTM D 4632
ELONGATION, % MIN	50 MAXIMUM	ASTM D 4632
APPARENT OPENING SIZE	0.84 MAXIMUM	ASTM D 4751
ULTRAVIOLET DEGRADATION	70% STRENGTH RETAINED (AT 500 HOURS)	ASTM D 4355
PERMEABILITY S-1	0.01 MINIMUM	ASTM D 4491

SEED MIX FOR THE FOLLOWING APPLIED AT 5#/1000 SQUARE FEET :

23.17 %	INTERMEDIATE WHEATGRASS
18.47 %	BROMEGRASS, SMOOTH
17.88 %	SLENDER WHEATGRASS
15.22 %	CRESTED WHEATGRASS
10.00 %	ANNUAL RYEGRASS
7.97 %	FESCUE, SHEEP
4.95 %	BLUEGRASS, KENTUCKY

NOTE: PROVIDE MULCH AND TACKIFIER TO MEET GERMINATION REQUIREMENTS.

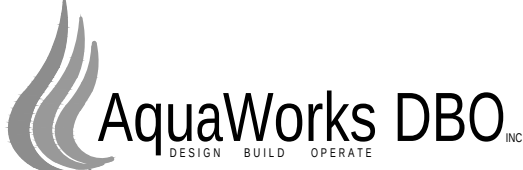
SEED MIX AND MULCH

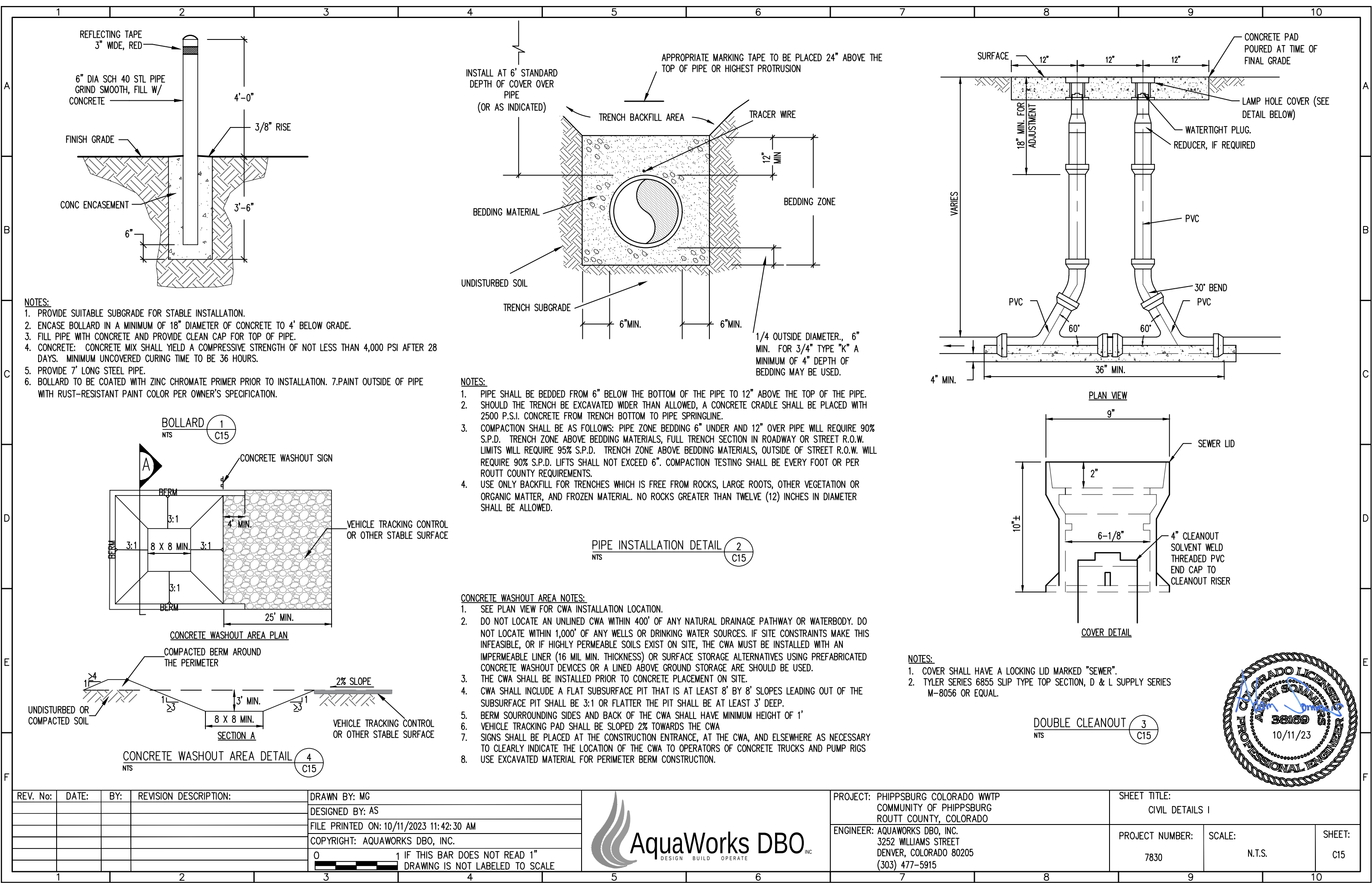
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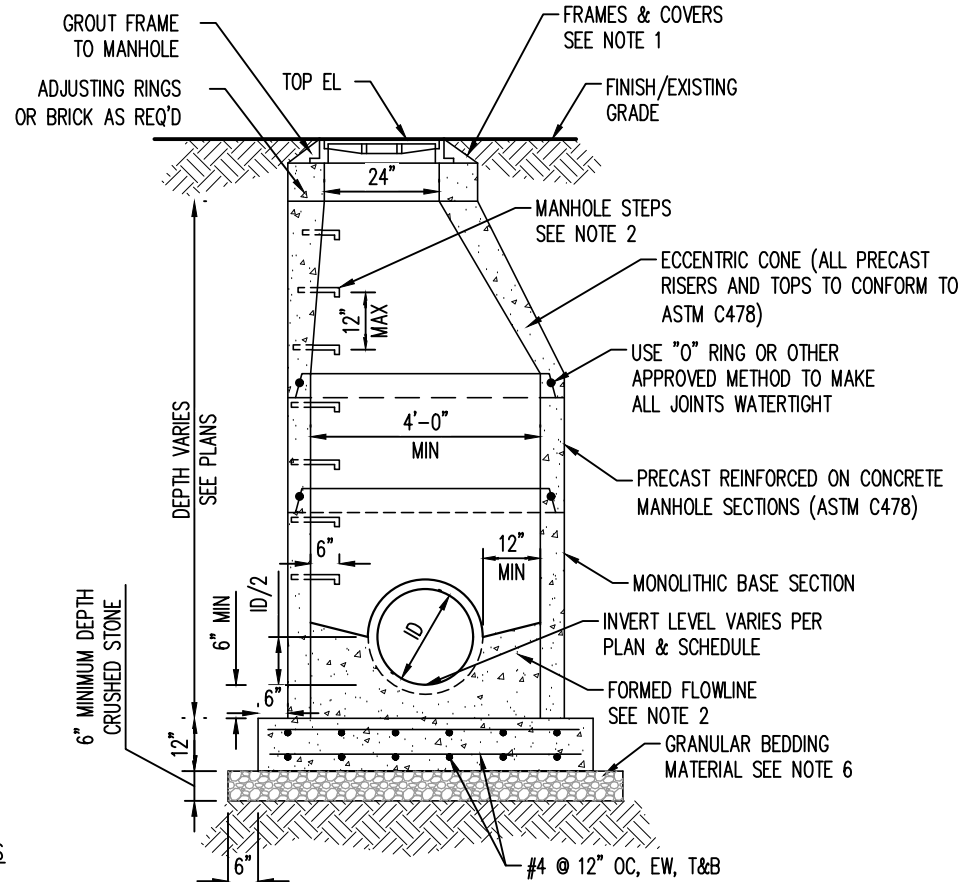
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C14



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				DESIGNED BY: AS		ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: 7830	SCALE: N.T.S.	SHEET: C14
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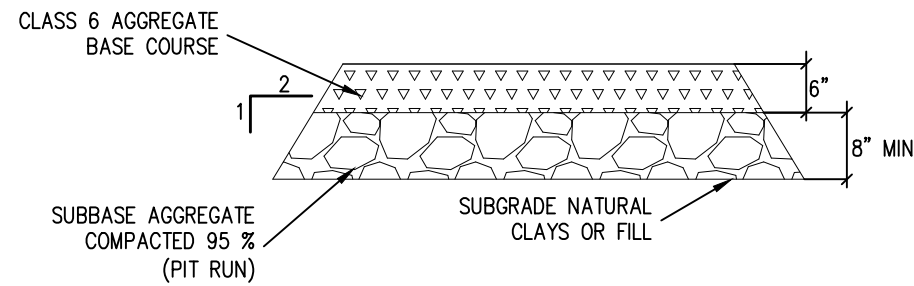


NOTES

1. SANITARY MANHOLE COVERS SHALL HAVE "SANITARY SEWER" CAST ON THE COVER AND SHALL BE NEENAH R-1688 OR ENGINEER APPROVED EQUIVALENT. STORM MANHOLE COVERS SHALL HAVE "STORM SEWER" CAST ON THE COVER AND SHALL BE NEENAH R-1678 OR ENGINEER APPROVED EQUIVALENT.
2. MANHOLE STEPS TO BE M.A. INDUSTRIES 004-501-DF OR ENGINEER APPROVED EQUIVALENT. PROVIDED TO WITHIN 12" OF TOP OF CONE.
3. FLOWLINE OF MANHOLE MAY BE FORMED IN CONCRETE; BUILT UP WITH MORTAR; OR BY LAYING A PIPE THROUGH MANHOLE, THE TOP BEING BROKEN OUT LATER.
4. GROUT ANNULAR SPACE BETWEEN WALL AND PIPE WITH NON-SHRINK MORTAR TO INSURE WATERTIGHT SEAL.
5. ALL CONCRETE TO COMPLY WITH ACI 318 AND SHALL BE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAY TEST.
6. ALL MANHOLES AND SPECIAL STRUCTURES TO BE PLACED ON SUITABLE SUBGRADE MATERIAL. IF SUBGRADE CONDITIONS WARRANT, UNSUITABLE FOUNDATION MATERIAL WILL BE OVEREXCAVATED, AND SELECT SUBGRADE MATERIAL WILL BE PLACED AS PER SECTION 5.00 OF THE WCPM STANDARD CONSTRUCTION SPECIFICATIONS.
7. GRANULAR BEDDING MATERIAL SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T-180.

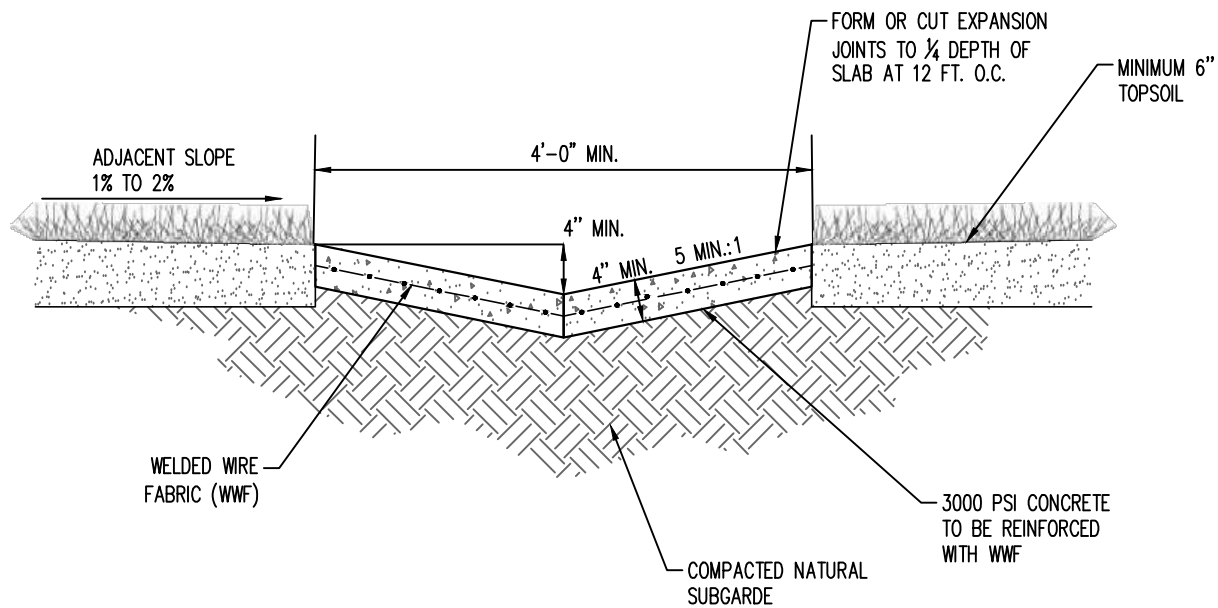
CONCRETE MANHOLE DETAIL
N.T.S.

5
C16



DRIVEWAY SECTION DETAIL
N.T.S.

6
C16

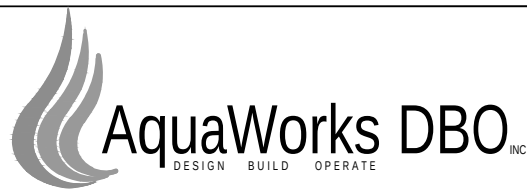


DETENTION BASIN TRICKLE CHANNEL FOR DRAINAGE CATCHMENTS <5 ACRES
N.T.S.

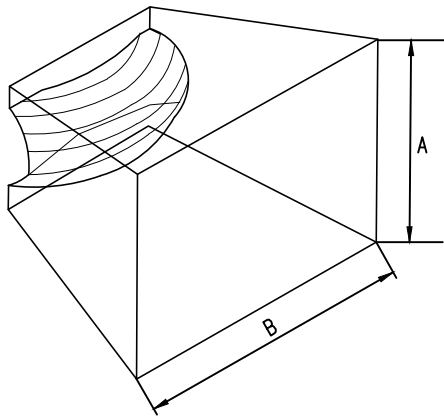
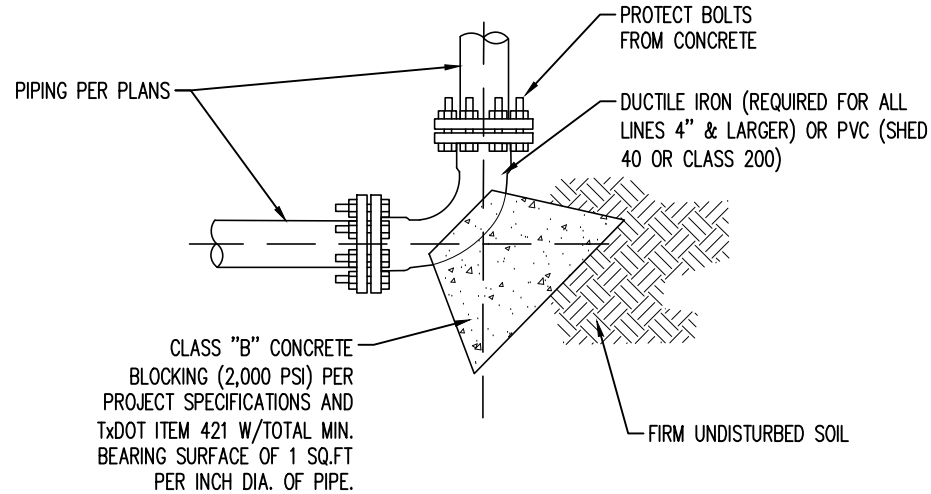
7
C16



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PROJECT: PHIPPSBURG COLORADO WWTP COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: CIVIL DETAILS II		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: 7830	SCALE: N.T.S.	SHEET: C16



NOTES

BLOCKING REQUIRED ON ALL FITTINGS 2" & LARGER. ALL REQUIRED BENDS & FITTINGS MAY NOT BE LABELLED ON THE PLANS. PIPE MAY BE CURVED UP TO 75% OF MANUFACTURERS RECOMENED MAXIMUM CURVATURE WITHOUT A BEND AS APPROVED BY OWNER & ENGINEER. PVC FITTINGS TO BE PROTECTED FROM CONCRETE WITH A WRAPPING OF 30" ROOFING FELT.

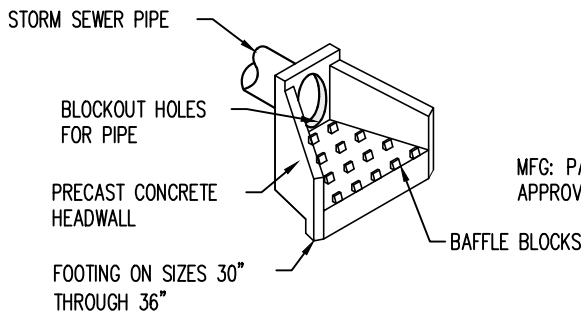
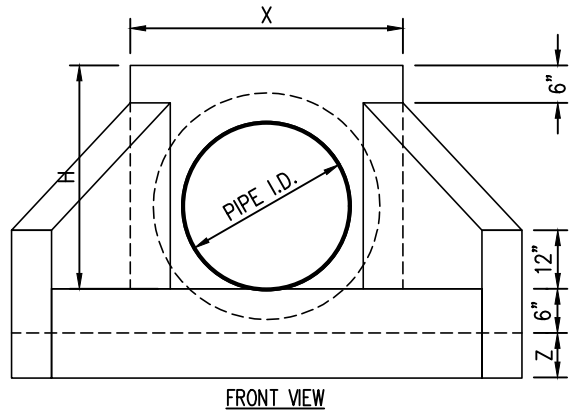
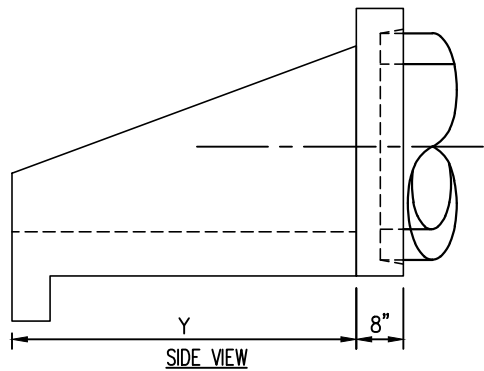
DIMENSIONS FOR CONCRETE THRUST BLOCKS

PIPE DIA. SIZE (INCHES)	MINIMUM SOIL BEARING AREA REQUIRED (SQUARE FEET)	TYPICAL DIMENSIONS OF BEARING AREA IN INCHES (A X B)	TYPICAL VOLUME OF CONC. REQUIRED (CUBIC FEET)*
2	2.0	12" X 24"	3.0
2 1/2	2.5	15" X 24"	4.0
3	3.0	16" X 27"	4.5
4	4.0	18" X 32"	6.0
6	6.0	24" X 36"	9.0
8	8.0	29" X 40"	12.0
10	10.0	30" X 48"	15.0
12	12.0	36" X 48"	18.0
14	14.0	36" X 56"	21.0
16	16.0	39" X 59"	24.0
18	18.0	42" X 62"	27.0

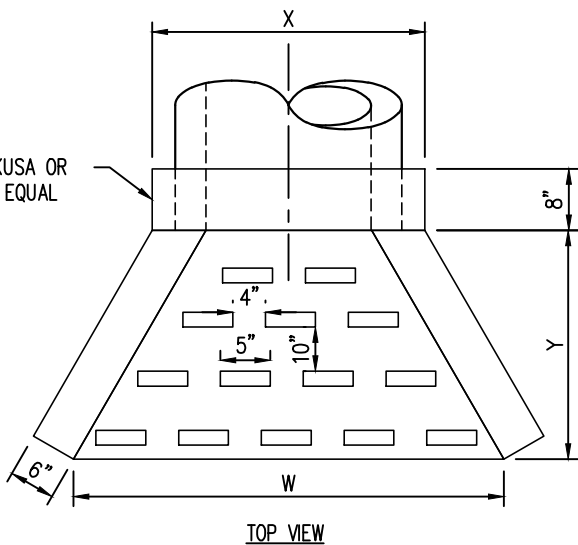
* VARIES CONSIDERABLY W/DISTANCE BETWEEN PIPE AND BEARING POINT

TYPICAL BLOCKING DETAILS
N.T.S.

8
C17



MODEL	PIPE DIA	DIMENSIONS					
		H	W	X	Y	Z	WEIGHT (LBS)
HW-12	12"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,700
HW-15	15"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,700
HW-18	18"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,600
HW-21	21"	3'-0"	5'-10"	3'-2"	3'-0"	N/A	4,300
HW-24	24"	3'-0"	5'-10"	3'-2"	3'-0"	N/A	4,200
HW-30	30"	3'-6"	7'-6"	4'-1"	4'-0"	9"	6,200
HW-36	36"	4'-1"	9'-3"	4'-8"	5'-0"	9"	8,100
HW-42	42"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000
HW-48	48"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000



SPECIFICATIONS

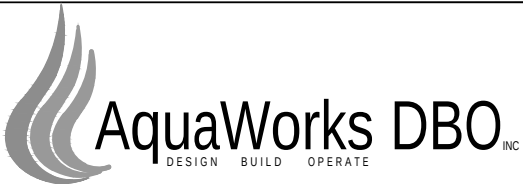
CONCRETE:
CLASS II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.

REINFORCEMENT:
GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL WITH THE LATEST ACI STANDARDS.

CONCRETE HEADWALL 9
NTS C17

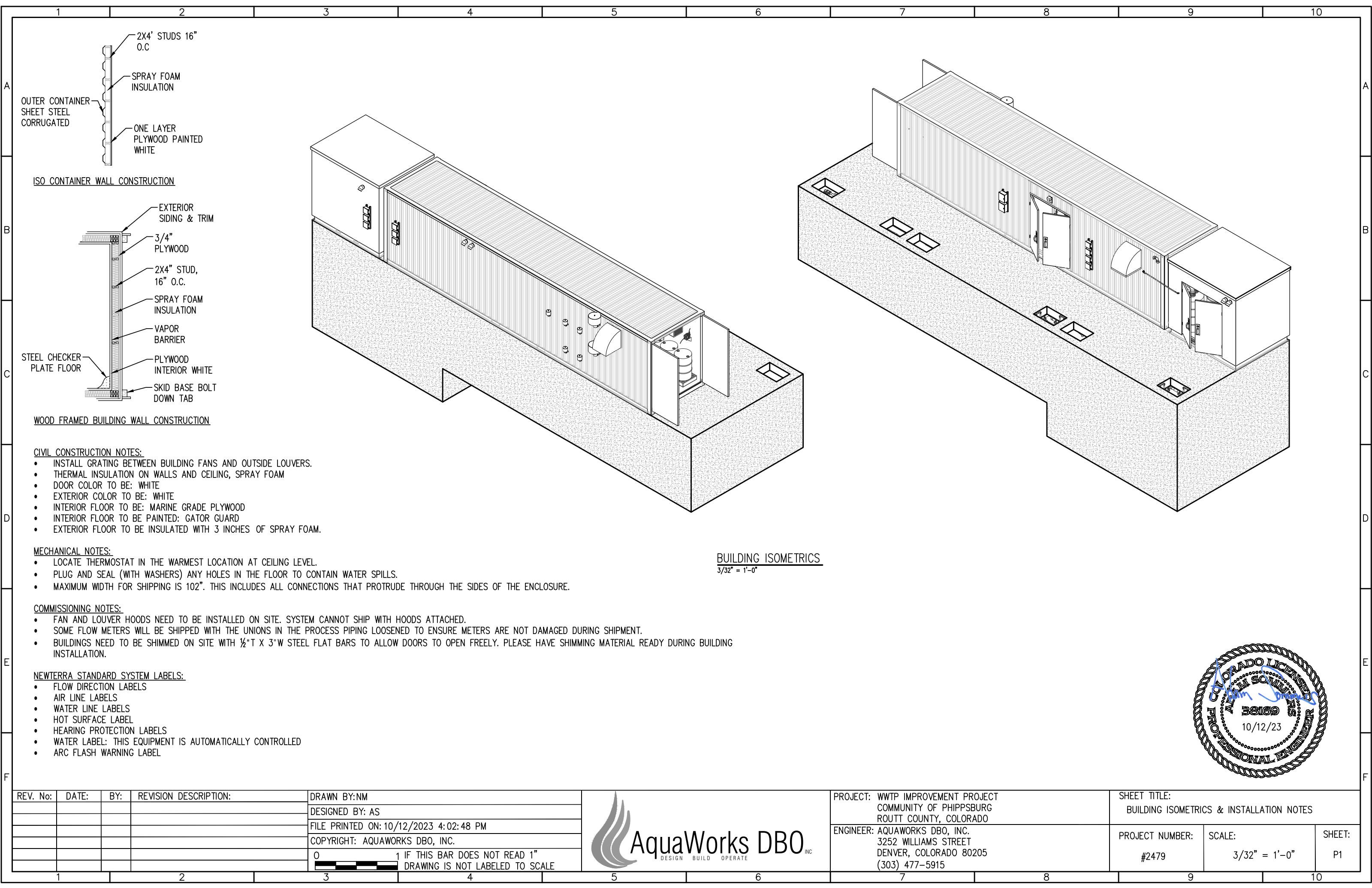


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PROJECT: PHIPPSBURG COLORADO WWTP
COMMUNITY OF PHIPPSBURG
ROUTT COUNTY, COLORADO
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE: CIVIL DETAILS III		
PROJECT NUMBER: 7830	SCALE: N.T.S.	SHEET: C17



CIVIL CONSTRUCTION NOTES:

- INSTALL GRATING BETWEEN BUILDING FANS AND OUTSIDE LOUVERS.
- THERMAL INSULATION ON WALLS AND CEILING, SPRAY FOAM
- DOOR COLOR TO BE: WHITE
- EXTERIOR COLOR TO BE: WHITE
- INTERIOR FLOOR TO BE: MARINE GRADE PLYWOOD
- INTERIOR FLOOR TO BE PAINTED: GATOR GUARD
- EXTERIOR FLOOR TO BE INSULATED WITH 3 INCHES OF SPRAY FOAM.

MECHANICAL NOTES:

- LOCATE THERMOSTAT IN THE WARMEST LOCATION AT CEILING LEVEL.
- PLUG AND SEAL (WITH WASHERS) ANY HOLES IN THE FLOOR TO CONTAIN WATER SPILLS.
- MAXIMUM WIDTH FOR SHIPPING IS 102". THIS INCLUDES ALL CONNECTIONS THAT PROTRUDE THROUGH THE SIDES OF THE ENCLOSURE.

COMMISSIONING NOTES:

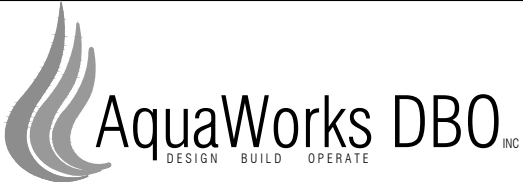
- FAN AND LOUVER HOODS NEED TO BE INSTALLED ON SITE. SYSTEM CANNOT SHIP WITH HOODS ATTACHED.
- SOME FLOW METERS WILL BE SHIPPED WITH THE UNIONS IN THE PROCESS PIPING LOOSENED TO ENSURE METERS ARE NOT DAMAGED DURING SHIPMENT.
- BUILDINGS NEED TO BE SHIMMED ON SITE WITH ½" T X 3" W STEEL FLAT BARS TO ALLOW DOORS TO OPEN FREELY. PLEASE HAVE SHIMMING MATERIAL READY DURING BUILDING INSTALLATION.

NEWTERRA STANDARD SYSTEM LABELS:

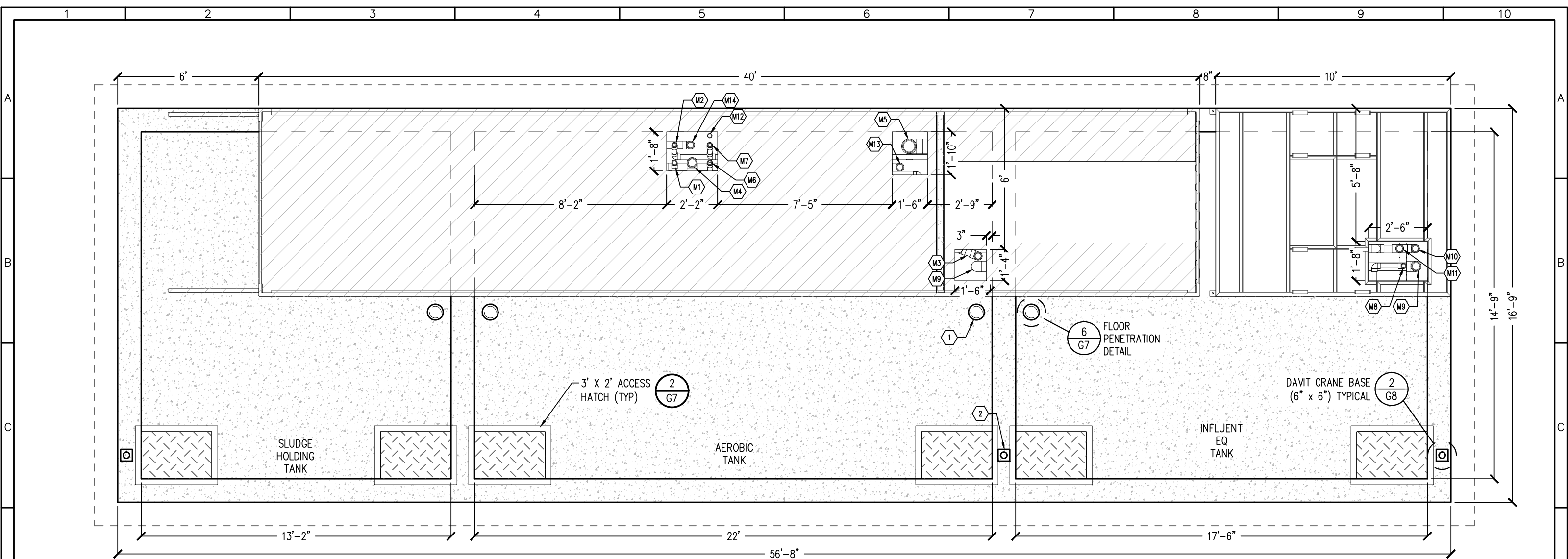
- FLOW DIRECTION LABELS
- AIR LINE LABELS
- WATER LINE LABELS
- HOT SURFACE LABEL
- HEARING PROTECTION LABELS
- WATER LABEL: THIS EQUIPMENT IS AUTOMATICALLY CONTROLLED
- ARC FLASH WARNING LABEL



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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: BUILDING ISOMETRICS & INSTALLATION NOTES		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 3/32" = 1'-0"	SHEET: P1



CONCRETE TANK LID PLAN
1/4" = 1'-0"

PROCESS NOTES:

- 1 4" VENT
- 2 DAVIT CRANE BASE

PIPING CONNECTION NOTES:

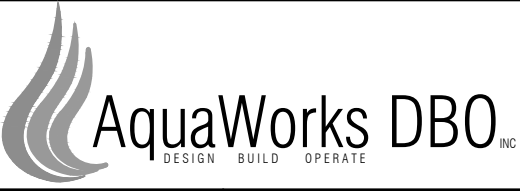
- M1 2" AIR TO SLUDGE DIGESTION
- M2 2" AIR TO INF EQ TANK
- M3 3" OVERFLOW TO INF EQ TANK (FLOOR DRAIN)
- M4 4" AIR TO AEROBIC TANK
- M5 6" MBR TANK OVERFLOW TO AEROBIC TANK
- M6 2" AERATION TANK PUMP 1 TO MBR TANK 1
- M7 2" AERATION TANK PUMP 2 TO MBR TANK 2
- M8 2" INFLUENT EQ PUMP TO BARSCREEN
- M9 4" FINE SCREEN TO AEROBIC TANK
- M10 3" OVERFLOW TO INF EQ TANK (FLOOR DRAIN)
- M11 3" OVERFLOW TO INF EQ TANK (SCREEN OVERFLOW)
- M12 2" CHEMICAL SLEEVE PIPE TO AEROBIC TANK
- M13 3" SYSTEM EFFLUENT
- M14 3" OVERFLOW TO SLUDGE TANK

GENERAL NOTES:

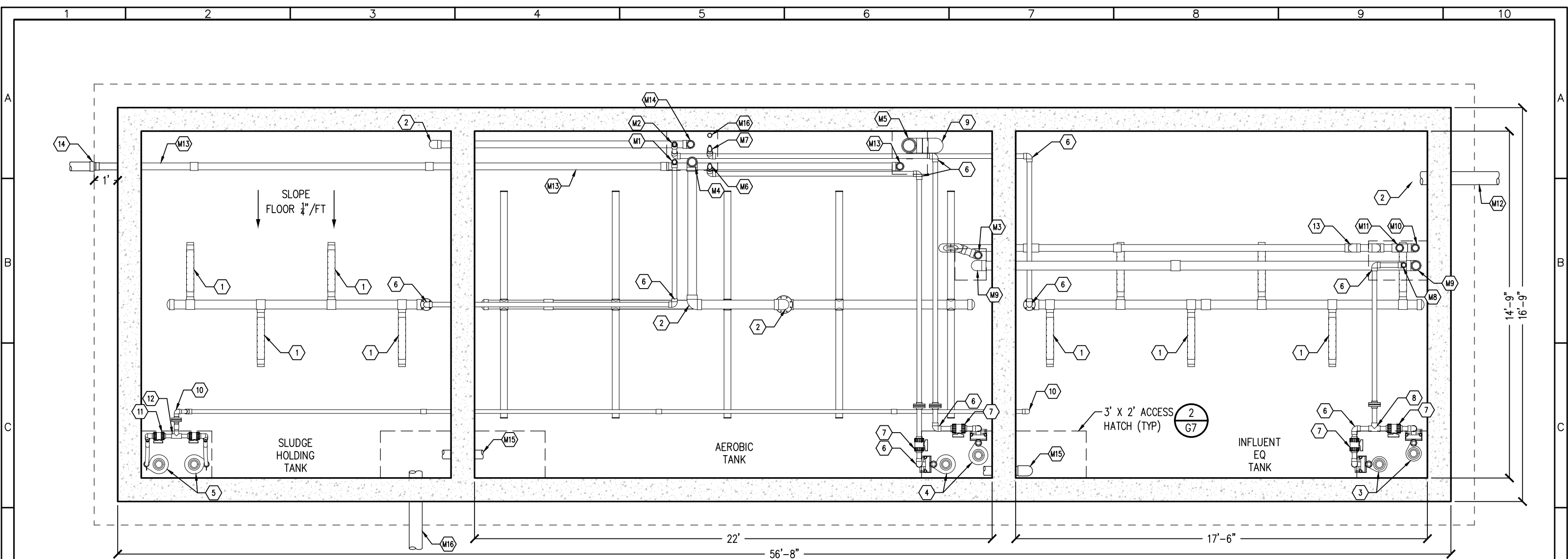
- 1) ALL PIPING SCH 80 PVC UNLESS NOTED OTHERWISE
- 2) INSTALL GREEN DRAIN ONE WAY VALVE OR EQUAL OVER ALL FLOOR DRAINS
- 3) CONTRACTOR TO FILL ALL FOUR VOIDS IN THE NEWTERRA FLOOR WITH GROUT. GROUT AROUND FLOOR DRAINS M3 & M10.



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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: CONCRETE TANK LID PLAN		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P2



CONCRETE TANK EQUIPMENT PLAN
1/4" = 1'-0"

PROCESS NOTES:

- 1 DIFFUSER (DETAIL 4/G7)
- 2 4" 90 ELBOW
- 3 INFLUENT EQ PUMPS
- 4 MBR FEED FORWARD PUMPS
- 5 SLUDGE SUPERNATANT PUMPS
- 6 2" 90 ELBOW
- 7 2" BALL VALVE
- 8 2" TEE
- 9 6" 90 ELBOW
- 10 1.5" 90 ELBOW
- 11 1.5" BALL VALVE
- 12 1.5" TEE
- 13 3" 90 ELBOW
- 14 4"X3" GASKETED REDUCER

PIPING CONNECTION NOTES:

- M1 2" AIR TO SLUDGE DIGESTION
- M2 2" AIR TO INF EQ TANK
- M3 3" OVERFLOW TO INF EQ TANK (FLOOR DRAIN)
- M4 4" AIR TO AEROBIC TANK
- M5 6" MBR TANK OVERFLOW TO AEROBIC TANK
- M6 2" AERATION TANK PUMP 1 TO MBR TANK 1
- M7 2" AERATION TANK PUMP 2 TO MBR TANK 2
- M8 2" INFLUENT EQ PUMP TO BARSCREEN
- M9 4" FINE SCREEN TO AEROBIC TANK
- M10 3" OVERFLOW TO INF EQ TANK (FLOOR DRAIN)
- M11 3" OVERFLOW TO INF EQ TANK (SCREEN OVERFLOW)
- M12 6" INFLUENT FROM COLLECTION SYSTEM
- M13 3" SYSTEM EFFLUENT
- M14 3" OVERFLOW TO SLUDGE TANK
- M15 4" BASIN OVERFLOW
- M16 6" OVERFLOW TO OVERFLOW POND

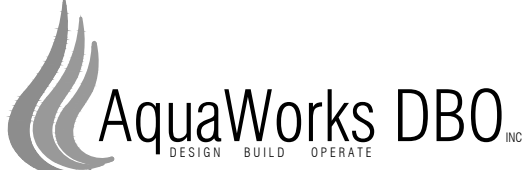
GENERAL NOTES:

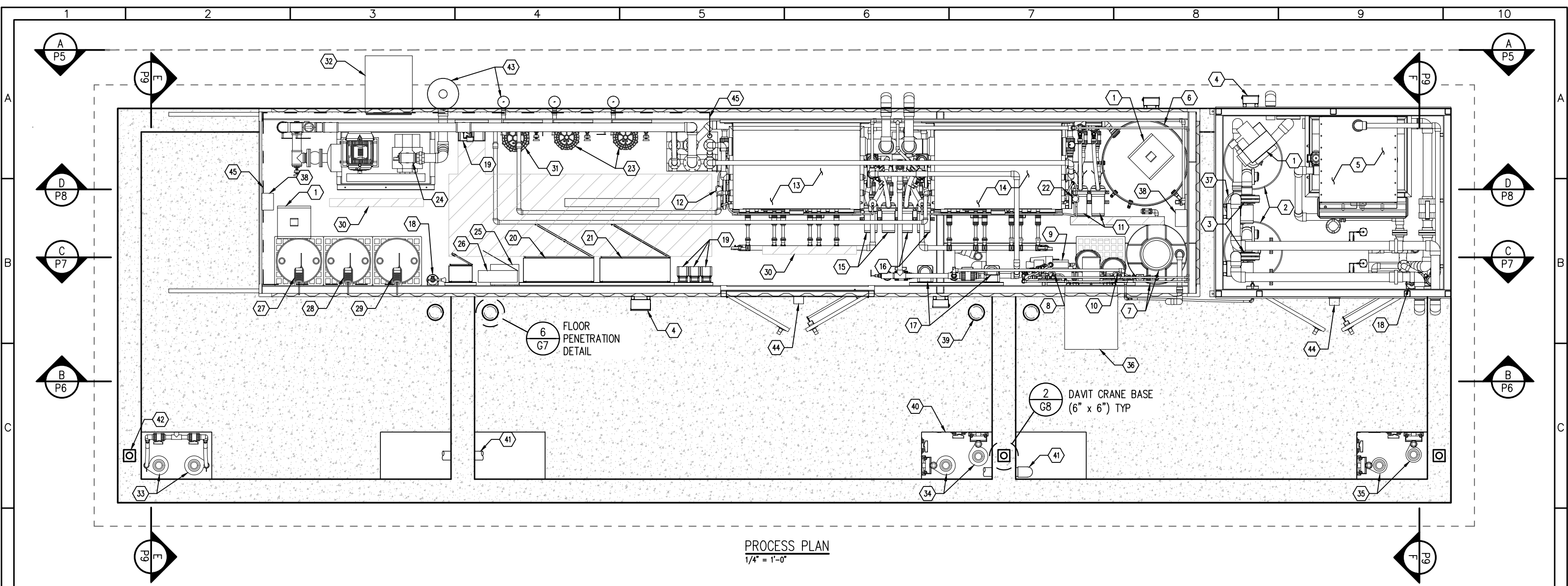
- 1) ALL PIPING SCH 80 PVC UNLESS NOTED OTHERWISE
- 2) INSTALL GREEN DRAIN ONE WAY VALVE OR EQUAL OVER ALL FLOOR DRAINS
- 3) CONTRACTOR TO FILL ALL FOUR VOIDS IN THE NEWTERRA FLOOR WITH GROUT. GROUT AROUND FLOOR DRAINS M3 & M10.

TANK COATINGS

- COAT INFLUENT EQUALIZATION TANK INTERIOR WALLS AND UNDERSIDE OF LID. SYSTEM TYPE: EPOXY, SHERWIN WILLIAMS OR EQUAL.
- 1. SURFACE PREPARATION: SSPC-SP 13/NACE 6 WITH A SURFACE PROFILE OF ICRI CSP 2 OR 3.
 - 2. FILLER: FILL BUG HOLES, AIR POCKETS AND OTHER VOIDS WITH STEEL-SEAM FT910.
 - 3. FINISH: DURA-PLATE 6000 REINFORCED EPOXY. DFT 60.0 TO 80.0 MILS.



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					ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P3	



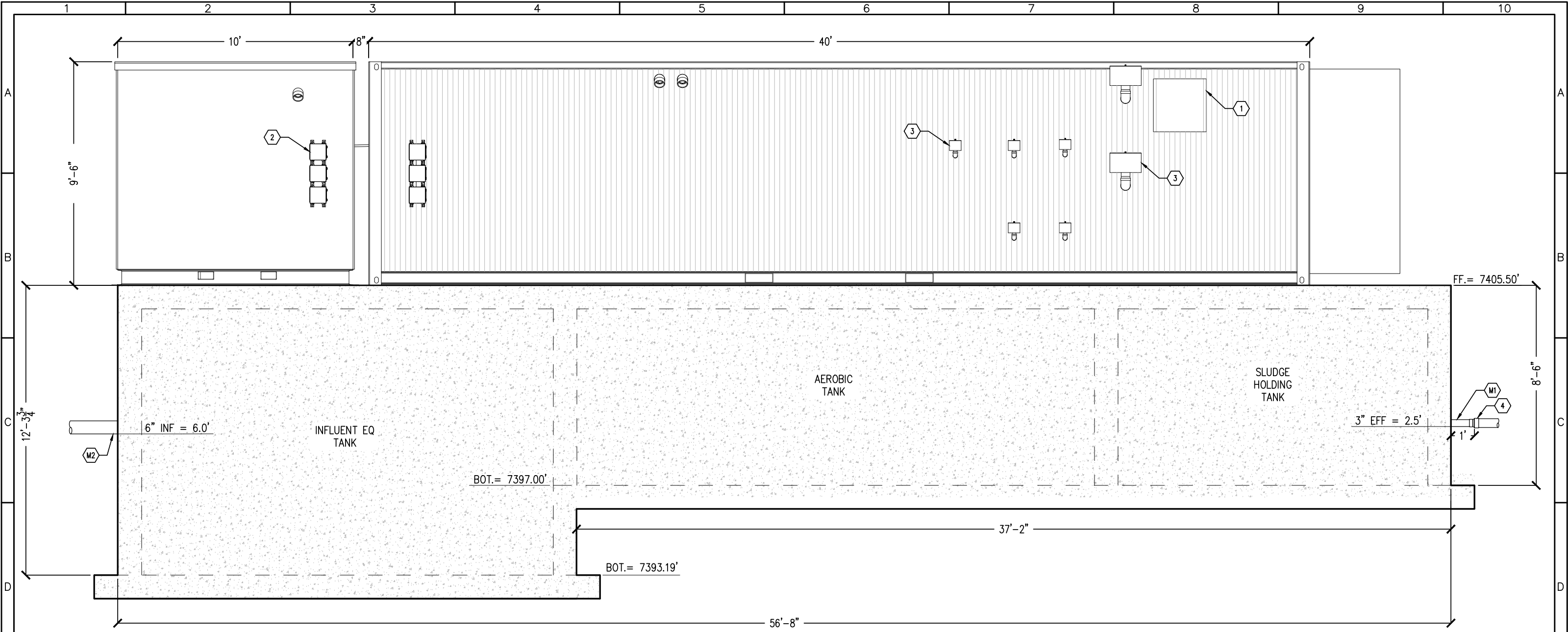
PROCESS PLAN
1/4" = 1'-0"

PROCESS NOTES:

- | | | | |
|--|-------------------------------------|--|---------------------------------|
| 1 HEATER | 15 PERMEATE PUMPS FOR MBR 1 | 29 ALUM CHEM FEED SYSTEM | 43 BLOWER MUFFLER |
| 2 ODOR CONTROL VESSEL | 16 PERMEATE PUMPS FOR MBR 2 | 30 BUILDING LIGHTS (TYP 4) | 44 OVERHEAD LIGHT |
| 3 VENTILATION BLOWER | 17 UV REACTORS | 31 MBR BLOWERS | 45 CHEMICAL FEED CARRIER TUBING |
| 4 ELECTRICAL JUNCTION BOX (TYP) | 18 FIRE EXTINGUISHER | 32 24" LOUVER & HOOD | |
| 5 INLET FINE SCREEN (2MM) | 19 VARIABLE FREQUENCY DRIVES | 33 SUPERNATANT TRANSFER PUMPS | |
| 6 BACKWASH TANK | 20 MASTER POWER PANEL | 34 MEMBRANE FEED PUMPS | |
| 7 HOUSE WATER STORAGE TANK | 21 MASTER CONTROL PANEL | 35 EQ TRANSFER PUMPS | |
| 8 SODIUM HYPOCHLORITE CHEM FEED SYSTEM | 22 PRIME/AIR BLEED PUMP FOR MBR 2 | 36 24" FAN & HOOD | |
| 9 HOUSE WATER SUPPLY PUMP | 23 EQ & SLUDGE HOLDING TANK BLOWERS | 37 LIQUID SEPARATOR | |
| 10 CITRIC ACID CHEM FEED SYSTEM | 24 AEROBIC TANK BLOWERS | 38 EYEWASH STATION WALL MOUNT MAASTERS 8 GAL | |
| 11 BACKWASH PUMPS | 25 TRANSFORMER | 39 4" VENT SCH 80 PVC (TYP) | |
| 12 PRIME AIR/BLEED PUMP FOR MBR 1 | 26 PANELBOARD | 40 3' X 2' ACCESS HATCH (TYP) | |
| 13 MEMBRANE (MBR) TANK 1 | 27 MICRO-C CHEM FEED SYSTEM | 41 4" OVERFLOW PVC SCH 80 | |
| 14 MEMBRANE (MBR) TANK 2 | 28 CAUSTIC CHEM FEED SYSTEM | 42 DAVIT CRANE BASE (TYP) | |



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				DESIGNED BY: AS			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P4
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PROCESS SECTION A
1/4"=1'-0"

PROCESS NOTES:

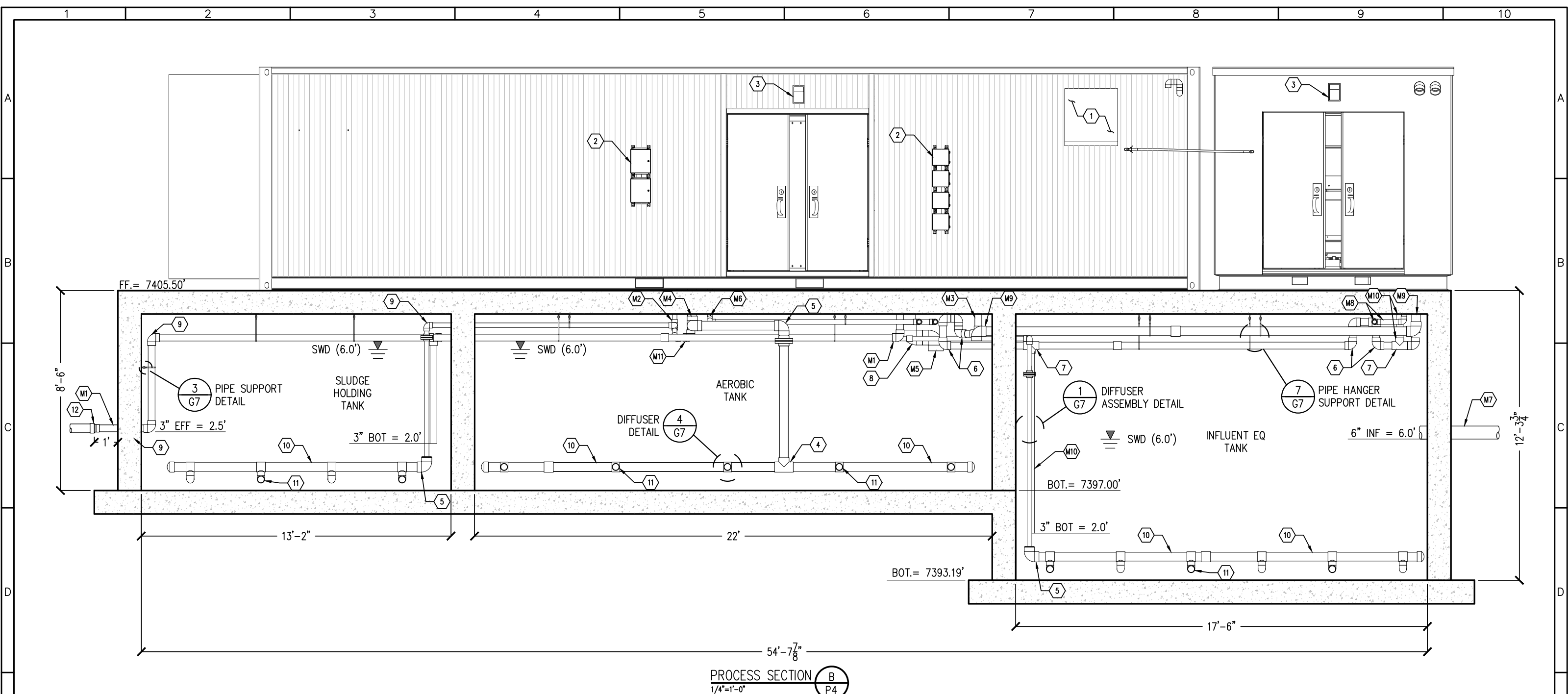
- 1 24" LOUVER & HOOD
- 2 ELECTRICAL JUNCTION BOX (TYP)
- 3 BLOWER MUFFLER (TYP)
- 4 4"x3" GASKETED REDUCER

EQUIPMENT CONNECTION NOTES:

- M1 3" SYSTEM EFFLUENT
- M2 6" INFLUENT FROM COLLECTION SYSTEM



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				FILE PRINTED ON: 10/12/2023 4:02:59 PM		ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P5
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PROCESS SECTION B
1/4"=1'-0" P4

PROCESS NOTES:

- 1

24" FAN & HOOD
- 2

ELECTRICAL JUNCTION BOX (TYP)
- 3

EXTERIOR LIGHT
- 4

4" TEE
- 5

4" 90 ELBOW
- 6

3" 90 ELBOW
- 7

3" TEE
- 8

6" 90 ELBOW

9

2" 90 ELBOW

10

4" DIFFUSER HEADER

11

DIFFUSER

12

4"x3" GASKETED REDUCER

PIPING CONNECTION NOTES:

- M1

3" SYSTEM EFFLUENT
- M2

2" AIR TO SLUDGE HOLDING TANK
- M3

3" OVERFLOW TO SLUDGE TANK (FLOOR DRAIN)
- M4

4" AIR TO AEROBIC TANK
- M5

6" MBR TANK OVERFLOW TO AEROBIC TANK
- M6

2" AEROBIC TANK PUMP 1 TO MBR TANK 1
- M7

6" INFLUENT FROM COLLECTION SYSTEM
- M8

2" INFLUENT EQ PUMP TO BARSCREEN

M9

4" FINE SCREEN TO AERATION TANK

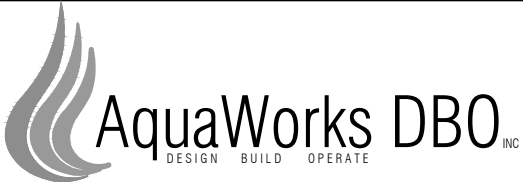
M10

3" OVERFLOW TO EQ TANK (SCREEN OVERFLOW)

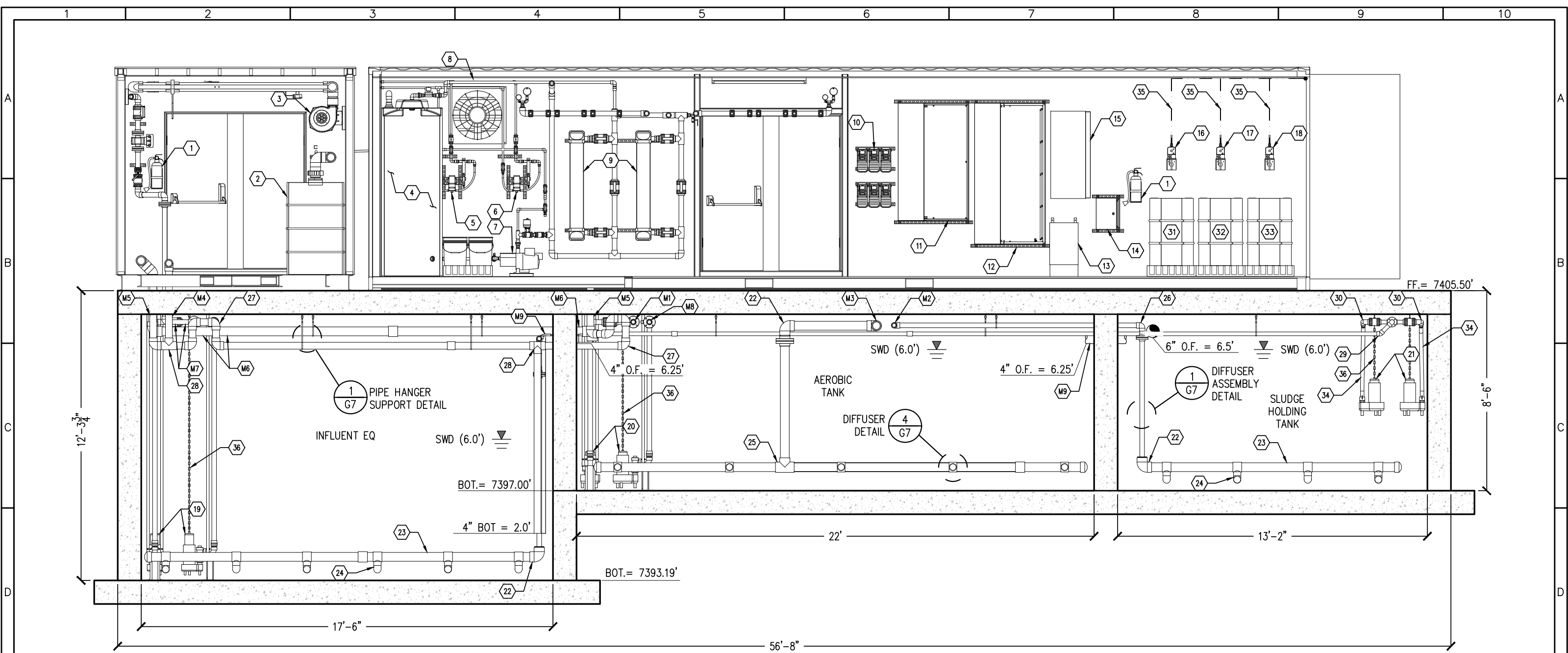
M11

3" OVERFLOW TO SLUDGE TANK

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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: PROCESS SECTION B		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P6



PROCESS SECTION C
1/4"=1'-0"

PROCESS NOTES:

- 1 FIRE EXTINGUISHER

2 ODOR CONTROL VESSEL

3 VENTILATION BLOWER

4 HOUSE WATER STORAGE TANK, 225 GAL

5 CITRIC ACID CHEMICAL FEED SYSTEM

6 SODIUM HYPOCHLORITE CHEMICAL FEED SYSTEM

7 PRESSURIZED WATER SUPPLY PUMP

8 BUILDING FAN

9 UV REACTORS (TYP 2)
- 10 VARIABLE FREQUENCY DRIVES (TYP 6)

11 MASTER CONTROL PANEL

12 MASTER POWER PANEL

13 TRANSFORMER

14 TRANSFORMER DISCONNECT PANEL

15 PANELBOARD

16 ALUM CHEMICAL FEED SYSTEM

17 CAUSTIC CHEMICAL FEED SYSTEM

18 MICRO-C CHEMICAL FEED SYSTEM
- 19 INFLUENT EQ PUMPS

20 MBR FEED FORWARD PUMPS

21 SLUDGE SUPERNATANT PUMPS

22 4" 90 ELBOW

23 4" DIFFUSER HEADER

24 DIFFUSER

25 4" TEE

26 2" 90 ELBOW

27 3" 90 ELBOW

PIPING CONNECTION NOTES:

- M1 2" AEROBIC TANK PUMP 2 TO MBR TANK 2

M2 2" AIR TO SLUDGE HOLDING TANK

M3 4" AIR TO AEROBIC TANK

M4 3" OVERFLOW TO EQ TANK (SCREEN OVERFLOW)

M5 3" OVERFLOW TO EQ TANK (FLOOR DRAIN)

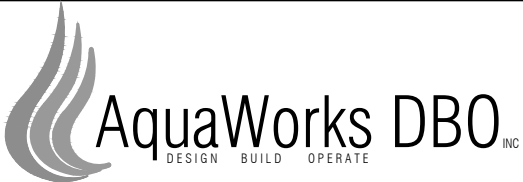
M6 4" FINE SCREEN TO AEROBIC TANK

M7 2" INF EQ TANK TO FINE SCREEN
- M8 2" AEROBIC TANK PUMP 1 TO MBR TANK 1

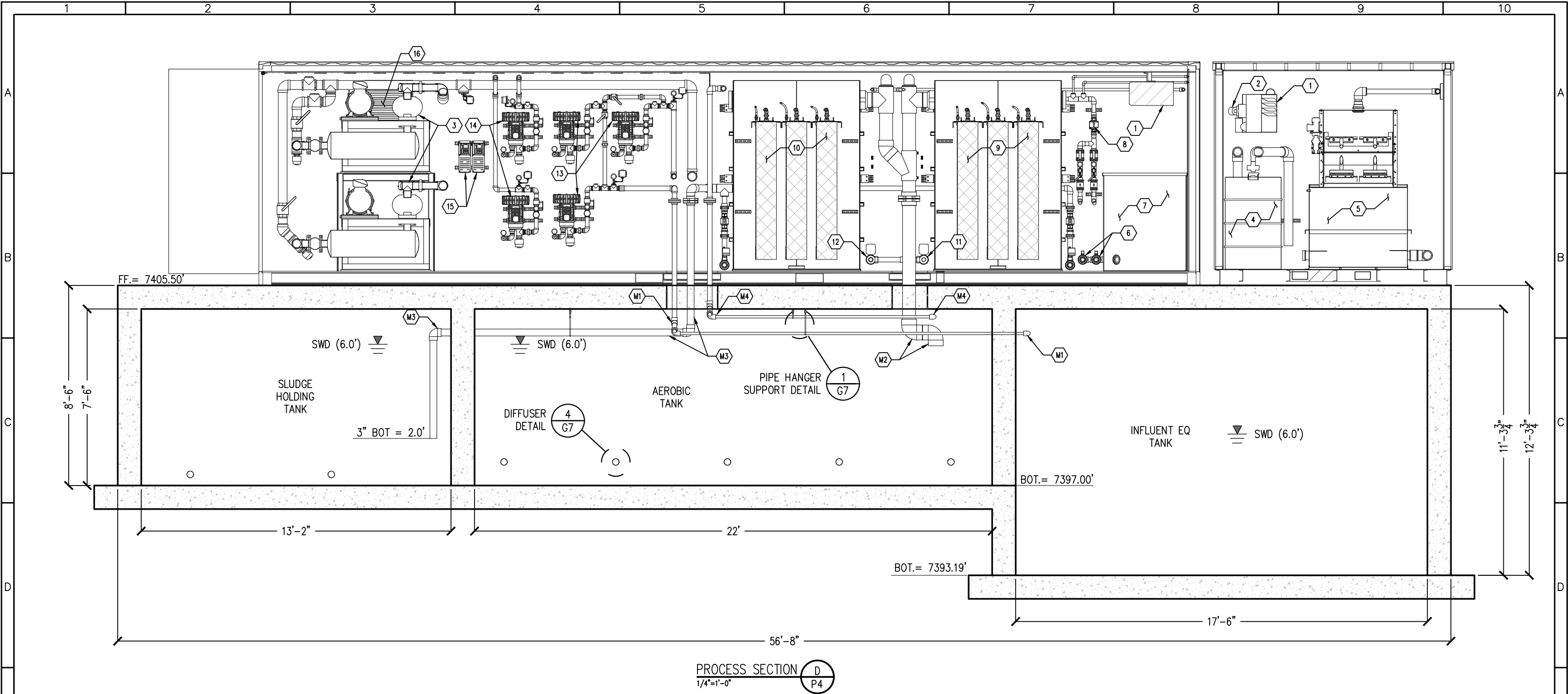
M9 4" BASIN OVERFLOW



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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P7



PROCESS SECTION D
1/4"=1'-0" P4

PROCESS NOTES:

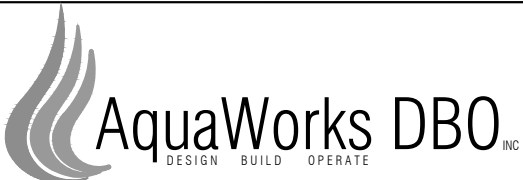
- | | |
|-------------------------------|------------------------------------|
| ① HEATER | ⑨ MEMBRANE BIOREACTOR (MBR) TANK 1 |
| ② VENTILATION BLOWER | ⑩ MEMBRANE BIOREACTOR (MBR) TANK 2 |
| ③ AEROBIC TANK BLOWERS | ⑪ PERMEATE PUMPS FOR MBR 1 |
| ④ ODOR CONTROL VESSEL | ⑫ PERMEATE PUMPS FOR MBR 2 |
| ⑤ AUTOMATIC FINE SCREEN (2MM) | ⑬ EQ/SLUDGE HOLDING TANK BLOWERS |
| ⑥ BACKWASH PUMPS | ⑭ MBR BLOWERS |
| ⑦ BACKWASH TANK | ⑮ VARIABLE FREQUENCY DRIVES |
| ⑧ PRIME AIR/BLEED SYSTEM | ⑯ 24" LOUVER & HOOD |

PIPING CONNECTION NOTES:

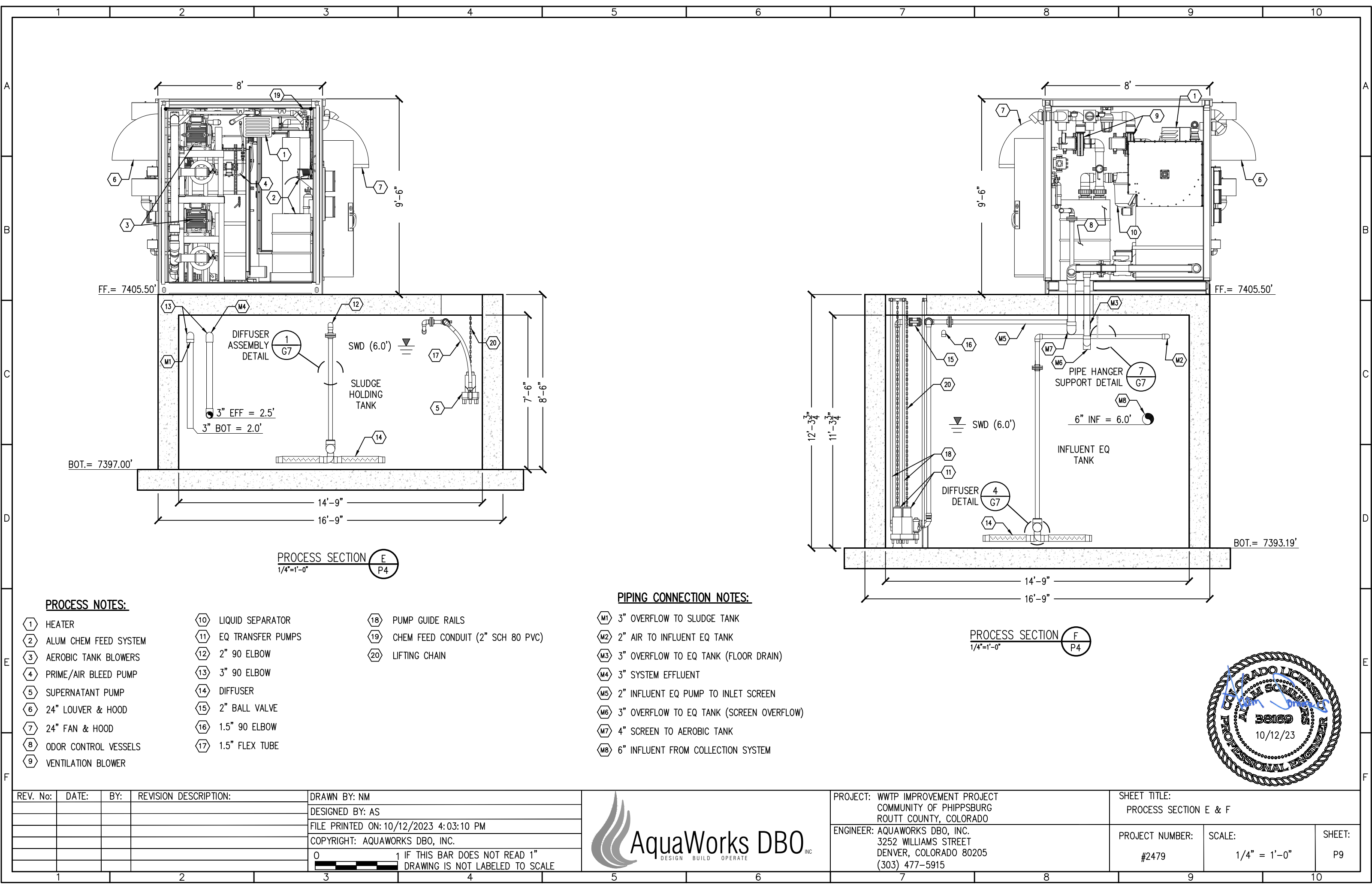
- | |
|--|
| ① 2" AIR TO INFLUENT EQ TANK |
| ② 6" MBR TANK OVERFLOW TO AEROBIC TANK |
| ③ 3" OVERFLOW TO SLUDGE TANK |
| ④ 2" AEROBIC TANK PUMP 1 TO MBR TANK 1 |



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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P8



PROCESS NOTES:

- 1

HEATER
- 2

ALUM CHEM FEED SYSTEM
- 3

AEROBIC TANK BLOWERS
- 4

PRIME/AIR BLEED PUMP
- 5

SUPERNATANT PUMP
- 6

24" LOUVER & HOOD
- 7

24" FAN & HOOD
- 8

ODOR CONTROL VESSELS
- 9

VENTILATION BLOWER

10

LIQUID SEPARATOR

11

EQ TRANSFER PUMPS

12

2" 90 ELBOW

13

3" 90 ELBOW

14

DIFFUSER

15

2" BALL VALVE

16

1.5" 90 ELBOW

17

1.5" FLEX TUBE

18

PUMP GUIDE RAILS

19

CHEM FEED CONDUIT (2" SCH 80 PVC)

20

LIFTING CHAIN

PIPING CONNECTION NOTES:

- M1

3" OVERFLOW TO SLUDGE TANK
- M2

2" AIR TO INFLUENT EQ TANK
- M3

3" OVERFLOW TO EQ TANK (FLOOR DRAIN)
- M4

3" SYSTEM EFFLUENT
- M5

2" INFLUENT EQ PUMP TO INLET SCREEN
- M6

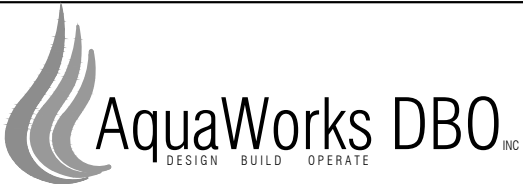
3" OVERFLOW TO EQ TANK (SCREEN OVERFLOW)
- M7

4" SCREEN TO AEROBIC TANK
- M8

6" INFLUENT FROM COLLECTION SYSTEM



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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: PROCESS SECTION E & F		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'-0"	SHEET: P9

1

2

3

4

5

6

7

8

9

10

VALVES AND PIPING

BALL VALVE

NO

NC

GATE VALVE

GLOBE VALVE

NEEDLE VALVE

SLIDE VALVE

SOLENOID VALVE

BUTTERFLY VALVE

SWING CHECK VALVE

WAFER CHECK VALVE

SPRING CHECK VALVE

WYE STRAINER

SAMPLE PORT

PRESSURE RELIEF VALVE

VACUUM RELIEF VALVE

CAMLOCK CONNECTION

FLEXIBLE CONNECTION

FLANGED CONNECTION

REDUCER

UNION

ADSORBENT FILTER

COALESCING FILTER

PARTICULATE FILTER

FILTER, SILENCER

PRESSURE REGULATOR

REGULATOR W/ FILTER

EQUIPMENT

AIR STRIPPER

OIL WATER SEPARATOR

SEAL FLUID SEPARATOR

BAG FILTER

CARBON VESSEL

OXIDIZER

PRODUCT STORAGE DRUM, TANK

STANDARD, CONICAL BOTTOM TANK

EQUIPMENT

CLOSED TOP TANK

OPEN TOP TANK

OPEN TOP TANK WITH LID

AIR DIFFUSER ASSEMBLY

STRAINER/FILTER

MEMBRANE CASSETTE

NO CLOG SPRAYER ASSEMBLY

ULTRAVIOLET LIGHT

ROTARY SCREEN

FILTER PRESS

EQUIPMENT

CENTRIFUGAL PUMP

PROGRESSIVE-CAVITY PUMP

CHEMICAL-INJECTION PUMP

CENTRIFUGAL, REGENERATIVE BLOWER

POSITIVE DISPLACEMENT BLOWER

ROTARY-CLAW BLOWER

LINEAR BLOWER

LIQUID-RING PUMP

ROTARY-VANE COMPRESSOR

RECIPROCATING COMPRESSOR

PASSIVE COOLING FINS

EDUCTOR

MAGNETIC FLOW METER

VENTURI

ROTOMETER

AS - AIR STRIPPER
BLD - BUILDING, TRAILER, OR SKID
FLT - FILTER VELLEL
LPC - LIQUID-PHASE CARBON VESSEL
MFD - MANIFOLD
OWS - OIL/WATER SEPARATOR
OX - OXIDIZER
PST - PRODUCT STORAGE TANK
SOS - SEAL OIL SEPARATOR
SWS - SEAL WATER SEPARATOR
TNK - TANK
VLS - VAPOR/LIQUID SEPARATOR
VPC - VAPOR-PHASE CARBON VESSEL

INSTRUMENTATION IDENTIFIERS

FIRST LETTERS

MEASURED/INITIATING VARIABLE

VARIABLE MODIFIER

READOUT/PASSIVE FUNCTION

SUCCESSING LETTERS

OUTPUT/ACTIVE FUNCTION

FUNCTION MODIFIER

A ANALYSIS

B BURNER, COMBUSTION

C CYCLE

D

E VOLTAGE

F FLOW, FLOW RATE

G GAS (LEL)

H HAND

I CURRENT

J POWER

K TIME, SCHEDULE

L LEVEL

M MONITOR

N

O

P PRESSURE

Q QUANTITY

R RADIATION

S SPEED, FREQUENCY

T TEMPERATURE

U MULTIVARIABLE

V VIBRATION, MECHANICAL ANALYSIS, VACUUM

W WEIGHT, FORCE

X UNCLASSIFIED

Y EVENT, STATE, PRESENCE

Z POSITION, DIMENSION

ALARM

GLASS, GAUGE, VIEWING DEVICE

INDICATE

SCAN

CONTROL

SENSOR, PRIMARY ELEMENT

ORIFICE, RESTRICTION

TEST CONNECTION

INTEGRATE TOTALIZE

RECORD

SWITCH, SOLENOID

TRANSMIT

MULTIFUNCTION

VALVE, DAMPER, LOUVER

WELL, PROBE

ACCESSORY DEVICES, UNCLASSIFIED

UNCLASSIFIED

UNCLASSIFIED

AUXILIARY DEVICES

DRIVER, ACTUATOR, UNCLASSIFIED CONTROL ELEMENT

GENERAL NOTES:

1. WATER FLOW METERS: INSTALL AS PER MANUFACTURES' RECOMMENDATIONS. ENSURE THAT THROTTLING VALVES ARE NOT IN DIRECT LINE OF THE METER.

2. PITOT AIR FLOW METERS: PROVIDE 8 DIA. OF STRAIGHT PIPE BEFORE AND 3 DIA. OF STRAIGHT PIPE AFTER METERS. AVOID TEES AND ELBOWS BEFORE AND AFTER METERS.

3. MATERIALS OF VALVES AND PIPING IS TO BE AS SPECIFIED ON THE DIAGRAM.

4. THERE ARE NO SPECIAL PIPING REQUIREMENTS OUTSIDE OF NEWTERRA'S STANDARDS UNLESS SPECIFIED ON THE DIAGRAM.

5. FLEXIBLE HOSE IS TO BE AS SPECIFIED ON THE DIAGRAM. IF A FLEXIBLE CONNECTION IS PREFERRED PLEASE CONSULT ENGINEERING TO ENSURE SELECTED HOSE IS RATED FOR THE OPERATING CONDITIONS.

6. DO NOT USE PVC PIPE ON AIR LINES OVER 5 PSIG.

7. ALL FEMALE PVC THREADED ADAPTORS MUST BE RE-ENFORCED FEMALE ADAPTORS.

8. NO DISSIMILAR METALS ARE TO BE IN DIRECT CONTACT ON WATER LINES. FOLLOW ENG.SOP.010

9. ALL PVC MUST BE SCHEDULE 80

10. ALL STAINLESS STEEL THREADED CONNECTIONS ARE TO UTILIZE GRAY TEFLON TAPE DESIGNED FOR SS FITTINGS.

11. ALL MECHANICAL BALL FLOAT LEVEL SWITCHES ARE TO BE INSTALLED WITH THEIR CABLES TIE WRAPPED, CABLES ARE NOT TO BE SHORTENED.

INDICATING INSTRUMENT

DIGITAL INPUT TO CONTROL PANEL

DIGITAL INPUT CAUSING ALARM

DIGITAL INPUT CAUSING SYSTEM SHUTDOWN ALARM

ANALOG INPUT TO CONTROL PANEL

ANALOG OUTPUT FROM CONTROL PANEL

PROJECT: WWTP IMPROVEMENT PROJECT
COMMUNITY OF PHIPPSBURG
ROUTT COUNTY, COLORADO

ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE:
P&ID LEGEND

PROJECT NUMBER:
#2479

SCALE:
NTS

SHEET:
P10

REV. No:

DATE:

BY:

REVISION DESCRIPTION:

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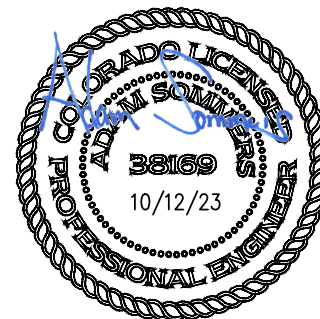
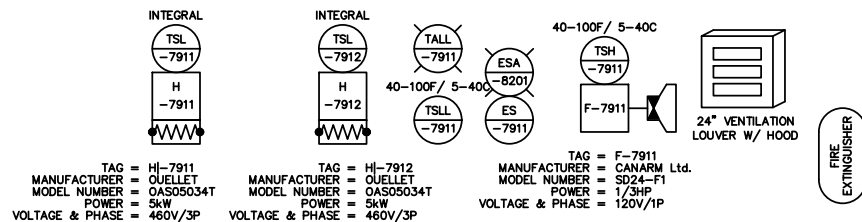
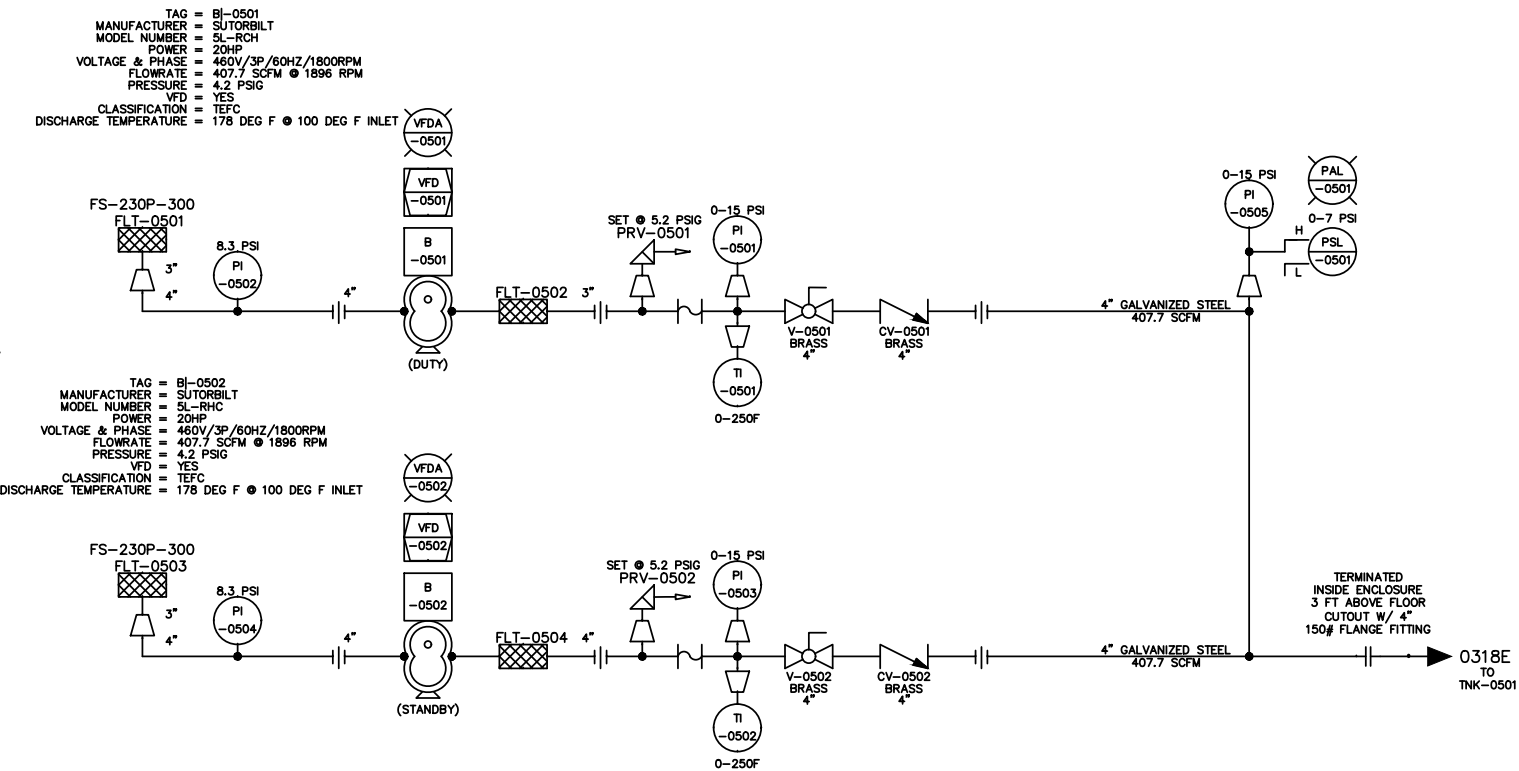
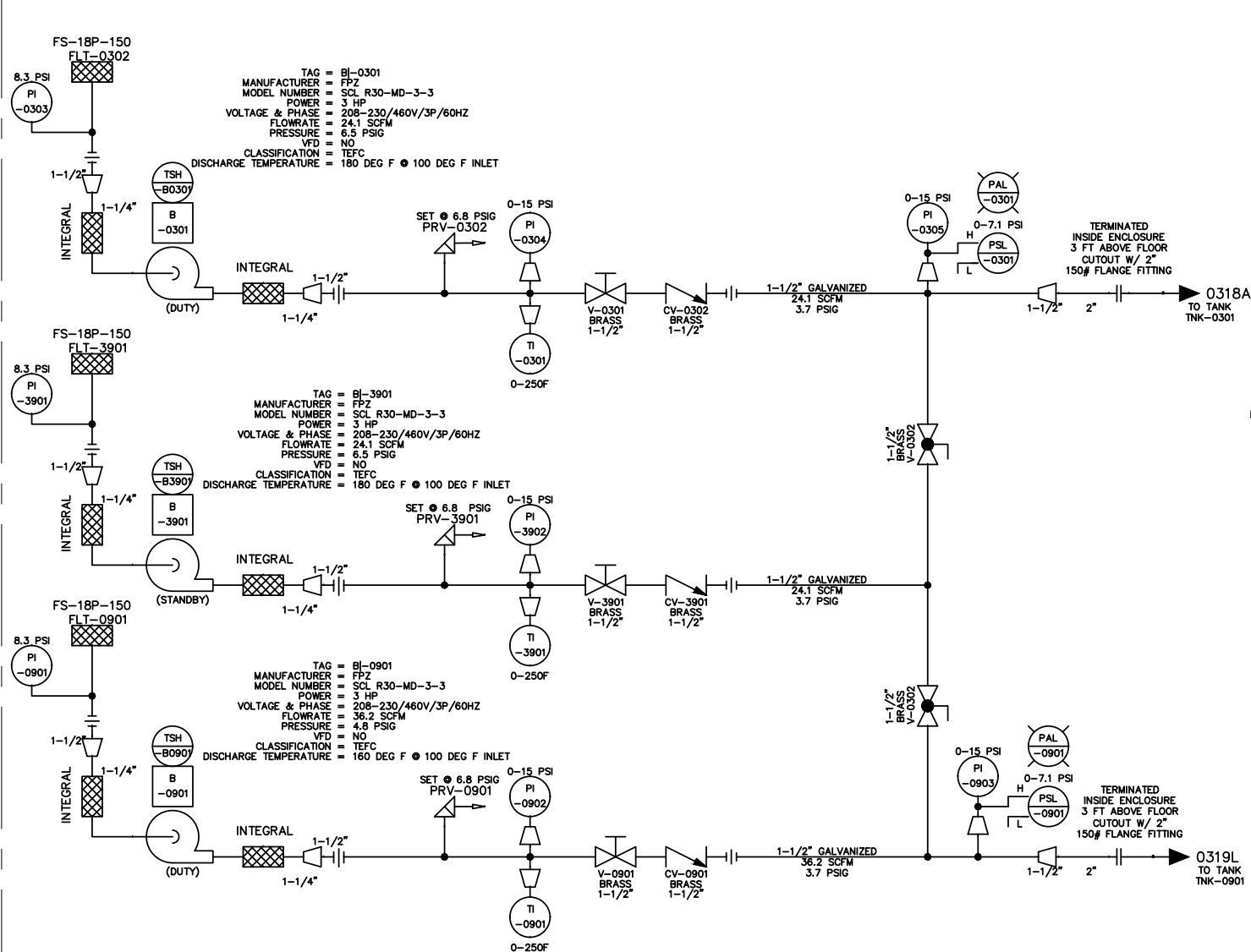
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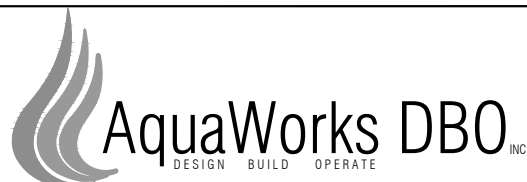
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BLD-7910: GENERAL PURPOSE AREA

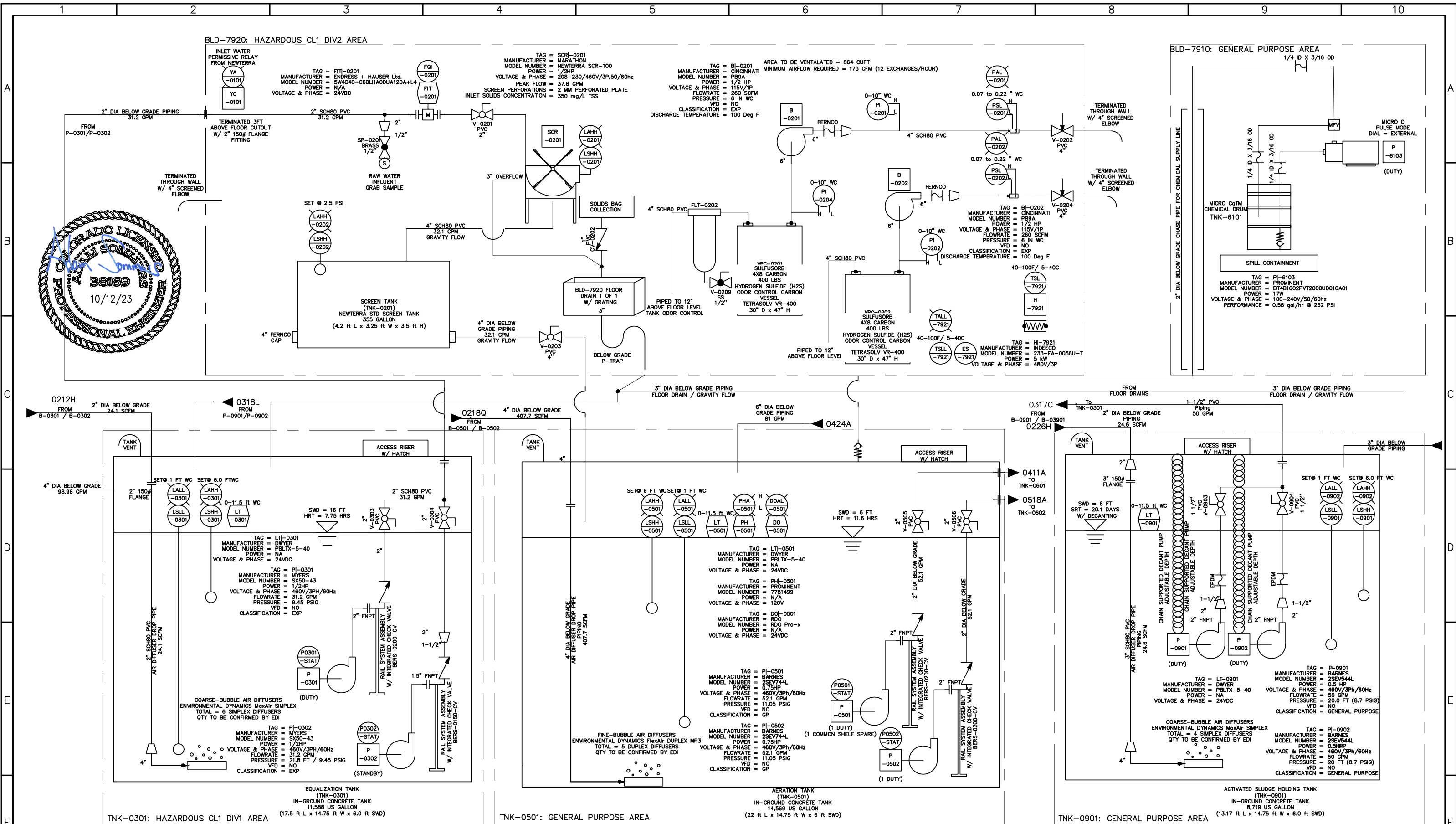
WWTP DESIGN PARAMETERS
AVERAGE DAILY FLOW (ADF) = 8.6 GPM
MAXIMUM DAILY FLOW (MDF) = 31.25 GPM
MAXIMUM MONTHLY FLOW (MMF) = 20.83 GPM
PEAK INSTANTANEOUS FLOW (PIF) = 52 GPM
SYSTEM AREA CLASSIFICATION = NFPA 820, 2016 EDITION, AS INTERPRETED



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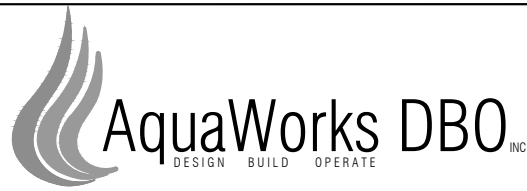


PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO	SHEET TITLE: P&ID 1	PROJECT NUMBER: #2479	SCALE: 1" = 20'	SHEET: P11
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915				



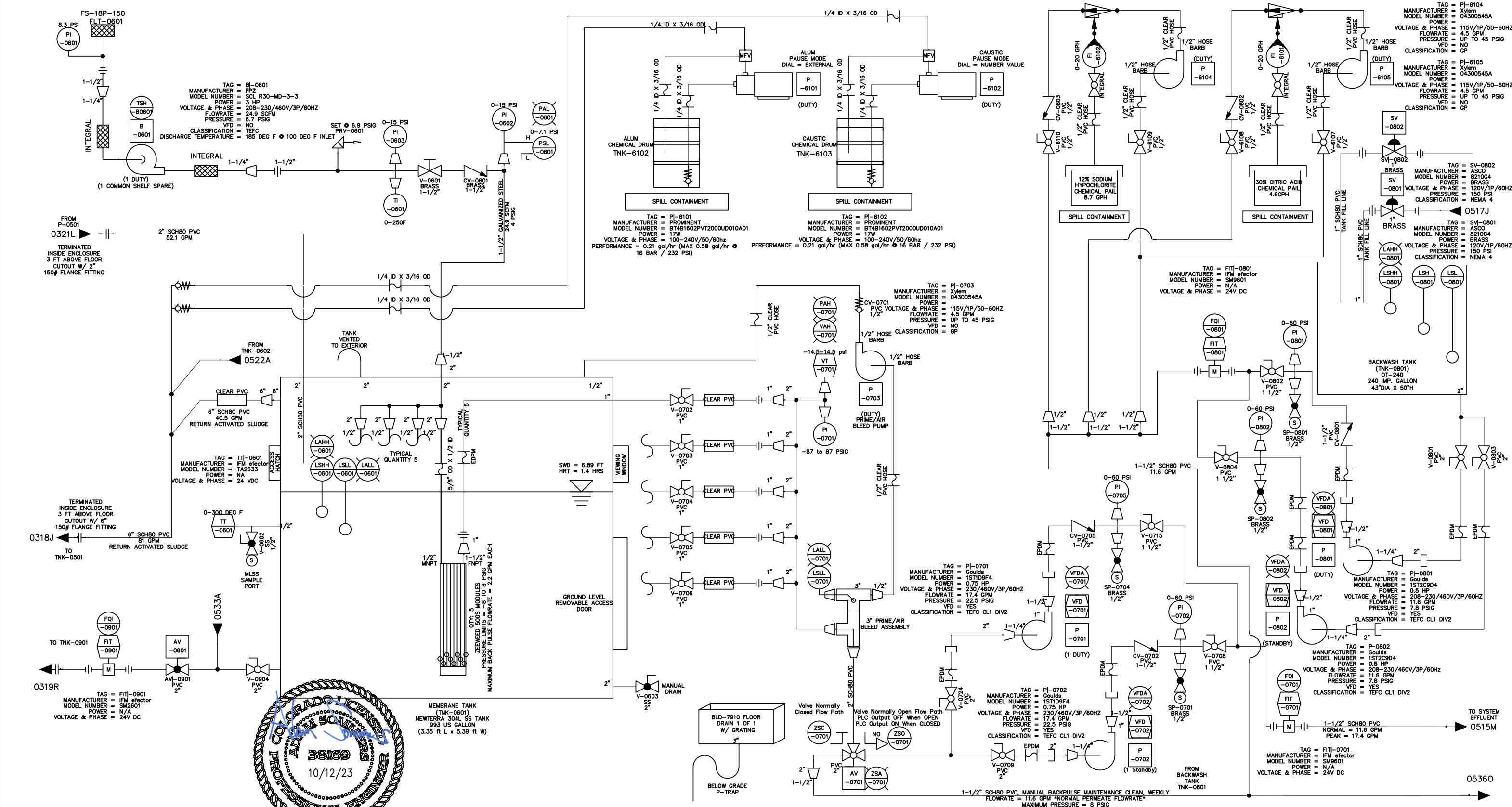
REV. No:	DATE:	BY:	REVISION DESCRIPTION:	DRAWN BY: AS	 AquaWorks DBO ^{INC} DESIGN BUILD OPERATE	PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: P&ID 2	
				DESIGNED BY: AS		ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915	PROJECT NUMBER: #2479	SCALE: 1" = 20'	SHEET: P12
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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915

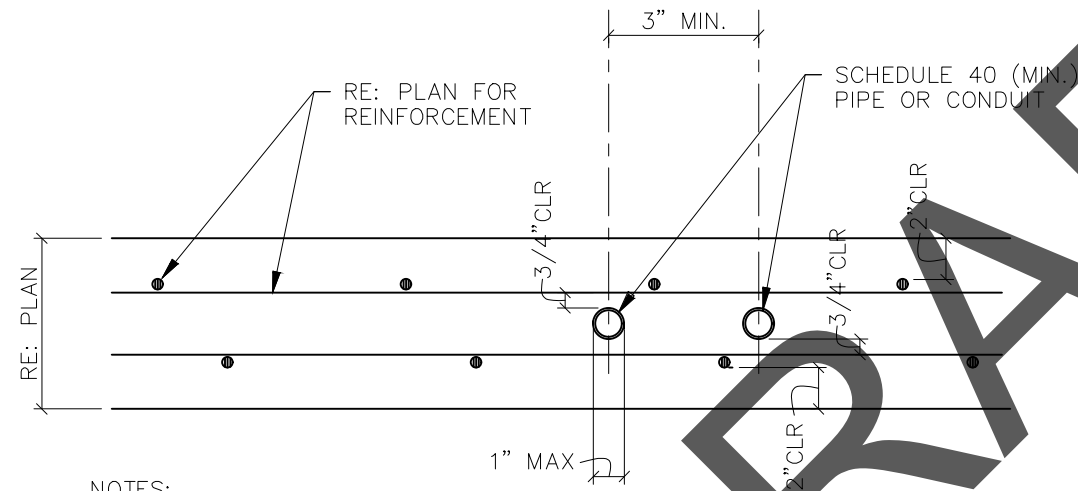
SHEET TITLE: P&ID 3		
PROJECT NUMBER: #2479	SCALE: 1" = 20'	SHEET: P13



	1	2	3	4	5	6	7	8	9	10
	DESIGN PARAMETERS				GENERAL NOTES					
A	1. DESIGN CODES AND STANDARDS				GENERAL			CONCRETE		
	A. BUILDING CODE: IBC 2015 RISK CATEGORY III				1. STRUCTURAL ELEMENTS ARE NON-Self SUPPORTING AND REQUIRE INTERACTION WITH OTHER ELEMENTS FOR STABILITY AND RESISTANCE TO LATERAL FORCES. WALLS SHALL BE TEMPORARILY BRACED BY THE CONTRACTOR UNTIL PERMANENT BRACING, FLOOR AND ROOF SLABS, AND/OR WALLS HAVE BEEN INSTALLED AND CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.			1. EXTERIOR CONCRETE AND INTERIOR CONCRETE EXPOSED TO FREEZE-THAW, AND CONCRETE SLABS AND WALLS PERMANENTLY EXPOSED TO THE EXTERIOR MINIMUM 28-DAY COMPRESSIVE STRENGTH = 4500 PSI. PROPORTIONED TO HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.42. SLUMP = 3" - 5". ALL CONCRETE EXPOSED TO THE EXTERIOR SHALL BE AIR ENTRAINED WITH MINIMUM TOTAL AIR CONTENT OF 6% (+/- 1%) BY VOLUME PER ASTM C231 FOR ¾" AGGREGATE AND LARGER. REFERENCE ACI 350-06 TABLE 4.2.1, TOTAL AIR CONTENT FOR CONCRETE EXPOSED TO CYCLES OF FREEZING AND THAWING, SEVERE EXPOSURE, FOR SMALLER AGGREGATE SIZES.		
B	B. MATERIAL CODES AND STANDARDS DESIGN LOADS: ASCE/SEI 7-10 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES				2. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION, UNLESS NOTED OTHERWISE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.			2. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE II		
	CONCRETE: ACI 318-14 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 350-06 - CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES ACI 350.1-10 - SPECIFICATION FOR TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING CONCRETE CONTAINMENT STRUCTURES				3. THE STRUCTURE HAS BEEN DESIGNED FOR THE INDICATED LOADS ONLY. USE OF HEAVY EQUIPMENT AND SCAFFOLDING, OR STORAGE OF MATERIALS THAT TRANSFER EXCESSIVE LOADS TO THE STRUCTURE SHALL BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO VERIFY THE ADEQUACY OF THE STRUCTURE FOR ALL APPLIED CONSTRUCTION LOADS THAT EXCEED THE LOADS INDICATED IN THE CONSTRUCTION DOCUMENTS AND SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER-OF-RECORD PRIOR TO ANY CONSTRUCTION ACTIVITY.			3. AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C-33. MAXIMUM COARSE AGGREGATE SIZE SHALL BE ¾".		
	2. GRAVITY LOADS				4. STRUCTURAL DRAWINGS ARE NOT STAND-ALONE DOCUMENTS AND ARE INTENDED TO BE USED IN CONJUNCTION WITH CIVIL, PROCESS, MECHANICAL, ELECTRICAL, PLUMBING AND DRAWINGS FROM OTHER DISCIPLINES. THE CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS INTO SHOP DRAWINGS AND WORK.			4. MATERIALS OR ADMIXTURES SHALL NOT CONTAIN ANY CALCIUM CHLORIDE		
	A. LIVE LOADS (UNIFORM/CONCENTRATED) CONTAINER ROOF 30 PSF / 300 LB CONCRETE LID (NOT AT CONTAINERS) 60 PSF				5. ALL WELDS SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (A.W.S) SPECIFICATIONS.			5. REINFORCING STEEL SHALL MEET THE FOLLOWING A. DEFORMED BARS ASTM SPECIFICATION A615, GRADE 60		
	B. SHIPPING CONTAINER TOTAL WEIGHT (PROVIDED BY MANUFACTURER) 1.) CONTAINER 1: "DRY" 24,537 LBS, "WET" 47,069 LBS 2.) CONTAINER 2: "DRY" 23,495 LBS, "WET" 36,847 LBS				6. THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT AND THE ENGINEER-OF-RECORD. REFERENCE PROCESS DRAWINGS FOR OPENING LOCATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.			6. WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH THE SIZE AND LOCATION OF MAIN REINFORCEMENT STEEL. REINFORCING BARS SHALL BE SPLICED AS NOTED IN THE REINFORCING LAP SPLICE SCHEDULE (6/S7)		
C	3. ROOF SNOW LOAD				7. USE ONLY DIMENSIONS INDICATED IN THE CONTRACT DOCUMENTS. DO NOT SCALE CONTRACT DOCUMENTS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DRAWING FILES. CONTRACTOR SHALL COORDINATE IN-PLACE DIMENSIONS BASED ON TOLERANCES OF THE RESPECTIVE TRADES.			7. REFER TO ACI 350-06 FOR CONCRETE COVER REQUIREMENTS, ACI 315 LATEST EDITION FOR DETAILING PRACTICES AND FABRICATION, AND ACI 301 LATEST EDITION FOR STANDARD PRACTICES FOR MIXING AND PLACING CONCRETE. REFER TO ACI 306R-10 FOR REQUIRED COLD WEATHER CONCRETING PROCEDURES. MINIMUM PROTECTION PERIOD FOR CONCRETE PLACED DURING FREEZING TEMPERATURES IS 7 DAYS		
	A. GROUND SNOW LOAD, Pg 78 PSF				8. ASSUME EQUAL SPACING IF NOT INDICATED IN CONTRACT DOCUMENTS.			8. ANCHORS INSTALLED IN HARDENED CONCRETE SHALL BE USED WHERE SPECIFIED ON THE CONTRACT DRAWINGS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED, DRY AND CLEANED AND ANCHORS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED WRITTEN INSTRUCTIONS AND APPLICABLE ESR REPORT. REFERENCE DETAILS FOR ANCHOR SIZE AND EMBEDMENT. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION AND LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. ALLOWABLE SUBSTITUTIONS FOR POST-INSTALLED ANCHORS IN CONCRETE ARE:		
	B. FLAT ROOF SNOW LOAD, Pf 84 PSF				9. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS, OPENING, BLOCKOUTS, RECESSES, ELEVATIONS, ANCHOR RODS AND EMBED LOCATIONS PRIOR TO CONSTRUCTION.			A. HILTI HIT-RE 500-SD EPOXY ADHESIVE (ICC-ES ESR-2322) B. HILTI HIT-HY 200 ADHESIVE (ICC-ES ESR-3187) C. HILTI KWIK BOLT TZ EXPANSION ANCHOR (ICC-ES ESR-1917) D. SIMPSON STRONG-TIE SET-XP EPOXY ADHESIVE (ICC-ES ESR-2508) E. SIMPSON STRONG-TIE AT-XP ADHESIVE (ICC-ES ESR-263) F. SIMPSON STRONG-TIE BOLT 2 WEDGE ANCHOR (ICC-ES ESR-3037)		
	C. SNOW EXPOSURE FACTOR, Ce 1.0				FOUNDATIONS			9. FOUNDATION SLAB SHALL BE PLACED IN A SINGLE POUR WITHOUT CONSTRUCTION JOINTS. IF CONTRACTOR PLANS MULTIPLE POURS, CONTACT WALLACE DESIGN COLLECTIVE FOR REQUIRED COLD JOINT DETAILS		
	D. SNOW LOAD IMPORTANCE FACTOR, I 1.1				1. FOUNDATION DESIGNS AND SUBGRADE PREPARATION NOTES ARE BASED ON THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT NUMBER 22-12813 BY: NORTHWEST COLORADO CONSULTANTS, INC., DATED: JANUARY 17, 2023					
	E. THERMAL FACTOR, Ct 1.0				2. FOOTING DESIGNS ARE BASED ON A ALLOWABLE SOIL BEARING CAPACITY OF 3000 PSF.					
D	4. WIND DESIGN DATA (CONTAINER DESIGN BY MANUFACTURER)				3. CONTRACTOR AND TESTING LABORATORY REPRESENTATIVE SHALL READ THE GEOTECHNICAL REPORT AND BECOME THOROUGHLY FAMILIAR WITH SITE AND SUBGRADE INFORMATION GIVEN THEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT QUANTITIES OF CUT AND FILL FOR ESTIMATING AND CONSTRUCTION.					
	A. ULTIMATE DESIGN WIND SPEED (3 SECOND GUST), Vult 120 MPH NOMINAL DESIGN WIND SPEED (3 SECOND GUST), Vasd 93 MPH				4. A QUALIFIED AND REGISTERED GEOTECHNICAL ENGINEER, LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED AND WORKING FOR THE TESTING LABORATORY, SHALL DETERMINE CONFORMANCE OF THE FOUNDATION BEARING STRATA WITH THE FOUNDATION DESIGN CRITERIA ABOVE, AND ALL OTHER CONTRACT DOCUMENTS. TESTING LABORATORY SHALL NOTIFY CONTRACTOR, ARCHITECT AND ENGINEER-OF-RECORD OF ANY CONDITIONS NOT IN ACCORDANCE WITH FOUNDATION DESIGN CRITERIA OR CONTRACT DOCUMENTS.					
	B. WIND EXPOSURE CATEGORY C				5. THE SUBGRADE SHALL BE PREPARED AS INDICATED IN THE GEOTECHNICAL REPORT					
	C. INTERNAL PRESSURE COEFFICIENT, GCpi +/- 0.18				6. USE ONLY STRUCTURAL FILL MATERIAL IDENTIFIED IN THE GEOTECHNICAL REPORT FOR FILL BELOW BUILDING AND FIVE FEET BEYOND THE EDGES OF THE BUILDING AND 1 FOOT BEYOND THE EDGES OF PAVING.					
	D. WIDTH OF END ZONE 3 FT				7. PER GEOTECHNICAL REPORT, REMOVE A MINIMUM OF 3 FT OF THE NATURAL SOIL BELOW THE MAT SLAB AND REPLACE WITH COMPACTED STRUCTURAL FILL					
	5. EARTHQUAKE DESIGN DATA (TANK WALLS)				8. FOUNDATION WALLS SHALL HAVE ADEQUATE TEMPORARY BRACING INSTALLED BY THE CONTRACTOR BEFORE BACKFILL IS PLACED AGAINST THEM. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED.					
	A. SEISMIC IMPORTANCE FACTOR, Ie 1.25				9. AVOID DAMAGE TO UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO, WATER MAINS, SANITARY SEWERS AND BURIED CABLES WHICH MIGHT EXTEND ACROSS OR ADJOIN SITE.					
	B. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETER, Ss 30.8%									
	C. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETER, S1 8.0%									
	D. SITE CLASS D									
	E. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, Sds 0.319									
	F. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, Sd1 0.128									
	G. SEISMIC DESIGN CATEGORY B									
	H. STRUCTURAL SYSTEM									
	1.) VERTICAL ELEMENT TYPE BEARING WALL SYSTEM									
	2.) BASIC SEISMIC FORCE-RESISTING SYSTEM TYPE ORDINARY REINFORCED CONCRETE SHEAR WALLS									
	3.) RESPONSE MODIFICATION FACTOR, R 4.0									
	4.) SEISMIC RESPONSE COEFFICIENT (ASD), Cs 0.070									
	5.) DESIGN BASE SHEAR (ASD), 1.0E 0.070W									
E	J. ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE									
F										

A.F.F.	ABOVE FINISHED FLOOR	LLV	LONG LEG VERTICAL
A.O.R.	ARCHITECT OF RECORD	LONG.	LONGITUDINAL
A.R.	ANCHOR RODS	LSH	LONG SIDE HORIZONTAL
AESS	ARCHITECTURALLY EXPOSED	LSL	LONG SLOT
	STRUCTURAL STEEL	LSV	LONG SIDE VERTICAL
ARCH.	ARCHITECTURAL	MAX.	MAXIMUM
B.L.	BLOCK LINTEL	MECH.	MECHANICAL
B.O.D.	BOTTOM OF DECK	MEP	MECHANICAL/ELECTRICAL/PLUMBING
B.O.S.	BOTTOM OF STEEL	MFR.	MANUFACTURER
B.P.	BASE PLATE	MIN.	MINIMUM
BAL.	BALANCE	MISC.	MISCELLANEOUS
BLDG.	BUILDING	MTL.	METAL
BRG.	BEARING	N.I.C.	NOT IN CONTRACT
C.J.	CONTRACTION JOINT	N.S.	NEAR SIDE
C.L.	CENTER LINE	N.T.S.	NOT TO SCALE
CFMF	COLD FORMED METAL FRAMING	O.C.	ON CENTER
CLR.	CLEAR	O.D.	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	O.F.	OPPOSITE FACE
COL.	COLUMN	O.H.	OPPOSITE HAND
CONC.	CONCRETE	OPP.	OPPOSITE
CONST.	CONSTRUCTION	P.A.F.	POWER/POWDER ACTUATED FASTENER
CONT.	CONTINUOUS	PCF	POUNDS PER CUBIC FOOT
D.B.A.	DEFORMED BAR ANCHOR	PEMB	PRE-ENGINEERED METAL BUILDING
D.B.E.	DECK BEARING ELEVATION	PL	PLATE
DIA.	DIAMETER	PLF	POUNDS PER LINEAR FOOT
DTL.	DETAIL	PLUMB.	PLUMBING
DWG.	DRAWING	PSF	POUNDS PER SQUARE FOOT
E.F.	EACH FACE	PSI	POUNDS PER SQUARE INCH
E.J.	EXPANSION JOINT	R	RADIUS
E.O.D.	EDGE OF DECK	R.O.	ROUGH OPENING
E.O.R.	ENGINEER OF RECORD	RE:	REFER
E.O.S.	EDGE OF SLAB	REINF.	REINFORCING
E.W.	EACH WAY	REQD.	REQUIRED
EA.	EACH	RTU	ROOF TOP UNIT
EIFS	EXTERIOR INSULATION AND FINISH	S.D.S.	SELF-DRILLING SCREWS
	SYSTEM	S.S.	STAINLESS STEEL
ELEC.	ELECTRICAL	SCHED.	SCHEDULE
ELEV.	ELEVATION	SIM.	SIMILAR
EQ.	EQUAL	SP.	SPACE/SPACING
EXIST.	EXISTING	SPECS.	SPECIFICATIONS
F.F.E.	FINISHED FLOOR ELEVATION	SSL	SHORT SLOT
F.S.	FAR SIDE	STD.	STANDARD
F.V.	FIELD VERIFY	STL.	STEEL
FDN.	FOUNDATION	T&B	TOP AND BOTTOM
FT.	FOOT/FEET	T.O.	TOP OF
FTG.	FOOTING	T.O.C.	TOP OF CONCRETE
G.B.	GRADE BEAM	T.O.M.	TOP OF MASONRY
G.C.	GENERAL CONTRACTOR	T.O.P.	TOP OF PIER
GA.	GAGE	T.O.S.	TOP OF STEEL
GALV.	GALVANIZED	T.O.W.	TOP OF WALL
H.S.A.	HEADED STUD ANCHOR	TRANS.	TRANSVERSE
HORIZ.	HORIZONTAL	TYP.	TYPICAL
I.F.	INSIDE FACE	U.N.O.	UNLESS NOTED OTHERWISE
IN.	INCH/INCHES	VERT.	VERTICAL
INFO.	INFORMATION	W.P.	WORK POINT
J.B.E.	JOIST BEARING ELEVATION	W.S.	WATERSTOP
JT.	JOINT	W.W.R.	WELDED WIRE REINFORCEMENT
K	UNIT OF 1,000 POUNDS (KIP)	WT.	WEIGHT
KSI	KIPS PER SQUARE INCH		
LBS.	POUNDS		
LLH	LONG LEG HORIZONTAL		

1. A REPRESENTATIVE OF THE ENGINEER OF RECORD WILL PERFORM THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTION REQUIRED OF THE BUILDING OFFICIAL OR THE SPECIAL INSPECTOR.
2. A PRE-CONSTRUCTION MEETING SHALL BE HELD AND ATTENDED BY AQUAWORKS DBO, STRUCTURAL ENGINEER OF RECORD, GENERAL CONTRACTOR, SUBCONTRACTORS, AND SPECIAL INSPECTORS.
3. THE GENERAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT LEAST 48 HOURS PRIOR TO COMPLETING CONSTRUCTION OPERATIONS THAT REQUIRE STRUCTURAL OBSERVATION (BY CALLING (303) 350-1690 TO SCHEDULE A SITE VISIT.)
4. AT A MINIMUM, THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER:
 - A. AFTER INSTALLATION OF CONCRETE WALL DOWELS AND BEFORE FOUNDATION CONCRETE PLACEMENT.
5. AT THE CONCLUSION OF THE WORK INCLUDED IN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.

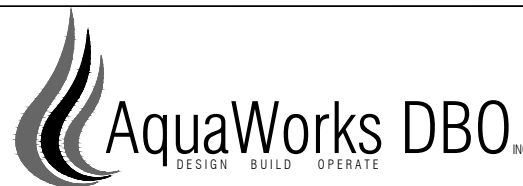


1. CONDUIT/PIPE SHALL BE FABRICATED AND INSTALLED SUCH THAT CUTTING, BENDING, OR DISPLACEMENT OF REINF. WILL NOT BE REQUIRED.
2. CONDUIT/PIPE SHALL NOT BE PLACED WITHIN 9" OF CONTAINER SUPPORT
3. DO NOT STACK CONDUIT VERTICALLY IN SLAB.
4. CONDUIT/PIPE SHALL BE SUPPORTED AND SECURED TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
5. ALUMINUM CONDUIT/PIPE NOT PERMITTED.
6. CONDUIT/PIPE SHALL BE MIN. 3/4" CLR. TO REINF.

SCALE: NTS

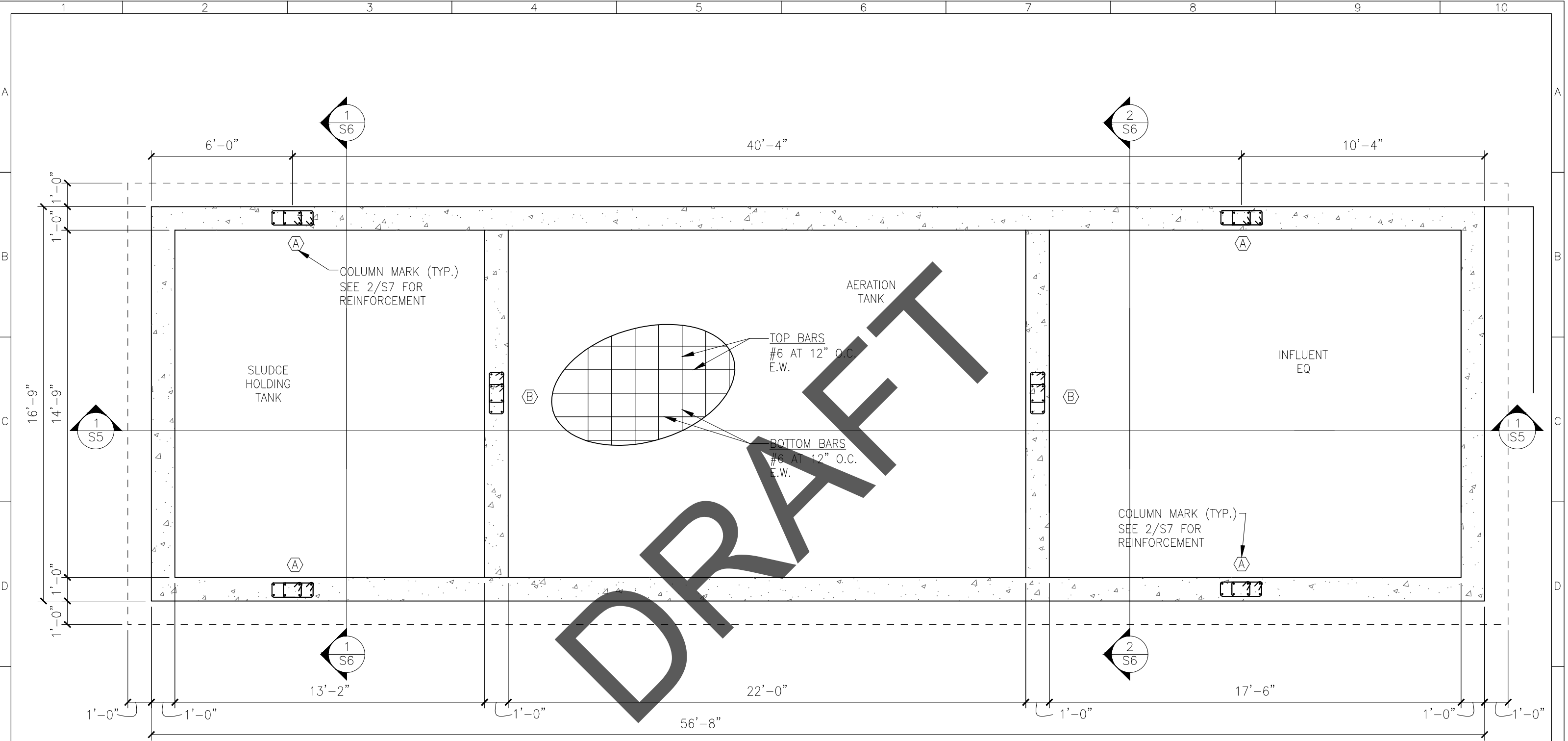


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ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

PROJECT NUMBER:	SCALE:	SHEET:
#2479	N.T.S.	S2



1
S3

CONCRETE TANK FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

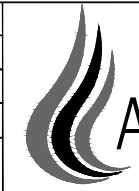
	FOUNDATION PLAN NOTES:
1.	18" CONCRETE SLAB REINFORCED AS SHOWN ON PLAN. PLACE SLAB OVER 6" BASE OF WELL GRADED GRANULAR FILL, OVER NEWLY PLACED, COMPACTED FILL (REMOVE ALL CLAYS PRIOR TO FILL PLACEMENT). PREPARE SUBGRADE PER GEOTECHNICAL RECOMMENDATIONS FROM REPORT REFERENCED ON SHEET S1.
2.	EXTERIOR GRADE ELEVATION VARIES, REF CIVIL. SLOPE BOTTOM OF FOOTING TO MAINTAIN MINIMUM BEARING DEPTH.
3.	REFERENCE PROCESS PLANS AND SECTIONS FOR SIZE AND LOCATIONS OF PENETRATIONS, TYP.



wallace
design
collective

wallace design collective, pc
structural - civil - landscape - survey
9800 pyramid court, suite 350
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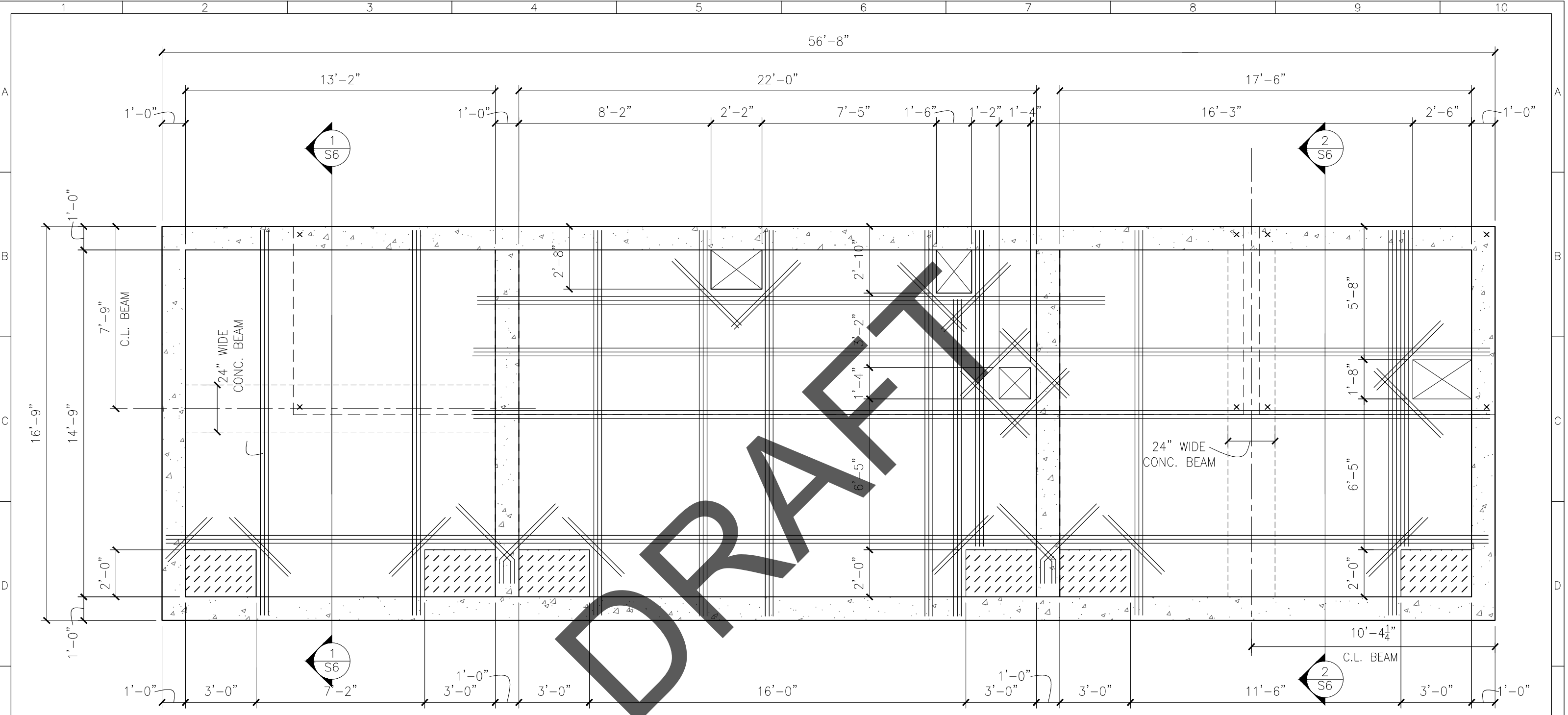
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AquaWorks DBO
DESIGN BUILD OPERATE

PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO			SHEET TITLE: CONCRETE TANK FOUNDATION PLAN		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915			PROJECT NUMBER: #2479	SCALE: 1/4" = 1'	SHEET: S3







wallace
design
collective

wallace design collective, pc
structural · civil · landscape · survey
9800 pyramid court, suite 350
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303.350.1690 · 800.364.5858

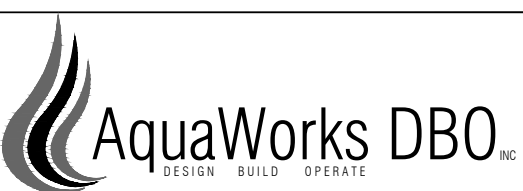
CONCRETE TANK LID PLAN

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

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CONCRETE TANK LID PLAN NOTES:

- 12" CONCRETE SLAB REINFORCED AS SHOWN ON PLAN.
- EXTERIOR GRADE ELEVATION VARIES, REF CIVIL.
- REFERENCE PROCESS PLANS AND SECTIONS FOR SIZE AND LOCATIONS OF PENETRATIONS, TYP.
- REF. 7-S7 AND 8-S7 FOR TYPICAL WALL PIPE SLEEVE OR OTHER WALL OPENING DETAILS. RE: PROCESS PLANS FOR LOCATIONS
- SPACING OF ADDITIONAL BARS AROUND OPENINGS SHALL BE MINIMUM OF 2".
- EXTEND ALL ADDITIONAL BARS TO NEXT INTERIOR WALL CL OR DEVELOPMENT LENGTH PER 6/S7 (WHICHEVER IS LONGER)
- PROVIDE 2" CLR FROM REINF. EA SIDE OF OPNG. PER 3/S7
- REF DETAIL 9/S7 FOR EMBEDS CAST INTO CONCRETE LID UNDER CONTAINER LEG LOCATIONS



PROJECT: WWTP IMPROVEMENT PROJECT
COMMUNITY OF PHIPPSBURG
ROUTT COUNTY, COLORADO

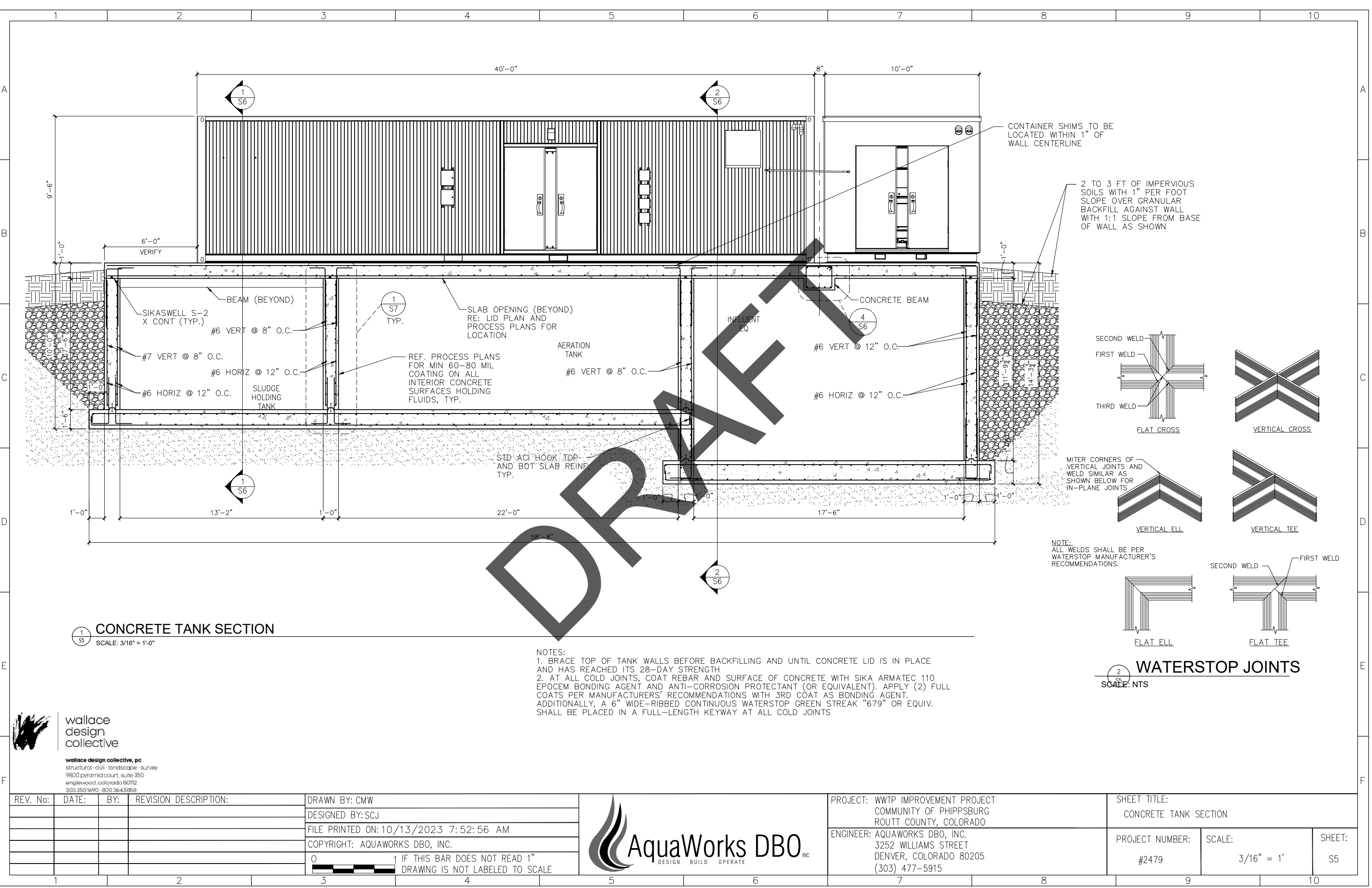
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE:
CONCRETE TANK LID PLAN

PROJECT NUMBER: #2479

SCALE: 1/4" = 1'

SHEET: S4



1 S5 CONCRETE TANK SECTION

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

- NOTES:
- 1. BRACE TOP OF TANK WALLS BEFORE BACKFILLING AND UNTIL CONCRETE LID IS IN PLACE AND HAS REACHED ITS 28-DAY STRENGTH
 - 2. AT ALL COLD JOINTS, COAT REBAR AND SURFACE OF CONCRETE WITH SIKA ARMATEC 110 EPOCEM BONDING AGENT AND ANTI-CORROSION PROTECTANT (OR EQUIVALENT). APPLY (2) FULL COATS PER MANUFACTURERS' RECOMMENDATIONS WITH 3RD COAT AS BONDING AGENT. ADDITIONALLY, A 6" WIDE-RIBBED CONTINUOUS WATERSTOP GREEN STREAK "679" OR EQUIV. SHALL BE PLACED IN A FULL-LENGTH KEYWAY AT ALL COLD JOINTS

2 S5 WATERSTOP JOINTS

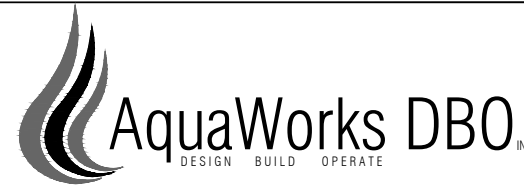
SCALE: NTS



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DESIGN BUILD OPERATE

PROJECT: WWTP IMPROVEMENT PROJECT
COMMUNITY OF PHIPPSBURG
ROUTT COUNTY, COLORADO

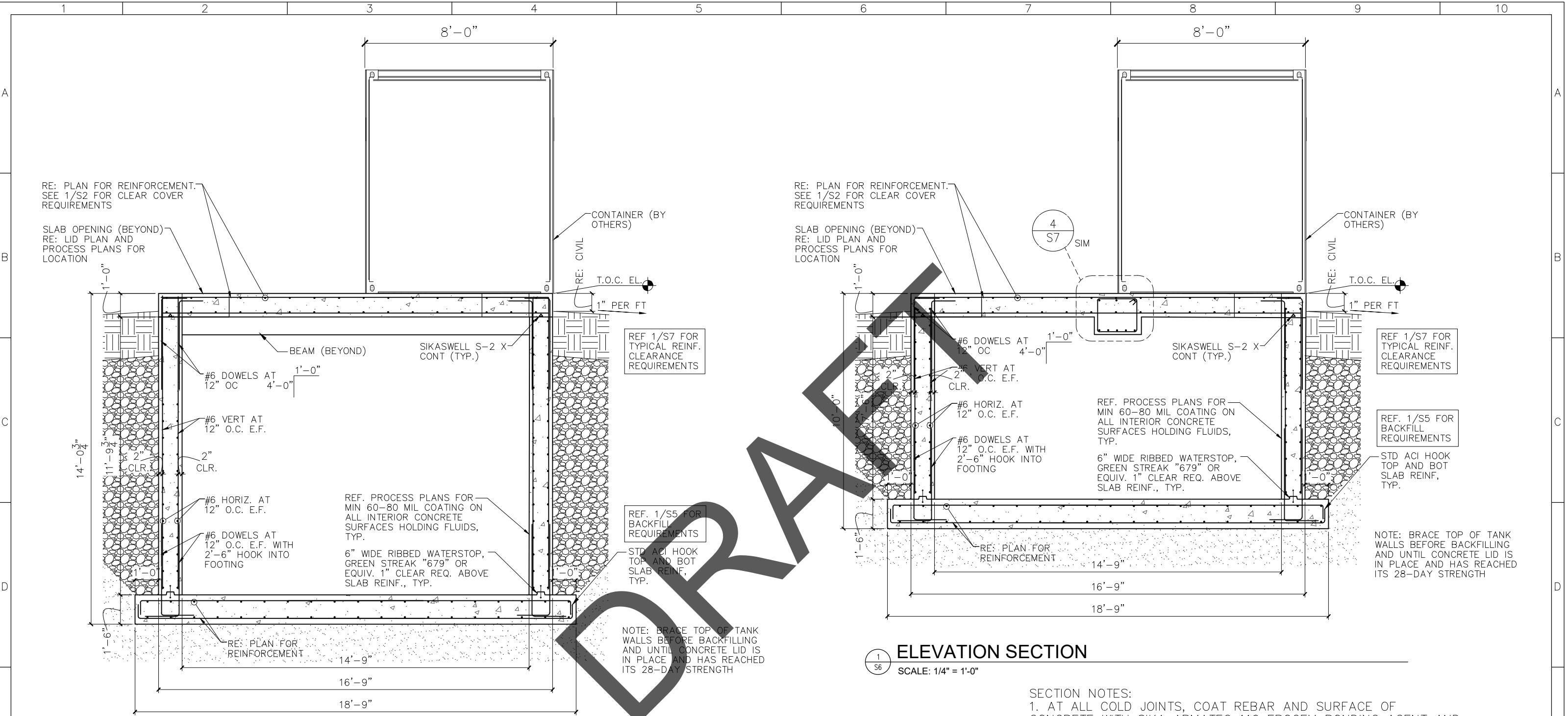
ENGINEER: AQUAWORKS DBO, INC.
3252 WILLIAMS STREET
DENVER, COLORADO 80205
(303) 477-5915

SHEET TITLE:
CONCRETE TANK SECTION

PROJECT NUMBER:
#2479

SCALE:
3/16" = 1'

SHEET:
S5



2
S6
ELEVATION SECTION
SCALE: 1/4" = 1'-0"

1
S6
ELEVATION SECTION
SCALE: 1/4" = 1'-0"

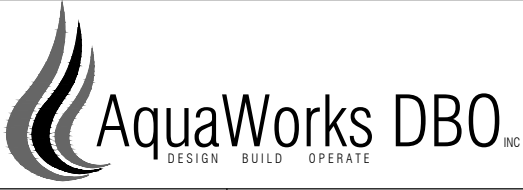
SECTION NOTES:
1. AT ALL COLD JOINTS, COAT REBAR AND SURFACE OF CONCRETE WITH SIKA ARMATEC 110 EPOCEM BONDING AGENT AND ANTI-CORROSION PROTECTANT (OR EQUIVALENT). APPLY (2) FULL COATS PER MANUFACTURERS' RECOMMENDATIONS WITH 3RD COAT AS BONDING AGENT. ADDITIONALLY, A 6" WIDE-RIBBED CONTINUOUS WATERSTOP GREEN STREAK "679" OR EQUIV. SHALL BE PLACED IN A FULL-LENGTH KEYWAY AT ALL COLD JOINTS



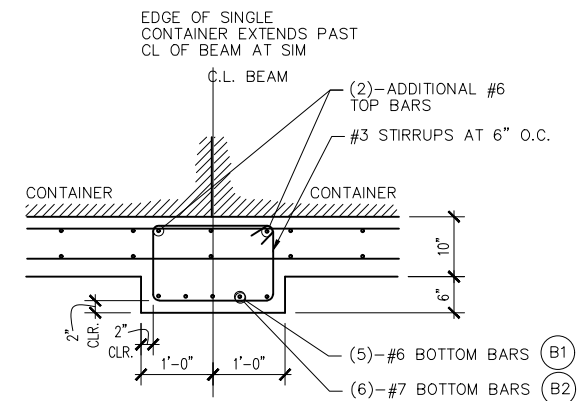
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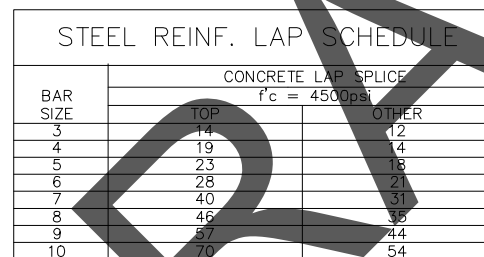
PROJECT: WWTP IMPROVEMENT PROJECT		SHEET TITLE: CONCRETE TANK SECTION		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: 1/4" = 1'	SHEET: S6



4
S7

DETAIL (LID BEAM)

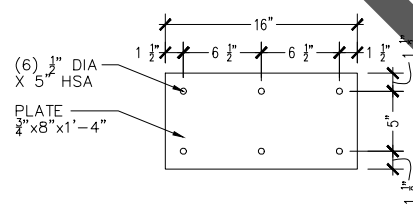
SCALE: 3/8" = 1'-0"



6
S7

LAP

NO SCALE

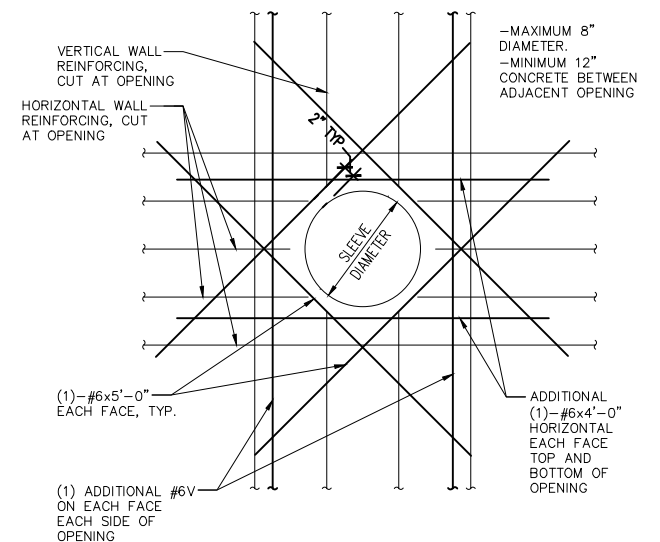


EMBED TYPE 2
(AT INSIDE CORNER LEGS)

9
S7

LID E

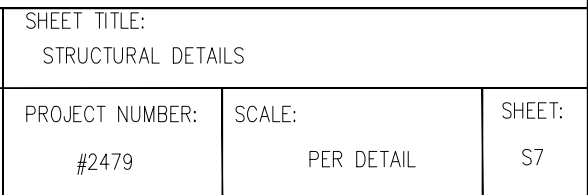
NO SCALE



8
S7

OPENING IN TANK WALL

NO SCALE



ONE-LINE

 PANELBOARD

 WEATHERHEAD

 DRY-TYPE TRANSFORMER

 PADMOUNT UTILITY TRANSFORMER

 SHORT CIRCUIT VALUE

 WIRE SIZE

 METER AND CTs

 FUSED DISCONNECT

 NON-FUSED DISCONNECT

 MOTOR

 CIRCUIT BREAKER

 FUSED SWITCH

 MAGNETIC STARTER/CONTACTOR

 GENERATOR

 GROUND

POWER LEGEND

 CEILING MOUNTED JUNCTION BOX

 WALL MOUNTED JUNCTION BOX

 FLOOR MOUNTED JUNCTION BOX

 WIREMOLD SURFACE RACEWAY

 NEMA-4X GROUND FAULT RECEPTACLE

 DUPLEX RECEPTACLE

 FOURPLEX RECEPTACLE

 ABOVE COUNTER MOUNTED RECEPTACLE

 GROUND FAULT RECEPTACLE

 CEILING MOUNTED RECEPTACLE

 FLOOR MOUNTED DUPLEX RECEPTACLE

 FLOOR MOUNTED FOURPLEX RECEPTACLE

 SPECIAL RECEPTACLE

 FLOOR MOUNTED SPECIAL RECEPTACLE

 TELEPHONE OUTLET

 WALL MOUNTED TELEPHONE OUTLET

 FLOOR MOUNTED TELEPHONE OUTLET

 COMBINATION VOICE/DATA

 TELEVISION OUTLET

CONTROLS LEGEND

 SOLENOID VALVE

 METER OR FLOW METER

 TRANSMITTER

 LEVEL METER

 GLOBE VALVE



PROJECT GENERAL NOTES:

- THE PROCESS BUILDING IS FACTORY DESIGNED, BUILT, TESTED AND DELIVERED TO THE SITE FULLY ASSEMBLED BY NEWTERRA. ALL WORK INSTALLED BY NEWTERRA SHALL MEET 2020 NEC INSPECTION CODES.
- THE CONTRACTOR SHALL WORK WITH NEWTERRA MANUFACTURING TO PROVIDE AND INSTALL ALL ELECTRICAL AND CONTROLS COMPLETE WITH ASSOCIATED CIRCUITRY NECESSARY TO PERFORM THE INTENDED FUNCTIONS OF THE CONTRACT DOCUMENTS. ANY MATERIALS, DEVICES AND CIRCUITRY NOT SPECIFICALLY INDICATED BUT NECESSARY TO PERFORM INTENDED FUNCTIONS AND CORRECT OPERATION SHALL BE PROVIDED AND INSTALLED.
- ELECTRICAL INSTALLATION OF POWER AND CONTROLS ON EQUIPMENT SKIDS SHALL BE BY THE MANUFACTURER.
- ALL EQUIPMENT, DEVICE AND RACEWAY DIMENSIONS, PLANS AND ELEVATIONS INDICATED ON THE DRAWINGS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD FOR FINAL INSTALLATION.
- ALL OVERCURRENT DEVICES (CIRCUIT BREAKERS, FUSES, OVERLOADS, ETC.) SIZES INDICATED ARE ESTIMATED. THE CONTRACTOR SHALL PROVIDE AND INSTALL OVERCURRENT DEVICES SIZED AS REQUIRED BY THE NEC FOR THE CONNECTED LOAD AND ACTUAL EQUIPMENT RATING. ALL OVERCURRENT DEVICES SIZES SHALL BE APPROVED BY THE ENGINEER.

SITE WORK:

- ALL WORK SHALL BE COORDINATED WITH OTHER UNDER GROUND UTILITIES.
- THE CONTRACTOR SHALL FOLLOW TRENCH DETAILS FOR CONDUIT AND WIRE.

GENERATOR PAD:

- SIZE PAD TO EXTEND A MINIMUM OF 18" PAST THE EDGE OF GENERATOR ENCLOSURE PROVIDED. COMPACT SOIL UNDER GENERATOR PADS TO 95% STANDARD PROCTOR. THE FINAL PAD THICKNESS IS A MINIMUM OF 6".
- STEEL REINFORCING BARS: ASTM A 615/A 615M, GRADE 60 (GRADE 420), DEFORMED. ALL REINFORCING STEEL SHALL BE UNIFORMLY TIED TO REINFORCING STEEL TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT WITH BOLSTERS, CHAIRS, OR SPACERS.
- ALL CONCRETE SHALL BE AIR PROPORTION NORMAL-WEIGHT CONCRETE MIXTURE AS FOLLOWS:
 - MINIMUM COMPRESSIVE STRENGTH: 4000 PSI AT 28 DAYS.
 - MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO: 0.45.
 - SLUMP LIMIT: 5 INCHES, PLUS OR MINUS 1 INCH.
 - AIR CONTENT: 6 PERCENT, PLUS OR MINUS 1.5 PERCENT AT POINT OF DELIVERY FOR 3/4-INCH NOMINAL MAXIMUM AGGREGATE SIZE.
- PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. COMPLY WITH ACI 306.1 FOR COLD-WEATHER PROTECTION AND ACI 301 FOR HOT-WEATHER PROTECTION DURING CURING.

SITE (POWER) TRENCH DETAIL:

- FOR THE CONDUIT TRENCHES TO THE INSTALL SCHEDULE 40 PVC CONDUIT WITH RIGID ELBOWS. REBAR STAKE AND TIE THE CONDUIT AT 5' INTERVALS ABOVE THE BOTTOM OF THE TRENCH AND FLOW FILL 8" WITH CONCRETE SLURRY.

COORDINATE TRENCH WIDTH WITH OWNER AND WHERE NEEDED CONDUITS CAN BE STACKED TO MINIMIZE TRENCH WIDTH

SERVICE:

- ALL WORK SHALL CONFORM TO 2020 NATIONAL ELECTRIC CODE ALONG WITH ANY LOCAL BUILDING CODES.
- ALL WORK INVOLVING THE UTILITY SHALL BE REVIEWED AND CONFIRMED, PRIOR TO ANY INSTALLATION. ALL WORK TO CONFORM TO YAMPA VALLEY ELECTRIC ASSOCIATION REQUIREMENTS.
- ALL FEEDERS ARE TO BE COPPER.
- PANEL SCHEDULES SHALL BE UPDATED AND TYPED PRIOR TO COMPLETION OF THE PROJECT.
- THE E.C. SHALL SUBMIT ELECTRICAL DISTRIBUTION GEAR, AND GENERATOR SHOP DRAWINGS TO THE OWNER AND ENGINEER FOR APPROVAL PRIOR TO FINAL PURCHASE.
- THE SERVICE EQUIPMENT SHALL BE BUILT AT THE EDGE OF THE TANK PAD WITH A RACK AS SHOWN OR MOUNTED ON THE CONTAINER EXTERIOR PER OWNER PREFERENCE.

STAND-BY GENERATOR AND ATS:

- THE GENERATOR SHALL BE INSTALLED WITH ALL CONNECTIONS, CONDUCTORS AND CONDUITS PER THE CODE.
- REFER TO GENERATOR SPECIFICATION TABLE FOR DETAILS ON THE PROJECT SPECIFIC GENERATOR.
- THE CONTRACTOR SHALL PROVIDE A CONCRETE HOUSEKEEPING PAD PER DETAIL.
- SUPPLY AUTOMATIC TRANSFER SWITCH IN THE AMPERAGE AND VOLTAGE SPECIFIED. SWITCH SHALL BE (3) POLE WITH A SOLID NEUTRAL CONNECTION.
- GROUND GENERATOR PER NEC 250-35(B) FOR A NON-SEPARATELY DERIVED SYSTEM.
- CONTROL CONDUCTORS FROM THE GENERATOR TO THE REMOTE CONTROL PANEL AND ATS SWITCH SHALL BE VERIFIED FROM THE MANUFACTURER AND INSTALLED PER CODE.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR THE GENERATOR AND TRANSFER SWITCHES TO THE ENGINEER PRIOR TO PURCHASE.
- THE CONTRACTOR IS RESPONSIBLE TO TEST AND SHOW PROPER OPERATION OF THE STANDBY SYSTEM TO THE OWNER.

GROUNDING:

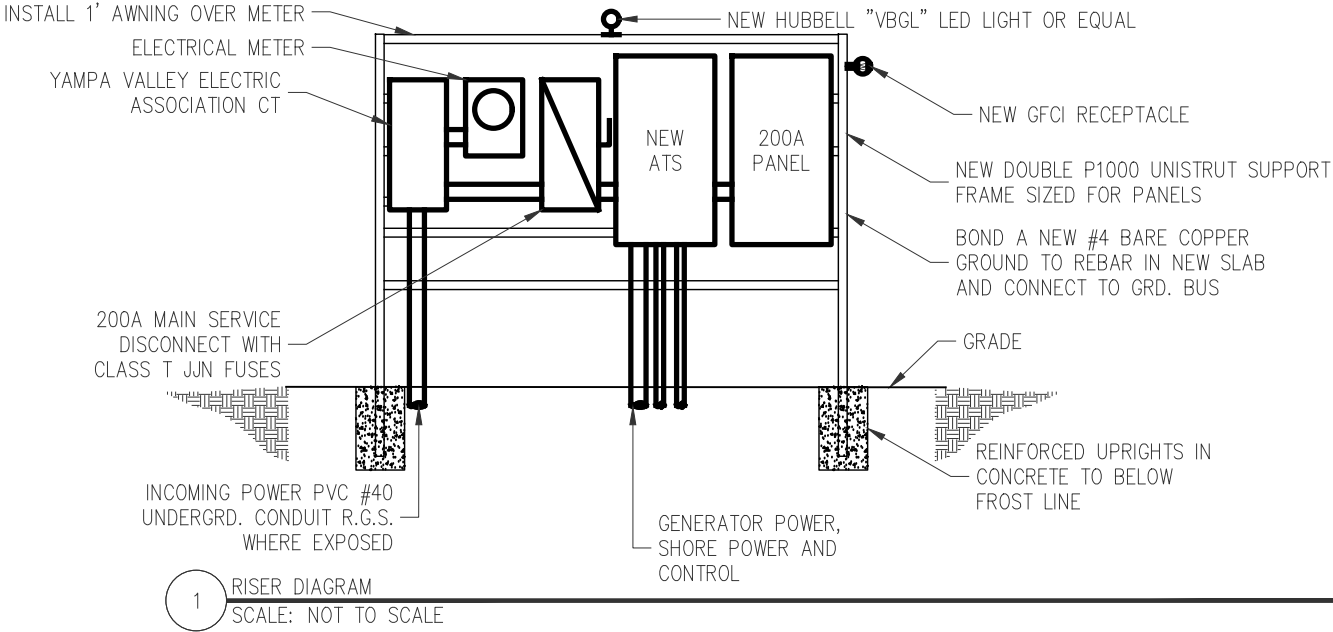
- PROVIDE NEW MAIN SERVICE GROUNDING WITH THE FOLLOWING:
 - A WALL MOUNTED 2" X 8" X 1/4" GROUND BAR MOUNTED ON WALL BY MAIN SERVICE BOND ALL CONDUCTORS HERE.
 - 2- 5/8" GROUND RODS AT ENTRANCE PER NEC.
 - INSTALL 20' OF BARE GROUND WIRE IN THE TRENCH TO THE GENERATOR AND COVER WITH CONCRETE.
 - BOND BUILDING STEEL OF NEW CONTAINERIZED PLANT.

DETAIL NOTES ALL SHEETS:

- THE CONTRACTOR SHALL VERIFY THE NUMBER OF CONTROL CABLES BETWEEN THE GENERATOR AND ATS SWITCH. THERE WILL BE A SET OF GENERATOR START CONTACTS ALONG WITH A COMMUNICATIONS CONNECTION FOR GENERATOR ALARM SIGNALS TO THE SCADA SYSTEM. COORDINATE WITH NEWTERRA ON CONNECTION TO SCADA.

CONTROL SYSTEM WORK BY ELECTRICAL:

- ALL CONTROL DEVICES, CABLING AND CONNECTIONS INSIDE THE BUILDING WILL BE INSTALLED BY THE MANUFACTURER.
- ALL CONTROL DEVICES AND FACTORY SUPPLIED CABLING FOR THE TANKS SHALL BE SUPPLIED BY NEWTERRA.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL CONTROL CONDUITS BETWEEN THE INTERIOR PANELS AND THE TANKS.
- THE E.C. SHALL SUPPLY THE CONTROL CABLING FROM THE BUILDING TO THE TANKS AS LISTED IN THE NEWTERRA SUBMITTAL AND THE SCHEDULE. EC TO PROVIDE CABLING BETWEEN CONTAINERS PER THE NEWTERRA ONE-LINE.



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PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: ELECTRICAL NOTES & DETAILS		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: NOT TO SCALE	SHEET: E1

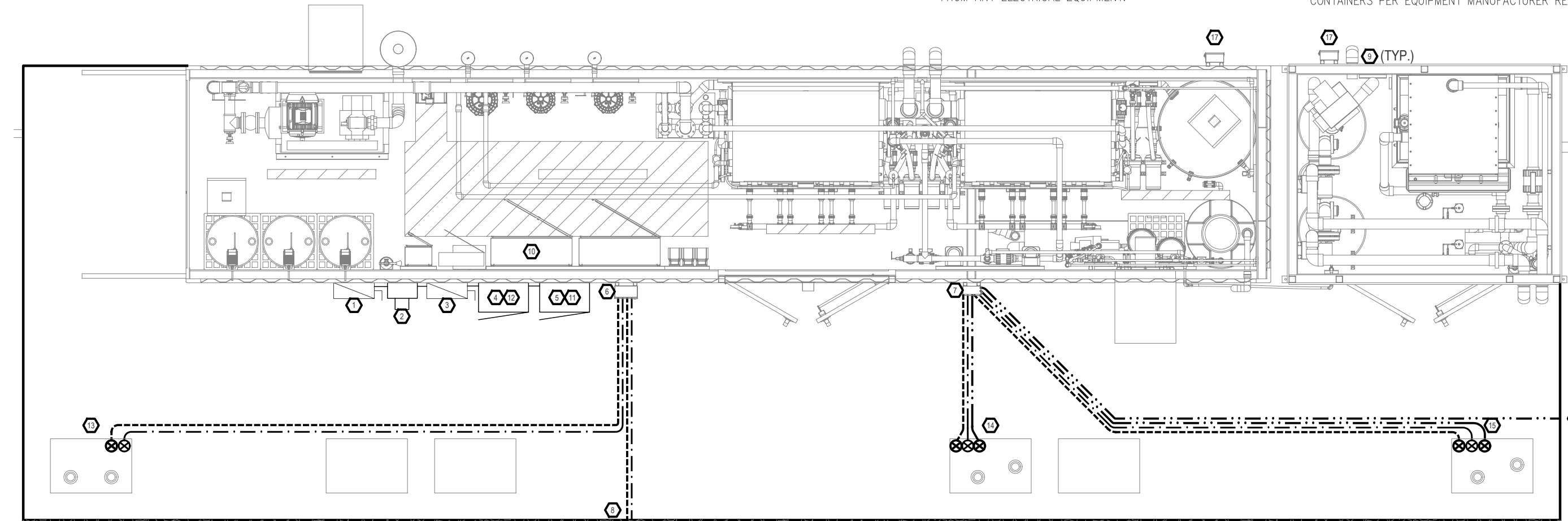


GENERAL NOTES:

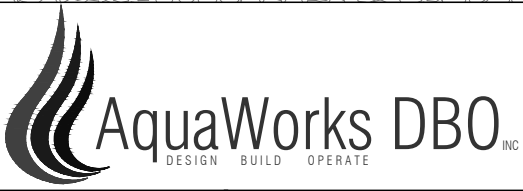
- A. ALL CONDUCTORS SIZING IS BASED ON COPPER ONLY.
- B. EC TO COORDINATE WITH YAMPA VALLEY ELECTRIC ASSOCIATION TO VERIFY SIZE AND AVAILABLE FAULT CURRENT FOR THE UTILITY TRANSFORMER. IF ANY VALUES EXCEED THE ONES LISTED ON THE SHORT CIRCUIT TABLE, CONTACT ENGINEER IMMEDIATELY TO REVISE DESIGN AND CALCULATIONS.
- C. VOLTAGE DROP IS TO BE TESTED AND IF NEEDED, UPSIZED BY THE EC.
- D. SEE INSTRUMENTATION TABLE ON E3 FOR POWER CONNECTION REQUIREMENTS, COMMUNICATION CABLE TYPES, CONDUIT SIZES, JUNCTION BOX ROUTING, HAZARDOUS AREA CLASSIFICATIONS AND TERMINATION INFORMATION
- E. ALL CONDUIT PATHWAYS SHOWN IN THIS DRAWING ARE DIAGRAMMATIC ONLY. EC TO DETERMINE THE BEST ROUTING FOLLOWING THE INSTRUMENTATION SCHEDULE ON PAGE E3
- F. TRANSFORMER ASSUMED TO BE NO FURTHER THEN 50' AWAY. IF THERE IS A DISCREPANCY, CONTACT ENGINEER FOR RECALCULATIONS

KEYED NOTES:

1. 200A YAMPA VALLEY ELECTRIC ASSOCIATION ASSOCIATION 600V NEMA 3R CT.
2. 200A YAMPA VALLEY ELECTRIC ASSOCIATION ASSOCIATION METER.
3. 200A YAMPA VALLEY ELECTRIC ASSOCIATION ASSOCIATION 600V NEMA 3R SERVICE DISCONNECT.
4. 200A, 480/277V, 3PHASE, 4 WIRE, NEMA 3R, AUTOMATIC TRANSFER SWITCH.
5. 200A, 480/277V, 3PHASE, 4 WIRE, NEMA 3R PANEL.
6. JUNCTION BOXES JB-TNK1, JB-TNK1-DC.
7. JUNCTION BOXES JB-TNK2-CL2, JB-TNK2-IS, JB-TNK2, & JB-TNK2-DC.
8. U.G. POWER AND CONTROL CONDUITS FOR GENERATOR. SEE CIVIL PLANS FOR EXACT LOCATIONS. GENERATOR IS ABOUT 60' NORTH OF THE PLANT. ATS TO RECEIVE 120V AND 24VDC CONNECTIONS.
9. EXTEND VENTILATION WHEN NEEDED TO ENSURE IT IS 3' AWAY FROM ANY ELECTRICAL EQUIPMENT.
10. PROPOSED LOCATION OF 120/208V 3PHASE PANEL. PANEL TO SUPPLY GENERATOR AND RACK'S SMALL LOADS.
11. MAINTENANCE LED LIGHT & GFI ON RACK 120V FROM NEW 120/208V PANEL.
12. COORDINATE OVERHEAD ROUTE FOR INCOMING 200A FEED FROM TRANSFER SWITCH.
13. SLUDGE HOLDING TANK TNK-0901. TANK TO RECEIVE 480V CONNECTIONS AND 24VDC CONNECTIONS. SEE E3 FOR EQUIPMENT CONNECTION SCHEDULE.
14. AERATION TANK TNK-0501. TANK TO RECEIVE 480V CONNECTIONS, CLASS 2 CONNECTIONS AND 24VDC. SEE E3 FOR EQUIPMENT CONNECTION SCHEDULE.
15. EQUALIZATION TANK TNK-0301. TANK TO RECEIVE 480V CONNECTIONS, 24VDC, AND INTRINSICALLY SAFE/CLASS 2 CONNECTIONS. SEE E3 FOR EQUIPMENT CONNECTION SCHEDULE.
16. INSTALL ULTRASONIC TRANSDUCER AT EXISTING FLUME (INTRINSICALLY SAFE.)
17. PROVIDE ELECTRICAL CONNECTIONS BETWEEN THE TWO CONTAINERS PER EQUIPMENT MANUFACTURER REQUIREMENTS.



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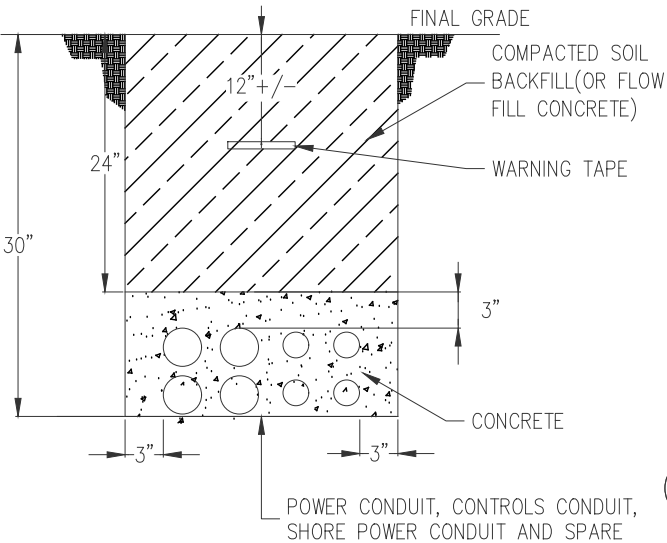


PROJECT: WWTP IMPROVEMENT PROJECT COMMUNITY OF PHIPPSBURG ROUTT COUNTY, COLORADO		SHEET TITLE: ELECTRICAL LAYOUT		
ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: NOT TO SCALE	SHEET: E2

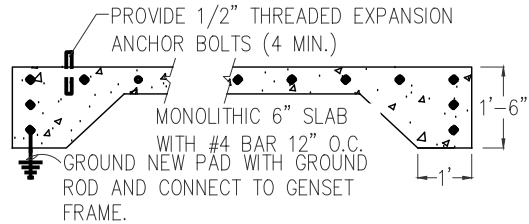
TANK POWER & INSTRUMENT CONNECTION											
TANK #	TAG	480V	120V	24VDC	IS/CL2	ITEM	CABLE IN CONDUIT	AREA CLASSIFICATION	CONNECTION	TERMINATION	
301	P-0301	YES	-	-	-	Equalization Tank Pump #1 (Duty)	3-#12, 1-#12, -3/4" Rigid	C1, Div1 Seal-Off	JB-TNK2	Plant MPP	
	P-0302	YES	-	-	-	Equalization Tank Pump #2 (Standby)	3-#12, 1-#12, -3/4" Rigid				
	P-0301-STAT	-	-	YES	-	Equalization Tank Pump #1 Status	Separate 1" Conduits for all connections. Verify the Qty of #16, pairs of #16 STP, & 24Vdc, and other pump control cables		JB-TNK2-DC	Plant MCP	
	P-0302-STAT	-	-	YES	-	Equalization Tank Pump #2 Status					
	LT-301	-	-	-	YES	Level Transmitter					
	LALL-301	-	-	-	YES	Level Alarm Low Low					
	LSLL-301	-	-	-	YES	Level Switch High High			JB-TNK2-IS		
LAHH-301	-	-	-	YES	Level Alarm High High						
LSHH-301	-	-	-	YES	Level Switch High High						
501	P-0501	YES	-	-	-	Aeration Tank Pump #1 (Duty)	3-#12, 1-#12, -3/4" Rigid	General Purpose	JB-TNK2	Plant MPP	
	P-0502	YES	-	-	-	Aeration Tank Pump #2 (Standby)	3-#12, 1-#12, -3/4" Rigid				
	P-0501-STAT	-	-	YES	-	Aeration Tank Pump #1 Status	Separate 1" Conduits for all connections. Verify the Qty of #16, and other pump sensor cables		TB-TNK2-DC	Plant MCP	
	P-0502-STAT	-	-	YES	-	Aeration Tank Pump #2 Status					
	PHA-0501	-	-	YES	-	pH Transmitter					
	PH-0501	-	-	YES	-	pH Transmitter Alarm					
	DOAL-0501	-	-	YES	-	Dissolved Oxygen Transmitter Alarm					
	DO-0501	-	-	YES	-	Dissolved Oxygen Transmitter					
	LAHH-0501	-	-	-	YES	Level Alarm High High					
	LSHH-0501	-	-	-	YES	Level Switch High High					
	LALL-0501	-	-	-	YES	Level Alarm Low Low			JB-TNK2-CL2		
LSLL-0501	-	-	-	YES	Level Switch Low Low						
LT-0501	-	-	-	YES	Level Transmitter						
901	P-0901	YES	-	-	-	Activated Sludge Decant Pump #1 (Duty)	3-#12, 1-#12, -3/4" Rigid	General Purpose	JB-TNK1	Plant MPP	
	P-0902	YES	-	-	-	Activated Sludge Decant Pump #2 (Standby)	3-#12, 1-#12, -3/4" Rigid				
	LT-0901	-	-	YES	-	Level Transmitter	Separate 1" Conduits for all connections. Verify the Qty of #16, pairs of #16 STP, & other sensor cables		JB-TNK1-DC	Plant MCP	
	LALL-0902	-	-	YES	-	Level Alarm Low Low					
	LSLL-0901	-	-	YES	-	Level Switch Low Low					
	LAHH-0902	-	-	YES	-	Level Alarm High High					
	LSHH-0901	-	-	YES	-	Level Switch High High					

WWTP Generator Specifications		
Manufacturer	MTU Rolls-Royce	
Model	4R0120 DS100	
Voltage	480	V
Duty	Standby	
Size (Rated for Site)	100kW/120kVA	kW/kVA
Phase/Wire	3ph/4w	
Engine	OM924LA	
Fuel	diesel	
Site Elevation	6500'	FT
Ambient Temp	95F	Deg
Low Temp Design	-20F	Deg
Max Starting kVA	344skV at 30%	kVA
Maximum Voltage Dip	30%	%
Sound	Steel Weather	
Exhaust	Internal Muffler w/ Top Exhaust	
Emergency Power Off Switch	QTY (2)	
Housing	Level 3	
Width	48	Inches
Length	144.08	Inches
Height	110.78	Inches
UL Base Tank	24 hour	
Approximate Weight	5730	Lbs
Accessories:		
Extreme Cold Weather Kit with Snow		
Block Heater	1500W 120V for (-20F)	
Battery Charger/Heat	10A	
Remote Annunciator	Yes	
Automatic Transfer Switch	Yes	
ATS Cable/Annunciator	TBD	

MAIN SERVICE CALCULATION 480 Volts			
Computed Loads		Demand Factor	
Lighting	0.3 kVA	125% =	0.3 kVA
Receptacle (1st 10 kW)	1.4 kVA	100% =	1.4 kVA
Receptacle (Over 10 kW)	0.0 kVA	50% =	0.0 kVA
Motor Loads	34.5 kVA	100% =	34.5 kVA
Largest Motor	22.5 kVA	125% =	28.1 kVA
Fixed Electric Heat	15.8 kVA	100% =	15.8 kVA
Other Load	5.8 kVA	100% =	5.8 kVA
	TOTAL DEMAND		85.9 kVA
On 200A Service	3Φ Load		103.3 Amps

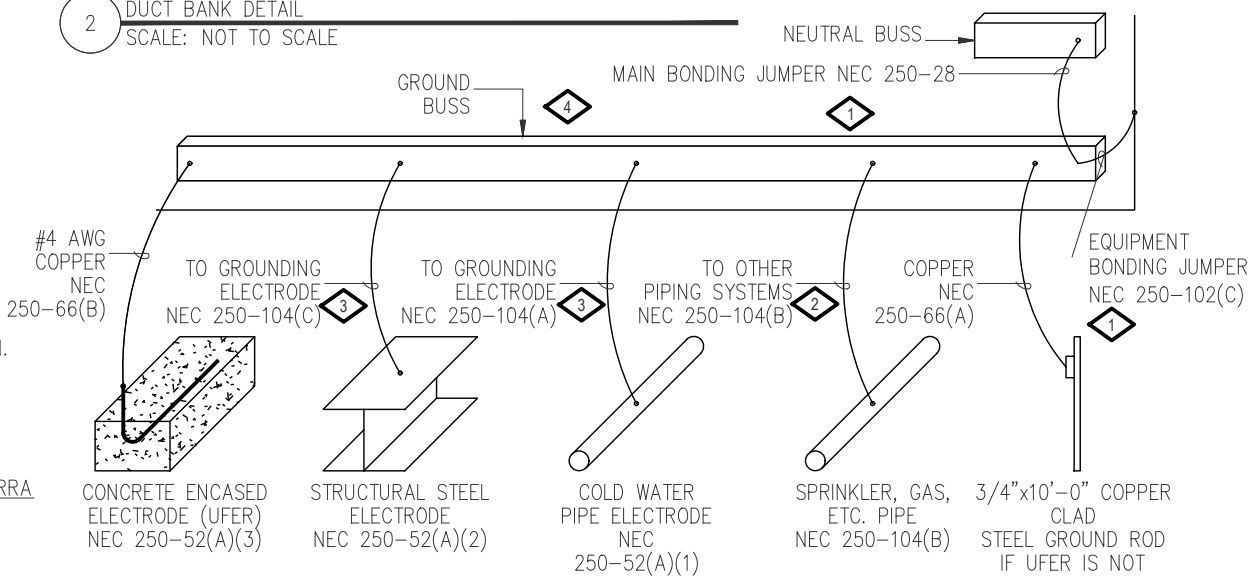


UNDERGROUND CONDUIT SCHEDULE					
Location	Power Size	Power Qty	Control/Data Size	Control/Data Qty	Spare Size Qty
Service Entrance	2"	1			NA NA
Generator	2"	1	1"	2	1-1"



1 GENERATOR PAD DETAIL
SCALE: NOT TO SCALE

2 DUCT BANK DETAIL
SCALE: NOT TO SCALE



- GENERAL NOTES – GROUNDING DETAIL:
1. THE GROUNDING ELECTRODE CONDUCTOR CONNECTION POINT IS NOT NECESSARILY A PHYSICAL CONNECTION. IT IS PROVIDED TO ILLUSTRATE THE INTERCONNECTION OF THE GROUNDING ELECTRODE SYSTEM. IT COULD, FOR EXAMPLE, BE THE WATER PIPE.
 2. NEC REFERENCES ARE FROM 2017 NATIONAL ELECTRIC CODE.
 3. BONDS SHALL BE MECHANICAL TYPE. INTERIOR BONDS MAY BE EXOTHERMIC.
 4. BOND SIZE SHALL MATCH CONDUCTORS SHOWN ON FEEDER SCHEDULE.
 5. GROUND CONDUCTORS SHALL BE STRANDED COPPER INSULATED CABLE, U.N.O.

DETAIL NOTES – GROUNDING DETAIL:

- 1 SIZE PER TABLE 250-66 UP TO 1100 KCMIL. SIZE TO 12.5% OF FEEDERS WHEN OVER 1100 KCMIL. MAIN BONDING JUMPER FOR SERVICES GREATER THAN 1000A, PROVIDED WITH SERVICE ENTRANCE SWITCHGEAR ARE ACCEPTABLE.
- 2 SIZE PER TABLE 250-122. ASSUMES MAIN DEVICE RATING IS EQUAL TO FEEDER SIZE.
- 3 SIZE PER TABLE 250-66.

BONDING CONDUCTOR SIZE				
SES SIZE	MBJ/EBJ 1	PIPING 2	GF 3	ISB 4
100A	6	8	6	4
200A	4	6	4	4
400A	1/0	3	1/0	6
600A	2/0	1	2/0	6
800A	2/0	1/0	2/0	6
1000A	3/0	2/0	3/0	6
1200A	4/0	3/0	3/0	6
1600A	250 KCMIL	4/0	3/0	6
2000A	300 KCMIL	250 KCMIL	3/0	6

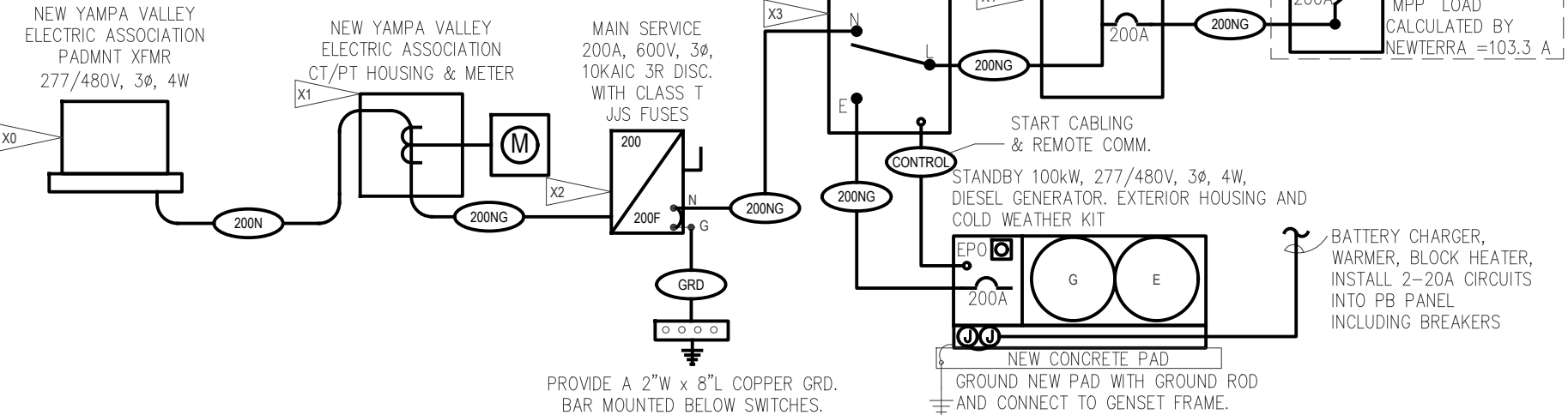
FAULT CURRENT AND VOLTAGE DROP CALCULATION TABLE																				
POINT	LOCATION DESCRIPTION	LENGTH (L) (ft)	LOAD ON FEEDER (Amps)	POWER FACTOR (%)	VOLTAGE (E-1)	PHASE WIRE SIZE	CONDUCTOR MATERIAL	CONDUCTOR TYPE	CONDUIT MATERIAL	VOLTAGE CLASS	INDUCTIVE VOLT LOSS	C VALUE	# OF PARALLEL RUNS	ISC AVAILABLE UPSTREAM (SEE NOTE 5)	ISC AT EQUIP (I=I+ OR I=I-)	% OF VOLTAGE AT START DROP	VOLTAGE AT END (V _E)	% VD	POINT	
F0	XFMR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	F0	
F1	CTMETER	60	200	90%	480	3	3X COPPER	THREE SINGLE CONDUCTORS	NONMAGNETIC	600V	151	13923	1	20,500	15,545	0.4%	480	478	0.4%	F1
F2	DISCONNECT	5	200	90%	480	3	3X COPPER	THREE SINGLE CONDUCTORS	NONMAGNETIC	600V	151	13923	1	15,545	5,000	0.0%	478	478	0.4%	F2
F3	ATS	5	200	90%	480	3	3X COPPER	THREE SINGLE CONDUCTORS	NONMAGNETIC	600V	151	13923	1	5,000	4,968	0.0%	478	478	0.4%	F3
F4	MDP	5	200	90%	480	3	3X COPPER	THREE SINGLE CONDUCTORS	NONMAGNETIC	600V	151	13923	1	4,968	4,936	0.0%	478	478	0.5%	F4
F5	MPP	15	200	90%	480	3	3X COPPER	THREE SINGLE CONDUCTORS	NONMAGNETIC	600V	151	13923	1	4,936	4,843	0.1%	478	477	0.6%	F5

NOTES:

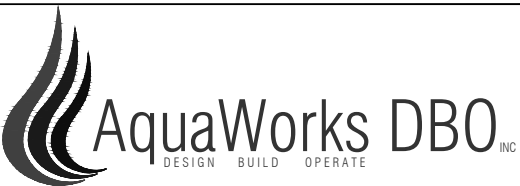
- ALL CALCULATIONS WERE DONE USING BUSSMAN "POINT-TO-POINT" METHOD.
- REFER TO PLANS FOR ASSUMED UTILITY TRANSFORMER SIZE UTILIZED FOR CALCULATIONS.
- TRANSFORMER IMPEDANCES USED IN THE CALCULATIONS WERE TAKEN FROM EATON'S PUBLISHED IMPEDANCES FOR DOE 2016 DRY-TYPE TRANSFORMERS.
- CONDUCTOR LENGTHS INDICATED IN THIS SCHEDULE ARE FOR THE PURPOSES OF FAULT CURRENT CALCULATIONS ONLY. THESE LENGTHS ASSUME WORST CASE SHORTEST DISTANCE CONDITIONS AND SHOULD NOT BE UTILIZED BY THE ELECTRICAL CONTRACTOR FOR BIDDING PURPOSES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ESTIMATING AND MEASURING ACTUAL FIELD CONDITION LENGTHS AS PART OF THE BID PROCESS.

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FEEDER SCHEDULE - COPPER			
KEY/AMPS	FEEDER CONDUIT AND CONDUCTORS		
SERVICE ENTRANCE FEEDERS			
200N	1[4#3/0, 2"C]		
EQUIPMENT FEEDERS			
200NGX	4#3/0, 1#6G, 2-1/2"C	200NG	3#3/0, 1#6G, 2-1/2"C
GROUNDING CONDUCTORS			
NOTES:		ABBREVIATIONS	
1. FEEDER FOR SECONDARY OF SEPARATELY DERIVED SYSTEM (SDS). GROUND SIZE PER NEC TABLE INCLUDED IN ARTICLE 250.66.		MECH	SEE MECH SCHEDULE
2. ALL CONDUCTORS ARE SINGLE CONDUCTOR COPPER THWN UNLESS NOTED OTHERWISE. AMPACITY BASED ON THE NEC TABLE INCLUDED IN ARTICLE 310.		XFMR	SEE XFMR SCHEDULE
3. ALL CONDUITS ARE EMT UNLESS NOTED OTHERWISE, FILL RATIOS BASED ON NEC ANNEX C TABLE C.1.			



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ENGINEER: AQUAWORKS DBO, INC. 3252 WILLIAMS STREET DENVER, COLORADO 80205 (303) 477-5915		PROJECT NUMBER: #2479	SCALE: NOT TO SCALE	SHEET: E3