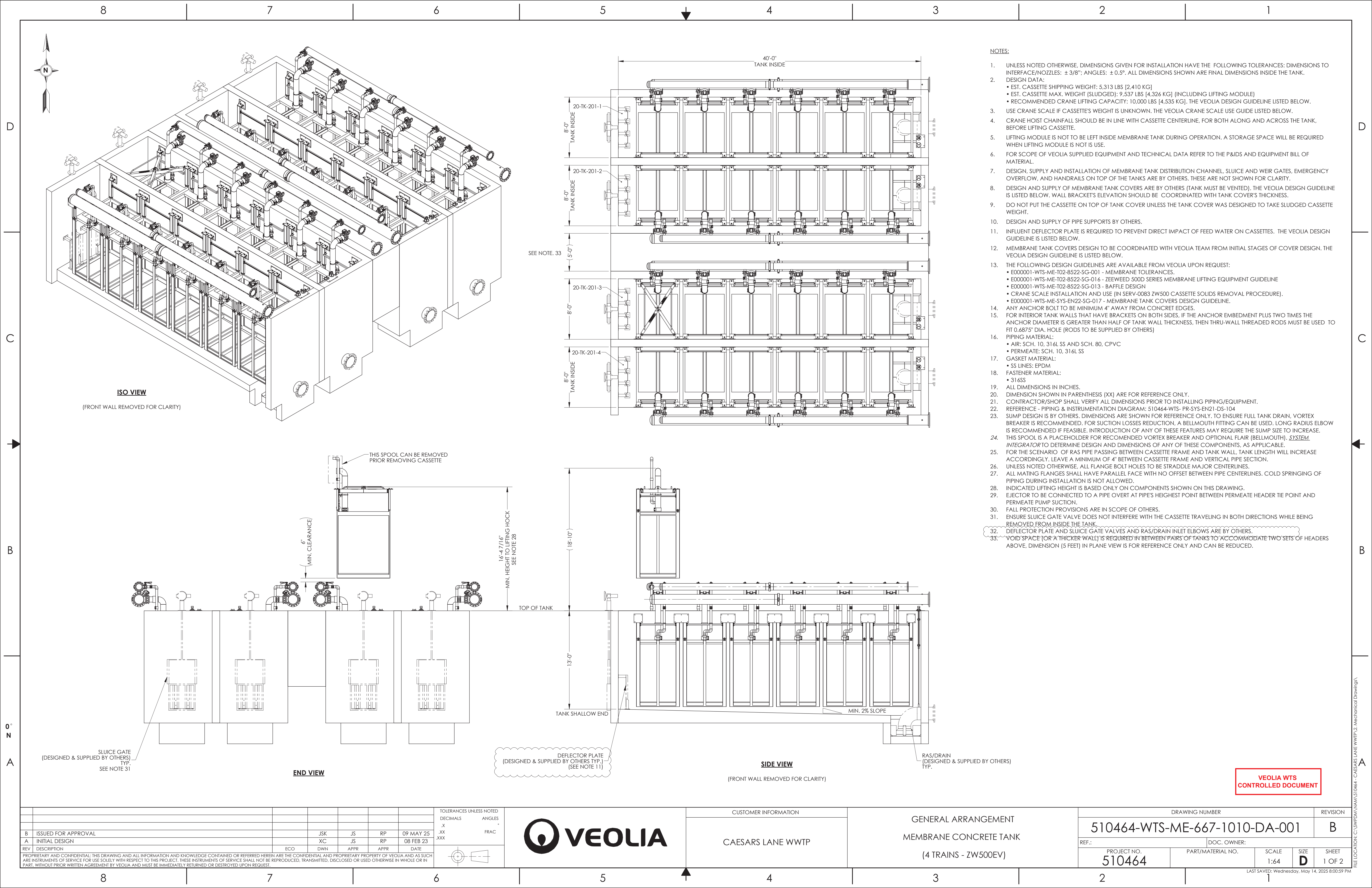




NOTES:

- UNLESS NOTED OTHERWISE, DIMENSIONS GIVEN FOR INSTALLATION HAVE THE FOLLOWING TOLERANCES: DIMENSIONS TO INTERFACE/NOZZLES: $\pm 3/8"$; ANGLES: $\pm 0.5^\circ$. ALL DIMENSIONS SHOWN ARE FINAL DIMENSIONS INSIDE THE TANK.
- DESIGN DATA:
 - EST. CASSETTE SHIPPING WEIGHT: 5,313 LBS [2,410 KG]
 - EST. CASSETTE MAX. WEIGHT (SLUDGED): 9,537 LBS [4,326 KG] (INCLUDING LIFTING MODULE)
 - RECOMMENDED CRANE LIFTING CAPACITY: 10,000 LBS [4,535 KG], THE VEOLIA DESIGN GUIDELINE LISTED BELOW.
- USE CRANE SCALE IF CASSETTE'S WEIGHT IS UNKNOWN. THE VEOLIA CRANE SCALE USE GUIDE LISTED BELOW.
- CRANE HOIST CHAINFALL SHOULD BE IN LINE WITH CASSETTE CENTERLINE, FOR BOTH ALONG AND ACROSS THE TANK, BEFORE LIFTING CASSETTE.
- LIFTING MODULE IS NOT TO BE LEFT INSIDE MEMBRANE TANK DURING OPERATION. A STORAGE SPACE WILL BE REQUIRED WHEN LIFTING MODULE IS NOT IN USE.
- FOR SCOPE OF VEOLIA SUPPLIED EQUIPMENT AND TECHNICAL DATA REFER TO THE P&IDS AND EQUIPMENT BILL OF MATERIAL.
- DESIGN, SUPPLY AND INSTALLATION OF MEMBRANE TANK DISTRIBUTION CHANNEL, SLUICE AND WEIR GATES, EMERGENCY OVERFLOW, AND HANDRAILS ON TOP OF THE TANKS ARE BY OTHERS. THESE ARE NOT SHOWN FOR CLARITY.
- DESIGN AND SUPPLY OF MEMBRANE TANK COVERS ARE BY OTHERS (TANK MUST BE VENTED). THE VEOLIA DESIGN GUIDELINE IS LISTED BELOW. WALL BRACKET'S ELEVATION SHOULD BE COORDINATED WITH TANK COVER'S THICKNESS.
- DO NOT PUT THE CASSETTE ON TOP OF TANK COVER UNLESS THE TANK COVER WAS DESIGNED TO TAKE SLUDGED CASSETTE WEIGHT.
- DESIGN AND SUPPLY OF PIPE SUPPORTS BY OTHERS.
- INFLUENT DEFLECTOR PLATE IS REQUIRED TO PREVENT DIRECT IMPACT OF FEED WATER ON CASSETTES. THE VEOLIA DESIGN GUIDELINE IS LISTED BELOW.
- MEMBRANE TANK COVERS DESIGN TO BE COORDINATED WITH VEOLIA TEAM FROM INITIAL STAGES OF COVER DESIGN. THE VEOLIA DESIGN GUIDELINE IS LISTED BELOW.
- THE FOLLOWING DESIGN GUIDELINES ARE AVAILABLE FROM VEOLIA UPON REQUEST:
 - E000001-WTS-ME-T02-8522-SG-001 - MEMBRANE TOLERANCES.
 - E000001-WTS-ME-T02-8522-SG-016 - ZEEWEED 500D SERIES MEMBRANE LIFTING EQUIPMENT GUIDELINE
 - E000001-WTS-ME-T02-8522-SG-013 - BAFFLE DESIGN
 - CRANE SCALE INSTALLATION AND USE (IN SERV-0083 ZW500 CASSETTE SOLIDS REMOVAL PROCEDURE).
 - E000001-WTS-ME-SYS-EN22-SG-017 - MEMBRANE TANK COVERS DESIGN GUIDELINE.
- ANY ANCHOR BOLT TO BE MINIMUM 4" AWAY FROM CONCRET EDGES.
- FOR INTERIOR TANK WALLS THAT HAVE BRACKETS ON BOTH SIDES, IF THE ANCHOR EMBEDMENT PLUS TWO TIMES THE ANCHOR DIAMETER IS GREATER THAN HALF OF TANK WALL THICKNESS, THEN THRU-WALL THREADED RODS MUST BE USED TO FIT 0.6875" DIA. HOLE (RODS TO BE SUPPLIED BY OTHERS)
- PIPING MATERIAL:
 - AIR: SCH. 10, 316L SS AND SCH. 80, CPVC
 - PERMEATE: SCH. 10, 316L SS
- GASKET MATERIAL:
 - SS LINES: EPDM
- FASTENER MATERIAL:
 - 316SS
- ALL DIMENSIONS IN INCHES.
- DIMENSION SHOWN IN PARENTHESIS (XX) ARE FOR REFERENCE ONLY.
- CONTRACTOR/SHOP SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLING PIPING/EQUIPMENT.
- REFERENCE - PIPING & INSTRUMENTATION DIAGRAM: 510464-WTS- PR-SYS-EN21-DS-104
- SUMP DESIGN IS BY OTHERS. DIMENSIONS ARE SHOWN FOR REFERENCE ONLY. TO ENSURE FULL TANK DRAIN, VORTEX BREAKER IS RECOMMENDED. FOR SUCTION LOSSES REDUCTION, A BELLMOUTH FITTING CAN BE USED. LONG RADIUS ELBOW IS RECOMMENDED IF FEASIBLE. INTRODUCTION OF ANY OF THESE FEATURES MAY REQUIRE THE SUMP SIZE TO INCREASE. THIS SPOOL IS A PLACEHOLDER FOR RECOMMENDED VORTEX BREAKER AND OPTIONAL FLAIR (BELLMOUTH). *SYSTEM INTEGRATOR* TO DETERMINE DESIGN AND DIMENSIONS OF ANY OF THESE COMPONENTS, AS APPLICABLE.
- FOR THE SCENARIO OF RAS PIPE PASSING BETWEEN CASSETTE FRAME AND TANK WALL, TANK LENGTH WILL INCREASE ACCORDINGLY. LEAVE A MINIMUM OF 4" BETWEEN CASSETTE FRAME AND VERTICAL PIPE SECTION.
- UNLESS NOTED OTHERWISE, ALL FLANGE BOLT HOLES TO BE STRADDLE MAJOR CENTERLINES.
- ALL MATING FLANGES SHALL HAVE PARALLEL FACE WITH NO OFFSET BETWEEN PIPE CENTERLINES. COLD SPRING OF PIPING DURING INSTALLATION IS NOT ALLOWED.
- INDICATED LIFTING HEIGHT IS BASED ONLY ON COMPONENTS SHOWN ON THIS DRAWING.
- EJECTOR TO BE CONNECTED TO A PIPE OVERT AT PIPE'S HIGHEST POINT BETWEEN PERMEATE HEADER TIE POINT AND PERMEATE PUMP SUCTION.
- FALL PROTECTION PROVISIONS ARE IN SCOPE OF OTHERS.
- ENSURE SLUICE GATE VALVE DOES NOT INTERFERE WITH THE CASSETTE TRAVELING IN BOTH DIRECTIONS WHILE BEING REMOVED FROM INSIDE THE TANK.
- DEFLECTOR PLATE AND SLUICE GATE VALVES AND RAS/DRAIN INLET ELBOWS ARE BY OTHERS.
- VOID SPACE (OR A THICKER WALL) IS REQUIRED IN BETWEEN PAIRS OF TANKS TO ACCOMMODATE TWO SETS OF HEADERS ABOVE, DIMENSION (5 FEET) IN PLANE VIEW IS FOR REFERENCE ONLY AND CAN BE REDUCED.

VEOLIA WTS
CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
B	ISSUED FOR APPROVAL					
A	INITIAL DESIGN					

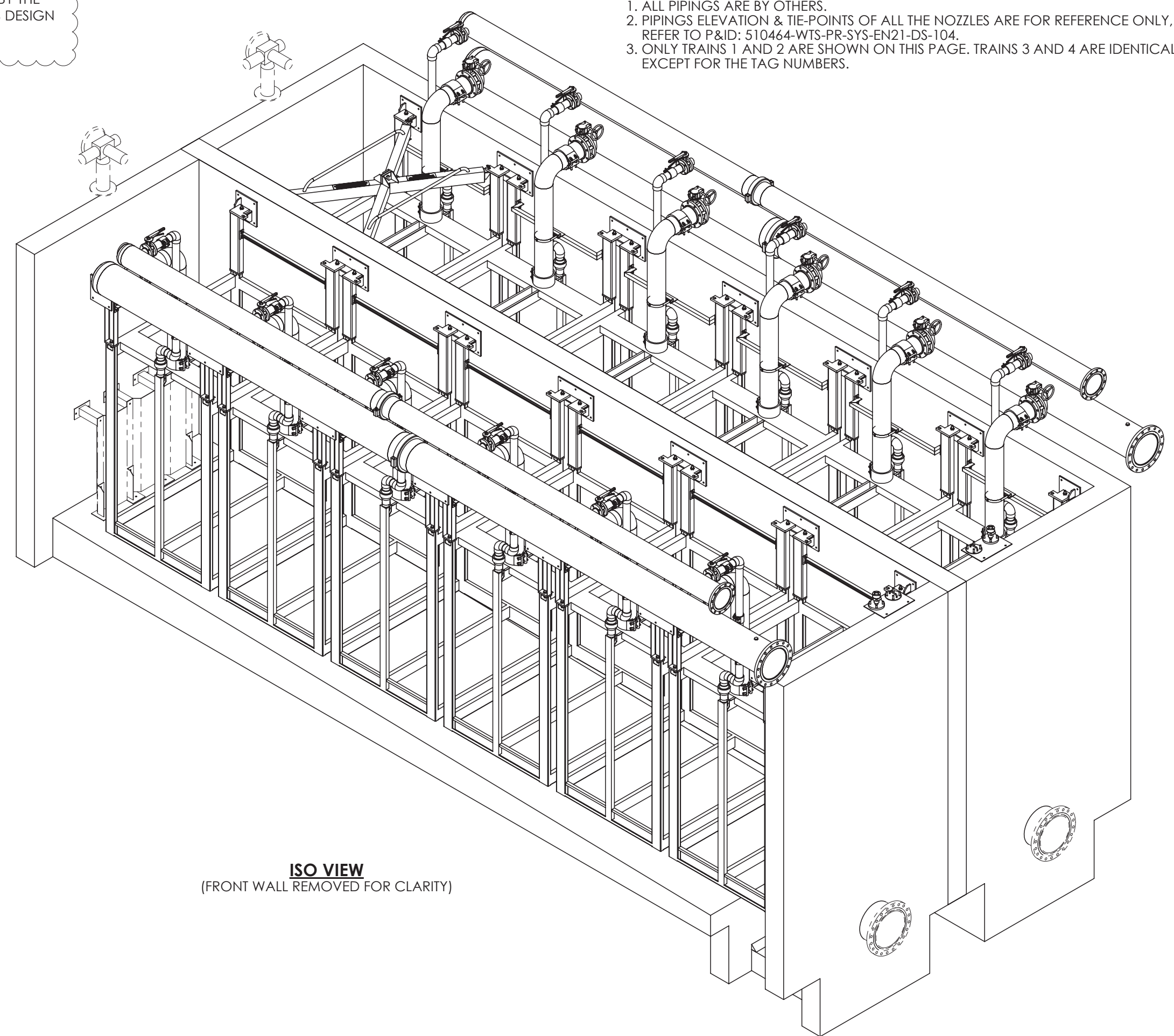
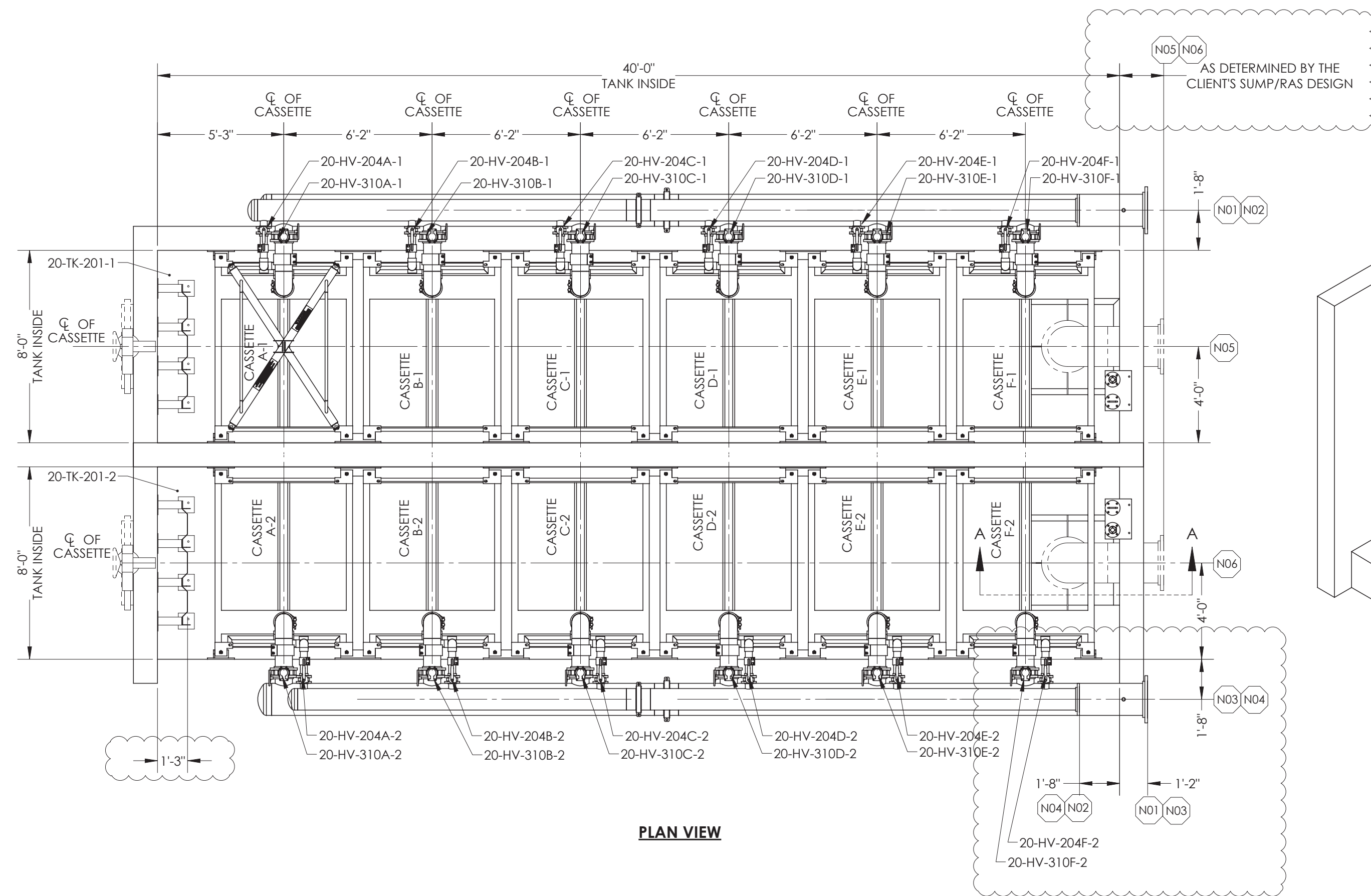
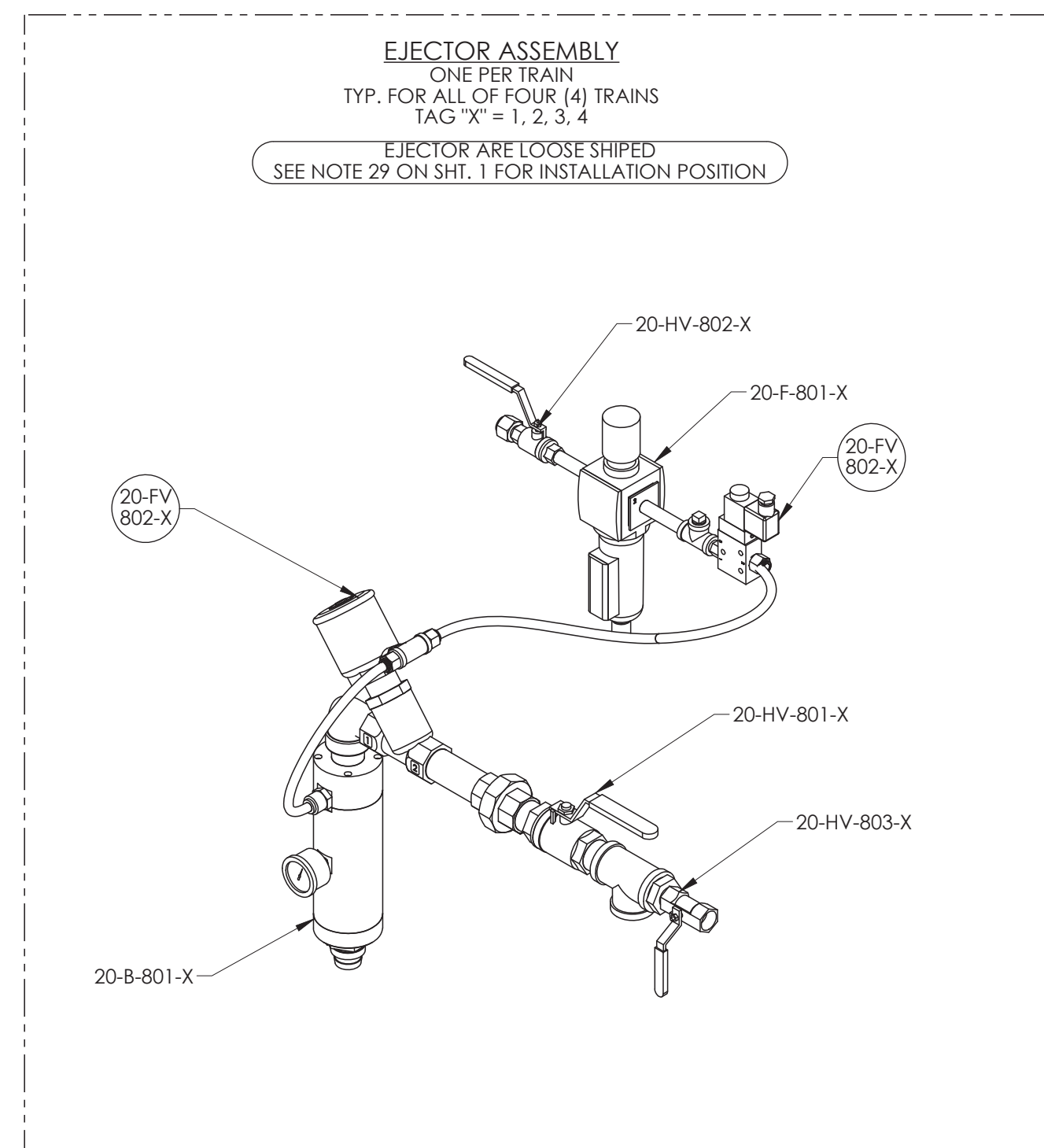
TOLERANCES UNLESS NOTED	DECIMALS	ANGLES
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CUSTOMER INFORMATION
CAESARS LANE WWTP

GENERAL ARRANGEMENT
MEMBRANE CONCRETE TANK
(4 TRAINS - ZW500EV)

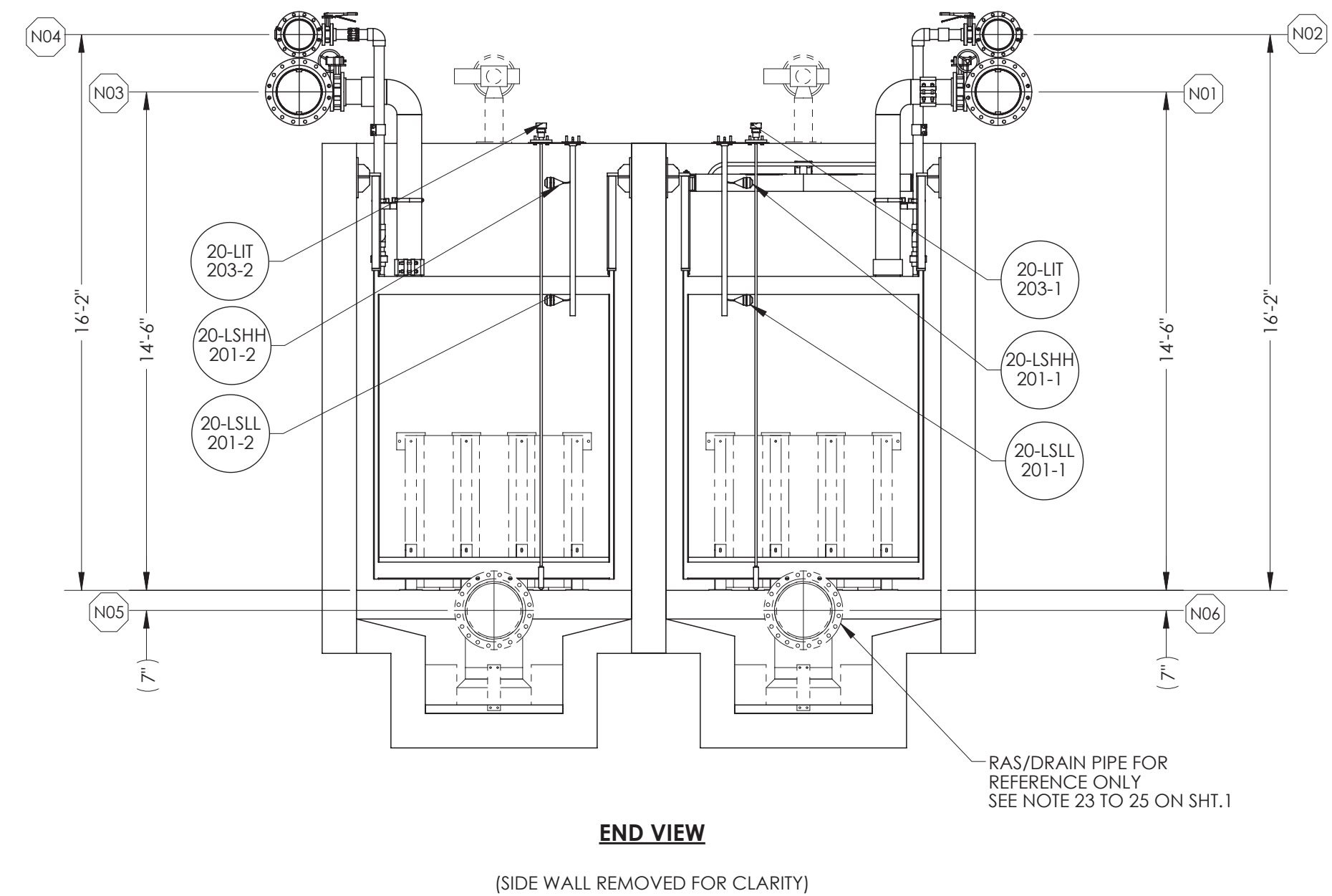
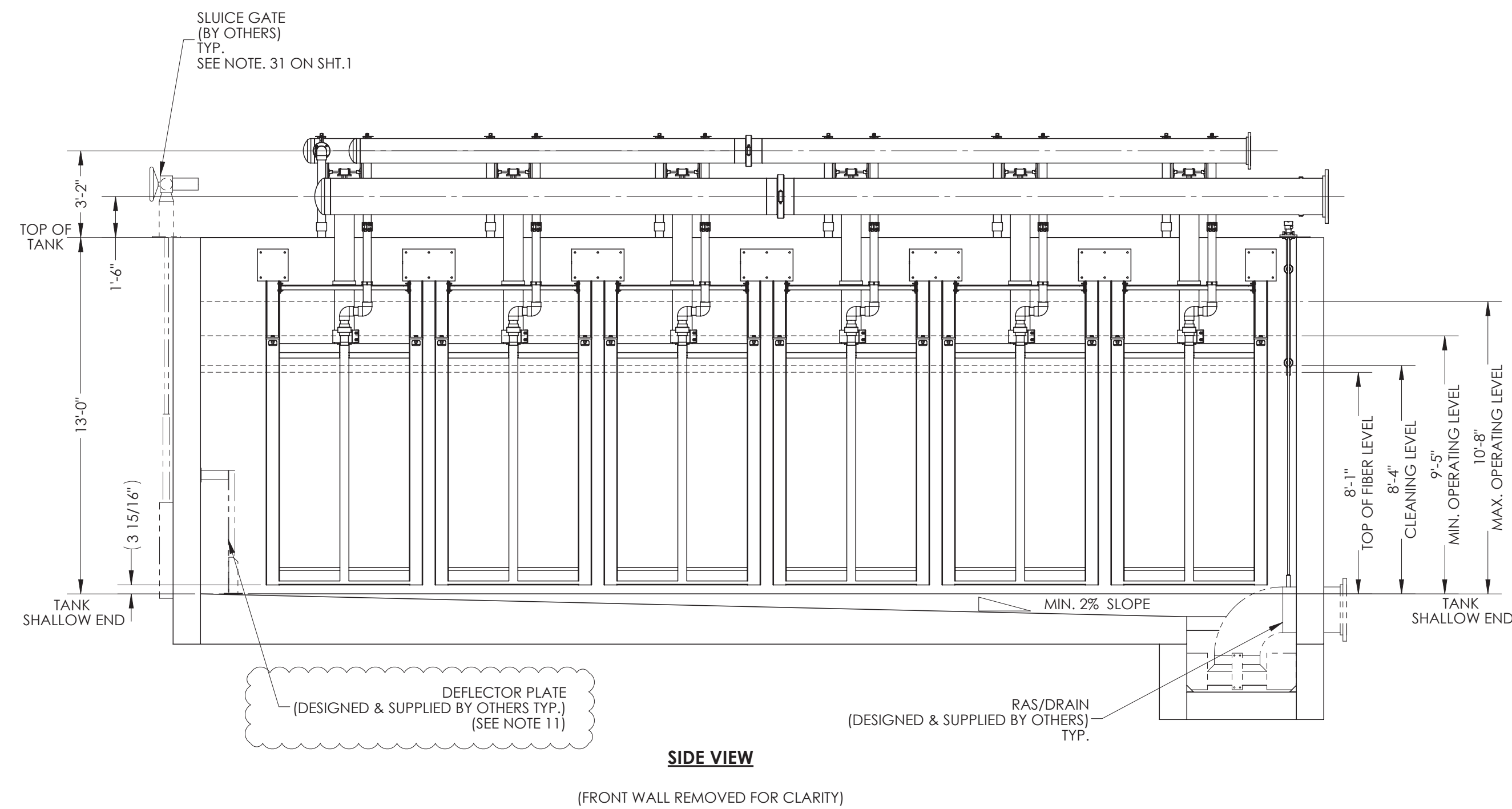
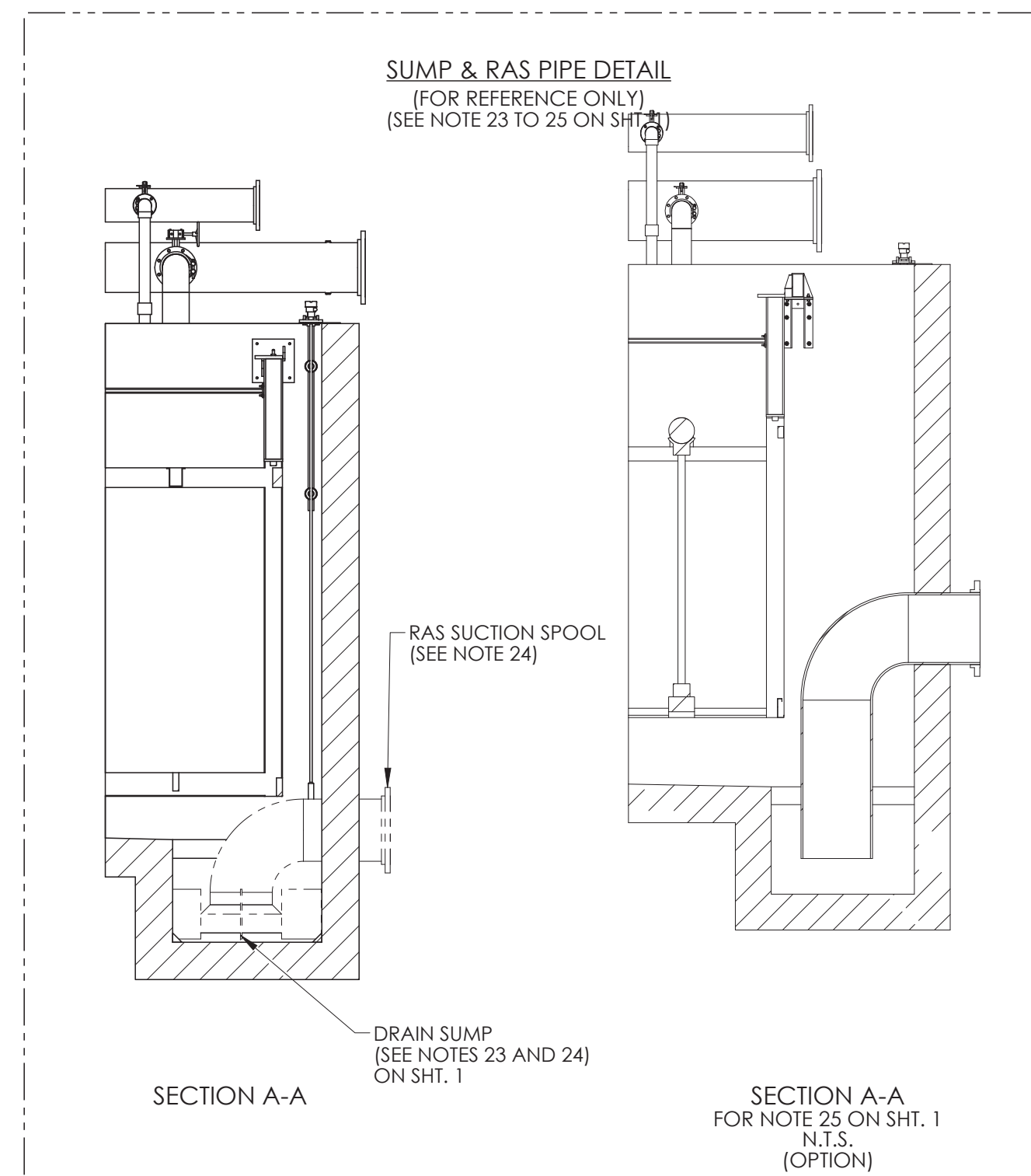
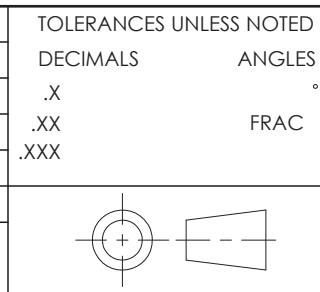
DRAWING NUMBER	REVISION
510464-WTS-ME-667-1010-DA-001	B
REF.:	DOC. OWNER:
PROJECT NO. 510464	PART/MATERIAL NO.
SCALE 1:64	SIZE D
SHEET 1 OF 2	



NOZZLE SCHEDULE			
NOZZLE	DESCRIPTION	TYPE	SIZE
N01	PERMEATE/BACKPULSE TO/FROM PUMP (TRAIN1)	150# RF FLG	16"
N02	AIR FROM MEMBRANE BLOWERS (TRAIN1)	150# RF FLG	10"
N03	PERMEATE/BACKPULSE TO/FROM PUMP (TRAIN2)	150# RF FLG	16"
N04	AIR FROM MEMBRANE BLOWERS (TRAIN2)	150# RF FLG	10"
N05	RAS/TANK DRAIN (TRAIN1)	150# RF FLG	20"
N06	RAS/TANK DRAIN (TRAIN2)	150# RF FLG	20"

NOTE:

1. ALL PIPINGS ARE BY OTHERS.
2. PIPINGS ELEVATION & TIE-POINTS OF ALL THE NOZZLES ARE FOR REFERENCE ONLY, REFER TO P&ID: 510464-WTS-PR-SYS-EN21-DS-104.
3. ONLY TRAINS 1 AND 2 ARE SHOWN ON THIS PAGE. TRAINS 3 AND 4 ARE IDENTICAL EXCEPT FOR THE TAG NUMBERS.

[illegible]

CUSTOMER INFORMATION

CAESARS LANE WWTP

GENERAL ARRANGEMENT
MEMBRANE CONCRETE TANK
(4 TRAINS - ZW500EV)

DRAWING NUMBER

REVISION

510464-WTS-ME-667-1010-DA-001

REF.:		DOC. OWNER:		
PROJECT NO. 510464	PART/MATERIAL NO.	SCALE 1:48	SIZE D	SHEET 2 OF 2

LAST SAVED: Wednesday, May 14, 2025 8:00:59 PM



VEOLIA WTS
CONTROLLED DOCUMENT

D	ISSUED FOR APPROVAL	RP	RP	RP	30-05-2025
C	ISSUED FOR APPROVAL	RP	RP	RP	01-12-2024
B	ISSUED FOR APPROVAL	RP	RP	RP	30-01-2024
A	ISSUED FOR APPROVAL	RP	RP	RP	28-03-2023
REV	DESCRIPTION	WRITTEN BY	CHECKED BY	APPROVED BY	DATE DD-MM-YY

DOCUMENT TYPE:	VEOLIA DOCUMENT NUMBER:						
CUTSHEET PACKAGE	CONTRACT	ISSUER	DISCIPLINE	PRODUCT	PHASE	TYPE	CHRONO
	510464	WTS	ME	MAT	MICS	DT	001

MECHANICAL TRANSMITTAL

PROPRIETARY AND CONFIDENTIAL : THIS DOCUMENT AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF VEOLIA AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE, IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY VEOLIA AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.



VEOLIA WTS
CONTROLLED DOCUMENT

D	ISSUED FOR CONTRACT BID	RP	RP	RP	30-05-2025
C	ISSUED FOR APPROVAL	RP	RP	RP	28-03-2023
B	ISSUED FOR APPROVAL	RP	RP	RP	30-01-2024
A	ISSUED FOR APPROVAL	RP	RP	RP	28-03-2023
REV	DESCRIPTION	WRITTEN BY	CHECKED BY	APPROVED BY	DATE DD-MM-YY

DOCUMENT TYPE:	VEOLIA DOCUMENT NUMBER:						
	CONTRACT	ISSUER	DISCIPLINE	PRODUCT	PHASE	TYPE	CHRONO
EQUIPEMNT BILL OF MATERIAL	510464	WTS	ME	SYS	EN10	BQ	001

MECHANICAL TRANSMITTAL

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510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
P&ID MEMBRANE BLOWERS POSITIVE DISPLACEMENT TYPE						510464-DS-102	
1	2	CFO	BLOWER-MEMBRANE,AERZEN, GM 50L, 60 HP (WITH VFD BY OTHERS)	Membrane Aeration Blowers (With VFD By others) Aerzen Generation 5 Blower Package -Pressure - including: Aerzen GM 50L , DN200 Blower Drive Motor - Teco: 60hp, 1800rpm, TEFC, 460V/60Hz Design flow: 1,611 ICFM @ 5.5 Psig Motor protection: 1 Thermistor/ph Base with integrated reactive type discharge silencer Intake filter silencer Hinged motor support as automatic belt tensioning device Set of vibration isolation mounts Narrow v-belt drive with guard - 1 set Spring loaded relief valve Discharge manifold with externally accessible integrated check valve Flexible connector with clamps for schedule 40 pipe, discharge Acoustic Enclosure - Indoor/Outdoor Inlet flexible sleeve -DN 200 (8") for piped air inlet Instruments: Pressure gauge c/w isolation ball valve Dirty filter indicator	20-B-201-A/B 20-F-201-A/B 20-PSV-201-A/B 20-HV-203-A/B 20-PI-203-A/B 20-CV-201-A/B	510464-DS-102 Sheet 1	A03
2	3	CFO	BLOWER-MEMBRANE,AERZEN, GM 50L, 60 HP WITHOUT VFD	Membrane Aeration Blowers (Without VFD) Aerzen Generation 5 Blower Package -Pressure - including: Aerzen GM 50L , DN200 Blower Drive Motor - Teco: 60hp, 1800rpm, TEFC, 460V/60Hz Design flow: 1,611 ICFM @ 5.5 Psig Motor protection: 1 Thermistor/ph Base with integrated reactive type discharge silencer Intake filter silencer Hinged motor support as automatic belt tensioning device Set of vibration isolation mounts Narrow v-belt drive with guard - 1 set Spring loaded relief valve Discharge manifold with externally accessible integrated check valve Flexible connector with clamps for schedule 40 pipe, discharge Acoustic Enclosure - Indoor/Outdoor Inlet flexible sleeve -DN 200 (8") for piped air inlet Instruments: Pressure gauge c/w isolation ball valve Dirty filter indicator	20-B-201-C/D/E 20-F-201-C/D/E 20-PSV-201-C/D/E 20-HV-203-C/D/E 20-PI-203-C/D/E 20-CV-201-C/D/E	510464-DS-102 Sheet 1	A03
3	5	3090315	VALVE-BTFLY,SS,8.00,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 8 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: MANUAL LEVER CONNECTION: LUG PRESSURE RATING: 150 PSI	20-HV-201-A/B/C/D/E	510464-DS-102 Sheet 1	B03
4	5	3054067	SWITCH-FLOW,Ni-BRS,24VDC,N4,3.3-66ft/s	THERMAL AIR SWITCH FLOW KOBOLD US PN# KAL-8115-C KOBOLD EU PN# KAL-L81N1WKN4 3.3-66 FT/SEC VELOCITY RANGE, 0.5"MNPT PROC.CONNECTION, Ni-PLATED BRASS WETTED PARTS, NYLON HOUSING, 8-LED FLOW TREND, 2-COLOUR LED SWITCH STATUS, NEMA 4, 0.5"NPT CONDUIT CONNECTION, 24V DC POWER SUPPLY, 1-SPDT SWITCH, 120 PSIG MAX. OPERATING PRESSURE, -10 TO +250 DEGREE F. PROCESS TEMPERATURE, +/-1% REPRODUCIBILITY, UP TO 60 SEC. TIME DELAY START UP, UL, CE & CSA APPROVAL IS REQUIRED.	20-FSL-201-A/B/C/D/E	510464-DS-102 Sheet 1	C01

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
P&ID PROCESS BLOWERS POSITIVE DISPLACEMENT TYPE						510464-DS-102	
5	3	CFO	BLOWER-PROCESS,AERZEN, GM 90S, 150 HP (WITH VFD BY OTHERS)	Process Aeration Blowers (With VFD by others) Aerzen Generation 5 Blower Package -Pressure - including: Aerzen GM 90S , DN250 Blower Drive Motor - Teco: 150 hp, 1800rpm, TEFC, 460V/60Hz Design flow: 2,038 SCFM @ 9.74 Psig Motor protection: 1 Thermistor/ph Base with integrated reactive type discharge silencer Intake filter silencer Hinged motor support as automatic belt tensioning device Set of vibration isolation mounts Narrow v-belt drive with guard - 1 set Spring loaded relief valve Discharge manifold with externally accessible integrated check valve Flexible connector with clamps for schedule 40 pipe, discharge Acoustic Enclosure - Indoor/Outdoor Inlet flexible sleeve - DN 250 (10") For piped air inlet Instruments: Pressure gauge c/w isolation ball valve Dirty filter indicator	16-B-401-A/B/C 16-F-401-A/B/C 16-PSV-401-A/B/C 16-HV-403-A/B/C 16-PI-403-A/B/C 16-CV-401-A/B/C	510464-DS-102 Sheet 2	A03
6	3	3090316	VALVE-BTFLY,SS,10.0,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 10 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: GEAR CONNECTION: LUG PRESSURE RATING: 150 PSI	16-HV-401-A/B/C	510464-DS-102 Sheet 2	B03
7	3	3054067	SWITCH-FLOW,Ni-BRS,24VDC,N4,3.3-66ft/s	THERMAL AIR SWITCH FLOW KOBOLD US PN# KAL-8115-C KOBOLD EU PN# KAL-L81N1WKN4 3.3-66 FT/SEC VELOCITY RANGE, 0.5"MNPT PROC.CONNECTION, Ni-PLATED BRASS WETTED PARTS, NYLON HOUSING, 8-LED FLOW TREND, 2-COLOUR LED SWITCH STATUS, NEMA 4, 0.5"NPT CONDUIT CONNECTION, 24V DC POWER SUPPLY, 1-SPDT SWITCH, 120 PSIG MAX. OPERATING PRESSURE, -10 TO +250 DEGREE F. PROCESS TEMPERATURE, +/-1% REPRODUCIBILITY, UP TO 60 SEC. TIME DELAY START UP, UL, CE & CSA APPROVAL IS REQUIRED.	16-FSL-401-A/B/C	510464-DS-102 Sheet 2	C01
	3	3090316 + Limit switch on the open CFO to be created	VALVE-BTFLY,SS,10.0,MAN,LG,150,EPDM,BR PLUS LIMIT SWITCH ON THE OPEN	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 10 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: GEAR CONNECTION: LUG PRESSURE RATING: 150 PSI FEATURE: ADDED LIMIT SWITCH ON THE OPEN POSITION	16-HV-400	510464-DS-102 Sheet 2	B03

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
P&ID BIOREACTORS						510464-DS-103	
8	3	CFO	ANOXIC MIXER	Sulzer Submersible Mixer,Model #RW6521-A60/12EC (Cast Iron,for Non Classified Area),6kW-571RPM,460/60/3,complete with 580mm propeller,double mechanical seals, bi-metal switches on stator plus Di seal probe,10m Cable. Accessories Included: *Mast Assy /w Floor/Inter/Upper Brkts,304SS (4"x4"SQ Guide Tube by Others) *Shock Absorber *Support Bracket,Shock Absorber,304SS *Power Cable Support Kit,20ft 304SS *Lifting Cable Assy,40ft 316SS *Relay,Heat Seal CA462,115V Accessories: 1 Portable 24"-36" Adjustable Reach 60"H,1000LB Capacity /w Manual Handwinch 3 Socket,Platform,304SS	16-MX-211-1/2/3	510464-DS-103	A13
9	3	CFO	FINE BUBBLE DIFFUSER GRID	SSI, Aeration diffuser grids with AFD270-E Fine Bubble Disc Diffusers with EPDM Membranes. A. Each aeration train consists of two Aerobic zones, zone 1 and zone 2 and each zone is 44.75' (L) X 24' (W) X 20.5' SWD. Aeration Equipment include the following items per each zone: Scope of supply complete with all components from the downstream of air supply line connection (±6" above water level) starting with SS Vanstone and loose follower flange including the drop pipe, which includes the following items: Aerobic zone 1: - 8" Dia. 304SS, Sch. 10 drop pipe (+/-20') c/w (3) 304SS supports and (1) 304SS couplings - 8" Dia. PVC, Sch. 40, Manifold (+/-25') c/w (5) 304SS supports and (1) PVC couplings - 4" Dia. PVC headers (+/- 440') c/w (440) factory installed diffusers (77) 304SS supports and (33) PVC unions - Quantity of 440 of POD270-E diffusers Aerobic zone 2: - 6" Dia. 304SS, Sch. 10 drop pipe (+/-20') c/w (3) 304SS supports and (1) 304SS couplings - 6" Dia. PVC, Sch. 40, Manifol (+/-25') c/w (5) 304SS supports and (1) PVC couplings - 4" Dia. PVC headers (+/- 320') c/w (312) factory installed diffusers (56) 304SS supports and (24) PVC unions - Quantity of 312 of POD270-E diffusers B-The spare parts included are: ●AFD270-E Diffuser Assemblies – 9 ●4" 304SS Supports - 5 ●4" Repair Couplings – 2 ●Special Tools Set – 1	NO TAG	510464-DS-103	B27
10	3	3090315	VALVE-BTFLY,SS,8.00,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 8 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: MANUAL LEVER CONNECTION: LUG PRESSURE RATING: 150 PSI	16-HV-405-1/2/3	510464-DS-103	B03
11	3	3090314	VALVE-BTFLY,SS,6.00,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 6 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: MANUAL LEVER CONNECTION: LUG PRESSURE RATING: 150 PSI BRAY ASSEMBLY ID 9C060LF169L BRAY 310600-13010375 / 010500-21100007	16-HV-406-1/2/3	510464-DS-103	B03

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
10	6	3195051	CONTROLLER,DUAL,4-20MA,HACH,SC4500,120V	CONTROLLER, UNIVERSAL, HACH MODEL SC4500 LXV525.99A11551 - DUAL DIGITAL SENSOR INPUTS (SC CONECTORS) - 5) 4-20 mA OUTPUTS - 2) SPDT RELAY OUTPUTS - NEMA 4X/IP66 ENCLOSURE - 100-240 VAC 50/60HZ - MOUNTING HARDWARE FOR CONTROLLER INCLUDED CE. ETL certified to UL and CSA safety standards (with all sensor types), FCC, ISED, KC, RCM, EAC, UKCA, SABS, C (Morocco)	16-AIT-405-1 16-AIT-405-2 16-AIT-405-3 16-AIT-403-1 16-AIT-403-2 16-AIT-403-3	510464-DS-103	C16

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
11	6	3184179	SENSOR-DO,CPVC,2.00,SOC,20PPM,LDO2,HACH	"Hach LDO® Model 2 , DO Probe with Luminescent Dissolved Oxygen Technology Accuracy: ± 0.05 ppm Below 5 ppm Accuracy 2: ± 0.1 ppm Above 5 ppm Accuracy 3: Temperature: ± 0.2 Accuracy 4: 0.2 °C Body material: Stainless Cable Length: 10 m (33 ft) Calibration Method: All Probes are factory calibrated and ready to use Air Calibration: one point, 100% water saturated air Sample Calibration: comparison to standard instrument, or comparison to Winkler Titration method Communication: Modbus Diameter: 48.25 mm Dimensions (D x L): 48.25 mm x 254 mm Flow: no flow required Flow Rate: None required Hazardous Location Ratings: ETL listed (cETLus marked) to Canadian and US General Safety and Hazardous (Class I, Div. 2) Locations Interferences: No Interferences from the following: H2S, pH, K+, Na+, Mg2+, Ca2+, NH4+, Al3+, Pb2+, Cd2+, Zn2+, Cr (total), Fe2+, Fe3+, Mn2+, Cu2+, Ni2+, Co2+, CN-, NO3-, SO42-, S2-, PO43-, Cl-, anion active surfactants, crude oils, Cl2 < 4 ppm Length: 254 mm Measurement Range 2: 0 - 20.00 mg/L Measurement Range 3: 0 - 200 % saturation Operating Temperature Range: 0 - 50 °C Options: None Pressure Range: max 3.5 bar Range: 0 - 20.00 ppm Region: US Repeatability: ± 0.1 ppm (mg/L) Resolution: 0.01 ppm (mg/L) Response Time: at 20 °C: To 60 s To 40 s Sensor Cable: 10 m (31 ft.) terminated with quick-disconnect plug Sensor Immersion Depth: Pressure Limits at 345 kPa 345 kPa (50 psi), maximum; accuracy may not be maintained at this depth Sensor Thread: Outer thread Storage Conditions: -20 °C to 70 °C Transmission Distance: 1000 m (3280 ft.) maximum when used with a termination box 100 m (328 ft.) maximum Warranty: Probe body: 3 years Sensor cap: 2 years in standard applications Weight: 1 kg Wetted Materials: Sensor Cap: Acrylic; Probe Body: CPVC, Polyurethane, Viton, Noryl, 316 Stainless Steel"	16-AE-405-1 16-AE-405-2 16-AE-405-3 16-AE-403-1 16-AE-403-2 16-AE-403-3	510464-DS-103	C16
12	3	3184186	SENSOR-PH,GLASS,1.00,MNPT,14,DPD1P1,HACH	pHD sc: Digital pH sensor with glass differential electrode, sc compatibility, PEEK®, Convertible Mount Accuracy: ± 0.02 pH Body material: PEEK® Cable Connection: Digital Cable Length: 10m (33 ft.) Calibration Method: Two point automatic, one point automatic, two point manual, one point manual Communication: Modbus Drift: 0.03 pH per 24 hours, non-cumulative Electrode Type: General Purpose Flow Rate: 3 m (10 ft.) per second, maximum Length: 271.3 mm Mounting: Convertible Operating Temperature Range: Analog Sensor with Digital Gateway: -5 - 105 °C Digital Sensor: 0 - 50 °C pH Range: 0 - 14 pH Pressure Range: Maximum 10.7 bar . 6.9 bar for Digital Sensor at 70°C, and 6.9 bar for Analog Sensor at 105°C. Range: -2.0 - 14.0 pH Region: Global	16-AE-402-1, 16-AE-402-2, 16-AE-402-3	510464-DS-103	C16

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
13	9	3109286	BRACKET-PROBE,FLOAT,1.00,NPT,SENSOR	KTO: FLOAT MOUNT, HACH, ITEM# 9253100, 1" NPT SENSOR	Mounting kit for: 16-AE-405-1/2/3 16-AE-403-1/2/3 16-AE-402-1/2/3	510464-DS-103	C16
14	3	3087034	SWITCH-FLOAT,PP,120/220VAC,4"FLT	SWITCH, LEVEL, MJK PT# 202810, MODEL 7030, CABLE SUSPENDED 4" Ø FLOAT, POLYPROPYLENE HOUSING, 39 FT LONG OIL RESISTANT PVC CABLE, 120VAC OR 220VAC, 1PH/60Hz, -20oC to 60oC OPERATING TEMPERATURE	16-LSHH-401-1/2/3	510464-DS-103	C08
P&ID MEMBRANE TANK						510464-DS-104	
15	4	3178110	ASSY-EJECTOR,316,24VDC,SS TUBE	ASSEMBLY EJECTOR (AIR ASSEMBLY AND WATER ASSEMBLY)	20-HV-802-1/2/3/4 20-PCV-801-1/2/3/4 20-FV-802-1/2/3/4 20-FV-801-1/2/3/4 20-E-801-1/2/3/4 20-HV-801-1/2/3/4 20-HV-803-1/2/3/4	510464-DS-104	A06
16	20	3193012	M/C-ZW500EV,64/64,316L,LEAP,8IN	ZW500EV CASSETTE, POPULATED WITH 64/64 MODULES, EACH MODULE HAS 530 FT2 OF SURFACE AREA	A-1/2/3/4 B-1/2/3/4 C-1/2/3/4 D-1/2/3/4 E-1/2/3/4	510464-DS-104	A01
	24	3090317	VALVE-BTFLY,316,8.00,GEAR,LG,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 8 IN. MATERIAL: BODY: DUCTILE IRON DISC: 316SS STEM: 416SS SEAT: EPDM CONTROL: MANUAL-GEAR CONNECTION: LUG PRESSURE RATING: 150 PSI ADDITIONAL MANUF. INFORMATION: P/N: 310800-13010375 - S31 8" DI,316,416,EPDM BONDED P/N: 040300-21202002 - GEAR	20-HV-310A-1/2/3/4 20-HV-310B-1/2/3/4 20-HV-310C-1/2/3/4 20-HV-310D-1/2/3/4 20-HV-310E-1/2/3/4 20-HV-310F-1/2/3/4	510464-DS-104	B03
	24	3090312	VALVE-BTFLY,SS,3.00,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 3 IN. MATERIAL: BODY- DUCTION IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: LEVER OPERATOR CONNECTION: LUG PRESSURE RATING: VACUUM TO 150 PSI ADDITIONAL MANUF. INFORMATION: VALVE# 31-0300-13010-375	20-HV-204A-1/2/3/4 20-HV-204B-1/2/3/4 20-HV-204C-1/2/3/4 20-HV-204D-1/2/3/4 20-HV-204E-1/2/3/4 20-HV-204F-1/2/3/4	510464-DS-104	B03

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
	4	3196525	VALVE-BTFLY,316,10.0,A/A 24V,LG,LS,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 10 IN. MATERIAL: BODY: DUCTILE IRON DISC: 316SS STEM: 416SS SEAT: EPDM CONTROL: DOUBLE ACTING W/ 24VDC SOLENOID, LIMIT SWITCHES CONNECTION: LUG PRESSURE RATING: 150 PSI ADDITIONAL MANUF. INFORMATION: P/N: 311000-13010375 - S31 10" DI,316,416,EPDM BONDED P/N: 921600-11300532 - S92/160 PNEU ACT-30mm DD P/N: 630250-21401536 - S63 SOL VLV,N4,24VDC P/N: 630250-22504536 - S63 MTG CHARGE N4,7,9 4-WAY P/N: 550250-23010536 - SPEED CONTROL,SINGLEWAY,1/4NPT P/N: 5A0000-126A2536 - S5A STS MON, 2 MECH SW P/N: 5B0000-22601534 - S5A/B/C 3PC BRACKET ASSY, IMP	20-FV-205-1/2/3/4	510464-DS-104	B04
17	4	3197282	M/C-ZW500EV,32/64,316L,LEAP,8IN	ZW500EV CASSETTE, POPULATED WITH 32/64 MODULES, EACH MODULE HAS 530 FT2 OF SURFACE AREA	F-1/2/3/4	510464-DS-104	A01
18	5	3136677	TRANS-LEVEL,316,3.00,FLG,156",E+H	"ENDRESS+HAUSER Transmitter, Level. Deltapilot M FMB51 FMB51-CD21JD1FGK85AGJB3U [CD] Approval: CSA C/US General Purpose [2] Output: 4-20mA HART [1] Display, Operation: LCD, push button on display/electronics [J] Housing: F31 Alu, Glass window [D] Electrical Connection: Thread NPT1/2, IP66/68 NEMA4X/6P [1F] Sensor Range: 400mbar/40kPa/6psi gauge,4mH2O/13ftH2O/160inH2Ooverload: 8bar/800kPa/120psi [G] Reference Accuracy: Standard [K] Calibration; Unit: Customised level; see additional spec.. > Additional text: 0...0156 "" H2O [85] Probe Connection: 156 in rod, 316L [AGJ] Process Connection: 3"" 150lbs RF, 316/316Lflange ANSI B16.5 [B] Membrane Material: Alloy C [3] Fill Fluid: Synthetic oil, FDA [U] Seal: None, cell welded "	20-LIT-200 20-LIT-203-1/2/3/4 RANGE: 0 - 156 INCHES	510464-DS-104	C09
19	4	3083238	TRANS-PRESS,316,0.50,NPT,-15-15,4-20,E+H	ENDRESS+HAUSER, Cerabar S PMC71 P/N: PMC71-UAC1KBRAAAA PRESSURE, CAPACITIVE COMPACT. LOW RANGE VALUE -15.000 psi UPEER RANGE VALUE 15.000 psi DISPLAY AT 4mA DISPLAY AT 20mA [U] APPROVAL: CSA C/US IS Cl.I,II,III Div.1 Gr.A-G, Cl.I Div.2 Gr.A-D, Ex ia, C: zone 0,1,2/ US: zone 0,1,2,20,21,22 [A] OUTPUT; OPERATING: 4-20mA HART; extern + LCD [C] HOUSING; COVER SEALING; CABLE ENTRY: T14 Alu IP66/67 NEMA6P; EPDM; NPT1/2 thread, T14 = side cover [1K] SENSOR RANGE; SENSOR OVERLOAD LIMIT: 2bar/200kPa/30psi gauge; 18bar/1800kPa/270psi [B] CALIBRATION; UNIT: **Customised; see additional spec. [RA] PROCESS CONNECTION: Thread ANSI MNPT1/2 FNPT1/4, 316L [A] SEAL: FKM [A] ADDITIONAL OPTION 1: NOT SELECTED [A] ADDITIONAL OPTION 2: NOT SELECTED	20-PIT-301-1/2/3/4 RANGE : -15 to +15 PSIG	510464-DS-104	C07

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
20	8	3087034	SWITCH-FLOAT,PP,120/220VAC,4"FLT	SWITCH, LEVEL, MJK PT# 202810, MODEL 7030, CABLE SUSPENDED 4" Ø FLOAT, POLYPROPYLENE HOUSING, 39 FT LONG OIL RESISTANT PVC CABLE, 120VAC OR 220VAC, 1PH/60Hz, -20oC to 60oC OPERATING TEMPERATURE	20-LSHH-201-1/2/3/4 20-LSLL-201-1/2/3/4	510464-DS-104	C08
	4	CFO	VALVE-KNIFEGATE,316,20.0,A/A SV,LG,24,UD,LS	20" Orbinox Series 20, P/N: 20-3636RE-20.0-DARDC-SOL-PROX KNIFEGATE V. SERIES 20 DN500 (20") ASME-150 Unidirectional Body CF8M Gate AISI 316 Seat EPDM Packing ST (Synth. fib.) Reinforced Yoke AISI 304 Actuator Pneumatic RDC Double Acting Pmin 6.0 bar / Pmax 8.0 bar Solenoid Valve NUMATICS 153SA43CM000030 NPT 3/8 24 V DC Monostable (1 Coil) Valve Electrical Failure Position Close 2x Inductive Switch TELEMECANIQUE XS618B1MAL2 , 2 wire, NO, (24...240) Vac/dc, LED, IP68, (-25...70) °C, cable 2 m CYLRDC-12X21 Media Liquid PS 10.0 bar 150.0 psi TS -20.0 / 80.0 °C; -4.0 / 176.0 °F DP Act 4.0 bar	20-FV-502-1/2/3/4	510464-DS-104	B18
P&ID PERMEATE SIPHON & ASSOCIATED EQUIPMENT						510464-DS-105	
21	8	3067260	VALVE-BALL,316,0.50,1PC THD	VALVE, BALL, PINACLE, 1/2", 1-PC REDUCED PORT, P/N 13TBV105, NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 5.5, 800# WOG, WITH LEVER LOCKING HANDLE	20-HV-302-1/2/3/4 20-HV-301-1/2/3/4	510464-DS-105	B01
22	4	3067264	VALVE,BALL,2",316SS,1PC,THD	VALVE, BALL, PINACLE, 2", 1-PC REDUCED PORT, P/N 13TBV12, NPT,316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 60, 1000# WOG, WITHLEVER LOCKING HANDLE.	20-HV-305-1/2/3/4	510464-DS-105	B01
23	4	CFO	DEZURIC, 16", V-PORT MODULATING BALL VALVE	DEZURIK 16" V-PORT ball valve with CS body Style: V-Port Ball Valve (VPB) Size: 16 Inch (400mm) End Flanged Drilling; Class 150, ISA 75.08.02 and IEC 534-3-2F-F Body Material: Carbon Steel Packing: PTFE Chevron; Temperature to 500° F. (250° C.) Ball Material: 317 SST; Heat Treated; Electroless Nickel Overlay to 700 Degree F. Shaft Material: 2205 Duplex Stainless Steel Seat: Rigid 317 Stainless Steel; Heat Treated; Electroless Nickel Overlay; Temperature to 450 Degree F. Bushing: 317 SST Wire Mesh Encapsulated in PTFE Liner to 500 Degree F. Coating: SB0 - Exterior: 4 mils minimum of Blue Epoxy DeZURIK with Standard (SP10) surface prep Actuator: PowerRac Cylinder; 8 In Dia VAC V200P – 3-15 PSI Pneumatic Positioner, NEMA 4X and IP66, Double/Single Acting, with Arrow Indicator Weight (Approx): 777 lbs/ 353 kgs Max Temperature: 450 Degrees F.	20-FCV-301-1/2/3/4	510464-DS-105	B05
24	4	3090321	VALVE-BTFLY,316,16.0,GEAR,LG,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 16 IN. MATERIAL: BODY: DUCTILE IRON DISC: 316SS STEM: 416SS SEAT: EPDM CONTROL: MANUAL-GEAR CONNECTION: LUG PRESSURE RATING: 150 PSI ADDITIONAL MANUF. INFORMATION: P/N: 311600-11010375 - S31 16" DI,316,416,EPDM BONDED P/N: 040500-21202002 - GEAR	20-HV-303-1/2/3/4	510464-DS-105	B03

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
25	4	3090313	VALVE-BTFLY,SS,4.00,MAN,LG,150,EPDM,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 4 IN. MATERIAL: BODY- DUCTILE IRON DISC- 316SS STEM- 416SS SEAT- EPDM CONTROL: MANUAL LEVER CONNECTION: LUG PRESSURE RATING: 150 PSI	20-HV-304-1/2/3/4	510464-DS-105	B03
26	8	3196528	VALVE-BTFLY,316,16.0,A/A 24V,LG,LS,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-375 VALVE SIZE: 16 IN. MATERIAL: BODY: DUCTILE IRON DISC: 316SS STEM: 416SS SEAT: EPDM CONTROL: DOUBLE ACTING W/ 24VDC SOLENOID, LIMIT SWITCHES CONNECTION: LUG PRESSURE RATING: 150 PSI ADDITIONAL MANUF. INFORMATION: P/N: 311600-13010375 - S31 16" DI,316,416,EPDM BONDED P/N: 922100-11300532 - S92/210 PNEU ACT-50mm DD P/N: 630250-21401536 - S63 SOL VLV,N4,24VDC P/N: 630250-22504536 - S63 MTG CHARGE N4,7,9 4-WAY P/N: 550250-23010536 - SPEED CONTROL,SINGLEWAY,1/4NPT P/N: 5A0000-126A2536 - S5A STS MON, 2 MECH SW P/N: 5B0000-22601534 - S5A/B/C 3PC BRACKET ASSY, IMP	20-FV-621-1/2/3/4 20-FV-622-1/2/3/4	510464-DS-105	B04
27	4	CFO	TRANS-FLOW,MAG,16.0FLG,0-4500GPM,PROMAG 400,E+H	Electromagnetic Flow meter Promag E 400, 5W4C3F, DN400 16" Manufacturer: E+H Tags: 20-FIT-301-1, 20-FIT-301-2, 20-FIT-301-3, 20-FIT-301-4 Model: 5W4C3F-C6ILHA0DUA1K0A+DAZ1 C6 Approval: CSA C/US NI Cl.I Div.2 Gr. ABCD I Design: Fixed flange, 0 x DN inlet/ outlet runs L Power Supply: 100-240VAC/24VAC/DC H Output; Input: 4-20mA HART, pulse/freq., switch output A Housing: Compact, alu, coated 0 Cable, Not used D Electrical Connection: Thread NPT1/2 U Liner: Polyurethane A1K Process Connection: Cl.150, carbon steel, flange ASME B16.5 0 Electrodes: 1.4435/316L A Calibration Flow: 0.5% DA >>Customized Parameterization: Output 1 Z1 >>Marking: Tagging (TAG), see additional spec. Details Curr. output 1 Volume flow Current span 4...20 mA NAMUR Value 0/4 mA: 0 USgal/min Value 20 mA: 4500 USgal/min Failsafe mode current output: Max. Damping output 1: 1 s Device 1 1x TAG stainless steel label (50105107)	20-FIT-301-1/2/3/4 RANGE: 0-4500 GPM	510464-DS-105	C10
28	8	3083677	GAUGE-PRESS,SS,4.5,BTM,15PSI,AS	PRESSURE GAUGE (COMPOUND), ASHCROFT PT# 45-1279SSL-4L 30"Hg/15PSI, SS BURDON TUBE AND SOCKET, 4.5"" DIAL, 30" MERCURY/15 PSI 1/2" LOWER CONNECTIONS, GLYCERINE FILLED, +/-0.5% ASME GR 2A ACCURACY, SOLID FRONT BLACK PHENOLIC CASE.	20-PI-302-1/2/3/4 20-PI-301-1/2/3/4 RANGE: 30" Mercury - 15 psi	510464-DS-105	C04
29	4	3089342	VALVE-BALL,FV,1",PVC/FPM,SRFC,24V	VALVE, BALL, 1", TRUE UNION, PVC BODY, TEFLON SEATS, FPM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 075, ASSEMBLY PT# S199 233 075 C/W CSA/UL APPROVED SOLENOID PILOT VALVE 24 V/DC TYPE PV95 PT#199190554CSA	20-FV-803-1/2/3/4	510464-DS-105	B02

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
30	4	3088951	VLVE,BALL,0.375",316SS,2PC,THD	VALVE, BALL, PINACLE, 3/8", 2-PC FULL PORT, P/N 13TBV20375,NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 16, 1000#WOG, WITH LEVER LOCKING HANDLE.	20-HV-321-1/2/3/4	510464-DS-105	B01

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
31	4	CFO	SAMPLE FEED PUMP FOR TURBIDITY METER ASSEMBLY	Material description: 1103629 - S1CBH07065PVTS070UD11001EN Ident.Code: S1CBH07065PVTS070UD11001EN Flow: 16.6GPH / 63L/H Pressure: 100PSI / 7BAR Options Included: dosing head material PV PVDF seal material T st.diaphragm / PTFE seal displacement material S Mult.-diaphragm detector opt execution of dosing head 0 w/o.vent valve, w/o. valvespr hydraulic connection 7 PVDF MNPT Connection execution 0 w. PM-Logo EI power supply U 100 - 240 V cable and plug D 2m USA relay function 1 fault indicating rel.(power) control version 1 Manual+cont.+p.c+Analog.+d overpressure shut-off 0 w./o. overpressure shut-off control unit 0 HMI w.Click Wheel (0,5m ca access code 1 w. contr. access contr. dyn languages EN english approval 07 MET (USA) 1001300 Universal Control Cable: 6 ft. (2m), 5 wire, 5 pole	20-P-321-1/2/3/4	510464-DS-105	A09
32	4	3196454	VALVE-BALL,PP,0.25X.38,MAN,MPTXTB,PARKER	POLYPROPYLENE BALL VALVES MFG: PARKER PART NUMBER: PP6VMC4-MG SHAPE: CONNECTOR STYLE: TUBE TO PIPE CONNECTION TYPE: COLLET CONNECTION 1 TUBE O.D. (INCH): 3/8 CONNECTION 1 STYLE: PUSH-TO-CONNECT CONNECTION 2 THREAD SIZE (INCH): 1/4 CONNECTION 2 STYLE: MALE PIPE PERFORMANCE CHARACTERISTICS MINIMUM OPERATING TEMPERATURE: 35 °F (2 °C) MAXIMUM OPERATING TEMPERATURE: 200 °F (93 °C) MAXIMUM OPERATING PRESSURE: 150 psi (10 bar) CONNECTION TYPE: NPTF SPECIFICATIONS MET: FDA, NSF-51, NSF-61 BODY MATERIAL: POLYPROPYLENE BALL MATERIAL: POLYSULFONE SEAT MATERIAL: EPDM	20-HV-320-1/2/3/4	510464-DS-105	B01
33	4	3178030	ASSY-TURBID,W/COLM,24V,SGL,HACH,TU5300	TURBIDITY PANEL ASSEMBLY C/W CLEANING MODULE ANF DEGASSING COLUMN	20-FV-324-1/2/3/4 20-HCV-324-1/2/3/4 20-TK-324-1/2/3/4 20-HV-324-1/2/3/4 20-FV-320-1/2/3/4 20-HCV-320-1/2/3/4 20-AE/AIT-320-1/2/3/4 20-FE-320-1/2/3/4	510464-DS-105	C15
34	4	3195051	CONTROLLER,DUAL,4-20MA,HACH,SC4500,120V	CONTROLLER, UNIVERSAL, HACH MODEL SC4500 LXV525.99A11551 - DUAL DIGITAL SENSOR INPUTS (SC CONECTORS) - 5) 4-20 mA OUTPUTS - 2) SPDT RELAY OUTPUTS - NEMA 4X/IP66 ENCLOSURE - 120 VAC 50/60HZ - MOUNTING HARDWARE FOR CONTROLLER INCLUDED	20-AIT-320-1/2/3/4	510464-DS-105	C15

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #	
35	4	3196221	ANALYZER-TURB,HACH,TU5300,W/CLEANER	MANUFACTURER: HACH P/N: LXV445.99.53112 MODEL: TU5300SC LOW RANGE LASER TURBIIDIMETER WITH FLOW SENSOR, AUTOMATIC CLEANING, RFID, AND SYSTEM CHECK, EPA VERSION MODEL: TU5300SC SPECIFICATIONS ACCURACY: ±2% OR 0.01 NTU FROM 0 - 40 NTU ±10% OF READING FROM 40 - 1000 NTU BASED ON FORMAZIN PRIMARY STD CABLE LENGTH:1.6 M (5.25 FT) CALIBRATION METHOD: FOR FORMAZIN AND STABLCAL®: 20 NTU FROM 0 TO 40 NTU; AT 20 FNU AND 600 NTU FOR FULL RANGE CUSTOM CALIBRATION FOR UP TO 6-POINT CALIBRATIONS CERTIFICATIONS: CE COMPLIANT US FDA ACCESSION NUMBER: 1420493-000 EPA VERSION, 1420492-000 ISO VERSION AUSTRALIAN ACMA MARKING COMMUNICATION: SYSTEM CHECK & RFID CONTROLLER: SENSOR ONLY DIMENSIONS (H X W X D):249 MM X 268 MM X 190 MM ENCLOSURE RATING: ELECTRONIC COMPARTMENT IP55; ALL OTHER FUNCTIONAL UNITS IP65 WITH PROCESS HEAD/ACM ATTACHED TO THE TU5300SC/TU5400SC INSTRUMENT FITTING TYPE: SAMPLE QUICK CONNECTOR: ¼-IN. FOR ¼-IN. TUBING INSTRUMENT: WITH FLOW SENSOR AND AUTOMATIC CLEANING MODULE LIGHT SOURCE: CLASS 2 LASER PRODUCT, WITH EMBEDDED 650 NM (EPA 0.43 MW) OR CLASS 1 LASER PRODUCT, WITH EMBEDDED 850 NM (ISO), MAX. 0.55 MW (COMPLIES WITH IEC/EN 60825-1 AND TO 21 CFR 1040.10 IN ACCORDANCE WITH LASER NOTICE NO. 50)		510464-DS-105	C15	
36				LOWER LIMIT OF DETECTION (LOD): 0.002 NTU MATERIAL: ASA S 777K / RAL7000, TPE RESIN ELASTOCON® STK40, THERMOPLASTIC ELASTOMER TPS-SEBS MODEL: TU5300SC MOUNTING CONFIGURATIONS: WALL MOUNT OPERATING HUMIDITY: RELATIVE HUMIDITY: 5 - 95% AT DIFFERENT TEMPERATURES, NON-CONDENSING OPERATING TEMPERATURE RANGE: 0 - 50 °C OPTIONS: PROCESS HEAD WITH FLOW SENSOR AND AUTOMATIC CLEANING MODULE POWER REQUIREMENTS (VOLTAGE): NONE RANGE: EPA: 0 - 700 NTU / FNU / TE/F / FTU 0 - 175 EBC REGULATORY: EPA REPEATABILITY: BETTER THAN 1% OF READING OR ±0.002 NTU ON FORMAZIN AT 25 °C (77 °F), WHICHEVER IS GREATER RESOLUTION: 0.0001 NTU / FNU / TE/F / FTU / EBC RESPONSE TIME: T90 <45 SECONDS AT 100 ML/MIN SAMPLE FLOW RATE: 100 - 1000 ML/MIN; OPTIMAL FLOW RATE: 200 - 500 ML/MIN SAMPLE PRESSURE: 6 BAR (87 PSI) MAXIMUM, COMPARED TO AIR AT SAMPLE TEMPERATURE RANGE FROM 2 - 40 °C (35.6 - 104 °F) SAMPLE TEMPERATURE: 2 - 60 °C (35 - 140 °F) SIGNAL AVERAGE TIME: 30 - 90 SECONDS STORAGE CONDITIONS: -40 - 60 °C (-40 - 140 °F) STRAY LIGHT: <10 MNTU SYSTEM CHECK: YES UNITS: NTU, FNU, TE/F, FTU, EBC VERIFICATION: LIQUID: STABLCAL®, FORMAZIN (0.1 - 40 NTU) DRY: GLASS ROD AT <0.1 NTU WARRANTY: 12 MONTHS				
P&ID BACKPULSE TANK/PUMP							510464-DS-106	
37	2	CFO	SULZER SUBMERSIBLE BACKPULSE PUMP	Backpulse Pump - Maximum Duty Point 3703 GPM @ 44ft TDH (22ft Static) Sulzer Submersible Pump (Wet Pit),Model #XFP255J-CB2-PE430/6,43kW- 1190RPM,460/60/3,complete with contrabock impeller,double mechanical seals,bi-metal switches plus Di seal probe,15m CSA Cable and DN250 Discharge. Accessories Included: *Guide Rail Assy /w Elbow and Upper Brkt DN250 (2"Dia Guide Pipe by Others) *Hardware Kit,SS *Lifting Chain 30ft Galv *Relay CA462 Heat/Seal 115V	20-P-610-A/B	510464-DS-106	A04	
38	2	3083502	CV,WFR,16"CENTERLINE,DI/SS	VALVE, CHECK, WAFER, CENTERLINE PT# 16R1644D5X, DUCTILE IRON BODY, EPDMRESILIENT SEAT, 316SS PLATE, SHAFT AND SPRINGS, 16", 150# RATING.	20-CV-602-1/2	510464-DS-106	B10	

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
39	2	3090321	VALVE-BTFLY,HV,16",LUG,SS,GEAR	VALVE, BUTTERFLY, BRAY SERIES 31-169, 16" CAST IRON LUG STYLE BODY, RATED VACUUM TO 150 PSI, SS DISC AND SHAFT, EPDM SEAT, GEAR OPERATOR; BRAY ASSEMBLY ID 9C160LF169G.	20-HV-610-1/2	510464-DS-106	B03
40	1	3089342	VALVE-BALL,PVC,1.00,A/S SV,SOC,FPM,24V	VALVE, BALL, 1", TRUE UNION, PVC BODY, TEFLON SEATS, FPM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 075, ASSEMBLY PT# S199 233 075 C/W CSA/UL APPROVED SOLENOID PILOT VALVE 24 V/DC TYPE PV95 PT#199190554CSA	23-FV-130	510464-DS-106	B02
41	1	3089339	VALVE-BALL,FV,0.5",PVC/EPDM,SRFC,24V	VALVE, BALL, 0.5", TRUE UNION, PVC BODY, TEFLON SEATS, EPDM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 063, ASSEMBLY PT# S199 233 063 C/W TYPE PV95 24 V/DC SOLENOID VALVE PT# 199 190 554CSA WITH MANUAL OVERRIDE, CSA/UL APPROVED.	23-FV-330	510464-DS-106	B02
42	1	3090241	VALVE-CHK,PVC,1.00,CONE,SOC,GF,VTN	VALVE, CONE CHECK, 1" TRUE UNION, GEORGE FISCHER, PT# 161 561 114,PVC BODY, FPM SEAL, SOCKET END CONNECTIONS. CV:32 MF: 18 L/m	23-CV-130	510464-DS-106	B15
43	1	1258023	VALVE-CHK,PVC,0.50,CONE,TU,EPDM,GF	CONE CHECK VALVE MANUFACTURER: GEORG FISCHER PART NUMBER: 161 561 102 SIZE: 0.50" TYPE: 561 BODY MATERIAL: PVC SEAL MATERIAL: EPDM PRESSURE RATING: 150 psig END CONNECTIONS: TRUE UNION (SOCKET/NPT) CV:13 MF:9 L/m	23-CV-330	510464-DS-106	B15
44	1	3087944	VALVE-BALL,PVC,1.00,GF,COMBO,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, OLD PT# V161546354, NEW PT#151546354, 1", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-130	510464-DS-106	B01
45	1	3087942	VALVE-BALL,PVC,0.50,COMBO,VENTED,GF	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, PT# V161546352, 0.5", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-330	510464-DS-106	B01
46	1	3067260	VALVE-BALL,0.5",316SS,1PC,THD	VALVE, BALL, PINACLE, 1/2", 1-PC REDUCED PORT, P/N 13TBV105, NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 5.5, 800# WOG, WITH LEVER LOCKING HANDLE	20-HV-602	510464-DS-106	B01

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
#REF!	1	CFO	TEMPERATURE TRANSMITTER	Temperature sensor/Transmitter RTD assembly TH13, TW type US style Manufacturer: E+H Tags: 20-TIT-301 Model: TH13-6A23X2EBA1EC 6 Thermowell Immersion length U: 16.50 Inch 16.5 inch A2 Process Connection; Material: NPT3/4 male thread; 316 3 Thermowell Shape: Tapered X Thermowell Lag T: 1.00 Inch 2 Extension: Nipple+union+nipple 316 E=4" E Sensor Type: 1xPt100 class B, 4-wire, -50-200oC B Enclosure; Cable Entry: Alu, E+H blue; NPT1/2 A Electrical Connection: **Programmable RTD TMT180 1 Additional Option 1: Not selected 2 Additional Option:E Calibration certificate 1x RTD + EN10204-3.1 material certificate incl. MTR + NACE MR0175 and MR0103, 0oC + 2 points variable, as specified C Version: Acc. to ASME PTC 19.3 TW2016,certificate for passed thermowell calculation Details: Low range value: 32 °F Upper range value: 90 °F Failure mode(1=low<3.6mA,2=high>21mA): 2 Calibration point 2: 45 °F Calibration point 3: 90 °F Medium: LIQUID Fluid type: Liquid (water) Max. temperature: 150 °F Max. pressure: 20 psi g Density: 1 lb/USgal Viscosity: 0.01 cP	20-TIT-301 RANGE: 0 - 50 DEG C	510464-DS-106	C03
#REF!	1	3136674	TRANS-LEVEL,316,3.00,FLG,118",E+H	"ENDRESS+HAUSER Transmitter, Level. Deltapilot M FMB51-CD21JD1FGK85AGJB3U [CD] Approval: CSA C/US General Purpose [2] Output: 4-20mA HART [1] Display, Operation: LCD, push button on display/electronics [J] Housing: F31 Alu, Glass window [D] Electrical Connection: Thread NPT1/2, IP66/68 NEMA4X/6P [1F] Sensor Range: 400mbar/40kPa/6psi gauge,4mH2O/13ftH2O/160inH2Ooverload: 8bar/800kPa/120psi [G] Reference Accuracy: Standard [K] Calibration; Unit: Customised level; see additional spec.. > Additional text: 0...118"" H2O [85] Probe Connection: 118 in rod, 316L [AGJ] Process Connection: 3"" 150lbs RF, 316/316Lflange ANSI B16.5 [B] Membrane Material: AlloyC [3] Fill Fluid: Synthetic oil, FDA [U] Seal: None, cell welded"	20-LIT-601 118" rod length to be finalized	510464-DS-106	C09
#REF!	1	3023463	GAUGE-PRESS,316,4.5,BCK,0.50M,30PSI,AS	PRESSURE INDICATOR ASHCROFT 45-1279SS-04B-0/30PSI DIAL SIZE: 4.5" CASE MATERIAL: PHENOLIC WINDOW MATERIAL: GLASS PROCESS CONNECTION: 1/2" NPTM, BACK WETTED PARTS MATERIAL: 316SS RANGE: 0-30 PSIG	20-PI-602	510464-DS-106	C04

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
#REF!	1	CFO	TRANS-FLOW,MAG,14.0FLG,0-4500GPM,PROMAG 400,E+H	Electromagnetic Flow meter Promag E 400, 5W4C3F, DN350 14" Manufacturer: E+H Tags: 20-FIT-602 Model: 5W4C3F-C6ILHA0DUA1K0A+DAZ1 C6 Approval: CSA C/US NI Cl.I Div.2 Gr. ABCD I Design: Fixed flange, 0 x DN inlet/ outlet runs L Power Supply: 100-240VAC/24VAC/DC H Output; Input: 4-20mA HART, pulse/freq., switch output A Housing: Compact, alu, coated 0 Cable, Not used D Electrical Connection: Thread NPT1/2 U Liner: Polyurethane A1K Process Connection: Cl.150, carbon steel, flange ASME B16.5 0 Electrodes: 1.4435/316L A Calibration Flow: 0.5% DA >>Customized Parameterization: Output 1 Z1 >>Marking: Tagging (TAG), see additional spec. Details Curr. output 1 Volume flow Current span 4...20 mA NAMUR Value 0/4 mA: 0 USgal/min Value 20 mA: 4500 USgal/min Failsafe mode current output: Max. Damping output 1: 1 s Device 1 1x TAG-stainless steel label (50105107)	20-FIT-602 RANGE: 0-4500 GPM	510464-DS-106	C10
#REF!		3104114	SWITCH-PRESS,UE,0-50PSI,J6-354	PRESSURE SWITCH, 0-50 PSI ADJUSTABLE RANGE, 1/4" NPT, 100107 UNITED ELECTRIC CONTROLS, J6-354	20-PSH-601 20-PSH-602 SET POINT: 30 PSIG	510464-DS-106	C02
#REF!	1	CFO	16" BASKET STRAINER	IFC Model: 16-B125FIB1 Strainer type: Cast Iron Basket Strainer Inlet/Outlet Connection: 16", 125#. FF Flanges per ASME B16.1 Body, Cover & Manifold Material: A126-B CAST IRON Basket filtration: 0.41 mm perforated screen. Option for 2mm at no extra cost. Basket Material: 304 Stainless Steel Cover Type: Bolted Flange Cover Gasket: Graphite DP Connections: ¾" NPT Instrumentation: Differential Pressure Switch with 2.5" dial, isolation valves and line filters. Drain Connection: 2" NPT c/w Plug Design Pressure: 150 PSI @ 150°F	20-SCN-600 C/W 20-DPS-600	510464-DS-106	B13
	1	3067264	VALVE,BALL,2",316SS,1PC,THD	VALVE, BALL, PINACLE, 2", 1-PC REDUCED PORT, P/N 13TBV12, NPT,316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 60, 1000# WOG, WITHLEVER LOCKING HANDLE.	20-HV-600	510464-DS-106	B01
P&ID EJECTOR FOR PERMEATE UPSTREAM LINES						510464-DS-109 SHEET 1	
55	1	3178110	ASSY-EJECTOR,316,24VDC,SS TUBE	ASSEMBLY EJECTOR (AIR ASSEMBLY AND WATER ASSEMBLY)	20-HV-802-5 20-PCV-801-5 20-FV-802-5 20-FV-801-5 20-E-801-5 20-HV-801-5 20-HV-803-5	510464-DS-109 SHEET 1	A06
56	1	3178110	ASSY-EJECTOR,316,24VDC,SS TUBE	ASSEMBLY EJECTOR (AIR ASSEMBLY AND WATER ASSEMBLY)	20-HV-802-6 20-PCV-801-6 20-FV-802-6 20-FV-801-6 20-E-801-6 20-HV-801-6 20-HV-803-6	510464-DS-109 SHEET 1	A06
P&ID EJECTOR FOR COMMON PERMEATE HEADER						510464-DS-109 SHEET 2	
56	1	3178110	ASSY-EJECTOR,316,24VDC,SS TUBE	ASSEMBLY EJECTOR (AIR ASSEMBLYAND WATER ASSEMBLY)	20-HV-802-7 20-PCV-801-7 20-FV-802-7 20-FV-801-7 20-E-801-7 20-HV-801-7 20-HV-803-7	510464-DS-109 SHEET 2	A06
P&ID - RAS/DRAIN PUMP AND ACCESSORIES						510464-DS-110	

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
57	4	CFO	SULZER RAS/DRAIN PUMP	Sulzer End Suction Centrifugal Pump Model #APT52-16 (SO) /w Open Impeller,Cast Iron Volute/Stainless Steel Impeller,JC 5610 Cartridge Seal (SiC/SiC/EPDM,No Flush),Standard Baseplate,Severe duty 590RPM 30HP TEFC T 460/60/3 Foot-mounted,Inverter Duty Electric Motor Designed for Max Ras flow of 6,302GPM @ 12ft TD, Minimum RAS Flow : 3,125 GPM Minimum flow (For Drain cycle): 1,900 GPM Minimum continuos stable flow: 1,550 GPM	20-P-501-1/2/3/4	510464-DS-110	A04
58	8	3023136 C/W Diaphragm seal by the vendor	GAUGE-PRESS,316,4.5,BTM,0.5M,15PSI,AS	PRESSURE INDICATOR ASHCROFT 45-1279SS-04L-0/15PSI DIAL SIZE: 4.5" CASE MATERIAL: PHENOLIC WINDOW MATERIAL: GLASS PROCESS CONNECTION: 1/2" NPTM, LOWER WETTED PARTS MATERIAL: 316SS RANGE: 0-15 PSIG Customized with diaphragm seal by the vendor	20-PI-503-1/2/3/4 20-PI-504-1/2/3/4 RANGE: 0-15 PSIG C/W diaphragm seal by the vendor	510464-DS-110	C04
59	4	CFO	TRANS-FLOW,MAG,16.0FLG,0-7000GPM,PROMAG 400,E+H	Electromagnetic Flow meter Promag E 400, 5W4C4H, DN400 16" Manufacturer: E+H Tags: 20-FIT-507-1, 20-FIT-507-2, 20-FIT-507-3, 20-FIT-507-4 Model: 5W4C4H-C6ILHA0DUA1K0A+DAZ1 C6 Approval: CSA C/US NI Cl.I Div.2 Gr. ABCD I Design: Fixed flange, 0 x DN inlet/ outlet runs L Power Supply: 100-240VAC/24VAC/DC H Output; Input: 4-20mA HART, pulse/freq., switch output A Housing: Compact, alu, coated 0 Cable, Not used D Electrical Connection: Thread NPT1/2 U Liner: Polyurethane A1K Process Connection: Cl.150, carbon steel, flange ASME B16.5 0 Electrodes: 1.4435/316L A Calibration Flow: 0.5% DA >>Customized Parameterization: Output 1 Z1 >>Marking: Tagging (TAG), see additional spec. Details Curr. output 1 Volume flow Current span 4...20 mA NAMUR Value 0/4 mA: 0 USgal/min Value 20 mA: 6500 USgal/min Failsafe mode current output: Max. Damping output 1: 1 s Device 1 1x TAG-stainless steel label (50105107)	20-FIT-507-1/2/3/4 RANGE: 0-7000 GPM	510464-DS-110	C10
60	16	3067262	VALVE-BALL,1",316SS,1PC,THD	VALVE, BALL, PINACLE, 1", 1-PC REDUCED PORT, P/N 13TBV11,NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 15.5,800# WOG, WITH LEVER LOCKING HANDLE.	20-HV-503-1/2/3/4 20-HV-504-1/2/3/4 20-HV-506-1/2/3/4 20-HV-505-1/2/3/4	510464-DS-110	B01
61	4	CFO	CV,WFR,18"CENTERLINE,DI/SS	VALVE, CHECK, WAFER, CENTERLINE PT# 18R1644D5X, DUCTILE IRON BODY, EPDMRESILIENT SEAT, 316SS PLATE, SHAFT AND SPRINGS, 18", 150# RATING.	20-CV-501-1/2/3/4	510464-DS-110	B10
62	4	CFO	VALVE-KNIFEGATE,316,18.0, SV,LG,24,UD	18" Orbinox Series 22, P/N: 22-3636RE-18.0-HW KNIFEGATE V. SERIES 22 DN450 (18") ASME-150 Bidirectional Body CF8M Gate AISI 316 Seat EPDM Packing ST (Synth. fib.) Yoke AISI 304 Actuator Manual Handwheel Rising Stem Media Liquid PS 10.0 bar 150.0 psi TS -20.0 / 80.0 °C; -4.0 / 176.0 °F DP Act 5.0 bar	20-HV-501-1/2/3/4	510464-DS-110	B17

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
	1	CFO	VALVE-KNIFEGATE,316,36.0,A/A SV,LG,24,UD/LS	36" Orbinox Series 20 P/N: 20-3636RE-36.0-DARDC-SOL-TRSTOP-PROX KNIFEGATE V. SERIES 20 DN900 (36") ASME-150A Unidirectional Body CF8M Gate AISI 316 Seat EPDM Packing ST (Synth. fib.) Yoke AISI 304 Actuator Pneumatic RDC Double Acting Pmin 6.0 bar / Pmax 8.0 bar Solenoid Valve NUMATICS 153SA43CM000030 NPT 3/8 24 V DC Monostable (1 Coil) Valve Electrical Failure Position Close 2x Inductive Switch TELEMECANIQUE XS618B1MAL2 , 2 wire, NO, (24...240) Vac/dc, LED, IP68, (-25...70) °C, cable 2 m Standard DA CYLRDC-16X37 TRAVEL STOP Installed - When the valve is opened, it will open to 95% (remain 5% closed) Media Liquid PS 7.0 bar 100.0 psi TS -20.0 / 80.0 °C; -4.0 / 176.0 °F DP Act 2.0 bar	16-FV-510	510464-DS-110	B18
63	1	CFO	HV,KNIFEGATE,4",LUG,UNI-DIR	4" Manual Orbinox Knife Gate Series 20 P/N: 20-3636RE-04.0-HW KNIFEGATE V. SERIES 20 DN100 (4") ASME-150 Unidirectional Body CF8M Gate AISI 316 Seat EPDM Packing ST (Synth. fib.) Yoke AISI 304 Actuator Manual Handwheel Rising Stem Media Liquid PS 10.0 bar 150.0 psi TS -20.0 / 80.0 °C; -4.0 / 176.0 °F	16-HV-705	510464-DS-110	B17
64	1	3090263	HV,DIA,4",FLG,PVC/TFE	VALVE, DIAPHRAGM, MANUAL, GEORGE FISCHER TYPE 317, PART# 161 317 340, 4", PVC BODY, TEFLON DIAPHRAGM, FLANGED CONNECTIONS.	16-HV-700	510464-DS-110	B22
65	1	CFO	VALVE-KNIFEGATE,316,4.0,A/A SV,LG,24,UD/LS	4" Orbinox Knife Gate Series 20, P/N: 20-3636RE-04.0-DARDC-SOL-PROX KNIFEGATE V. SERIES 20 DN100 (4") ASME-150 Unidirectional Body CF8M Gate AISI 316 Seat EPDM Packing ST (Synth. fib.) Yoke AISI 304 Actuator Pneumatic RDC Double Acting Pmin 6.0 bar / Pmax 8.0 bar Solenoid Valve NUMATICS 082SA43CM000030 NPT 1/4 24 V DC Monostable (1 Coil) Valve Electrical Failure Position Close Junction Box 2x Inductive Switch TELEMECANIQUE XS618B1MAL2 , 2 wire, NO, (24...240) Vac/dc, LED, IP68, (-25...70) °C, cable 2 m CYLRDC-04X05 Media Liquid PS 10.0 bar 150.0 psi TS -20.0 / 80.0 °C; -4.0 / 176.0 °F	16-FV-700	510464-DS-110	B18

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
66	1	CFO	TRANS-FLOW,MAG,3.0FLG,0-130GPM,PROMAG 400,E+H	Electromagnetic Flow meter Promag E 400, 5W4C80, DN80 3" Manufacturer: E+H Tags: 16-FIT-707 Model: 5W4C80-C6ILHA0DUA1K0A+AADAZ1 C6 Approval: CSA C/US NI Cl.I Div.2 Gr. ABCD I Design: Fixed flange, 0 x DN inlet/ outlet runs L Power Supply: 100-240VAC/24VAC/DC H Output; Input: 4-20mA HART, pulse/freq., switch output A Housing: Compact, alu, coated O Cable, Not used D Electrical Connection: Thread NPT1/2 U Liner: Polyurethane A1K Process Connection: Cl.150, carbon steel, flange ASME B16.5 O Electrodes: 1.4435/316L A Calibration Flow: 0.5% DA >>Customized Parameterization: Output 1 Z1 >>Marking: Tagging (TAG), see additional spec. Details Curr. output 1 Volume flow Current span 4...20 mA NAMUR Value 0/4 mA: 0 USgal/min Value 20 mA: 130 USgal/min Failsafe mode current output: Max. Damping output 1: 1 s Device 1 1x TAG-stainless steel label (50105107)	16-FIT-707 RANGE: 0-130 GPM	510464-DS-110	C10
P&ID - NaOH CHEMICAL SKID						510464-DS-111 SHEET 1	
69	1	CFO	Floor mounted, Dual metering pump, Chemical injection skid For NaOH (Sodium Hydroxide)	See the drawing 1061538-200 for Unit General arrangment Motor-DrivenMeteringPumpSigmaXControlType#Sigma3-S3Cb Design for two pumps to operate in a Duty/Stand-by configuration with only one pump operating at a time. As standard, the package includes a 0-160 PSI pressure gauge, a calibration column, back pressure valve and a pressure relief valve. Designed for use with ProMinent DN32 sized Sigma pumps. Line Size: 1.5 Inch Piping Material: PVC Seal Materials: EPDM Design Pressure: 150psi Flow: 132.1GPH / 500L/H Pressure: 100PSI / 7BAR	15-P-301-A/B 15-FQI-301 15-HV-300 15-HV-313 15-HV-312 15-HV-322 15-HV-323 15-HV-311 15-HV-321 15-PSV-310 15-PSV-320 15-HV-302 15-HV-320 15-HV-301 15-PCV-301	510464-DS-111 SHEET 1	A09
P&ID - CITRIC ACID AND SODIUMHYPOCHLORITE SKIDS						510464-DS-111 SHEET 2	
72	1	CFO	PUMP-CENT,DB9V,MAG,1HP,FKM,460/3/60,FT	SYSTEM1.SodiumHypochloriteDosingSkid Chemical: Sodium Hypochlorite 12% Viscosity (at operating temperature): 2.5 cPs Operating flow rate: -Maintenance Clean: 0.52 USGPM-0.62 USGPM -Recovery Clean: 2.88 USGPM-3.41 USGPM Discharge pressure: 20 psig (customer to specify) Operating temperature: 20 °C Ambient temperature: 10-25 °C Area classification: non-hazardous area Location: Indoor heated *Please, see pump performance curve to determine flow capacity and discharge pressure. SCOPE OF SUPPLY Dual-pump (duty/back-up) floor-mounted skid. The system is designed as per attached drawing# 1122683-200 R0-System 1 List of main components: Pump (Qty:2) -Tags: 23-P-101-A/B -Pump type: MAG Drive Pump -Model: DB9V-R-FF-M219 -Body:PVDF -Impeller Bushing: Ceramic -O-Ring: FKM -Connection: FRP ANSI150# -Impeller Size: 4.18" -Magnet Set: 8-Pole -Motor: 1.0 HP. 3 ph/60 Hz/208-230/460V. 3450 rpm. TEFC	23-P-101-A/B 23-CV-105-A/B 23-HCV-105 23-HCV-106 23-PSV-101 23-STR-103 23-HV-101 23-HV-102 23-HV-103-A/B 23-HV-104-A/B 23-HV-107-A/B 23-HV-106-A/B 23-CV-105-A/B 23-HV-108 23-PI-101 23-PI-102 23-FIT-101 23-FV-105	510464-DS-111 SHEET 2	A09

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

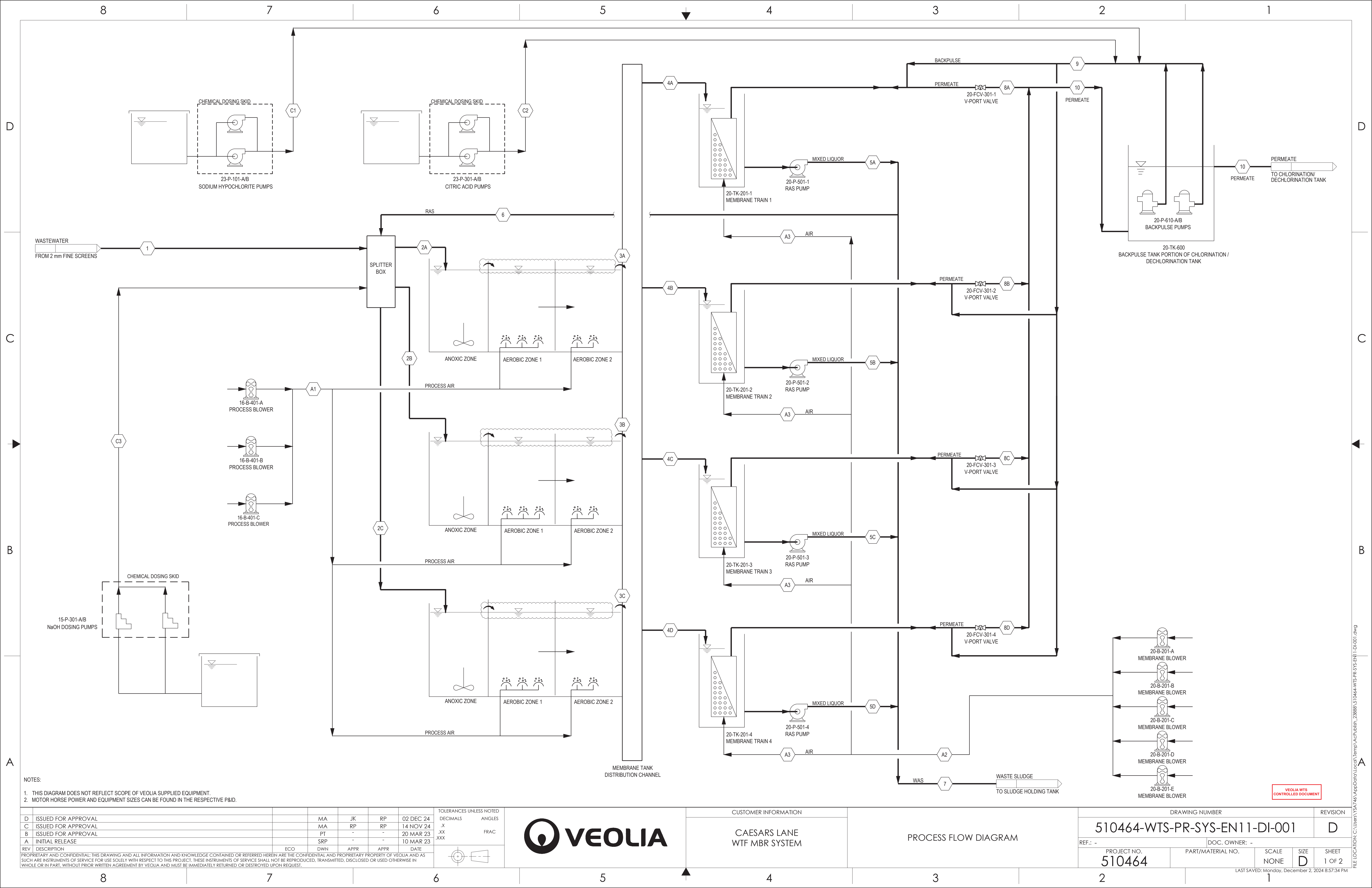
S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
75	1	CFO	PUMP-CENT,DB9V,MAG,1HP,EPDM,460/3/60,FT	SYSTEM2.CitricAcidDosingSkid Chemical: Citric Acid 50% Viscosity (at operating temperature): 20 cPs Operating flow rate: -Maintenance Clean: 1.02 USGPM-1.2 USGPM -Recovery Clean: 1.12 USGPM-1.32 USGPM Discharge pressure: 20 psig (customer to specify) Operating temperature: 20 °C Ambient temperature: 10-25 °C Area classification: non-hazardous area Location: Indoor heated *Please, see pump performance curve to determine flow capacity and discharge pressure. SCOPE OF SUPPLY Dual-pump (duty/back-up) floor-mounted skid. The system is designed as per attached drawing# 1122685-200 R0-System 2. List of main components: Pump (Qty:2) -Tags: 23-P-301-A/B -Pump type: MAG Drive Pump -Model: DB9V-R-E-FF-M219 -Body:PVDF -Impeller Bushing: Ceramic -O-Ring: EPDM -Connection: FRP ANSI150# -Impeller Size: 4.18" -Magnet Set: 8-Pole -Motor: 1.0 HP, 3 ph/60 Hz/208-230/460V, 3450 rpm, TEFC	23-P-301-A/B 23-CV-305-A/B 23-HCV-305 23-HCV-306 23-PSV-301 23-STR-303 23-HV-301 23-HV-302 23-HV-303-A/B 23-HV-304-A/B 23-HV-307-A/B 23-HV-306-A/B 23-CV-305-A/B 23-HV-308 23-PI-301 23-PI-302 23-FIT-301 23-FV-305	510464-DS-111 SHEET 2	A09
	1	3084450	SWITCH-FLOAT,KYNAR,240VAC/VDC,KO,20FT	LEVEL SWITCH FLOAT, KOBOLD PT# NCK-2554, 20' CALBE W/ PVC JACKET, 1/8" NPT TOP MOUNTED CONNECTION, 1" X 1" FLOAT. KYNAR, 240 VAC AC/DC @ 0.5 AMPS.	23-LSL-301	510464-DS-111 SHEET 2	C09

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
P&ID, AIR COMPRESSOR						510464-DS-112	
76	2	CFO	COMPRESSOR-AIR,10 HP,120 GAL,V,ATLAS COPCO	CR10-TSP-120 Gal Vertical 460/3/60-PS,TN4 Atlas Copco 10 HP two-stage pressure lubricated packaged piston air compressor mounted on 120 gallon vertical air vessel. Key feature: • Cast iron design to ensure durability and reliability for all demanding applications • Fully enclosed belt guard for additional equipment safety • ASME safety valves • Stainless steel valves • Aftercooler included for lower compressed air outlet temperature • Start/Stop pressure switch control - Magnetic motor starttr with NEMA 4 panel (To be removed from the compressor by the vendor) • Loose timed drain • Comes equipped with head unloaders • TEFC motor • 1-year bumper-to-bumper warranty Characteristics • Maximum air pressure: 175 psig • Free air delivery:23.8 cfm @ 150 psig • Connection: 1" NPT • Voltage: 480V / 3Ph / 60Hz • Dimensions: 40" x 30" x 77" (L x W x H) • Weight: 599 lbs UD15+ COALESCENT FILTER • 2-in-1 combination coalescing filter • Oil removal down to 0.0009 ppm • Particle removal down to 0.01 µm • Pressure drop indicator on filter	90-AC-001-A/B 90-PSV-001-A/B 90-HV-001-A/B 90-PSL-001-A/B 90-PI-001-A/B 90-F-001-A/B 90-FV-001-A/B 90-TK-001-A/B	510464-DS-112	A07
	2	CFO	Compressor Local Control/Starter Panel (By Veolia)	Compressor Local Control/Starter Panel (By Veolia)	90-LCP-001A 90-LCP-001B	510464-DS-112 (BY ELECTRICAL)	
77	2	CFO	DRYER-AIR,FX15,30CFM,ATLAS COPCO	Atlas Copco FX15 refrigerant air dryer. Removes any condensate from the compressed air and provides a steady pressure dew point as low as +4°C. Characteristics • Maximum working pressure: 232 psig • Inlet capacity: 30 cfm • Pressure drop at full flow: 3.63 psi • Connections: 3/4 " NPT • Voltage: 115V / 1Ph / 60Hz • Dimensions: 19.4 x 13.8 x 17.7 inches (L x W x H) • Weight: 44 lbs	90-DR-001-A/B	510464-DS-112	A08
78	4	3088952	VALVE-BALL,316,0.75,2PC THD	VALVE, BALL, 3/4", 2-PC FULL PORT,NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 55, 1000#WOG, WITH LEVER LOCKING HANDLE. PINACLE P/N 13TBV2075	90-HV-002-A/B 90-HV-003-A/B	510464-DS-112	B01

510464- CAESAR LANES- EQUIPMENT BILL OF MATERIAL- REV D

S. No	Qty	SAP Part No. OR CFO	Primary Description	Complete Description	Tags	Drawing No.	Cutsheet Binder Tab #
79	1	3148892	ASSY-INSTR,AIR,30CFM,NUM,W/ PNL	MAIN AIR COMPONENT KIT FOR AIR COMPRESSOR INSTRUMENT AIR ASSEMBLY (MOUNTED ON PANEL) MANUFACTURER: ASCO/NUMATICS (EMERSON) MFR. P/N: 1NCS22-118012-2 QTY 1 - P/N: A652A0000012901, 652 AIR PREP ASSEMBLY QTY 1 - P/N: 8652AD004TA0000, 652 DIVERTER BLOCK QTY 1 - P/N: 8652A3M04011100, 652 SHUT-OFF QTY 1 - P/N: 8652AFML4HA000N, 652 COAL FILTER QTY 1 - P/N: 8652A2M040A0000, 652 SHUT-OFF QTY 1 - P/N: 8652AD004TA0000, 652 DIVERTER BLOCK QTY 1 - P/N: 8652AK004N122G0, 652 REGULATOR QTY 2 - P/N: P699AT502467001, SUPPORT BRACKET QTY 1 - P/N: A652A0000012584, 652 AIR PREP ASSEMBLY QTY 1 - P/N: 8652A2M040A0000, 652 SHUT-OFF QTY 1 - P/N: 8652AD004TA0000, 652 DIVERTER BLOCK QTY 1 - P/N: P699AT502467001, SUPPORT BRACKET QTY 1 - P/N: 129-197, 1/2 NPT S.S. PIPE PLUG QTY 4 - P/N: INB103-102-023, MALE CONNECTOR QTY 1 - P/N: NS5752, MOUNTING PLATE QTY 6 - P/N: NS3878, 1/4-20 X 1 1/4 SS SHCS QTY 6 - P/N: NS2621, 1/4-20 SS HEX NUT QTY 2 - P/N: NS4276 or AP25P-04-F2-QD, PRESSURE SWITCH QTY 2 - P/N: NS5751, 5M CABLE QTY 1 - P/N: NS3567, REDUCER BUSHING QTY 3 - P/N: QRTU50BL-1, 1/2 OD BLUE TUBING MAX. FLOW: 30.5 SCFM (864 L/min), P1 = 91 PSI (6.3 bar) w/ ΔP = 5 PSI	90-HV-005 90-HV-006 90-HV-004 90-F-002 90-PDI-001 90-PCV-001 90-PSLL-002 90-PSL-003	510464-DS-112	C18



PFD Flow Data					Caesar's Lane								510464	
Stream ID	Stream Description		Type of Flow	Units	MIN	Init ADF	ADF	MMF	MMF-1	MDF	MDF N-1	PHF	Buildout	
					Minimum Equipment Sizing	Initial Flow	Average Day Flow	Maximum Month Flow	Maximum Month Flow With One Train Offline	Maximum Day Flow	Maximum Day Flow With One Train Offline	Peak Hour Flow	Maximum Equipment Sizing	
	Plant Capacity			MGD	1.00	3.00	5.00	8.00	8.00	11.00	11.00	16.50	16.50	
	Number of Bio Trains				3	3	3	3	3	3	3	3	3	
-	Number of membrane trains running		-	n	1	2	4	4	3	4	3	4	4	
-	Modules per Train		-	n	352	352	352	352	352	352	352	352	384	
1	Plant Raw Influent Flow (Total)		Continuous	gpm	694	2,083	3,472	5,556	5,556	7,639	7,639	11,458	11,458	
2A/B/C	Bioreactor Influent Flow (Per Bio Train)		Continuous	gpm	231	694	1,157	1,852	1,852	2,546	2,546	3,819	3,819	
3A/B/C	Bioreactor Overflow (Per Bio Train)		Continuous	gpm	231	694	1,157	1,852	1,852	2,546	2,546	3,819	3,819	
-	Membrane Recycle Ratio [R]		-	-	4.5	7.0	4.0	4.0	3.0	3.0	2.3	2.2	2.2	
-	Membrane Feed Activated Sludge Flow (Total) [(R+1) × Q]		Continuous	gpm	3,819	16,667	17,361	27,778	22,222	30,556	25,208	36,667	36,667	
4A/B/C/D	Membrane Feed Activated Sludge Flow (Per Train) [(R+1) × Q]		Continuous	gpm	3,819	8,333	4,340	6,944	7,407	7,639	8,403	9,167	9,167	
5A/B/C/D	Membrane Recirculated Activated Sludge (RAS) Flow (Per Train) [R × Q]		Continuous	gpm	3,125	7,292	3,472	5,556	5,556	5,729	5,856	6,302	6,302	
	Membrane Tank Drain Flow		Intermittent	gpm					1,995				1,995	
6	Membrane Recirculated Activated Sludge (RAS) Flow (Total) [R × Q]		Continuous	gpm	3,125	14,583	13,889	22,222	16,667	22,917	17,569	25,208	25,208	
7	Waste Activated Sludge (WAS)	Volume	Daily Average	gpd	4,900	11,000	28,500	50,500	50,500	70,000	70,000	70,000	70,000	
		Wasting Duration Per Day	-	hours	8	8	8	8	8	8	8	8	8	
		Flow	Intermittent	gpm	10	23	59	105	105	146	146	146	146	
8A/B/C/D	Permeate Flow (Per Train)	Net [Q]	Net	gpm	694	1,042	868	1,389	1,852	1,910	2,546	2,865	2,865	
		Instantaneous	Instantaneous	gpm	736	1,104	920	1,625	2,167	2,234	2,979	3,352	3,438	
9	Backpulse Flow	Backpulse	Intermittent	gpm					3,394				3,703	
		Maintenance Clean	Intermittent	gpm					1,555				1,696	
		Recovery Clean	Intermittent	gpm					1,555				1,696	
10	Permeate Flow (Total)	Net [Q]	Net	gpm	694	2,083	3,472	5,556	5,556	7,639	7,639	11,458	11,458	
		Instantaneous	Instantaneous	gpm	736	2,208	3,681	6,500	6,500	8,938	8,938	13,406	13,750	
Chemical Flows														
C1	Sodium Hypochlorite (12% w/v) (10.3% w/w solution)	Maintenance Clean	Intermittent	gpm					2.58				2.82	
		Recovery Clean	Intermittent	gpm					14.22				15.51	
C2	Citric Acid (50% w/w solution)	Maintenance Clean	Intermittent	gpm					5.02				5.47	
		Recovery Clean	Intermittent	gpm					5.52				6.02	
C3	NaOH (25%)		Continuous	gpm					TBD				1.67	
Air Flows														
A1	Process Air to Aerobic Tank		Continuous	scfm	4,076	4,076	4,076	4,076	4,076	4,076	4,076	4,076	4,076	
A2	Membrane Air (Total)	Leap Low	Continuous	icfm	740	1,480	2,961	2,961	2,221	2,961	2,221	2,961	3,221	
		Leap High	Continuous	icfm	1,480	2,961	5,922	5,922	4,441	5,922	4,441	5,922	6,442	
A3	Membrane Air (Per Train)	Leap Low	Continuous	icfm					740				805	
		Leap High	Continuous	icfm					1,480				1,611	

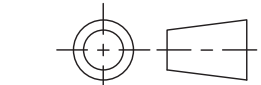


CAESARS LANE WASTEWATER TREATMENT FACILITY (WTF) MBR SYSTEM

PIPING & INSTRUMENTATION DIAGRAMS

VEOLIA WTS
CONTROLLED DOCUMENT

E	REVISED AS NOTED	-	NE	MR	KK	08 MAY 25
D	REVISED AS NOTED	-	SBN	MR	KK	25 NOV 24
C	REVISED AS NOTED	-	AS	MR	KK	23 JAN 24
B	REVISED AS NOTED	-	PT	MR	KK	23 MAR 23
A	INITIAL RELEASE	-	PT	MR	KK	17 FEB 23
REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF VEOLIA AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY VEOLIA AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.						



CAESARS LANE WTF
MBR SYSTEM

P&ID
TITLE PAGE

DRAWING NUMBER					REVISION
510464-WTS-PR-SYS-EN21-DS-100					E
REF.: -		DOC. OWNER: -			
PROJECT NO. 510464		PART/MATERIAL NO.	SCALE NONE	SIZE D	SHEET 1 OF 3

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8		7		6		5		4		3		2		1	
CONTROL VALVE ACTUATORS		VALVE SYMBOLS		RELIEF		PUMPS, BLOWERS, & COMPRESSORS		FLOW ELEMENT		CONNECTIONS		FILTERS		VESSELS/TRIM	
ACTUATED VALVE OPERATION IS NORMALLY CLOSED UNLESS MARKED OTHERWISE		OPEN DURING NORMAL PROCESS OPERATION		CLOSED DURING NORMAL PROCESS OPERATION											
PISTON DOUBLE ACTING		GATE (OR GENERIC)		PRESSURE SAFETY		CENTRIFUGAL PUMP		PADDLE WHEEL		FLANGE		FIXED SCREEN		CONICAL BOTTOM TANK	
PISTON SPRING TO OPEN		BALL		VACUUM SAFETY		CENTRIFUGAL/REGENERATIVE BLOWER		ANNUBAR		FLANGE BLIND		TOP HAT STRAINER		PROPELLER AGITATOR	
PISTON SPRING TO CLOSE		BUTTERFLY		MULTIFUNCTION		PROPELLER PUMP		FLOW NOZZLE		MECHANICAL COUPLING OR VICTAULIC		BAR SCREEN		VORTEX BREAKER	
DIAPHRAGM DOUBLE ACTING		GLOBE		PRESSURE RUPTURE DISK		METERING PUMP		FLUME		MECHANICAL COUPLING OR VICTAULIC PLUG		HEPA FILTER		VESSEL INSULATION	
DIAPHRAGM SPRING TO OPEN		DIAPHRAGM		VACUUM RUPTURE DISK		AIR OPERATED DOUBLE DIAPHRAGM PUMP		MAGNETIC		SANITARY		Y STRAINER		TANK (CLOSED TOP)	
DIAPHRAGM SPRING TO CLOSE		ANGLE		PRESSURE RUPTURE DISK		POSITIVE DISPLACEMENT PUMP		PITOT		SANITARY PLUG		CONICAL STRAINER		TANK (OPEN TOP)	
DIAPHRAGM DOUBLE BALANCING		PLUG		VACUUM RUPTURE DISK		VERTICAL TURBINE PUMP		SONIC/ULTRASONIC		THREADED		FILTER		DOMED TANK	
BACK PRESSURE CONTROL (EXTERNAL REGULATING)		PINCH		AIR RELEASE		CAN PUMP		TURBINE		THREADED PLUG		PUMP SCREEN		MANHOLE	
BACK PRESSURE CONTROL (INTERNAL REGULATING)		V-BALL		VACUUM RUPTURE DISK		AIR COMPRESSOR PISTON		VENTURI TUBE		SOCKET		STEAM TRAP		MANHOLE W/ DAVIT ARM	
PRESSURE REDUCING (EXTERNAL REGULATING)		KNIFE GATE		AIR RELEASE		REFRIGERATED AIR DRYER		VORTEX		UNION		RESIN TRAP		VESSEL SIGHT GLASS	
PRESSURE REDUCING (INTERNAL REGULATING)		UPWARD OPENING SLIDING GATE		AIR RELEASE		WELL PUMP		MASS FLOW/CORIOLIS		CAMLOCK		TANK HEATER		FOUR PORT HOUSING	
ROTARY MOTOR ANALOG		DOWNWARD OPENING SLIDING GATE		AIR RELEASE		DRUM PUMP		ROTAMETER		CAMLOCK PLUG		HEAT EXCHANGER		TWO PORT HOUSING	
ROTARY MOTOR DIGITAL		MANUAL BLAST GATE		AIR RELEASE		SUBMERSIBLE SUMP PUMP		IN-LINE FLOW GLASS		HOSE BARB		IN-LINE HEATER		END PORT HOUSING	
I/P CONVERTER		BACKFLOW PREVENTER		AIR RELEASE		FAN		FLOW STRAIGHTENER		WELDED PIPE CAP		PLATE & FRAME HEAT EXCHANGER		MEMBRANE MODULE	
POSITIONER		CHECK		AIR RELEASE		ERI PRESSURE EXCHANGER		FIXED ORIFICE		PLAIN END PIPE COUPLING		DESUPERHEATER			
TRAVEL STOP		INJECTION QUILL		AIR RELEASE		MOTOR		ADJUSTABLE ORIFICE		REDUCER					
MANUAL GEAR WHEEL		FOOT		AIR RELEASE		PROGRESSIVE CAVITY PUMP		RESTRICTED ORIFICE		COMPRESSION FITTING					
MANUAL CHAIN WHEEL		FLOAT		AIR RELEASE				RESTRICTED ORIFICE ANGLE		COMPRESSION FITTING PLUG					
SOLENOID		MUD		AIR RELEASE				ORIFICE PLATE QUICK-CHANGE		SPECTACLE BLIND OPEN					
SOLENOID 3 WAY		3 WAY		AIR RELEASE						SPECTACLE BLIND CLOSED					
SOLENOID 4 WAY		4 WAY		AIR RELEASE											
		5 WAY		AIR RELEASE											
		6 WAY		AIR RELEASE											
		2 VALVE MANIFOLD		AIR RELEASE											
		3 VALVE MANIFOLD		AIR RELEASE											
		5 VALVE MANIFOLD		AIR RELEASE											
		SAMPLE		AIR RELEASE											
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		ALARM	HIGH– HIGH ALARM	HIGH ALARM	LOW ALARM	LOW–LOW ALARM	SENSOR FAULT ALARM	BLIND CONTROLLER	INDICATING CONTROLLER	SENSOR (PRIMARY ELEMENT)	GLASS	INDICATOR	CONTROL STATION	PILOT LIGHT	TOTALIZER	RECORD	SWITCH	HIGH–HIGH SWITCH	HIGH SWITCH	LOW SWITCH	LOW–LOW SWITCH	BLIND TRANSMITTER	INDICATING TRANSMITTER	SOLENOID VALVE (PILOT), RELAY, COMPUTATION, CONVERTER	CONTROL VALVE	VALVE				FINAL CONTROL ELEMENT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											



CAESARS LANE WTF
MBR SYSTEM

LEGENDS & SYMBOLS

PROJECT NO.
510464

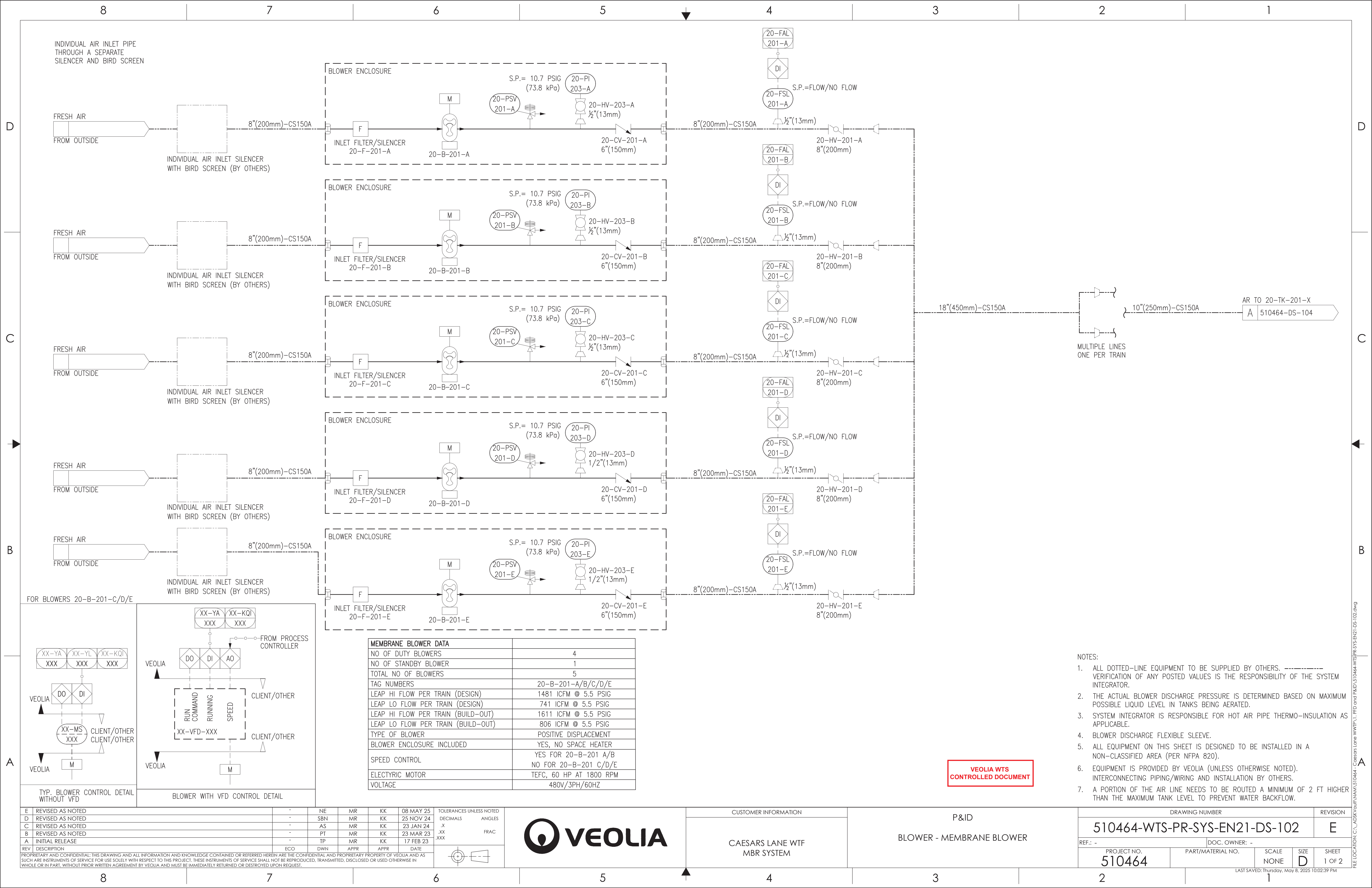
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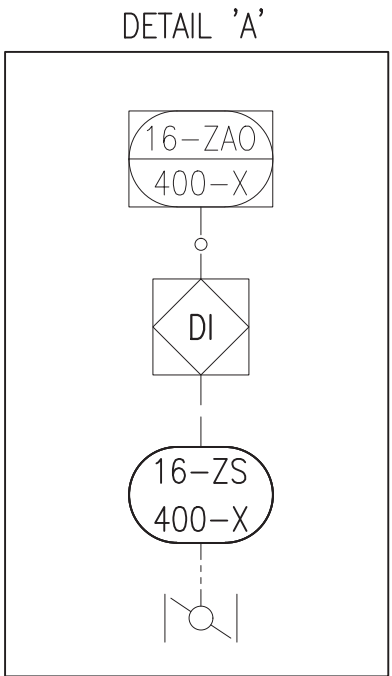
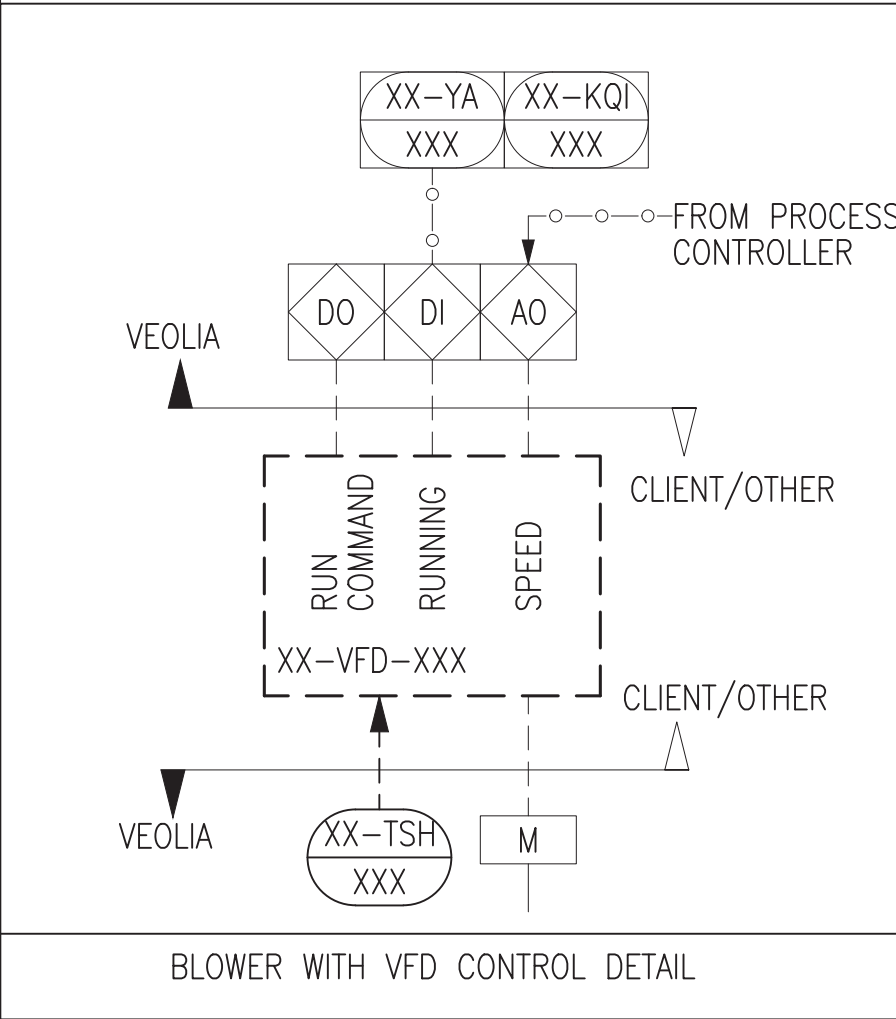
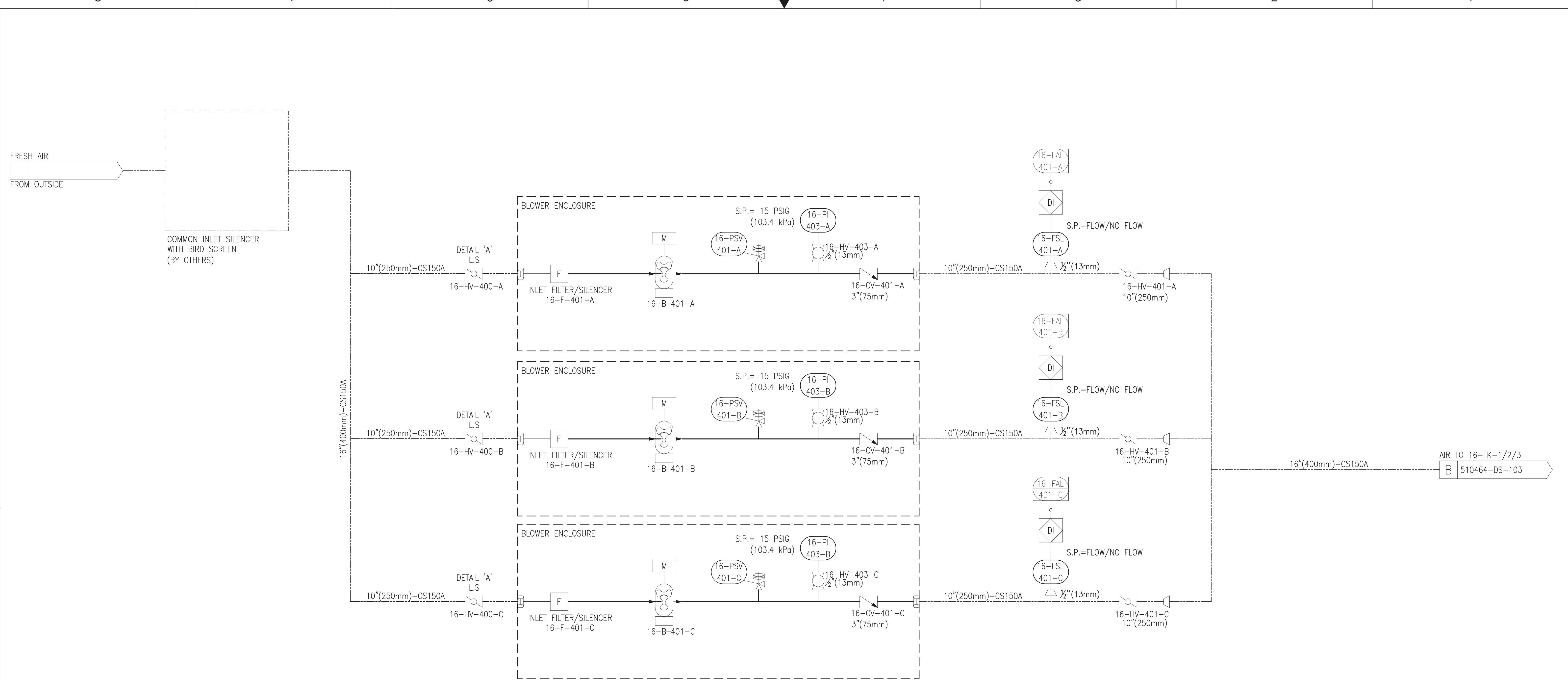
SCALE
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3 OF 3

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PROCESS BLOWER INFO	
NO OF DUTY BLOWERS	2
NO OF STANDBY BLOWER	1
TOTAL NO OF BLOWERS	3
TAG NUMBERS	16-B-401-A/B/C
BLOWER RATED CAPACITY	2038 SCFM AT 9.74 PSIG
TYPE OF BLOWER	POSITIVE DISPLACEMENT
BLOWER ENCLOSURE INCLUDED	YES, NO SPACE HEATER
SPEED CONTROL	VFD
ELECTYRIC MOTOR	TEFC, 150 HP AT 1800 RPM
VOLTAGE	480V/3PH/60HZ

E	REVISED AS NOTED	-	NE	MR	KK	08 MAY 25	TOLERANCES UNLESS NOTED
D	REVISED AS NOTED	-	SBN	MR	KK	25 NOV 24	DECIMALS
C	REVISED AS NOTED	-	AS	MR	KK	23 JAN 24	ANGLES
B	REVISED AS NOTED	-	PT	MR	KK	23 MAR 23	FRAC
A	INITIAL RELEASE	-	TP	MR	KK	17 FEB 23	
REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE	
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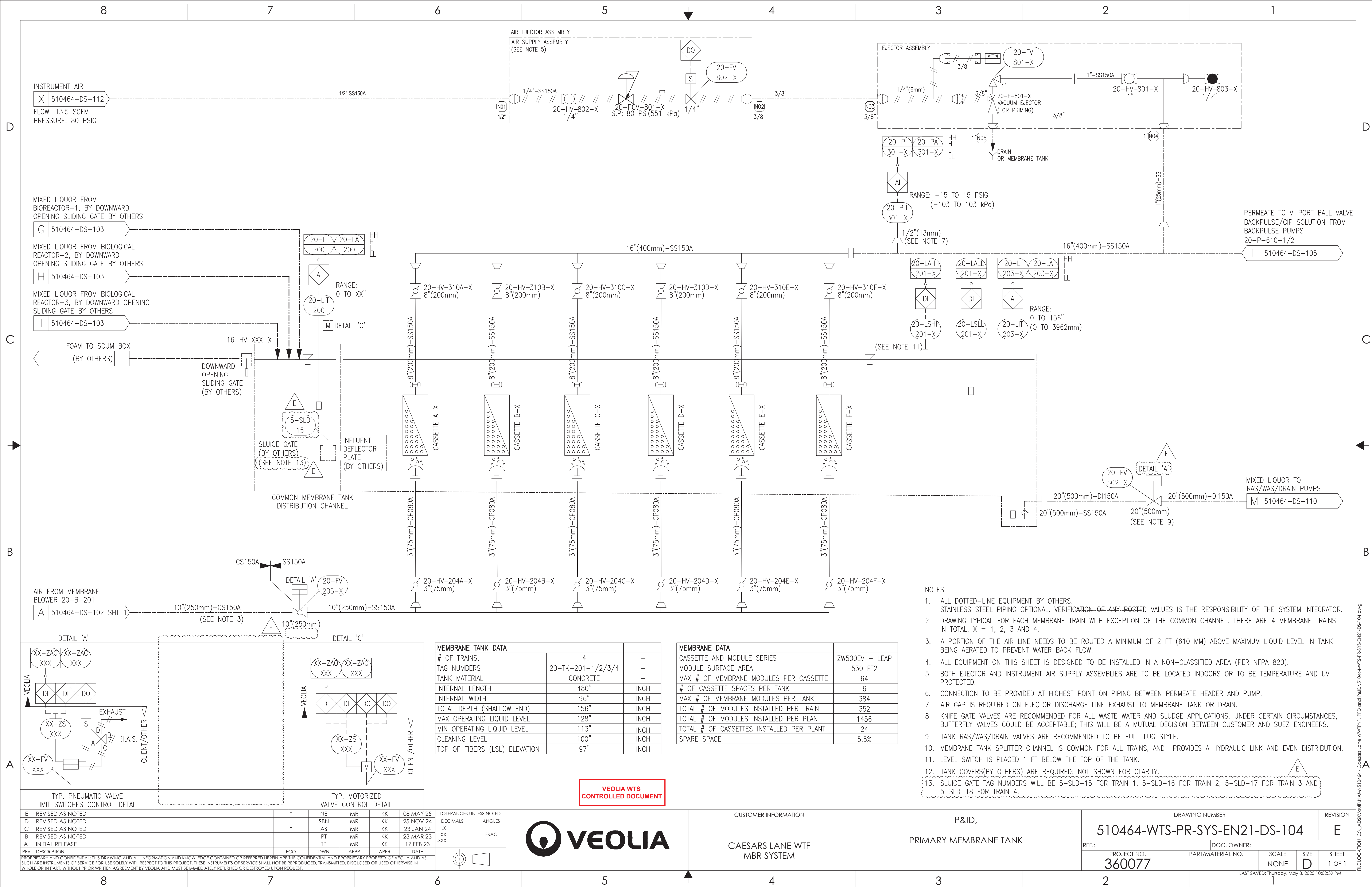
CUSTOMER INFORMATION
CAESARS LANE WTF
MBR SYSTEM

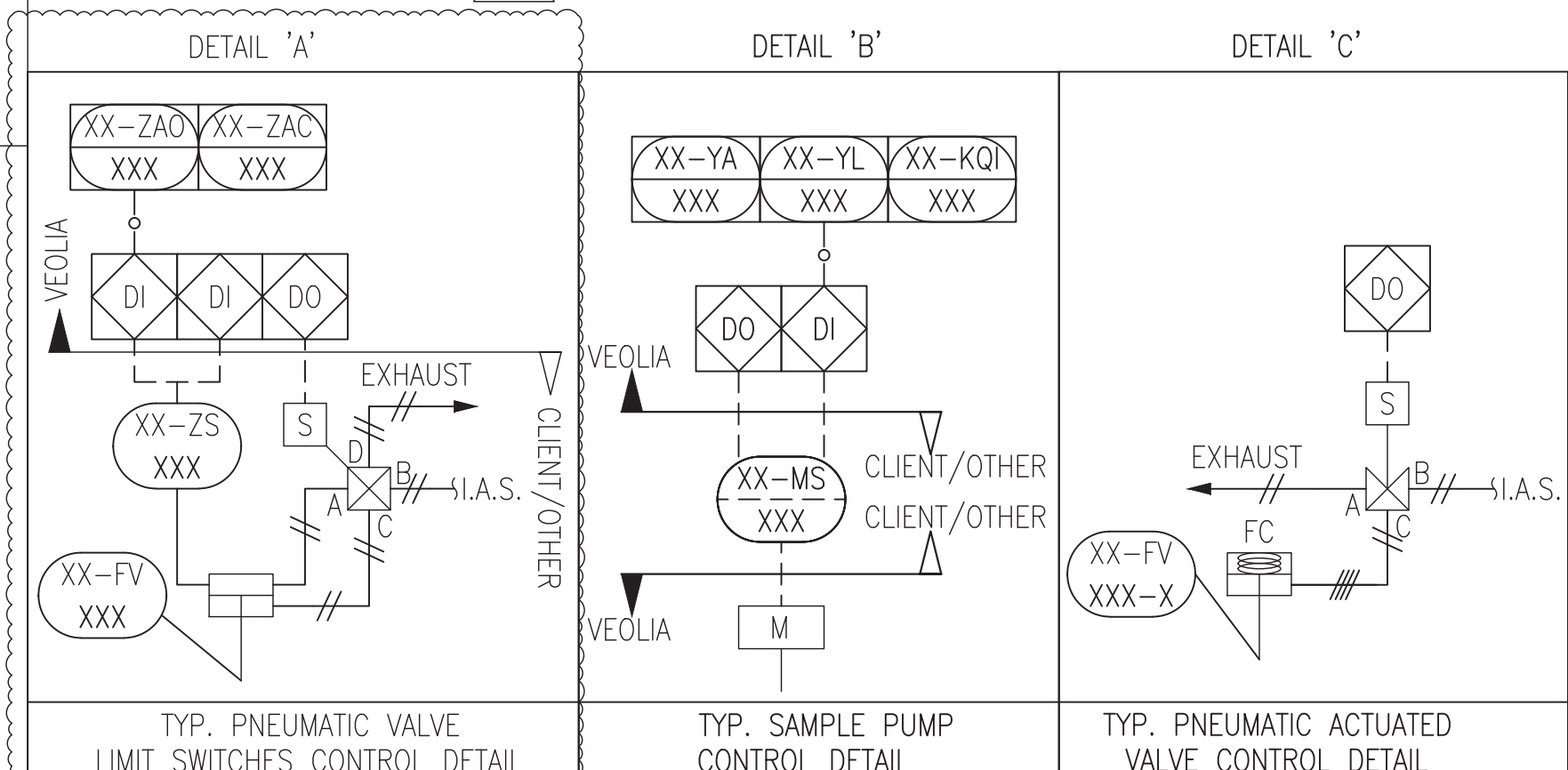
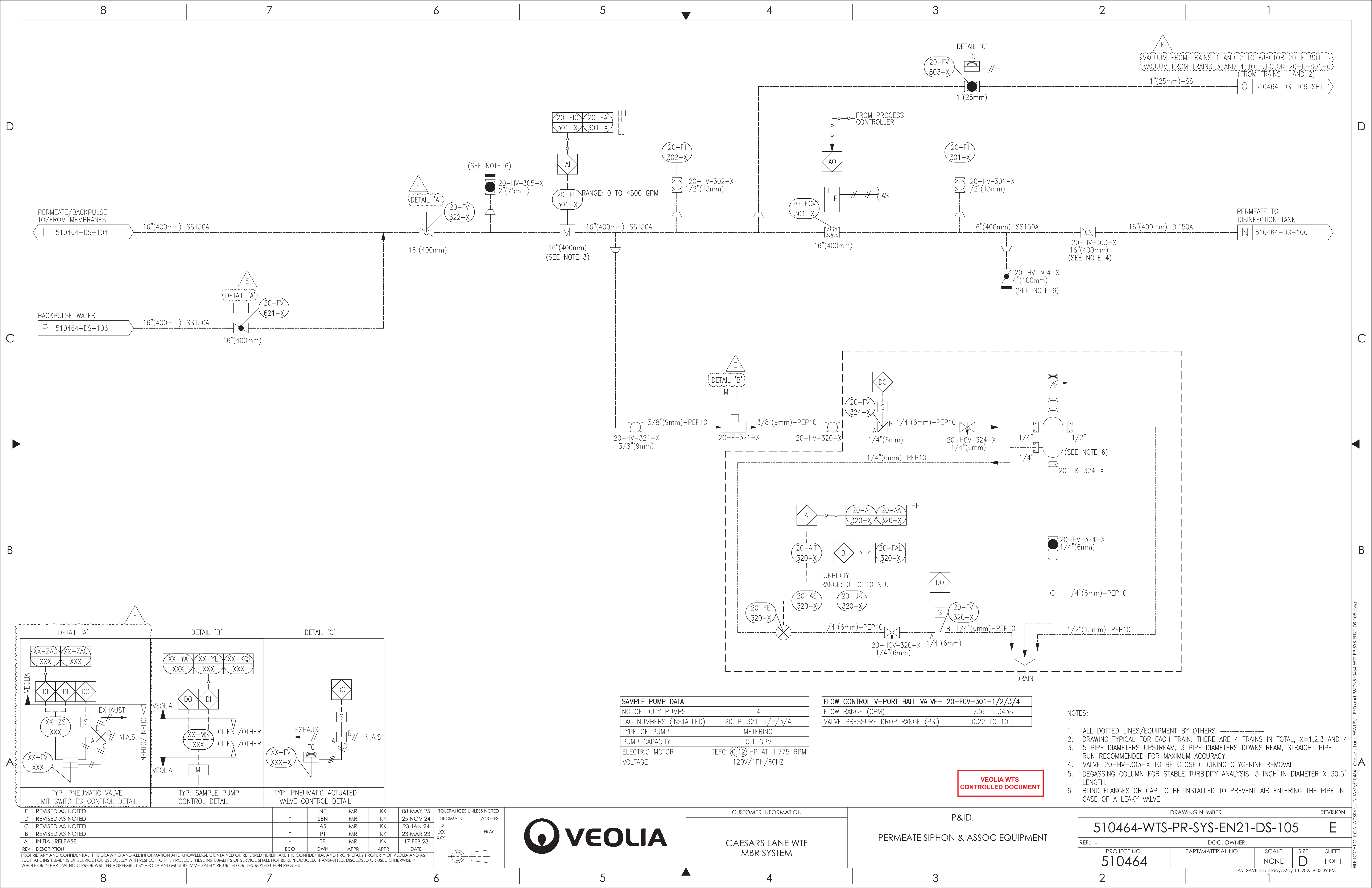
P&ID,
BLOWER - PROCESS BLOWER

DRAWING NUMBER					REVISION
510464-WTS-PR-SYS-EN21-DS-102					E
REF.: -		DOC. OWNER:			
PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET	
510464		NONE	D	2 OF 2	

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SAMPLE PUMP DATA	
NO OF DUTY PUMPS	4
TAG NUMBERS (INSTALLED)	20-P-321-1/2/3/4
TYPE OF PUMP	METERING
PUMP CAPACITY	0.1 GPM
ELECTRIC MOTOR	TEFC, 0.12 HP AT 1,775 RPM
VOLTAGE	120V/1PH/60HZ

FLOW CONTROL V-PORT BALL VALVE- 20-FCV-301-1/2/3/4	
FLOW RANGE (GPM)	736 - 3438
VALVE PRESSURE DROP RANGE (PSI)	0.22 TO 10.1

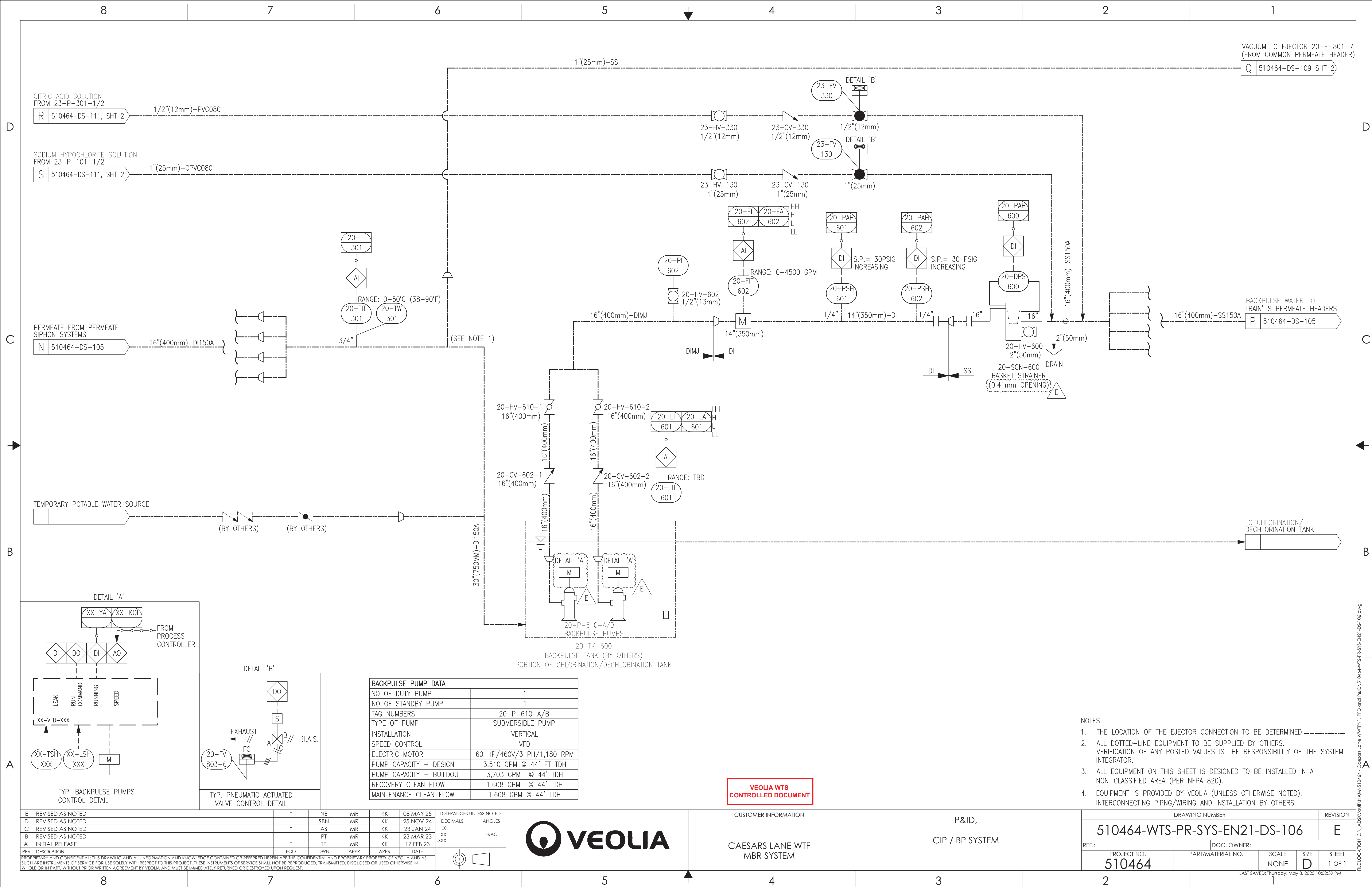
- NOTES:
- ALL DOTTED LINES/EQUIPMENT BY OTHERS -----
 - DRAWING TYPICAL FOR EACH TRAIN. THERE ARE 4 TRAINS IN TOTAL, X=1,2,3 AND 4
 - 5 PIPE DIAMETERS UPSTREAM, 3 PIPE DIAMETERS DOWNSTREAM, STRAIGHT PIPE RUN RECOMMENDED FOR MAXIMUM ACCURACY.
 - VALVE 20-HV-303-X TO BE CLOSED DURING GLYCERINE REMOVAL.
 - DEGASSING COLUMN FOR STABLE TURBIDITY ANALYSIS, 3 INCH IN DIAMETER X 30.5' LENGTH.
 - BLIND FLANGES OR CAP TO BE INSTALLED TO PREVENT AIR ENTERING THE PIPE IN CASE OF A LEAKY VALVE.

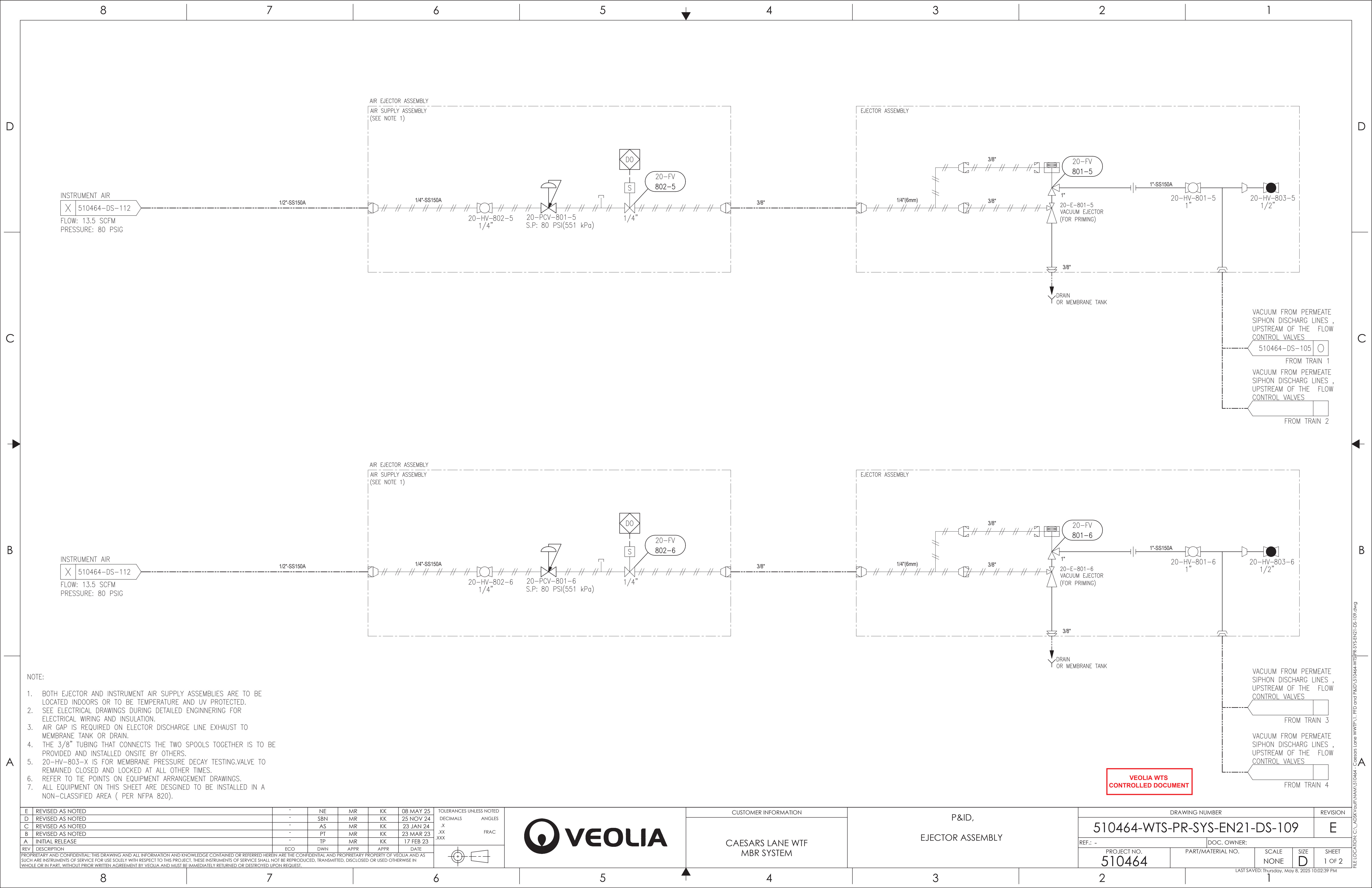
REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
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D	REVISED AS NOTED	-	SBN	MR	KK	25 NOV 24
C	REVISED AS NOTED	-	AS	MR	KK	23 JAN 24
B	REVISED AS NOTED	-	PT	MR	KK	23 MAR 23
A	INITIAL RELEASE	-	TP	MR	KK	17 FEB 23

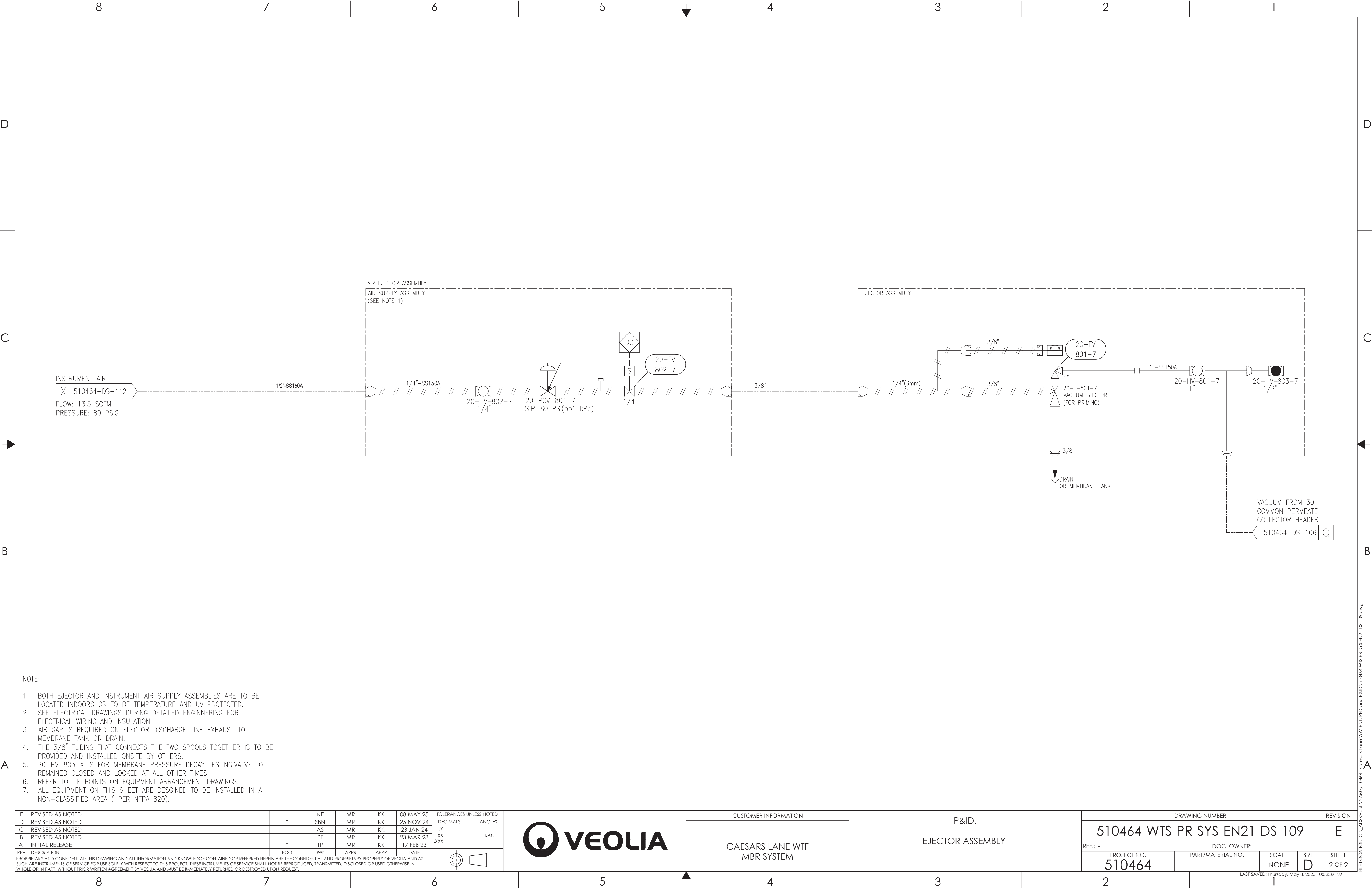
PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF VEOLIA AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY VEOLIA AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.

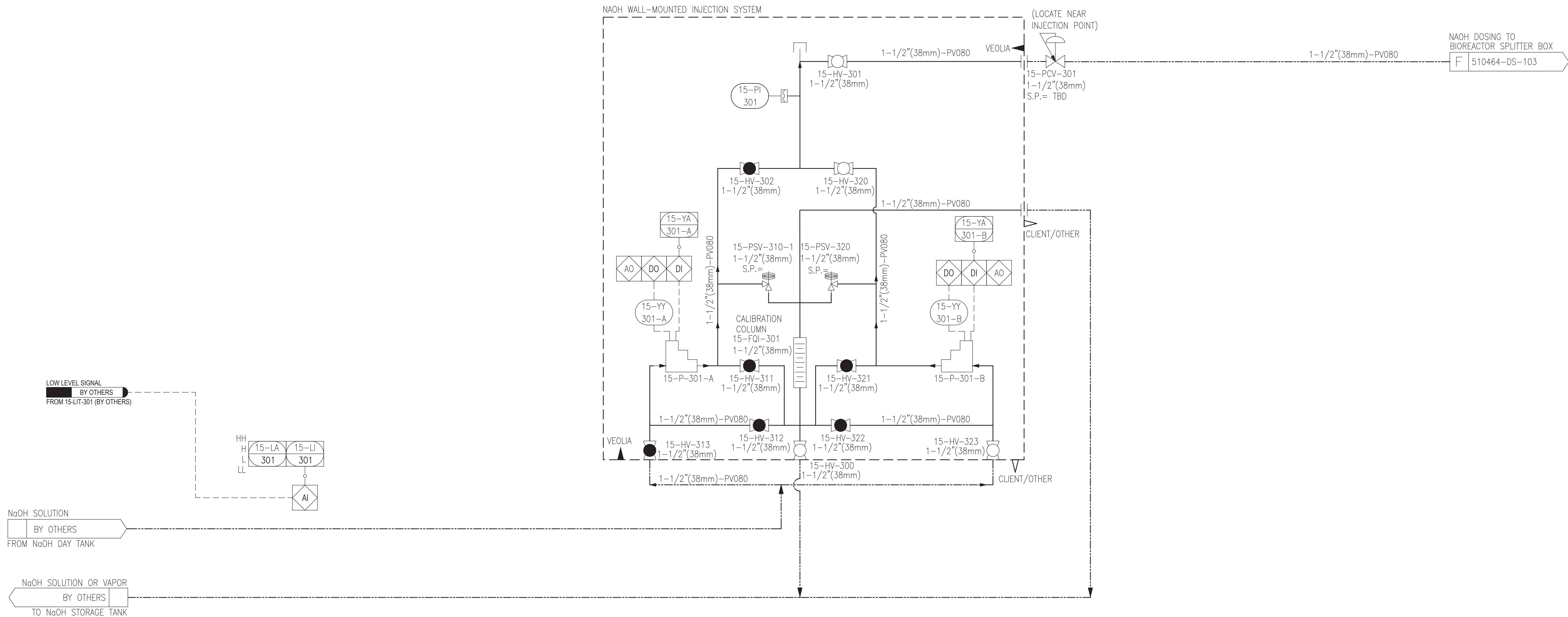
TOLERANCES UNLESS NOTED
DECIMALS ANGLES
FRAC

CUSTOMER INFORMATION		P&ID,		DRAWING NUMBER		REVISION	
CAESARS LANE WTF MBR SYSTEM		PERMEATE SIPHON & ASSOC EQUIPMENT		510464-WTS-PR-SYS-EN21-DS-105		E	
REF.: -		DOC. OWNER:		PROJECT NO.		SHEET	
510464		PART/MATERIAL NO.		SCALE		1 OF 1	
NONE		SIZE		LAST SAVED: Tuesday, May 13, 2025 9:03:39 PM			
D							









ALKALINITY PUMP DATA	
TAG NUMBERS	15-P-301-A/B
# OF PUMPS	1 DUTY / 1 STANDBY
DESIGN FLOW AND PRESSURE	TBD
MAX. FLOW AND PRESSURE	2.2 GPM @ 100 PSIG
VOLTAGE	120 VAC/ 1 ph/ 60 Hz
SUPPLIER, MODEL	PROMINENT

NOTES:

1. ALL DOTTED LINES/EQUIPMENT BY OTHERS -----
2. ALL SYSTEM COMPONENTS PRESENTED ON THIS DRAWING ARE WALL MOUNTED
3. ALL EQUIPMENT DESIGNED TO BE INSTALLED IN NON-CLASSIFIED AREA (PER NFPA 820).
4. VENT ALL CHEMICAL TANKS APPROPRIATELY.
5. CHEMICAL CONTAINMENT BY OTHERS.

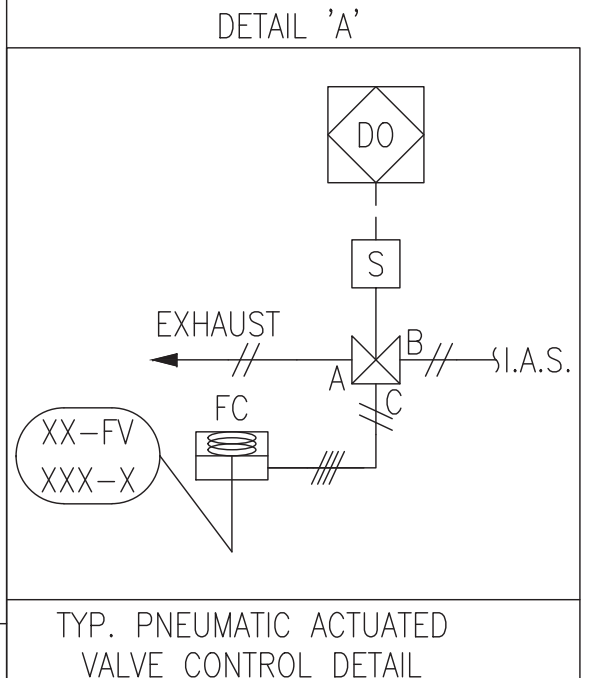
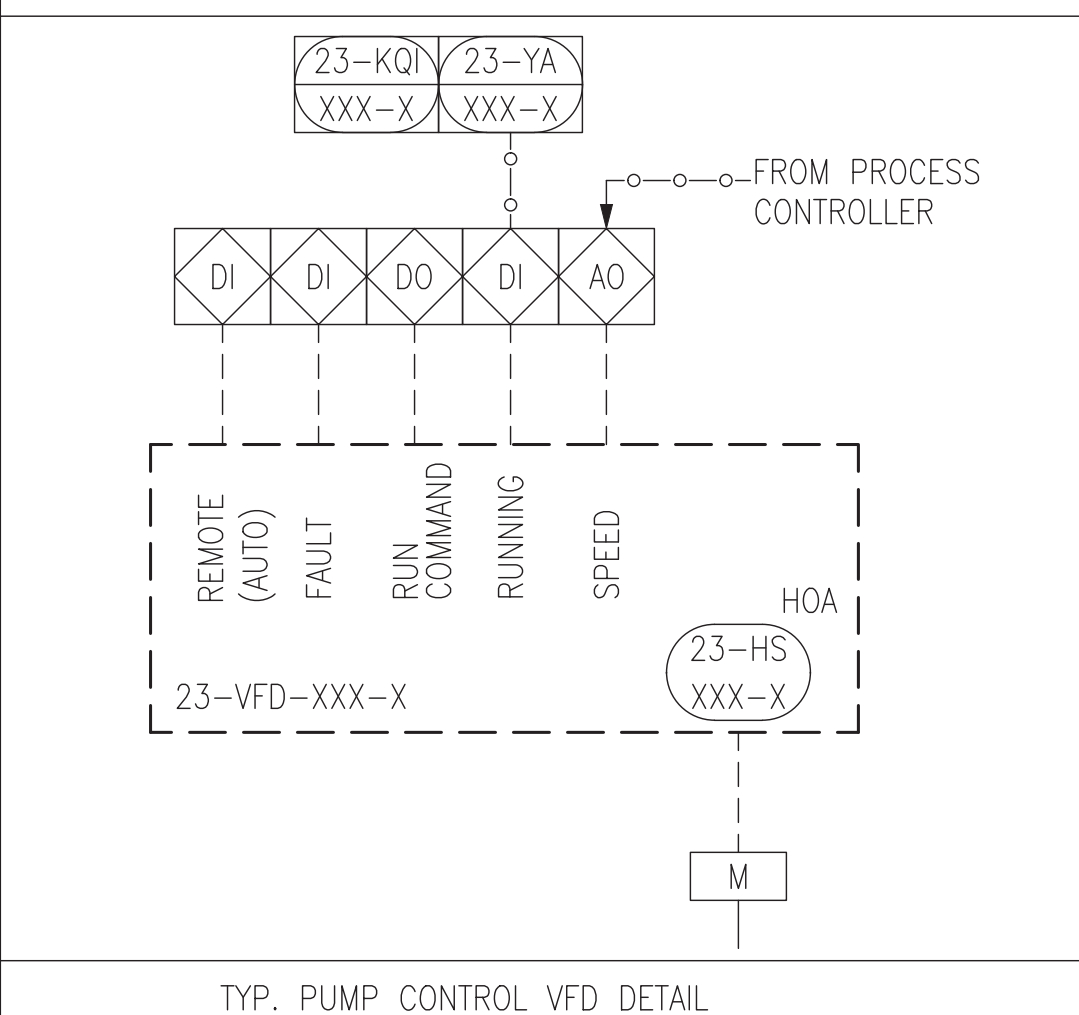
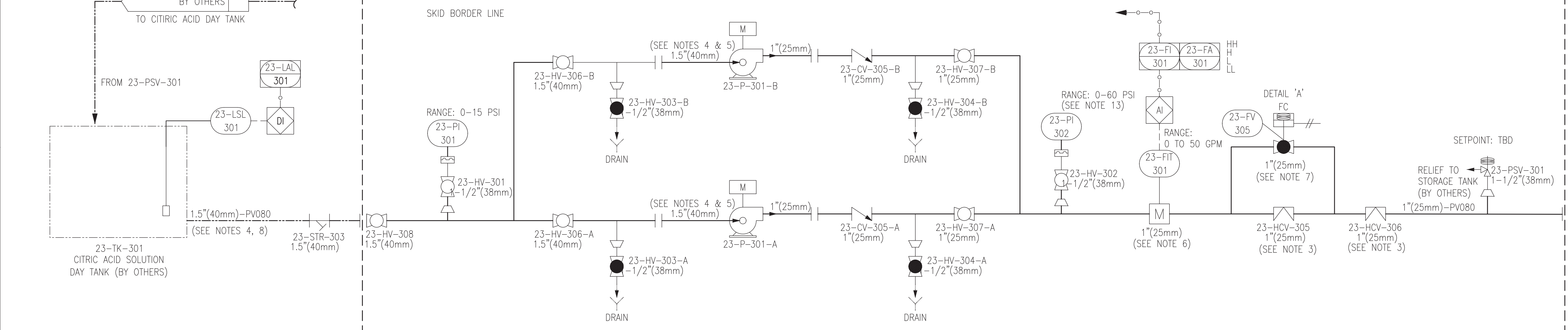
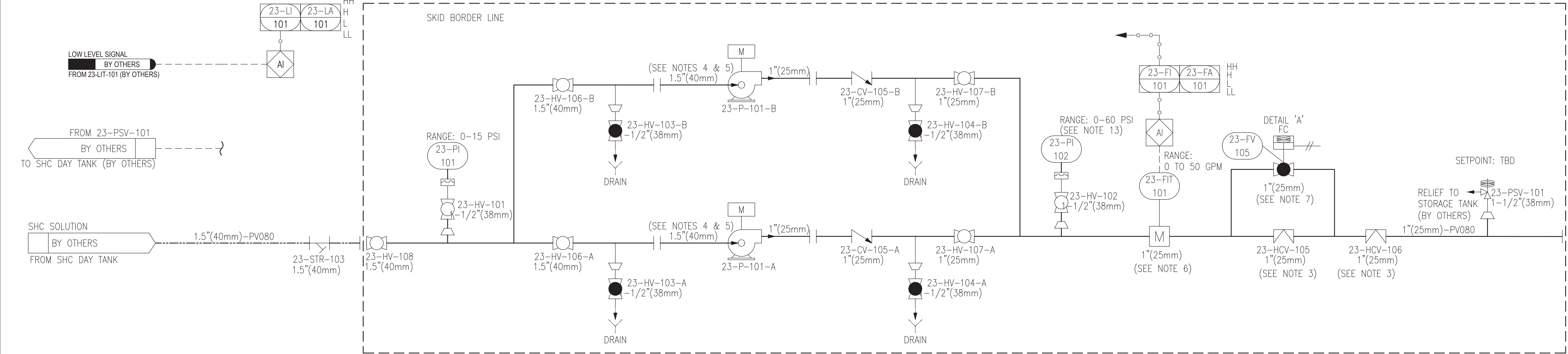
REVISED AS NOTED	-	NE	MR	KK	08 MAY 25	TOLERANCES UNLESS NOTED DECIMALS ANGLES FRAC 		CUSTOMER INFORMATION CAESARS LANE WTF MBR SYSTEM	P&ID, CHEMICAL DOSING SYSTEM BIOLOGICAL PROCESS	DRAWING NUMBER				REVISION			
D REVISED AS NOTED	-	SBN	MR	KK	25 NOV 24					510464-WTS-PR-SYS-EN21-DS-111	E						
C REVISED AS NOTED	-	AS	MR	KK	23 JAN 24												
B REVISED AS NOTED	-	PT	MR	KK	23 MAR 23												
A INITIAL RELEASE	-	TP	MR	KK	17 FEB 23												
REV DESCRIPTION	ECO	DWN	APPR	APPR	DATE					REF.: -				DOC. OWNER:			
PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF VEOLIA AND AS SUCH ARE INSTRUMENTS OF SERVICE WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY VEOLIA AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.										PROJECT NO.		PART/MATERIAL NO.		SCALE	SIZE	SHEET	
										510464				NONE	D	1 OF 2	

D

C

B

A



GENERAL PUMP INFO	
SODIUM HYPOCHLORITE	12.0% w/w
NO. OF DUTY PUMPS	1
NO. OF STANDBY PUMPS	1
NO. OF SHELF SPARE PUMPS	1 (SEE NOTE 11)
TYPE OF PUMP	END-SUCTION CENTRIFUGAL
TAG NUMBERS (INSTALLED)	23-P-101-A/B
SPEED CONTROL	VFD
ELECTRIC MOTOR	1.0HP @ 3450RPM
VOLTAGE	460 V/3 ph/60 Hz
PUMP MODEL	DB9V-R-FF-M219

INSTALLED	DESIGN FLOW	TDH
MC	2.67 GPM	25 PSIG
RC	14.70 GPM	25 PSIG

BUILDOUT	MAX FLOW	TDH
MC	2.82 GPM	25 PSIG
RC	15.51 GPM	25 PSIG

GENERAL PUMP INFO	
CITRIC ACID	50% w/w
NO. OF DUTY PUMPS	1
NO. OF STANDBY PUMPS	1
NO. OF SHELF SPARE PUMPS	1 (SEE NOTE 11)
TYPE OF PUMP	END-SUCTION CENTRIFUGAL
TAG NUMBERS (INSTALLED)	23-P-301-A/B
SPEED CONTROL	VFD
ELECTRIC MOTOR	1.0HP @ 3450RPM
VOLTAGE	460 V/3 ph/60 Hz
PUMP MODEL	DB9V-R-FF-M219

INSTALLED	DESIGN FLOW	TDH
MC	5.19 GPM	25 PSIG
RC	5.72 GPM	25 PSIG

BUILDOUT	MAX FLOW	TDH
MC	5.47 GPM	25 PSIG
RC	6.02 GPM	25 PSIG

- NOTES: (REVIEW AND REMOVE BEFORE EXTERNAL RELEASE)
- ALL DOTTED-LINE EQUIPMENT NOT SUPPLIED BY VWTS. _____ VERIFICATION OF ANY POSTED VALUES IS THE RESPONSIBILITY OF THE SYSTEM INTEGRATOR.
 - DRAINS FROM SODIUM HYPOCHLORITE SOLUTION AND ANY ACID SOLUTION SHOULD NOT BE MIXED.
 - 23-HCV-105/305 TO BE ADJUSTED FOR MAINTENANCE CLEAN FLOW. 23-HCV-106/306 TO BE ADJUSTED FOR RECOVERY CLEAN FLOW. IF THERE IS ONLY RECOVERY CLEAN FLOW THEN 23-HCV-105/305 AND 23-FV-105/305 CAN BE REMOVED.
 - BOTTOM CONNECTION FROM THE TANK IS MANDATORY. FLOODED SUCTION SETUP REQUIRED FOR PUMP OPERATION.
 - REFER TO MANUFACTURER'S I&O MANUAL FOR PIPING AND INSTALLATION REQUIREMENTS.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
 - VALVE TO OPEN ONLY FOR RECOVERY CLEAN PROCESS.
 - TANK DESIGN, INCLUDING SECONDARY CONTAINMENT AND VENTING IF REQUIRED, IS BY OTHERS.
 - FLOOR DRAINS TO BE PROVIDED AND PIPED INTO BY GENERAL CONTRACTOR, AS REQUIRED.
 - OUTDOOR PIPING/EQUIPMENT TO BE HEAT-TRACED AND INSULATED BY OTHERS.
 - EQUIPMENT AND ENVIRONMENTAL PROTECTION, IF REQUIRED, IS BY OTHERS.
 - GASKETS AND HARDWARE SHOULD BE COMPATIBLE WITH SELECTED CHEMICAL, (NOT PROVIDED BY VWTS).
 - ALL BALL VALVES SUPPLIED FOR CHEMICALS ARE TO BE VENTED WITH VITON SEALS.

REVDESCRIPTION

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REVISED AS NOTED
REVISED AS NOTED
REVISED AS NOTED
REVISED AS NOTED
INITIAL RELEASE

ECO
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DATE

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MR
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MR
MR

KK
KK
KK
KK
KK

08 MAY 25
25 NOV 24
23 JAN 24
23 MAR 23
17 FEB 23

TOLERANCES UNLESS NOTED

DECIMALS
ANGLES
FRAC

VEOLIA

CAESARS LANE WTF
MBR SYSTEM

CUSTOMER INFORMATION

CAESARS LANE WTF
MBR SYSTEM

P&ID,
MEMBRANE CLEANING CHEM. SYSTEMS

CENTRIFUGAL, MAG DRIVE PUMP

DRAWING NUMBER
510464-WTS-PR-SYS-EN21-DS-111

REVISION
E

REF.: -

PROJECT NO.
510464

DOC. OWNER:

PART/MATERIAL NO.

SCALE
NONE

SIZE
D

SHEET
2 OF 2

LAST SAVED: Thursday, May 8, 2025 10:02:38 PM

VEOLIA WTS
CONTROLLED DOCUMENT

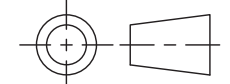
GENERAL COMPRESSOR INFO		PHASE 1
NO OF DUTY COMPRESSORS		1
NO OF STANDBY COMPRESSORS		1
TOTAL NO OF AIR RECEIVER TANKS		2
TAG NUMBERS FOR COMPRESSORS		90-AC-001-A/B
TAG NUMBERS FOR AIR RECEIVER TANKS		90-TK-001-A/B
TYPE OF COMPRESSORS		RECIPROCATING
CAPACITY		35 CFM AT 175 PSIG
AIR RECEIVER VOLUME		120 GAL
MODEL		ATLAS COPCO CR7.5
SPEED CONTROL		NO
ELECTRIC MOTOR		TEFC, 10 HP AT 1800 RPM
VOLTAGE		480 VAC / 3 ph / 60 Hz

FILTER DATA	
TAG NUMBERS	90-F-002
FILTER TYPE	100% PRIMARY COALESCING FILTER WITH AUTODRAIN
FILTER SIZE	1 µm
AIR DRYER DATA	
TAG NUMBERS	90-DR-001-A/B
DRYER TYPE	REFRIGERATED
DRYER CAPACITY	30 CFM
MODEL INFO	ATLAS COPCO FX15
ELECTRIC INFO	120 VAC / 1 ph / 60 Hz

- NOTES:
- EQUIPMENT SUPPLIED BY WTS AND INSTALLED BY OTHERS UNLESS NOTED.
 - INSTRUMENT AIR DISTRIBUTION NETWORK INCLUDING ISOLATION VALVE SUPPLIED BY OTHERS AS NEEDED.
 - HANDLE FOR BYPASS VALVE TO BE REMOVED OR VALVE LOCKED IN CLOSED POSITION.
 - TIMED DRAIN VALVE SOLENOIDS CONNECT TO LOCAL 120VAC. ADJUST INTERVAL AND DURATION SETTINGS ON SOLENOID TO AMBIENT CONDITIONS.
 - LOW POINT DRAIN VALVE (SUPPLIED AND POWERED BY OTHERS) TO BE LOCATED AT LOW POINT IN PIPING WHERE MOISTURE MAY ACCUMULATE. ADDITIONAL VALVE MAY BE REQUIRED BASED ON PIPE ROUTING.
 - REGULATING VALVE TO BE SET IN THE FIELD BY WTS FSR.
 - CONNECT AIR DRYER TO LOCAL 120VAC. ONLY ONE DRYER TO OPERATE AT A TIME AND TO BE ROTATED MANUALLY ON A WEEKLY BASIS. IF ONLY ONE DRYER IS SUPPLIED A BYPASS LINE WITH MANUAL VALVE SHALL BE SUPPLIED.
 - CONTRACTOR TO WIRE AIR COMPRESSOR PRESSURE SWITCH TO LOCAL MOTOR STARTER PANEL. WTS FSR TO CONFIRM AND ADJUST PRESSURE SETPOINT DURING COMMISSIONING.
 - FINAL SIZING AND DESIGN TO BE VERIFIED DURING DETAILED PROJECT ENGINEERING.
 - MAIN AIR COMPONENT KIT, SUPPLIED BY WTS, INSTALLED BY THE CONTRACTOR

REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
E	REVISED AS NOTED	-	NE	MR	KK	08 MAY 25
D	REVISED AS NOTED	-	SBN	MR	KK	25 NOV 24
C	REVISED AS NOTED	-	AS	MR	KK	23 JAN 24
B	REVISED AS NOTED	-	PT	MR	KK	23 MAR 23
A	INITIAL RELEASE	-	TP	MR	KK	17 FEB 23

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CUSTOMER INFORMATION		P&ID, AIR COMPRESSOR	
CAESARS LANE WTF MBR SYSTEM			

DRAWING NUMBER					REVISION
510464-WTS-PR-SYS-EN21-DS-112					E
REF.: -		DOC. OWNER:			
PROJECT NO. 510464	PART/MATERIAL NO.	SCALE NONE	SIZE D	SHEET 1 OF 1	

LAST SAVED: Thursday, May 8, 2025 9:58:40 PM



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UDIG-NY
SAFE DIGGING STARTS HERE
CALL 811

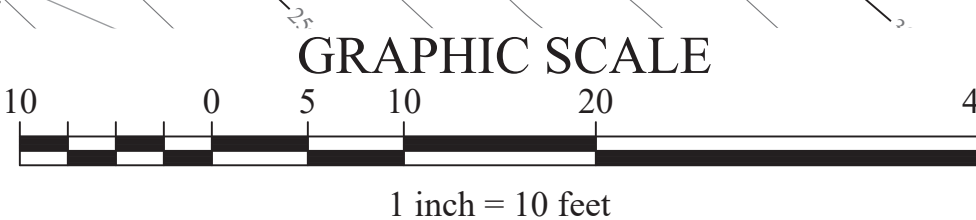
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PARTIAL
SITE PIPING / UTILITY
PLAN #3

ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ, JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ
SHEET NO.	

PROJECT # 18-732	PHASE #
------------------	---------

FOR CONTINUATION
SEE SHEET C-118



FOR CONTINUATION
SEE SHEET C-114

NOTES :

1. REFER TO STORMWATER STRUCTURE SCHEDULE ON SHEET C-120 FOR DESIGN INFORMATION.
2. REFER TO PROCESS PIPE PROFILE SHEETS C-123, C-124, C-125 AND C-126
3. REFER TO WATER MAIN PROFILE SHEET C-127.

BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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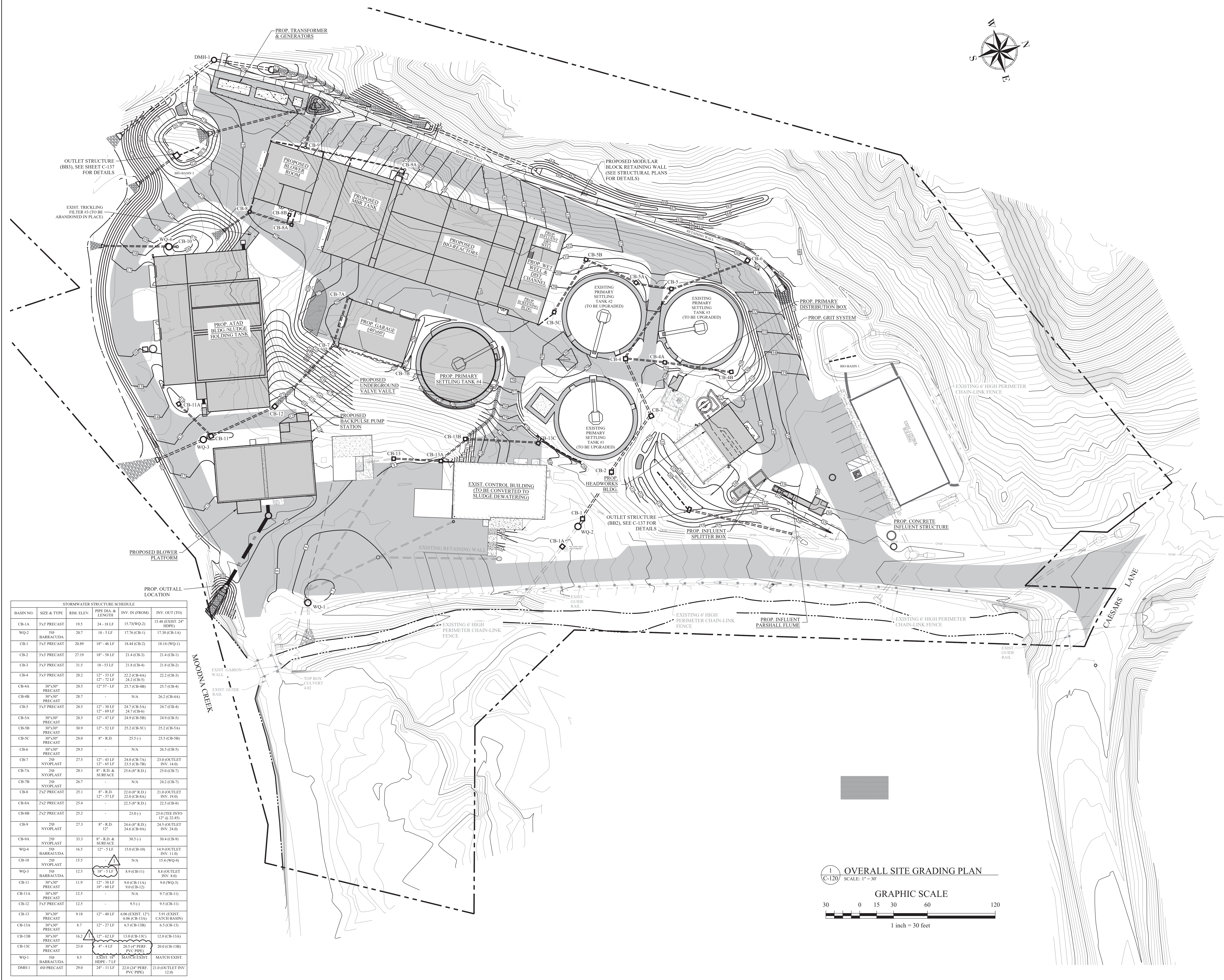
CAESARS LANE WWTP EXPANSION PROJECT:
PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

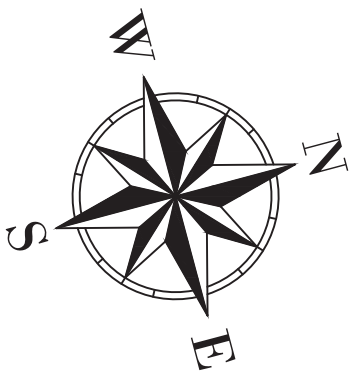
OVERALL SITE GRADING
PLAN & STORMWATER
SCHEDULE

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR. 2025
DESIGN BY: SMQ/JTW
DRAWN BY: HPB/j
CHECKED BY: MWW
REVIEWED BY: MJS, JZ

SHEET NO.
C-120
PROJECT # 18-732 PHASE #





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CAESARS LANE WWTP EXPANSION PROJECT:
PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

PARTIAL SITE GRADING PLAN #1

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

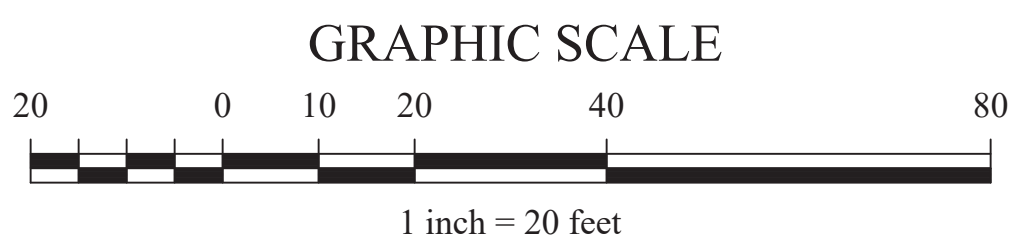
ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ, JTW
DRAWN BY:	HPBj
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ
SHEET NO.	

C-121

PROJECT # 18-732 PHASE #

STORMWATER STRUCTURE SCHEDULE					
BASIN NO.	SIZE & TYPE	RIM ELEV.	PIPE DIA. & LENGTH	INV. IN (FROM)	INV. OUT (TO)
CB-1A	3'x3' PRECAST	19.5	24" - 18 LF	15.75 (WQ-2)	15.48 (EXIST. 24" HDPE)
WQ-2	5'0" BARRACUDA	20.7	18" - 5 LF	17.76 (CB-1)	17.30 (CB-1A)
CB-1	3'x3' PRECAST	20.89	18" - 46 LF	18.44 (CB-2)	18.14 (WQ-1)
CB-2	3'x3' PRECAST	27.19	18" - 58 LF	21.4 (CB-3)	21.4 (CB-1)
CB-3	3'x3' PRECAST	31.5	18" - 53 LF	21.8 (CB-4)	21.8 (CB-2)
CB-4	3'x3' PRECAST	28.2	12" - 33 LF	22.2 (CB-4A)	22.2 (CB-3)
CB-4A	30"x30" PRECAST	28.5	12" - 57 LF	24.2 (CB-5)	25.7 (CB-4)
CB-4B	30"x30" PRECAST	28.7	-	N/A	26.2 (CB-4A)
CB-5	3'x3' PRECAST	28.5	12" - 30 LF	24.7 (CB-5A)	24.7 (CB-4)
CB-5A	30"x30" PRECAST	28.5	12" - 69 LF	24.7 (CB-6)	24.9 (CB-5)
CB-5B	30"x30" PRECAST	30.9	12" - 52 LF	24.9 (CB-5B)	25.2 (CB-5A)
CB-5C	30"x30" PRECAST	28.0	8" - R.D.	25.5 (-)	25.5 (CB-5B)
CB-6	30"x30" PRECAST	29.5	-	N/A	26.5 (CB-5)
CB-7	2'0" NYOPLAST	27.5	12" - 43 LF	24.0 (CB-7A)	23.0 (OUTLET INV. 14.0)
CB-7A	2'0" NYOPLAST	28.1	8" - R.D. & SURFACE	23.5 (CB-7B)	25.0 (CB-7)
CB-7B	2'0" NYOPLAST	26.7	-	N/A	24.2 (CB-7)
CB-8	2'x2' PRECAST	25.1	8" - R.D.	22.0 (8" R.D.)	21.0 (OUTLET INV. 19.0)
CB-8A	2'x2' PRECAST	25.4	-	22.5 (8" R.D.)	22.5 (CB-8)
CB-8B	2'x2' PRECAST	25.2	-	23.0 (-)	23.0 (TEE INTO 12" @ 22.45)
CB-9	2'0" NYOPLAST	27.3	8" - R.D.	24.6 (8" R.D.)	24.5 (OUTLET INV. 24.0)
CB-9A	2'0" NYOPLAST	33.3	8" - R.D. & SURFACE	30.5 (-)	30.4 (CB-9)
WQ-4	5'0" BARRACUDA	16.5	12" - 3 LF	15.0 (CB-10)	14.9 (OUTLET INV. 11.0)
CB-10	2'0" NYOPLAST	15.5	-	N/A	15.4 (WQ-4)
WQ-3	5'0" BARRACUDA	12.5	18" - 3 LF	8.9 (CB-11)	8.8 (OUTLET INV. 8.0)
CB-11	30"x30" PRECAST	11.9	12" - 38 LF	9.0 (CB-11A)	9.0 (WQ-3)
CB-11A	30"x30" PRECAST	12.5	18" - 60 LF	9.0 (CB-12)	8.7 (CB-11)
CB-12	3'x3' PRECAST	12.5	-	N/A	9.5 (CB-11)
CB-13	30"x30" PRECAST	9.18	12" - 40 LF	6.06 (EXIST. 12" 6.06 (CB-13A))	5.91 (EXIST. CATCH BASIN)
CB-13A	30"x30" PRECAST	8.7	12" - 27 LF	6.5 (CB-13B)	6.5 (CB-13)
CB-13B	30"x30" PRECAST	16.2	12" - 62 LF	13.0 (CB-13C)	12.0 (CB-13A)
CB-13C	30"x30" PRECAST	23.0	6" - 4 LF	20.5 (4" PERF. PVC PIPE)	20.0 (CB-13B)
WQ-1	5'0" BARRACUDA	8.5	EXIST. 18" HDPE - 7 LF	MATCH EXIST.	MATCH EXIST.
DMH-1	4'0" PRECAST	29.0	24" - 11 LF	22.0 (24" PERF. PVC PIPE)	21.0 (OUTLET INV. 12.0)

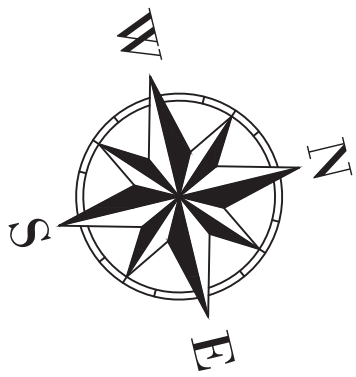
1 PARTIAL SITE GRADING PLAN #1
SCALE: 1" = 20'



- BIO-BASIN 1 NOTES:
- EXCAVATE AND REMOVE THE EXISTING BOTTOM OF BIO-BASIN 1 TO INSTALL NON-WOVEN GEOTEXTILE, CRUSHED STONE, 6" UNDERDRAIN, BIO-BASIN SOIL, HARDWOOD MULCH AND PLANTINGS AS SHOWN IN THE DETAILS.
 - CONTRACTOR IS TO TAKE PLACE AFTER THE ENTIRE DRAINAGE AREA TO THE BIO-BASIN IS STABILIZED.
 - THE CONSTRUCTION IS TO TAKE PLACE AFTER THE ENTIRE DRAINAGE AREA TO THE BIO-BASIN IS STABILIZED.

MATCH LINE SEE SHEET C-122

MATCH LINE SEE SHEET C-122



33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Millport, PA 15237
(845) 567-3100 (870) 296-2765

BID SET

HAZARDOUS MATERIAL NOTE:
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CAESARS LANE WWTP EXPANSION PROJECT:
PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

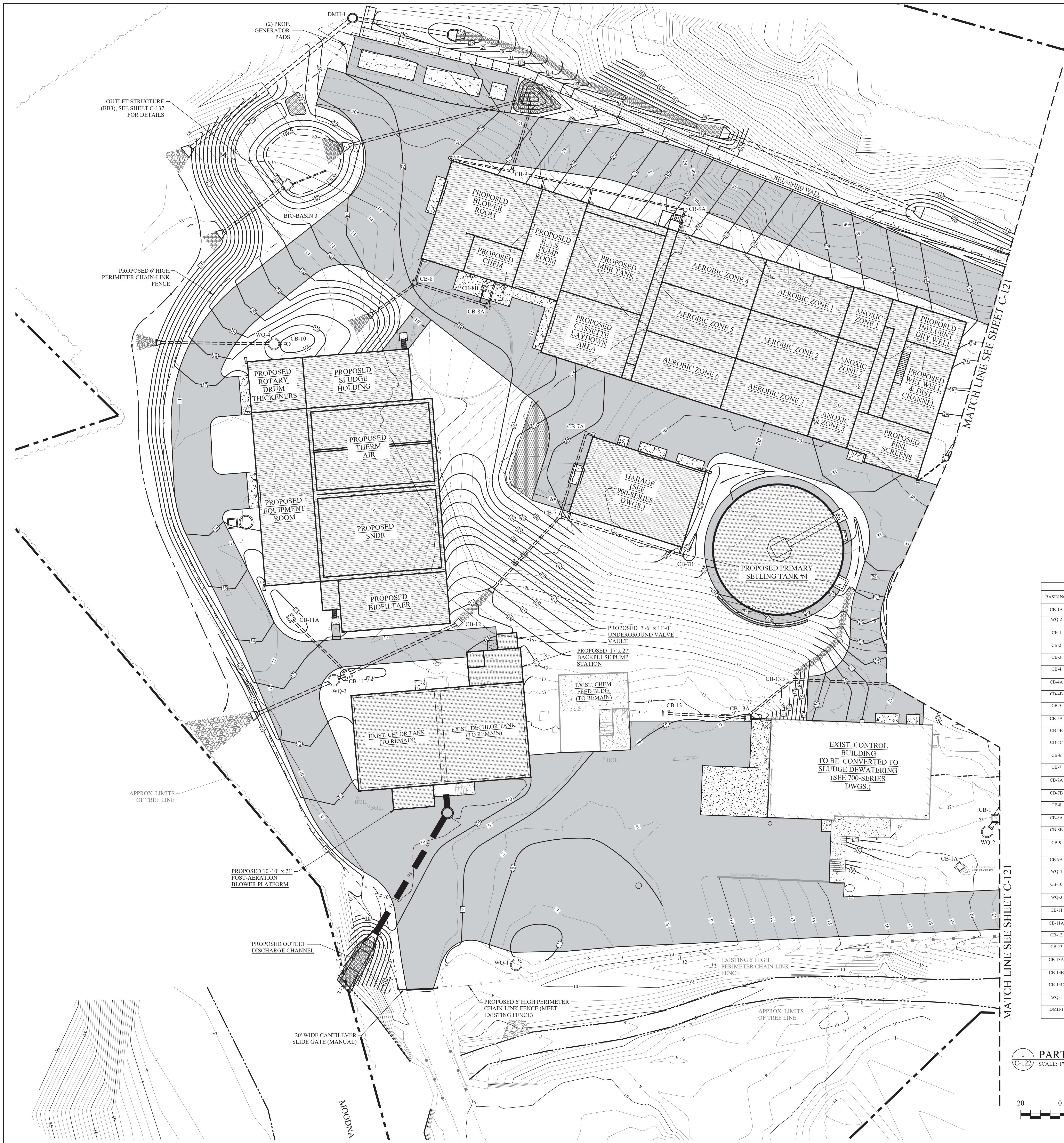
PARTIAL
SITE GRADING
PLAN #2

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ, JTW
DRAWN BY:	HPBH
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ
SHEET NO.	

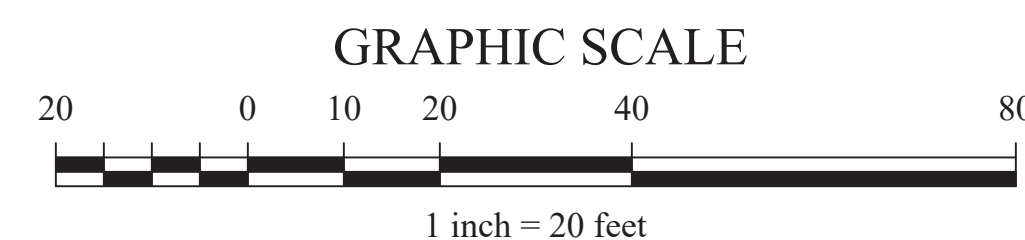
C-122

PROJECT # 18-732 PHASE #

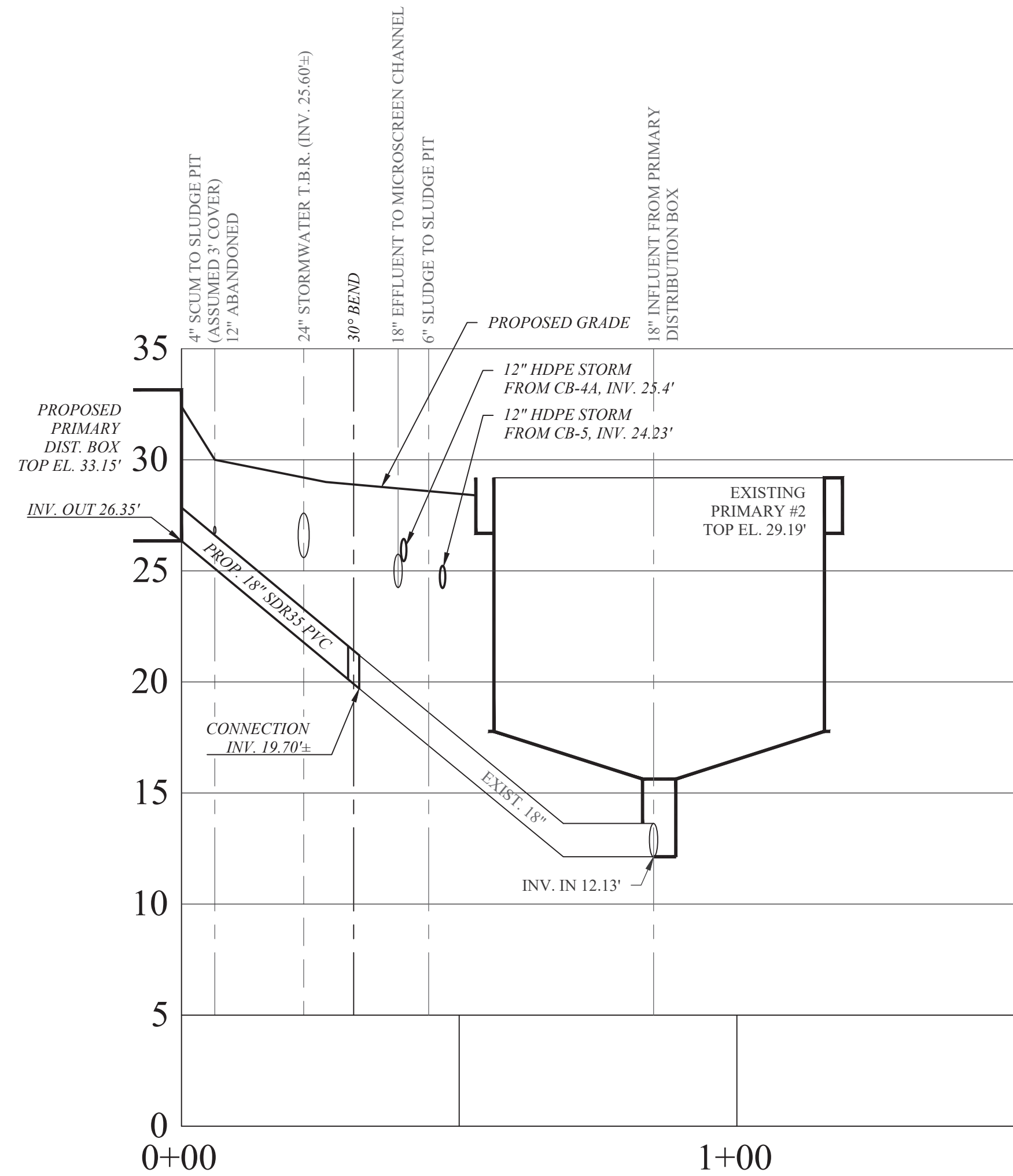


STORMWATER STRUCTURE SCHEDULE					
BASIN NO.	SIZE & TYPE	RIM. ELEV.	PIPE DIA. & LENGTH	INV. IN (FROM)	INV. OUT (TO)
CB-1A	24x3 PRECAST	19.5	24" - 18 LF	15.75 (WQ-2)	15.48 (EXIST. 24" HDPE)
WQ-2	50 BARRACUDA	20.7	18" - 5 LF	17.76 (CB-1)	17.30 (CB-1A)
CB-1	35x3 PRECAST	20.89	18" - 46 LF	18.44 (CB-2)	18.14 (WQ-1)
CB-2	35x3 PRECAST	27.19	18" - 58 LF	21.4 (CB-3)	21.4 (CB-1)
CB-3	35x3 PRECAST	31.5	18" - 53 LF	21.8 (CB-4)	21.8 (CB-2)
CB-4	35x3 PRECAST	28.2	12" - 33 LF	22.2 (CB-4A)	22.2 (CB-3)
CB-4A	30x30" PRECAST	28.5	12" - 57 LF	25.7 (CB-4B)	25.7 (CB-4)
CB-4B	30x30" PRECAST	28.7	-	N/A	26.2 (CB-4A)
CB-5	35x3 PRECAST	28.5	12" - 30 LF	24.7 (CB-5A)	24.7 (CB-4)
CB-5A	30x30" PRECAST	28.5	12" - 47 LF	24.9 (CB-5B)	24.9 (CB-5)
CB-5B	30x30" PRECAST	30.9	12" - 52 LF	25.2 (CB-5C)	25.2 (CB-5A)
CB-5C	30x30" PRECAST	28.0	8" - R.D.	25.5 (-)	25.5 (CB-5B)
CB-6	30x30" PRECAST	29.5	-	N/A	26.5 (CB-5)
CB-7	20 NYOPLAST	27.5	12" - 43 LF	24.0 (CB-7A)	23.0 (OUTLET INV. 140)
CB-7A	20 NYOPLAST	28.1	8" - R.D. & SURFACE	25.6 (8" R.D.)	25.0 (CB-7)
CB-7B	20 NYOPLAST	26.7	-	N/A	24.2 (CB-7)
CB-8	25x2 PRECAST	25.1	8" - R.D.	22.0 (8" R.D.)	21.0 (OUTLET INV. 190)
CB-8A	25x2 PRECAST	25.4	-	22.5 (8" R.D.)	22.5 (CB-8)
CB-8B	25x2 PRECAST	25.2	-	23.0 (-)	23.0 (TEE INTO 12" @ 22-45)
CB-9	20 NYOPLAST	27.3	8" - R.D.	24.6 (8" R.D.)	24.5 (OUTLET INV. 240)
CB-9A	20 NYOPLAST	33.3	8" - R.D. & SURFACE	30.5 (-)	30.4 (CB-9)
WQ-4	50 BARRACUDA	16.5	12" - 5 LF	15.0 (CB-10)	14.9 (OUTLET INV. 110)
CB-10	20 NYOPLAST	15.5	-	N/A	15.4 (WQ-4)
WQ-3	50 BARRACUDA	12.5	18" - 3 LF	8.9 (CB-11)	8.8 (OUTLET INV. 80)
CB-11	30x30" PRECAST	11.9	12" - 38 LF	9.0 (CB-11A)	9.0 (WQ-3)
CB-11A	30x30" PRECAST	12.5	18" - 60 LF	9.0 (CB-12)	9.7 (CB-11)
CB-12	35x3 PRECAST	12.5	-	9.5 (-)	9.5 (CB-11)
CB-13	30x30" PRECAST	9.18	12" - 40 LF	6.06 (EXIST. 12" 6.06 (CB-13A))	5.91 (EXIST. CATCH BASIN)
CB-13A	30x30" PRECAST	8.7	12" - 27 LF	6.5 (CB-13B)	6.5 (CB-13)
CB-13B	30x30" PRECAST	16.2	12" - 62 LF	13.0 (CB-13C)	12.0 (CB-13A)
CB-13C	30x30" PRECAST	23.0	2" - 4 LF	20.5 (4" PERF. PVC PIPE)	20.0 (CB-13B)
WQ-1	50 BARRACUDA	8.5	EXIST. 18" HDPE - 7 LF	22.0 (24" PERF. PVC PIPE)	MATCH EXIST.
DMH-1	40 PRECAST	29.0	24" - 11 LF	22.0 (24" PERF. PVC PIPE)	21.0 (OUTLET INV. 120)

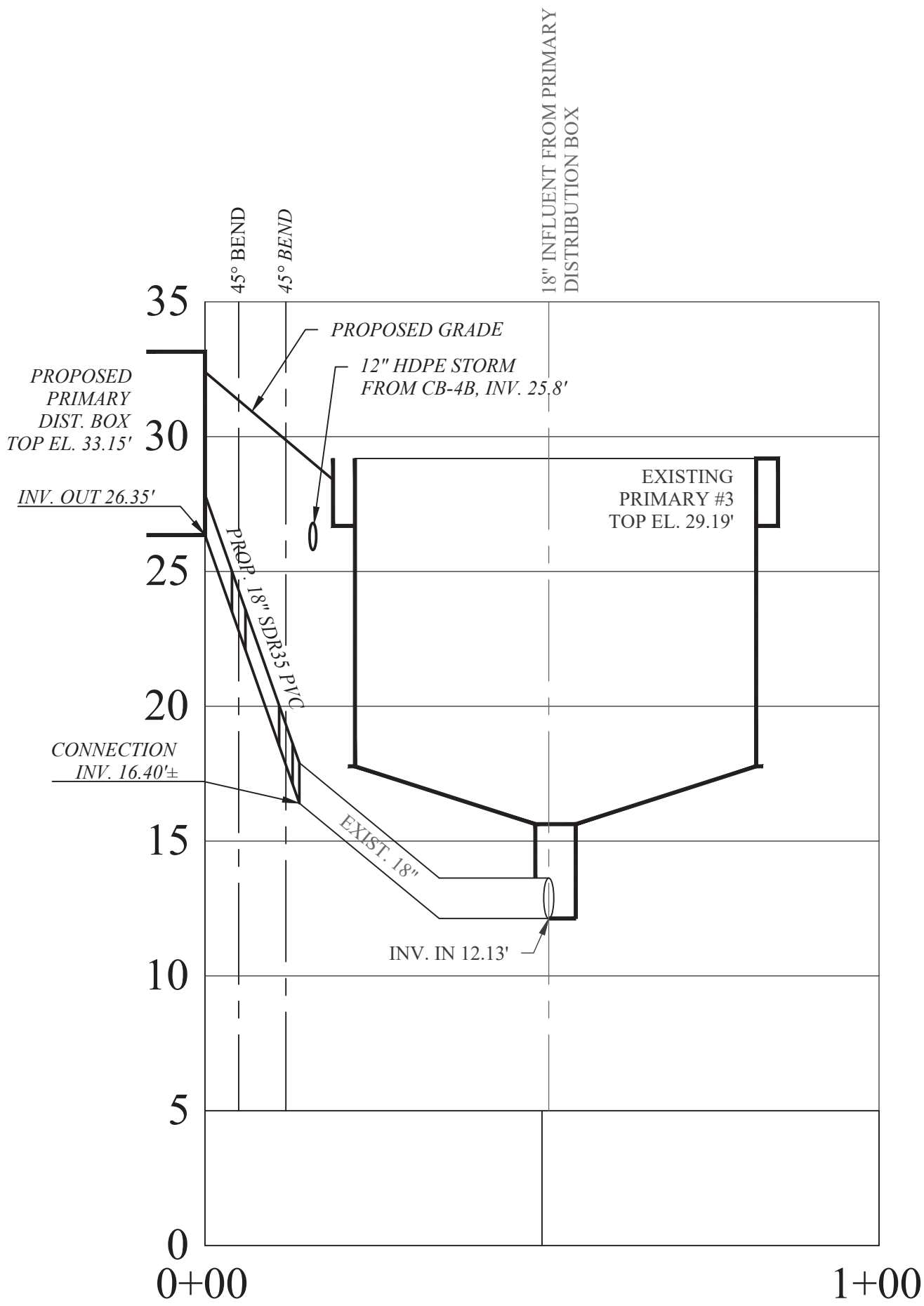
1 C-122 PARTIAL SITE GRADING PLAN #2
SCALE: 1" = 20'



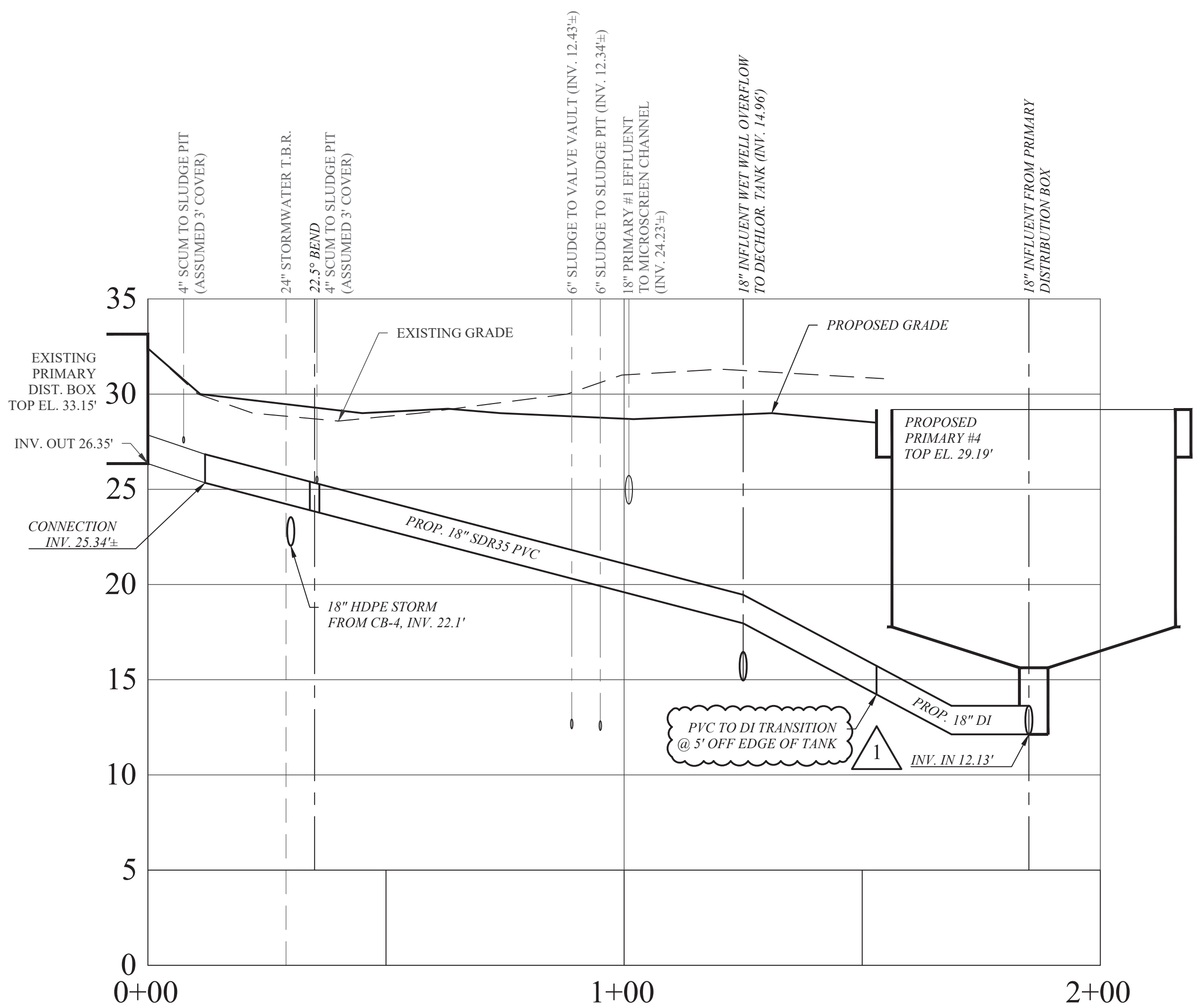
P:\2018\18-752 Caesars Lane WWTP Improvements\Expansion Phase\Drawings\1 - Site Work & Overall\Addendum 4\18-752 Caesars Lane WWTP Pipe Profiles.dwg, C-124, 7/6/2025, 2:16:27 PM



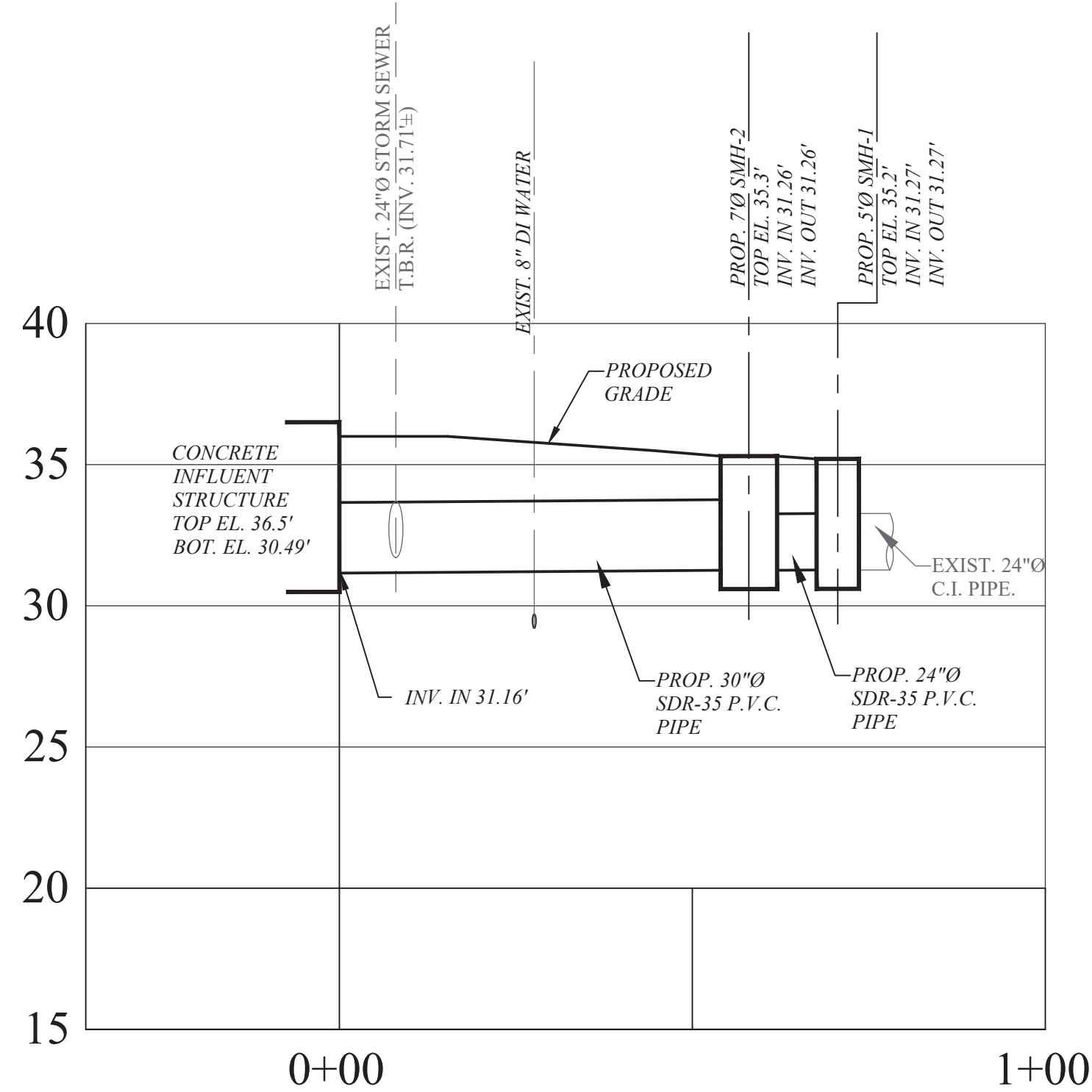
18" SDR35 PVC INFLUENT
TO PRIMARY #2



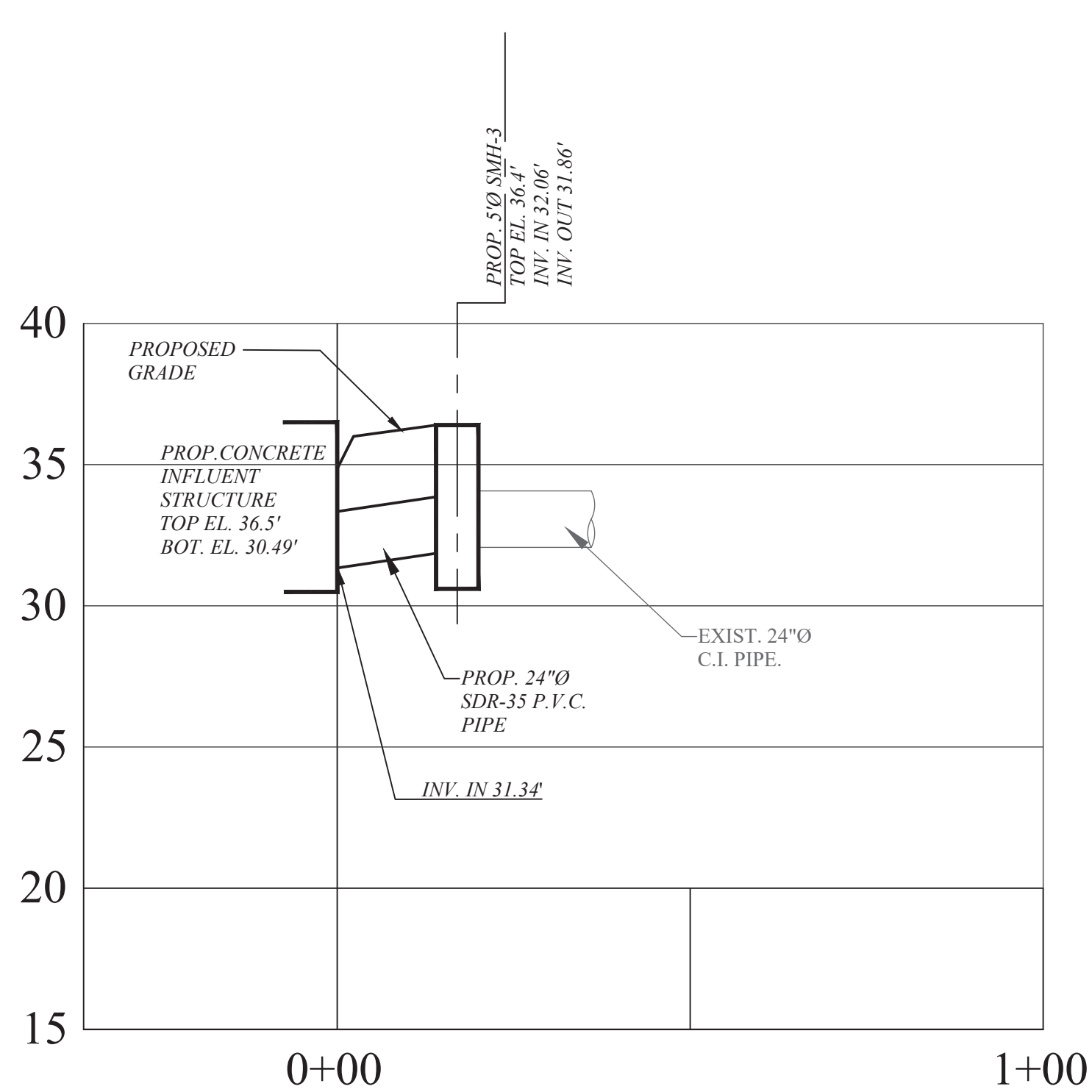
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TO PRIMARY #3



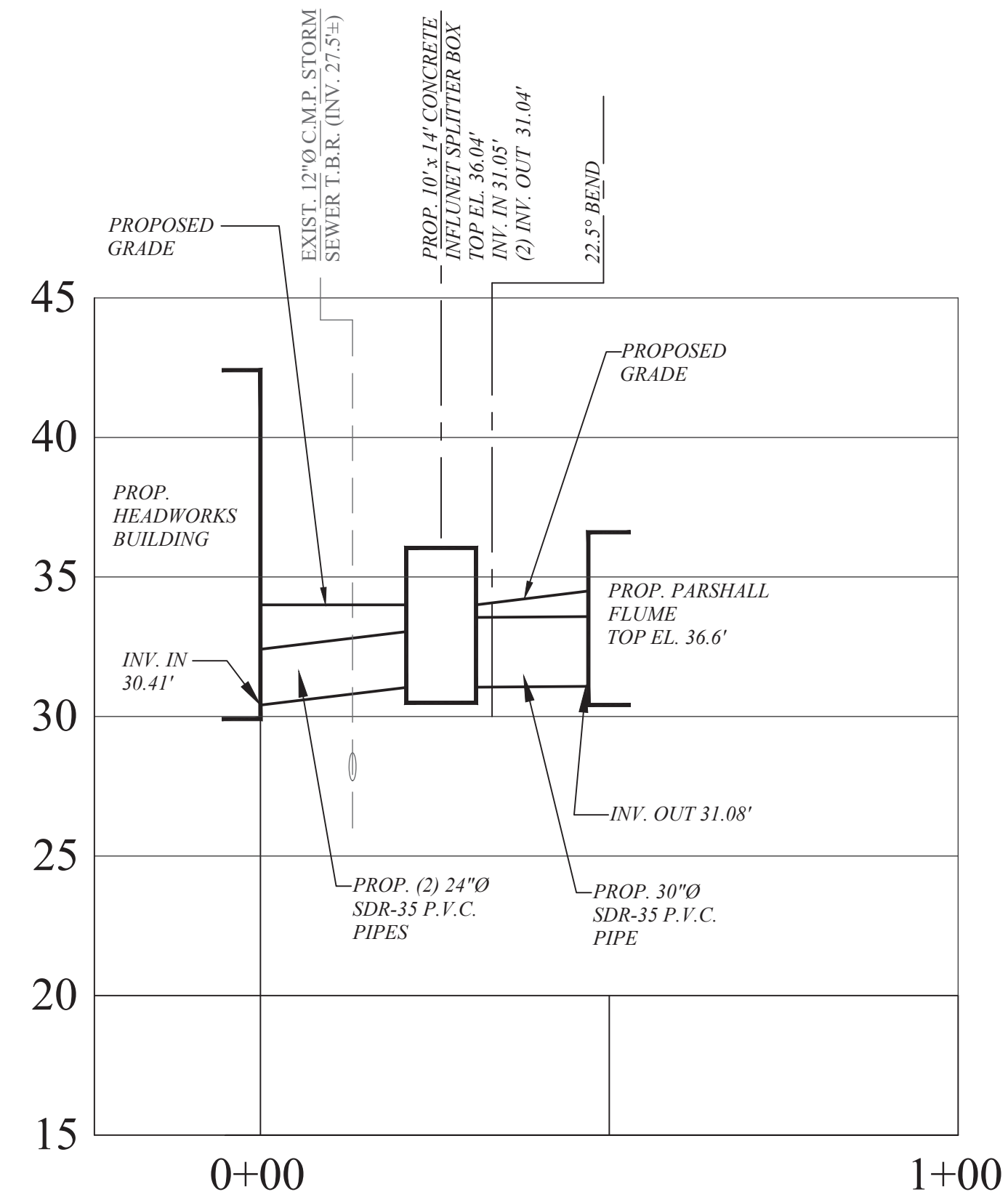
18" SDR35 PVC INFLUENT
TO PRIMARY #4



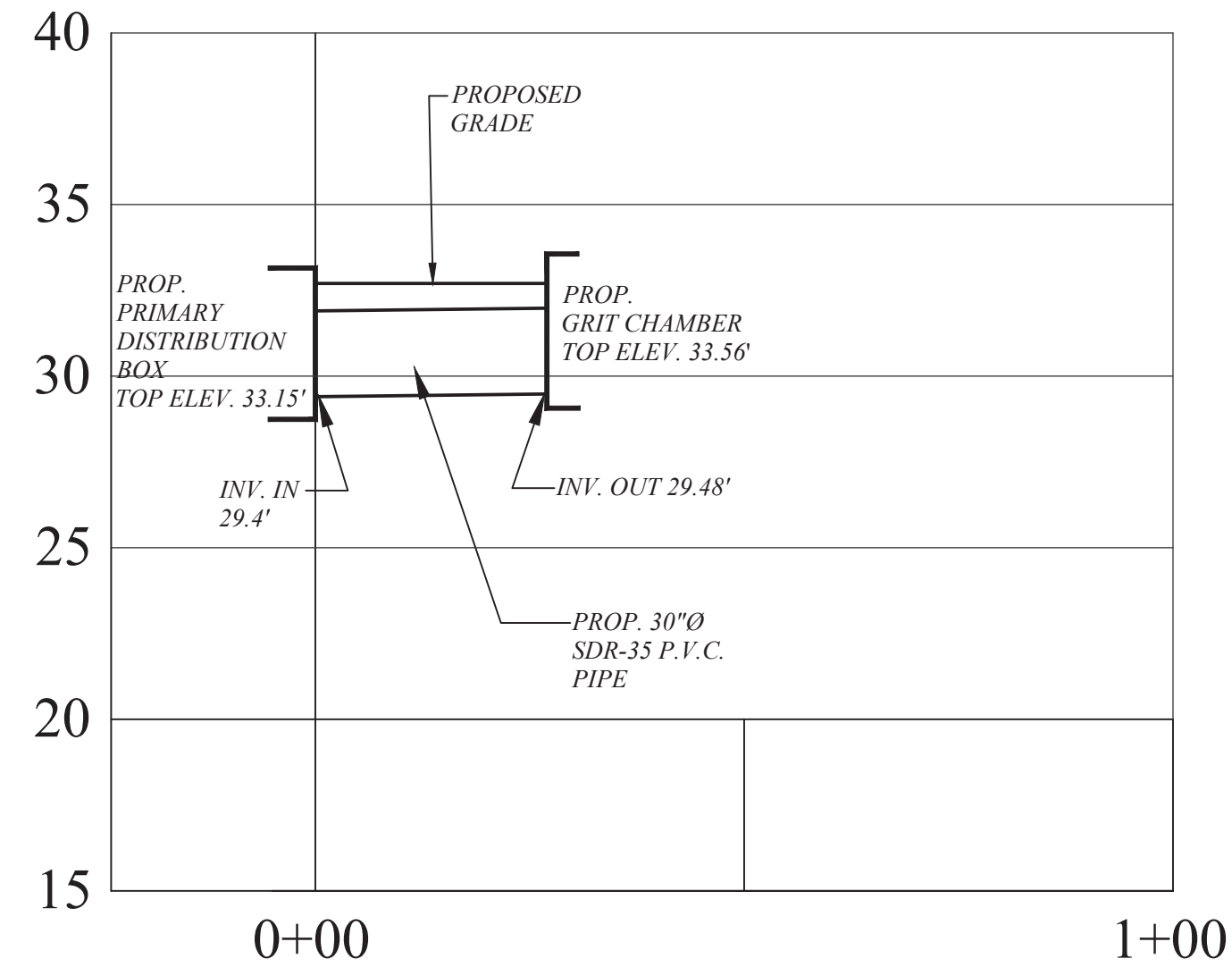
24" SDR35 PVC - SMH-1 TO SMH-2 AND
30" SDR35 PVC - SHM-2 TO INFLUENT STRUCTURE



24" SDR35 PVC - SMH-3
TO INFLUENT STRUCTURE



30" SDR35 PVC - PARSHALL FLUME
EFFLUENT TO INFLUENT SPLITTER BOX
AND 24" SDR35 PVC SPLITTER BOX
EFFLUENT TO HEADWORKS BUILDING



30" SDR35 PVC - GRIT CHAMBER
TO PRIMARY DISTRIBUTION BOX

SHADED TEXT = EXISTING PIPING
ITALICIZED TEXT = PROPOSED PIPING

NOTE: PIPE CROSSINGS ARE SHOWN FOR INFORMATIONAL
PURPOSES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PIPE
LOCATIONS AND DEPTHS VIA TEST PITS PRIOR TO ANY REMOVAL
OR PLACEMENT OF NEW PIPING.

1 YARD PIPING PROFILES
C-124 SCALE: HORIZ. 1" = 20', VERT. 1" = 5'



33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Milford, PA 18337
(845) 567-3100 (870) 296-2765

BID SET

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DIRECTION FROM THE HAZARDOUS MATERIAL
CONSULTANT PRIOR TO THE CONTINUATION OF WORK
INVOLVING SUSPECTED MATERIAL.



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**CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

PROCESS PIPE PROFILES

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

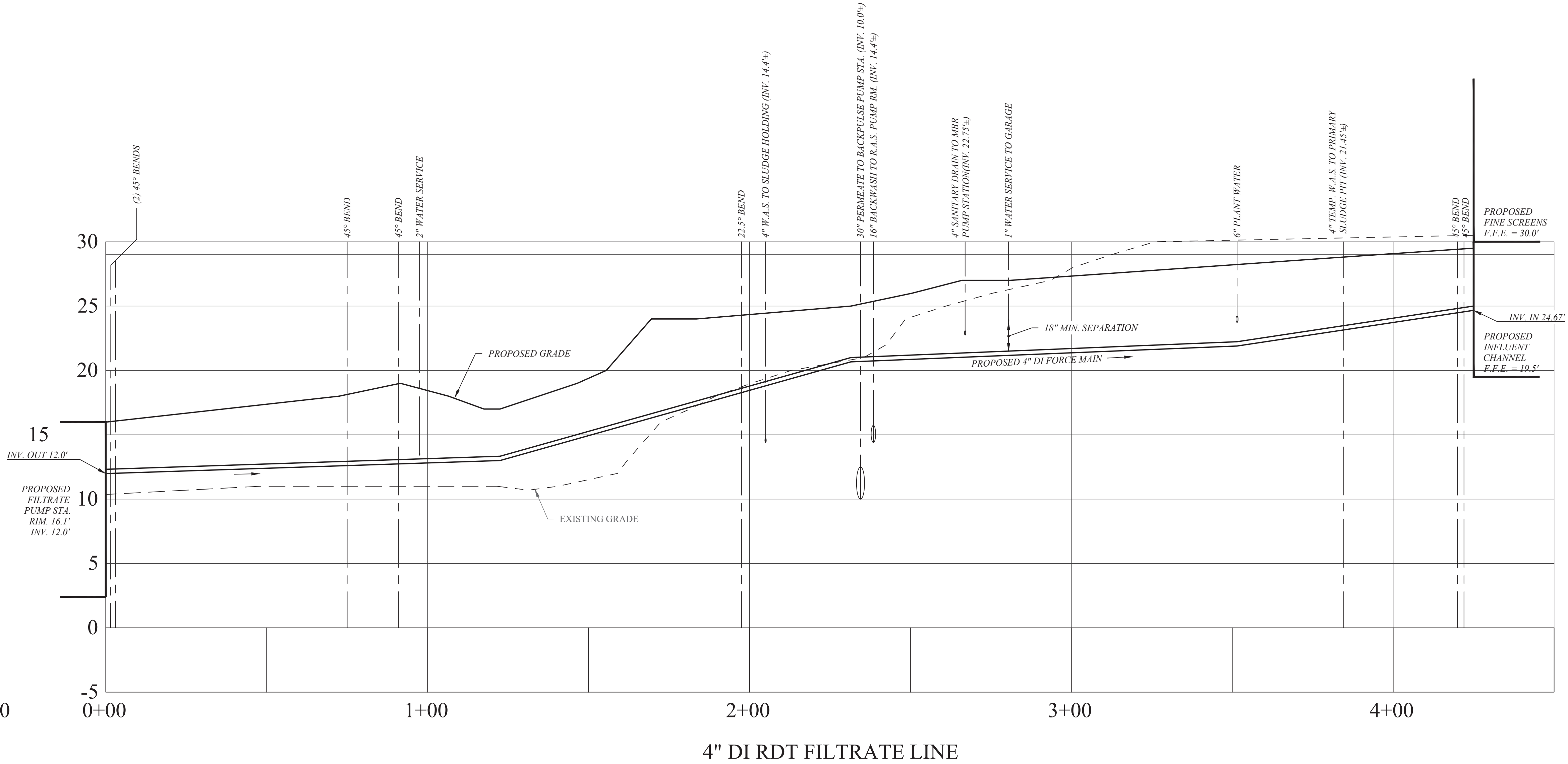
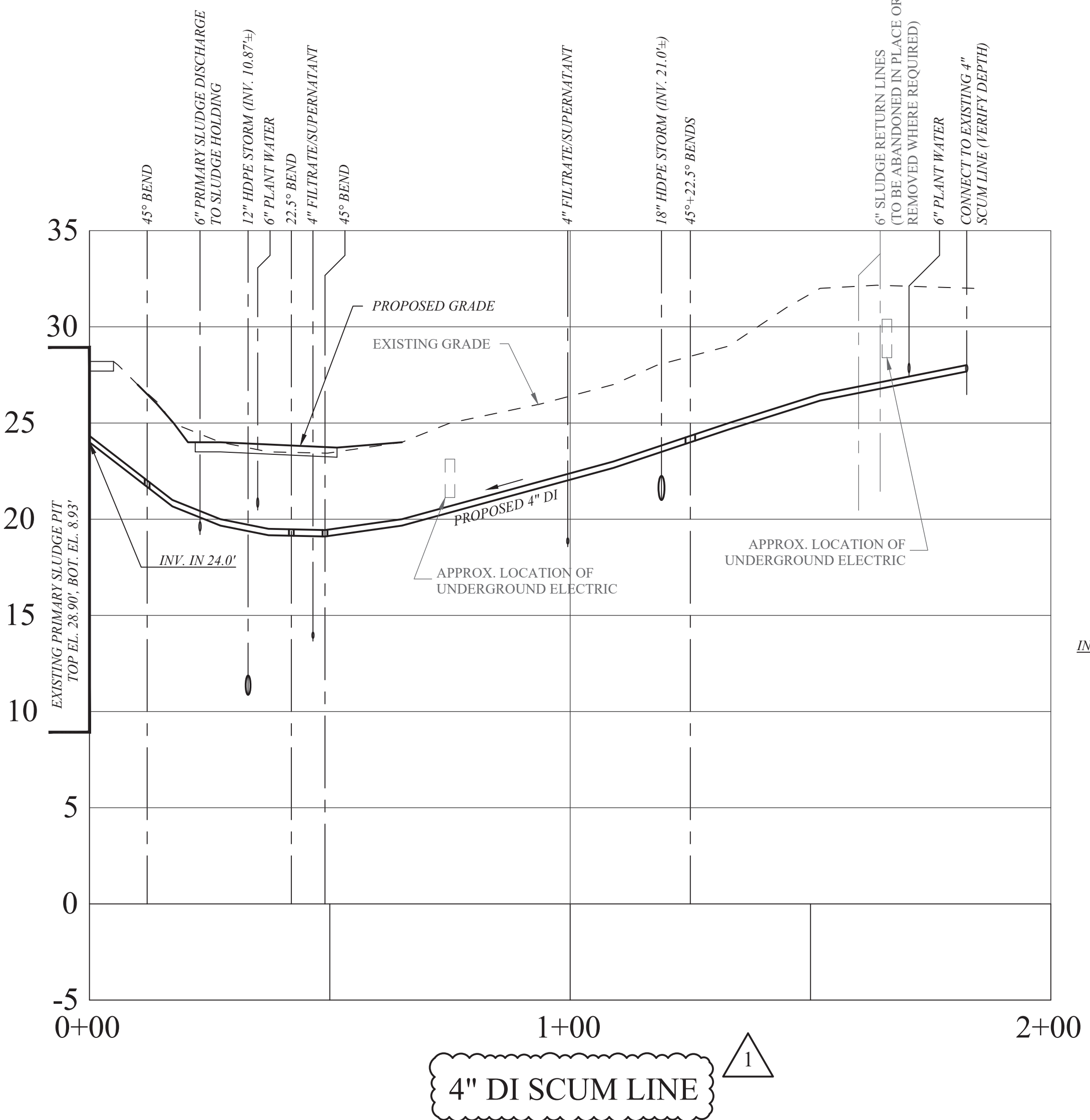
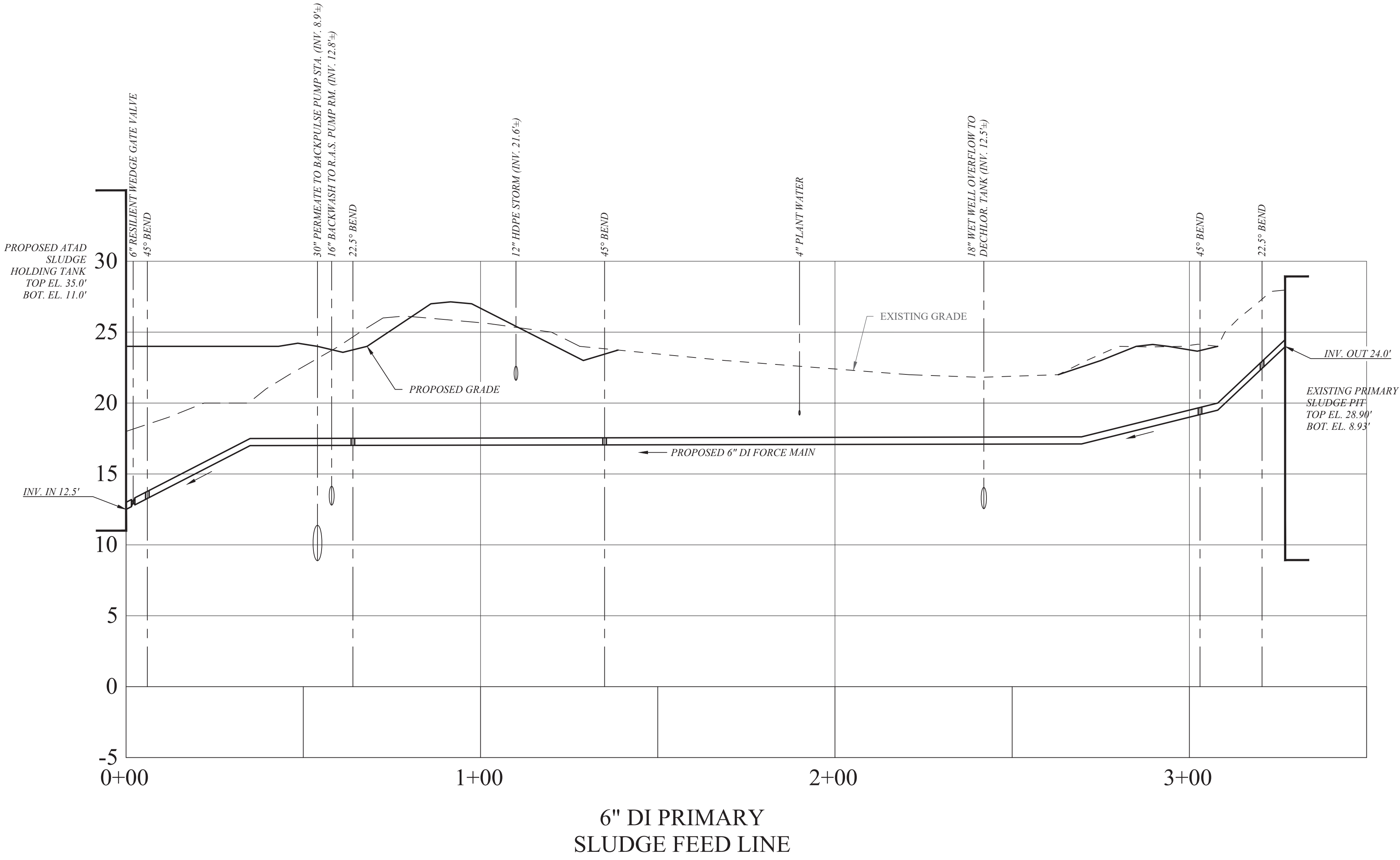
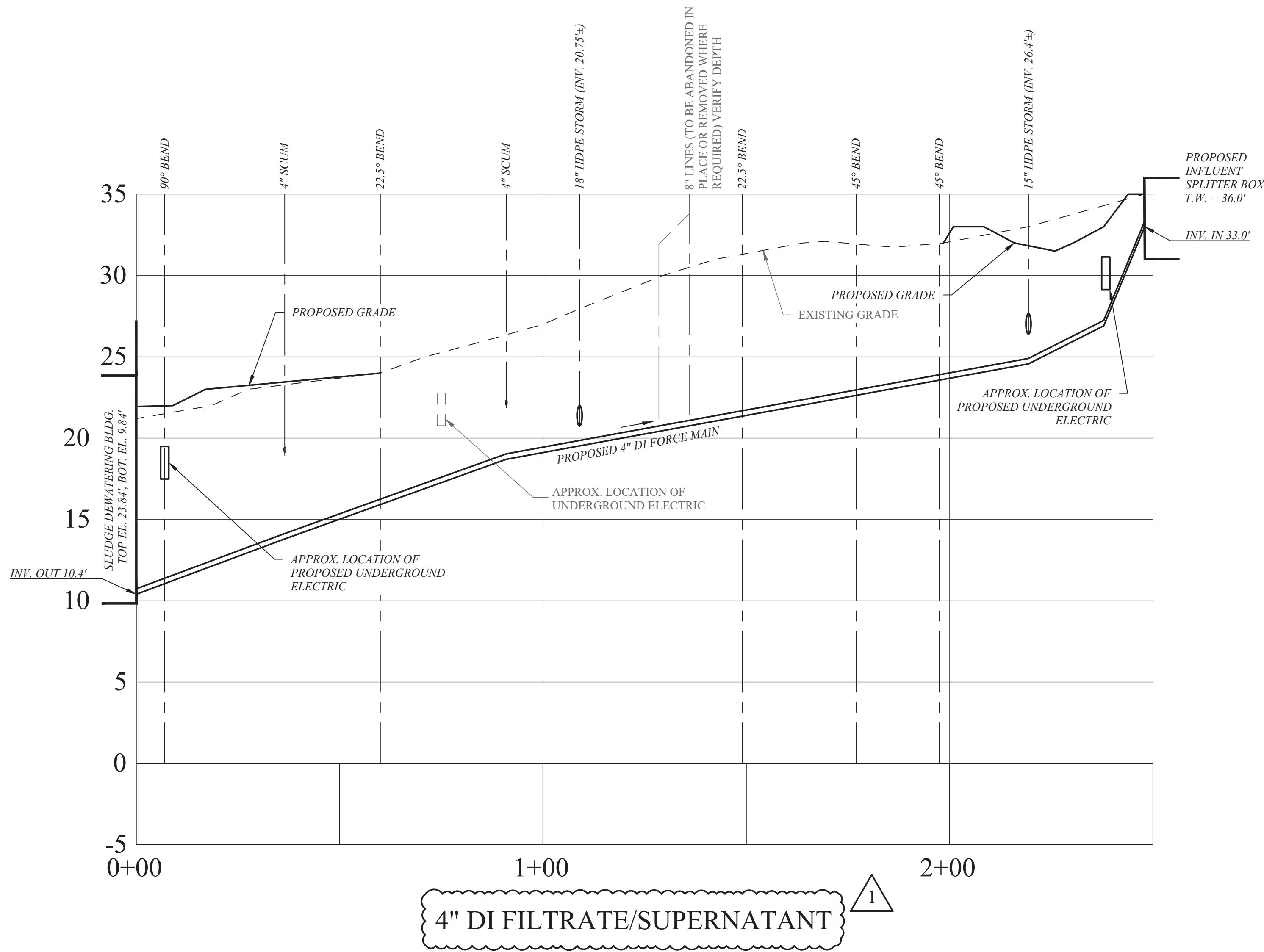
ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ, JTW
DRAWN BY:	HPBH
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.

C-124

PROJECT # 18-732 PHASE #

F:\2018\12-22-Caesars Lane WWTP Improvements\Expansion Phase\Drawings\1 - Site Work & Coord\Addendum 4119-252-Caesars Lane WWTP Pipe Profiles.dwg, C-126, 7/6/2025, 2:16:26 PM



SHADED TEXT = EXISTING PIPING
ITALICIZED TEXT = PROPOSED PIPING

NOTE: PIPE CROSSINGS ARE SHOWN FOR INFORMATIONAL PURPOSES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PIPE LOCATIONS AND DEPTHS VIA TEST PITS PRIOR TO ANY REMOVAL OR PLACEMENT OF NEW PIPING.

1 YARD PIPING PROFILES
C-126 SCALE: HORIZ. 1" = 20', VERT. 1" = 5'



33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Milford, PA 18337
(845) 567-3100 (870) 296-2765

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EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

PROCESS PIPE PROFILES

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

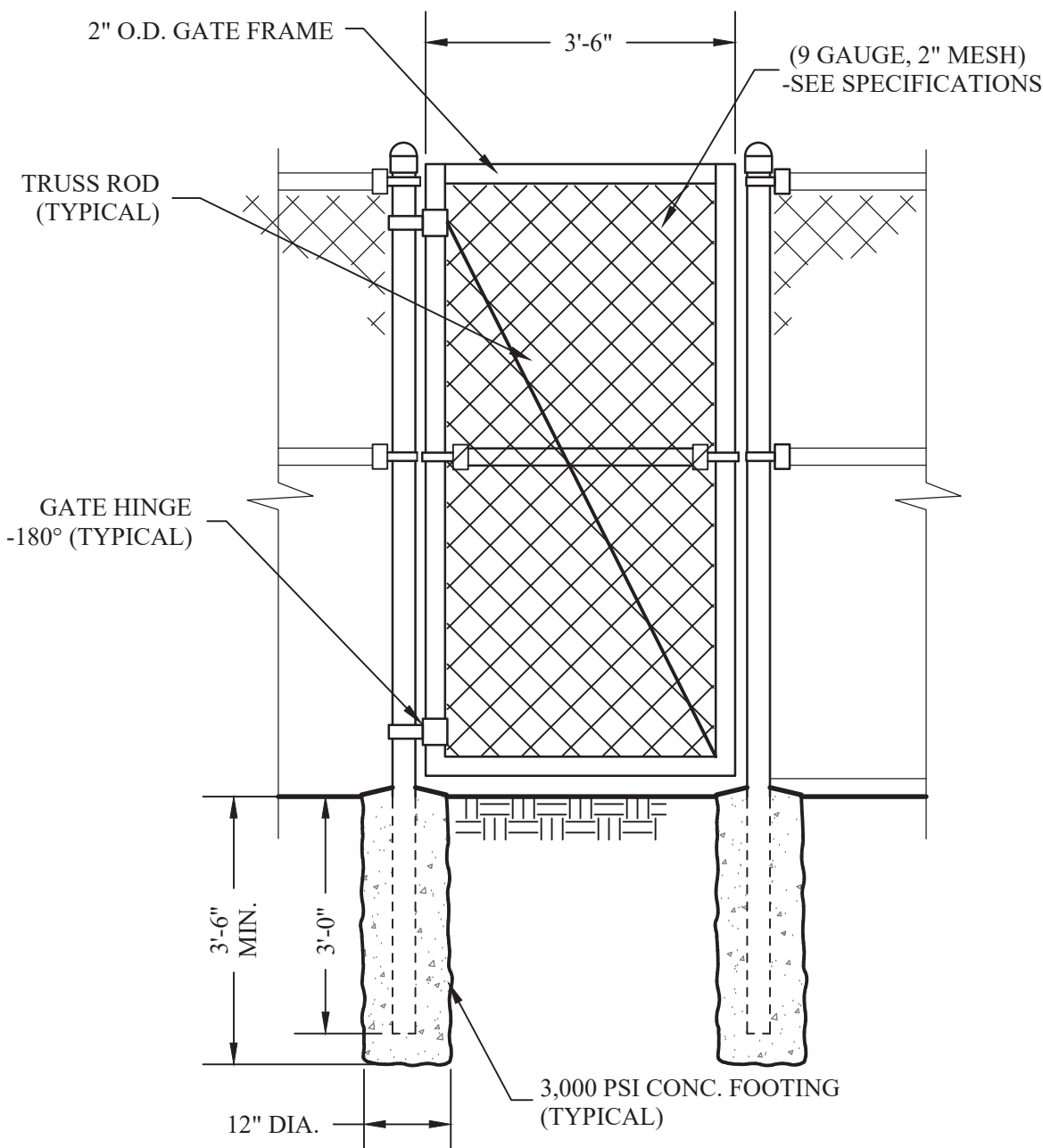
ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ/JTW
DRAWN BY:	HPBH
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.

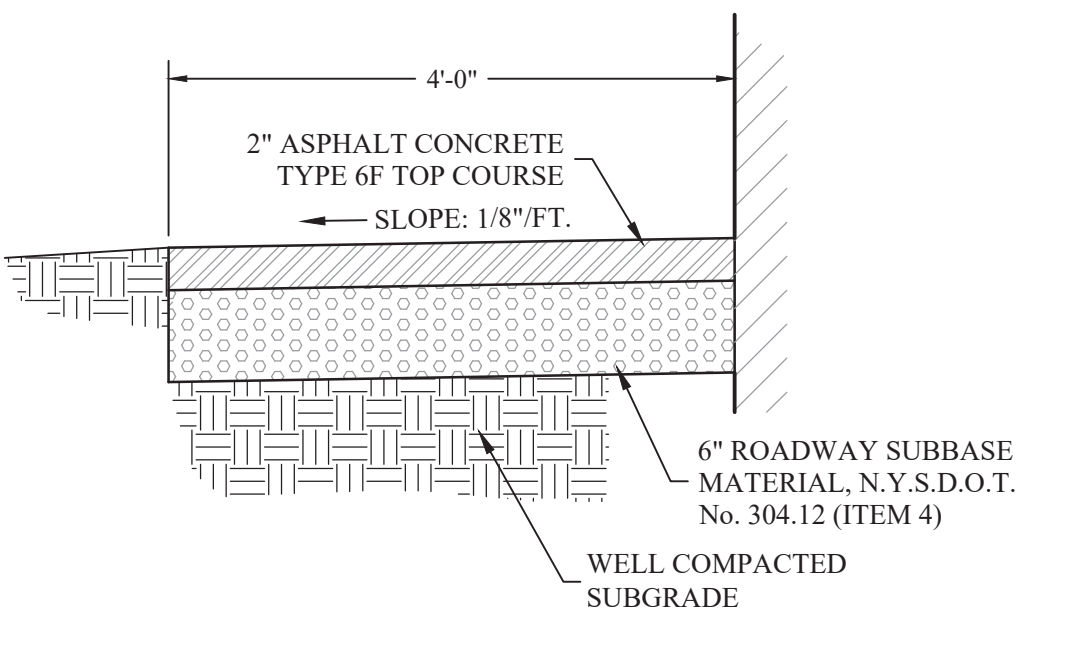
C-126

PROJECT # 18-732 PHASE #

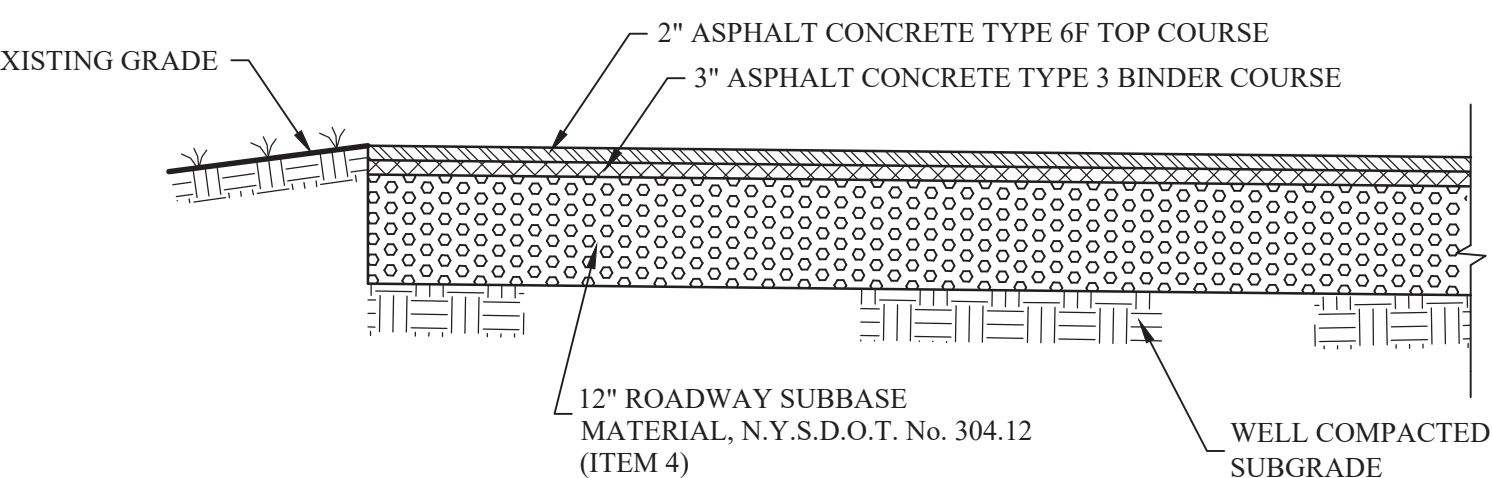
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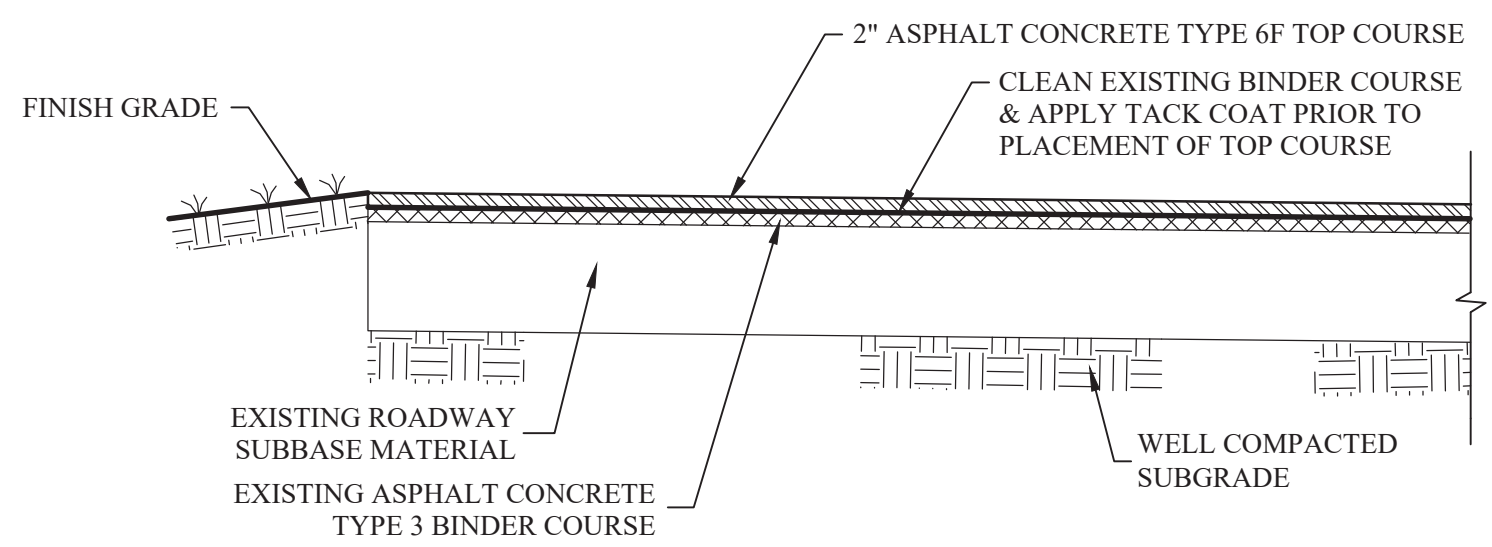
1
C-142
CHAIN LINK MAN GATE DETAIL
SCALE: NONE



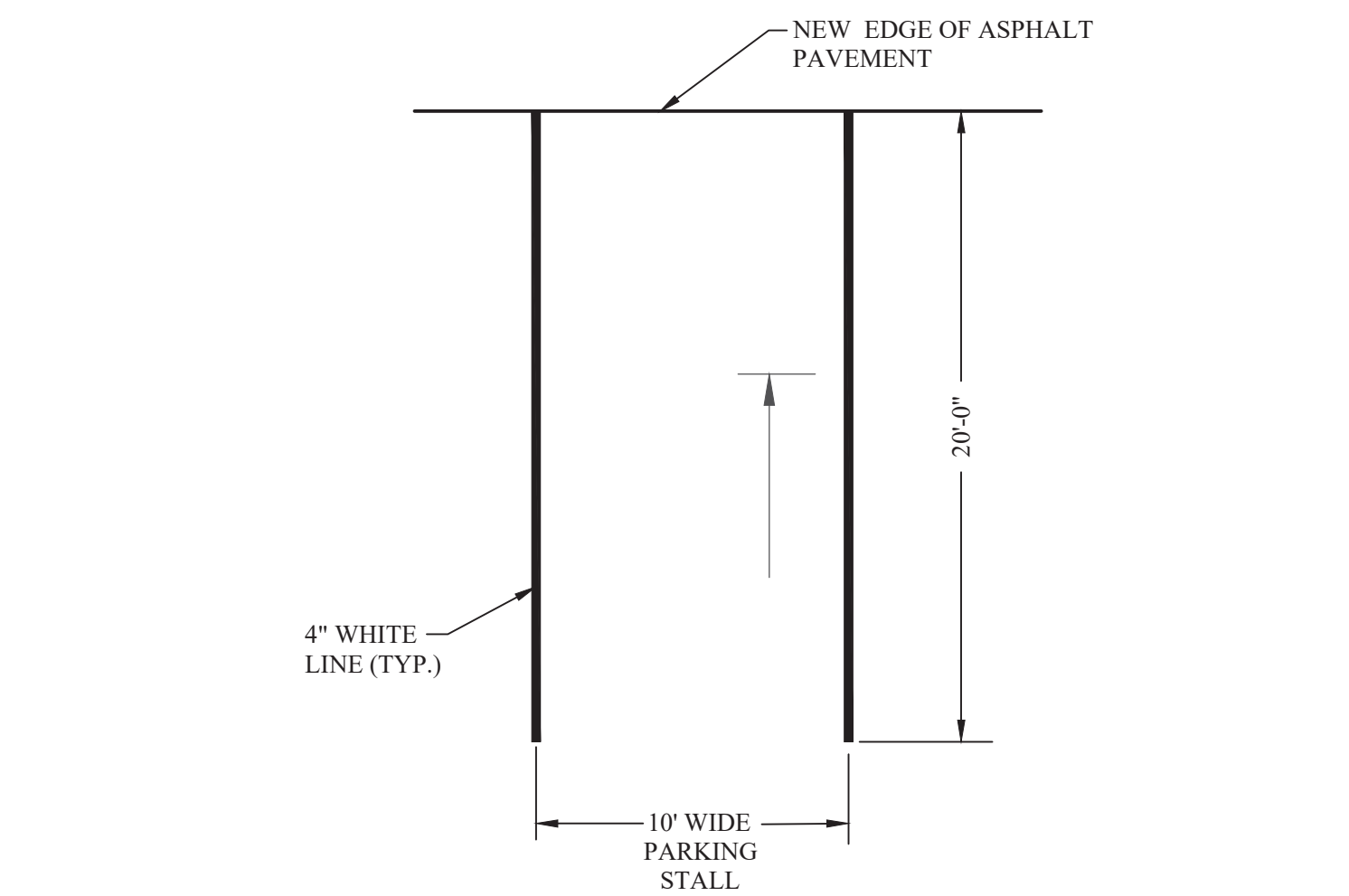
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C-142
TYP. ASPHALT PAVEMENT WALKWAY SECTION
SCALE: NONE



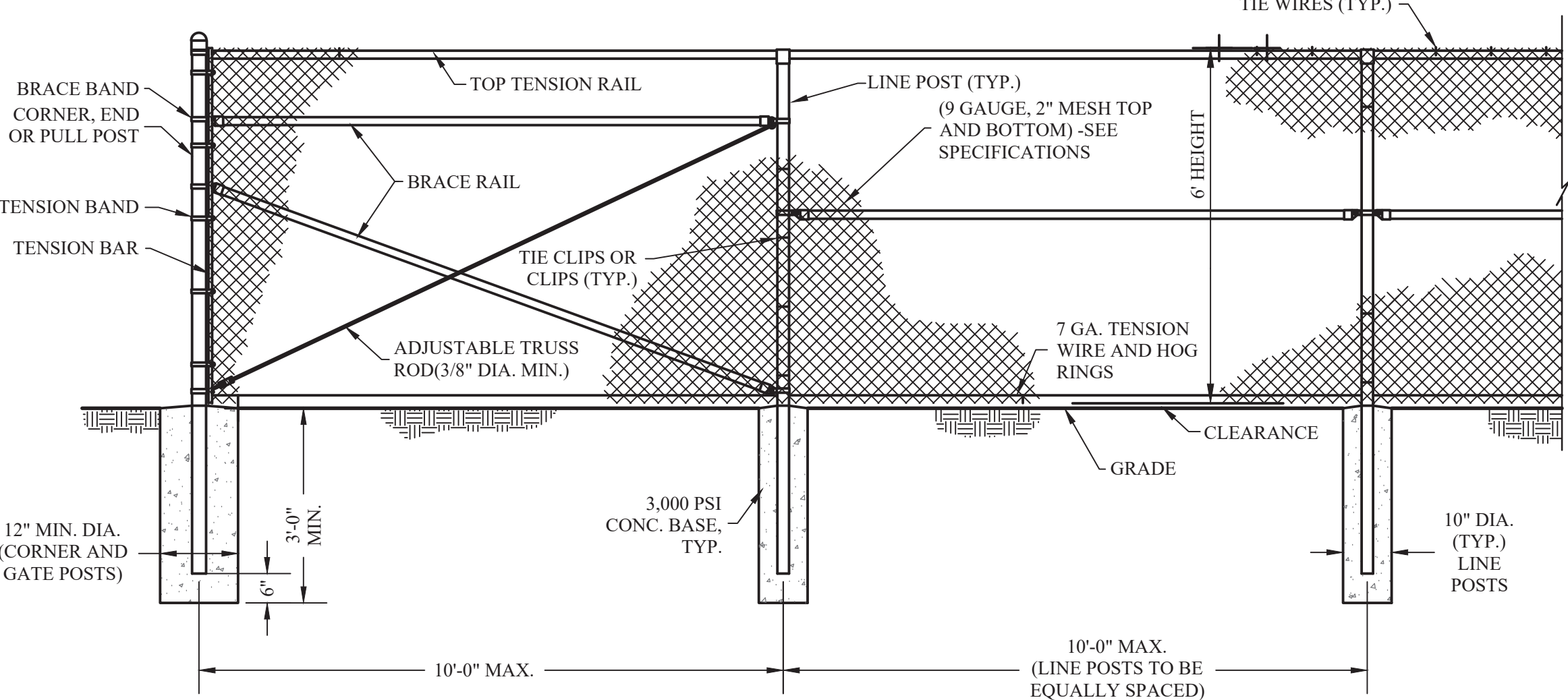
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C-142
TYPICAL FULL DEPTH ASPHALT PAVEMENT SECTION
SCALE: NONE



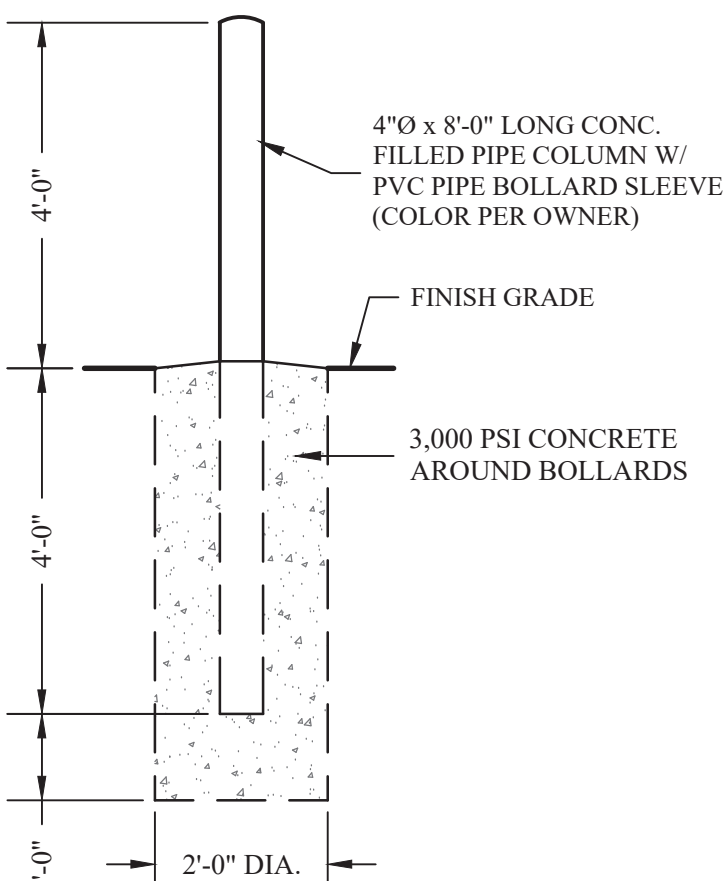
10
C-142
TYPICAL FINAL PAVEMENT ACCESS DRIVE SECTION
SCALE: NONE



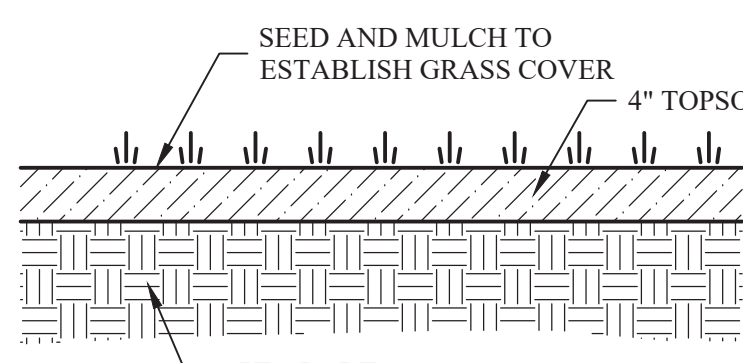
11
C-142
TYPICAL PARKING SPACE STRIPING DETAIL
SCALE: N.T.S.



2
C-142
CHAIN LINK FENCE DETAIL
SCALE: NONE

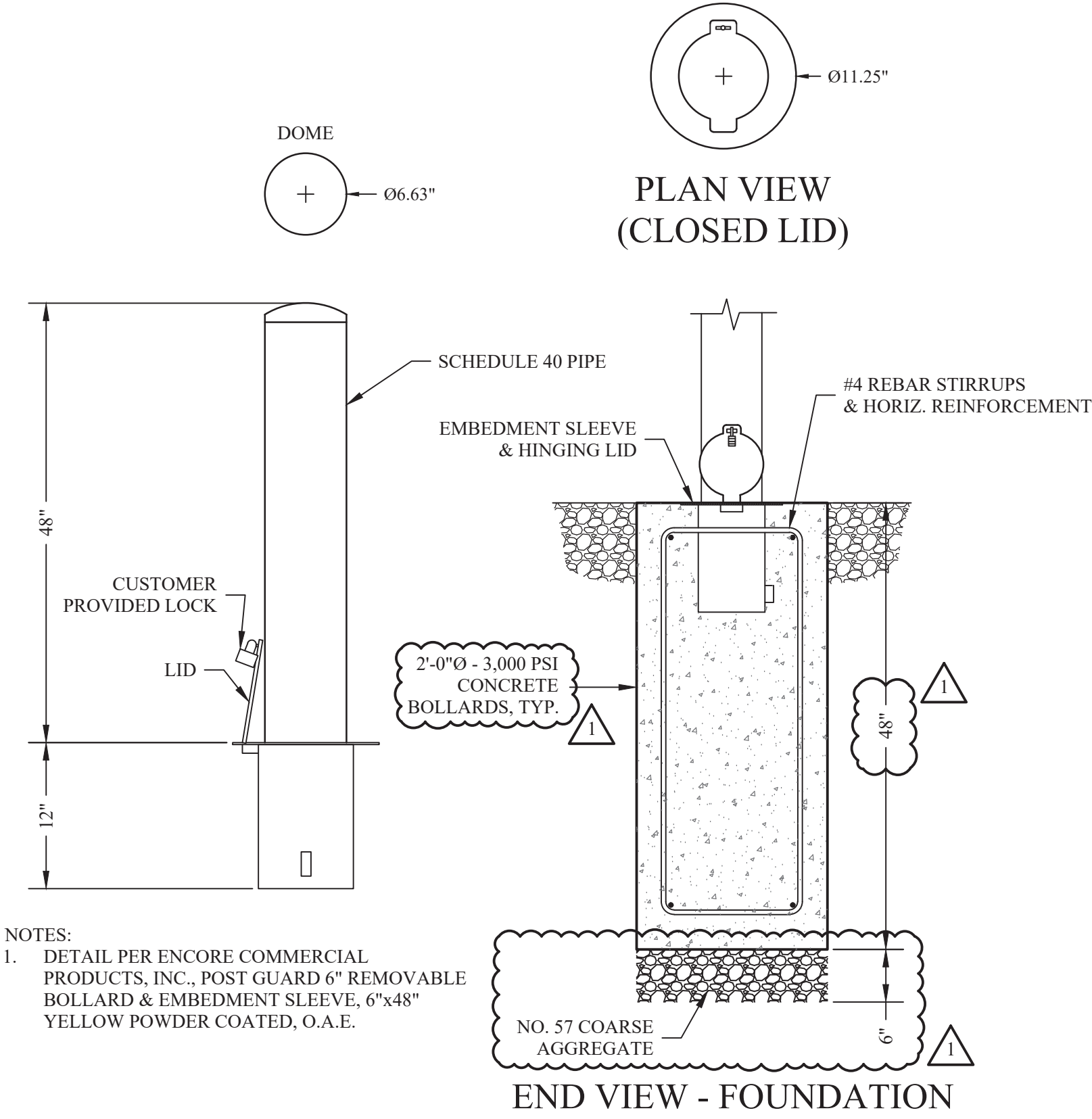


5
C-142
CONCRETE BOLLARD DETAIL
SCALE: NONE



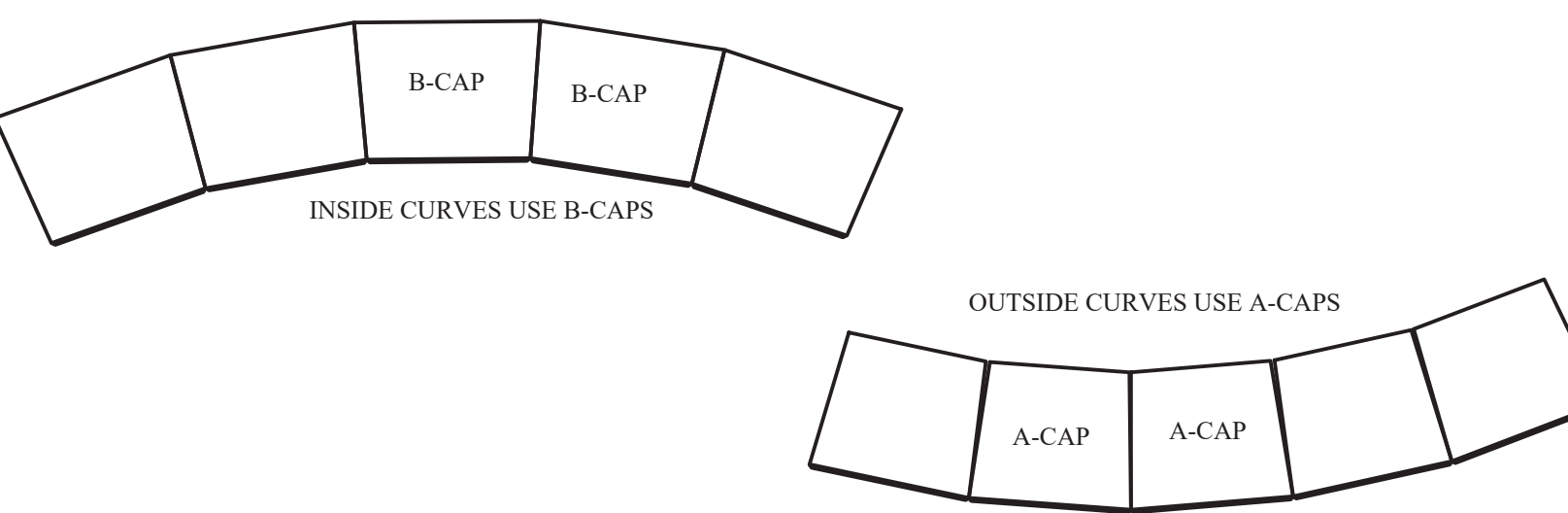
- NOTES:
1. ALL DISTURBED AREAS, OTHER THAN AREAS PROPOSED FOR STRUCTURES, PAVEMENT OR SIDEWALK, SHALL BE VEGETATED WITH GRASS AS SHOWN ON THIS DETAIL.
 2. ALL SLOPES STEEPER THAN 3:1 TO INCLUDE JUTE MATTING.

9
C-142
TOPSOIL RESTORATION DETAIL
SCALE: NONE

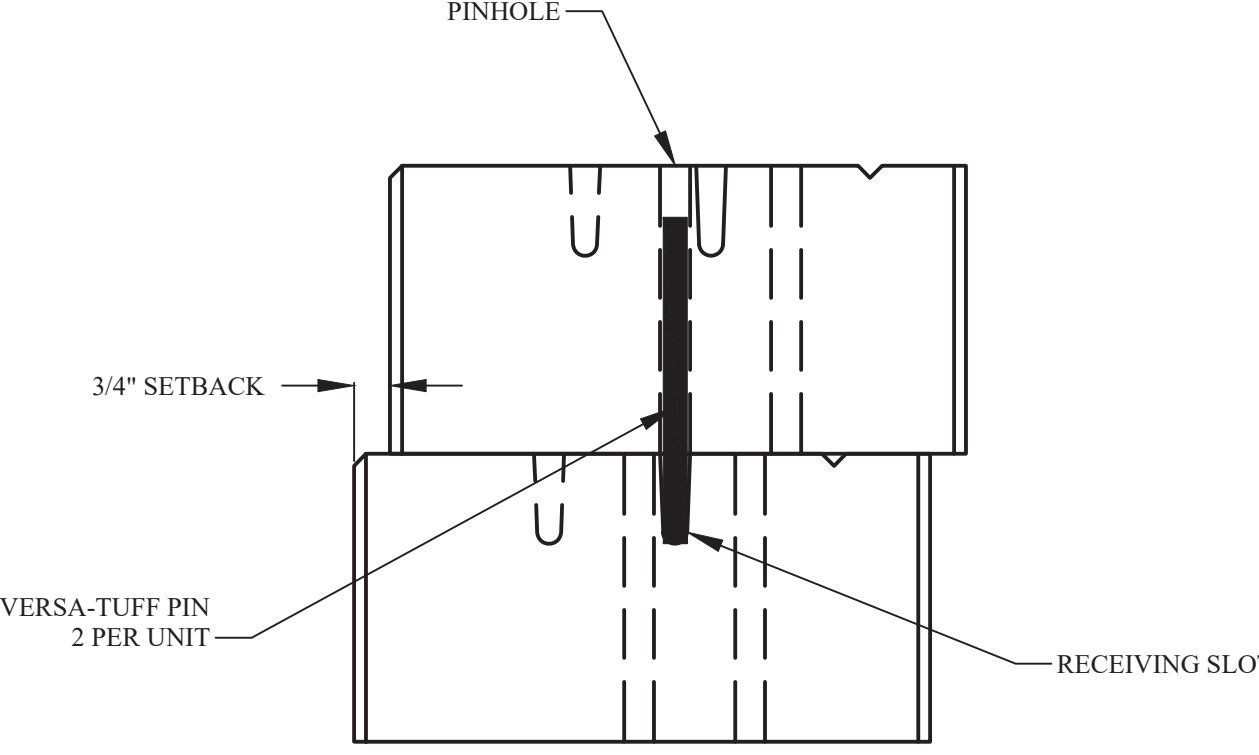


- NOTES:
1. DETAIL PER ENCORE COMMERCIAL PRODUCTS, INC., POST GUARD 6" REMOVABLE BOLLARD & EMBEDMENT SLEEVE, 6"x48" YELLOW POWDER COATED, O.A.E.

6
C-142
REMOVABLE BOLLARD DETAIL
SCALE: NONE



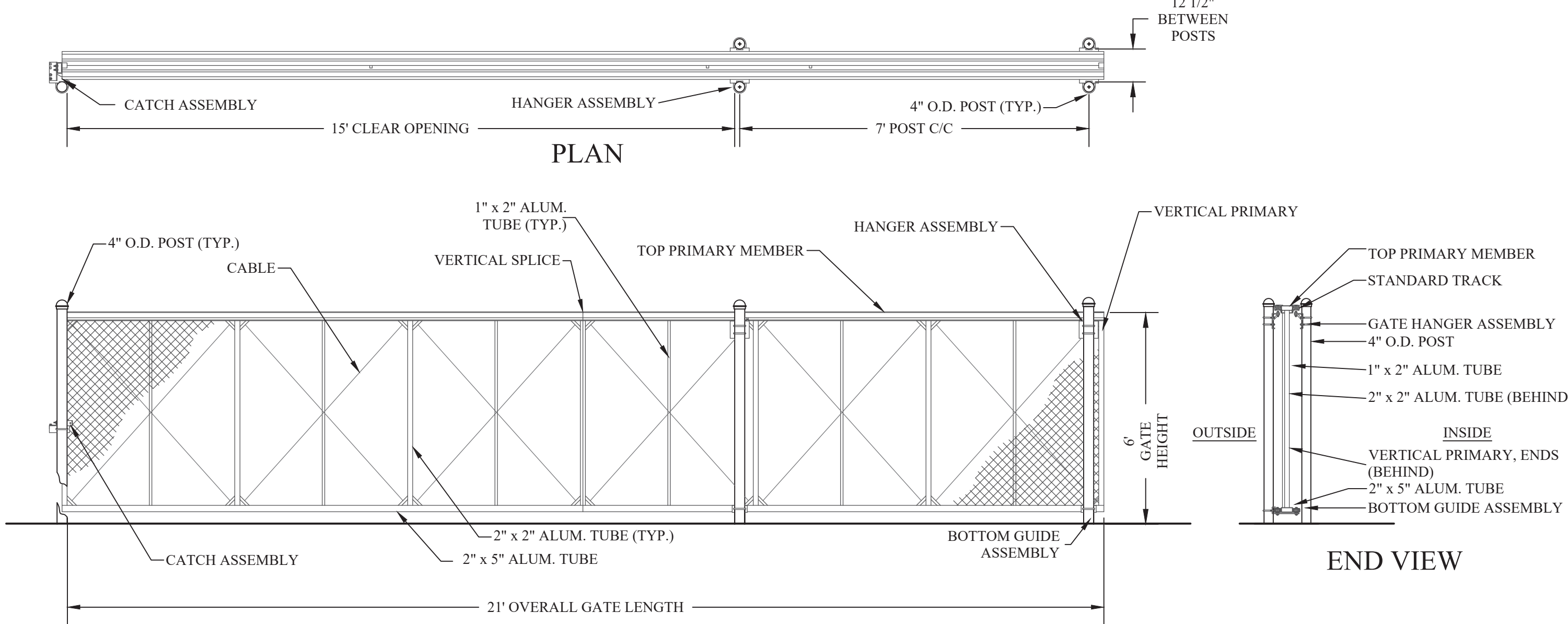
CAPPING DETAIL-PLAN VIEW
CURVES
SCALE: NONE



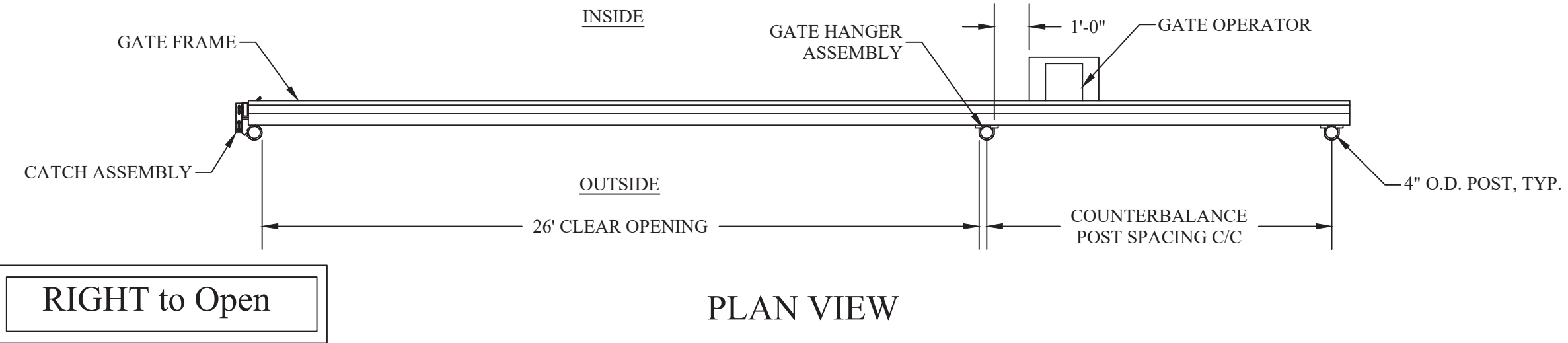
PINNING DETAIL
CROSS SECTION
SCALE: NONE

- NOTE:
1. DETAILS PER VERSA-LOK RETAINING WALL SYSTEMS, O.A.E.

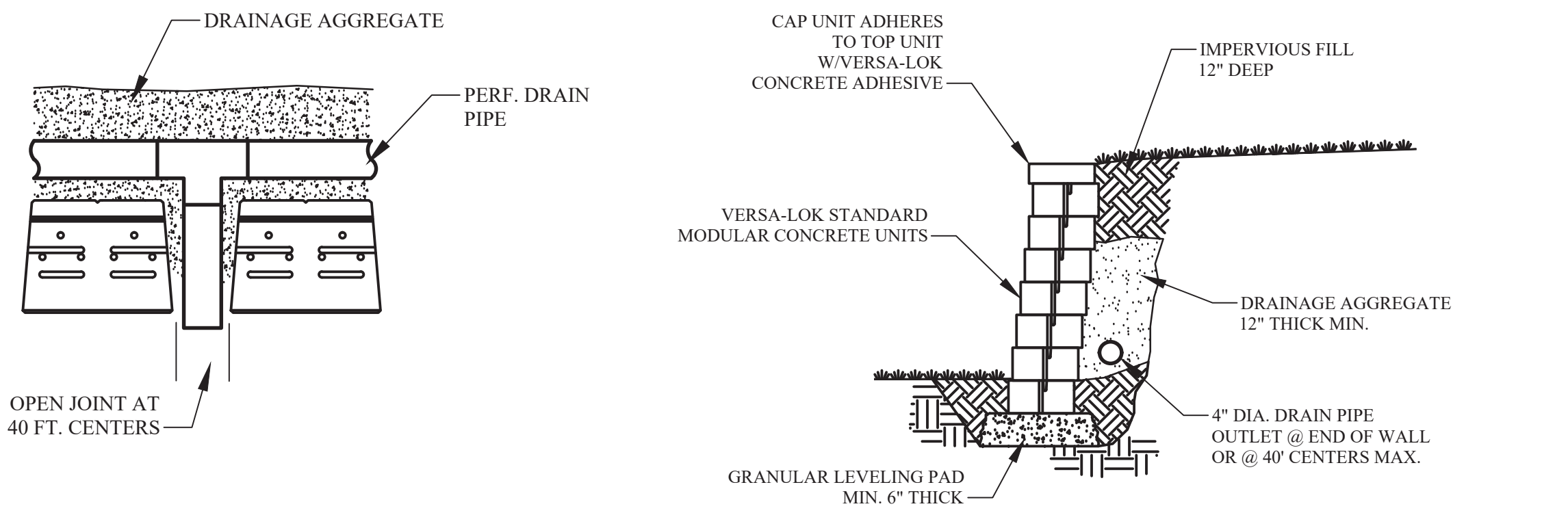
12
C-142
CONCRETE BLOCK RETAINING WALL DETAILS
SCALE: N.T.S.



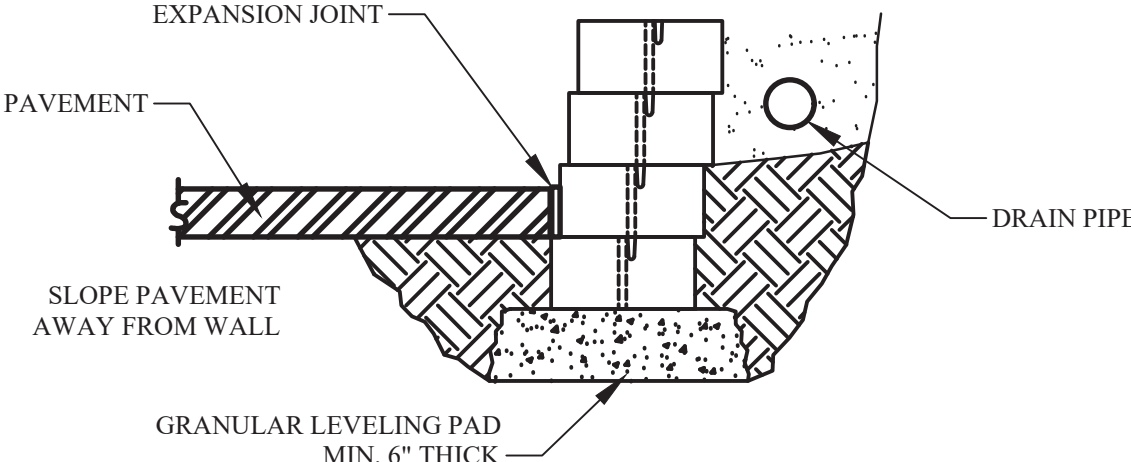
3
C-142
TYP. SLIDING GATE DETAIL
SCALE: NONE



7
C-142
HEAVY DUTY CANTILEVER SLIDE GATE DETAILS
SCALE: NONE



TYPICAL SECTION-UNREINFORCED RETAINING WALL
SCALE: NONE



PAVEMENT AT BASE OF WALL
SCALE: NONE

BID SET

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CAESARS LANE WWTP EXPANSION PROJECT:
PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

SITE DETAILS

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	SMQ/JTW
DRAWN BY:	HPB/jr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

BID SET

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NEW WINDSOR, NY 12553
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NEW WINDSOR, NY 12553

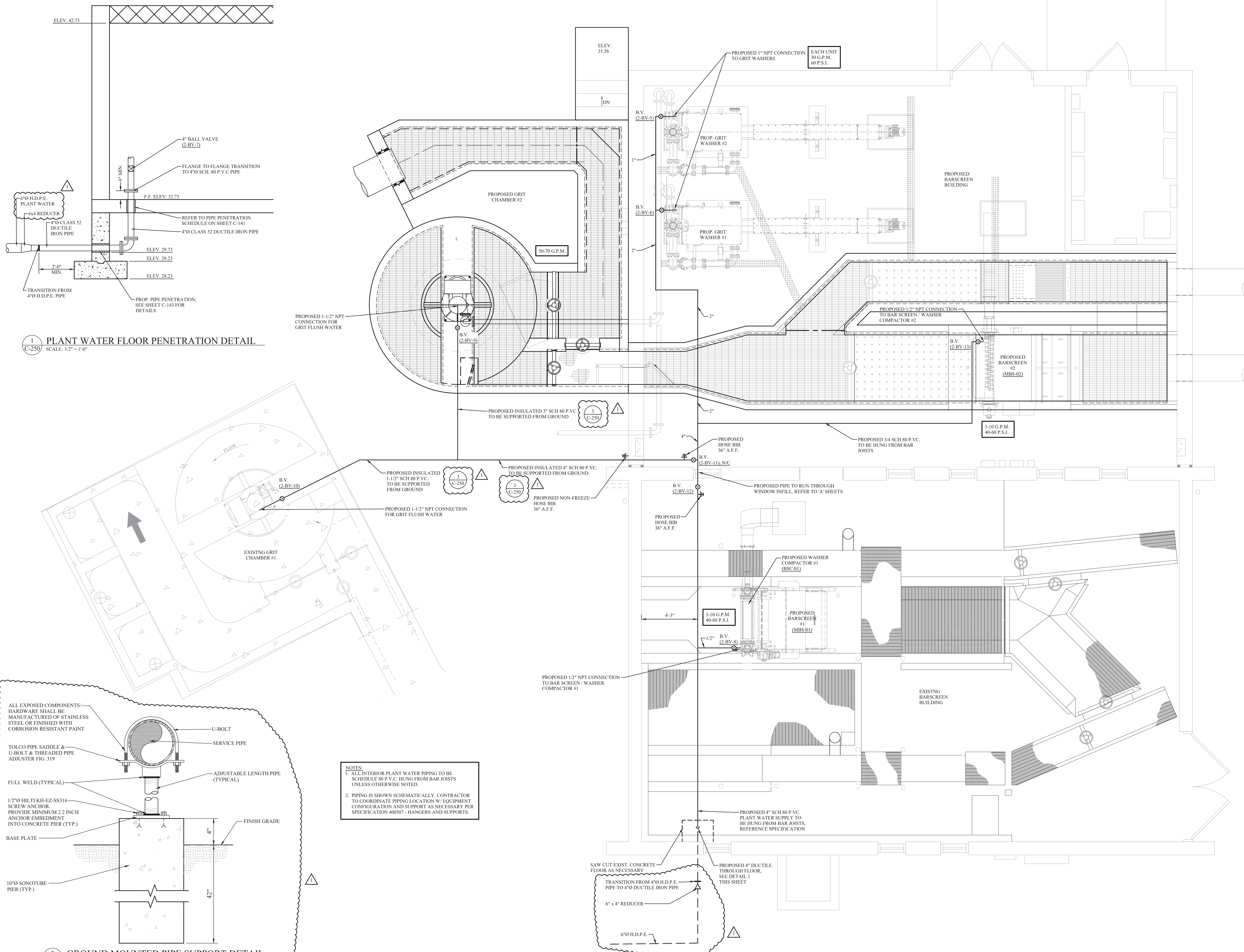
**PROPOSED
HEADWORKS
PLANT WATER SUPPLY -
PLAN VIEW**

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR, 2025
DESIGN BY: QMM
DRAWN BY: JRJ
CHECKED BY: MJS
REVIEWED BY: MJS, JZ
SHEET NO.

C-250

PROJECT # 18-732 PHASE #

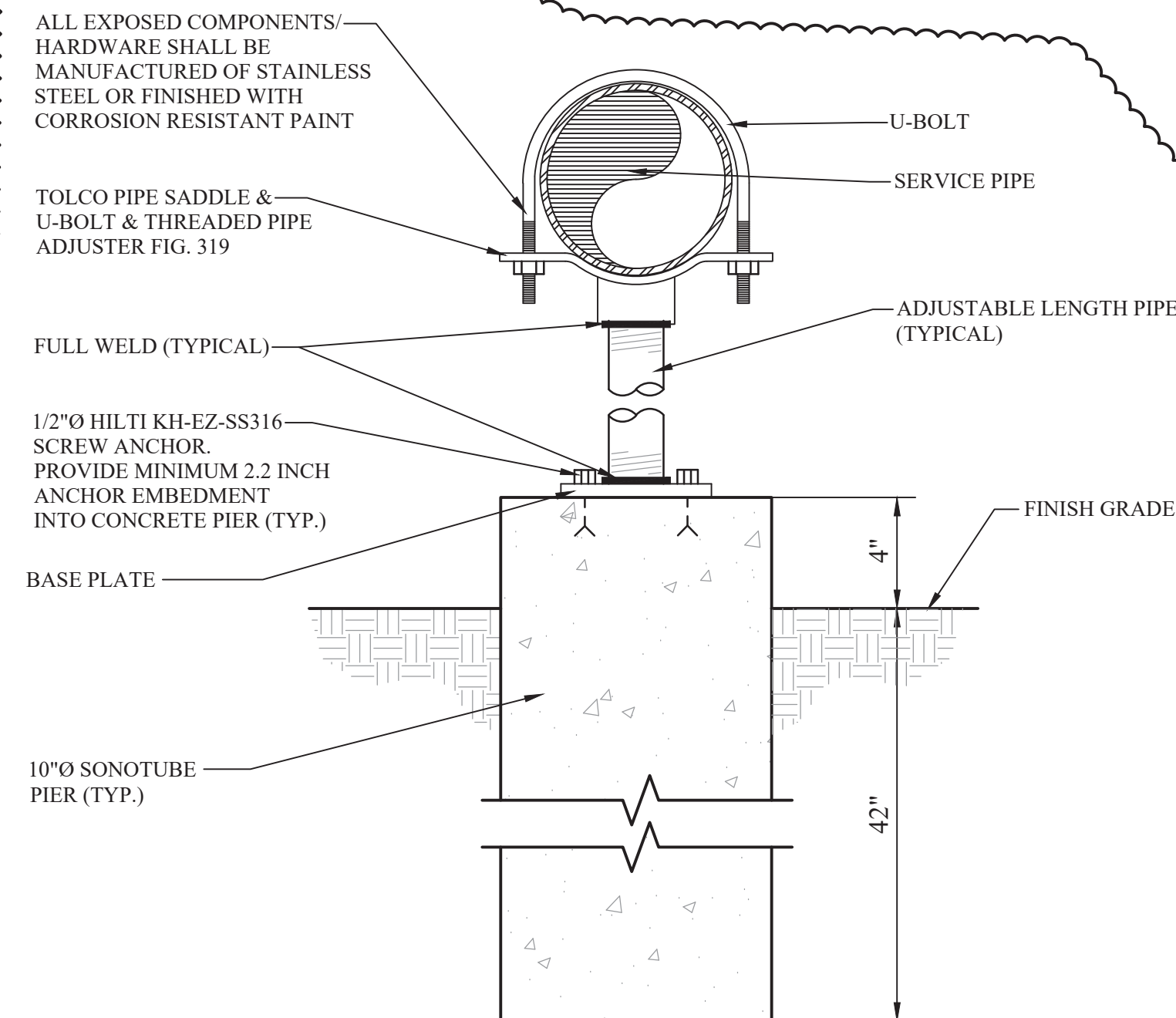


1 PLANT WATER FLOOR PENETRATION DETAIL
SCALE: 1/2" = 1'-0"

2 PROPOSED HEADWORKS PLANT WATER SUPPLY - PLAN VIEW
SCALE: 3/8" = 1'-0"

3 GROUND MOUNTED PIPE SUPPORT DETAIL
SCALE: N.T.S.

NOTES:
1. ALL INTERIOR PLANT WATER PIPING TO BE SCHEDULE 80 P.V.C. HUNG FROM BAR JOISTS UNLESS OTHERWISE NOTED.
2. PIPING IS SHOWN SCHEMATICALLY. CONTRACTOR TO COORDINATE PIPING LOCATION W/ EQUIPMENT CONFIGURATION AND SUPPORT AS NECESSARY PER SPECIFICATION 400507 - HANGERS AND SUPPORTS.



NOTES:
1. ALL PIPE SUPPORTS SHALL BE STAINLESS STEEL.
2. PIPING SUPPORTS SHALL BE IN ACCORDANCE WITH SECTION 308 OF THE NYS PLUMBING CODE, AND SPACED IN ACCORDANCE WITH TABLE 308.5.



- GENERAL NOTES:
1. FOR PIPE CONFIGURATION OF ALL SETTLING TANKS REFER TO SITE PLANS.
 2. FOR SPECIFICATIONS REGARDING DIMENSIONS AND LAYOUT OF ALL CLARIFIER EQUIPMENT, REFER TO SPECIFICATION SECTION 4643.21.
 3. CONTRACTOR SHALL FIELD VERIFY AND MATCH ALL ELEVATIONS FOR WEIR, BAFFLES, INVERTS AND TANK ETC. WITH EXISTING PRIMARY TANKS.
- COATING NOTES:
1. ALL CONCRETE SURFACES OF THE PRIMARY CLARIFIER IN CONTACT WITH WASTEWATER SHALL BE COATED WITH 2 COATS OF H-BUILD TENEK-TRAM (SERIES 46H-413) POLYAMIDE EPOXY- COAL, OR APPROVED EQUIV. APPLY COATINGS IN STRICT ADHERENCE WITH THE MANUFACTURERS GUIDELINES. SURFACES WITH OXYGENATED SERIES POLYURETHANE PRIMER BY TENEMEC WITH SSPC-SP13/NACE 6 AND THE MANUFACTURERS RECOMMENDATIONS.
 2. CORED OR CUT CONCRETE SURFACES WITH EXPOSED REIN. STEEL SHALL BE COATED WITH OXYGENATED SERIES POLYURETHANE PRIMER BY TENEMEC OR APPROVED EQUIV. PRIOR TO COATING WITH EPOXY- COAL.

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25
ISSUED DATE: 18 APR. 2025		
DESIGN BY: JTW		
DRAWN BY: HPB/lr		
CHECKED BY: MWW		
REVIEWED BY: MJS, JZ		
SHEET NO.		
C-310		
PROJECT # 18-732		PHASE #

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HAZARDOUS MATERIAL NOTE:
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**CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

**EXISTING
PRIMARY
SLUDGE PIT
MODIFICATIONS**

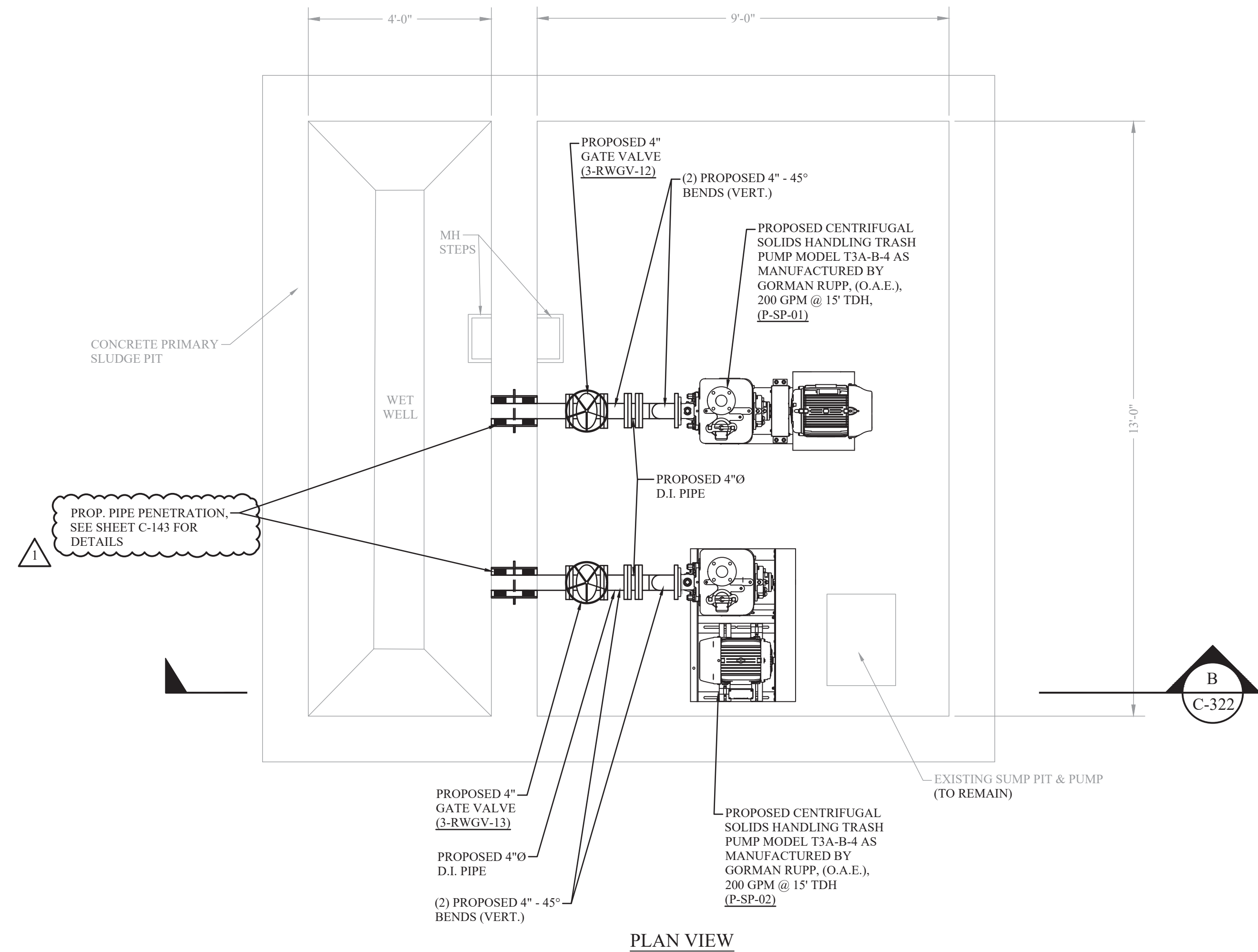
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR, 2025
DESIGN BY: QMM
DRAWN BY: JRJ
CHECKED BY: MJS
REVIEWED BY: MJS, JZ

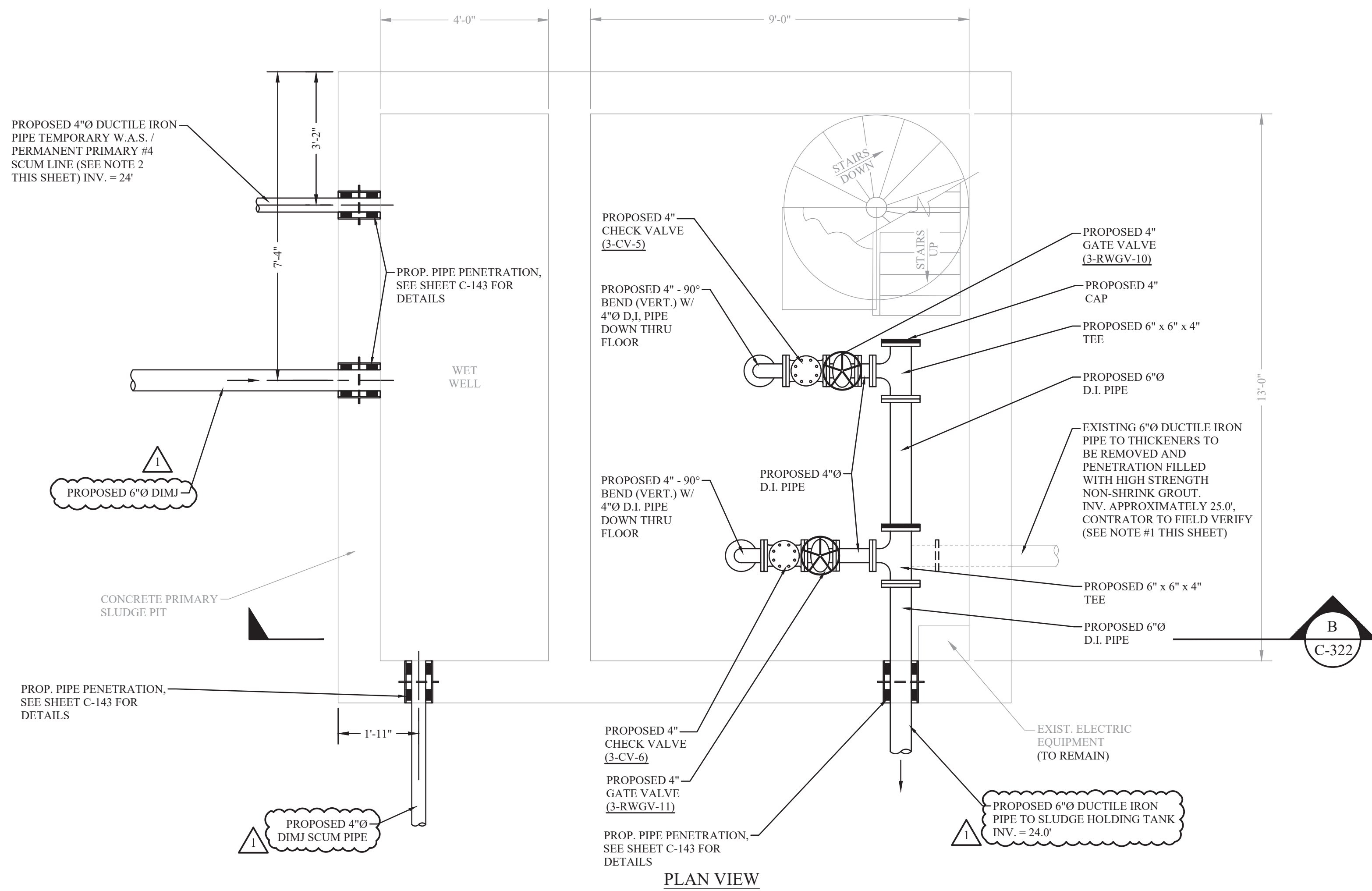
SHEET NO.

C-322

PROJECT # 18-732 PHASE #

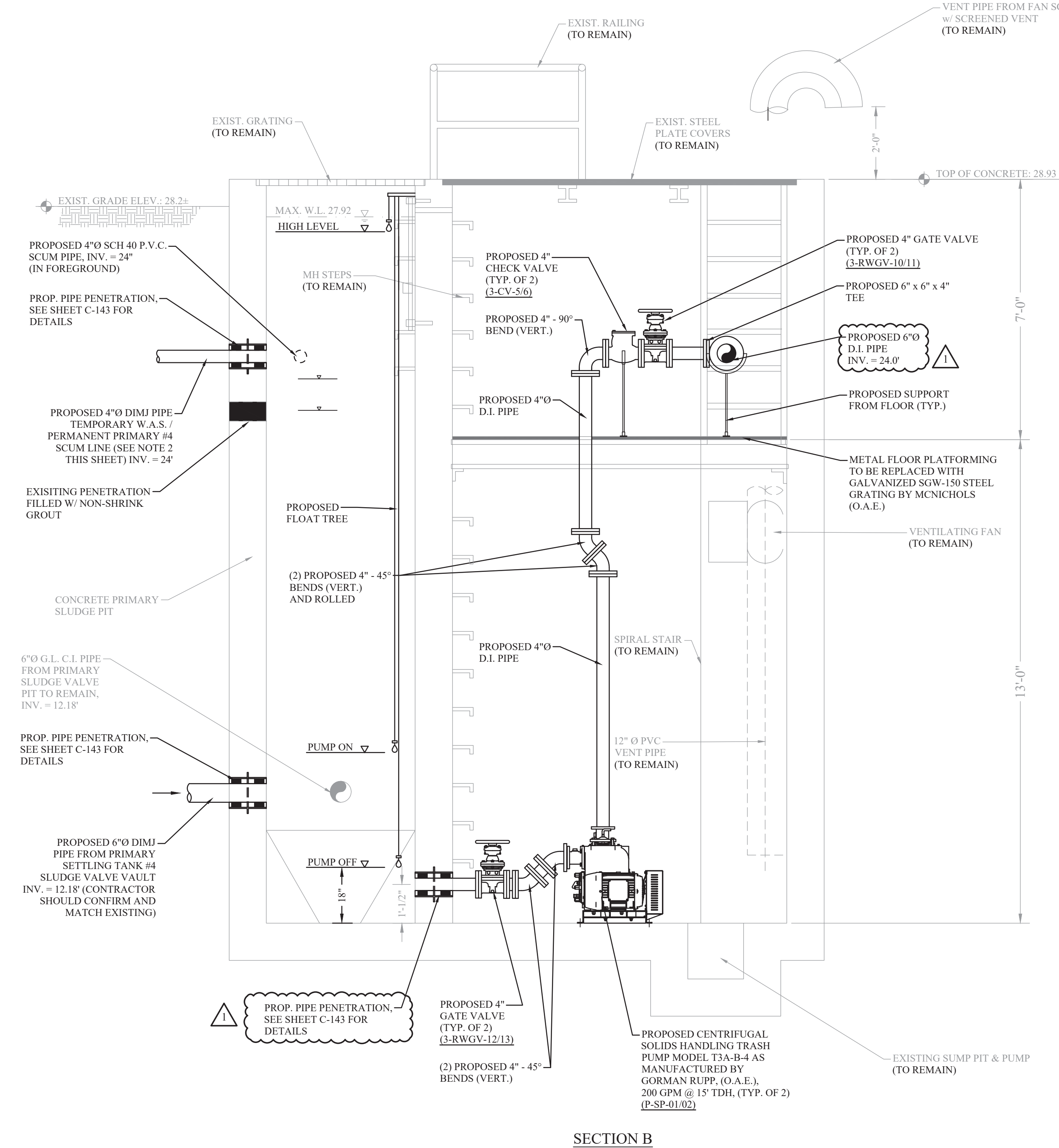


1 EXISTING PRIMARY SLUDGE PIT LOWER LEVEL MODIFICATIONS
SCALE: 1/2" = 1'-0"



2 EXISTING PRIMARY SLUDGE PIT UPPER LEVEL MODIFICATIONS
SCALE: 1/2" = 1'-0"

- NOTES:**
- NEW SLUDGE PUMPS AND PIPING TO BE REPLACED PRIOR TO M.B.R. STARTUP. SLUDGE DISCHARGE TO REMAIN TO GRAVITY THICKENERS UNTIL A.T.A.D. STARTUP, AT WHICH TIME THE PIPING SHALL BE TIED INTO DISCHARGE TO SLUDGE HOLDING TANK.
 - TEMPORARY 4" DUCTILE W.A.S. LINE TO BE OPERATIONAL UPON INITIAL MBR STARTUP. ONCE PROPOSED A.T.A.D. SYSTEM IS OPERATIONAL, LINE TO BE REUSED AS PRIMARY #4 SCUM LINE. REFER TO SITE PLAN FOR TIE IN LOCATION.
 - ITEMS NOTED AS "T.B.R." SHALL BE TOTALLY REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
 - REFER TO SHEET E-031 FOR CONTROL PANEL MOUNTING.



3 EXISTING PRIMARY SLUDGE PIT LOWER / UPPER LEVEL MODIFICATIONS
SCALE: 1/2" = 1'-0"

BID SET

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PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

**A.T.A.D.
OVERALL PLAN**

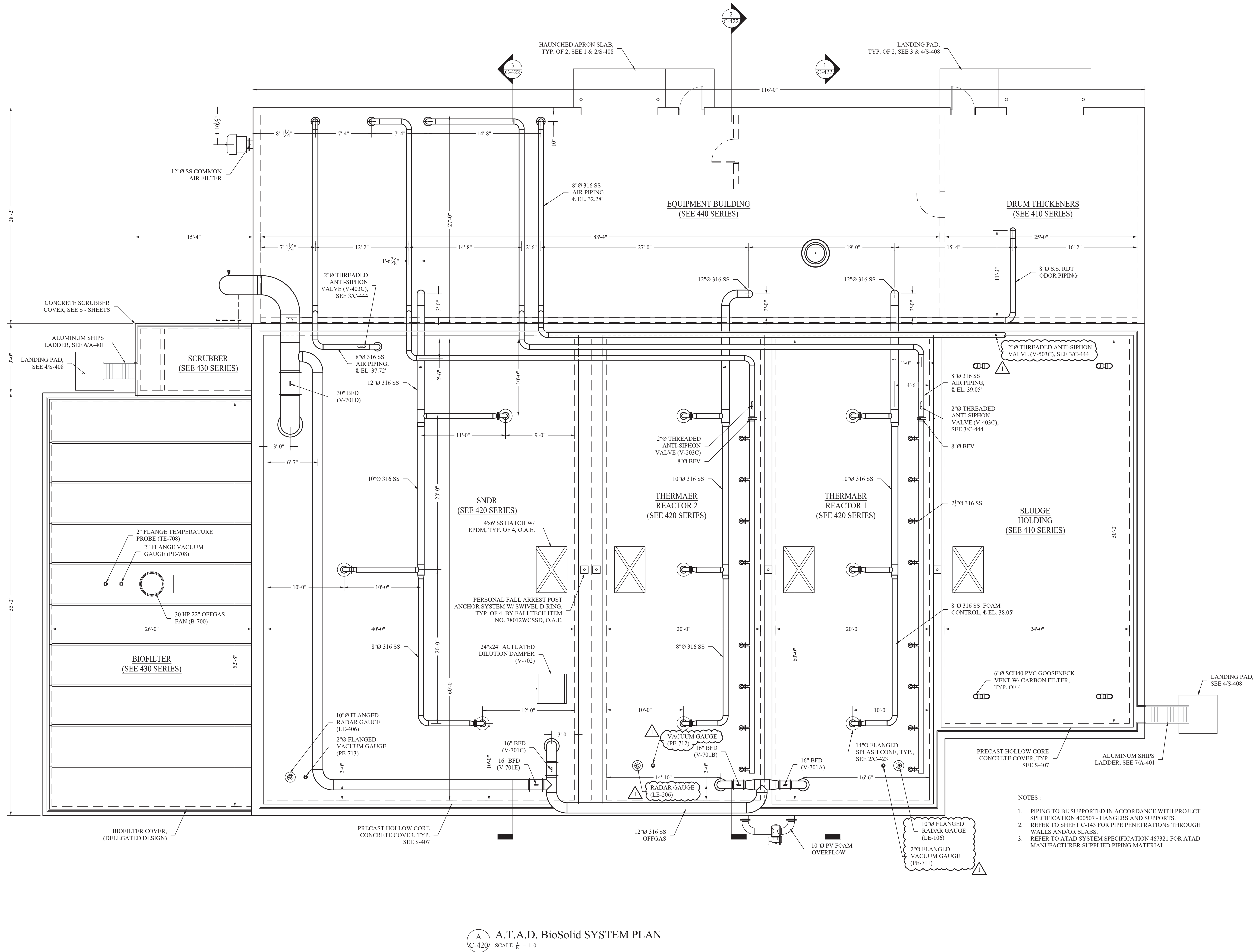
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	QMM
DRAWN BY:	HPBH
CHECKED BY:	MJS, JZ
REVIEWED BY:	MJS, JZ

SHEET NO.

C-420

PROJECT # 18-732 PHASE #



A.T.A.D. BioSolid SYSTEM PLAN
SCALE: 1/8" = 1'-0"

BID SET

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EXPANSION PROJECT:
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145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

**MBR - INFLUENT PUMPS
& MICROSCREEN PLAN**

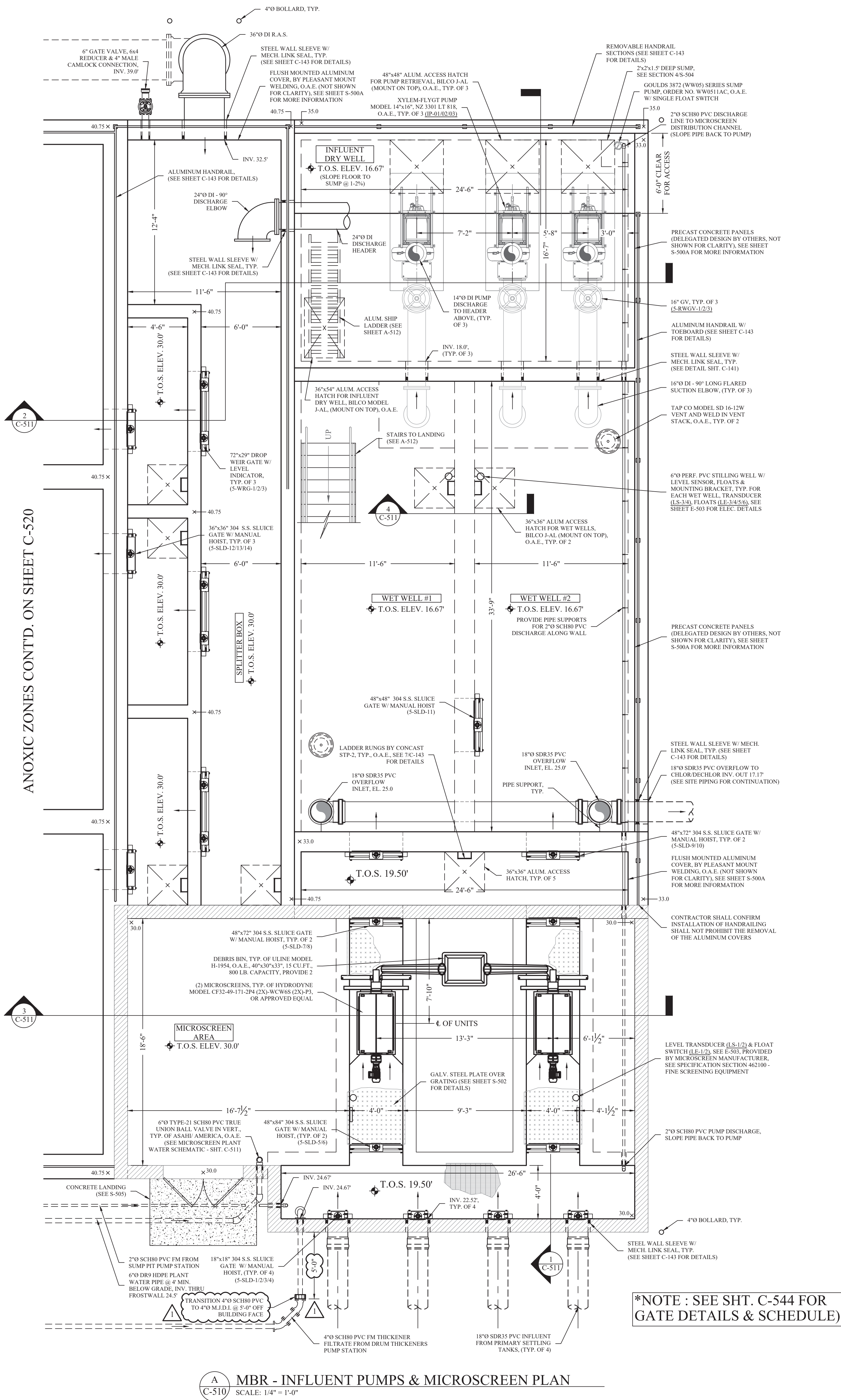
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	JTW
DRAWN BY:	HPBH
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.

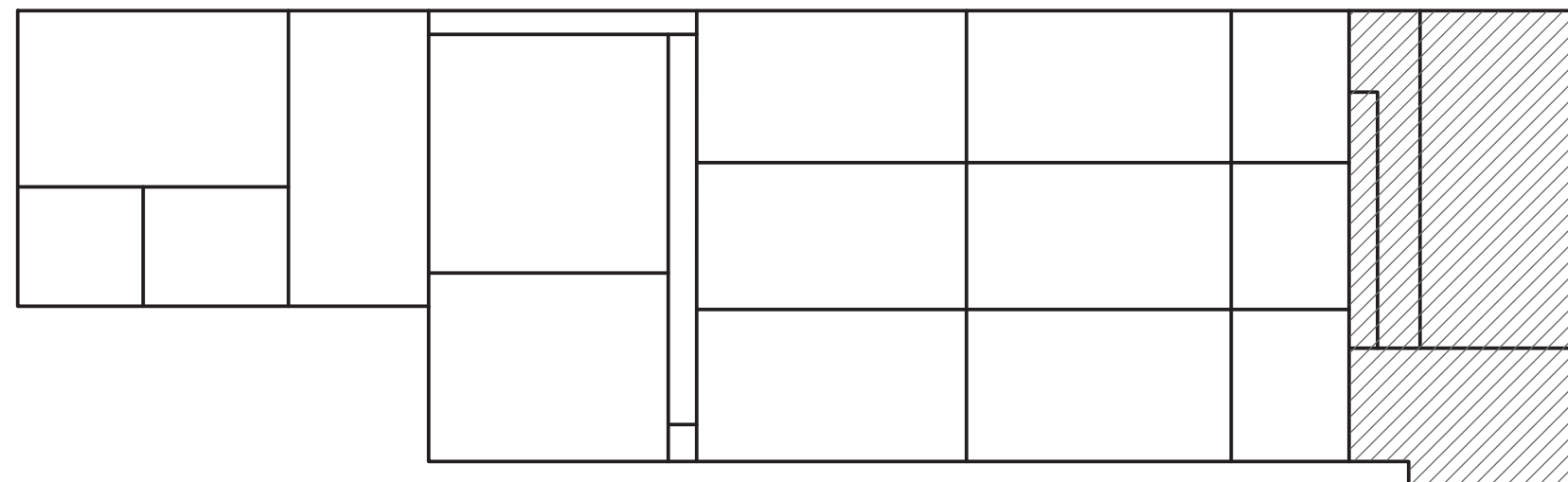
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PROJECT # 18-732 PHASE #

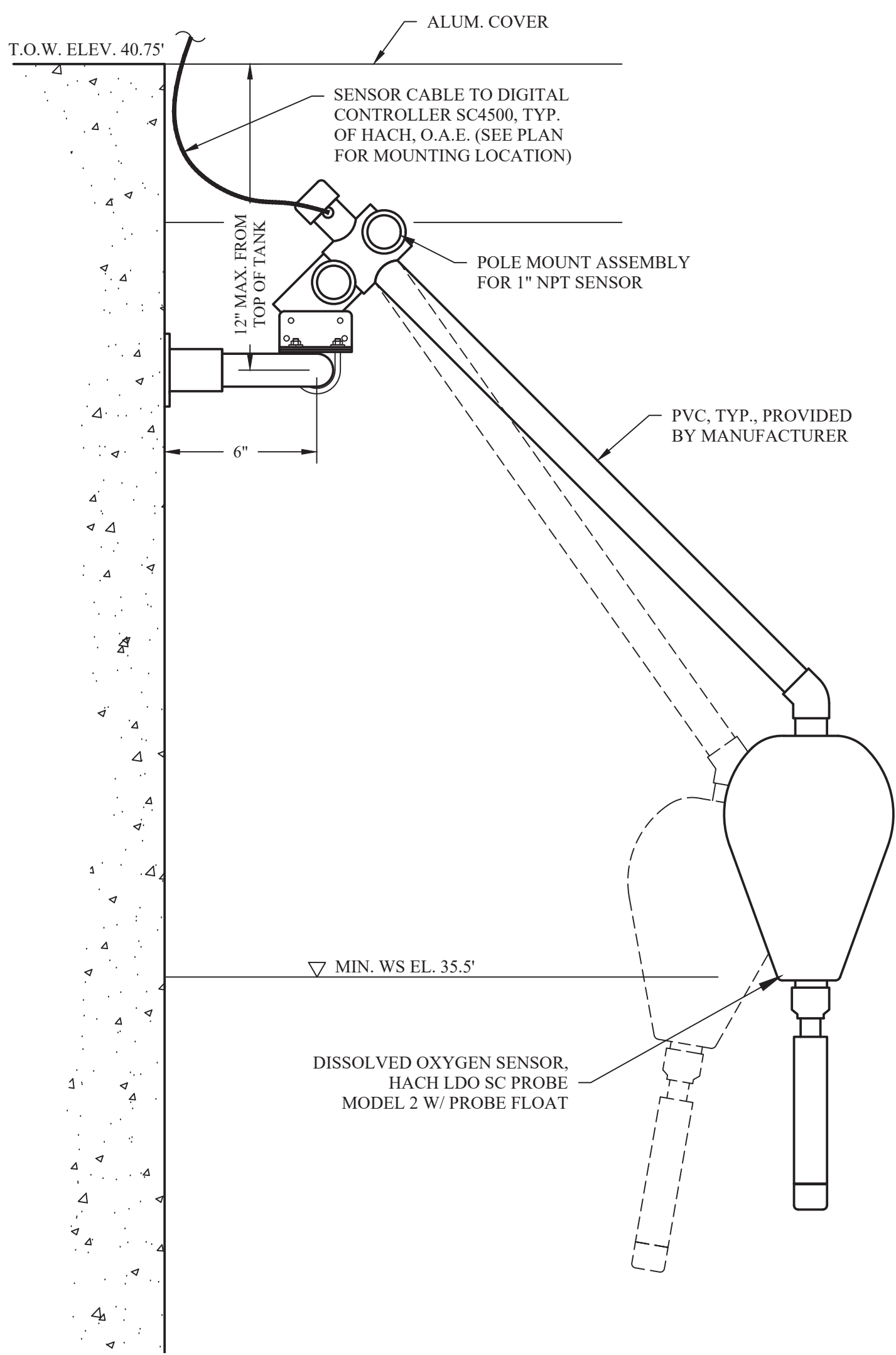


MBR - INFLUENT PUMPS & MICROSCREEN PLAN
SCALE: 1/4" = 1'-0"

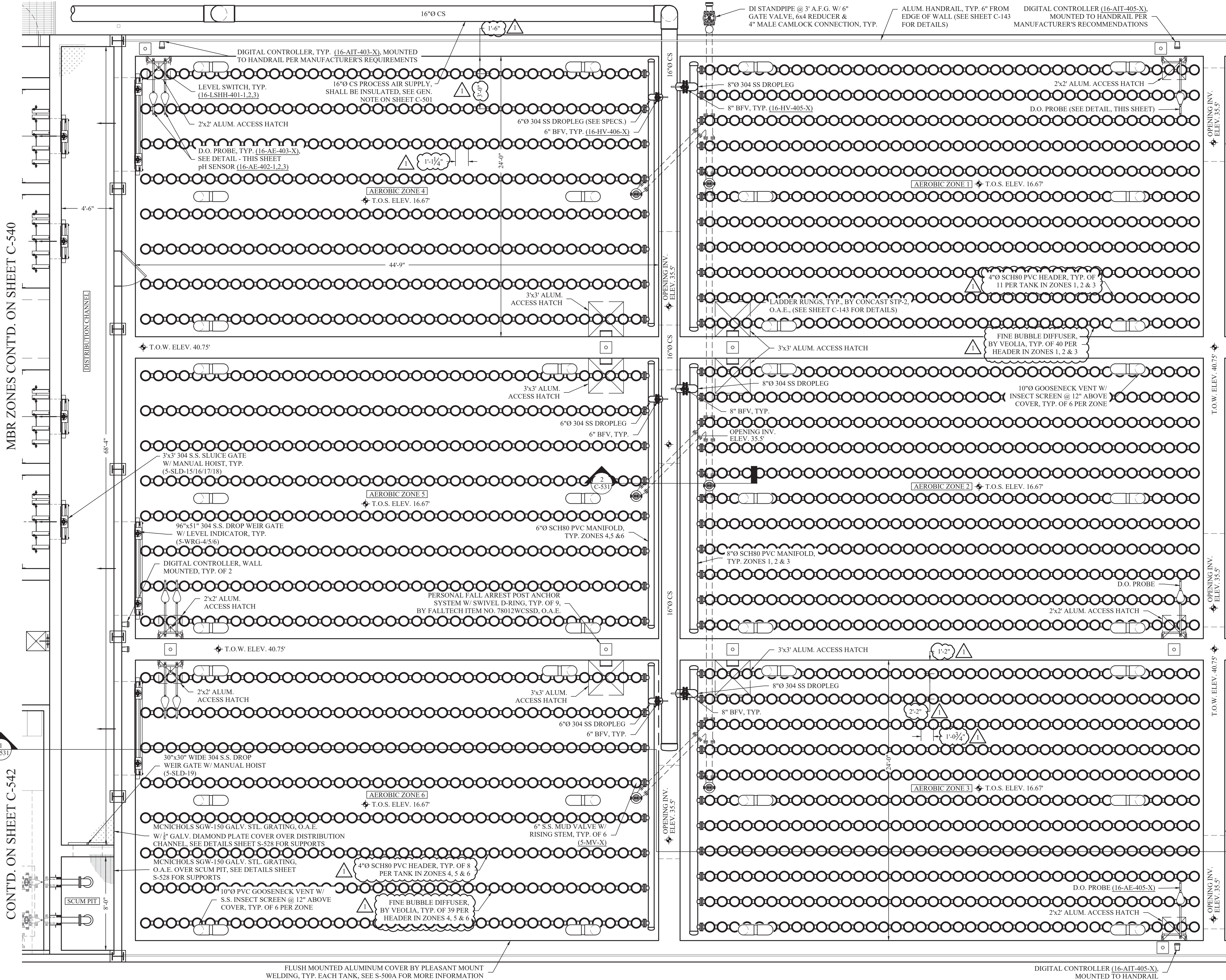
KEY PLAN
SCALE: 1/32" = 1'-0"



C:\2018\16-752 Caesar Lane WWTP Improvements\Expansion Phase\Drawings\0 - MBR\Process\Addendum 4\PLANS AND SECTIONS\MBR - Aerobic Zone Tank Plan.dwg C:\2018\16-752 Caesar Lane WWTP Improvements\Expansion Phase\Drawings\0 - MBR\Process\Addendum 4\PLANS AND SECTIONS\MBR - Aerobic Zone Tank Plan.dwg 16/10/25 10:17:33 AM



1 D.O. PROBE/pH SENSOR FLOAT MOUNT DETAIL
SCALE: NONE (PROVIDED BY VEOLIA)
NOTE: CONTRACTOR TO INSTALL AND MOUNT IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTALLATION. MOUNTING BRACKET, ANCHORS AND HARDWARE SUPPLIED BY MANUFACTURER. FURNISHED BY VEOLIA AND SUPPLIED BY MANUFACTURER.

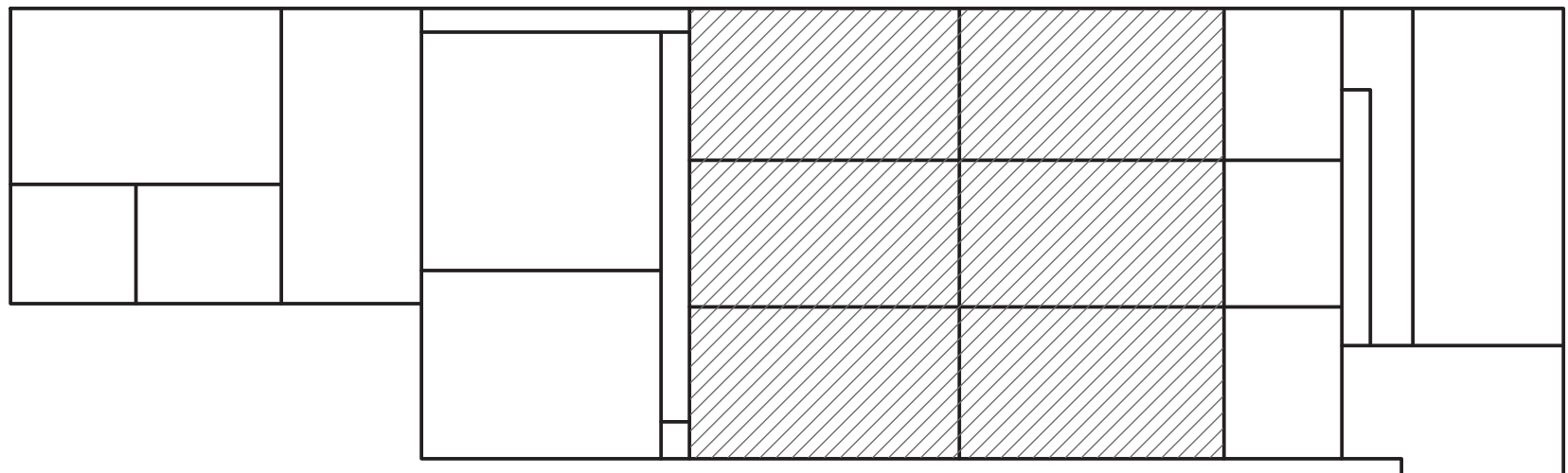


A MBR - AEROBIC ZONE TANK PLAN
SCALE: 1/4" = 1'-0"

NOTES :

1. ALL CARBON STEEL AND STAINLESS STEEL PIPE SHALL COMPLY WITH ASTM A53.
2. ALL CARBON STEEL AND STAINLESS STEEL PIPE SHALL BE WELDED.
3. ALL FITTINGS SHALL COMPLY WITH ASTM A234-WPB.

***NOTE : SEE SHT. C-544 FOR GATE DETAILS & SCHEDULE)**



BID SET

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PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - AEROBIC ZONE TANK PLAN

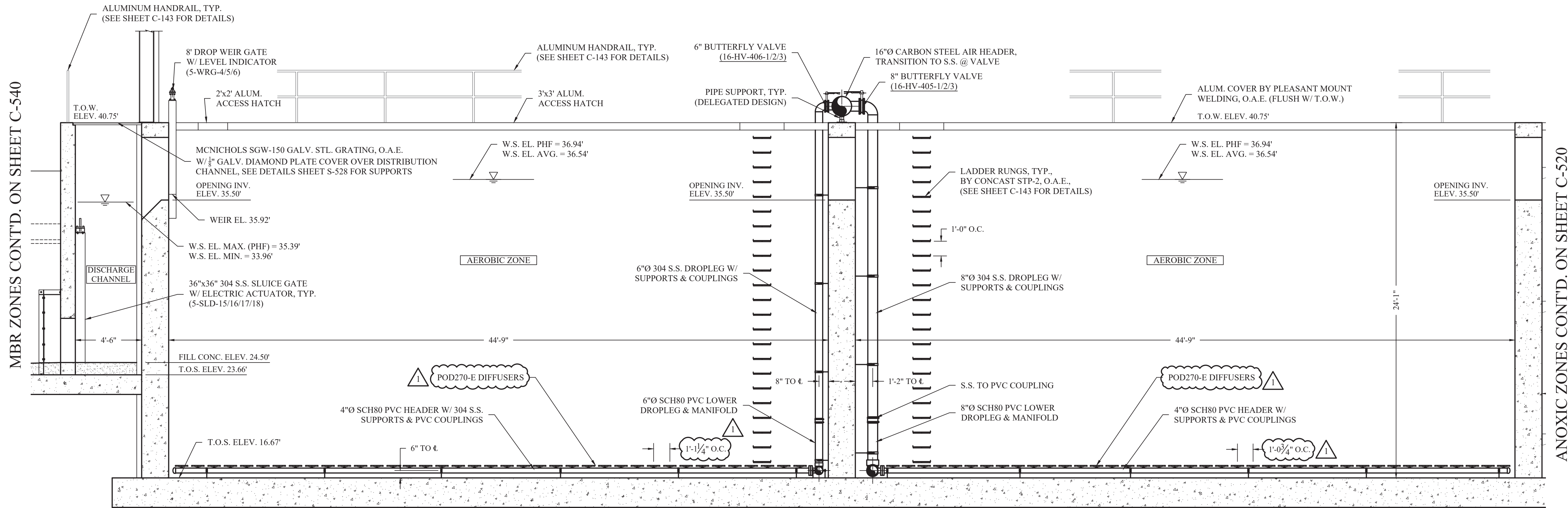
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	JTW
DRAWN BY:	HPBH
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.

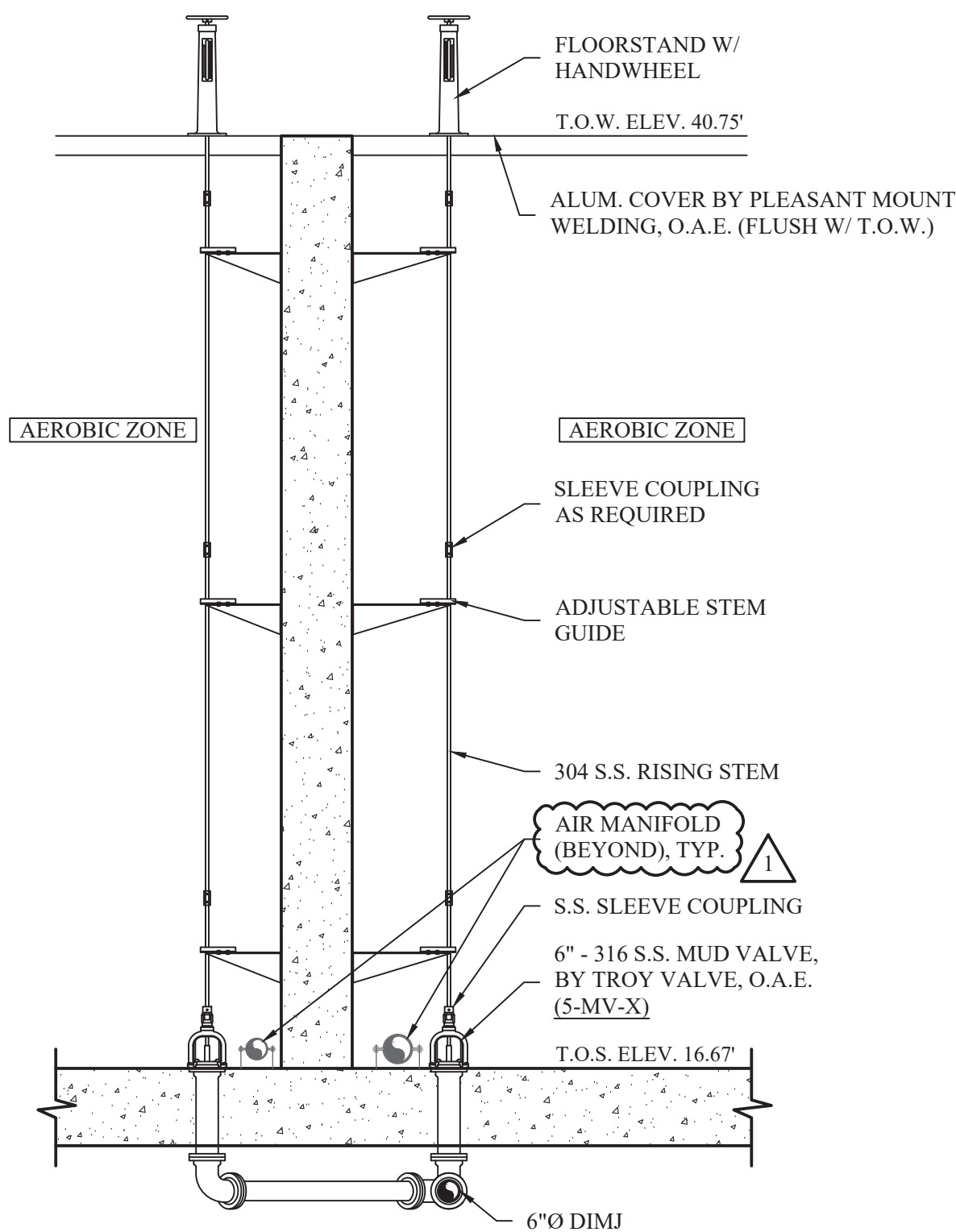
C-530

PROJECT # 18-732 PHASE #

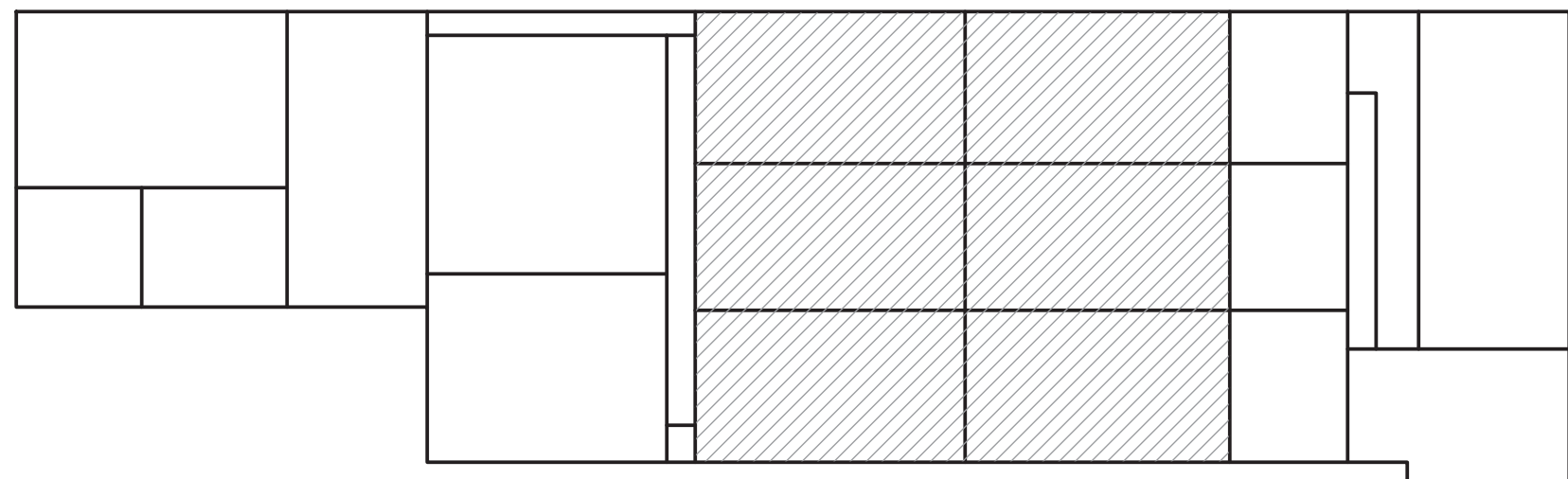


1
C-531
MBR - AEROBIC ZONE TANK SECTION
SCALE: 1/4" = 1'-0"
NOTE : CONTRACTOR TO REFER TO VEOLIA'S PAID AND BILL OF MATERIALS TO CONFIRM SCOPE OF SUPPLY FOR THE FINE BUBBLE DIFFUSER GRIDS.

*NOTE : SEE SHT. C-544 FOR GATE DETAILS & SCHEDULE)



2
C-531
TYP. TANK WALL SECTION @ MUD VALVES
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

BID SET

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NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
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NEW WINDSOR, NY 12553

MBR - AEROBIC ZONE
TANK SECTIONS

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR, 2025
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DRAWN BY: HPBjr
CHECKED BY: MWW
REVIEWED BY: MJS, JZ

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C-531

PROJECT # 18-732 PHASE #

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145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - CASSETTE LAYDOWN AREA, CHEM AREA & SCUM PIT SECTIONS

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR. 2025
DESIGN BY: JTW
DRAWN BY: HPBh
CHECKED BY: MWV
REVIEWED BY: MJS, JZ

SHEET NO.

C-542

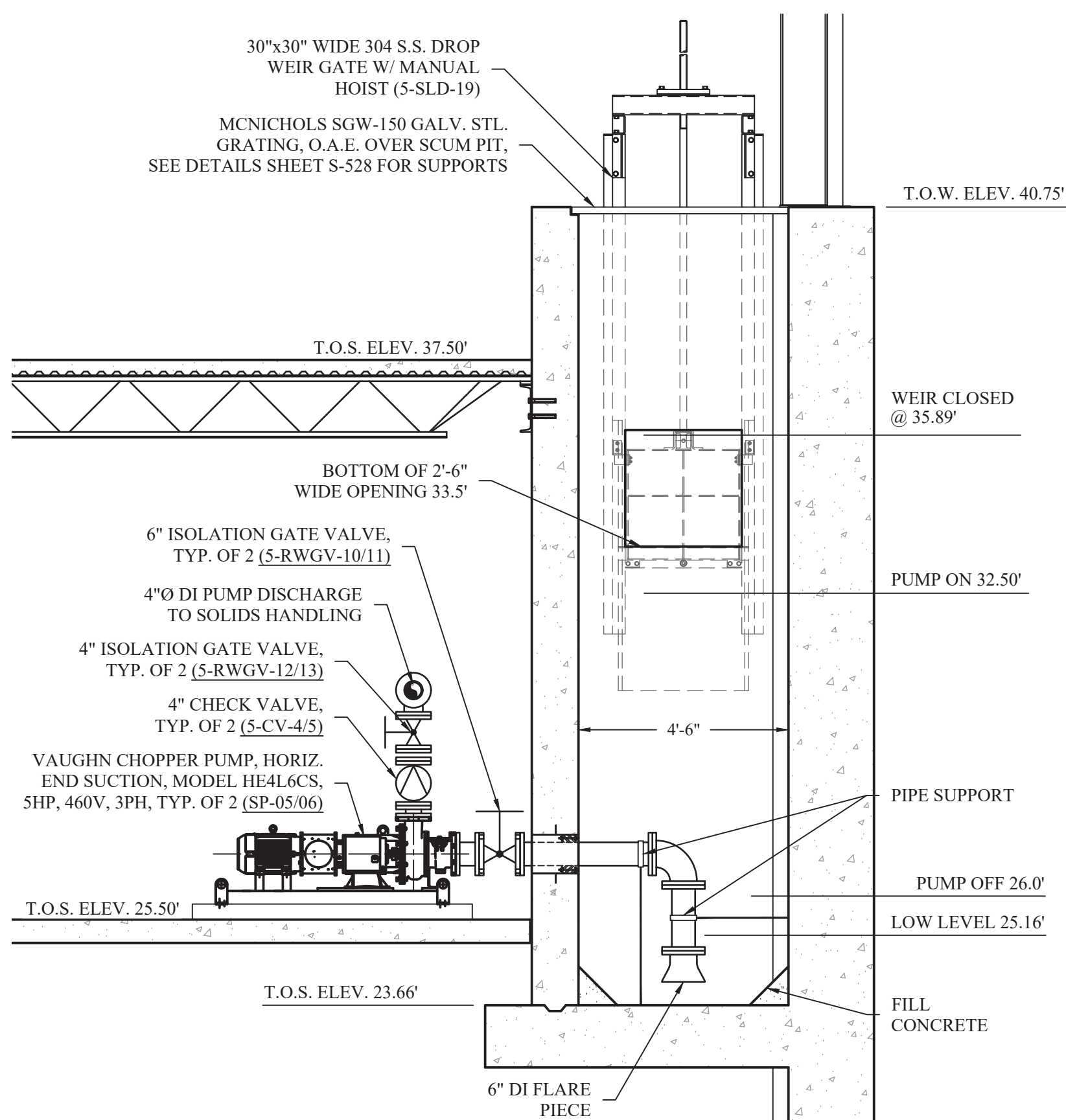
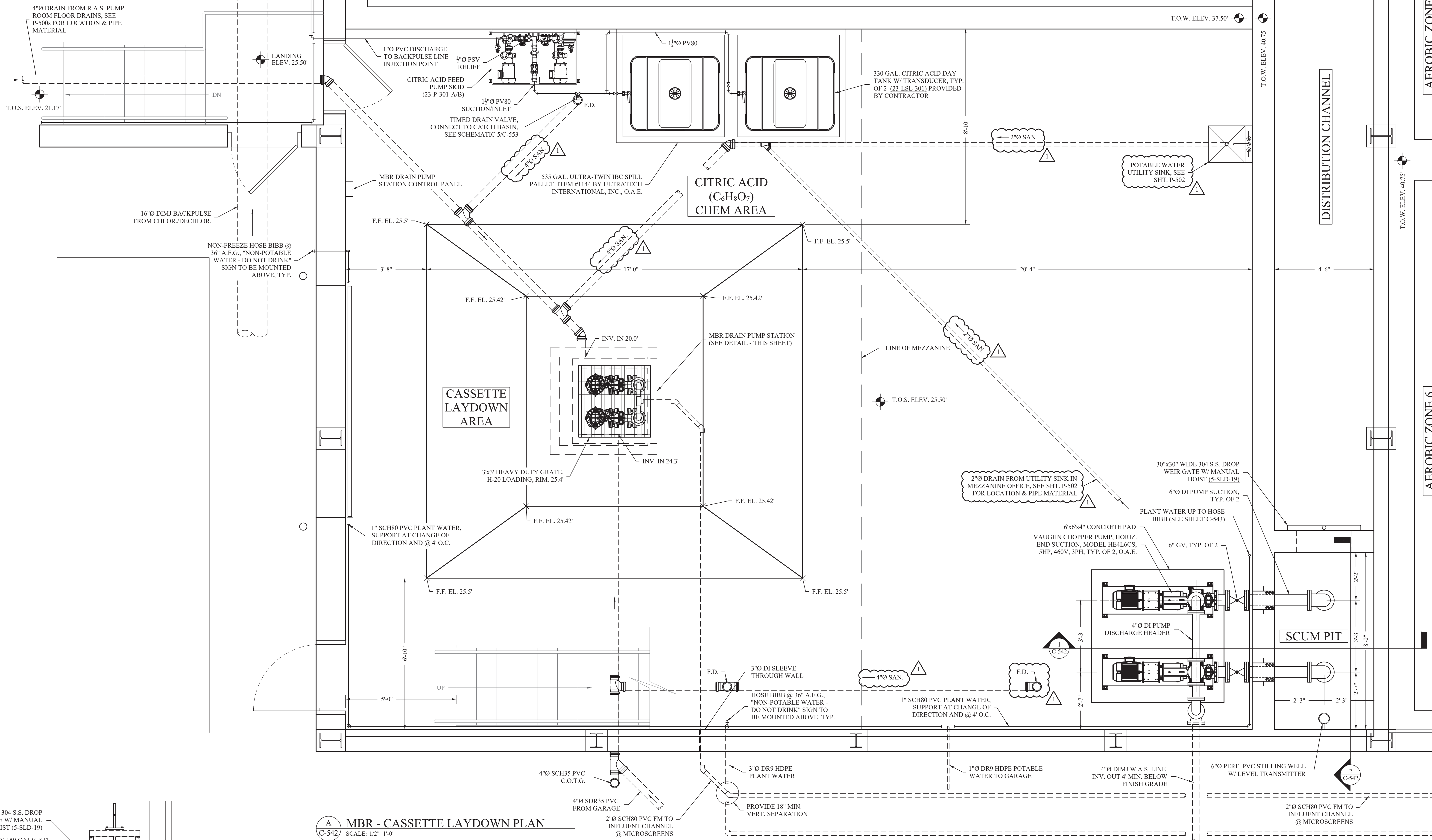
PROJECT # 18-732 PHASE #

R.A.S. PUMP ROOM

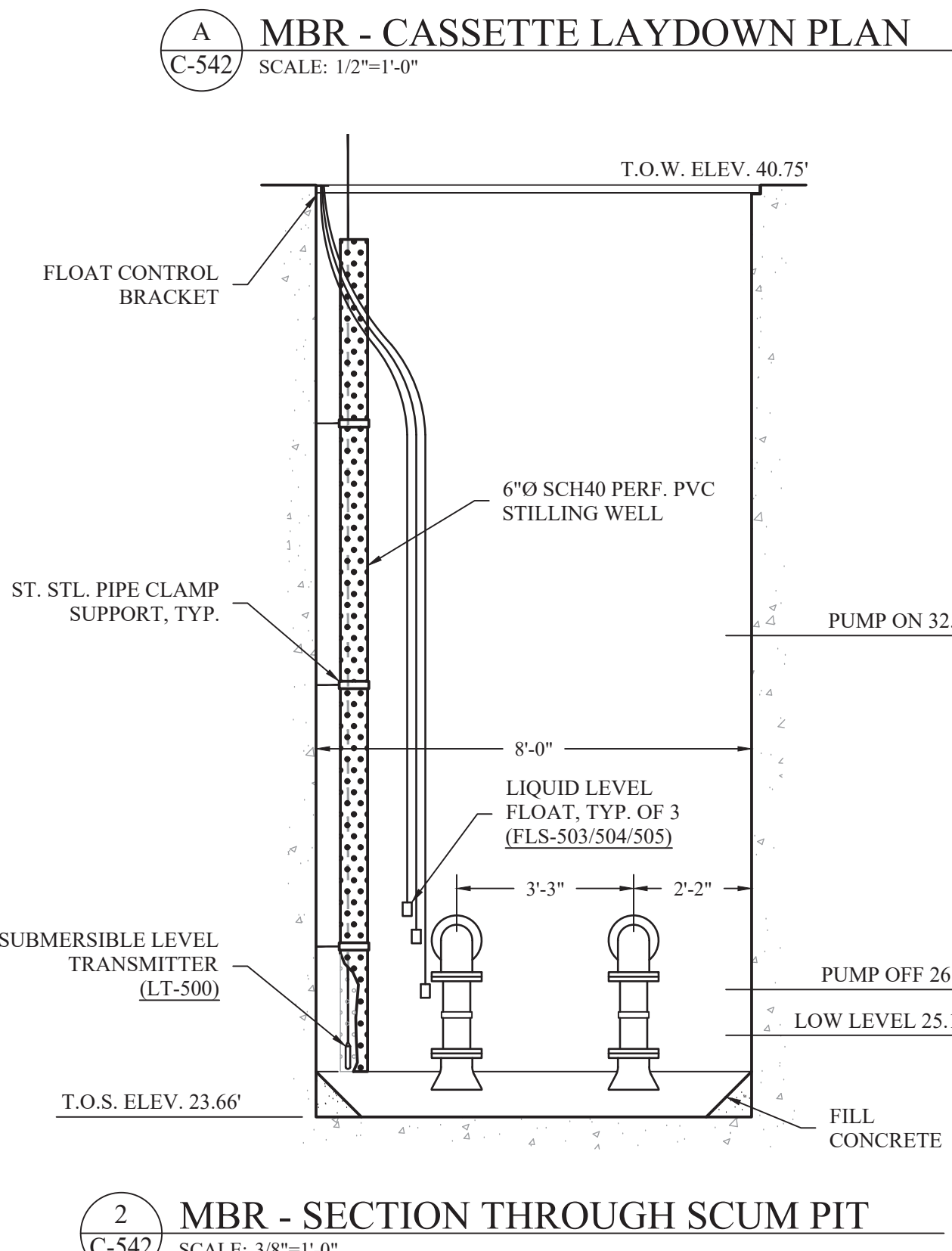
MEMBRANE ZONE 1

AEROBIC ZONE 5

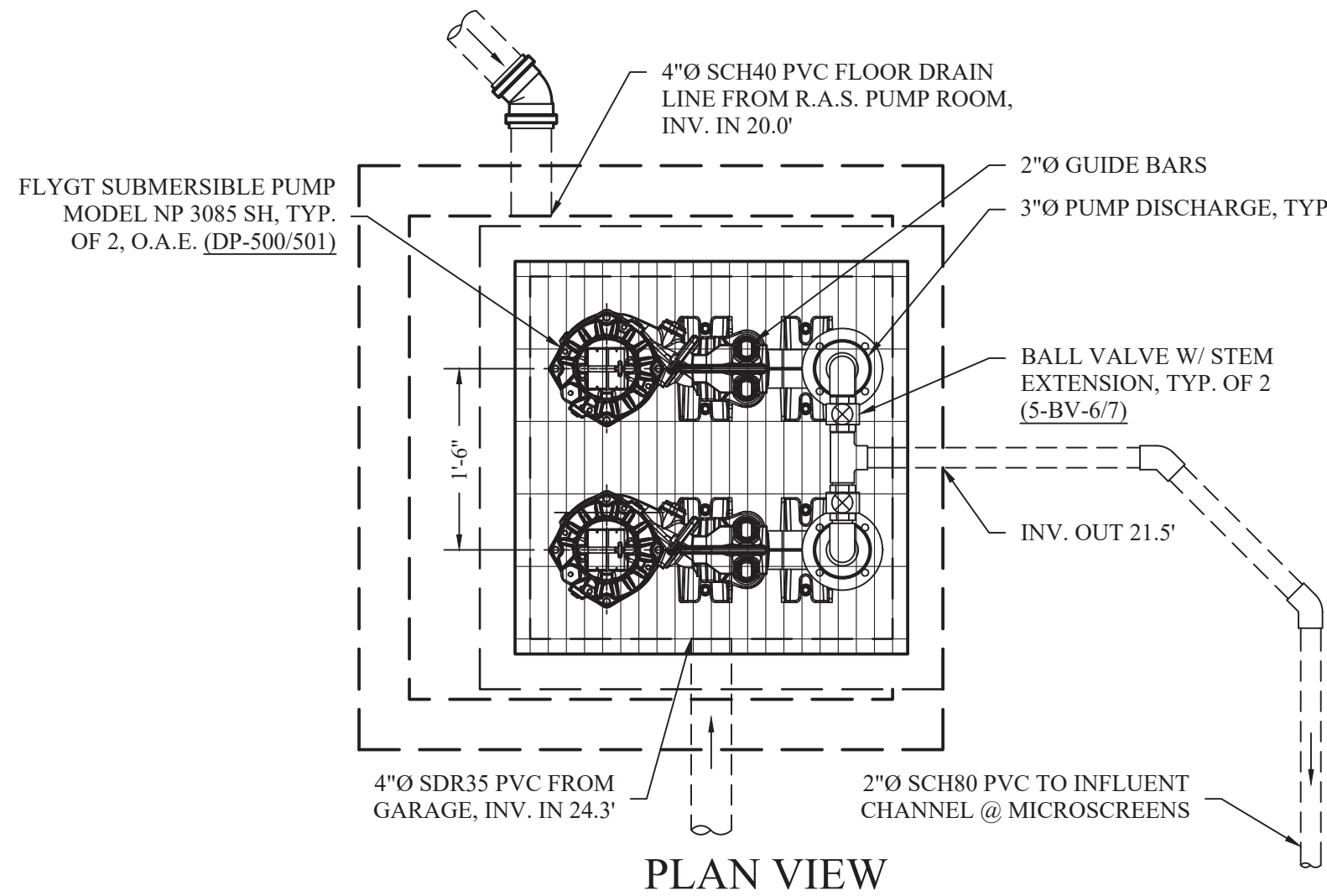
AEROBIC ZONE 6



1 MBR - SECTION THROUGH SCUM PIT
SCALE: 3/8"=1'-0"

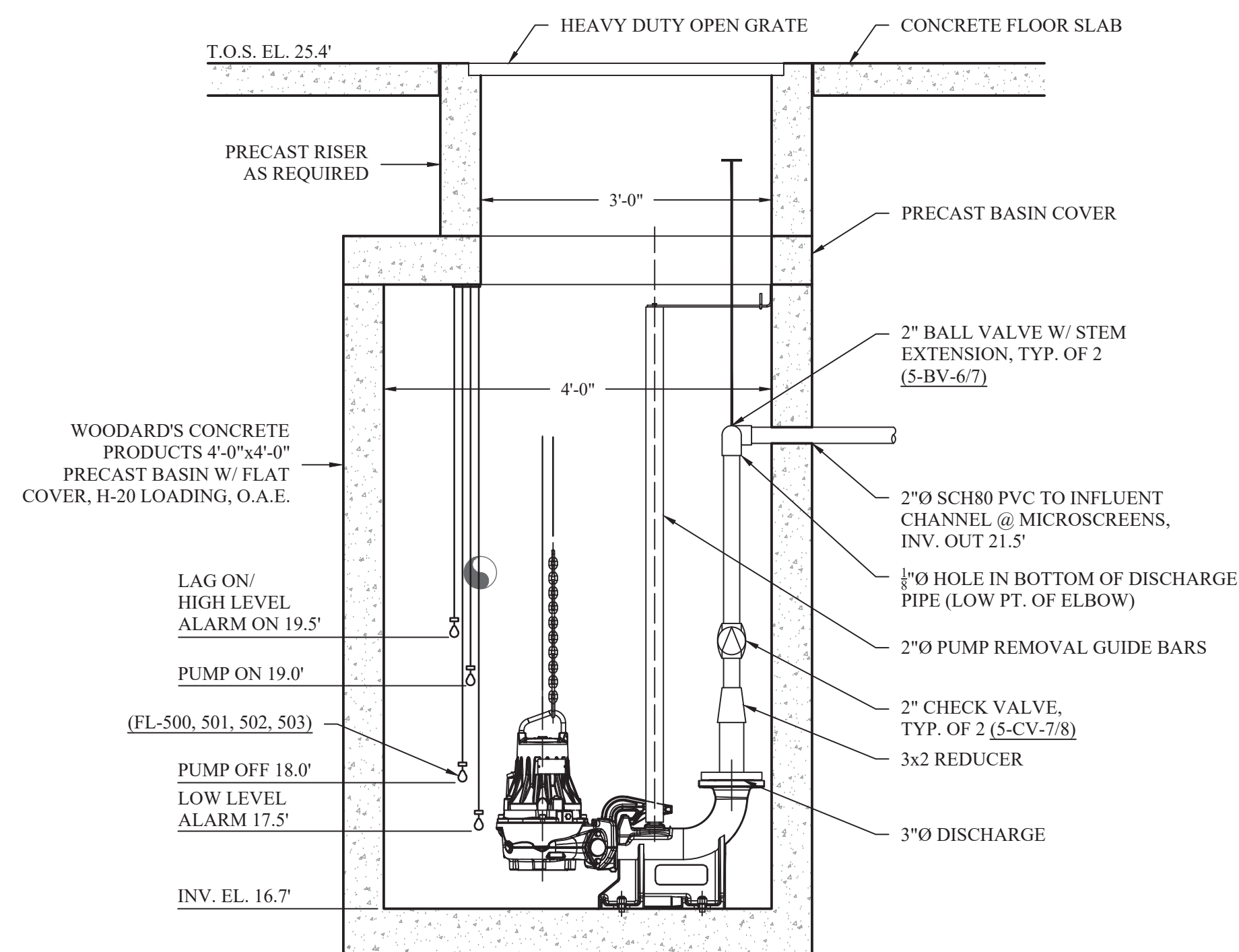


2 MBR - SECTION THROUGH SCUM PIT
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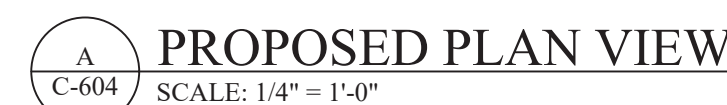


- NOTES:
- ALL CONSTRUCTION JOINTS AND PIPE CONNECTIONS SHALL BE WATERTIGHT.
 - PUMPS TO ALTERNATE AND ALARM TO SOUND IF EITHER PUMP FAILS TO CYCLE PROPERLY.
 - ALL APPLICABLE N.E.C. REQUIREMENTS MUST BE MET.

3 MBR - PRECAST DRAIN PUMP STATION
SCALE: N.T.S.

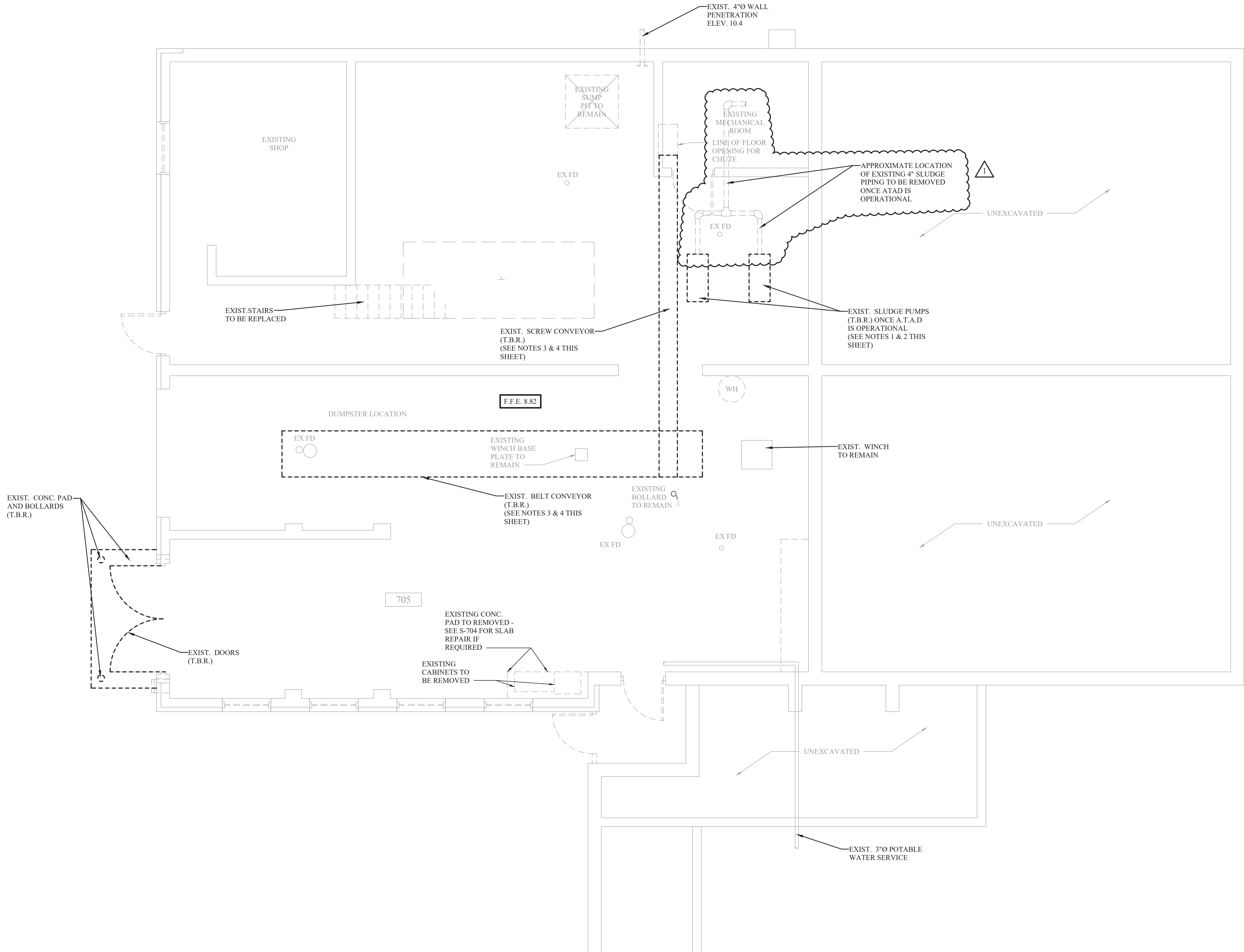


SECTION VIEW



PROJECT # 18-732	PHASE #
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P:\2018\18-732 Caesars Lane WWTP Improvements\Expansion Phase\Drawings\ - Sludge Dewatering - Bid Press.dwg, CD-701, 7/10/2025 11:13:36 AM



1
CD-701
EXISTING CONDITIONS / DEMO PLAN DEWATERING BUILDING - LOWER LEVEL
SCALE: 1/4" = 1'-0"

NOTES:

- EXISTING SLUDGE PUMPS TO BE CONNECTED TO NEW BELT PRESS TEMPORARILY WHEN EXISTING PRESS IS TAKEN OFF-LINE.
- ONCE BOTH PRESSES ARE OPERATIONAL, AN EXISTING SLUDGE PUMP SHALL BE DEDICATED TO EACH PRESS TO ALLOW FOR SIMULTANEOUS OPERATION.
- CONTRACTOR TO PROVIDE AT A MINIMUM TWO WEEKS NOTICE TO ENGINEER AND OPERATOR PRIOR TO REMOVING THE EXISTING CONVEYOR. NEW CONVEYOR SHALL BE INSTALLED AND OPERATIONAL NO MORE THAN FOUR WEEKS AFTER EXISTING CONVEYOR IS TAKEN OFF-LINE.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING A TEMPORARY CONVEYOR FROM THE EXISTING DISCHARGE CHUTE OF THE EXISTING PRESS. CONTRACTOR TO PROVIDE A MINIMUM OF THREE (3) C.Y. DUMPING CARTS (THAT CAN BE HANDLED BY THE OPERATOR) FOR USE WHEN THE EXISTING CONVEYOR SYSTEM IS TAKEN OFFLINE UNTIL THE NEW CONVEYOR IS COMPLETELY OPERATIONAL.
- ITEMS NOTED AS "T.B.R." SHALL BE TOTALLY REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.



33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Millard, PA 15337
(845) 567-3100 (670) 296-2765

BID SET

HAZARDOUS MATERIAL NOTE:
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**CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

**EXISTING
CONDITIONS / DEMO
PLAN DEWATERING
BUILDING
- LOWER LEVEL**

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	QMM
DRAWN BY:	JRJ
CHECKED BY:	MJS
REVIEWED BY:	MJS, JZ

SHEET NO.
CD-701
PROJECT # 18-732 PHASE #

MHEENGINEERING

33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Milford, PA 18337
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BID SET

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UDIG-NY

SAFE DIGGING STARTS HERE

CALL 811

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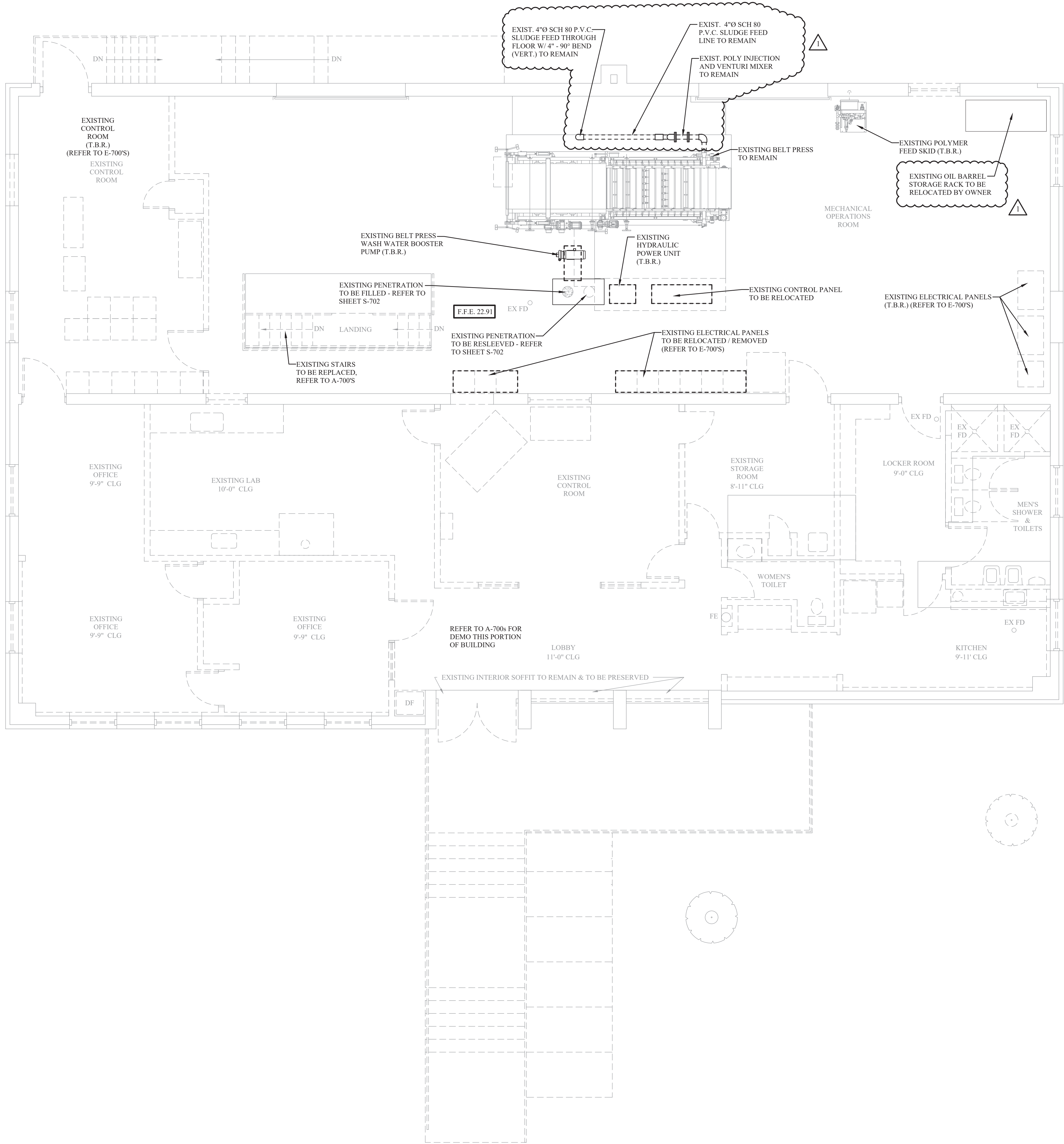
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NEW WINDSOR, NY 12553

EXISTING
CONDITIONS / DEMO
PLAN DEWATERING
BUILDING
- UPPER LEVEL

REVISIONS		
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ISSUED DATE: 18 APR, 2025		
DESIGN BY:	QMM	
DRAWN BY:	JRJ	
CHECKED BY:	MJS	
REVIEWED BY:	MJS, JZ	
SHEET NO.		
CD-702		
PROJECT # 18-732		PHASE #

- NOTES:
- ALL DEMO / RELOCATION IDENTIFIED ON THIS SHEET SHALL BE COMPLETED AFTER NEW BELT PRESS IS OPERATIONAL.
 - ITEMS NOTED AS "T.B.R." SHALL BE TOTALLY REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.



1 CD-702 EXISTING CONDITIONS / DEMO PLAN DEWATERING BUILDING - UPPER LEVEL
SCALE: 1/4" = 1'-0"

BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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**CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

**PROPOSED
LAYOUT PLAN
DEWATERING BUILDING
- LOWER LEVEL**

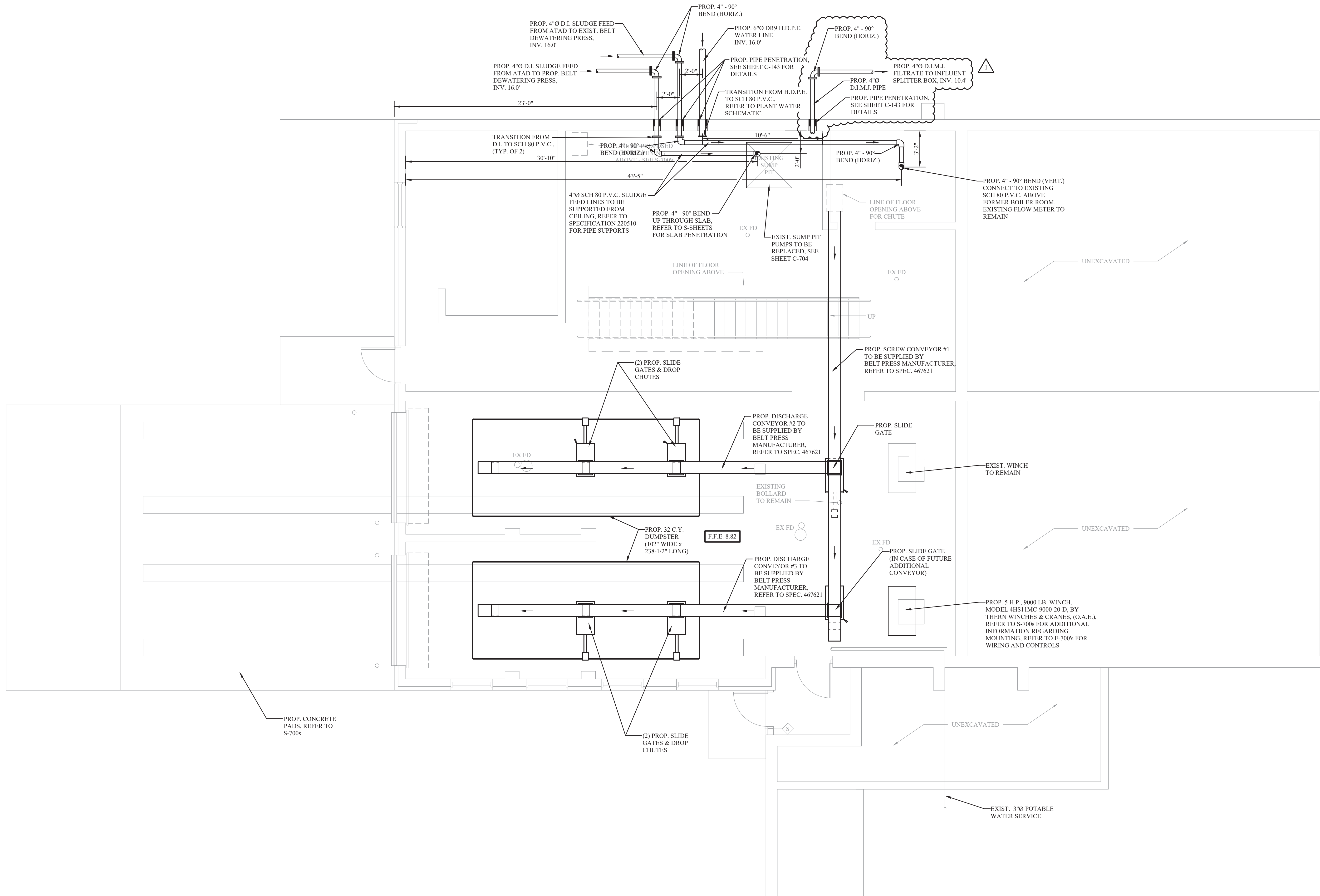
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR, 2025
DESIGN BY: QMM
DRAWN BY: JRJ
CHECKED BY: MJS
REVIEWED BY: MJS, JZ

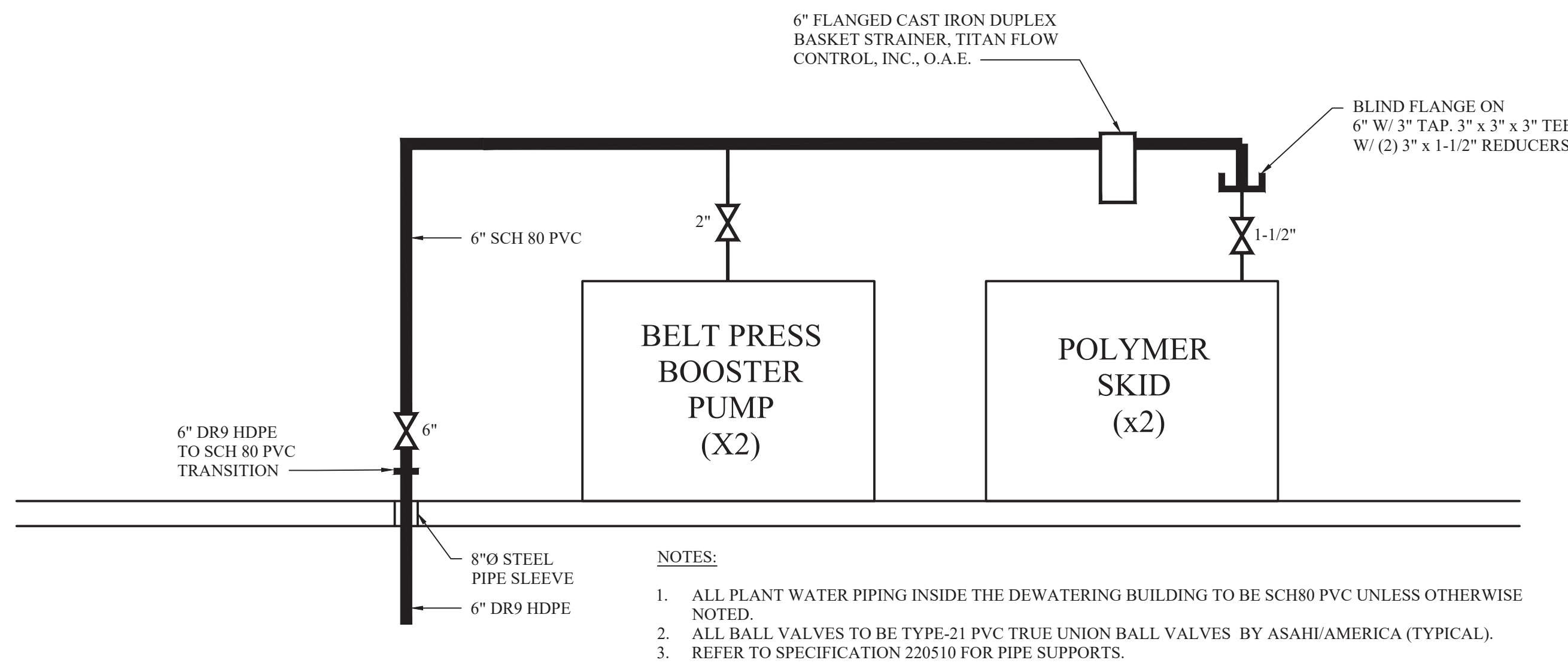
SHEET NO.

C-701

PROJECT # 18-732 PHASE #



1
C-701 **PROPOSED LAYOUT PLAN DEWATERING BUILDING - LOWER LEVEL**
SCALE: 1/4" = 1'-0"



2
C-701 **DEWATERING BUILDING WATER PROCESS SCHEMATIC**
SCALE: NONE

[illegible]

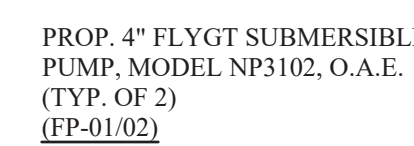
UDIG-NY
SAFE DIGGING STARTS HERE
CALL 811

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DEWATERING BUILDING
EXISTING SUMP PIT
DETAIL

ISSUED DATE:	18 APR, 2025
DESIGN BY:	QMM
DRAWN BY:	JRJ
CHECKED BY:	MJS
REVIEWED BY:	MJS, JZ

SHEET NO.	
C-704	
PROJECT # 18-732	PHASE #





BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK CONTROLLED ON MHE PLANS, DO NOT INCLUDE THE IDENTIFICATION, TESTING, ANALYSIS, REMEDIATION, DECONTAMINATION OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD. ALL TESTING, IDENTIFICATION, ANALYSIS, REMEDIATION, DECONTAMINATION OR HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED LABORATORY. UPON IDENTIFICATION OF A HAZARDOUS MATERIAL, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL CONSULTANT. THE PERMIT HOLDER WILL BE NOTIFIED IMMEDIATELY BY THE HAZARDOUS MATERIAL CONSULTANT AND ADJACENT TO SAID MATERIALS. IF ANY UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK, CONTRACTOR SHALL STOP WORK IMMEDIATELY, NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT. THE PERMIT HOLDER WILL BE NOTIFIED IMMEDIATELY BY THE HAZARDOUS MATERIAL CONSULTANT. CONTRACTOR SHALL STOP WORK INVOLVING SUSPECTED MATERIAL.



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CAESARS LANE WWTP
EXPANSION PROJECT:

PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
OR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

INFLUENT SPLITTER BOX PLAN AND SECTION

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	WPG, NEM, PJW
DRAWN BY:	WPG, NEM, PJW
CHECKED BY:	PJW
REVIEWED BY:	JSS

SHEET NO. _____

S-202

PROJECT # 18-732	PHASE #
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GENERAL NOTES (STRUCTURAL):

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY THE CONTRACTOR OR HIS AGENTS TO STRUCTURES OR SURROUNDING AREAS. DAMAGE WILL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER OF RECORD (E.O.R.) AT NO ADDITIONAL COST TO THE OWNER.
- EXCAVATION SUPPORT, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING THE STABILITY OF THE EXCAVATION AND ITS INFLUENCE ON ADJACENT PROPERTIES AND STRUCTURES. EXCAVATION SUPPORT MAY ALSO BE UTILIZED TO MINIMIZE EXCAVATION LIMITS. THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED CALCULATIONS BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER TO THE E.O.R. PRIOR TO INSTALLATION OF EXCAVATION SUPPORT MEASURES.
- ALL ITEMS NOT INDICATED TO BE EXISTING SHALL BE PROVIDED AND INSTALLED UNDER THE REQUIREMENTS OF THIS CONTRACT.
- THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES REGARDING SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN STRUCTURAL WORK.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE E.O.R.
- ANY ITEMS INDICATED TO BE REPLACED-IN-KIND SHALL BE INSTALLED TO MATCH EXISTING LOCATIONS, CONFIGURATIONS, AND ELEVATIONS UNLESS OTHERWISE NOTED.
- ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. IF MANUFACTURER'S SPECIFICATIONS CONFLICT WITH CONTRACT DRAWINGS OR SPECIFICATIONS, THE E.O.R. SHALL BE NOTIFIED IMMEDIATELY.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT. NEITHER THE STRUCTURE NOR INDIVIDUAL STRUCTURAL ELEMENTS SUCH AS WALLS, BEAMS, JOISTS, AND COLUMNS WILL BE LATEROALLY STABLE UNTIL ALL WORK INDICATED ON THE STRUCTURAL DRAWINGS IS COMPLETE.
- ALL SUBSURFACE UTILITIES SHALL BE IDENTIFIED PRIOR TO EXCAVATION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EXCAVATION. IF UNIDENTIFIED UTILITIES ARE ENCOUNTERED, THE E.O.R. SHALL BE NOTIFIED IMMEDIATELY.
- ALL ITEMS SHOWN TO BE REMOVED SHALL BE PROPERLY HANDLED AND DISPOSED OF OFF SITE.
- NO BACKFILLING OF THE STRUCTURE SHALL OCCUR UNTIL CONCRETE BREAKS SATISFACTORY TO THE E.O.R. ARE OBTAINED OR UNTIL THE CONTAINMENT STRUCTURE HAS SUCCESSFULLY PASSED HYDROSTATIC TESTING IF APPLICABLE.
- ALL ITEMS INDICATED TO BE A DELEGATED DESIGN SHALL BE SUBMITTED TO THE E.O.R. PRIOR TO ORDERING MATERIALS. SUBMITTALS SHALL INCLUDE PLANS AND CALCULATIONS SIGNED AND SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER.
- ELEVATIONS SHOWN ARE BASED ON SURVEY BY CTMALE DATED APRIL 3, 2023.

SPECIAL INSPECTIONS:

ALL SPECIAL INSPECTIONS LISTED ARE IN ADDITION TO ALL INSPECTION REQUIRED BY STATE AND LOCAL BUILDING CODES. ALL SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN AGENCY RETAINED AND PAID BY THE OWNER OR OWNER'S REPRESENTATIVE. THE AGENCY SHALL PROVIDE ALL INFORMATION AS NECESSARY FOR THE BUILDING OFFICIAL TO DETERMINE THAT THE AGENCY MEETS THE APPLICABLE REQUIREMENTS. COPIES OF NECESSARY TEST AND INSPECTION RECORDS SHALL BE FILED WITH THE BUILDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL. ALL SPECIAL INSPECTIONS AND REPORTS SHALL BE IN ACCORDANCE WITH CHAPTER 17 OF THE 2020 NEW YORK STATE BUILDING CODE LATEST REVISION.

CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OWNER'S DESIGNATED INSPECTOR FOR SCHEDULING OF ALL SPECIAL INSPECTIONS. CONTRACTOR SHALL NOTIFY INSPECTOR MINIMUM 48 HOURS PRIOR TO NEED OF INSPECTION.

THE OWNER RESERVES THE RIGHT TO BACK CHARGE THE CONTRACTOR FOR ANY COSTS ASSOCIATED WITH ADDITIONAL SPECIAL INSPECTIONS REQUIRED DUE TO CANCELLATION OF SCHEDULED INSPECTIONS AND RE-INSPECTION OF PREVIOUSLY FAILED INSPECTIONS.

SPECIAL INSPECTIONS REQUIRED INCLUDE BUT ARE NOT LIMITED TO:

STEEL:

- STRUCTURAL STEEL:
 - SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS, STRUCTURES AND STRUCTURES THEREOF SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360-16.
- COLD-FORMED STEEL DECK:
 - SPECIAL INSPECTIONS AND QUALIFICATION OF WELDING SPECIAL INSPECTORS FOR COLD-FORMED STEEL FLOOR AND ROOF DECK SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF SDI QA/QC.
- INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS:
 - PERIODIC SPECIAL INSPECTION OF END CONNECTIONS - WELDED OR BOLTED.
 - PERIODIC SPECIAL INSPECTION OF BRIDGING - HORIZONTAL OR DIAGONAL.

CONCRETE:

- PERIODIC INSPECTION OF REINFORCING STEEL.
- PERIODIC INSPECTION OF ANCHORS CAST IN CONCRETE.
- INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE.
- CONTINUOUS INSPECTION OF ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.
- PERIODIC INSPECTION OF MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 3.1.
- PERIODIC VERIFICATION OF DESIGN MIX.
- PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP, AIR, AND TEMPERATURE TESTS; CONTINUOUS.
- CONTINUOUS INSPECTION OF PLACEMENT & FOR PROPER APPLICATION TECHNIQUES.
- PERIODIC INSPECTION OF ERECTION OF PRECAST CONCRETE MEMBERS.
- PERIODIC INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.
- PERIODIC VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
- PERIODIC INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS, OF THE CONCRETE MEMBER BEING FORMED.

MASONRY:

- SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE PROGRAM REQUIREMENTS OF TMS 402 AND TMS 602.

SOILS:

- CONTINUOUS INSPECTION OF:
 - PROPER MATERIALS
 - DENSITIES
 - LIFT THICKNESSES DURING PLACEMENT
 - COMPACTION OF CONTROLLED FILL
- PERIODIC INSPECTION OF:
 - MATERIALS BELOW FOOTINGS ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY
 - EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL
 - CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS
 - SUBGRADE PRIOR TO PLACEMENT OF COMPACTED FILL
- THE APPROVED SOILS REPORT, IF ANY EXISTS, SHALL BE USED TO DETERMINE COMPLIANCE.

CONCRETE NOTES:

- CONCRETE SHALL CONFORM TO ACI 211.1, ACI 301, ACI 304R (WHEN PUMPING), AND ACI 318-14. AGGREGATE SHALL CONFORM TO ASTM C33. COMPRESSIVE STRENGTH RANGE OF SLUMP WATER-TO-CEMENT RATIO, AND AIR ENTRAINMENT SHALL BE PER THE CONCRETE CLASS SPECIFIED HEREIN AND IN ACCORDANCE WITH CAST-IN-PLACE CONCRETE SPECIFICATION 03000. SUBMIT COPIES OF TEST REPORTS SHOWING THAT THE MIX HAS BEEN SUCCESSFULLY TESTED TO PRODUCE CONCRETE WITH THE PROPERTIES SPECIFIED. TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (E.O.R.) FOR APPROVAL PRIOR TO CONCRETE PLACEMENT.
 - CONCRETE CLASSIFICATIONS PER SPECIFICATION SECTION 03000:
 - FOOTINGS & FROST WALLS: CLASS A
 - ABOVE GRADE WALLS, EXPOSED FOUNDATION WALLS, TANK AND CHANNEL WALLS: CLASS B
 - INTERIOR SLABS ON-GROUND: CLASS C
 - TANK AND CHANNEL FOUNDATIONS: CLASS D
 - INTERIOR SUSPENDED SLABS: CLASS E
 - L.W. CONCRETE INTERIOR SUSPENDED SLABS: CLASS F
 - APRONS, LANDINGS, EQUIPMENT BASES, SIDEWALKS & CURBS: CLASS H
 - FILL CONCRETE: CLASS G
 - CONCRETE FINISHES PER SPECIFICATION SECTION 03000:
 - FOUNDATIONS BELOW GRADE: AS-CAST SF-20 FINISH
 - EXPOSED FOUNDATION WALLS: SG-60 EXPOSED FINISH
 - TANK WALLS & SLABS: AS-CAST SF-30 FINISH
 - EXTERIOR SLABS: FINE BROOM FINISH
 - INTERIOR SLABS: TROWEL FINISH

- CEMENT SHALL CONFORM TO ASTM C150, TYPE II/III AND SHALL HAVE A CURING PERIOD OF NOT LESS THAN 7 DAYS.

- CONCRETE SHALL BE WET CURED, USING BURLAP OR COTTON CURING MATS, OR CURED USING ASTM D497 POLYETHYLENE SHEET RATIO, AND AIR ENTRAINMENT SHALL BE PER THE CONCRETE CLASS SPECIFIED HEREIN AND IN ACCORDANCE WITH CAST-IN-PLACE CONCRETE SPECIFICATION 03000. SUBMIT COPIES OF TEST REPORTS SHOWING THAT THE MIX HAS BEEN SUCCESSFULLY TESTED TO PRODUCE CONCRETE WITH THE PROPERTIES SPECIFIED. TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (E.O.R.) FOR APPROVAL PRIOR TO CONCRETE PLACEMENT.

- PUMPING SHALL NOT RESULT IN SEPARATION OR LOSS OF MATERIALS NOR CAUSE INTERRUPTIONS SUFFICIENT TO PERMIT LOSS OF PLASTICITY BETWEEN SUCCESSIVE INCREMENTS. LOSS OF SLUMP IN PUMPING EQUIPMENT SHALL NOT EXCEED 2 INCHES. CONCRETE SHALL NOT BE CONVEYED THROUGH PIPE MADE OF ALUMINUM OR ALUMINUM ALLOY. RAPID CHANGES IN PIPE SIZES SHALL BE AVOIDED. MAXIMUM ALLOWED INCREASE IN PIPE SIZE SHALL NOT EXCEED 10 PERCENT OF THE DIAMETER OF THE PIPE. MAXIMUM SIZE OF WELL ROUNDED AGGREGATE SHALL BE LIMITED TO 40 PERCENT OF THE PIPE DIAMETER. SAMPLES FOR TESTS SHALL BE TAKEN AT BOTH THE POINT OF DELIVERY TO THE PUMP AND AT THE DISCHARGE END.

- CONCRETE SHALL NOT BE PLACED WHEN WEATHER CONDITIONS PREVENT PROPER PLACEMENT AND CONSOLIDATION INCLUDING PERIODS OF PRECIPITATION. TRANSPORT CONCRETE AS RAPIDLY AS PRACTICABLE TAKING PRECAUTION TO PREVENT SEGREGATION OR LOSS OF INGREDIENTS. PUMPING IN ACCORDANCE WITH ACI 304 SHALL BE PERMITTED. DO NOT EXCEED A FREE VERTICAL DROP OF 3 FEET FROM THE POINT OF DISCHARGE. PLACE CONCRETE IN ONE CONTINUOUS OPERATIONS FROM ONE SIDE OF SLAB TO THE OTHER. POSITION GRADE STAKES AT 12 FEET ON CENTER MAXIMUM IN EACH DIRECTION.

- UNLESS OTHERWISE NOTED, REINFORCEMENT BARS SHALL BE BLACK STEEL. REINFORCING BARS SHALL CONFORM TO ASTM A618, GRADE 60. WELDED WIRE FABRIC REINFORCEMENT SHALL CONFORM TO ASTM A1064. REINFORCEMENT SHALL NOT CONTAIN RUST, LE, OIL, GREASE, CLAY, OR FOREIGN SUBSTANCES THAT WOULD REDUCE THE CONCRETE BONDING STRENGTH. REMOVE LOOSE RUST PRIOR TO PLACEMENT OF REINFORCEMENT.

- REINFORCEMENT SPLICES SHALL BE KEPT TO A PRACTICAL MINIMUM. SEE THE LAP SPLICE TABLE ON THIS SHEET FOR MINIMUM LAP SPLICE LENGTHS.
- PROVIDE MINIMUM 2" OF CONCRETE COVER FOR ALL REINFORCING STEEL WHEN CAST AGAINST FORMS OR 3" OF CONCRETE COVER FOR ALL REINFORCING STEEL WHEN CAST AGAINST EARTH, UNLESS OTHERWISE INDICATED.

- CONCRETE FOOTINGS AND MAT FOUNDATIONS SHALL BE PLACED MONOLITHICALLY WITH THE EXCEPTION THAT VERTICAL CONSTRUCTION JOINTS WILL BE ALLOWED IF EPOXY BONDING COMPOUND IS APPLIED TO THE ROUGHENED SURFACE OF THE HARDENED CONCRETE.

- INTERIOR SLABS: THE CONTRACTOR SHALL PROVIDE CONSTRUCTION JOINTS AS INDICATED. JOINTS MAY BE SAWCUT OR CUT WITH A JOINTING TOOL. SAWED JOINTS SHALL BE COMPLETED WITHIN 4 TO 12 HOURS AFTER PLACEMENT OF CONCRETE. JOINTS SHALL INTERSECT WITH THE CORNERS OF ISOLATION JOINT AT COLUMN LOCATIONS, IF ANY ARE PRESENT, AND BE SPACED A MAXIMUM OF 15 FEET ON CENTER, UNLESS NOTED OTHERWISE.

- REINFORCEMENT SUPPORTS SHALL BE CONCRETE OR OTHER NON-CORRODIBLE MATERIAL HAVING A COMPRESSIVE STRENGTH EQUAL TO OR GREATER THAN THE COMPRESSIVE STRENGTH OF THE CONCRETE BEING PLACED.

- PROVIDE A 3/4" ROUNDED EDGE ON ALL EXPOSED SLAB EDGES. PROVIDE A 3/4" CHAMFER ON ALL OTHER EXPOSED CONCRETE CORNERS.

- EPOXY BONDING COMPOUND SHALL BE USED ON ALL CONTACTING SURFACES BETWEEN EXISTING CONCRETE AND NEW CONCRETE. EPOXY BONDING COMPOUND SHALL CONFORM TO ASTM C881, TYPE AND GRADE TO BE IN ACCORDANCE WITH APPROPRIATE USE INDICATED IN SPECIFICATION 03000. CAST-IN-PLACE CONCRETE. DO NOT ALLOW COMPOUND TO HARDEN PRIOR TO CONCRETE PLACEMENT. BONDING AGENT USED SHALL BE NSF 61 APPROVED.

- PLACE, CONSOLIDATE AND IMMEDIATELY STRIKE OFF CONCRETE TO OBTAIN PROPER COUNTER GRADE AND ELEVATION BEFORE BLEED WATER APPEARS. PERMIT CONCRETE TO ATTAIN A SET SUFFICIENT FOR FLOATING AND SUPPORTING THE WEIGHT OF THE FINISHER AND EQUIPMENT. IF BLEED WATER IS PRESENT PRIOR TO FLOATING THE SURFACE, DRAG THE EXCESS WATER OFF OR REMOVE BY ABSORPTION WITH POROUS MATERIALS. DO NOT USE WATER CEMENT TO ABSORB BLEED WATER.

- UNLESS OTHERWISE NOTED, ALL CONCRETE CONSTRUCTION SHALL MEET THE SPECIFIED TOLERANCES OF ACI 117. TOP ELEVATIONS SHALL MATCH THE SPECIFIED ELEVATIONS WITHIN A TOLERANCE OF +/-

- THE REQUIREMENTS OF ACI 302.1R CLASS 4 SHALL BE IN EFFECT FOR THE CONSTRUCTION OF ALL FLOORS AND SLABS. THE REQUIREMENTS OF ACI 360.1R-10 SHALL BE IN EFFECT FOR THE CONSTRUCTION OF ALL SLABS-ON-GROUND.

- SLABS-ON-GRADE: FF = 25 AND FL = 20

- SUSPENDED SLABS: FF = 25 AND FL = 20

- NO CONCRETE SHALL BE PLACED UNTIL ALL EMBEDDED ITEMS (I.E. PROCESS, ELECTRICAL, MECHANICAL, ETC) HAVE BEEN SET. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TRADES.

- ALL BAR PLACING AND BENDING SHALL BE IN ACCORDANCE WITH ACI 315.

- PERFORM COMPRESSIVE TESTS IN ACCORDANCE WITH ASTM C39. OBTAIN ONE COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. TAKE PRECAUTIONS TO PREVENT EVAPORATION AND LOSS OF WATER FROM SPECIMENS. TEST ONE CYLINDER AT 3 DAYS, ONE CYLINDER AT 7 DAYS, AND TWO (THREE FOR 4"x8" CYLINDERS) CYLINDERS AT 28 DAYS AND HOLD ONE IN RESERVE. PERFORM SLUMP TESTS IN ACCORDANCE WITH ASTM C143. PERFORM AIR CONTENT TESTS IN ACCORDANCE WITH ASTM C173 OR ASTM C231. SUBMIT ALL TEST DATA TO THE E.O.R.

- CONSOLIDATE CONCRETE WITH HIGH FREQUENCY, INTERNAL MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND SPADING AND TAMPING. FURNISH A SPARE VIBRATOR ON THE JOB SITE WHENEVER CONCRETE IS PLACED. OPERATE VIBRATORS WITH VIBRATORY ELEMENT SUBMERGED IN THE CONCRETE, WITH A MINIMUM FREQUENCY OF NOT LESS THAN 6000 IMPULSES PER MINUTE WHEN SUBMERGED. INSERT AND WITHDRAW VIBRATORS AT INTERVALS APPROXIMATELY 18 INCHES APART.
- ELASTOMERIC JOINT SEALANT SHALL CONFORM TO ASTM C920, TYPE S, GRADE P, CLASS 25. JOINT SEALANT IN CONTACT WITH POTABLE WATER SHALL BE NSF 61 APPROVED.

- CONTROLLED DENSITY FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION 03310.

- CRYSTALLINE WATERPROOFING ADMIXTURES SHALL BE IN ACCORDANCE WITH CAST-IN-PLACE CONCRETE SPECIFICATION 03000 AND THE CRYSTALLINE WATERPROOFING SPECIFICATION 07616.

- APPLICABLE LOCATIONS (EXCLUDING FILL CONCRETE):
 - MICROSCREEN CHANNELS
 - WET WELLS
 - DRY WELL
 - SPLITTER BOX
 - ANOXIC TANKS
 - AEROBIC TANKS
 - DISTRIBUTION CHANNEL
 - MBR TRAINS

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL SYSTEMS INCLUDING MATERIALS, INSTALLATION, WORKMANSHIP, FABRICATION, ASSEMBLY, ERECTION, INSPECTION, QUALITY CONTROL, AND TESTING SHALL BE PROVIDED IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- ALL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED:
 - W SHAPES: ASTM A992, Fy = 50KSI
 - HSS: ASTM A500 GR. C, Fy = 50KSI
 - PLATES AND OTHER STEEL SHAPES: ASTM A36, Fy = 36KSI
- ALL HOLES IN STEEL SHALL BE STANDARD SIZE 1/16" LARGER THAN BOLT DIAMETER UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE DRILLED OR PUNCHED. BURNING IS NOT ALLOWED. COLUMN BASEPLATE HOLES FOR ANCHOR BOLTS ARE PERMITTED TO BE OVERSIZED.
- COES SHALL BE PROVIDED WITH 1/2" RADIUS MINIMUM, SMOOTH CORNERS, AND DEPTH OF NOTCHES. DEPTH AND LENGTH OF COES SHALL BE AS INDICATED.
- UNLESS OTHERWISE NOTED, ALL BOLTS SHALL CONFORM TO ASTM A325, EXCEPT ANCHOR BOLTS SHALL CONFORM TO ASTM F1554. ALL NUTS SHALL CONFORM TO ASTM A563, GRADE 8 AND STYLE FOR APPLICABLE ASTM BOLT STANDARD. ALL WASHERS SHALL CONFORM TO ASTM F436 FOR ASTM A325 BOLTS AND F1554 ANCHOR BOLTS.
- UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE SNUG-TIGHT. BOLTS SPECIFIED AS PRE-TENSIONED (PT) SHALL BE PRE-TENSIONED USING THE TURN-OF-NUT METHOD. CONNECTIONS SPECIFIED AS SLIP CRITICAL (SC) SHALL HAVE BOLTS PRE-TENSIONED USING THE TURN-OF-NUT METHOD AND FAYING SURFACES PREPARED IN ACCORDANCE WITH THE CLASSIFICATION INDICATED. BOLTS INDICATED TO USE A JAM NUT SHALL BE INSTALLED USING THE FOLLOWING SEQUENCE:
 - INSTALL THIN NUT (JAM NUT) FIRST AND TORQUE TO 50% OF TORQUE VALUE
 - INSTALL THICK NUT (D SHAPED) SECOND AND TORQUE TO 100% OF TORQUE VALUE WHILE HOLDING THE JAM NUT TO PREVENT ROTATION
- STEEL DETAILER SHALL PROVIDE CONNECTION DESIGN IN ACCORDANCE WITH AISC360.3. DETAILER SHALL SELECT AND COMPLETE CONNECTIONS USING SCHEMATIC DETAILS INDICATED ON PLANS AND AISC360.360.
- UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ALL STRUCTURAL STEEL FASTENERS (INCLUDING NUTS, BOLTS, WASHERS, ETC.) SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153. REPAIR AREAS OF DAMAGED GALVANIZATION IN ACCORDANCE WITH ASTM A780.
- UNLESS NOTED OTHERWISE, ALL MBR ENCLOSURE COLUMNS SHALL BE PROVIDED WITH A 2" THICK CAP PLATE.
- STEEL GRATING SHALL BE GALVANIZED SGW-150 BY MCNICHOLS OR APPROVED EQUAL.

STEEL JOISTS NOTES:

- STEEL JOISTS SHALL BE DESIGNED, FABRICATED, AND INSTALLED IN ACCORDANCE WITH STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS' LATEST EDITION AND SJI CODE OF STANDARD PRACTICE' LATEST EDITION.
- STEEL JOIST FRAMING SHALL SUPPLY AN AFFIDAVIT STATING COMPLIANCE WITH ALL APPLICABLE AISC, SJI AND AISI REQUIREMENTS.
- STEEL JOIST SUPPLIER MUST BE A MEMBER OF SJI.
- ALL STEEL JOISTS SHALL BE BRACED IN ACCORDANCE WITH SJI JOIST BRIDGING SHALL BE FURNISHED BY THE JOIST MANUFACTURER.
- JOIST LAYOUTS SHOWN ON PLANS ARE CONCEPTUAL, WITH MAXIMUM SPACING AS INDICATED, ACTUAL JOIST LAYOUT SHALL BE PER APPROVED SHOP DRAWINGS.
- UNLESS NOTED OTHERWISE, ALL STEEL JOISTS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
- UNLESS OTHERWISE NOTED, ALL M.E.P. FIXTURES SUPPORTED BELOW JOISTS SHALL BE SUPPORTED BY A MINIMUM OF TWO JOISTS.

WELDING NOTES:

- ALL WELDING SHALL BE CONDUCTED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1, LATEST EDITION FOR STRUCTURAL STEEL AND AWS D1.3, LATEST EDITION FOR STRUCTURAL STEEL SHEET.
- THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR PROTECTING EXISTING EQUIPMENT, MATERIALS, BUILDING STRUCTURES, AND BUILDING COMPONENTS DURING ANY FIELD WELDING OPERATIONS.
- WELDS OF HEADED STUDS SHALL MATCH STRENGTH OF STUDS.

GEOTECHNICAL NOTES:

- THE FOLLOWING BEARING PRESSURE VALUES WERE RECOMMENDED PER THE GEOTECHNICAL REPORT PREPARED BY TECTONIC ENGINEERING CONSULTANTS, INC. IN ACCORDANCE WITH APPROPRIATE USE INDICATED IN SPECIFICATION 03000.
 - MAX NET ALLOWABLE BEARING OF UNDISTURBED NATIVE SOIL: 4000PSF
 - MAX NET ALLOWABLE BEARING OF SHALE OR SANDSTONE BEDROCK: 8000PSF
- BOTTOM OF EXCAVATION IS DEFINED AS THE ELEVATION BENEATH THE SUBBASE. SUBBASE PREPARATION SHALL BE AS FOLLOWS:
 - BENEATH SLABS-ON-GRADE: 6" COMPACTED LIFT OF CLEAN STONE
 - BENEATH FOUNDATIONS/MAT SLABS: 6" COMPACTED LIFT OF CRUSHED STONE
- IF UNSUITABLE MATERIAL IS ENCOUNTERED AT OR UNDER THE PROPOSED BOTTOM OF EXCAVATION, THE UNSUITABLE MATERIAL SHALL BE REMOVED FROM WITHIN THE ZONE OF INFLUENCE OF THE BEARING ELEMENT AND REPLACED IN ACCORDANCE WITH NOTE 4.
- ZONE OF INFLUENCE IS DEFINED AS A 1V:1H PLANE EXTENDING DOWNWARD FROM THE BOTTOM PERIMETER OF THE FOUNDATION ELEMENT TO WITHIN A SUITABLE DISTANCE BELOW, TO BE DETERMINED BY THE ENGINEER OF RECORD (E.O.R.) BASED ON FIELD CONDITIONS AND MATERIAL TYPE.
- OVER EXCAVATION IS DEFINED AS ANY EXCAVATION BELOW THE PROPOSED BOTTOM OF EXCAVATION IDENTIFIED ON THE PLANS OR AS DESCRIBED WITHIN THE PROJECT SPECIFICATIONS. OVER EXCAVATION SHALL BE RE-ESTABLISHED AS FOLLOWS:
 - BENEATH FOUNDATIONS AND SLABS-ON-GRADE: COMPACTED SELECT FILL
 - BENEATH TANKS: CONTROLLED DENSITY FILL
- SELECT FILL SHALL BE UTILIZED FOR BACKFILL OF ALL STRUCTURES (UNLESS OTHERWISE NOTED).
- THE MINIMUM SELECT FILL PROPERTIES LISTED BELOW WERE RECOMMENDED PER THE GEOTECHNICAL REPORT PREPARED BY TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C. DATED JANUARY 15, 2020:
 - UNIT WEIGHT = 130 PSF
 - FRICTION ANGLE = 35°
 - Ka = 0.27
 - Ko = 0.43
 - Kp = 3.69
- THE CONTRACTOR SHALL SUBMIT DESIRED BACKFILL MATERIAL SPECIFICATION MEETING ALL DESIGN CRITERIA LISTED ABOVE, AT A MINIMUM, TO THE ENGINEER OF RECORD PRIOR TO USE ON SITE. ALTERNATIVELY, THE CONTRACTOR SHALL ELECT TO PERFORM A FIELD PROCTOR OF THE EXISTING SITE SOILS TO VERIFY THAT EXISTING SOILS MEET THE MINIMUM DESIGN VALUES STATED ABOVE.
- IN-SITU COMPACTION TESTING OF SUBGRADE AND BACKFILL MATERIAL SHALL BE PERFORMED BY THE OWNER'S SPECIAL INSPECTOR.
- FOR ADDITIONAL GEOTECHNICAL INFORMATION, SEE THE SITE SPECIFIC GEOTECHNICAL REPORT PREPARED BY TECTONIC PROVIDED IN THE CONTRACT.

TYPICAL STRAIGHT REBAR LAP SPLICE LENGTHS PER ACI 350 CHAPTER 12 AND ACI 318 CHAPTER 25 (ASSUMING 5000 PSI CONCRETE, BLACK STEEL)			
MAIN BAR SIZE	l _h (in)	TOP BARS IN SLABS > 18" THICK, l _h (in)	
#4	14	19	19
#5	17	23	23
#6	20	27	27
#7	23	32	32
#8	27	37	37
#9	31	43	43
#10	35	50	50

TYPICAL STRAIGHT REBAR LAP SPLICE LENGTHS PER ACI 350 CHAPTER 12 AND ACI 318 CHAPTER 25 (ASSUMING 4000 PSI CONCRETE, BLACK STEEL)			
MAIN BAR SIZE	l _h (in)	TOP BARS IN SLABS > 18" THICK, l _h (in)	
#4	15	20	20
#5	19	25	25
#6	23	30	30
#7	27	36	36
#8	32	42	42
#9	37	50	50
#10	43	60	60

REBAR LAP SPLICE TABLES AND REFERENCE DETAIL

TRUSS NOTES:

- ALL TRUSSES SHALL BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. ROOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:
 - GROUND SNOW LOAD = 30 PSF
 - FLAT ROOF SNOW LOAD = 22 PSF
 - UNBALANCED SNOW LOAD SHALL BE PER ASCE-7, LATEST EDITION
 - DEAD LOAD TOP CHORD = 10 PSF
 - LIVE LOAD BOTTOM CHORD = 10 PSF
 - DEAD LOAD BOTTOM CHORD = 10 PSF
 - UPLIFT FROM WIND = 20 PSF
 - CARBON STEEL PIPE LOAD = 60PLF
- LOADS DO NOT INCLUDE TRUSS SELF WEIGHT. LOADS DO NOT INCLUDE NON-UNIFORM OR UNBALANCED SNOW LOADS. CARBON STEEL PIPE LOADS WILL BE MODELED AS POINT LOADS SUPPORTED BY THE TRUSS VIA HANGERS. EACH HANGER SHALL BE SUPPORTED BY A MINIMUM OF 3 TRUSSES. TRUSSES SHALL BE DESIGNED UTILIZING THE REQUIREMENTS OF ASCE-7, LATEST ADDITION FOR UNBALANCED SNOW LOADS.
- EACH TRUSS SHALL BE RESTRAINED AGAINST UPLIFT UTILIZING AN APPROVED CLIP WITH A MINIMUM CAPACITY OF 500 LBS.
- UNLESS NOTED OTHERWISE ALL TRUSSES AND THEIR CONNECTIONS SHALL BE GALVANIZED AND SHALL COMPLY WITH THE REQUIREMENTS OF AISI SPECIFICATION FOR THE DESIGN OF COLD FORM STEEL STRUCTURAL MEMBERS, LATEST EDITION.
- TRUSS LAYOUTS SHOWN ON PLANS ARE CONCEPTUAL, WITH MAXIMUM SPACING AS INDICATED. ACTUAL TRUSS LAYOUT SHALL BE PER APPROVED SHOP DRAWINGS.

AISI COLD FORMED FRAMING NOTES:

- METAL STUD SIZES SHOWN ON PLANS AND DETAILS ARE BASED ON CLARKDIETRICH GALVANIZED STEEL STUDS. ALL FRAMING MATERIALS AND CONNECTIONS SHALL BE EQUIVALENT TO THOSE MANUFACTURED BY CLARKDIETRICH. ALL STUDS AND THEIR CONNECTIONS SHALL BE GALVANIZED AND SHALL COMPLY WITH THE REQUIREMENTS OF AISI SPECIFICATION FOR THE DESIGN OF COLD FORM STEEL STRUCTURAL MEMBERS, LATEST EDITION.
- METAL PURLIN AND GIRL SIZES SHOWN ON PLANS AND DETAILS ARE BASED ON FLEXSPAN GALVANIZED STEEL FRAMING. ALL FRAMING MATERIALS AND CONNECTIONS SHALL BE EQUIVALENT TO THOSE MANUFACTURED BY FLEXSPAN. ALL ROOF FRAMING MEMBERS AND THEIR CONNECTIONS SHALL BE GALVANIZED OR PAINTED AND SHALL COMPLY WITH THE REQUIREMENTS OF AISI SPECIFICATION FOR THE DESIGN OF COLD FORM STEEL STRUCTURAL MEMBERS, LATEST EDITION.
- ALL METAL STUDS SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. PURLINS SHALL HAVE A MINIMUM YIELD STRENGTH OF 55 KSI.
- STEEL STUDS: MANUFACTURER'S STANDARD C-SHAPED STEEL STUDS, OF WEB DEPTHS INDICATED, PUNCHED, WITH STIFFENED FLANGES, AND AS FOLLOWS:
 - MINIMUM BASE-METAL THICKNESS: 16 GA. (54 MILS)
 - MINIMUM FLANGE WIDTH: 1.58 INCHES
- INSTALL CONTINUOUS U-SHAPED STEEL TRACKS SIZED TO MATCH STUDS. ALIGN TRACKS ACCURATELY AND SECURELY ANCHOR TO SUPPORTING STRUCTURE AT EACH STUD LOCATION. TRACKS SHALL BE UNPUNCHED WITH STRAIGHT FLANGES AND MATCH MINIMUM BASE METAL THICKNESS OF STUDS.
- FASTEN BOTH FLANGES OF STUDS TO BOTTOM TRACK UNLESS OTHERWISE INDICATED. SPACE STUDS AS FOLLOWS:
 - STUD SPACING: 24" O.C. MAX
- SET STUDS PLUMB, EXCEPT AS NEEDED FOR DIAGONAL BRACING OR REQUIRED FOR NON-PLUMB WALLS OR WARPED SURFACES AND SIMILAR REQUIREMENTS.
- ISOLATE NON-LOAD-BEARING STEEL FRAMING FROM BUILDING STRUCTURE TO PREVENT TRANSFER OF VERTICAL LOADS WHILE PROVIDING LATERAL SUPPORT.
- BRIDGE ALL JOISTS, RAFTERS AND BEARING WALL STUDS WITH BRIDGING CHANNEL AT 4" O.C. MAX. SCREW OR WELD BOTTOM OF BRIDGING AFTER SHEATHING IS IN PLACE.
- ALL CLIP AND UTILITY ANGLES SHALL BE THE SAME GAUGE AS THE MEMBERS BEING CONNECTED. IF THE MEMBERS BEING CONNECTED ARE DIFFERENT GAUGES, ANGLES SHALL BE A MINIMUM OF THE THINNER GAUGE.
- FOR ALL OPENINGS LARGER THAN JOIST FRAMING, FRAME WITH DOUBLE-HEADERS AND TRIMMERS AROUND OPENINGS. PROVIDE DOUBLE BOX JOISTS AROUND PARTITION WALLS PARALLEL TO JOISTS.
- SHOP DRAWINGS OF ALL LIGHT GAUGE METAL FRAMING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO MANUFACTURING.
- IF BASIS OF DESIGN MANUFACTURER'S LIGHT GAUGE FRAMING IS NOT USED, CONTRACTOR SHALL PROVIDE ALL SPECIFICATIONS AND MATERIAL PROPERTIES FOR THE SELECTED LIGHT GAUGE MANUFACTURER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

CONCRETE CONTAINMENT STRUCTURE DESIGN PROVISIONS:

THE CONCRETE CONTAINMENT STRUCTURES SHOWN HEREON HAVE BEEN DESIGNED FOR THE FOLLOWING IN ACCORDANCE WITH PCA RECTANGULAR CONCRETE TANKS REVISED 5TH EDITION, ACI 350-06, ACI 350-3-06 AND ACI 350-4R-04.

- SOIL AND BACKFILL PROPERTIES (APPLICABLE TO ALL TANKS):
 - SOIL UNIT WEIGHT, $\gamma = 130$ PCF
 - GROUNDWATER ASSUMED AT ELEVATION 15.00'
 - SOIL FRICTION ANGLE, $\phi = 30^\circ$
 - ACTIVE EARTH PRESSURE, $K_a = 0.27$
 - AT REST EARTH PRESSURE, $K_r = 0.43$ (UTILIZED FOR ALL TANK DESIGNS)
 - PASSIVE EARTH PRESSURE, $K_p = 3.69$
 - SUBGRADE MODULUS = 250 PSI
 - SUBGRADE BEARING CAPACITY = 4000PSF

MICROSCREEN CHANNELS:

- UNIT WEIGHT OF LIQUID, $\gamma = 65$ PCF
- HEIGHT OF MEDIA = 6'-0"
- BACKFILL HEIGHT = 10'-0"

WET WELLS:

- UNIT WEIGHT OF LIQUID, $\gamma = 65$ PCF
- HEIGHT OF LIQUID = 8'-0"
- BACKFILL HEIGHT = 15'-10"

DRY WELL:

- UNIT WEIGHT OF LIQUID, $\gamma = N/A$
- HEIGHT OF LIQUID = N/A
- BACKFILL HEIGHT = 15'-10"

SPLITTER BOX:

- UNIT WEIGHT OF LIQUID, $\gamma = 65$ PCF
- HEIGHT OF LIQUID = 8'-8"
- BACKFILL HEIGHT = 8'-6"

ANOXIC & AEROBIC TANKS:

- UNIT WEIGHT OF LIQUID, $\gamma = 65$ PCF
- HEIGHT OF LIQUID = 20'-3"
- BACKFILL HEIGHT = 21'-0"

DISTRIBUTION CHANNEL & MBR TRAIN TANKS:

- UNIT WEIGHT OF LIQUID, $\gamma = 65$ PCF
- HEIGHT OF LIQUID = 11'-9"
- BACKFILL HEIGHT = 16'-9"

TYPICAL HOOKED REBAR DEVELOPMENT LENGTHS PER ACI 350 CHAPTER 12 AND ACI 318 CHAPTER 25 (ASSUMING 5000 PSI CONCRETE, BLACK STEEL)			
MAIN BAR SIZE	R (in)	l _{db} (C.C. > 2.5")	l _{db} (C.C. < 2.5")
#4	1.5	7	11
#5	1.875	8	13
#6	2.25	10	16
#7	2.625	12	18
#8	3	13	21
#9	3.75	15	23
#10	5.375	17	26

TYPICAL STRAIGHT REBAR LAP SPICE LENGTHS PER ACI 350 CHAPTER 12 AND ACI 318 CHAPTER 25 (ASSUMING 4000 PSI CONCRETE, BLACK STEEL)		
MAIN BAR SIZE	l _l (in)	TOP BARS IN SLABS > 18" THICK, l _l (in)
#4	15	20
#5	19	29
#6	23	30
#7	36	47
#8	47	62
#9	59	77
#10	73	95

BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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FOR TOWN OF NEW WINDSOR
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**ANOXIC AND AEROBIC
TANK PLAN**

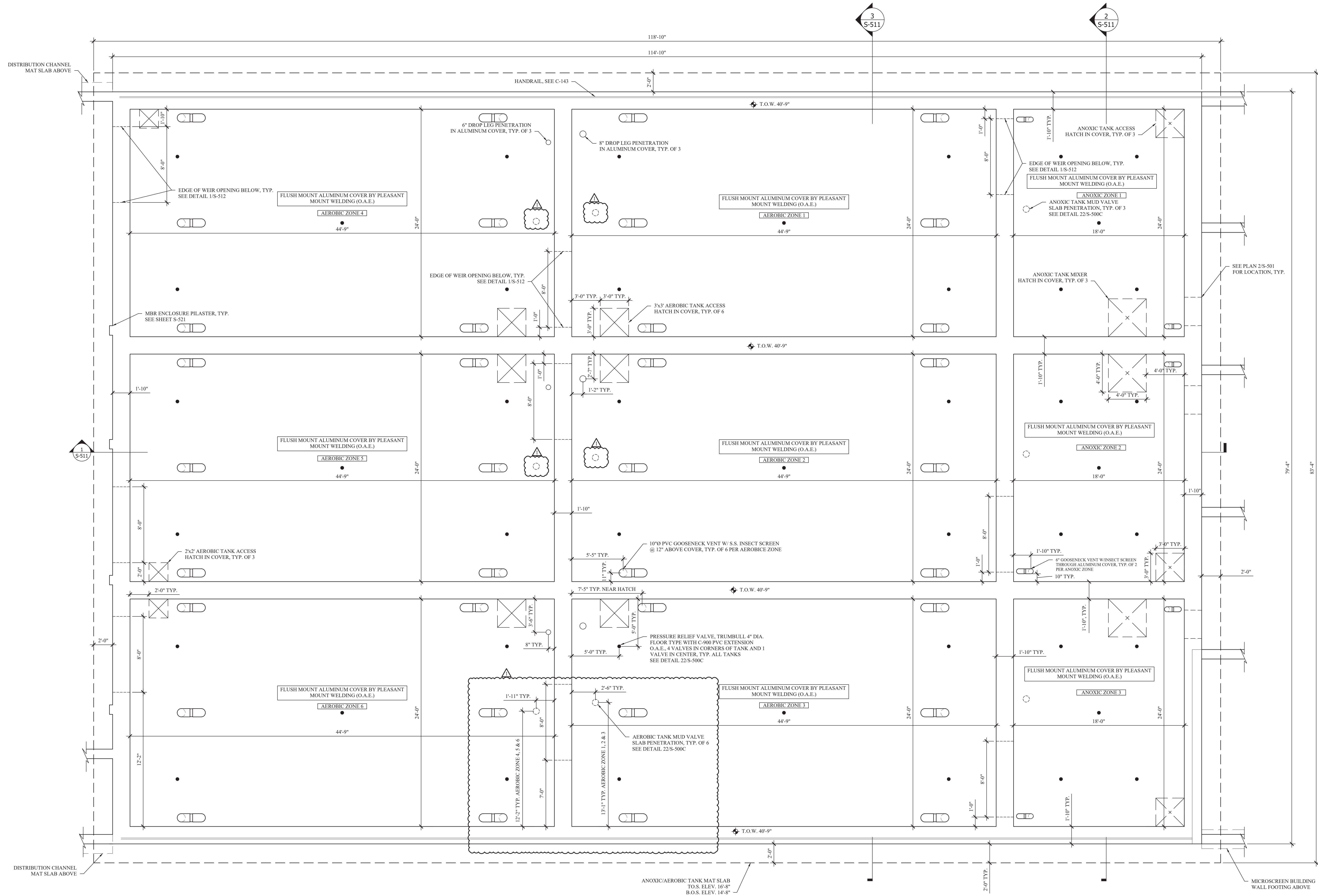
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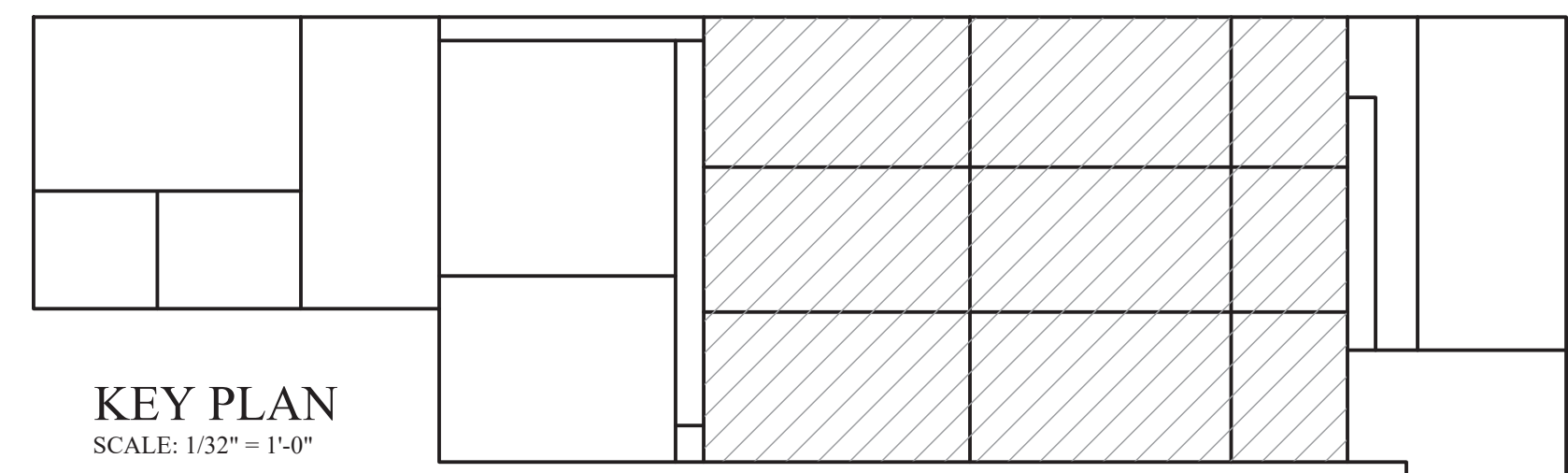
SHEET NO.

S-510

PROJECT # 18-732 PHASE #



1
S-510 **SLAB, WALL AND COVER PLAN**
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

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HAZARDOUS MATERIAL NOTE:
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ANOXIC AND AEROBIC
TANK SECTIONS

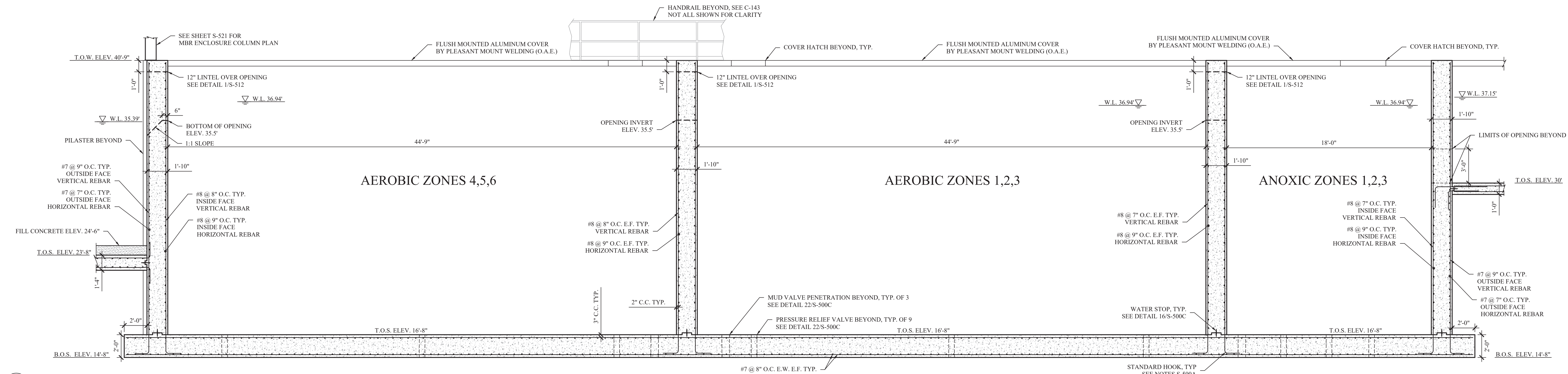
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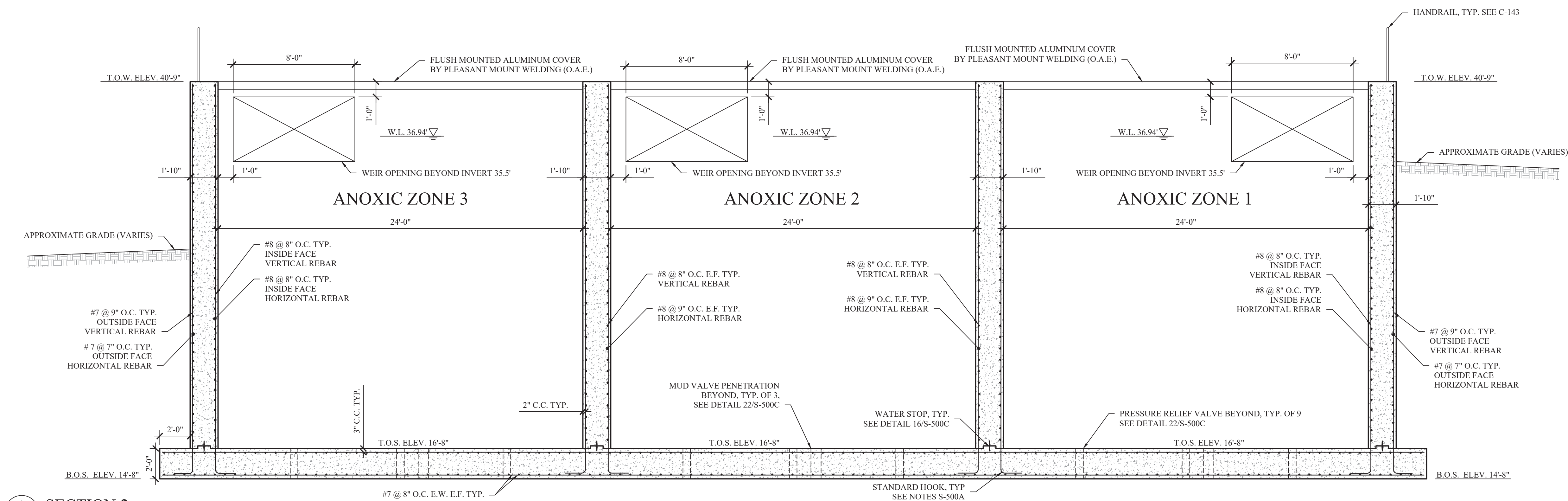
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PROJECT # 18-732 PHASE #



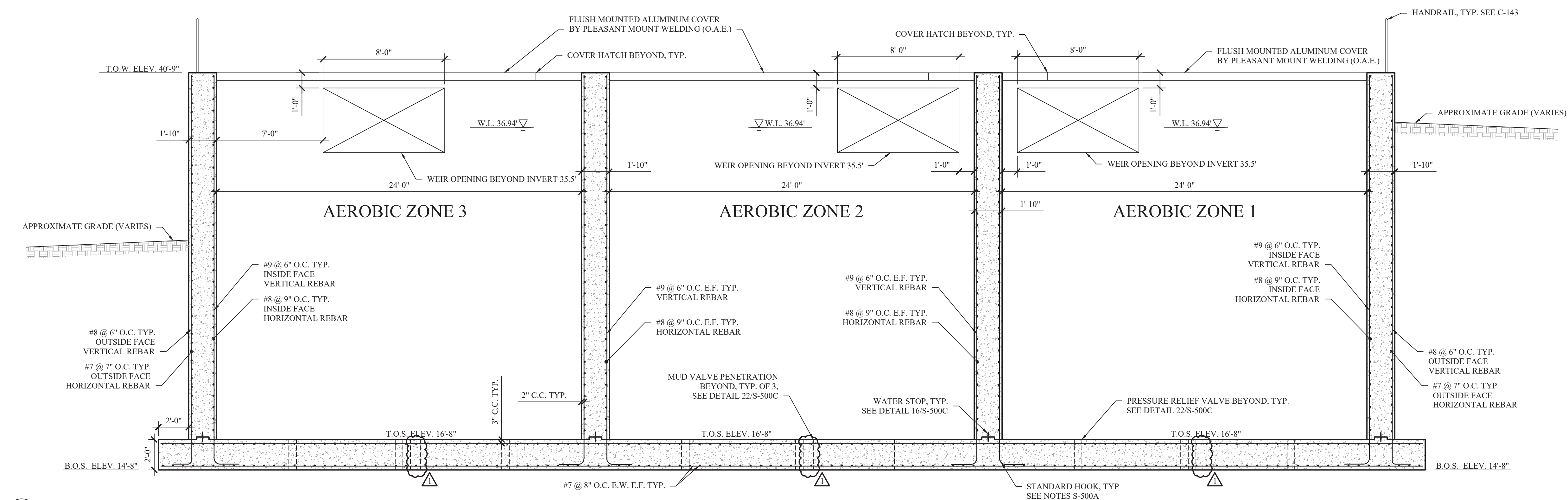
1
S-511

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



2
S-511

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

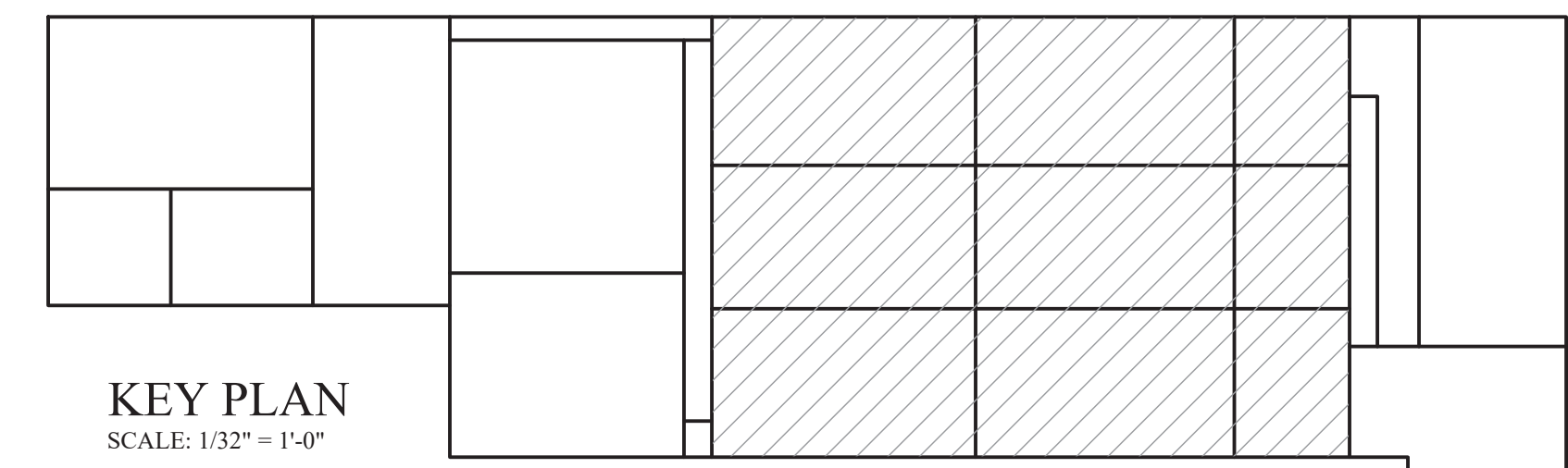


3
S-511

SECTION 3 (AEROBIC ZONES 4,5,6 SIMILAR TO ABOVE, WEIR OPENINGS VARY SEE SHEET S-510 FOR LOCATIONS)
SCALE: 1/4" = 1'-0"

SUBBASE AND BACKFILL NOTES:

- SUBBASE PREPARATION SHALL BE AS FOLLOWS:
 - BENEATH SLABS-ON-GRADE: 6" COMPACTED LIFT OF CLEAN STONE
 - BENEATH FOUNDATIONS/MAT SLABS: 6" COMPACTED LIFT OF CRUSHED STONE
- BACKFILL ALL STRUCTURES WITH SOIL THAT MEETS MINIMUM PROPERTIES IDENTIFIED IN THE GEOTECHNICAL NOTES AND PROJECT GEOTECHNICAL REPORT.



BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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**MBR BASIN AND
ENCLOSURE PLANS**

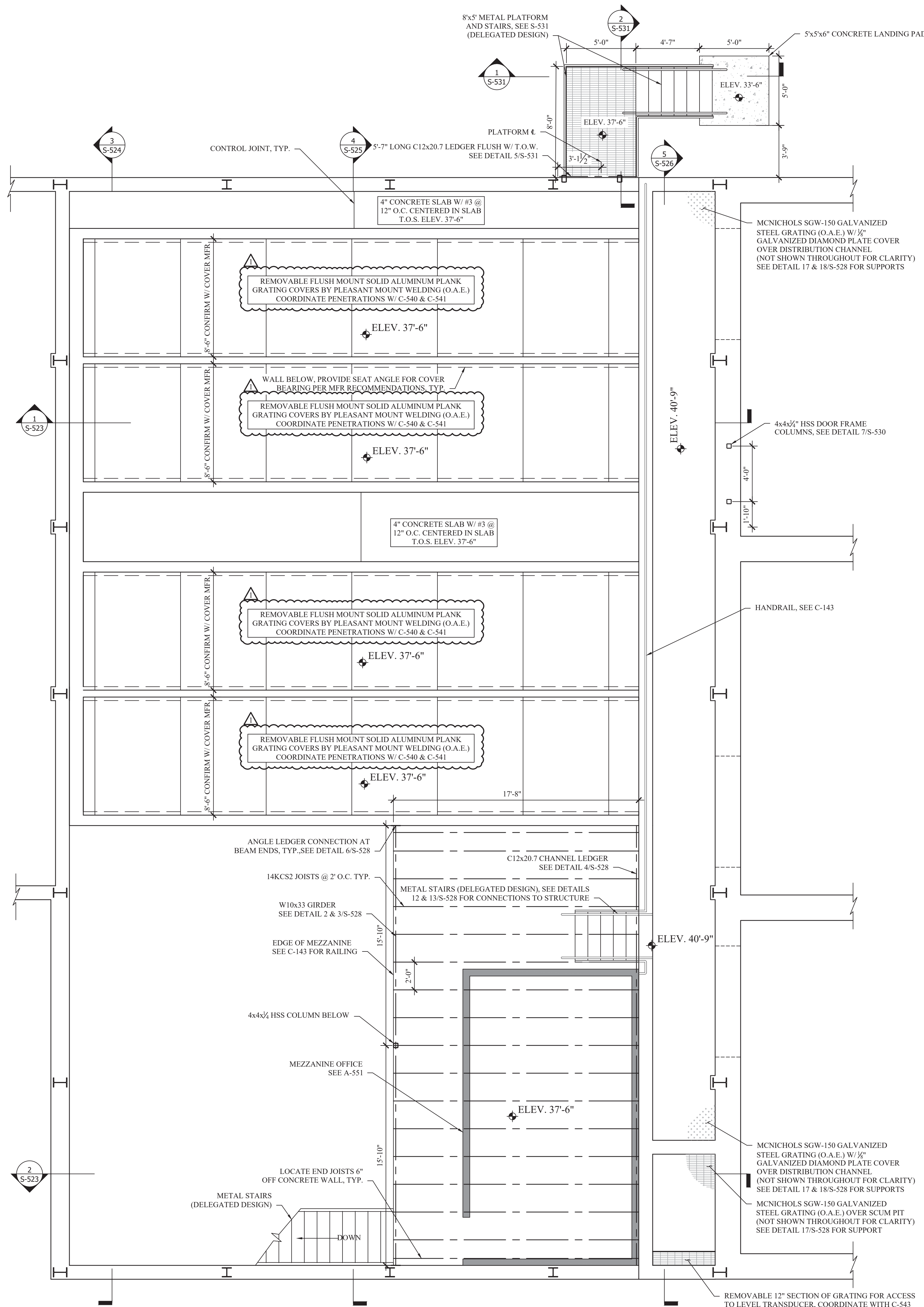
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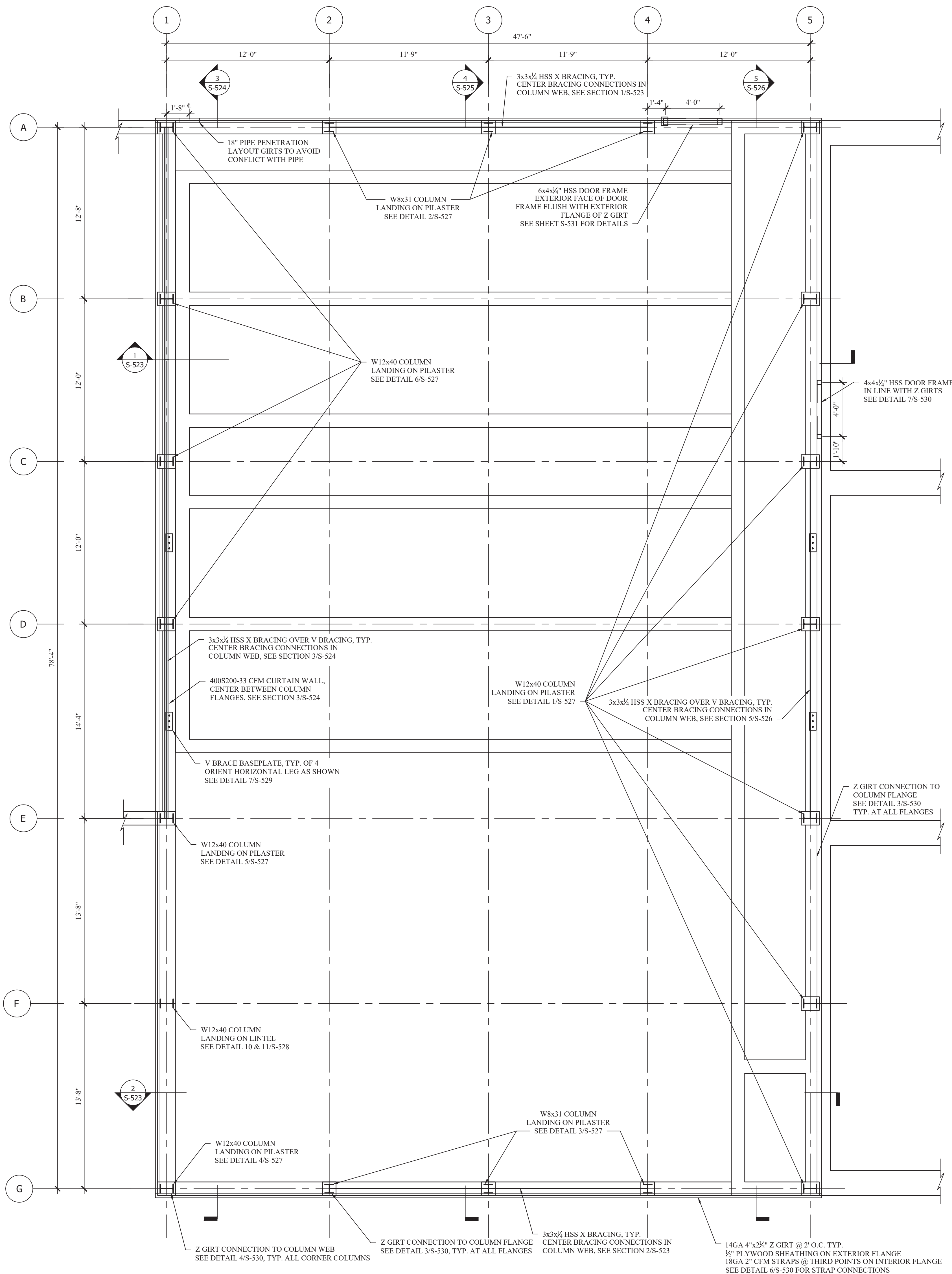
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PROJECT # 18-732 PHASE #

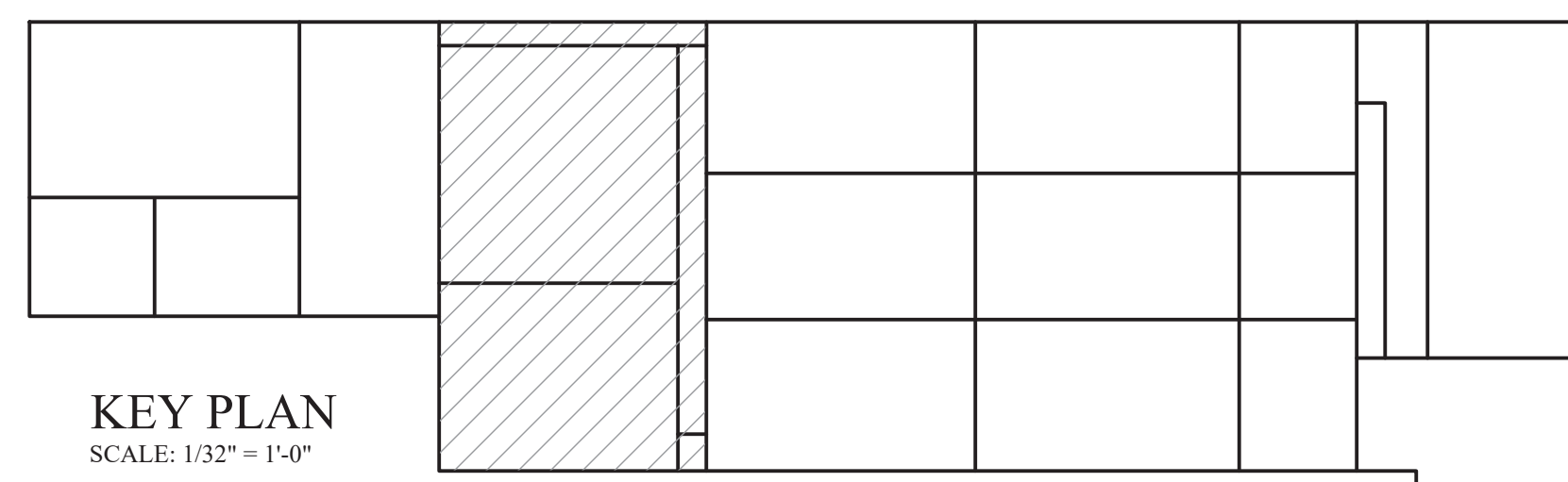


3
S-521 MBR BASIN GRATING, COVERS AND MEZZANINE FRAMING PLAN
SCALE: 1/4" = 1'-0"

NOTE: ALL M.E.P. FIXTURES SUPPORTED BY JOISTS
SHALL BE SUPPORTED BY A MINIMUM OF TWO JOISTS



4
S-521 MBR ENCLOSURE COLUMN, BRACING AND WALL FRAMING PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

SUBBASE AND BACKFILL NOTES:

1. SUBBASE PREPARATION SHALL BE AS FOLLOWS:
- BENEATH SLABS-ON-GRADE: 6" COMPACTED LIFT OF CLEAN STONE
 - BENEATH FOUNDATIONS/MAT SLABS: 6" COMPACTED LIFT OF CRUSHED STONE
2. BACKFILL ALL STRUCTURES WITH SOIL THAT MEETS MINIMUM PROPERTIES IDENTIFIED IN THE GEOTECHNICAL NOTES AND PROJECT GEOTECHNICAL REPORT.



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111 Wheatfield Drive, Suite 1
Milford, PA 18337
(870) 296-2765

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HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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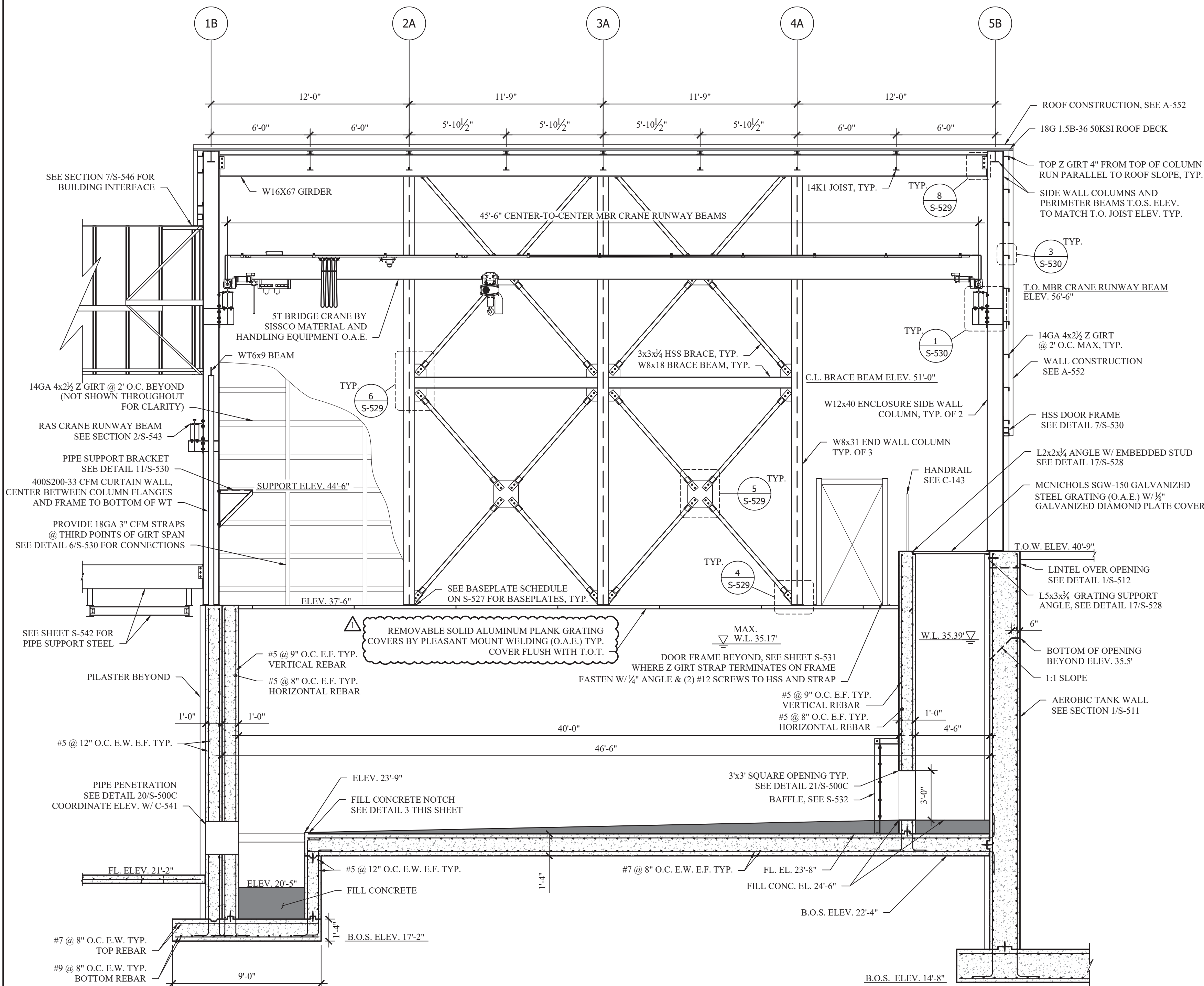
MBR BASIN AND ENCLOSURE SECTIONS

REVISIONS		
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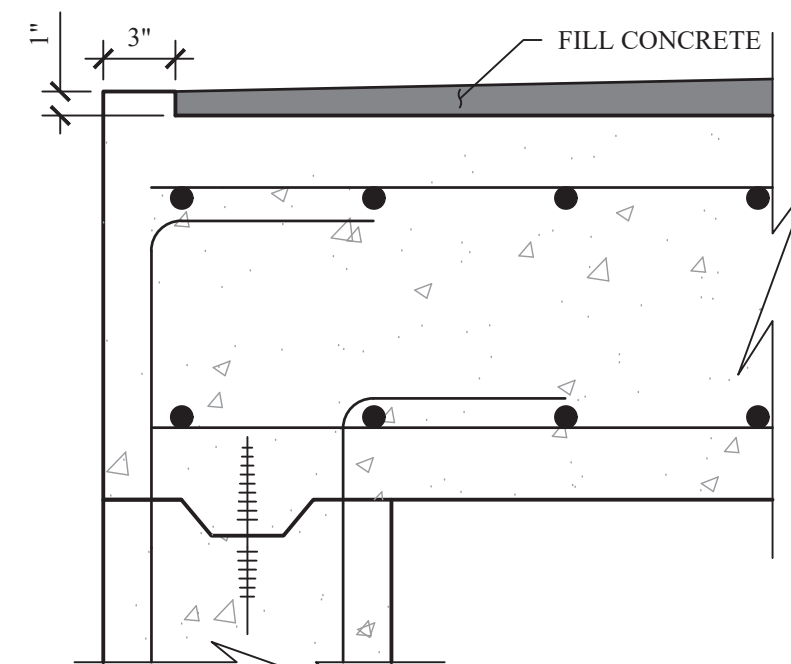
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CHECKED BY: PIJW
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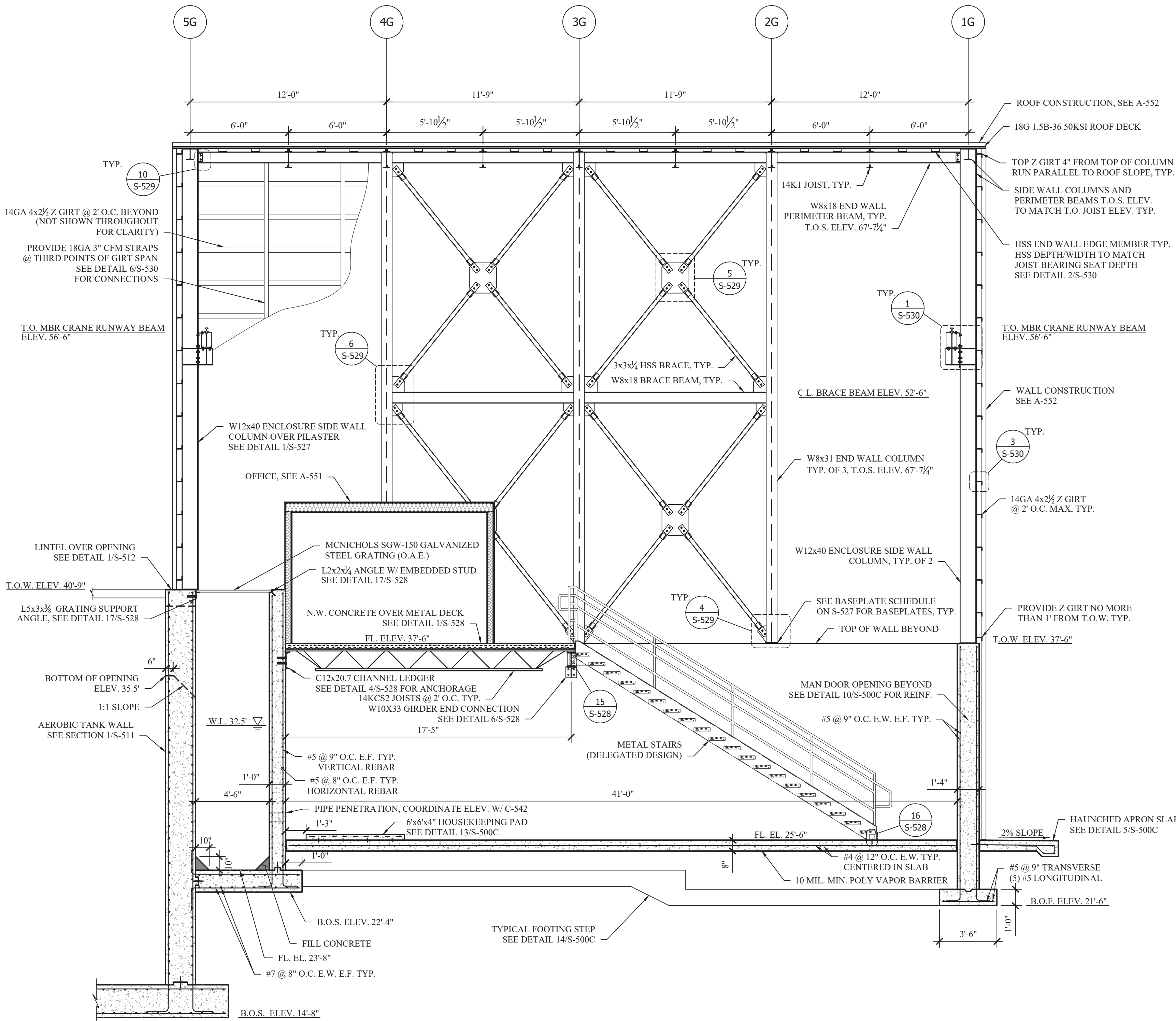
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PROJECT # 18-732 PHASE #



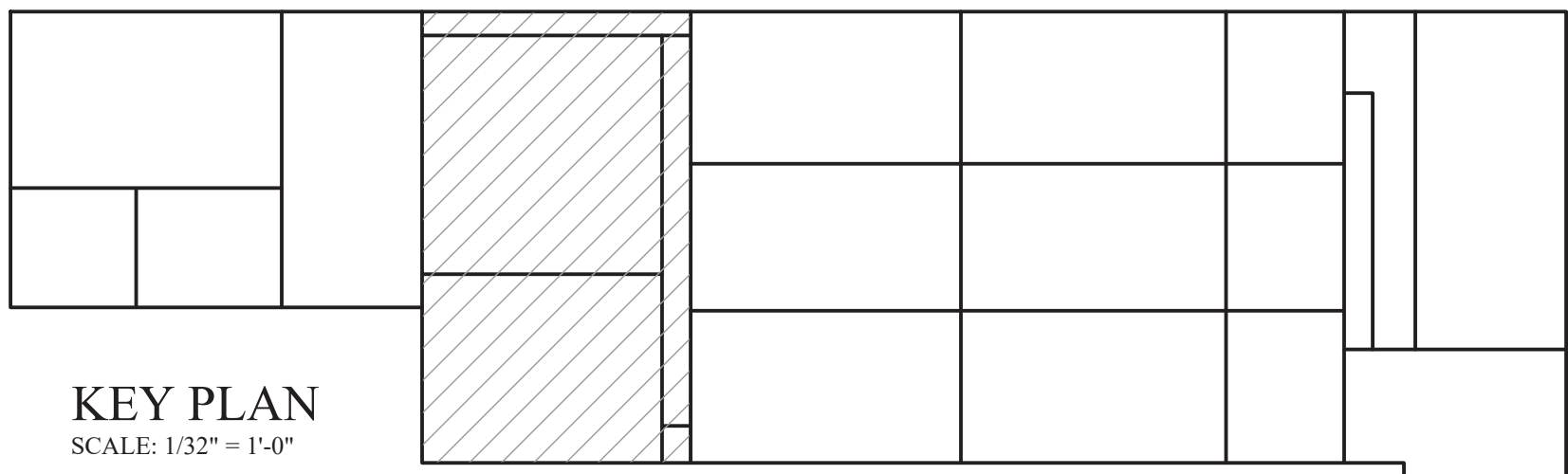
1 SECTION 1
SCALE: 1/4" = 1'-0"



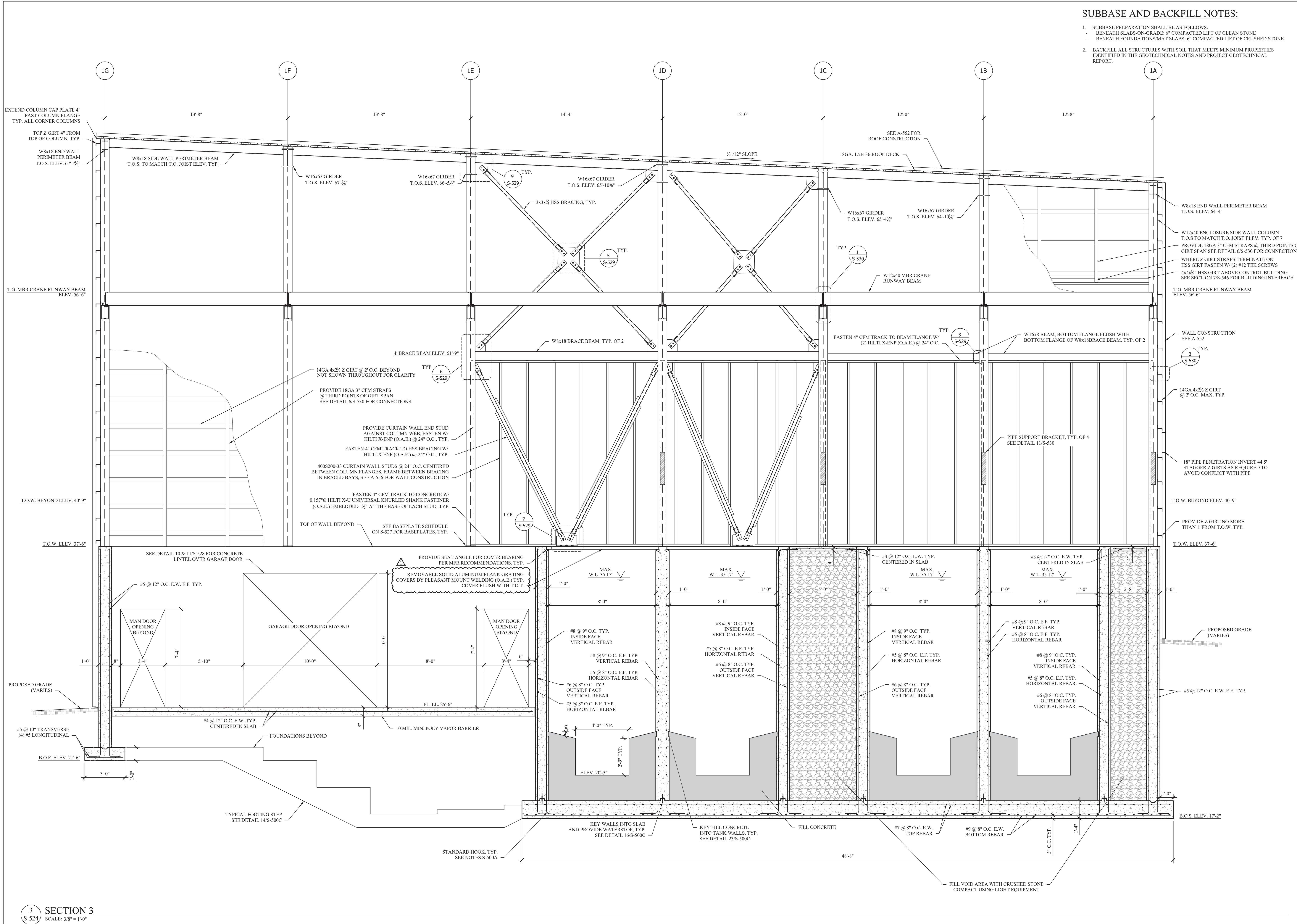
3 MBR TANK FILL CONCRETE NOTCH
SCALE: 3" = 1'-0"



2 SECTION 2
SCALE: 1/32" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"



SUBBASE AND BACKFILL NOTES:

- SUBBASE PREPARATION SHALL BE AS FOLLOWS:
 - BENEATH SLABS-ON-GRADE: 6\"/>
- BACKFILL ALL STRUCTURES WITH SOIL THAT MEETS MINIMUM PROPERTIES IDENTIFIED IN THE GEOTECHNICAL NOTES AND PROJECT GEOTECHNICAL REPORT.

MHE

ENGINEERING

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111 Wheatfield Drive, Suite 1
Millport, PA 15207
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BID SET

HAZARDOUS MATERIAL NOTE:
THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.

UDIG-NY
SAFE DIGGING STARTS HERE
CALL 811

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CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR BASIN AND
ENCLOSURE SECTIONS
CONTINUED

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR. 2025
DESIGN BY: WPG, NEM, PIW
DRAWN BY: WPG, NEM, PIW
CHECKED BY: PJW
REVIEWED BY: JSS
SHEET NO.

S-524

PROJECT # 18-732 PHASE #

SUBBASE AND BACKFILL NOTES:

- SUBBASE PREPARATION SHALL BE AS FOLLOWS:
 - BENEATH SLABS-ON-GRADE: 6" COMPACTED LIFT OF CLEAN STONE
 - BENEATH FOUNDATIONS/MAT SLABS: 6" COMPACTED LIFT OF CRUSHED STONE
- BACKFILL ALL STRUCTURES WITH SOIL THAT MEETS MINIMUM PROPERTIES IDENTIFIED IN THE GEOTECHNICAL NOTES AND PROJECT GEOTECHNICAL REPORT.



33 Airport Center Drive, Suite 202 111 Wheatfield Drive, Suite 1
New Windsor, NY 12553 Milford, PA 18337
(845) 567-3100 (870) 296-2765

BID SET

HAZARDOUS MATERIAL NOTE:
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MBR BASIN AND ENCLOSURE SECTIONS CONTINUED

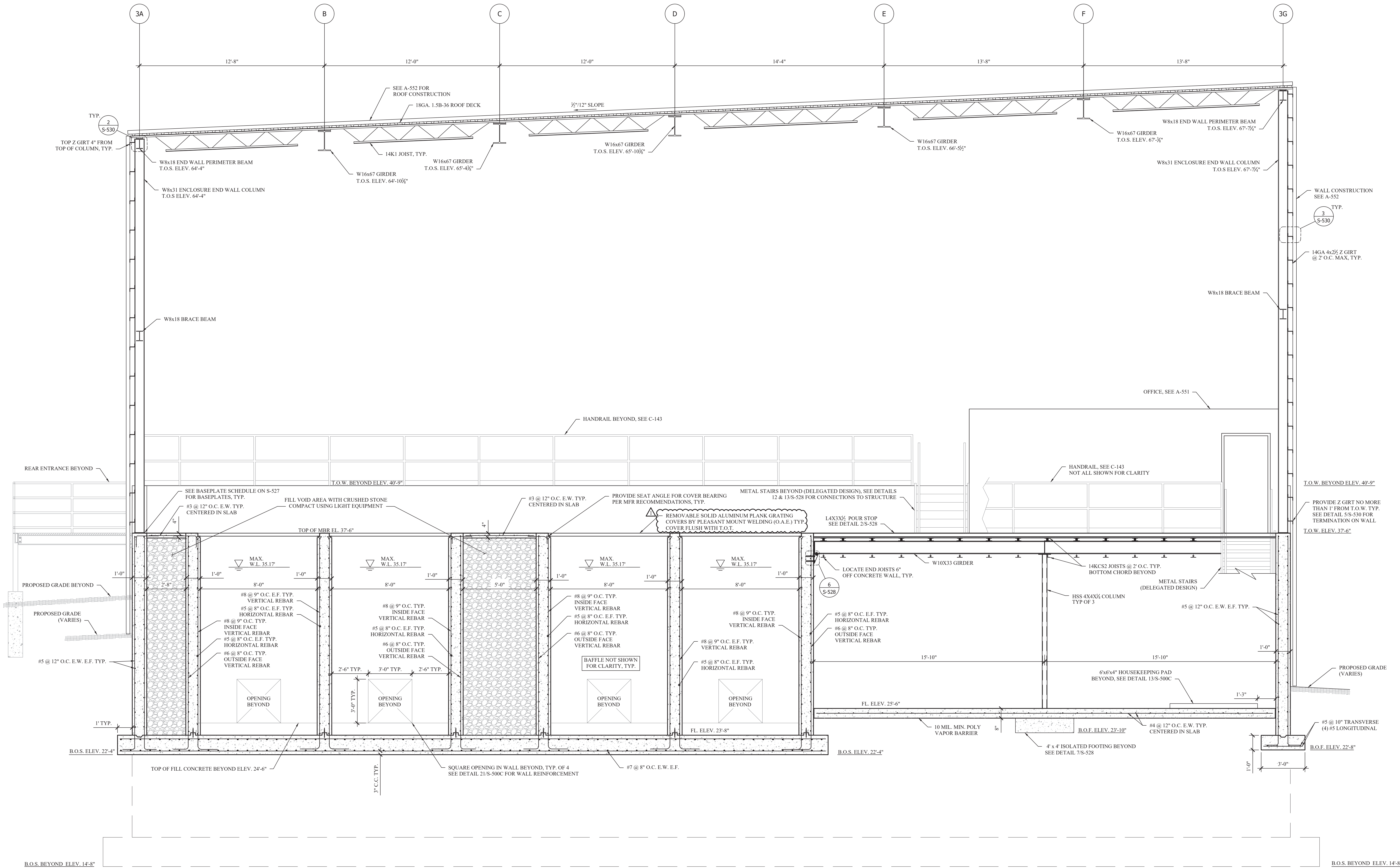
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDENDUM 4	07/10/25

ISSUED DATE: 18 APR. 2025
DESIGN BY: WPG, NEM, PIW
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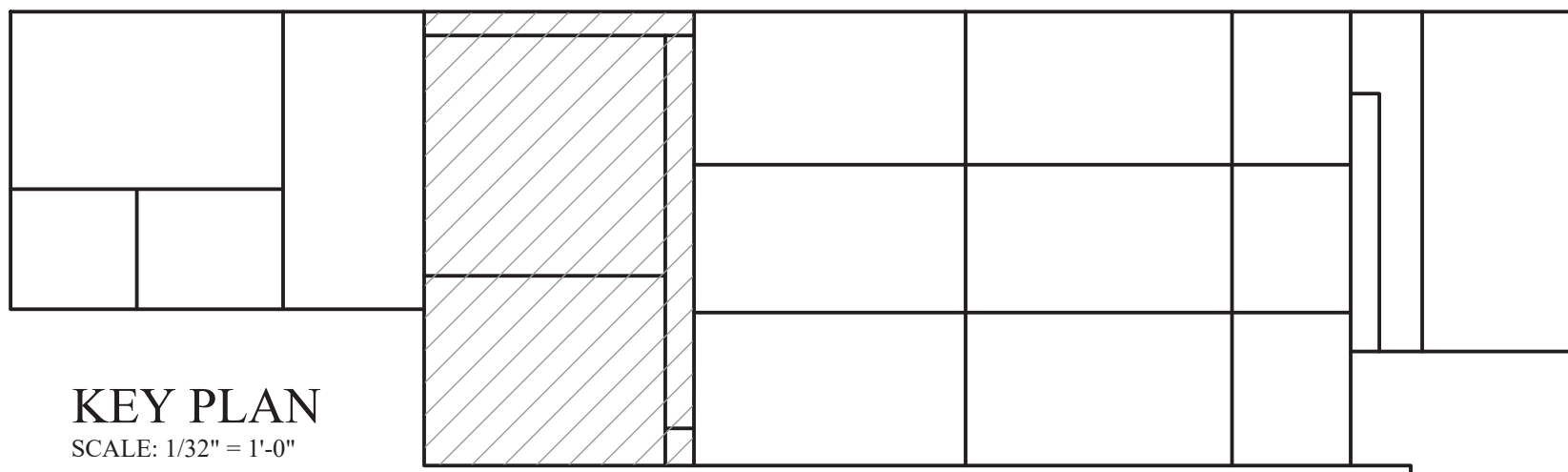
SHEET NO.

S-525

PROJECT # 18-732 PHASE #



SECTION 4
SCALE: 3/8" = 1'-0"



BOILER SCHEDULE														
UNIT TAG	LOCATION	SYSTEM FLUID	NATURAL GAS		OUTPUT MBH	BOILER HP	% EFF	RELIEF VALVE (PSI)	ELECTRICAL		FLUE OUTLET CONNECTION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
			INPUT (MBH)	RATE (CFH)					VOLTS/ PH	MOP (AMPS)				
B-700	MECHANICAL	WATER	399	399	383	N/A	95	12	120/1	20	4"	WEIL-MCLAIN	EVG-399	①②
B-701	MECHANICAL	WATER	399	399	383	N/A	95	12	120/1	20	4"	WEIL-MCLAIN	EVG-399	①②
① PROVIDE WITH CONCENTRIC VENT AND CONDENSATE NEUTRALIZER KIT.														
② PROVIDE WITH BOILER CONTROLS/PUMP CONTROLLERS AS NECESSARY FOR OPERATION OF CIRCULATING PUMPS.														

PUMP SCHEDULE													
UNIT TAG	LOCATION	SERVICE	SYSTEM FLUID	GPM	HEAD FT. WG	RPM	ELECTRICAL			BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER		REMARKS
							HP	VOLTS	PHASE				
P-700	MECHANICAL	HWS&R LOOP	WATER	56	40	1578	2	460	3	BELL&GOSSETT	E-90		①②
P-701	MECHANICAL	HWS&R LOOP	WATER	56	40	1579	2	460	3	BELL&GOSSETT	E-90		①②
BP-700	MECHANICAL	B-700	WATER	29	25	1725	1/2	460	3	TACO	0013		③
BP-701	MECHANICAL	B-701	WATER	29	25	1725	1/2	460	3	TACO	0013		③
① PROVIDE W/ VFD.													
② PUMPS TO OPERATE AS DUTY/STANDBY.													
③ BOILER PUMPS TO BE PROVIDED BY BOILER MANUFACTURER.													

EXPANSION TANK SCHEDULE										
UNIT TAG	SERVICE	TYPE	ACCEPTANCE VOLUME (GAL)	TANK VOLUME (GAL)	DIAMETER (IN)	LENGTH (IN)	FILL PRESSURE (PSI)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
EXT-700	BOILER SYSTEM	DIAPHRAGM	6.3	7.8	12	19	12	BELL & GOSSETT	D-15	

AIR SEPARATOR SCHEDULE										
UNIT TAG	LOCATION	SERVICE	TYPE	GPM	WPD FT-H ₂ O	CONN. SIZE (IN)	VELOCITY FPM	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
AS-700	MECHANICAL	BOILER SYSTEM	TANGENTIAL	56	0.2	3	144	BELL&GOSSETT	ROLAIRTROL RL-3F	

STATIONARY ROOF VENTILATOR SCHEDULE									
UNIT TAG	LOCATION	SERVICE	CFM	THROAT DIMENSIONS	FREE AREA (SQ. FT.)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER		REMARKS
SRV-300	SLUDGE PIT	SLUDGE PIT	250	8X8	0.44	GREENHECK	FGI		①
SRV-400	ATAD BUILDING	EQUIPMENT ROOM	3000	30X30	6.25	GREENHECK	FGI		①
SRV-500	MBR BUILDING	INFLUENT DRY WELL	675	14X14	1.36	GREENHECK	FGI		①
① PROVIDE WITH 14" HIGH INSULATED ALUMINUM ROOF CURB AND 120V AAD (NEMA 4X ACTUATOR/ENCLOSURE).									

AIR INLET AND OUTLET SCHEDULE						
TYPE	DESCRIPTION	SERVICE	FACE SIZE (NECK SIZE)	MOUNTING TYPE	BASIS OF DESIGN MANUFACTURER AND MODEL	REMARKS
S1	DIFFUSER	SUPPLY	24X24	LAY-IN	PRICE SCD	①
S2	GRILLE	SUPPLY	SEE PLANS	TO DUCT	PRICE 720 SERIES	①
R1	GRILLE	RETURN	24X24/12X12	LAY-IN	PRICE 80 SERIES	①
E1	GRILLE	EXHAUST	SEE PLANS	TO DUCT	PRICE 730 SERIES	①
① PROVIDE WITH BALANCING DAMPER						

DUCTLESS SPLIT SYSTEM SCHEDULE																			
INDOOR UNIT										OUTDOOR UNIT									
UNIT TAG	LOCATION	ARRANGEMENT	INSTALLATION HEIGHT AFF (APPROX)	TOTAL COOLING (BTU/H)	MIN SEER	HEATING CAPACITY (BTU/H)	SUPPLY CFM HIGH/LOW	ELECTRICAL			REMARKS	UNIT TAG	LOCATION	INSTALLATION HEIGHT AFG (APPROX)	SERVICE	ELECTRICAL			REMARKS
								VOLTS	PHASE	MOP						VOLTS	PHASE	MOP	
HWU-400	ATAD BUILDING	HIGH WALL MOUNT	7'-0"	33,000	18.5	35,200	883/601	208	1	30	①	DSCU-400	ROOF	-	HWU-400	208	1	30	LG
HWU-500	MBR BUILDING	HIGH WALL MOUNT	7'-0"	12,000	22.7	13,600	282/177	208	1	20	①	DSCU-500	EXTERIOR WALL	8'-0"	HWU-500	208	1	20	LG
HWU-700	DEWATERING BUILDING	HIGH WALL MOUNT	7'-0"	12,000	22.7	13,600	282/177	208	1	20	①	DSCU-700	ROOF	-	HWU-700	208	1	20	LG
HWU-701	DEWATERING BUILDING	HIGH WALL MOUNT	7'-0"	12,000	22.7	13,600	282/177	208	1	20	①	DSCU-701	ROOF	-	HWU-700	208	1	20	LG
F-700 CC	DEWATERING BUILDING	CASED COIL	-	60,000	13	-	1575	-	-	-	①	DSCU-702	ROOF	-	F-700 CC	208	1	50	COMFORTAIRE
① PROVIDE WITH LOW AMBIENT WIND BAFFLE KIT, REMOTE CONTROLLER, BASE PAN HEATER, AND HIGH LIFT CONDENSATE PUMP.																			
② MOUNT EXTERIOR DUCTLESS SPLIT CONDENSING UNIT ON WALL MOUNT BRACKET/STAND PER MANUFACTURER RECOMMENDATIONS.																			
③ MOUNT EXTERIOR DUCTLESS SPLIT CONDENSING UNIT ON ROOF MOUNT QUICKSLING (NON-PENETRATING) STAND AND INSTALL PER MANUFACTURER RECOMMENDATIONS.																			

FURNACE SCHEDULE																
UNIT TAG	LOCATION	SERVICE	SA CFM	OA CFM (MIN)	ESP (IN WG)	ELECTRICAL				DX COOLING COIL				GAS HEATING		
						MOP	VOLTS	PHASE	FLA	NOMINAL TONNAGE	INPUT MBH	OUTPUT MBH	RISE (°F)	AFUE	SEER	REMARKS
F-700	DEWATERING BUILDING	OFFICE/LOCKER AREA	1575	175	0.8	20	120	1	12.8	5	110	106	80	97	14	COMFORT-AIRE
① PROVIDE WITH LP CONVERSION KIT, LOW VOLTAGE HONEYWELL PRESTIGE 2.0 THERMOSTAT, AND CONCENTRIC VENT KIT.																

EXHAUST FAN SCHEDULE																
UNIT TAG	LOCATION	SERVICE	ARRANGEMENT	DRIVE	CFM	SP (IN WG)	FAN RPM	MAX SONES	WALL / ROOF OPENING SIZE (MAX)	BOTTOM OF FAN HEIGHT AFF (APPROX)	ELECTRICAL			BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	REMARKS
											HP (W)	VOLTS	PHASE			
EF-200	HEADWORKS BUILDING	BAR SCREEN ROOM	IN-LINE	BELT	2650	0.3	1235	-	-	8'-4"	1/2	120	1	GREENHECK	QEI-15	①
EF-201	HEADWORKS BUILDING	ELECTRICAL ROOM	IN-LINE	DIRECT	500	0.3	1522	-	-	9'-4"	1/10	120	1	GREENHECK	SQ-90-VG	② ③
EF-300	SLUDGE PIT	SLUDGE PIT	ROOF MOUNT	DIRECT	250	0.3	1569	5	13.5"X13.5"	-	1/15	120	1	GREENHECK	G-070-VG	②
EF-301	SLUDGE VALVE PIT	SLUDGE VALVE PIT	IN-LINE	DIRECT	400	0.3	1379	-	-	2'-0"	1/10	120	1	GREENHECK	SQ-90-VG	⑩
EF-400	ATAD BUILDING	EQUIPMENT ROOM	IN-LINE	DIRECT	3000	0.3	1139	-	-	9'-0"	3/4	208	1	GREENHECK	SQ-160-VG	④ ⑤
EF-401	ATAD BUILDING	THICKENING ROOM	IN-LINE	DIRECT	925	0.3	1318	-	-	9'-4"	1/4	120	1	GREENHECK	SQ-100-VG	⑤
EF-500	MBR BUILDING	CHEMICAL ROOMS	IN-LINE	DIRECT	600	0.5	1689	-	-	8'-6"	1/6	120	1	GREENHECK	SQ-95-VG	⑤
EF-501	MBR BUILDING	RAS PUMP ROOM	WALL MOUNT	DIRECT	3900	0.3	1434	21	18"X18"	25'-0"	2	208	1	GREENHECK	CUE-160-VG	⑥
EF-502	MBR BUILDING	BLOWER ROOM	WALL MOUNT	DIRECT	5000	0.3	982	19	26"X26"	13'-0"	2	208	1	GREENHECK	CUE-200-VG	⑥ ③
EF-503	MBR BUILDING	BLOWER ROOM	WALL MOUNT	DIRECT	5000	0.3	982	19	26"X26"	13'-0"	2	208	1	GREENHECK	CUE-200-VG	⑥ ③
EF-504	MBR BUILDING	ELECTRICAL ROOM	CEILING	DIRECT	500	0.3	1212	7	-	8'-0"	(12)	120	1	GREENHECK	SP-A510-VG	⑨ ③
EF-505	MBR BUILDING	MEMBRANE AREA	WALL MOUNT	DIRECT	2500	0.3	1479	16	18"X18"	24'-0"	3/4	208	1	GREENHECK	CUE-140-VG	⑥ ③
EF-506	MBR BUILDING	MEMBRANE AREA	WALL MOUNT	DIRECT	2500	0.3	1479	16	18"X18"	24'-0"	3/4	208	1	GREENHECK	CUE-140-VG	⑥ ③
EF-507	MBR BUILDING	MEMBRANE AREA	WALL MOUNT	DIRECT	2500	0.3	1479	16	18"X18"	24'-0"	3/4	208	1	GREENHECK	CUE-140-VG	⑥ ③
EF-508	MBR BUILDING	MEMBRANE AREA	WALL MOUNT	DIRECT	2500	0.3	1479	16	18"X18"	24'-0"	3/4	208	1	GREENHECK	CUE-140-VG	⑥ ③
EF-509	MBR BUILDING	FINE SCREEN ROOM	IN-LINE	DIRECT	1100	0.3	1488	-	-	9'-0"	1/4	120	1	GREENHECK	SQ-100-VG	④
EF-510	MBR BUILDING	INFLUENT DRY WELL	ROOF MOUNT	DIRECT	675	0.3	1670	9	13"X13"	-	1/10	120	1	GREENHECK	G-090-VG	⑦
EF-700	DEWATERING BUILDING	DUMPSTER AREA & MECHANICAL	IN-LINE	DIRECT	2700	0.6	1147	-	-	8'-0"	3/4	208	1	GREENHECK	SQ-160-VG	④
EF-701	DEWATERING BUILDING	MECHANICAL OPERATIONS ROOM	IN-LINE	DIRECT	2600	0.3	1019	-	-	8'-0"	3/4	208	1	GREENHECK	SQ-160-VG	④
EF-702	DEWATERING BUILDING	LOCKER ROOMS	ROOF MOUNT	DIRECT	445	0.6	1550	-	12.5"X12.5"	-	1/8	120	1	GREENHECK	G-095-VG	⑦
EF-950	GARAGE	GARAGE	WALL MOUNT	DIRECT	1800	0.3	1107	-	27.38"X27.38"	8'-0"	1/2	120	1	GREENHECK	AER-20-03-0615-VG	⑥
① PROVIDE WITH ALUMINUM/SPARK RESISTANT CONSTRUCTION, EXPLOSION PROOF MOTOR, EXPLOSION PROOF DISCONNECT SWITCH (NEMA-7), ALUMINUM MOTOR COVER, MOUNTING RAIL/VIBRATION ISOLATORS, EPOXY COATING, AND SPARE BELT. EQUIPMENT AND ACCESSORIES TO BE RATED FOR USE IN A CLASS 1, DIV 1 SPACE.																
② PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH, INLET GUARD, AND VIBRATION ISOLATORS.																
③ CONTROL BY LINE VOLTAGE REVERSE-ACTING (COOLING) THERMOSTAT. UPON A RISE IN TEMPERATURE ABOVE 85°F (ADJUSTABLE), FAN SHALL ENABLE.																
④ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), INLET GUARD, VIBRATION ISOLATORS, AND EPOXY COATING.																
⑤ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), VIBRATION ISOLATORS, AND EPOXY COATING.																
⑥ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), WALL BRACKET, AND 120V AAD (NEMA 4X ACTUATOR/ENCLOSURE).																
⑦ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), 12" HIGH ROOF CURB, AND 120V AAD (NEMA 4X ACTUATOR/ENCLOSURE).																
⑧ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), WALL HOUSING/SLEEVE, OSHA APPROVED MOTOR/FAN GUARD, 120V AAD (NEMA 4X ACTUATOR/ENCLOSURE), AND 45" WEATHERHOOD.																
⑨ PROVIDE WITH SPEED CONTROLLER, DISCONNECT SWITCH, AND VIBRATION ISOLATORS.																
⑩ PROVIDE WITH ALUMINUM CONSTRUCTION, SPEED CONTROLLER (VG MOTOR), UNIT MOUNTED DISCONNECT SWITCH (NEMA-4X), INLET GUARD, VIBRATION ISOLATORS, GRAVITY BACKDRAFT DAMPER, AND EPOXY COATING.																

BID ADDENDUM



JADE STONE
ENGINEERING

GENERAL SHEET NOTES:

1. REFER TO E-001 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
3. ALL CONDUCTORS NOT SHOWN FOR CLARITY. COORDINATE WITH ALL PRIME CONTRACTORS AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
4. REFER TO FLOOR PLANS FOR GENERAL DEVICE/EQUIPMENT LOCATIONS. COORDINATE FINAL LOCATIONS WITH PROCESS MECHANICAL DRAWINGS. REFER TO SITE PLAN FOR DUCT BANK INFORMATION.
5. REFER TO SINGLE LINE DIAGRAMS, SPECIFICATIONS, AND SUBMITTAL DOCUMENTATION FOR ADDITIONAL INFORMATION/REQUIREMENTS.
6. CONTRACTOR TO COORDINATE ALL ASPECTS OF SEQUENCE OF CONSTRUCTION WITH OWNER AND ALL OTHER TRADE CONTRACTORS.
7. CIRCUITS SHOWN ARE POWER, CONTROL, INSTRUMENTATION, AND CONTROL CIRCUIT POWER. REFER TO SINGLE LINE DIAGRAMS, SCHEDULES, AND DETAILS FOR ADDITIONAL CIRCUITS.
8. ALL WIRING REQUIREMENTS INCLUDING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
9. QUANTITY OF CONDUCTORS CALLED FOR MAY INCLUDE SPARE CONDUCTORS. PROVIDE CONDUCTORS SHOWN OR MINIMUM NUMBER REQUIRED PER MANUFACTURERS WRITTEN INSTRUCTIONS. ALL REQUIREMENTS TO BE PER NEC.
10. CONTRACTOR TO PROVIDE ARC FLASH WARNING LABELS FOR ALL NEW OR MODIFIED ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
11. REFER TO ELECTRICAL DETAIL SHEETS AND SCHEDULE SHEETS FOR ADDITIONAL INFORMATION/REQUIREMENTS.
12. CONTRACTOR TO COORDINATE MOUNTING LOCATIONS OF ALL PANELS WITH OWNER AND ALL OTHER TRADE CONTRACTORS. PROVIDE ALL NECESSARY MOUNTING HARDWARE, BRACKETS, ACCESSORIES, ETC.
13. PROVIDE INTRINSICALLY SAFE BARRIERS AS REQUIRED INTERNAL TO CONTROL PANELS. ALL REQUIREMENTS TO BE PER NEC.
14. NOT ALL REQUIRED CLASSIFIED SPACE WIRING METHODS INCLUDING, BUT NOT LIMITED TO SEAL-OFFS MAY BE SHOWN. PROVIDE WIRING METHODS PER NEC (LATEST EDITION). PROVIDE CONDUIT UNION WITHIN 6" OF EACH SEAL-OFF AT CONTROL PANELS, DISTRIBUTION PANELS, VFDs, STARTERS, DISCONNECTS, OR SOURCE OF SUPPLY WHERE FEASIBLE.
15. NOT ALL REQUIRED THRU-WALL, WATERTIGHT, CONDUIT PENETRATIONS SHOWN FOR CLARITY. CONTRACTOR TO PROVIDE A THRU-WALL, WATERTIGHT, CONDUIT PENETRATION FOR ALL CONDUIT PENETRATIONS WITHIN BUILDING INTERIOR/EXTERIOR WALLS AND FLOORS. REFER TO ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION. COORDINATE WITH OWNER AND ALL OTHER TRADE CONTRACTORS PRIOR TO ROUGH-IN.
16. CONTRACTOR TO COORDINATE ALL CONDUIT PENETRATIONS AND CONDUIT ROUTING WITH ALL OTHER TRADE CONTRACTORS AND OWNER PRIOR TO ROUGH-IN.
17. ALL CONDUCTORS TO BE COPPER AND CONTAIN THWN OR XHHW INSULATION.
18. ALL CONTROL/COMMUNICATION WIRING REQUIREMENTS INCLUDING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
19. ALL PROPOSED EQUIPMENT LOCATIONS/INSTALLATIONS TO COMPLY WITH NEC ARTICLE 110.26 "SPACES ABOUT ELECTRICAL EQUIPMENT".

SHEET KEY NOTES:

1. NOT ALL INTERNAL COMPONENTS SHOWN FOR CLARITY. DIAGRAM IS INTENDED TO SHOW ALL REQUIRED FIELD CIRCUITING REQUIRED UNDER THIS CONTRACT. REFERENCE SUBMITTAL DOCUMENTATION FOR ALL PANEL INTERNAL COMPONENTS. CONTRACTOR TO PROVIDE ADDITIONAL INTERNAL CONTACTS AND JUMPERS PER CONTROL PANEL MANUFACTURERS RECOMMENDATIONS FOR AN OVERALL COMPLETE AND OPERABLE SYSTEM.
2. CONTROL PANEL AND ALL INTERNAL COMPONENTS ARE BY THIS CONTRACT. THIS CONTRACT IS RESPONSIBLE FOR ALL FIELD WIRING BETWEEN DEVICES, TERMINATIONS, AND MOUNTING/INSTALLATION OF PANEL AS SHOWN/INDICATED. REFER TO SUBMITTAL DOCUMENTATION AND COORDINATE WITH ALL OTHER TRADE CONTRACTORS TO PROVIDE COMPLETE SYSTEM FIELD CIRCUITRY AND TERMINATIONS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
3. DISCONNECT SIZE SHOWN FOR BIDDING PURPOSES ONLY. COORDINATE DISCONNECT SIZE WITH EQUIPMENT MANUFACTURERS RECOMMENDATIONS. COORDINATE CONDUCTOR/CONDUIT SIZE WITH MANUFACTURERS RECOMMENDED DISCONNECT SIZE. ALL REQUIREMENTS TO BE PER NEC.
4. (2)#18STP, 3/4"C.
5. (1) CAT 6A PREMIUM ETHERNET CABLE, 1"C. PROVIDE AS PLENUM RATED WITH 4 BONDED PAIRS. TO BE BELDEN #3633 OR APPROVED EQUAL.
6. (2)#14, 1"C.
7. (4)#14, 3/4"C. CIRCUIT TO BE UTILIZED FOR THE ASSOCIATED MOTOR THERMAL SAFETY SWITCH. CIRCUIT TO CONTROL TERMINALS OF PROPOSED VFD. IN THE EVENT OF A MOTOR HIGH TEMPERATURE, THE UNIT IS TO BE SHUT DOWN TO PREVENT DAMAGE. NOTE: TWO CONDUCTORS TO BE UTILIZED AS SPARES.
8. CONTRACTOR TO PROVIDE JUNCTION/PULL BOXES AS REQUIRED. COORDINATE FINAL LOCATIONS WITH OTHER TRADE CONTRACTORS (NOTE: JUNCTION BOXES ARE NOT ALWAYS SHOWN ON FLOOR PLANS. CONTRACTOR TO FIELD LOCATE AS NECESSARY). JUNCTION BOXES ARE TO BE RATED FOR ENVIRONMENT INSTALLED, INCLUDING BUT NOT LIMITED TO HAZARDOUS ENVIRONMENTS, CORROSIVE AREAS AND OUTDOORS INSTALLATIONS. CONTRACTOR TO SIZE JUNCTION BOXES PER NEC ARTICLE 314, TYPICAL OF ALL JUNCTION BOXES SHOWN ON THIS DRAWING.
9. (3)#14, 3/4"C. PROVIDE AS VFD SHIELDED CABLE. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER DIAMETER AS REQUIRED PER MANUFACTURER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL REQUIREMENTS TO BE PER NEC.
10. PROVIDE CONDUIT BUSHING, FITTING, OR FLEX CONNECTION AS REQUIRED FOR PROPER CONNECTION OF DEVICE. ALL BUSHINGS, FITTINGS, OR FLEX CONNECTIONS TO BE SUITED FOR ENVIRONMENT INSTALLED WITHIN. COORDINATE WITH EQUIPMENT MANUFACTURER. FLEX CONNECTION LENGTHS TO BE MINIMIZED TO GREATEST EXTENT POSSIBLE. TYPICAL.
11. (4)#18STP, 3/4"C.
12. (20)#14, 1"C.
13. FACTORY CABLE BY THIS CONTRACT. THIS CONTRACT RESPONSIBLE FOR ALL TERMINATIONS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE 3/4" CONDUIT WHERE EXPOSED TO PHYSICAL DAMAGE AND RECOMMENDED BY THE EQUIPMENT MANUFACTURER. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER AS REQUIRED PER MANUFACTURER. COORDINATE FINAL INSTALLATION REQUIREMENTS WITH ALL OTHER TRADE CONTRACTORS.
14. (4)#14, 3/4"C.



HAZARDOUS MATERIAL NOTE:

THE SERVICES PROVIDED BY MHE, INCLUDING ALL WORK DEPICTED ON MHE PLANS, DO NOT INCLUDE SERVICES RELATED TO THE IDENTIFICATION, CONTROLS OR HANDLING OF HAZARDOUS MATERIALS, INCLUDING SUCH MATERIALS AS ASBESTOS AND LEAD PAINT. ALL TESTING, IDENTIFICATION, ABATEMENT, CONTROLS, AND HANDLING OF HAZARDOUS MATERIALS SHALL BE UNDERTAKEN BY A HAZARDOUS MATERIAL CONSULTANT AND CERTIFIED PROFESSIONALS. IF SUCH MATERIALS HAVE BEEN IDENTIFIED, CONTRACTOR WILL COMMUNICATE DIRECTLY WITH HAZARDOUS MATERIAL PROFESSIONAL FOR THE PERFORMANCE OF ANY WORK ON OR ADJACENT TO SAID MATERIALS. IF UNIDENTIFIED MATERIALS OF CONCERN ARE ENCOUNTERED WHILE UNDERTAKING THE WORK SHOWN HEREON, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER, AND SHALL OBTAIN DIRECTION FROM THE HAZARDOUS MATERIAL CONSULTANT PRIOR TO THE CONTINUATION OF WORK INVOLVING SUSPECTED MATERIAL.



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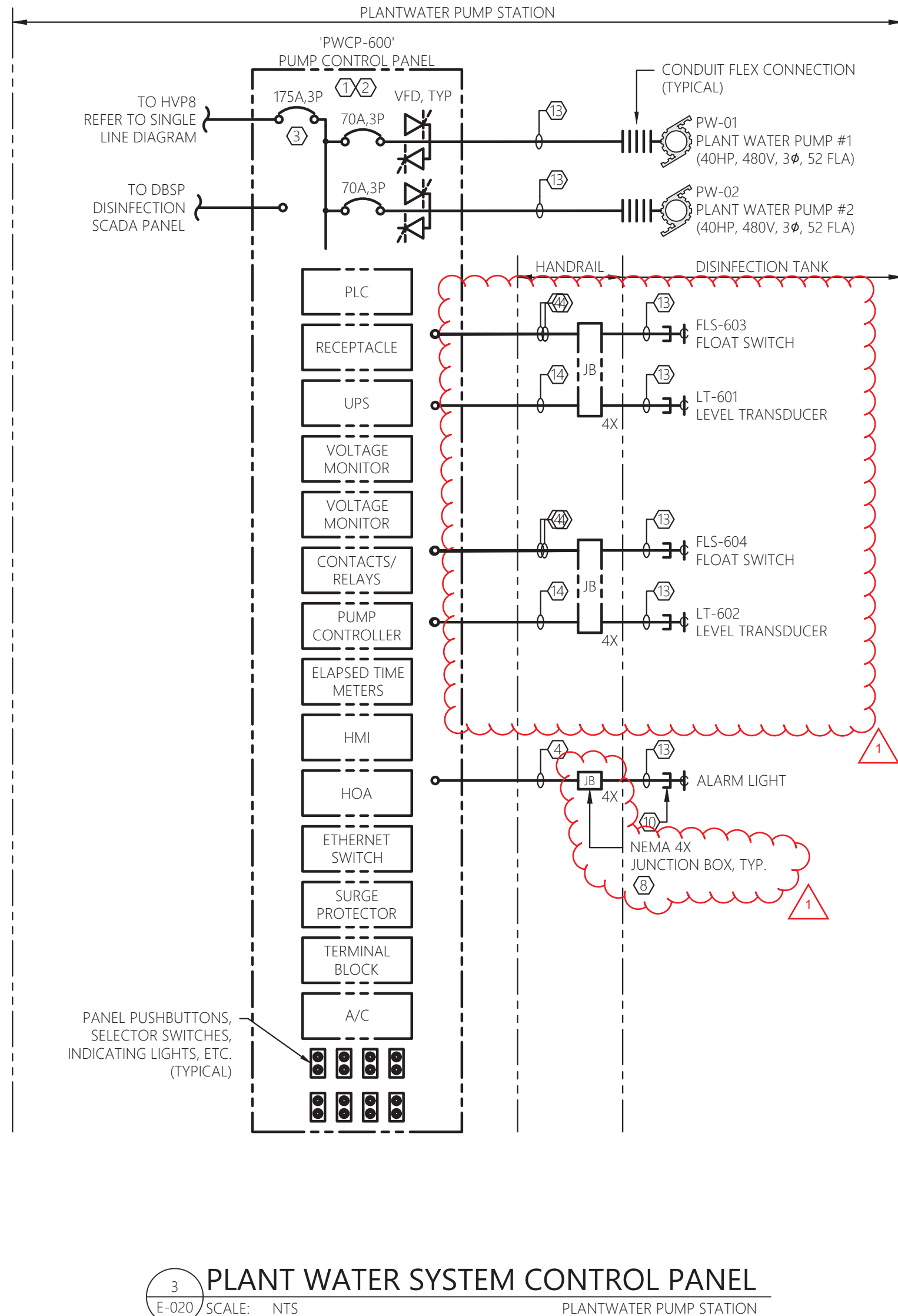
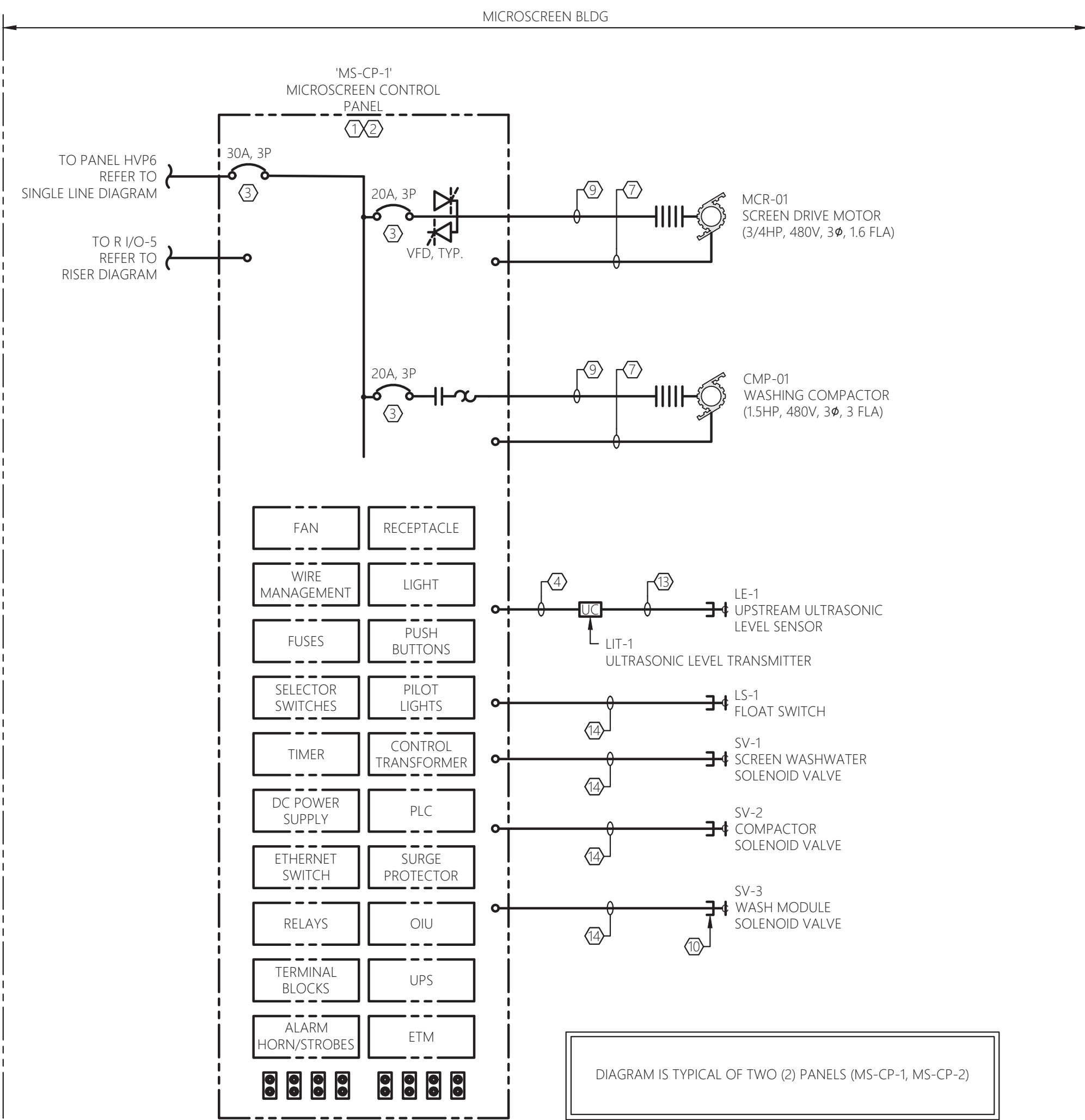
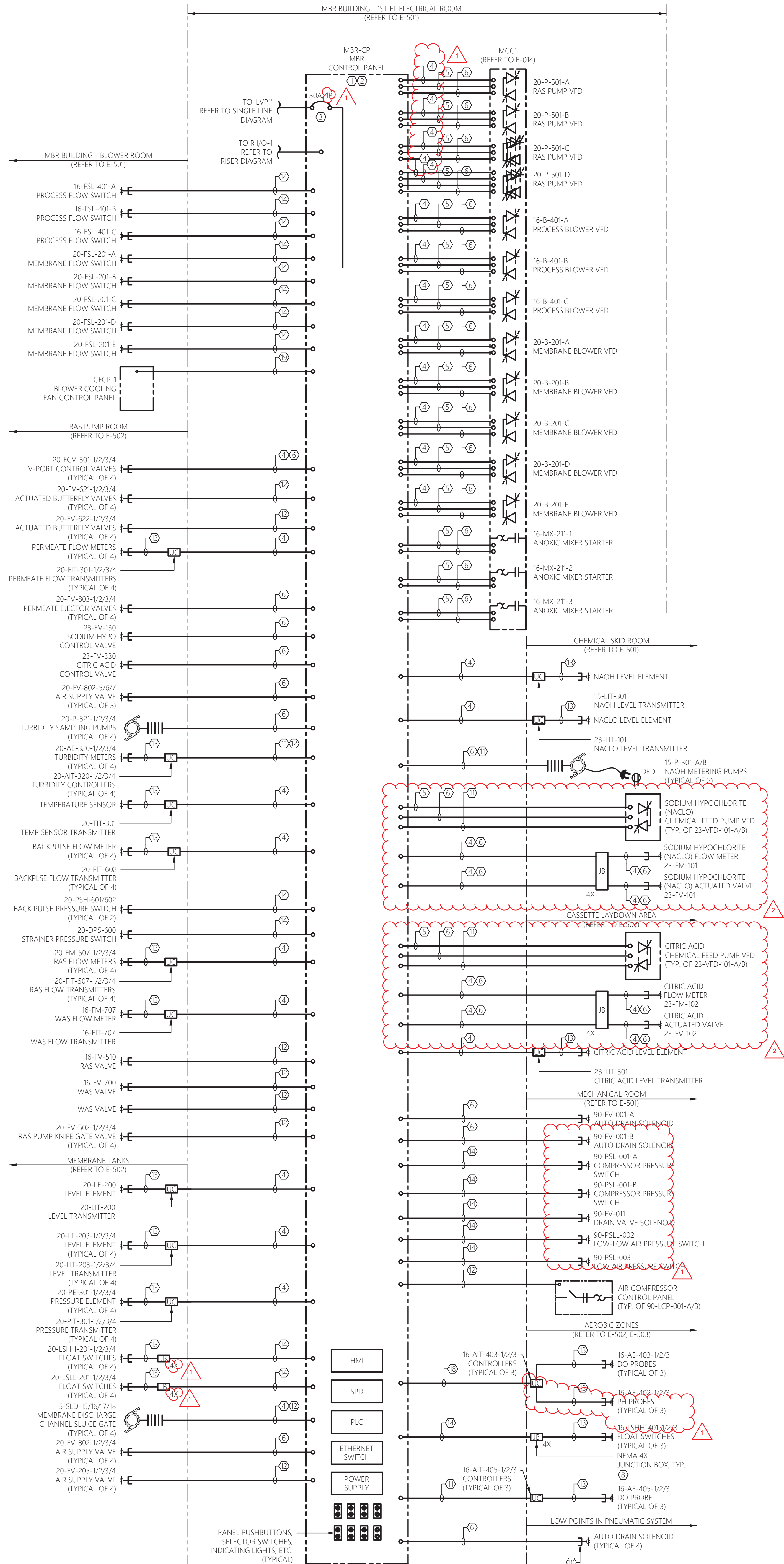
**CAESARS LANE WWTP
EXPANSION PROJECT:
PHASE 2**
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

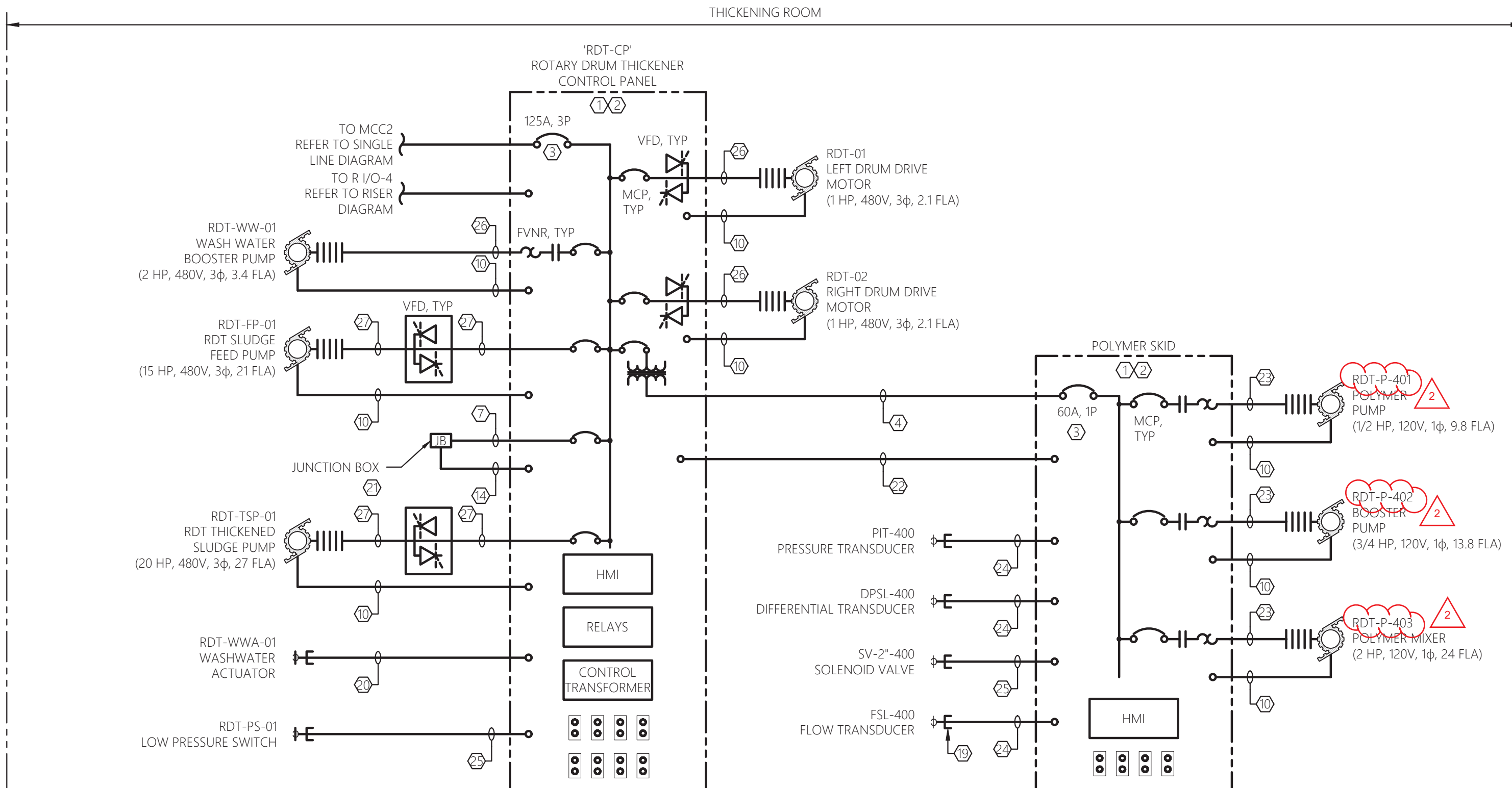
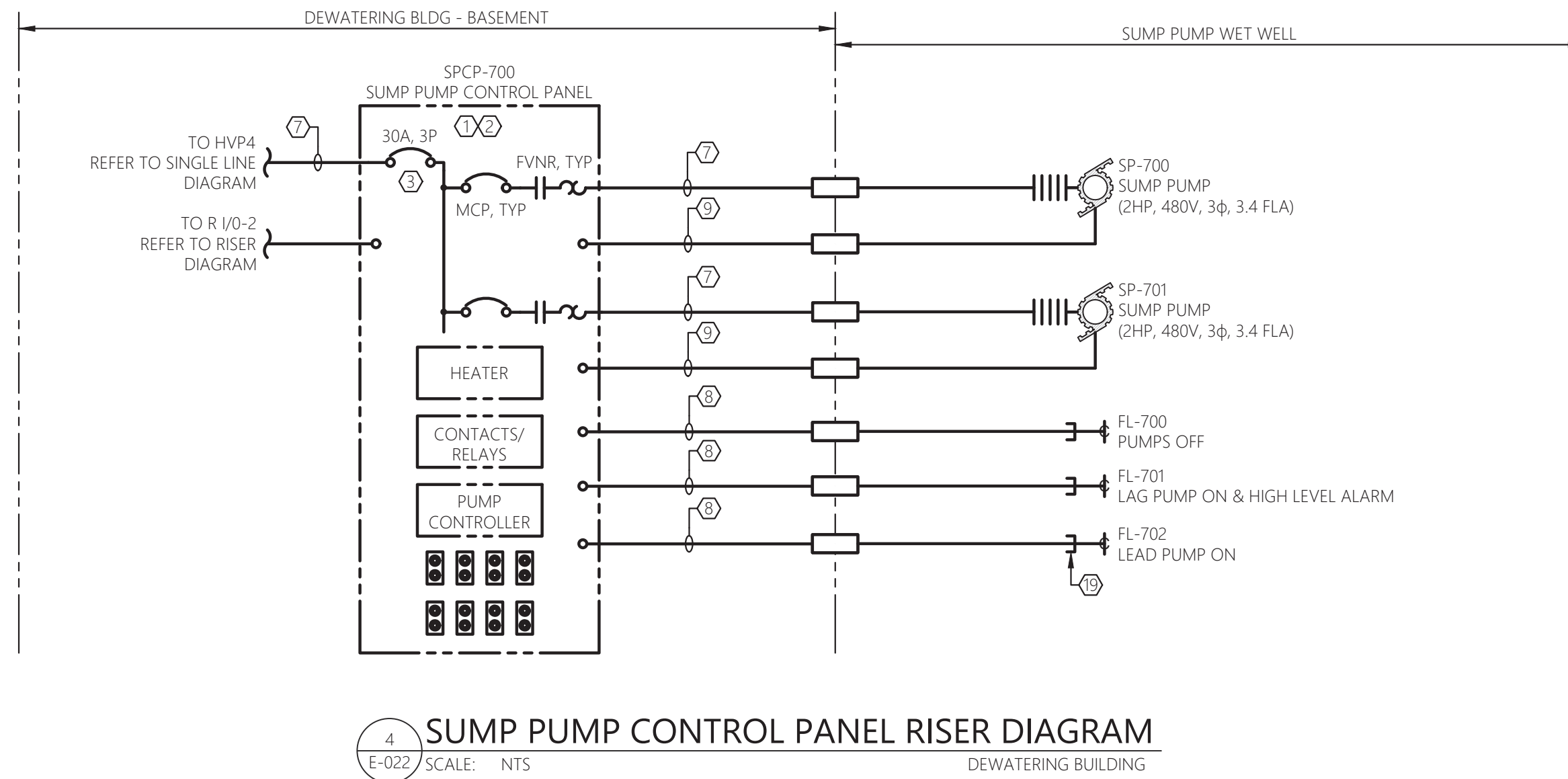
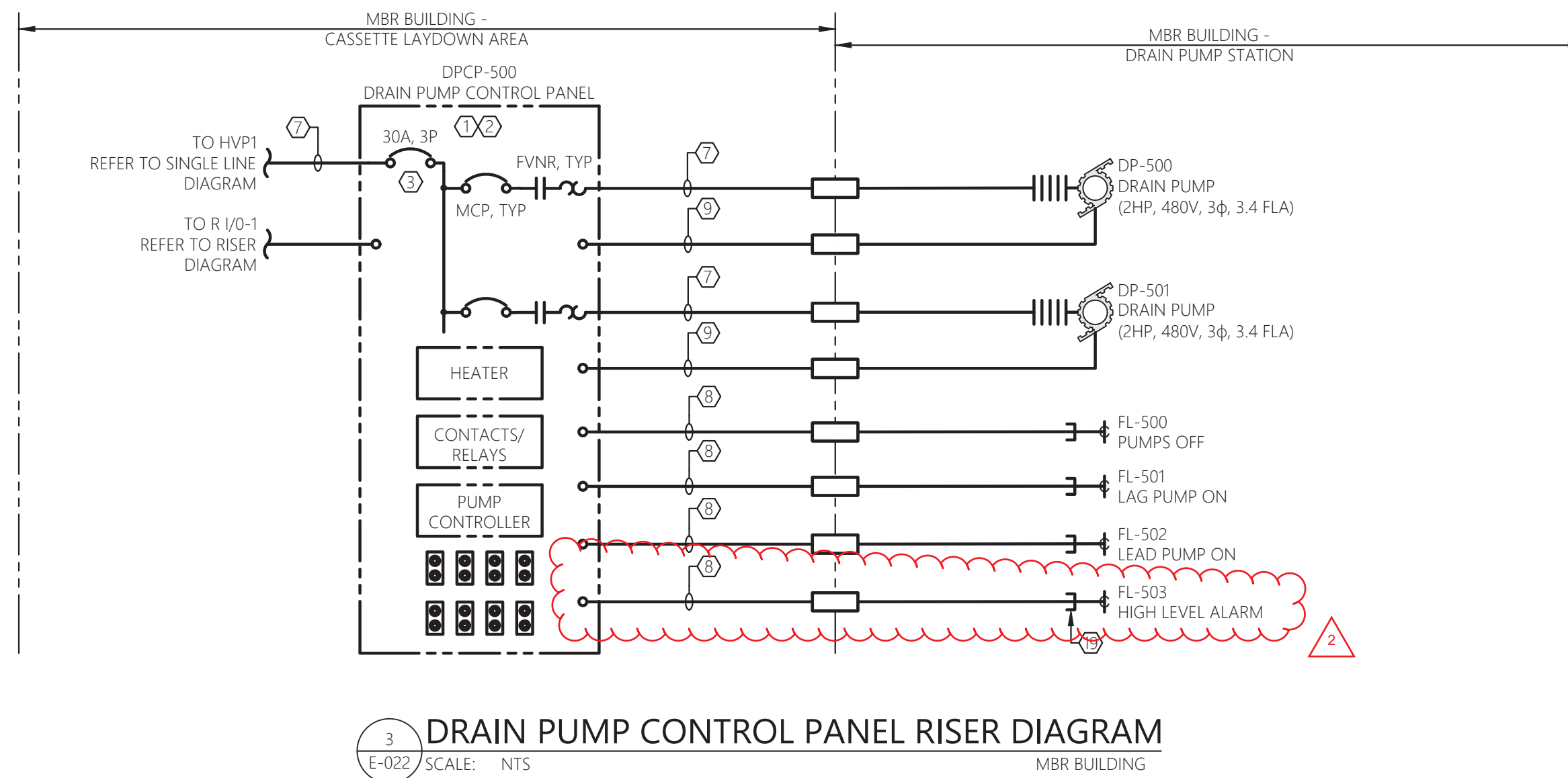
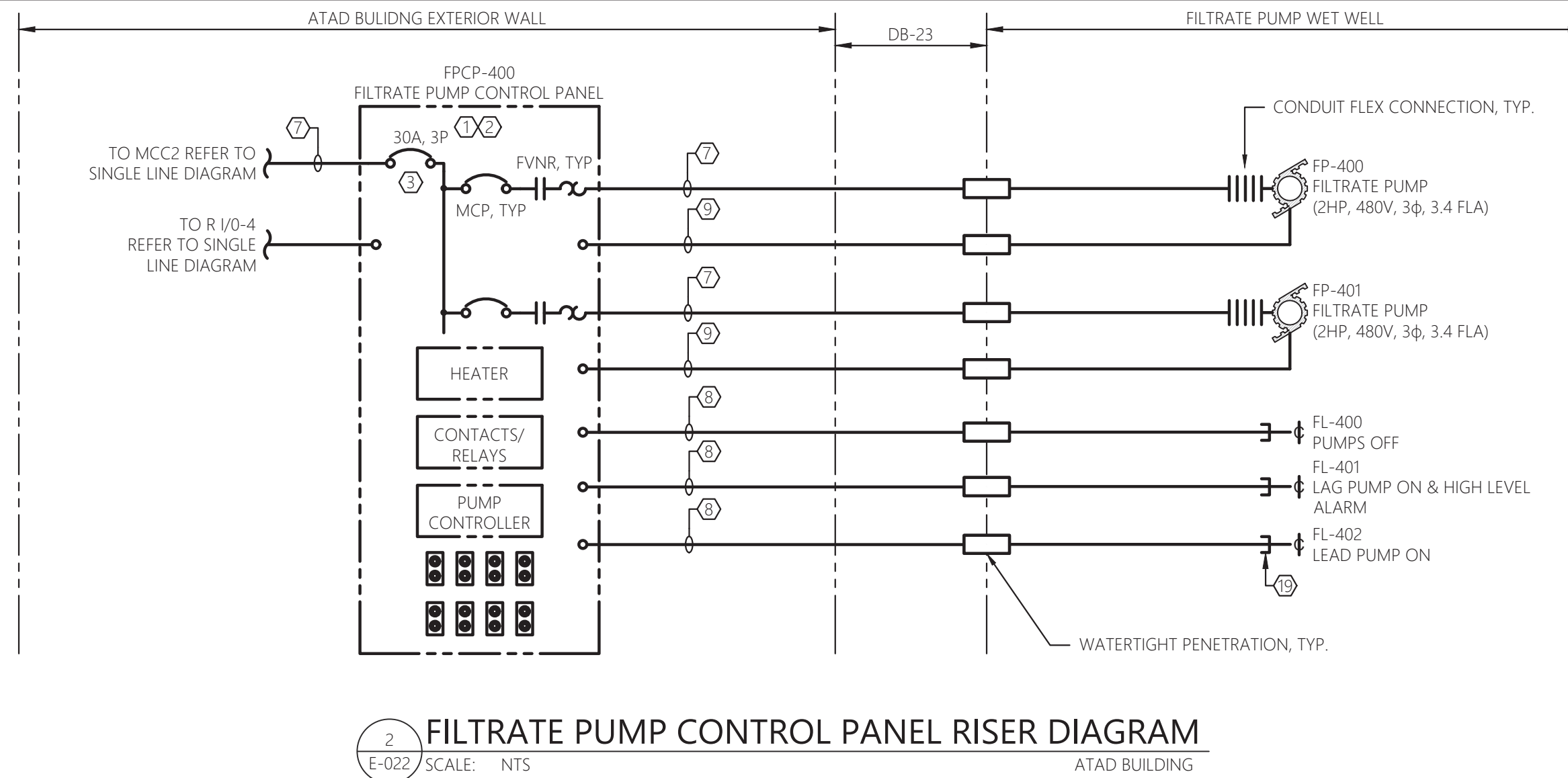
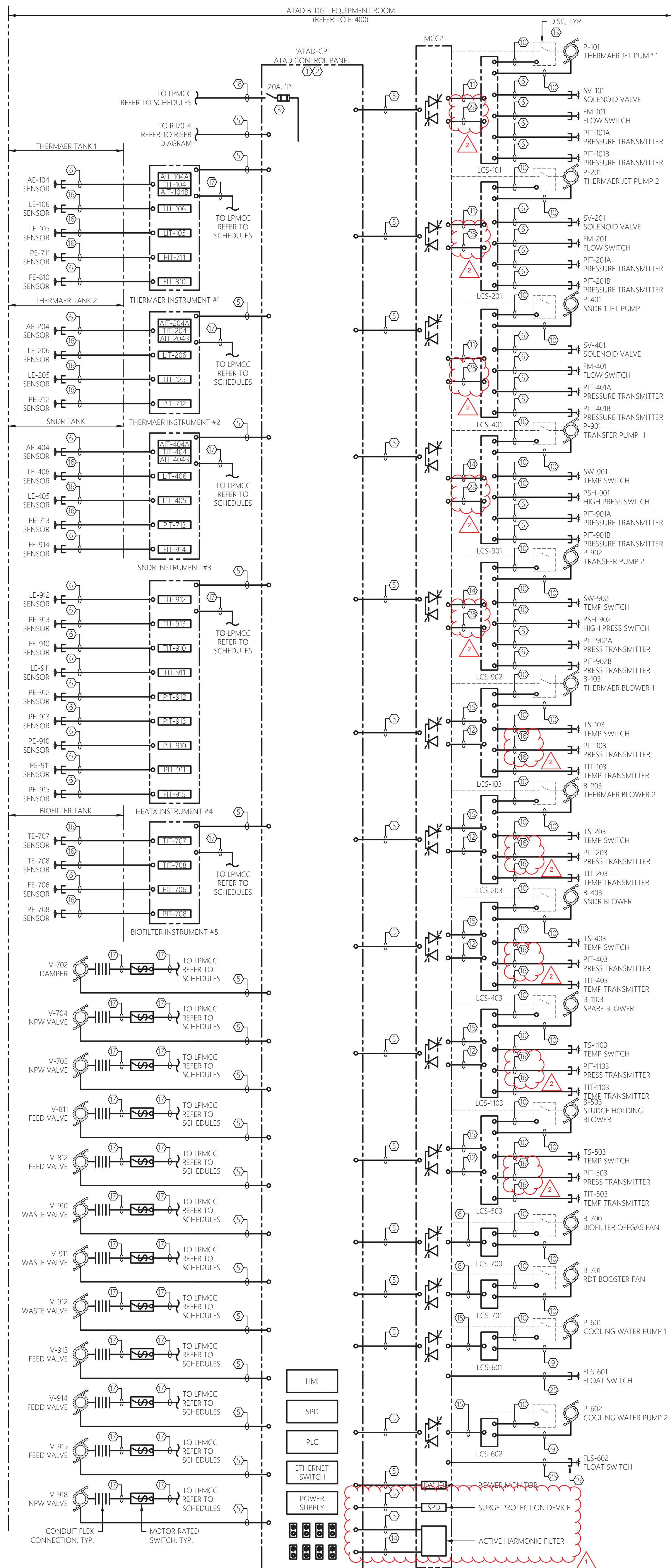
**ELECTRICAL
RISER DIAGRAMS**

REVISIONS		
NO.	DESCRIPTION	DATE
2	BID ADDENDUM	07/10/2025
1	BID ADDENDUM	06/27/2025
ISSUED DATE: 10 JULY, 2025		
DESIGN BY: RRM		
DRAWN BY: CDJ		
CHECKED BY: MGR		
REVIEWED BY: JER		
SHEET NO.		

E-020

PROJECT # 18-732 PHASE #





GENERAL SHEET NOTES:

1. REFER TO E-001 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
3. ALL CONDUCTORS NOT SHOWN FOR CLARITY, COORDINATE WITH ALL PRIME CONTRACTORS AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
4. REFER TO E-001 FOR PLACING OF ALL ELECTRICAL EQUIPMENT. LOCATIONS, ISOLATE FINAL LOCATIONS WITH PROCESS MECHANICAL DRAWINGS. REFER TO SITE PLAN FOR DUCT BANK INFORMATION.
5. REFER TO SINGLE LINE DIAGRAMS, SPECIFICATIONS, AND SUBMITTAL DOCUMENTATION FOR ADDITIONAL INFORMATION/REQUIREMENTS.
6. CONTRACTOR TO COORDINATE ALL ASPECTS OF SEQUENCE OF CONSTRUCTION WITH OWNER AND OTHER TRADE CONTRACTORS.
7. CIRCUITS SHOWN ARE POWER, CONTROL, INSTRUMENTATION, AND CONTROL CIRCUIT POWER. REFER TO SINGLE LINE DIAGRAMS, SCHEDULES, AND DETAILS FOR ADDITIONAL CIRCUITS.
8. ALL WIRING REQUIREMENTS CONCERNING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
9. QUANTITY OF CONDUCTORS CALLED FOR MAY INCLUDE SPARE CONDUCTORS. PROVIDE CONDUCTORS SHOWN OR MINIMUM NUMBER REQUIRED PER MANUFACTURER WRITTEN INSTRUCTIONS. ALL REQUIREMENTS TO BE PER NEC.
10. CONTRACTOR TO PROVIDE IAC FLASH WARNING LABELS FOR ALL NEW OR MODIFIED ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
11. REFER TO ELECTRICAL DETAIL SHEETS AND SCHEDULE SHEETS FOR ADDITIONAL INFORMATION/REQUIREMENTS.
12. CONTRACTOR TO COORDINATE MOUNTING LOCATIONS OF ALL PANELS WITH OWNER AND ALL OTHER TRADE CONTRACTORS. PROVIDE ALL NECESSARY MOUNTING-HARDWARE, BRACKETS, ACCESSORIES, ETC..
13. CONDUIT PENETRATIONS THROUGH ROOF OR FLOOR SHALL BE IN ACCORDANCE WITH ALL REQUIREMENTS TO BE PER NEC.
14. NOT ALL REQUIRED CLASSIFIED SPACE WIRING METHODS INCLUDING, BUT NOT LIMITED TO SPLIT OFFS MAY BE SHOWN. PROVIDE WIRING METHODS PER NEC (LATEST EDITION). PROVIDE CONDUIT UNION WITHIN 6' OF EACH SPLIT OFF. AT CONDUIT PANELS, DISTRIBUTION PANELS, VFDs, STARTERS, DISCONNECTS, OR SOURCE OF SUPPLY WHERE FEASIBLE.
15. NOT ALL REQUIRED THRU-WALL, WATERTIGHT, CONDUIT PENETRATIONS SHOWN FOR CLARITY. CONTRACTOR TO PROVIDE A THRU-WALL, WATERTIGHT, CONDUIT PENETRATIONS FOR ALL PENETRATIONS THROUGH BUILDING INTERIOR/EXTERIOR WALLS AND FLOORS. REFER TO ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION. COORDINATE WITH OWNER AND ALL OTHER TRADE CONTRACTORS PRIOR TO ROUGH-IN.
16. COORDINATE TO COORDINATE ALL CONDUIT PENETRATIONS AND CONDUIT ROUTING WITH ALL OTHER TRADE CONTRACTORS AND OWNER PRIOR TO ROUGH-IN.
17. ALL CONDUCTORS TO BE COPPER AND CONTAIN THWN OR XHHW INSULATION.
18. ALL CONTROL/COMMUNICATION WIRING REQUIREMENTS INCLUDING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
19. ALL PRECIPITATED EQUIPMENT LOCATIONS/INSTALLATIONS TO COMPLY WITH NEC ARTICLE 10.26 "SPACES ABOUT ELECTRICAL EQUIPMENT."

SHEET KEY NOTES:

- 1) NOT ALL INTERNAL COMPONENTS SHOWN FOR CLARITY. DIAGRAM IS INTENDED TO SHOW ALL REQUIRED FIELD CIRCUITING REQUIRED UNDER THIS CONTRACT. REFERENCE SUBMITTAL DOCUMENTATION FOR ALL PANEL INTERNAL COMPONENTS.
- 2) CONTRACTOR TO PROVIDE ADDITIONAL INTERNAL CONTACTS AND JUMPERS PER CONTROL PANEL MANUFACTURERS RECOMMENDATIONS FOR AN OVERALL COMPLETE AND OPERABLE SYSTEM.
- 3) CONTROL PANEL AND ALL INTERNAL COMPONENTS ARE BY THIS CONTRACT. THIS CONTRACT IS RESPONSIBLE FOR ALL FIELD WIRING BETWEEN DEVICES, TERMINATIONS, AND MOUNTING/INSTALLATION OF PANEL AS SHOWN/INDICATED. REFER TO SUBMITTAL DOCUMENTATION AND COORDINATE WITH ALL OTHER TRADE CONTRACTORS TO PROVIDE COMPLETE SYSTEM FIELD CIRCUITRY AND TERMINATIONS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
- 4) DISCONNECT SIZE SHOWN FOR BIDDING PURPOSES ONLY. COORDINATE DISCONNECT SIZE WITH EQUIPMENT MANUFACTURERS RECOMMENDATIONS. COORDINATE CONDUCTOR/CONDUIT SIZE WITH MANUFACTURERS RECOMMENDED DISCONNECT SIZE. ALL REQUIREMENTS TO BE PER NEC.
- 5) (2)#6 @ 10G, 3/4"
- 6) (1) CAT 6A PERMINUT ETHERNET CABLE, 1" C. PROVIDE AS PLENUM RATED WITH 4 BONDED PAIRS, TO BE BELDEN #3633 OR EQUIV.
- 7) (1) PACT CABLE. THIS CONTRACT IS RESPONSIBLE FOR ALL TERMINATIONS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE CONDUIT WHERE EXPOSED TO PHYSICAL DAMAGE AND RECOMMENDED BY THE EQUIPMENT MANUFACTURER. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER AS REQUIRED PER MANUFACTURER. COORDINATE FINAL INSTALLATION REQUIREMENTS WITH MANUFACTURER.
- 8) (3)#10 @ 10G, 1" C.
- 9) (4)#14, 3/4" C.
- 10) (4)#14, 3/4" C. CIRCUIT TO BE UTILIZED FOR THE ASSOCIATED MOTOR THERMAL SAFETY AND SEAL LEAK SWITCH. CIRCUIT TO BE SHUT DOWN IN TERMINALS OF PROPOSED VFD. IN THE EVENT OF A MOTOR HIGH TEMPERATURE OR SEAL LEAKAGE, THE LINE IS TO BE SHUT DOWN TO PREVENT DAMAGE. NOTE, TWO CONDUCTORS TO BE UTILIZED AS SPARES.
- 11) (4)#14, 3/4" C.
- 12) (10)#14, 1" C.
- 13) (3)#18ST, 3/4" C.
- 14) REFER TO SINGLE LINE DIAGRAM SHEET E-015 FOR POWER AND DISCONNECT INFORMATION/DETAILS.
- 15) (10)#14, 1" C.
- 16) (8)#14, 1" C.
- 17) (1)#18ST, 3/4" C.
- 18) (2)#12 @ 12G, 3/4" C.
- 19) (4)#10 @ 10G, 1" C.
- 20) PROVIDE CONDUIT BUSHING, FITTING, OR FLEX CONNECTION AS REQUIRED FOR PROPER CONNECTION OF DEVICE. ALL BUSHINGS, FITTINGS, OR FLEX CONNECTIONS TO BE SUITED FOR ENVIRONMENT INSTALLED WITHIN. COORDINATE WITH OTHER TRADE CONTRACTORS AND EQUIPMENT MANUFACTURER. FLEX CONNECTIONS TO BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE. TYPICAL.
- 21) (14)#14, 3/4" C.
- 22) JUNCTION BOX BY EQUIPMENT MANUFACTURER. COORDINATE FINAL LOCATION WITH EQUIPMENT MANUFACTURER. JUNCTION BOX FACTORY WIRED TO RDT SYSTEM CONTROL INSTRUMENTATION/DEVICES. THIS CONTRACT IS RESPONSIBLE FOR PROVIDING CIRCUITRY, CONDUIT & CONDUCTORS AND TERMINATIONS AS SHOWN/SPECIFIED AS A MINIMUM. PROVIDE ADDITIONAL CIRCUITRY AS REQUIRED PER MANUFACTURERS RECOMMENDATIONS. REFER TO SUBMITTAL DOCUMENTATION FOR ADDITIONAL INFORMATION AND COORDINATE FINAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER. REFER TO FLOOR PLAN FOR FINAL LOCATION.
- 23) (10)#14, (2)#18ST, 1" C.
- 24) (3)#12 @ 12G, 3/4" C.
- 25) (2)#18ST, 3/4" C.
- 26) (14)#14, 3/4" C.
- 27) (3)#10 @ 10G, 3/4" C. PROVIDE AS VFD SHEilded CABLE. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER DIAMETER AS REQUIRED PER MANUFACTURER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL REQUIREMENTS TO BE PER NEC.
- 28) (3)#8 @ 10G, 3/4" C. PROVIDE AS VFD SHEilded CABLE. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER DIAMETER AS REQUIRED PER MANUFACTURER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL REQUIREMENTS TO BE PER NEC.
- 29) (3)#18ST, 3/4" C.



33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100

BID ADDENDUM



JADE STONE
ENGINEERING



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CAESARS LANE WWTP
EXPANSION PROJECT:

PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

ELECTRICAL RISER DIAGRAMS

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DRAWN BY:		CDJ
CHECKED BY:		MGR
REVIEWED BY:		JER
SHEET NO.		

1000

E-022

BID ADDENDUM



JADE STONE
ENGINEERING

GENERAL SHEET NOTES:

- REFER TO E-001 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
- PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
- ALL CONDUCTORS NOT SHOWN FOR CLARITY. COORDINATE WITH OTHER TRADE CONTRACTORS AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
- REFER TO FLOOR PLANS FOR GENERAL DEVICE/EQUIPMENT LOCATIONS. COORDINATE FINAL LOCATIONS WITH PROCESS MECHANICAL DRAWINGS. REFER TO SITE PLAN FOR DUCT BANK INFORMATION AS REQUIRED.
- REFER TO SINGLE LINE DIAGRAMS, SPECIFICATIONS, AND SUBMITTAL DOCUMENTATION FOR ADDITIONAL INFORMATION/REQUIREMENTS.
- CONTRACTOR TO COORDINATE ALL ASPECTS OF SEQUENCE OF CONSTRUCTION WITH OWNER AND OTHER TRADE CONTRACTORS.
- CIRCUITS SHOWN ARE POWER, CONTROL, INSTRUMENTATION, AND CONTROL CIRCUIT POWER. REFER TO SINGLE LINE DIAGRAMS, SCHEDULES, AND DETAILS FOR ADDITIONAL CIRCUITS.
- ALL WIRING REQUIREMENTS INCLUDING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
- QUANTITY OF CONDUCTORS CALLED FOR MAY INCLUDE SPARE CONDUCTORS. PROVIDE CONDUCTORS SHOWN OR MINIMUM NUMBER REQUIRED PER MANUFACTURERS WRITTEN INSTRUCTIONS. ALL REQUIREMENTS TO BE PER NEC.
- CONTRACTOR TO PROVIDE ARC FLASH WARNING LABELS FOR ALL NEW OR MODIFIED ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
- REFER TO ELECTRICAL DETAIL SHEETS AND SCHEDULE SHEETS FOR ADDITIONAL INFORMATION/REQUIREMENTS.
- CONTRACTOR TO COORDINATE MOUNTING LOCATIONS OF ALL PANELS WITH OWNER AND ALL OTHER TRADE CONTRACTORS. PROVIDE ALL NECESSARY MOUNTING HARDWARE, BRACKETS, ACCESSORIES, ETC.
- PROVIDE INTRINSICALLY SAFE BARRIERS AS REQUIRED INTERNAL TO CONTROL PANELS. ALL REQUIREMENTS TO BE PER NEC.
- NOT ALL REQUIRED CLASSIFIED SPACE WIRING METHODS INCLUDING, BUT NOT LIMITED TO SEAL-OFFS MAY BE SHOWN. PROVIDE WIRING METHODS PER NEC (LATEST EDITION). PROVIDE CONDUIT UNIFORM WITHIN 6" OF EACH SEAL-OFF AT CONTROL PANELS, DISTRIBUTION PANELS, VFDs, STARTERS, DISCONNECTS, OR SOURCE OF SUPPLY WHERE FEASIBLE.
- NOT ALL REQUIRED THRU-WALL, WATERTIGHT, CONDUIT PENETRATIONS SHOWN FOR CLARITY. CONTRACTOR TO PROVIDE A THRU-WALL, WATERTIGHT, CONDUIT PENETRATION FOR ALL CONDUIT PENETRATIONS WITHIN BUILDING INTERIOR/EXTERIOR WALLS AND FLOORS. REFER TO ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION. COORDINATE WITH OWNER AND ALL OTHER TRADE CONTRACTORS PRIOR TO ROUGH-IN.
- CONTRACTOR TO COORDINATE ALL CONDUIT PENETRATIONS AND CONDUIT ROUTING WITH ALL OTHER TRADE CONTRACTORS AND OWNER PRIOR TO ROUGH-IN.
- ALL CONDUCTORS TO BE COPPER AND CONTAIN XHHW INSULATION.
- ALL CONTROL/COMMUNICATION WIRING REQUIREMENTS INCLUDING BUT NOT LIMITED TO WIRE SIZE, TYPE, AND QUANTITY OF CONDUCTORS TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.
- ALL PROPOSED EQUIPMENT LOCATIONS/INSTALLATIONS TO COMPLY WITH NEC ARTICLE 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT.

SHEET KEY NOTES:

- CONTRACTOR TO DISCONNECT FROM POWER SOURCE AND ALL CONNECTED EQUIPMENT. MAKE ELECTRICALLY SAFE, AND RELOCATE EXISTING BELT PRESS CONTROL PANEL. BPCP-01 AS SHOWN ON E-700 SERIES DRAWINGS. EQUIPMENT TO BE REMOVED IS TO BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE IN ITS ENTIRETY. OWNER HAS THE RIGHT TO MAINTAIN ANY EQUIPMENT, COMPONENTS, DEVICES, CONTROLS, ETC., SCHEDULED FOR REMOVAL. REFER TO SPECIFICATIONS FOR REMOVAL AND COORDINATE FINAL REQUIREMENTS WITH APPLICABLE TRADE CONTRACTOR, OWNER, BELT PRESS CONTROL PANEL MANUFACTURE, AND ENGINEER.
- NOT ALL ASSOCIATED CONTROLS, STARTERS, DISCONNECTS & CIRCUITRY MAY BE SHOWN FOR CLARITY. CONTRACTOR TO FIELD VERIFY AND COMPLETELY REMOVE ALL ASSOCIATED CONTROLS, STARTERS, DISCONNECTS, CONTROLS, CONTROLS CIRCUITRY (CONDUIT & CONDUCTORS), ALL MOUNTING HARDWARE, BRACKETS, ACCESSORIES, ETC., ASSOCIATED WITH EQUIPMENT/CIRCUITING SCHEDULED FOR REMOVAL. COORDINATE FINAL REQUIREMENTS WITH APPLICABLE TRADE CONTRACTOR, OWNER, BELT PRESS CONTROL PANEL MANUFACTURE, AND ENGINEER.
- NOT ALL INTERNAL COMPONENTS SHOWN FOR CLARITY. DIAGRAM IS INTENDED TO SHOW ALL REQUIRED FIELD CIRCUITING AND EQUIPMENT TO BE REMOVED AS REQUIRED BY THE CONTRACTOR. CONTRACTOR TO REMOVE ANY EXISTING CIRCUITING ASSOCIATED WITH THE BELT PRESS SYSTEM. CLOSELY COORDINATE ALL REQUIREMENTS WITH APPLICABLE TRADE CONTRACTOR, OWNER, BELT PRESS CONTROL PANEL MANUFACTURE, AND ENGINEER.
- REFER TO ELECTRICAL DEMOLITION PLANS, SCHEDULES AND DETAILS FOR ADDITIONAL DEMOLITION INFORMATION/REQUIREMENTS. CONTRACTOR TO COORDINATE ALL EQUIPMENT/CIRCUITING SCHEDULED FOR REMOVAL AND FINAL SEQUENCE OF REMOVAL REQUIREMENTS WITH APPLICABLE TRADE CONTRACTOR, OWNER, BELT PRESS CONTROL PANEL MANUFACTURE, AND ENGINEER PRIOR TO COMMENCEMENT OF DEMOLITION. CONTRACTOR TO FIELD VERIFY AND PROVIDE AS REQUIRED.
- FOR EXISTING TO REMAIN EQUIPMENT, CONTRACTOR TO DISCONNECT, MAKE ELECTRICALLY SAFE, AND LABEL TO BE RECONNECTED AS SHOWN ON NEW WORK.
- WWTP IS TO BE OPERATIONAL AT ALL TIMES. PROVIDE TEMPORARY POWER PROVISIONS AS REQUIRED TO FACILITATE WWTP OPERATION DURING ELECTRICAL DEMOLITION AND INSTALLATION. PROVIDE ALL NECESSARY EQUIPMENT, DEVICES, CABLING, ETC., AS REQUIRED FOR AN OVERALL COMPLETE AND OPERABLE TEMPORARY POWER SYSTEM. CONTRACTOR TO MINIMIZE DOWN TIMES TO THE GREATEST EXTENT POSSIBLE. COORDINATE ALL REQUIREMENTS WITH APPLICABLE TRADE CONTRACTOR, OWNER, AND ENGINEER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING TEMPORARY POWER.
- CONTRACTOR TO PROVIDE TEMPORARY POWER PLAN IN WRITING TO ENGINEER FOR APPROVAL PRIOR TO PERFORMING ELECTRICAL SERVICE DISRUPTIONS.
- CONTRACTOR TO NOT COMMENCE ELECTRICAL DEMOLITION UNTIL TEMPORARY POWER PROVISIONS HAVE BEEN ESTABLISHED AND APPROVED BY THE ENGINEER. NOTE: IT IS THE INTENTION THAT THE NEW ELECTRICAL SERVICE BE INSTALLED, TESTED, AND OPERATIONAL BEFORE THE EXISTING ELECTRICAL SERVICE BE REMOVED.
- CONTRACTOR TO REMOVE ALL POWER AND CONTROL CIRCUITRY (CONDUIT AND CONDUCTORS) IN ITS ENTIRETY AS SHOWN. CONTRACTOR TO FIELD VERIFY.
- CONTRACTOR TO DISCONNECT/REMOVE ALL POWER AND CONTROL CIRCUITRY (CONDUIT & CONDUCTORS) IN ITS ENTIRETY BACK TO SOURCE AS WELL AS DEMOLISH ASSOCIATED JUNCTION BOXES, DISCONNECTS, STARTERS, ASSOCIATED CONTROL DEVICES, ALL MOUNTING HARDWARE, BRACKETS, ACCESSORIES, ETC., ALL ITEMS REMOVED TO BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT SITE. CONTRACTOR TO FIELD VERIFY.
- NOT ALL INTERNAL COMPONENTS SHOWN FOR CLARITY. DIAGRAM IS INTENDED TO SHOW ALL REQUIRED FIELD CIRCUITING AND TERMINATION REQUIRED BY THE CONTRACTOR. REFERENCE SUBMITTAL DOCUMENTATION FOR ALL PANEL INTERNAL COMPONENTS. CONTRACTOR TO PROVIDE ADDITIONAL INTERNAL COMPONENTS, CONTACTS, AND JUMPERS PER CONTROL PANEL MANUFACTURERS RECOMMENDATIONS FOR AN OVERALL COMPLETE AND OPERABLE SYSTEM. CLOSELY COORDINATE ALL REQUIREMENTS WITH ALL OTHER TRADE CONTRACTORS AND PANEL MANUFACTURE.
- CONTROL PANEL AND ALL INTERNAL COMPONENTS (IF NOT EXISTING) ARE BY TO BE PROVIDED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ALL FIELD WIRING BETWEEN DEVICES, AND MOUNTING/INSTALLATION OF PANEL AS SHOWN/INDICATED. REFER TO SUBMITTAL DOCUMENTATION AND COORDINATE WITH APPLICABLE TRADE CONTRACTOR, OWNER, CONTROL PANEL MANUFACTURE, AND ENGINEER TO PROVIDE COMPLETE SYSTEM FIELD CIRCUITRY AND TERMINATIONS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
- DISCONNECT SIZE SHOWN FOR BIDDING PURPOSES ONLY. COORDINATE DISCONNECT SIZE WITH EQUIPMENT MANUFACTURERS RECOMMENDATIONS. COORDINATE CONDUIT/CONDUIT SIZE WITH MANUFACTURERS RECOMMENDED DISCONNECT SIZE. ALL REQUIREMENTS TO BE PER NEC. TYPICAL.
- COORDINATE TERMINATIONS OF CIRCUITRY AT BELT PRESS MANUFACTURE PROVIDED (IF NOT EXISTING) JUNCTION BOX CLOSELY WITH MANUFACTURER & OTHER TRADE CONTRACTORS.
- COMPONENT INTERNAL TO CONTROL PANEL IS TO BE REMOVED BY BELT PRESS CONTROL PANEL MANUFACTURE. NOT ALL PROPOSED COMPONENTS INTERNAL TO CONTROL PANEL MAY BE SHOWN FOR CLARITY. COORDINATE WITH BELT PRESS CONTROL PANEL MANUFACTURE AS NEEDED.
- COMPONENT INTERNAL TO CONTROL PANEL IS TO BE INSTALLED BY BELT PRESS CONTROL PANEL MANUFACTURE. NOT ALL PROPOSED COMPONENTS INTERNAL TO CONTROL PANEL MAY BE SHOWN FOR CLARITY. COORDINATE WITH BELT PRESS CONTROL PANEL MANUFACTURE AS NEEDED.
- (3)#12 & #12G, 3/4". PROVIDE AS VFD SHIELDED CABLE. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER DIAMETER AS REQUIRED PER MANUFACTURER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL REQUIREMENTS TO BE PER NEC.
- (4)#14, 3/4".
- (3)#8 & #10G, 1".
- (3)#12 & #12G, 3/4".
- (2)#8 & #10G, 3/4".
- (2)#12 & #12G, 3/4". PROVIDE AS VFD SHIELDED CABLE. CONDUIT SIZE IS LISTED AS MINIMUM. PROVIDE LARGER DIAMETER AS REQUIRED PER MANUFACTURER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL REQUIREMENTS TO BE PER NEC.
- (2)#10 & #10G, 3/4".
- (1) CAT 6A PREMIUM ETHERNET CABLE, 1". PROVIDE AS PLENUM RATED WITH 4 BONDED PAIRS. TO BE BELDEN #3633 OR APPROVED EQUAL.
- (2)#12 & #12G, 3/4".
- (20)#14, 1".
- (2)#18STP, 3/4".
- (3)#10 & #10G, 3/4".
- REFER TO EQUIPMENT CONNECTION SCHEDULE FOR ADDITIONAL INFORMATION/REQUIREMENTS. TYPICAL.
- (6)#14, 3/4".
- (10)#14, 3/4".

HAZARDOUS MATERIAL NOTE:

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FOR TOWN OF NEW WINDSOR
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NEW WINDSOR, NY 12553

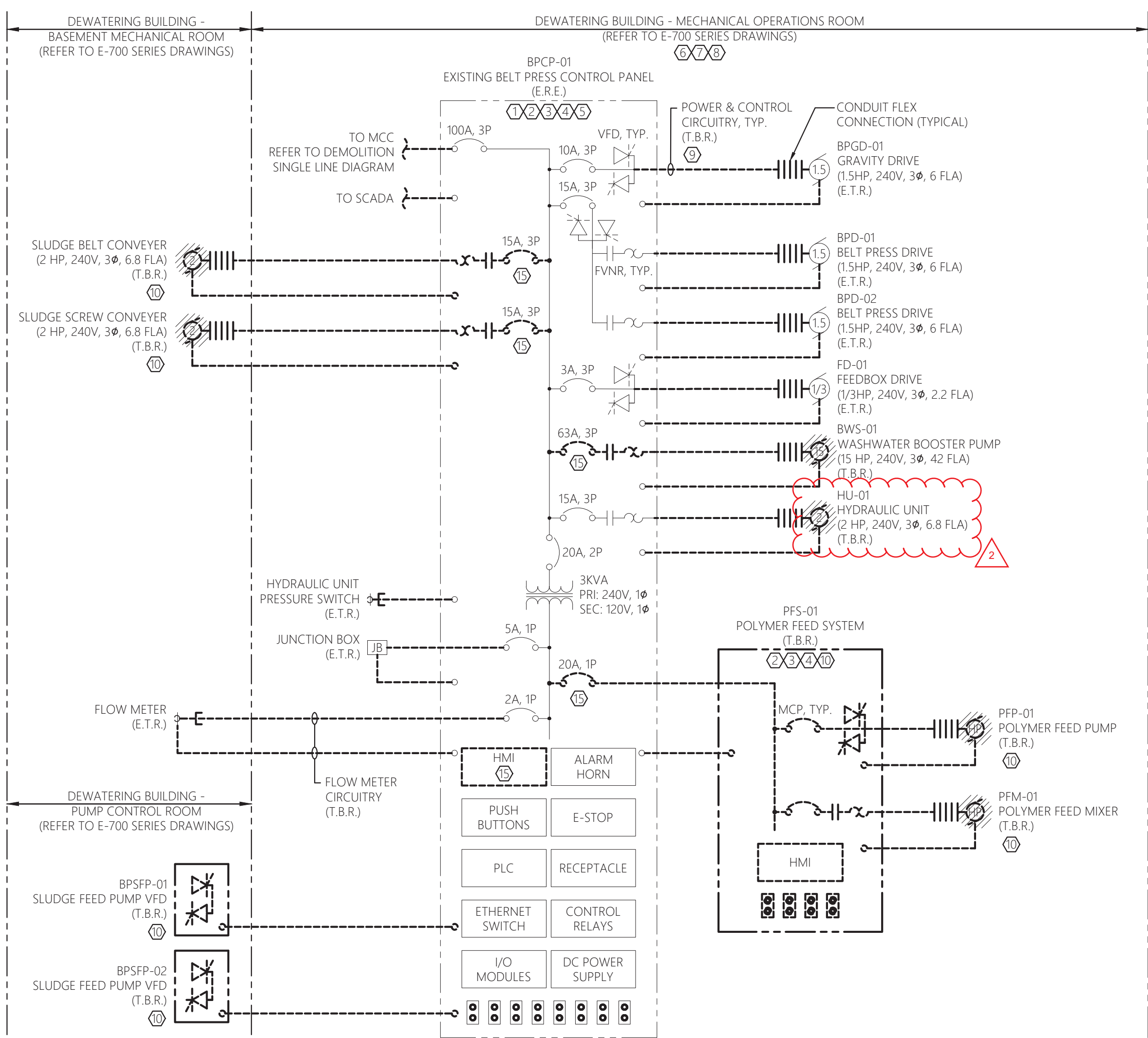
ELECTRICAL RISER DIAGRAMS

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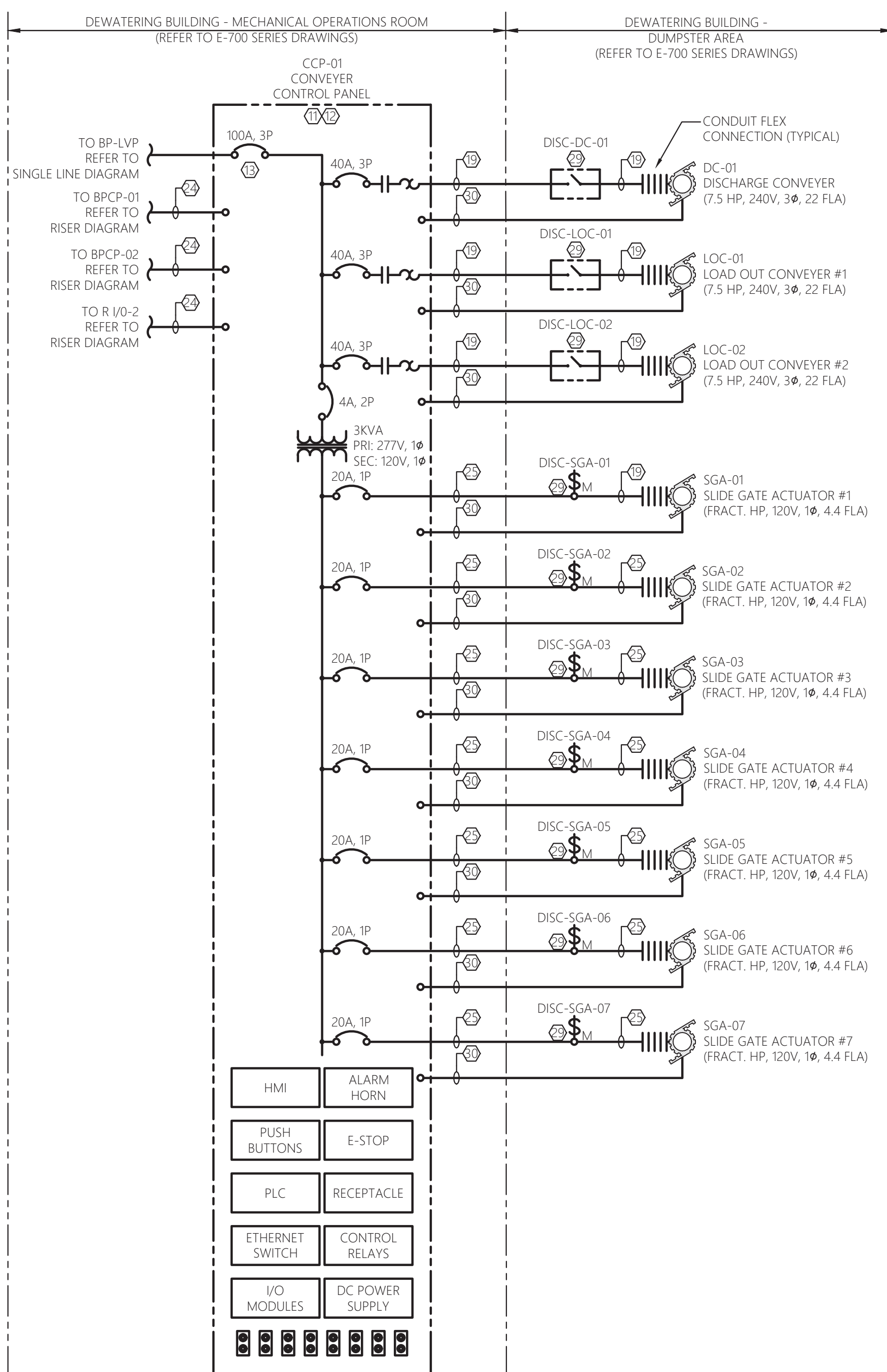
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DESIGN BY: RRM
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SHEET NO.

E-028

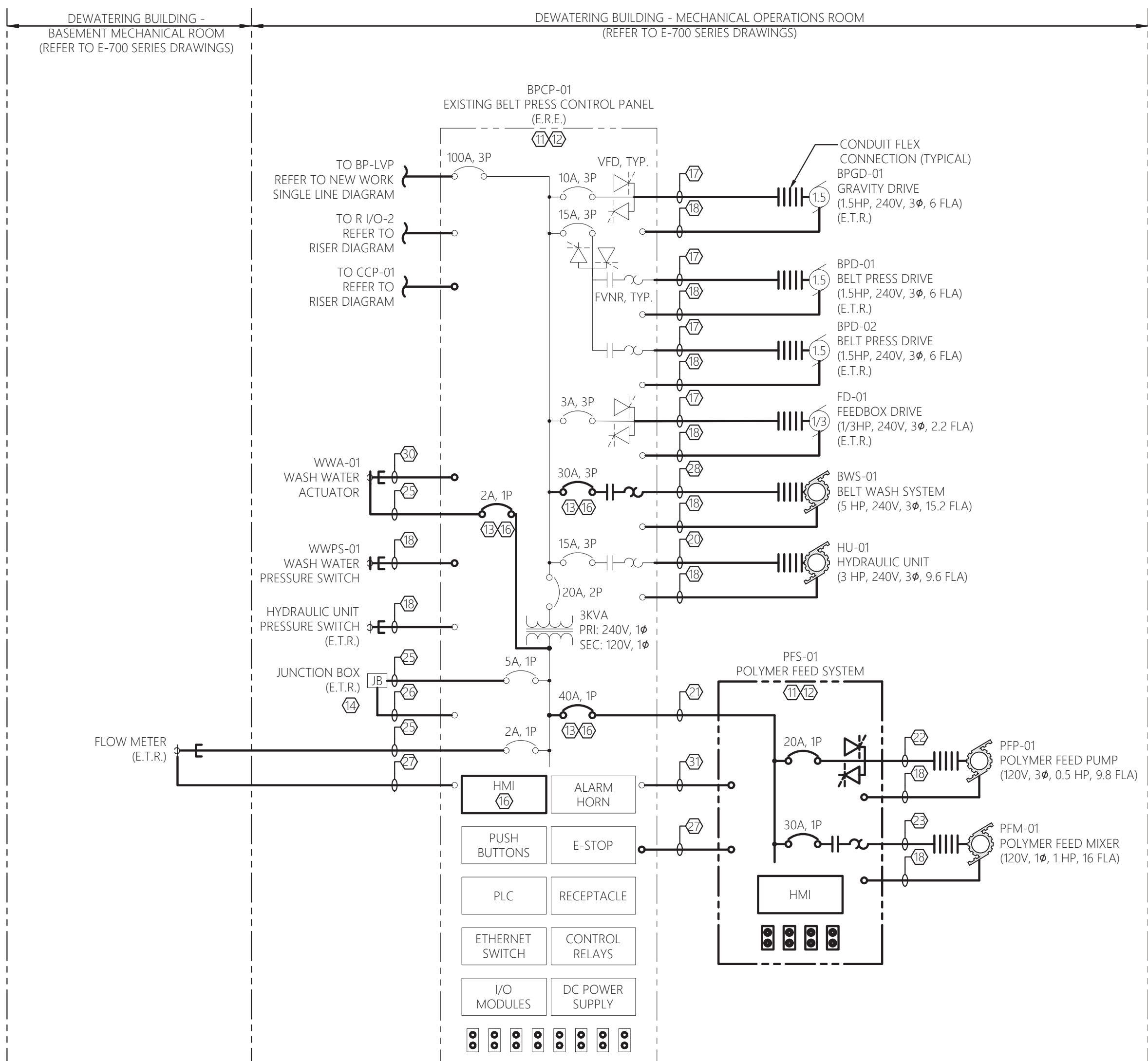
PROJECT # 18-732 PHASE #



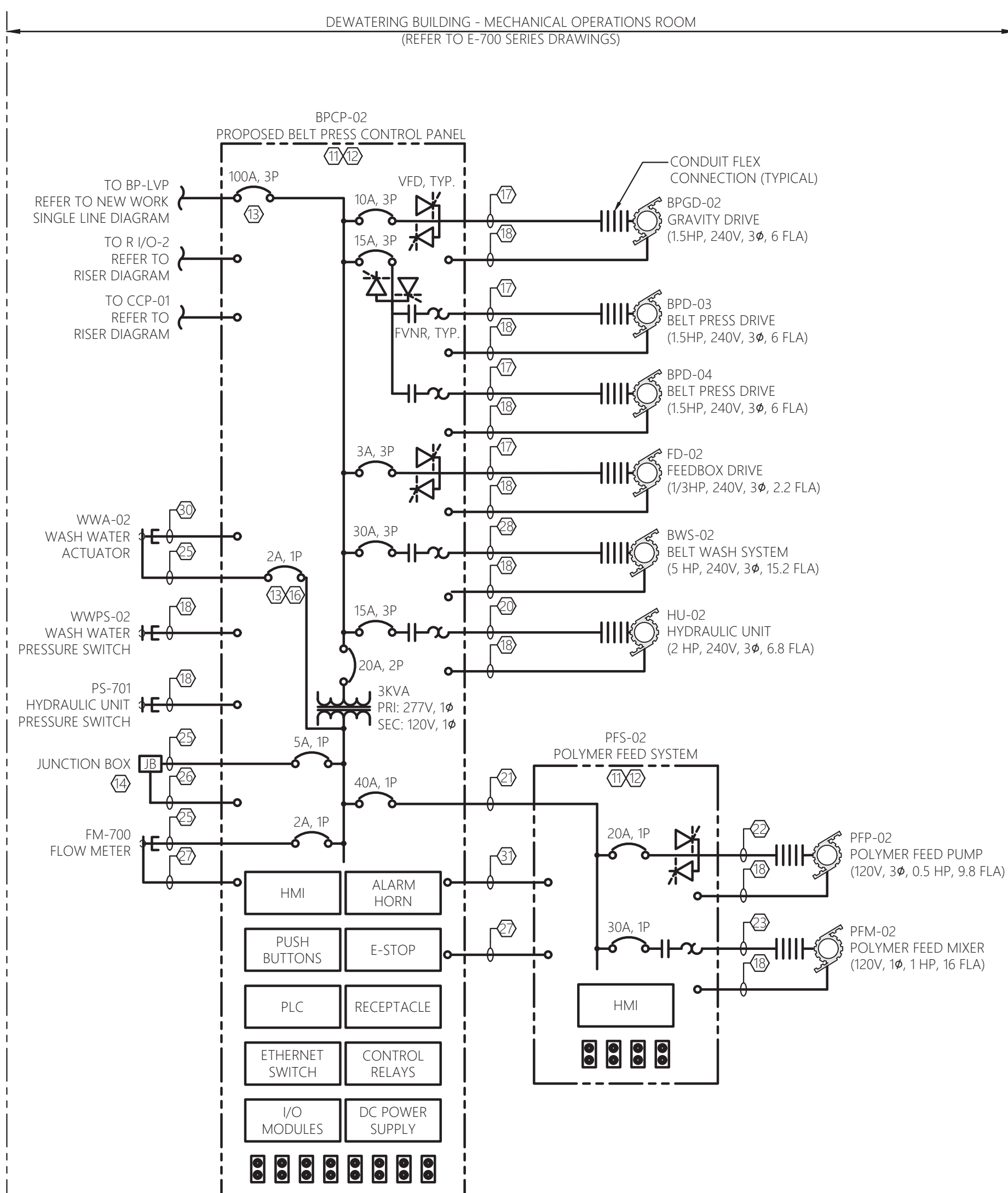
1 EXISTING BELT FILTER PRESS CONTROL PANEL RISER DIAGRAM - DEMOLITION
E-028 SCALE: NTS DEWATERING BLDG



3 CONVEYER CONTROL PANEL RISER DIAGRAM
E-028 SCALE: NTS DEWATERING BLDG



2 EXISTING BELT FILTER PRESS CONTROL PANEL RISER DIAGRAM - NEW WORK
E-028 SCALE: NTS DEWATERING BLDG



4 PROPOSED BELT FILTER PRESS CONTROL PANEL RISER DIAGRAM
E-028 SCALE: NTS DEWATERING BLDG

CONTROL DIAGRAMS ARE SCHEMATIC IN NATURE AND SHOWS ALL INTERCONNECTIONS. CONTRACTOR MAY GROUP POWER CIRCUITS INTO LARGER CONDUIT AND GROUP CONTROL CIRCUITS INTO SEPARATE LARGER CONDUIT. GROUPING OF CIRCUITS INTO LARGER CONDUITS MUST COMPLY WITH NEC FILL AND DERATING REQUIREMENTS. VFD INPUT & OUTPUT CONDUITS MUST BE RUN INDEPENDENT OF OTHER CONDUCTORS.