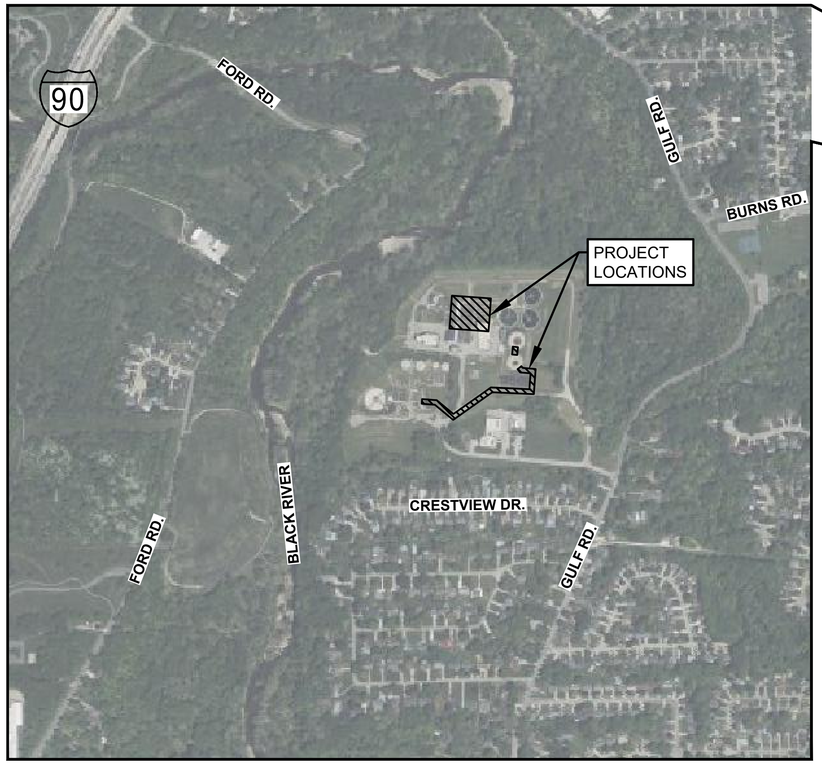
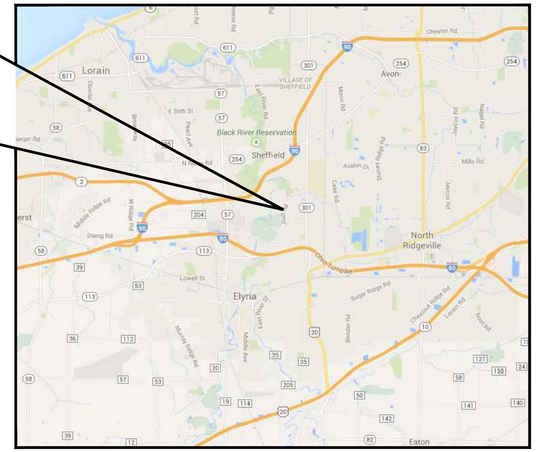
CITY OF ELYRIA
LORAIN COUNTY, OHIO
WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS





NTS

VICINITY MAP
NOT TO SCALE

PREPARED FOR:

CITY OF ELYRIA

KEVIN BRUBAKER, MAYOR
CHRIS PYANOWSKI, SAFETY-SERVICE DIRECTOR
KATHY McKILLIPS, P.E., CITY ENGINEER
SHAYNE STEWART, PLANT SUPERINTENDENT

SUBMITTED BY AECOM

STATE OF OHIO
ROBERT E. BUDZILEK
E-56060
REGISTERED PROFESSIONAL ENGINEER

10/28/2025

BOB BUDZILEK, P.E. **DATE**

PREPARED BY:

AECOM
1300 EAST 9TH STREET, SUITE 500
CLEVELAND, OH 44114
216.622.2300 tel 216.622.2301 fax
www.aecom.com

ACCEPTED BY THE CITY OF ELYRIA

KEVIN BRUBAKER **DATE**
MAYOR

CHRIS PYANOWSKI **DATE**
SAFETY-SERVICE DIRECTOR

KATHY McKILLIPS, P.E **DATE**
CITY ENGINEER

BID DOCUMENTS
10.28.2025

ELYRIA, OHIO
FOUNDED IN 1817
INCORPORATED IN 1851
BY HUMAN ELY

Project Management Initials: Designer: ____ Checked: ____ Approved: ____
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BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

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REGISTRATION

STATE OF OHIO
ROBERT
D.
SUDDERTH
E-56060
REGISTERED
PROFESSIONAL ENGINEER
10/28/25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

INDEX OF SHEETS

SHEET NUMBER

G2

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LEGEND

	MANHOLE		ROADWAY CURB
	PIPE OR DUCT AND MANHOLE SMALLER THAN 36"Ø		ROAD CENTERLINE
			NATURAL GAS LINE
	PIPE (36" DIAM. OR LARGER)		SANITARY SEWER
			STORM SEWER
	PROPERTY LINE		WATER LINE
	CHAIN LINK FENCE		OVERHEAD ELECTRIC
	POWER POLE	C	CABLE BOX
	LIGHT POLE		DRAIN INLET (CATCH BASIN)
	GATE VALVE	P.K.S.	P.K. NAIL SET
	WATER VALVE	+ EL. 136.30	GROUND ELEVATION
	WATER SERVICE VALVE		EX. TREES
	HYDRANT		EX. TREE TO BE REMOVED
	CLEAN OUT		SOIL BORING
	GAS VALVE	MAIL	MAILBOX
	GAS SERVICE / METER		
	EX. SIGN		

ABBREVIATIONS

BC	BITUMINOUS CURB	MB	METER BOX
Bit. Conc.	BITUMINOUS CONCRETE	MET	METER
Br.	BRICK	MH	MANHOLE
BTM	BOTTOM	N/F	NOW OR FORMERLY
CBDH	CONCRETE BOUND WITH DRILL HOLE	OHW	OVERHEAD WIRES
CBN	CATCH BASIN	ORN	ORNAMENTAL
CI	CAST IRON	PVC	POLYVINYLCHLORIDE
CLF	CHAIN LINK FENCE	PW	PLANT WATER
CMP	CORRUGATED METAL PIPE	R	RIM
CONC.	CONCRETE	R.C.P.	REINFORCED CONCRETE PIPE
DEC	DECANT	RPZ	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
DI	DUCTILE IRON PIPE	RTW	RETAINING WALL
DMH	DRAIN MANHOLE	SB/DH	STONE BOUND WITH DRILL HOLE
DND	DO NOT DISTURB	SMH	SEWER MANHOLE
E	ELECTRIC	STA.	STATION
EM	ELECTRIC METER	STY. WD.	STORY WOOD
EFF	EFFLUENT	TBR	TO BE REMOVED
EL	ELEVATION	TBRR	TO BE REMOVED AND REPLACED
EX	EXISTING	TEMP.	TEMPORARY
FL	FLOOR	T.O.F.	TOP OF FRAME
G	GAS	TYP	TYPICAL
GV	GATE VALVE	UP/LP	UTILITY POLE/LIGHT POLE
HDG	HEDGE	VC	VITRIFIED CLAY
HP	HANDICAP PARKING	W	WATER
HYD	HYDRANT	WAS	WASTE ACTIVATED SLUDGE
INF	INFLUENT	WG	WATER GATE
INV.	INVERT	WS	WATER SHUTOFF
I.D.	INSIDE DIAMETER		
IP FND	IRON PIPE FOUND		

GENERAL CONSTRUCTION NOTES

1. ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH CURRENT CITY OF ELYRIA CODIFIED ORDINANCES AND STANDARDS AND THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION), AND ODOT STANDARD DRAWINGS, AS INDICATED.
2. THE LOCATION, TYPE, DEPTH, AND SIZE OF ALL EXISTING UNDERGROUND PIPES AND UTILITIES SHOWN ON THESE PLANS HAVE BEEN OBTAINED BY FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT. THE ENGINEER MAKES NO GUARANTEES AS TO THEIR ACCURACY OR COMPLETENESS. EXACT LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION IN THE AREA.
3. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITY LINES DURING THE INSTALLATION OF THE SEWER AND WATER LINE AND APPURTENANCES. ANY DAMAGE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
4. EACH RESIDENCE AND BUILDING MAY BE SERVICED BY UNDERGROUND SANITARY, STORM, GAS, WATER, CABLE TV, ELECTRIC AND TELEPHONE REGARDLESS IF THEY ARE SHOWN ON THE PLANS, OR NOT. THE CONTRACTOR SHALL USE CAUTION WHEN EXCAVATING AND PROVIDE SUPPORT WHERE NECESSARY.
5. CONTRACTOR SHALL ASSUME ALL RISKS AS TO THE NATURE AND BEHAVIOR OF THE SOIL WHICH MAY BE ENCOUNTERED, INCLUDING ANY DIFFERENCES THAT MAY BE DUE TO ROCK, QUICKSAND, OR OTHER UNFAVORABLE CONDITIONS. THE CONTRACTOR MAY CONDUCT SUBSURFACE TESTS AND INVESTIGATIONS AS DEEMED NECESSARY PRIOR TO SUBMISSION OF THE BID.
6. WORKING HOURS WITHIN THE CITY ARE 7:00 AM TO 8:00 PM MONDAY THROUGH FRIDAY; HOWEVER CONTRACTOR MAY BE PERMITTED TO WORK ALTERNATIVE HOURS AND WEEKENDS, IF APPROVED BY THE CITY ENGINEER.
7. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWERS ARE PROHIBITED PER CITY OF ELYRIA'S CODIFIED ORDINANCE SECTION 932.03.
8. PREMIUM BACKFILL TO BE PLACED AND COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY IN ALL TRENCHES UNDER PAVEMENT, OR DRIVE AREAS AND EXTEND 5' BEYOND THE PAVEMENT, OR DRIVE EDGE ON EITHER SIDE. PREMIUM BACKFILL SHALL BE ODOT 304 LIMESTONE.
9. ALL EXISTING GAS MAINS SHOWN IN PROFILE ARE ASSUMED TO HAVE 3' COVER.
10. ALL EXISTING WATER MAINS SHOWN IN PROFILE ARE ASSUMED TO HAVE A MINIMUM OF 4.5' COVER.
11. ALL EXISTING UNDERGROUND ELECTRIC CONDUIT IN PROFILE ARE ASSUMED TO HAVE A MINIMUM OF 3' COVER.
12. CONTRACTOR TO COORDINATE RELOCATION WITH ALL UTILITY COMPANIES SO AS NOT TO DELAY CONSTRUCTION.
13. THE TERMS "OWNER", " DEPARTMENT", "CITY", AND "CITY OF ELYRIA" ARE USED INTERCHANGEABLY.
14. CONSTRUCTION STAGING AND STORAGE AREAS SHALL BE COORDINATED AND OBTAINED BY THE CONTRACTOR.
15. IN AREAS WHERE ROADS NEED TWO WAY TRAFFIC AND WHERE ENTIRE DRIVE APRONS ARE AFFECTED BY WORK, THE CONTRACTOR SHALL USE ODOT MEDIUM SET (MS)), OR FAST SET (FS) CONCRETE MIX TO MAINTAIN ACCESS TO RESIDENCE AND FULLY OPEN ROADS TO THE FLOW OF TWO WAY TRAFFIC WITHIN 24 HOURS.
16. UTILITIES: AT LEAST TWO (2) WORKING DAYS BEFORE BREAKING GROUND, CONTRACTOR SHALL NOTIFY ALL PUBLIC SERVICE AGENCIES HAVING WIRE, POLES, PIPE, CONDUITS, MANHOLES, OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS PROJECT. FOR WATER, STORM AND SANITARY UTILITIES OWNED BY THE CITY OF ELYRIA, THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST THREE (3) DAYS IN ADVANCE OF PERFORMING WORK.

    THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE OHIO & GAS PROCEDURES UNDERGROUND PROTECTION SERVICE (OGPUPS), AND ALL NON REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ALL AREAS.

    OUPS 1-800-362-2764 (CONTACT LIMITED BASIS PARTICIPANTS DIRECTLY).
    OGPUPS 1-800-925-0988.

    THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF UTILITIES AS REQUIRED BY SECTION 153.64 ORC.

    LISTED BELOW ARE ALL IDENTIFIED UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

UTILITIES

ENGINEERING
CITY OF ELYRIA
131 COURT STREET
ELYRIA, OHIO 44035
PHONE (440) 326-1444
PROJECT CONTACT: KATHRYN McKILLIPS
kmckillips@cityofelyria.org

WASTE WATER POLLUTION CONTROL
CITY OF ELYRIA
SHAYNE STEWART
1194 GULF ROAD
ELYRIA, OHIO 44035
PHONE (440) 366-2211 EXT. 5100
sstewart@cityofelyria.org

WATER DISTRIBUTION
CITY OF ELYRIA
DAVE ROTHGERY
851 GARDEN STREET
ELYRIA, OHIO 44035
PHONE (440) 322-2927
drothgery@cityofelyria.org

ELECTRIC
OHIO EDISON
DOUGLAS LINN
6326 LAKE AVENUE
ELYRIA, OHIO 44035
PHONE (440) 326-3268
linndm@firstenergycorp.com

GAS
COLUMBIA GAS OF OHIO
ADAM WOODIE
3101 NORTH RIDGE ROAD
LORAIN, OH 44055
PHONE (440) 240-6144
awoodie@nisource.com
EMERGENCY PHONE (866) 632-6243

TELEPHONE
WINDSTREAM
KEVIN DEMBIEC
560 TERNES AVENUE
ELYRIA, OHIO 44035
PHONE (440) 329-4247
kevin.dembiec@windstream.com

TELEPHONE
WINDSTREAM
GEOFFREY HAMM
560 TERNES AVENUE
ELYRIA, OHIO 44035
PHONE (440) 329-4245
geoffrey.p.hamm@windstream.com

CABLE
SPECTRUM
MARTY VANKUREN
576 TERNES AVENUE
ELYRIA, OHIO 44035
PHONE (216) 854-0755
marty.vankuren@charter.com

CABLE
SPECTRUM
DAN MCCAFFERTY
576 TERNES AVENUE
ELYRIA, OHIO 44035
PHONE (330) 351-3373
daniel.mccafferty@charter.com

17. THE CITY WILL ALLOW THE CONTRACTOR TO USE WATER FROM A DESIGNATED HYDRANTS FOR CONSTRUCTION AT NO COST. A BACKFLOW PREVENTER AND WATER METER SHALL BE USED.
18. THE CONTRACTOR SHALL COORDINATE WITH THE CITY WATER DISTRIBUTION DEPARTMENT FOR ANY INTERRUPTION OF WATER SERVICE NECESSARY TO COMPLETE THE WORK. IF THE INTERRUPTION IS LONGER THAN 4 HOURS, THE CONTRACTOR SHALL PROVIDE AND PAY FOR A TEMPORARY SERVICE.
19. ANY DRAIN TILE OR SEWER PIPE DISTURBED DURING CONSTRUCTION, DOCUMENTED ON THE PLANS OR NOT, SHALL BE RECONNECTED WITH LIKE MATERIAL AND JOINED BY AN APPROVED COUPLING. SEE DETAIL ON SHEET UD1.
20. ROADWAY CONSTRUCTION SHALL BE BASED ON THE CENTERLINE OF CONSTRUCTION REFERENCE THE TYPICAL ROAD SECTIONS ON SHEETS CD1. HORIZONTAL AND VERTICAL CONTROL FOR THE CENTERLINE OF CONSTRUCTION CAN BE FOUND IN THE CONTROL POINT TABLE.
21. IF ROAD RESTORATION WILL NOT BE COMPLETED BY NOVEMBER 25, 2026, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF TEMPORARY PAVEMENT, TO REMAIN IN PLACE UNTIL PERMANENT RESTORATION IS COMPLETED.
22. CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE SECTION 149.53 TO NOTIFY THE OHIO HISTORICAL SOCIETY AND THE OHIO HISTORIC SITE PRESERVATION BOARD OF ARCHAEOLOGICAL DISCOVERIES LOCATED IN THE PROJECT AREA, AND TO COOPERATE WITH THOSE ENTITIES IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND SALVAGE EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.
23. UNAVOIDABLE CUTTING OF ANY SIZE TREES USED FOR ROOSTING AND BROOD REARING HABITAT FOR THREATENED AND ENDANGERED BAT SPECIES SHALL BE PERFORMED ONLY BEFORE APRIL 1 OR AFTER SEPTEMBER 30 WHEN THE BATS WOULD NOT BE USING SUCH HABITAT. IF TREE CUTTING WOULD NEED TO OCCUR OUTSIDE OF THIS TIME WINDOW, A SURVEY MUST BE COORDINATED WITH OHIO DIVISION OF NATURAL RESOURCES.
24. PROPERLY INSTALLED EROSION CONTROL BARRIERS (E.G., SILT FENCES, STRAW BALES, ETC.) SHOULD BE LOCATED ON SLOPES, ALONG STREAMS AND DRAINAGE WAYS, AROUND DRAINAGE STRUCTURES, AND ANYWHERE ELSE THAT EXPOSED SOIL COULD RUN OFF AND CREATE SEDIMENT PROBLEMS. ALL SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION.

EXISTING UTILITIES:

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION, SCHEDULING AND PAYING FOR TEMPORARY OR PERMANENT RELOCATION OF UTILITIES NECESSARY TO COMPLETE THE WORK.

WORK LIMITS:

1. THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.
2. CONSTRUCTION VEHICLES AND MATERIALS SHOULD NOT BE STAGED OR STORED WITHIN THE DRIPLINE OF TREES.

CONSTRUCTION NOISE:

1. ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE EFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVISES BETWEEN THE HOURS OF 8 PM AND 7 AM. ANY DEVIATIONS TO THE HOURS OF OPERATION FOR POWER-OPERATED CONSTRUCTION-TYPE DEVICES MUST BE APPROVED BY THE FIELD ENGINEER. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY SUCH DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

EXISTING UTILITY REMOVAL

1. COST FOR ALL UTILITIES TO BE REMOVED AS NECESSARY FOR CONSTRUCTION OR AS SHOWN ON THE PLAN AND PROFILE DRAWINGS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE NEW UTILITY TO BE INSTALLED WHICH NECESSITATES THE EXISTING UTILITY REMOVAL. I.E. THERE ARE NO BID UNITS COSTS FOR UTILITY REMOVAL.

EXISTING UTILITY SERVICE LATERALS

1. ALL SERVICE LATERALS FOR SANITARY, STORM, WATER AND GAS TO BE MARKED IN THE FIELD. WHAT IS SHOWN ON PLANS FOR LATERALS ARE PLACE HOLDERS AND NOT NECESSARILY FROM OUPS OR PHYSICAL SURVEY. THE CONTRACTOR SHALL CALL OUPS FOR MARKING ALONG COORDINATING WITH THE CITY ENGINEERING AND WATER DEPARTMENTS FOR MARKING IN THE FIELD PRIOR TO EXCAVATION.

ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN AND SUBGRADE REPAIRS:

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. FOLLOWING REMOVAL OF EXISTING AGGREGATE BASE, THE ENGINEER WILL INSPECT THE NEWLY EXPOSED SUBGRADE. THE SUBGRADE SHALL THEN BE PROOF ROLLED IN ACCORDANCE WITH ODOT ITEM 204.06. PRIOR TO SUBGRADE COMPACTION, THE ENGINEER WILL IDENTIFY THE AREAS OF UNSUITABLE SUBGRADE FOR REPAIR (SEE STEP 2). SUBSEQUENTLY, SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH ODOT ITEM 204.03. VIBRATORY ROLLERS SHALL NOT BE USED IN THE COMPACTION OF THE SUBGRADE. ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS DESCRIBED HEREIN COMPLETE IN PLACE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR SUBGRADE COMPACTION, AS PER PLAN.
2. THE LIMITS DESIGNATED BY THE ENGINEER FOR EXCAVATION OF UNSUITABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS SHALL BE REPAIRED. STABILIZATION OF LOCALIZED AREAS SHALL BE ACHIEVED BY CONDITIONING THE SOIL TO ITS OPTIMUM MOISTURE CONTENT FOLLOWED BY ROLLING OR CHOKING WITH CRUSHED STONE. SUBSEQUENTLY, THE SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH ODOT ITEM 204.03. ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS DESCRIBED HEREIN COMPLETE IN PLACE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR SUBGRADE REPAIRS.

ITEM 407 - NON-TRACKING TACK COAT

1. CONTRACTOR SHALL SUPPLY 702.12 NON-TRACKING ASPHALT EMULSION AND FOLLOW ALL REQUIREMENTS OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS 407 AND 702.12. ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ASSOCIATED ASPHALT PAVEMENT BID ITEMS.

REVIEW OF DRAINAGE FACILITIES

1. BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY OF ELYRIA, REPRESENTATIVES OF THE CITY OF ELYRIA AND THE CONTRACTOR, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE CITY OF ELYRIA.
2. ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH ALL RELATED COSTS BEING THE FULL RESPONSIBILITY OF THE CONTRACTOR.
3. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT ODOT 611 CONDUIT ITEMS.

EXISTING TREES:

1. BEFORE THE START OF WORK, REPRESENTATIVES OF THE CITY OF ELYRIA AND THE CONTRACTOR SHALL CONDUCT A SURVEY OF THE EXISTING TREES WITHIN THE WORK ZONE AND IDENTIFY ANY TREE BRANCHES AT RISK OF DAMAGE BY SEWER CONSTRUCTION ACTIVITIES. IDENTIFIED BRANCHES SHALL BE PRUNED UNDER THE SUPERVISION OF AN ARBORIST. THE COST OF TREE TRIMMING SHALL BE INCLUDED IN THE CONTRACT PRICE OF THE SEWER.

SEEDING AND MULCHING

1. THIS ITEM SHALL CONSIST OF FURNISHING SEED, AGRICULTURAL LIMITING MATERIALS, COMMERCIAL FERTILIZER, MULCHING MATERIAL AND WATER AND PLACING AND INCORPORATING AS SPECIFIED. THE AREA TO BE SEEDED AND PAID UNDER THIS ITEM SHALL INCLUDE ALL GRASS AREAS DESIGNATED BY THE ENGINEER WITHIN THE RIGHT OF WAY LIMITS OR WORK LIMIT, AND ALL AREAS OUTSIDE OF THE PROJECT LIMITS WHERE VEGETATIVE GROWTH HAS BEEN INJURIOUSLY DISTURBED OR DESTROYED BY THE CONTRACTOR. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF ODOT CMS ITEM 659.
2. AREAS TO BE SEEDED SHALL BE FREE OF ROCK AND OTHER FOREIGN MATERIAL THREE INCHES (3) OR GREATER IN ANY DIMENSION AND SHALL BE SATISFACTORILY SHAPED AND FINISHED AS PROVIDED IN ODOT 203. IN ADDITION FOUR INCHES (4) OF TOPSOIL SHALL BE PLACED ON TOP OF THE SURFACE TO BE SEEDED PER ODOT 653.
3. THE SEED SHALL BE THOROUGHLY MIXED AND THEN EVENLY SOWN OVER THE PREPARED AREAS AT A RATE LISTED BELOW. SEED SHALL BE SOWN DRY OR HYDRAULICALLY. ALL AREAS TO BE SEEDED IN THE PROJECT ARE CONSIDERED TO BE URBAN IN CHARACTER AND SHALL BE SEEDED WITH THE FOLLOWING MIXTURE (PERCENTAGES BY WEIGHT)

MIX		RATE
37.5%	KENTUCKY BLUEGRASS	3 LBS PER 1,000 SQUARE FEET
37.5%	CREEPING RED FESCUE	3 LBS PER 1,000 SQUARE FEET
25.0%	ANNUAL AND PERENNIAL RYEGRASS	2 LBS PER 1,000 SQUARE FEET

4. IMMEDIATELY AFTER SOWING, THE AREAS SHALL BE RAKED, DRAGGED, OR OTHERWISE TREATED TO COVER THE SEED TO A DEPTH OF APPROXIMATELY ¼ INCH.
5. THE OPERATION OF SEED SOWING SHALL NOT BE PERFORMED WHEN THE GROUND IS FROZEN OR MUDDY, OR WHEN THE SOIL OR WEATHER CONDITIONS WOULD PREVENT THE PROPER SOIL PREPARATION AND SUBSEQUENT OPERATIONS. ALL SEEDING PERFORMED BETWEEN NOVEMBER 1 AND FEBRUARY 28 SHALL BE TEMPORARY IN ACCORDANCE WITH ODOT CMS 207, OR DORMANT SEEDING OR MULCHING.
6. WITHIN 24 HOURS AFTER GIVEN AREA IS SEEDED, MULCH CONFORMING TO ODOT 659.15 SHALL BE EVENLY PLACED OVER ALL SEEDED AREA AT THE RATES PRESCRIBED.
7. THE CONTRACTOR SHALL MAINTAIN ALL SEEDED AND MULCHED AREAS UNTIL FINAL INSPECTION. IF THE PROJECT ACHIEVES SUBSTANTIAL COMPLETION BETWEEN NOVEMBER 1 AND FEBRUARY 28 AND TEMPORARY SEEDING OR MULCHING IS PERFORMED IN THAT PERIOD, THE CONTRACTOR SHALL PERFORM FINAL SEEDING NO LATER THAN MAY 31ST. IF DORMANT SEEDING WAS USED BETWEEN NOVEMBER 1 AND FEBRUARY 28, THE CONTRACTOR SHALL RESEED OR REPAIR AND MULCH ANY AREA, WHICH DOES NOT HAVE GROWTH.
8. THE CONTRACTOR SHALL SUPPLY THE CITY WITH TEN (10) 40 LBS BAGS OF SCOTTS TURF BUILDER EZ SPREAD UPON FINAL ACCEPTANCE.

PROTECTION OF LANDSCAPING

1. THE CONTRACTOR SHALL TAKE CARE AS NOT TO DISTURB LANDSCAPING ITEMS LOCATED OUTSIDE THE RIGHT OF WAY. ANY DAMAGES CAUSED TO THESE ITEMS SHALL BE FULLY RESTORED OR REPLACED BY THE CONTRACTOR WITH ALL RELATED COSTS BEING THE FULL RESPONSIBILITY OF THE CONTRACTOR.

BID DOCUMENTS

AECOM

PROJECT
WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT
CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT
AECOM
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REGISTRATION



ISSUE/REVISION

I/R	DATE	DESCRIPTION
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PROJECT NUMBER
60332065

SHEET TITLE
GENERAL NOTES AND LEGEND

SHEET NUMBER
G3

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ANSI D 22" x 34"
Approved: SB
Checked: SA
Designer: DE
Last Plotted: 10/28/2025 10:20:21 AM by: Initials:
Last saved by: WILLIAMSCP
Filename: C:\USERS\WILLIAMSCP\AECOM\ELYRIA CD CM 4 AERATION TANKS - GENERAL\900_CAD_GIS\910_CAD\20-SHEETS\60332065_TASK 3_AERATION TANK_G3-4.DWG

SANITARY SEWER CONSTRUCTION NOTES:

1. 4" TO 10" SANITARY SHALL BE PVC PIPING AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH ASTM F794, WITH JOINTS PER ASTM D3212 AND INSTALLED PER ASTM D2321 WITH A BEDDING CLASSIFICATION PER ASTM D2321.

2. SANITARY SEWER PIPE CONSTRUCTION SHALL COMPLY WITH ODOT CMS SECTION 611, UNLESS OTHERWISE NOTED HEREIN.

3. ALL SEWER LINES SHALL BE INSPECTED PER ODOT 611.12 TO VERIFY ACCURACY OF ALIGNMENT AND FREEDOM FROM DEBRIS AND OBSTRUCTIONS. THE METHOD OF INSPECTION SHALL BE VIDEO RECORDING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TWENTY-FOUR (24) HOURS IN ADVANCE OF VIDEO RECORDING. THE CONTRACTOR SHALL CLEAN THE SEWER WITHIN TWENTY-FOUR HOURS PRIOR TO RECORDING. VIDEO RECORDING SHALL BE PERFORMED BY A FIRM EXPERIENCED IN TELEVISING AND RECORDING INSTALLED SEWER PIPE. THE CONTRACTOR SHALL SUBMIT TWO (2) COPIES OF ALL VIDEOS ON DVD OR CD COLOR VIDEO FORMAT AND TWO (2) COPIES OF A TYPEWRITTEN LOG OF THE CONTENTS OF THE VIDEOS. VIDEOS AND LOGS SHALL BE SUBMITTED TO THE OWNER

4. ALL MANHOLES SHALL BE WATERTIGHT STRUCTURES, PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478. CONNECTIONS BETWEEN SEWER PIPE AND NEW MANHOLE SHALL BE A-LOK OR APPROVED EQUAL MEETING ASTM C-923. CONCRETE SHALL BE CLASS A, 4,000 PSI, 28 DAY COMPRESSIVE STRENGTH. REINFORCING STEEL AND RING WALL DIMENSIONS SHALL BE AS SHOWN IN STANDARD ODOT MANHOLE NO. 3 DRAWING. LIFT HOLES, IF PROVIDED, SHALL BE WATERTIGHT AND FILLED WITH A NON-SHRINK GROUT AFTER SET IN PLACE. JOINTS SHALL BE FORMED ENTIRELY OF CONCRETE EMPLOYING A ROUND RUBBER GASKET (O-RING) CONFORMING TO ASTM C-443, SHALL BE SELF-CENTERING AND MAKE A UNIFORM WATERTIGHT JOINT. JOINTS DAMAGED DURING INSTALLATION SHALL BE REPLACED WITH NEW RING WALLS AS NEEDED.

5. THE CONTRACTOR SHALL PERFORM A MANHOLE VACUUM TEST FOLLOWING THE INSTALLATION OF THE MANHOLE BOTTOM, RING WALL(S) AND TOPS, OR CHIMNEY SECTIONS. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH AND MEET ALL THE REQUIREMENTS OF ASTM C-1244. THE MANHOLE SHALL BE TESTED AT 10" OF MERCURY FOR 60 SECONDS AND MAY HAVE LESS THAN 1" REDUCTION. IF THE MANHOLE DOES NOT PASS THE VACUUM TEST, IT SHALL BE REPAIRED AS NEEDED THEN TESTED UNTIL THE MANHOLE PASSES. ALL TESTING SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE AND UNDER THE DIRECT OBSERVATION OF THE CITY ENGINEER OR HIS REPRESENTATIVE.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF FLOW IN ANY SANITARY SEWER IMPACTED BY CONSTRUCTION ACTIVITIES. BY-PASS PUMPING WILL BE REQUIRED DURING DAILY OPERATIONS WHERE THE EXISTING SANITARY SEWER IS TO BE REMOVED AND REPLACED. AT THE END OF EACH WORK DAY, THE EXISTING AND NEW SEWER SHALL BE TEMPORARILY TIED BACK TOGETHER AS NECESSARY TO MAINTAIN FLOW WITHOUT THE USE OF PUMPS. IF PUMPS ARE TO BE USED TO MAINTAIN FLOW DURING NOW WORKING HOURS, THEN THE CONTRACTOR IS RESPONSIBLE TO PROVIDE FULL TIME OVER-SIGHT TO VERIFY THAT THE PUMPS ARE OPERATING AND FLOW IS BEING MAINTAINED.

FLEXIBLE COUPLINGS:

1. PROVIDE FLEXIBLE COUPLING THAT CONFORMS TO ASTM C1173 AND ASTM D5926 TO COUPLE NEW GRAVITY SEWER PIPE TO EXISTING GRAVITY SEWER PIPE. TIGHTENING BANDS SHALL BE SERIES 316 STAINLESS STEEL WITH STAINLESS STEEL NUT AND BOLTS. TIGHTENING CLAMPS 4-INCH DIAMETER TO 15-INCH DIAMETER COUPLING SHALL BE PROVIDED WITH A SERIES 300 STAINLESS STEEL SHEAR RING HAVING A MINIMUM THICKNESS OF 0.012 INCH.

2. APPROPRIATE COUPLINGS SHALL BE PROVIDED AT ALL JOINTS BETWEEN NEW AND EXISTING PIPES, UNLESS OTHERWISE SHOWN ON THE PLAN, AND SHALL CREATE A WATERTIGHT JOINT BETWEEN THE NEW AND EXISTING PIPES.

MAILBOXES:

1. ANY MAILBOX REMOVED OR DISTURBED WITH CONSTRUCTION SHALL BE RESET IN A CONCRETE BASE AT ITS ORIGINAL LOCATION. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE CONTRACT'S BID PRICE FOR VARIOUS SEWER RELATED ITEMS. NO SEPARATE COMPENSATION WILL BE PAID BY THE CITY TO THE CONTRACTOR.

PERMITS:

1. ALL RIGHT OF WAY OCCUPANCY PERMITS SHALL BE SECURED BY THE CONTRACTOR.

DISPOSAL OF REMOVED MATERIALS:

1. ALL PAVEMENT, CURBING, AND/OR SIDEWALK REMOVED BY THE CONTRACTOR AS PART OF THE WORK SHALL BE DISPOSED AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. THE CONTRACTOR MAY DISPOSE THE ASPHALT GRINDINGS AT THE CITY OF ELYRIA CENTRAL MAINTENANCE GARAGE, LOCATED AT 851 GARDEN STREET.

2. ALL EXCAVATED MATERIAL REMOVED BY THE CONTRACTOR FROM UNDER THE ROADWAY FOR THE CONSTRUCTION OF THE SEWER OR MAIN SHALL BE DISPOSED AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

SHEETING / SHORING REQUIREMENTS:

1. THE CONTRACTOR SHALL HAVE A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, DESIGN THE SHEETING SHORING FOR THE TRENCH AT DEPTHS GREATER THAN 20 FEET.

SNOW REMOVAL:

1. FROM NOVEMBER 1 TO APRIL 1, CONTRACTOR SHALL NOTIFY ENGINEER OF ALL CONSTRUCTION PLATES PLACED IN CITY ROADWAYS. THE CITY WILL BE PERFORMING SNOW REMOVAL ON CITY ROADS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SNOW FROM ROADS THAT ARE CLOSED OR LIMITED TO LOCAL ACCESS ONLY DUE TO CONSTRUCTION. IF A ROAD IS OPENED TO FULL TRAFFIC PRIOR TO COMPLETE RESTORATION, CONTRACTOR SHALL TAKE RESTORATION MEASURES NECESSARY TO FACILITATE PLOWING BY THE CITY. SUCH MEASURE SHALL BE APPROVED BY THE CITY PRIOR TO OPENING THE ROAD TO FULL TRAFFIC. CITY SNOW PLOWING OPERATIONS PILE SNOW ALONG THE STREET CURB. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SNOW OUTSIDE OF THE WORK ZONE TO ACCESS MATERIALS COVERED BY THE CITY'S SNOW REMOVAL OPERATIONS.

OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTES:

1. A MINIMUM 18 INCH VERTICAL CLEARANCE AND 10 FEET HORIZONTAL CLEARANCE SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWERS AND A MINIMUM 12 INCH VERTICAL CLEARANCE AND 4 FEET HORIZONTAL CLEARANCE SHALL BE MAINTAINED BETWEEN MAINS AND STORM SEWERS. WHERE 10 FOOT HORIZONTAL CLEARANCE IS NOT FEASIBLE, A 10 FOOT RADIAL CLEARANCE SHALL BE PROVIDED.

CONSTRUCTION STAKING

1. AFTER PROJECT AWARD, THE CONTRACTOR SHALL BE PROVIDED THE SURVEY AND SEWER DESIGN CAD FILES FOR CONSTRUCTION STAKING AND LAYOUT. THE CONTRACTOR'S SURVEYOR WILL NEED TO USE THESE FILES TO LAYOUT THE ALIGNMENT OF THE SEWERS INCLUDING STAKING MH / STRUCTURE LOCATIONS.

BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

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ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

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REGISTRATION

STATE OF OHIO
ROBERT P. SUDDERTH
E-56060
REGISTERED PROFESSIONAL ENGINEER
10/28/25

ISSUE/REVISION

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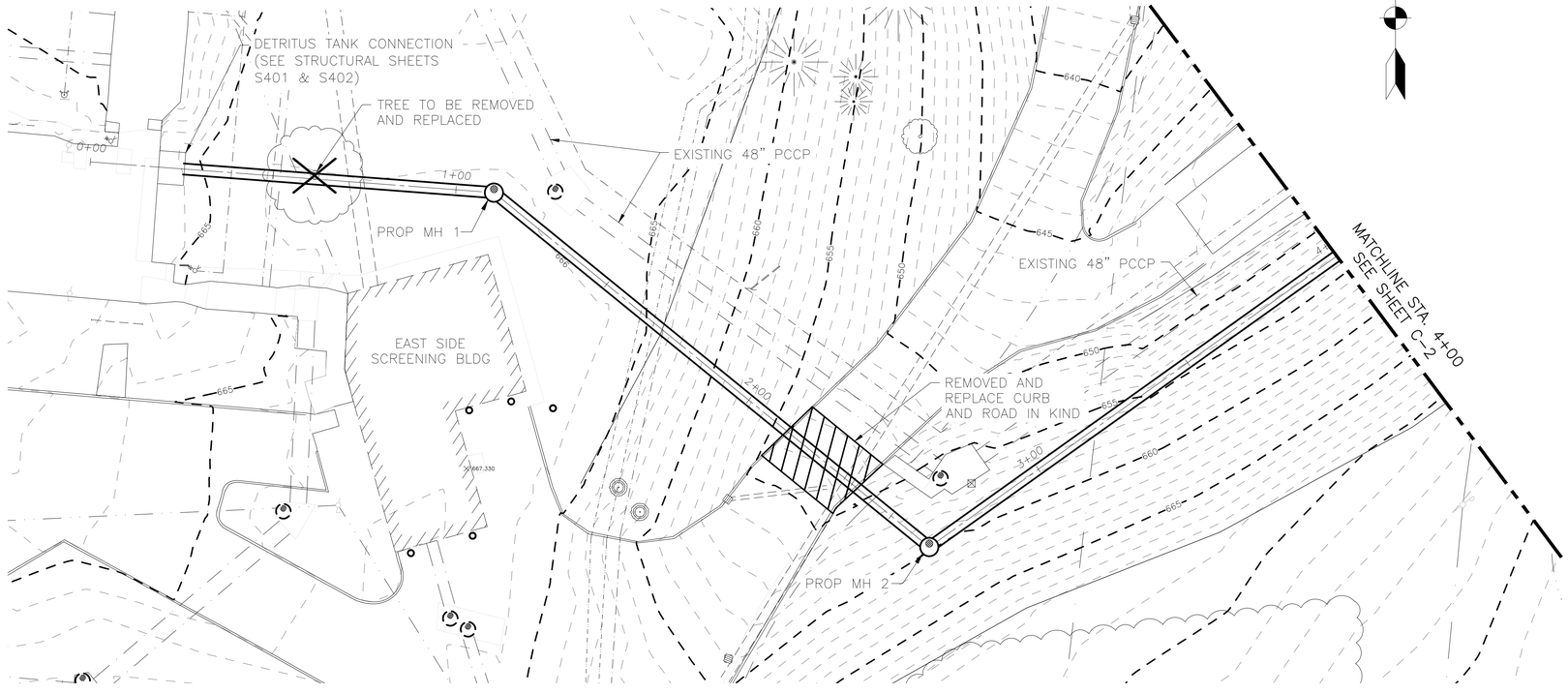
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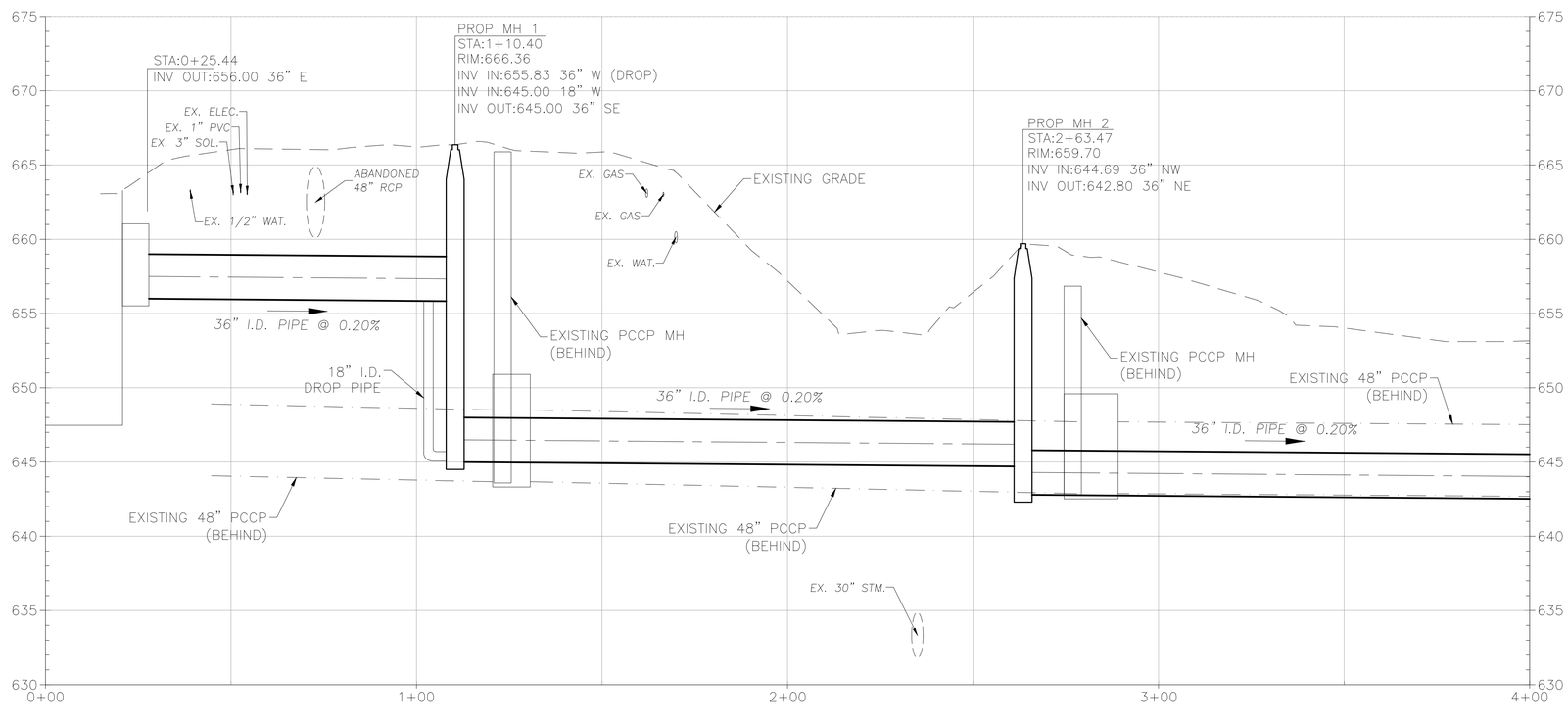
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G4

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VERT. SCALE: 1" = 5'

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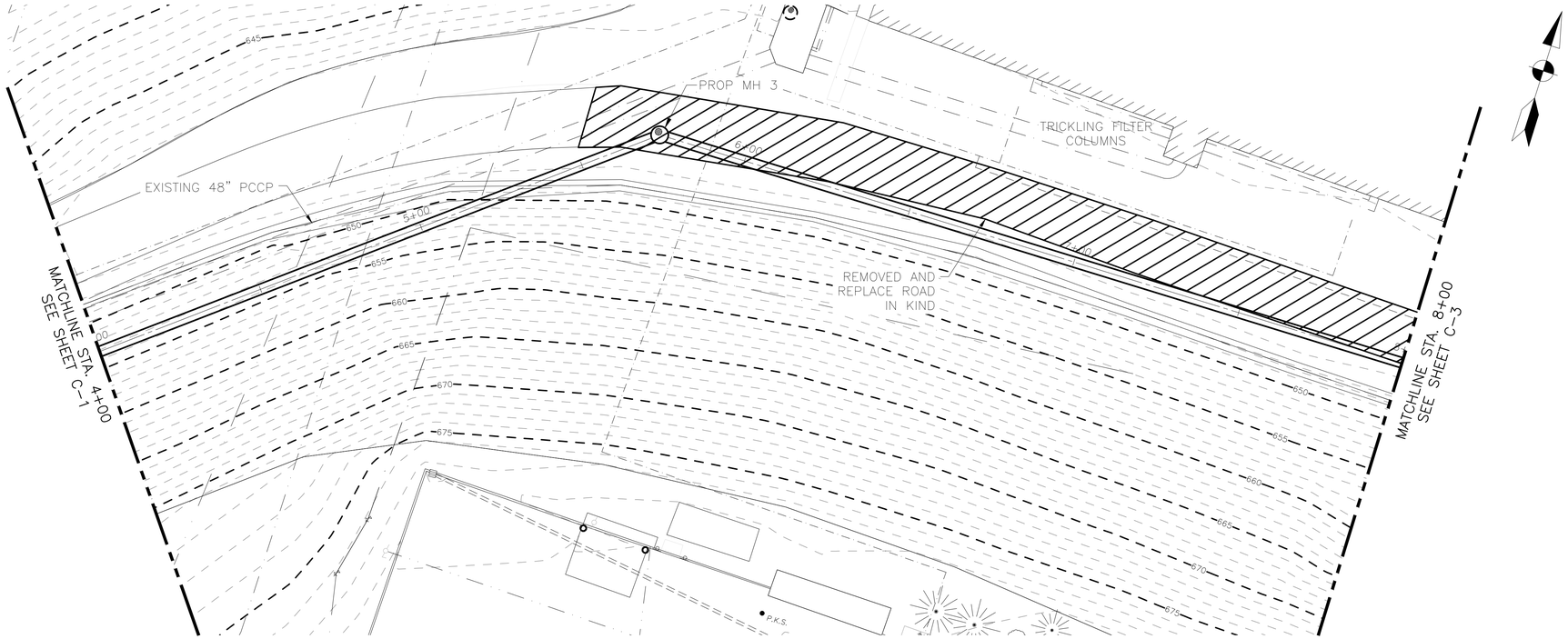
WET WEATHER PIPE
PLAN AND PROFILE
STA. 0+00 TO STA. 4+00

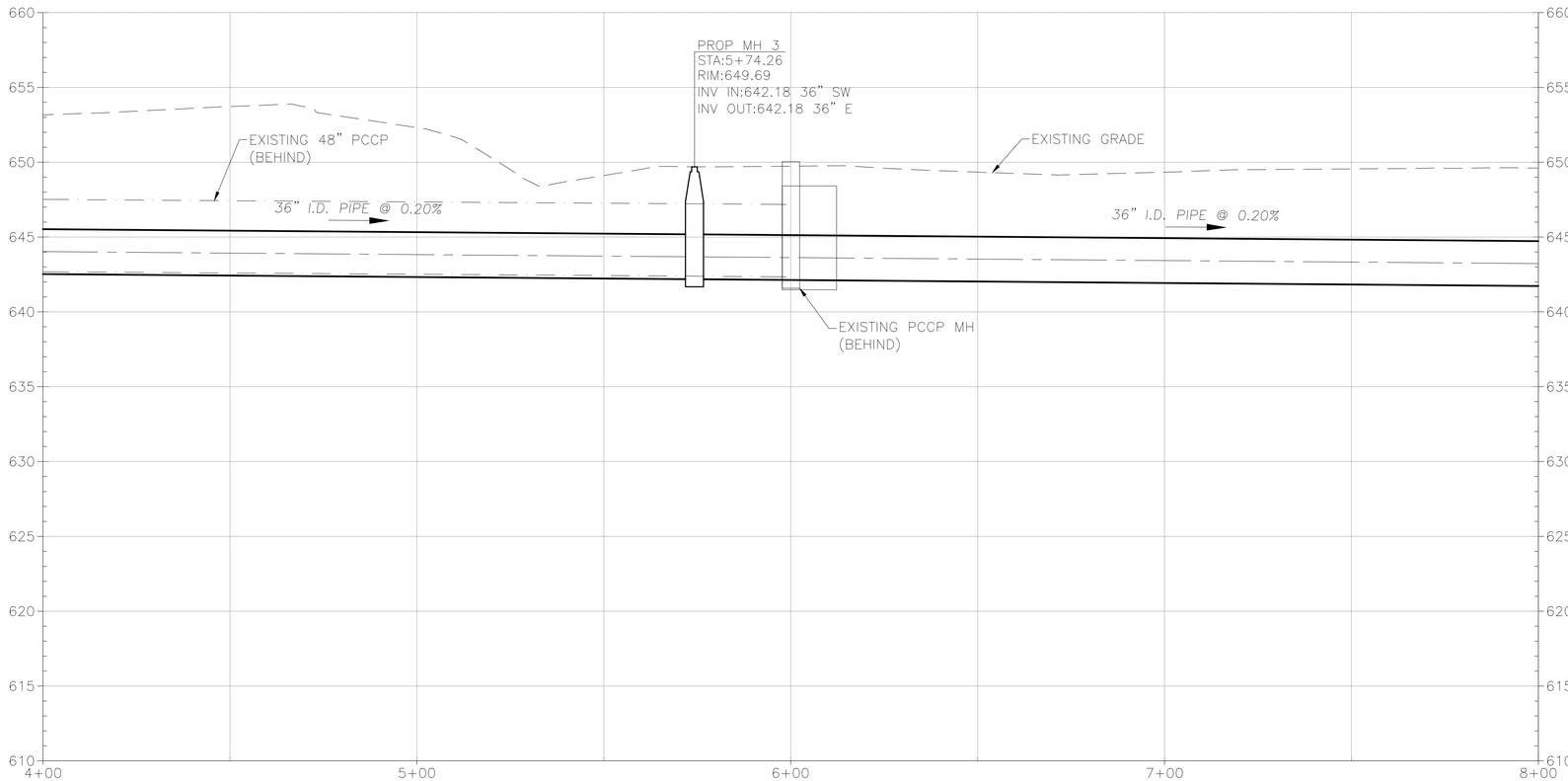
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C1

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VERT. SCALE: 1" = 5'

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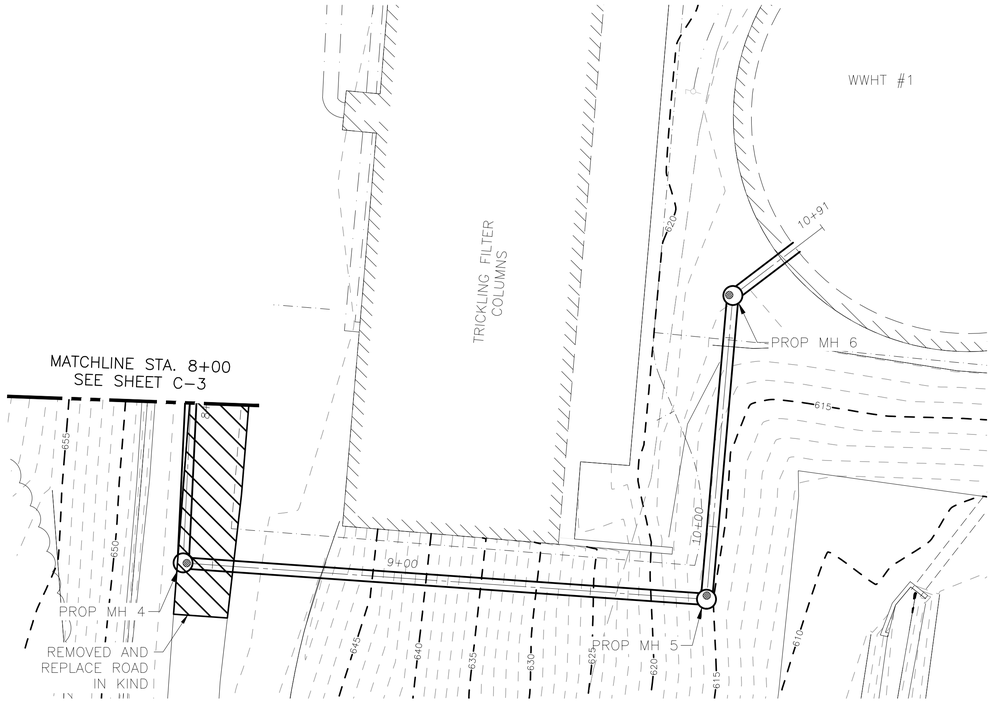
WET WEATHER PIPE
PLAN AND PROFILE
STA. 4+00 TO STA. 8+00

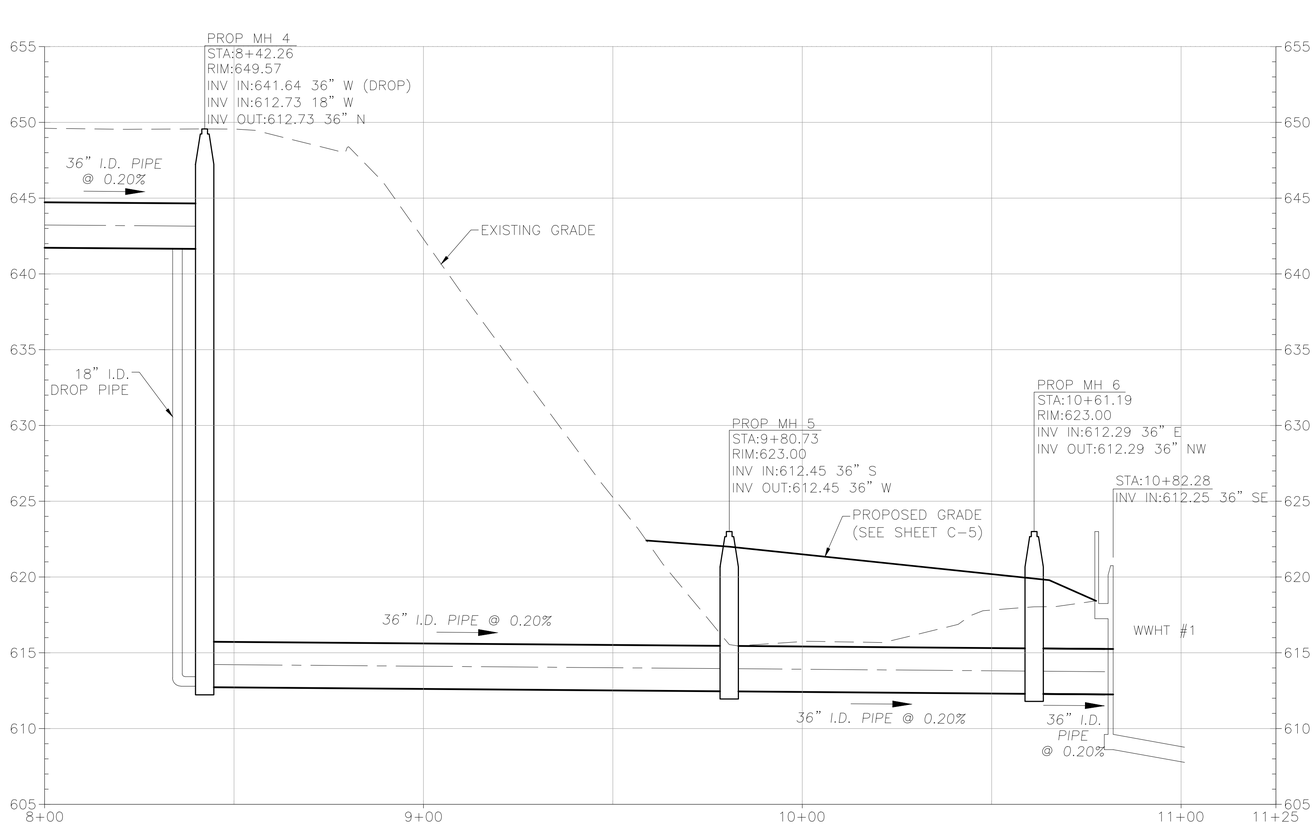
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C2

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VERT. SCALE: 1" = 5'

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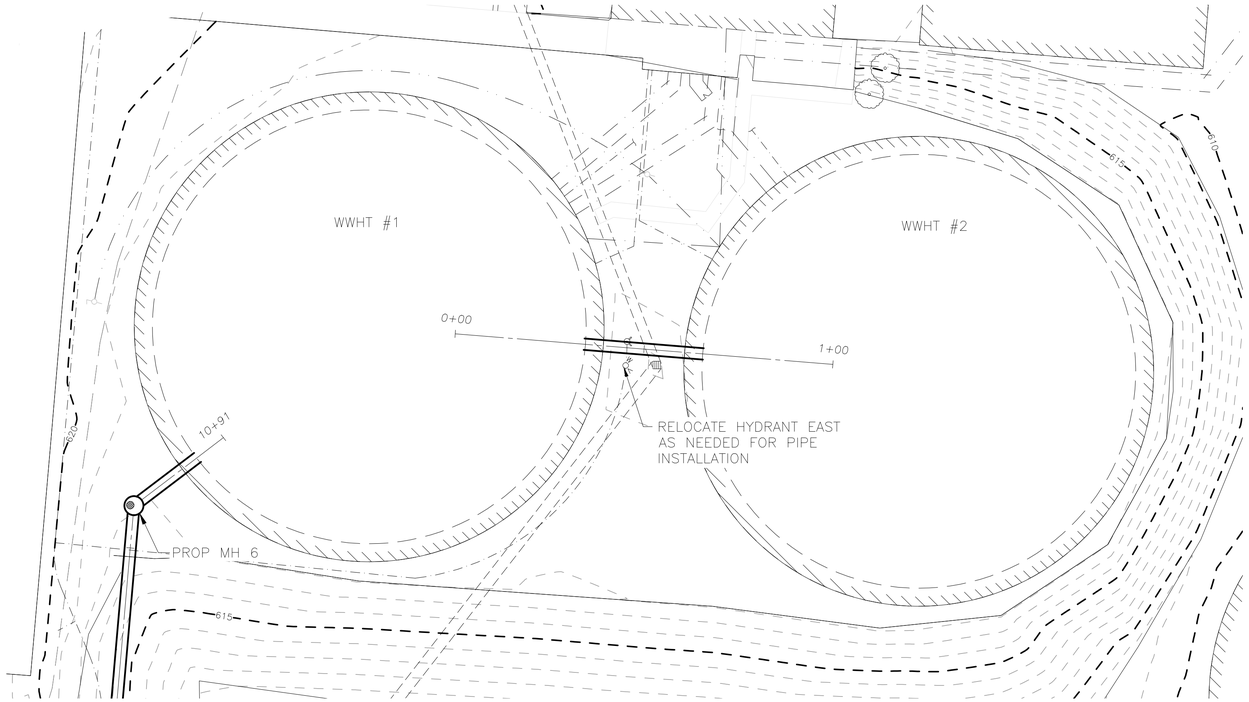
WET WEATHER PIPE
PLAN AND PROFILE
STA. 8+00 TO STA. 11+25

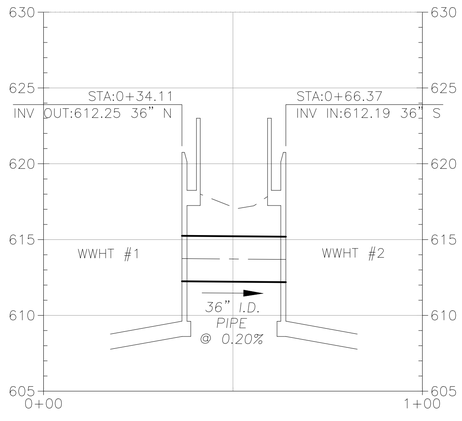
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C3

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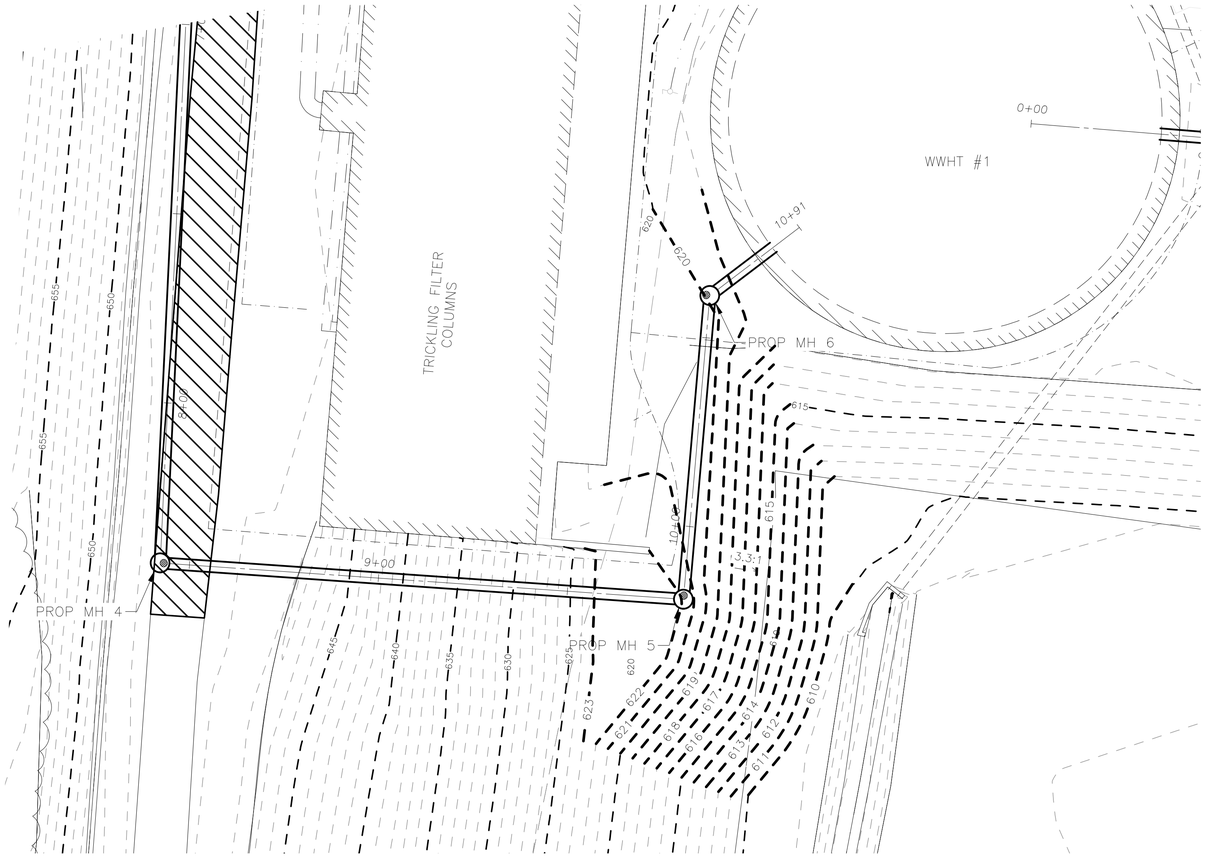
WET WEATHER PIPE TANK CONNECTION PLAN AND PROFILE

SHEET NUMBER

C4

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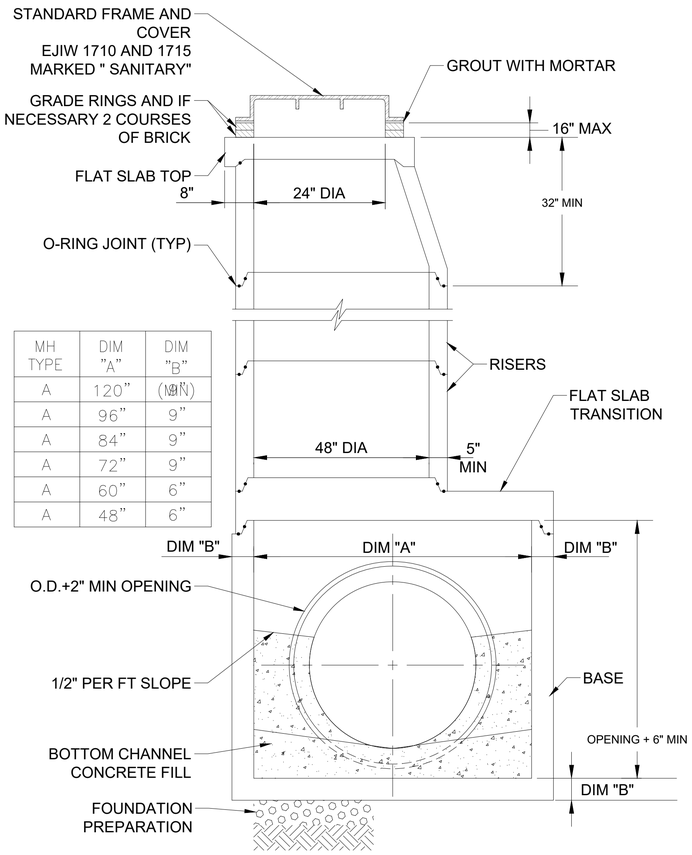
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WET WEATHER PIPE
PROPOSED GRADING PLAN

SHEET NUMBER

C5

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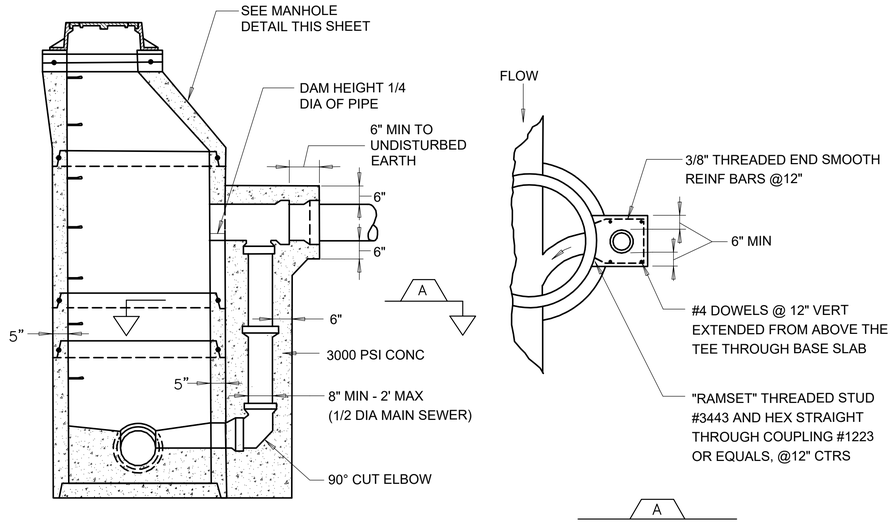
MH TYPE	DIM "A"	DIM "B" (MIN)
A	120"	9"
A	96"	9"
A	84"	9"
A	72"	9"
A	60"	6"
A	48"	6"

MANHOLE TYPE A
PRECAST CONCRETE

NOT TO SCALE

PRECAST CONCRETE / DROP MH NOTES:

1. THE PRECAST MANHOLE DESIGN SHALL BE IN ACCORDANCE WITH ASTM C478 WITH JOINTS PER ASTM C443.
2. SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE OR ALL GROOVE ENDS UP. ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTION WITHOUT LIFT HOLES OF ANY KIND.
3. BASES FOR MANHOLES ARE SHOWN WITH MONOLITHIC FLOOR AND RISERS WHICH MAY BE CAST IN ONE OR TWO OPERATIONS. A PERMISSIBLE ALTERNATE IS TO CAST AND SHIP THE FLOOR AND BARREL SEPARATELY. OPENINGS FOR INLET AND OUTLET PIPE SHALL BE PROVIDED, EITHER WHEN THE UNIT IS CAST OR LATER, TO MEET PROJECT REQUIREMENTS. BOTTOM CHANNELS MAY BE FORMED OF CONCRETE PRECAST IN THE BASE OR INSTALLED BY FIELD CONSTRUCTION. FLOORS MAY ALSO BE POURED IN PLACE.
4. OPENINGS IN RISER SECTIONS SHALL BE PREFABRICATED. FLEXIBLE CONNECTIONS SHALL BE PROVIDED FOR SANITARY AND STORM SEWERS. PREMIUM SEALS SHALL MEET ASTM C-923.
5. JOINT SEALS BETWEEN PRECAST MANHOLE SECTIONS SHALL BE RESILIENT AND FLEXIBLE GASKET JOINTS. JOINTS SHALL MEET ASTM C-443.
6. MANHOLE GRADE RINGS SHALL BE SEALED EXTERNALLY AND BETWEEN GRADE RINGS WITH A LAYER OF MASTIC COMPOUND SUCH AS FABERLITE, KENT SEAL, OR EQUAL.
7. PRECAST MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
8. MINIMUM CLEARANCE FROM TOP OF FILL TO BOTTOM OF FLAT SLAB TRANSITION
9. APPLY "THOROSEAL" BY THORO SYSTEM PRODUCTS, OR APPROVED EQUAL TO THE INSIDE EXPOSED SURFACES OF ALL MANHOLES.



NOTE: DROP MH SHALL BE CONSTRUCTED WHERE DISTANCE BETWEEN INVERTS EXCEEDS 2'-0"

MANHOLE TYPE B
DROP MH

NOT TO SCALE

BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

AECOM
1300 EAST 9TH STREET, SUITE 500
CLEVELAND, OH 44114
216.622.2300 tel 216.622.2301 fax
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CONSULTANTS

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REGISTRATION

STATE OF OHIO
ROBERT K. SUDZEIKA
E-56060
REGISTERED PROFESSIONAL ENGINEER
10/28/25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

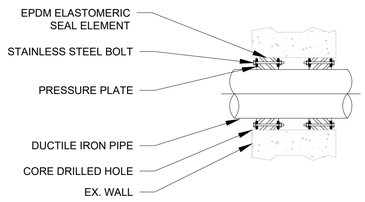
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MISCELLANEOUS CIVIL DETAILS
SHEET 1 OF 2

SHEET NUMBER

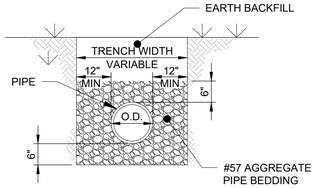
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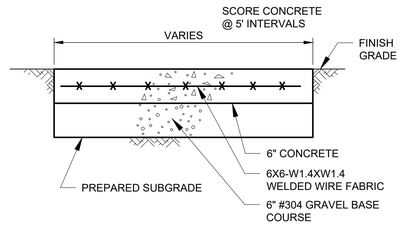
1 TYP **WALL MODULAR SEAL DETAIL**

Scale: NONE



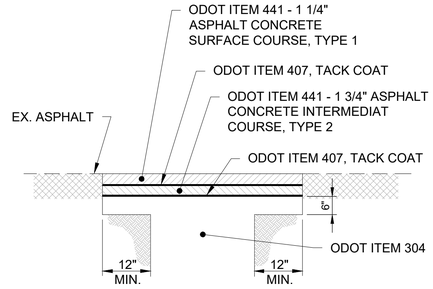
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Scale: NONE



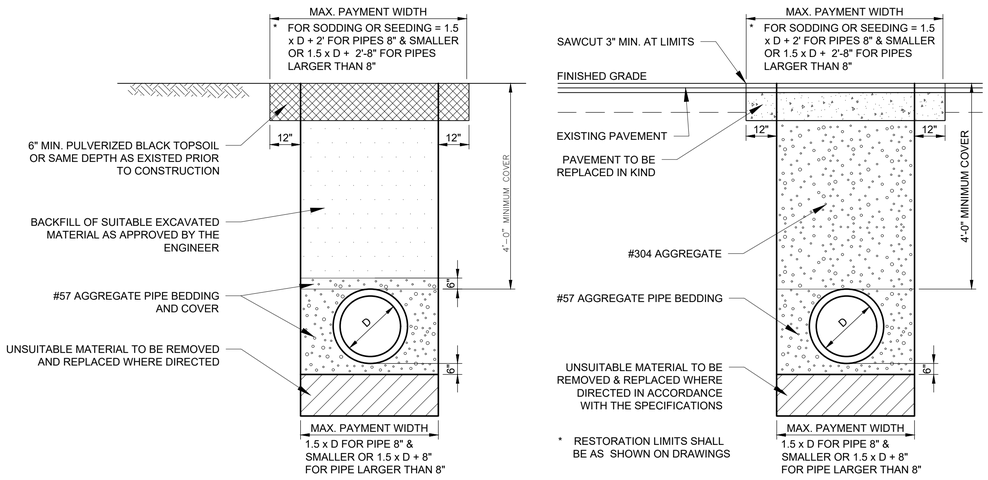
3 TYP **CONCRETE WALKWAY SECTION**

Scale: NONE



4 TYP **ASHPALT REPLACEMENT DETAIL**

Scale: NONE



5 TYP **TYPICAL TRENCH CROSS SECTION**

Scale: NONE

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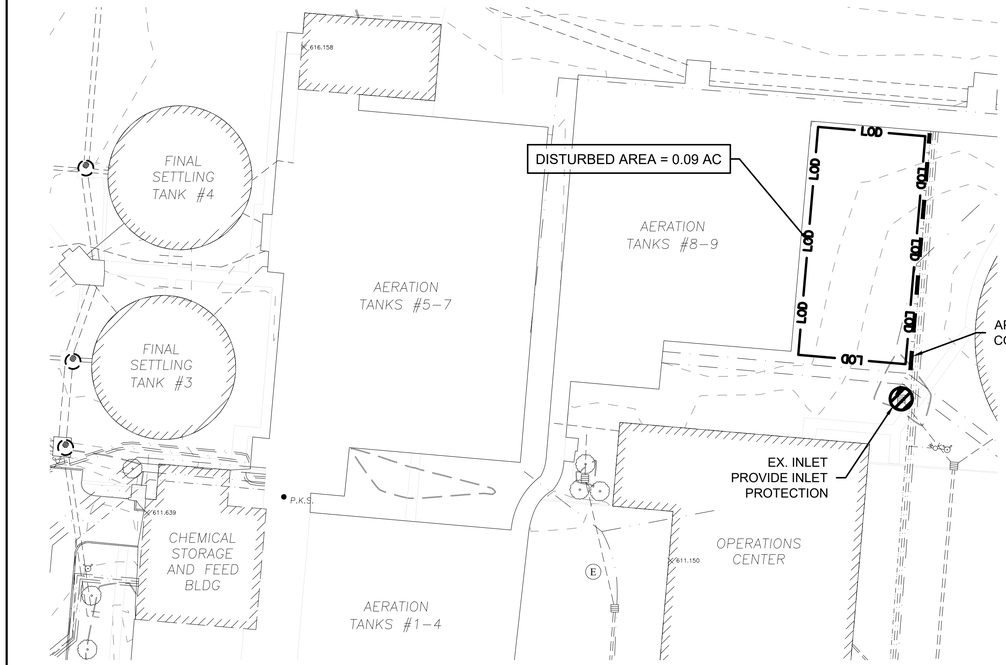
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SHEET 2 OF 2

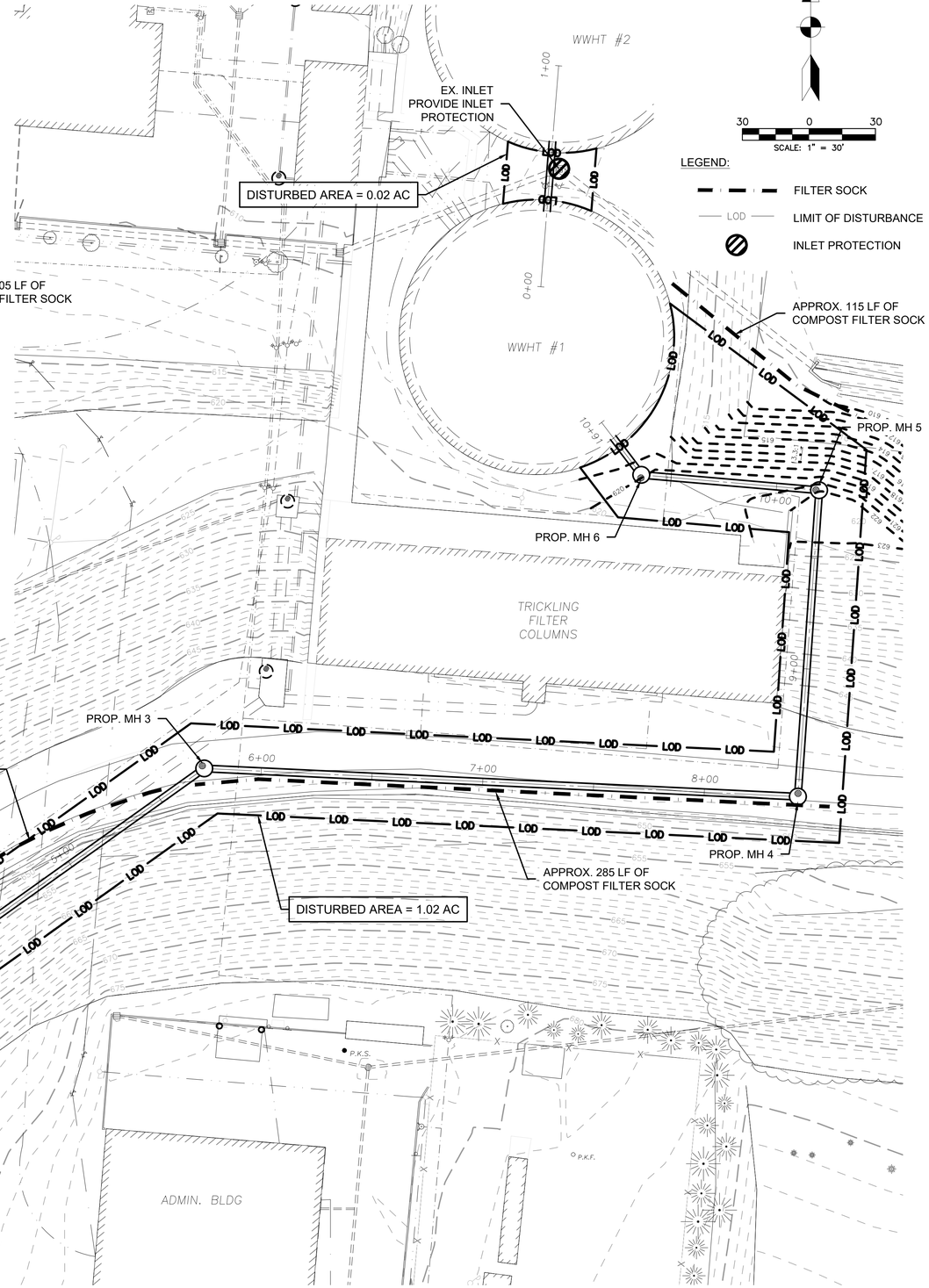
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CD-2

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30 0 30
SCALE: 1" = 30'

LEGEND:

- FILTER SOCK
- LOD — LIMIT OF DISTURBANCE
- INLET PROTECTION

BID DOCUMENTS

AECOM

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SHEET TITLE

PROPOSED SWPPP PLAN

SHEET NUMBER

SW1

Printed on 10% Post-Consumer Recycled Content Paper

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Checked:##
Designer:##
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VICINITY MAP

1"=1000'



DISTURBED PROJECT AREA = 0.96 ACRES
LATITUDE: N 41° 24' 17"
LONGITUDE: W 82° 05' 26"

SWPPP GENERAL NOTES

1. PRIOR TO WORK, THE CONTRACTOR SHALL LOCATE ON THE SWPPP PLANS PROVIDED (SHEET SW1 - SW3) ALL CONSTRUCTION SUPPORT FACILITIES SUCH AS, BUT NOT LIMITED TO, DESIGNATED AREAS FOR STORAGE OR DISPOSAL OF SOLID, SANITARY, AND TOXIC WASTE, DUMPSTER(S), DRUM(S), WASHOUT PIT(S), DESIGNATED FUELING AREA(S), CHEMICAL COMPOUND STORAGE AND MIXING AREA(S), EQUIPMENT AND MATERIAL STORAGE AREA(S) AND EQUIPMENT FUELING AND MAINTENANCE LOCATION(S). ALL LOCATIONS FOR THE ABOVE MENTIONED ITEMS SHALL BE AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORM WATER DRAINAGE AREAS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SEPARATE AND APPROPRIATE DISPOSAL CONTAINERS FOR SOLID, SANITARY AND TOXIC WASTE, WHICH SHALL BE SERVICED BY A LICENSED COMMERCIAL OPERATOR FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHOULD USE PROTECTED STORAGE AREAS FOR INDUSTRIAL OR CONSTRUCTION MATERIALS TO MINIMIZE EXPOSURE OF SUCH MATERIALS TO STORM WATER.
2. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE SHALL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY OHIO REVISED CODE 3714.
3. ALL CHEMICALS MIXED ON THE SITE SUCH AS, BUT NOT LIMITED TO, FERTILIZER, LIME, OR CONCRETE SHALL BE PERFORMED WITHIN THE DESIGNATED AREAS MARKED ON THE PLANS BY THE CONTRACTOR AS DIRECTED IN NOTE 1.
4. IF THE CONTRACTOR WISHES TO HAVE FUEL TANKS AND DRUMS STORED ON SITE, THEN HE MUST PROVIDE A MARKED STORAGE AREA WITH ALL COMPONENTS OF SUCH CONTAINERS SURROUNDED BY A DIKE AND THE DIKE SHALL BE IN COMPLIANCE WITH ALL ELYRIA FIRE DEPARTMENT LOCAL, STATE AND FEDERAL REGULATIONS. IF ONE ABOVE GROUND STORAGE TANK (AST) OF 660 GALLONS, OR MORE, TOTAL AST OF 1,330 GALLONS, OR BELOW-GROUND STORAGE OF 42,000 GALLONS OF FUEL, THEN A SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN SHALL BE DEVELOPED AND DELIVERED TO THE CITY ENGINEER PRIOR TO COMMENCEMENT OF WORK. IN THE EVENT OF A SMALL RELEASE (LESS THAN 25 GALLONS OF PETROLEUM WASTE), THE CONTRACTOR SHALL IMMEDIATELY CONTAIN THE SPILL AREA, CONTACT THE CITY ENGINEER, TEST THE CONTENTS AND DISPOSE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. IN THE CASE OF A LARGE RELEASE (25 GALLONS OR MORE OF PETROLEUM WASTE), THE CONTRACTOR MUST CONTACT THE OHIO EPA AT 1-800-282-9378, THE ELYRIA FIRE DEPARTMENT AT (440) 323-4815, THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC), AND THE ELYRIA WASTEWATER POLLUTION CONTROL PLANT AT (440) 366-2211 WITHIN 30 MINUTES OF THE SPILL. ALL SPILLS SHALL BE RECORDED AND INCLUDE THE PREVENTATIVE ACTION TAKEN TO REMEDY AND A COPY SHALL BE GIVEN TO THE OWNER AND MAINTAINED BY THE OWNER FOR THREE YEARS, OR FROM THE CONCLUSION OF LITIGATION.
5. SOILS CONTAMINATED BY PETROLEUM, OR OTHER CHEMICAL SPILLS MUST BE TREATED AND DISPOSED IN AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY, OR HAZARDOUS WASTE TREATMENT STORAGE, OR DISPOSAL FACILITY (TSD) AT THE CONTRACTORS EXPENSE.

DISTURBED AREA: 1.13 ACRES

(WORK LIMITS EQUAL LIMITS OF DISTURBANCE).
SOIL = PREDOMINANTLY SILTY CLAY & SILTY SAND
PRE CONSTRUCTION C = POST CONSTRUCTION C.

DRAINAGE AREA:

THE STORM SYSTEM CARRIES THE FLOW TO THE BLACK RIVER.

GENERAL CONSTRUCTION ACTIVITIES:

THE PROJECT INCLUDES THE MODIFICATION TO THE ELYRIA WWPCP AERATION TANKS FROM A 2-PASS TO A 3-PASS CONFIGURATION TO INCREASE THE CAPACITY TO 40 MGD. IT ALSO INCLUDES INSTALLATION OF 1,100 LINEAR FEET (LF) OF 36-INCH SEWER TO DIVERT FLOW FROM THE EAST DETRITUS TANK TO THE TWO WET WEATHER HOLDING TANKS DURING WET WEATHER EVENTS.

CONSTRUCTION SEQUENCE

1. THE STAGING & PARKING AREA SHALL BE ESTABLISHED AT THE LOCATION NOTED ON THE SWPPP PLAN ON 12" OF ODOT 304 LIMESTONE AGGREGATE BASE. IF AN AGGREGATE BASE COURSE IS USED, THEN THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE STONE SUCH THAT IT IS REPLENISHED WHEN THE DEPTH IS LESS THAN 6" OR REMOVED AND REPLACED IF THE STONE BECOMES MUD-LADEN. THE CONTRACTOR'S TRAILER MAY HAVE SANITARY FACILITIES AND SHALL HAVE A WATER SOURCE. ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY REGULATIONS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE THROUGHOUT THE CONSTRUCTION, WHICH MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND SHALL BE SERVICED BY A COMMERCIAL OPERATOR. (SEE NOTE 1 UNDER SWPPP GENERAL NOTES).
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL NON-SEDIMENT POLLUTION CONTROLS AT THIS SITE, WHICH PREVENT NON-SEDIMENT POLLUTANTS FROM DISCHARGING INTO RUNOFF OR INTO THE GROUND AND MUST DISPOSE OF THEM IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATORY AUTHORITIES. IT IS PROHIBITED TO BURN, BURY, OR POUR OUT INTO THE GROUND, DITCH OR INTO A STORM SEWER, SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT, CURING COMPOUND AND OTHER SUCH TOXIC OR HAZARDOUS WASTE. STORAGE TANKS SHALL BE LOCATED IN DIKED AREAS AWAY FROM DRAINAGE CHANNELS AND THE DIKED AREA SHOULD HOLD A VOLUME OF 110% OF THE LARGEST TRUCK, OR TANK. SHOULD THE CONTRACTOR FAIL TO PREVENT NON-SEDIMENT POLLUTION AT THIS SITE, HE MUST IMMEDIATELY REMEDIATE THE SITE TO LOCAL, STATE AND FEDERAL REGULATORY AUTHORITIES' APPROVAL ENTIRELY AT HIS OWN EXPENSE. (SEE NOTE 1 UNDER SWPPP GENERAL NOTES).
4. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A MINIMUM OF ONE SOLID WASTE DISPOSAL RECEPTACLE AND HAVE THIS RECEPTACLE EMPTIED BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE AS NECESSARY. NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORM WATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN THE RECEPTACLE. (SEE NOTE 1 UNDER SWPPP GENERAL NOTES).
5. ALL CATCH BASINS OR INLETS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED AROUND THEM PRIOR TO DISTURBING THE UPSTREAM DRAINAGE AREA. THE INLET PROTECTION AROUND THESE BASINS OR INLETS SHALL NOT BE REMOVED UNTIL AFTER THE SITE IS STABILIZED.
6. CONSTRUCTION SHALL BE STAGED SUCH THAT LAWN DISTURBANCE IS KEPT TO A MINIMUM.
7. CLEAR AND GRUB.

CONSTRUCTION SEQUENCE (CONT.)

8. THERE IS THE POTENTIAL TO ENCOUNTER GROUNDWATER IN TRENCHES. GROUNDWATER, STORMWATER AND SEDIMENT BEARING DRAINAGE SHALL BE FILTERED OR PONDED TO ALLOW REMOVAL OF SILT, SEDIMENT, DEBRIS, AND OTHER POLLUTANTS PRIOR TO DISCHARGE FROM THE SITE. THE SETTLED MATERIAL SHALL BE DISPOSED IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL. ALL FILTERED WATER SHALL BE DISCHARGED ONTO STONE AND NOT THE GROUND TO PREVENT EROSION. THERE SHALL BE NO TURBID OR MURKY DISCHARGES TO SURFACE WATERS OF THE STATE RESULTING FROM DEWATERING, OR BY-PASS PUMPING ACTIVITIES. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY DEWATERING INTO A SUMP PIT, DISCHARGE THROUGH A FILTER SOCK, OR BAG OR COMPARABLE PRACTICE APPROVED IN WRITING BY THE CITY PRIOR TO USE.
9. AS A MINIMUM, ALL STOCKPILES SHALL HAVE SILT FENCE PLACED 10' OFF AND ALONG THE BOTTOM FOOTPRINT OF THE FINAL STOCKPILE CONFIGURATION PRIOR TO PLACEMENT OF MATERIAL. IF THE STOCKPILE WILL BE INACTIVE FOR 21 DAYS OR MORE, THEN THE SURFACE SHALL BE SEEDED, OR STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY. THE STOCKPILE CAN BE LOCATED BY THE CONTRACTOR TO BEST FIT HIS MEANS AND METHODS, BUT AT NO TIME SHALL ALLOW SEDIMENT LADEN RUNOFF TO EXIT SITE. SILT FENCE SHALL BE PER ODOT 207, PERIMETER FILTER FABRIC FENCE.
10. INSTALL SANITARY SEWER AND STRUCTURES, DO NOT CONNECT SERVICES UNTIL PROPOSED MAIN IS ACCEPTED BY THE CITY. INSTALL STORM SYSTEM. REHABILITATE EXISTING SEWERS.
11. BEGIN GRADING OPERATIONS.
12. STABILIZE WITH GRASS, STONE, SIDEWALK, OR PAVEMENT WITHIN 7 DAYS OF REACHING FINAL GRADE, OR WITHIN 7 DAYS OF LAST ACTIVITY IF IT WILL BE LEFT UNDISTURBED FOR 14 DAYS OR MORE. THE CONTRACTOR IS RESPONSIBLE TO PREVENT DISCHARGE OF WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS FROM MIXING WITH RUN-OFF AND LEAVING THE SITE. THE CONTRACTOR SHALL SIZE THE CONCRETE WASHOUT PIT TO HANDLE HIS PROPOSED CONCRETE OPERATIONS AND SHALL MAINTAIN THE PIT SUCH THAT ALL CONCRETE TRUCKS CAN USE IT TO WASHOUT. ALL CURED RESIDUE FROM THE PIT SHALL BE DISPOSED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL LOCATE THE WASHOUT PIT ON THE PLANS PRIOR TO HIS CONCRETE OPERATIONS AND THE WASHOUT PIT SHALL BE LOCATED AWAY FORM WATERCOURSES. (SEE NOTE 1 UNDER GENERAL NOTES).
13. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND SHALL SUPPLY WATER TRUCKS, OR OTHER MEANS, AS NECESSARY, TO CONTROL DUST GENERATED BY CONSTRUCTION ACTIVITIES ON THE SITE TO THE SATISFACTION OF THE OWNER. IF DUST CONTROL SUPPRESSANTS ARE USED, THEN THEY CANNOT BE APPLIED NEAR CATCH BASINS, OR OTHER DRAINAGE WAYS. USED OIL CANNOT BE USED AS A DUST SUPPRESSANT.
14. AT COMPLETION OF CONSTRUCTION AND THE SITE IS SUFFICIENTLY STABILIZED, THE TEMPORARY SEDIMENTATION AND EROSION CONTROL ITEMS SHALL BE REMOVED. THE CONTRACTOR SHALL THOROUGHLY CLEAN CONDUITS AND MISCELLANEOUS APPURTENANT STRUCTURES TO THE SATISFACTION OF THE OWNER. ALL SEDIMENT SHALL BE REMOVED FROM THE STORM SYSTEM, DITCHES, SWALES OR OTHER DRAINAGE COURSES AND DISPOSED OF AT A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SEDIMENT AND EROSION CONTROL ITEMS AT ANY OFF-SITE BORROW OR SPOIL AREAS REQUIRED FOR THIS PROJECT.
16. UTILITY COMPANIES MUST COMPLY WITH ALL STORM WATER POLLUTION PREVENTION MEASURES AS DEFINED ON THE STORM WATER POLLUTION PREVENTION PLANS, DETAILS AND NOTES.
17. LUMP SUM PAYMENT FOR EROSION AND SEDIMENT CONTROL SHALL INCLUDE THE INSTALLATION, MAINTENANCE, INSPECTION, AND REMOVAL UPON COMPLETION OR WHEN THE UPSTREAM DRAINAGE AREAS BECOME STABILIZED. IT INCLUDES THE FOLLOWING ITEMS: ROCK CONSTRUCTION ENTRANCE, SILT FENCE, INLET PROTECTION, STAGING & PARKING AREA, NON-POLLUTION CONTROLS, SANDBAG BARRIER, WASHOUT PIT EROSION CONTROL MATTING, DUST CONTROL, GROUNDWATER CONTROL, PERMANENT SEEDING AND TEMPORARY SEEDING (IF REQUIRED).
18. CONTRACTOR SHALL DISPLAY AND MAINTAIN A COPY OF THE SWPPP AND INSPECTION LOGS ON SITE AT ALL TIMES.

INSPECTION

TEMPORARY AND PERMANENT SEDIMENTATION AND EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF A 0.5 INCHES OR GREATER RAINFALL AND REESTABLISHED AS NECESSARY. INSPECTION SHALL BE LOGGED AND THE REPORT KEPT ON SITE FOR THE OHIO EPA.

A WRITTEN RECORD DOCUMENTING THE RESULTS OF THESE INSPECTIONS MUST BE MAINTAINED WITH THE SWPPP. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWPPP. FURTHERMORE, THE CONTRACTOR SHALL ENSURE THAT THE MEASURES ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE VEHICLE TRACKING. GULF ROAD, AND ELYRIA WWTP ENTRANCE DRIVEWAYS SHALL BE INSPECTED DAILY AND CLEANED OF SEDIMENT AND DEBRIS.

IF UNFORESEEN ENVIRONMENTAL CONDITIONS ARE ENCOUNTERED, ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES MAY BECOME NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE TO AMEND THE SWPPP WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT COULD DISCHARGE POLLUTANTS TO "THE WATERS" AT THE CONSTRUCTION SITE. THE REVISION TO THE SWPPP MUST BE COMPLETED AS SOON AS PRACTICAL AND BEFORE THE NEXT STORM EVENT. ADDITIONAL EROSION CONTROL MEASURES MAY ALSO BE REQUESTED BY THE OWNER, LOCAL AUTHORITY, PROJECT ENGINEER, SOIL CONSERVATION SERVICE REPRESENTATIVE OR OEPA AT ANYTIME. SUCH REQUEST SHALL BE IMPLEMENTED IMMEDIATELY AT CONTRACTOR'S EXPENSE.

SHOULD AN ACCIDENTAL SPILL OCCUR, IMMEDIATE ACTION SHALL BE UNDERTAKEN BY THE GENERAL CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL IN THE MANNER SPECIFIED BY LOCAL, STATE, AND FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. AS SOON AS POSSIBLE, ALL SPILLS >25 GALLONS SHALL BE REPORTED TO THE APPROPRIATE STATE AND LOCAL AGENCIES. THIS SHALL INCLUDE THE OHIO EPA AT 800-282-9378, THE LOCAL FIRE DEPARTMENT, THE NATIONAL RESPONSE CENTER AT 800-424-8802 AND THE LORAIN COUNTY OFFICE OF EMERGENCY MANAGEMENT & HOMELAND SECURITY (440-329-5117).

MAINTENANCE

ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED AND AS SOON AS POSSIBLE TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED UNTIL ALL UP SLOPE AREAS THEY CONTROL ARE PERMANENTLY STABILIZED. THE CONTRACTOR SHALL COMPLY WITH THE MAINTENANCE REQUIREMENTS FOR THE PROPOSED EROSION CONTROLS.

STABILIZATION

PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART III G.2.b OF THE OEPA AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NPDES, AS STATED BELOW:

TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
ANY DISTURBED AREAS WITHIN 50 FT. OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FT. OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER

PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREA WITHIN 50 FT. OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

NETTING AND WOOD CELLULOSE SHALL BE USED FOR MULCH ONLY.

PERMANENT SEEDING

PERMANENT SEED MIXTURE SHALL BE ODOT 659.09-1, CLASS 1, UNLESS OTHERWISE NOTED.

IF BROADCAST SEEDING, SEED BETWEEN AUGUST 15 TO OCTOBER 30. IF NECESSARY TO SEED BEFORE AUGUST 15, BUT AFTER MARCH 1 INCREASE THE SEEDING RATES BY 5 PERCENT.

BETWEEN MARCH 1 AND OCTOBER 30, THE CONTRACTOR MAY USE HYDROSEEDING, WHICH APPLIES THE MULCH, SEED, WATER, AND COMMERCIAL FERTILIZER IN THE SAME OPERATION.

BETWEEN NOVEMBER 1 AND FEBRUARY 29, THE CONTRACTOR SHOULD APPLY TEMPORARY , OR DORMANT SEED AND MULCH.

THE GERMINATION RATE AS FOLLOWS:

SPECIES	MINIMUM PERCENT	HIGH QUALITY PERCENT
KENTUCKY BLUEGRASS	80	85
FINE FESCUE	85	90
PERENNIAL RYEGRASS	85	90
ANNUAL RYEGRASS	85	90
TALL FESCUE	85	90
CREEPING RED FESCUE	85	90

THE MINIMUM SEED PURITY IS 98%.

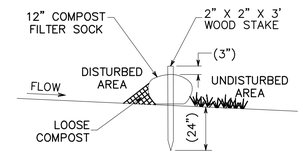
PLACE 4 INCHES OF TOPSOIL ON AREAS TO BE SEEDED, UNLESS OTHERWISE NOTED IN THE PLANS.

SEEDED AREAS SHALL BE INSPECTED AND WHERE THE SEED HAS NOT PRODUCED A HEALTHY STAND OF GRASS, WITH AT LEAST 80% UNIFORM DENSITY COVERAGE, THEN THE AREA SHALL BE RESEEDED AS NECESSARY BY THE CONTRACTOR. AREAS SHALL BE STABILIZED WITH MULCH WHEN CONDITIONS PROHIBIT SEEDING.

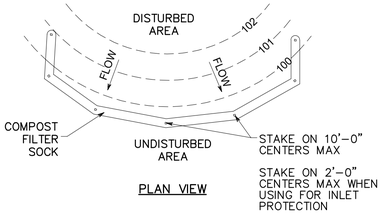
FOR TEMPORARY SEED SPECIFICATION SEE DETAIL SHEET C0-13.

COMPOST FILTER SOCK

N.T.S



SECTION VIEW



PLAN VIEW

SOCK FABRIC SHALL MEET THE GUIDELINES OF THE ODNR BEST MANAGEMENT PRACTICES FOR OIL AND GAS WELL SITE CONSTRUCTION.

COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5-8.0
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONTENT	5.0 dS MAXIMUM

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 3 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (SEE ABOVE). SEE TABLE BELOW FOR MAXIMUM SLOPE LENGTH ABOVE SEDIMENT BARRIERS.

% SLOPE	DISTANCE BETWEEN BARRIERS IN FEET
2-8	110-92
8-12	92-75
12-18	80-60
18-24	60-52

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES APPROXIMATELY 1/3 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

BID DOCUMENTS

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CLIENT

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REGISTRATION

STATE OF OHIO
ROBERT D. BUDZIEN
E-56060
REGISTERED PROFESSIONAL ENGINEER
10/28/25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

SWPPP
NOTES AND DETAILS

SHEET NUMBER

SW2

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ANSI D 22" x 34"
Approved:##
Checked:##
Designer:##
Last Plotted: [illegible] Initials:
Last saved by: WILLIAMSCP
Filename: C:\USERS\WILLIAMSCP\AECOM\ELYRIA CD CM 4 AERATION TANKS - GENERAL\900_CAD_GIS\910_CAD\20-SHEETS\60332065_TASK 3_AERATION TANK_SW3.DWG

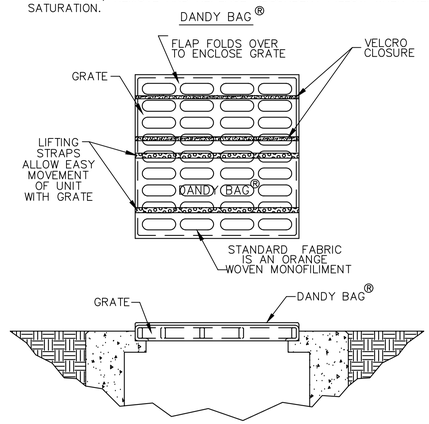
DANDY BAG®

INSTALLATION AND MAINTENANCE GUIDELINES

LOCATION: TO BE USED ON ALL INLETS OR CATCHBASINS IN PAVED AND LANDSCAPED AREAS.

INSTALLATION: THE EMPTY DANDY® BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN POUCH, ON THE BOTTOM (BELOW-GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILLOW TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE DANDY BAG® AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.



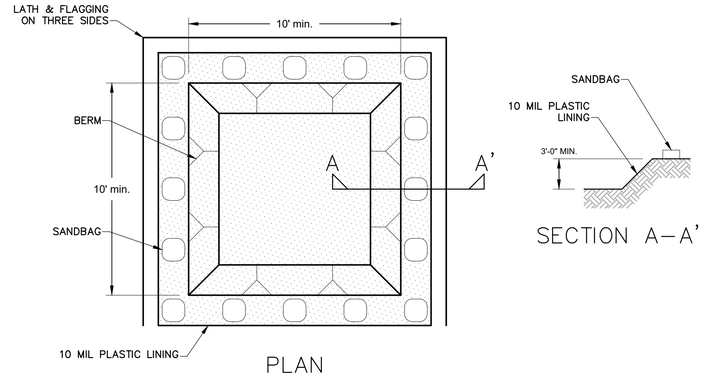
CONCRETE WASHOUT AREA

DESCRIPTION

A CONCRETE WASH OUT AREA IS A STABILIZED LINED COLLECTION AREA WHERE TRUCKS, PANS AND TOOLS CAN BE WASHCED OFF AFTER WORKING WITH CONCRETE.

NOTES:

1. FINAL LOCATION AND SIZE TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY. THE SIGN SHALL BE A MIN. OF 24"X24" WITH 4" MIN. LETTER HEIGHT MOUNTED 72" MIN. ABOVE GRADE.
3. THE CONCRETE SHALL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN IT'S FUNCTIONALITY.

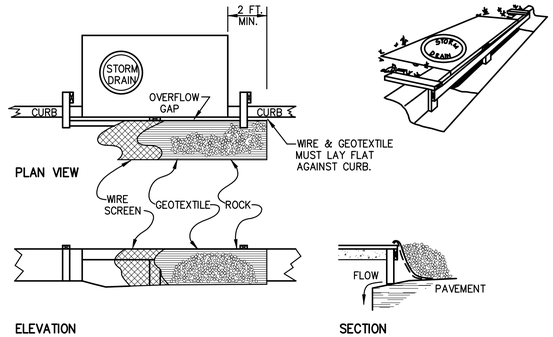


STORM DRAIN INLET PROTECTION

DESCRIPTION

STORM DRAIN INLET PROTECTION CONSISTS OF A GEOTEXTILE BARRIER SUPPORTED AROUND OR ACROSS A STORM DRAIN INLET. IT IS USED TO PREVENT SEDIMENT-LADEN WATER FROM ENTERING A STORM DRAIN SYSTEM. IT REDUCES THE RATE AT WHICH SEDIMENT-LADEN WATER MAY ENTER AN INLET, THEREBY CAUSING PONDING AND SETTLING OF SEDIMENT.

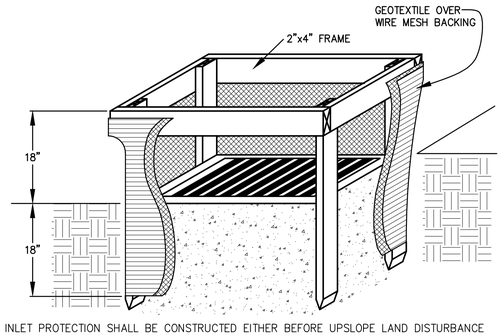
SPECIFICATIONS FOR CURB INLET PROTECTION



SPECIFICATIONS FOR CURB INLET PROTECTION

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL. SHALL BE A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING. THE ANCHORS SHALL BE NAILED TO 2-BY-
2. THE WOODEN FRAME IS TO BE CONSTRUCTED OF 2-BY-4 INCH CONSTRUCTION-GRADE LUMBER. THE END SPACERS 4 INCH STAKES DRIVEN ON THE OPPOSITE SIDE OF THE CURB.
3. THE WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC AND STONE. IT SHALL BE A CONTINUOUS PIECE WITH A MINIMUM WIDTH OF 30 INCHES AND 4 FEET LONGER THAN THE THROAT LENGTH OF THE INLET, 2 FEET ON EACH SIDE.
4. GEOTEXTILE CLOTH SHALL HAVE AN EQUIVALENT OPENING SIZE (EOS) OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE AT LEAST THE SAME SIZE AS THE WIRE MESH.
5. THE WIRE MESH AND GEOTEXTILE CLOTH SHALL BE FORMED TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET AND SECURELY FASTENED TO THE 2-BY-4 INCH FRAME.
6. TWO-INCH STONE SHALL BE PLACED OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER AS TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE CLOTH.

SPECIFICATIONS FOR INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS



1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-BY-4-INCH CONSTRUCTION-GRADE LUMBER. THE 2-BY-4-INCH POSTS SHALL BE DRIVEN 1 FOOT INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-BY-4-INCH FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6 INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.

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REGISTRATION

STATE OF OHIO
ROBERT R. SUDDERTH
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SHEET TITLE

SWPPP
NOTES AND DETAILS

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SW3

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ABBREVIATIONS

A

&	AND
@	AT
A/E	ARCHITECT/ENGINEER
AB	ANCHOR BOLT(S)
ABBRV	ABBREVIATION(S)
ABV	ABOVE
ADD'L	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT, ADJUST(ABLE)
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ANCH	ANCHOR(S)
ALT	ALTERNATE(S)(ING)
AL	ALUMINUM
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
ASPH	ASPHALT
AVG	AVERAGE(S)

B

℄	BUILDING LINE
B/	BOTTOM OF, BELOW
BAL	BALANCE
BC	BOTTOM CHORD
BF	BOTH FACES, BELOW FLOOR
BITUM	BITUMINOUS
BL	BOTTOM LAYER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BP	BEARING PLATE
BOT	BOTTOM
B PL	BASEPLATE
BRDG	BRIDGING
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BT	BENT
BTWN	BETWEEN

C

℄, CL	CENTER LINE
C/C	CENTER TO CENTER
CAIS	CAISSON
CANT	CANTILEVER(ED)
CAP	CAPACITY
CCW	COUNTER CLOCKWISE
CEM	CEMENT
CFS	COLD FORMED STEEL
CGS	CENTER GRAVITY OF STEEL
CIP	CAST IN PLACE
CJ	CONTROL/CONTRACTION JOINT
CLG	CEILING
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CPRS	COMPRESSIBLE
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUE(OUS)(ATION)
CONTR	CONTRACTOR(S)
COORD	COORDINATE(S)
CSNK	COUNTERSINK(SUNK)
CTR	CENTER

D

DBA	DEFORMED BAR ANCHOR
DBL	DEGREE(S)
DEG, °	DEGREE(S)
DEMO	DEMOLITION
DET	DETAIL(S)
DIA, ∅	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION(S)
DK	DECK(S)
DL	DEAD LOAD
DN	DOWN
do	DITTO
DP	DEEP
DWG	DRAWING(S)
DWL	DOWEL(S)

E

E	EAST
(E)	EXISTING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT(S)
EL	ELEVATION(S)
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR(S)
EMBED	EMBEDDED, EMBEDMENT
ENCL	ENCLOSE(S)(D)(URE)
ENG	ENGINEER(S)(ING)
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL(S)
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EWB	EACH WAY BOTTOM
EWT	EACH WAY TOP
EWTB	EACH WAY TOP AND BOTTOM
EXC	EXCAVATE(ION)
EXF	EXHAUST FAN
EXP	EXPANSION
EXT	EXTERIOR

F

F/F	FACE TO FACE
FD	FLOOR DRAIN(S)
FDN	FOUNDATION(S)
FF	FAR FACE
FIN	FINISH(ED)(ES)(ING)
FL	FULL LENGTH
FLEX	FLEXIBLE
FLG	FLANGE(S)
FLR	FLOOR(S)
FOS	FACTOR OF SAFETY
FP	FULL PENETRATION
FR	FRAME(D)(S)
FT	FOOT, FEET
FTG	FOOTING(S)
FURN	FURNISH(ED)(ES)
FUT	FUTURE

G

GA	GAGE, GAUGE
GALV	GALVANIZE(D)(S)
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GR	GRADE
GRD	GROUND

H

HC	HOLLOW CORE
HD	HEADED
HDG	HOT-DIPPED GALVANIZED
HDR	HEADER
HT	HEIGHT
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING/VENTILATING/AIR CONDITIONING

I

ID	INSIDE DIAMETER
IF	INSIDE FACE
IJ	ISOLATION JOINT
IN	INCH(ES)
INCL	INCLUDE(ED)(ING)
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR(S)
INV	INVERT

J

JST	JOIST
JT	JOINT

K

K	KIPS
K/F	KIPS PER FOOT
KSF	KIPS PER SQUARE FOOT
KO	KNOCKOUT

L

L	ANGLE
LB	POUND(S)
LEV	LEVEL(ING)
LG	LONG, LENGTH
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW POINT
LSH	LONG SIDE HORIZONTAL
LT	LEFT
LW	LONG WAY
LWB	LONG WAY BOTTOM
LWGT	LIGHTWEIGHT
LWT	LONG WAY TOP
LWTB	LONG WAY TOP AND BOTTOM

M

MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MLFRS	MAIN LATERAL FORCE RESISTING SYSTEM
MK	MARK
MO	MASONRY OPENING
MTL	METAL

P

#	POUND
PAR	PARALLEL
PC	PRECAST CONCRETE
PE	PROFESSIONAL ENGINEER
PEMB	PRE-ENGINEERED METAL BUILDING
PERIM	PERIMETER
PERP	PERPENDICULAR
PL, ℔	PLATE
PLMB	PLUMBING
PLYW	PLYWOOD
PREFAB	PREFABRICATED
PROP	PROPERTY
PSF	POUNDS PER SQ FT
PSI	POUNDS PER SQ IN
PT	POINT
P/T, PTEN	POST-TENSION
PTFE	POLYTETRAFLUOROETHYLENE

Q

QTY	QUANTITY

R

R	RISER
RAD	RADIUS
RD	ROOF DRAIN
RE	RIGHT END
REBAR	REINFORCING BAR
RECT	RECTANGULAR
REF	REFERENCE(D)(S)
REINF	REINFORCING
REL	RELOCATE
REQ'D	REQUIRED
REV	REVISE(D)(ION)
RM	ROOM
RMV	REMOVE
RND	ROUND
RTU	ROOF TOP UNIT

N

#, NO.	NUMBER
N	NORTH
(N)	NEW
N/A	NOT APPLICABLE
NF	NEAR FACE
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE

O

O/O	OUT TO OUT
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OGL	ON GAGE LINE
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
OSL	OUTSTANDING LEG
OZ	OUNCE

S

SC	SLIP CRITICAL
SCHED	SCHEDULE
SCW	SHALL CONFORM WITH
SEC	SECOND
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SL	SLAB
SLV	SLEEVE
SOG	SLAB ON GRADE
SPA	SPACE(S)(ING)
SPEC	SPECIFICATION
SQ	SQUARE
SRD	SECONDARY ROOF DRAIN
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIFF	STIFFEN(ER)
STIR	STIRRUP
STL	STEEL
STRUCT	STRUCTURE(AL)
SUP	SUPPORT
SUSP	SUSPENDED
SW	SHORT WAY, SWITCH
SWB	SHORT WAY BOTTOM
SWT	SHORT WAY TOP
SWTB	SHORT WAY TOP AND BOTTOM
SYM	SYMMETRICAL

T

T	TREAD
T&B	TOP & BOTTOM
T/	TOP OF
TC	TOP CHORD
TEMP	TEMPERATURE
TEN	TENSION
THK	THICK
THK'N	THICKEN(ED)
TL	TOP LAYER
TOL	TOLERANCE
TOT	TOTAL
TYP	TYPICAL

U

UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY(IES)

V

V	VENT
VB	VAPOR BARRIER
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOL	VOLUME

W

W/	WITH
W/O	WITHOUT
WD	WOOD
WL	WIND LOAD
WPT	WORKPOINT
WS	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

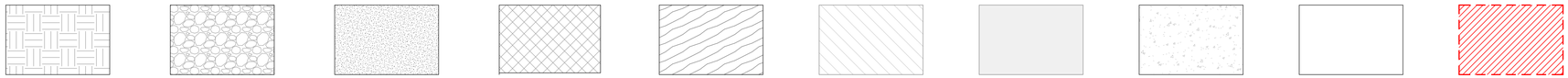
X

X	EXTRA STRONG
XX	DOUBLE EXTRA STRONG

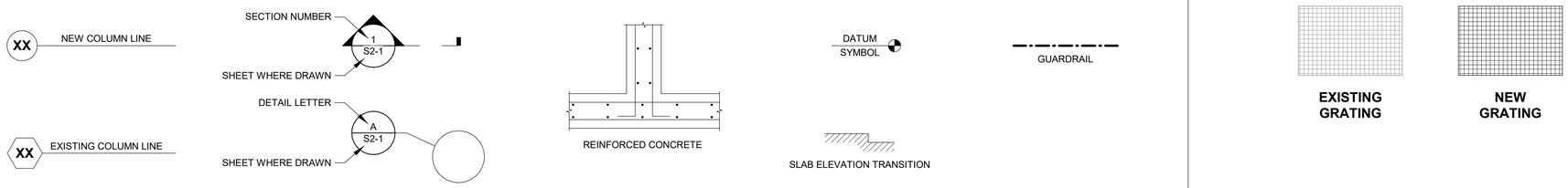
Y

YD	YARD

MATERIAL INDICATION



GRAPHIC SYMBOLS



STRUCTURAL SHEET LIST

SHEET NAME	SHEET NUMBER
ABBREVIATIONS, LEGENDS, & SYMBOLS	S001
GENERAL NOTES	S002
GENERAL NOTES	S003
SPECIAL INSPECTIONS	S004
SPECIAL INSPECTIONS	S005
SPECIAL INSPECTIONS	S006
TYPICAL STRUCTURAL DETAILS	S050
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TYPICAL STRUCTURAL DETAILS	S053
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AERATION TANKS 1, 2, 3, & 4 - PLANS	S105
AERATION TANKS 1, 2, 3, & 4 - SECTIONS	S151
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AERATION TANKS 5, 6, & 7 - PLANS	S201
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AERATION TANKS 5, 6, & 7 - SECTIONS	S252
AERATION TANKS 5, 6, & 7 - SECTIONS	S253
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AERATION TANKS 8 & 9 - PLANS	S302
AERATION TANKS 8 & 9 - PLANS	S303
AERATION TANKS 8 & 9 - PLANS	S304
AERATION TANKS 8 & 9 - PLANS	S305
AERATION TANKS 8 & 9 - PLANS	S306
AERATION TANKS 8 & 9 - PLANS	S307
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AERATION TANKS 8 & 9 - SECTIONS	S354
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DETRITUS TANK EFFLUENT CHANNEL - PLANS	S402
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REPAIR REFERENCE PHOTOS	S500
REPAIR REFERENCE PHOTOS	S501
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AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

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REGISTRATION

STATE OF OHIO
ANDREW L KNAPKE
#E-66697
REGISTERED
PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

ABBREVIATIONS, LEGENDS, & SYMBOLS

SHEET NUMBER

S001

ANSI D 22"x34"
Approved: AK
Checked: AK
Designer: CS
Project Management Initials:
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GENERAL CONDITIONS

1. GOVERNING BUILDING CODE: OHIO BUILDING CODE (OBC), 2024.
2. COORDINATE WITH ALL DRAWINGS FOR PERTINENT INFORMATION RELATED TO THE STRUCTURAL WORK. ALL CHANGES TO THE STRUCTURAL SYSTEMS SHALL BE RE-DESIGNED BY A PROFESSIONAL ENGINEER AT NO COST TO THE OWNER OR A/E AND SUBMITTED TO THE A/E FOR REVIEW. SUBMITTAL SHALL BE REVIEWED AND ACKNOWLEDGED IN WRITING BY THE A/E BEFORE BEGINNING CONSTRUCTION.
3. EQUIPMENT FRAMING LOADS, OPENINGS, AND STRUCTURE IN ANY WAY RELATED TO HVAC, PLUMBING, PROCESS, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. OBTAIN APPROVAL OF THE PERTINENT TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN THESE REQUIREMENTS SHALL BE BORNE BY THE APPROPRIATE CONTRACTOR.
4. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS, OR TIE-DOWNS THAT MAY BE NECESSARY.
5. THE STRUCTURE HAS BEEN DESIGNED FOR THE UNIFORM LOADS INDICATED IN ADDITION TO THE CONCENTRATED LOADS REQUIRED BY THE BUILDING CODE. THE STRUCTURAL DESIGN IS BASED SOLELY ON THE STRUCTURE IN ITS COMPLETED STATE. CONTRACTORS AND THEIR SUB-CONTRACTORS SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADINGS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION PRIOR TO COMPLETION OF THE STRUCTURE. SUCH CONSTRUCTION LOADINGS INCLUDE, BUT ARE NOT LIMITED TO, LOADS FROM CRANES, LIFTS, DOLLIES, AND HOISTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE EVALUATION OF THE IMPACT OF SUCH LOADS ON THE STRUCTURE AND PROVIDING TEMPORARY SHORING, BRACING, AND REINFORCEMENT AS REQUIRED.
6. DO NOT SCALE THESE STRUCTURAL DOCUMENTS. THE CONTRACTOR SHALL OBTAIN MEASUREMENTS FROM THE ANNOTATED DIMENSIONS ON THE DRAWINGS. SEE THE PROCESS DRAWINGS FOR ALL DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE PROCESS DRAWINGS. REPORT ALL DISCREPANCIES TO THE A/E FOR RESOLUTION BEFORE PROCEEDING.
7. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION PRIOR TO FINAL DETAILING AND FABRICATION OF NEW STRUCTURAL ELEMENTS.
8. THE CONTRACTOR SHALL SUPPORT, BRACE, AND SECURE EXISTING STRUCTURES AS REQUIRED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF EXISTING STRUCTURES DURING CONSTRUCTION.

EXISTING CONDITIONS

1. ALL EXISTING STRUCTURAL ELEMENTS (SLABS, BEAMS, WALLS, COLUMNS, FOUNDATIONS, ETC) SHALL REMAIN INTACT UNLESS SPECIFICALLY NOTED TO BE REMOVED ON THE STRUCTURAL DRAWINGS.
2. INFORMATION PROVIDED ON THESE DRAWINGS RELATED TO EXISTING CONDITIONS IS BASED ON AVAILABLE DESIGN DOCUMENTS AND LIMITED FIELD OBSERVATION. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO AND AWAIT DIRECTION FROM THE A/E IF ANY DISCREPANCY BETWEEN THE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS IS DISCOVERED.
3. THIS PROJECT REQUIRES A SIGNIFICANT AMOUNT OF DRILLING INTO THE EXISTING REINFORCED CONCRETE STRUCTURE. THE CONTRACTOR WILL NOT RECEIVE ADDITIONAL PAYMENT FOR DIFFICULTIES ENCOUNTERED IN DRILLING DUE TO HARDNESS OF MATERIALS, HITTING OF EXISTING REINFORCING, ETC. ALL COSTS ASSOCIATED WITH RE-DRILLING OF HOLES DUE TO HITTING EXISTING REINFORCING STEEL SHALL BE BORNE BY THE CONTRACTOR. THIS INCLUDES FILLING UNNECESSARY AND UNUSED HOLES WITH EPOXY GROUT. LOCATE REINFORCING WITH A PACHOMETER OR OTHER NON-DESTRUCTIVE TESTING DEVICE PRIOR TO DRILLING AND CORING OPERATIONS. LOCATE HOLES PRIOR TO FABRICATION OF CONNECTION MATERIAL. DO NOT CUT OR DAMAGE REINFORCING STEEL DURING CONCRETE DRILLING OR CORING OPERATIONS.
4. CORE DRILLS REQUIRED BY MECHANICAL OR ELECTRICAL TRADES, BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS, SHALL BE DOCUMENTED IN SKETCH FORM SHOWING EXACT DIMENSIONS AND LOCATIONS. THE SKETCH SHALL BE SUBMITTED TO THE A/E FOR COMMENT PRIOR TO PROCEEDING WITH THE DRILLING OPERATION.
5. EXISTING CONCRETE SURFACE PREPARATION:
   INTENTIONALLY ROUGHEN EXISTING CONCRETE SURFACES WHERE NEW CONCRETE IS BEING PLACED AGAINST THE EXISTING CONCRETE AND CONNECTED BY DRILLING AND EPOXY GROUTING AS REQUIRED BY THE TYPICAL DETAILS. THE ENTIRE COMMON SURFACE WHERE THE EXISTING CONCRETE ABUTS THE NEW SHALL BE COATED WITH A BONDING AGENT. FOLLOW ALL ADDITIONAL REQUIREMENTS OF SURFACE PREPARATION AS REQUIRED BY THE BONDING AGENT MANUFACTURER.
6. CONCRETE REPAIRS:
   A. CONCRETE REPAIRS IDENTIFIED IN THE STRUCTURAL PLANS WITH REFERENCE PHOTOS ON SHEETS S500 THROUGH S502 SHALL BE INCLUDED IN THE LUMP SUM BASE BID FOR THE AERATION TANK CONCRETE WORK. THE CONTRACTOR SHALL VISIT THE SITE TO OBSERVE EXISTING CONDITIONS AND CONSTRAINTS AND EVALUATE THE MEANS AND METHODS OF CONSTRUCTION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID. CONTRACTOR SHALL VISUALLY OBSERVE THE AREAS NOTED FOR REPAIR TO ESTIMATE QUANTITY OF REPAIR REQUIRED AND SUBMIT ASSUMED QUANTITIES AND UNIT PRICES FOR EACH TYPE OF REPAIR ON THE BID FORM.
   B. CONCRETE REPAIRS BEYOND THOSE INCLUDED IN THE LUMP SUM BASE BID WILL BE PAID FOR, UPON APPROVAL BY THE A/E, FROM THE ADDITIONAL CONCRETE REPAIR ALLOWANCE PER THE UNIT PRICES PROVIDED IN THE BID FORM FOR ADDITIONAL CONCRETE REPAIRS.
   C. WHILE THE AERATION TANKS, SPLITTER BOXES, AND OTHER ASSOCIATED CONCRETE STRUCTURES ARE EMPTY DURING CONSTRUCTION, THE CONTRACTOR SHALL INVESTIGATE THE EXISTING CONDITION OF THE CONCRETE. THE CONTRACTOR SHALL VISUALLY LOOK FOR ANY CRACKS AND SOUND ALL WALLS AND BASE SLABS OF THE TANK TO IDENTIFY ANY DELAMINATED CONCRETE. THE CONTRACTOR SHALL SUBMIT A REPORT SUMMARIZING THE EXISTING CONDITION OF THE EMPTY STRUCTURES WITH A LIST AND QUANTITY OF RECOMMENDED REPAIR TYPES PER THE TYPICAL DETAILS ON SHEET S054 FOR A/E APPROVAL. IF THE A/E INSTRUCTS THE CONTRACTOR TO MOVE FORWARD WITH THE REPAIRS, THE CONTRACTOR SHALL DO SO AND WILL BE COMPENSATED BASED UPON THE UNIT PRICES FOR EACH REPAIR TYPE ON THE BID FORM.

LIQUID RETENTION STRUCTURES

1. DURING CONSTRUCTION ALL TANKS, CONCRETE STRUCTURES, ETC. ARE BUOYANT WHEN EMPTY. IN THE EVENT THAT THE EXCAVATION BECOMES FLOODED OR THE SURROUNDING GROUND BECOMES SATURATED, THEY MUST BE FILLED WITH WATER TO PREVENT FLOTATION. PROVIDE OPENINGS OR OTHER DEVICES THAT WILL MAINTAIN THE WATER LEVEL ON THE INSIDE AT THE SAME ELEVATION AS ON THE OUTSIDE AND TAKE OTHER MEASURES AS REQUIRED TO ASSURE THAT THE STRUCTURES DO NOT FLOAT.
2. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH TWO COATS OF EPOXY. EPOXY COATING SHALL BE A TWO (2) COMPONENT, 100% SOLID, MOISTURE INSENSITIVE EPOXY RESIN, WHICH FORMS A WATERPROOF VAPOR BARRIER. COLOR SHALL BE CONCRETE GRAY.
3. ALL WATERSTOPS SHALL BE PROPERLY SUPPORTED AND WIRED TO REINFORCING TO REMAIN STRAIGHT AND TRUE.

SELECTIVE STRUCTURAL DEMOLITION

1. PLANS AND SECTIONS INDICATE AREAS OF SELECTIVE DEMOLITION OF EXISTING STRUCTURE. PRIOR TO INITIATION OF SELECTIVE DEMOLITION, CONTRACTOR SHALL CONFIRM ALL EXISTING MEASUREMENTS AND CONDITIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS MUST BE REPORTED IMMEDIATELY TO THE A/E.
2. CONTRACTOR SHALL SECURE AND BRACE THE EXISTING STRUCTURES AS REQUIRED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY OF THE EXISTING STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE SEQUENCE OF WORK AND ERECTION PROCEDURES, TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, TIE-DOWNS, UNDERPINNING WHICH MAY BE NECESSARY.
3. WHERE DRAWINGS AND DETAILS INDICATE PARTIAL REMOVAL OF EXISTING CONCRETE, CONTRACTOR SHALL EXTEND REMOVAL TO EXTENTS NECESSARY TO MAINTAIN SOUNDNESS OF THE REMAINING MATERIAL. REMAINING MATERIAL SHALL BE VISUALLY EXAMINED AND "SOUNDED" FOR ITS ABILITY TO REMAIN IN-PLACE UPON COMPLETION OF THE WORK.
4. WHERE CONSTRUCTION DRAWINGS AND DETAILS INDICATE PARTIAL REMOVAL OF EXISTING STRUCTURAL AND NON-STRUCTURAL MATERIALS TO FACILITATE NEW CONSTRUCTION, CONTRACTOR SHALL IDENTIFY EXTENTS OF REMOVALS PRIOR TO START OF WORK. THIS WORK IS NOT EXPLICITLY MAPPED WITHIN THE DEMOLITION DRAWINGS, YET IS UNDERSTOOD TO BE PART OF THE WORK. REMOVALS MAY INCLUDE: SLAB CORING AND CHIPPING, WALL CORING AND CHIPPING, GRATING, GUARDRAILS, ETC. ADDITIONALLY, SURFACE PREPARATION PRIOR TO PLACING OF NEW WORK MAY REQUIRE ROUGHENING/SCARIFYING THE EXISTING STRUCTURE WHICH INTERFACES WITH THE NEW WORK. SEE SPECIFIC DETAILS FOR INDIVIDUAL REQUIREMENTS.
5. CONTRACTOR SHALL SUBMIT FLOOR PLANS INDICATING PROPOSED AREAS AND LENGTHS OF SELECTIVE DEMOLITION TO A/E FOR REVIEW PRIOR TO START OF WORK. THESE PLANS SHALL REFLECT ANY PROPOSED TEMPORARY BRACING AND SHORING OF THE EXISTING STRUCTURE, AS WELL AS ANY ADDITIONAL PERMANENT REINFORCEMENT.
6. DEMOLITION AS REQUIRED FOR PERFORMANCE OF WORK IS INCLUDED WITHIN THE SCOPE OF WORK DEFINED BY THE CONTRACT DOCUMENTS. THE STRUCTURAL DRAWINGS INDICATE GENERAL AREAS OF REQUIRED DEMOLITION AND, DUE TO THE COMPLEXITY OF THE PROJECT AND THE POTENTIAL FOR CONTRACTOR MEANS AND METHODS TO POTENTIALLY AFFECT THE SCOPE OF REQUIRED DEMOLITION, AREAS BEYOND THOSE INDICATED ON THE STRUCTURAL DRAWINGS SHOULD BE EXPECTED TO OCCUR. FOR EXAMPLE, DEMOLITION OF EXISTING SLABS AND WALLS WILL BE REQUIRED TO INSTALL NEW CONSTRUCTION, BUT ALL SUCH AREAS ARE NOT FULLY INDICATED ON THESE DRAWINGS. SUCH AREAS ARE WITHIN THE SCOPE OF REQUIRED WORK DEFINED BY THE CONTRACT DOCUMENTS AND SHALL BE PERFORMED INCLUDING COMPLIANCE WITH ALL CONTRACT REQUIREMENTS FOR THE CONTRACTOR TO PROVIDE SHORING AND OR BRACING FOR STABILIZATION OF THE STRUCTURE DURING CONSTRUCTION OPERATIONS. DEMOLISH EXISTING CONCRETE AS REQUIRED TO ALLOW INSTALLATION OF NEW CONCRETE WALLS AND SLABS. PRESERVE, DO NOT CUT, EXISTING CONCRETE SLAB REINFORCING WHICH IS INDICATED TO REMAIN OR IS INTENDED FOR SPLICING. CONTRACTOR TO SELECT DEMO MEANS AND METHODS SUCH AS TO MINIMIZE DAMAGE TO EXISTING REINFORCING, TYPICAL AT ALL NEW WALLS AND SLABS. SEE NOTES FOR SHORING REQUIREMENTS.

STRUCTURAL DESIGN LOADS

1. STRUCTURE RISK CATEGORY = III
2. DESIGN LIVE LOADS:
   A. CATWALKS AND MAINTENANCE PLATFORMS = 40 PSF
   B. LIVE LOAD REDUCTION:
      a. LIVE LOAD REDUCTIONS SHALL BE COMPUTED IN ACCORDANCE WITH THE BUILDING CODE.
3. DESIGN SNOW LOAD AND SNOW DRIFTING SHALL CONFORM WITH THE BUILDING CODE. SNOW LOAD DESIGN PARAMETERS ARE AS FOLLOWS:
   A. GROUND SNOW LOAD (Pg) = 20 PSF
   B. SNOW EXPOSURE FACTOR (Ce) = 1.0
   C. SNOW THERMAL FACTOR (Ct) = 1.2
   D. SNOW LOAD IMPORTANCE FACTOR (Is) = 1.0
   E. MINIMUM SNOW LOAD FOR LOW SLOPE ROOFS (Pm) = 24 PSF
   F. FLAT-ROOF SNOW LOAD (Pf) = 19 PSF + DRIFTING
4. DESIGN DEAD LOADS:
   A. STRUCTURE COMPONENTS = SELF-WEIGHT
5. DESIGN RAIN LOADS:
   A. DESIGN RAINFALL INTENSITY (15-MINUTE) = 5.85 IN/HR
6. WIND DESIGN SHALL CONFORM WITH THE BUILDING CODE. WIND DESIGN PARAMETERS ARE AS FOLLOWS:
   A. ULTIMATE DESIGN WIND SPEED (V_{ULT}), (3 SECOND GUST) = 116 MPH
   B. NOMINAL DESIGN WIND SPEED (V_{asd}) = 90 MPH
   C. WIND EXPOSURE CATEGORY = EXPOSURE C
   D. INTERNAL PRESSURE COEFFICIENT = ±0.18
   E. WIND FORCES FOR THE TANK STRUCTURES ARE DEVELOPED PER ASCE 7-16 SECTION 29.4 "DESIGN WIND LOADS: OTHER STRUCTURES."
7. SEISMIC DESIGN SHALL CONFORM WITH SECTION 1613 OF THE BUILDING CODE. SEISMIC DESIGN PARAMETERS ARE AS FOLLOWS:
   A. SOIL SITE CLASS = D
   B. MAPPED SPECTRAL RESPONSE ACCELERATION:
      a. S_S = 12.80%
      b. S_1 = 5.00%
   C. DESIGN SPECTRAL RESPONSE ACCELERATION:
      a. S_{DS} = 13.70%
      b. S_{D1} = 8.00%
   D. SEISMIC DESIGN CATEGORY = B
   E. SEISMIC IMPORTANCE FACTOR (Ie) = 1.25
   F. SEISMIC RESPONSE COEFFICIENT (Cs) = 0.034
   G. BASIC SEISMIC FORCE RESISTING SYSTEM:
      a. LATERAL SYSTEM = ORDINARY REINFORCED CONCRETE SHEAR WALLS
      b. RESPONSE MODIFICATION FACTOR (R) = 3
      c. DEFLECTION AMPLIFICATION FACTOR (Cd) = 3
   H. DESIGN BASE SHEAR:
      a. NEW SPLITTER BOX NO. 3
         • NORTH-SOUTH = 45 KIPS
         • EAST-WEST = 45 KIPS
      b. NEW OVERFLOW TANK ATTACHED TO THE EXISTING DETRITUS TANK EFFLUENT CHANNEL:
         • NORTH-SOUTH = 3 KIPS
         • EAST-WEST = 3 KIPS
   I. DESIGN BY EQUIVALENT LATERAL FORCE PROCEDURE
   J. ATTACHMENT OF ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PROCESS SYSTEMS COMPONENTS TO COMPLY WITH THE BUILDING CODE AND ASCE 7.
8. LATERAL FORCE RESISTING SYSTEM DESCRIPTION:
   A. LATERAL FORCE RESISTANCE AND STABILITY IN THE COMPLETED STRUCTURE IS PROVIDED EXCLUSIVELY BY CAST-IN-PLACE REINFORCED CONCRETE SHEAR WALLS (SEE PLAN SHEETS FOR LOCATIONS). THESE WALLS PROVIDE ALL LATERAL FORCE RESISTANCE IN EACH ORTHOGONAL DIRECTION. THE CONCRETE SLABS SERVE AS HORIZONTAL DIAPHRAGMS THAT DISTRIBUTE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE CONCRETE SHEAR WALLS. THE CONCRETE SHEAR WALLS CARRY THE APPLIED LOADS TO THE FOUNDATIONS.
9. GEOTECHNICAL LOADING:
   A. HYDROSTATIC LOADING AND BUOYANCY CONSIDERATIONS SHALL BE BASED ON LOCALLY PERCHED GROUNDWATER AT THE TOP OF GRADE IMMEDIATELY ADJACENT TO THE STRUCTURES.
   B. LATERAL EARTH PRESSURE:
      a. BELOW-GRADE WALLS ARE DESIGNED IN A RESTRAINED (AT-REST) AND UNDRAINED CONDITION WITH LOCALLY PERCHED GROUNDWATER AT THE TOP OF GRADE IMMEDIATELY ADJACENT TO THE WALLS.
      b. AT-REST LATERAL EARTH PRESSURE COEFFICIENT, Ko = 0.7
      c. SOIL DENSITY = 130 PCF
   C. DESIGN BUOYANT UPLIFT CONSIDERS THE NET UPLIFT DIFFERENCE BETWEEN THE APPLIED BUOYANCY UPLIFT PRESSURE FACTORED BY A SAFETY FACTOR OF 1.5 BALANCED BY THE SELF-WEIGHT OF THE STRUCTURE, TENSILE CAPACITY OF THE DRILLED PIERS, AND ENGAGED SOILS ALONG THE PERIMETER OF THE TANK.

FOUNDATIONS, EXCAVATION AND BACKFILL

1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE SUBSURFACE INVESTIGATION REPORT BY AECOM DATED JULY 14, 2025. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SURVEY AND THE SUBSURFACE INVESTIGATION REPORT PRIOR TO BIDDING AND BEFORE BEGINNING CONSTRUCTION.
2. THE SUBSURFACE INVESTIGATION IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. FURTHERMORE, NO WARRANTY IS MADE BY THE OWNER WITH REGARD TO COMPLETENESS AND ACCURACY OF THE SUBSURFACE INVESTIGATION DATA, SOIL TEST DATA, STATEMENTS AND INTERPRETATIONS GIVEN IN THE REPORT.
3. NOTIFY THE A/E AS SOON AS POSSIBLE OF ANY UNUSUAL SOIL CONDITIONS OR SOIL CONDITIONS AT VARIANCE WITH TEST BORINGS, SUCH AS UNEXPECTED SPRING OR SEEPAGE WATER, MATERIAL DIFFERING FROM TEST BORINGS OR SOIL OF QUESTIONABLE BEARING CAPACITY.
4. DEEP FOUNDATIONS:
   A. THIS SECTION IS APPLICABLE TO THE 2-FT DIAMETER DRILLED PIERS AT THE NEW SPLITTER BOX NO. 3.
   B. DRILL PIERS TO THE ELEVATIONS SHOWN ON THE DRAWINGS. VERIFY THAT EACH DRILLED PIER PLACED IS BEARING ON MATERIAL WITH THE DESIGN BEARING CAPACITY.
   C. TEMPORARY OR PERMANENT STEEL CASINGS WILL BE NECESSARY DURING DRILLING IN ORDER TO MAINTAIN STABILITY OF THE SOILS DURING CONSTRUCTION.
   D. ALLOWABLE END-BEARING RESISTANCE IN COMPRESSION = 25,000 PSF.
   E. ALLOWABLE UPLIFT RESISTANCE FOR TENSION =
      a. 72.2 KIPS FOR 4-FT DEEP ROCK SOCKETS.
      b. 129.0 KIPS FOR 6-FT DEEP ROCK SOCKETS.
5. SHALLOW FOUNDATIONS:
   A. THIS SECTION IS APPLICABLE TO THE MAT SLAB FOUNDATION AT THE NEW OVERFLOW TANK ATTACHED TO THE EXISTING DETRITUS TANK EFFLUENT CHANNEL.
   B. FOUNDATION DESIGN BEARING CAPACITY, PER IBC TABLE 1806.2 = 2,000 PSF.
   C. SET FOUNDATIONS AT THE ELEVATIONS SHOWN ON THE DRAWINGS ON FIRM SUBGRADE PREPARED PER THE EARTHWORK SPECIFICATIONS. VERIFY THAT EACH FOOTING PLACED IS BEARING ON MATERIAL WITH THE DESIGN BEARING CAPACITY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND FINAL CLEARANCE OF ALL REQUIRED NEEDLING, UNDERPINNING, SHORING OR BRACING OF EXISTING STRUCTURES.
7. BACKFILL BEHIND WALLS:
   A. BACKFILL AGAINST BOTH SIDES OF WALLS EQUALLY UNTIL THE LOWER ELEVATION IS ATTAINED.
   B. BACKFILL AGAINST WALLS SHALL NOT BE PLACED UNTIL THE FLOOR CONSTRUCTION AT THE TOP AND BOTTOM OF THE WALL HAS BEEN COMPLETED TO BRACE THE WALL.
   C. AT THE CONTRACTOR'S OPTION, WALLS MAY BE BRACED AND BACKFILL INSTALLED PRIOR TO COMPLETION OF THE SUPPORTING FLOORS. ALL SUCH BRACING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE SUPPORTING FLOORS IS COMPLETED AND CONTINUOUSLY CONNECTED TO THE WALLS.
8. BUILDING EXCAVATION AND COMPACTION:
   A. CARE SHALL BE TAKEN TO NOT DISTURB THE BOTTOM OF THE EXCAVATION. EXCAVATION TO FINAL GRADE SHALL NOT BE MADE UNTIL JUST PRIOR TO PLACING CONCRETE.
   B. PLACE BACKFILL AND FILL IN LIFTS OF 8" MAXIMUM LOOSE DEPTH. COMPACT EACH LIFT WITH A POWER VIBRATING COMPACTOR OR SIMILAR EQUIPMENT TO ENSURE MAXIMUM COMPACTION OF THE MATERIAL.
   C. FILL COMPACTION:
      a. COMPACT COHESIVE MATERIAL FILL TO 95% OF MAXIMUM DENSITY ACCORDING TO ASTM D698.
      b. COMPACT COHESIONLESS MATERIAL FILL FOR DRAINAGE TO 95% OF MAXIMUM DENSITY ACCORDING TO ASTM D1557.
   D. SETTLEMENT OR WASHING OUT THAT OCCURS IN GRADED OR BACKFILLED AREAS PRIOR TO ACCEPTANCE OF THE WORK SHALL BE REPAIRED AND GRADES RE-ESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES.
9. SEE CIVIL DRAWINGS FOR ADDITIONAL EARTHWORK REQUIREMENTS.

BID DOCUMENTS

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AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

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DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S002

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CAST-IN-PLACE CONCRETE

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE PROJECT MANUAL AND LATEST AMERICAN CONCRETE INSTITUTE CODES AND STANDARDS, INCLUDING, BUT NOT LIMITED TO, ACI 117, ACI 301, ACI 315 AND ACI 318.

2. MATERIALS AND PRODUCTS:
   A. BAR REINFORCING STEEL: DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615, GRADE 60
   B. WELDED WIRE FABRIC: ASTM A-185, DELIVERED IN FLAT SHEETS
   C. CONCRETE:
      a. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS (f'c):
         - 4000 PSI FOR DRILLED PIERS (SPECIFICATION CLASS F)
         - 5000 PSI FOR CONCRETE WITH EXPOSURE TO WASTEWATER INCLUDING MAT FOUNDATIONS, SLABS, WALLS, COLUMNS, BEAMS, AND INFILLS (SPECIFICATION CLASS STX)
         - 1500 PSI FOR LEAN CONCRETE FILL (SPECIFICATION CLASS LC)
         - 120 PSI CONTROLLED LOW-STRENGTH MATERIAL ENGINEERED FILL (SPECIFICATION CLASS CLSM)
      b. PROVIDE ENTRAINED AIR IN CONCRETE EXPOSED TO WEATHER OR WATER

3. CONTRACTION AND CONSTRUCTION JOINTS:
   A. CONCRETE FOUNDATIONS, BEAMS, SLABS AND WALLS:
      a. BEAMS AND SLABS SHALL BE CAST MONOLITHICALLY, EXCEPT FOR REQUIRED CONTRACTION/CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS.
      b. PROVIDE VERTICAL CONTRACTION/CONSTRUCTION JOINTS IN SLABS AND HORIZONTAL CONTRACTION/CONSTRUCTION JOINTS IN WALLS AS SHOWN ON THE DRAWINGS.
      c. CONSTRUCTION JOINTS:
         - CONTRACTOR SHALL SUBMIT ALTERNATE AND ADDITIONAL CONSTRUCTION JOINT LOCATIONS AND DETAILS TO THE A/E FOR APPROVAL PRIOR TO CONSTRUCTION.
         - WHERE CONSTRUCTION JOINTS ARE REQUIRED BUT ARE NOT INDICATED ON THE DRAWINGS, THEY SHALL BE SUBMITTED TO THE A/E FOR APPROVAL.
         - JOINT LOCATIONS SHALL BE SUBMITTED WITH THE ASSOCIATED REINFORCING STEEL SHOP DRAWINGS AND ARE SUBJECT TO REVIEW BY THE A/E.
         - AT LEAST 48 HOURS SHALL ELAPSE BETWEEN CASTING OF ADJOINING UNITS AT A CONSTRUCTION JOINT.
         - UNLESS NOTED OTHERWISE OR SHOWN ON THE DRAWINGS, PROVIDE A CONTINUOUS SHEAR KEY IN SLABS AND WALLS, AND A MINIMUM OF TWO (2) CONTINUOUS HORIZONTAL KEYS IN BEAMS AND EACH JOIST AT CONSTRUCTION JOINTS. THE MINIMUM KEY SIZE SHALL BE 1 1/2" DEEP X 1/3 THE DEPTH OR WIDTH OF THE MEMBER.
         - REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS UNLESS DETAILED OTHERWISE ON THE DRAWINGS.
         - CONSTRUCTION JOINTS BELOW GRADE SHALL HAVE WATERSTOPS UNLESS BOTH SIDES OF THE JOINT ARE EXPOSED TO EARTH.
         - HARDENED CONCRETE OF CONSTRUCTION JOINTS SHALL BE THOROUGHLY COATED WITH A BONDING AGENT (SIKA ARMATEC 110 OR EQUAL).
      d. REFERENCE ACI 302 FOR GUIDELINES AND ADDITIONAL INFORMATION.

4. DOWELS IN FOOTINGS TO MATCH VERTICAL COLUMN AND WALL REINFORCING UNLESS SHOWN OTHERWISE.

5. PROVIDE 3/4" CHAMFERS ON EXPOSED CORNERS OF COLUMNS, BEAMS AND WALLS UNLESS OTHERWISE INDICATED. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL CONFORM WITH THE TYPICAL REINFORCING BAR CLEARANCE TABLE.

6. EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ETC:
   A. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ETC. REQUIRED BY OTHER TRADES. RECONCILE THEIR EXACT SIZES AND LOCATIONS BEFORE PROCEEDING WITH THE WORK.
   B. ALL ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
   C. SECURE THE APPROVAL OF THE STRUCTURAL ENGINEER PRIOR TO PLACING OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
   D. DO NOT CORE DRILL THROUGH BEAMS, JOISTS, GIRDERS, AND WALLS.
   E. NO CONDUIT SHALL BE PLACED IN CONCRETE SLABS OR BEAMS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

7. REINFORCING:
   A. FURNISH (1) TON ALLOWANCE FOR MISCELLANEOUS REINFORCING BARS DELIVERED TO THE JOB SITE IN STANDARD LENGTHS TO BE FABRICATED AND PLACED AS DIRECTED BY THE A/E. UNUSED MATERIAL SHALL BE REMOVED AND CREDITED TO THE PROJECT.
   B. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED. USE STANDARD 90° BAR HOOK UNLESS NOTED OTHERWISE.
   C. UNLESS INDICATED OTHERWISE, WELDING OF REINFORCING IS NOT PERMITTED. WHERE WELDING IS INDICATED, PROVIDE ASTM A706 REINFORCING STEEL WITH E80XX OR BETTER WELDING ELECTRODES.
   D. LAP/SPLICE;
      a. REINFORCING BAR LAP SPLICES AND ANCHORAGE LENGTHS SHALL CONFORM WITH TABLE #1, "MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE".
      b. LAP WELDED WIRE FABRIC 1 SPACE (2 CROSS WIRES) + 2" AT EDGES AND ENDS OF SHEETS.
      c. WHERE REINFORCING IS SHOWN THROUGH CONSTRUCTION JOINTS, MECHANICAL BAR SPLICE DEVICES MAY BE USED.
   E. REINFORCING BAR SUPPORT:
      a. DETAIL AND PROVIDE REINFORCING BARS AND SUPPORT REQUIRED FOR PROPER SUPPORT OF PRINCIPAL REINFORCING WHETHER OR NOT THEY ARE INDICATED ON THE DRAWINGS. MINIMUM BAR SIZE SHALL BE #4 AND MAXIMUM SPACING SHALL BE 36" ON CENTER FOR REINFORCING THAT SUPPORTS PRIMARY REINFORCING. DO NOT USE WELDED WIRE FABRIC FOR THE SUPPORT OF PRINCIPAL REINFORCING.
      b. PROVIDE A MINIMUM OF TWO (2) #4 TOP REINFORCING BARS IN BEAMS WHERE NO OTHER TOP BARS ARE AVAILABLE FOR SUPPORTING STIRRUPS. SPANDREL AND EDGE BEAMS SHALL HAVE A MINIMUM OF TWO (2) #4 TOP REINFORCING BARS AND CLOSED STIRRUPS CONTINUOUS ACROSS THE SPAN.
      c. PROVIDE CONCRETE CUBES OR SAND PLATED CHAIRS FOR THE SUPPORT OF REINFORCING ON GRADE.
      d. WELDED WIRE FABRIC SHALL BE CHAIRED TO ITS PROPER HEIGHT AND MAINTAINED AT THE PROPER LEVEL THROUGHOUT THE CONCRETE PLACING OPERATION. LIFTING OF WELDED WIRE FABRIC WITH A HOOK DURING CONCRETE PLACEMENT SHALL NOT BE PERMITTED.

TABLE 1A
MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE

USE THIS TABLE FOR ASTM A615 GRADE 60-UNCOATED REINFORCING WHEN CONCRETE CLEAR COVER IS 2" OR MORE AND BAR CLEAR SPACING IS GREATER THAN OR EQUAL TO (4) BAR DIAMETERS. IF CONCRETE CLEAR COVER IS LESS THAN 2", LAP AND ANCHORAGE LENGTHS SHALL BE CALCULATED PER ACI 318. FOR BAR CLEAR SPACING LESS THAN (4) BAR DIAMETERS, SEE TABLE #1B.

	(5000 PSI CONCRETE)				(4000 PSI CONCRETE)				
	TOP BARS		OTHER BARS			TOP BARS		OTHER BARS	
BAR SIZE	LAP	ANCH	LAP	ANCH	BAR SIZE	LAP	ANCH	LAP	ANCH
#3	16"	12"	16"	12"	#3	16"	12"	16"	12"
#4	18"	14"	16"	12"	#4	20"	15"	16"	12"
#5	22"	17"	17"	13"	#5	25"	19"	19"	15"
#6	26"	20"	20"	16"	#6	29"	23"	23"	18"
#7	38"	29"	29"	23"	#7	43"	33"	33"	25"
#8	44"	34"	34"	26"	#8	49"	37"	37"	29"
#9	54"	42"	42"	32"	#9	60"	46"	46"	36"
#10	66"	51"	51"	39"	#10	74"	57"	57"	44"
#11	80"	61"	61"	47"	#11	89"	68"	68"	53"

TABLE 1B
MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE

USE THIS TABLE FOR ASTM A615 GRADE 60-UNCOATED REINFORCING WHEN CONCRETE CLEAR COVER IS 2" OR MORE AND BAR CLEAR SPACING IS GREATER THAN OR EQUAL TO (1.5) BAR DIAMETERS. IF CONCRETE CLEAR COVER IS LESS THAN 2", LAP AND ANCHORAGE LENGTHS SHALL BE CALCULATED PER ACI 318.

	(5000 PSI CONCRETE)				(4000 PSI CONCRETE)				
	TOP BARS		OTHER BARS			TOP BARS		OTHER BARS	
BAR SIZE	LAP	ANCH	LAP	ANCH	BAR SIZE	LAP	ANCH	LAP	ANCH
#3	18"	14"	16"	12"	#3	20"	16"	16"	12"
#4	29"	23"	23"	17"	#4	33"	25"	25"	19"
#5	42"	32"	32"	25"	#5	47"	36"	36"	28"
#6	52"	40"	40"	31"	#6	58"	45"	45"	35"
#7	76"	58"	58"	45"	#7	85"	65"	65"	50"
#8	87"	67"	67"	51"	#8	97"	74"	74"	57"
#9	98"	75"	75"	58"	#9	109"	84"	84"	65"
#10	(MC)	85"	(MC)	65"	#10	(MC)	94"	(MC)	73"
#11	(MC)	94"	(MC)	72"	#11	(MC)	105"	(MC)	81"

TABLES 1A AND 1B NOTES:

A. FOR EPOXY COATED REINFORCING MULTIPLY THE TABLE VALUES ABOVE BY 1.31 FOR TOP BARS AND 1.5 FOR OTHER BARS.
B. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE TABLE VALUES ABOVE BY 1.3.
C. FOR BUNDLED BARS MULTIPLY THE TABLE VALUES ABOVE BY: 1.2 (3 BAR BUNDLE), 1.33 (4 BAR BUNDLE).
D. (MC) DENOTES MECHANICAL COUPLER DEVELOPING 125% OF THE BAR YIELD STRENGTH. NO OTHER SPLICE WILL BE ACCEPTED.
E. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP DIMENSION OF THE SMALLER BAR OR THE ANCHORAGE DIMENSION OF THE LARGER BAR. USE WHICHEVER DIMENSION IS LARGER.
F. TOP BARS SHALL BE DEFINED AS BEAM AND SLAB HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE TOP REINFORCEMENT. HORIZONTAL REINFORCING IN WALLS SHALL BE CONSIDERED TOP BARS.

TABLE 2
TYPICAL REINFORCING BAR CLEARANCE TABLE

LOCATION	CLEARANCE
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
ALL OTHER CASES UNO IN SECTIONS AND DETAILS	2"

STRUCTURAL STEEL

1. GOVERNING CODES:
   A. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 15TH EDITION, AND ALL SPECIFICATIONS INCLUDED THEREIN.
   B. THE STRUCTURE WAS DESIGNED USING THE LRFD APPROACH PER THE 15TH EDITION OF THE AISC "STEEL CONSTRUCTION MANUAL."
   C. WELDED CONNECTIONS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY, AWS D1.1, LATEST EDITION.
   D. BOLTED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS" AS APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS..

2. MATERIALS AND PRODUCTS:
   A. STRUCTURAL STEEL:
      a. ROLLED STEEL SHAPES UNLESS NOTED ON THE DRAWINGS: ASTM A992 (FY=50 KSI)
      b. ROLLED STEEL CHANNELS: ASTM A992 (Fy=50 KSI) OR ASTM A36 (FY=36 KSI)
      c. ROLLED STEEL PLATES AND BARS UP TO 4" THICK, AND ANGLES: ASTM A572 GRADE 50 (Fy=50 KSI)
      d. ROLLED STEEL PLATES AND BARS OVER 4" THICK, AND RODS: ASTM A36 (FY=36 KSI)
      e. ROUND HSS: ASTM A500, GRADE C (FY=50 KSI)
      f. RECTANGULAR HSS: ASTM A500, GRADE C (FY=50 KSI)
   B. BOLTS:
      a. ASTM F3125 CLASS 120 (GRADE A325 OR GRADE F1852), BEARING-TYPE BOLTS WITH THREADS INCLUDED IN THE SHEAR PLANE
      b. ALL BOLTS SHALL BE DOMESTICALLY PRODUCED.
   C. ANCHOR BOLTS:
      a. ASTM F-1554, GRADE 55 (WITH SUPPLEMENT S1), OR AS SPECIFIED ON THE DRAWINGS.
      b. PROVIDE HEAVY HEX NUT AND WASHER AT BOTH ENDS, UNO.
   D. WELDING ELECTRODES: E70 XX (LOW HYDROGEN) OR BETTER.
   E. PROTECTION OF STEEL: ALL STRUCTURAL STEEL SHALL BE GALVANIZED.
      a. GALVANIZING PROCESS:
         - ALL STEEL TO BE GALVANIZED SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
         - BOLTS FASTENING GALVANIZED MATERIAL SHALL BE MECHANICALLY GALVANIZED.
         - GALVANIZING SHALL BE REMOVED PER AWS D-19.0, "WELDING ZINC COATED STEEL", PRIOR TO FIELD WELDING. WELDS SHALL BE TOUCHED-UP WITH TWO COATS OF ZINC-RICH PAINT BRUSH APPLIED USING ZRC GALVANIZING COMPOUND OR EQUAL.
         - PROVIDE VENT/DRAINAGE HOLES IN HSS MEMBERS (MINIMUM 3/4 DIAMETER, BOTTOM SIDE OF HORIZONTAL MEMBERS, WITHIN 2" OF BASE FOR VERTICAL MEMBERS) PRIOR TO GALVANIZING.

3. CONTINGENCY: PROVIDE AND ERECT 0.5 TONS OF STRUCTURAL AND/OR MISCELLANEOUS STEEL (STRUCTURAL SHAPES, ANGLES, PLATES, ETC.) TO BE USED AS DIRECTED BY THE ARCHITECT. CONNECTIONS TO BE FIELD-WELDED, IF REQUIRED. A CREDIT FOR UNUSED MATERIAL SHALL BE GIVEN TO THE OWNER AT THE END OF THE PROJECT. THIS CREDIT SHALL NOT BE LESS THAN $5,000 PER TON OF UNUSED MATERIAL.

4. STEEL-TO-STEEL CONNECTIONS:
   A. IN GENERAL, IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT SHOP CONNECTIONS BE WELDED, AND FIELD CONNECTIONS BE BOLTED, EXCEPT WHERE NOTED OTHERWISE.
   B. WELDED CONNECTIONS:
      a. FOR WELDING SYMBOLS WITH NO LENGTH DIMENSION GIVEN, THE WELDING SHALL BE CONTINUOUS BETWEEN ABRUPT CHANGES IN DIRECTION.
   C. BOLTED CONNECTIONS:
      a. BOLTS SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION, UNLESS NOTED OTHERWISE.

5. VERIFY THE EXACT SIZE AND LOCATION OF OPENINGS IN SLABS AND WALLS PRIOR TO FABRICATION OF STEEL FRAMING MEMBERS.

STRUCTURAL ALUMINUM

1. GOVERNING CODES:
   A. DETAIL, FABRICATE, AND ERECT STRUCTURAL ALUMINUM IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S SPECIFICATION FOR ALUMINUM STRUCTURES, LATEST EDITION.
   B. ALL WELDING SHALL CONFORM WITH AWS D1.2, LATEST STRUCTURAL WELDING CODE-ALUMINUM.

2. MATERIALS AND PRODUCTS:
   A. STRUCTURAL ALUMINUM SHALL BE DOMESTIC ALLOY 6061-T6.
   B. FASTENERS:
      a. UNLESS DETAILED OTHERWISE, ALL FASTENERS SHALL BE 316 STAINLESS STEEL. ALUMINUM BOLTS, WHERE SPECIFIED SHALL BE 2024-T4 OR 6061-T6 ALLOY.

3. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH TWO COATS OF EPOXY. EPOXY COATING SHALL BE A TWO (2) COMPONENT, 100% SOLID, MOISTURE INSENSITIVE EPOXY RESIN, WHICH FORMS A WATERPROOF VAPOR BARRIER. COLOR SHALL BE CONCRETE GRAY.

STRUCTURAL ALUMINUM

1. MATERIALS AND PRODUCTS:
   A. GRATING, CHECKERED PLATE, AND SUPPORT ANGLES: 6061-T6
   B. GRATING CROSSBARS: 6061-T1
   C. PROTECTION:
      a. COAT CONCEALED SURFACES OF ALUMINUM THAT WILL BE IN CONTACT WITH GROUT, CONCRETE, OR DISSIMILAR METALS WITH A HEAVY COAT OF BITUMINOUS PAINT FOR DI-ELECTRIC SEPARATION.
      b. ALL ATTACHMENTS AND FASTENERS SHALL BE EITHER 316 STAINLESS STEEL OR GALVANIZED STEEL WITH A HEAVY COAT OF BITUMINOUS PAINT FOR DI-ELECTRIC SEPARATION OF NON-COMPATIBLE METALS.

2. SHOP FABRICATE ALL CUT-OUTS AND NOTCHES. PROVIDE BANDED EDGES AT CUT-OUTS.

3. ALL ALUMINUM GRATING IS RIVETED AND REMOVABLE. REFERENCE SPECIFICATIONS.
   A. GRATING SCHEDULE:

TYPE	BEARING BAR DEPTH	BEARING BAR THICKNESS	BEARING BAR CLR SPA	RIVET SPA
AG1	1-3/4"	3/16"	1-1/8"	7"
AG2	1-1/4"	1/8"	1-1/8"	7"

POST-INSTALLED ANCHORS

1. MATERIALS AND PRODUCTS:
   A. ADHESIVE ANCHORS INTO CONCRETE:
      a. EPOXY MORTAR / ADHESIVE: HILTI HIT-RE 500 V3 SAFE-SET (ICC ESR 3814) OR HILTI HIT-HY 200 V3 SAFE-SET (ICC ESR 3187) OR APPROVED EQUAL CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, CREEP, AND INSTALLATION REQUIREMENTS.
      b. ANCHOR RODS: HILTI HAS-R 316 STAINLESS STEEL ANCHOR RODS OR APPROVED EQUAL. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE IN SEISMIC APPLICATIONS PER ACI 355.4 AND AC 308. CURRENT ICC ESR SHALL BE SUBMITTED.
   B. MECHANICAL (WEDGE) ANCHORS INTO CONCRETE: HILTI KWIK BOLT TZ2 316 STAINLESS STEEL (ICC ESR 4266) OR APPROVED EQUAL. MECHANICAL ANCHORS SHALL BE APPROVED FOR USE IN SEISMIC APPLICATIONS PER ACI 355.2 AND AC 193. CURRENT ICC ESR SHALL BE SUBMITTED.

2. ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY ACI/CRSI AS AN ADHESIVE ANCHOR INSTALLER. ALL PERSONNEL INSTALLING ADHESIVE OR MECHANICAL ANCHORS SHALL BE TRAINED BY THE ANCHOR MANUFACTURER ON PROPER INSTALLATION TECHNIQUES. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE UPON REQUEST.

3. EPOXY / ADHESIVE ANCHORS:
   A. CONCRETE SHALL BE AT LEAST 21 DAYS OLD BEFORE INSTALLATION OF POST-INSTALLED ADHESIVE ANCHORS OCCURS.

4. MECHANICAL ANCHORS:
   A. CONCRETE SHALL HAVE REACHED THE SPECIFIED f'c STRENGTH PRIOR TO MECHANICAL ANCHOR INSTALLATION.
   B. MECHANICAL ANCHORS SHALL NOT BE USED FOR NON-VIBRATION ISOLATED EQUIPMENT RATED OVER 10 HORESEPOWER WITH RECIPROCATING OR ROTATING MECHANISMS; ANCHORS SHALL BE UNDERCUT ANCHORS.

5. HOLE INSTALLATION:
   A. HOLES FOR POST-INSTALLED ANCHORS SHALL BE MADE WITH A HAMMER DRILL (NOT CORED). ALL DUST AND WATER SHALL BE REMOVED FROM THE HOLE PRIOR TO ANCHOR INSTALLATION (SURFACE OF CONCRETE MAY BE MOIST, BUT STANDING WATER SHALL NOT BE PRESENT IN THE HOLE).
   B. PRIOR TO DRILLING OPERATIONS FOR HOLES OF POST-INSTALLED EPOXY ANCHORS OR REINFORCING STEEL, LOCATE EXISTING REINFORCING WITH A PACHOMETER OR OTHER NON-DESTRUCTIVE TESTING DEVICE. DO NOT CUT OR DAMAGE THE EXISTING REINFORCING BARS. IT IS RECOMMENDED THAT 1/4" PILOT HOLES BE DRILLED TO CONFIRM THAT EXISTING REINFORCING BARS ARE NOT PRESENT AND THAT ALL HOLES BE DRILLED WITH A HAMMER DRILL AND CARBIDE DRILL BITS.
   C. ALL UNNECESSARY AND UNUSED HOLES SHALL BE COMPLETELY FILLED WITH NON-SHRINK EPOXY GROUT. CLOSELY MATCH THE COLOR OF THE GROUT WITH THE COLOR OF THE EXISTING SURFACES OR PAINT TO A MATCHING COLOR. REFER TO GROUT MANUFACTURER'S RECOMMENDATIONS FOR PAINT.
   D. HOLES IN CONNECTION PLATES SHALL BE NO MORE THAN 1/16" LARGER THAN THE BOLT DIAMETER.

6. EFFECTIVE EMBEDMENT LENGTH OF MECHANICAL OR ADHESIVE ANCHORS INTO CONCRETE SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
   A. 1/2" DIAMETER WEDGE ANCHORS - 3 1/4" EMBEDMENT
   B. 5/8" DIAMETER WEDGE ANCHORS - 4" EMBEDMENT
   C. 3/4" DIAMETER WEDGE ANCHORS - 4 3/4" EMBEDMENT
   D. 1/2" DIAMETER ADHESIVE ANCHORS - 4 1/2" EMBEDMENT
   E. 5/8" DIAMETER ADHESIVE ANCHORS - 5 1/2" EMBEDMENT
   F. 3/4" DIAMETER ADHESIVE ANCHORS - 6 1/2" EMBEDMENT

7. EMBEDMENT LENGTH OF POST-INSTALLED REINFORCING BARS DOWELED INTO EXISTING CONCRETE WITH HILTI HIT-RE V3 OR HILTI HIT-HY 200 V3 EPOXY MORTAR SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON PLANS OR IN DETAILS. BARS SHALL BE INSTALLED WITHIN A HAMMER-DRILLED HOLE. HOLE SIZE, CLEANING, AND PREPARATION SHALL BE IN CONFORMANCE WITH MANUFACTURER'S STANDARD INSTALLATION PROCEDURES.
   A. #3 - 12" EMBEDMENT
   B. #4 - 13" EMBEDMENT
   C. #5 - 16" EMBEDMENT
   D. #6 - 20" EMBEDMENT
   E. #7 - 29" EMBEDMENT

8. PROOF LOAD TESTING REQUIREMENTS FOR POST-INSTALLED REINFORCING BARS:
   A. "PROOF LOAD TESTING" IS THE APPLICATION OF TENSION LOAD TO AN INSTALLED ANCHOR TO VERIFY PROPER SET OF THAT ANCHOR.
   B. TESTING SHOULD BE PERFORMED ONLY AFTER THE MINIMUM CURE TIME SPECIFIED IN THE ADHESIVE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS FOR AMBIENT TEMPERATURE CONDITIONS HAS ELAPSED. PROOF LOADS SHALL BE MAINTANED LONG ENOUGH TO ENABLE A DETERMINATION OF NO ANCHOR MOVEMENT.
   C. INITIAL INSPECTION BY THE SPECIAL INSPECTOR SHALL BE MADE PRIOR TO PROOF LOADING. THE SPECIAL INSPECTOR SHALL VERIFY THE LOCATIONS AND CONFIGURATIONS OF THE ANCHORS BASED ON THE PLANS INCLUDING ANY EDGE DISTANCE AND SPACING REQUIREMENTS, DRILL BIT TYPE AND SIZE USED, HOLE DEPTH, HOLE CLEANING TECHNIQUE, ANCHOR TYPE, SIZE, EMBEDMENT, AND INSTALLATION PROCEDURE INCLUDING ADHESIVE EXPIRATION DATE AND PROPER DISPENSING.
   D. THE TESTING AGENCY SHALL USE A CONFINED TENSION TEST SETUP THAT RESTRICTS DEVELOPMENT OF A CONICAL CONCRETE FRACTURE SURFACE.
   E. PROOF LOAD TESTING IS REQUIRED FOR THE FOLLOWING. ANCHOR TYPE, LOCATION, DRAWING DETAIL REFERENCE, TEST FREQUENCY, AND TENSION LOADS ARE:
      a. #5 VERT REBAR DOWELS AT THE NEW TANK 5/6 DIVIDER WALL (3/S252) - TEST 3% OF DOWELS TO 14,500#

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PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

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PROJECT NUMBER

60332065

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S003

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STATEMENT OF REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

	TYPE	CONTINUOUS SPECIAL INSPECTION*	PERIODIC SPECIAL INSPECTION**	REMARKS
1.	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	X	-	INSPECT ALL FOOTING SUBGRADES PRIOR TO CONCRETE PLACEMENT. SEE GEOTECHNICAL REPORT AND OTHER SPECIAL INSPECTION TABLES FOR INSPECTION REQUIREMENTS OF SOILS FOR DEEP FOUNDATION SYSTEMS.
2.	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X	PER IBC 1705.6
3.	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X	PER IBC 1705.6
4.	DURING FILL PLACEMENT, VERIFY USE OF PROPER MATERIALS AND PROCEDURES IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.. VERIFY DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-	PER IBC 1705.6, VERIFY APPROPRIATE FILL MATERIAL IS PLACED AND COMPACTED PER THE SOILS REPORT AND REQUIREMENTS OF IBC 1803.5.8 AND 1803.5.9.
5.	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	X	-	PER IBC 1705.6

* CONTINUOUS SPECIAL INSPECTION IS DEFINED AS THE FULL-TIME INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

** PERIODIC SPECIAL INSPECTION IS DEFINED AS THE PART-TIME OR INTERMITTENT INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

STATEMENT OF REQUIRED SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

	TYPE	CONTINUOUS SPECIAL INSPECTION*	PERIODIC SPECIAL INSPECTION**	REMARKS
1.	INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	-	PER IBC 1705.8
2.	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE), AND ADEQUATE END BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	X	-	PER IBC 1705.8
3.	FOR CONCRETE ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	-	-	PER IBC 1705.3
4.	VERIFY CORRECT PLACEMENT OF REINFORCEMENT PER THE CONTRACT DOCUMENTS.	X	-	INSPECT ALL REINFORCING STEEL PRIOR TO CONCRETE PLACEMENT
5.	VERIFY CORRECT PLACEMENT OF CONCRETE PER THE CONTRACT DOCUMENTS.	X	-	

* CONTINUOUS SPECIAL INSPECTION IS DEFINED AS THE FULL-TIME INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

** PERIODIC SPECIAL INSPECTION IS DEFINED AS THE PART-TIME OR INTERMITTENT INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

STATEMENT OF REQUIRED SPECIAL INSPECTION AND TESTS OF CONCRETE CONSTRUCTION

	TYPE	CONTINUOUS SPECIAL INSPECTION*	PERIODIC SPECIAL INSPECTION**	REFERENCED STANDARD (a)	IBC REFERENCE	REMARKS
1.	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3		INSPECT ALL REINFORCING STEEL PRIOR TO CONCRETE PLACEMENT.
2.	REINFORCING BAR WELDING:			AWS D1.4 ACI318 Ch. 26.6.4		WELDING INSPECTION SHALL TYPICALLY CONSIST OF VISUAL INSPECTION PER AWS.
	a. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.	-	X			
	b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16".	-	X			
	c. INSPECT ALL OTHER WELDS.	X	-			
3.	INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2		
4.	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS (b).					CONTINUOUS INSPECTION PER PRODUCT ICC REPORT TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, HOLE CLEANING PROCEDURES, ANCHOR SPACING, EDGE DISTANCES, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE REQUIRED FOR STRUCTURES IN SEISMIC DESIGN CATEGORIES C, D ,E, AND F.
	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS AND THE ANCHORS SHOWN IN SECTION 3/S252.	X	-	ACI 318: 17.10		
	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4a.	-	X	ACI 318: 17.10		
5.	VERIFYING USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2	
6.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C31, ASTM C172, ACI 318: 26.5, 26.12		
7.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5		
8.	VERIFY MAINTANENCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5		
9.	INSPECT FORMWORK FOR SHAPE LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)		

(a) WHERE APPLICABLE, SEE SECTION 1705.13.

(b) SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH CHAPTER 17 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

* CONTINUOUS SPECIAL INSPECTION IS DEFINED AS THE FULL-TIME INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

** PERIODIC SPECIAL INSPECTION IS DEFINED AS THE PART-TIME OR INTERMITTENT INSPECTION OF THE WORK BY AN APPROVED INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. SEE SPECIFIC MATERIAL SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.

NOTES:

1. SPECIAL INSPECTION SCOPE OF WORK TO BE PAID BY THE OWNER, UNO. STEEL QUALITY CONTROL (QC) INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. COORDINATE WITH SPECIAL INSPECTION AGENCY IN THEIR PERFORMANCE OF SPECIFIED DUTIES AND RENDER ALL NECESSARY PHYSICAL ASSISTANCE AND COOPERATION.
3. PROVIDE A MINIMUM OF 48 HOURS NOTICE, NOT INCLUDING WEEKENDS, TO THE SPECIAL INSPECTION AGENCY BEFORE TESTING AND INSPECTION OF CONSTRUCTED ELEMENTS IS REQUIRED.

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WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

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I/R	DATE	DESCRIPTION
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PROJECT NUMBER

60332065

SHEET TITLE

SPECIAL INSPECTIONS

SHEET NUMBER

S004

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STATEMENT OF REQUIRED QUALITY CONTROL AND QUALITY ASSURANCE FOR STEEL CONSTRUCTION

QUALITY CONTROL (QC) AS SPECIFIED BY CHAPTER N OF AISC 360-16 SHALL BE PROVIDED BY THE FABRICATOR AND ERECTOR. QUALITY ASSURANCE (QA) AS SPECIFIED BY CHAPTER N OF AISC 360-16 SHALL BE PROVIDED BY OTHERS WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), APPLICABLE BUILDING CODE, PURCHASER, OWNER, OR ENGINEER OF RECORD. NONDESTRUCTIVE TESTING (NDT) SHALL BE PERFORMED BY THE AGENCY OR FIRM RESPONSIBLE FOR QUALITY ASSURANCE EXCEPT AS PERMITTED IN ACCORDANCE WITH SECTION N6 OF AISC 360-16 (SEE BELOW).

N6. APPROVED FABRICATORS AND ERECTORS: QUALITY ASSURANCE (QA) INSPECTIONS, EXCEPT NONDESTRUCTIVE TESTING (NDT), MAY BE WAIVED WHEN THE WORK IS PERFORMED IN A FABRICATION SHOP OR BY AN ERECTOR APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ) TO PERFORM THE WORK WITHOUT QA. NDT OF WELDS COMPLETED IN AN APPROVED FABRICATOR'S SHOP MAY BE PERFORMED BY THE FABRICATOR WHEN APPROVED BY THE AHJ. WHEN THE FABRICATOR PERFORMS THE NDT, THE QA AGENCY SHALL REVIEW THE FABRICATOR'S NDT REPORTS. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE AHJ STATING THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE FABRICATOR ARE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. AT COMPLETION OF ERECTION, THE APPROVED ERECTOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE AHJ STATING THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE ERECTOR ARE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. REFER TO SECTION 1704.2.5.1 AND SECTION 1704.5 OF IBC 2021. THESE INSPECTIONS MAY BE WAIVED IF THE FABRICATOR COMPLIES WITH IBC SECTION 1704.2.5.

MINIMUM REQUIREMENTS FOR INSPECTION OF STRUCTURAL STEEL BUILDINGS

1.	QUALITY CONTROL.	QC INSPECTION TASKS SHALL BE PERFORMED BY THE FABRICATOR'S OR ERECTOR'S QUALITY CONTROL INSPECTOR (QCI), AS APPLICABLE, IN ACCORDANCE WITH SECTIONS N5.4, N5.6 AND N5.7 OF AISC 360-16. TASKS IN TABLES N5.4-1 THROUGH N5.4-3 AND TABLES N5.6-1 THROUGH N5.6-3 LISTED FOR QC ARE THOSE INSPECTIONS PERFORMED BY THE QCI TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. FOR QC INSPECTION, THE APPLICABLE CONSTRUCTION DOCUMENTS ARE THE SHOP DRAWINGS AND THE ERECTION DRAWINGS, AND THE APPLICABLE REFERENCED SPECIFICATIONS, CODES AND STANDARDS.
2.	QUALITY ASSURANCE.	QA INSPECTION OF FABRICATED ITEMS SHALL BE MADE AT THE FABRICATOR'S PLANT. THE QUALITY ASSURANCE INSPECTOR (QAI) SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE FABRICATOR. QA INSPECTION OF THE ERECTED STEEL SYSTEM SHALL BE MADE AT THE PROJECT SITE. THE QAI SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE ERECTOR. THE QAI SHALL REVIEW THE MATERIAL TEST REPORTS AND CERTIFICATIONS AS LISTED IN SECTION N3.2 OF AISC 360-16 FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. TASKS IN TABLES N5.4-1 THROUGH N5.4-3 AND TABLES N5.6-1 THROUGH N5.6-3 LISTED FOR QA ARE THOSE INSPECTIONS PERFORMED BY THE QAI TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. CONCURRENT WITH THE SUBMITTAL OF SUCH REPORTS TO THE AHJ, EOR OR OWNER, THE QA AGENCY SHALL SUBMIT TO THE FABRICATOR AND ERECTOR A) INSPECTION REPORTS, B) NONDESTRUCTIVE TESTING REPORTS.
3.	COORDINATED INSPECTION.	WHERE A TASK IS NOTED TO BE PERFORMED BY BOTH QC AND QA, IT IS PERMITTED TO COORDINATE THE INSPECTION FUNCTION BETWEEN THE QCI AND QAI SO THAT THE INSPECTION FUNCTIONS ARE PERFORMED BY ONLY ONE PARTY. WHERE QA RELIES UPON INSPECTION FUNCTIONS PERFORMED BY QC, THE APPROVAL OF THE ENGINEER OF RECORD AND THE AUTHORITY HAVING JURISDICTION IS REQUIRED.
4.	INSPECTION OF WELDING.	OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION OF IN-PROCESS AND COMPLETED WELDS SHALL BE THE PRIMARY METHOD TO CONFIRM THAT THE MATERIALS, PROCEDURES AND WORKMANSHIP ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. FOR STRUCTURAL STEEL, ALL PROVISIONS OF AWS D1.1/D1.1M SHALL APPLY. AS A MINIMUM, WELDING INSPECTION TASKS SHALL BE IN ACCORDANCE WITH TABLES N5.4-1 THROUGH N5.4-3. IN THESE TABLES, THE INSPECTION TASKS ARE AS FOLLOWS:

(a) OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

(b) PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH WELDED JOINT OR MEMBER.

TABLE N5.4-1 INSPECTION TASKS PRIOR TO WELDING

INSPECTION TASKS PRIOR TO WELDING	QC	QA
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS.	P	O
WELDING PROCEDURE SPECIFICATION (WPSs) AVAILABLE.	P	P
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE).	O	O
WELDER IDENTIFICATION SYSTEM (a).	O	O
CONFIGURATION AND FINISH OF ACCESS HOLES.	O	O
FIT-UP OF FILLET WELDS.		
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT).	O	O
b. CLEANLINESS (CONDITION OF STEEL SURFACES).	O	O
c. TACKING (TACK WELD QUALITY AND LOCATION).	O	O
CHECK WELDING EQUIPMENT.	O	-

(a) - THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE LOW-STRESS TYPE.

TABLE N5.4-2 INSPECTION TASKS DURING WELDING

INSPECTION TASKS DURING WELDING	QC	QA
CONTROL AND HANDLING OF WELDING CONSUMABLES.		
a. PACKAGING.	O	O
b. EXPOSURE CONTROL.	O	O
NO WELDING OVER CRACKED TACK WELDS.	O	O
ENVIRONMENTAL CONDITIONS.		
a. WIND SPEED WITHIN LIMITS.	O	O
b. PRECIPITATION AND TEMPERATURE.	O	O
WPS FOLLOWED.		
a. SETTINGS ON WELDING EQUIPMENT.	O	O
b. TRAVEL SPEED.	O	O
c. SELECTED WELDING MATERIALS.	O	O
d. SHIELDING GAS TYPE/FLOW RATE.	O	O
e. PREHEAT APPLIED.	O	O
f. INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.).	O	O
g. PROPER POSITION (F,V,H,OH)	O	O
WELDING TECHNIQUES.		
a. INTERPASS AND FINAL CLEANING.	O	O
b. EACH PASS WITHIN PROFILE LIMITATIONS.	O	O
c. EACH PASS MEETS QUALITY REQUIREMENTS.	O	O
PLACEMENT AND INSTALLTION OF STEEL HEADED STUD ANCHORS	P	P

STATEMENT OF REQUIRED QUALITY CONTROL AND QUALITY ASSURANCE FOR STEEL CONSTRUCTION, CONTINUED

TABLE N5.4-3 INSPECTION TASKS AFTER WELDING

INSPECTION TASKS AFTER WELDING	QC	QA
WELD CLEANED.	O	O
SIZE, LENGTH AND LOCATION OF WELDS.	P	P
WELDS MEET VISUAL ACCEPTANCE CRITERIA.		
a. CRACK PROHIBITION.	P	P
b. WELD/BASE-METAL FUSION.	P	P
c. CRATER CROSS SECTION.	P	P
d. WELD PROFILES.	P	P
e. WELD SIZE.	P	P
f. UNDERCUT.	P	P
g. POROSITY.	P	P
ARC STRIKES.	P	P
k-AREA (a).	P	P
REPAIR ACTIVITES.	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER.	P	P
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR.	O	O

5.	NONDESTRUCTIVE TESTING OF WELDED JOINTS.	
a.	PROCEDURES.	ULTRASONIC TESTING (UT), MAGNETIC PARTICLE TESTING (MT), PENETRANT TESTING (PT) AND RADIOGRAPHIC TESTING (RT), WHERE REQUIRED, SHALL BE PERFORMED BY QA IN ACCORDANCE WITH AWS D1.1/D1.1M.
d.	ULTRASONIC TESTING REJECTION RATE.	THE ULTRASONIC TESTING REJECTION RATE SHALL BE DETERMINED AS THE NUMBER OF WELDS CONTAINING DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED. WELDS THAT CONTAIN ACCEPTABLE DISCONTINUITIES SHALL NOT BE CONSIDERED AS HAVING DEFECTS WHEN THE REJECTION RATE IS DETERMINED. FOR EVALUATING THE REJECTION RATE OF CONTINUOUS WELDS OVER 3 FEET IN LENGTH WHERE THE EFFECTIVE THROAT IS 1 INCH OR LESS, EACH 12 INCH INCREMENT OR FRACTION THEREOF SHALL BE CONSIDERED AS ONE WELD. FOR EVALUATING THE REJECTION RATE OF CONTINUOUS WELDS OVER 3 FEET IN LENGTH WHERE THE EFFECTIVE THROAT IS GREATER THAN 1 INCH, EACH 6 INCH INCREMENT OR FRACTION THEREOF SHALL BE CONSIDERED AS ONE WELD.
e.	REDUCTION OF RATE OF ULTRASONIC TESTING.	FOR PROJECTS THAT CONTAIN 40 OR FEWER WELDS, THERE SHALL BE NO REDUCTION IN THE ULTRASONIC TESTING RATE. THE RATE OF UT IS PERMITTED TO BE REDUCED IF APPROVED BY THE ENGINEER OF RECORD AND BY THE AUTHORITY HAVING JURISDICTION. WHERE THE INITIAL RATE FOR UT IS 100%, THE NDT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR IS PERMITTED TO BE REDUCED TO 25% PROVIDED THE REJECTION RATE, THE NUMBER OF WELDS CONTAINING UNACCEPTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED, IS DEMOSTRATED TO BE 5% OR LESS OF THE WELDS TESTED FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR. A SAMPLING OF AT LEAST 40 COMPLETED WELDS FOR A JOB SHALL BE MADE FOR SUCH REDUCED EVALUATION ON EACH PROJECT.
f.	INCREASE IN RATE OF ULTRASONIC TESTING.	FOR STRUCTURES ASSIGNED TO RISK CATEGORY II, WHERE THE INITIAL RATE FOR UT IS 10%, THE NDT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR SHALL BE INCREASED TO 100% SHOULD THE REJECTION RATE, THE NUMBER OF WELDS CONTAINING UNACCEPTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED, EXCEEDS 5% OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING OF A LEAST 20 COMPLETED WELDS FOR A JOB SHALL BE MADE PRIOR TO IMPLEMENTING SUCH AN INCREASE. IF THE REJECT RATE FOR THE WELDER OR WELDING OPERATOR FALLS TO 5% OR LESS ON THE BASIS OF A LEAST 40 COMPLETED WELDS, THE RATE OF UT MAY BE DECREASED TO 10%.
g.	DOCUMENTATION.	ALL NDT PERFORMED SHALL BE DOCUMENTED. FOR SHOP FABRICATION, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY PIECE MARK AND LOCATION IN THE PIECE. FOR FIELD WORK, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY LOCATION IN THE STRUCTURE, PIECE MARK AND LOCATION IN THE PIECE. WHEN A WELD IS REJECTED ON THE BASIS OF NDT, THE NDT RECORD SHALL INDICATE THE LOCATION OF THE DEFECT AND THE BASIS OF REJECTION.

BOLTING

1.	INSPECTION OF HIGH STRENGTH BOLTING.	OBSERVATION OF BOLTING OPERATIONS SHALL BE THE PRIMARY METHOD USED TO CONFIRM THAT THE MATERIALS, PROCEDURES AND WORKMANSHIP INCORPORATED IN CONSTRUCTION ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND THE PROVISIONS OF THE RCSC SPECIFICATION.
a.	SNUG-TIGHT JOINTS.	FOR SNUG-TIGHT JOINTS, PRE-INSTALLATION VERIFICATION TESTING AS SPECIFIED IN TABLE N5.6-1 AND MONITORING OF THE INSTALLATION PROCEDURES AS SPECIFIED IN TABLE N5.6-2 ARE NOT APPLICABLE. THE QCI AND QAI NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS IN SNUG-TIGHT JOINTS.
b.	PRETENSIONED JOINTS AND SLIP-CRITCAL JOINTS.	FOR PRETENSIONED JOINTS AND SLIP-CRITCAL JOINTS, WHEN THE INSTALLER IS USING THE TURN-OF-NUT METHOD WITH MATCHMARKING TECHNIQUES, THE DIRECT-TENSION-INDICATOR METHOD, OR THE TWIST-OFF-TYPE TENSION CONTROL BOLT METHOD, MONITORING OF BOLT PRE-TENSIONING PROCEDURES SHALL BE AS SPECIFIED IN TABLE N5.6-2. THE QCI AND QAI NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS WHEN THESE METHODS ARE USED BY THE INSTALLER.
c.	PRETENSIONED JOINTS AND SLIP-CRITCAL JOINTS.	FOR PRETENSIONED JOINTS AND SLIP-CRITCAL JOINTS, WHEN THE INSTALLER IS USING THE CALIBRATED WRENCH METHOD OR TURN-OF-NUT METHOD WITHOUT MATCHMARKING, MONITORING OF BOLT PRETENSIONING PROCEDURES SHALL BE AS SPECIFIED IN TABLE N5.6-2. THE QCI AND QAI SHALL BE ENGAGED IN THEIR ASSIGNED INSPECTION DUTIES DURING INSTALLATION OF FASTENERS WHEN THESE METHODS ARE USED BY THE INSTALLER. AS A MINIMUM, BOLTING INSPECTION TASKS SHALL BE IN ACCORDANCE WITH TABLES N5.6-1 THROUGH N5.6-3. IN THESE TABLES, THE INSPECTION TASKS ARE AS FOLLOWS:

(a) OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEDD NOT BE DELAYED PENDING THESE INSPECTIONS.

(b) PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH BOLTED CONNECTION.

TABLE N5.6-1 INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS.	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.	O	O
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE).	O	O
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL.	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED.	P	O
PROPER STORAGE PROVDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS.	O	O

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PROJECT NUMBER

60332065

SHEET TITLE

SPECIAL INSPECTIONS

SHEET NUMBER

S005

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STATEMENT OF REQUIRED QUALITY CONTROL AND QUALITY ASSURANCE FOR STEEL CONSTRUCTION, CONTINUED		
TABLE N5.6-2 INSPECTION TASKS DURING BOLTING		
INSPECTION TASKS DURING BOLTING	**QC**	**QA**
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED.	O	O
JOINTS BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION.	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING.	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.	O	O

TABLE N5.6-3 INSPECTION TASKS AFTER BOLTING				
INSPECTION TASKS AFTER BOLTING			**QC**	**QA**
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.			P	P
2.	INSPECTION OF GALVANIZED STRUCTURAL STEEL MAIN MEMBERS.	EXPOSED CUT SURFACES OF GALVANIZED STRUCTURAL STEEL MAIN MEMBERS AND EXPOSED CORNERS OF RECTANGULAR HSS SHALL BE VISUALLY INSPECTED FOR CRACKS SUBSEQUENT TO GALVANIZING. CRACKS SHALL BE REPAIRED OR THE MEMBER SHALL BE REJECTED.		
3.	OTHER INSPECTION TASKS	THE FABRICATOR'S QCI SHALL INSPECT THE FABRICATED STEEL TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE SHOP DRAWINGS. THE ERECTOR'S QCI SHALL INSPECT THE ERECTED STEEL FRAME TO VERIFY COMPLIANCE WITH THE FIELD DETAILS SHOWN ON THE ERECTION DRAWINGS. THE QAI SHALL BE ON THE PREMISES FOR INSPECTION DURING THE PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. AS A MINIMUM, THE DIAMETER, GRADE, TYPE, AND LENGTH OF THE ANCHOR ROD OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE, SHALL BE VERIFIED AND DOCUMENTED PRIOR TO PLACEMENT OF CONCRETE. THE QAI SHALL INSPECT THE FABRICATED STEEL OR ERECTED STEEL FRAME, AS APPLICABLE, TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS. THE ACCEPTANCE OR REJECTION OF JOINT DETAILS AND THE CORRECT APPLICATION OF JOINT DETAILS SHALL BE DOCUMENTED.		
(a) OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.				
(b) PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH BOLTED CONNECTION.				

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

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REGISTRATION

STATE OF OHIO
ANDREW L KNAPKE
#E-66697
REGISTERED
PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

SPECIAL INSPECTIONS

SHEET NUMBER

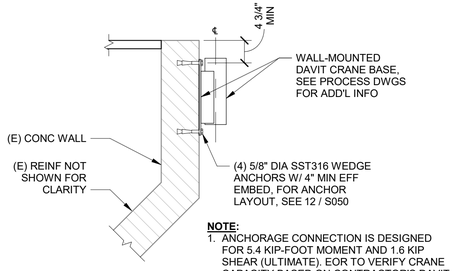
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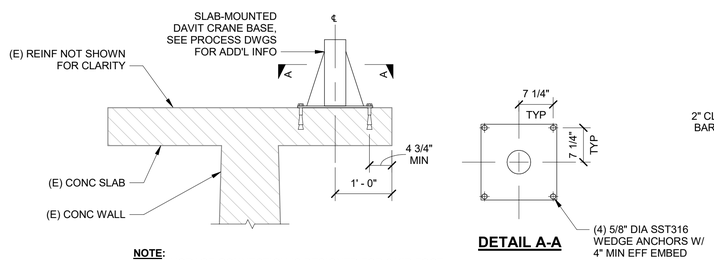
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Project Management Initials:
Designer: CS
Checked: AK
Approved: AK
ANSI D 22"x34"



NOTE:
1. ANCHORAGE CONNECTION IS DESIGNED FOR 5.4 KIP-FOOT MOMENT AND 1.6 KIP SHEAR (ULTIMATE). EOR TO VERIFY CRANE CAPACITY BASED ON CONTRACTOR'S DAVIT CRANE SUBMITTAL.

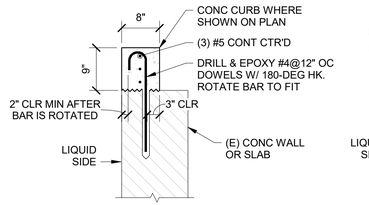
13 | S050 — TYPICAL WALL-MOUNTED DAVIT CRANE AT (E) TANKS 5, 6 & 7 — NTS



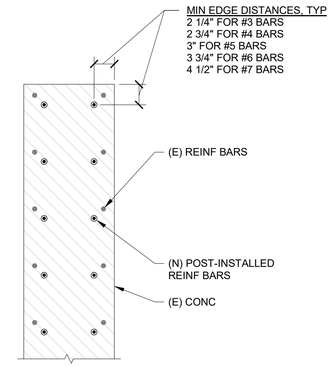
NOTE:
1. ANCHORAGE CONNECTION IS DESIGNED FOR 6 KIP-FOOT MOMENT (ULTIMATE). EOR TO VERIFY CRANE CAPACITY BASED ON CONTRACTOR'S DAVIT CRANE SUBMITTAL.

12 | S050 — TYPICAL SLAB-MOUNTED DAVIT CRANE AT (E) TANKS 8 & 9 — NTS

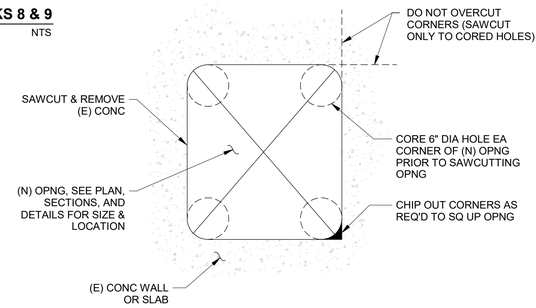
DETAIL A-A



11 | S050 — TYPICAL CONC CURBS AT (E) TANKS 8 & 9 — NTS

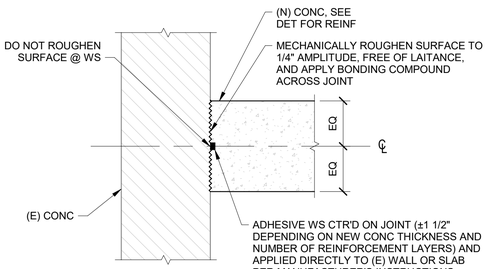


9 | S050 — TYPICAL EDGE DISTANCE REQUIREMENTS FOR POST-INSTALLED REINF BARS — NTS

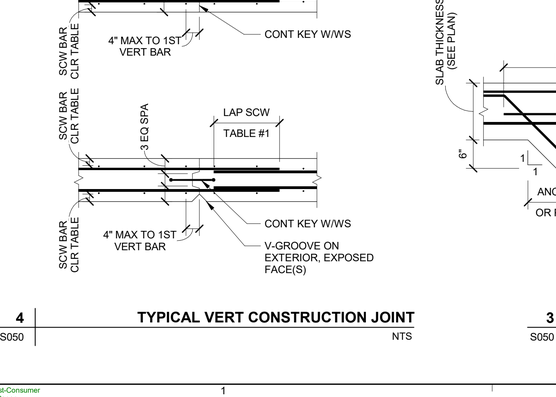


10 | S050 — TYPICAL SAWCUT AT (N) OPENINGS IN (E) CONC — NTS

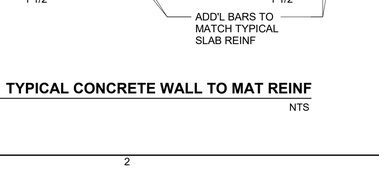
6 | S050 — TYPICAL SAWCUT EDGE EXPOSED TO VIEW OR LIQUID — NTS



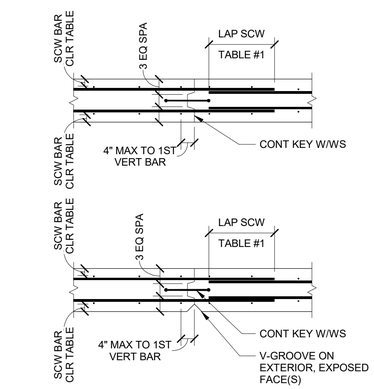
5 | S050 — TYPICAL WATER STOP & JOINT PREPARATION AT (E) TO (N) CONC JOINTS — NTS



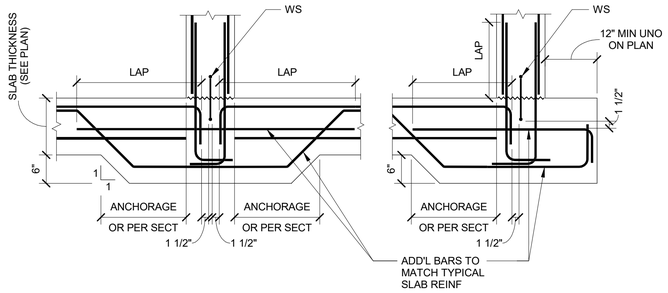
8 | S050 — TYPICAL POST-INSTALLED REINF @ WALLS, SLABS, AND INFILLED OPENINGS — NTS



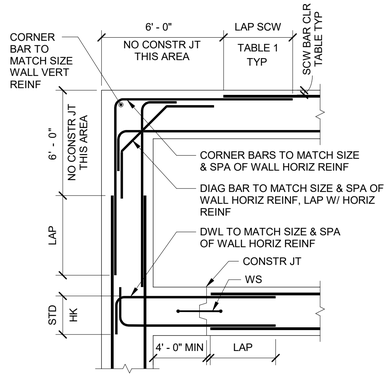
7 | S050 — TYPICAL POST-INSTALLED REINF BARS AT (E) TO (N) CONC JOINTS — NTS



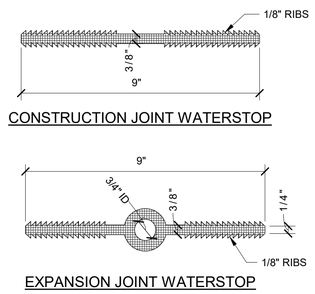
4 | S050 — TYPICAL VERT CONSTRUCTION JOINT — NTS



3 | S050 — TYPICAL CONCRETE WALL TO MAT REINF — NTS



2 | S050 — TYPICAL CONCRETE WALL CORNER REINF — NTS



NOTE:
1. USE FACTORY-FABRICATED WATERSTOP INTERSECTIONS PRODUCED BY THE WATERSTOP MANUFACTURER FOR ALL WATERSTOP DIRECTIONAL CHANGES AND INTERSECTIONS. LIMIT FIELD-FABRICATED JOINTS TO BUTT JOINTS FABRICATED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1 | S050 — TYPICAL WATER STOPS — NTS

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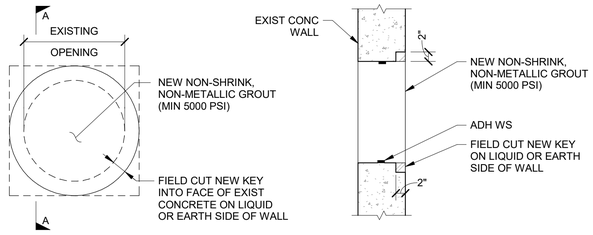
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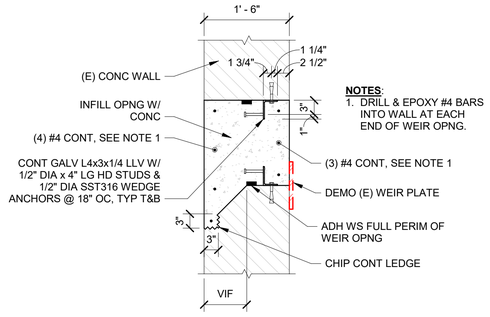
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PLAN **SECTION A-A**

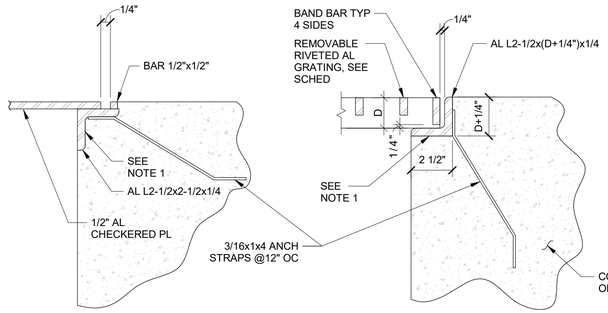
NOTE:
1. THIS DETAIL IS INTENDED ONLY FOR LOCATIONS WHERE PROCESS PIPING IS BEING DEMOLISHED AND OPENINGS ARE REQUIRED TO BE INFILLED. APPLY THIS DETAIL ONLY WHERE SPECIFICALLY NOTED ON PLAN OR IN DETAILS.

5 | TYPICAL FILL FOR EXISTING WALL OPENING DUE TO DEMOLISHED PROCESS PIPING
S051 Scale: 3/4" = 1'-0"

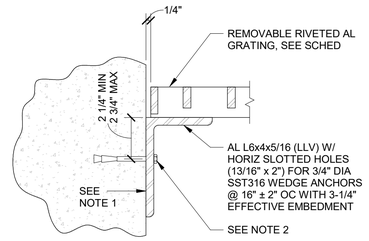


NOTES:
1. DRILL & EPOXY #4 BARS INTO WALL AT EACH END OF WEIR OPNG.

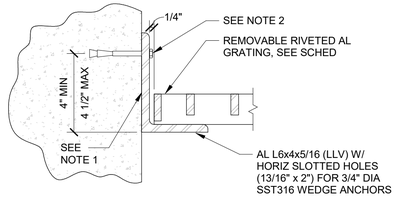
4 | TYPICAL WEIR OPENING INFILL AT (E) TANKS 8 & 9
S051 NTS



CHECKERED PL SUPPORT **GRATING SUPPORT OPTION 1**



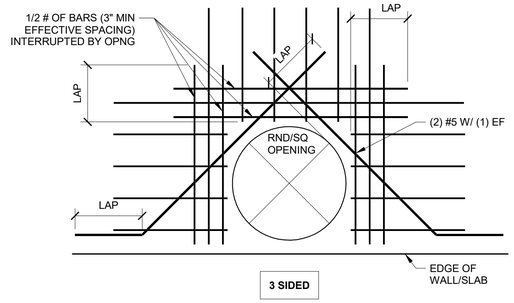
GRATING SUPPORT OPTION 2



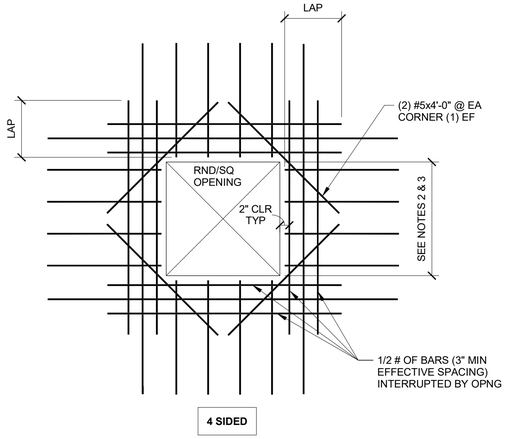
GRATING SUPPORT OPTION 3

NOTES:
1. COAT CONCEALED SURFACES OF ALUMINUM THAT WILL BE IN CONTACT WITH GROUT, CONCRETE, OR DISSIMILAR METALS WITH A HEAVY COAT OF BITUMINOUS PAINT FOR DI-ELECTRIC SEPARATION.
2. FIELD DRILL HOLES FOR WEDGE ANCHORS AFTER LOCATING EXISTING REINF. DO NOT CUT (E) REINF.

3 | TYPICAL ALUMINUM CHECKERED PL AND GRATING SUPPORT
S051 NTS



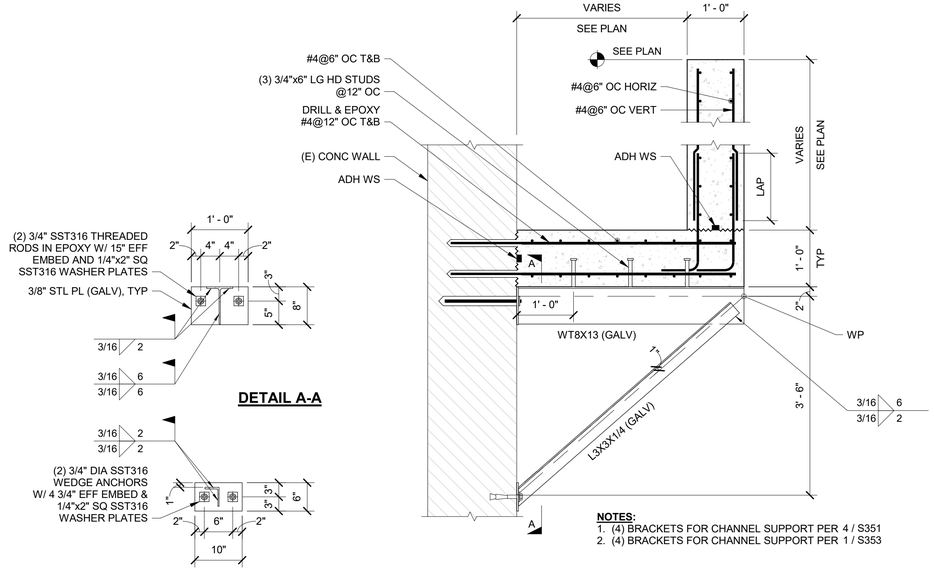
3 SIDED



4 SIDED

NOTES:
1. FORM OR PROVIDE PIPE SLEEVES AT HOLES & BLOCK OUTS IN THE FLOOR SLAB(S) & WALLS BEFORE PLACING CONCRETE. DO NOT DRILL OR CUT HOLES WITHOUT THE WRITTEN PERMISSION OF A/E. DO NOT CUT THROUGH REINF BARS.
2. ADDITIONAL REINFORCEMENT NOT REQUIRED AT OPENINGS LESS THAN 10" IN WIDTH OR DIAMETER.
3. DO NOT CONSTRUCT AN OPENING THAT EXCEEDS 3'-0" IN WIDTH, LENGTH, OR DIAMETER UNLESS THE OPENING IS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

2 | TYPICAL CAST OPENING IN CONCRETE WALL/FLOOR
S051 NTS



DETAIL A-A

NOTES:
1. (4) BRACKETS FOR CHANNEL SUPPORT PER 4 / S351
2. (4) BRACKETS FOR CHANNEL SUPPORT PER 1 / S353

1 | TYPICAL STEEL BRACKET AND REINF FOR (N) CONC CHANNELS AT (E) TANKS 8 & 9
S051 NTS

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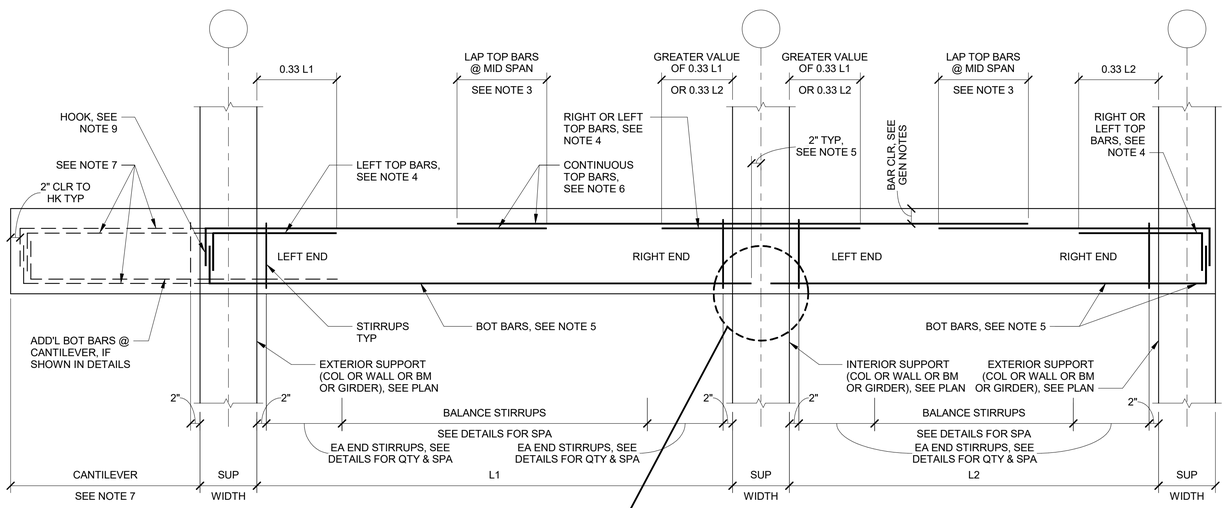
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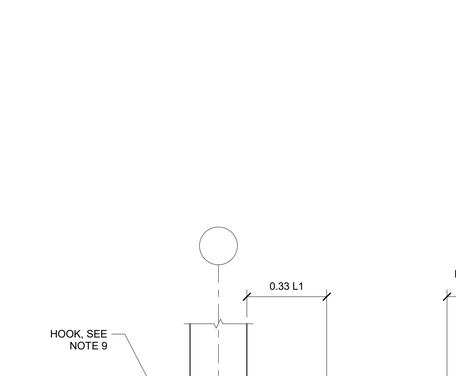
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2 TYPICAL CONCRETE BEAM AND GIRDER REINFORCING DETAIL

S052 NTS



SEE NOTES



TYPE A



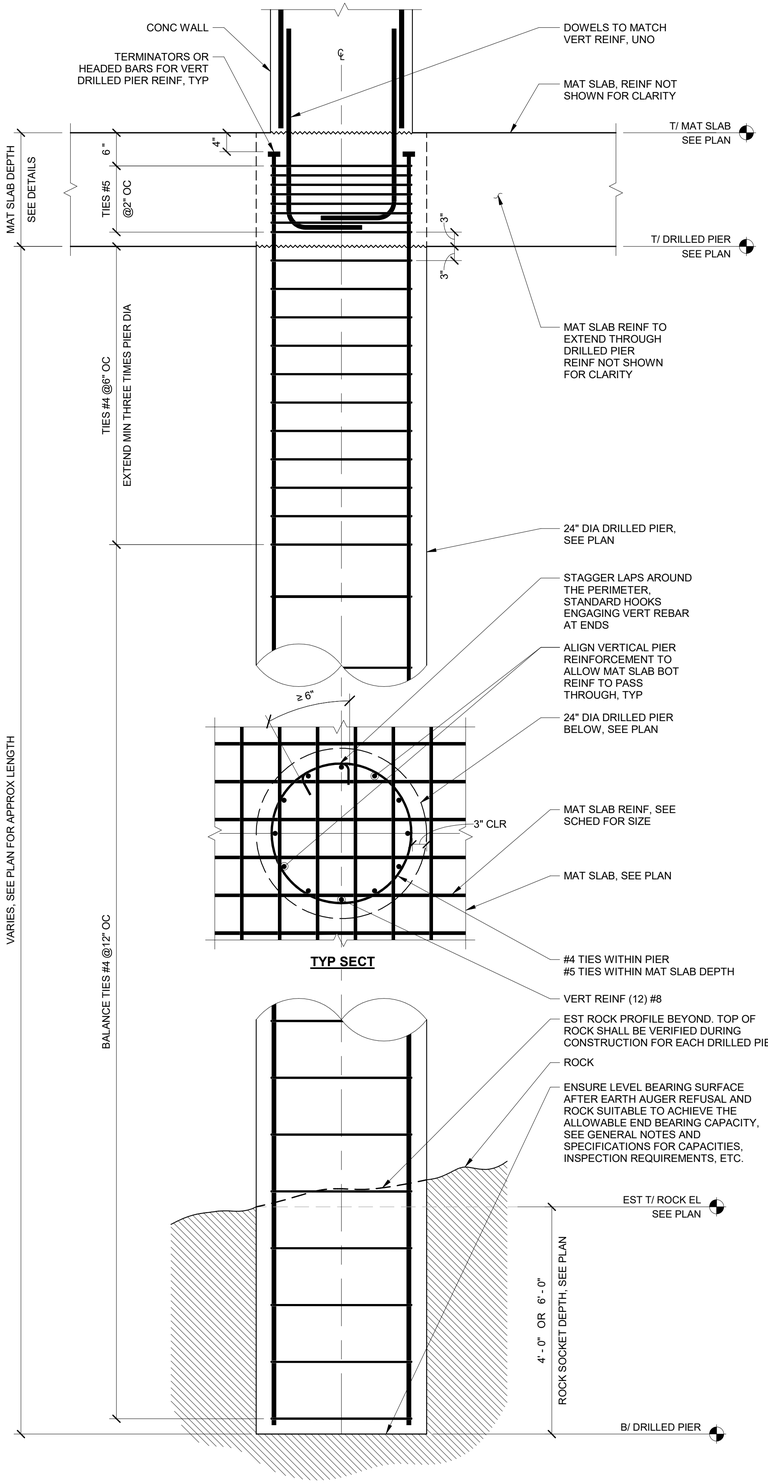
TYPE B

3 TYPICAL STIRRUP TYPES

S052 NTS

NOTES:

1. SEE PLAN, SECTIONS, AND DETAILS FOR BEAM REINFORCING AND STIRRUP SPACING. PROVIDE BAR LENGTHS AS INDICATED IN THE DETAIL ABOVE, UNLESS NOTED OTHERWISE.
2. BOTTOM BARS SHALL NOT BE LAPPED UNLESS SPECIFICALLY SHOWN ON PLAN, AT NOTED LOCATIONS BELOW, OR WITH PRIOR PERMISSION OF THE A/E.
3. LAP ALL CONTINUOUS TOP BARS AT MID SPAN, UNLESS NOTED OTHERWISE, WHEN REQUIRED BY DETAILING OF BAR LENGTHS.
4. "LEFT" AND "RIGHT" END TOP BARS ARE IN ADDITION TO THE CONTINUOUS TOP BARS.
   A. "LEFT" AND "RIGHT" ENDS SHALL BE DETERMINED BY THE ORIENTATION OF THE BEAM AS SHOWN IN SECTIONS AND DETAILS. REFERENCE THE DIAGRAM IN THIS DETAIL.
5. AT LEAST ONE QUARTER OF THE BOTTOM REINFORCING STEEL, BUT NOT LESS THAN TWO BARS, SHALL BE CONTINUOUS AND PASS THROUGH THE REGION BOUNDED BY THE LONGITUDINAL REINFORCEMENT OF THE COLUMN AND/OR WALL.
   A. EXTEND OTHER BOTTOM REINFORCING TO WITHIN 2" OF THE SUPPORT CENTERLINE OR PROVIDE 6" MINIMUM EMBEDMENT, WHICHEVER IS GREATER.
6. AT PERIMETER/EXTERIOR BEAMS, AT LEAST TWO CONTINUOUS TOP BARS SHALL PASS THROUGH THE REGION BOUNDED BY THE LONGITUDINAL REINFORCEMENT OF THE COLUMN AND/OR WALL.
7. AT CANTILEVERS, ALL TOP AND BOT BARS SHALL BE EXTENDED TO THE END OF CANTILEVER AND TERMINATE IN A STANDARD HOOK. EXTEND EACH END OF STIRRUPS TO END OF CANTILEVER OR BALANCE IF NO EACH END STIRRUPS ARE LISTED. ALL STIRRUPS SHALL BE CLOSED IN CANTILEVERED ZONE.
8. ALL BEAMS THAT FRAME INTO COLUMNS SHALL HAVE CLOSED STIRRUPS.
9. ALL TOP & BOT BARS SHALL BE HOOKED AT EXTERIOR SUPPORTS AND OPENINGS. PROVIDE 2" COVER BETWEEN END OF HOOK AND EXTERIOR FACE OF CONCRETE.
10. COLUMN, SUPPORT, AND SLAB REINFORCEMENT IS NOT SHOWN FOR CLARITY.
11. PROVIDE BAR CHAIRS AT 4'-0" OC MAX.
12. PROVIDE #5 CONTINUOUS TOP BARS TO SUPPORT STIRRUPS WHERE TOP BARS ARE NOT CALLED FOR.



TYP SECT

1 TYPICAL DRILLED PIER

S052 NTS

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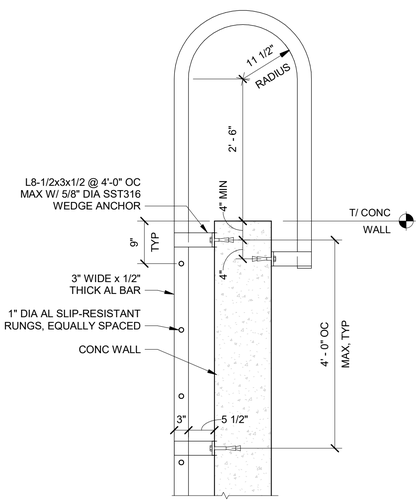
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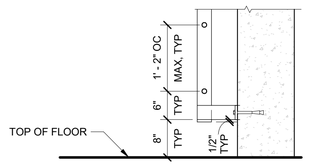
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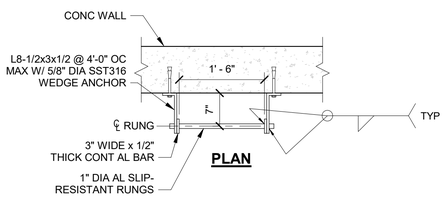
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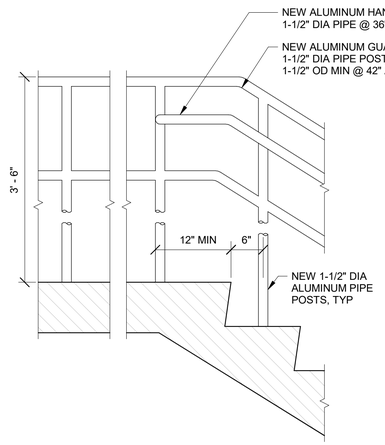


SECTION

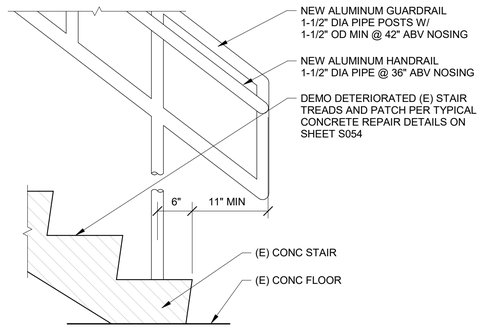


PLAN

3 S053 **TYPICAL (N) ALUMINUM LADDER** NTS

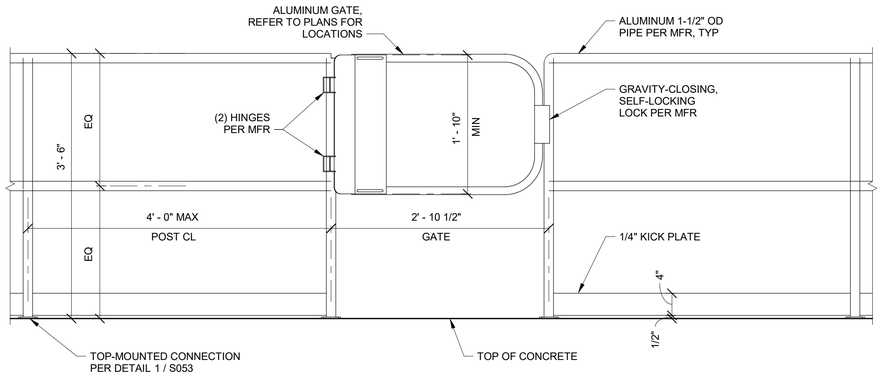


AT TOP OF EXISTING CONCRETE STAIR

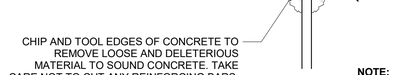


AT BOTTOM OF EXISTING CONCRETE STAIR

5 S053 **TYPICAL (N) GUARDRAIL/HANDRAIL AT EXISTING CONCRETE STAIR** NTS

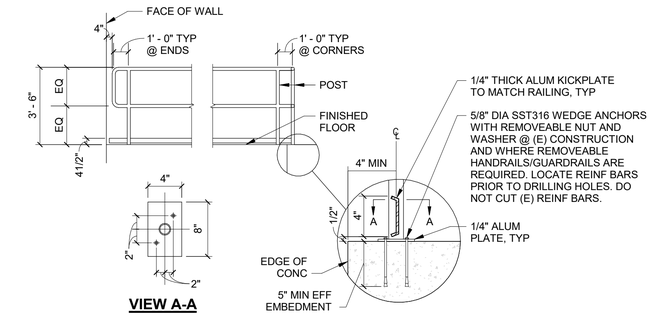


2 S053 **TYPICAL (N) ALUMINUM GATE AT GUARDRAIL** NTS



NOTE:
1. EXPANSION JOINT DETAIL SHOWN FOR FLOOR. REPAIR APPLIES TO ALL INTERIOR AND EXTERIOR OF SLAB CEILINGS, WALLS AND TOP AND BOTTOM OF FLOOR SLABS AT SELECT LOCATIONS SHOWN ON THE DRAWINGS.

4 S053 **TYPICAL EXPANSION JOINT REPAIR** NTS



VIEW A-A

1 S053 **TYPICAL (N) TOP-MOUNTED ALUMINUM GUARDRAIL/HANDRAIL** NTS

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
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ANDREW L KNAPKE
PE-66697
REGISTERED
PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

TYPICAL STRUCTURAL DETAILS

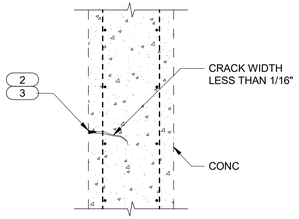
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S053

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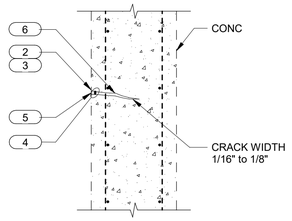
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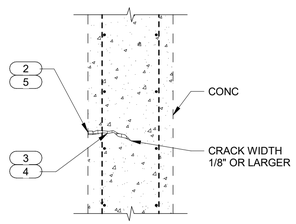
REPAIR TYPE A

1. "NARROW CRACK" REFERS TO A CRACK IN THE CONCRETE THAT IS LESS THAN 1/16" WIDE, YET GREATER THAN 0.016". CRACKS EXTENDING BENEATH AREAS RECEIVING REPAIR TYPES C, D AND E SHALL REMAIN "NARROW CRACKS", REGARDLESS OF MEASURED WIDTH.
2. CLEAN SURFACE OF CONCRETE WITH HYDRO BLASTING. ROUTE CRACKS WITH "V-NOTCH" GRINDING WHEEL TO MINIMUM DEPTH OF 1/4". BLOW OUT CRACKS WITH OIL-FREE COMPRESSED AIR PER ASTM D4258.
3. APPLY NEAT MIX OF SIKADUR 31 HI-MOD GEL INTO PREPARED SUBSTRATE, WORKING INTO SUBSTRATE FOR POSITIVE ADHESION PER MANUFACTURER'S INSTRUCTIONS.



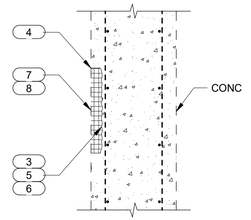
REPAIR TYPE B

1. "WIDE CRACK" REFERS TO A CRACK IN THE CONCRETE THAT IS WIDER THAN OR EQUAL TO 1/16" AND LESS THAN 1/8".
2. CRACK SHOULD BE ROUTED TO A MINIMUM OF 3/8" WIDE x 1" DEEP.
3. CLEAN ROUTED CUT BY SAND BLASTING AND BLOW OUT CRACKS WITH OIL-FREE COMPRESSED AIR PER ASTM D4258.
4. BOND BREAKER TAPE OR 1/4" FINE SILICIA SAND TO CLOSE BASE OF JOINT MUST BE USED TO PREVENT BOND.
5. USE SIKAFLEX-2c NS TO FILL CRACK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.
6. IN AREAS WHERE CRACK EXTENDS BENEATH EXISTING REINFORCING STEEL, SEE "REPAIR TYPE F" FOR DEEP SURFACE REPAIR PROCEDURES.



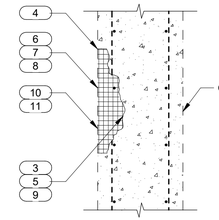
REPAIR TYPE C

1. "WIDE CEMENTITOUS CRACK REPAIR" REFERS TO A CRACK IN THE CONCRETE THAT IS WIDER THAN OR EQUAL TO 1/8".
2. CRACK SHOULD BE ROUTED TO A MINIMUM OF 3/4" WIDE x 1/2" DEEP. CRACK ROUTING SHALL EXTEND TO "ROOT" OF CRACK. "FEATHERED EDGE" TRANSITION AT EDGES AND TERMINATION OF CRACK IS NOT PERMITTED. DO NOT CUT REINFORCING STEEL.
3. REMOVE ALL LAITANCE AND CONTAMINANTS FROM THE SURFACE OF THE REMAINING SOUND CONCRETE BY WATER BLASTING AT 8,000 PSI. BLAST CLEANED SUBSTRATE SURFACES SHALL BE ROUGHENED TO A MINIMUM PROFILE OF 1/8"± AND SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
4. SCRUB THE SIKA ARMATEC 110 EPOCEM BONDING COMPOUND SLURRY ONTO ALL SURFACES OF CONCRETE THAT HAVE BEEN PREPARED TO BE PATCHED. SCRUB THE BONDING COMPOUND SLURRY INTO THE SUBSTRATE BY USING A STIFF-BRISTLE BRUSH TO ENSURE A COMPLETE COVERAGE OF ALL SURFACE IRREGULARITIES, WITH A MINIMUM THICKNESS OF 20 MILS (80 SQ/FT MAXIMUM PER GALLON). APPLY FRESHLY MIXED PATCHING COMPOUND WET ON WET BONDING COMPOUND.
5. FILL SURFACE REPAIR USING SIKATOP 123 PLUS (OR APPROVED EQUAL) APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REPAIR AREAS ARE SHOWN ON THE PLANS. NOTE THAT NOT ALL REPAIR AREAS ARE GRAPHICALLY DEFINED ON PLANS AND ELEVATIONS. CONTRACTOR SHALL BID FOR REPAIR AREA QUANTITIES IDENTIFIED WITHIN TABLE FOR EACH STRUCTURE.
6. WET-CURE THE REPAIR AS REQUIRED BY THE SPECIFICATIONS.



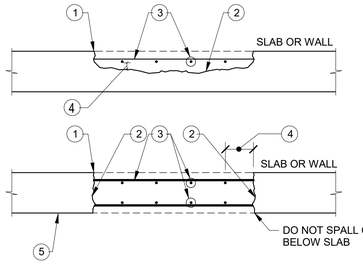
REPAIR TYPE D

1. "SHALLOW SURFACE REPAIR" REFERS TO SURFACE REPAIRS WHERE THE EXISTING REINFORCING STEEL IS NOT EXPOSED.
2. LOCATE THE EXTENT OF THE DAMAGED AREA BY TAPPING THE CONCRETE SURFACE WITH A HAMMER OR USING A CHAIN DRAG AND LISTENING FOR HOLLOW SOUNDS INDICATING CONCRETE DETERIORATION. THE PERIMETER OF THE AREA TO BE REPAIRED SHALL BE DEFINED BY STRAIGHT LINES. "SQUARE UP" DETERIORATED AREAS AS SHOWN IN 1 / S054. UNDER NO CIRCUMSTANCES SHALL THE SIZE OF THE REPAIR BE LESS THAN 6"x6".
3. REMOVE DAMAGED AND LOOSE CONCRETE TO A SOUND AND SOLID SUBSTRATE BY USING A SMALL HAND HELD JACKHAMMER (20 LBS MAXIMUM).
4. SAW CUT ALONG PERIMETER OF THE DAMAGED AREA TO MINIMUM 1/2" DEPTH. FEATHERED EDGES ARE NOT PERMITTED. DO NOT CUT REINFORCING STEEL.
5. REMOVE ALL LAITANCE AND CONTAMINANTS FROM THE SURFACE OF THE REMAINING SOUND CONCRETE BY WATER BLASTING AT 8,000 PSI. BLAST CLEANED SUBSTRATE SURFACES SHALL BE ROUGHENED TO A MINIMUM PROFILE OF 1/8"± AND SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
6. SCRUB THE SIKA ARMATEC 110 EPOCEM BONDING COMPOUND SLURRY ONTO ALL SURFACES OF CONCRETE THAT HAVE BEEN PREPARED TO BE PATCHED. SCRUB THE BONDING COMPOUND SLURRY INTO THE SUBSTRATE BY USING A STIFF-BRISTLE BRUSH TO ENSURE A COMPLETE COVERAGE OF ALL SURFACE IRREGULARITIES, WITH A MINIMUM THICKNESS OF 20 MILS (80 SQ/FT MAXIMUM PER GALLON). APPLY FRESHLY MIXED PATCHING COMPOUND WET ON WET BONDING COMPOUND.
7. FILL SURFACE REPAIR USING SIKATOP 123 PLUS (OR APPROVED EQUAL) APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REPAIR AREAS ARE SHOWN ON THE PLANS.
8. WET-CURE THE REPAIR AS REQUIRED BY THE SPECIFICATIONS.



REPAIR TYPE E

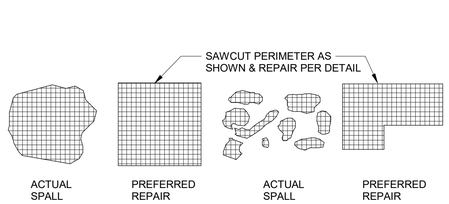
1. "DEEP SURFACE REPAIR" REFERS TO SURFACE REPAIRS WHERE THE EXISTING REINFORCING STEEL IS EXPOSED.
2. LOCATE THE EXTENT OF THE DAMAGED AREA BY TAPPING THE CONCRETE SURFACE WITH A HAMMER OR USING A CHAIN DRAG AND LISTENING FOR HOLLOW SOUNDS INDICATING CONCRETE DETERIORATION. THE PERIMETER OF THE AREA TO BE REPAIRED SHALL BE DEFINED BY STRAIGHT LINES AND SHALL EXTEND A MINIMUM OF 2 BAR DIAMETERS AND 3" BEYOND THE END OF ANY EXPOSED REINFORCING. "SQUARE UP" DETERIORATED AREAS AS SHOWN IN 1 / S054. UNDER NO CIRCUMSTANCES SHALL THE SIZE OF THE REPAIR BE LESS THAN 6"x6".
3. REMOVE ALL DETERIORATED AND LOOSE CONCRETE WHERE EMBEDDED REINFORCING STEEL BARS ARE CORRODED. REMOVED DAMAGED AND LOOSE CONCRETE TO A SOUND AND SOLID SUBSTRATE. CAREFULLY REMOVE ALL CONCRETE MATERIAL AROUND CORRODED STEEL BARS BY USING A SMALL HAND-HELD JACKHAMMER. JACKHAMMER AND REMOVE CONCRETE TO COMPLETELY EXPOSE THE SURFACE AREA AROUND CORRODED BAR SECTIONS. REMOVE CONCRETE MATERIAL BEHIND STEEL BARS SUCH THAT ALL FINGERS CAN FREELY AND COMPLETELY BE WRAPPED AROUND A BAR (WHEN HELD) WITH A MINIMUM CLEARANCE OF 3/4" BETWEEN THE BAR AND THE REMAINING SUBSTRATE.
4. SAW CUT ALONG PERIMETER OF THE DAMAGED AREA TO MINIMUM 1/2" DEPTH. DO NOT CUT REINFORCING STEEL.
5. REMOVE ALL LAITANCE AND CONTAMINANTS FROM THE SURFACE OF THE REMAINING SOUND CONCRETE BY WATER BLASTING AT 8,000 PSI. BLAST CLEANED SUBSTRATE SURFACES SHALL BE ROUGHENED TO A MINIMUM PROFILE OF 1/8"± AND SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
6. REMOVE ALL RUST FROM THE SURFACE OF ALL BARS THAT HAVE BEEN EXPOSED BY THE REMOVAL OPERATION. WATER BLAST OR WIRE BRUSH CLEAN UNTIL ONLY TIGHTLY BONDED, LIGHT RUST REMAINS.
7. STEEL SURFACES SHALL BE HIGH-PRESSURE (8,000 PSI) WASHED WITH CLEAN, CLORIDE FREE WATER. WHERE MORE THAN 20% OF THE CROSS SECTIONAL AREA OF STEEL BAR IS LOST TO CORROSION, SPLICE NEW STEEL BAR SECTIONS TO THE RUST FREE STEEL BAR SECTIONS BY LAPPING OR USING APPROVED MECHANICAL COUPLERS. SEE 2 / S054.
8. APPLY TWO (2) COATS OF SIKA ARMATEC 110 EPOCEM CORROSION PROTECTION AND BONDING COMPOUND ON ALL PREPARED OLD AND NEW (SPLICED SECTION) SURFACES OF THE REINFORCING STEEL BARS BY USING STIFF-BRISTLE BRUSH OR SPRAY AND BRUSH. EACH COAT SHALL BE A MINIMUM THICKNESS OF 20 MILS (COVERAGE OF 80 SQ/FT MAXIMUM PER GALLON) WITH AN OVERALL MINIMUM THICKNESS OF 40 MILS. ALLOW A MINIMUM DRYING TIME OF 2 TO 3 HOURS AT 73° FAHRENHEIT AND 4 TO 6 HOURS AT 40° FAHRENHEIT BETWEEN COATS. ALLOW THE SAME AMOUNT OF DRYING TIME AFTER FINAL COAT ON THE STEEL BEFORE APPLYING THE COMPOUND ON THE SURFACES OF CONCRETE (AROUND THE STEEL BARS) THAT HAVE BEEN PREPARED TO RECEIVE THE PATCHING COMPOUND.
9. SCRUB THE SIKA ARMATEC 110 EPOCEM BONDING COMPOUND SLURRY INTO ALL SURFACES OF CONCRETE THAT HAVE BEEN PREPARED TO BE PATCHED. SCRUB THE BONDING COMPOUND SLURRY INTO THE SUBSTRATE BY USING A STIFF-BRISTLE BRUSH TO ENSURE A COMPLETE COVERAGE OF ALL SURFACE IRREGULARITIES, WITH A MINIMUM THICKNESS OF 20 MILS (80 SQ/FT MAXIMUM PER GALLON). APPLY FRESHLY MIXED PATCHING COMPOUND WET ON WET BONDING COMPOUND.
10. FILL SURFACE REPAIR USING SIKATOP 123 PLUS APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REPAIR AREAS ARE SHOWN ON THE PLANS. NOTE THAT NOT ALL REPAIR AREAS ARE GRAPHICALLY DEFINED ON PLANS AND ELEVATIONS. CONTRACTOR SHALL BID FOR REPAIR AREA QUANTITIES IDENTIFIED WITHIN TABLE FOR EACH STRUCTURE.
11. WET-CURE THE REPAIR AS REQUIRED BY THE SPECIFICATIONS.



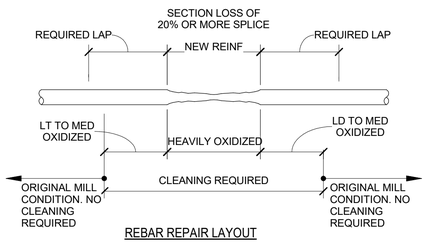
NOTES:
1. SAW CUT EDGE 1/2" DEEP (MIN). LOCATE EXISTING REINF AS NECESSARY TO AVOID CUTTING REINF.
2. PREPARE SURFACE: REMOVE LOOSE, DETERIORATED CONCRETE TO SOUND CONCRETE, CLEAN AND FREE OF CONTAMINATES. APPLY BONDING MATERIAL PRIOR TO PATCHING.
3. CLEAN STEEL WITH WIRE BRUSH TO REMOVE ALL TRACES OF CORROSION. SPLICE NEW REINFORCING IF SECTION LOSS IS MORE THAN 20%. APPLY ANTI-CORROSION COATING TO ALL EXPOSED STEEL.
4. UNDER-CUT ALL EXPOSED REINF A MINIMUM OF 3/4" OR AS REQUIRED. MAINTAIN MINIMUM THICKNESS OF PATCHING MATERIAL AS REQUIRED BY MANUFACTURER.
5. FULL DEPTH SLAB REPAIRS REQUIRE SHORING.

2 CONCRETE WALL OR SLAB REPAIR
S054 Scale: 3/4" = 1'-0"

METHODS OF CONCRETE REPAIR FOR SPALLS, VOIDS, HONEYCOMBS OR DEMOLISHED AREAS



SURFACE REPAIR AREA LAYOUT



REBAR REPAIR LAYOUT

NOTE:
1. DEPTH AND EXTENT OF REPAIR AREA MAY REQUIRE TEMPORARY SHORING. ALL REPAIRS SHALL BE PERFORMED UNDER THE SUPERVISION AND DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER.

1 SURFACE/REBAR REPAIR LAYOUT
S054 Scale: 3/4" = 1'-0"

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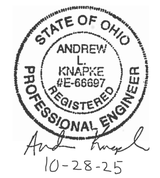
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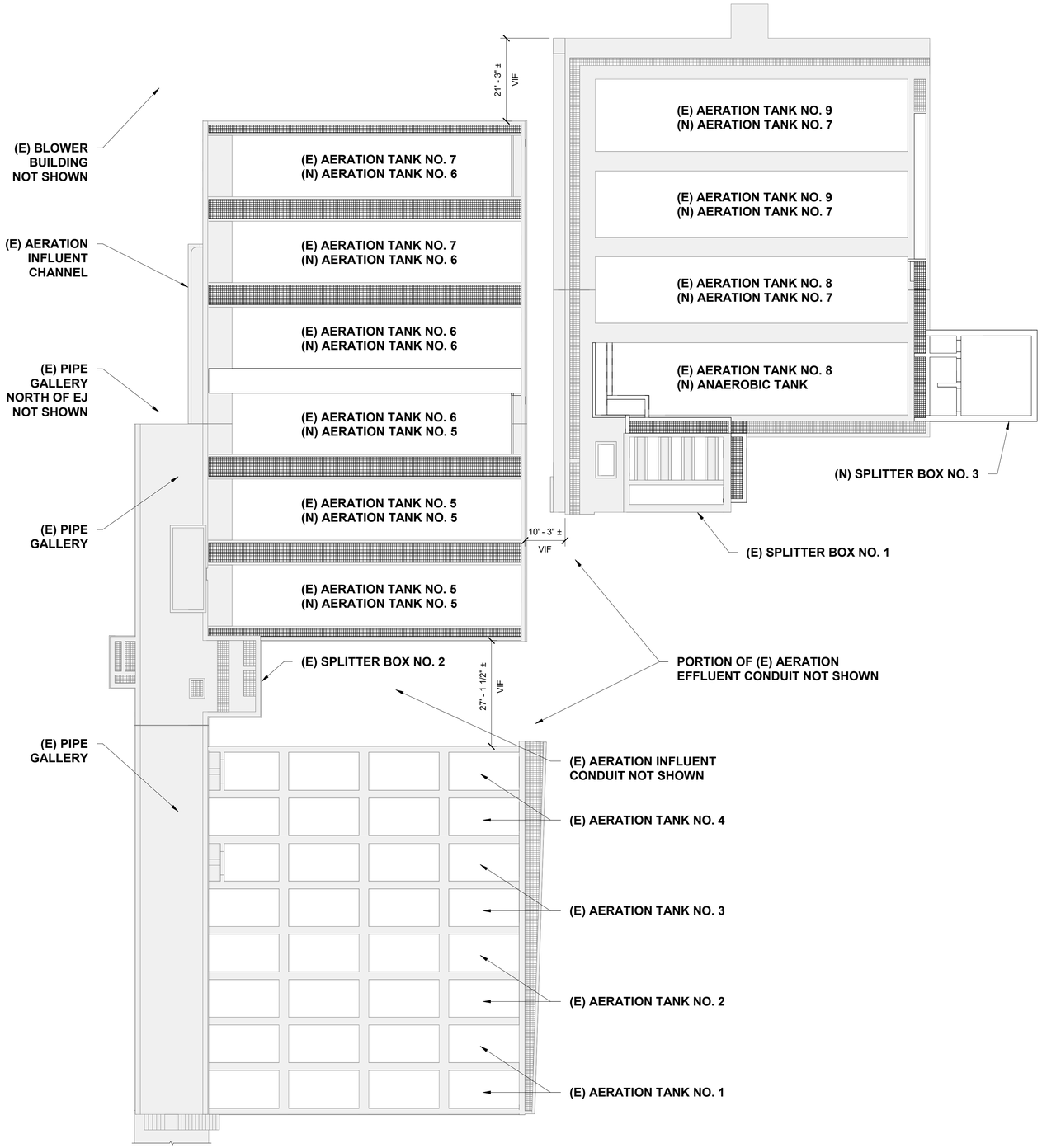
TYPICAL CONCRETE REPAIR DETAILS

SHEET NUMBER

S054

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Project Management Initials:

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1 OVERALL PLAN - AERATION TANKS

S100

Scale: 1/16" = 1'-0"

PLAN NOTES:

1. THIS OVERALL PLAN SHOWS THE FINAL CONDITION OF THE AERATION TANK STRUCTURES AND PIPE GALLERY, INCLUDING COMPLETED DEMOLITION AND NEW STRUCTURES.
2. MAT FOUNDATIONS AND DRILLED PIERS ARE NOT SHOWN FOR CLARITY.
3. DIMENSIONS SHOWN ON THIS PLAN ARE BETWEEN THE TOP EDGES OF EXISTING WALLS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.
4. REFERENCES:
   - A. EXISTING AERATION TANKS 1, 2, 3, & 4
     - a. DEMOLITION PLANS: S101-S102
     - b. NEW CONSTRUCTION PLANS: S103-S105
     - c. SECTIONS: S151-S152
   - B. EXISTING AERATION TANKS 5, 6, & 7 / NEW AERATION TANKS 5 & 6
     - a. DEMOLITION PLANS: S201-S202
     - b. NEW CONSTRUCTION PLANS: S203-S204
     - c. SECTIONS: S251-S253
   - C. EXISTING AERATION TANKS 8 & 9 / NEW ANAEROBIC TANK AND AERATION TANK 7
     - a. DEMOLITION PLANS: S301-S304
     - b. NEW CONSTRUCTION PLANS: S305-S308
     - c. SECTIONS: S351-S354
   - D. DETRITUS TANK EFFLUENT CHANNEL EXPANSION
     - a. DEMOLITION PLANS: S401
     - b. NEW CONSTRUCTION PLANS: S402
     - c. SECTIONS: S451
   - E. REPAIR REFERENCE PHOTOS: S500-S502

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REGISTRATION

STATE OF OHIO
ANDREW L. KNAPKE
PE-66697
REGISTERED
PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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SHEET TITLE

OVERALL PLAN - AERATION TANKS

SHEET NUMBER

S100

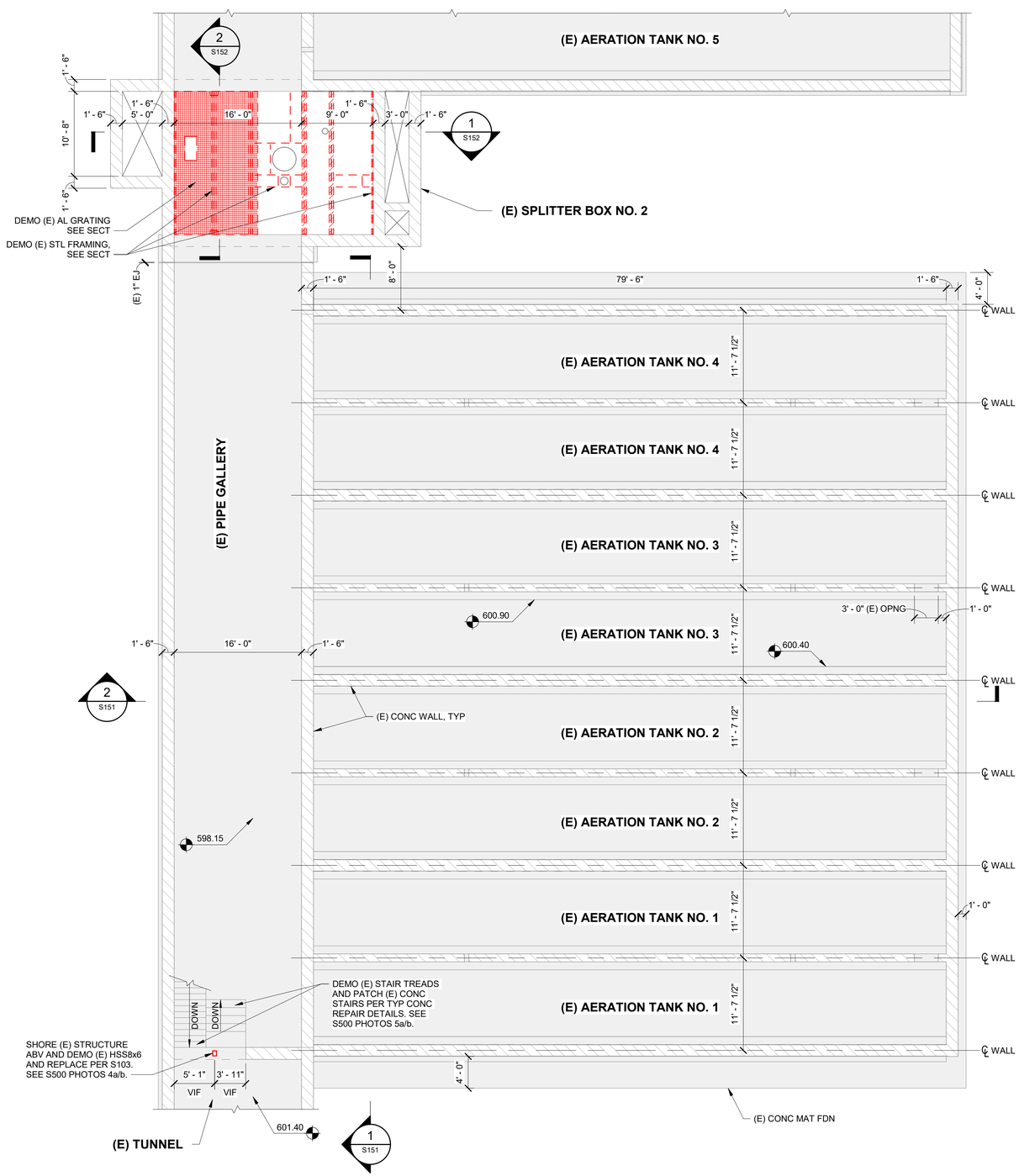
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Approved: AK
Checked: AK
Designer: CS
Project Management Initials:

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1 S101 **DEMOLITION PLAN - EXISTING AERATION TANKS 1, 2, 3, & 4 @ EL. 600.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S103 THROUGH S105 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S151-S152

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

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REGISTRATION

STATE OF OHIO ANDREW L KNAPKE #E-66697 REGISTERED PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

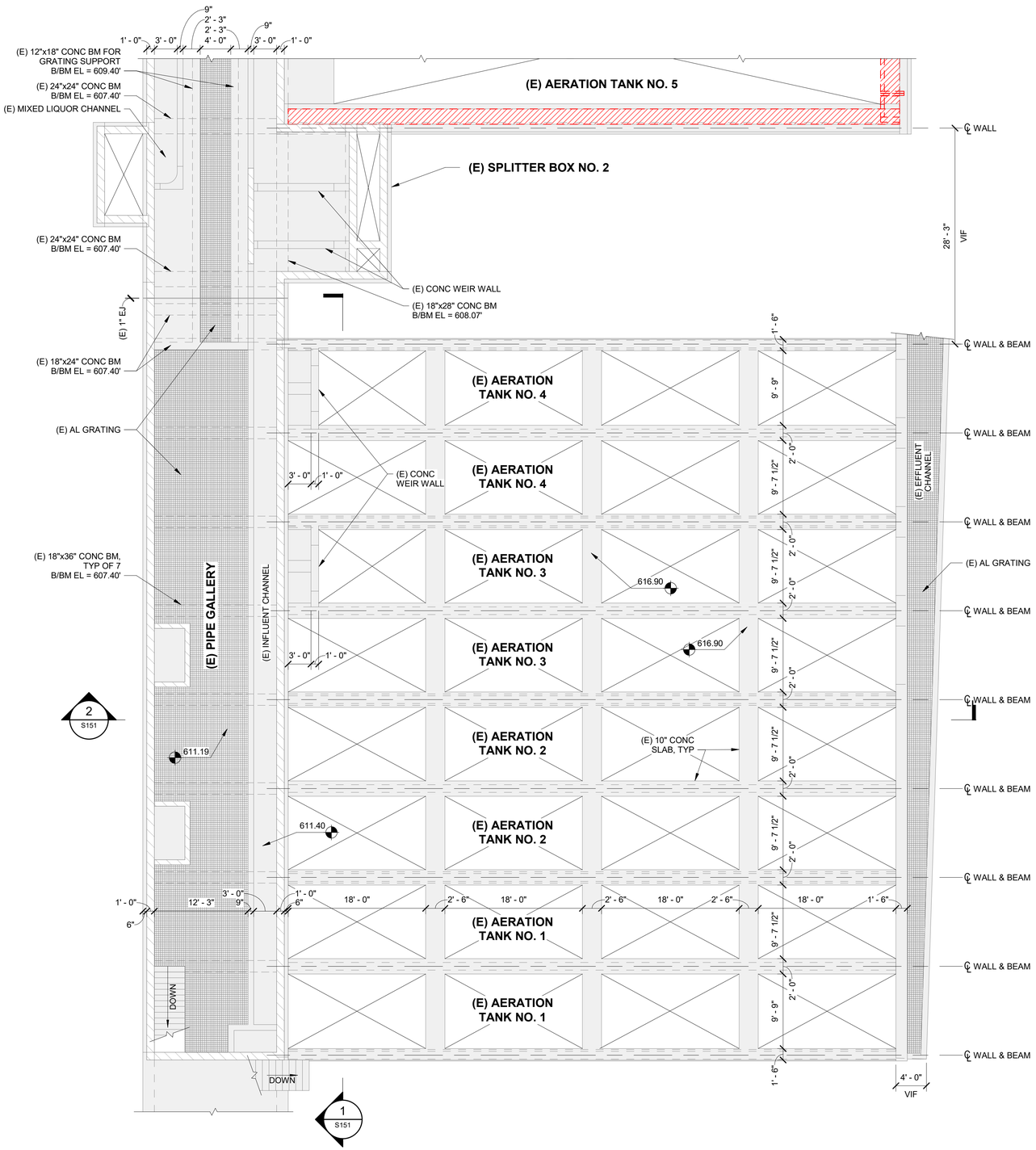
AERATION TANKS 1, 2, 3, & 4 - PLANS

SHEET NUMBER

S101

ANSI D 22"x34"
Approved: AK
Checked: AK
Designer: CS
Project Management Initials:
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N

1 / S102 **DEMOLITION PLAN - EXISTING AERATION TANKS 1, 2, 3, & 4 @ EL. 616.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S103 THROUGH S105 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S151-S152

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - PLANS

SHEET NUMBER

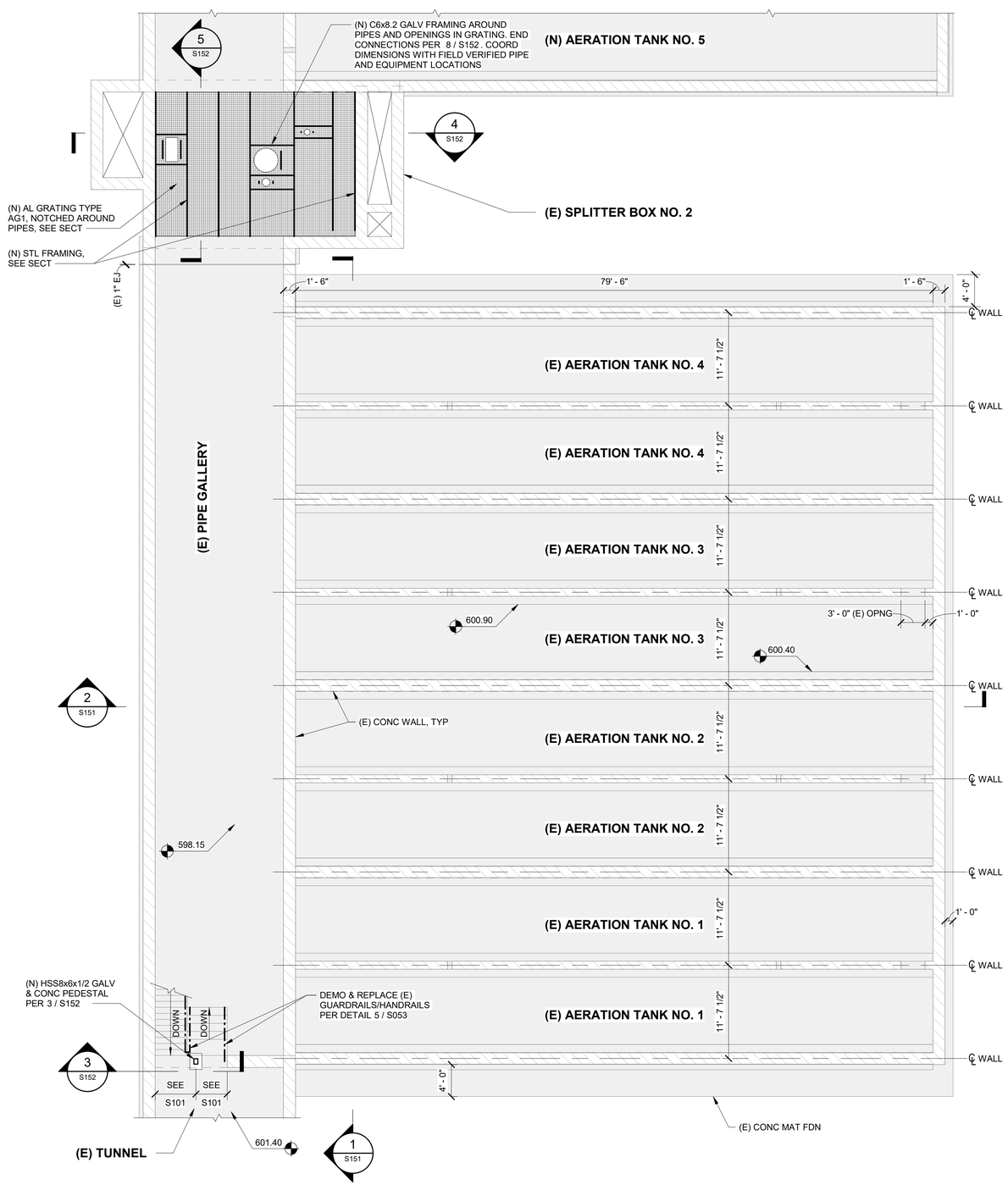
S102

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N

1 S103 **NEW CONSTRUCTION PLAN - AERATION TANKS 1, 2, 3, & 4 @ EL. 600.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S101 THROUGH S102 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. ONLY GUARDRAILS TO BE MODIFIED AND/OR REPLACED ARE SHOWN ON PLAN. DEMOLISH EXISTING GUARDRAILS AS REQUIRED TO SUPPORT CONSTRUCTION OF NEW ALUMINUM GUARDRAILS.
5. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S151-S152
   F. REPAIR REFERENCE PHOTOS: S500

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AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
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ELYRIA, OH

CONSULTANT

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - PLANS

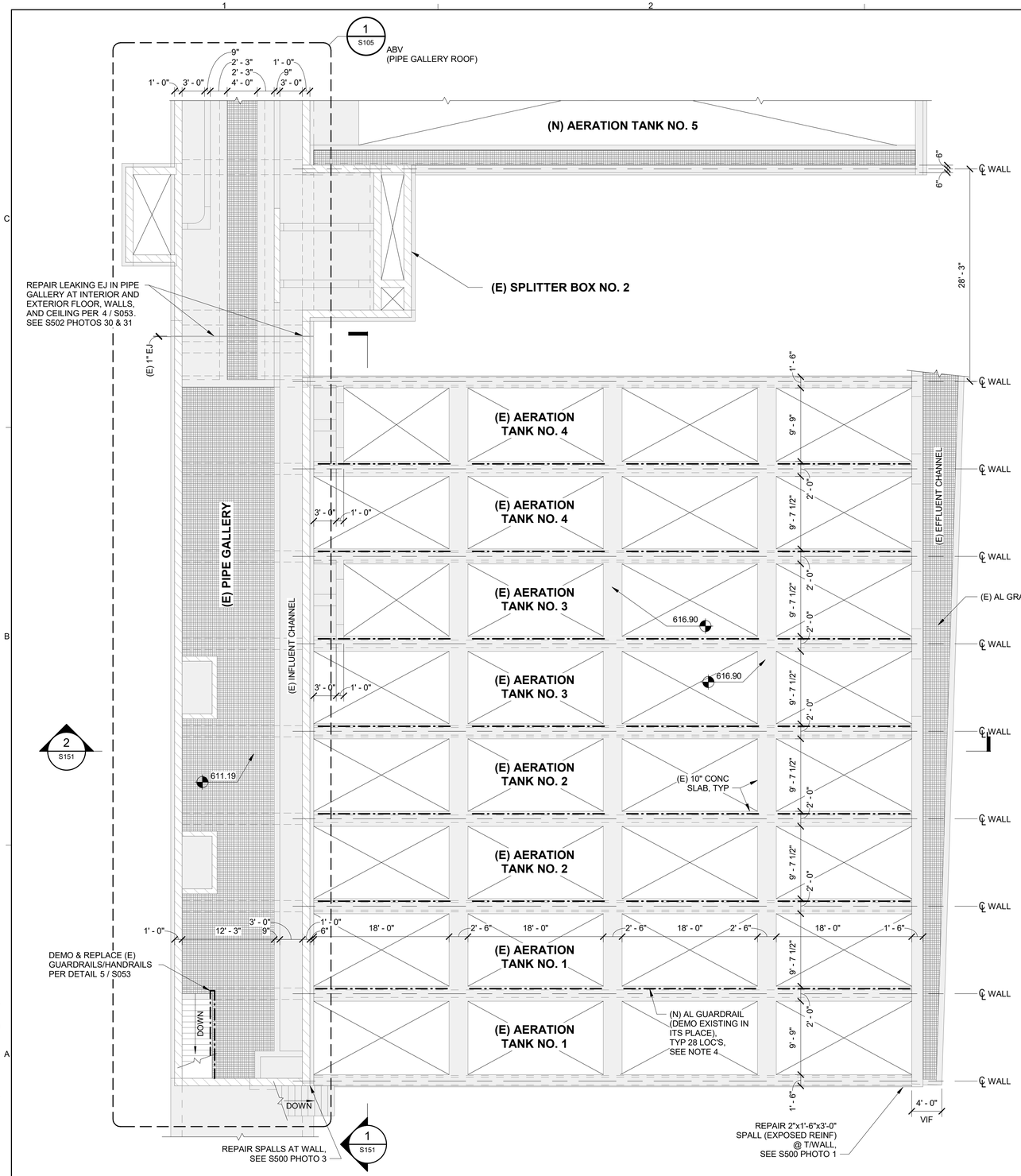
SHEET NUMBER

S103

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N

1 S104 **NEW CONSTRUCTION PLAN - AERATION TANKS 1, 2, 3, & 4 @ EL. 616.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S101 THROUGH S102 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. ONLY GUARDRAILS TO BE MODIFIED AND/OR REPLACED ARE SHOWN ON PLAN. DEMOLISH EXISTING GUARDRAILS AS REQUIRED TO SUPPORT CONSTRUCTION OF NEW ALUMINUM GUARDRAILS.
5. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S151-S152
   F. REPAIR REFERENCE PHOTOS: S500-S502

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ELYRIA, OH

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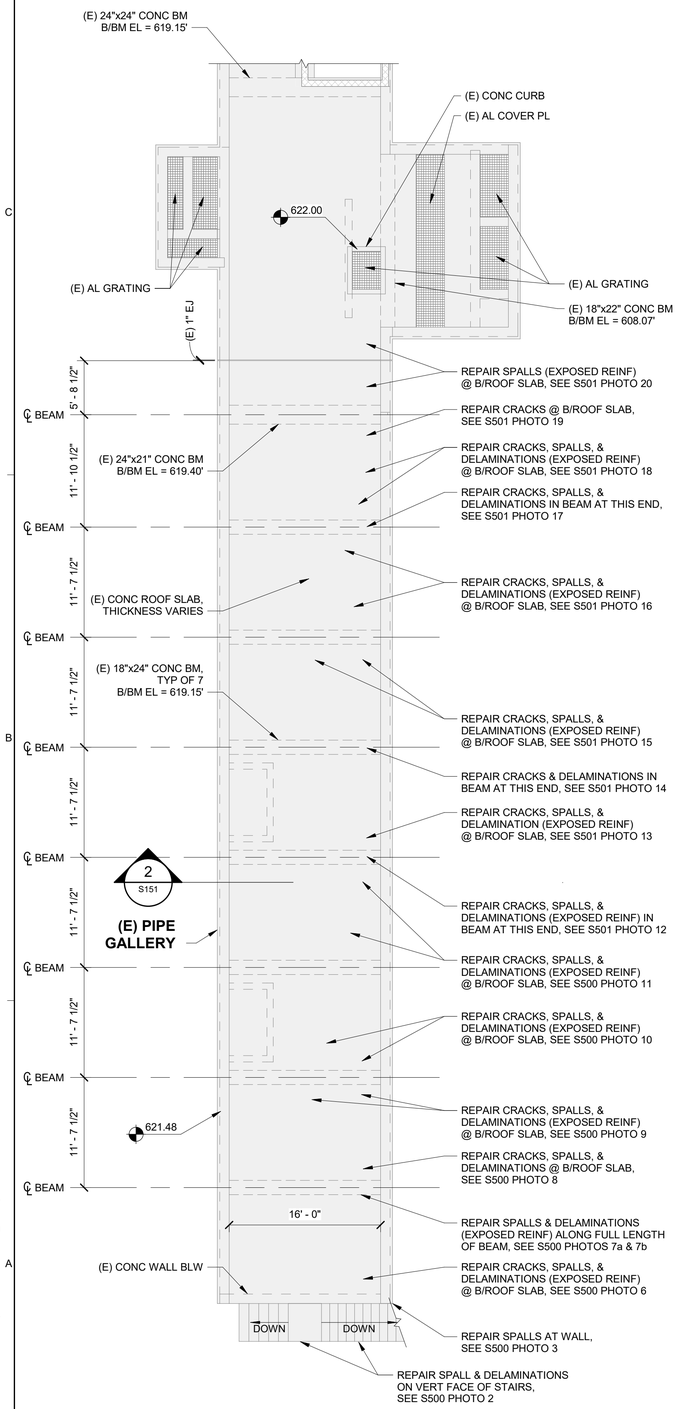
60332065

SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - PLANS

SHEET NUMBER

S104



N

1 S105 **NEW CONSTRUCTION PLAN - EXISTING PIPE GALLERY ROOF @ EL. 621.50**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S101 THROUGH S102 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
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   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. REFERENCES:
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   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S151-S152
   F. REPAIR REFERENCE PHOTOS: S500-S501

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PROJECT

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WASTEWATER POLLUTION CONTROL PLANT
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CLIENT

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SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - PLANS

SHEET NUMBER

S105

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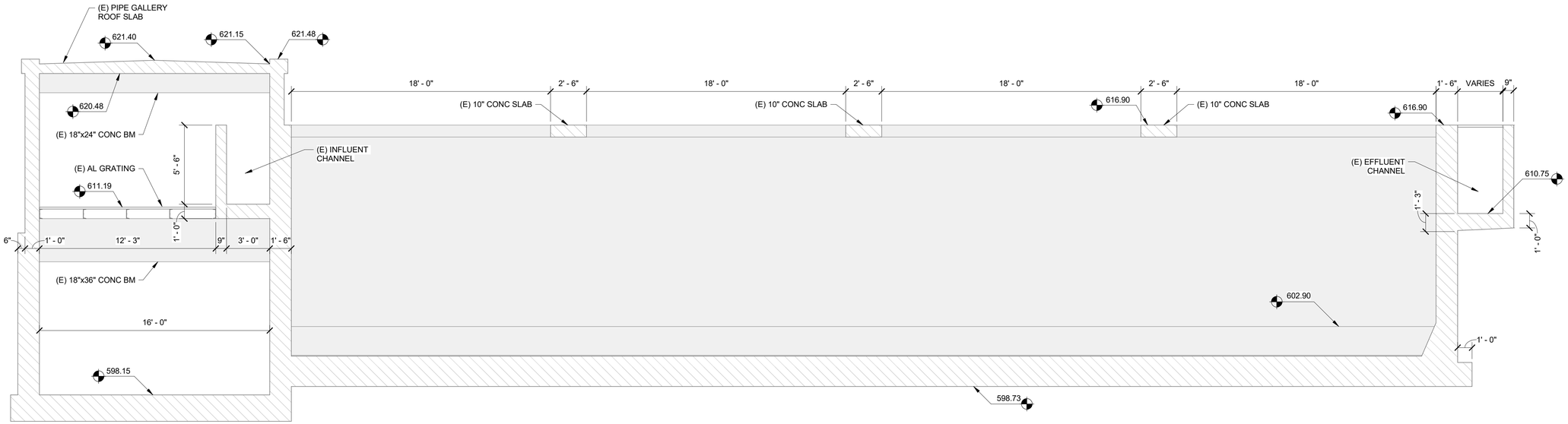
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Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

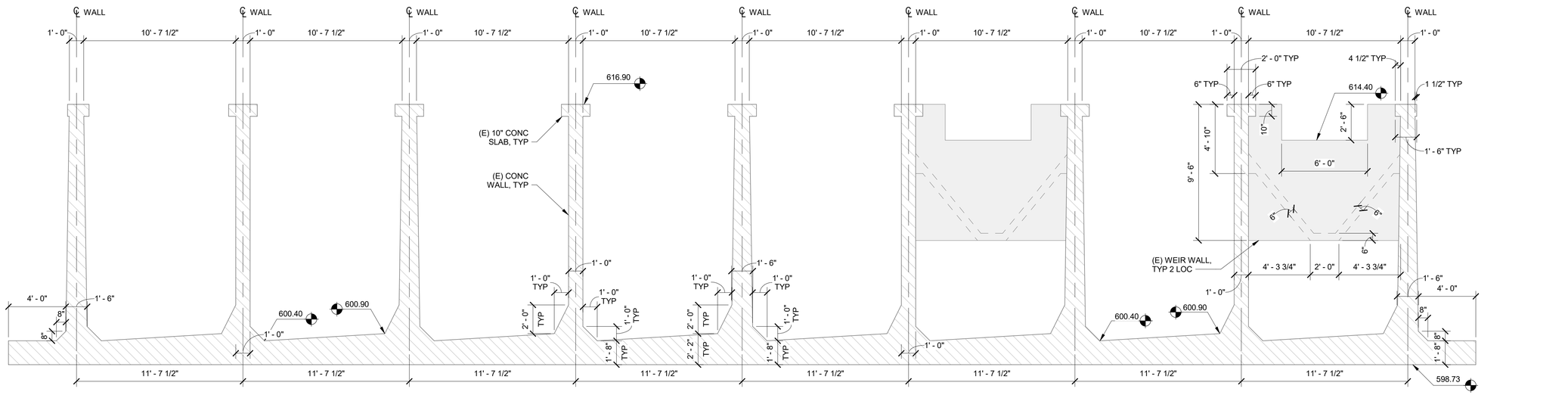
Project Management Initials:

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2 SECTION (EXISTING CONDITION)
S151 Scale: 1/4" = 1'-0"



1 SECTION (EXISTING CONDITION)
S151 Scale: 1/4" = 1'-0"

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SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - SECTIONS

SHEET NUMBER

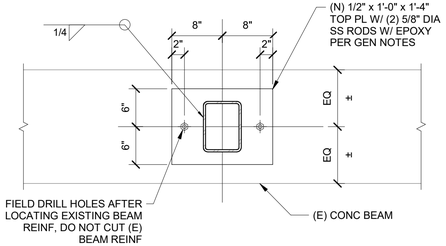
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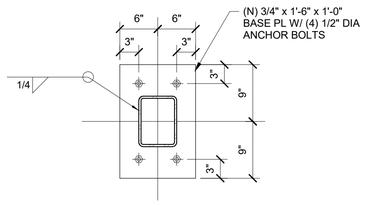
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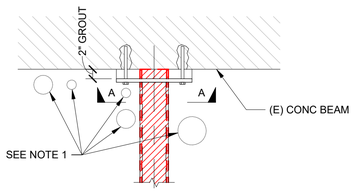
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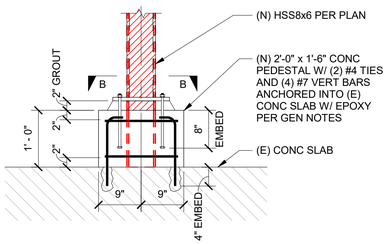


SECTION A-A



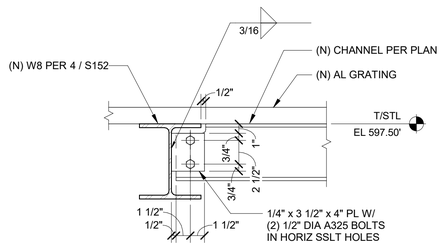
SECTION B-B





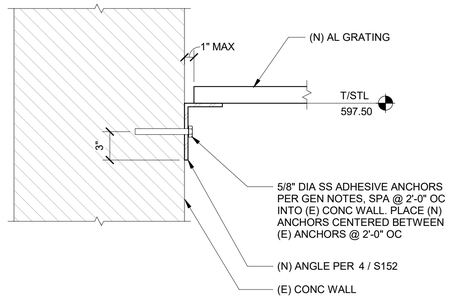
NOTES:
1. SEVERAL PIPES MAY CONFLICT WITH THE POST REPLACEMENT. CONTRACTOR SHALL GIVE THE OWNER A MINIMUM OF TWO WEEKS NOTICE OF THE WORK SO THAT PIPES IN THE VICINITY CAN BE TEMPORARILY RE-ROUTED OR DEMOLISHED. REFERENCE PROCESS DRAWINGS FOR ADDITIONAL INFO.
2. ALL STEEL, INCLUDING ANCHOR BOLTS AND PLATES, SHALL BE HOT-DIP GALVANIZED.

3 S152 — **SECTION (FINAL CONDITION AND NEW CONSTR)** — Scale: 3/4" = 1'-0"

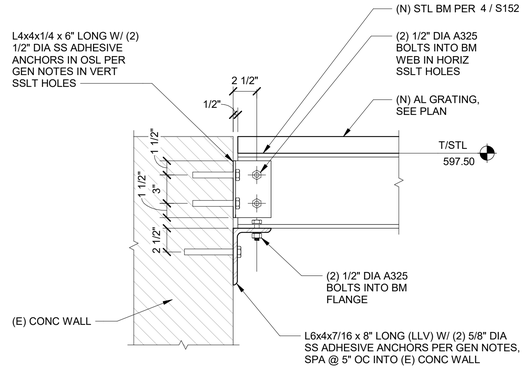


NOTE:
1. C6-TO-W8 CONNECTION IS SHOWN. C6-TO-C6 CONNECTION IS SIMILAR WITH ADDITIONAL 1" DEEP BOTTOM COPE. REDUCE COPE LENGTHS AT SUPPORTING CHANNEL FLANGES.

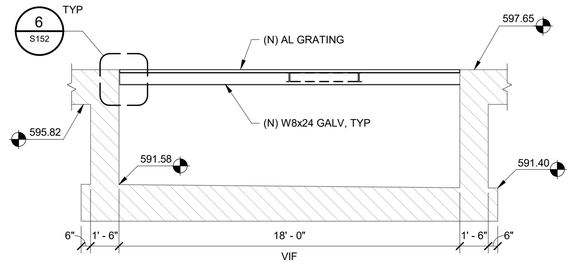
8 S152 — **SECTION** — Scale: 1 1/2" = 1'-0"



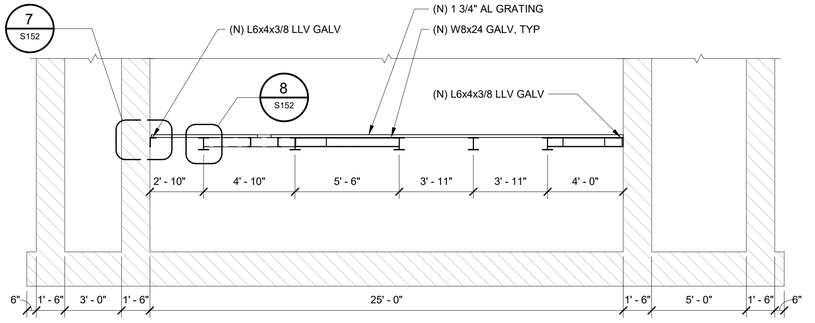
7 S152 — **DETAIL** — Scale: 1 1/2" = 1'-0"



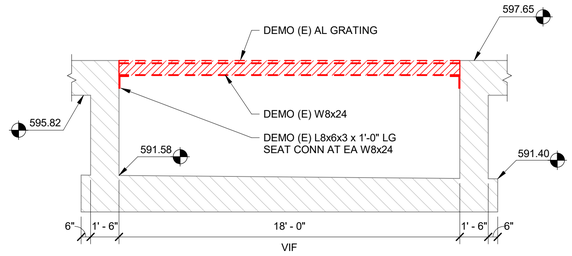
6 S152 — **DETAIL** — Scale: 1 1/2" = 1'-0"



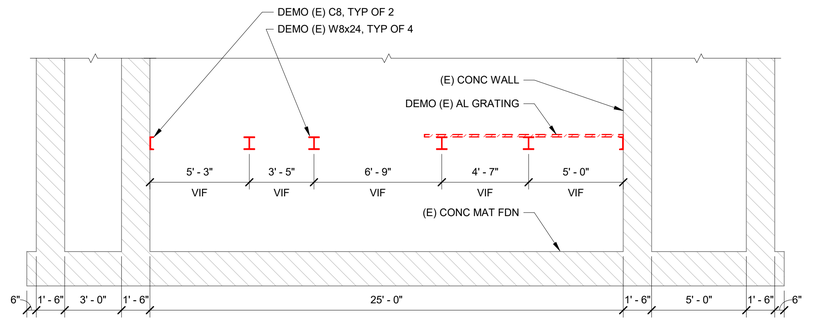
5 S152 — **SECTION (FINAL CONDITION AND NEW CONSTR)** — Scale: 1/4" = 1'-0"



4 S152 — **SECTION (FINAL CONDITION AND NEW CONSTR)** — Scale: 1/4" = 1'-0"



2 S152 — **SECTION (EXISTING CONDITION AND PROPOSED DEMO)** — Scale: 1/4" = 1'-0"



1 S152 — **SECTION (EXISTING CONDITION AND PROPOSED DEMO)** — Scale: 1/4" = 1'-0"

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AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

AECOM
1300 EAST 9TH STREET, SUITE 500
CLEVELAND, OH 44114
216.622.2300 tel 216.622.2301 fax
www.aecom.com

CONSULTANTS

SURVEY
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260 BURNS ROAD, SUITE 100
ELYRIA, OH 44035
440 465 4730 tel 440 365 4790 fax
www.ksassociates.com

REGISTRATION

STATE OF OHIO ANDREW L. KNAPKE #E-66697 REGISTERED PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 1, 2, 3, & 4 - SECTIONS

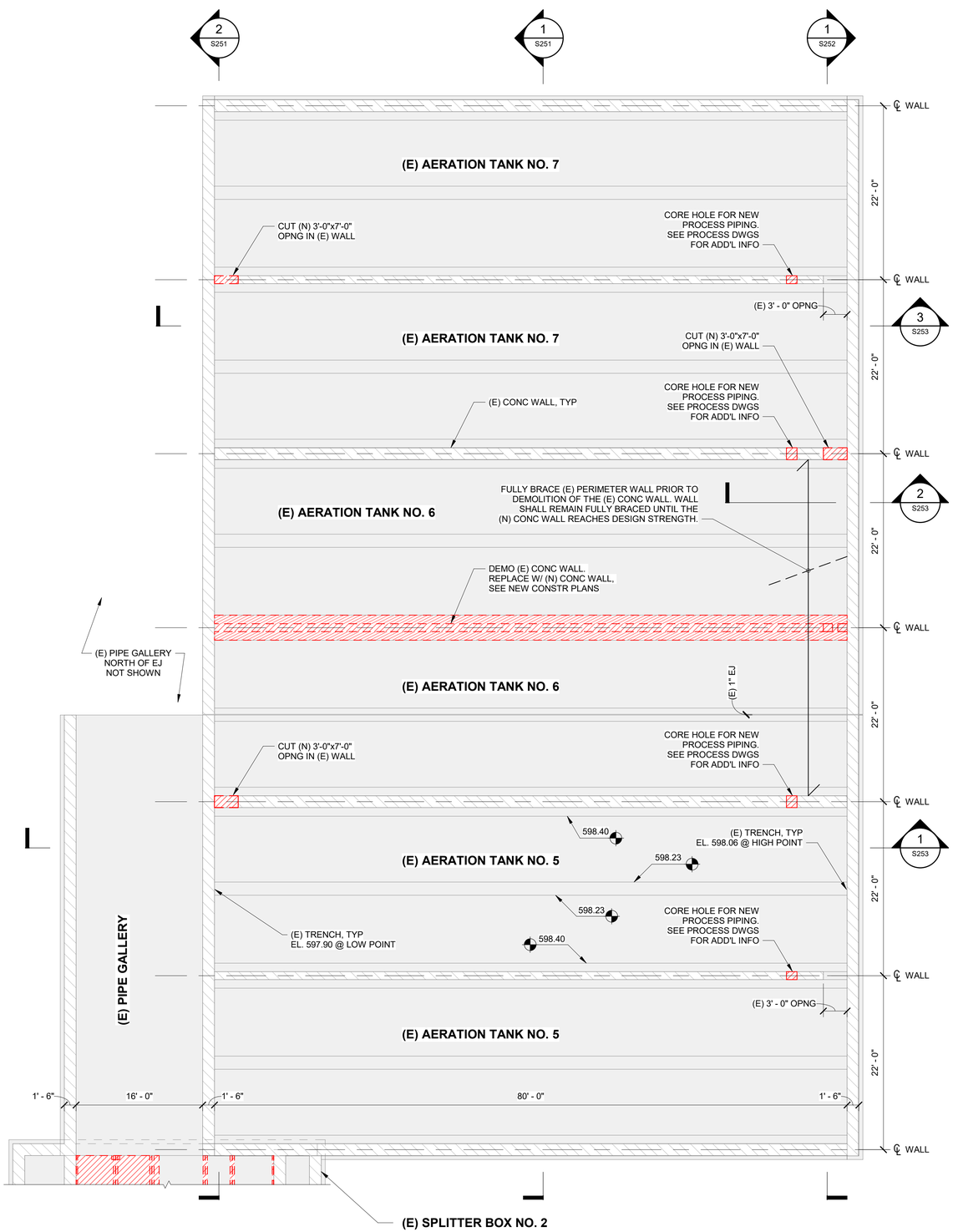
SHEET NUMBER

S152

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N

1 / S201 DEMOLITION PLAN - EXISTING AERATION TANKS 5, 6, & 7 @ EL. 598.40

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S203 AND S204 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S251-S253

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PROJECT

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WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
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CLIENT

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 5, 6, & 7 - PLANS

SHEET NUMBER

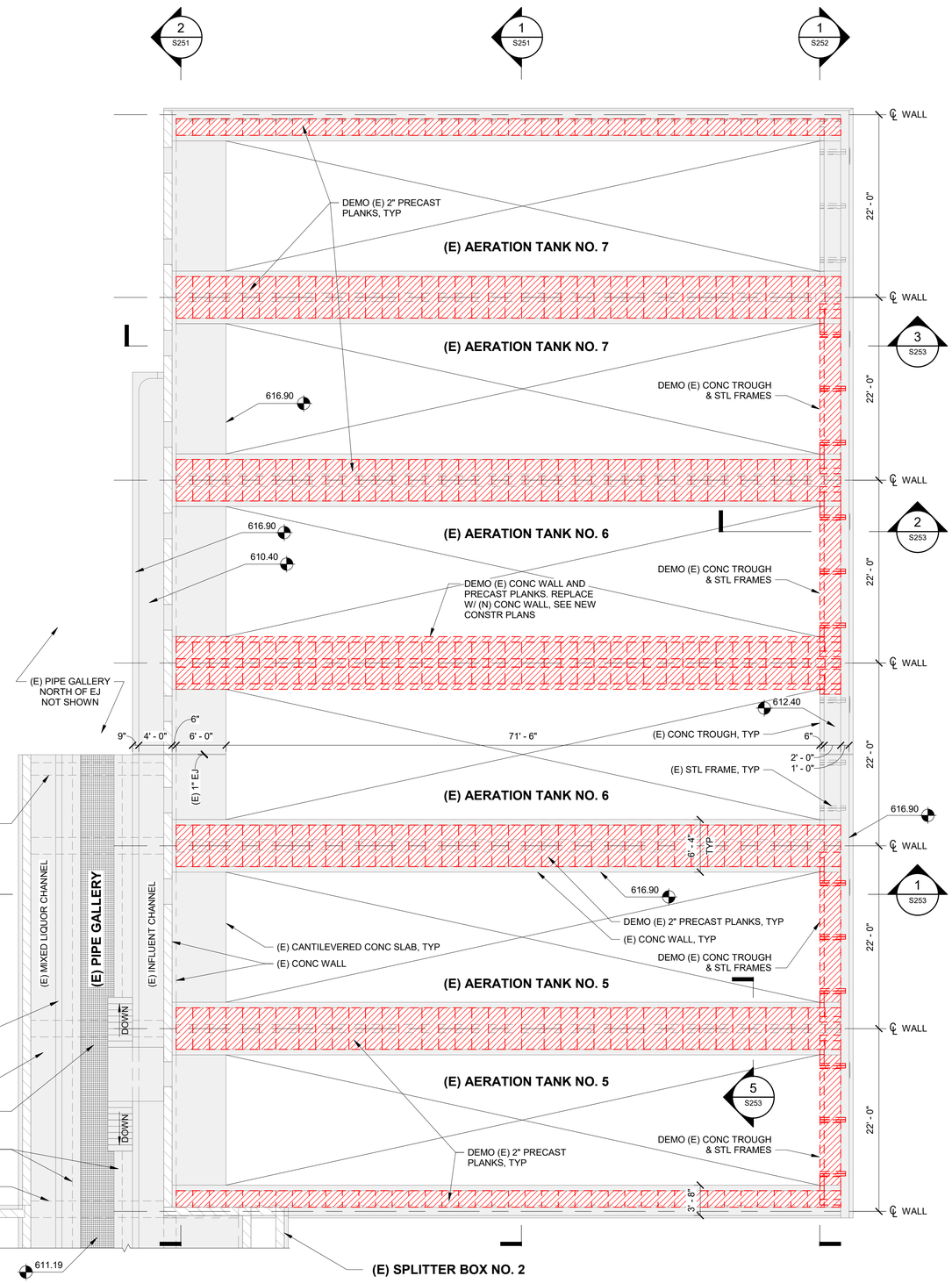
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Project Management Initials: Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

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1 / S202 **DEMOLITION PLAN - EXISTING AERATION TANKS 5, 6, & 7 @ EL. 616.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S203 AND S204 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S251-S253

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
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10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

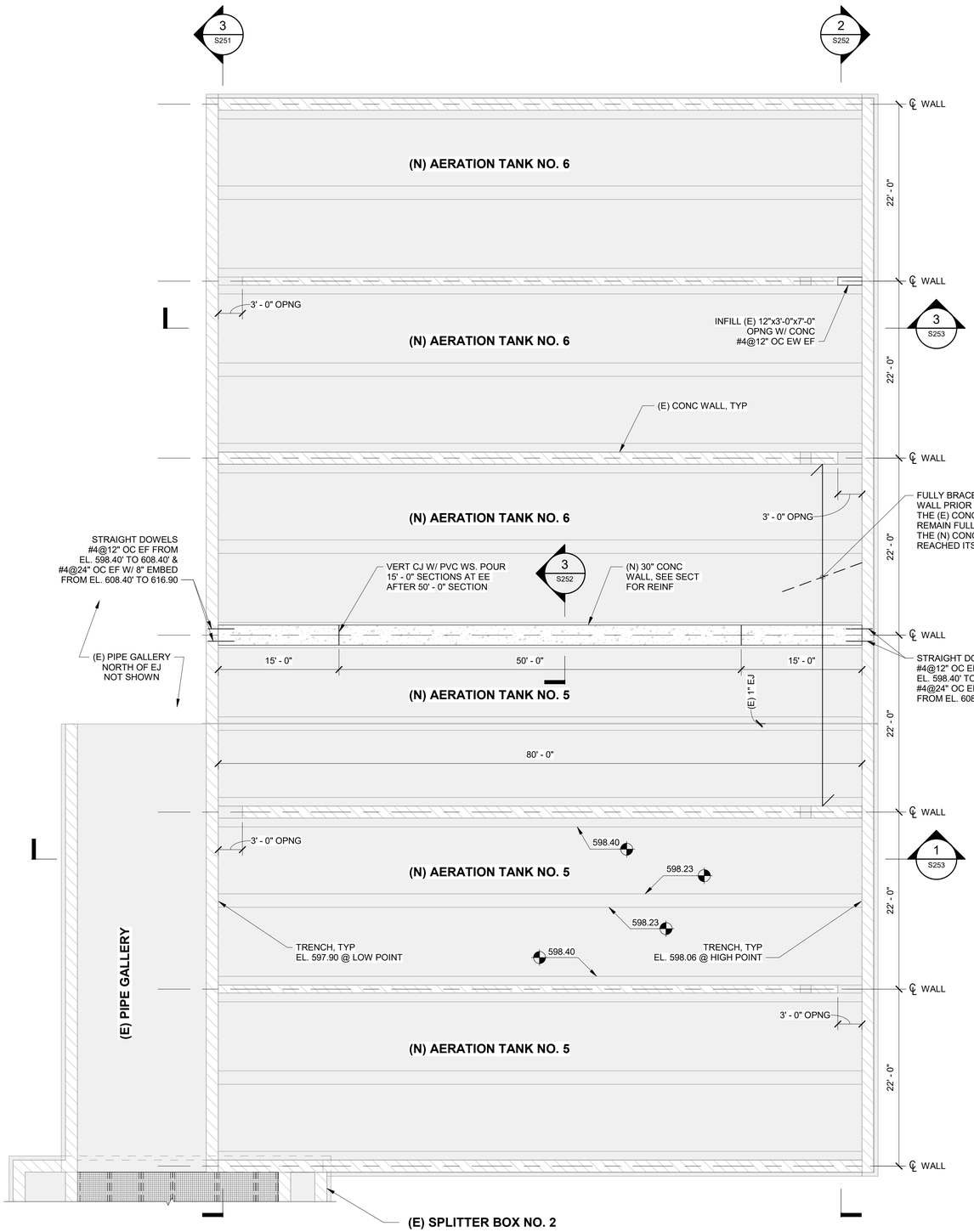
AERATION TANKS 5, 6, & 7 - PLANS

SHEET NUMBER

S202

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Project Management Initials:
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N

1 NEW CONSTRUCTION PLAN - AERATION TANKS 5 & 6 @ EL. 598.40

S203

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S201 THROUGH S202 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
5. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S251-S253

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PROJECT

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WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 5, 6, & 7 - PLANS

SHEET NUMBER

S203

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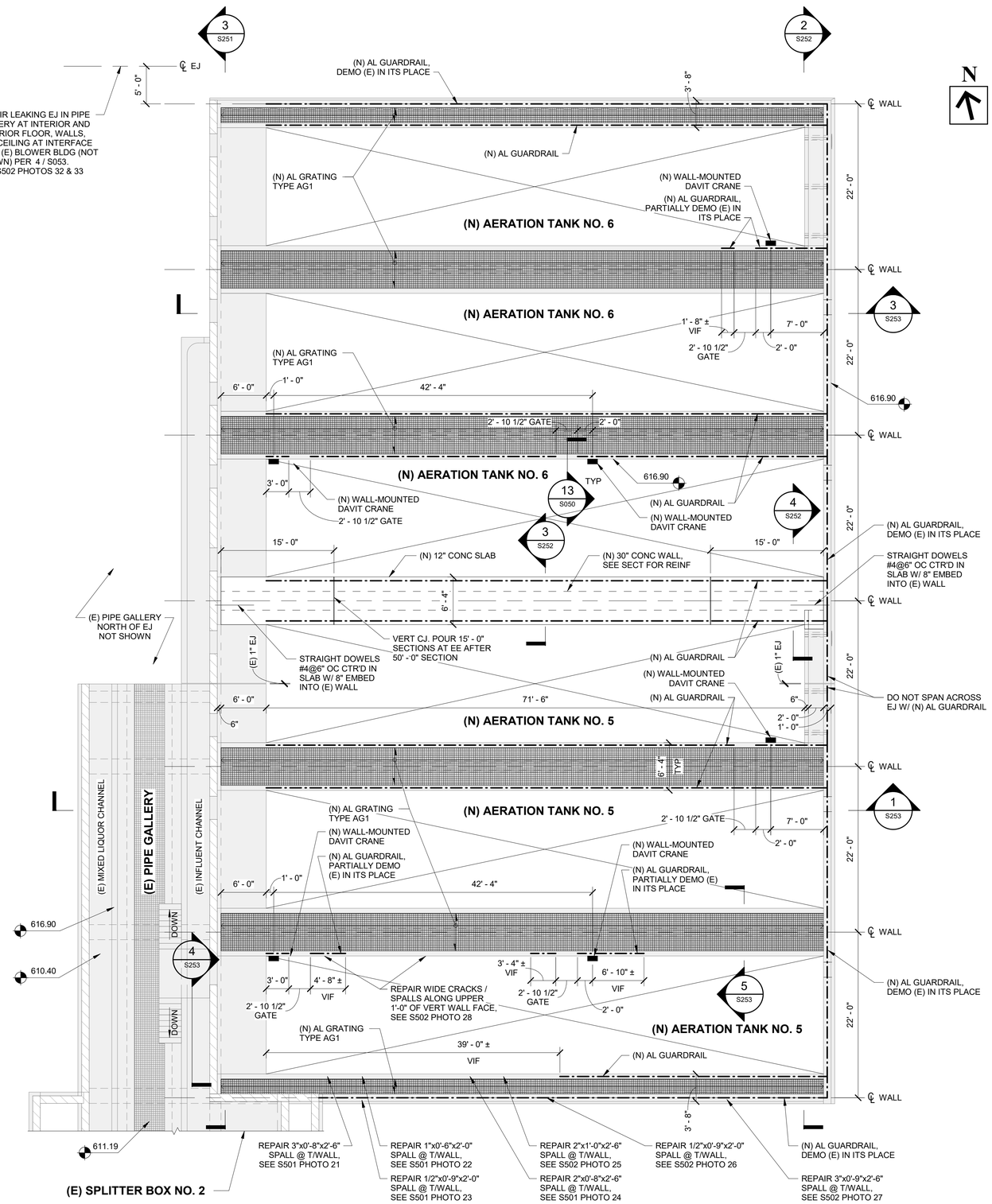
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Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

Project Management Initials:

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N

1 / S204 **NEW CONSTRUCTION PLAN - AERATION TANKS 5 & 6 @ EL. 616.90**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S201 THROUGH S202 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. ONLY GUARDRAILS TO BE MODIFIED AND/OR REPLACED ARE SHOWN ON PLAN. DEMOLISH EXISTING GUARDRAILS AS REQUIRED TO SUPPORT CONSTRUCTION OF NEW ALUMINUM GUARDRAILS.
5. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S251-S253
   F. REPAIR REFERENCE PHOTOS: S501-S502

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 5, 6, & 7 - PLANS

SHEET NUMBER

S204

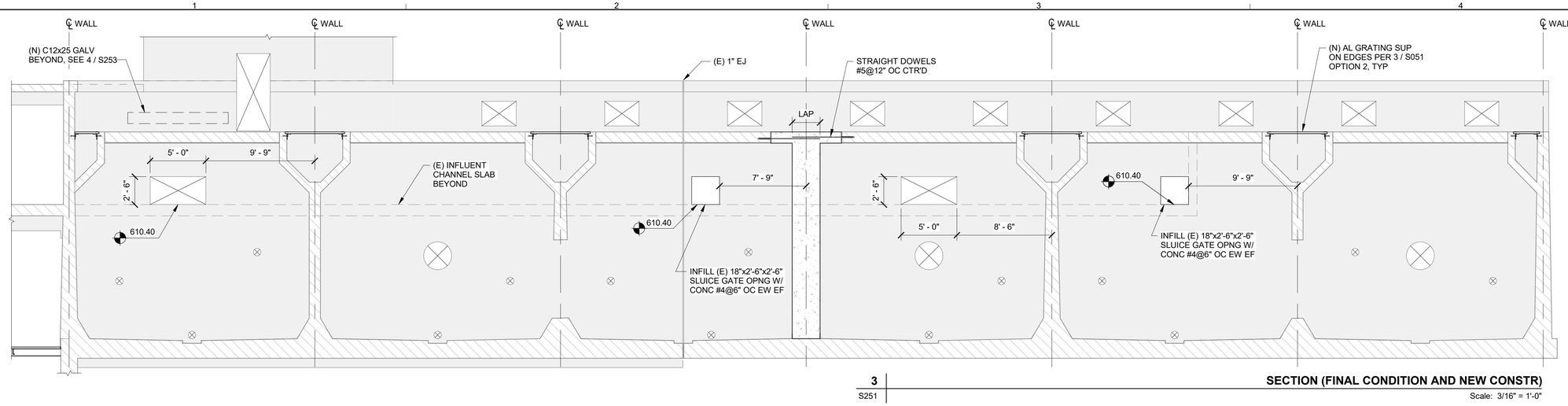
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Project Management Initials:

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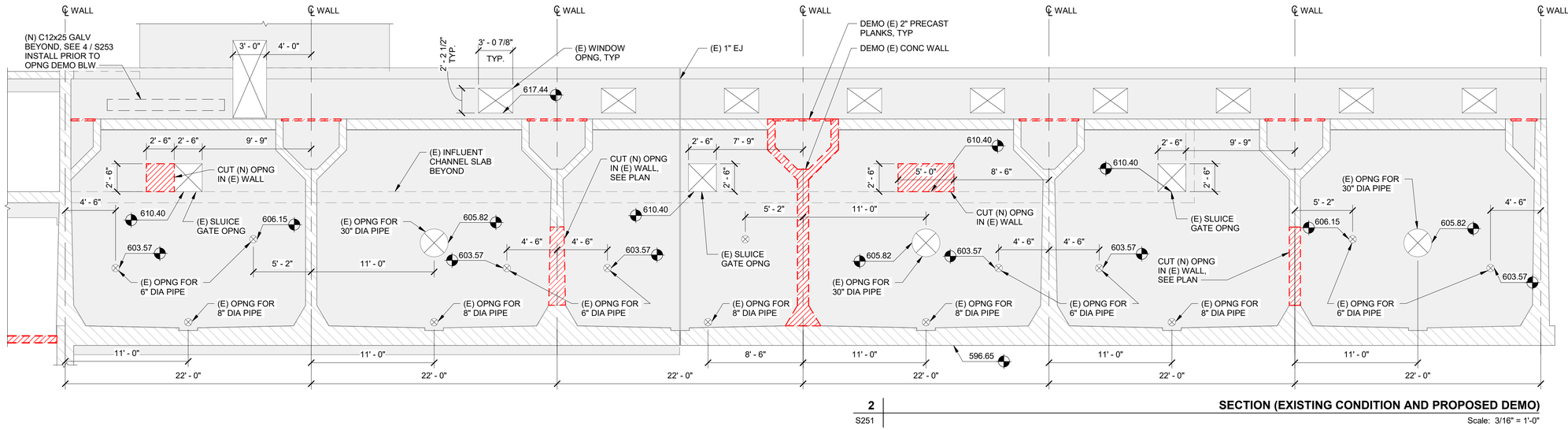
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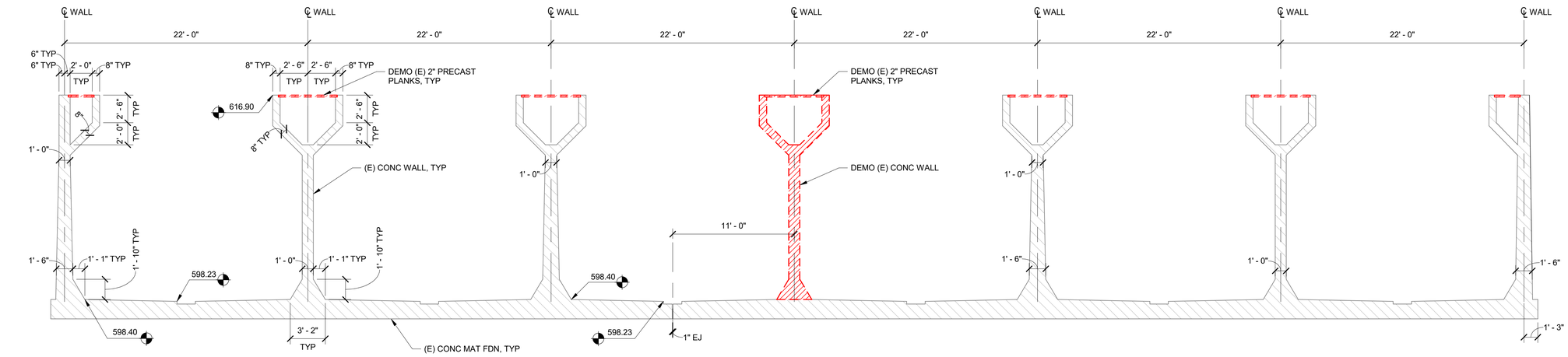
3 S251 **SECTION (FINAL CONDITION AND NEW CONSTR)**

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



2 S251 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**

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



1 S251 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**

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

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SHEET TITLE

AERATION TANKS 5, 6, & 7 - SECTIONS

SHEET NUMBER

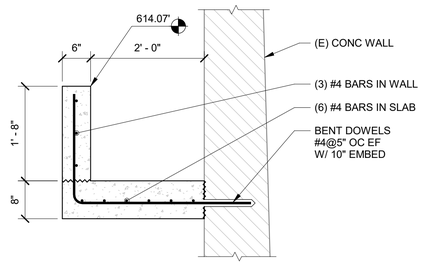
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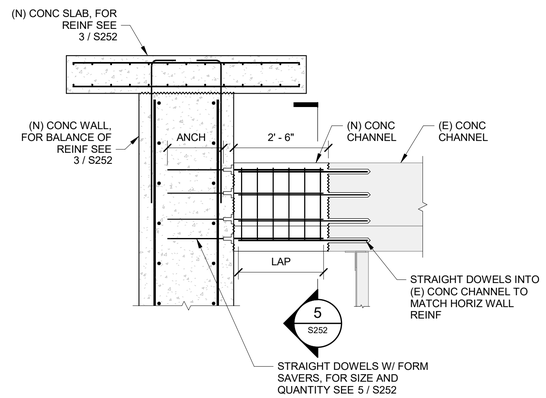
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Approved: AK
Checked: AK
Designer: CS
Project Management Initials:

Last Plotted: 10/27/2025 4:16:15 PM
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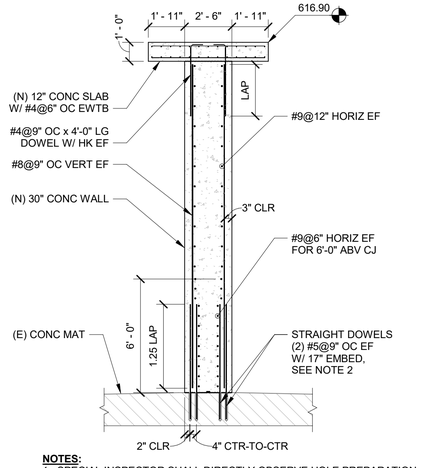
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5 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S252 | Scale: 3/4" = 1'-0"

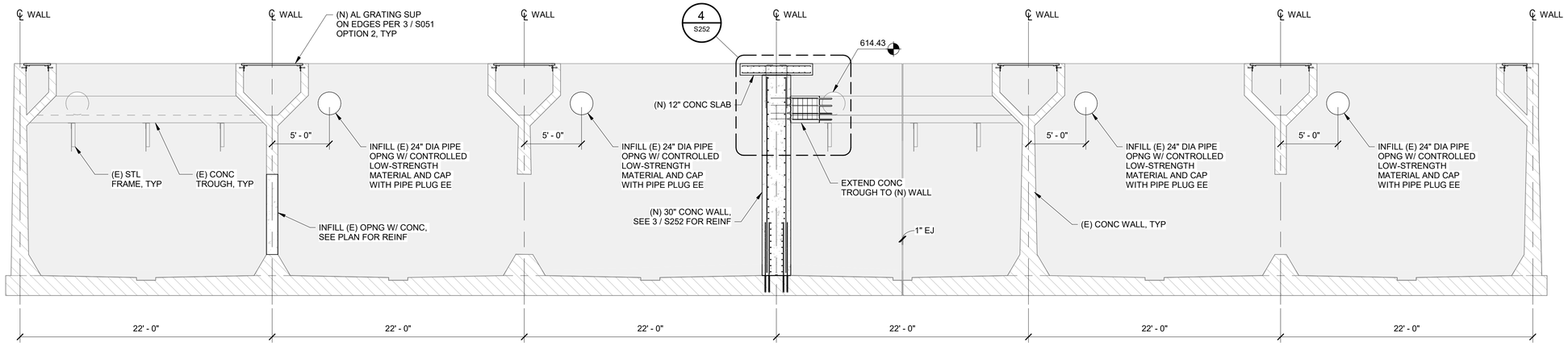


4 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S252 | Scale: 1/2" = 1'-0"

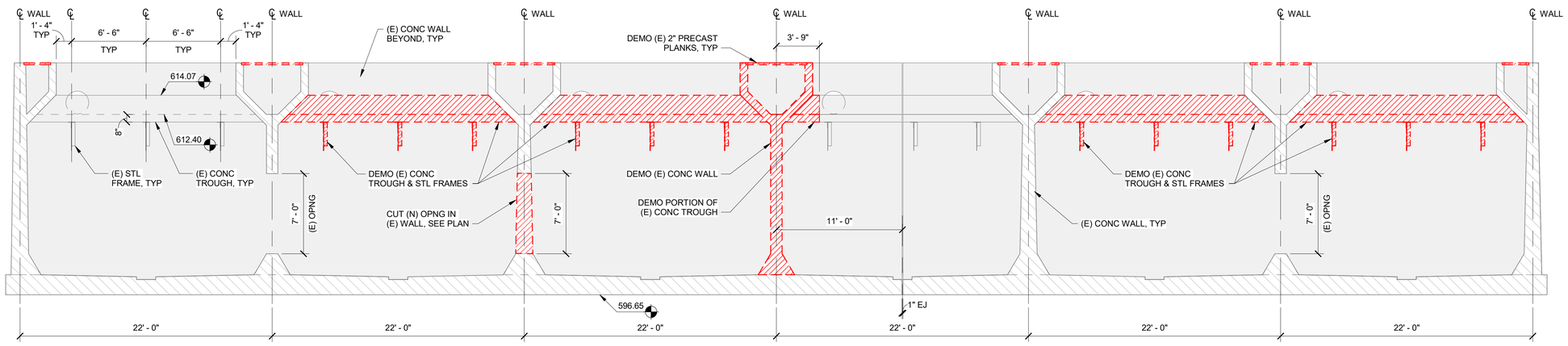


NOTES:
1. SPECIAL INSPECTOR SHALL DIRECTLY OBSERVE HOLE PREPARATION AND INSTALLATION OF ALL EPOXY DOWELS SHOWN IN THIS DETAIL.
2. EPOXY DOWELS SHALL BE PROOF LOADED PER GEN NOTES.

3 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S252 | Scale: 1/4" = 1'-0"



2 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S252 | Scale: 3/16" = 1'-0"



1 | **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
S252 | Scale: 3/16" = 1'-0"

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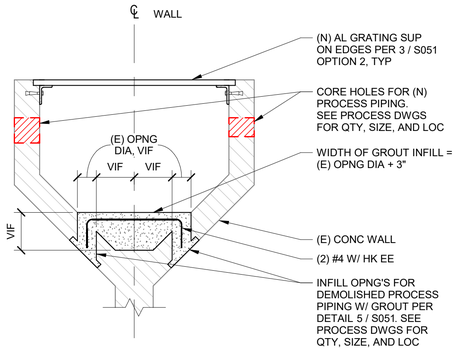
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60332065

SHEET TITLE
AERATION TANKS 5, 6, & 7 - SECTIONS

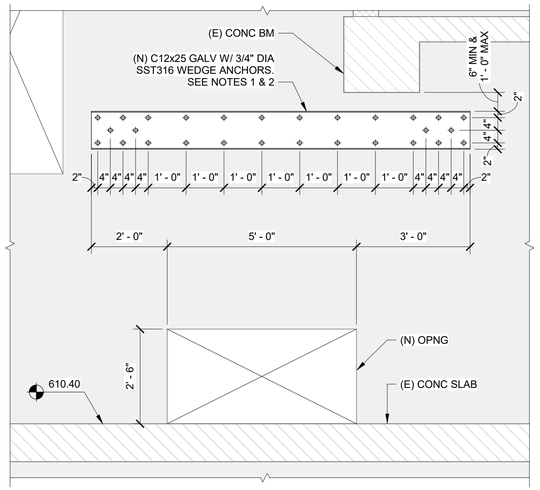
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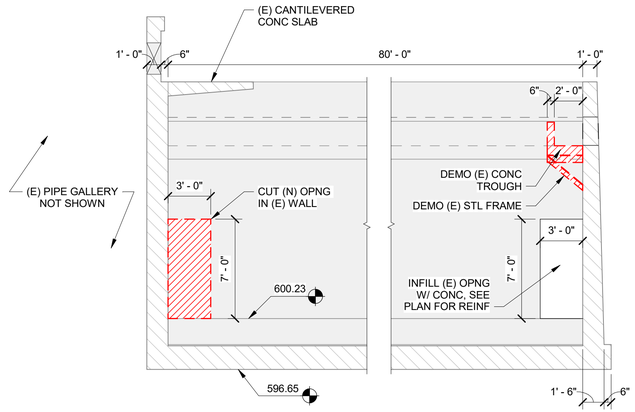


5 S253 **SECTION**
Scale: 1/2" = 1'-0"

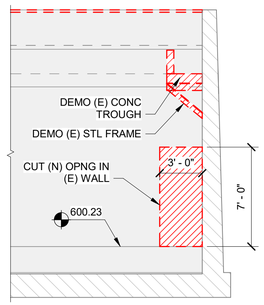


NOTES:
1. INSTALL C12 PRIOR TO CONSTRUCTION OF OPNG BELOW IT.
2. FIELD DRILL HOLES IN C12 AFTER LOCATING (E) REINF STEEL. NOTIFY A/E AND AWAIT DIRECTION IF HOLE LOCATIONS NEED TO MOVE MORE THAN 1/2" FROM THEIR SPECIFIED LOCATION. DO NOT CUT (E) REINF.

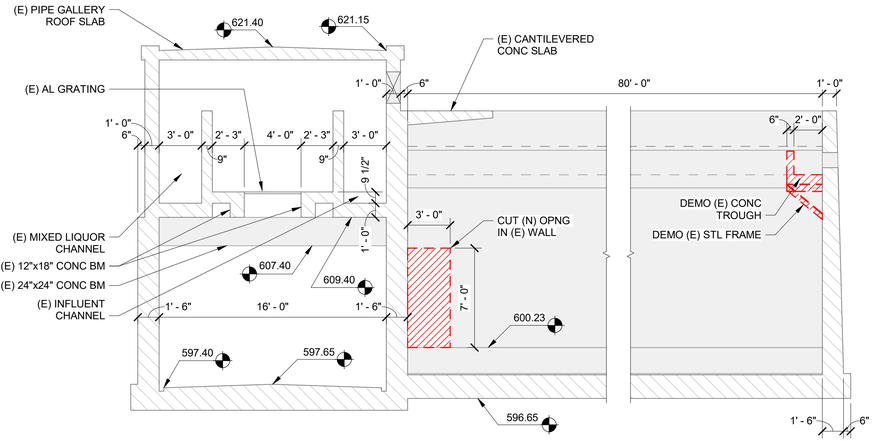
4 S253 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/2" = 1'-0"



3 S253 **SECTION**
Scale: 3/16" = 1'-0"



2 S253 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 3/16" = 1'-0"



1 S253 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 3/16" = 1'-0"

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
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ELYRIA, OH

CONSULTANT

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REGISTRATION

STATE OF OHIO ANDREW L. KNAPKE 86697 REGISTERED PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 5, 6, & 7 - SECTIONS

SHEET NUMBER

S253

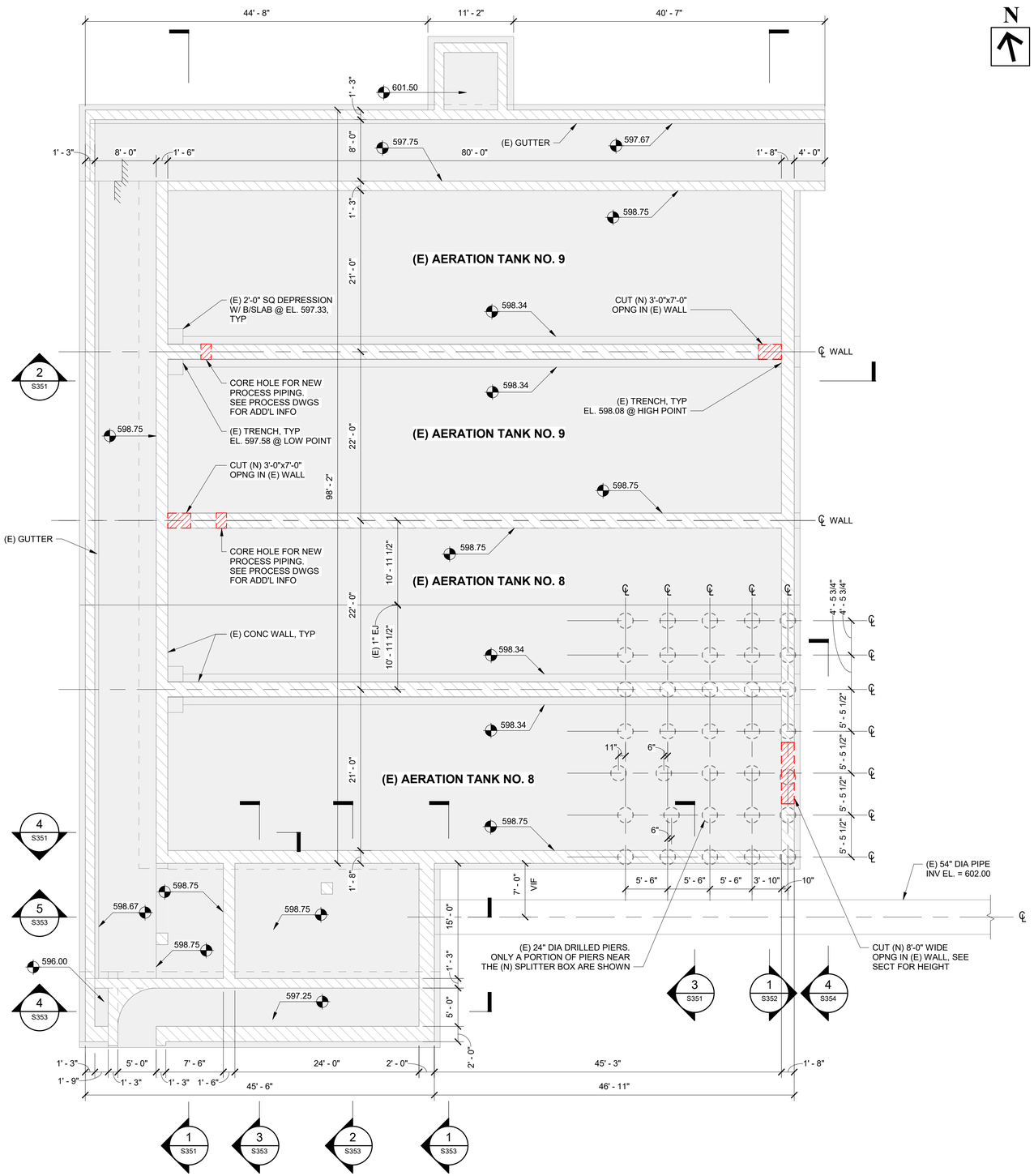
Project Management Initials:
Designer: CS
Checked: AK
Approved: AK
ANSI D 22"x34"

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N

1 S301 **DEMOLITION PLAN - EXISTING AERATION TANKS 8 & 9 @ EL. 598.75**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S305 THROUGH S308 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
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I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S301

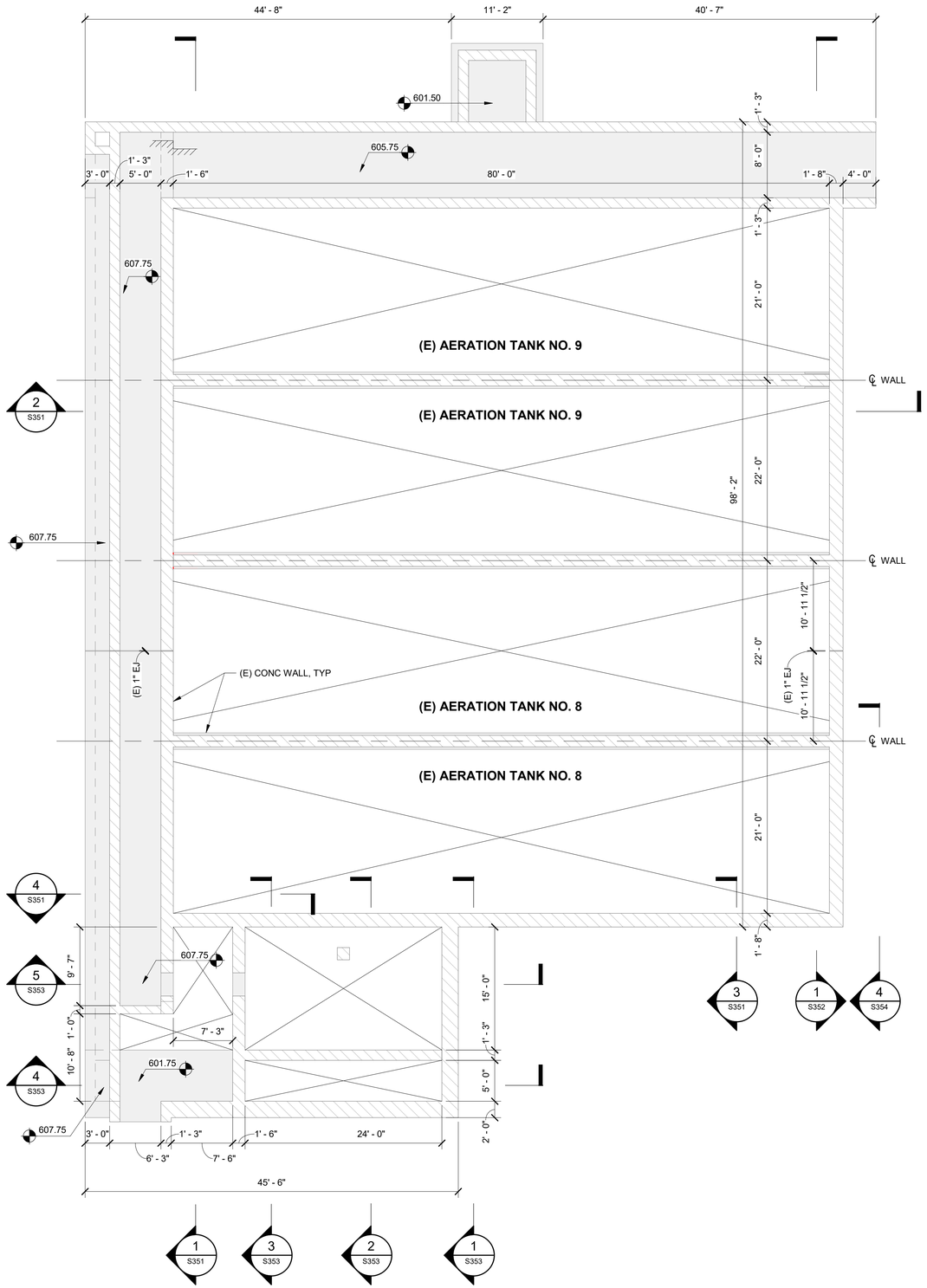
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N

1 S302 **DEMOLITION PLAN - EXISTING AERATION TANKS 8 & 9 @ EL. 607.75**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S305 THROUGH S308 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
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CLIENT

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I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S302

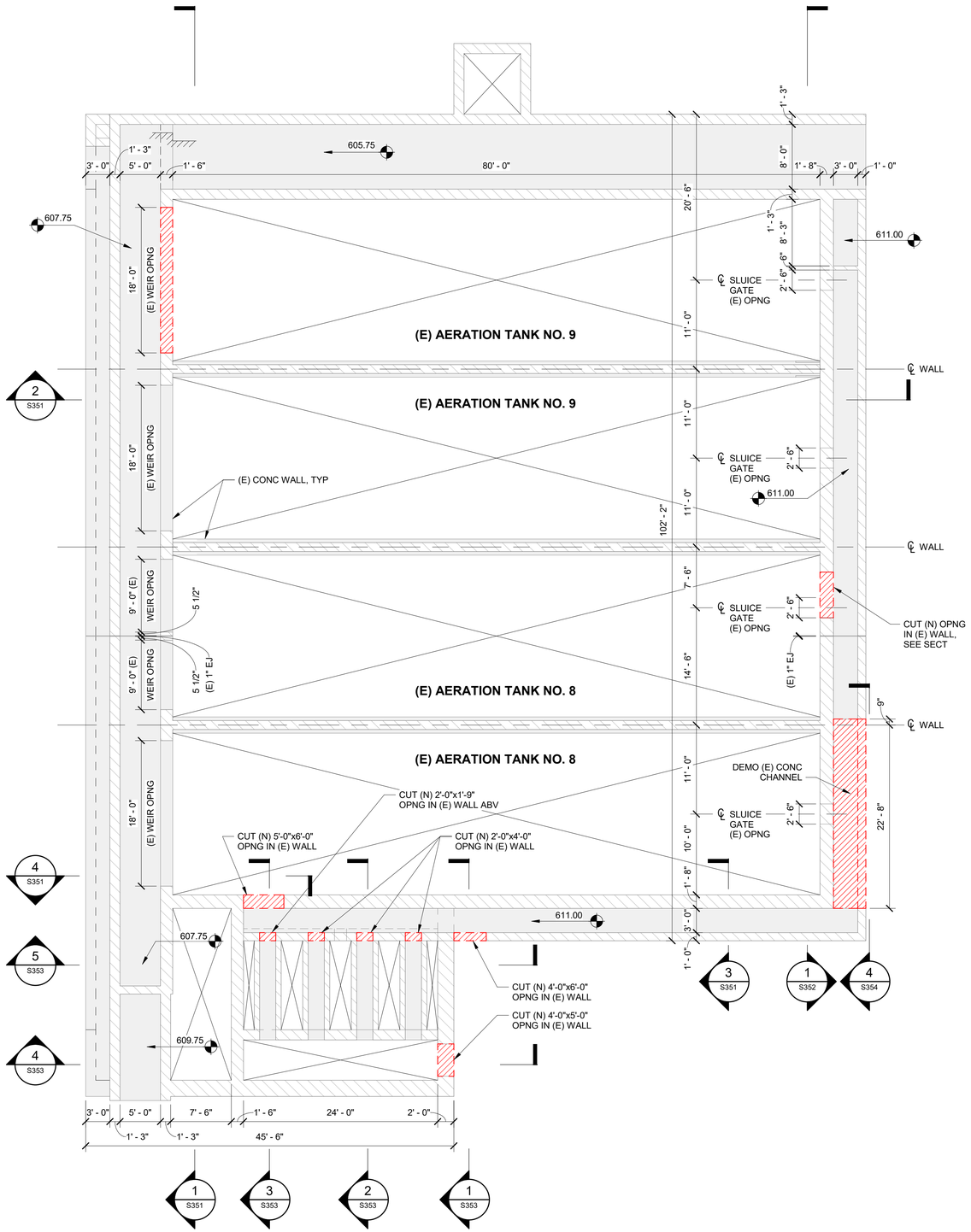
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1 S303 DEMOLITION PLAN - EXISTING AERATION TANKS 8 & 9 @ EL. 615.00

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S305 THROUGH S308 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
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   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
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CLIENT

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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

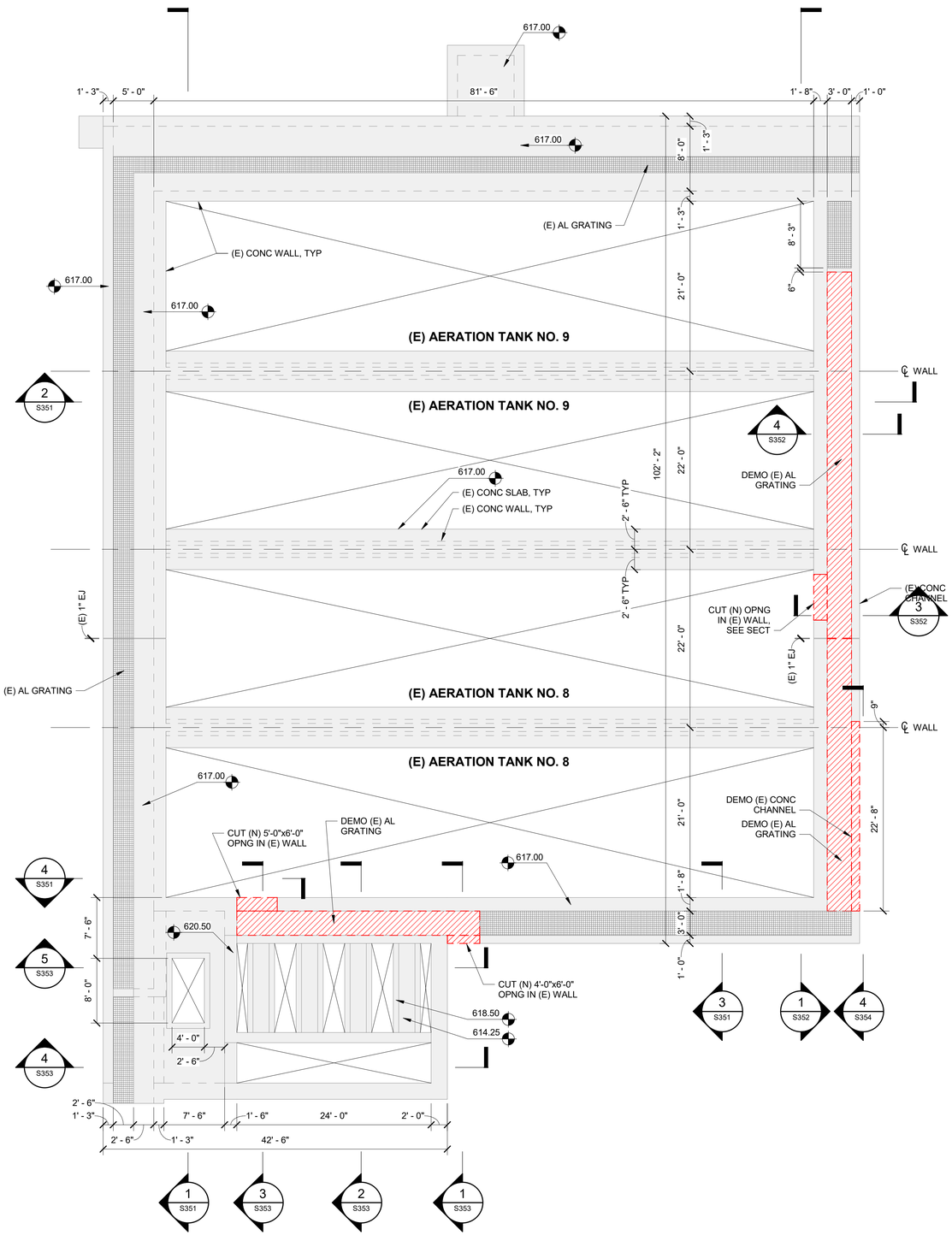
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N

1 S304 **DEMOLITION PLAN - EXISTING AERATION TANKS 8 & 9 @ EL. 617.00**

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S305 THROUGH S308 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
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ELYRIA, OH

CLIENT

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PROJECT NUMBER

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SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S304

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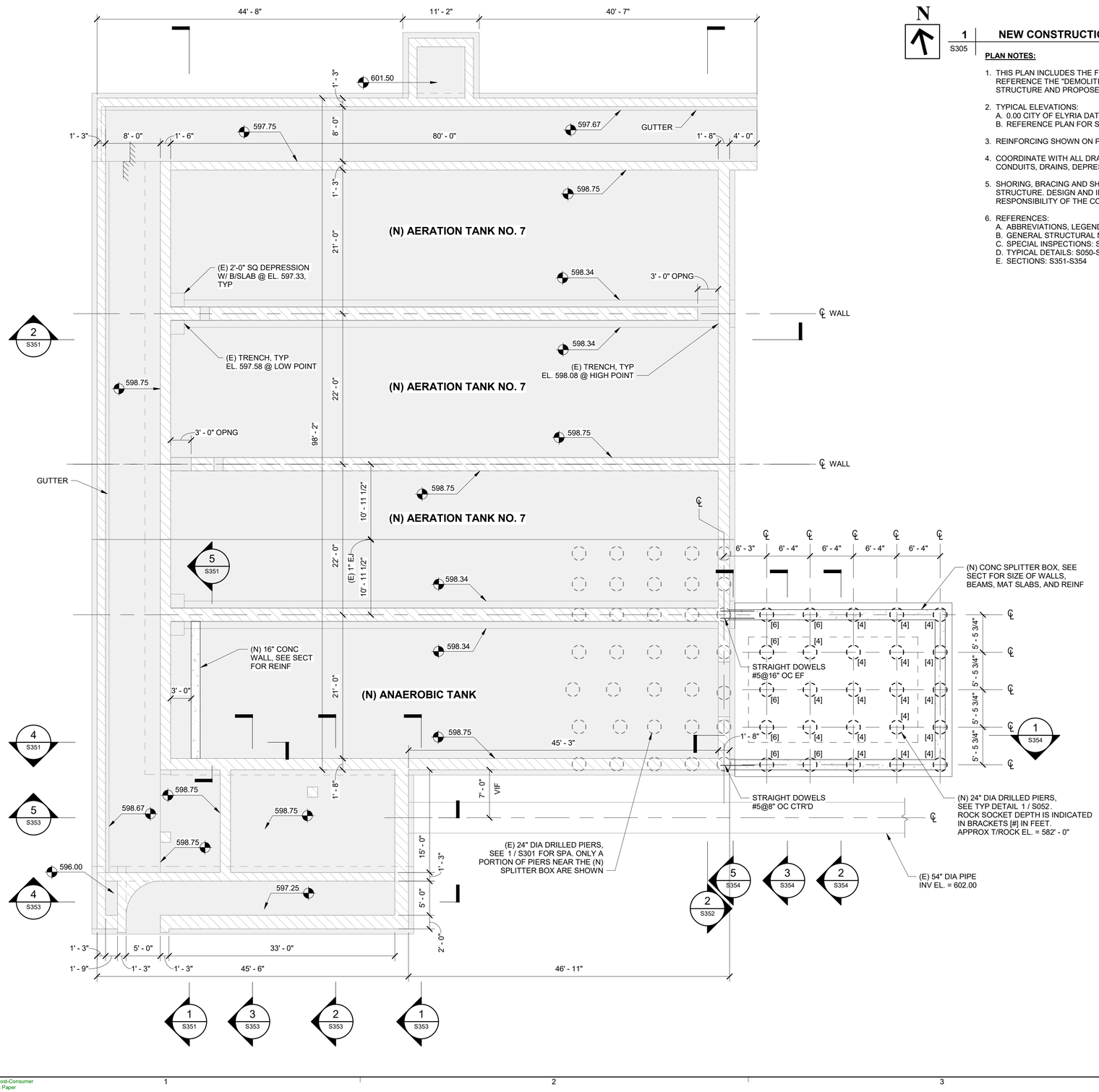
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N

1 NEW CONSTRUCTION PLAN - ANAEROBIC AND AERATION TANK 7 @ EL. 598.75

S305 Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S301 THROUGH S304 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
5. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

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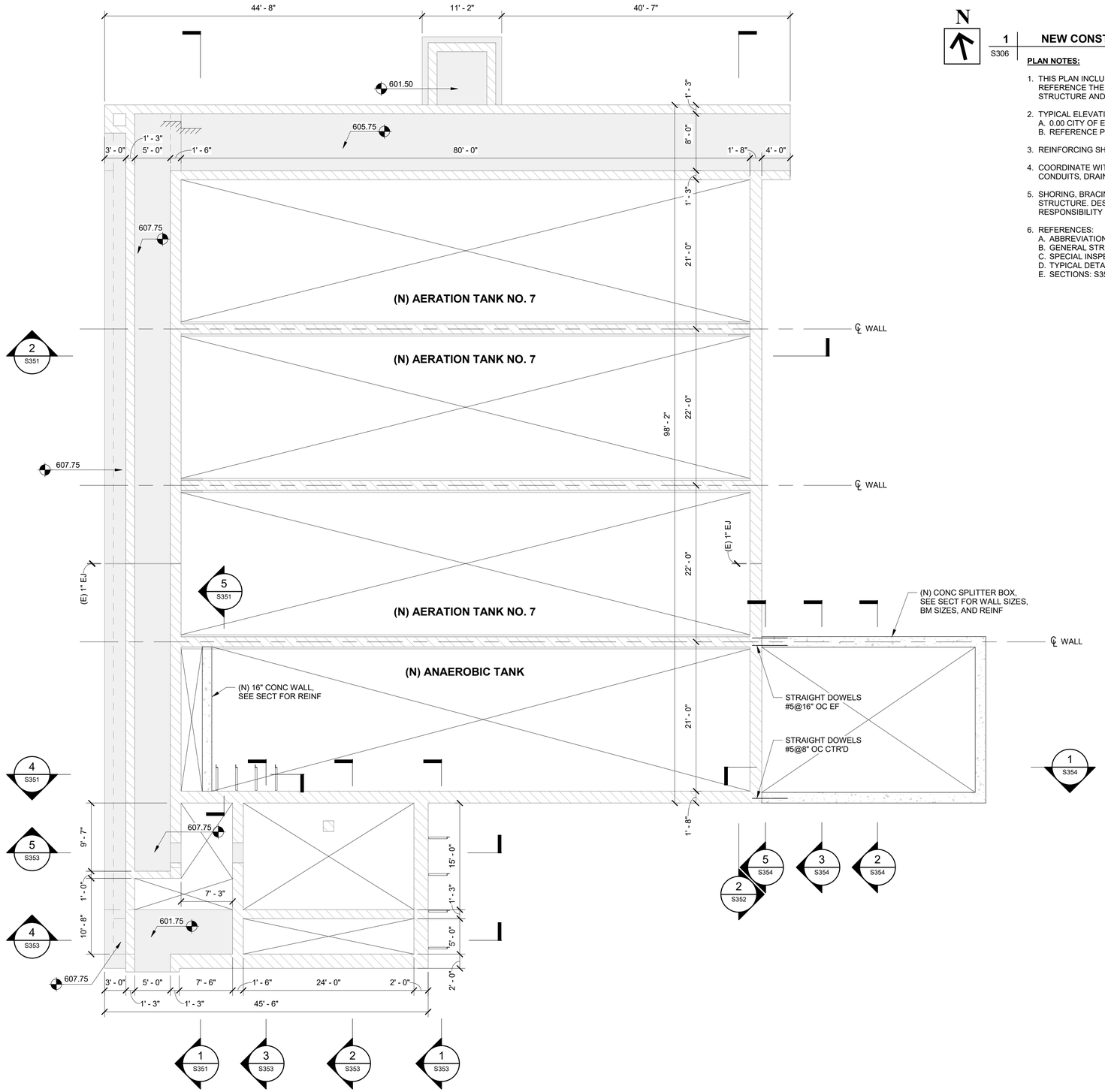
AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S305

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N

1 NEW CONSTRUCTION PLAN - ANAEROBIC AND AERATION TANK 7 @ EL. 607.75

S306

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S301 THROUGH S304 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
5. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
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   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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CLIENT

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SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S306

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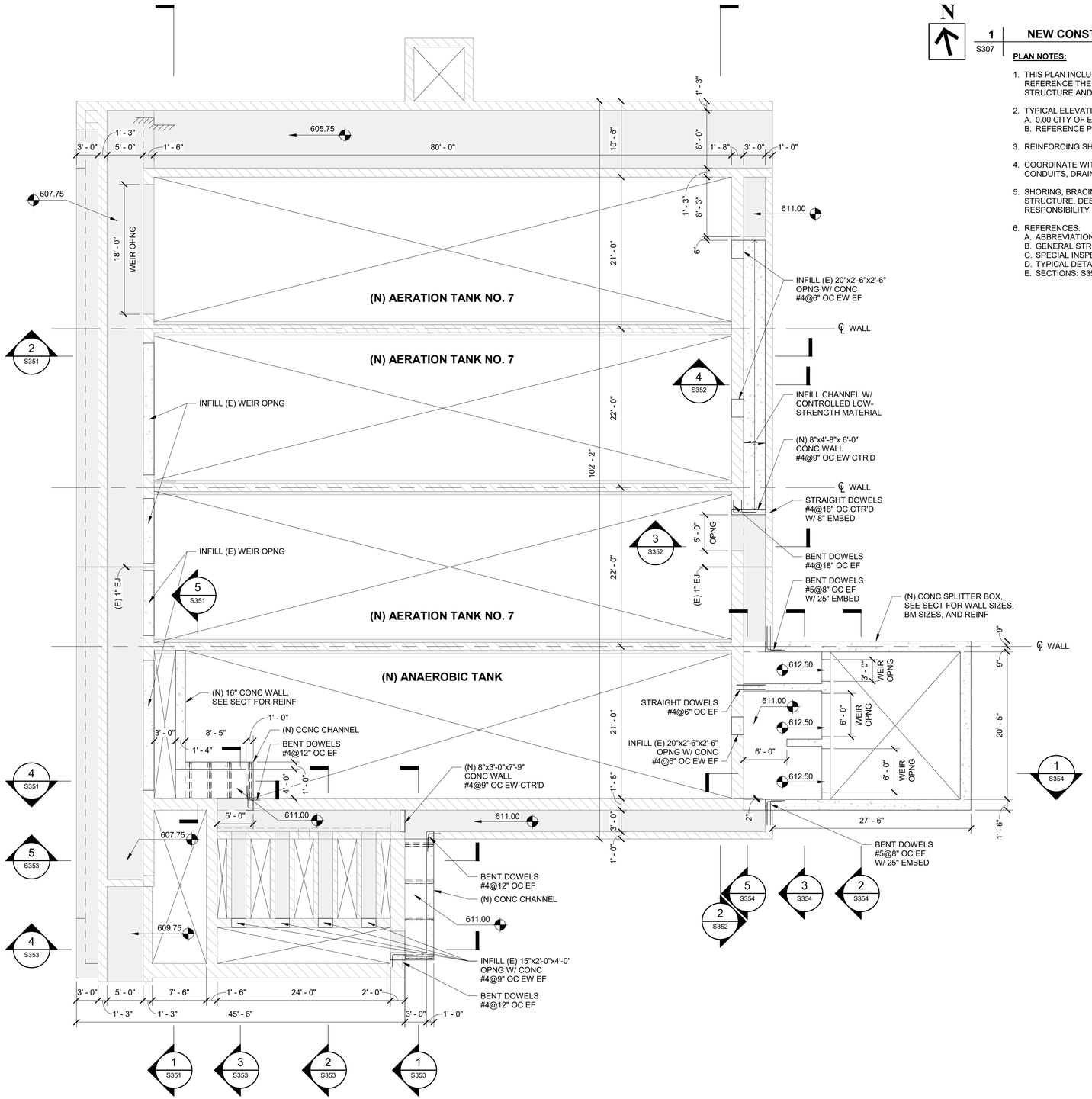
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Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

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N

1 NEW CONSTRUCTION PLAN - ANAEROBIC AND AERATION TANK 7 @ EL. 615.00
S307 Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S301 THROUGH S304 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
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   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
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4. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
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6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

AECOM
1300 EAST 9TH STREET, SUITE 500
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10-28-25

ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
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PROJECT NUMBER

60332065

SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

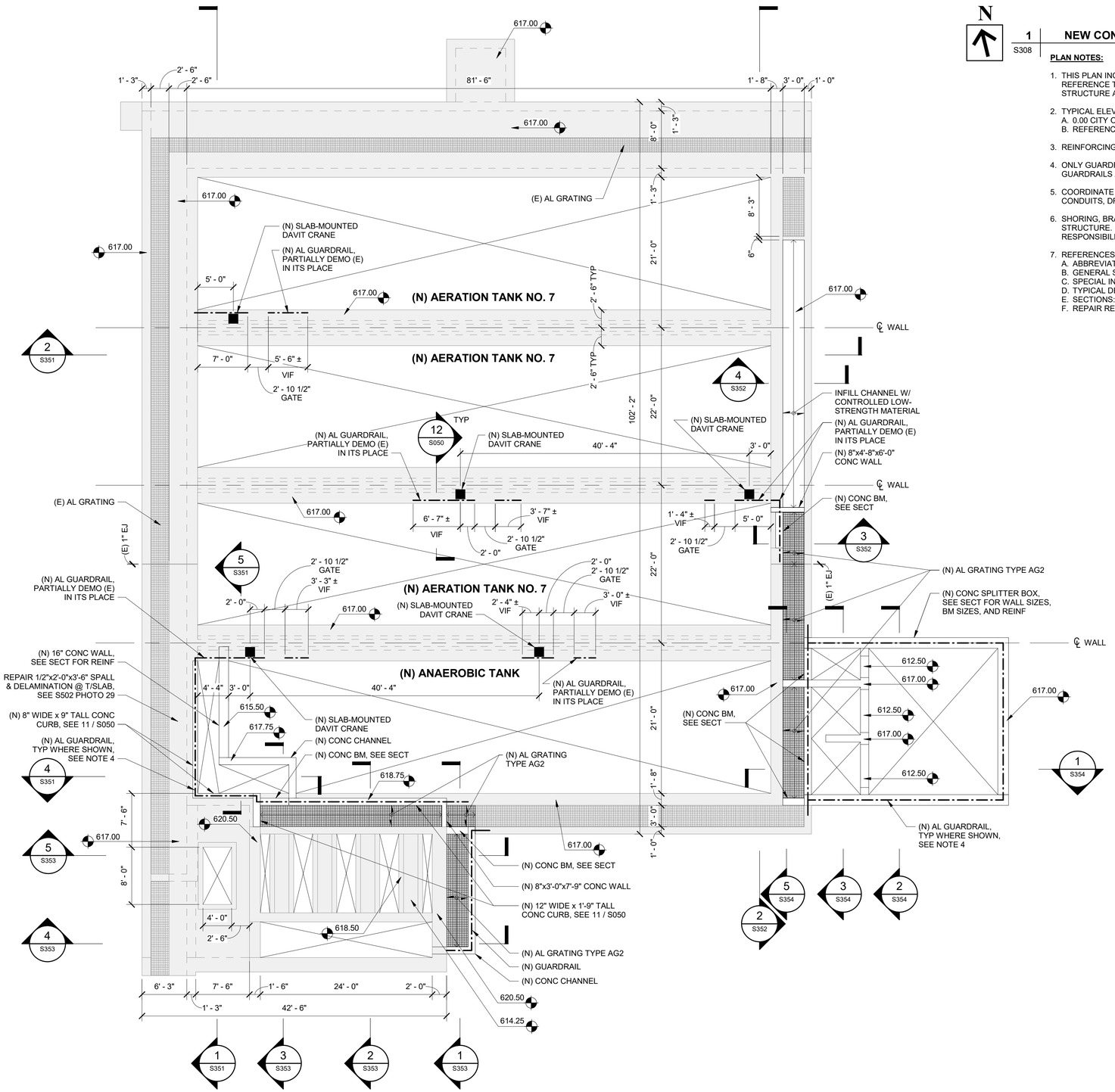
SHEET NUMBER

S307

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Designer: CS Checked: AK Approved: AK ANSI D 22"x34"
Project Management Initials:
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File name: /Autodesk Docs://BP-US WEST 60332065-Elyria WWPCP/60332065_R24-Elyria WWPCP-S.rvt

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N

1 NEW CONSTRUCTION PLAN - ANAEROBIC AND AERATION TANK 7 @ EL. 617.00

S308

Scale: 1/8" = 1'-0"

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S301 THROUGH S304 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. ONLY GUARDRAILS TO BE MODIFIED AND/OR REPLACED ARE SHOWN ON PLAN. DEMOLISH EXISTING GUARDRAILS AS REQUIRED TO SUPPORT CONSTRUCTION OF NEW ALUMINUM GUARDRAILS.
5. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
6. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
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   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S351-S354
   F. REPAIR REFERENCE PHOTOS: S502

Project Management Initials: Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

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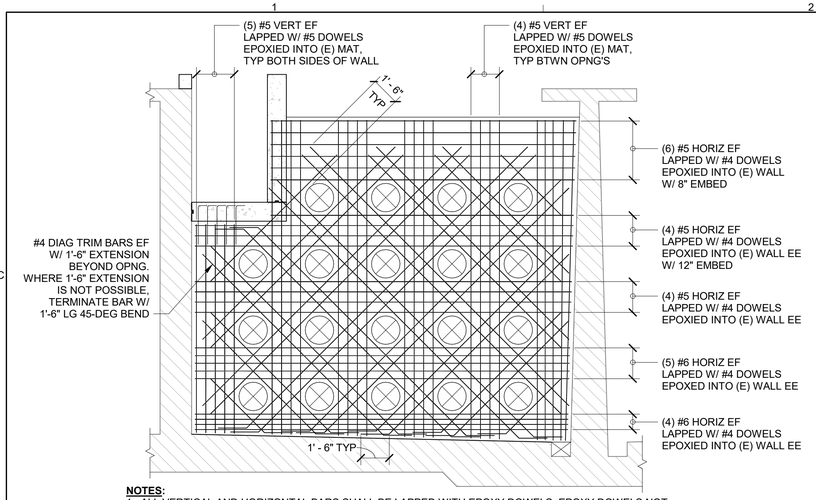
SHEET TITLE

AERATION TANKS 8 & 9 - PLANS

SHEET NUMBER

S308

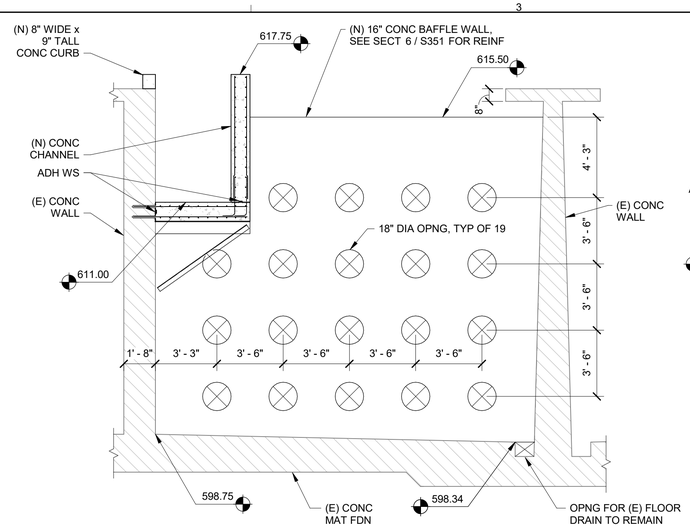
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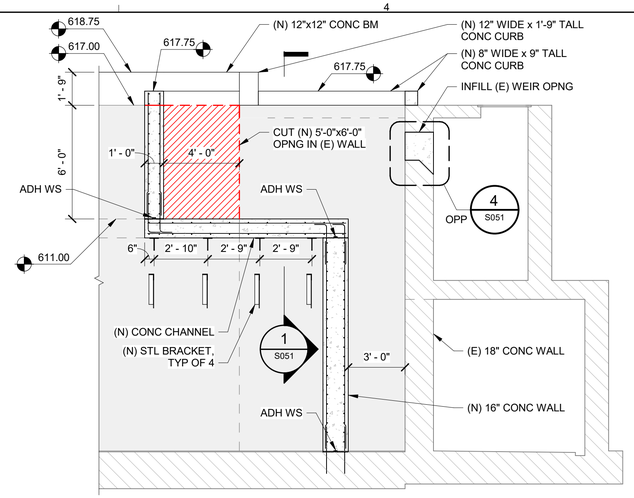
NOTES:

1. ALL VERTICAL AND HORIZONTAL BARS SHALL BE LAPPED WITH EPOXY DOWELS. EPOXY DOWELS NOT REQUIRED FOR DIAGONAL BARS. DRILLED AND EPOXIED DOWELS INTO (E) CONC WALLS AND MAT FDN NOT SHOWN FOR CLARITY. SEE TYPICAL DETAIL 8 / S050.
2. REINF IN CONCRETE CHANNEL NOT SHOWN FOR CLARITY. SEE TYPICAL DETAIL 1 / S051 AND PROVIDE CORNERS BARS BETWEEN WALLS PER 2 / S050.

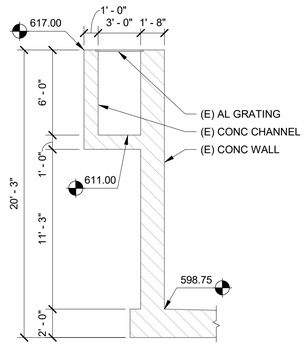
6 | SECTION (FINAL CONDITION AND NEW CONSTR)
S351 Scale: 1/4" = 1'-0"



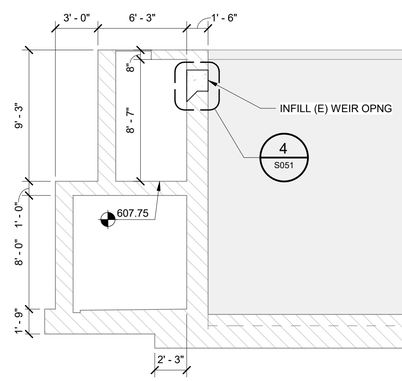
5 | SECTION (FINAL CONDITION AND NEW CONSTR)
S351 Scale: 1/4" = 1'-0"

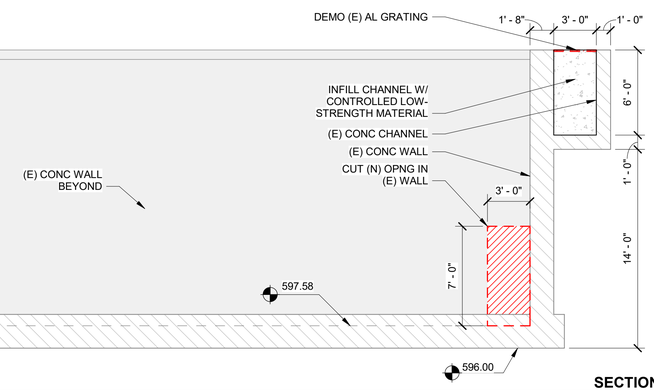


4 | SECTION
S351 Scale: 1/4" = 1'-0"

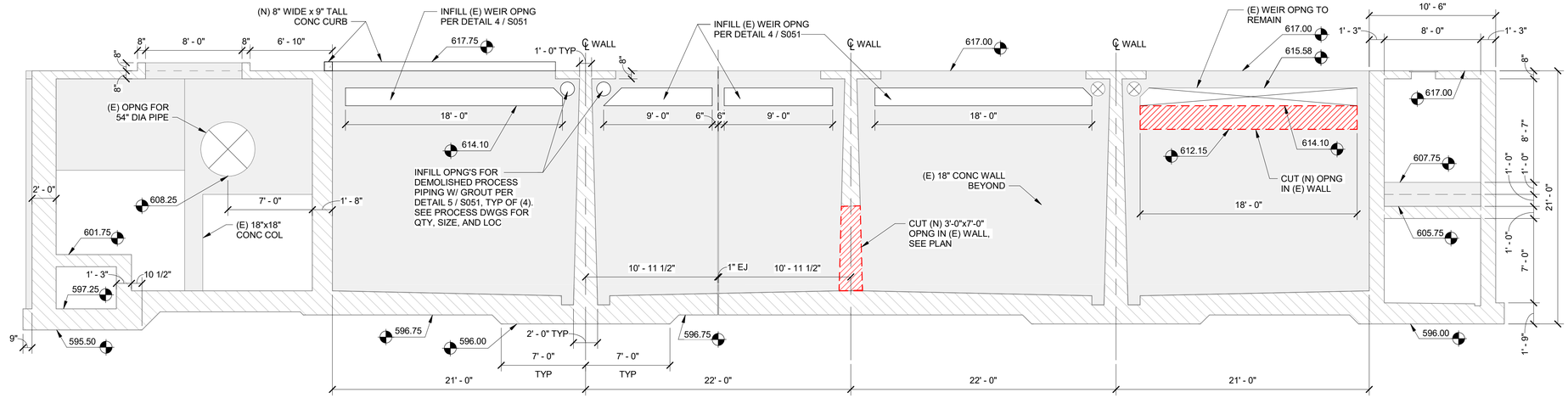


3 | SECTION (EXISTING CONDITION)
S351 Scale: 3/16" = 1'-0"





2 | SECTION
S351 Scale: 3/16" = 1'-0"



1 | SECTION
S351 Scale: 3/16" = 1'-0"

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PROJECT NUMBER

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SHEET TITLE

AERATION TANKS 8 & 9 - SECTIONS

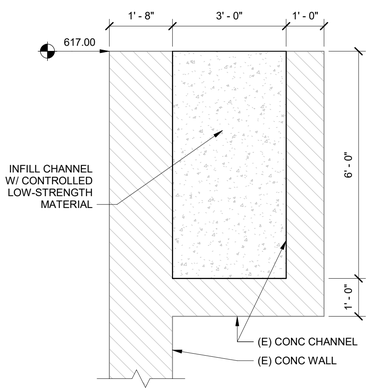
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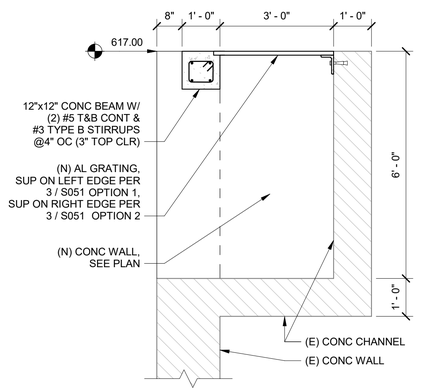
Designer: CS Checked: AK Approved: AK ANSI D 22"x34"
Project Management Initials:

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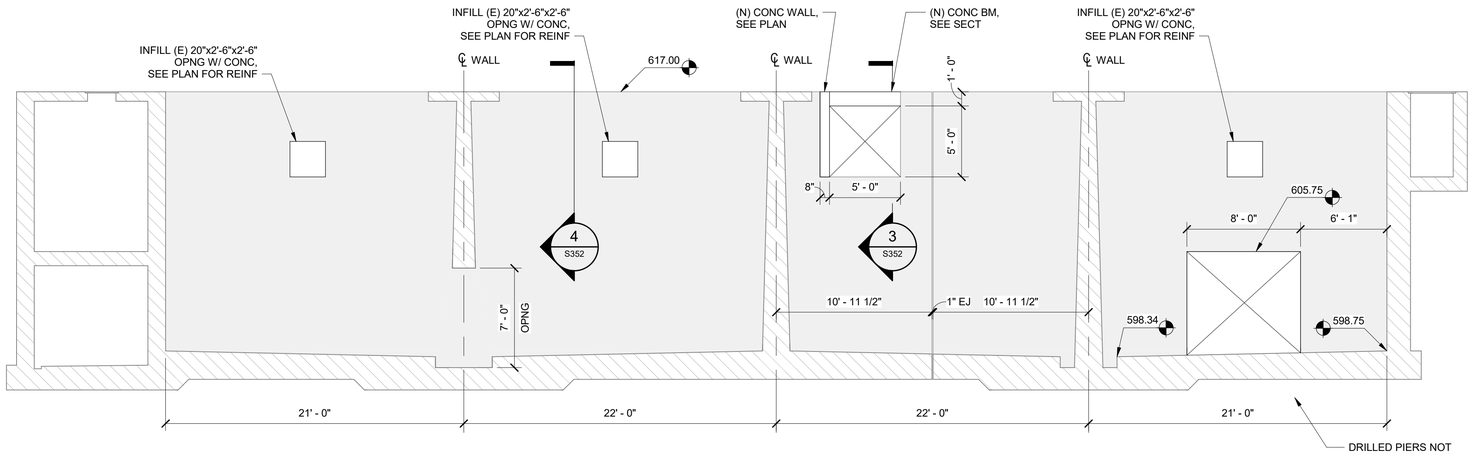
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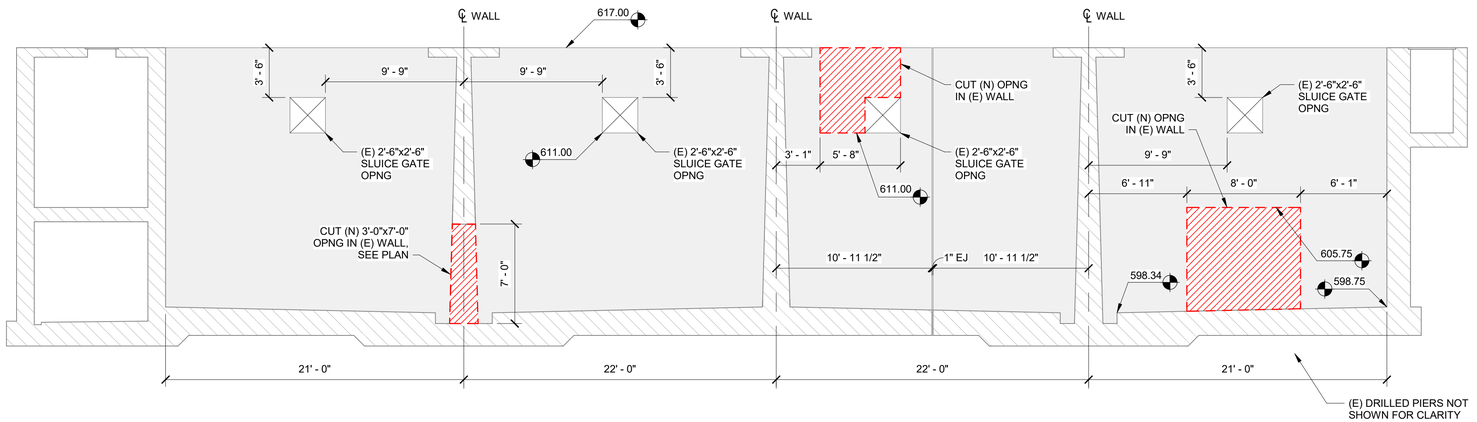
4 S352 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/2" = 1'-0"



3 S352 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/2" = 1'-0"



2 S352 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 3/16" = 1'-0"



1 S352 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 3/16" = 1'-0"

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SHEET TITLE

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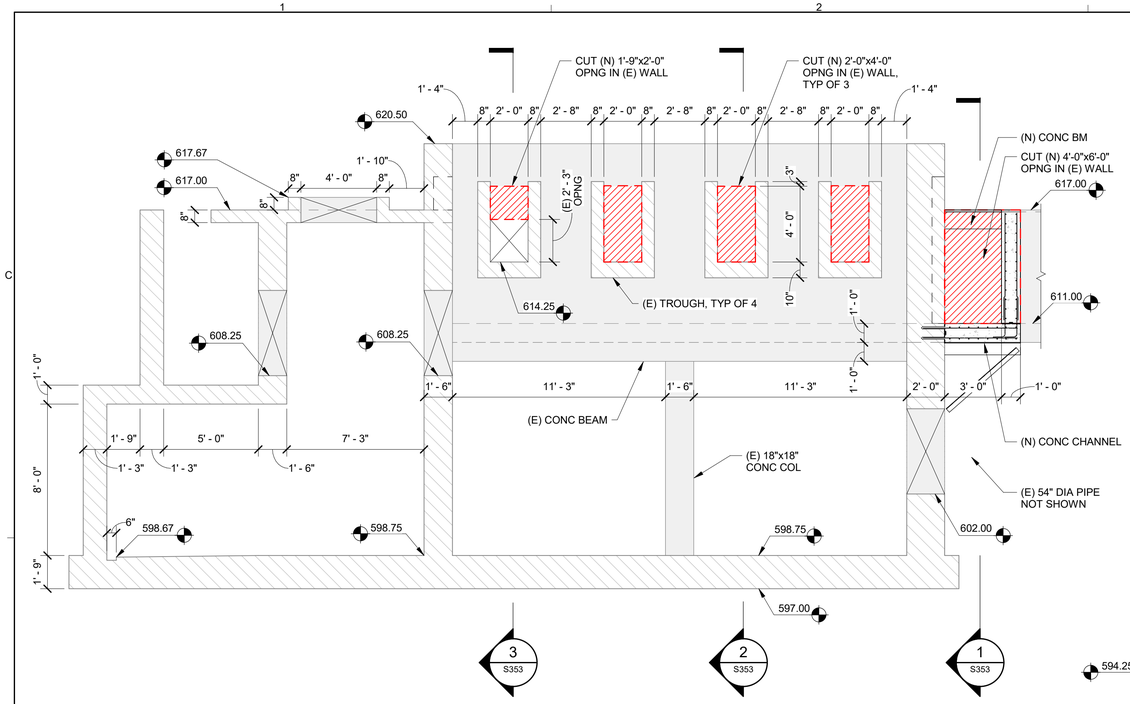
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Project Management Initials:
Designer: CS
Checked: AK
Approved: AK
ANSI D 22"x34"

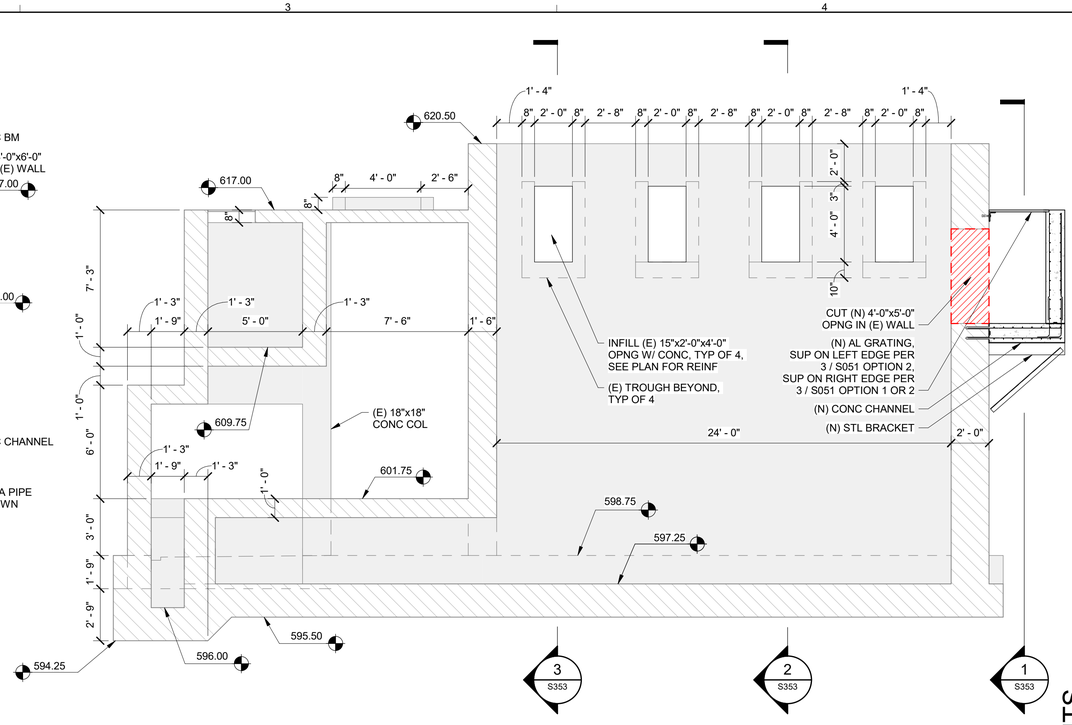
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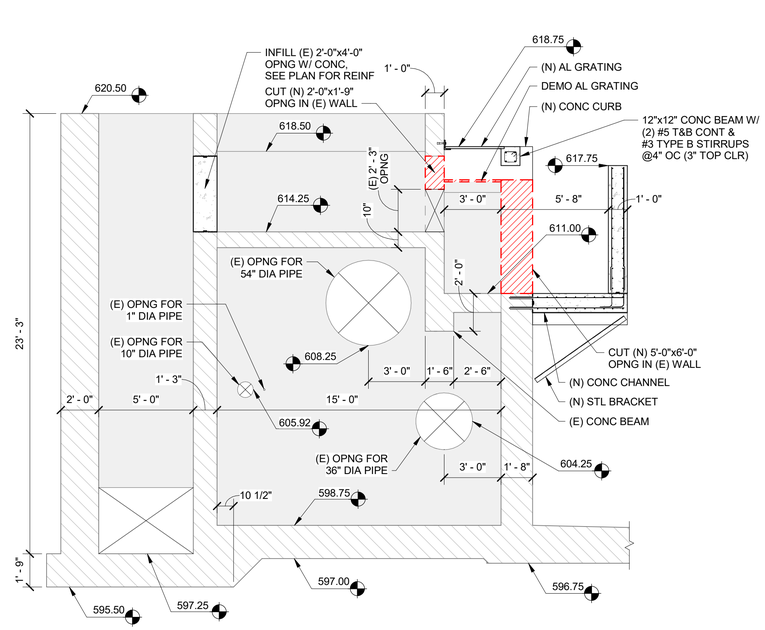
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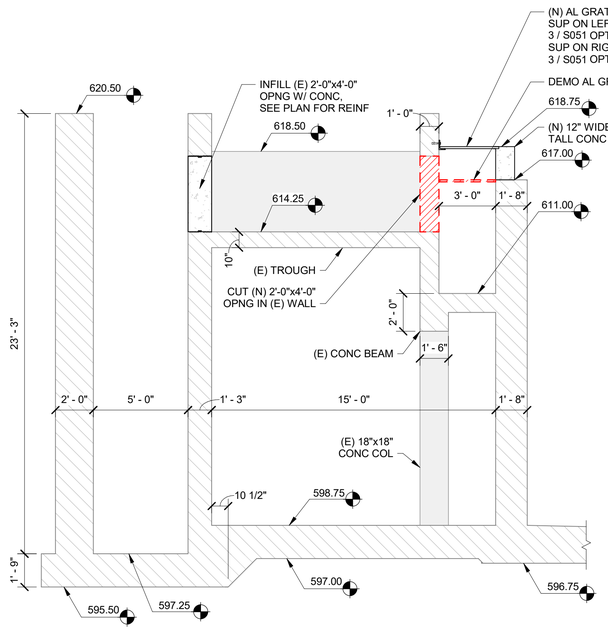
5 S353 **SECTION**
Scale: 1/4" = 1'-0"



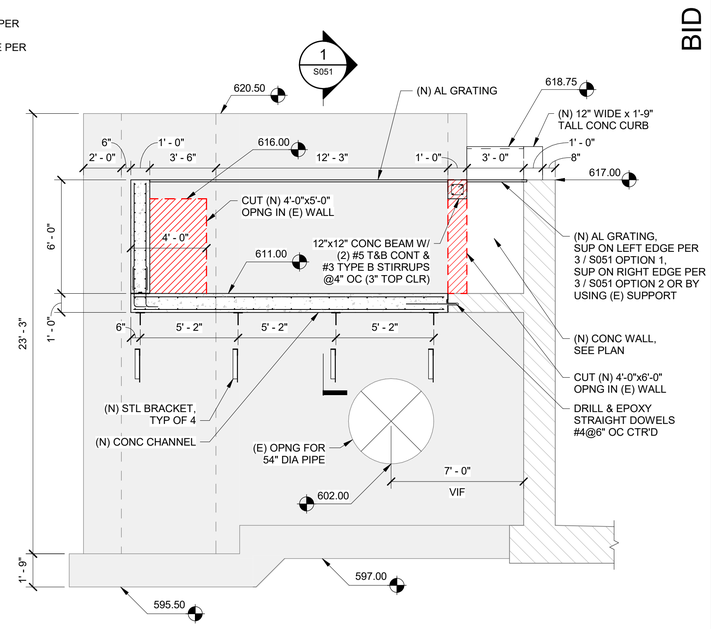
4 S353 **SECTION**
Scale: 1/4" = 1'-0"



3 S353 **SECTION**
Scale: 1/4" = 1'-0"



2 S353 **SECTION**
Scale: 1/4" = 1'-0"



1 S353 **SECTION**
Scale: 1/4" = 1'-0"

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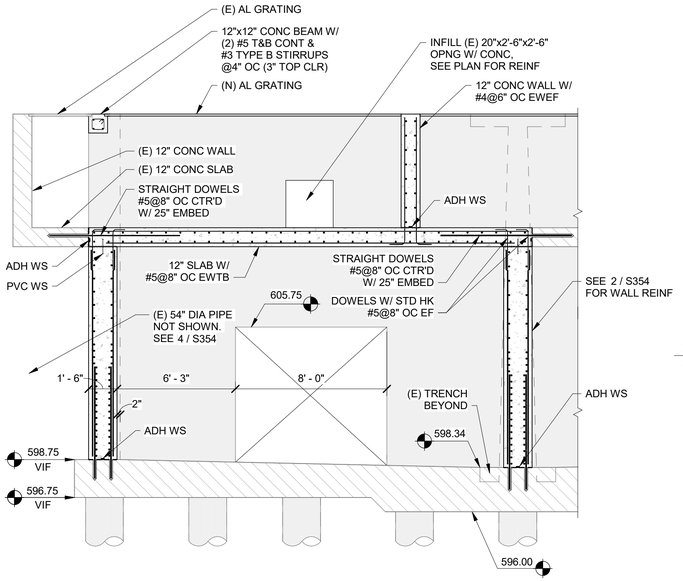
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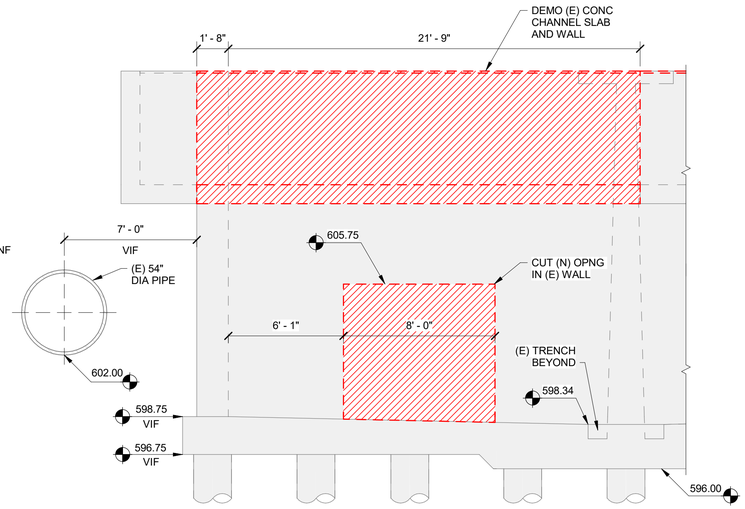
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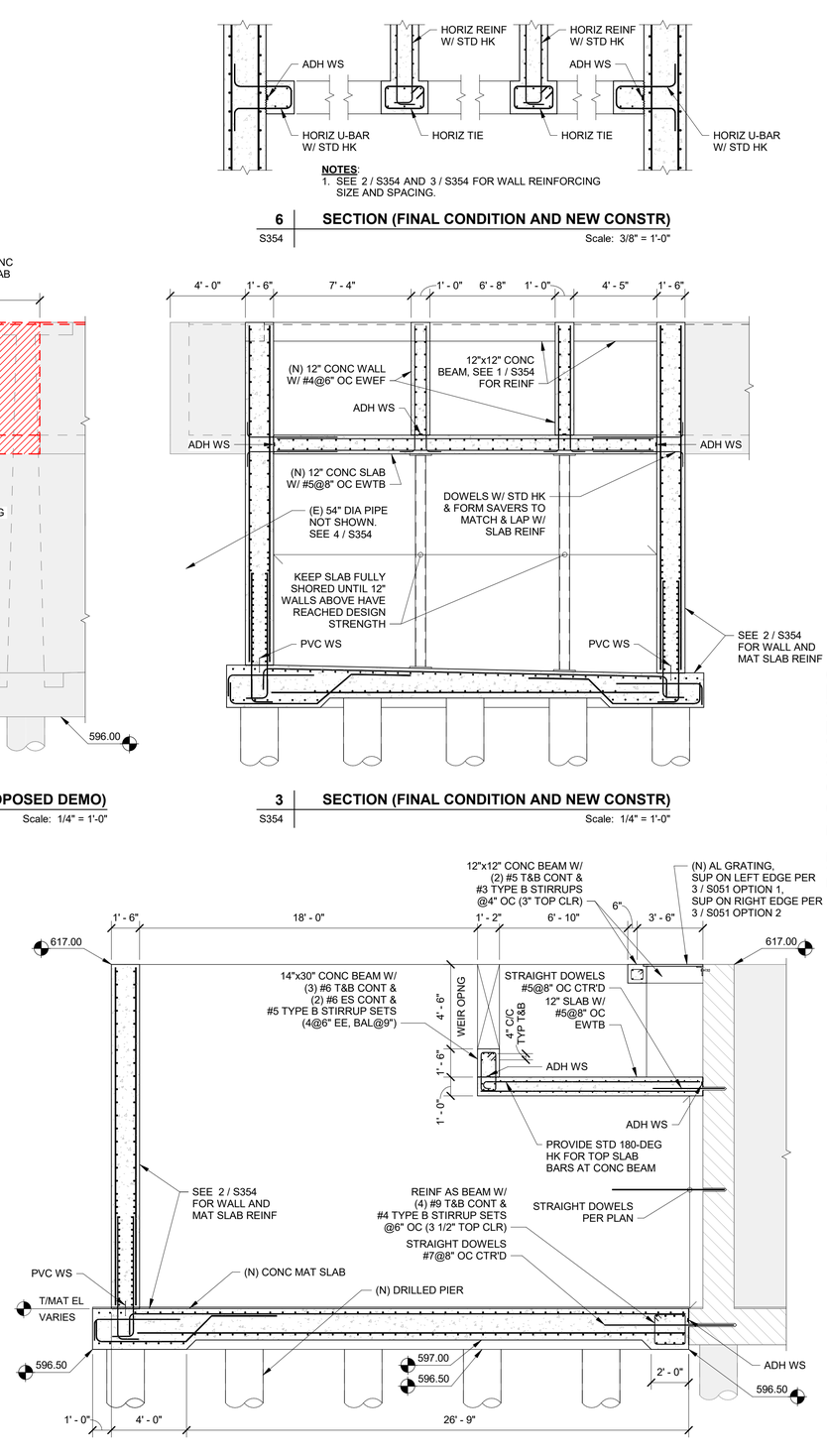
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S354 | Scale: 1/4" = 1'-0"



4 | **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
S354 | Scale: 1/4" = 1'-0"

3 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S354 | Scale: 1/4" = 1'-0"

2 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S354 | Scale: 1/4" = 1'-0"



1 | **SECTION (FINAL CONDITION AND NEW CONSTR)**
S354 | Scale: 1/4" = 1'-0"

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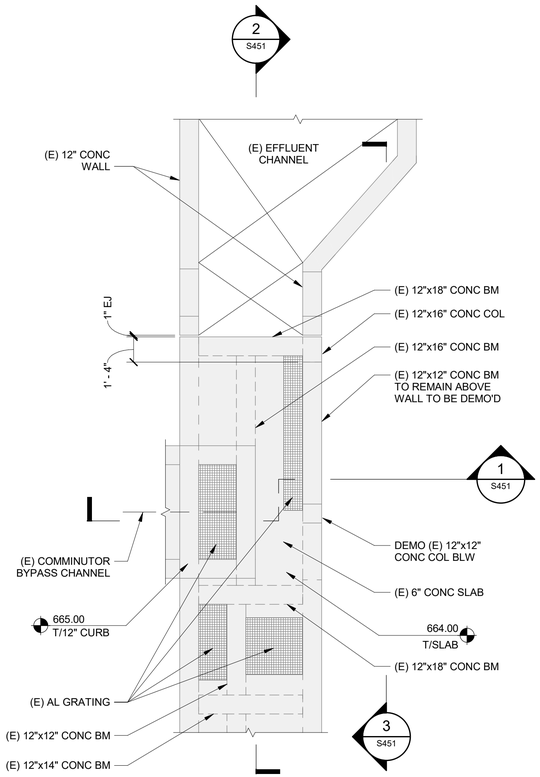
S354

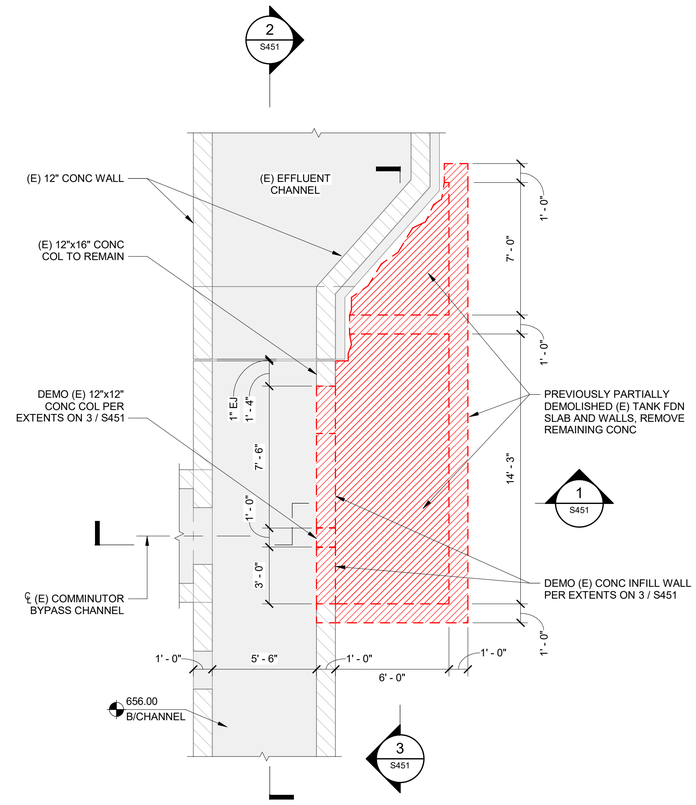
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N

2 DEMOLITION PLAN - DETRITUS TANK EFFLUENT CHANNEL @ EL. 665.50'

S401

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

N

1 DEMOLITION PLAN - DETRITUS TANK EFFLUENT CHANNEL @ EL. 656.00'

S401

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

PLAN NOTES:

1. THIS PLAN INCLUDES THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION. REFERENCE THE "NEW CONSTRUCTION" PLANS ON S402 FOR THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
4. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S451

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

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ELYRIA, OH

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REGISTRATION

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ANDREW L KNAPKE
#E-66697
REGISTERED
PROFESSIONAL ENGINEER
10-28-25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

DETRITUS TANK EFFLUENT CHANNEL - PLANS

SHEET NUMBER

S401

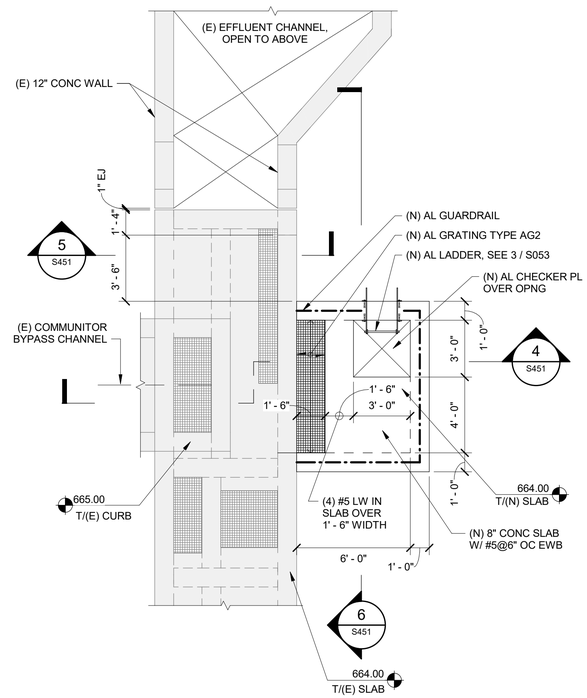
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07_ 07.00_ STRUCTURE_ S401

Project Management Initials: Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

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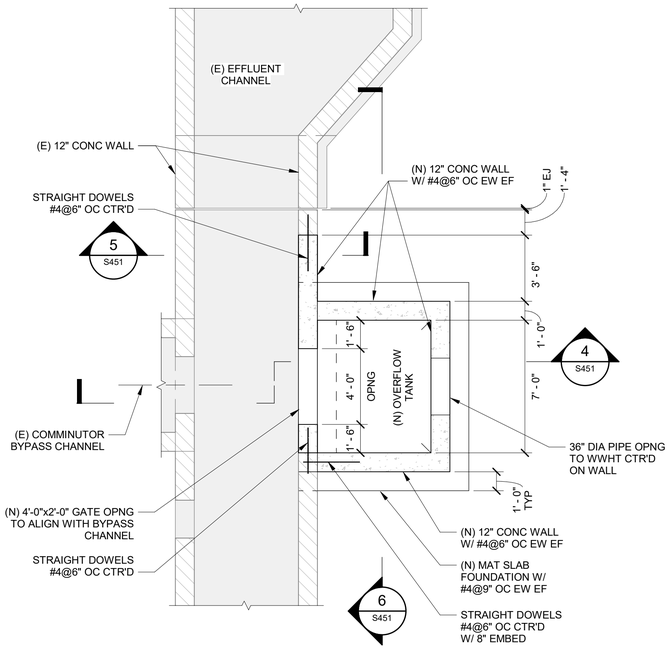
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N

2 S402 **NEW CONSTRUCTION PLAN - DETRITUS TANK EFFLUENT CHANNEL @ EL. 665.50'**

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



N

1 S402 **NEW CONSTRUCTION PLAN - DETRITUS TANK EFFLUENT CHANNEL @ EL. 656.00'**

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

PLAN NOTES:

1. THIS PLAN INCLUDES THE FINAL CONDITION OF THE STRUCTURE AND NEW STRUCTURAL COMPONENTS. REFERENCE THE "DEMOLITION" PLANS ON S401 FOR THE EXISTING CONDITION OF THE STRUCTURE AND PROPOSED DEMOLITION.
2. TYPICAL ELEVATIONS:
   A. 0.00 CITY OF ELYRIA DATUM EQUALS 537.40 USGS.
   B. REFERENCE PLAN FOR SPOT ELEVATIONS.
3. REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINFORCING SHOWN IN SECTIONS AND DETAILS.
4. COORDINATE WITH ALL DRAWINGS FOR LOCATION OF OPENINGS, SLEEVES, AND UNDER FLOOR PIPES, CONDUITS, DRAINS, DEPRESSIONS, EQUIPMENT, ETC.
5. SHORING, BRACING AND SHEETING MAY BE REQUIRED WHEN EXCAVATING ADJACENT TO THE EXISTING STRUCTURE. DESIGN AND INSTALLATION OF SUCH SHORING, BRACING AND SHEETING IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. REFERENCES:
   A. ABBREVIATIONS, LEGENDS, & SYMBOLS: S001
   B. GENERAL STRUCTURAL NOTES: S002-S003
   C. SPECIAL INSPECTIONS: S004-S006
   D. TYPICAL DETAILS: S050-S054
   E. SECTIONS: S451

BID DOCUMENTS

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PROJECT

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SHEET TITLE

DETRITUS TANK EFFLUENT CHANNEL - PLANS

SHEET NUMBER

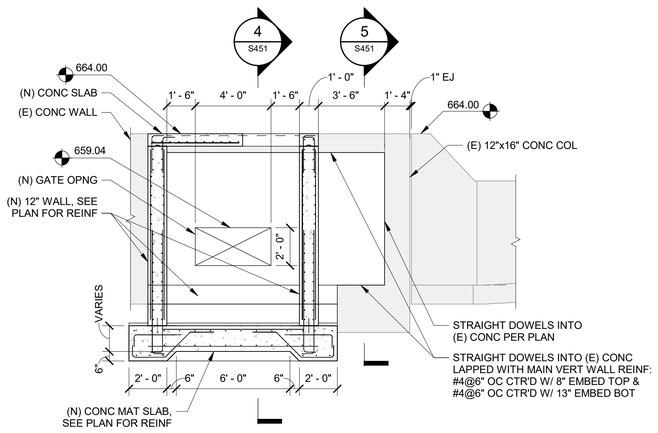
S402

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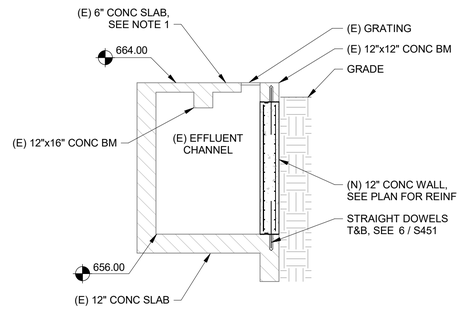
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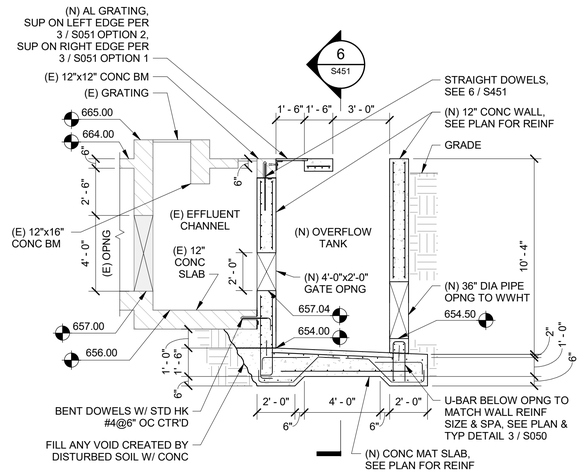
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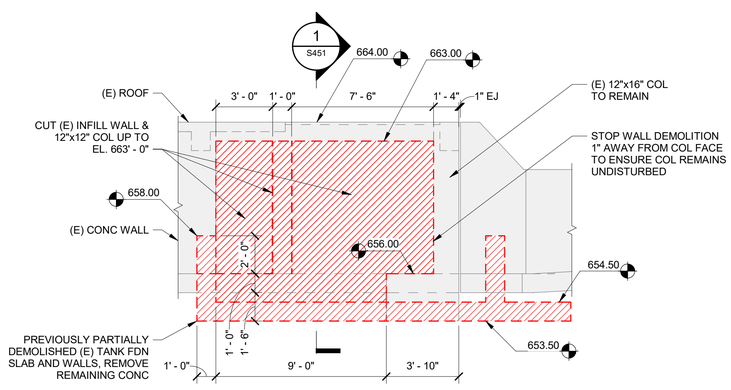
6 S451 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/4" = 1'-0"



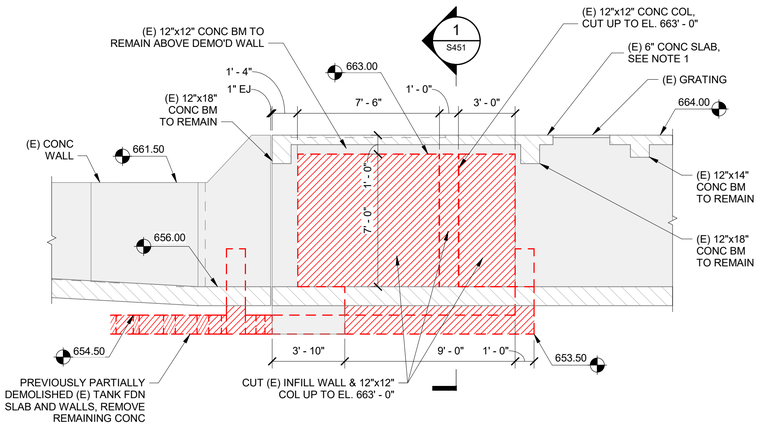
5 S451 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/4" = 1'-0"



4 S451 **SECTION (FINAL CONDITION AND NEW CONSTR)**
Scale: 1/4" = 1'-0"

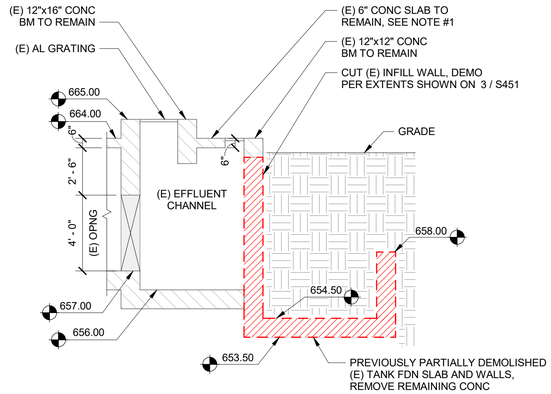


3 S451 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 1/4" = 1'-0"



NOTE:
1. THE EXISTING 6" CONCRETE SLAB AND BEAMS ABOVE THE EFFLUENT CHANNEL SHALL BE FULLY SHORED PRIOR TO DEMOLITION OF INFILL WALL AND REMAIN FULLY SHORED UNTIL THE NEW WALL HAS REACHED ITS DESIGN STRENGTH.

2 S451 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 1/4" = 1'-0"



NOTE:
1. THE EXISTING 6" CONCRETE SLAB AND BEAMS ABOVE THE EFFLUENT CHANNEL SHALL BE FULLY SHORED PRIOR TO DEMOLITION OF INFILL WALL AND REMAIN FULLY SHORED UNTIL THE NEW WALL HAS REACHED ITS DESIGN STRENGTH.

1 S451 **SECTION (EXISTING CONDITION AND PROPOSED DEMO)**
Scale: 1/4" = 1'-0"

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

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ISSUE/REVISION

1	10/28/2025	BID DOCUMENTS
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60332065

SHEET TITLE

DETRITUS TANK EFFLUENT CHANNEL - SECTIONS

SHEET NUMBER

S451

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Project Management Initials: Designer: CS Checked: AK Approved: AK ANSI D 22"x34"

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1
WALL SPALL (EXPOSED REINF)
REFER TO SHEET S103



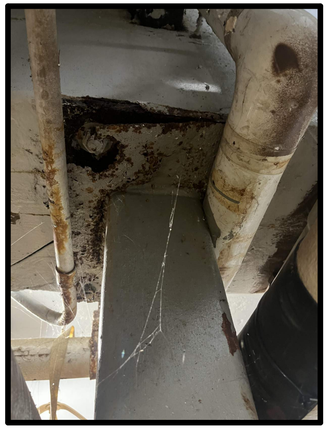
2
SPALLS AND DELAMINATIONS
REFER TO SHEET S105



3
SPALLS
REFER TO SHEETS S104, S105



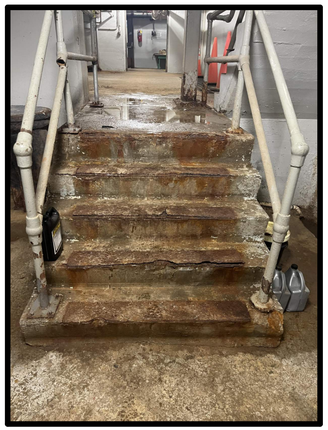
4a
DEGRADED STEEL HSS AND BASE/TOP PLATES
REFER TO SHEETS S101, S103



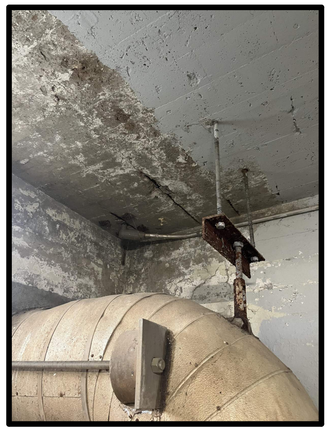
4b
DEGRADED STEEL HSS AND BASE/TOP PLATES
REFER TO SHEETS S101, S103



5a
DEGRADED STAIR TREADS (UPPER)
REFER TO SHEETS S101, S103



5b
DEGRADED STAIRS TREADS (LOWER)
REFER TO SHEETS S101, S103



6
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



7a
BEAM SPALLS AND DELAMINATIONS (EXPOSED REINF)
REFER TO SHEET S105



7b
BEAM SPALLS AND DELAMINATIONS (EXPOSED REINF)
REFER TO SHEET S105



8
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



9
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



10
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



11
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

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10-28-25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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PROJECT NUMBER

60332065

SHEET TITLE

REPAIR REFERENCE PHOTOS

SHEET NUMBER

S500

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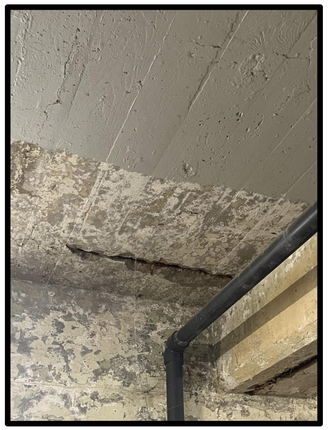
ANSI D 22"X34"
Approved: AK
Checked: AK
Designer: CS
Project Management Initials:

Last Plotted: 10/27/2025 4:16:23 PM
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12
BEAM CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



13
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



14
BEAM CRACKS AND DELAMINATIONS
REFER TO SHEET S105



15
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



16
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



17
BEAM CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



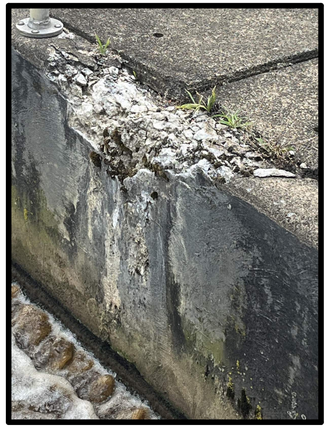
18
SLAB CRACKS, SPALLS, AND DELAMINATIONS
(EXPOSED REINF)
REFER TO SHEET S105



19
SLAB CRACKS
REFER TO SHEET S105



20
SLAB SPALLS
(EXPOSED REINF)
REFER TO SHEET S105



21
WALL SPALL
REFER TO SHEET S204



22
WALL SPALL
REFER TO SHEET S204



23
WALL SPALL
REFER TO SHEET S204



24
WALL SPALL
REFER TO SHEET S204

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SHEET TITLE

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SHEET NUMBER

S501

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Project Management Initials:
Designer: CS
Checked: AK
Approved: AK
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25
WALL SPALL
REFER TO SHEET S204



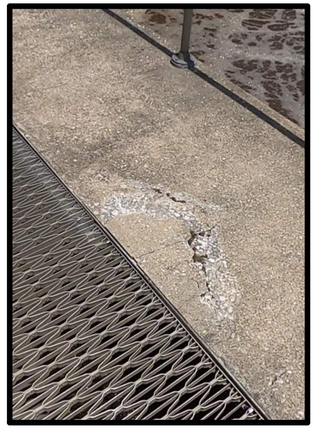
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REFER TO SHEET S204



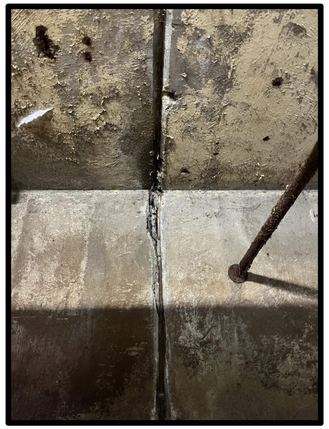
27
WALL SPALL
REFER TO SHEET S204



28
WALL CRACKS AND SPALLS
REFER TO SHEET S204



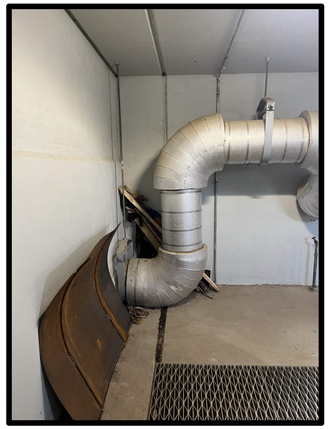
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SLAB SPALL AND DELAMINATION
REFER TO SHEET S308



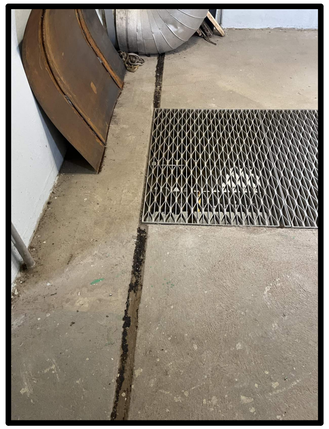
30
EXPANSION JOINT IN PIPE GALLERY
ROOF & EXTERIOR WALL
REFER TO SHEET S104



31
EXPANSION JOINT IN PIPE GALLERY FLOOR &
INFLUENT CHANNEL WALL
REFER TO SHEET S104



32
EXPANSION JOINT IN PIPE GALLERY FLOOR,
EXTERIOR WALL, AND ROOF (NEAR BLOWER BLDG)
REFER TO SHEET S204



33
EXPANSION JOINT IN PIPE GALLERY FLOOR
(NEAR BLOWER BLDG)
REFER TO SHEET S204

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SHEET TITLE

REPAIR REFERENCE PHOTOS

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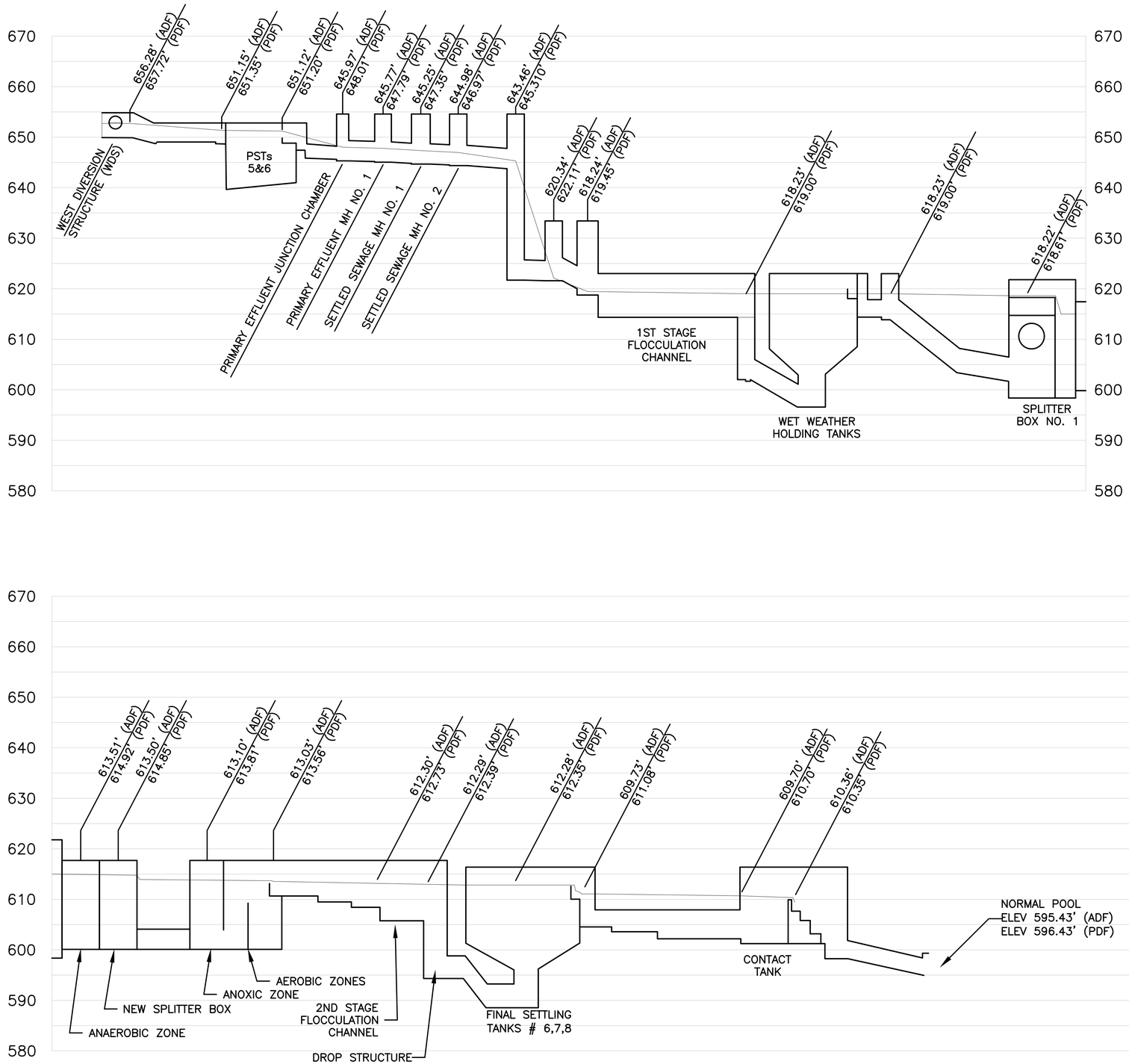
S502

Designer: CS
Checked: AK
Approved: AK
ANSI D 22"x34"
Project Management Initials:

Last Plotted: 10/27/2025 4:19:26 PM
Filename: Autodesk Docs://BF-US WEST 60332065-Elyria WWPCP/60332065_R24-Elyria WWPCP-S.rvt

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BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

AECOM
1300 EAST 9TH STREET, SUITE 500
CLEVELAND, OH 44114
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REGISTRATION

STATE OF OHIO
TIMOTHY F. McCANN
71500
REGISTERED PROFESSIONAL ENGINEER
10/28/2025

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

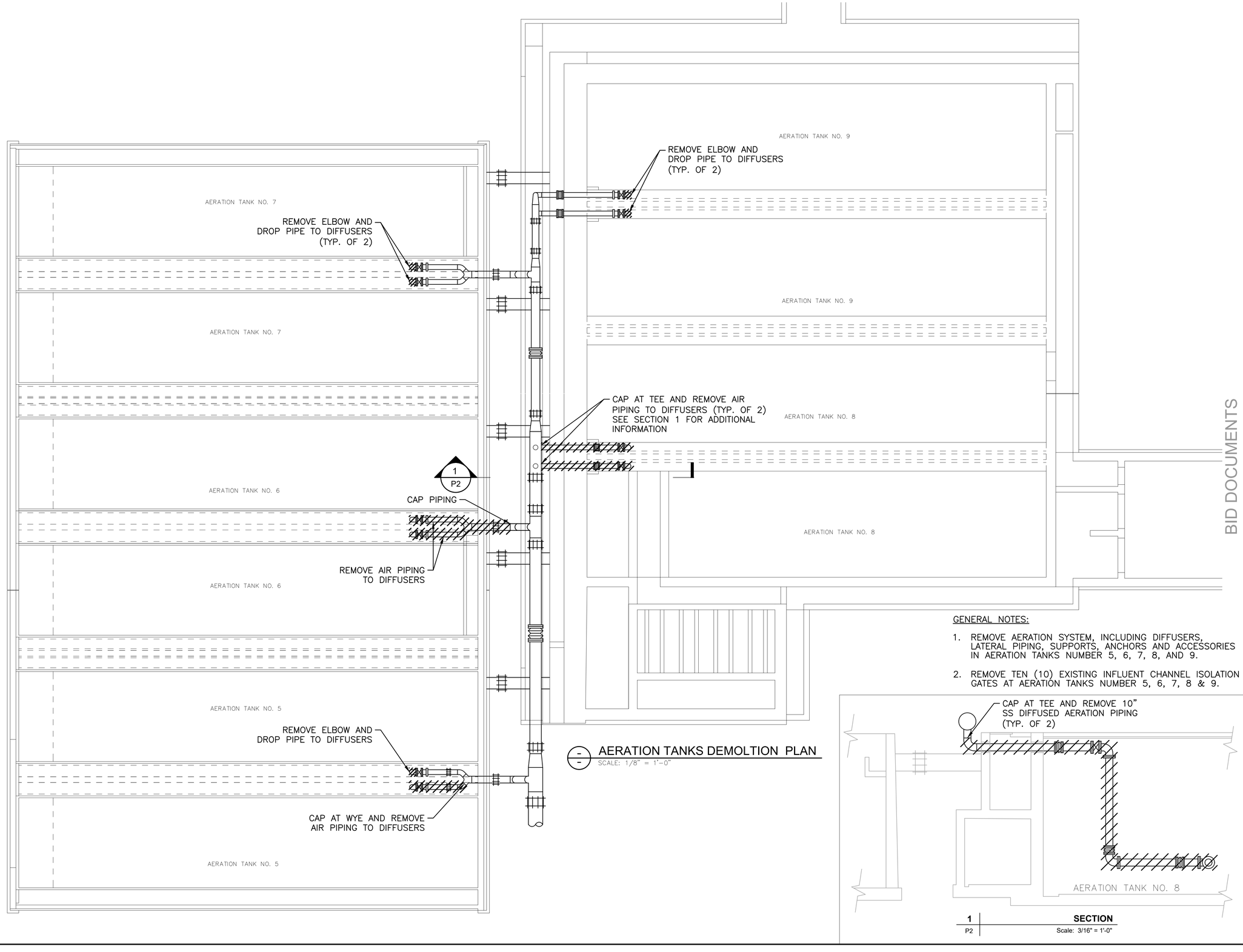
HYDRAULIC PROFILE

SHEET NUMBER

P1

ANSI D 22" x 34"
Approved: SB
Checked: SA
Designer: DE
Last Plotted: [illegible]
Last saved by: WILLIAMSCP
Filename: C:\USERS\WILLIAMSCP\AECOM\ELYRIA CD CM 4 AERATION TANKS - GENERAL\900_CAD_GIS\910_CAD\20-SHEETS\60332065_TASK 3_AERATION TANK_P1.DWG
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ANSI D 22" x 34"



AERATION TANKS DEMOLTION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. REMOVE AERATION SYSTEM, INCLUDING DIFFUSERS, LATERAL PIPING, SUPPORTS, ANCHORS AND ACCESSORIES IN AERATION TANKS NUMBER 5, 6, 7, 8, AND 9.
2. REMOVE TEN (10) EXISTING INFLUENT CHANNEL ISOLATION GATES AT AERATION TANKS NUMBER 5, 6, 7, 8 & 9.

1 / P2 SECTION
Scale: 3/16" = 1'-0"

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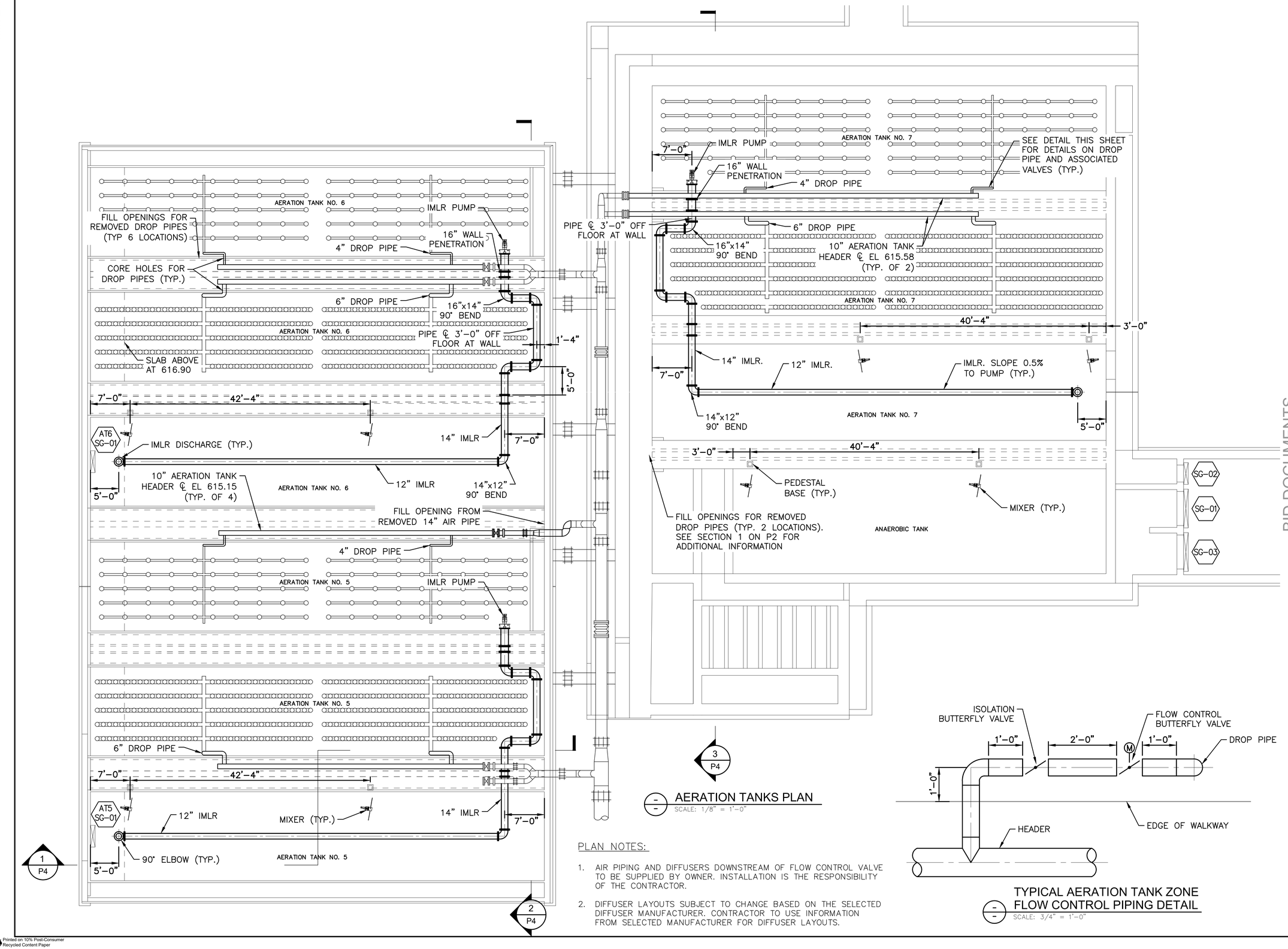
AERATION TANKS
EXISTING CONDITIONS & PROPOSED DEMOLITION PLAN & SECTION

SHEET NUMBER

P2

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ANSI D 22" x 34"



AERATION TANKS PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES:

1. AIR PIPING AND DIFFUSERS DOWNSTREAM OF FLOW CONTROL VALVE TO BE SUPPLIED BY OWNER. INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. DIFFUSER LAYOUTS SUBJECT TO CHANGE BASED ON THE SELECTED DIFFUSER MANUFACTURER. CONTRACTOR TO USE INFORMATION FROM SELECTED MANUFACTURER FOR DIFFUSER LAYOUTS.

TYPICAL AERATION TANK ZONE FLOW CONTROL PIPING DETAIL
SCALE: 3/4" = 1'-0"

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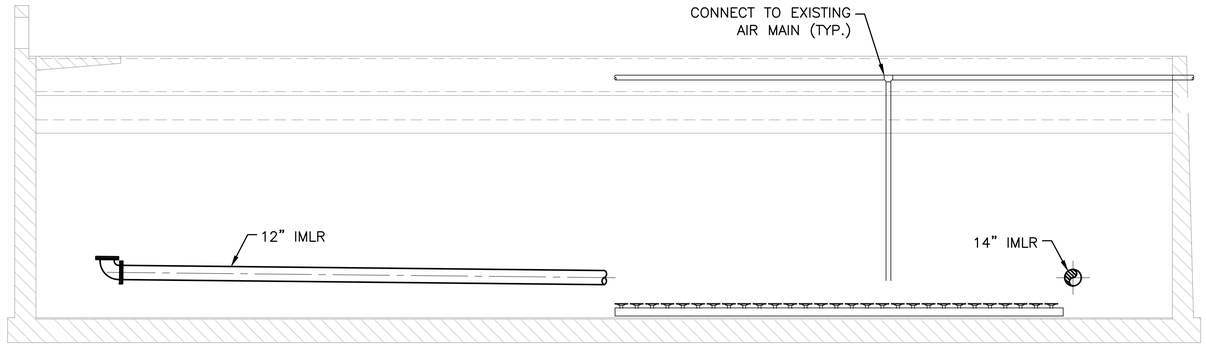
AERATION TANKS
PROPOSED AERATION PIPING PLAN

SHEET NUMBER

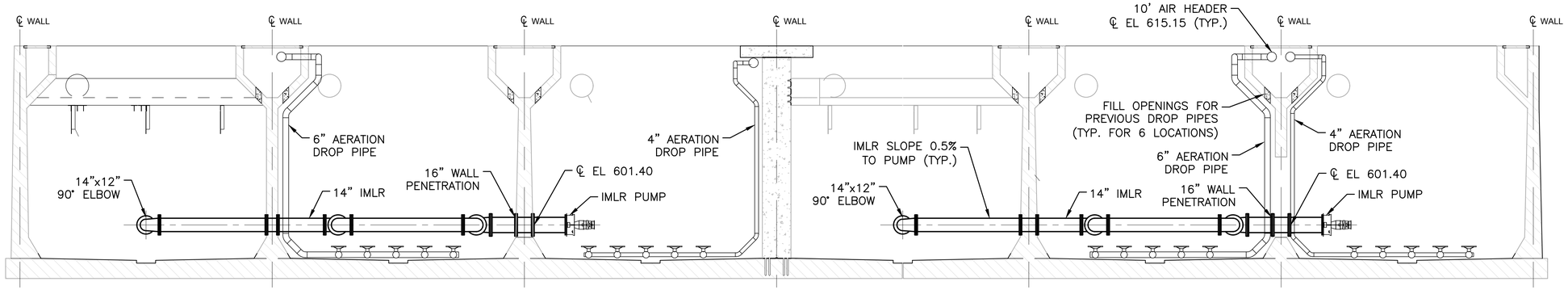
P3

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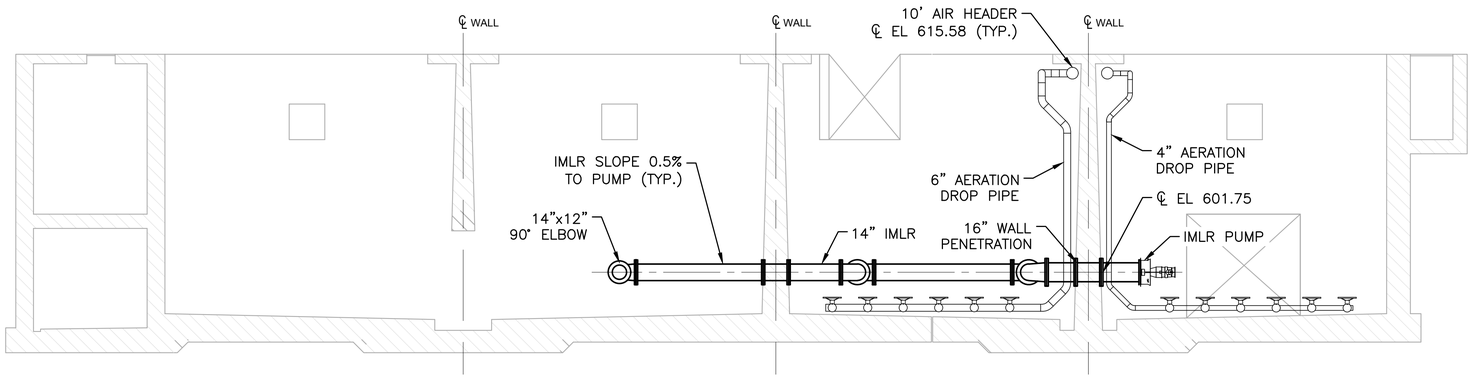
ANSI D 22" x 34"



1 P3 **SECTION**
Scale: 3/16" = 1'-0"



2 P3 **SECTION**
Scale: 3/16" = 1'-0"



3 P3 **SECTION**
Scale: 3/16" = 1'-0"

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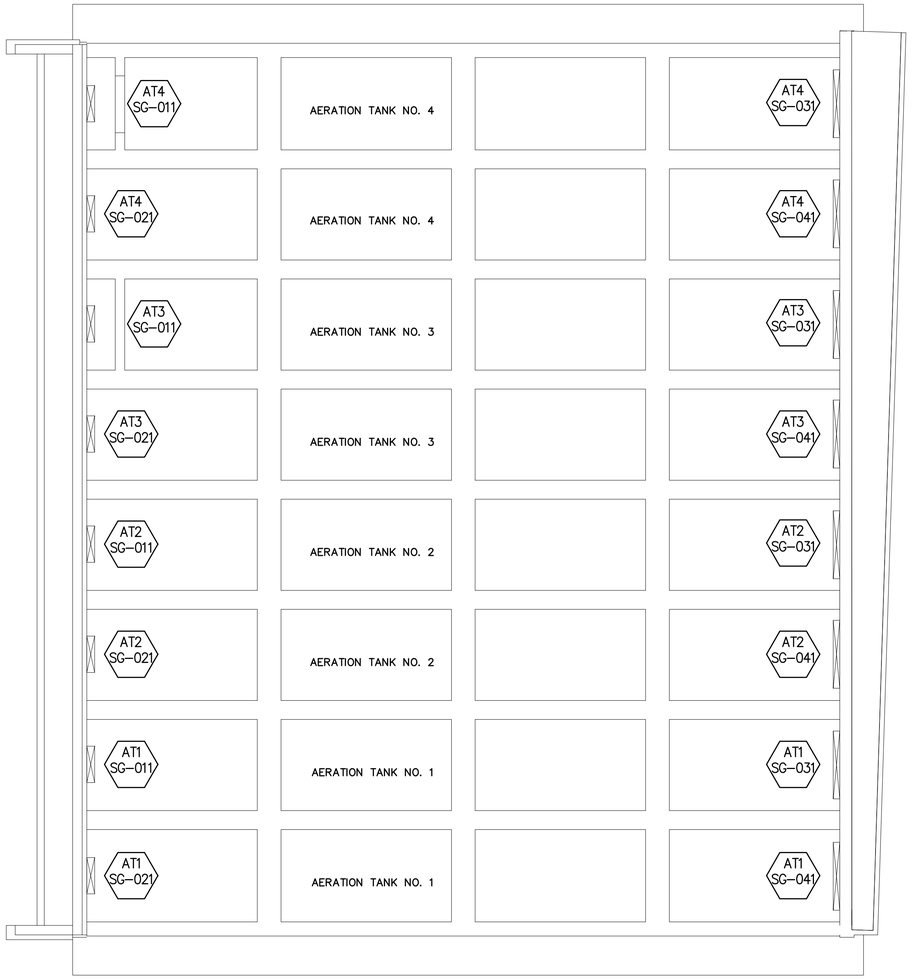
AERATION TANKS
PROPOSED AERATION PIPING
SECTIONS

SHEET NUMBER

P4

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ANSI D 22" x 34"



AERATION TANKS PLAN

SCALE: 1/8" = 1'–0"

PLAN NOTES:

1. REPLACE EXISTING GATES IN AERATION TANKS NO. 2, 3 & 4 PER EQUIPMENT SCHEDULE.

BID DOCUMENTS

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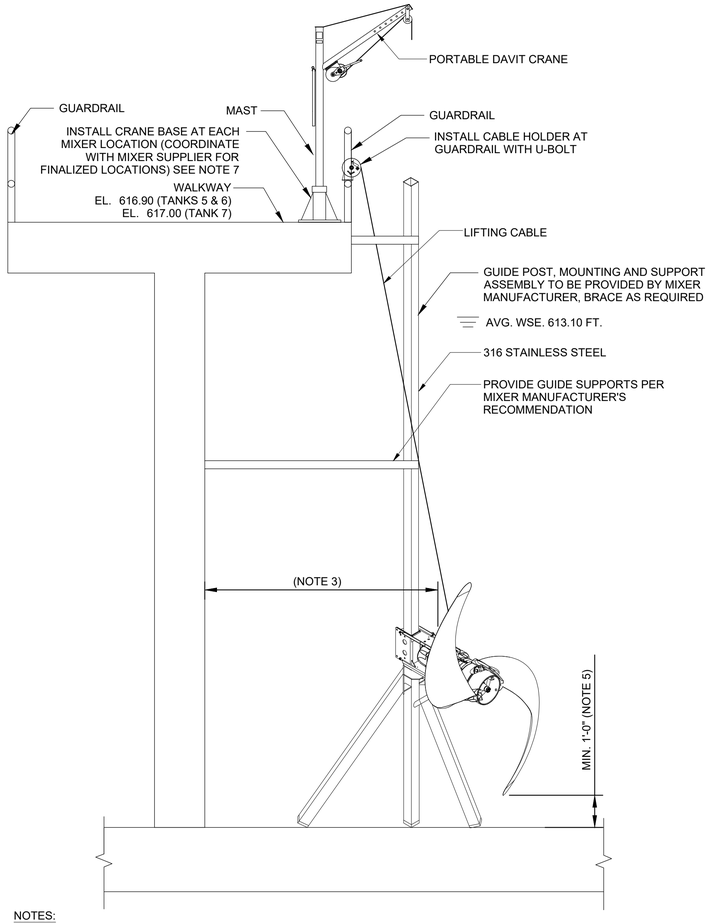
AERATION TANKS 1, 2, 3 & 4 PLAN

SHEET NUMBER

P5

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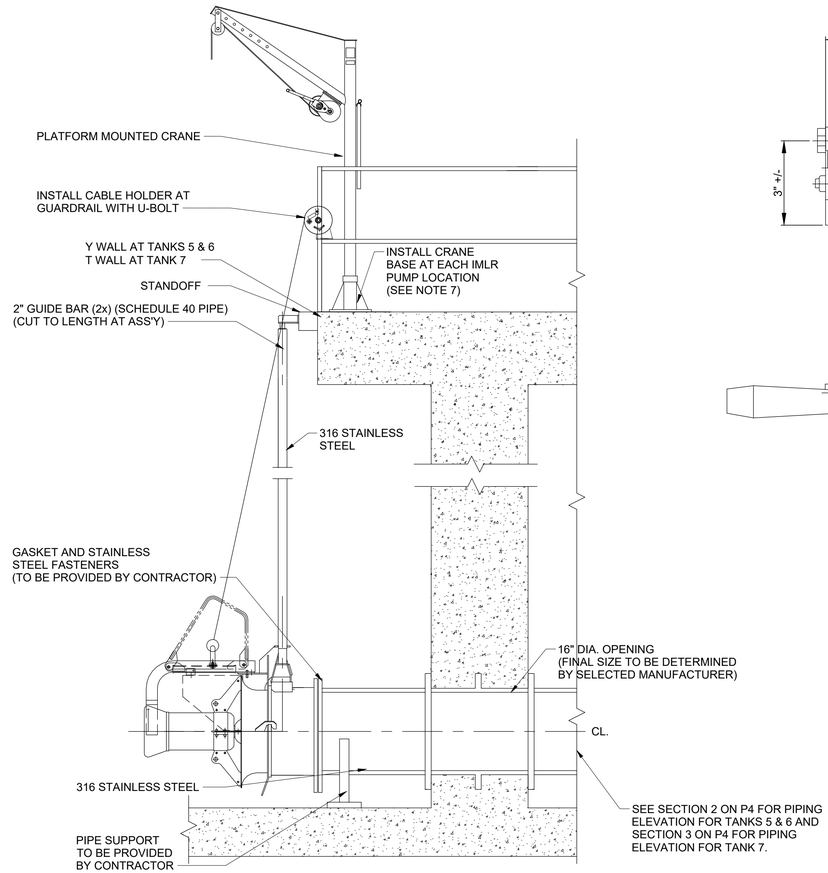
ANSI D 22" x 34"



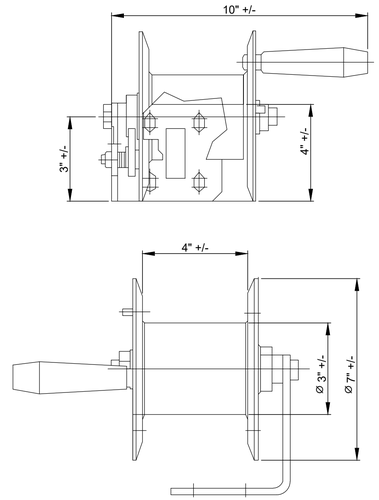
NOTES:

1. FINAL LAYOUT OF MIXERS TO BE DETERMINED BY MIXER MANUFACTURER AFTER CFD ANALYSIS HAS BEEN SUBMITTED AND APPROVED BY THE DISTRICT.
2. THE CONTRACTOR SHALL ANCHOR MIXERS ACCORDING TO MANUFACTURE'S RECOMMENDADTIONS.
3. CLEARANCE BETWEEN THE BACK WALL AND MIXER PROPELLER SHALL BE EQUIVALENT TO PROPELLER DIAMETER.
4. MIXERS SHALL BE ORBITED AT THE ANGLE TOWARD FLOW AS SHOWN ON PLAN SHEETS BASED ON MIXER MANUFACTURER'S RECOMMENDATION.
5. PEAK POSITION OF THE PROPELLER BLADE TO THE BOTTOM OF THE TANK SHALL BE MINIMUM 12".
6. MIXER LIFTING ATTACHMENT SHALL BE A MAXIMUM DISTANCE OF 4'-0" FROM THE CENTER OF DAVIT CRANE PEDESTAL BASE.
7. PEDESTAL CRANE BASE SHOWN. PEDESTAL BASES TO BE USED FOR TANK 7. WALL MOUNTED BASES TO BE USED FOR TANKS 5 & 6. SEE DETAILS 12 & 13 ON S050 FOR ADDITIONAL INFORMATION

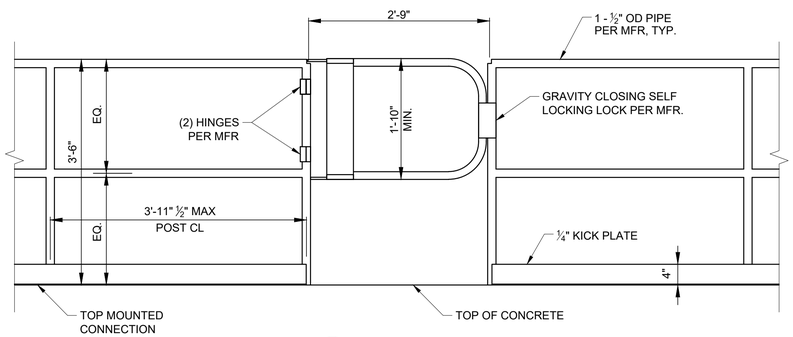
1 MIXER SUPPORT DETAIL
NTS



2 IMLR PUMP SUPPORT DETAIL
NTS



3 CABLE HOLDER DETAIL
SCALE: NTS



4 GATE DETAIL
NTS

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AERATION TANKS DETAILS

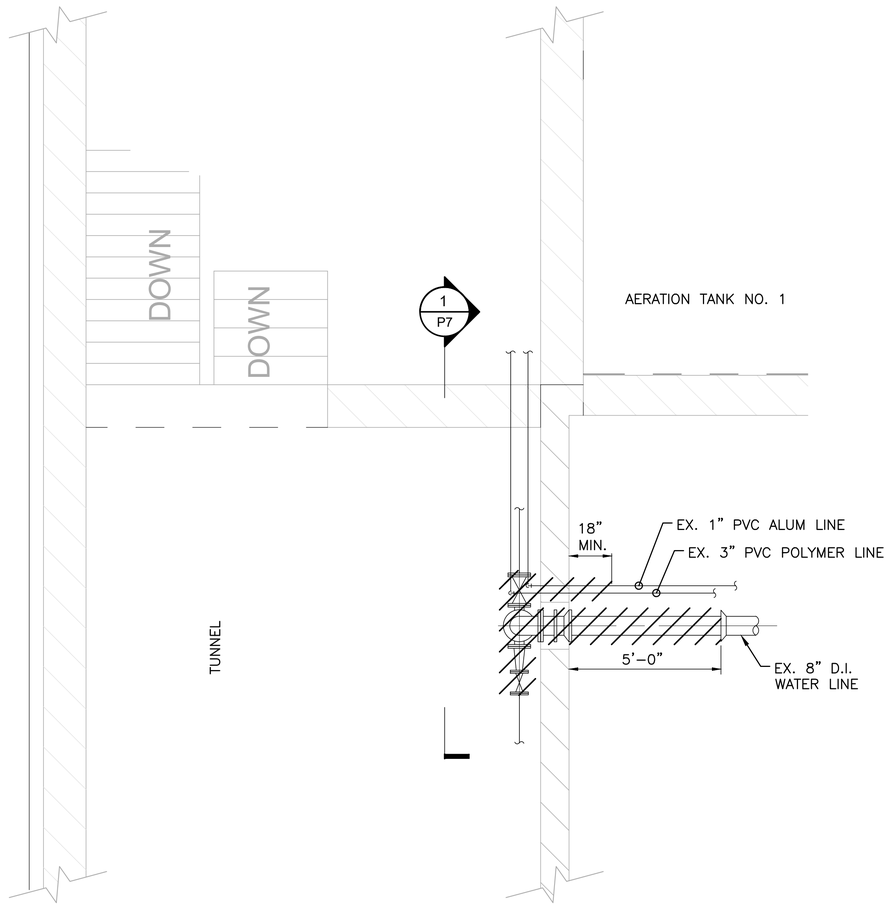
SHEET NUMBER

P6

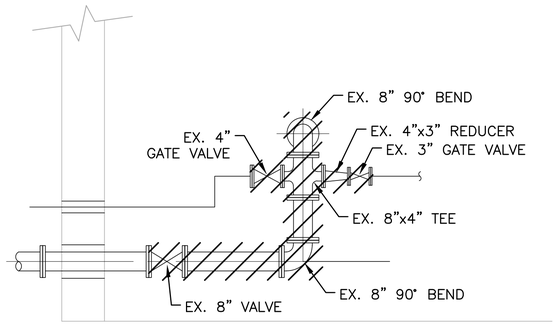
ANSI D 22" x 34"

NOTES:

1. REMOVE AND REPLACE EX. 8" POTABLE WATER PIPE, VALVES, AND FITTINGS FROM INTERIOR LIMITS SHOWN TO FIRST BURIED JOINT OUTSIDE WALL.
2. REMOVE AND REPLACE EX. 1" ALUM LINE TO LIMITS SHOWN.
3. REMOVE AND REPLACE EX. 3" POLYMER LINE TO LIMITS SHOWN.
4. PERFORM VISUAL LEAK TEST OF NEW JOINT AT SYSTEM PRESSURE PRIOR TO BACKFILL.
5. PROVIDE LINK-SEAL AND GROUT ANNULAR SPACE IN WALL PENETRATIONS ON EACH SIDE.



AERATION TANKS DEMOLTION PLAN
SCALE: 3/8" = 1'-0"



1 P7 SECTION
Scale: 3/8" = 1'-0"

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SHEET TITLE

POTABLE WATER REPLACEMENT PLAN AND SECTION

SHEET NUMBER

P7

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ANSI D 22" x 34"

OPENING / GATE SCHEDULE - SPEC SECTION 40 05 23

TAG NUMBER	NUMBER OF UNITS	LOCATION		OPENING SIZE (WxH)	OPENING REMARKS	GATE REMARKS	FUNCTION	INVERT ELEVATION (FT)	DESIGN HEAD (FT) MAX WS TO GATE INVERT	FRAME TYPE	CLOSURE TYPE	OPERATOR TYPE	STEM	SHEET	REMARKS
		FROM	TO												
DTEC SG-01	1	DETRITUS TANK EFFLUENT CHANNEL	OVERFLOW TANK TO 36" BYPASS	2'-0" x 4'-0"	NEW OPENING	NEW	BYPASS ISOLATION	657.04	6.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	S402	SELF-CONTAINED
AT2 SG-011	1	INFLUENT CHANNEL	AT 2	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT2 SG-021	1	INFLUENT CHANNEL	AT 2	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT3 SG-011	1	INFLUENT CHANNEL	AT 3	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT3 SG-021	1	INFLUENT CHANNEL	AT 3	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT4 SG-011	1	INFLUENT CHANNEL	AT 4	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT4 SG-021	1	INFLUENT CHANNEL	AT 4	1'-0" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	INFLUENT ISOLATION	611.40	2.75	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	1985 P.31 & P.27	SELF-CONTAINED
AT2 SG-031	1	AT 2	EFFLUENT CHANNEL	9'-7.5" x 1'-0"	EXISTING OPENING	NEW	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT2 SG-041	1	AT 2	EFFLUENT CHANNEL	9'-7.5" x 1'-0"	EXISTING OPENING	NEW	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT3 SG-031	1	AT 3	EFFLUENT CHANNEL	8'-9" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT3 SG-041	1	AT 3	EFFLUENT CHANNEL	8'-9" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT4 SG-031	1	AT 4	EFFLUENT CHANNEL	8'-9" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT4 SG-041	1	AT 4	EFFLUENT CHANNEL	8'-9" x 1'-0"	EXISTING OPENING	REPLACE EXISTING	EFFLUENT WEIR	614.90	1.00	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	1985 P.26	SELF-CONTAINED
AT5 SG-01	1	INFLUENT CHANNEL	AT 5	5'-0" x 2'-6"	MOD. EX. OPENING	REPLACE EXISTING	INFLUENT ISOLATION	610.40	3.83	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	S251	NON SELF-CONTAINED; PEDESTAL-MOUNTED ACTUATOR
AT6 SG-01	1	INFLUENT CHANNEL	AT 6	5'-0" x 2'-6"	MOD. EX. OPENING	REPLACE EXISTING	INFLUENT ISOLATION	610.40	3.83	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - OPEN / CLOSE OPERATOR CONTROL	RISING	S251	NON SELF-CONTAINED; PEDESTAL-MOUNTED ACTUATOR
PASB-E SG-01	1	NEW SPLITTER BOX (PASB-E)	DIST. CHANNEL TO SSSB	6'-0" x 2'-6"	NEW OPENING	NEW	FLOW SPLIT - MODULATING	612.50	3.50	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	S354	SELF-CONTAINED
PASB-E SG-02	1	NEW SPLITTER BOX (PASB-E)	INFLUENT CHANNEL	3'-0" x 2'-6"	NEW OPENING	NEW	FLOW SPLIT - MODULATING	612.50	3.50	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	S354	SELF-CONTAINED
PASB-E SG-03	1	NEW SPLITTER BOX (PASB-E)	DIST. CHANNEL TO SSSB	6'-0" x 2'-6"	NEW OPENING	NEW	FLOW SPLIT - MODULATING	612.50	3.50	WALL MOUNTED	FLUSH	ELECTRICAL ACTUATOR - MODULATING WEIR OPERATOR CONTROL	RISING	S354	SELF-CONTAINED

PROCESS VALVE SCHEDULE - SPEC SECTION 40 05 23

TAG NUMBER	NUMBER OF UNITS	SIZE (IN)	TYPE	FUNCTION	LOCATION	SERVICE	FLOW	JOINT TYPE	OPERATOR TYPE	NOTES	SHEET
-	1	8	GATE	ISOLATION	S. END OF PIPE GALLERY; W. of AT 1	POTABLE WATER		F	MANUAL	REPLACE EXIST.	P.38 C-C
-	1	4	GATE	ISOLATION	S. END OF PIPE GALLERY; W. of AT 2	POTABLE WATER		F	MANUAL	REPLACE EXIST.	P.38 C-C
-	1	3	GATE	ISOLATION	S. END OF PIPE GALLERY; W. of AT 3	POTABLE WATER		F	MANUAL	REPLACE EXIST.	P.38 C-C
AT5 BFV1 THRU AT7 BFV1	3	6	BUTTERFLY	DROP LEG ISOLATION	AERATION TANKS 5 TO 7 - ZONE 1	PROCESS AIR	3,430 SCFM	F	MANUAL	NEW	P2
AT5 BFV2 THRU AT7 BFV2	3	6	BUTTERFLY	DROP LEG ISOLATION	AERATION TANKS 5 TO 7 - ZONE 2	PROCESS AIR	2,410 SCFM	F	MANUAL	NEW	P2
AT5 BFV3 THRU AT7 BFV3	3	4	BUTTERFLY	DROP LEG ISOLATION	AERATION TANKS 5 TO 7 - ZONE 3	PROCESS AIR	1,730 SCFM	F	MANUAL	NEW	P2
AT5 BFV4 THRU AT7 BFV4	3	4	BUTTERFLY	DROP LEG ISOLATION	AERATON TANKS 5 TO 7 - ZONE 4	PROCESS AIR	1,270 SCFM	F	MANUAL	NEW	P2

ABBREVIATIONS:

JOINTS

F = FLANGED

Lu = LUG

Sc = SCREWED

U = TRUE UNION

OPERATORS

E = ELECTRIC (NON-MODULATING)

H = HANDWHEEL

C = CHAINWHEEEL

L = LEVER

N = NUT

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CITY OF ELYRIA

DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
ELYRIA, OH

CONSULTANT

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CONSULTANTS

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260 BURNS ROAD, SUITE 100
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REGISTRATION

STATE OF OHIO
TIMOTHY F. McCANN
71500
PROFESSIONAL ENGINEER
10/28/2025

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	10/28/2025	BID DOCUMENTS

PROJECT NUMBER

60332065

SHEET TITLE

EQUIPMENT SCHEDULES

SHEET NUMBER

P8

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ANSI D 22" x 34"

AIR FLOW CONTROL VALVE SCHEDULE - SPEC SECTION 40 23 13.06

TAG NUMBER	NUMBER OF UNITS	LOCATION	SERVICE	APPROX. AIR FLOW (SCFM)	SIZE (IN)	ACTUATOR TYPE	OPERATION THROTTLING	JOINT TYPE	SHEET
AT5 FCV1 THRU AT7 FCV1	3	AERATION TANKS 5 TO 7 - ZONE 1	AIR DROP LEG	3,430	6	MODULATING AIR FLOW VALVE ACTUATOR	20-70%	FLANGED	P2
AT5 FCV2 THRU AT7 FCV2	3	AERATION TANKS 5 TO 7 - ZONE 2	AIR DROP LEG	2,410	6	MODULATING AIR FLOW VALVE ACTUATOR	20-70%	FLANGED	P3
AT5 FCV3 THRU AT7 FCV3	3	AERATION TANKS 5 TO 7 - ZONE 3	AIR DROP LEG	1,730	4	MODULATING AIR FLOW VALVE ACTUATOR	20-70%	FLANGED	P4
AT5 FCV4 THRU AT7 FCV4	3	AERATON TANKS 5 TO 7 - ZONE 4	AIR DROP LEG	1,270	4	MODULATING AIR FLOW VALVE ACTUATOR	20-70%	FLANGED	P5

PROCESS PUMP SCHEDULE - SPEC SECTION 43 21 00.04

TAG NUMBER	NUMBER OF UNITS	NAME	LOCATION	PUMP TYPE	CONFIGURATION	RATING POINT				MINIMUM SUCTION / DISCHARGE SIZE (INCH)	NOMINAL MAX PUMP SPEED (RPM)	SEAL TYPE	SEAL WATER (Y/N)	MOTOR DATA					RATING	SPEC SEC	DISCHARGE GAUGE TYPE	ANSI/ HI STANDARD & PUMP TEST ACCEPTANCE GRADE	SHEET	REMARKS
						CAPACITY	TOTAL DYNAMIC HEAD, TDH (FT)	MIN EFF (%)	MINIMUM SHUTOFF HEAD (FT)					DRIVE HP	RPM	ENCLOSURE	ELECTRICAL SERVICE	DRIVE TYPE						
AT5 IMLRP THRU AT7 IMLRP	3	INTERNAL MIXED LIQUOR RECYCLE PUMP	AERATION TANKS	SUBMERSIBLE PROPELLER	HORIZONTAL	3.3 MGD	2.7	43	5.9	16	875	-	N	4	875	SUBMERSIBLE	460/3/360	CONSTANT	-	43 21 00.04	-	14.6 / 1U	P2	

SUBMERSIBLE MIXER SCHEDULE - SPEC SECTION 44 42 46.03

TAG NUMBER	NUMBER OF UNITS	ZONE	TANK/ZONE DIMENSIONS				MIXER PARAMETERS				SHEET
			LENGTH (FT)	WIDTH (FT)	DEPTH (FT)	VOLUME (GAL)	RATED POWER (HP)	SPEED TYPE	PROPELLER DIA (IN)	WEIGHT (LB)	
ANT-M1 & ANT-M2	2	ANAEROBIC TANK	80	20.38	16	195,100	3	CONSTANT	12 - 80	610	P2
AT5-M1 & AT5-M2 AT6-M1 & AT6-M2	4	AERATION TANKS 5 & 6 - ANOXIC ZONES	80	21.21	16	203,100	3	CONSTANT	12 - 80	610	P2
AT7-M1 & AT7-M2	2	AERATION TANK 7 - ANOXIC ZONE	80	20.75	16	198,700	3	CONSTANT	12 - 80	610	P2

BID DOCUMENTS

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WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

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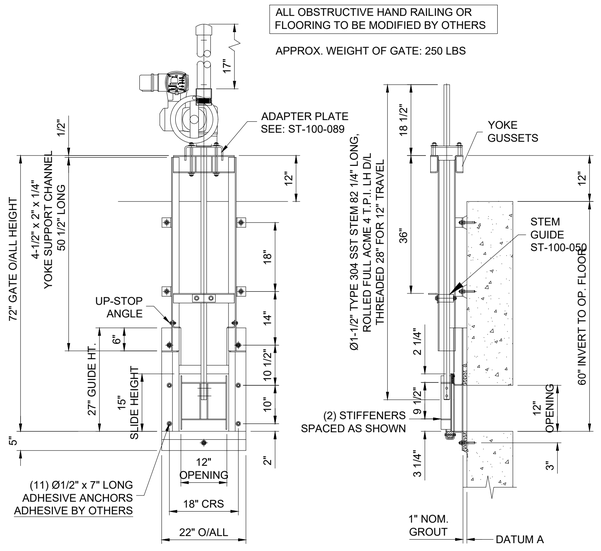
EQUIPMENT SCHEDULES

SHEET NUMBER

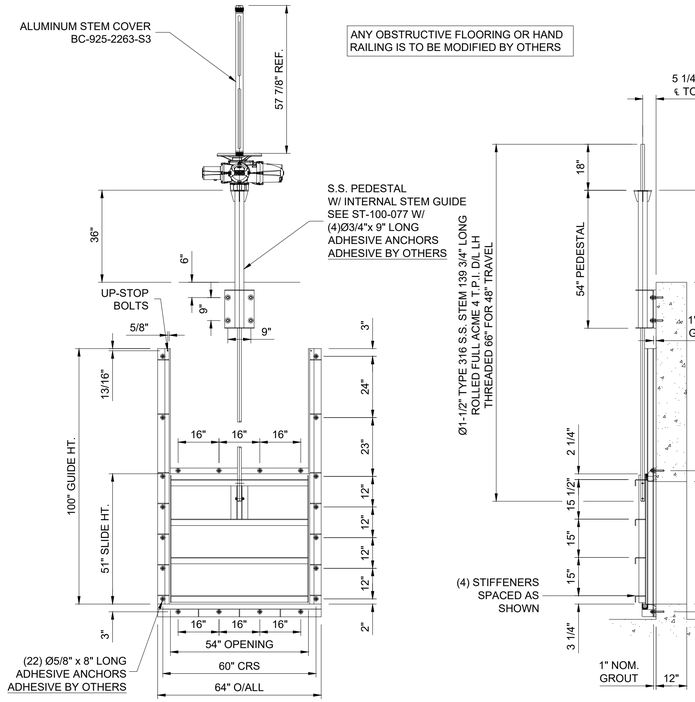
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ANSI D 22" x 34"



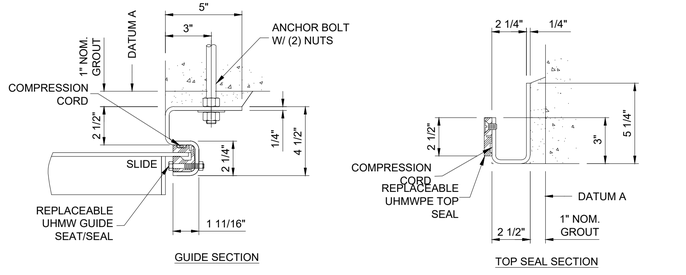
SERIES 924 SLUICE GATE 12" x 12"

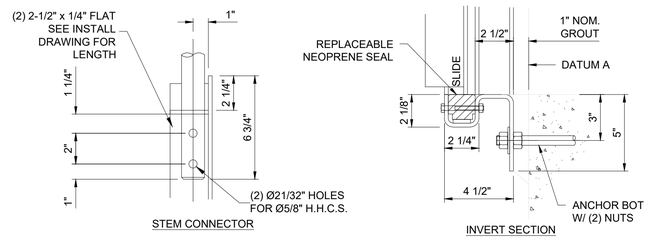


SERIES 925 SLIDE GATE 54" x 48"

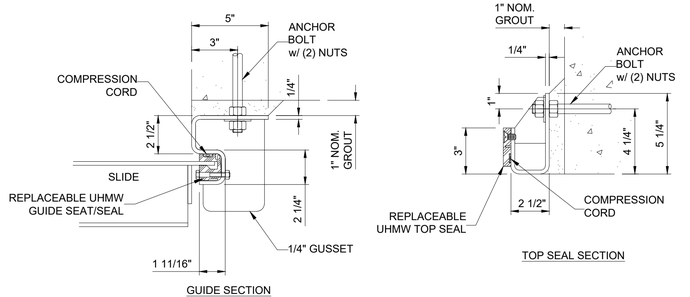
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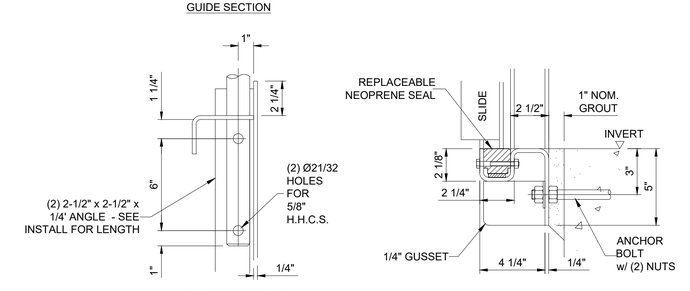
1. FIELD VERIFY OPENING DIMENSIONS AND ELEVATIONS. ARRANGEMENT AND DIMENSIONS SHOWN ARE PROVIDED AS GENERAL REFERENCE AND TO CONVEY TYPICAL ANCHORING REQUIREMENTS FROM THE SPECIFIED GATE MANUFACTURER. REFER TO EQUIPMENT SCHEDULE FOR ACTUAL SIZES AND DETAILED INFORMATION.





SERIES 924 SLUICE GATE SECTION DETAILS





SERIES 925 SLIDE GATE SECTION DETAILS

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SHEET TITLE

GATE DETAILS
SHEET 1 OF 2

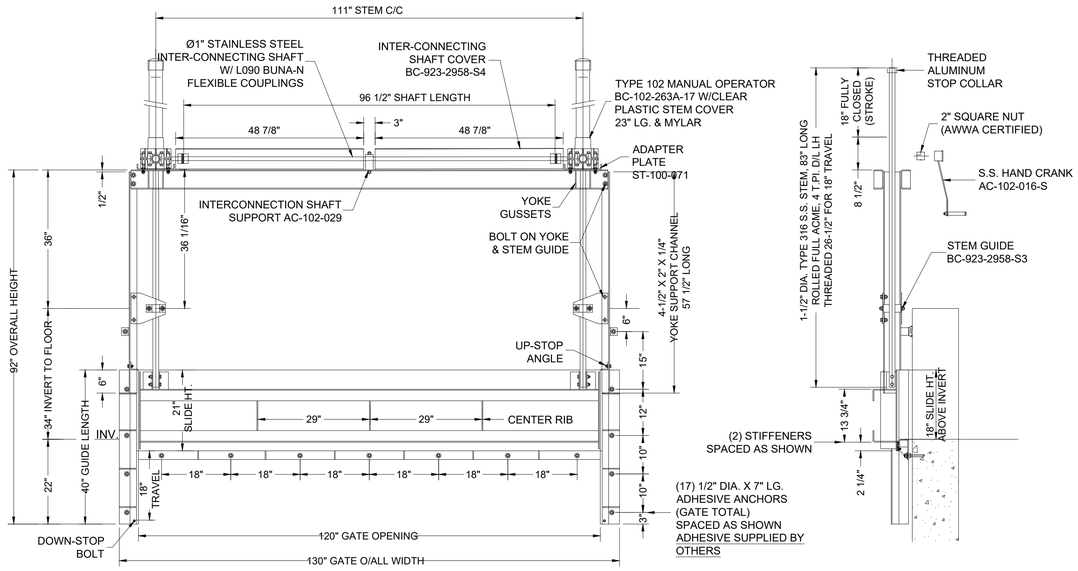
SHEET NUMBER

P10

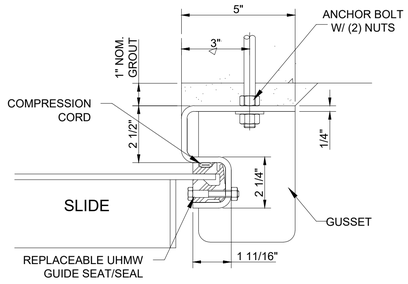
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ANSI D 22" x 34"

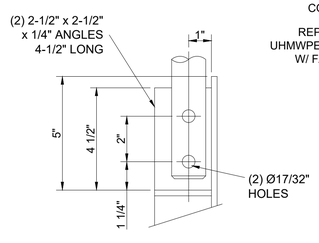
ALL OBSTRUCTIVE HAND RAILING OR FLOORING TO BE MODIFIED BY OTHERS



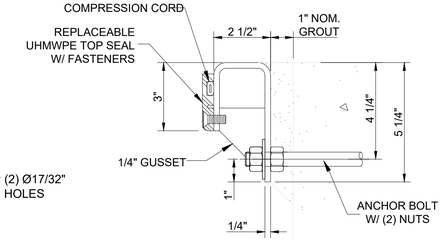
SERIES 923 WEIR GATE 120" x 18"



FACE MOUNTED GUIDE SECTION



STEM CONNECTOR SECTION



INVERT SEAL SECTION

SERIES 923 WEIR GATE SECTION DETAILS

NOTE:

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SHEET TITLE

GATE DETAILS
SHEET 2 OF 2

SHEET NUMBER

P11

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ANSI D 22" x 34"

ABBREVIATIONS

A/C	AIR CONDITIONER
ABV	ABOVE
AC	ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
ACSR	ALUMINUM CABLE STEEL REINFORCED
A/E	ARCHITECT/ENGINEER
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
ALT	ALTERNATE
AMP or A	AMPERE
AMPL	AMPLIFIER
ANNU	ANNUNCIATOR
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AS	AMMETER SWITCH
ASC	ADJUSTABLE SPEED CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GAGE
BAT	BATTERY
BIL	BASIC IMPULSE LEVEL
BLDG	BUILDING
BOT	BOTTOM
BPS	BOLTED PRESSURE SWITCH
BRD	BOARD
BSMT	BASEMENT
BTWN	BETWEEN
C	CONDUIT
/C	CONDUCTORS
CAB	CABINET
CAT	CATALOG
CATV	CENTRAL ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
COL	COLUMN
COMB	COMBINATION
COMM	COMMUNICATION
CONC	CONCRETE
COND	CONDUCTOR
CONT	CONTINUED/CONTINUATION
CONTR	CONTRACTOR
CPC	COMPUTER POWER CENTER
CPU	COMPUTER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CTR	CENTER
CU	COPPER
CW	COOL WHITE
DB	DUCT BANK
DC	DIRECT CURRENT
DET	DETECTOR
DIA	DIAMETER
DIAG	DIAGRAM
DIM	DIMENSION
DISC	DISCONNECT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
ED	ELEMENTARY DIAGRAM
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
EPS	ELECTRICAL PNEUMATIC SWITCH
EQUIP	EQUIPMENT
EQ	EQUAL
ETC	AND SO FORTH
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FDR	FEEDER
FIN	FINISH
FIXT	FIXTURE
FLR	FLOOR
FLS	FLOW SWITCH
FLUOR	FLUORESCENT
FT	FOOT (FEET)
FU	FUSE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GALV	GALVANIZED
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HG	MERCURY VAPOR
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HZ	HERTZ
IC	INTERRUPTING CAPACITY
ID	INSIDE DIAMETER
IMC	INTERMEDIATE METALLIC CONDUIT
IMP	IMPEDANCE
IN	INCH
INCAND	INCANDESCENT
INSTR	INSTRUMENT
INSUL	INSULATION
INTERCOM	INTERCOMMUNICATION
JB	JUNCTION BOX
kA	KILOAMPERES
kcmil	THOUSAND CIRCULAR MILS
kV	KILOVOLTS
kVA	KILOVOLT-AMPERES
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATTS
kWH	KILOWATT HOURS
LA	LIGHTING ARRESTER
LAB	LABORATORY
LPS	LOW PRESSURE SODIUM
LS	LIMIT SWITCH
LTG	LIGHTING
LV	LOW VOLTAGE
M	METER (METRIC MEASUREMENT)
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MGB	MAIN GROUND BUS
MH	METAL HALIDE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATL ELECTRIC MANUFACTURERS ASSOC
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOC
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
OBC	OHIO BUILDING CODE
OCB	OIL CIRCUIT BREAKER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
P	POLE
PB	PUSH BUTTON
PC	PROGRAMMABLE CONTROLLER
PE	PHOTOELECTRIC CELL
PF	POWER FACTOR
PH or Ø	PHASE
PL	PIOLET LIGHT
PNL	PANEL
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PTN	PARTITION
PVC	POLYVINYL CHLORIDE CONDUIT
QTY	QUANTITY
REC	RECEPTACLE
REF	REFERENCE
REFR	REFRIGERATOR
REQD	REQUIRED
REV	REVISED
RM	ROOM
RVNR	REDUCED VOLTAGE NON-REVERSING
SCHED	SCHEDULE
SCHEM	SCHEMATIC
SD	SMOKE DAMPER
SECT	SECTION
SH	SHIELDED
SHT	SHEET
SIM	SIMILAR
SOLE	SOLENOID
SP	SPARE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
STP	SHIELDED TWISTED PAIR
STA	STATION
STBY	STANDBY
STD	STANDARD
SUBS	SUBSTATION
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYNC	SYNCHRONIZING
TB	TERMINAL BOARD
TDR	TIME DELAY RELAY
TELE	TELEPHONE
TEMP	TEMPERATURE
TOT	TOTAL
TV	TELEVISION
TVPS	TELEVISION POWER SUPPLY
TW	TWISTED
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORIES
UNFIN	UNFINISHED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	VOLTAGE
VA	VOLT AMPERE
VAC	VACUUM
VAR	VARIABLE
VC	VOLUME CONTROL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VP	VAPOR PROOF
VS	VOLTMETER SWITCH
VSD	VARIABLE SPEED DRIVE
W	WATTS
W/	WITH
W/O	WITHOUT
W/W	WIREWAY
WD	WIRING DIAGRAM
WP	WEATHERPROOF
XFMR	TRANSFORMER
Z	IMPEDANCE
&	AND
@	AT
#	NUMBER
°	DEGREE
°C	DEGREES CELSIUS
°F	DEGREES FAHRENHEIT

ELECTRICAL LEGEND

- CONDUIT RUN CONCEALED
- CONDUIT RUN EXPOSED
- CONDUIT DIRECT BURIED IN EARTH
- DB — CONDUIT DUCT BANK ENCASED IN CONCRETE
- SWW — WIREWAY, # INDICATES SIZE
- HOME RUN. HASH MARKS INDICATE QTY OF WIRE, # INDICATES SIZE OF WIRE OTHER THAN #12 AWG. ALL UNMARKED CONDUITS TO CONTAIN 2-#12 AWG PLUS GND WIRE, UNLESS NOTED OTHERWISE.
- J — JUNCTION BOX, "X" INDICATES THE FOLLOWING:
- XX / M — MOTOR, XX INDICATES UNIT DESIGNATION SEE MOTOR SCHEDULE
- F XX — DISC SW, F INDICATES FUSED, XX INDICATES FUSE SIZE
- XX — COMBINATION STARTER, XX INDICATES FUSE SIZE
- XXX — EQUIPMENT, XXX INDICATES THE FOLLOWING:
  - LCP: LOCAL CONTROL PANEL
  - PLC: PROGRAMMABLE LOGIC CONTROLLER
  - XMTR: TRANSMITTER
- XXX — CONTROL POINTS, XXX INDICATES THE FOLLOWING:
  - DO: DISSOLVED OXYGEN
  - FCV: FLOW CONTROL VALVE
  - NH3: AMMONIA
  - ORP: OXYGEN/REDUCTION POTENTIAL
- ELECTRICAL PANEL 240/120V BRANCH CIRCUIT PANELBOARD
- TRANSFORMER, SEE TRANSFORMER SCHEDULE

GRAPHIC SYMBOLS

- TRANSFORMER. RATING AS NOTED OR SCHEDULED.
- TRIP / FRAME — THREE POLE MOLDED CASE CIRCUIT BREAKER. FRAME AND TRIP SIZES AS NOTED.
- ST — THREE POLE MOLDED CASE CIRCUIT BREAKER WITH SHUNT TRIP OPERATOR. FRAME AND TRIP SIZES AS NOTED.
- NON-FUSED SAFETY SWITCH. FRAME SIZE AS NOTED.
- LOW VOLTAGE FUSED SAFETY SWITCH. FUSE AND SAFETY SWITCH SIZES AS NOTED.
- MEDIUM VOLTAGE FUSED DISCONNECT SWITCH. FUSE SIZE AS NOTED.
- LOW VOLTAGE FUSE. SIZE AS NOTED.
- MEDIUM VOLTAGE FUSE. SIZE AS NOTED.
- SPACE — SPACE IN CIRCUIT BREAKER OR FUSED SWITCH DISTRIBUTION PANELBOARD. FRAME SIZE AS NOTED.
- SPARE — SPARE LOW VOLTAGE FUSED DISCONNECT SWITCH. FUSE AND DISCONNECT SWITCH SIZES AS NOTED.
- TVSS — TRANSIENT VOLTAGE SURGE SUPRESSION.
- EPO — EMERGENCY POWER OFF.
- GFP — GROUND FAULT PROTECTION.
- VFD — VARIABLE FREQUENCY DRIVE PROVIDED BY DIVISION 15.
- EC — ELEVATOR CONTROLLER PROVIDED BY DIVISION 14.
- C — CONTACTOR.
- M — METERING.
- COMBINATION STARTER AND MOTOR CIRCUIT PROTECTOR. STARTER AND MOTOR CIRCUIT PROTECTOR SIZES AS NOTED.
- COMBINATION STARTER AND SAFETY SWITCH. STARTER AND SAFETY SWITCH SIZES AS NOTED.
- COMBINATION STARTER AND FUSED SAFETY SWITCH. STARTER, FUSE AND SAFETY SWITCH SIZES AS NOTED.
- CONTROL POWER TRANSFORMER (CPT) OR POTENTIAL TRANSFORMER (PT).
- AUTOMATIC TRANSFER SWITCH. SIZE AS NOTED OR SCHEDULED.
- XX — PANELBOARD. "XX" INDICATES PANEL DESIGNATION.
- M / XX — THREE PHASE MOTOR. HORSEPOWER AS NOTED OR SCHEDULED. "XX" INDICATES MOTOR DESIGNATION.
- G — GENERATOR. SIZE AS NOTED OR SCHEDULED.
- CURRENT TRANSFORMER. SIZE AS REQUIRED.
- DELTA CONNECTED WIRING.
- WYE CONNECTED WIRING.
- N — NEUTRAL BUS GROUNDING.

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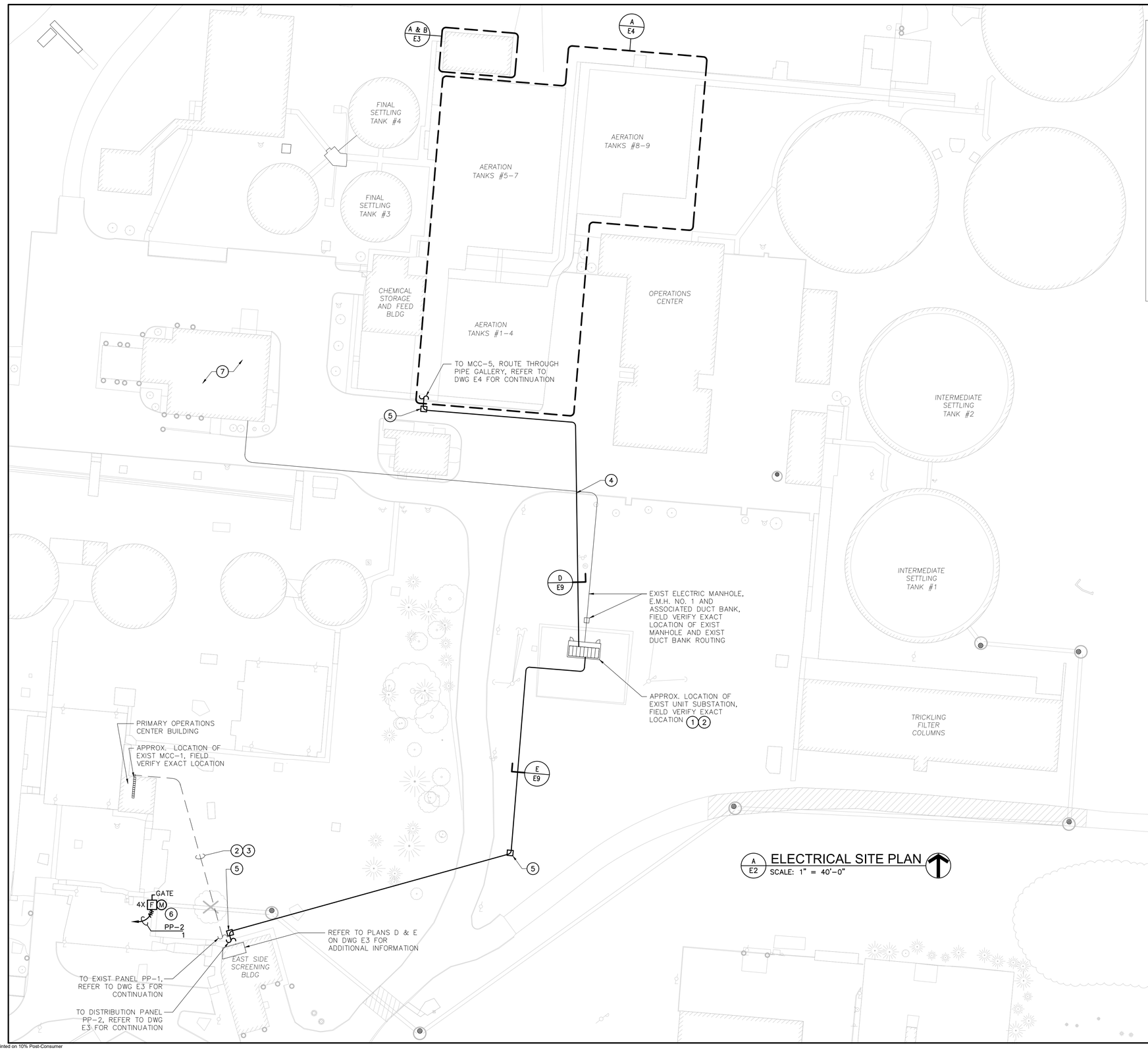
ELECTRCIAL ABBREVIATIONS, LEGEND, SYMBOLS, AND NOTES

SHEET NUMBER

E1

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ANSI D 22" x 34"
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Checked:##
Designer:##
Last Printed by: Initials:
Last saved by: MIKE.KROSKY
Filename: C:\USERS\WILLIAMSCP\AECOM\ELYRIA CD CM 4 AERATION TANKS - GENERAL\900_CAD_GIS\910_CAD\20-SHEETS\60332065_TASK 3_AERATION TANK_E2.DWG



A E2 ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"

KEYNOTES

X	
01	COORDINATE THIS WORK W/ UNIT SUBSTATION ONE-LINE DIAGRAM – MODIFICATIONS ON DWG E6 FOR ADDITIONAL INFORMATION.
02	COORDINATE THIS WORK W/ UNIT SUBSTATION ONE-LINE DIAGRAM – DEMOLITION ON DWG E6 FOR ADDITIONAL INFORMATION.
03	EXIST CONDUIT TO REMAIN AND BE ABANDONED. DE-ENERGIZE, DISCONNECT, AND REMOVE EXISTING CONDUCTORS BETWEEN EXIST MCC-1 AND EXIST PANEL PP-1, REFER TO DWG E3 FOR LOCATION OF EXIST PANEL PP-1.
04	APPROX. LOCATION OF EDGE OF EXIST SIDEWALK. SAW CUT AND PATCH EXIST SIDEWALK TO ACCOMMODATE DUCT BANK.
05	HANDHOLE, SIZE AS REQUIRED. REFER TO SPECIFICATION SECTION 260543 FOR ADDITIONAL INFORMATION.
06	FOR ACTUATOR SLIDE GATES, PROVIDE (1) CONTROL CONDUIT TO EXIST PLC IN EXIST EAST SIDE SCREENING BUILDING W/ 9#14 & 1#14G EA. FIELD VERIFY LOCATION OF EXIST PLC IN EXIST EAST SIDE SCREENING BUILDING FOR 480V POWER REFER TO ONE-LINE ON DWG E8.
07	EXIST MCC-3 IN EXIST SLUDGE BLDG, FIELD VERIFY EXACT LOCATION. DE-ENERGIZE, DISCONNECT, EXIST CONDUIT TO REMAIN & BE ABANDONED, AND REMOVE EXIST CONDUCTORS FROM N.O. (NORMALLY OPEN) MAIN BREAKER (OF THIS MAIN-TIE-MAIN CONFIGURATION) BACK TO EXIST UNIT SUBSTATION. COORDINATE THIS W/ ONE-LINE ON DWG E6.

BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

CITY OF ELYRIA
DEPARTMENT OF PUBLIC SERVICE
131 COURT STREET
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10/28/25

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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PROJECT NUMBER

60332065

SHEET TITLE

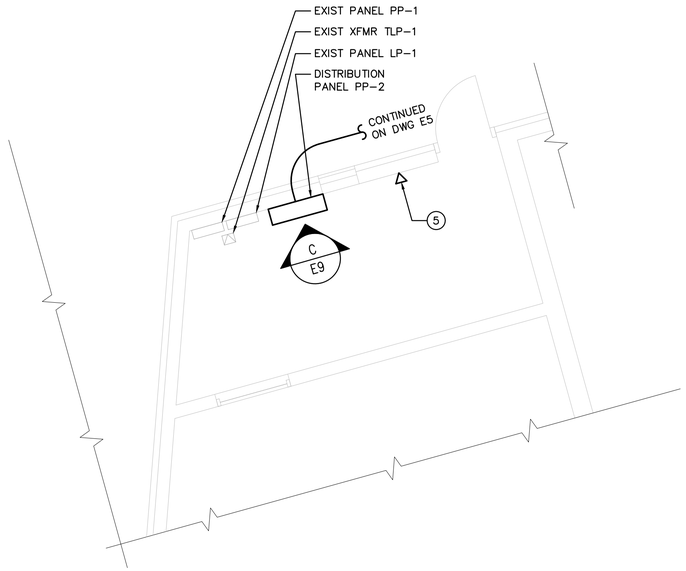
PROPOSED ELECTRICAL SITE PLAN

SHEET NUMBER

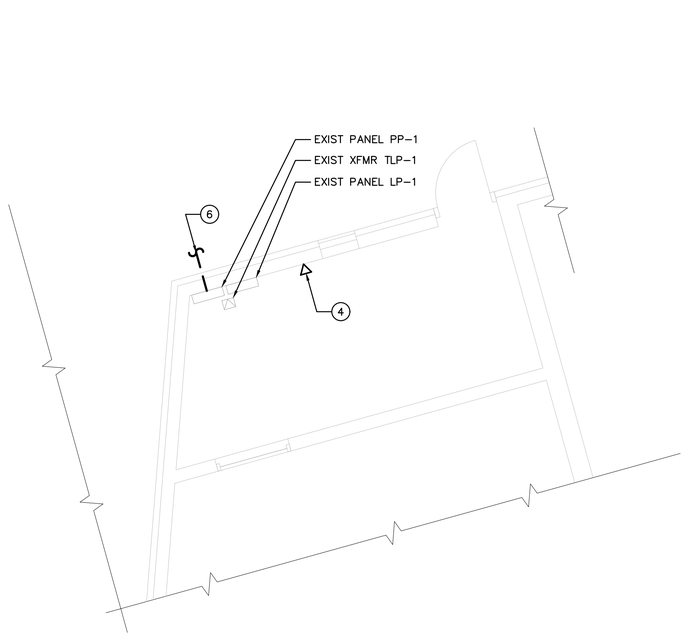
E2

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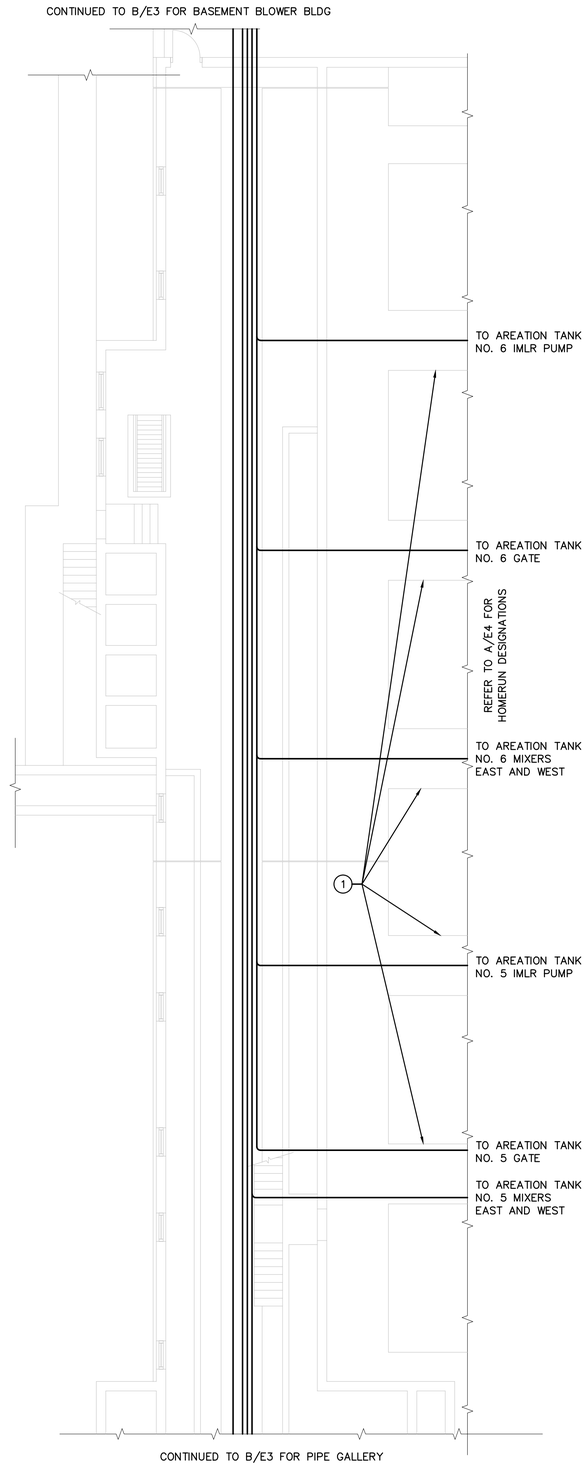
ANSI D 22" x 34"



E / E3 EAST SCREENING BUILDING ELECTRICAL PLAN - MODIFICATIONS
SCALE: 1/4" = 1'–0"



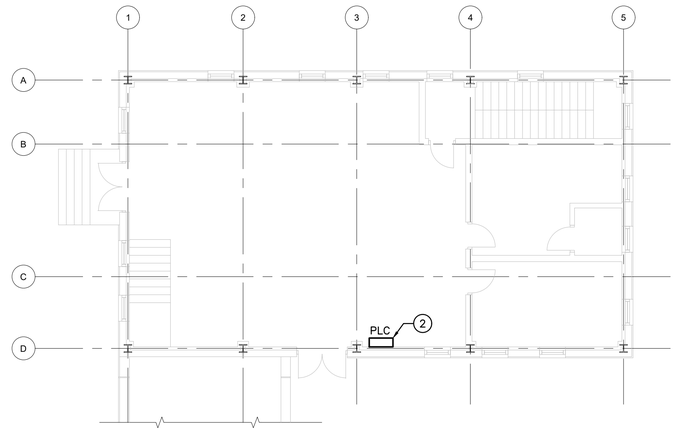
D / E3 EAST SCREENING BUILDING ELECTRICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'–0"



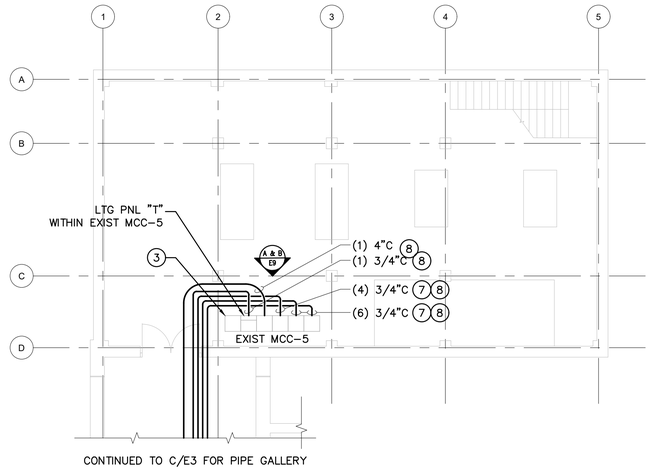
C / E3 PIPE GALLERY ELECTRICAL PLAN
SCALE: 1/8" = 1'–0"

KEYNOTES (X)

01	FROM PIPE GALLERY, ROUTE CONDUITS BELOW GRADE UNDER EXIST PRECAST CONCRETE PANELS. FIELD VERIFY EXACT LOCATION. REFER TO DWG E2 FOR CONTINUATION.
02	PROPOSED FOR PLC CABINET, REFER TO "I" DWGS FOR ADDITIONAL INFORMATION. PROVIDE PENETRATION TO FLOOR BELOW AND ROUTE CONTROL CONDUITS TO SIMILAR PATH AS PWR CONDUITS. REFER TO PLANS FOR CONTROL AND ANALOG CONDUITS (I.E. E2 AND E5). REFER TO "I" DWGS FOR SYSTEMS ARCHITECTURE PLAN AND ADDITIONAL INFORMATION.
03	REFER TO MCC-5 ONE-LINE - MODIFICATIONS ON DWG E6 FOR ADDITIONAL INFORMATION.
04	EXIST TELECOM OUTLET TO BE REUSED AND RELOCATED.
05	RELOCATE EXIST TELECOM OUTLET AND PROVIDE ALL MODIFICATIONS AS NECESSARY TO REWIRE TELECOM OUTLET.
06	EXIST CONDUIT TO REMAIN. REMOVE CONDUCTORS BACK TO EXIST MCC-1. FOR CONTINUATION AND LOCATION OF EXIST MCC-1, REFER TO DWG E2.
07	CONTRACTOR SHALL BE PERMITTED TO CONSOLIDATE INDIVIDUAL BRANCH CIRCUIT HOME RUNS AND ROUTE LARGER CONDUITS THAN NOTED PROVIDED THAT THIS COMPLIES W/ NEC ARTICLE 310.15(B).
08	PROPOSED CONDUIT ROUTING SHOWN FOR INTENT & REFERENCE. ONLY. CONTRACTOR SHALL ROUTE CONDUIT IN A WORKMANLIKE AND ORGANIZED MANNER TO OPTIMIZE CONDUIT ROUTING. PWR, CONTROL, AND ANALOG CONDUITS SHALL NOT BE COMBINED W/ EA OTHER; BUT SHALL BE COMBINED FOR EA GROUP. EC SHALL NOT EXCEED 40% FILL FOR EA CONDUIT TYPE (PWR, CONTROL, ANALOG).



A / E3 BASEMENT BLOWER BLDG 1ST FLR PLAN
SCALE: 1/8" = 1'–0"



B / E3 BASEMENT BLOWER BLDG ELECT PLAN
SCALE: 1/8" = 1'–0"

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SHEET TITLE

BLOWER AND EAST SCREENING BUILDING ELECTRICAL PLANS

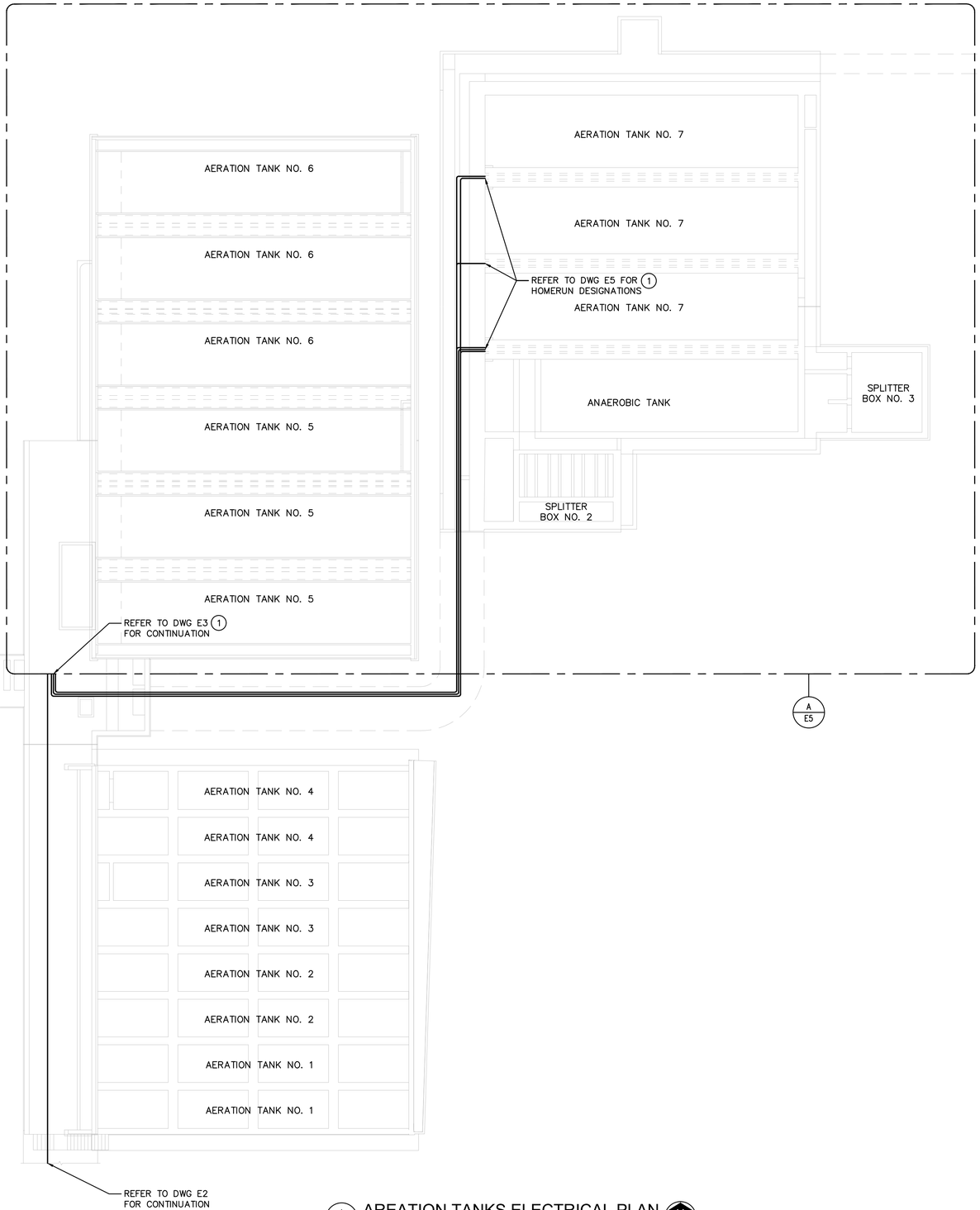
SHEET NUMBER

E3

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ANSI D 22" x 34"

KEYNOTES	
01	PROPOSED CONDUIT ROUTING SHOWN FOR INTENT & REFERENCE. ONLY. CONTRACTOR SHALL ROUTE CONDUIT IN A WORKMANLIKE AND ORGANIZED MANNER TO OPTIMIZE CONDUIT ROUTING.



A E4 AREATION TANKS ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"

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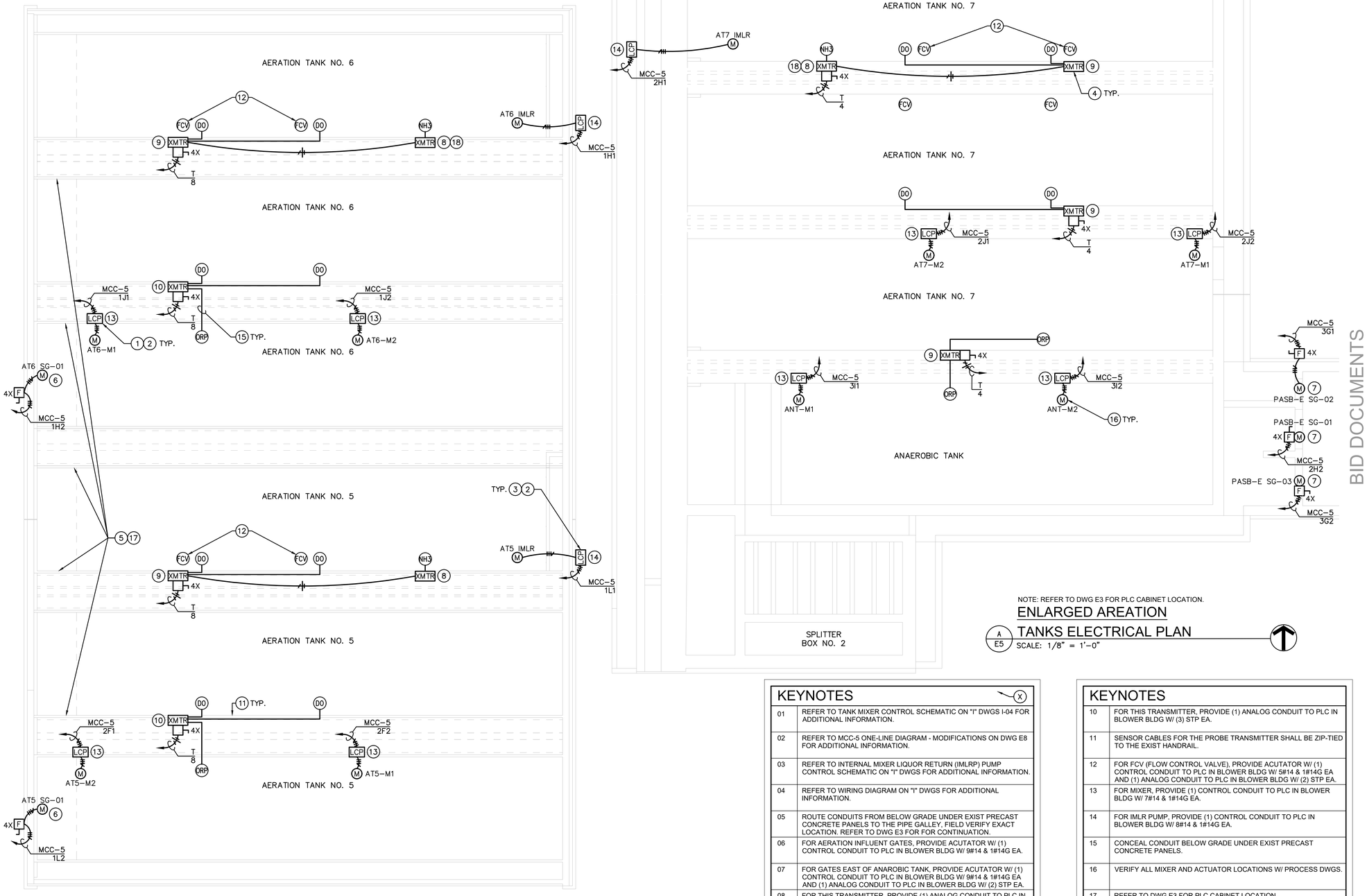
AERATION TANKS TUNNEL ELECTRICAL PLAN

SHEET NUMBER

E4

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ANSI D 22" x 34"



NOTE: REFER TO DWG E3 FOR PLC CABINET LOCATION.

ENLARGED AREATION TANKS ELECTRICAL PLAN

A / E5

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

KEYNOTES

01	REFER TO TANK MIXER CONTROL SCHEMATIC ON "I" DWGS I-04 FOR ADDITIONAL INFORMATION.
02	REFER TO MCC-5 ONE-LINE DIAGRAM - MODIFICATIONS ON DWG E8 FOR ADDITIONAL INFORMATION.
03	REFER TO INTERNAL MIXER LIQUOR RETURN (IMLRP) PUMP CONTROL SCHEMATIC ON "I" DWGS FOR ADDITIONAL INFORMATION.
04	REFER TO WIRING DIAGRAM ON "I" DWGS FOR ADDITIONAL INFORMATION.
05	ROUTE CONDUITS FROM BELOW GRADE UNDER EXIST PRECAST CONCRETE PANELS TO THE PIPE GALLEY, FIELD VERIFY EXACT LOCATION. REFER TO DWG E3 FOR FOR CONTINUATION.
06	FOR AERATION INFLUENT GATES, PROVIDE ACUTATOR W/ (1) CONTROL CONDUIT TO PLC IN BLOWER BLDG W/ 9#14 & 1#14G EA.
07	FOR GATES EAST OF ANAROBIC TANK, PROVIDE ACUTATOR W/ (1) CONTROL CONDUIT TO PLC IN BLOWER BLDG W/ 9#14 & 1#14G EA AND (1) ANALOG CONDUIT TO PLC IN BLOWER BLDG W/ (2) STP EA.
08	FOR THIS TRANSMITTER, PROVIDE (1) ANALOG CONDUIT TO PLC IN BLOWER BLDG W/ (1) STP EA.
09	FOR THIS TRANSMITTER, PROVIDE (1) ANALOG CONDUIT TO PLC IN BLOWER BLDG W/ (2) STP EA.

KEYNOTES

10	FOR THIS TRANSMITTER, PROVIDE (1) ANALOG CONDUIT TO PLC IN BLOWER BLDG W/ (3) STP EA.
11	SENSOR CABLES FOR THE PROBE TRANSMITTER SHALL BE ZIP-TIED TO THE EXIST HANDRAIL.
12	FOR FCV (FLOW CONTROL VALVE), PROVIDE ACUTATOR W/ (1) CONTROL CONDUIT TO PLC IN BLOWER BLDG W/ 5#14 & 1#14G EA AND (1) ANALOG CONDUIT TO PLC IN BLOWER BLDG W/ (2) STP EA.
13	FOR MIXER, PROVIDE (1) CONTROL CONDUIT TO PLC IN BLOWER BLDG W/ 7#14 & 1#14G EA.
14	FOR IMLR PUMP, PROVIDE (1) CONTROL CONDUIT TO PLC IN BLOWER BLDG W/ 8#14 & 1#14G EA.
15	CONCEAL CONDUIT BELOW GRADE UNDER EXIST PRECAST CONCRETE PANELS.
16	VERIFY ALL MIXER AND ACTUATOR LOCATIONS W/ PROCESS DWGS.
17	REFER TO DWG E3 FOR PLC CABINET LOCATION..
18	PROVIDE 1" SPARE CONDUIT W/ PULLWIRE AND CAP AT THIS LOCATION FOR FUTURE USE.

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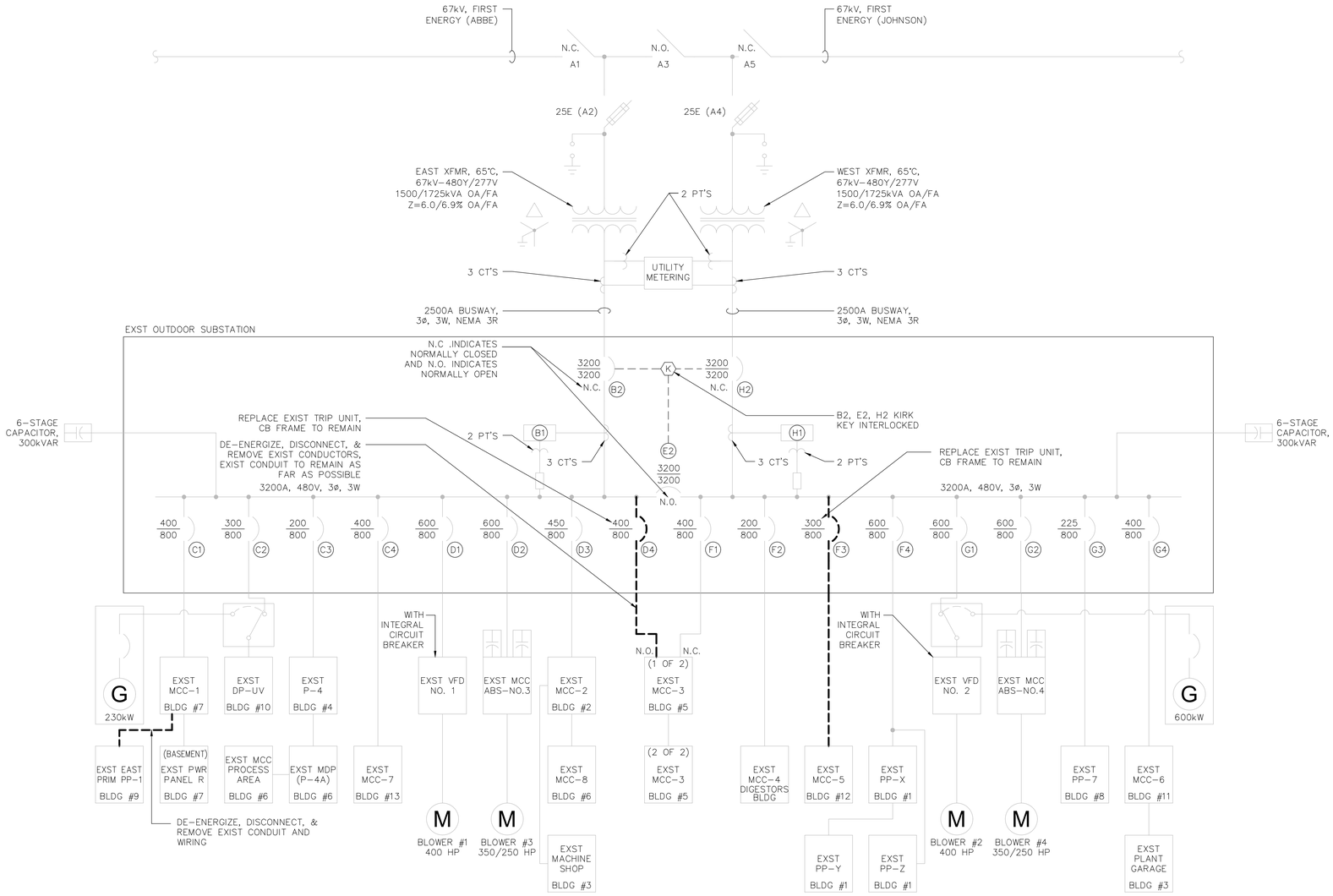
SHEET TITLE

AERATION TANKS ELECTRICAL PLAN

SHEET NUMBER

E5

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(A / E5) UNIT SUBSTATION ONE-LINE DIAGRAM - DEMOLITION

SCALE: NOT TO SCALE

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60332065

SHEET TITLE

UNIT SUBSTATION ONE-LINE DIAGRAM - DEMOLITION

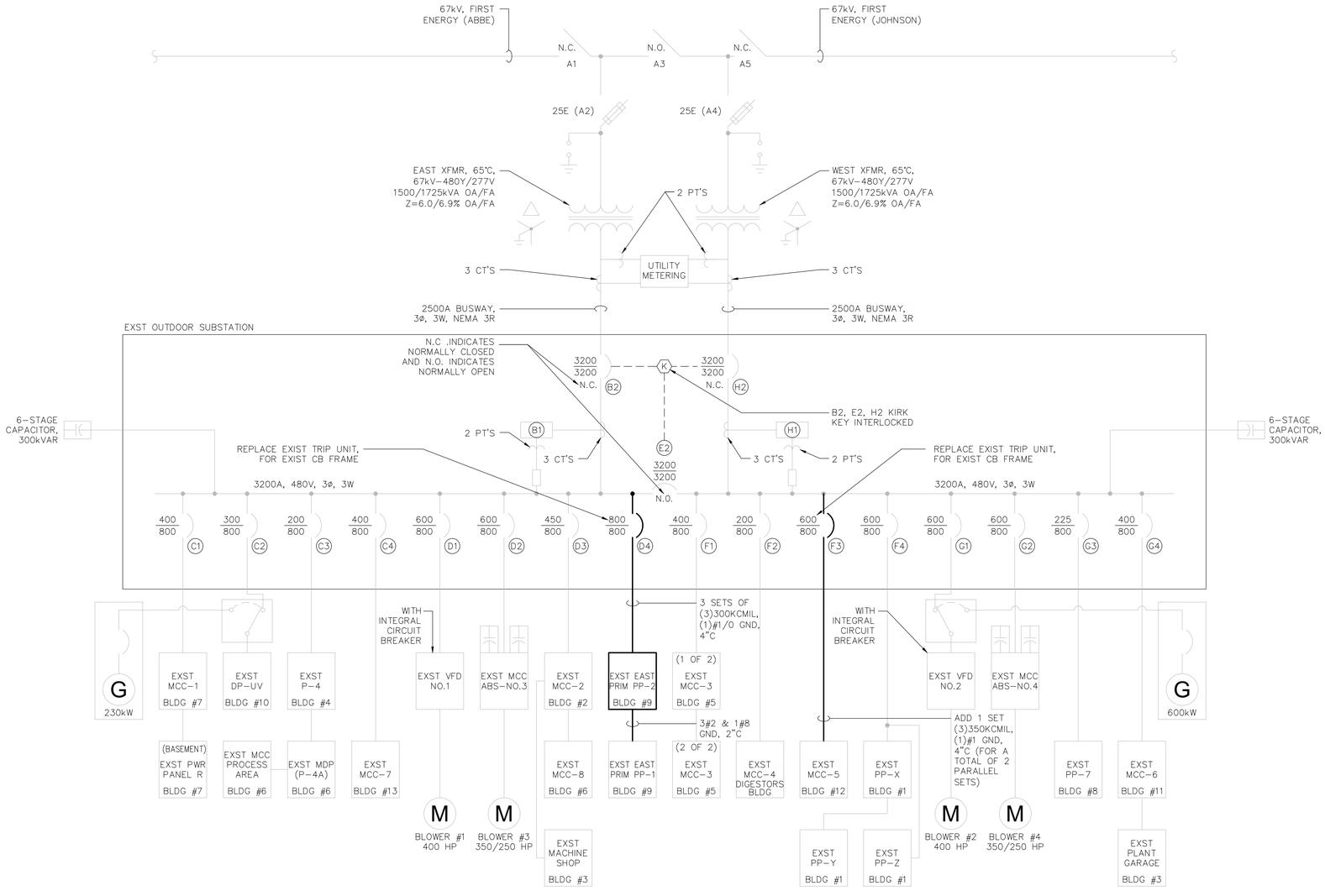
SHEET NUMBER

E6

ANSI D 22" x 34"

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ANSI D 22" x 34"



A / E6 UNIT SUBSTATION ONE-LINE DIAGRAM - MODIFICATIONS
SCALE: NOT TO SCALE

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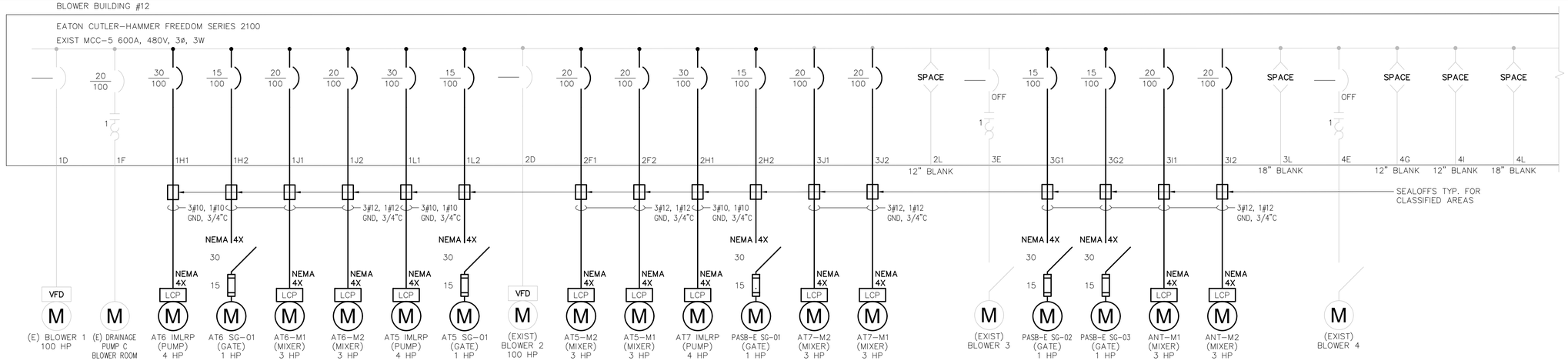
UNIT SUBSTATION ONE-LINE DIAGRAM - MODIFICATIONS

SHEET NUMBER

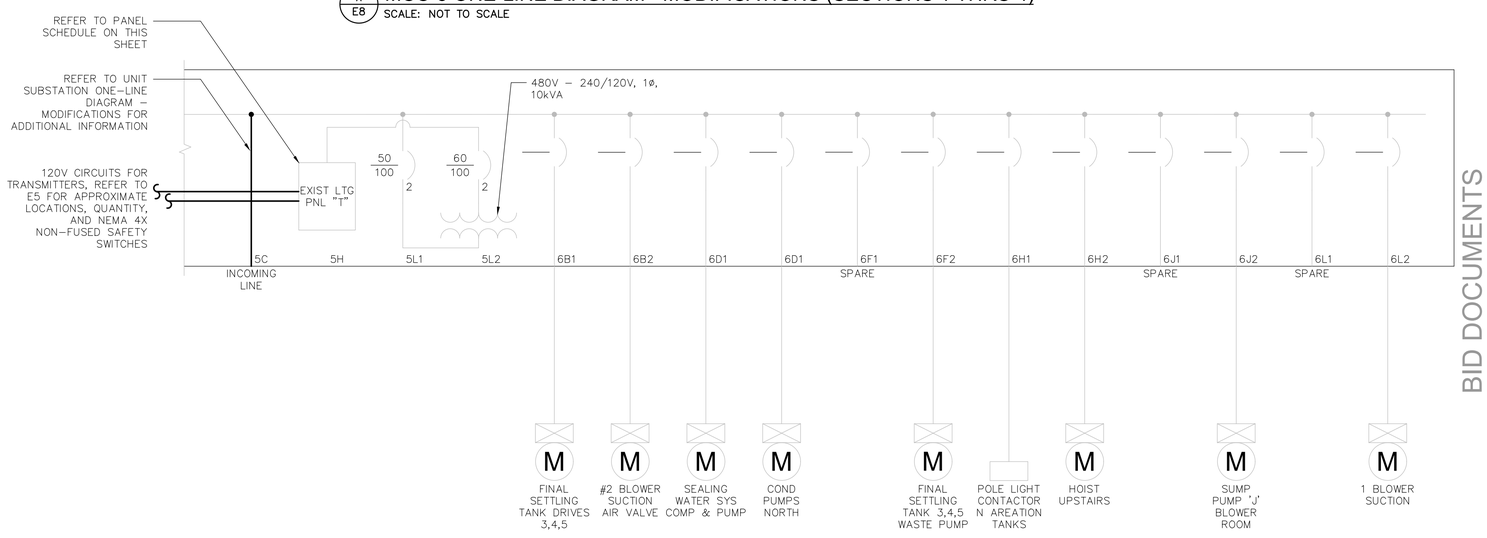
E7

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ANSI D 22" x 34"



A E8 MCC-5 ONE-LINE DIAGRAM - MODIFICATIONS (SECTIONS 1 THRU 4)
SCALE: NOT TO SCALE



B E8 MCC-5 ONE-LINE DIAGRAM - MODIFICATIONS (SECTIONS 5 AND 6)
SCALE: NOT TO SCALE

PANEL NO. EXIST LTG PNL "T"	240/120 V x PH x W	MAIN CB ☐	☐
LOCATION INSIDE MCC-5	SURFACE ☐ FLUSH ☑	MAIN SW ☐	☐
	COLUMN TYPE ☐	& CL FUSE ☐ 60 AMPS	☐
	DOUBLE LUGS ☐	MAIN LUGS ☑	☐

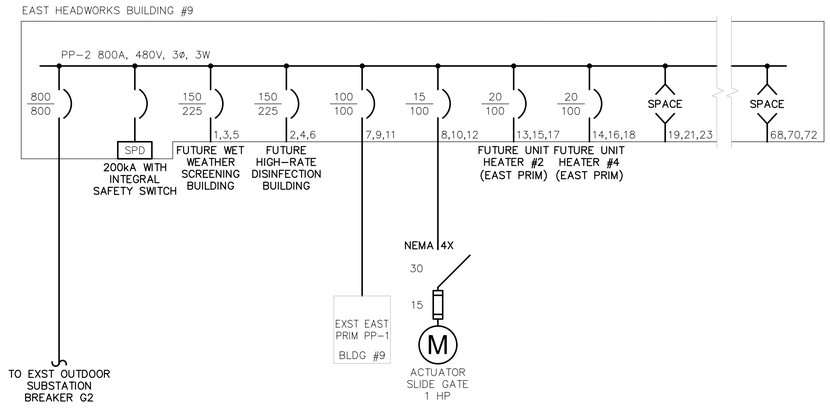
LOAD	KW A	KW B	CB	AB	CB	KW A	KW B	LOAD
(EXIST) LTS NORTH GALLERY BASEMENT			20	1 — 2	20			(EXIST) GALLERY EM LT LL: RECs UP/LOWER LVL
(EXIST) UNIT HTS N. GALLERY UPPER/LOWER			20	3 — 4	20			SPARE
(EXIST) LTS NORTH GALLERY UPPER LEVEL			20	5 — 6	20			(EXIST) 3 SP RECs OUT @AIRATION TANKS WALL
(EXIST) UNKNOWN			20	7 — 8	20		0.06	(NEW) TRANSMITTERS AERATION TANKS #5 & #6
(EXIST) BLOWER 2 CTR			20	9 — 10	20			(EXIST) HOT WATER HTR IN BLOWER ROOM
(EXIST) LTS BLOWER RM			20	11 — 12	20			(EXIST) BLOWER RM EM LTS & RECs AND FLOC
(EXIST) EM LT & FAN STAIRS 2ND FL LTS UH			20	13 — 14	20			(EXIST) EM LTS 2ND FLR & WEST ENTRANCE LTS
(EXIST) RECEPTACLES 2ND FLR SE CORNER			20	15 — 16	20			(EXIST) 2ND FLR REC BY STAIRS & STOVE
(EXIST) UNIT HEATER 2ND FLOOR EAST			20	17 — 18	20			(EXIST) UNKNOWN
(EXIST) LTS 2ND FLR RESTROOM AND OFFICE			20	19 — 20	20			(EXIST) RECs 2ND FLR OFFICE & HTR MOTOR
SPARE			20	21 — 22	20	0.04		(NEW) TRANSMITTERS AERATION TANK #7
SPARE			20	23 — 24	20			(EXIST) EM LT N GALLERY UPPER LVL & STAR LTS
SPACE				25 — 26				SPACE
SPACE				27 — 28				SPACE
SPACE				29 — 30				SPACE

(EXIST) MCC-5 LOAD ANALYSIS

LOAD DESCRIPTION	HP	kW	AMPS	kVA
(EXIST) BLOWERS	(2) 100	–	248	206.2
(EXIST) MISC LOADS	–	–	100	83.1
(EXIST) XFMR PANEL T	–	10	12.0	10.0
GATES	(5) 1	–	10.5	8.7
MIXERS	(6) 3	5	28.8	23.9
PUMPS	(3) 4	5	18	15.0
SUBTOTAL			417.33	346.95
OCPD CALCULATION			521.7	
MAIN BUS RATING			600	

PP-2 LOAD ANALYSIS

LOAD DESCRIPTION	HP	kW	AMPS	kVA
FUT WW SCREEN BLDG	–	–	120	99.8
FUT H-R DISINF BLDG	–	–	120	99.8
EXST EAST PRIM PP-1	–	–	80	66.5
ACTUATOR SLIDE GATE	1	–	2.1	1.7
FUTURE HEATER #2	–	5	6.0	5.0
FUTURE HEATER #4	–	5	6.0	5.0
SUBTOTAL			334.13	277.78
WITH 50% GROWTH			501.2	
OCPD CALCULATION			626.5	
MAIN BUS RATING			800	



C E8 DISTRIBUTION PANEL PP-2 ONE-LINE DIAGRAM
SCALE: NOT TO SCALE

BID DOCUMENTS

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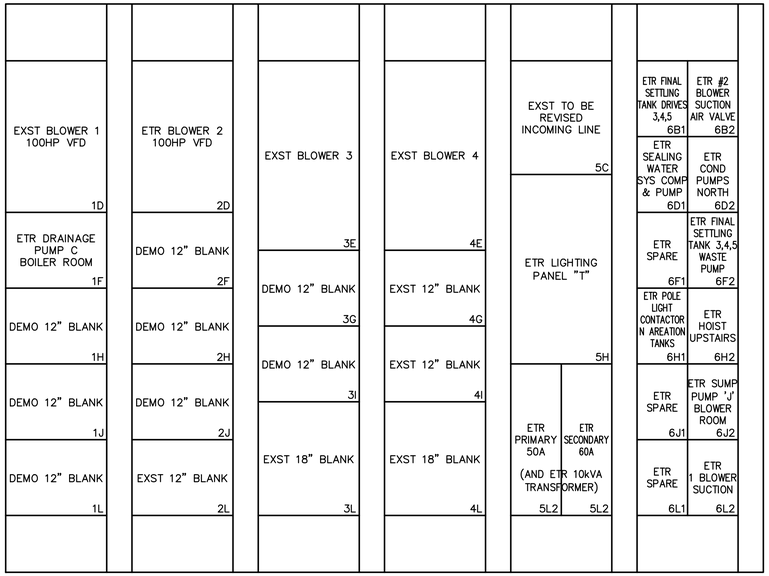
SHEET TITLE

DISTRIBUTION PANEL PP-2 ONE-LINE DIAGRAM

SHEET NUMBER

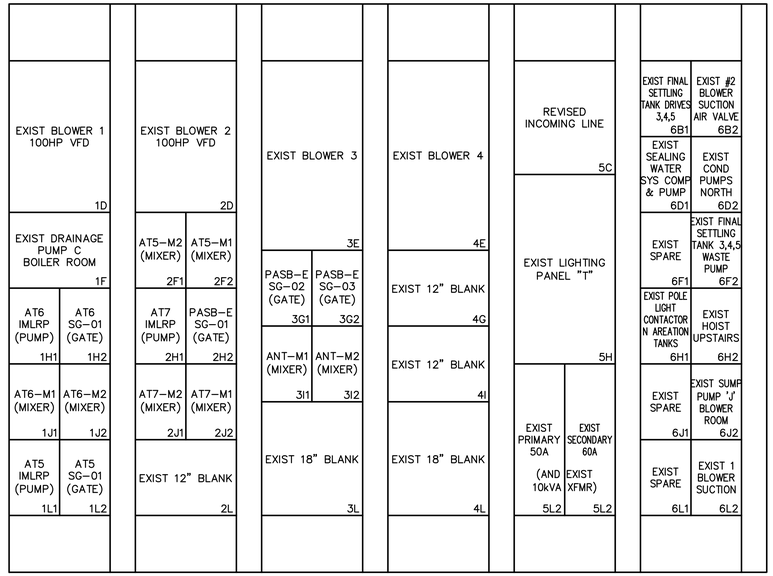
E8

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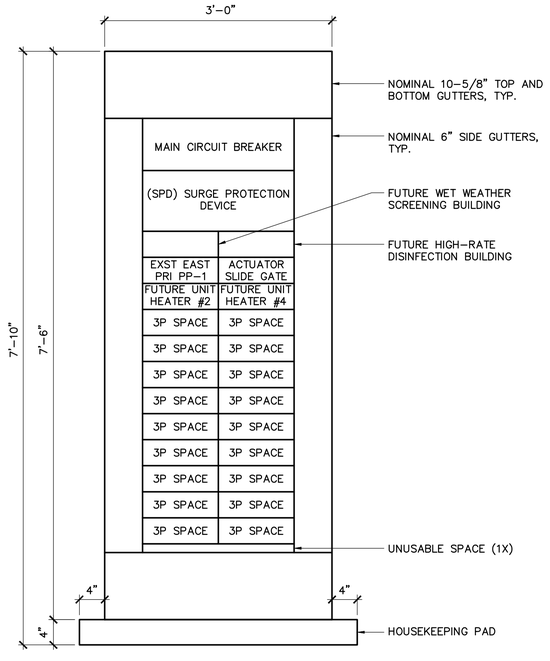
A E9 MOTOR CONTROL CENTER MCC-5 ELEVATION - DEMOLITION

SCALE: 1" = 1'-0"



B E9 MOTOR CONTROL CENTER MCC-5 ELEVATION - MODIFICATIONS

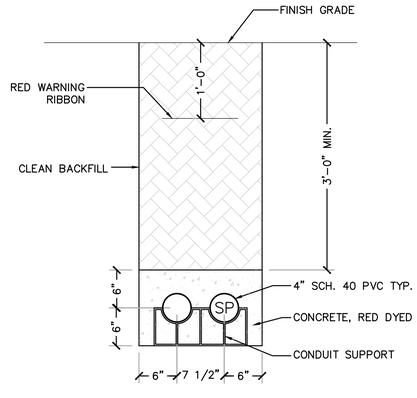
SCALE: 1" = 1'-0"



NOTE: BASIS OF DESIGN: EATON, DIST PANEL SHALL BE 10.4" DEEP.

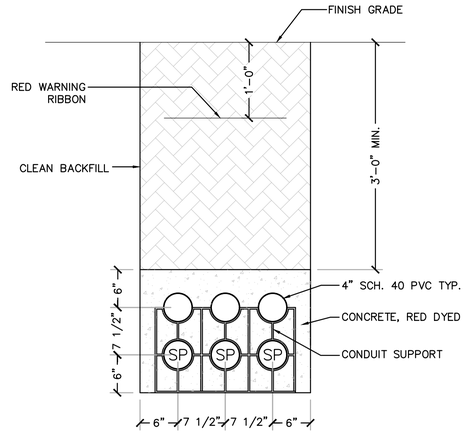
C E9 DISTRIBUTION PANEL PP-2 ELEVATION

SCALE: 1" = 1'-0"



D E9 DUCT BANK SECTION 1X2

SCALE: 1" = 1'-0"



E E9 DUCT BANK SECTION 2X3

SCALE: 1" = 1'-0"

BID DOCUMENTS

ANSI D 22" x 34"

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

CLIENT

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10/28/25

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PROJECT NUMBER

60332065

SHEET TITLE

ELECTRICAL ELEVATIONS AND SECTIONS

SHEET NUMBER

E9

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INSTRUMENT TAGGING LEGEND

	FIRST LETTER(S)		SUCCEEDING LETTER(S)		
	PROCESS VARIABLE	MODIFIER	READOUT/ PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY, SPECIFIC GRAVITY	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			FAILURE
G	GAGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE, HUMIDITY, OR MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	TORQUE	OVERLOAD		ORIFICE, RESTRICTION	OPENED
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR EVENT	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		RUNNING
S	SPEED OR FREQUENCY	SAFETY		SWITCH	STOPPED OR OFF
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE OR DAMPER, LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATOR	

P&ID INSTRUMENT SYMBOLS

XXX / YYY	XXX INDICATES FUNCTION FROM INSTRUMENT TAGGING LEGEND YYY INDICATES LOOP NUMBER
	INSTRUMENTS SHARRING A COMMON HOUSING
FIELD MOUNTED INSTRUMENT	PANEL MOUNTED INSTRUMENT
MCC OR MOTOR CONTROLLER MOUNTED INSTRUMENT	INTERIOR OF PANEL OR CONTROLLER MOUNTED INSTRUMENT
PILOT LIGHT	PLC SOFTWARE FUNCTION
SOFTWARE PILOT LIGHT	HMI SOFTWARE FUNCTION
PLC INPUT OR OUTPUT X INDICATES TYPE: I=INPUT, O=OUTPUT	INTERLOCK LOGIC: X INDICATES NOTE NUMBER FOR DESCRIPTION

P&ID EQUIPMENT SYMBOLS

CENTRIFUGAL PUMP		POSITIVE DISPLACEMENT PUMP	
SUBMERSIBLE PUMP		METERING PUMP	
GATE		STOP LOG	
BFP	BACKFLOW PREVENTER		STRAIGHTENING VANES
STRAINER		DRAIN	
S	SOLENOID, TWO-WAY	S	SOLENOID, THREE-WAY
THREE-WAY VALVE		ANGLE VALVE	
BALL VALVE		BUTTERFLY VALVE	
CHECK VALVE		CONE VALVE	
DIAPHRAGM VALVE		GATE VALVE	
G	GLOBE VALVE		NEEDLE VALVE
PINCH VALVE		PLUG VALVE	
SURGE VALVE		TELESCOPING VALVE	
BACKPRESSURE REDUCING VALVE		PRESSURE REDUCING VALVE	
M	SINGLE PHASE ELECTRIC VALVE ACTUATOR	M	THREE PHASE ELECTRIC VALVE ACTUATOR
P	PNEUMATIC VALVE ACTUATOR		DIAPHRAGM VALVE OPERATOR

P&ID PRIMARY ELEMENTS

M	ELECTROMAGNETIC FLOWMETER		VENTURI
	PITOT TUBE		ORIFICE PLATE
	PROPELLER METER	FE	ROTAMETER
	FLUME		WEIR
	RADAR LEVEL		ULTRASONIC LEVEL
D	DOPPLER TYPE FLOW METER	D	DENSITY METER
	FLOAT SWITCH		PROBE
	GAUGE		DIAPHRAGM SEAL
	THERMAL MASS FLOWMETER		ISOLATION RING PRESSURE SENSOR
WW	SUBMERSIBLE PRESSURE (LEVEL)		

P&ID LINETYPES

	INSTRUMENT SUPPLY OR CONNECTION TO PROCESS LINE
	ELECTRIC SIGNAL
	SOFTWARE LINK, SYSTEM FUNCTION CONNECTION OR COMMUNICATION LINK
	PNEUMATIC SIGNAL
	CAPILLARY LINE
	HYDRAULIC SIGNAL
	SONIC SIGNAL
	HEAT TRACE

SYSTEM ARCHITECTURE SYMBOLS

	COPPER CABLING
	ETHERNET CABLING
	FIBER OPTIC CABLING
SOFTWARE DIGITAL ANALOG	SIGNAL AND COMMUNICATION LINK DIRECTION (SOFTWARE AND HARDWARE TYPES)
	PLC

P&ID MISCELLANEOUS SYMBOLS

XX/YY	LINE/SIGNAL CONTINUED ON ANOTHER SHEET: XX INDICATES LINE/SIGNAL NUMBER YY INDICATES SHEET NUMBER
X	LINE/SIGNAL CONTINUED ON SAME SHEET: X = LINE/SIGNAL NUMBER
	LINE/SIGNAL ORIGIN OR DESTINATION NOT SHOWN
S	STROBE LIGHT
AH	ALARM HORN
(X)	X = QUANTITY OF SIGNALS (MIXED)

EQUIP/DEVICE CODES

A	AMBER (ALARM CONDITION)
ACK	ACKNOWLEDGE
ATL	ACROSS THE LINE (CONSTANT SPEED)
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
FOPP	FIBER-OPTIC PATCH PANEL
FOR	FORWARD-OFF-REVERSE
G	GREEN (RUN;ON;START)
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
I/O	INPUTS/OUTPUTS
LA	LOCAL-AUTO
LCP	LOCAL CONTROL PANEL
LD	LOCAL-DCS
LOA	LOCAL-OFF-AUTO
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MOA	MANUAL-OFF-AUTO
NSE	NETWORK SWITCH ENCLOSURE
OA	OFF-AUTO
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OCA	OPEN-CLOSE-AUTO
OO	ON-OFF, OFF-ON
OSC	OPEN-STOP-CLOSE
PID	PROPORTIONAL-INTEGRAL-DERIVATIVE
POT	POTENTIOMETER
R	RED (OFF;STOP)
RO	RUN-OFF
RST	RESET
SIL	SILENCE
SS	START-STOP
STR	START
STRR	START-RESET
SP	SETPOINT
STP	STOP
T	TEST
VFD	VARIABLE FREQUENCY DRIVE
W	WHITE

ANALYZER CODES

ALK	ALKALINITY
CL2	CHLORINE
CLR	CHLORINE RESIDUAL
COL	COLOR
DO	DISSOLVED OXYGEN
HUM	HUMIDITY
LEL	LOWER EXPLOSIVE LIMIT
MHO	CONDUCTIVITY
N2G	NITROGEN GAS
NH3	AMMONIA
NO2	NITRITE
NO3	NITRATE
OG	OXYGEN GAS
ORP	OXYGEN/REDUCTION POTENTIAL
OZG	OZONE GAS
PC	PARTICLE COUNTER
pH	POTENTIAL OF HYDROGEN
PO4	PHOSPHATE
PUR	PURITY OXYGEN
TH	TOTAL HARDNESS
TOC	TOTAL ORGANIC CARBON
TRB	TURBIDITY
TSS	TOTAL SUSPENDED SOLIDS
UV	ULTRAVIOLET
ZP	ZETA POTENTIAL

GENERAL NOTES

1. TYPICAL DETAILS LINESTYLES, ON "I" SHEETS, DO NOT DIFFERENTIATE BETWEEN SCOPE OF WORK BY DISCIPLINES.
2. THE "I" SHEETS ARE NOT INTENDED TO SHOW ALL WORK FOR OTHER DISCIPLINES. THESE SHEETS SHOW GENERAL INTENT ONLY AND SERVE AS A GENERAL SOURCE OF REFERENCE. REFER TO THE RESPECTIVE DISCIPLINES' SHEETS FOR DETAILED DESIGN REQUIREMENTS.
3. P&IDs ARE NOT INTENDED TO SHOW ALL PIPING, VALVES, FITTINGS, EQUIPMENT, COMPONENTS, DEVICES, NOR OTHER SIMILAR ACCESSORIES THAT MAY BE REQUIRED FOR THIS PROJECT. THEY ARE INTENDED TO CAPTURE THE CONCEPT OF HOW PROCESS EQUIPMENT AND INSTRUMENTATION ARE RELATED AND WORK TOGETHER FOR THE TREATMENT PROCESS. MAINLY ONLY EQUIPMENT THAT INTERFACES WITH PROGRAMMABLE CONTROLLERS AND HMI SYSTEMS ARE SHOWN. REFERENCE OTHER DISCIPLINES' SPECIFICATIONS AND SHEETS FOR CONTRACT REQUIREMENTS.
3. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CURRENT VERSIONS OF NATIONAL ELECTRICAL CODE AND NFPA 820 (WHERE APPLICABLE).
4. 480 VOLT CIRCUITS, 120 VOLT CIRCUITS, SIGNAL, TELEPHONE, INTERCOMMUNICATION, ANALOG METERING CIRCUITS, DC PULSE CIRCUITS, AND ALL OTHER CIRCUITS SHALL EACH BE RUN IN SEPARATE CONDUITS, UNLESS NOTED OTHERWISE.
5. CONDUIT ROUTING SHOWN ON DRAWINGS IS DIAGRAMMATIC IN NATURE AND SHALL BE MODIFIED AS REQUIRED TO ACCOMMODATE ACTUAL SUPPLIED EQUIPMENT AND INSTALLATION CONDITIONS.
6. CONTRACTORS MAY ENCOUNTER ELECTRICAL CONDUITS IN THE CONCRETE WALLS OR SLABS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THERE ARE NOT ANY ELECTRICAL CONDUITS IN THE AREA WHERE HE IS PERFORMING DEMOLITION WORK, CORING CONCRETE OR PERFORMING ANY WORK THAT WOULD PENETRATE CONCRETE. DAMAGED OR CUT ELECTRICAL CONDUITS SHALL BE REPAIRED TO ORIGINAL CONDITION AT THAT CONTRACTOR'S EXPENSE.
7. VERIFY THE LOCATION OF CONDUIT ENTRANCES FOR ALL EQUIPMENT USING THE APPROVED SHOP DRAWINGS PRIOR TO INSTALLING CONDUITS AND BOXES TO SERVE THE EQUIPMENT. CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6" FROM THE CENTER LINE OF EQUIPMENT CONDUIT ENTRANCE.
8. FINAL LOCATIONS FOR ALL ELECTRICAL EQUIPMENT, INCLUDING RECEPTACLES, JUNCTION BOXES, SWITCHES, CONTROL PANELS AND LOCAL STARTERS SHALL BE DETERMINED BY THE OWNER PRIOR TO INSTALLATION.
9. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING ELECTRICAL CONNECTIONS TO ALL EQUIPMENT INSTALLED OR MODIFIED AS PART OF THIS CONTRACT TO SUPPLY A COMPLETE WORKING CONTROL SYSTEM.
10. PROVIDE TEMPORARY ELECTRICAL AND CONTROL CONNECTIONS TO EQUIPMENT, AS REQUIRED, TO MAINTAIN PLANT TREATMENT CAPABILITIES WHERE AFFECTED BY CONSTRUCTION WORK.

BID DOCUMENTS

AECOM

PROJECT

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ELYRIA, OH

CLIENT

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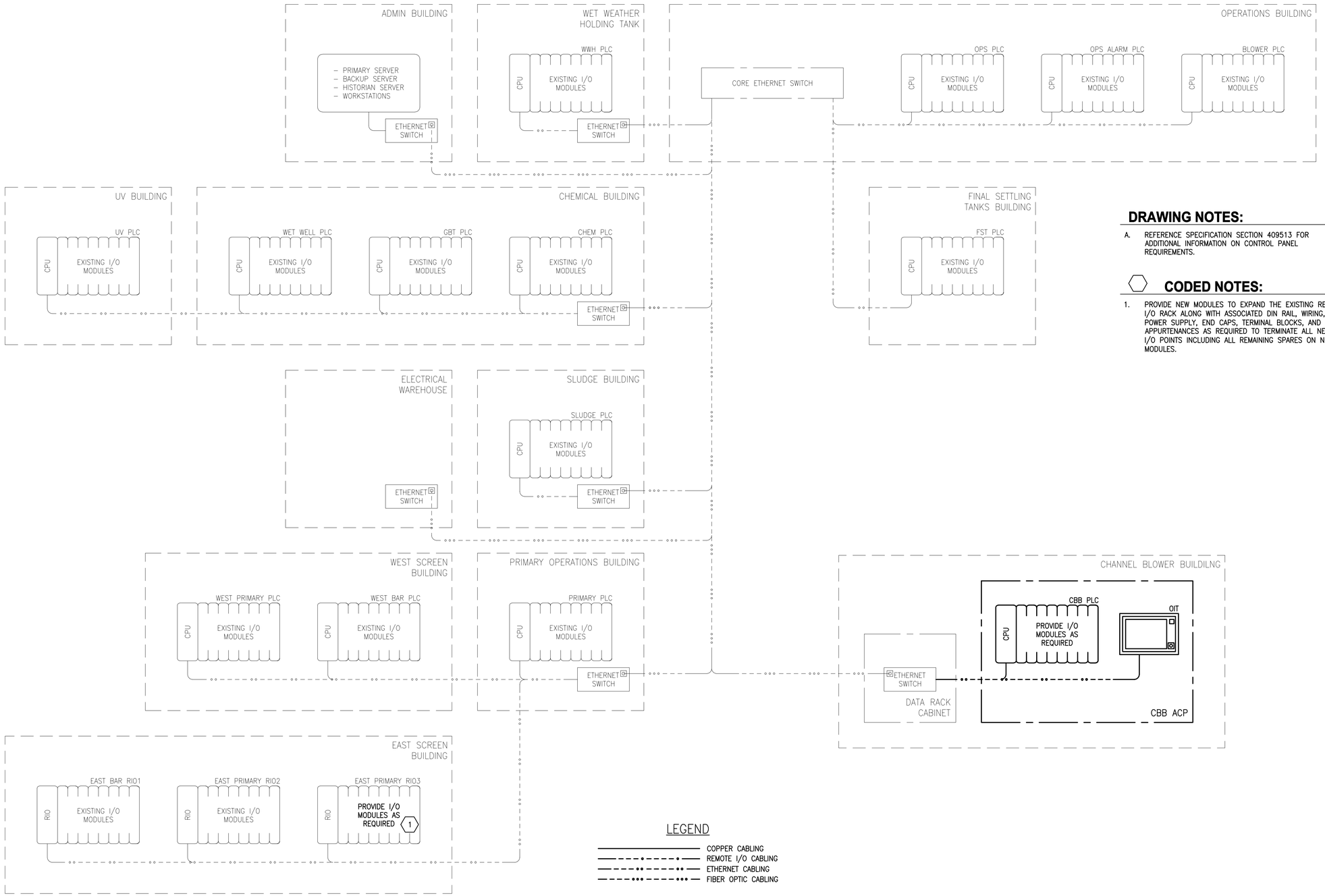
SHEET TITLE

LEGENDS, SYMBOLS, AND GENERAL INFORMATION

SHEET NUMBER

I-01

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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409513 FOR ADDITIONAL INFORMATION ON CONTROL PANEL REQUIREMENTS.

CODED NOTES:

1. PROVIDE NEW MODULES TO EXPAND THE EXISTING REMOTE I/O RACK ALONG WITH ASSOCIATED DIN RAIL, WIRING, POWER SUPPLY, END CAPS, TERMINAL BLOCKS, AND APPURTENANCES AS REQUIRED TO TERMINATE ALL NEW I/O POINTS INCLUDING ALL REMAINING SPARES ON NEW MODULES.

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SYSTEM ARCHITECTURE

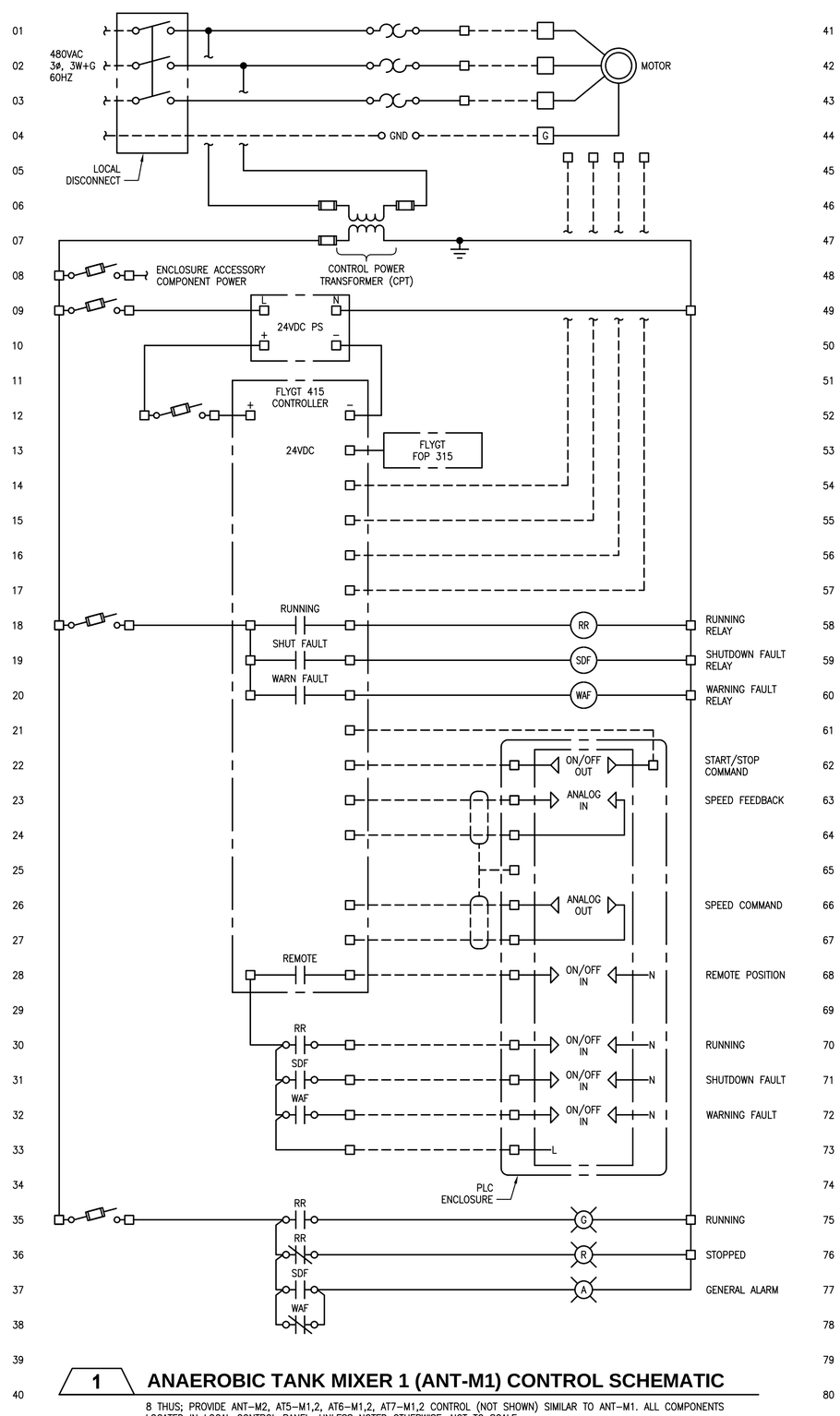
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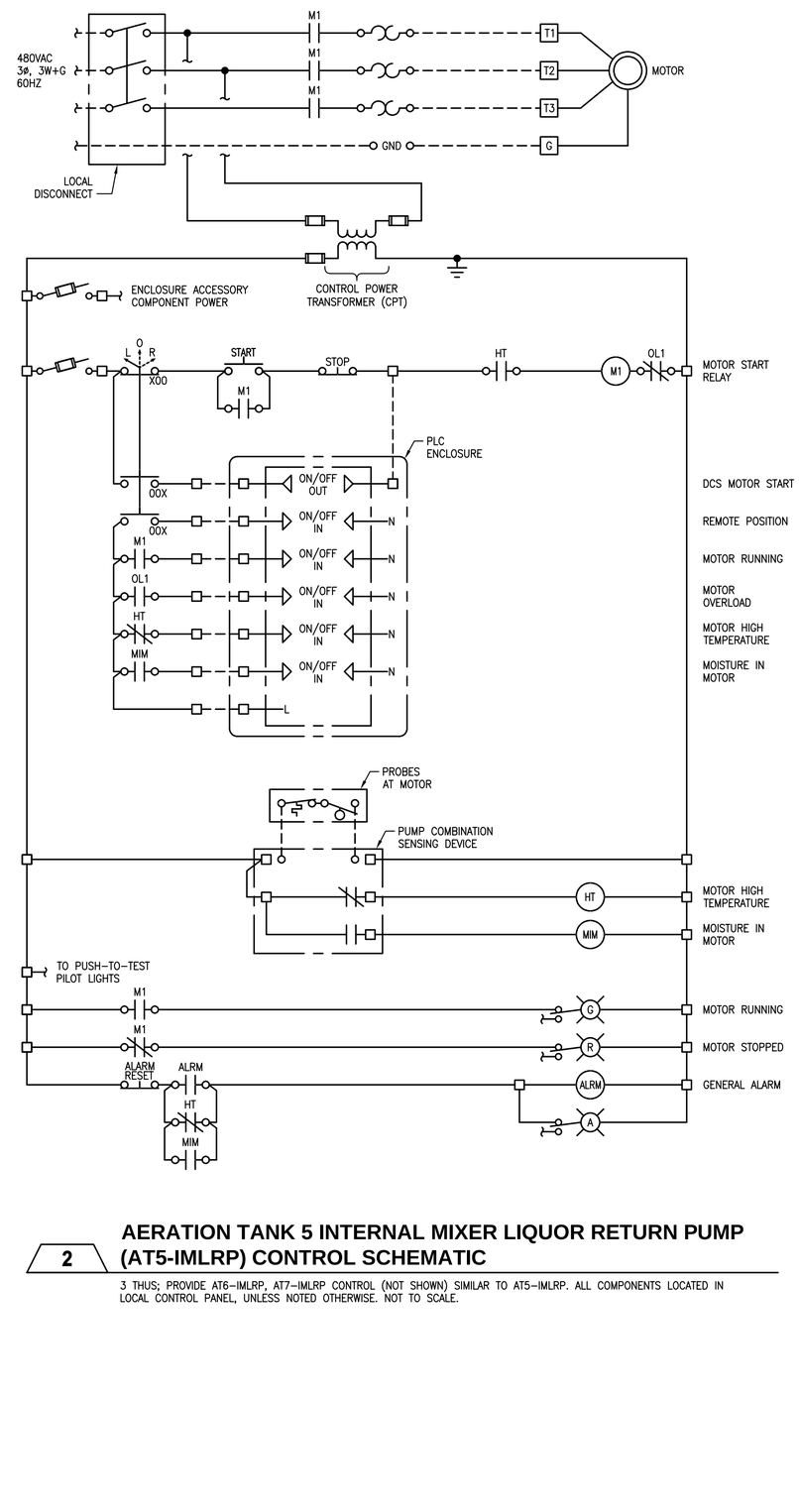
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1 ANAEROBIC TANK MIXER 1 (ANT-M1) CONTROL SCHEMATIC

8 THUS; PROVIDE ANT–M2, AT5–M1,2, AT6–M1,2, AT7–M1,2 CONTROL (NOT SHOWN) SIMILAR TO ANT–M1. ALL COMPONENTS LOCATED IN LOCAL CONTROL PANEL, UNLESS NOTED OTHERWISE. NOT TO SCALE.



2 AERATION TANK 5 INTERNAL MIXER LIQUOR RETURN PUMP (AT5-IMLRP) CONTROL SCHEMATIC

3 THUS; PROVIDE AT6–IMLRP, AT7–IMLRP CONTROL (NOT SHOWN) SIMILAR TO AT5–IMLRP. ALL COMPONENTS LOCATED IN LOCAL CONTROL PANEL, UNLESS NOTED OTHERWISE. NOT TO SCALE.

DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 40 9513 FOR ADDITIONAL INFORMATION ON CONTROL PANEL REQUIREMENTS.

B. REFERENCE PLC I/O SCHEDULES FOR DESIGNATION OF ASSOCIATED PLC FOR EACH PIECE OF EQUIPMENT.

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SHEET TITLE

CONTROL SCHEMATICS 1

SHEET NUMBER

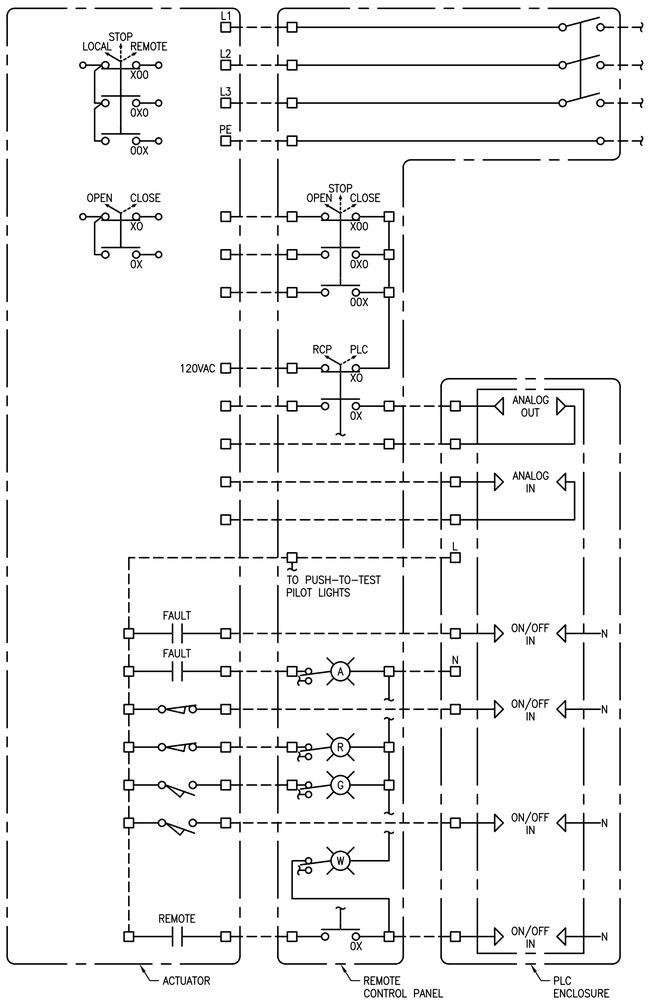
I-03

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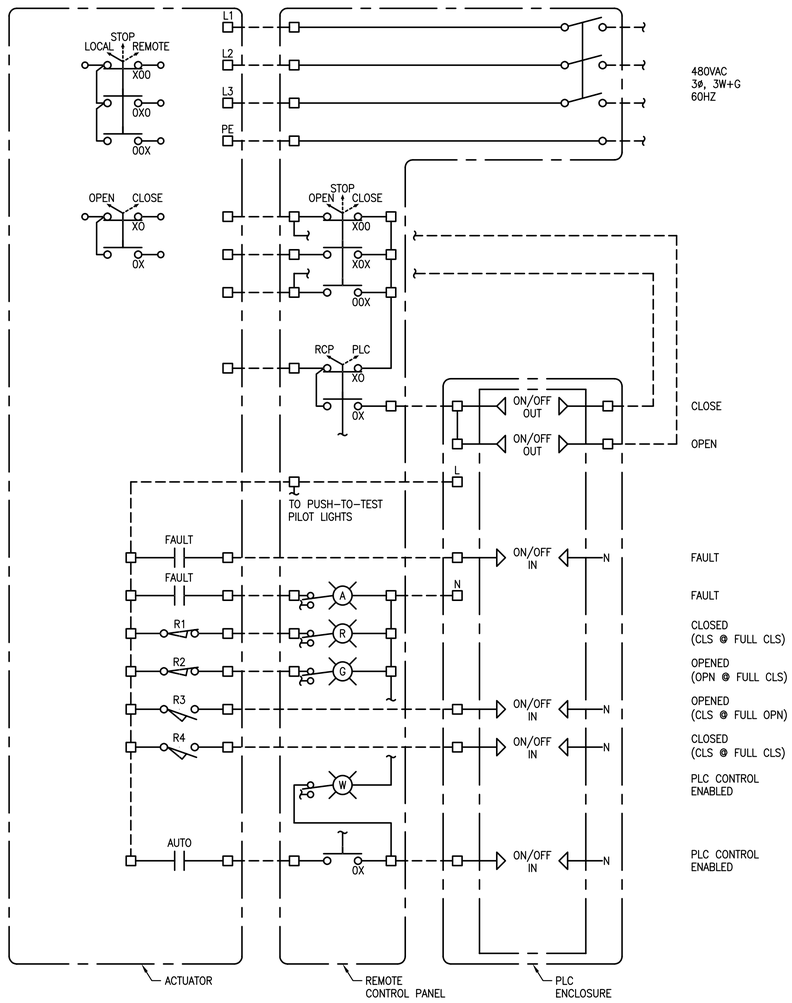
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1 TYPICAL MODULATING ELECTRIC ACTUATOR CONTROL DIAGRAM

PROVIDE REMOTE CONTROL PANEL ONLY WHEN INDICATED ON PLAN SHEETS. WHERE REMOTE CONTROL PANEL IS NOT REQUIRED, PROVIDE LOCAL DISCONNECT SWITCH (WIRED BETWEEN POWER SOURCE AND ACTUATOR) ADJACENT TO ACTUATOR.



2 TYPICAL OPEN/CLOSE ELECTRIC ACTUATOR CONTROL DIAGRAM

PROVIDE REMOTE CONTROL PANEL ONLY WHEN INDICATED ON PLAN SHEETS. WHERE REMOTE CONTROL PANEL IS NOT REQUIRED, PROVIDE LOCAL DISCONNECT SWITCH (WIRED BETWEEN POWER SOURCE AND ACTUATOR) ADJACENT TO ACTUATOR.

DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 40 9513 FOR ADDITIONAL INFORMATION ON CONTROL PANEL REQUIREMENTS.

B. REFERENCE PLC I/O SCHEDULES FOR DESIGNATION OF ASSOCIATED PLC FOR EACH PIECE OF EQUIPMENT.

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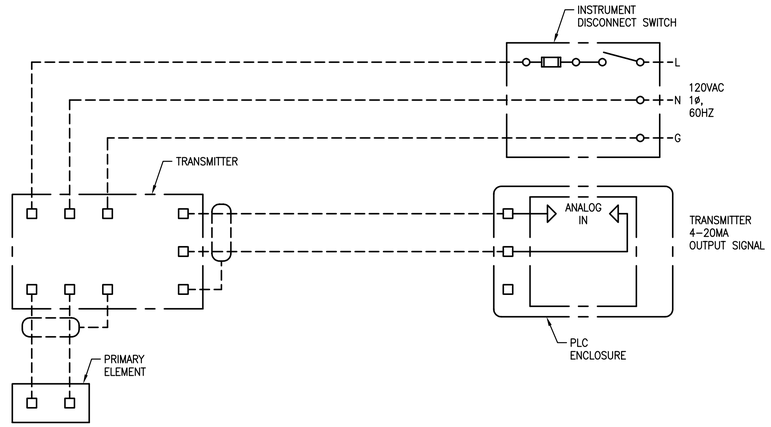
CONTROL SCHEMATICS 2

SHEET NUMBER

I-04

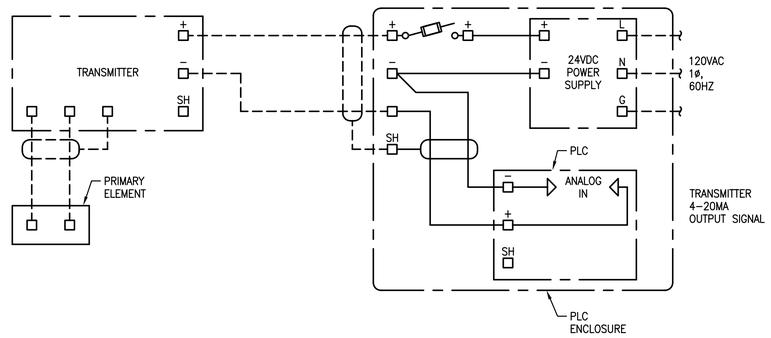
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1 TYPICAL 120VAC INSTRUMENTATION WIRING DIAGRAM

SHOWN TYPICAL. PROVIDE FOR EACH 120VAC INSTRUMENTATION DEVICE, UNLESS NOTED OTHERWISE.



2 TYPICAL LOOP-POWERED INSTRUMENTATION WIRING DIAGRAM

SHOWN TYPICAL. PROVIDE FOR EACH 24VDC LOOP–POWERED INSTRUMENTATION DEVICE, UNLESS NOTED OTHERWISE.

DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 40 9513 FOR ADDITIONAL INFORMATION ON CONTROL PANEL REQUIREMENTS.

B. REFERENCE PLC I/O SCHEDULES FOR DESIGNATION OF ASSOCIATED PLC FOR EACH PIECE OF EQUIPMENT.

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SHEET TITLE

CONTROL SCHEMATICS 3

SHEET NUMBER

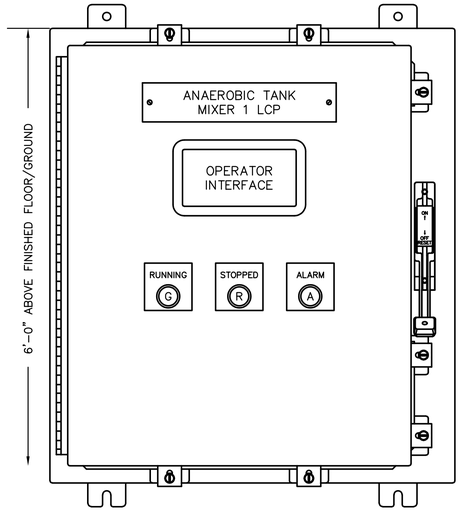
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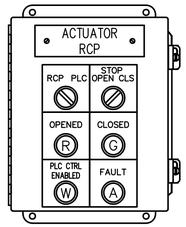
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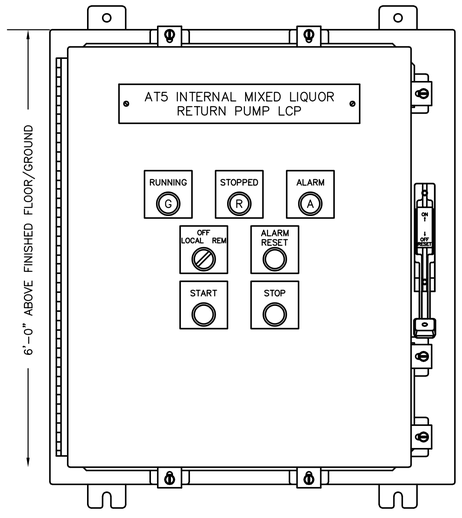
1 ANAEROBIC TANK MIXER 1 LOCAL CONTROL PANEL LAYOUT

8 THUS; SHOWN FOR ANT-M1. ANT-2, AT5-M1,2, AT6-M1,2, AT7-M1,2 SIMILAR. ENCLOSURE SHALL BE 24"Hx22"Wx8"D, MINIMUM. NOT TO SCALE.



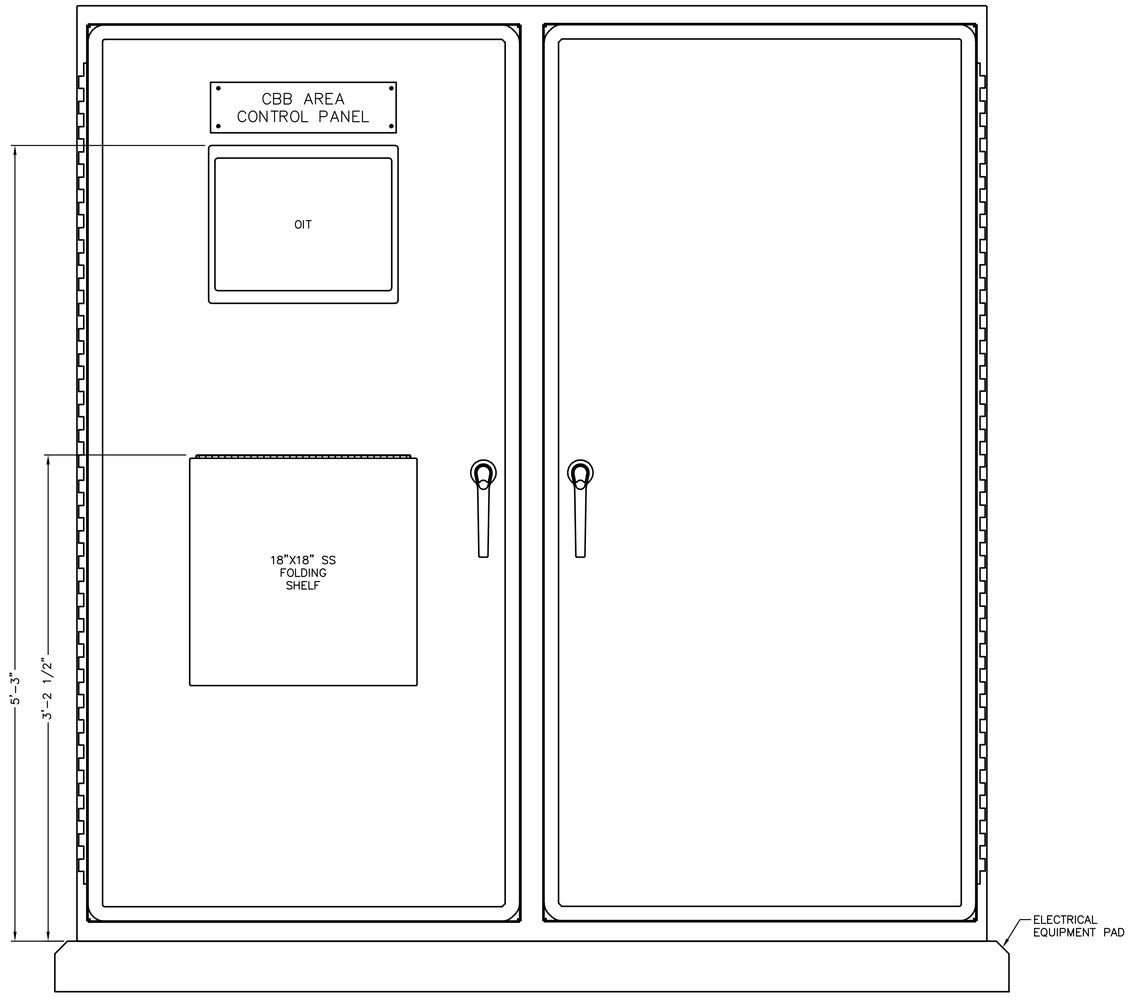
2 ACTUATOR REMOTE CONTROL PANEL LAYOUT

SHOWN TYPICAL; PROVIDE FOR EACH LOCATION WHERE REQUIRED. ENCLOSURE SHALL BE 10"Hx8"Wx8"D, MINIMUM. NOT TO SCALE.



3 AERATION TANK 5 INTERNAL MIXED LIQUOR RETURN PUMP LOCAL CONTROL PANEL LAYOUT

3 THUS; SHOWN FOR AT5-IMLRP. AT6-IMLRP, AT-7-IMLRP SIMILAR. ENCLOSURE SHALL BE 24"Hx22"Wx8"D, MINIMUM. NOT TO SCALE.



4 CBB AREA CONTROL PANEL PLC ENCLOSURE LAYOUT

1 THUS; ENCLOSURE SHALL BE 72"Hx72"Wx24"D, MINIMUM. NOT TO SCALE.

DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 40 9513 FOR ADDITIONAL INFORMATION ON CONTROL PANEL REQUIREMENTS.

B. REFERENCE PLC I/O SCHEDULES FOR DESIGNATION OF ASSOCIATED PLC FOR EACH PIECE OF EQUIPMENT.

BID DOCUMENTS

AECOM

PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

WASTEWATER POLLUTION CONTROL PLANT
1194 GULF ROAD
ELYRIA, OH

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10/28/25

ISSUE/REVISION

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SHEET TITLE

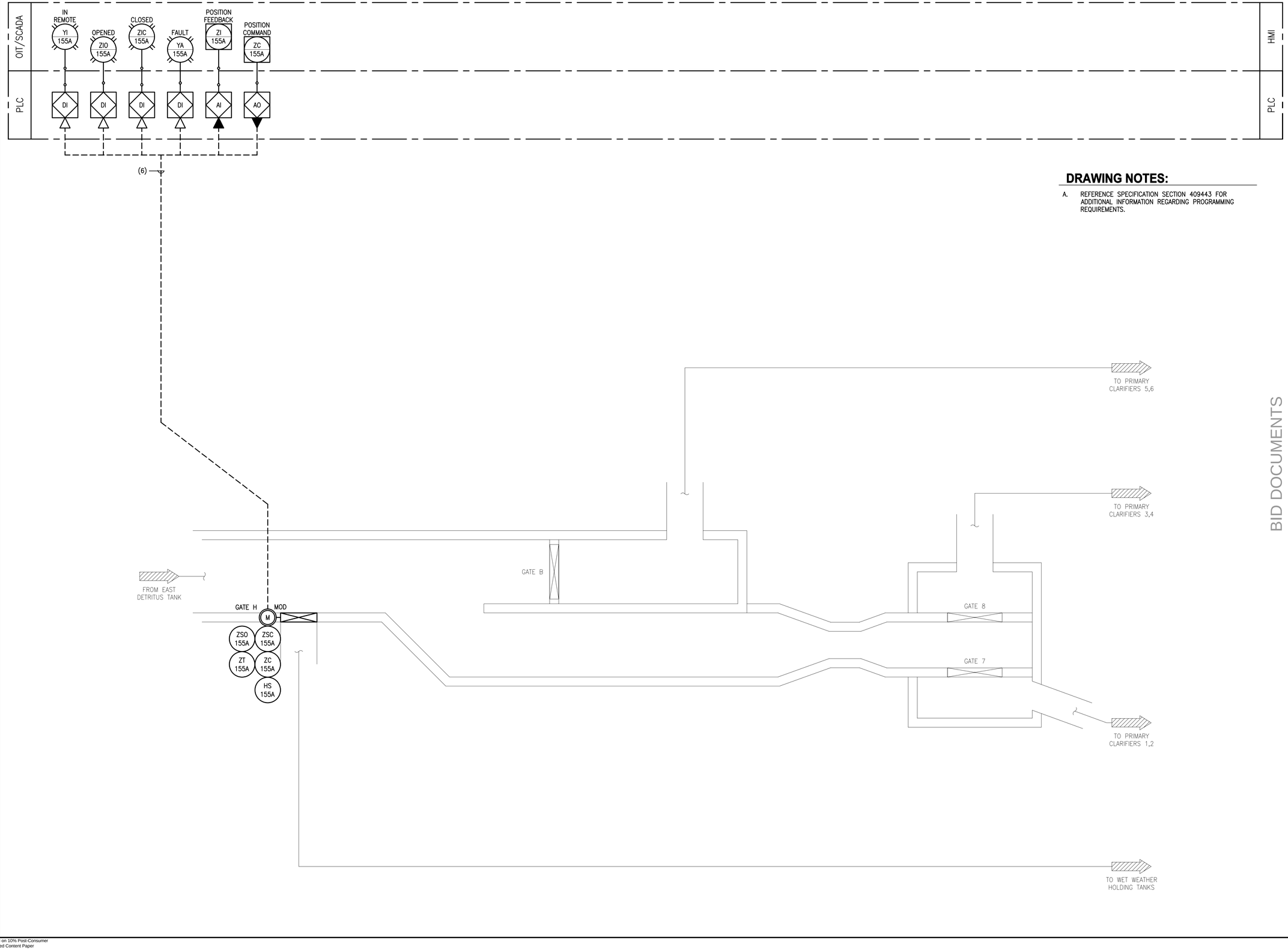
CONTROL ENCLOSURE LAYOUTS

SHEET NUMBER

I-06

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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409443 FOR ADDITIONAL INFORMATION REGARDING PROGRAMMING REQUIREMENTS.

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PROJECT NUMBER

60332065

SHEET TITLE

EAST PRIMARY FLOW SPLITTER P&ID

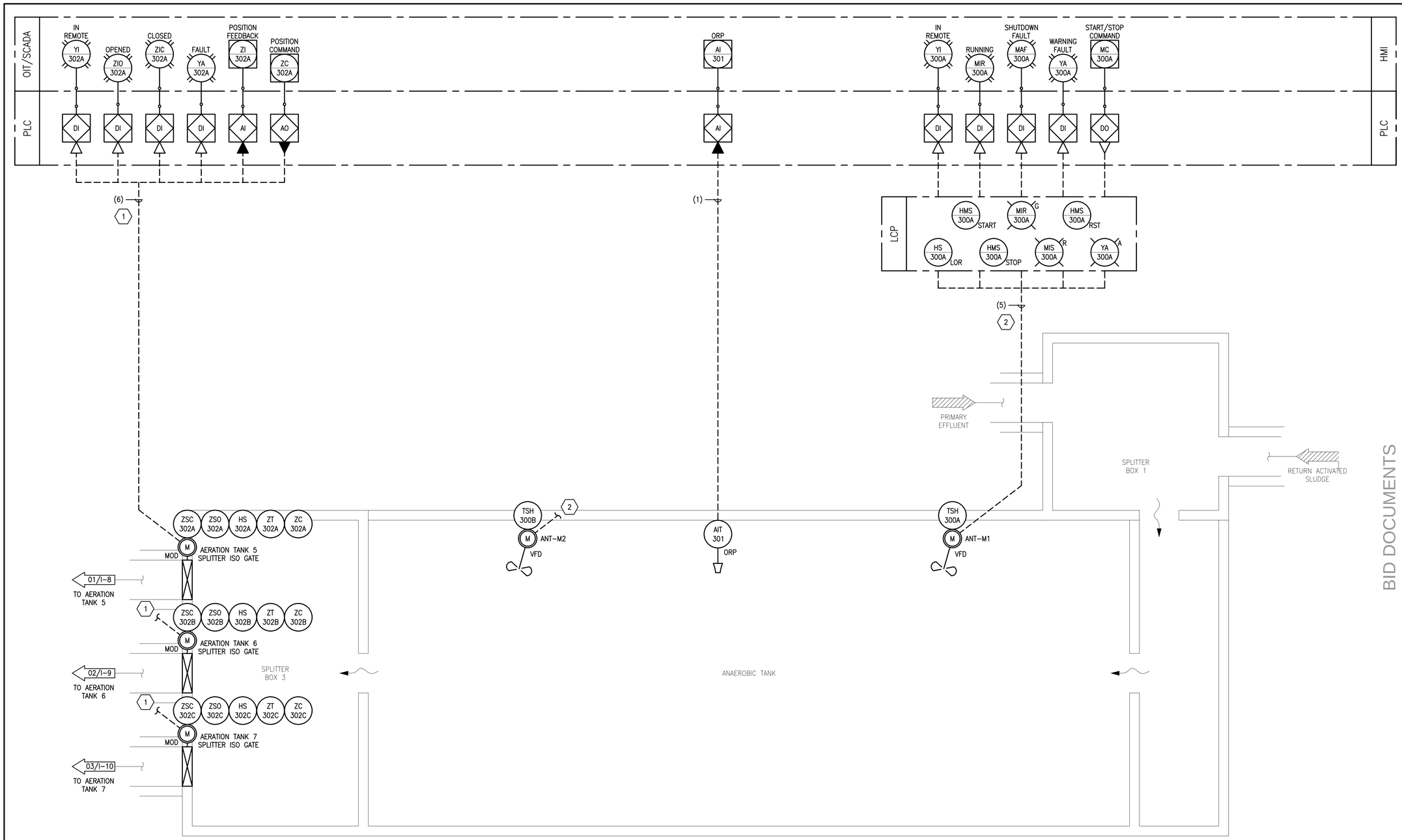
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I-07

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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409443 FOR ADDITIONAL INFORMATION REGARDING PROGRAMMING REQUIREMENTS.

CODED NOTES:

1. AERATION TANK 5 SPLITTER ISO GATE MONITORING AND CONTROLS ARE SHOWN AS TYPICAL FOR MODULATING ACTUATORS. PROVIDE SAME FOR ALL MODULATING ACTUATORS ON THIS SHEET.
2. ANAEROBIC TANK MIXER 1 MONITORING AND CONTROLS ARE SHOWN AS TYPICAL FOR MIXERS. PROVIDE SAME FOR ALL MIXERS ON THIS SHEET.

BID DOCUMENTS

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PROJECT

WWPCP ACTIVATED SLUDGE AERATION TANK IMPROVEMENTS

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SHEET TITLE

ANAEROBIC TANK P&ID

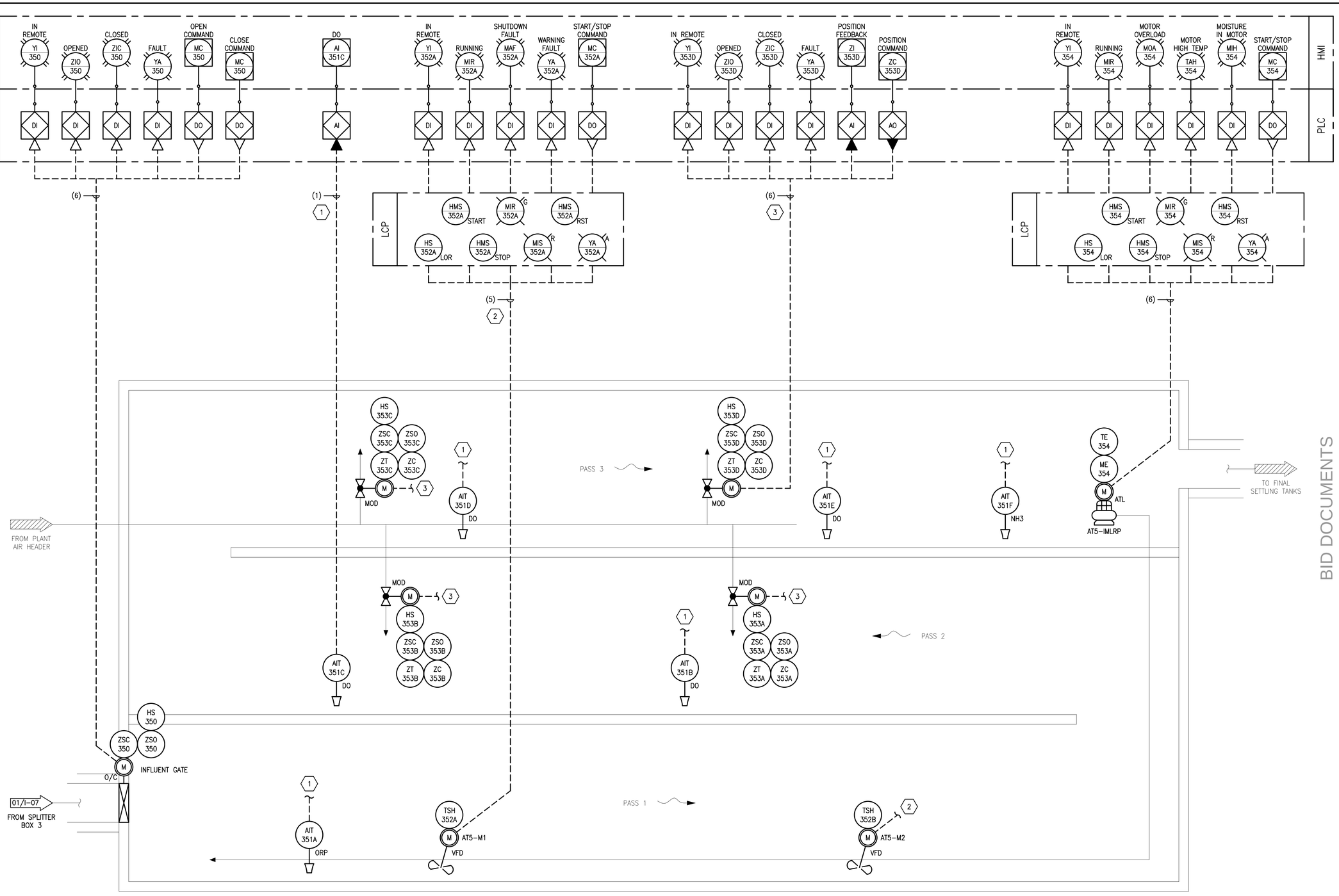
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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409443 FOR ADDITIONAL INFORMATION REGARDING PROGRAMMING REQUIREMENTS.

CODED NOTES:

1. AERATION TANK 5 PASS 2 DO MONITORING IS SHOWN AS TYPICAL FOR ANALYZERS. PROVIDE SAME FOR ALL ANALYZERS ON THIS SHEET.

2. AERATION TANK 5 MIXER 1 MONITORING AND CONTROLS ARE SHOWN AS TYPICAL FOR MIXERS. PROVIDE SAME FOR ALL MIXERS ON THIS SHEET.

CODED NOTES:

3. AERATION TANK 5 PASS 3 AIR FLOW CONTROL VALVE MONITORING AND CONTROL ARE SHOWN AS TYPICAL FOR MODULATING ACTUATORS. PROVIDE SAME FOR ALL MODULATING ACTUATORS SHOWN ON THIS SHEET.

AECOM

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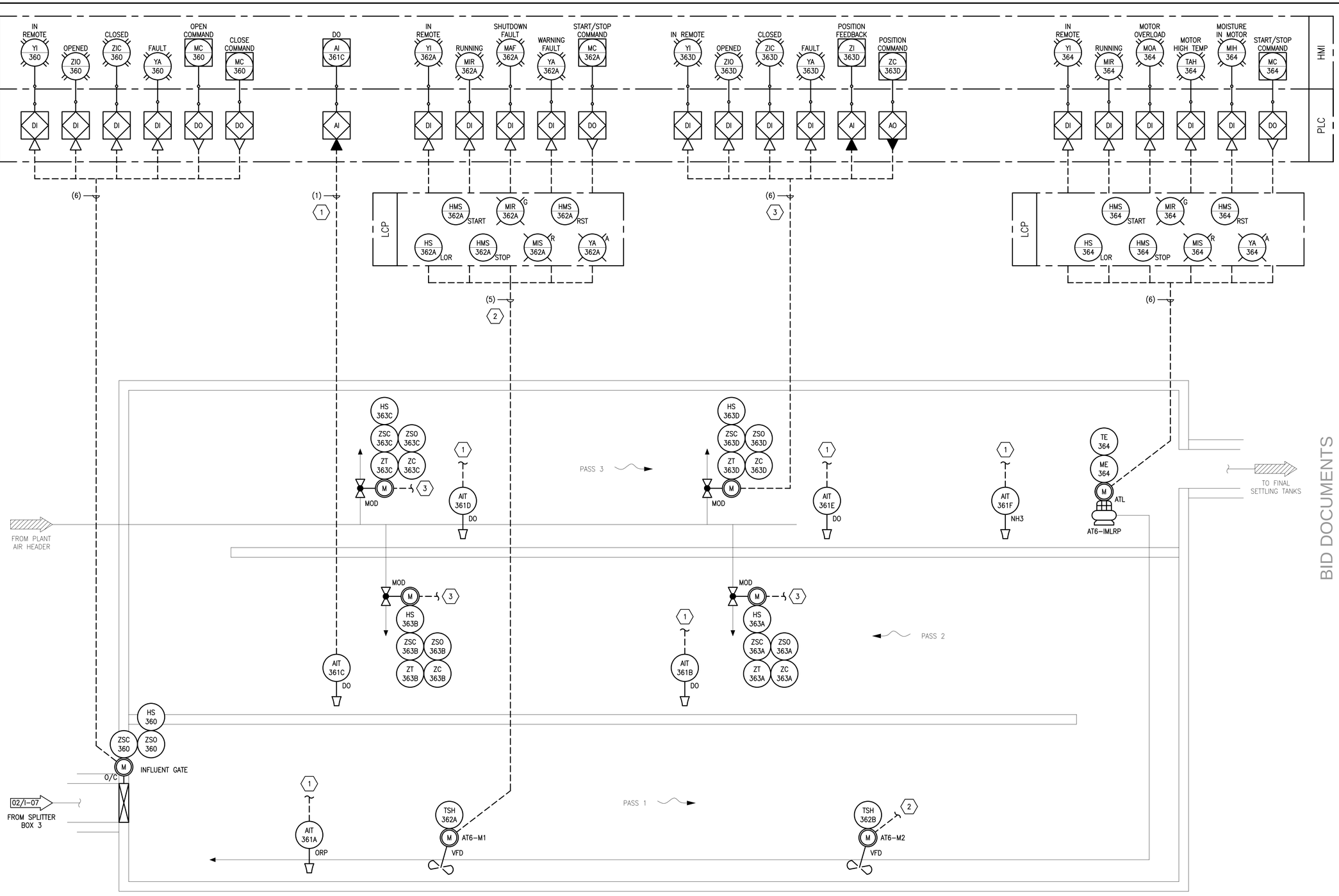
AERATION TANK 5 P&ID

SHEET NUMBER

I-09

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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409443 FOR ADDITIONAL INFORMATION REGARDING PROGRAMMING REQUIREMENTS.

CODED NOTES:

1. AERATION TANK 6 PASS 2 DO MONITORING IS SHOWN AS TYPICAL FOR ANALYZERS. PROVIDE SAME FOR ALL ANALYZERS ON THIS SHEET.
2. AERATION TANK 6 MIXER 1 MONITORING AND CONTROLS ARE SHOWN AS TYPICAL FOR MIXERS. PROVIDE SAME FOR ALL MIXERS ON THIS SHEET.

CODED NOTES:

3. AERATION TANK 6 PASS 3 AIR FLOW CONTROL VALVE MONITORING AND CONTROL ARE SHOWN AS TYPICAL FOR MODULATING ACTUATORS. PROVIDE SAME FOR ALL MODULATING ACTUATORS SHOWN ON THIS SHEET.

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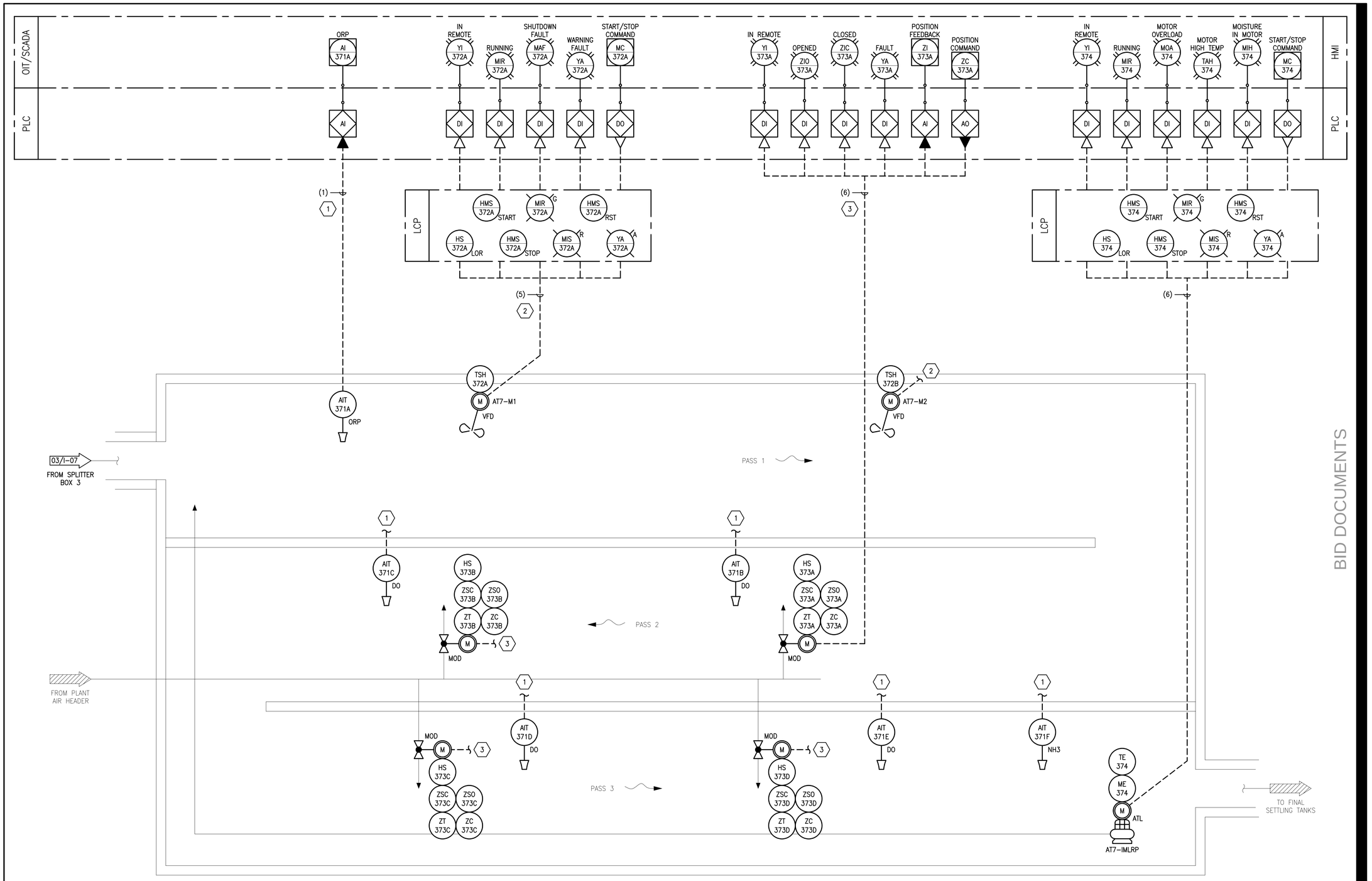
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SHEET NUMBER

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DRAWING NOTES:

A. REFERENCE SPECIFICATION SECTION 409443 FOR ADDITIONAL INFORMATION REGARDING PROGRAMMING REQUIREMENTS.

CODED NOTES:

1. AERATION TANK 7 PASS 1 ORP MONITORING IS SHOWN AS TYPICAL FOR ANALYZERS. PROVIDE SAME FOR ALL ANALYZERS ON THIS SHEET.
2. AERATION TANK 7 MIXER 1 MONITORING AND CONTROLS ARE SHOWN AS TYPICAL FOR MIXERS. PROVIDE SAME FOR ALL MIXERS ON THIS SHEET.

CODED NOTES:

3. AERATION TANK 7 PASS 2 AIR FLOW CONTROL VALVE MONITORING AND CONTROL ARE SHOWN AS TYPICAL FOR MODULATING ACTUATORS. PROVIDE SAME FOR ALL MODULATING ACTUATORS SHOWN ON THIS SHEET.

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AERATION TANK 7 P&ID

SHEET NUMBER

I-11

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