

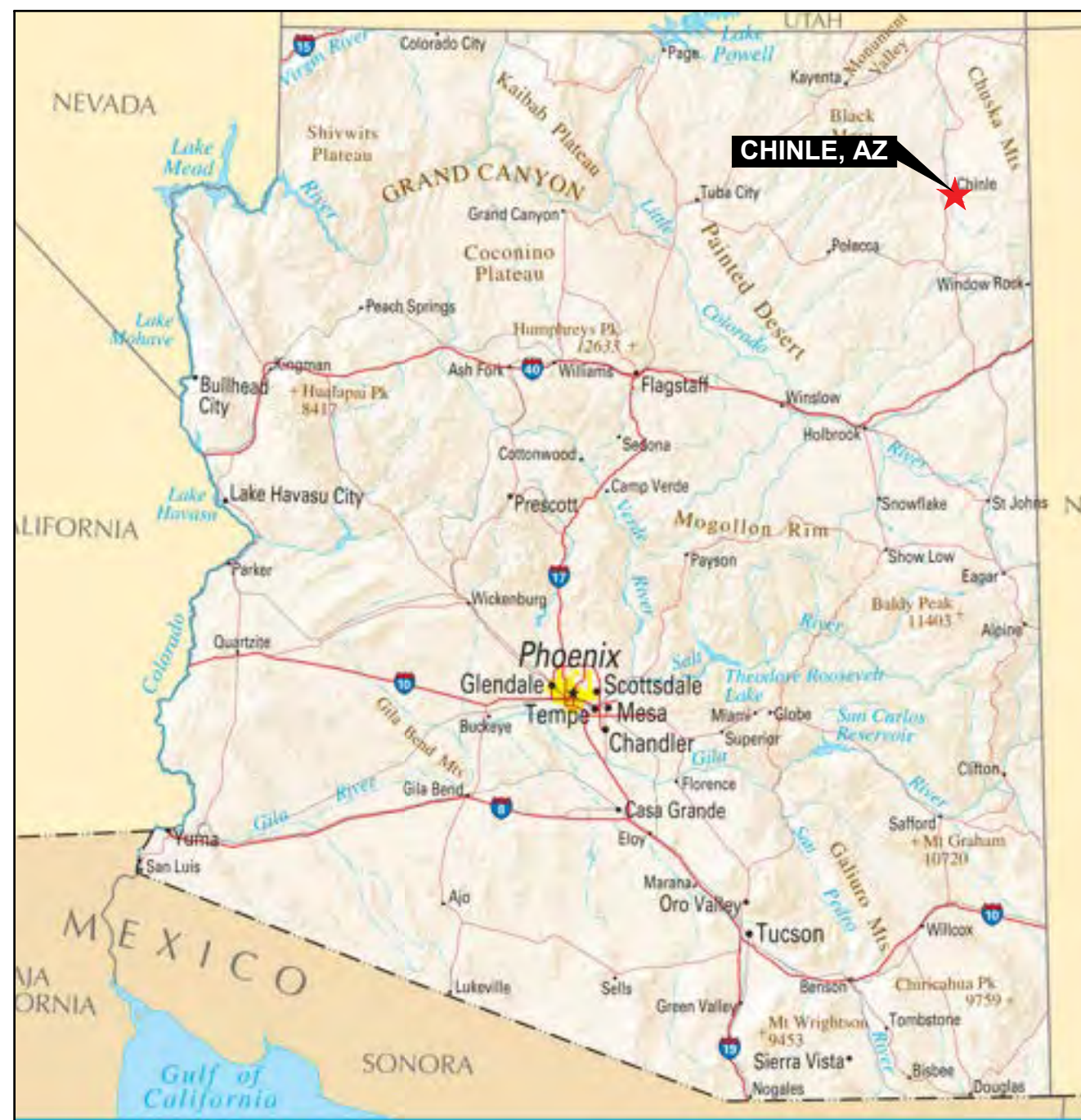
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CHINLE WWTP

CONTINUOUS FLOW-INTERMITTENT DISCHARGE (CFID) POND SYSTEM

NAVAJO TRIBAL UTILITY AUTHORITY

CHINLE, ARIZONA



SITE LOCATION
NTS



VICINITY MAP
NTS

DATE OF PREPARATION:
ORIGINAL ISSUE: 07/14/2023

ENGINEER AND GEOTECHNICAL CONSULTANT:
WSP
4221 BALLOON PARK RD NE
ALBUQUERQUE, NM 87109 (505) 821-1801

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE EXISTING INFORMATION SHOWN ON THESE PLANS IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR WILL BE RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND DEPTHS OF EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION. THE CONTRACTOR MUST ALSO CALL 811 AND NAVAJO TRIBAL UTILITY AUTHORITY, P.O. BOX 170, FORT DEFANCE, AZ, 86504 AT 928-729-5721 AT LEAST 3 WORKING DAYS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

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PROJECT:

**CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFANCE, AZ 86504
WSP PROJECT No:
2151700051

REVISIONS

NO.	DATE	BY	APPROVED

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SHEET TITLE:

COVER SHEET

SHEET NUMBER:	REV. #
G-001	
SHEET 1	OF 52 SHEETS

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GENERAL NOTES:

QUALITY CONTROL

- 1.0 UNLESS OTHERWISE STATED, INDIAN HEALTH SERVICE (IHS)/NAVAJO ENGINEERING AND CONSTRUCTION AUTHORITY (NECA) SPECIFICATIONS (REV 1.5) AND INDIAN HEALTH SERVICE STANDARD DETAILS FOR WATER (REV 3.2) AND SEWER (REV 1.9) SHALL CONTROL THE MATERIALS AND WORKMANSHIP OF THIS PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT. THE IHS/NECA SPECIFICATIONS ARE A SEPARATE VOLUME AND NOT ISSUED AS PART OF THE CONSTRUCTION SET. SPECIFICATION SECTIONS AND STANDARD DRAWINGS, WHEN NOTED HEREIN, REFER TO CORRESPONDING PARTS OF THESE DOCUMENTS.
- 2.0 IF DURING THE COURSE OF WORK THE CONTRACTOR BECOMES AWARE OF A CONTRADICTION IN THE REQUIREMENTS BETWEEN THE STANDARD SPECIFICATIONS AND DRAWINGS AND THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

SAFETY

- 3.0 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY AND FOR KNOWLEDGE AND COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS AND OTHER FEDERAL, STATE, TRIBAL AND LOCAL SAFETY AND WORKPLACE COMPLIANCE REQUIREMENTS.

EXISTING CONDITIONS

- 4.0 THE LOCATION OF EXISTING UTILITIES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR THE ACCURATE LOCATION IN THE FIELD.
- 5.0 IF EVIDENCE OF SUBSURFACE ARCHAEOLOGICAL OR HISTORIC FEATURES ARE OBSERVED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY HALT CONSTRUCTION IN THE AREA, PROTECT THE SITE, AND NOTIFY THE ENGINEER. NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE 50 FOOT BUFFER AROUND THE EXISTING ARCHAEOLOGICAL SITE UNTIL APPROVED.

PROJECT CONTROL

- 6.0 PROJECT CONTROL SHOWN HEREON WAS ESTABLISHED REAL TIME KINEMATIC OBSERVATIONS FROM NATIONAL GEODETIC SURVEY CONTROL POINTS .

LOCAL HORIZONTAL DATUM: AZSPCS EAST ZONE MODIFIED,
C.S.F= 1.000364 TO BE UTILIZED AS "GROUND" COORDINATES.

VERTICAL DATUM: NAVD88 (2011)

BRASS CAP CONTROL POINTS THAT HAVE BEEN INSTALLED ONSITE AND ARE THE BASIS OF HORIZONTAL CONTROL. THE CONTROL POINTS SHALL BE MAINTAINED AND REMAIN UNDISTURBED DURING CONSTRUCTION AND WILL SERVE AS HORIZONTAL CONTROL POINTS FOR THE PROJECT.

Point Table				
Point #	Northing	Easting	Elevation	Description
96	1889416.985	871408.932	5457.83	BCF BIA NAVAJO ROADS CDOT-4
97	1888984.260	869814.723	5458.41	FRB
98	1888015.160	870521.982	5462.40	FRB
99	1888143.586	870208.812	5464.88	SRB 1/2

- 7.0 SCALES IN THESE PLANS ARE VALID WHEN PLOTTED ON 22"x34" (ANSI).

WORK AREA

- 8.0 THE CONTRACTOR SHALL CONFINE WORK TO WITHIN THE PRESCRIBED CONSTRUCTION LIMITS, EASEMENT, RIGHT-OF-WAY OR PROPERTY.
- 9.0 THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH THE OWNER AND ENGINEER TO MINIMIZE ACCESS TO ADJACENT PROPERTIES AND TRAFFIC DISRUPTIONS.
- 10.0 THE CONTRACTOR SHALL ACQUIRE THE NECESSARY LICENSES OR PERMITS WHEN WORKING WITHIN OR NEAR A RIGHT-OF-WAY, STREET, ROAD OR HIGHWAY, SIDEWALK, TRAIL, OR OTHER PUBLIC THOROUGHFARE AND SHALL INCORPORATE THE REQUIREMENTS OF SAID LICENSE/PERMIT.
- 11.0 WHEN WORKING IN OR NEAR TRAFFIC THE CONTRACTOR SHALL (AT A MINIMUM) PROVIDE, ADEQUATE SIGNS, BARRICADES, WARNING LIGHTS, AND FLAGGERS TO ENSURE THE SAFETY/PROTECTION OF THE PUBLIC, EMPLOYEES, AND THE WORK IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), LATEST EDITION.
- 12.0 IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ACCESS TO EXISTING RESIDENCES, BUSINESSES, TURNOUTS AND INTERSECTING ROADS AT ALL TIMES DURING CONSTRUCTION.
- 13.0 IF A FENCED/SECURE STORAGE AREA FOR MATERIALS AND EQUIPMENT IS DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN AREA OFF THE PROJECT SITE. USING THE AREA FOR STORAGE SHALL COMPLY WITH LOCAL ZONING OR OTHER ORDINANCES AND SHALL BE PERMITTED, IF REQUIRED.
- 14.0 OVERNIGHT PARKING OF CONTRACTOR'S EQUIPMENT SHALL NOT OBSTRUCT ACCESS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL PARK OR STORE EQUIPMENT AT SAFE DISTANCES FROM THE TRAVELED WAY.
- 15.0 THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION, DRAINAGE CONTROL AND DUST DURING CONSTRUCTION AND MUST, WHEN APPLICABLE, PREPARE AND ADHERE TO A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED ACCORDING TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S CONSTRUCTION GENERAL PERMIT(CGP).

OTHER UTILITIES

- 16.0 THE CARE AND PROTECTION OF OTHER UTILITIES, STREET APPURTENANCES, DRAINAGE STRUCTURES AND OTHER INFRASTRUCTURE, WHETHER PUBLIC OR PRIVATE, THAT ARE NOT PART OF THE INTENDED WORK ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 17.0 WHERE TRENCHING AROUND OR BENEATH EXISTING UTILITY LINES OCCURS, THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY OWNER AND FOR SUPPORTING THE UTILITY LINE, AS REQUIRED BY THE UTILITY OWNER, DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THE UTILITY IS ADEQUATELY SUPPORTED BY COMPACTED BACKFILL OR OTHER MEANS AT THE COMPLETION OF CONSTRUCTION AS REQUIRED BY THE UTILITY OWNER. IF THE TECHNIQUES REQUIRED FOR STABILIZING OTHER UTILITIES CONFLICT WITH THE REQUIREMENTS OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

EXCESS MATERIAL & DEBRIS

- 18.0 ANY EXTRA NATURAL SOIL (CLEAN OF OIL AND CHEMICALS) REMAINING AFTER BACKFILL AND COMPACTION MAY BE DISPOSED AT A SITE APPROVED BY THE OWNER. CONTRACTOR SHALL HAUL DEBRIS AND NON-NATURAL SOILS TO A CERTIFIED LANDFILL.

RECORD DRAWINGS

- 19.0 THE CONTRACTOR SHALL PREPARE AND MAINTAIN AN UP-TO-DATE SET OF RECORD DRAWINGS FOR THE PROJECT. THESE PLANS SHALL BE KEPT CURRENT DAILY AND SHALL BE MADE AVAILABLE FOR REVIEW AS REQUESTED BY THE ENGINEER. THE COST OF PREPARING AND MAINTAINING A RECORD DRAWING SET SHALL BE INCIDENTAL TO THE PROJECT.

STRUCTURAL NOTES:

FOUNDATIONS:

BELOW GRADE FOUNDATIONS SHALL BEAR ON A MINIMUM OF THREE (3) FEET OF GRANULAR NON-EXPANSIVE ENGINEERED FILL UNDERLAIN BY A REINFORCING GEOGRID.

SLABS SHOULD BEAR ON THREE (3) FEET OF NON-EXPANSIVE LOW PERMEABILITY ENGINEERED FILL.

FILL MATERIALS ARE TO CONFORM TO GRADATION AS FOLLOWS:

SIEVE SIZE	PERCENT PASSING
1"	100
NO. 4	50-100
NO.40	35 MAX.

ENGINEERED FILL OR OTHER APPROVED GRANULAR SOILS SHOULD BE PLACED IN A MAXIMUM LIFT NOT TO EXCEED 8", MATERIAL IS TO BE COMPACTED TO 95% ASTM D698 PER GEOTECHNICAL REPORT.

THE GEOGRID SHOULD BE PER TESAR TRIAX TX 160 OR EQUIVALENT AS APPROVED BY THE ENGINEER.

ALL EARTH WORK, FOOTING DEPTHS, AND EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED BY THE ENGINEER TO VERIFY ASSUMED ALLOWABLE SOIL BEARING AND LOW SETTLEMENT AND SWELL POTENTIAL, AND TO MAKE ANY ADDITIONAL RECOMMENDATIONS.

CONCRETE:

SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT ISSUE OF THE ACI MANUAL OF CONCRETE PRACTICE, WITH TYPE 1-11 CEMENT. MINIMUM 28 DAY STRENGTH, 3000 PSI, EXCEPT AS FOLLOWS:

FOUNDATIONS, GRADE BEAMS, OR ANY OTHER CONCRETE
IN CONTACT WITH EARTH.....3000 PSI (MAX W/C = 0.45)

CAST IN PLACE SLABS NOT ON GRADE.....4000 PSI

MAXIMUM SLUMP FOR ALL CONCRETE.....5"

CONTRACTOR SHALL SUBMIT FOR APPROVAL CONCRETE MIX DESIGNS FOR EACH CLASS OF CONCRETE. THE MIX SUBMITTAL SHALL INDICATE WHICH OF THE FOLLOWING ACI 318 METHODS THE CONCRETE SUPPLIER ALONG WITH THE TESTING LAB METHOD HE/SHE INTENDS TO USE FOR CONCRETE PROPORTIONING - THE FIELD EXPERIENCE METHOD, THE LABORATORY TRIAL MIXTURE METHOD OR A COMBINATION OF BOTH. IF CONSECUTIVE TESTS (15 TO 30) ARE BEING RELIED UPON PER ACI 318, SECTION 5.3 THOSE TESTS SHALL BE SUBMITTED ALONG WITH THE MIX DESIGNS. MIX DESIGNS SHALL BEAR THE STAMP OF A LICENSED ENGINEER.

NO ADMIXTURES SHALL BE USED WITHOUT APPROVAL. NO AIR ENTRAINMENT SHALL BE ALLOWED IN FLAT SLABS. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. CONCRETE SHALL NOT BE IN CONTACT WITH ALUMINUM. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND EMBEDDED ITEMS. DO NOT TAMP SLABS. USE ROLLER BUG, VIBRATING SCREED OR BULL FLOAT TO FINISH. SEE SPECIFICATIONS FOR CURING.

MINIMUM STRENGTH FOR REMOVAL OF FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.

LEGEND:

EXISTING		PROPOSED	
	TOPOGRAPHIC CONTOUR		TOPOGRAPHIC CONTOUR
	FENCE		FENCE
	SANITARY SEWER LINE		SANITARY SEWER LINE
	MANHOLE		MANHOLE
	POWER POLE		GATE VALVE
	OVERHEAD ELECTRIC LINE		BIOLIC DIFFUSER
	UNDERGROUND ELECTRIC LINE		AERATOR
	WATERLINE		

FLY ASH (POZZOLAN) IF PERMITTED PER SPECIFICATIONS SHALL NOT EXCEED 25% REPLACEMENT OF TOTAL CEMENT CONTENT USING A 1:1 REPLACEMENT FACTOR.

REINFORCING:

LATEST ACI CODE AND DETAILING MANUAL APPLY. ALL REINFORCING BARS DEFORMED EXCEPT #2 BARS AND WIRE MESH.

ALL REINFORCING SHALL BE ASTM A-615 GRADE 60 EXCEPT AS FOLLOWS:

SPIRALS.....GRADE 60 OR COLD DRAWN A-82
#2 AND #3 BARS.....GRADE 40
WIRE MESH.....A-185
WELDED ANCHORS.....GRADE 40 CHEMICAL ANALYSIS
LIMITED PER AWS SPECIFICATIONS FOR WELD WITHOUT PREHEAT.
WELDED ANCHORS #5 AND LARGER.....ASTM A-706

CLEAR CONCRETE COVER TO REINFORCING ARE AS FOLLOWS:

CAST-IN-PLACE CONCRETE (NONPRESTRESSED):

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"

EXPOSED TO EARTH OR WEATHER:
#6 THROUGH #18.....2"
#5 AND SMALLER.....1 1/2"

NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
SLABS, WALLS: #11 AND SMALLER.....1 1/2"

LAP SPLICES IN CONCRETE SHALL BE CLASS B TENSION LAPS 70 BAR Ø MIN.

WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTORS OPTION.

PROVIDE SHOP DRAWING AND FABRICATE AFTER THE CONTRACTORS REVIEW. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL, PLACE REBAR PER CRSI STANDARDS.

REBAR SPACING GIVEN IS MAXIMUM ON CENTER AND ALL REBAR IS CONTINUOUS UNLESS OTHERWISE NOTED. PROVIDE BENT CORNER REBAR TO MATCH AND LAP WITH HORIZONTAL REBAR AT CORNERS AND INTERSECTIONS OF WALLS. DOWEL ALL VERTICAL WALL REBAR TO FOUNDATIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.



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CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN



NAVAJO TRIBAL UTILITY
AUTHORITY
PO BOX 170
FT. DEFIANCE, AZ 86504

WSP PROJECT No:
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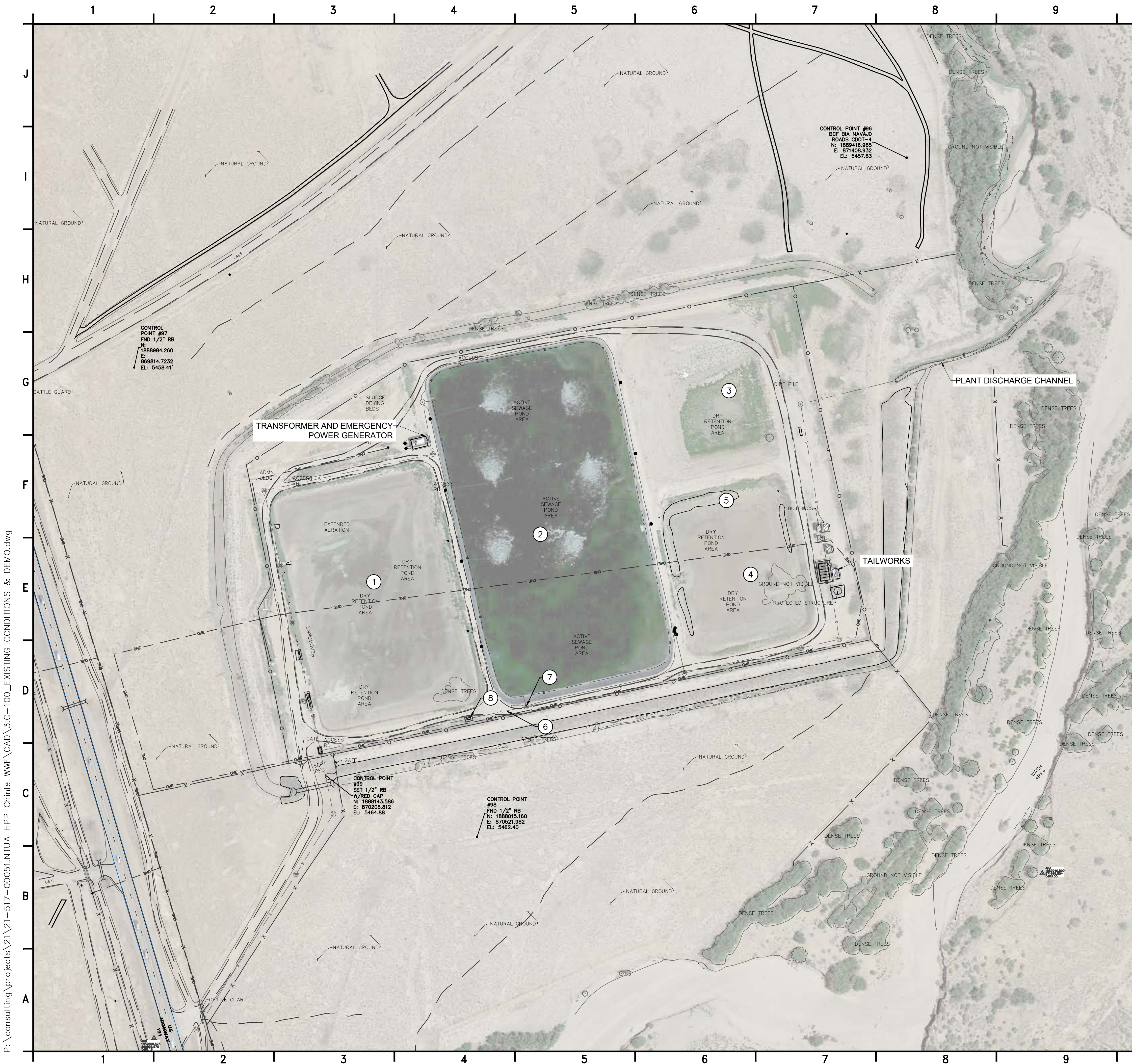
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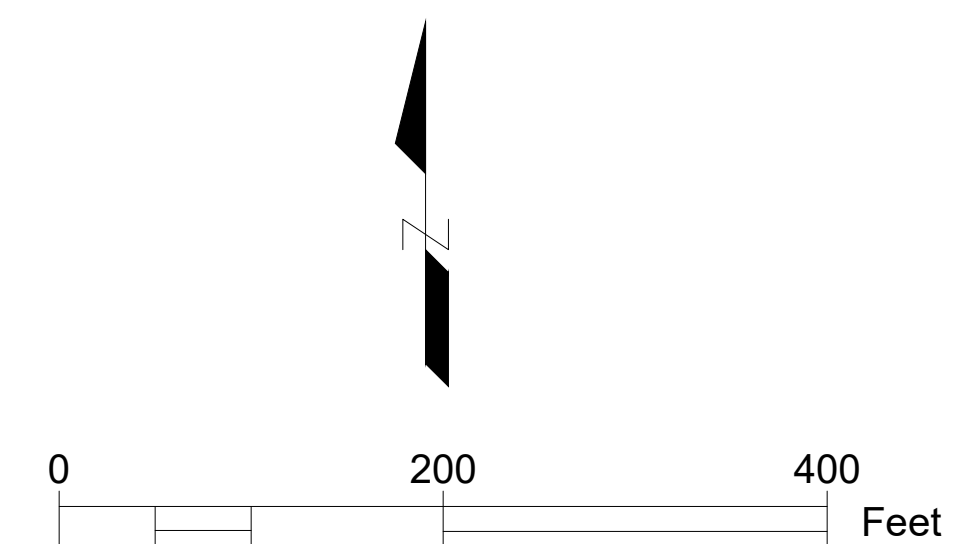
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GENERAL NOTES
& LEGEND

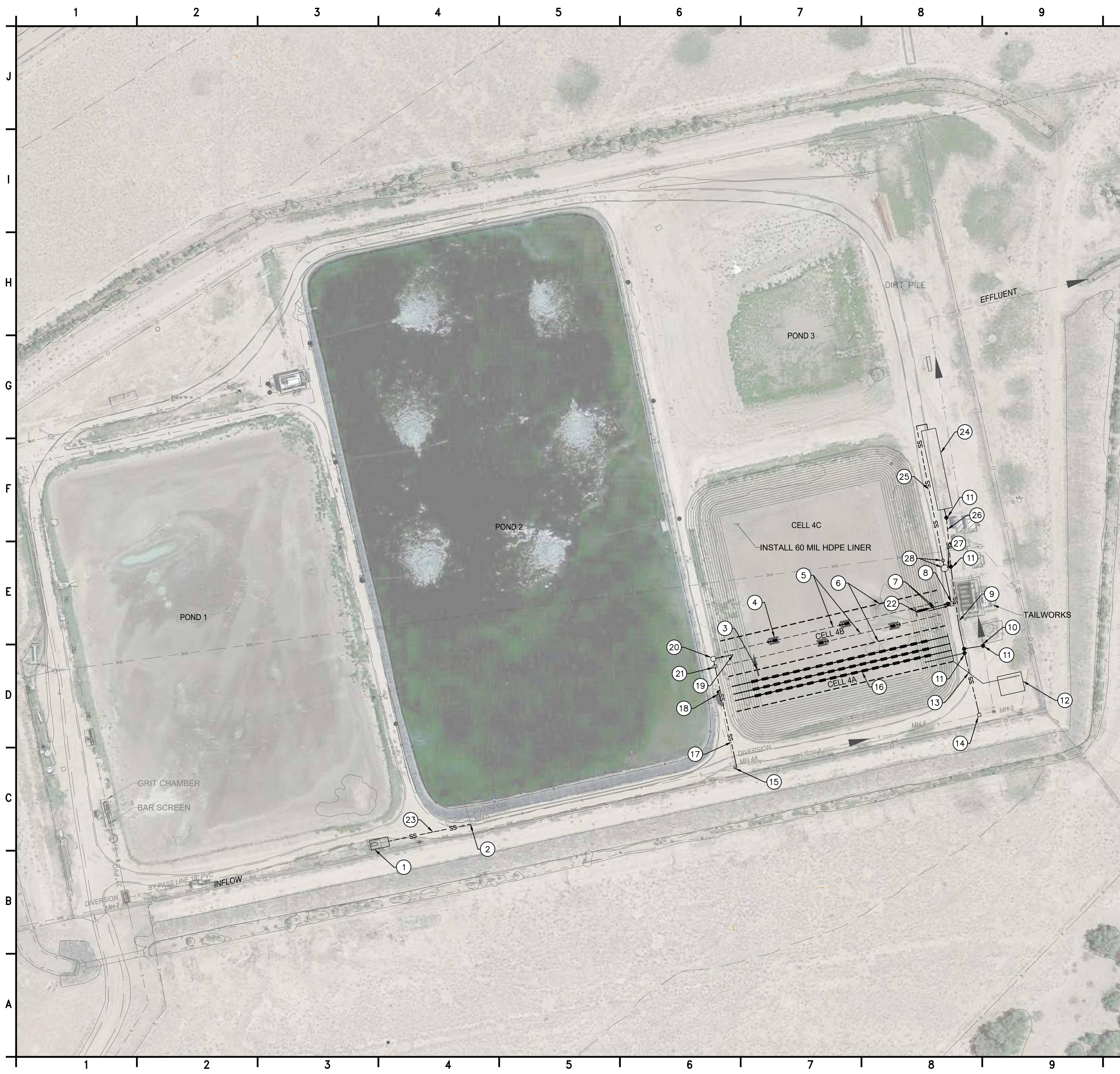
SHEET NUMBER:	REV. #
G-002	
SHEET 2 OF 52 SHEETS	



SHEET NUMBER:	REV. #
C-100	
SHEET 3 OF 52	SHEETS



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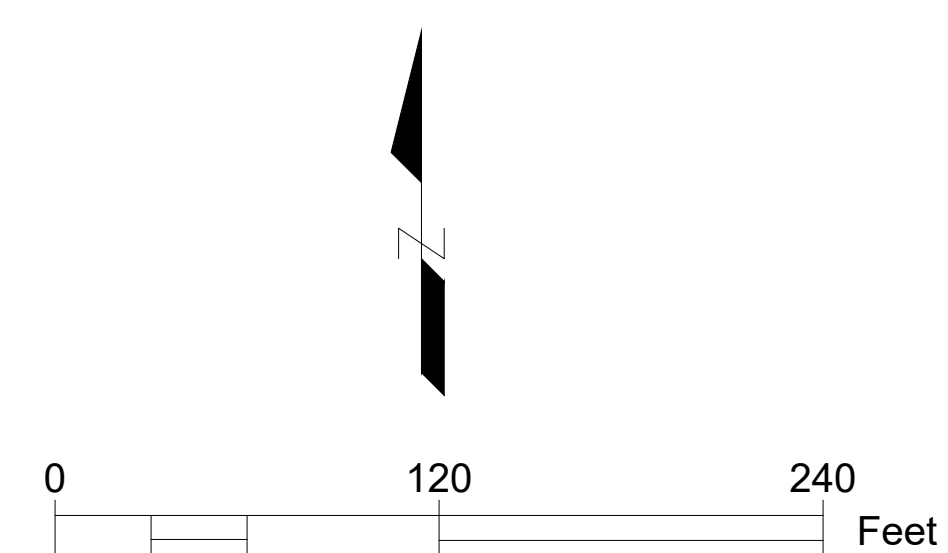


CONSTRUCTION NOTES:

- 1 NEW HEADWORKS (MANUAL BAR SCREEN), SEE SHEET C-304 AND C-305
- 2 RE-GROUT MANHOLE INVERT AND INSTALL PORTABLE FLOW METER
- 3 4' x 3' WINDOW IN BAFFLE, SEE SHEET C-314
- 4 INSTALL 4-15 HP AIRE-O2 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, AND MOORING CABLES, ETC.
- 5 MOORING CABLES FOR AERATORS
- 6 BAFFLES (FLOATING SYNTHETIC)
- 7 20' SECTION - 12" DIP CLASS 350 SANITARY SEWER SECTION WITH MJ GATE VALVE
- 8 NEW OUTLET BOX. SEE DISCHARGE STRUCTURE DETAILS SHEET C-303
- 9 NEW 15-INCH SDR 35 PVC SEWER
- 10 TAP EXISTING SEWER MAIN
- 11 NEW MANHOLE
- 12 AERATION BLOWERS WITH CONCRETE PAD, SEE SHEET C-401
- 13 14" DUCTILE IRON AIR PIPING
- 14 4' X 4' DIVERSION BOX WITH 2 SLUICE GATES, SEE SHEET C-312
- 15 TAP EXISTING MANHOLE
- 16 BIOLAC DIFFUSER AIR SYSTEM
- 17 6" PVC SCH 40 MLSS RECYCLE LINE
- 18 3" PVC WASTE MLSS LINE, SEE SHEET C-312
- 19 20' SECTION - 8" DIP WITH MJ GATE VALVE
- 20 MLSS PUMP STATION, SEE SHEET C-306
- 21 MLSS VALVE VAULT, SEE SHEET C-307
- 22 NEW FLOATING DECANTER, SEE SHEET C-311
- 23 REPLACE 113' SAS WITH 18" SDR 35 PVC
- 24 DISINFECTION CONTACT EXTENSION CHAMBER, SEE SHEET C-312
- 25 NEW 12" DIP FORCEMAIN
- 26 NEW 15" SDR 35 PVC SEWER
- 27 NEW 12" SDR 35 PVC OVERFLOW
- 28 EFFLUENT PUMP STATION AND VALVE VAULT, SEE SHEETS C-308 AND C-309

SHEET GENERAL NOTES:

1. UTILITIES ILLUSTRATED ON PLAN ARE PRESENTED FOR CONTRACTOR INFORMATION, IF APPLICABLE. SUBSURFACE UTILITY LOCATES HAVE NOT BEEN FIELD VERIFIED, ACTUAL UTILITIES ARE SUBJECT TO CHANGE AND UNMARKED, UNKNOWN UTILITIES SHOULD BE MITIGATED IN THE FIELD PRIOR TO GROUND DISTURBANCES. COORDINATE WITH NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) IN CHINLE, AZ, AND ARIZONA ONE-CALL UTILITY LOCATE.
2. FOR DETAILS OF NEW CONSTRUCTION SEE FOLLOWING DRAWING SHEETS.



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SHEET TITLE:
CFID POND SYSTEM

SHEET NUMBER:	REV. #
C-101	
SHEET 4 OF 52 SHEETS	

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GRADING NOTES:

1. RESTORE POND 4 TO AS-BUILT DIMENSIONS AND ELEVATIONS, SEE SHEET C-201 FOR GRADING PROFILE SECTIONS.
2. REMOVE ABANDONED PIPING, ROCK, AND CONCRETE STRUCTURES FROM POND 4.

SHEET GENERAL NOTES:

1. UTILITIES ILLUSTRATED ON PLAN ARE PRESENTED FOR CONTRACTOR INFORMATION, IF APPLICABLE. SUBSURFACE UTILITY LOCATES HAVE NOT BEEN FIELD VERIFIED, ACTUAL UTILITIES ARE SUBJECT TO CHANGE AND UNMARKED, UNKNOWN UTILITIES SHOULD BE MITIGATED IN THE FIELD PRIOR TO GROUND DISTURBANCES. COORDINATE WITH NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) IN CHINLE, AZ, AND ARIZONA ONE-CALL UTILITY LOCATE.

LEGEND

- EXISTING GROUND TOPOGRAPHIC CONTOUR
- PROPOSED GRADING TOPOGRAPHIC CONTOUR



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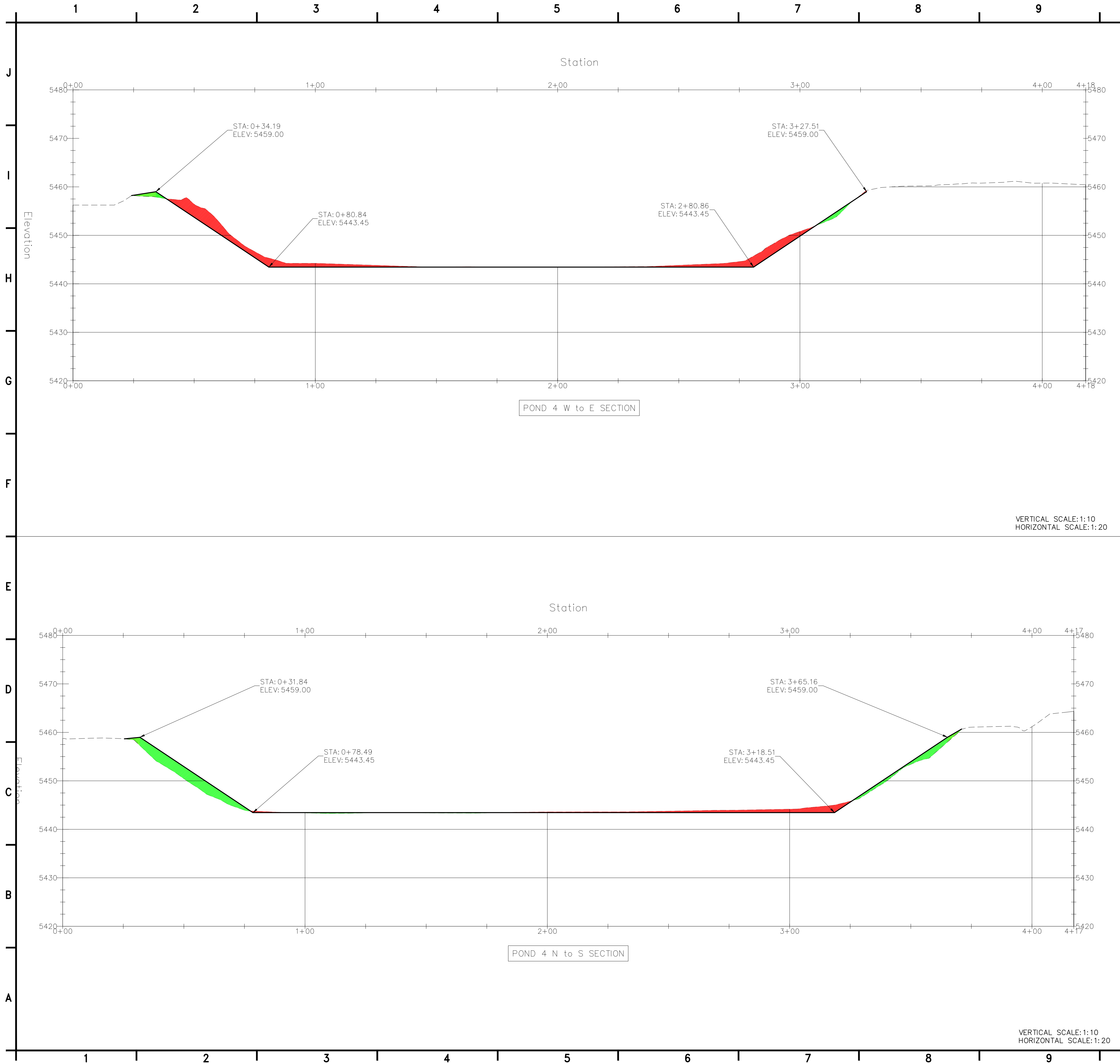
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SHEET TITLE:

GRADING PLAN

SHEET NUMBER:	REV. #
C-200	
SHEET 5 OF 52 SHEETS	

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CUT AND FILL REPORT:

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
POND 4 CUT AND FILL	full	1.00	1.00	95724	2236.70	837.48	1399.22<Cut>
Totals							
				2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total				95724	2236.70	837.48	1399.22<Cut>

* Value adjusted by cut or fill factor other than 1.0



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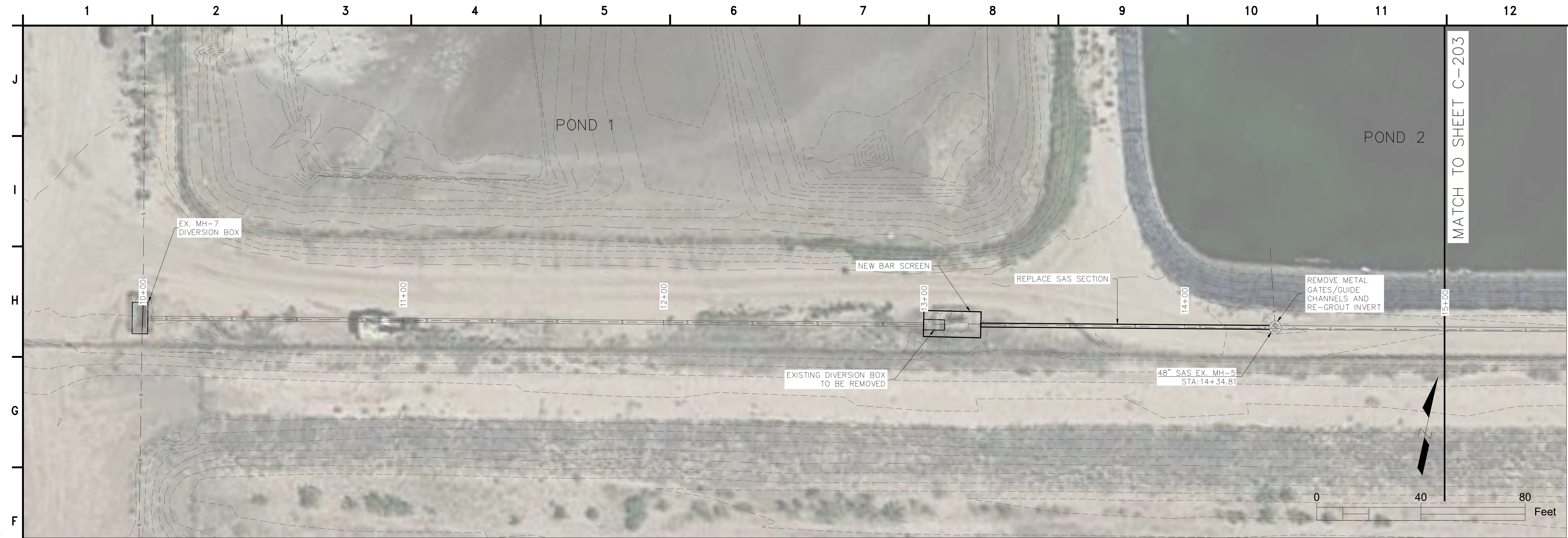
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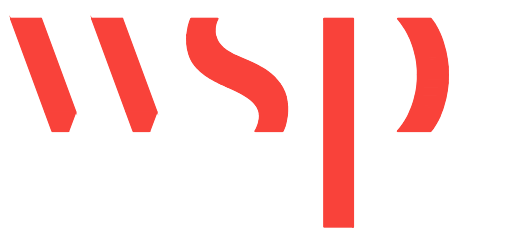
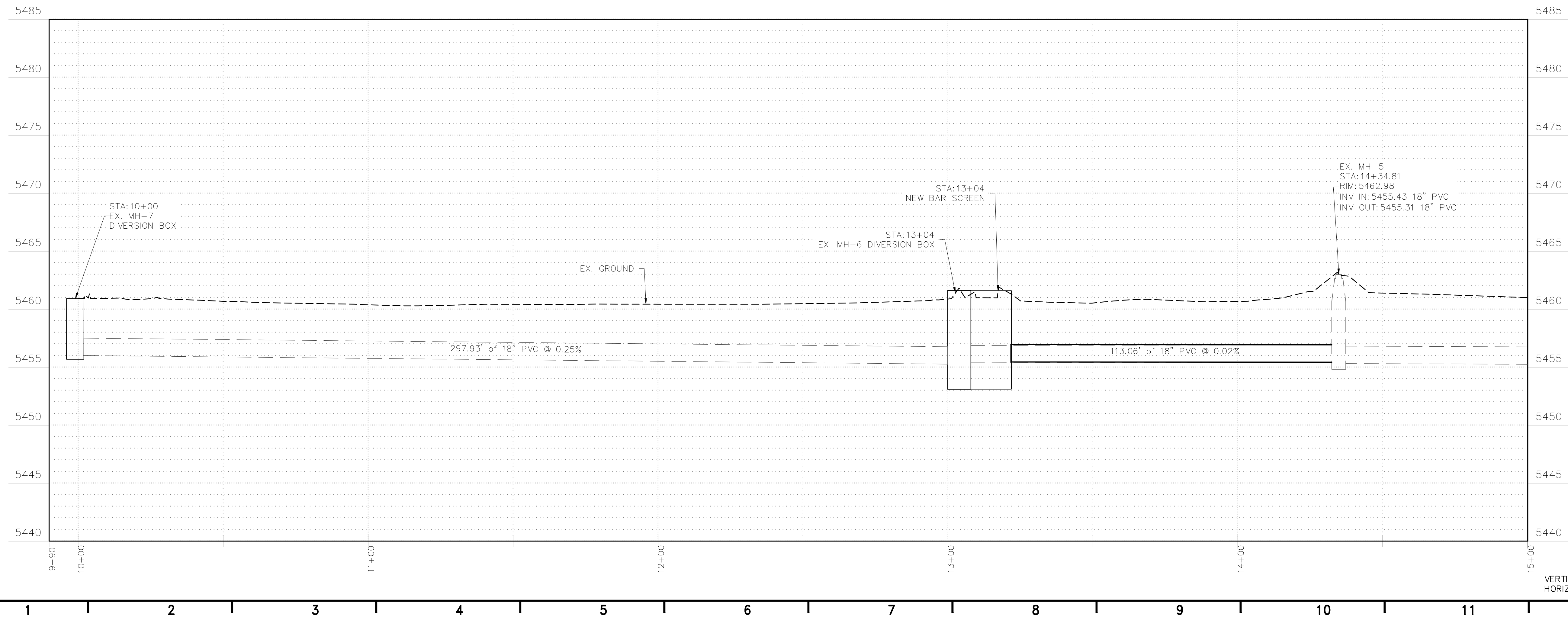
GRADING PLAN
PROFILES

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C-201	
SHEET 6 OF 52 SHEETS	

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EX. SEWER LINE AND MH TIE-IN



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PROJECT:

**CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFIANCE, AZ 86504

WSP PROJECT No:
2151700051

REVISIONS

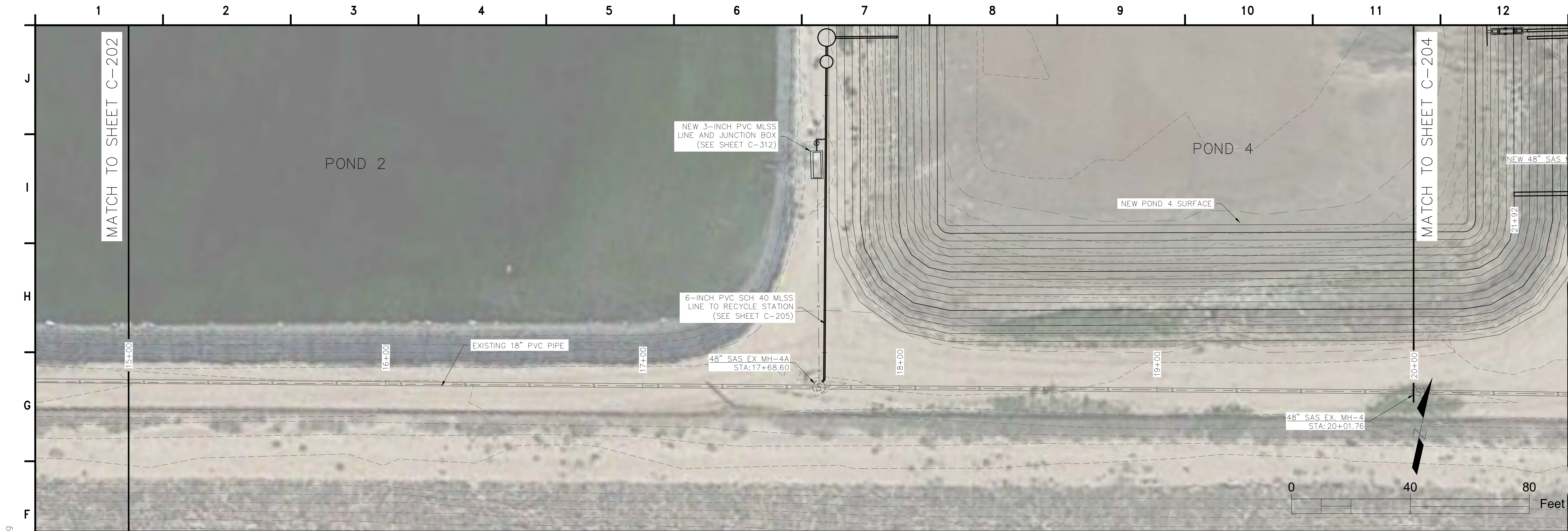
NO.	DATE	BY	APPROVED

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DRAWN BY:	WSP - AO
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APPROVED BY:	WSP - DB
DATE:	07/14/2023

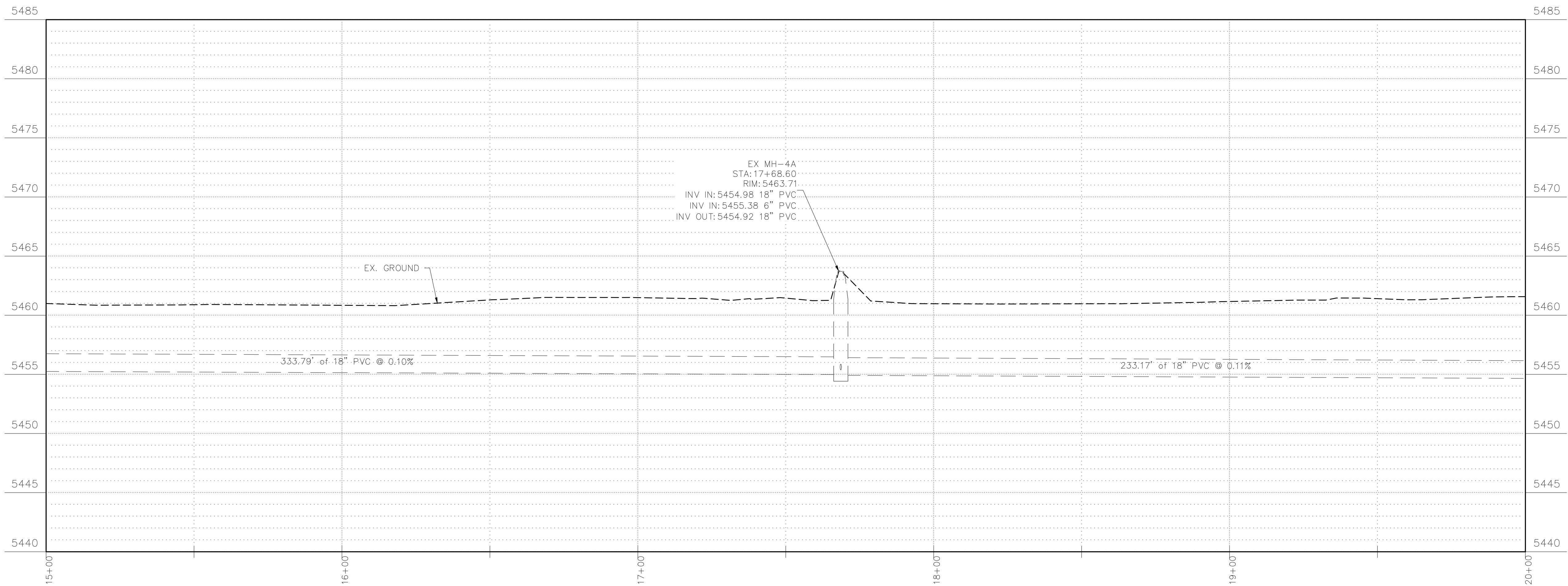
SHEET TITLE:
**SEWER LINE
PLAN AND PROFILE
STA 10+00 TO STA 15+00**

SHEET NUMBER:	REV. #
C-202	
SHEET 7 OF 52 SHEETS	

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EX. SEWER LINE AND MH TIE-IN



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APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

SEWER LINE
PLAN AND PROFILE
STA 15+00 TO STA 20+00

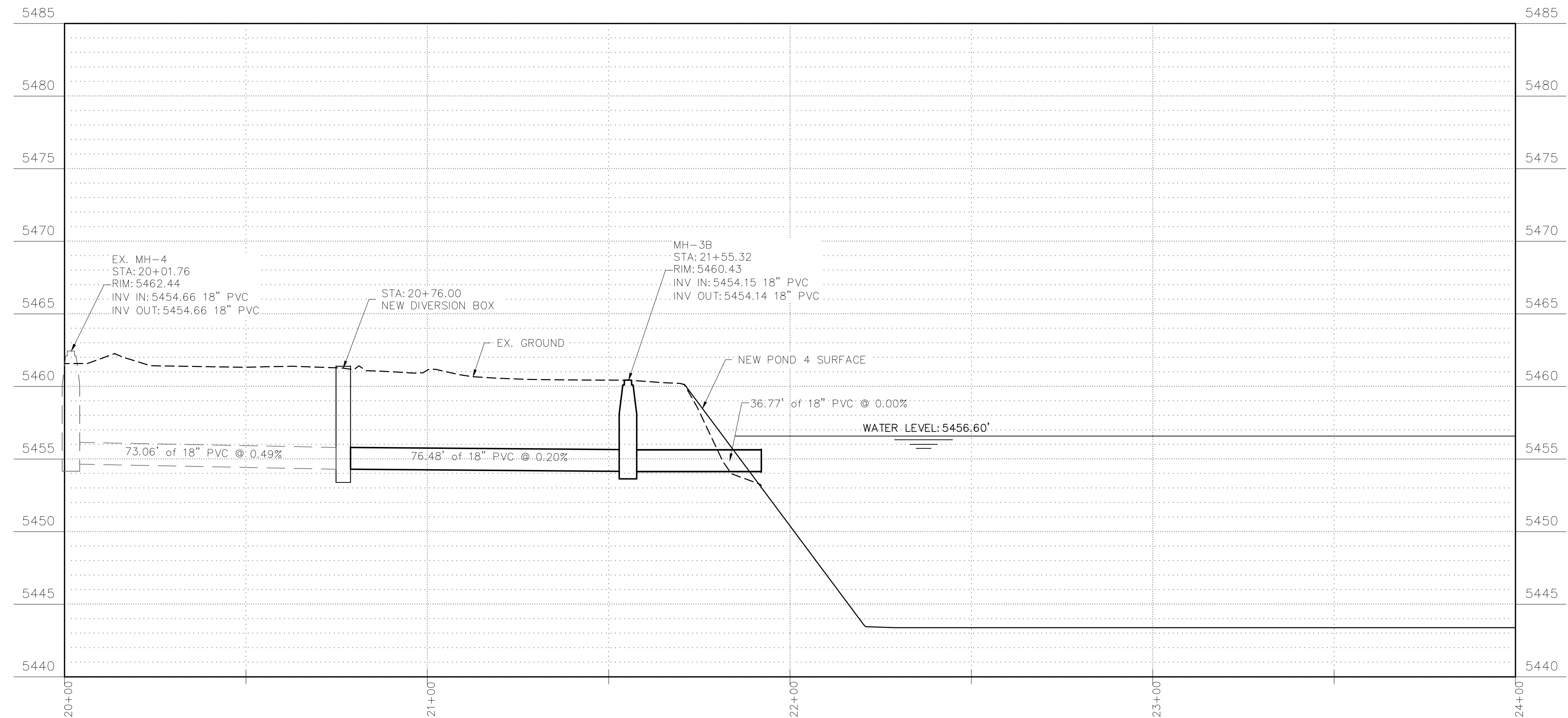
SHEET NUMBER:	REV. #
C-203	
SHEET 8 OF 52 SHEETS	

VERTICAL SCALE: 1:5
HORIZONTAL SCALE: 1:20

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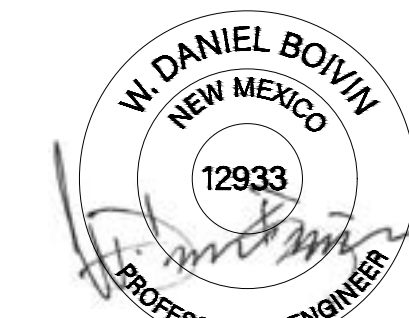
EX. SEWER LINE AND MH TIE-IN



VERTICAL SCALE: 1:5
HORIZONTAL SCALE: 1:20



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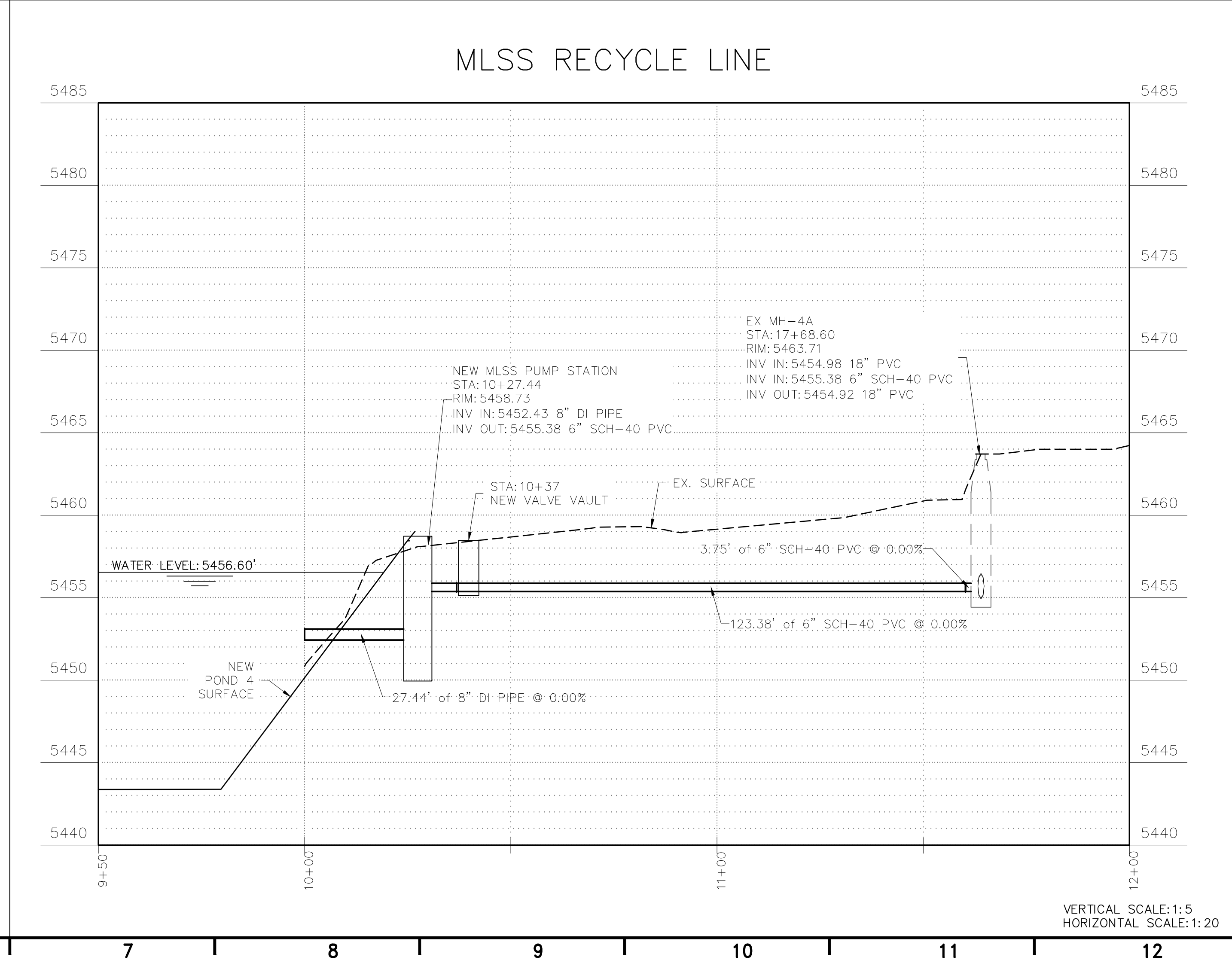
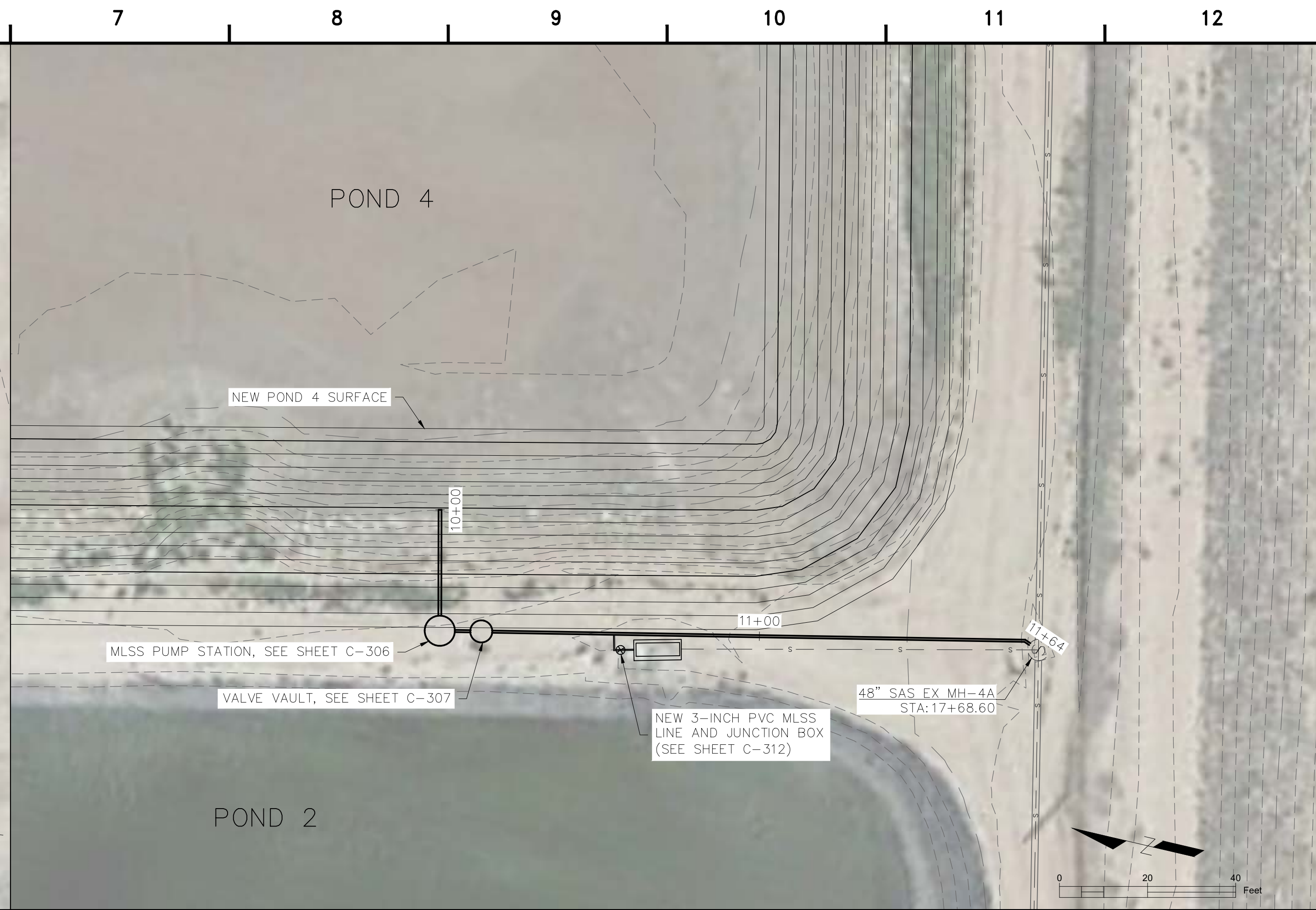
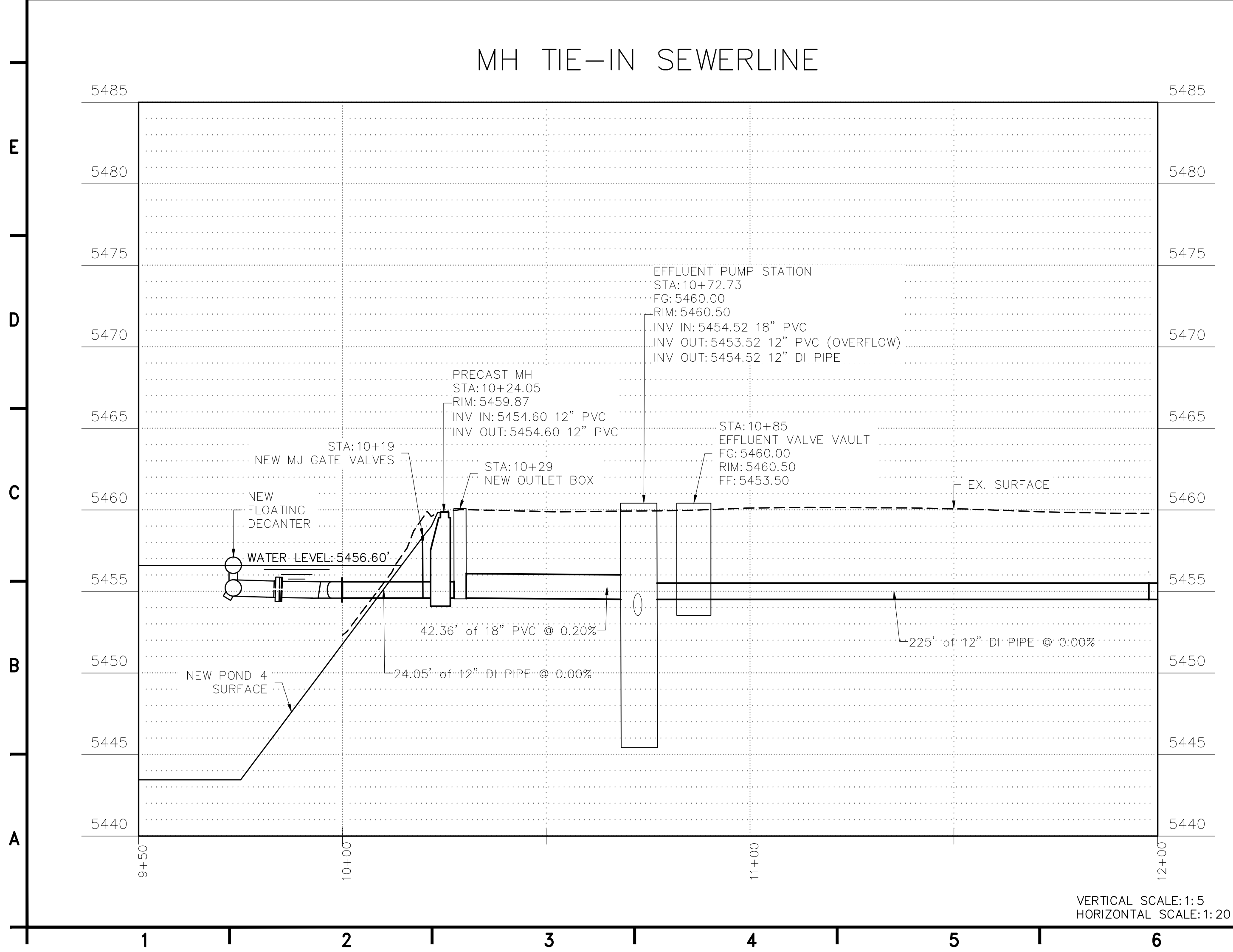
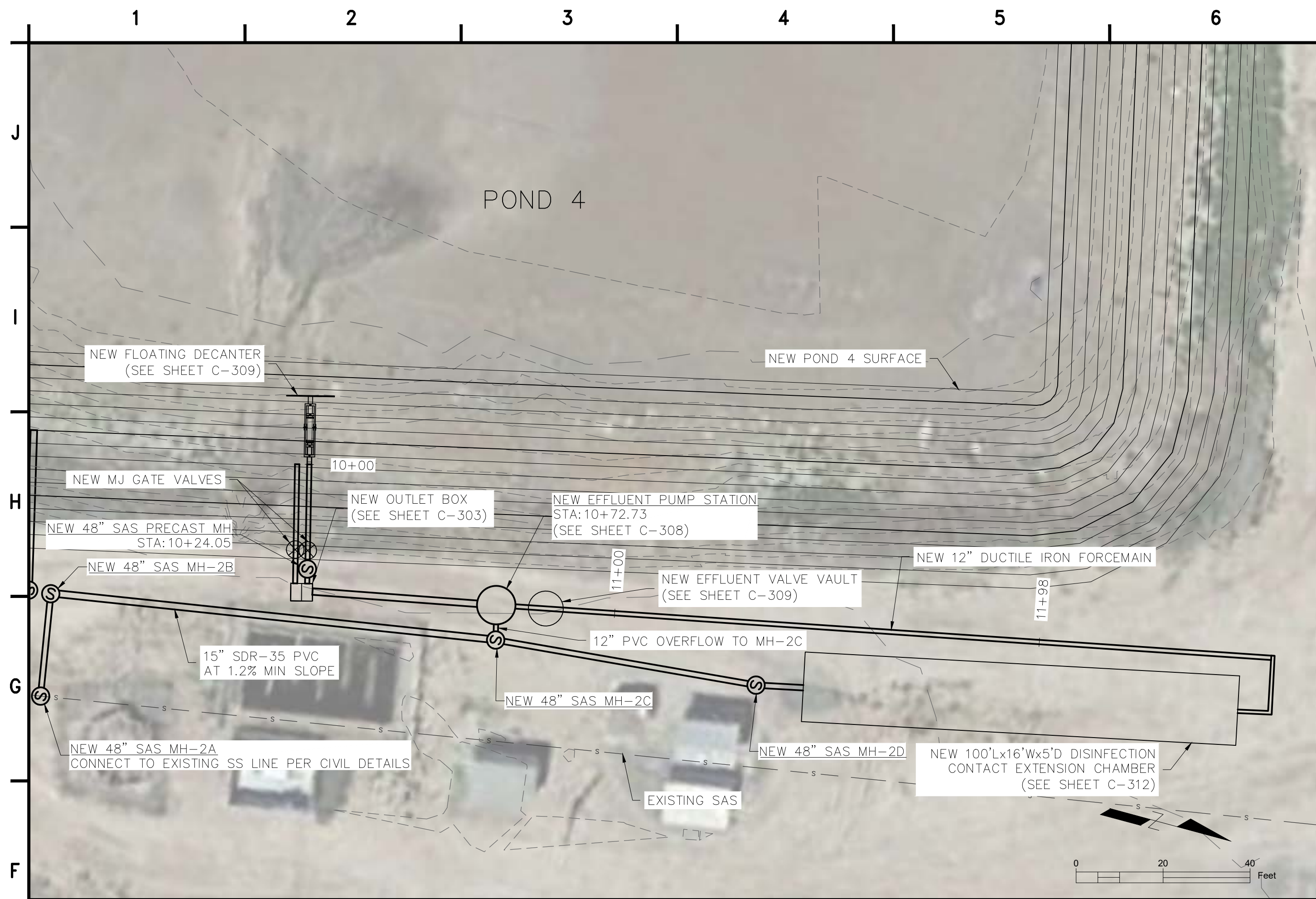
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APPROVED BY:	WSP - DB
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SHEET TITLE:

**SEWER LINE
PLAN AND PROFILE
STA 20+00 TO STA 24+00**

SHEET NUMBER:	REV. #
C-204	
SHEET 9 OF 52 SHEETS	

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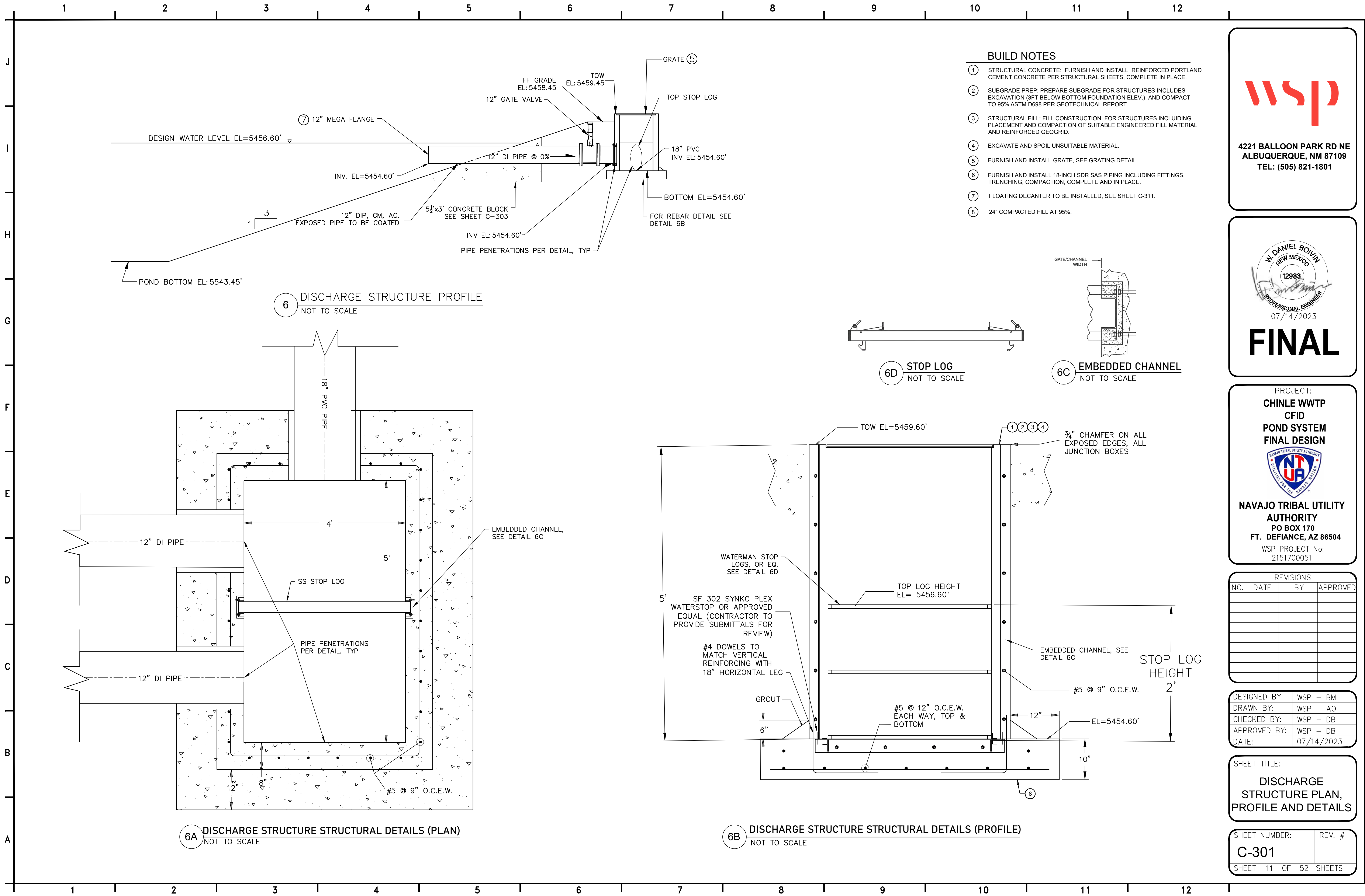
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DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

**SEWER LINE & MLSS
RECYCLE LINE
PLAN AND PROFILE
STA 10+00 TO STA 12+00**

SHEET NUMBER:	REV. #
C-205	
SHEET 10 OF 52 SHEETS	

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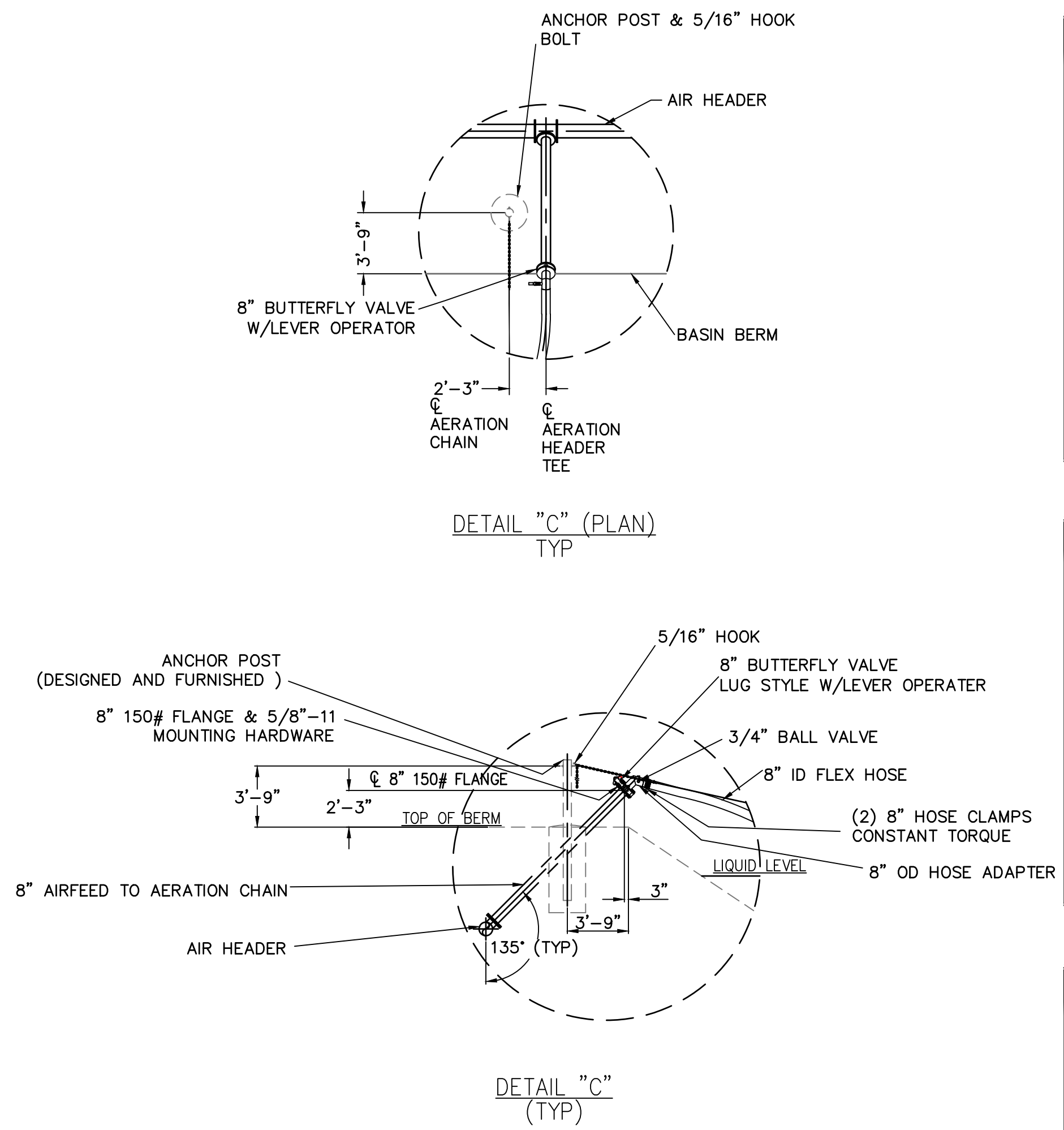
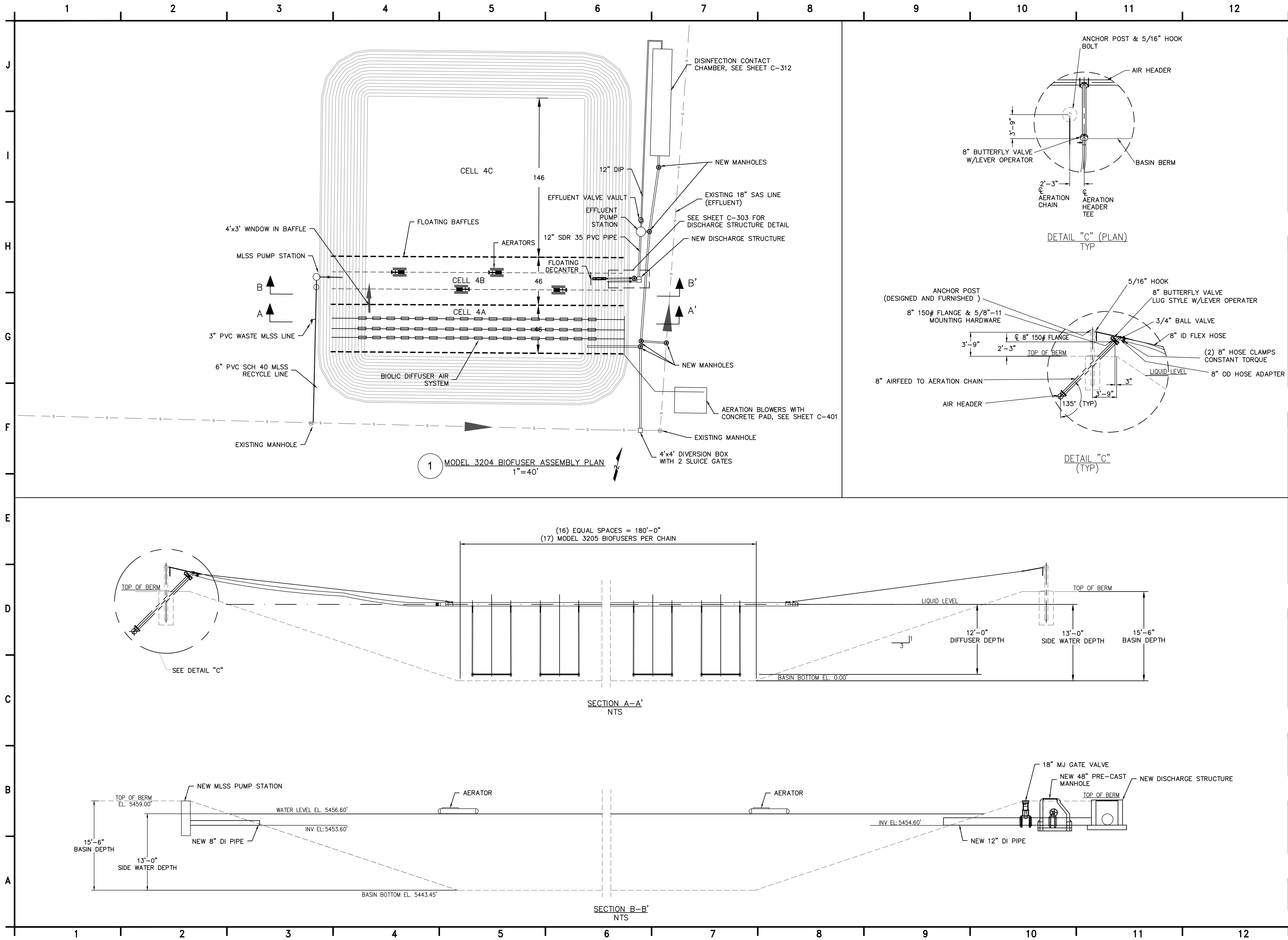
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**DISCHARGE
STRUCTURE PLAN,
PROFILE AND DETAILS**

SHEET NUMBER:	REV. #
C-301	
SHEET 11 OF 52 SHEETS	

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**CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN**



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2151700051

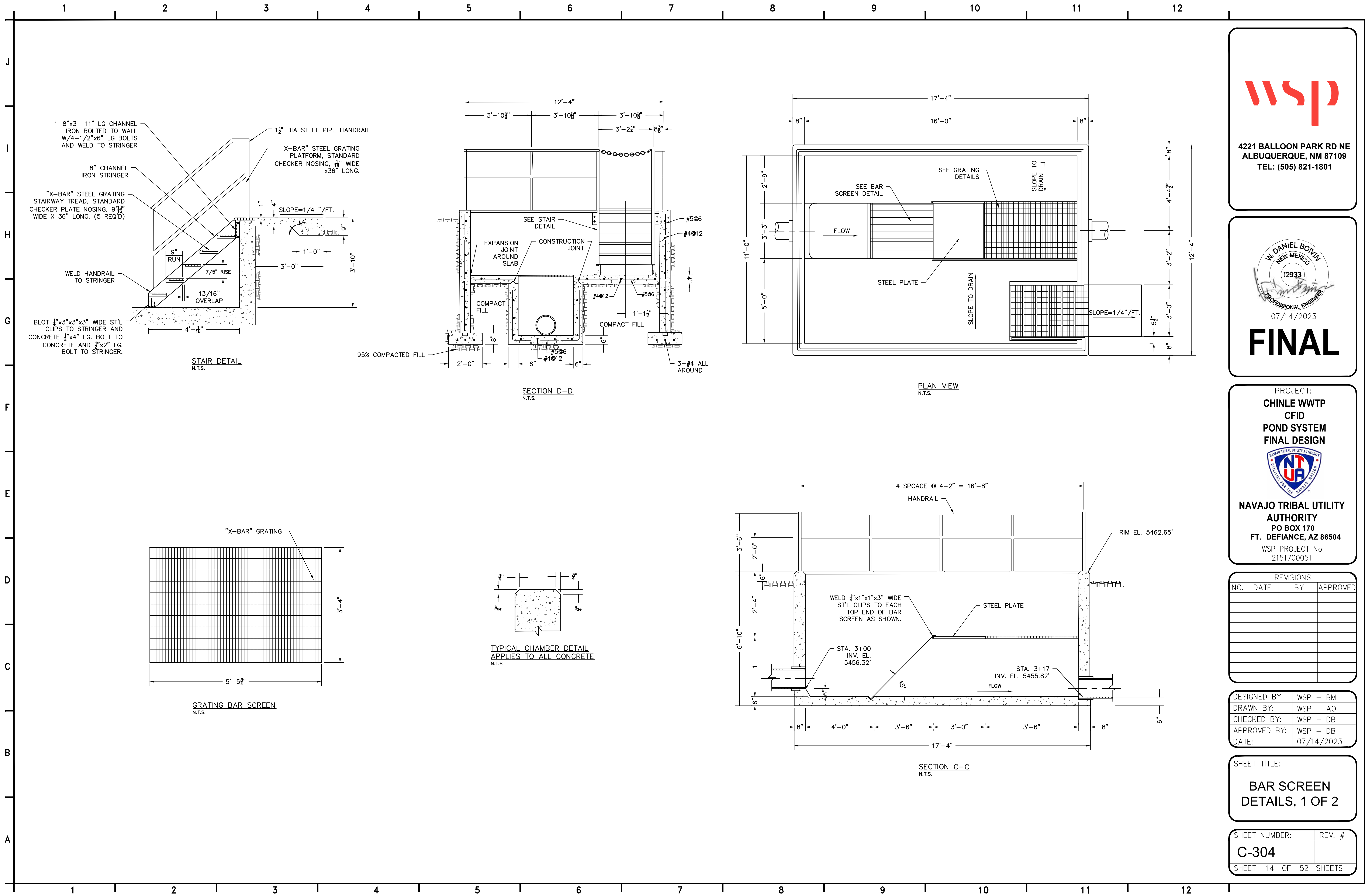
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**DIFUSER
DETAILS**

SHEET NUMBER:	REV. #
C-302	
SHEET 12 OF 52 SHEETS	

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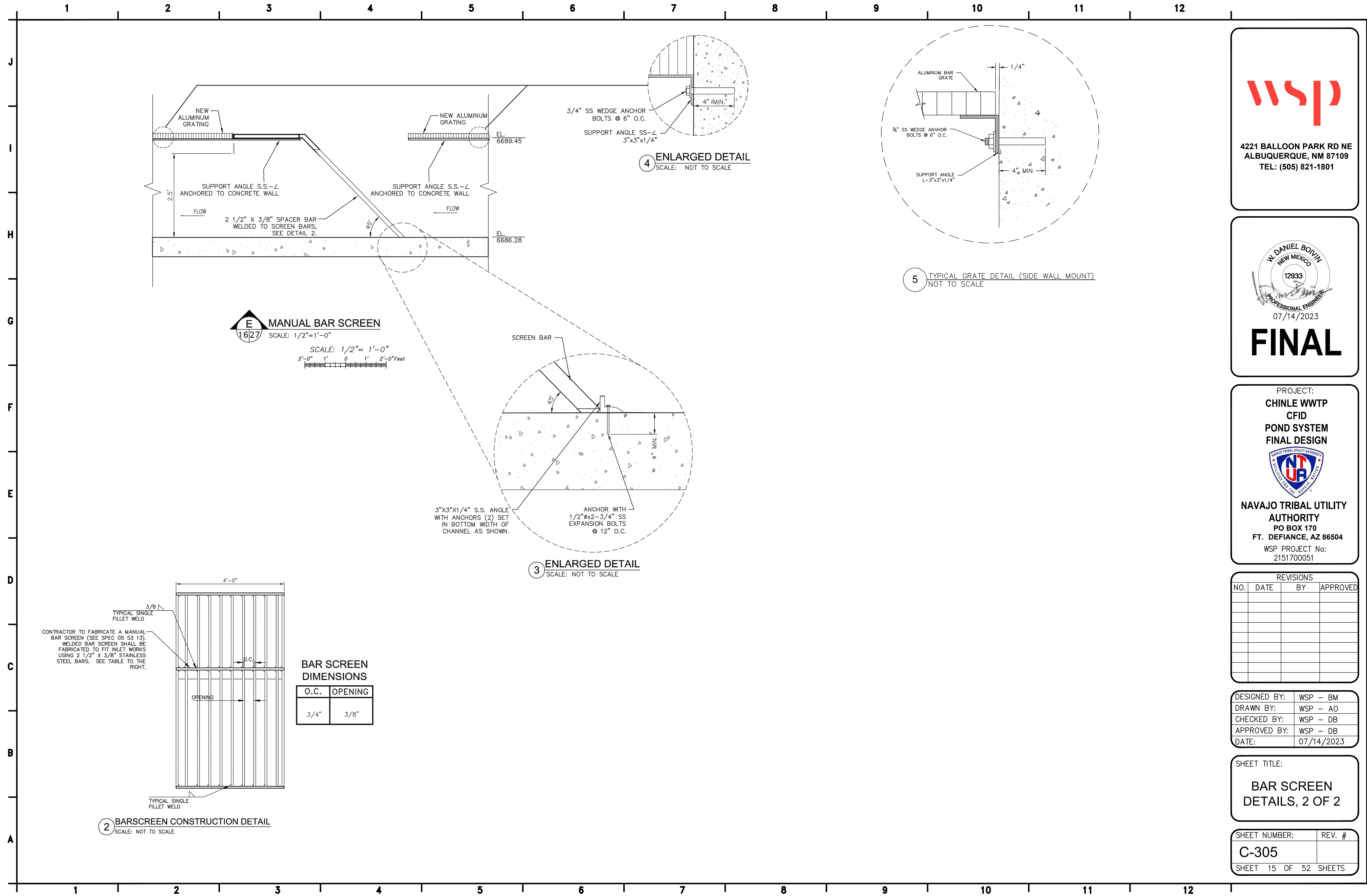
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**BAR SCREEN
DETAILS, 1 OF 2**

SHEET NUMBER:	REV. #
C-304	
SHEET 14 OF 52 SHEETS	

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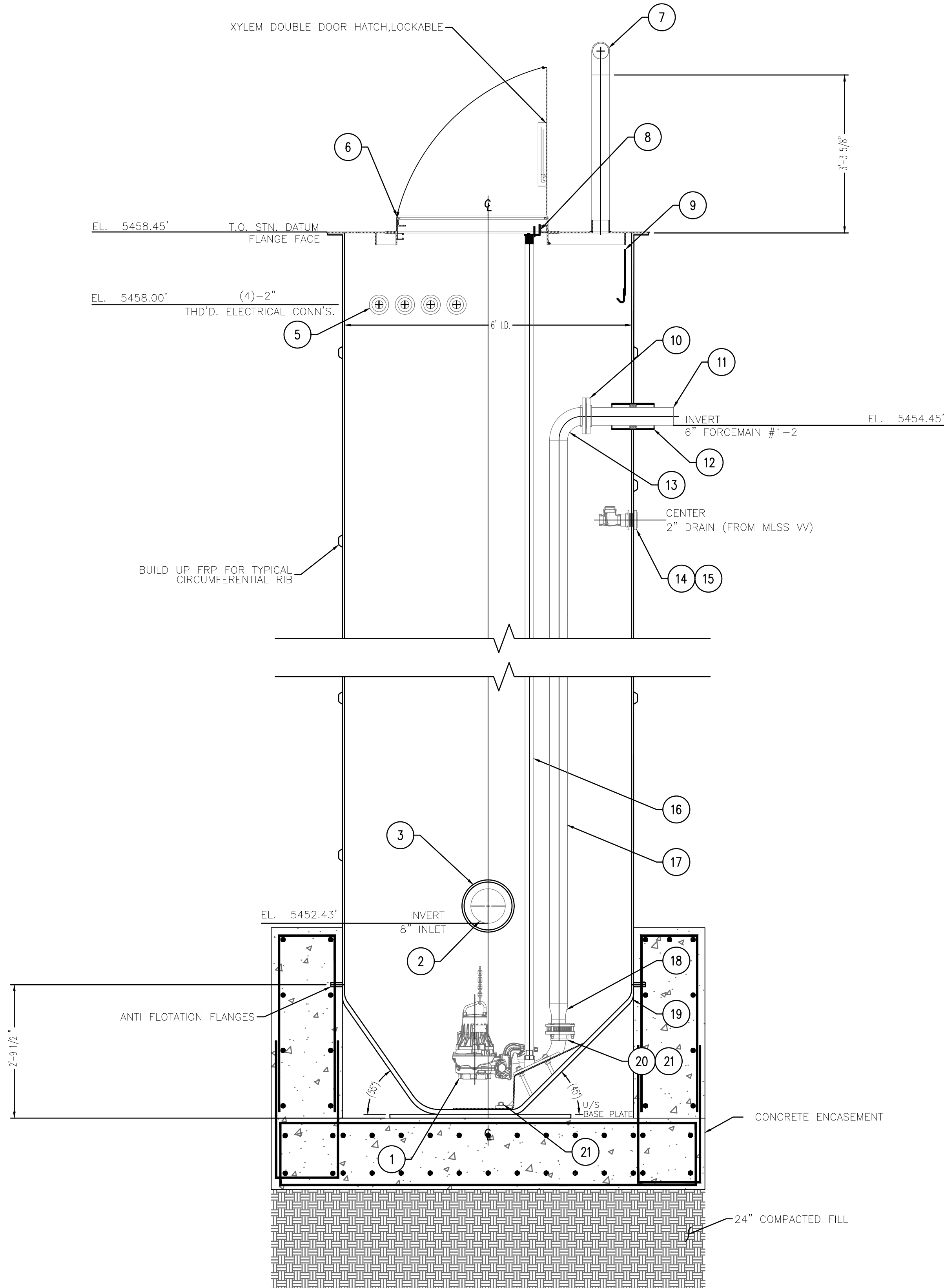
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NO.	DATE	BY	APPROVED

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DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

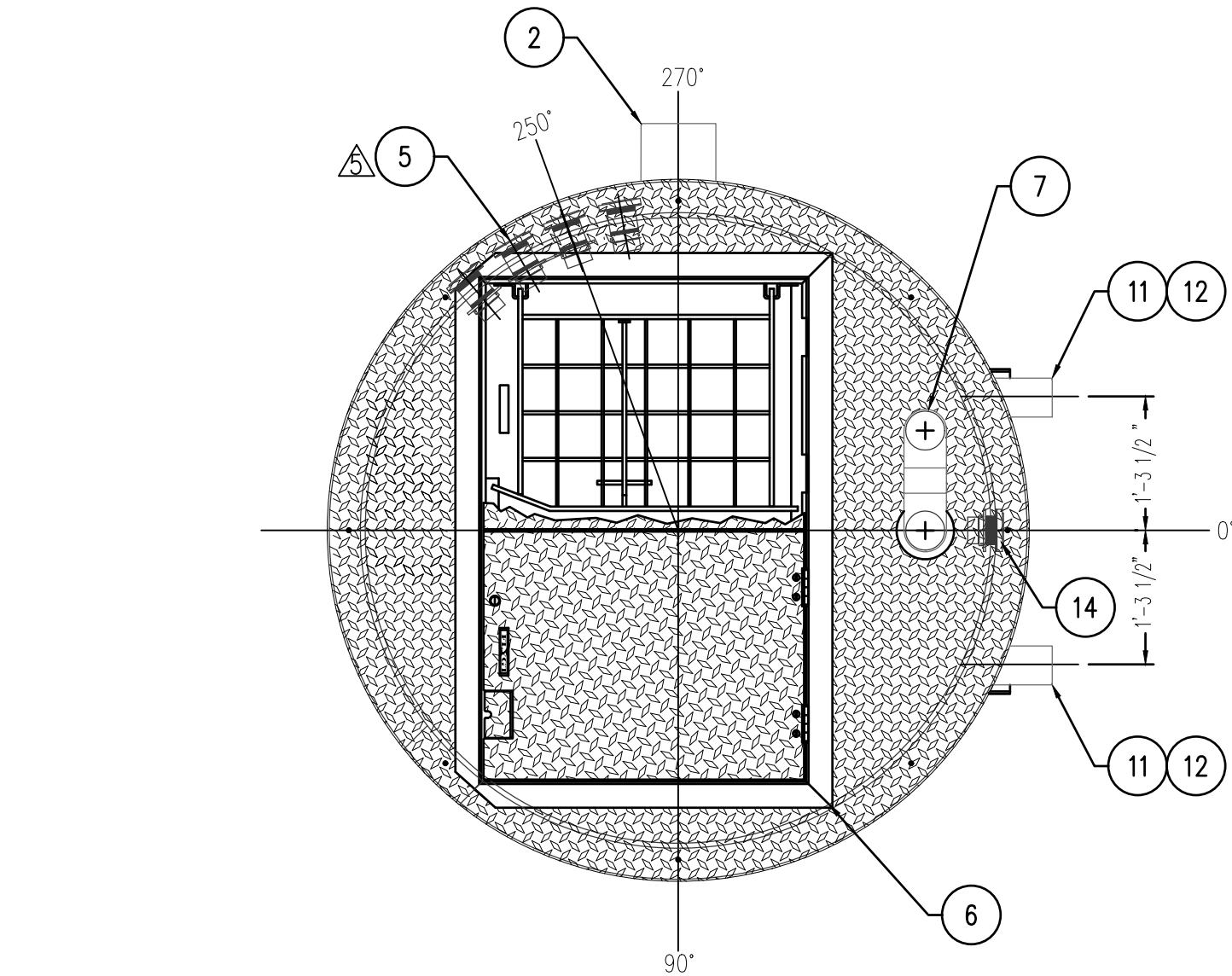
SHEET TITLE:
**BAR SCREEN
DETAILS, 2 OF 2**

SHEET NUMBER:	REV. #
C-305	
SHEET 15 OF 52 SHEETS	

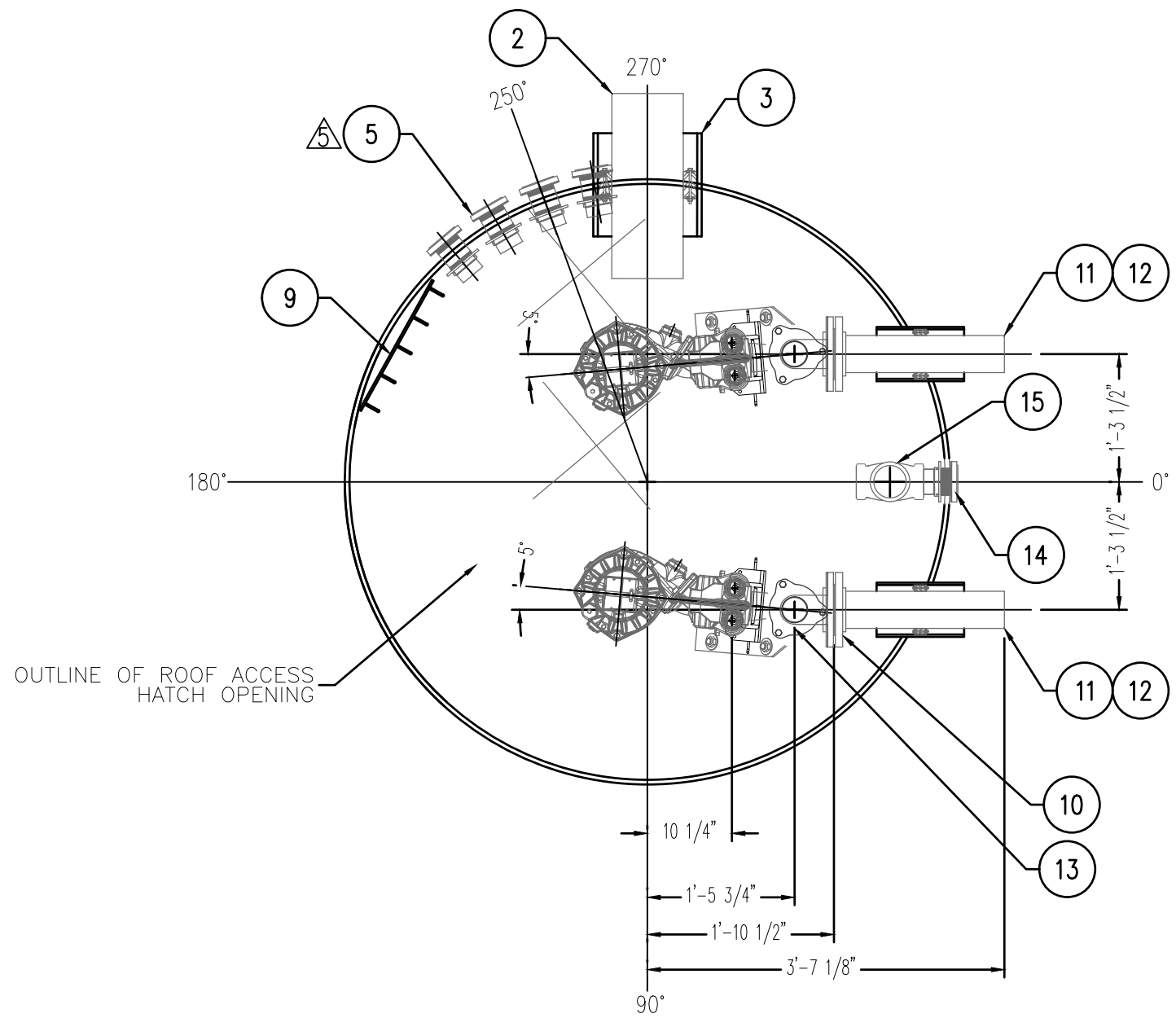
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1 MLSS PUMP STATION (PROFILE)
NOT TO SCALE



1A MLSS PUMP STATION (PLAN)
NOT TO SCALE



1B PUMPS LAYOUT
NOT TO SCALE

BILL OF MATERIALS		
ITEM	DESCRIPTION	QTY.
1	FLYGT PUMPS NP-302.060.464, DN80 [3"]	2
2	8" INLET (SDR 35 HDPE PIPE)	1
3	10" I.D. FRP SLEEVE c/w WRAP-IT LINK WL-475, 12 LINK	2
4	*ITEM REMOVED*	-
5	2" THREADED PVC ELECTRICAL CONNECTION	4
6	FBC-AOSH 33.75x61" ALUMINUM EJ SAFE HATCH, PEDESTRAIN RATED, DOUBLE DOOR, COVER STAY, SS HARDWARE, SLAM LOCK, HANDLE, c/w (1)-4" VENT CONNL. (MODEL FBC-33.75x61AOSH-72)	1
7	4" GOOSENECK VENT, SCH.10, 316 SS c/w 180° RETURN BEND & SST BROSSCREEN	1
8	2" UPPER GUIDE BAR SUPPORT BRACKET, 316 SS	2
9	CABLE HANGER, 316 SS	1
10	6"-150# RF FLANGE, 316 SS	4
11	6" FORCEMAIN #1 & #2, SCH.10 316 SS	2
12	8" I.D. FRP SLEEVE c/w WRAP-IT LINK WL-300, 10 LINK	2
13	6" SR 90 ELBOW, SCH.10 316 SS	2
14	2" BULKHEAD FITTING, FRP (DRAIN FROM VALVE VAULT)	1
15	2" CHECK VALVE (DRAIN FROM VALVE VAULT), SST	1
16	2" GUIDE BARS, SCH.40, 316 SS	4
17	6 RISERS, SCH.10, 316 SS	2
18	6x3" CONCENTRIC REDUCER, SCH.10, 316 SS	2
19	FLYGT T.O.P STYLE BASE c/w FRP REINFORCED BOTTOM & INTEGRAL ANTI-FLOTATION FLANGE	1
20	TOP DISCHARGE ELBOW - 619 99 10-R DN80 [3"]	1
21	TOP DISCHARGE ELBOW - 620 00 10-L DN80 [3"]	1
22	3/4" PUMP BASE BOLTS, 316 SS	8

FABRICATION DESIGN STANDARDS

- XYLEM SPECIFICATION GE-1008-04, REVISION MAY 2002
- AMEC 45-10.01 MANUFACTURE AND INSTALLATION FOR FRP STRUCTURES
- AMEC 45-10.02 FRP PRESSURE PIPE, FITTINGS AND FLANGES

GENERAL NOTES

- WINDING ANGLE - 75°
- TANK WALL - VARIES WITH ELEVATION
- LINER - C-GLASS VEIL AND (2)-1 1/2 oz. MATT
- RESIN - ISOPHTHALIC
- INTERIOR FINISH - WHITE ISOPHTHALIC NPG GELCOAT
- EXTERIOR (ABOVE GRADE) TO HAVE DARK GREEN GELCOAT
- DIMENSIONS ARE IN MILLIMETERS U.N.O.
- APPROX. SHIPPING WEIGHT: 3,200 lbs

INSTALLATION PROCEDURES

- USE THE LIFTING LUGS PROVIDED FOR VERTICAL HANDLING.
- USE SLINGS AROUND THE MAIN TANK FOR HORIZONTAL HANDLING.
- ENSURE UNIT IS STANDING VERTICAL ON CONCRETE PAD.
- BOLT UNIT FIRMLY AND SQUARELY IN PLACE, SHIM WHERE NECESSARY.
- ENCASE BOTTOM RIB IN CONCRETE TO A MIN. HEIGHT OF 150mm ABOVE RIB TO PROVIDE ANCHORAGE. REBAR TO CONNECT SECOND POUR TO THE CONCRETE BASE PAD.
- WHEN EXTERNAL VALVES ARE MOUNTED, SUPPORT PIPING CONNECTIONS DIRECT TO CONCRETE PAD.
- MAINTAIN A DRY SITE UNTIL BACKFILLING OPERATIONS COMMENCE.
- USE A GOOD QUALITY SCREENING OR SAND AS BACKFILL MATERIAL TO REACH 90% COMPACTION.
- PLACE THE BACKFILL IN EQUAL INCREMENTS NOT EXCEEDING 300mm THICK AROUND THE STATION TO PREVENT UNBALANCED LOADS BEING IMPOSED DURING BACKFILLING OPERATIONS. PROGRESSIVELY TAMP BACKFILL AROUND STATION TO FULL HEIGHT TO REDUCE SETTLEMENT TO AN ABSOLUTE MINIMUM.



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PROJECT:

CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN



NAVAJO TRIBAL UTILITY
AUTHORITY
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FT. DEFANCE, AZ 86504

WSP PROJECT No:
2151700051

REVISIONS			
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DESIGNED BY:	WSP - BM
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DATE:	07/14/2023

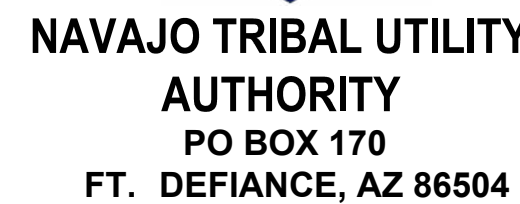
SHEET TITLE:

MLSS PUMP
STATION DETAILS

SHEET NUMBER:	REV. #
C-306	
SHEET 16 OF 52 SHEETS	



PROJECT:
**CHINLE WWTP
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2151700051

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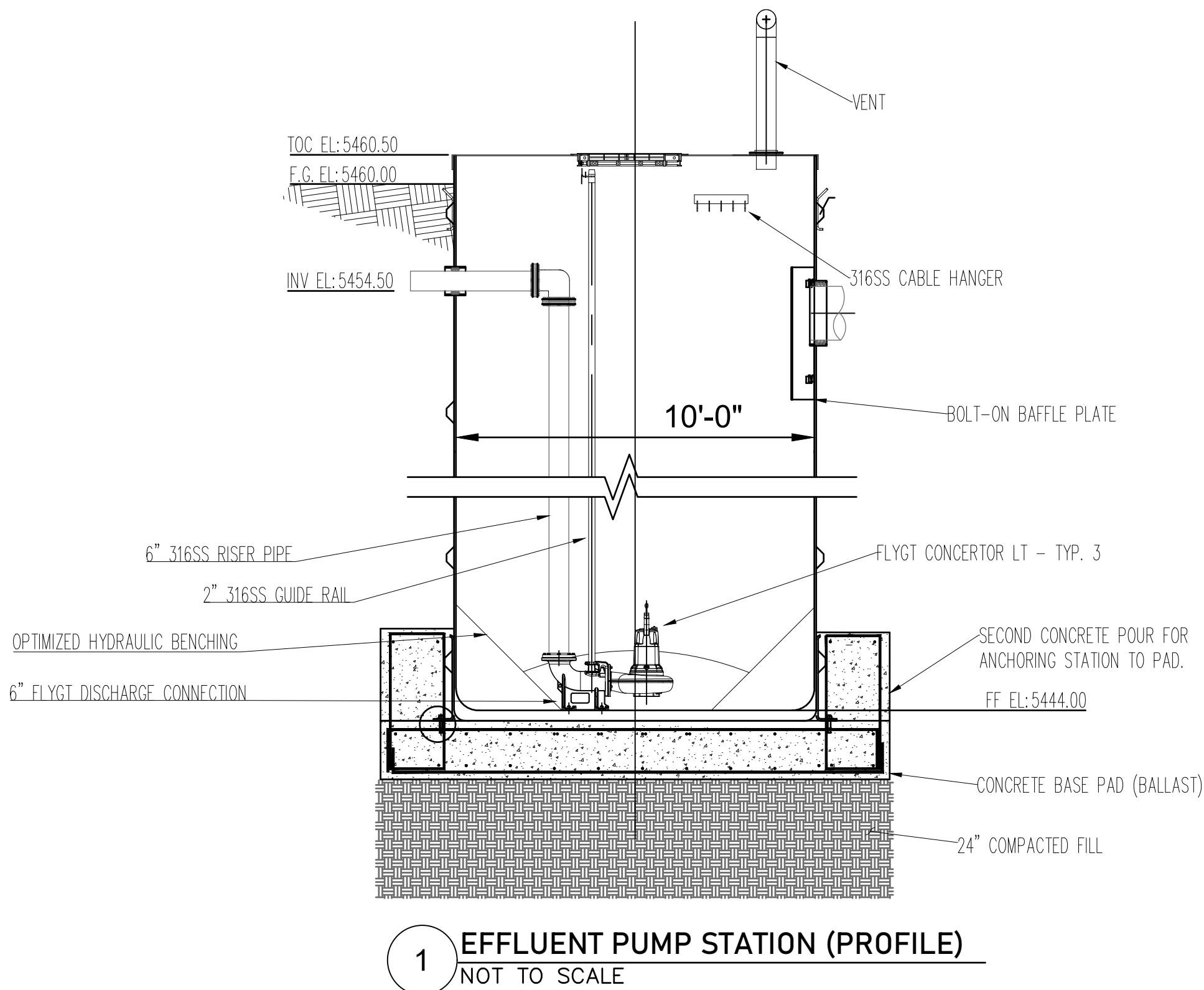
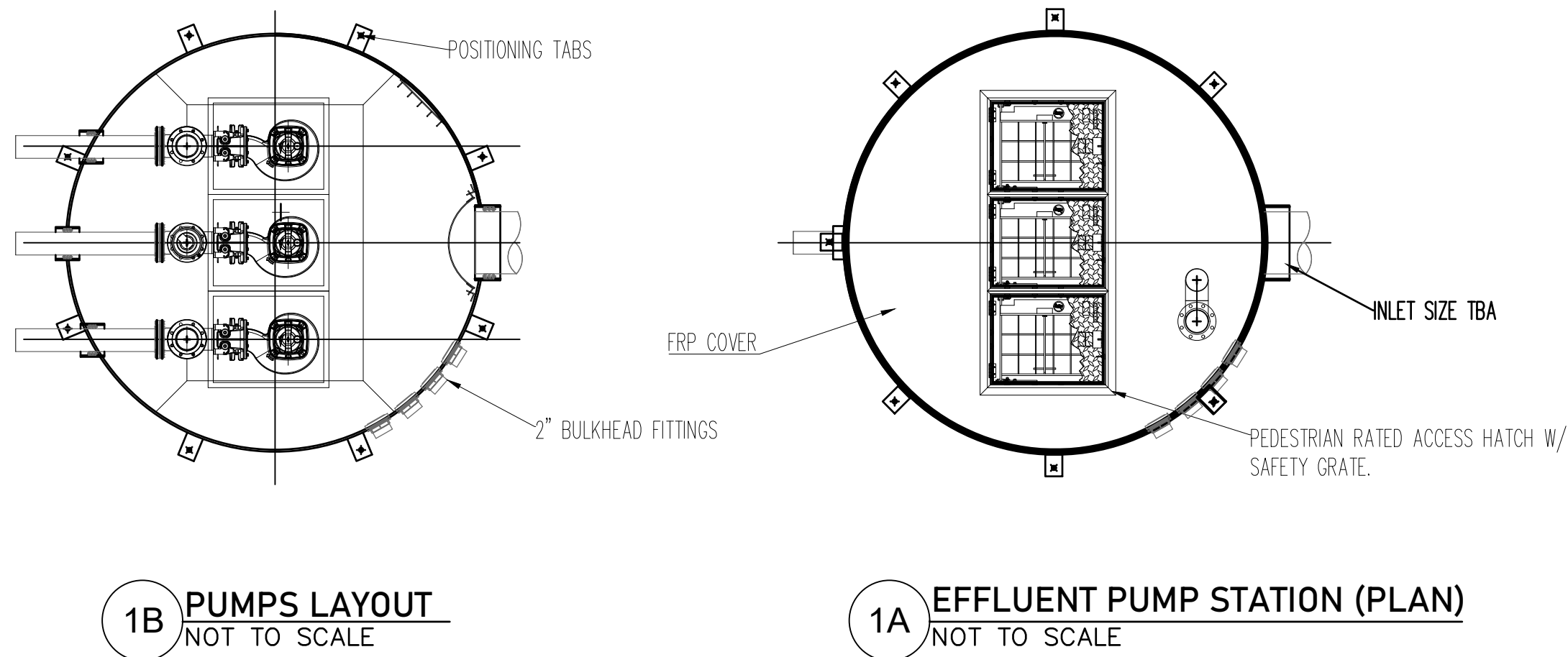
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DRAWN BY:	WSP – AO
CHECKED BY:	WSP – DB
APPROVED BY:	WSP – DB
DATE:	07/14/2023

SHEET TITLE:

**MLSS VALVE
VAULT DETAILS**

SHEET NUMBER:	REV. #
C-307	
SHEET 17 OF 52	SHEETS

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- NOTES:
- 1) STATION TO SHIP COMPLETE WITH PIPING PRE-INSTALLED.
 - 2) STATION TO FEATURE 4:1 SAFETY FACTOR AGAINST WORST CASE LOADING CONDITIONS WITH WATER TABLE TO GRADE.
 - 3) BASE PAD TO BE DESIGNED TO PROVIDE ADEQUATE BALLAST TO RESIST UPLIFT WITH WATER TABLE TO GRADE.
 - 4) STATION TO SHIP COMPLETE WITH OPTIMIZED HYDRAULIC BENCHING.
 - 5) STATION TO BE OFFERED WITH 25 YEAR WARRANTY ON THE STRUCTURE.
 - 6) EFFLUENT PUMP STATION AND VALVE VAULT:
THREE (3) SUMBERSIBLE PUMPS
FLYGT MODEL NP6020.181 N150
6"DISCHARGE, HARD IRON IMPELLER
7.5 HP, 460VAC/3PH/60HZ, 65'SUBMERSIBLE CABLE

- ONE (1)FLYGT FIBERGLASS PREFABRICATED LIFT STATION
10'DIAMETER X 15'-6"DEEP (TO BE DETERMINED DURING CONSTRUCTION)
6"316SS INTERNAL PIPING
2"316SS GUIDE RAIL SYSTEM
CUSTOM BENCHED SELF CLEANING BOTTOM
VENT PIPING THREADS
WALL PENETRATION SEALS PROVIDED (ELECTRICAL CONNECTIONS, GRAVITY INLET, DISCHARGE STUBOUT)
FRP COVER
ALUMINUM ACCESS HATCH WITH SAFETY GRATE, 300 PSF RATED
INCLUDES REQUIRED LIFT STATION ACCESSORIES:
•SS LIFTING CHAIN
•SS GUIDE BRACKETS
•SS CABLE HANGER
•FLYGT GRIP EYE LIFTING DEVICE

- ONE (1)PREFABRICATED FIBERGLASS VALVE VAULT
8'DIAMETER X 6'DEEP
6"316SS INTERNAL PIPING
3EA 6"FLYGT CHECK VALVES
3EA 6"CAST IRON PLUG ISOLATION VALVES
1EA 2"RF VALVE ARV
WALL PENETRATION SEALS
ALUMINUM LADDER
FRP COVER
ACCESS HATCH, 300 PSF RATED

- ONE (1) TRIPLEX PUMP CONTROL PANEL
NEMA 3R PAINTED GALVANIZED ENCLOSURE WITH GASKETED DOOR
FVNR STARTERS
TIME BASED OPERATION (1 HOUR RUN, 3 HOUR STANDBY)
HIGH LEVEL ALARM BEACON AND HORN, SEAL FAIL/ LEAK DETECTION MONITORING
POWER MONITOR AND SURGE PROTECTION ON SUPPLY
ANTI-CONDENSATION HEATER
ENABLE AND HIGH LEVEL FLOAT



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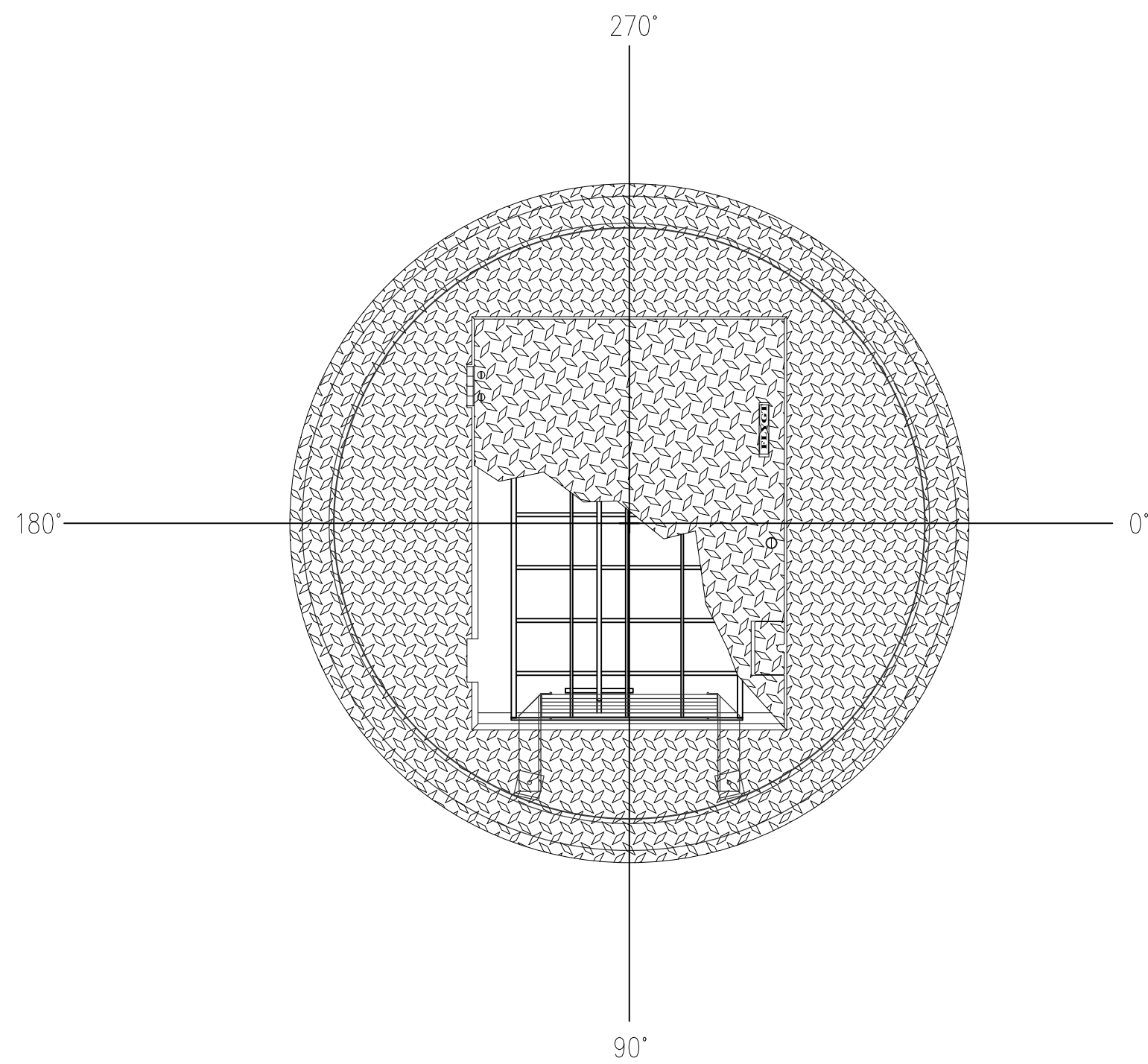
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DATE:	07/14/2023

SHEET TITLE:

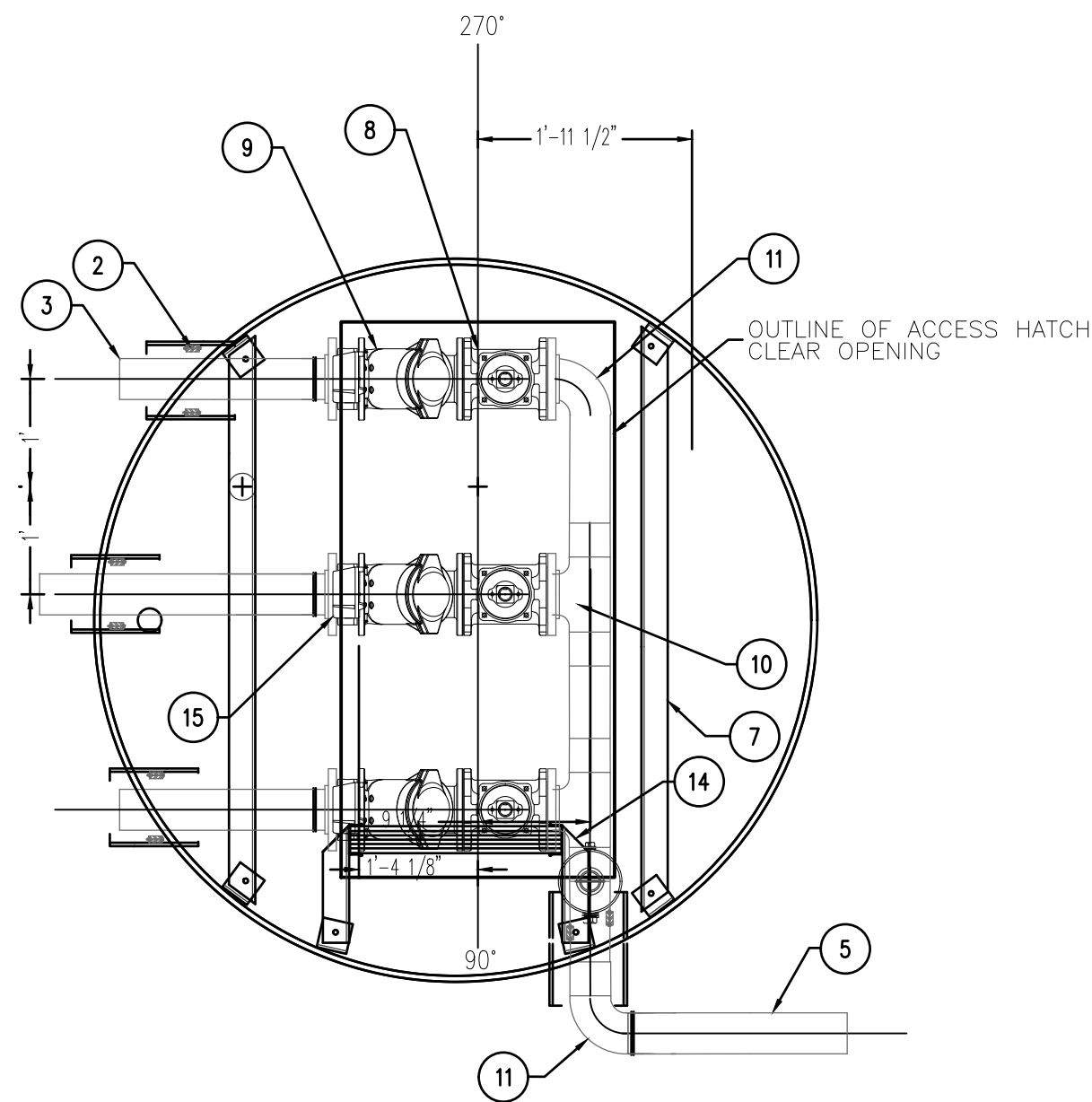
EFFLUENT PUMP
STATION DETAILS

SHEET NUMBER:	REV. #
C-308	
SHEET 18 OF 52 SHEETS	

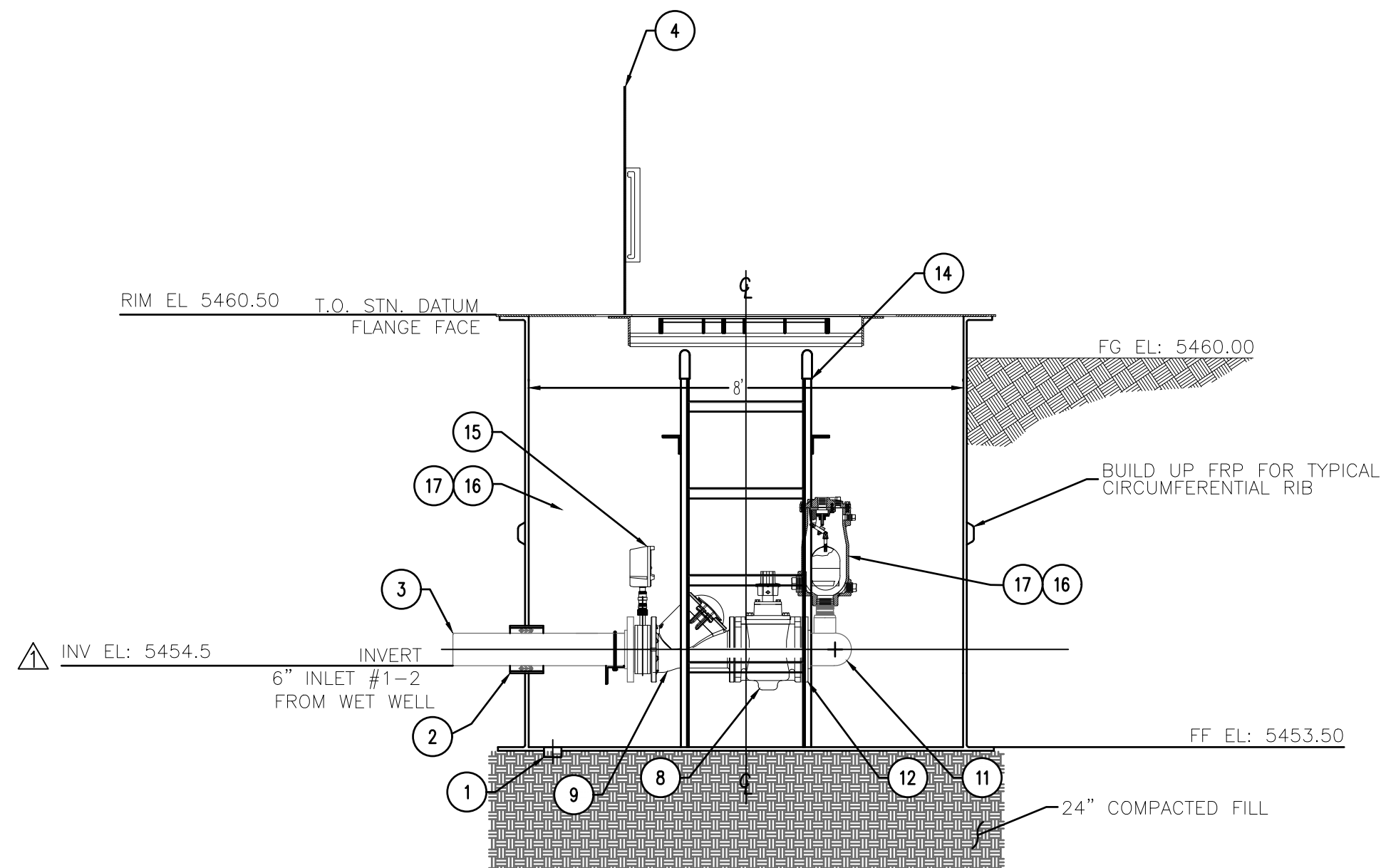
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1B EFFLUENT VALVE VAULT LAYOUT (PLAN)
NOT TO SCALE



1A EFFLUENT VALVE VAULT PIPING LAYOUT
NOT TO SCALE



1 EFFLUENT VALVE BOX (PROFILE)
NOT TO SCALE

BILL OF MATERIALS		
ITEM	DESCRIPTION	QTY.
1	50mm [2"] NPT DRAIN, FRP	1
2	150mm [6"] FRP SLEEVE c/w WRAP-IT LINK, MODEL WL-300/10 LINK (FIELD INSTALLS)	3
3	150mm [6"] INLET #1-2, SCH.10, 316 SS	2
4	ALUMINUM COVER c/w EJ SAFE HATCH, PEDESTRAIN RATED, SINGLE DOOR, COVER STAY, SS HARDWARE, SLAM LOCK, HANDLE	1
5	CONNECT TO 12" DIP FORCEMAIN (RESTRAINED)	1
6	100mm [4"] ANTILOCK COUPLER, SST	1
7	HEADER SUPPORT (L64x64x6.4mm [2.5x2.5x1/4"]); ALUMINUM c/w PIPE CLAMPS	2
8	150mm [6"] PLUG VALVE (AIS COMPLIANT), DEZURIK	2
9	150mm [6"] CHECK VALVE, HDL 5087	2
10	8" TEE	1
11	8" REDUCING ELBOW	2
12	150mm-150# [6"] FLANGE, 316 SS	6
13	150mm [6"] HYMAX COUPLERS, NOT SHOWN ON DRAWING (SHIPPED LOOSE, INSTALLED)	2
14	ALUMINUM LADDER, FULL LENGTH	1
15	150mm [6"] ONYX PRESSURE ISOLATOR VALVE WITH GAUGE	2
16	50mm [2"] NPT COUPLER, CLASS 150, 316 SS	2
17	50mm [2"] NPT AIR RELEASE VALVE, VALMATIC 801 (AIS COMPLIANT)	2

FABRICATION DESIGN STANDARDS
1. FLYGT SPECIFICATION GE-1008-04, REVISION MAY 2002
2. AMEC 4S-10.01 MANUFACTURE AND INSTALLATION FOR FRP STRUCTURES
3. AMEC 4S-10.02 FRP PRESSURE PIPE, FITTINGS AND FLANGES

GENERAL NOTES
1. WINDING ANGLE - 75°
2. TANK WALL - VARIES WITH ELEVATION
3. LINER - C-GLASS VEIL AND (2)-1 1/2 oz. MATT
4. RESIN - ISOPHTHALIC
5. INTERIOR FINISH - WHITE ISOPHTHALIC NPG GELCOAT
6. EXTERIOR (ABOVE GRADE) TO HAVE DARK GREEN URETHANE PAINTED FINISH
7. DIMENSIONS ARE IN MILLIMETERS U.N.O.
8. APPROX. SHIPPING WEIGHT: 567 kg (1,250 lbs)

INSTALLATION PROCEDURES
1. USE SLINGS FOR VERTICAL AND HORIZONTAL HANDLING.
2. ENSURE UNIT IS STANDING VERTICAL ON CONCRETE PAD OR HARD PACKED GROUND.
3. LEVEL THE STATION.
4. MAINTAIN A DRY SITE UNTIL BACKFILLING OPERATIONS COMMENCE.
5. USE A GOOD QUALITY SCREENING OR SAND AS BACKFILL MATERIAL TO 90% COMPACTION.
6. PLACE THE BACKFILL IN EQUAL INCREMENTS NOT EXCEEDING 300mm THICK AROUND THE STATION TO PREVENT UNBALANCED LOADS BEING IMPOSED DURING BACKFILLING OPERATIONS. PROGRESSIVELY TAMP BACKFILL AROUND STATION TO FULL HEIGHT TO REDUCE SETTLEMENT TO AN ABSOLUTE MINIMUM.



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PROJECT:
CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN



NAVAJO TRIBAL UTILITY
AUTHORITY
PO BOX 170
FT. DEFIANC, AZ 86504

WSP PROJECT No:
2151700051

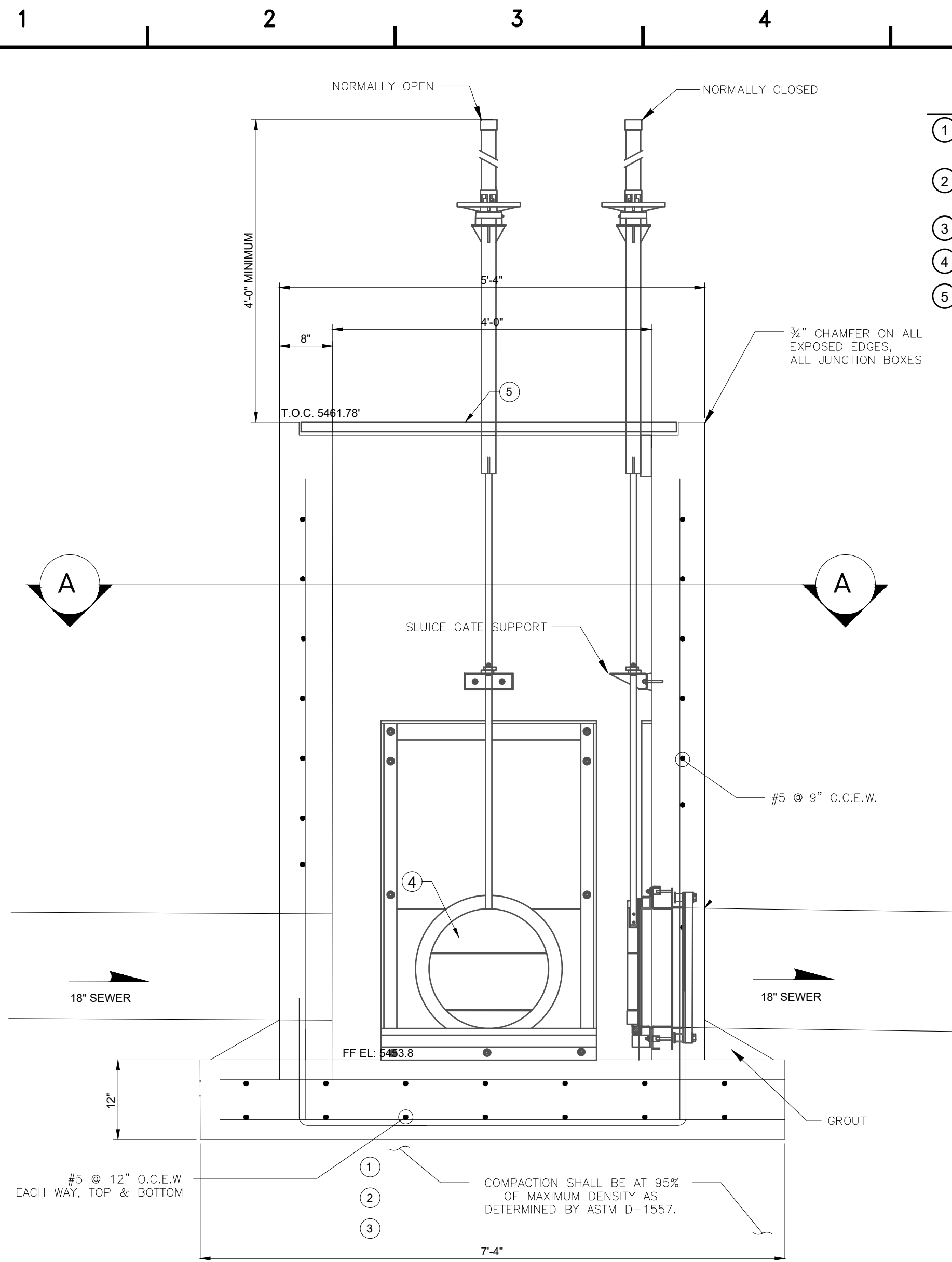
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

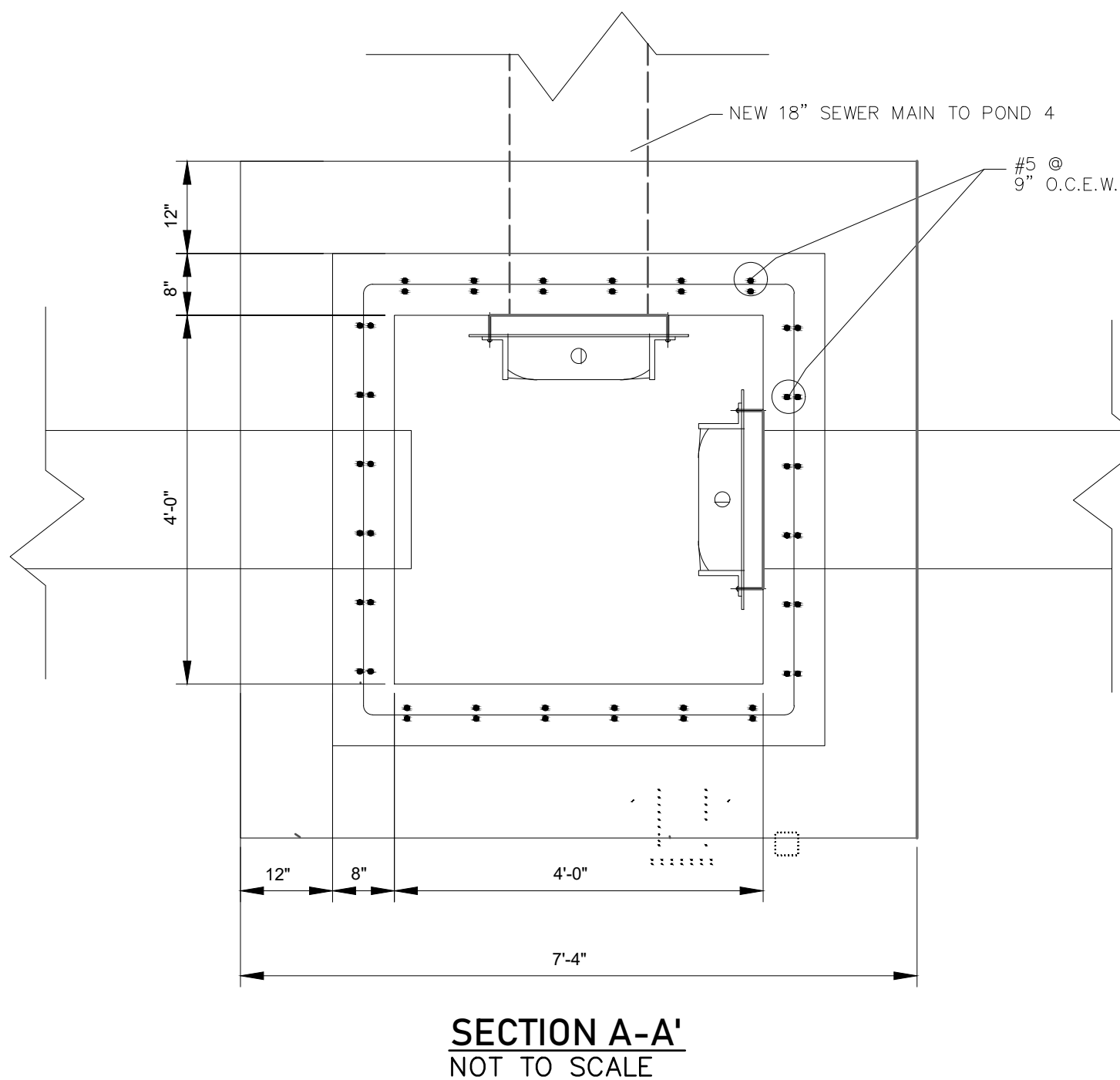
SHEET TITLE:
EFFLUENT VALVE
VAULT DETAILS

SHEET NUMBER:	REV. #
C-309	
SHEET 19 OF 52 SHEETS	

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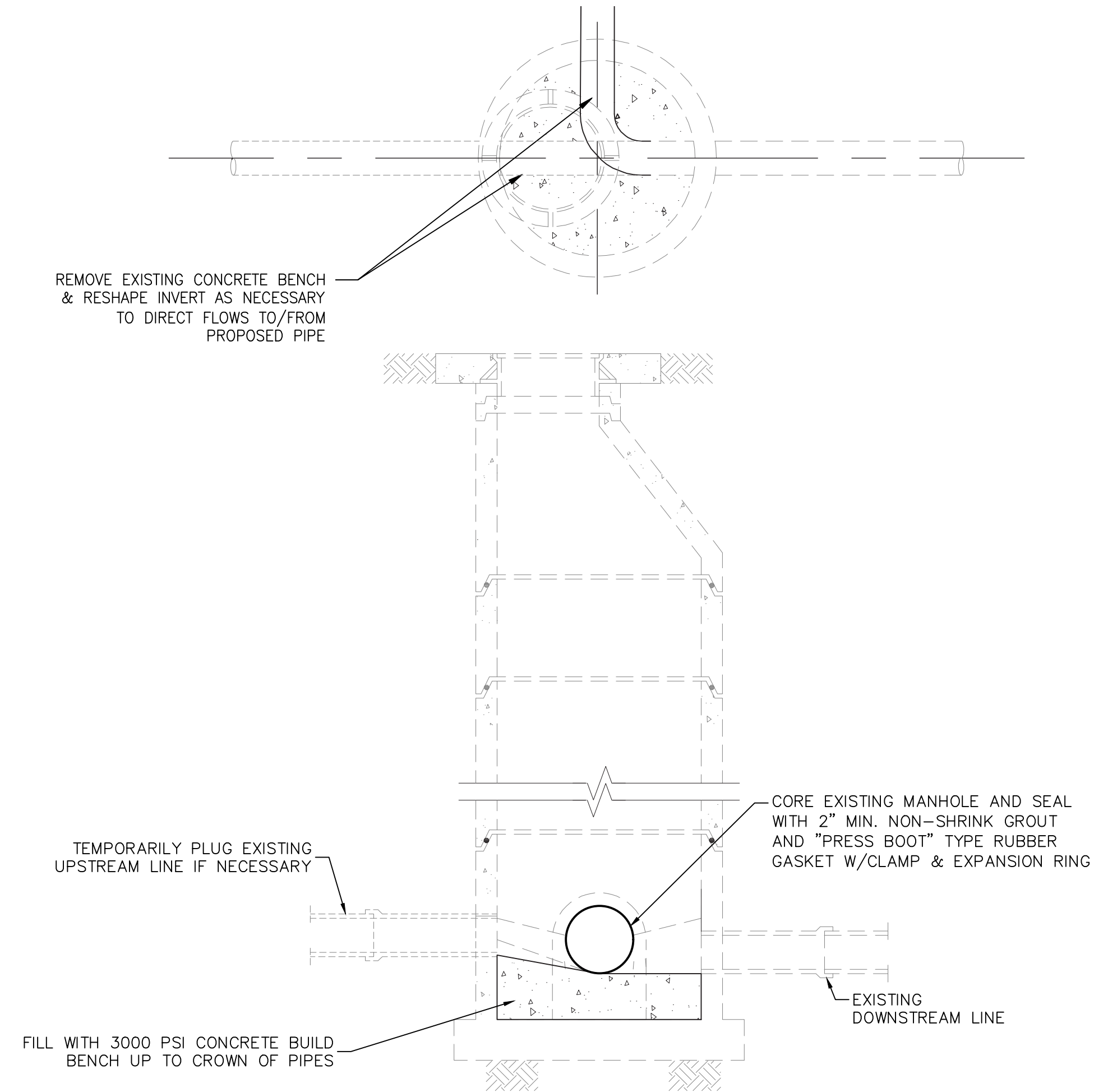
1 DIVERSION BOX STUCTURAL DETAILS (PROFILE)
NOT TO SCALE



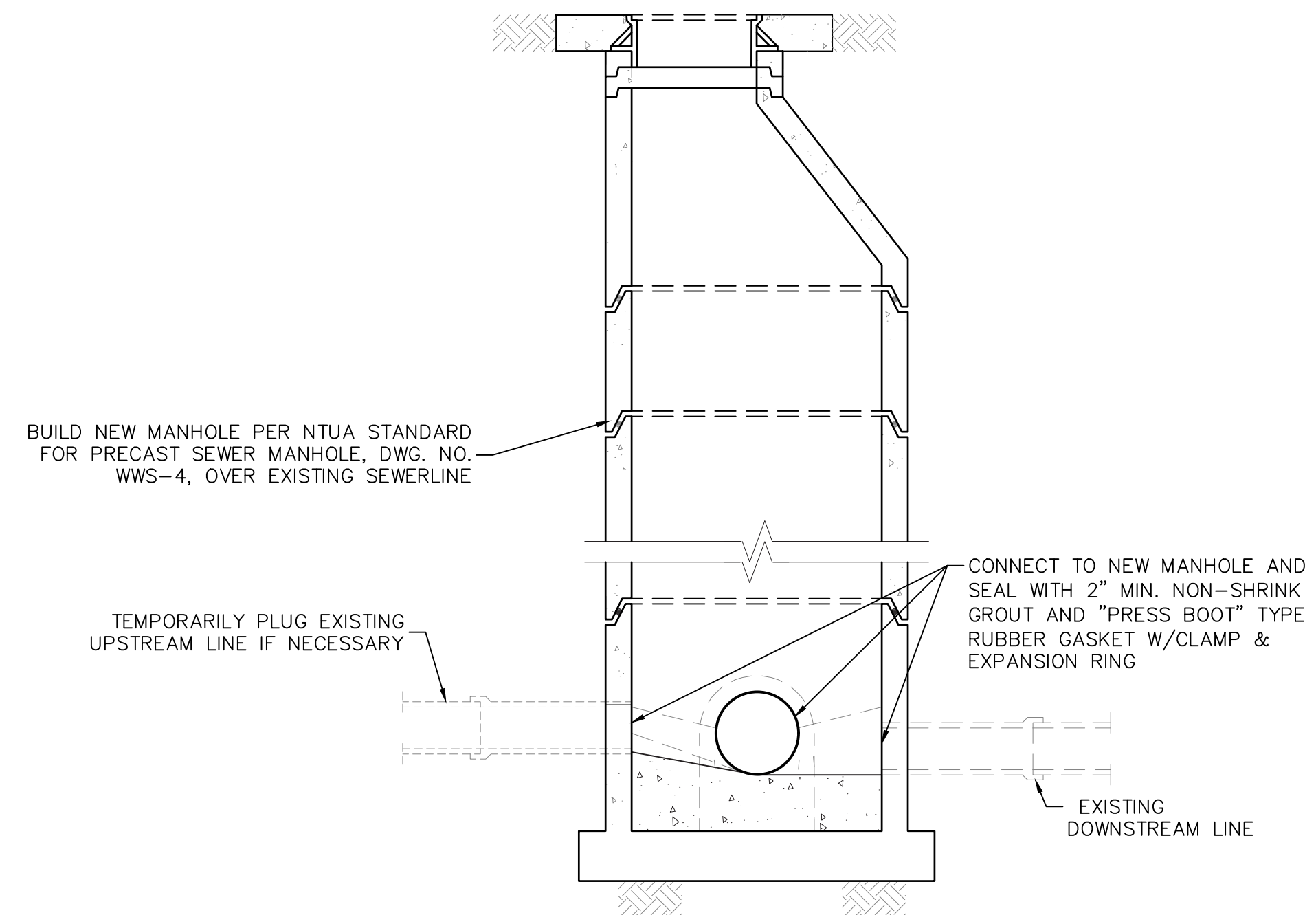
SECTION A-A'
NOT TO SCALE

BUILD NOTES

- 1 PREPARE SUBGRADE FOR STRUCTURE INCLUDES EXCAVATION (3-FT BELOW BOTTOM FOUNDATION ELEV.
- 2 FILL CONSTRUCTION FOR STRUCTURES INCLUDING PLACEMENT AND COMPACTION OF SUITABLE ENGINEERED FILL MATERIAL.
- 3 EXCAVATE AND SPOIL UNSUITABLE MATERIAL.
- 4 FURNISH AND INSTALL SLUICE GATE WITH SS STEM AND RAILS.
- 5 FURNISH AND INSTALL GRATE.



2 SEWER CONNECTION TO EXISTING MANHOLE
NOT TO SCALE



3 CONNECTION TO EXISTING SEWERLINE WITH NEW MH
NOT TO SCALE



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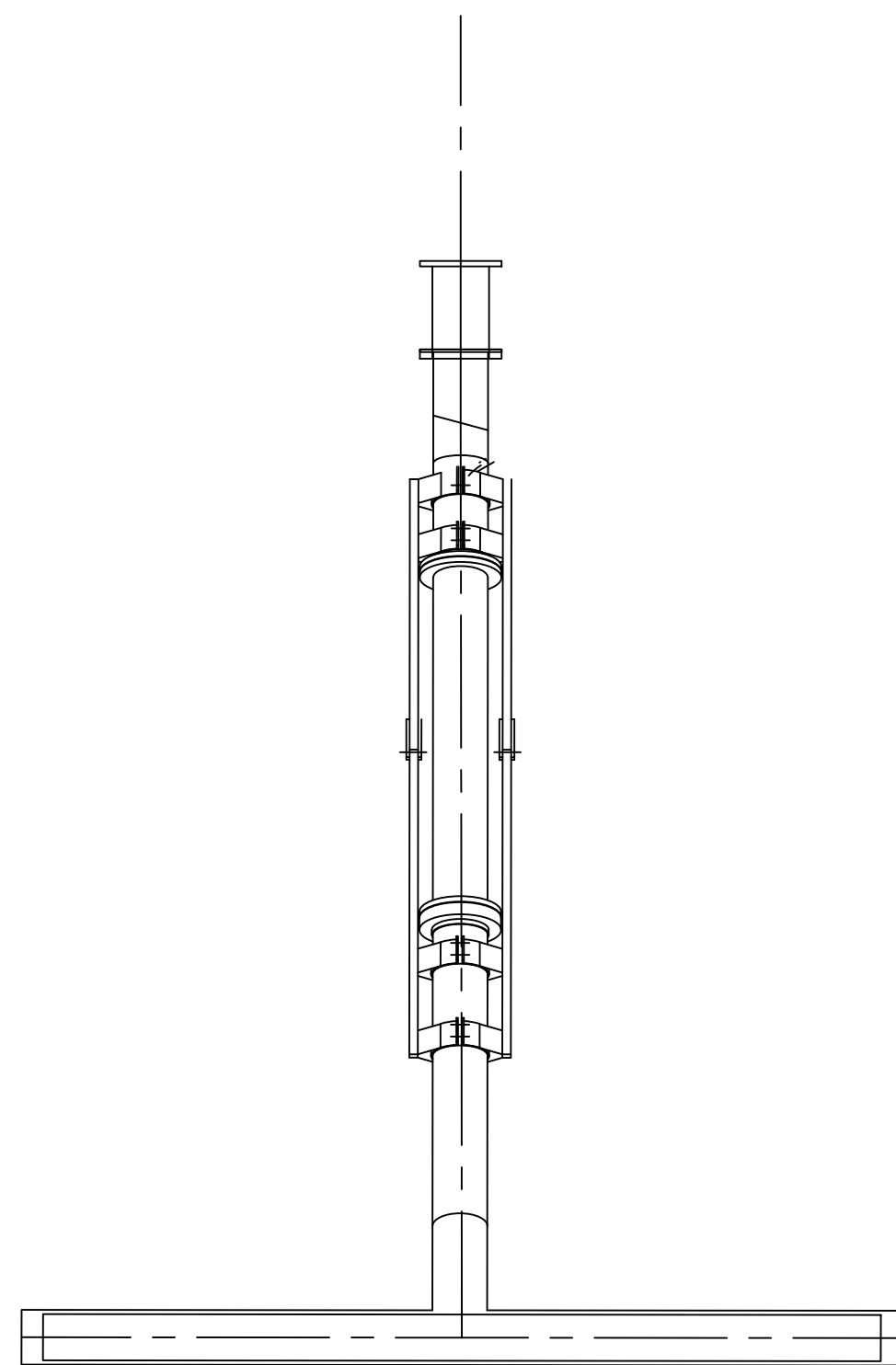
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NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**DIVERSION BOX AND
MH CONNECTION
DETAILS**

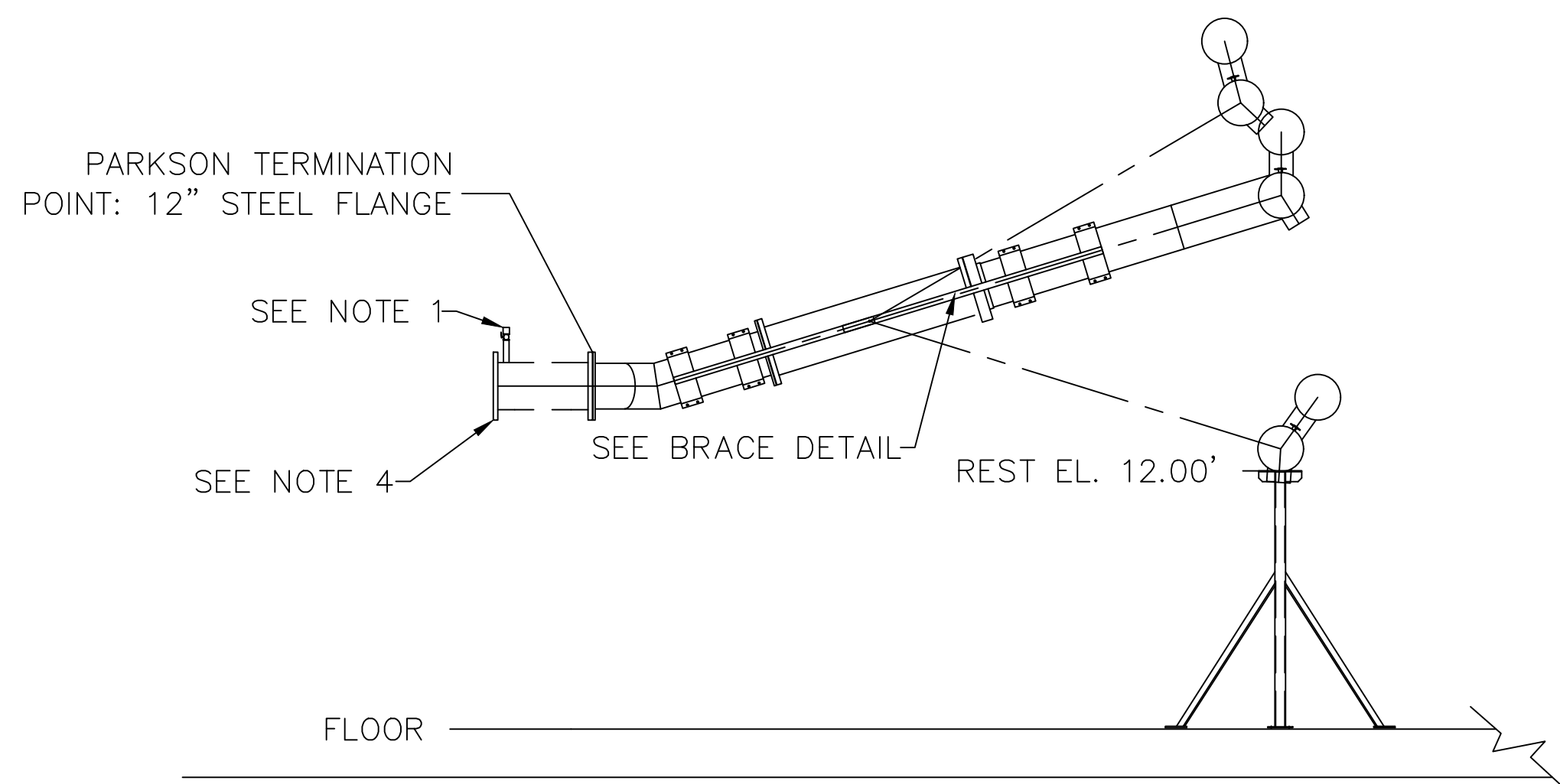
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C-310	
SHEET 20 OF 52 SHEETS	

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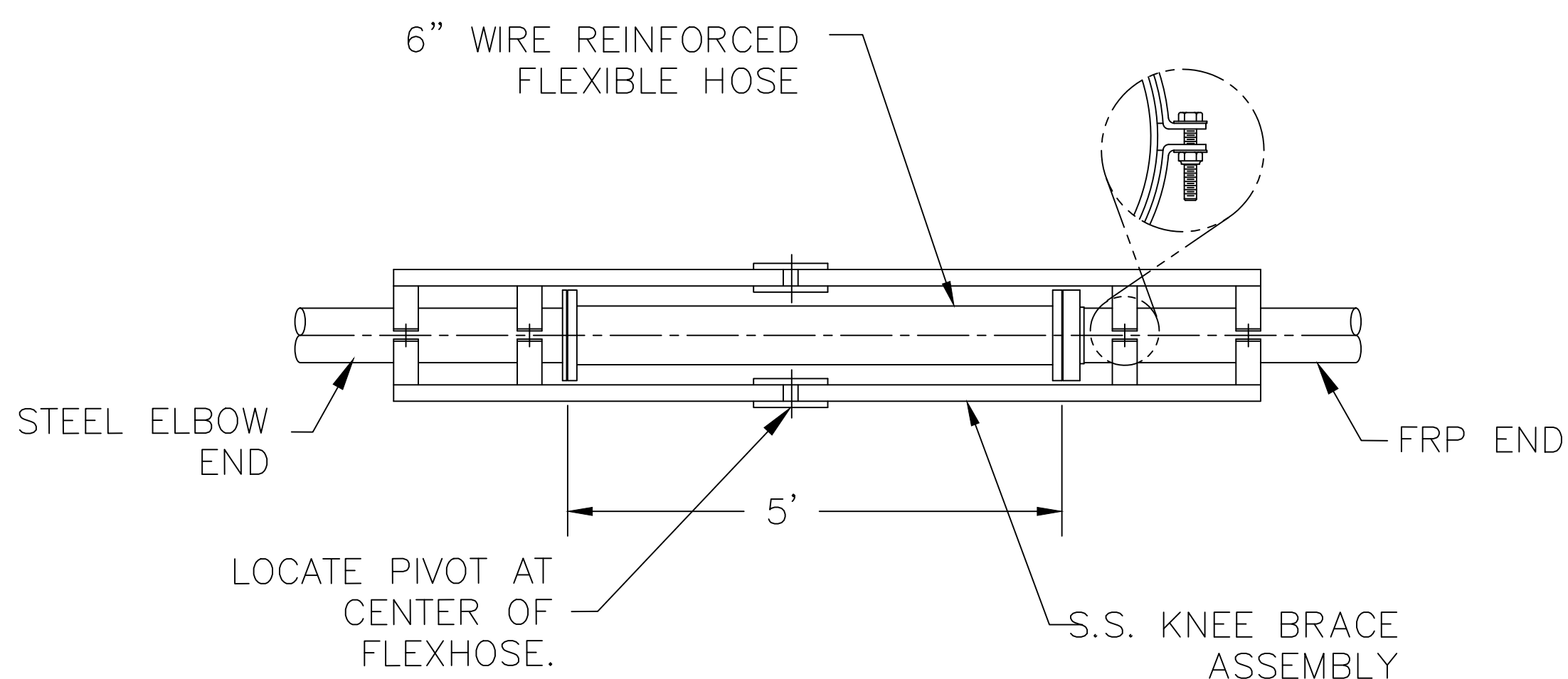


MODEL SD12-2400
SUPERNATANT DYNACANTER

1 FLOATING DECANTER (PLAN)
NOT TO SCALE



2 FLOATING DECANTER (PROFILE)
NOT TO SCALE



3 BRACE DETAIL
NOT TO SCALE

NOTES:

1) ALL FLANGES SHALL MEET OUTSIDE DIAMETER, BOLT CIRCLE DIAMETER, NUMBER AND SIZE OF HOLES PER ANSI B.16.1 125 LB. CAST IRON, AND ANSI B16.5 150 LB. STEEL FLANGE SPECIFICATIONS.

2) CONTRACTOR NEEDS TO PROVIDE A 3/4 " NIPPLE AND GLOBE VALVE BETWEEN OUTSIDE OF DECANTER SPOOL PENETRATION AND EFFLUENT CONTROL VALVE TO SERVE AS A FILL PORT TO SINK DECANTER AT START-UP.

3) DECANTER OUTLET PIPING MUST BE DESIGNED WITH A SUBMERGED OUTLET OR TRAPS TO PREVENT AIR FROM ENTERING THE DECANTER.

4) CONTRACTOR TO SUPPLY ALL INTERCONNECTING HARDWARE AND GASKETS.

5) DECANTER REST ASSEMBLY SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.



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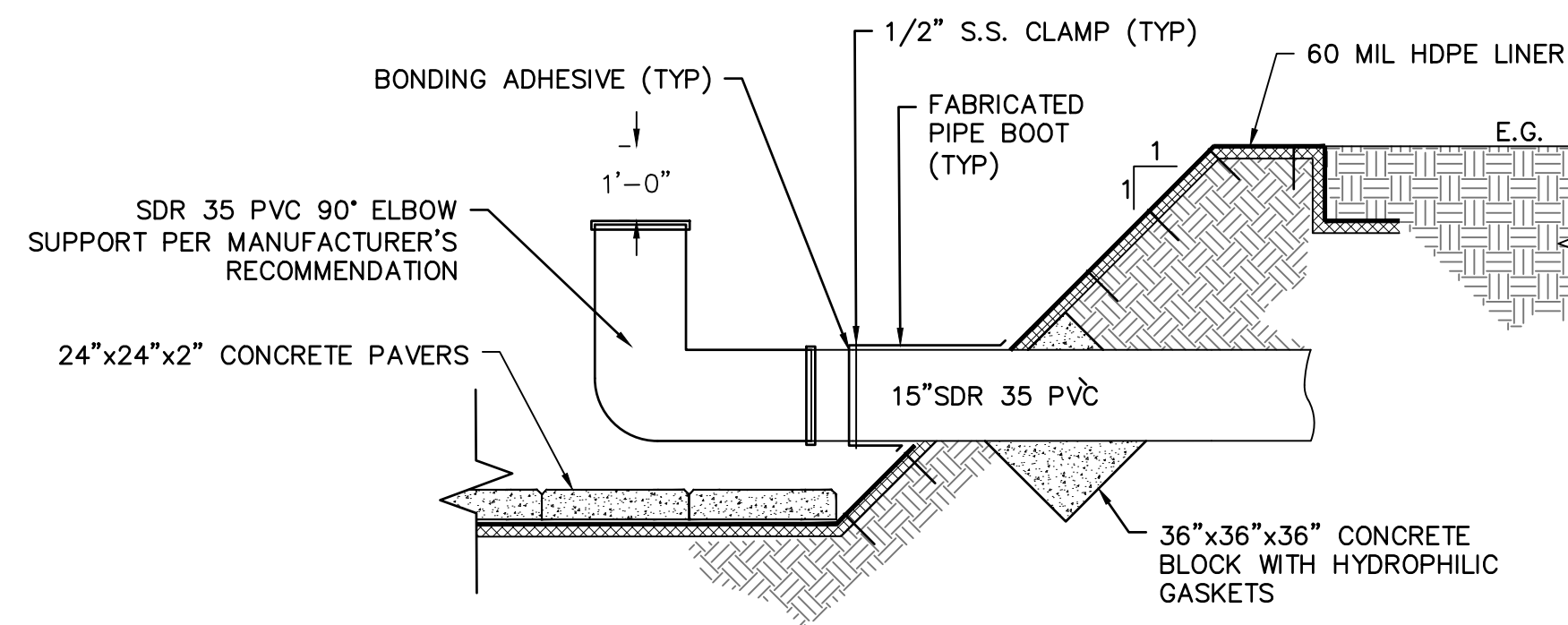
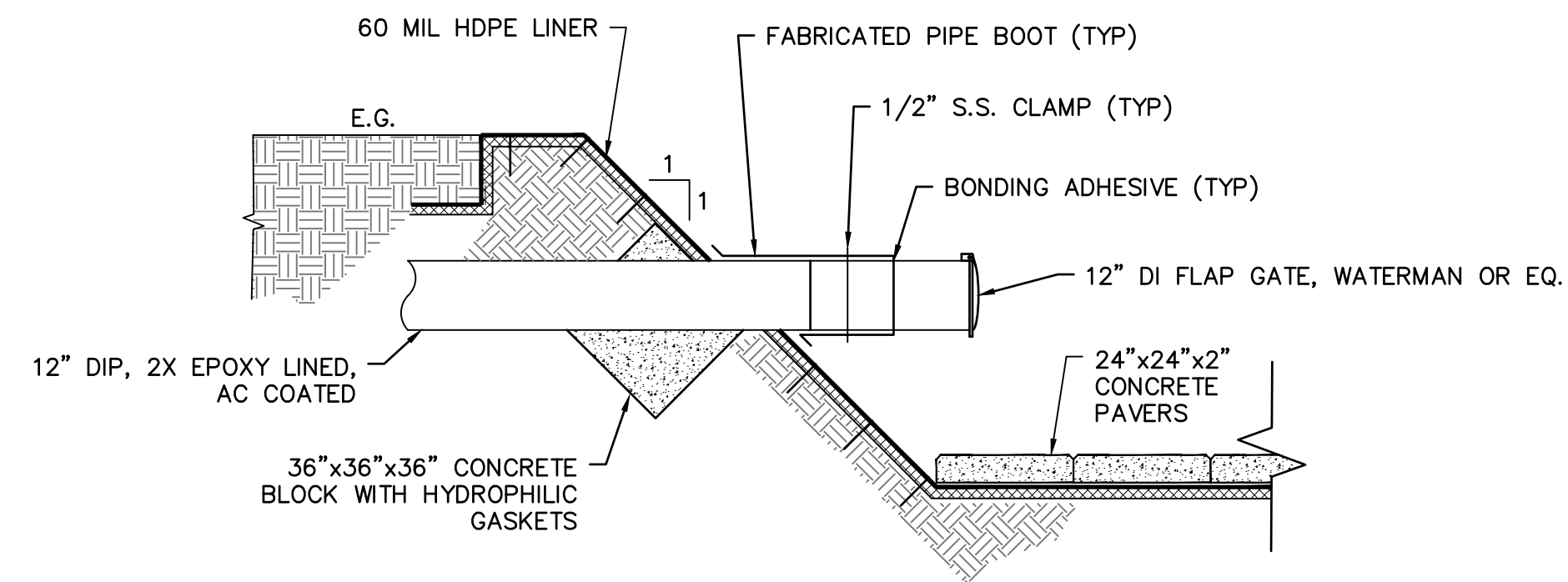
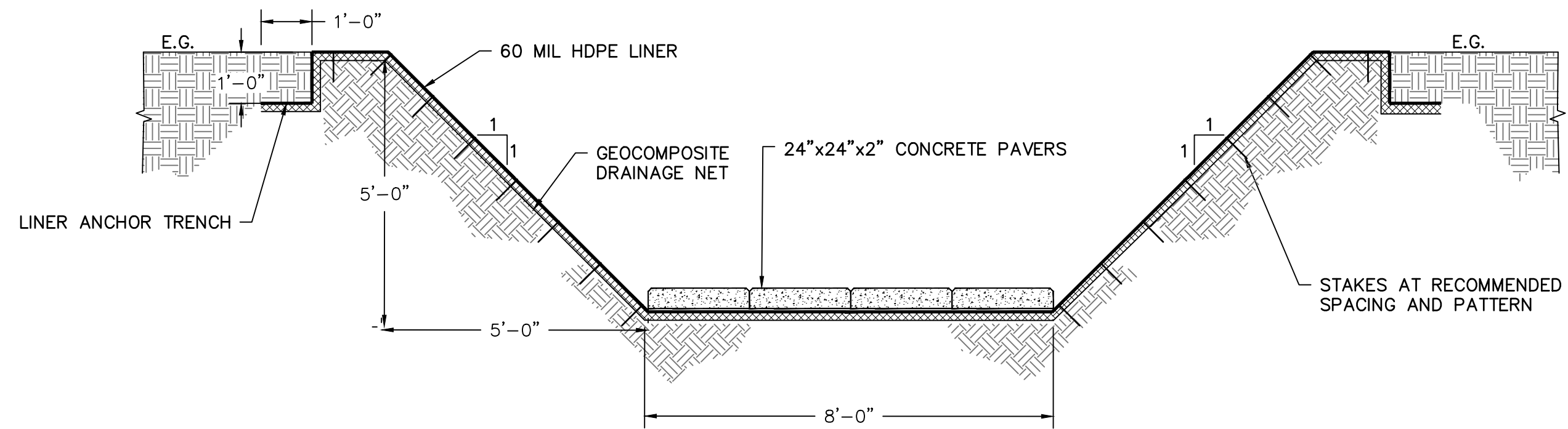
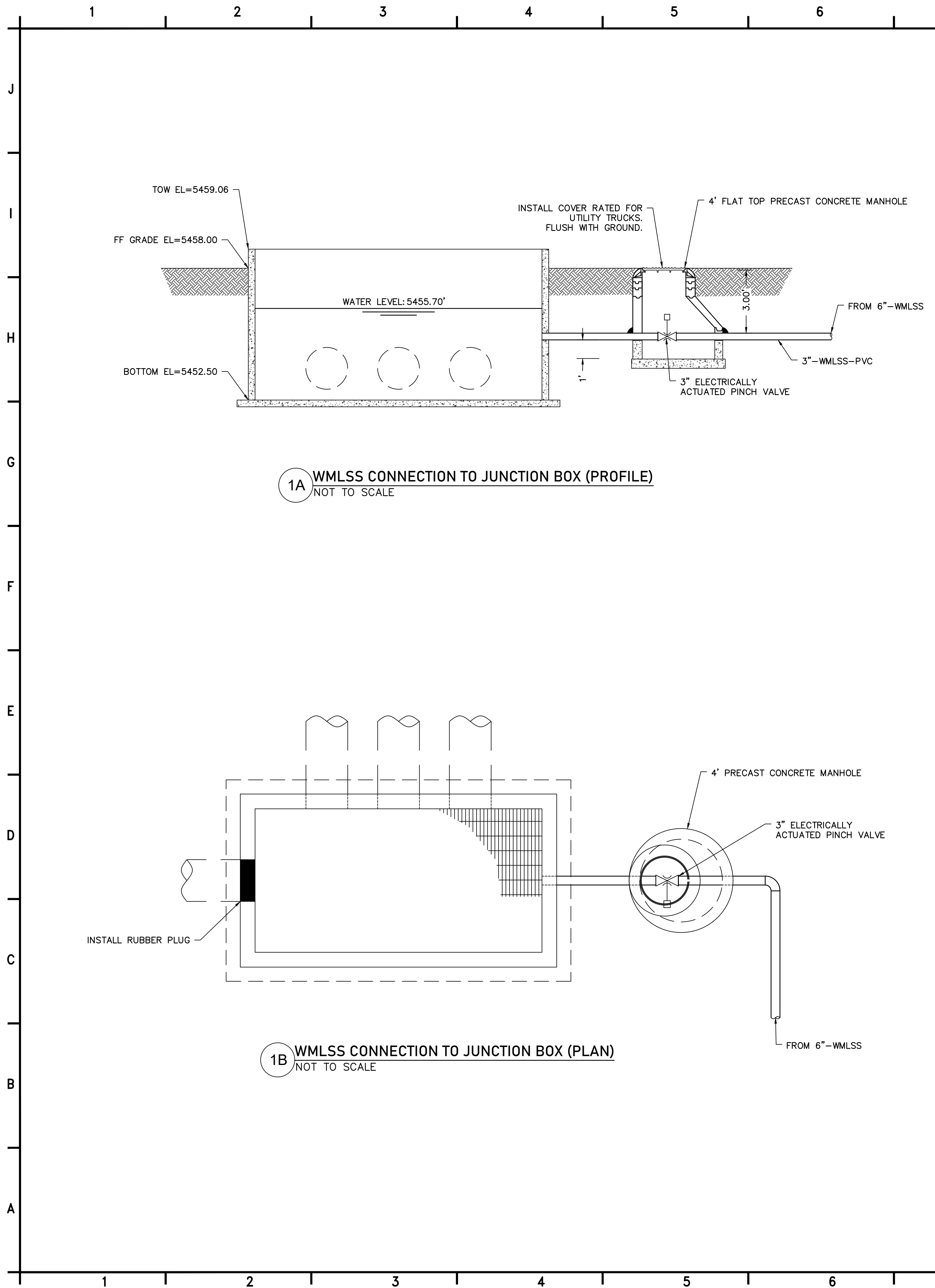
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DRAWN BY:	WSP - AO
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APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

FLOATING DECANTER
DETAILS

SHEET NUMBER:	REV. #
C-311	
SHEET 21 OF 52 SHEETS	

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**CHINLE WWTP
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WSP PROJECT No:
2151700051

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DESIGNED BY:	WSP - BM
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CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**WASTE MLSS
CONNECTION AND
DISINFECTION
CHAMBER**

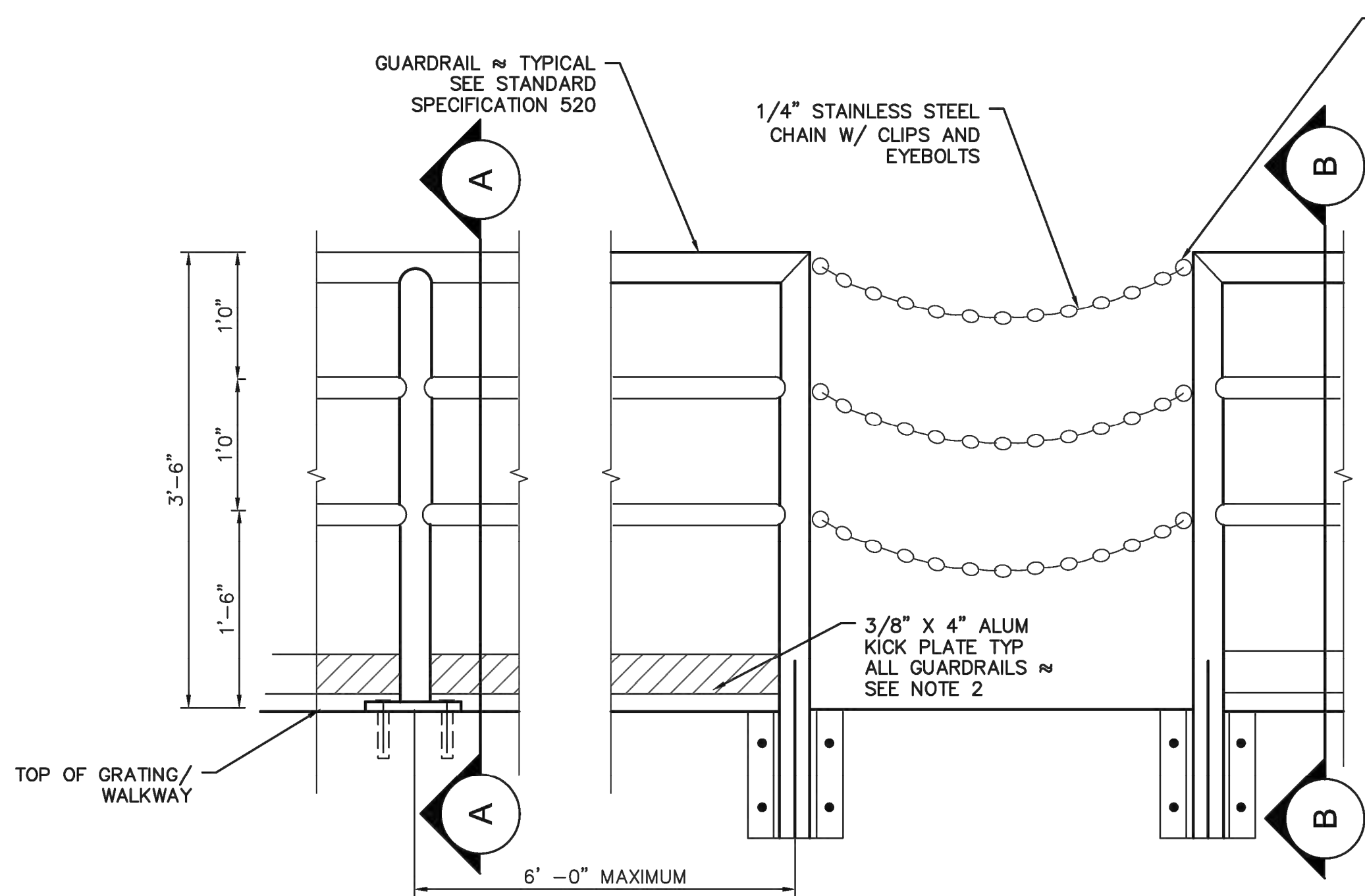
SHEET NUMBER:	REV. #
C-312	
SHEET 22 OF 52 SHEETS	

P:\consulting\projects\21-517-00051.NTUA HPP Chinle WWF\CAD\23.C-313_GUARDRAIL AND GRATE DETAILS.dwg

1 2 3 4 5 6 7 8 9 10 11 12

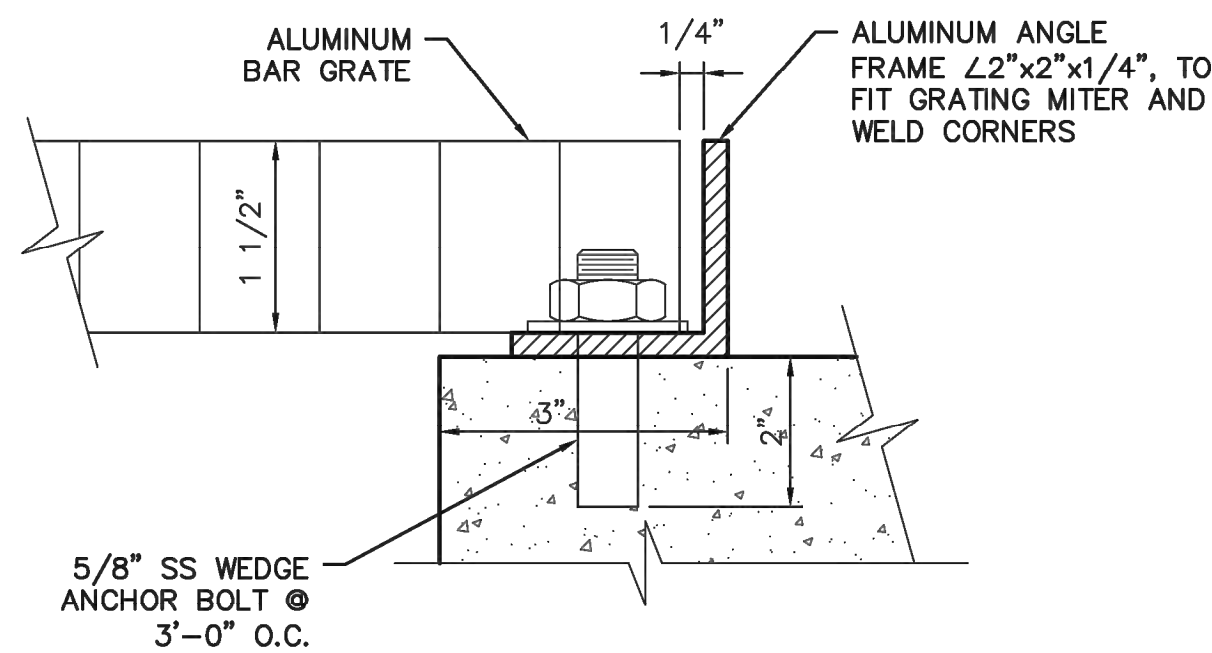
J
I
H
G
F
E
D
C
B
A

- NOTE:
- EXCEPT AS SPECIFICALLY SHOWN OTHERWISE, GUARDRAILS SHALL BE ATTACHED TO THE SIDE OF CONCRETE MEMBERS AS SHOWN IN DETAIL B THIS SHEET. GUARDRAILS EMBEDDED IN CONCRETE MEMBERS ARE NOT ALLOWED EXCEPT WHERE SHOWN ON THE STRUCTURAL DRAWINGS.
 - KICK PLATE IS NOT REQUIRED WHERE TOP OF FRAMING FOR GRATING IS 4 INCHES ABOVE TOP OF GRATING.
 - MATERIAL - ALUMINUM ALLOY 6063-T6, CLEAR SATIN ANODIZED FINISH ALL EXPOSED SURFACES (0.4 MIL THICKNESS FOR ALL CAST COMPONENTS, 0.7 MIL THICKNESS FOR EXTRUDED COMPONENTS).
 - CONNECTIONS - COPE MEMBERS AND CONTINUOUSLY WELD OR CONNECT MECHANICALLY AT ALL JUNCTIONS TO PROVIDE FINISHED APPEARANCE SIMILAR TO WELDED SYSTEM. GRIND ALL WELDS SMOOTH TO MATCH FINISH OF ADJACENT MEMEBERS.

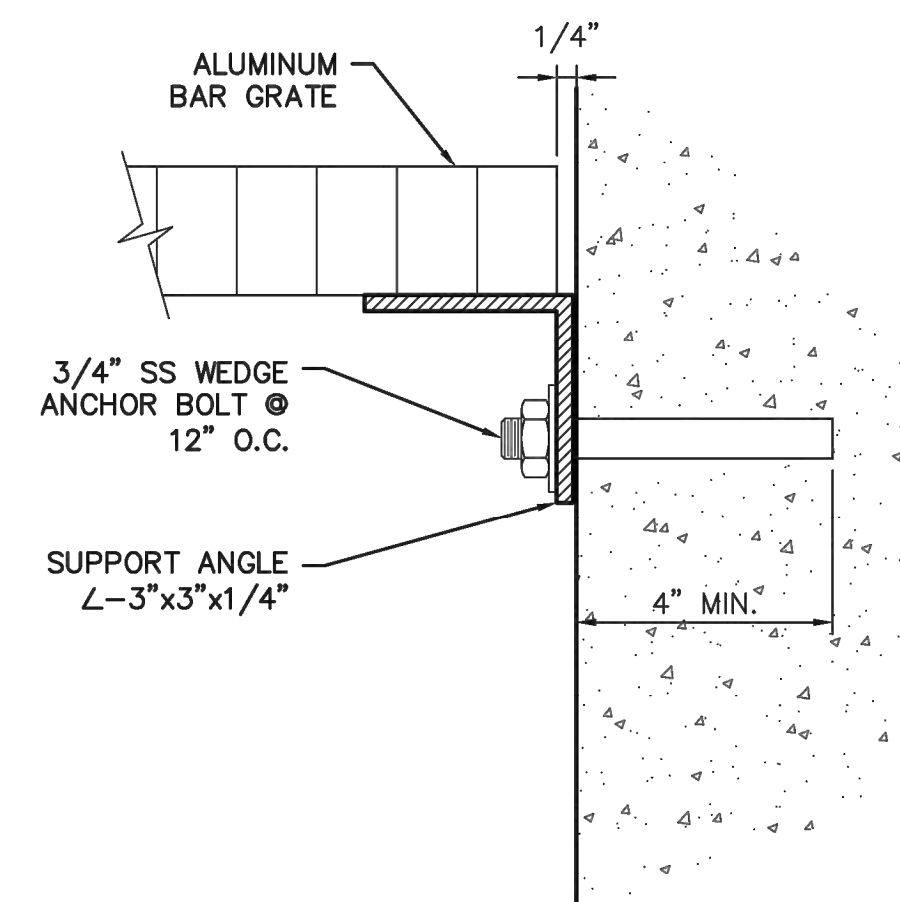


2 TYPICAL GUARDRAIL ELEVATION
NOT TO SCALE

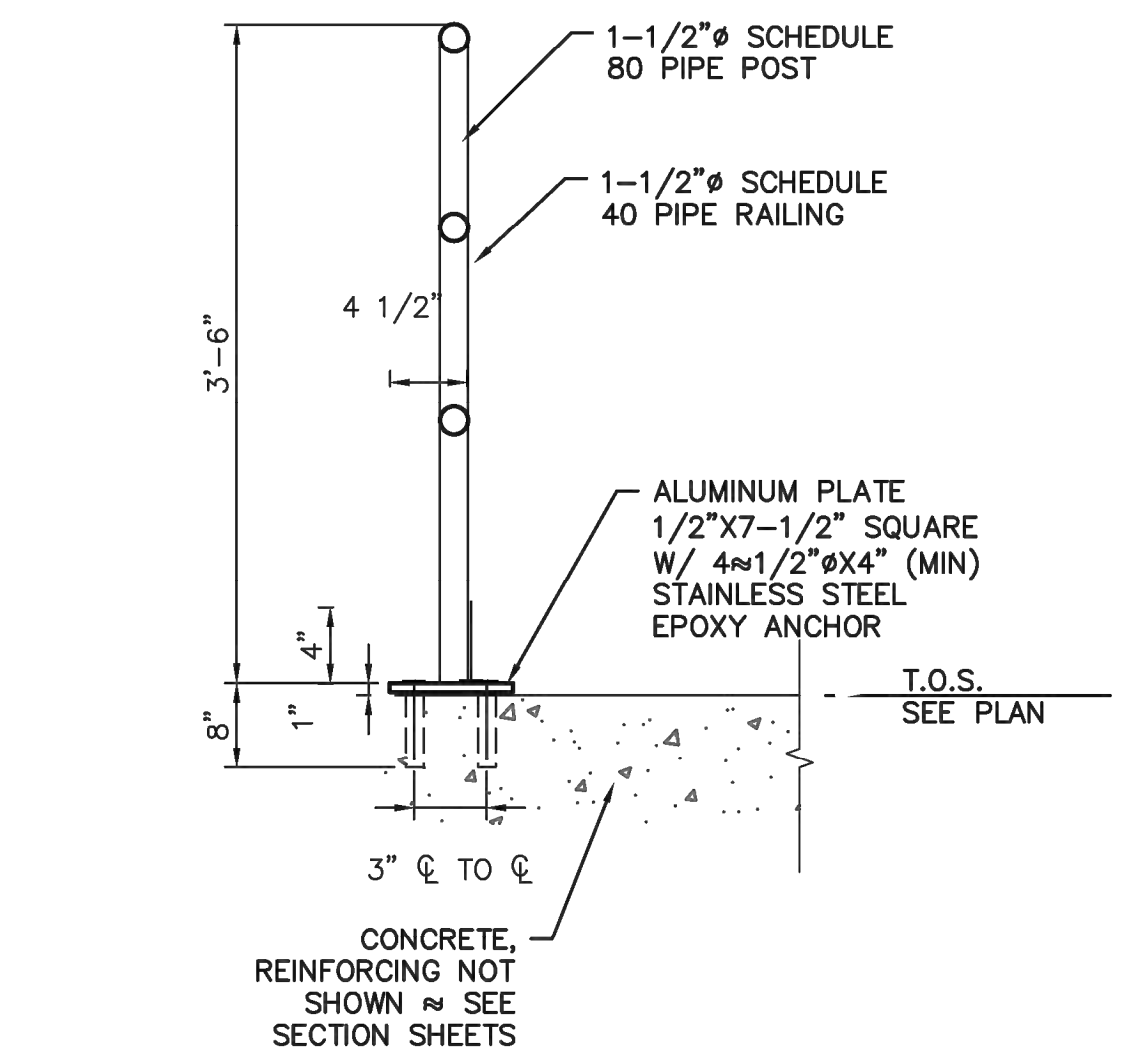
FASTEN TO ONE POST. WITH STAINLESS STEEL EYE BOLT. THE OTHER END OF THE CHAIN SHALL BE FASTENED TO ANOTHER POST BY A 2-1/2" HEAVY DUTY CADMIUM PLATED HARNESS STRAP ENGAGING A SIMILAR EYEBOLT



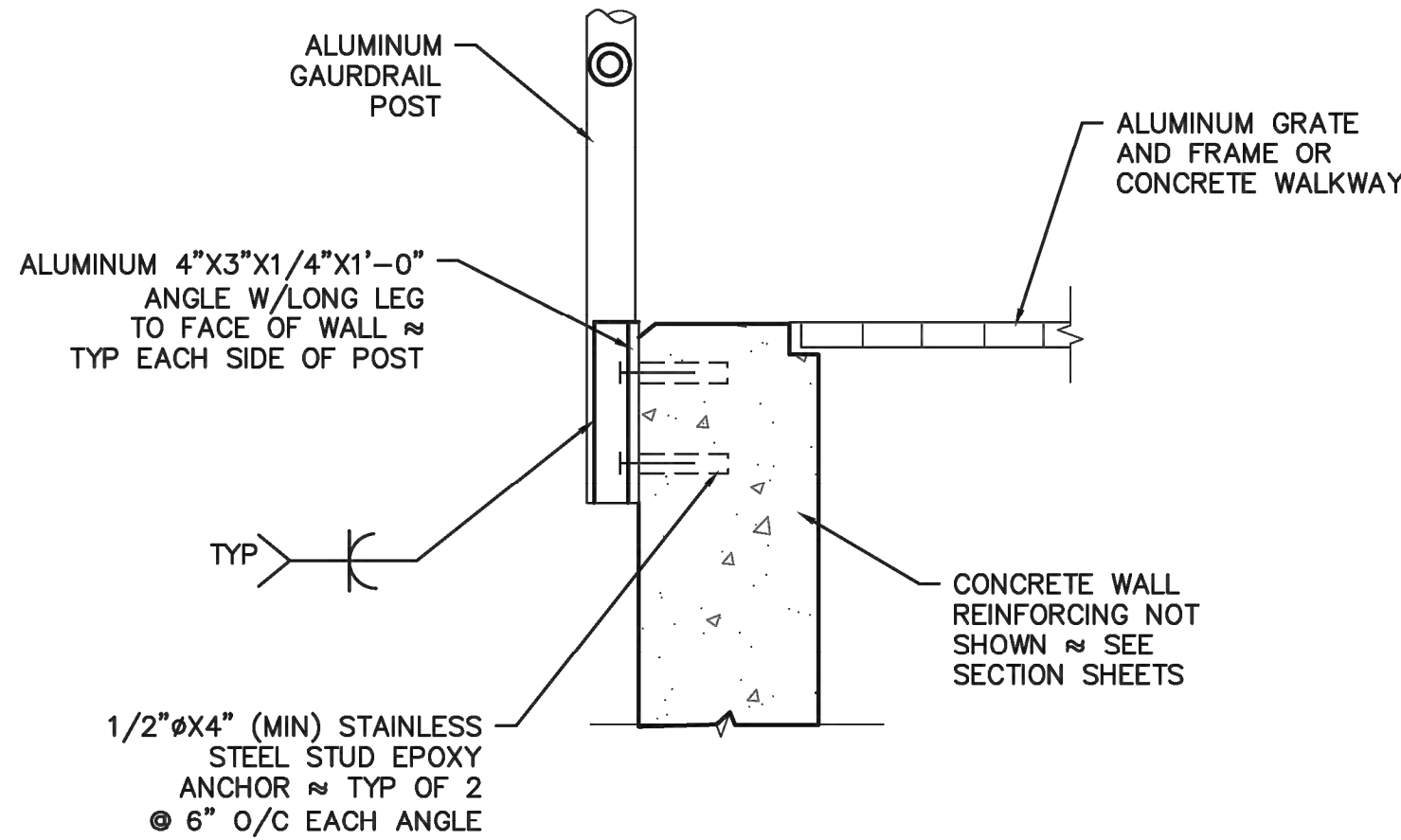
4 TYPICAL GRATE DETAIL
(EXISTING STRUCTURES) TOP MOUNT
NOT TO SCALE



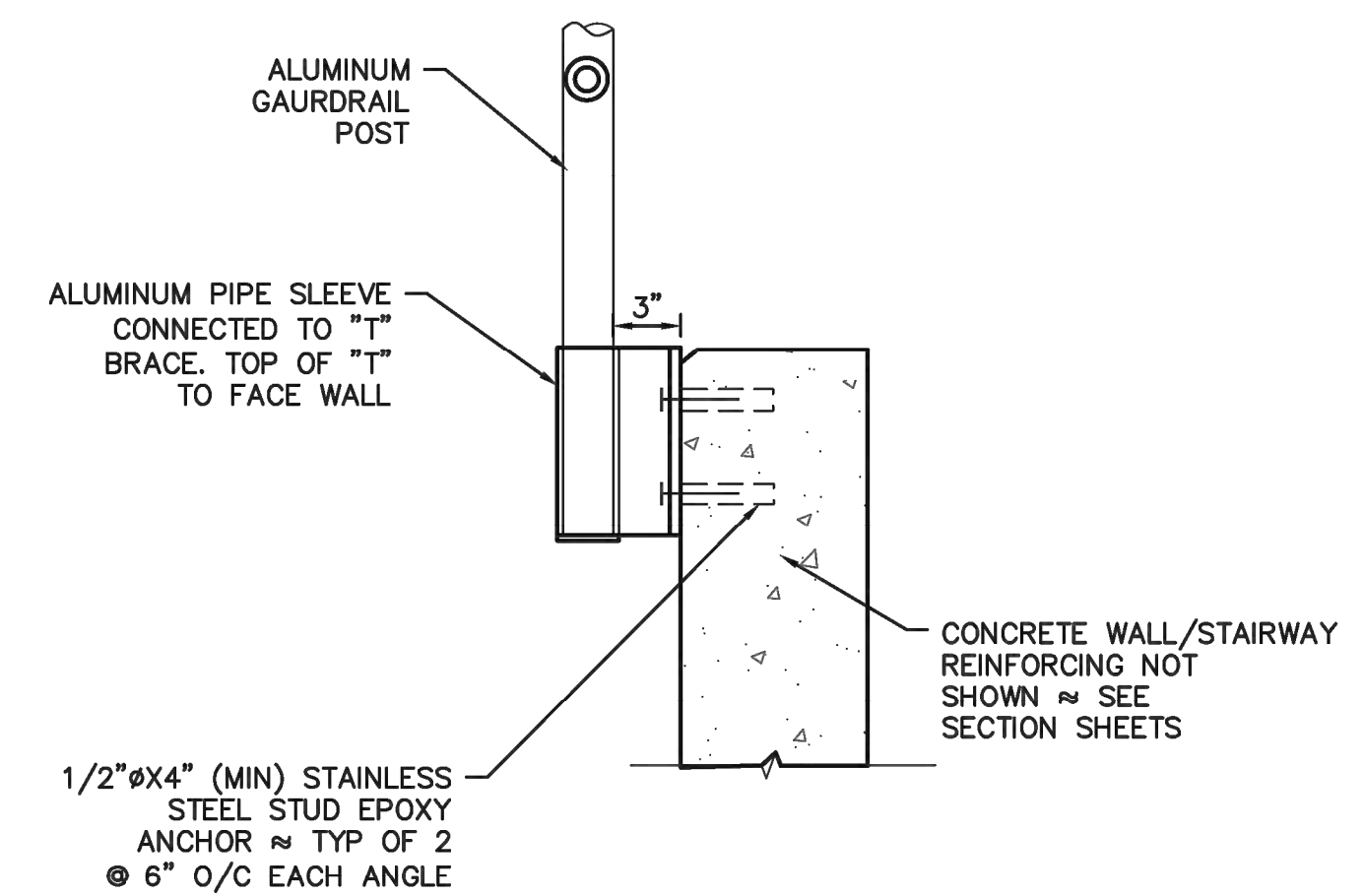
5 TYPICAL GRATE DETAIL
(SIDE WALL MOUNT)
NOT TO SCALE



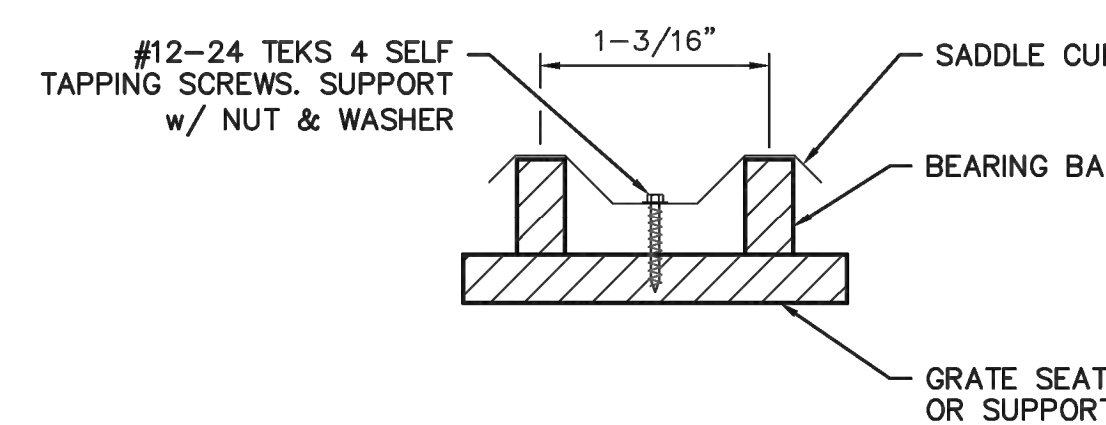
A TYPICAL ALUMINUM GUARDRAIL SECTIONS
NOT TO SCALE



B GUARDRAIL CONNECTION SECTION
NOT TO SCALE



7 OFFSET GUARDRAIL CONNECTION SECTION
NOT TO SCALE



NOTE: PROVIDE 4 CUPS PER GRATING PANEL APPROX. 4" FROM PANEL CORNERS, MAXIMUM CUP SPACING AT 36" O.C. SELF TAPPING SCREW AND CUP TO BE SAME MATERIAL AS GRATING.

6 GRATE FASTENING
NOT TO SCALE



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2151700051

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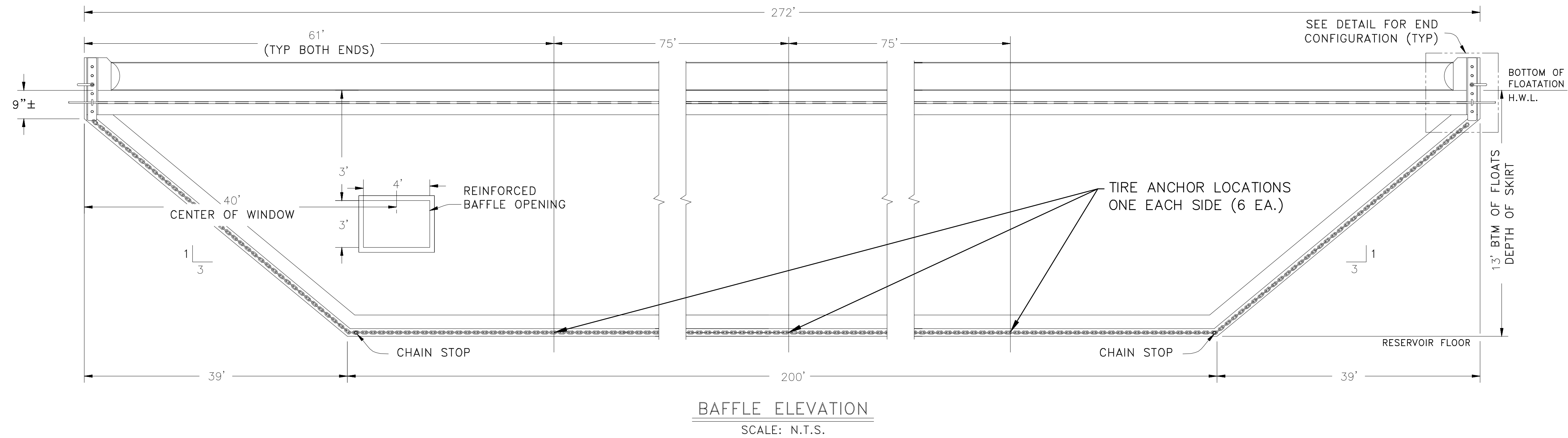
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DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

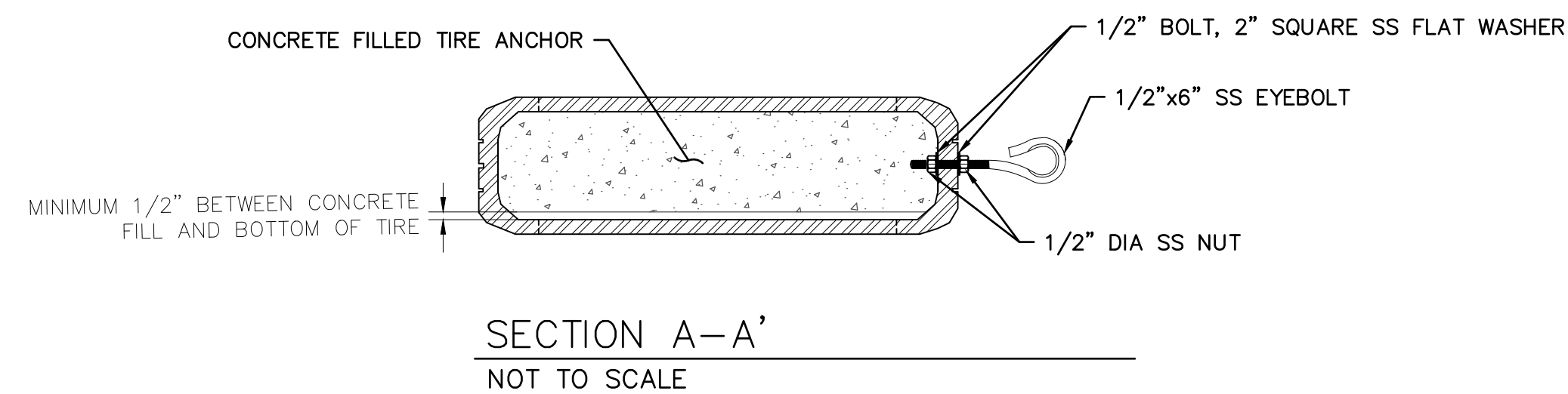
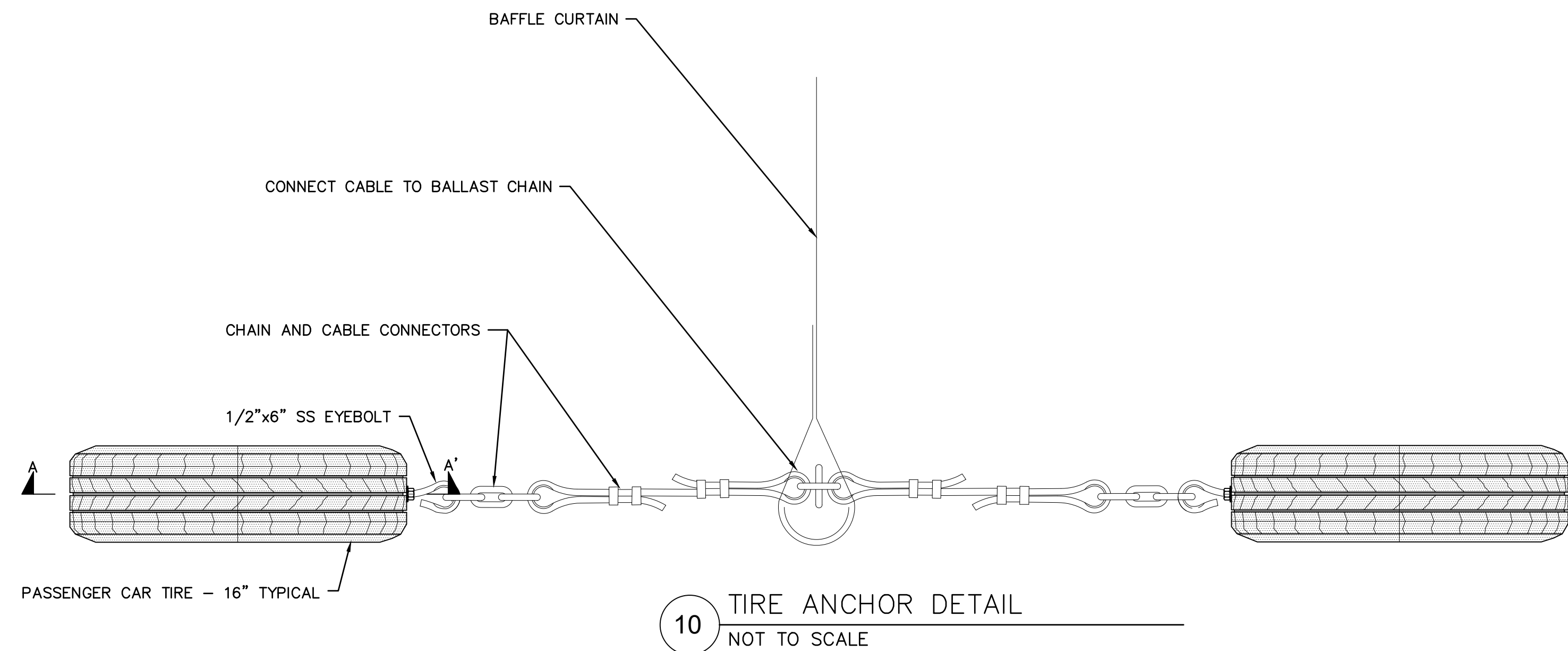
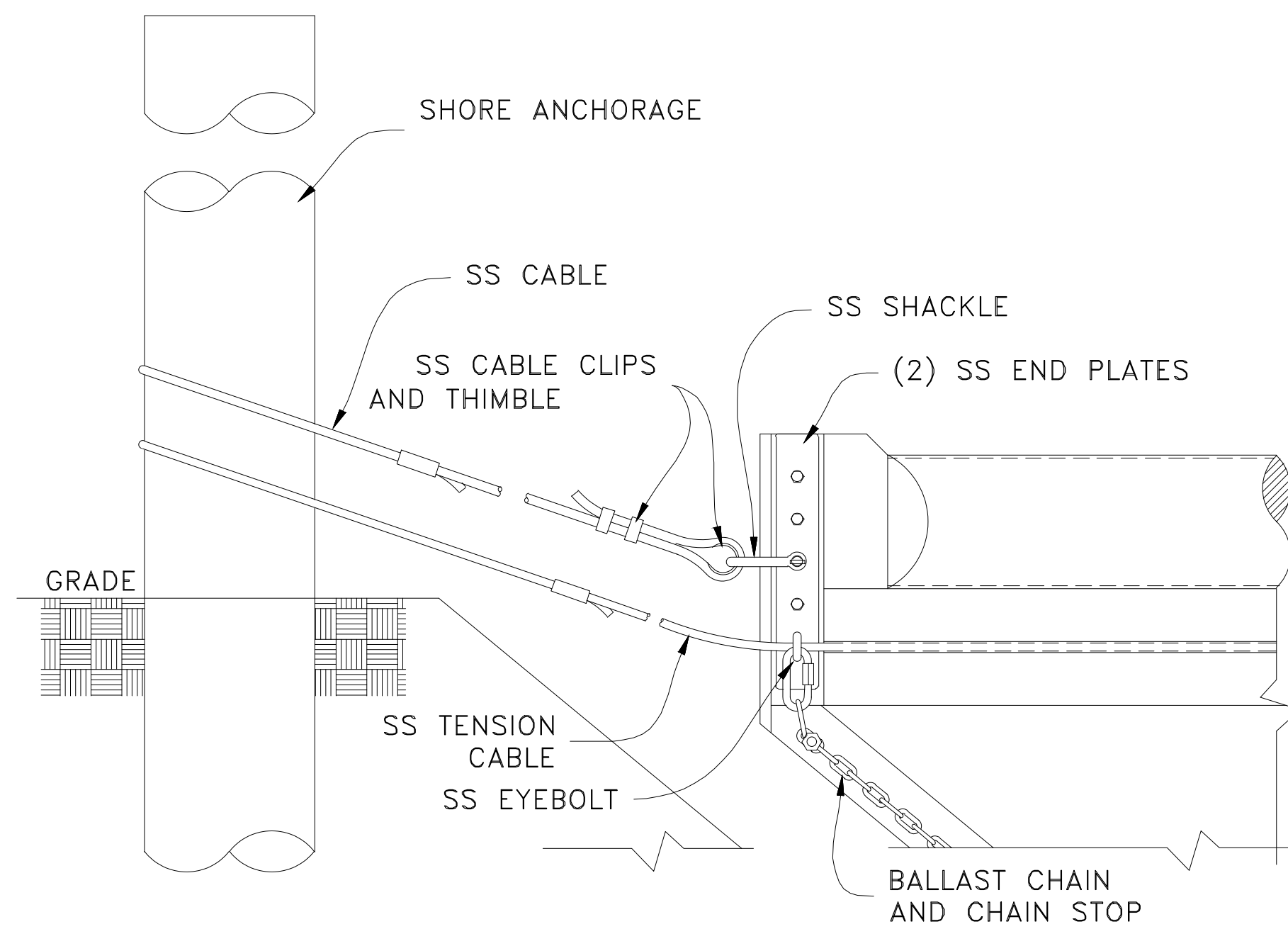
**GUARDRAIL AND
GRATE DETAILS**

SHEET NUMBER:	REV. #
C-313	
SHEET 23 OF 52 SHEETS	

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7 BAFFLE CURTAIN DETAIL PROFILE
NOT TO SCALE



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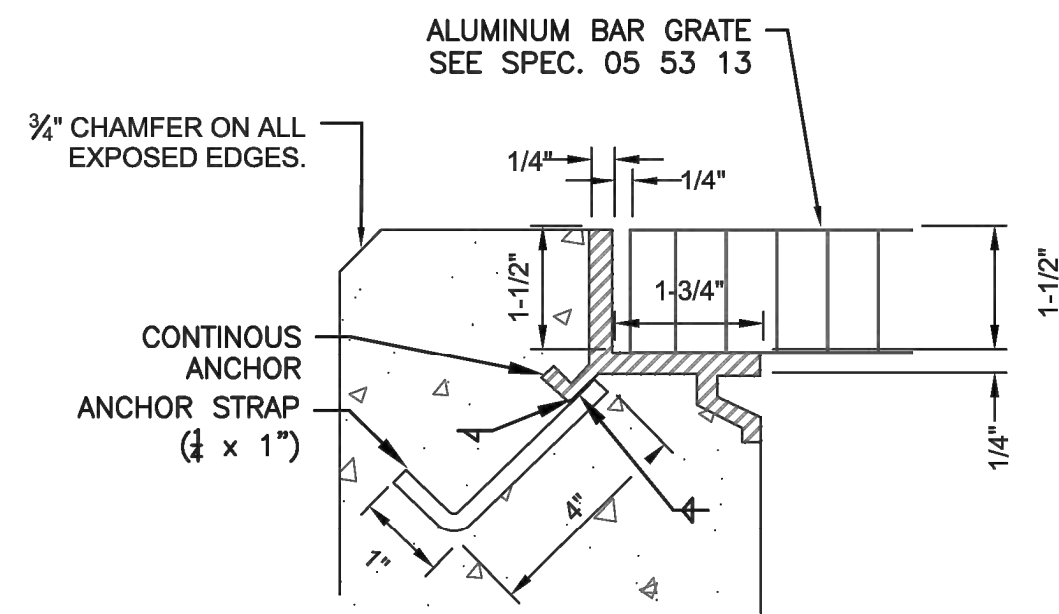
REVISIONS			
NO.	DATE	BY	APPROVED

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DRAWN BY:	WSP - AO
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APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
**BAFFLE CURTAIN
DETAILS**

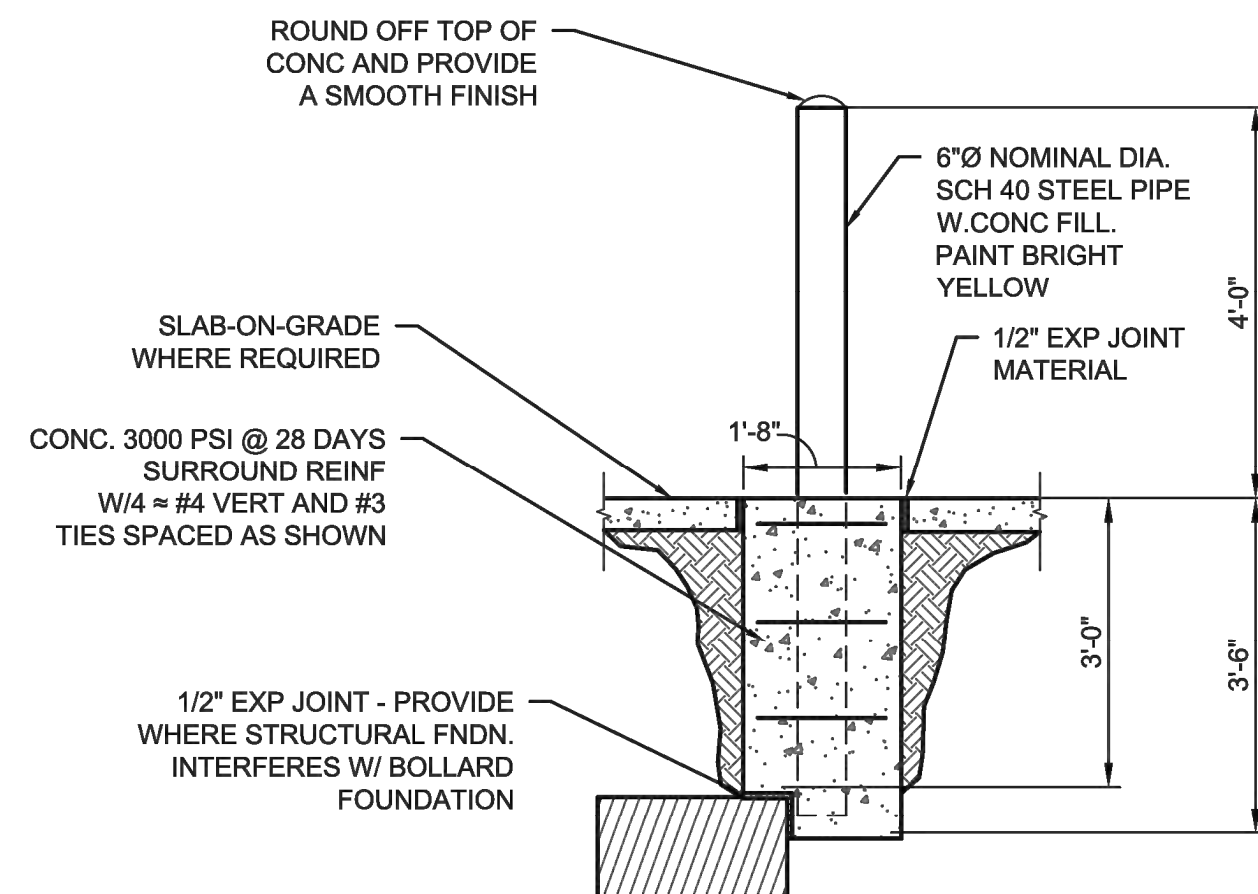
SHEET NUMBER:	REV. #
C-314	
SHEET 24 OF 52 SHEETS	

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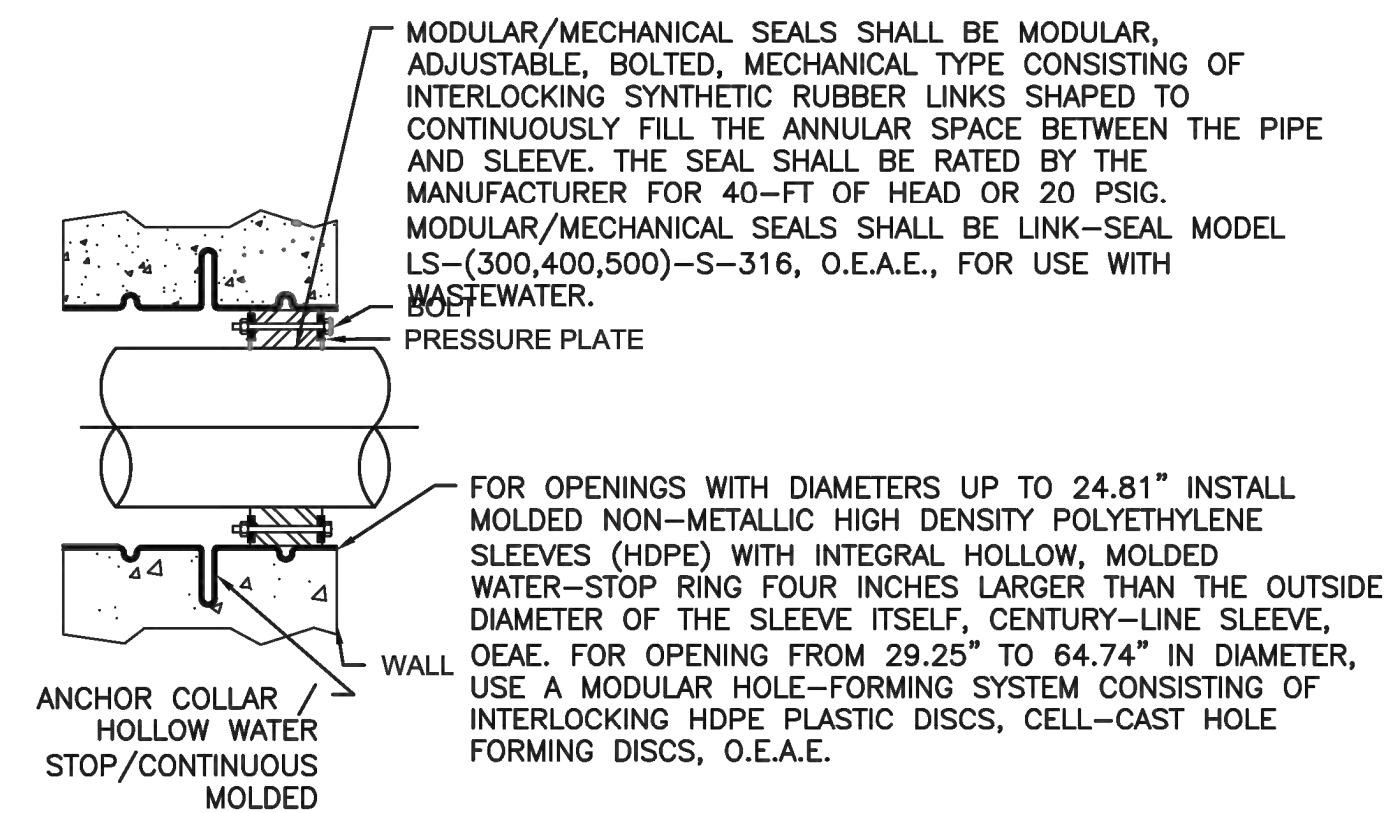


- NOTES:
1. ALL NEW STRUCTURES WITH GRATING SHALL USE EMBEDDED GRATING FRAMES.
 2. FRAMES SHALL HAVE MITRED CORNERS AND WELDED JOINTS AND SHALL BE SIZED TO MATCH GRATING DEPTHS. VERTICAL AND HORIZONTAL LEGS OF THE FRAME SHAPE SHALL HAVE 1/4-INCH WALL THICKNESS. FRAME SHALL BE DESIGNED TO PROVIDE CONTINUOUS SLOT TO ACCOMMODATE FASTENERS, AND SHALL HAVE A CONTINUOUS EXTRUDED ANCHOR. SURFACES COMING INTO CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF BITUMINOUS PAINT.
 - 3.
 - 4.

1 TYPICAL GRATE INSET (NEW STRUCTURES)
NOT TO SCALE

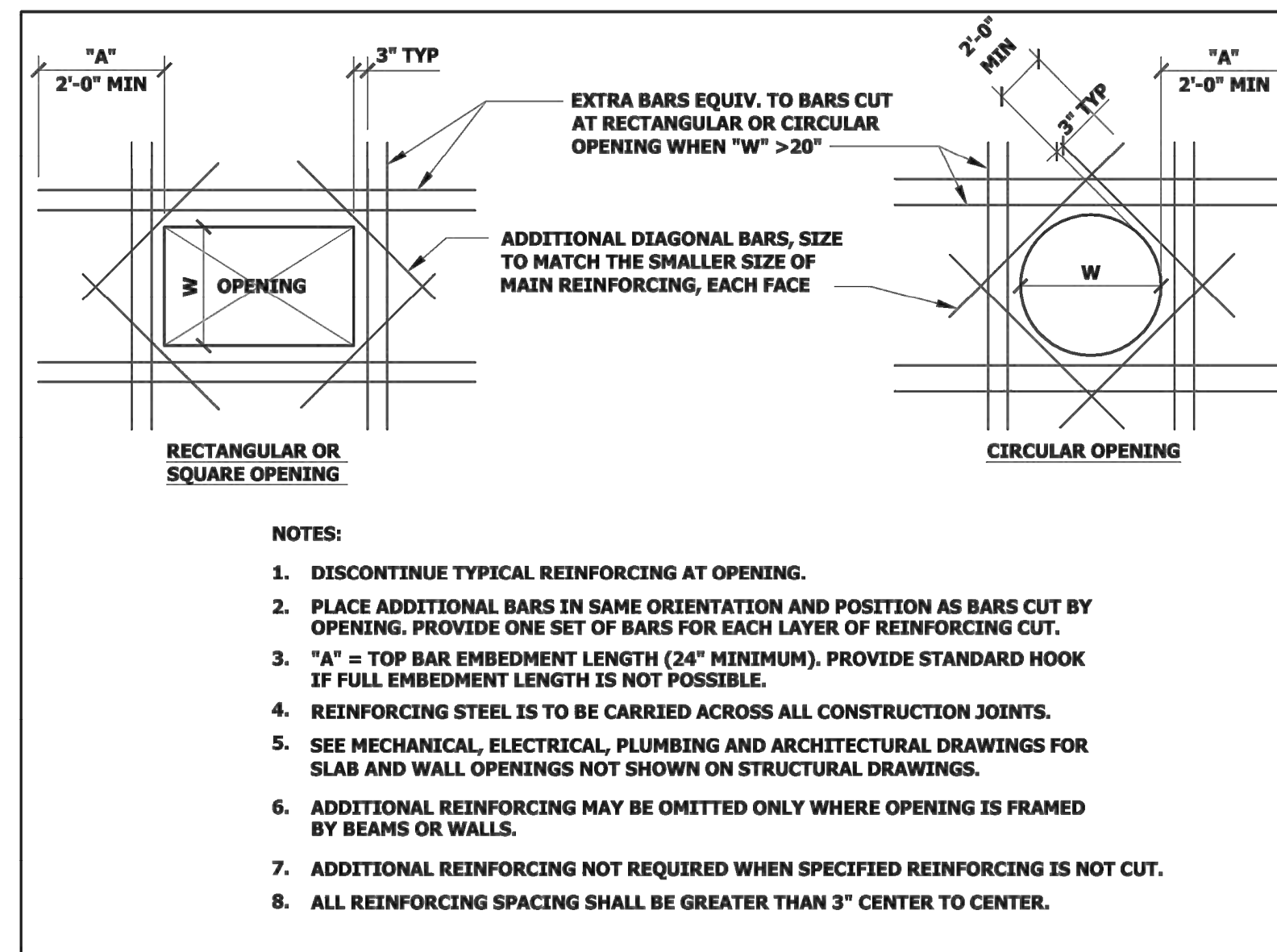


2 TYPICAL STATIONARY BOLLARD DETAIL
NOT TO SCALE



3 PIPE PENETRATION NEW WALLS OR FLOORS
NOT TO SCALE

NOTE:
THE ABOVE DETAIL APPLIES TO ALL NEW WALL AND FLOOR PIPE PENETRATIONS OTHER THAN THOSE IDENTIFIED IN THE "PVC INSERT LOCATION CHART" ON SHEET 177-BNR-718.



4 CONCRETE PIPE PENETRATION (OPENINGS 12" TO 48")
NOT TO SCALE

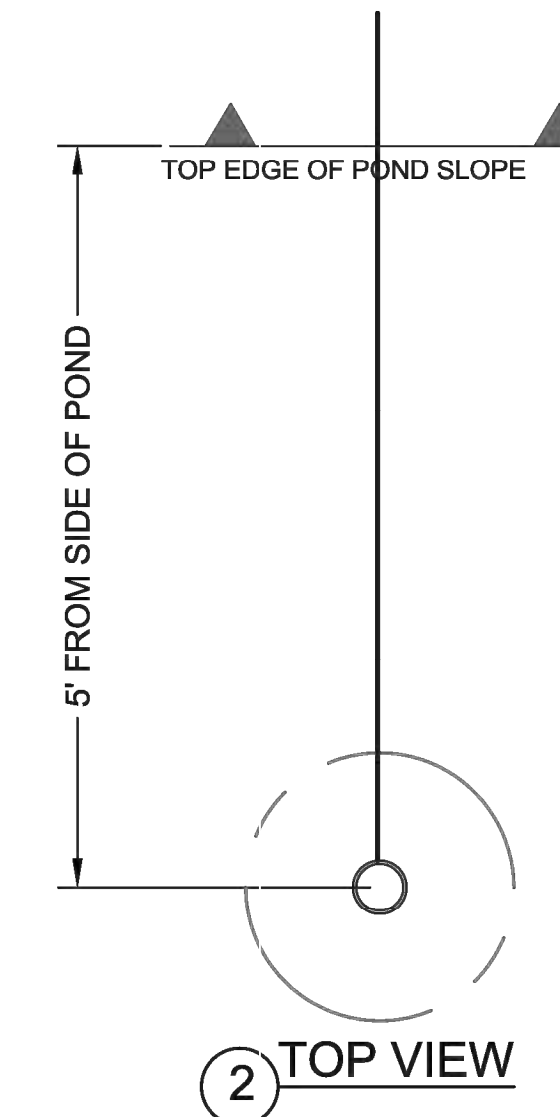
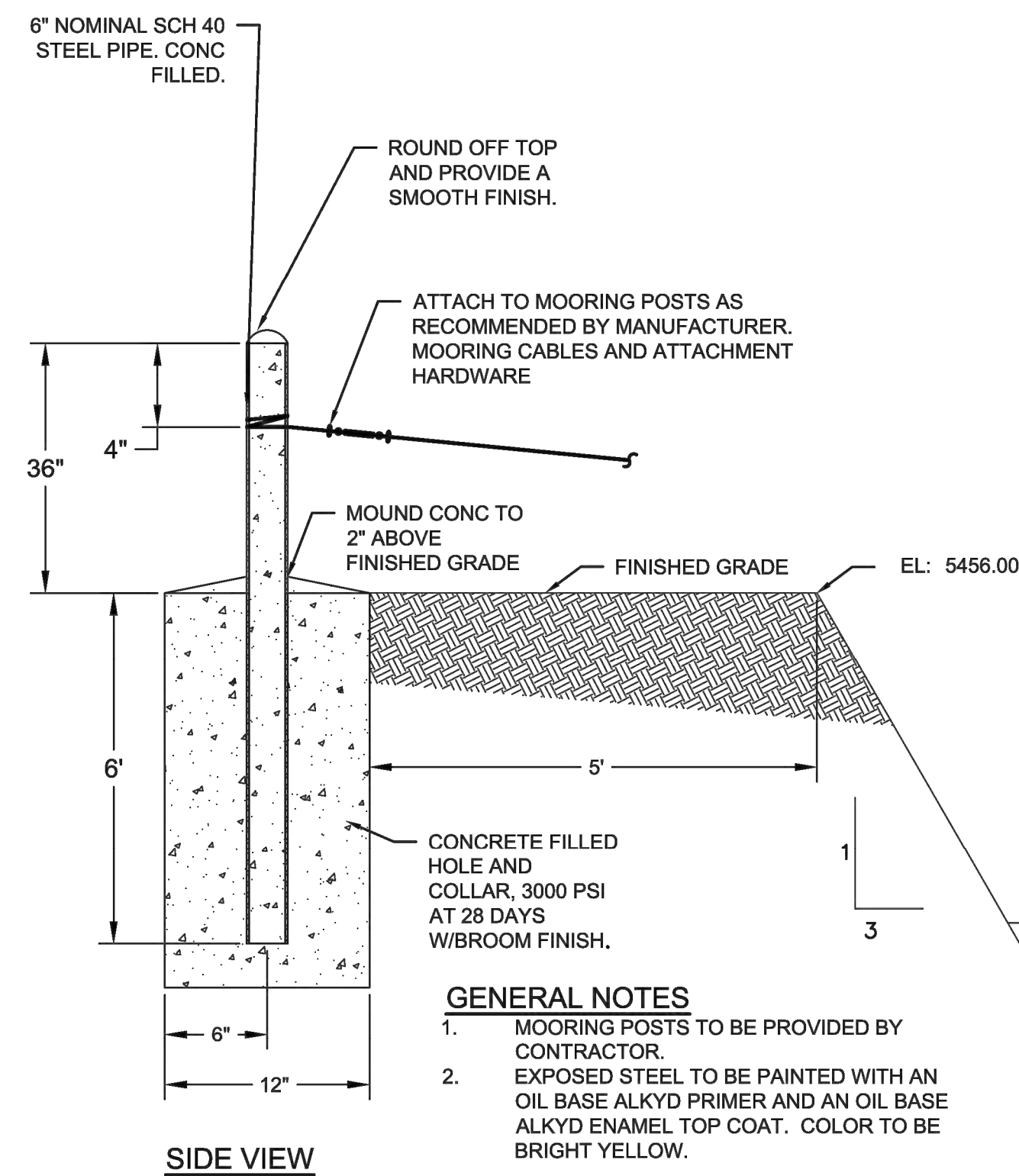


TABLE 1 DISTANCE BETWEEN MOORS (ANCHOR POSTS)	
ROW	DISTANCE (FT)
1	300
2	300
3	300

NOTE: DOES NOT INCLUDE ADDITIONAL LENGTHS FOR SLACKING OF CABLING OR FOR ATTACHING TO MOORING POSTS.

5 AERATOR ANCHOR POST WEST SIDE OF POND
NOT TO SCALE



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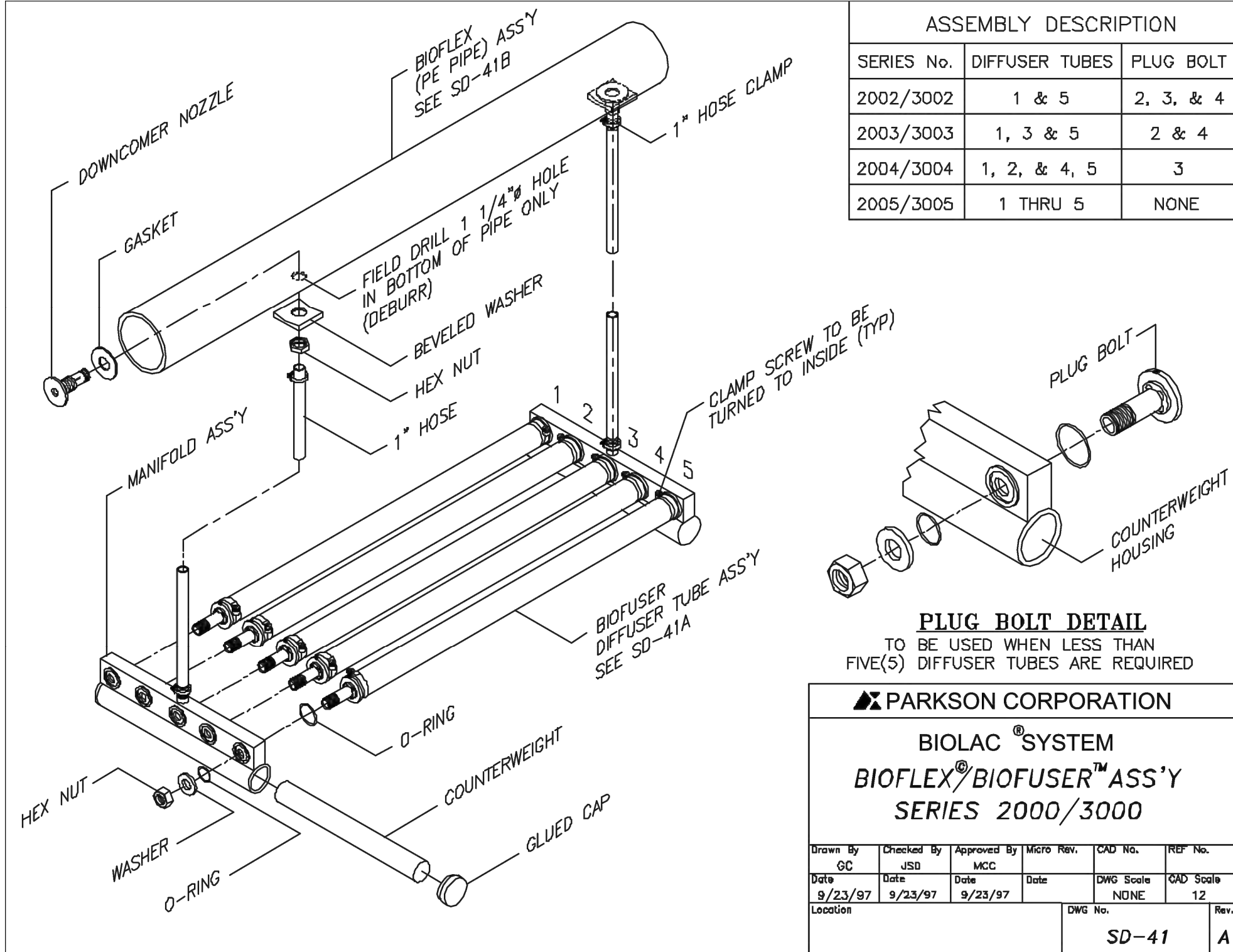
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP - BM
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CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:
DETAILS

SHEET NUMBER:	REV. #
C-315	
SHEET 25 OF 52 SHEETS	

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BIOFUSER™ ASSEMBLY

THE BIOFUSER DIFFUSER ASSEMBLY IS SHIPPED LOOSE AND ASSEMBLED IN THE FIELD BY CONTRACTOR. THE BIOFUSER ASSEMBLY SHOULD BE ASSEMBLED BEFORE THE PE PIPE IS WELDED TOGETHER. THE COUNTERWEIGHT CAN BE INSTALLED AT THIS TIME, OR FOR HANDLING PURPOSES, INSTALLED JUST BEFORE THE DOWNCOMER HOSES ARE CONNECTED.

TO ASSEMBLE USE THIS WITH S.D. DRAWING SD-41

- A. TO ASSEMBLE THE DIFFUSER TUBES INTO THE MANIFOLD, SELECT A FLAT SURFACE (TABLE). MAKE SURE THE TABLE IS SMOOTH AND NO SHARP EDGES THAT COULD CUT THE DIFFUSER SHEATHS.
- B. PLACE TWO MANIFOLDS ON THE TABLE ONE AT EACH END AND AS MANY DIFFUSER TUBES AS REQUIRED PER APPROPRIATE DRAWING. PLACE TWO WOODEN 2x4's UNDER AND PERPENDICULAR TO THE TUBES TO RAISE THE TUBES OFF THE TABLE.
- C. SLIDE THE LARGE O-RING OVER THE BOSS ON THE END OF THE DIFFUSER TUBE. THEN INSERT ONE END OF THE DIFFUSER TUBE INTO THE MANIFOLD. MAKE SURE THE O-RING IS PROPERLY SEATED AND THE SCREW ON THE CLAMP IS FACING TO THE INSIDE. NEXT, INSTALL THE OUTSIDE (SMALL) O-RING AND PROPERLY SEAT INTO THE O-RING GROOVE IN THE MANIFOLD. THEN SLIDE THE WASHER OVER THE BOLT AND AGAINST THE O-RING. START THE NUT ONTO THE BOLT, APPLY MAX. TWO(2) DROPS LOCITE #425 ON THE BOLT THREADS, OUTSIDE THE WASHER.

MAKE SURE THAT THE LOCATING GROOVES ON THE TUBES LINE UP WITH THE LOCATING PINS ON THE MANIFOLD. THEN SCREW THE NUT UNTIL HAND TIGHT.

INSTALL ALL THE DIFFUSER TUBES, AND PLUG BOLTS IF REQUIRED, INTO ONE MANIFOLD THEN INSTALL THE MANIFOLD ONTO THE OTHER END USING THE SAME PROCEDURE. AFTER THE TUBES ARE ASSEMBLED TO THE MANIFOLDS HAND TIGHT, TORQUE ALL NUTS TO 135 IN-LBS.

CAUTION: AFTER THE BIOFUSERS ARE ASSEMBLED, DO NOT STACK THE ASSEMBLIES ON TOP OF ONE ANOTHER, AS THIS CAN DAMAGE THE SHEATHS. LAY THE ASSEMBLIES ON THEIR SIDE, MAKING SURE THAT NOTHING MAKES CONTACT AGAINST THE DIFFUSER SHEATHS.

PARKSON CORPORATION

BIOLAC® SYSTEM
BIOFUSER™ DIFFUSER ASS'Y
SERIES 2000

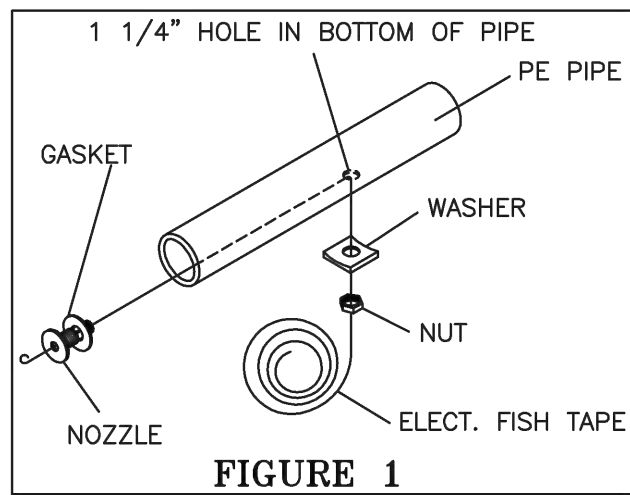
Drawn By	Checked By	Approved By	Micro Rev.	CAD No.	REF No.
G.C.	JSD	MCC			
Date	Date	Date	Date	DWG Scale	CAD Scale
10/10/96	10/16/96	10/16/96		NONE	12
Location			DWG No.		Rev.
			SD-41A		

BIOFLEX® (PE PIPE) ASSEMBLY

The floating lateral consists of HDPE pipe, end fittings and downcomer fittings. The pipe will be shipped in 20 ft or 40 ft length (normally 40 ft), and must be field welded (fusion welded) together by installation contractor.

In order to inspect the integrity of the fusion welds, the following procedure should be followed: Each welder will be required to make one test sample weld at the start and end of each days welding. An additional test sample should be made for every twenty(20) welds. The samples should be least 6' long overall. Each weld sample should have three straps, 1" wide, cut lengthwise. Each strap is bent 90°. If there are any voids or gaps, the weld is unacceptable. These samples should then be sent back to Parkson for inspection.

- A. Field drill and match mark the PE pipe as per the pipe hole layout drawings furnished. Most of the pipe will have lettering in line full length of the pipe. This can be used as a hole centerline, as it is important that all the drilled holes be in line. Layout and drill the holes (1 1/4") using a hole saw. After drilling, deburr the hole inside and outside the pipe to provide a good seal. The downcomer fittings can be installed as they are drilled or as the pipe is being welded.
- B. To install the downcomer fittings use an electrician's steel fish tape or heavy wire of sufficient length to extend the full length of the unwelded pipe (max. 40 ft). Slide the nut and beveled washer onto the fish tape, then insert the fish tape into the hole in the pipe until it is accessible from the end of the pipe. Slide the downcomer fitting with rubber washer over the end of the fish tape and secure with a wire hook so the fitting will not slide off the fish tape. Pull the fish tape back through the hole until the downcomer fitting is pulled through the hole.
- Position the fitting so the two(2) raised bosses on the trough of the fitting are parallel to the length of the pipe. Then slide the washer over the fitting, apply Loctite Assure #425 to the threads on the fitting under the nut then screw the nut onto the fitting and torque to 135 in-lbs.
- C. The pipe should be welded together at the edge of the basin, starting with the closed end, so it can be floated into the basin as it is welded together. Note a special hose adapter is to be welded to the open of the pipe. When the PE pipe has been completely welded together cut the Hi-temp hose to length as shown on drawings. Attach one end of hose to the PE pipe adapter and other end to hose adapter at the air header on shore. Assemble and attach the restraining cable/chain to both ends of the PE pipe as shown on the assembly drawing.
- D. The downcomer hose can be attached to the pipe downcomer fitting as the pipe is being welded together and before it enters the basin. Plug the end of the hose to prevent waste from entering the hose. Coil the hose and tie the hose to the PE pipe with twine. The diffuser assemblies can be attached to the downcomer hoses from a boat or could be attached to the downcomer hose then tied to the PE pipe on shore before it enters the basin. It is absolutely critical that the downcomer hoses are straight and free of twists and kinks. If it is attached on shore, special care must be taken so that the diffuser sheath does not drag on the ground and get damaged.



PARKSON CORPORATION

BIOLAC® SYSTEM
BIOFLEX® ASSEMBLY

Drawn By	Checked By	Approved By	Micro Rev.	CAD No.	REF No.
G.C.	JSD	MCC			
Date	Date	Date	Date	DWG Scale	CAD Scale
9/25/97	9/25/97	9/25/97			
Location			DWG No.		Rev.
			SD-41B		

- E. Pull the entire aeration chain into position in the basin by pulling the restraining chain. Make sure that you also pull and position the aeration chain hose. Attach the restraining chain to the hooks located on the sides of the basin. Repeat the above until all the aeration chains are
- F. Once the aeration chains are secured into position and the hose attached to the air header, they are ready to be tested for air leaks. Fully open all butterfly valves at each aeration chain connection. Turn on blowers, (refer to Part II Section 2 prior to starting blowers) and start checking for air bubbles and/or hissing sounds. The leak will be fairly easy to detect as bubbling at the leaks. Also check that all the diffuser assemblies have identical bubble patterns.

- G. If the basin has been dewatered, or if new construction, the chains can be assembled in the bottom of the basin. If the basin has a liner, special care must be taken so as not to damage or cut the liner. The PE pipe can be drilled and welded together in the bottom of the basin, but not recommended if basin is lined.

Connect the downcomer hoses to the PE pipe then stretch the hose and connect to the diffuser assembly, making sure there are no twists or kinks in the hose. The diffuser assemblies should then be placed near the PE pipe.

Connect one end of the air feed hose to the PE pipe. Plug the other end of the hose so it cannot fill with water. Attach a rope to the end of the hose and secure to shore.

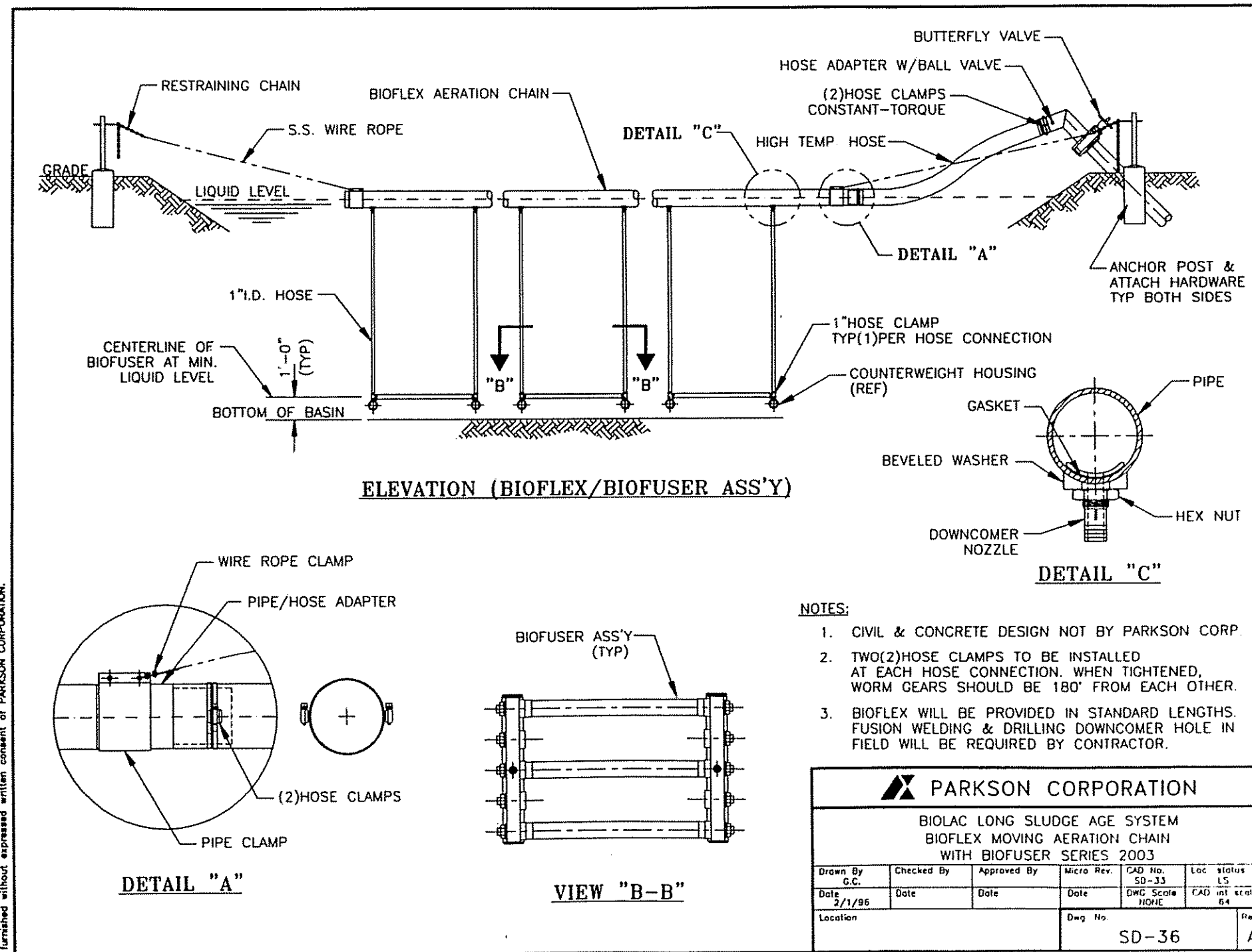
Attach the restraining chains to the PE pipe. Tie a rope to the end of the chain and secure to the anchor post on shore. As the basin is being filled with water occasionally retie the ropes to shore.

When the water has reached the required side water (S.W.D.) per drawing, adjust and secure the restraining chains to the anchor post. Attach the air feed hose to the air adapter at shore. Adjust and cut hose if necessary at startup per Parkson Representative instruction.

PARKSON CORPORATION

BIOLAC® SYSTEM
BIOFLEX® ASSEMBLY

Drawn By	Checked By	Approved By	Micro Rev.	CAD No.	REF No.
G.C.	JSD	MCC			
Date	Date	Date	Date	DWG Scale	CAD Scale
9/25/97	9/25/97	9/25/97			
Location			DWG No.		Rev.
			SD-41C		



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FINAL

PROJECT:

**CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFANCE, AZ 86504
WSP PROJECT No:
2151700051

REVISIONS

NO.	DATE	BY	APPROVED

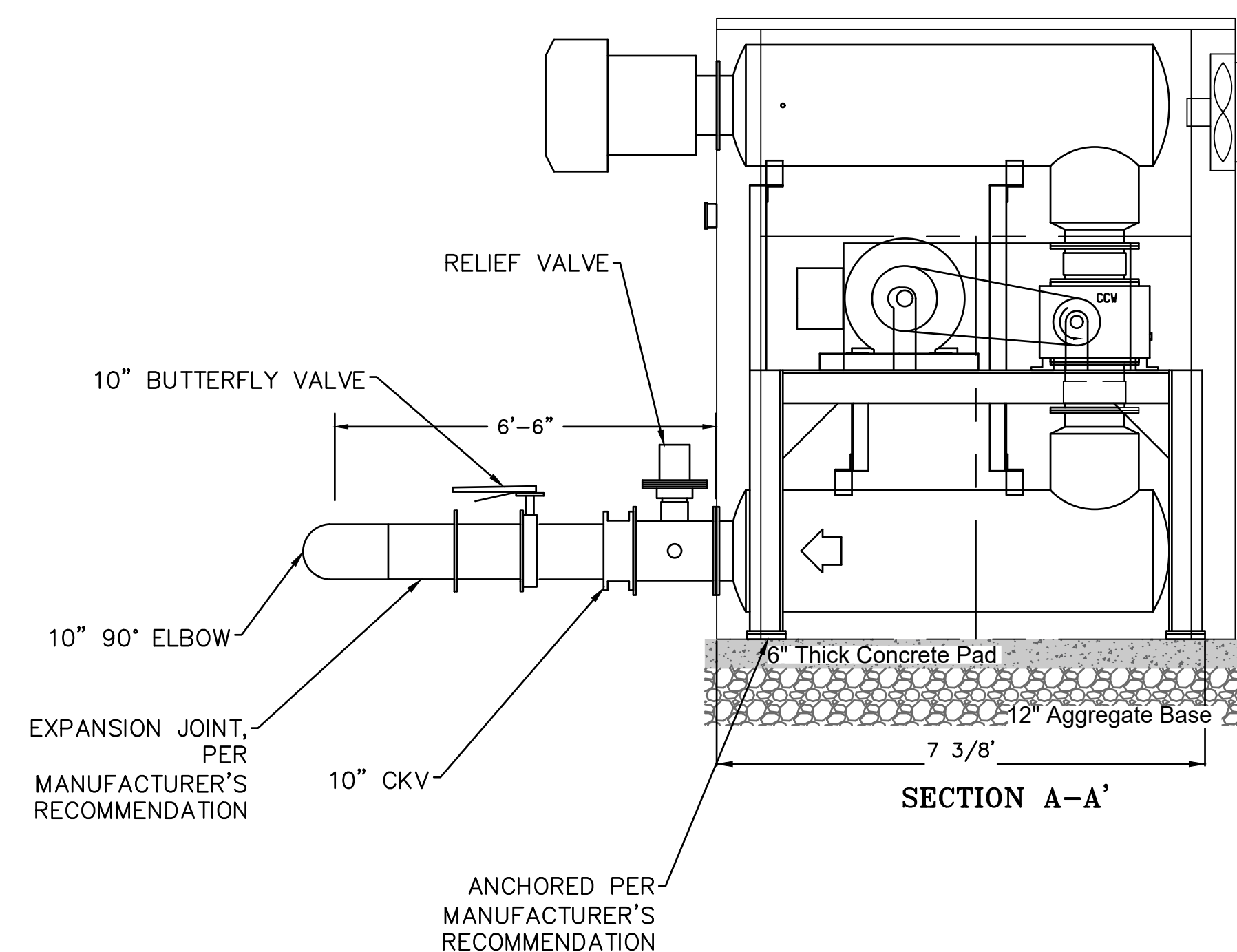
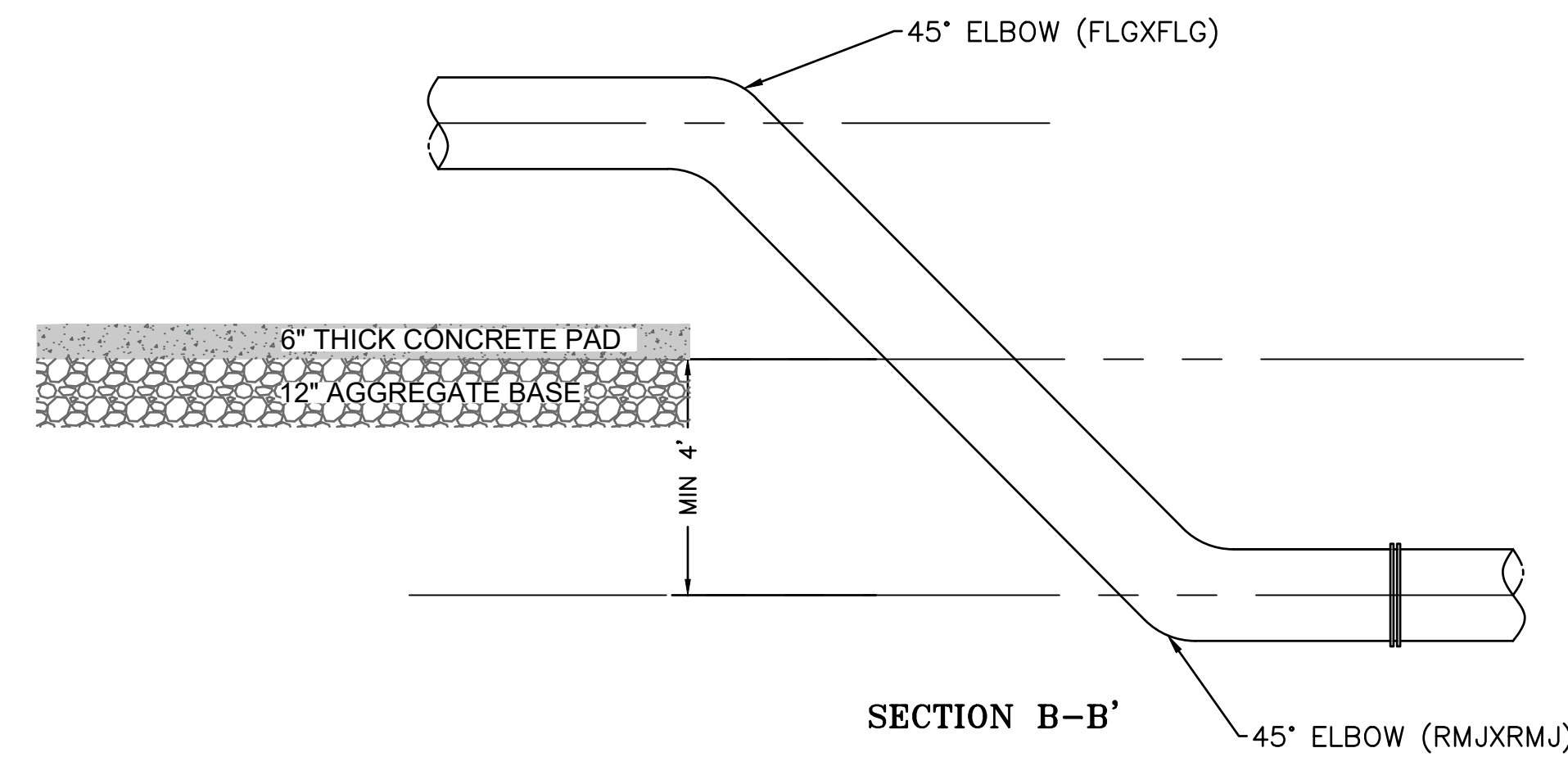
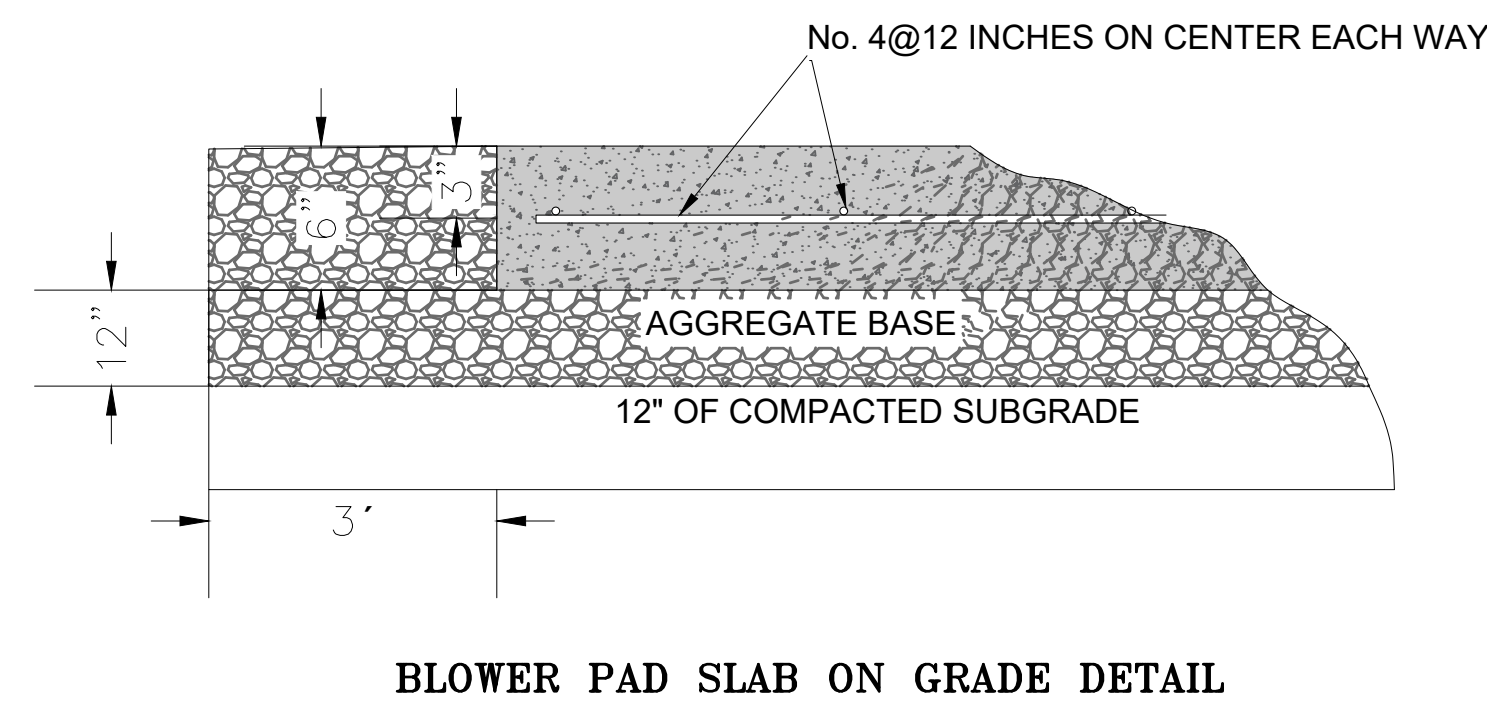
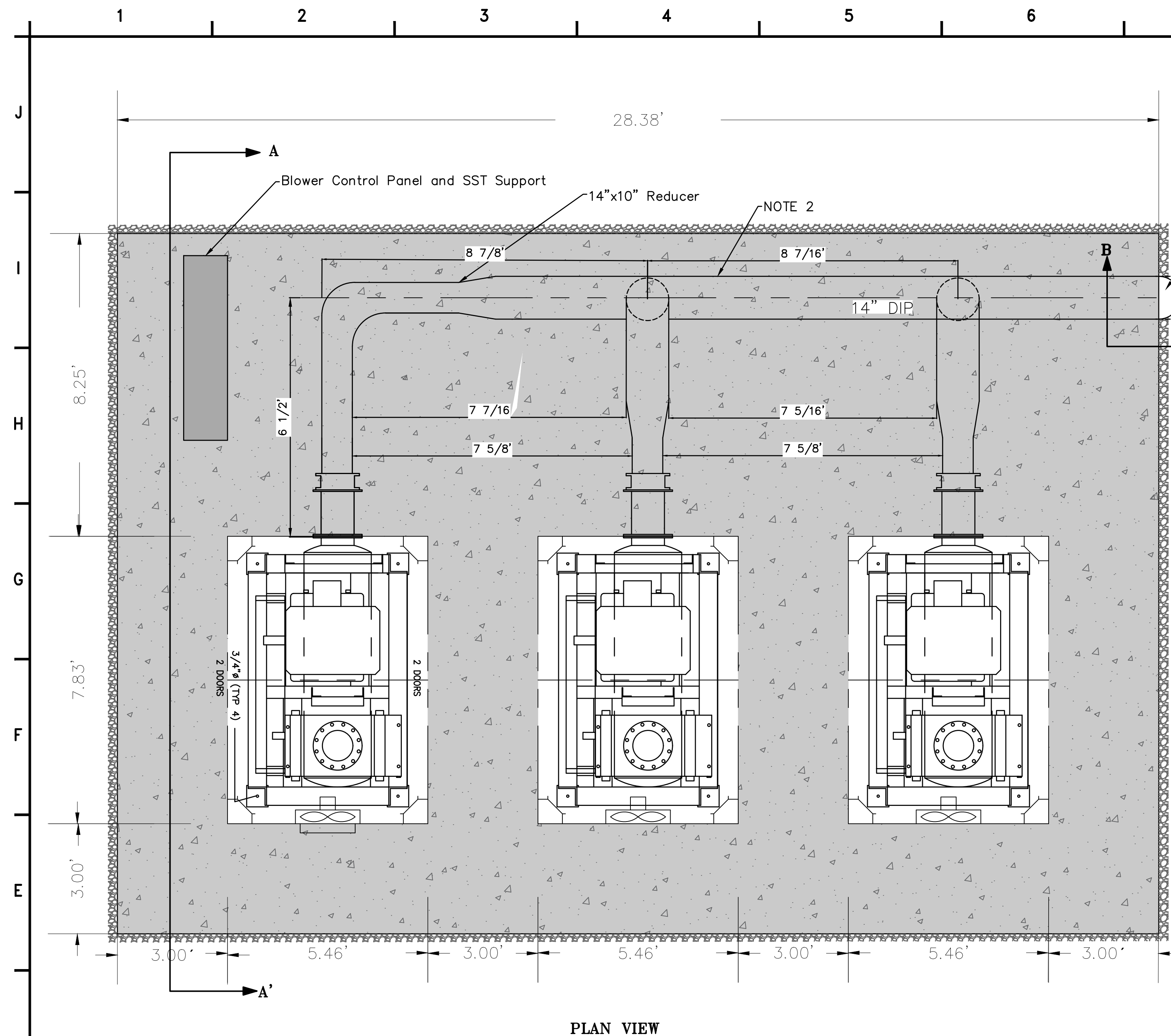
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DRAWN BY: WSP - AO
CHECKED BY: WSP - DB
APPROVED BY: WSP - DB
DATE: 07/14/2023

SHEET TITLE:

**BIOFUSER
DETAILS**

SHEET NUMBER: C-400
REV. #
SHEET 26 OF 52 SHEETS

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NOTES:

1. CONTRACTOR TO FIELD MEASURE AND CUT LENGTHS OF SPOOL PIECES NEEDED BETWEEN THE FLANGE AT BLOWER AND THE CENTERLINE OF AIR HEADER AS SHOWN IN THE PLANS.
2. CONTRACTOR SHALL DESIGN, SUPPLY AND INSTALL PIPE SUPPORT SYSTEM USING MANUFACTURER'S STANDARD AVAILABLE PIPE SUPPORT HARDWARE, COMPLYING WITH ANSI/MSS SP-69.
3. ALL EXPOSED PIPING AND SUPPORT ASSEMBLIES SHALL BE COATED PER MANUFACTURER'S RECOMMENDATIONS.
4. ALL EXPOSED AIR PIPING SHALL BE FLANGED CONNECTION.
5. BLOWER MAKE/MODEL: GARDNER DENVER 624 "HELIFLOW" SERIES BY PARKSON CORPORATION OR EQUAL WITH WEATHER PROOF ENCLOSURE AND COOLING FAN.
6. INSTALL SIGNAGE OF CAUTION FOR EXTREMELY HOT AIR PIPING.



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WSP PROJECT No:
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REVISIONS			
NO.	DATE	BY	APPROVED

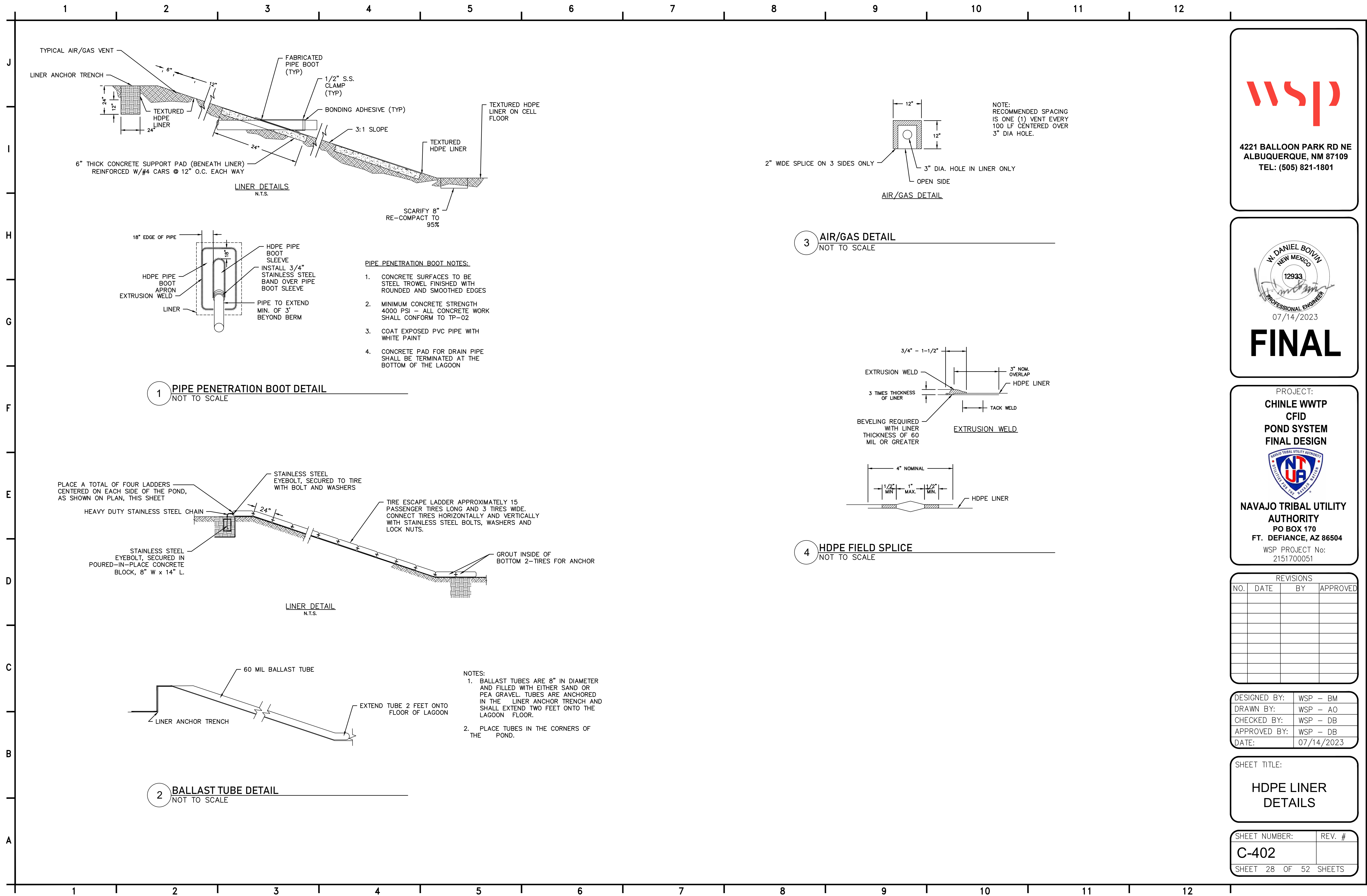
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DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

BLOWER SYSTEM

SHEET NUMBER:	REV. #
C-401	
SHEET 27 OF 52 SHEETS	

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PROJECT:

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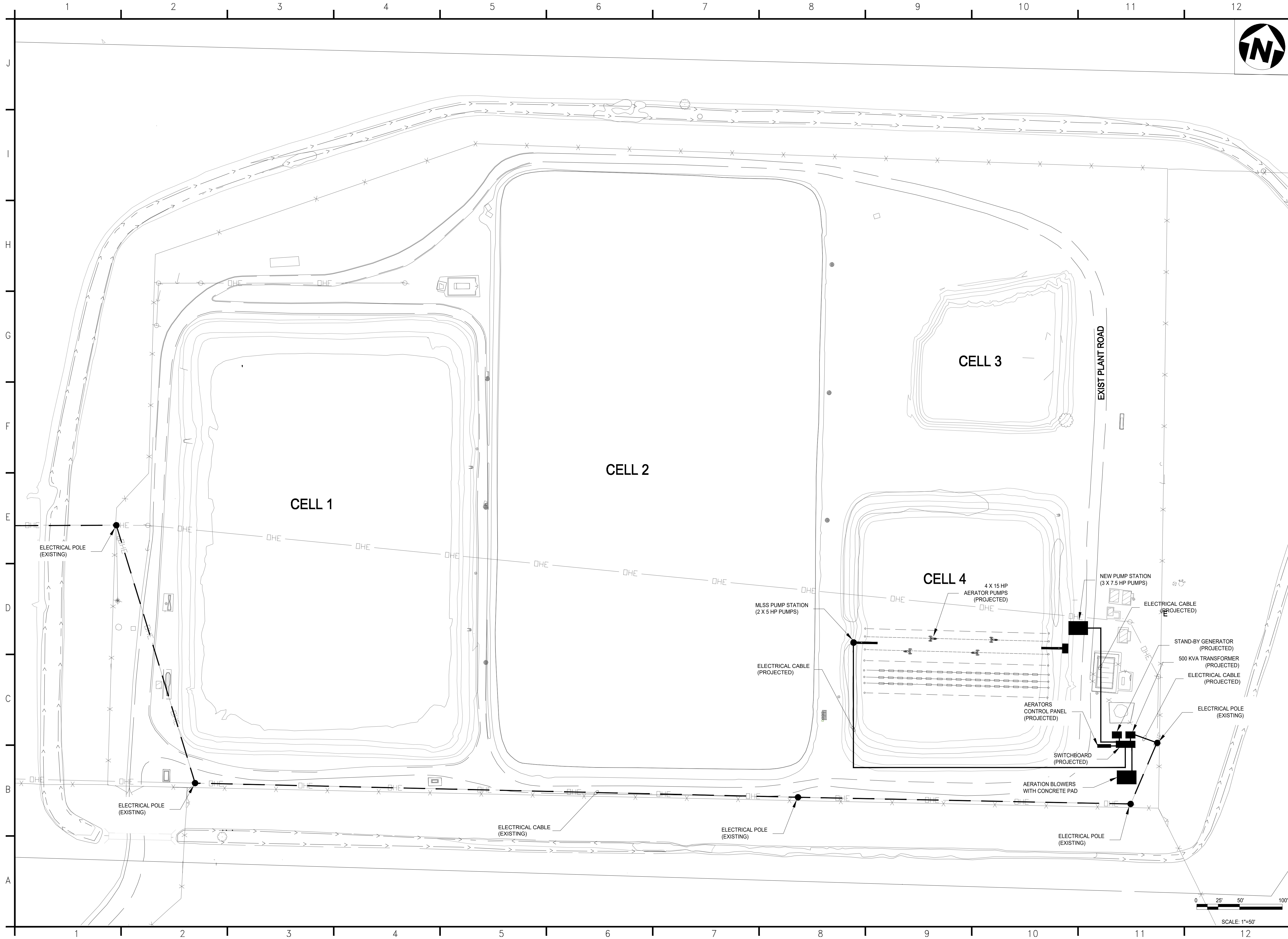
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DRAWN BY:	WSP - AO
CHECKED BY:	WSP - DB
APPROVED BY:	WSP - DB
DATE:	07/14/2023

SHEET TITLE:

HDPE LINER
DETAILS

SHEET NUMBER:	REV. #
C-402	
SHEET 28 OF 52 SHEETS	

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PROJECT:
**CHINLE WWTP
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WSP PROJECT No:
2151700051

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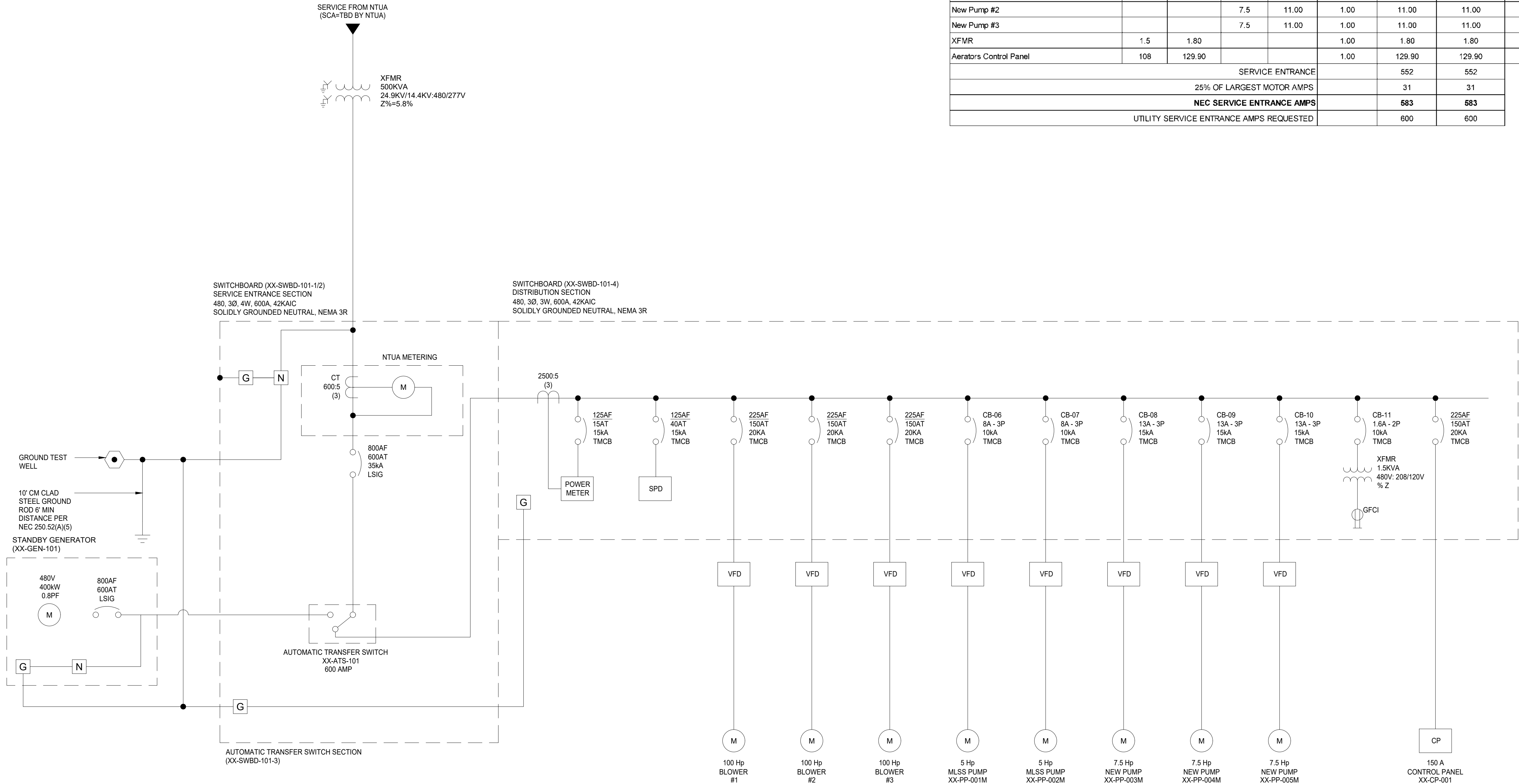
NO.	DATE	DESCRIPTION

DESIGNED BY:	SA
DRAWN BY:	JJ
CHECKED BY:	JJ
DATE:	26MAY2023

SHEET TITLE:
**ELECTRICAL
SITE LAYOUT
DRAWING**

SHEET NUMBER:	REV. #
E-100	
SHEET 29 OF 52 SHEETS	

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LOAD DESCRIPTION	NON MOTOR LOAD KVA	NON MOTOR LOAD AMPS	MOTOR HP	MOTOR AMPS	DEMAND FACTOR	DEMAND SERVICE ENTRANCE AMPS	CONNECTED SERVICE ENTRANCE AMPS	POWER SOURCE
Blower #1			100	124.00	1.00	124.00	124.00	SB-001
Blower #2			100	124.00	1.00	124.00	124.00	SB-001
Blower #3			100	124.00	1.00	124.00	124.00	SB-001
MLSS Pump #1			5	7.60	1.00	7.60	7.60	SB-001
MLSS Pump #2			5	7.60	1.00	7.60	7.60	SB-001
New Pump #1			7.5	11.00	1.00	11.00	11.00	SB-001
New Pump #2			7.5	11.00	1.00	11.00	11.00	SB-001
New Pump #3			7.5	11.00	1.00	11.00	11.00	SB-001
XFMR	1.5	1.80			1.00	1.80	1.80	SB-001
Aerators Control Panel	108	129.90			1.00	129.90	129.90	SB-001
SERVICE ENTRANCE						552	552	
25% OF LARGEST MOTOR AMPS						31	31	
NEC SERVICE ENTRANCE AMPS						583	583	
UTILITY SERVICE ENTRANCE AMPS REQUESTED						600	600	



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FT. DEFIANC, AZ 86504
WSP PROJECT No:
2151700051

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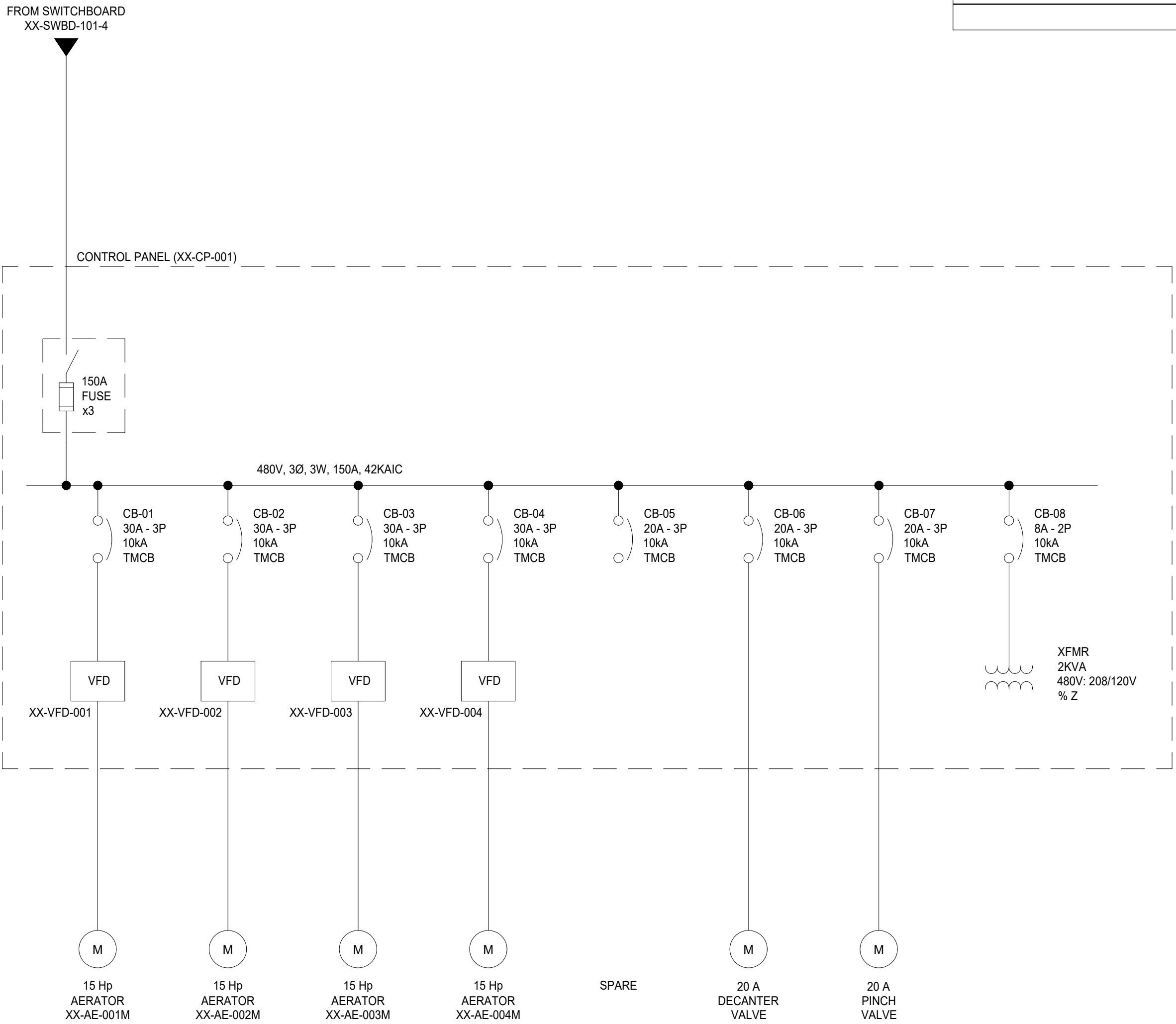
NO.	DATE	DESCRIPTION

DESIGNED BY:	SA
DRAWN BY:	JJ
CHECKED BY:	JJ
DATE:	26MAY2023

SHEET TITLE:
SWITCHBOARD
SINGLE LINE
DIAGRAM

SHEET NUMBER:	REV. #
E-101	
SHEET 30 OF 52 SHEETS	

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LOAD DESCRIPTION	NON MOTOR LOAD KVA	NON MOTOR LOAD AMPS	MOTOR HP	MOTOR AMPS	DEMAND FACTOR	DEMAND SERVICE ENTRANCE AMPS	CONNECTED SERVICE ENTRANCE AMPS	POWER SOURCE
Aerator #1			15	21.00	1.00	21.00	21.00	PP-001
Aerator #2			15	21.00	1.00	21.00	21.00	PP-001
Aerator #3			15	21.00	1.00	21.00	21.00	PP-001
Aerator #4			15	21.00	1.00	21.00	21.00	PP-001
Decanter Valve	16	19.25			1.00	19.25	19.25	PP-001
Pinch Valve	16	19.25			1.00	19.25	19.25	PP-001
XFMR	2	2.41			1.00	2.41	2.41	PP-001
SERVICE ENTRANCE						125	125	
25% OF LARGEST MOTOR AMPS						5	5	
NEC SERVICE ENTRANCE AMPS						130	130	
UTILITY SERVICE ENTRANCE AMPS REQUESTED						150	150	



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WSP PROJECT No:
2151700051

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NO.	DATE	DESCRIPTION

DESIGNED BY:	SA
DRAWN BY:	JJ
CHECKED BY:	JJ
DATE:	26MAY2023

SHEET TITLE:
CONTROL PANEL
SINGLE LINE
DIAGRAM

SHEET NUMBER:	REV. #
E-102	
SHEET 31 OF 52 SHEETS	

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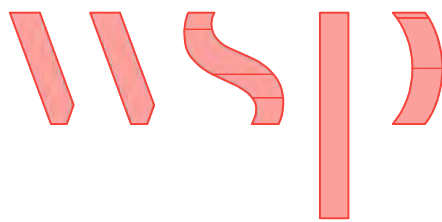
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NAVAJO TRIVAL UTILITY AUTHORITY
HIGH-PERFORMANCE POND SYSTEM - CHINLE

FOR: N.T.U.A.
LOCATION: CHINLE, AZ
PROJECT No.: 2151700051
DRAWING PKG No.: 23-045_CHINLE

TABLE OF CONTENTS		
DRAWING NO.	SEC	DRAWING TITLE
N-A01	A	TITLE PAGE
N-A02	A	PROCESS FLOW SYMBOLS & NOTES PG. 1 - P & ID
N-A03	A	PROCESS FLOW SYMBOLS & NOTES PG. 2 - P & ID
N-A04	A	PROCESS FLOW SYMBOLS & NOTES PG. 3 - P & ID
N-A05	A	PROCESS FLOW SYMBOLS & NOTES PG. 4 - P & ID
N-C01	C	AREA MAP AND CONSTRUCTION NOTES
N-C02	C	AERATOR PUMP PLACEMENT DIAGRAM
N-D01	D	NETWORK AND CONDUIT DIAGRAM: PANEL AND FIELD
N-E00	E	480VAC THREE-LINE DIAGRAM
N-E01	E	480VAC THREE-LINE DIAGRAM
N-E02	E	480VAC THREE-LINE DIAGRAM
N-F01	F	120VAC SCHEMATIC
N-G01	G	24VDC SCHEMATIC
N-H00	H	PLC POWER AND COMMUNICATION - RACK 1 MODULE 00
N-H01	H	I/O SCHEMATIC PLC RACK 1 MODULES 01 & 02
N-H02	H	I/O SCHEMATIC PLC RACK 1 MODULE 03
N-H03	H	I/O SCHEMATIC PLC RACK 1 MODULE 04
N-H04	H	I/O SCHEMATIC PLC RACK 1 MODULE 05
N-M01	M	ASSEMBLY DRAWING ENCLOSURE
N-M02	M	ASSEMBLY DRAWING BACKPLATE
N-M03	M	BILL OF MATERIALS



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PROJECT:
**CHINLE WWTP
HIGH-PERFORMANCE
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFIANCE, AZ 86504
WSP PROJECT No:
2151700051

REVISIONS			
NO.	DATE	BY	APPROVED
RCA	20230324	RSB	PP

DESIGNED BY:	RSB
DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
TITLE PAGE

N-A01

SHEET NUMBER:	REV. #
N-A01	RCA
SHEET 1 OF 21 SHEETS	

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ELECTRICAL SYMBOLS LEGEND						GENERAL ELECTRICAL NOTES (NOT ALL SYMBOLS & NOTES WILL APPLY TO THIS PROJECT)					
SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION	
		EXISTING				EMERGENCY LIGHTING UNIT				MEDIUM VOLTAGE DISCONNECT SWITCH	
		REMOVE				CEILING MOUNTED EXIT SIGN – ARROW AS INDICATED				MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER	
		NEW WORK				TWO FACED EXIT SIGN				TRANSFORMER (DELTA–WYE CONN.)	
		HIDDEN OR BURIED				WALL MOUNTED EXIT SIGN				SHIELDED TRANSFORMER	
		HOMERUN CONDUIT				SWITCHBOARD, POWER PANELBOARD				DRAWOUT CIRCUIT BREAKER (TRIP FRAME)	
		GROUND				LIGHTING PANELBOARD				CIRCUIT BREAKER (TRIP FRAME) WITH GROUND FAULT INTERRUPTER	
		PHASE				TRANSFORMER				MOTOR CIRCUIT PROTECTOR	
		SWITCHED				COMBINATION MAGNETIC STARTER AND CIRCUIT BREAKER 2 – INDICATES NEMA STARTER SIZE 20 – INDICATES CIRCUIT BREAKER TRIP				MOTOR CONTROL CENTER STARTER UNIT	
		NEUTRAL				BELL				FUSE	
		ISOLATED GROUND				HORN "H" OR SIREN "S"				GENERATOR	
		FLEXIBLE CONDUIT				BUZZER				CURRENT TRANSFORMER (NUMBERS INDICATE RATIO AND QUANTITY)	
		CONDUIT TURNING DOWN				PUSHBUTTON				POTENTIAL TRANSFORMER (NUMBER INDICATES QUANTITY)	
		CONDUIT TURNING UP				MANUAL PULL STATION				AMMETER SWITCH	
		CONDUIT UP AND DOWN				FIRE ALARM HORN (V=VISUAL SIGNAL)				VOLTMETER SWITCH	
		CONDUIT SEAL				PHOTOELECTRIC SMOKE DETECTOR				VOLTMETER	
		CONDUIT CAP				IONIZATION SMOKE DETECTOR				AMMETER	
		BUSWAY WITH DESCRIPTION				THERMAL DETECTOR				KILOWATT METER	
		GROUNDING CONDUCTOR				DUCT SMOKE DETECTOR (PHOTOELECTRIC)				TRANSFER SWITCH	
		CABLE TRAY WITH DESCRIPTION				MAGNETIC DOOR HOLDER				KEY INTERLOCK #1	
		CEILING JUNCTION BOX				PRESSURE SWITCH				BATTERY	
		WALL JUNCTION BOX				FLOW SWITCH				NORMALLY CLOSED CONTACT	
		DUPLEX RECEPTACLE OUTLET				VALVE SUPERVISORY SWITCH				NORMALLY OPEN CONTACT	
		SINGLE RECEPTACLE OUTLET				FIRE ALARM CONTROL PANEL				PROTECTIVE RELAY, SOLENOID COIL	
		DOUBLE DUPLEX RECEPTACLE OUTLET				FIRE ALARM RACEWAY				THERMAL OVERLOAD	
		GROUND FAULT CIRCUIT INTERRUPTER DUPLEX OUTLET WITH WEATHERPROOF COVER				CEILING SPEAKER				CONNECTION	
		SPLIT WIRED DUPLEX RECEPTACLE				WALL SPEAKER				CROSS, NO CONNECTION	
		DUPLEX ISOLATED GROUND				TELECOMMUNICATIONS OUTLET				SURGE ARRESTOR	
		SPECIAL PURPOSE OUTLET – USE SUBSCRIPT TO IDENTIFY TYPE IN SPECS				FLOOR MOUNTED TELECOMMUNICATIONS OUTLET				TRANSIENT VOLTAGE SURGE SUPPRESSOR	
		FLOOR RECEPTACLE OUTLET USE SUBSCRIPT TO IDENTIFY TYPE IN SPECS				INTERCOM OUTLET				CAPACITOR	
		RECEPTACLE RACEWAY				TELECOMMUNICATIONS RACEWAY				CONTROL RELAY #1	
		SINGLE POLE SWITCH – USE SUBSCRIPT TO DESIGNATE CONTROL OF PARTICULAR OUTLETS				PROTECTED TRANSMISSION SYSTEM (PTS) DATA TERMINAL CONNECTION				BUS PLUG CIRCUIT BREAKER	
		DOUBLE POLE SWITCH				TELEVISION OUTLET				THERMOSTAT	
		THREE-WAY SWITCH				CARD READER				KEYED NOTE DESIGNATION	
		FOUR-WAY SWITCH				ELECTRIC DOOR STRIKE				ELECTRICAL EQUIPMENT DESIGNATION (SEE SCHEDULE)	
		WEATHERPROOF SWITCH				DOOR CONTACTS				MECHANICAL EQUIPMENT DESIGNATION (SEE SCHEDULE)	
		KEY OPERATED SWITCH				REMOTE ACCESS PANEL				NAMEPLATE DESIGNATION (SEE SCHEDULE)	
		DIMMER SWITCH – NUMBER INDICATES WATTAGE				HAND GEOMETRY UNIT				WEATHERPROOF	
		OCCUPANCY SENSING SWITCH				MOTION DETECTOR				ABOVE FINISH FLOOR	
		PHOTOCELL				CLOSED CIRCUIT TV CAMERA					
		REMOTE CONTROL SWITCH 6 POLE, 30 AMPS									
		FLUORESCENT LUMINAIRE A=FIXTURE TYPE 1=CIRCUIT NUMBER b=SWITCH CONTROLLING FIXTURE									
		FLUORESCENT STRIP LUMINAIRE									
		WALL MOUNTED FLUORESCENT LUMINAIRE									
		CEILING MOUNTED LUMINAIRE									
		WALL MOUNTED LUMINAIRE									
		EMERGENCY LUMINAIRE									
		LIGHT POLE WITH LUMINAIRE									

1. PERFORM INSTALLATION IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND APPLICABLE DOE ORDERS. EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).

2. PROVIDE AND MAINTAIN A CLEAR WORKING SPACE ABOUT ELECTRIC EQUIPMENT (SWITCHBOARDS, PANELBOARDS, ETC.) IN ACCORDANCE WITH NEC ARTICLES 110.26 AND 110.34.

3. USE 600 VAC CIRCUIT BREAKERS IN 480V AND 480Y/277V SWITCHBOARDS, PANELBOARDS AND MOTOR CONTROL CENTERS.

4. PROVIDE CIRCUIT BREAKERS WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM.

5. PROVIDE PADLOCKING PROVISIONS FOR EACH TWO- AND THREE-POLE CIRCUIT BREAKER.

6. BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT. SIZE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH NEC TABLE 250.122.

7. IDENTIFY NEW BRANCH CIRCUITS AT THE PANEL AND AT THE LOAD OUTLET, RECEPTACLE AND SWITCH. IDENTIFY THE PURPOSE OF INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES AND MOTOR STARTERS BY MEANS OF NAMEPLATES AS INDICATED.

8. ROUTE CONDUITS TO SUIT EQUIPMENT AND BUILDING STRUCTURE. LIMIT THE USE OF ELECTRICAL METALLIC TUBING (EMT) TO AREAS WHERE IT WILL NOT BE SUBJECT TO PHYSICAL DAMAGE OR CORROSION. USE INTERMEDIATE METAL CONDUIT (IMC) OR RIGID GALVANIZED STEEL CONDUIT (RGS) FOR WORK EMBEDDED IN CONCRETE OR EXPOSED TO PHYSICAL DAMAGE. USE MINIMUM 3/4 INCH CONDUIT EXCEPT AS FOLLOWS: 1/2" CONDUIT MAY BE USED FOR 20 AMP GENERAL LIGHT AND POWER CIRCUITS AND FOR CONTROL CIRCUITS; 3/8" FLEXIBLE METAL CONDUIT MAY BE USED TO CONNECT LIGHT FIXTURES IN SUSPENDED CEILINGS. USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FLEXIBLE CONNECTIONS TO EQUIPMENT IN MECHANICAL ROOMS OR OUTDOORS.

9. SEAL AROUND CONDUIT PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS SEPARATING AREAS TO RESTORE ORIGINAL FIRE RATING; USE A UL CLASSIFIED FIRE SEALANT. SEAL PENETRATIONS THROUGH ROOF AND EXTERIOR WALLS TO MAKE WATERPROOF. REQUEST INSPECTION OF FIRE SEALS BY ELECTRICAL INSPECTOR FROM AUTHORITY HAVING JURISDICTION BEFORE AND AFTER PLACEMENT OF FIRE SEAL MATERIALS.

10. USE 12 AWG OR LARGER CONDUCTORS FOR POWER WIRING. USE 14 AWG STRANDED CONDUCTORS FOR CONTROL WIRING UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS.

11. USE ONLY COPPER CONDUCTORS ON CIRCUITS 600V AND LESS. CONDUCTORS 10 AWG AND SMALLER SHALL BE SOLID AND 8 AWG AND LARGER AWG SHALL BE STRANDED. PROVIDE TYPE THHN/THWN WIRE INSULATION; XHHW INSULATION MAY BE USED FOR 1 AWG AND LARGER.

12. USE THE FOLLOWING CONDUCTOR COLOR CODES:

	208Y/120 VOLT	480Y/277 VOLT
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
EQUIP. GROUND	GREEN	GREEN

ISOLATED GROUND SHALL BE GREEN WITH YELLOW TRACER.

13. ARRANGE CONNECTIONS FOR SINGLE PHASE CIRCUITS TO ACHIEVE THREE PHASE LOAD BALANCE WITHIN 20% OF THE AVERAGE PHASE LOAD CURRENT. UNGROUNDED CONDUCTORS USING A COMMON NEUTRAL MUST ORIGINATE FROM DIFFERENT PHASES.

14. INSTALL OUTDOOR EQUIPMENT TO BE WEATHERPROOF AND TO EXCLUDE BIRDS AND RODENTS WITH MAXIMUM 1/2" DIAMETER UNPROTECTED OPENINGS IN ENCLOSURES.

15. PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH NFPA 780. PROVIDE MATERIAL THAT IS UL LABELED FOR LIGHTNING PROTECTION SERVICE. THE LIGHTNING PROTECTION SYSTEM DESIGN AND INSTALLATION SHALL FOLLOW THAT SHOWN ON THE DRAWINGS.

16. TEST CONDUCTORS FOR CONTINUITY AND FREEDOM FROM SHORTS AND UNINTENTIONAL GROUNDS.

17. ELECTRICAL EQUIPMENT SPECIFIED IN THIS DOCUMENT SHALL BE ACCEPTANCE TESTED AND INSPECTED IN ACCORDANCE WITH UL.

18. ELECTRICAL MATERIALS AND CONSTRUCTION SHALL CONFORM TO OWNERS/PROJECT MANAGERS STANDARD CONSTRUCTION SPECIFICATIONS WHERE APPLICABLE.

19. DISPOSE OF ITEMS REMOVED AS DIRECTED BY THE OWNER/PROJECT CONSTRUCTION INSPECTOR.

20. REPAIR AREAS DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT AREAS WITH RESPECT TO BOTH COLOR AND FINISH.

21. KEEP JOB SITE IN AN ORDERLY CONDITION AND AT PROJECT COMPLETION, REMOVE ALL WASTE. LEAVE THE JOB SITE IN A CONDITION ACCEPTABLE TO THE OWNER/PROJECT CONSTRUCTION INSPECTOR.

22. IF A CONFLICT ARISES BETWEEN THE FIELD CONDITIONS AND THESE GENERAL ELECTRICAL REQUIREMENTS, CONTACT THE OWNER/PROJECT LEADER FOR DIRECTIONS.

23. TIE-INS TO EXISTING POWER SYSTEMS WILL BE PERFORMED BY THE PROJECT SUPPORT SERVICES SUB-CONTRACTOR.

DRAWING NOTES

1. DRAWINGS ARE MEANT TO BE A REPRESENTATION ONLY. DEVICES MAY LOOK DIFFERENT THAN WHAT WE HAVE SHOWN.

2. REFER TO PRODUCT SPECIFICATIONS FOR EXACT DIMENSIONS OF ENCLOSURE, BACK PANEL & ALL DEVICES DRAWN IN THESE DRAWINGS.

NOTING SYMBOLS & DESIGNATIONS

CORRESPONDS TO A BILL OF MATERIALS

55 CORRESPONDS TO A KEYED NOTE #

(INDICATES DETAIL DESIGNATION)

TITLE NOTATION & SEE DETAIL SYMBOL

(INDICATES SHEET NUMBER)

8519 JEFFERSON NE
ALBUQUERQUE, NM 87113
TEL: (505) 821-1801

JOSEPH L. JORGENSEN
NEW MEXICO
19288
PROFESSIONAL ENGINEER
03/21/23

PROJECT:
CHINLE WWTP
HIGH-PERFORMANCE
POND SYSTEM
FINAL DESIGN

NAVAJO TRIBAL UTILITY
AUTHORITY
PO BOX 170
FT. DEFIANE, AZ 86504
WSP PROJECT No:
2151700051

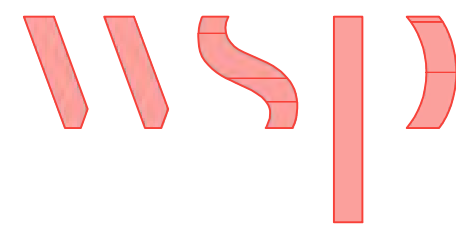
REVISIONS			
NO.	DATE	BY	APPROVED
RCA	20230324	RSB	PP

DESIGNED BY:	RSB
DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
PROCESS FLOW SYMBOLS &
NOTES PG. 1 - P & ID

N-A02

SHEET NUMBER:	REV. #
N-A02	RCA
SHEET 2 OF 21 SHEETS	



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TEL: (505) 821-1801



PROJECT:
**CHINLE WWTP
HIGH-PERFORMANCE
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFIANCIE, AZ 86504
WSP PROJECT No:
2151700051

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N-A02

SHEET NUMBER:	REV. #
N-A02	RCA
SHEET 2 OF 21 SHEETS	

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	1	2	3	4	5	6	7	8	9	10	11	12	
J	SIGNAGE & LABELS KEY			PROCESS FLOW DIAGRAMS AND P&ID SYMBOLS									
I	1120 VAC POWER1A120 VAC POWER1B120 VAC POWER 2120 VAC SURGE PROTECTOR2A120 VAC SURGE PROTECTOR2B120 VAC SURGE PROTECTOR 3POWER SUPPLY3APOWER SUPPLY3BPOWER SUPPLY 4TB-DI 14ATB-DI 24BTB-DI 3 5TB-D0 15ATB-D0 25BTB-D0 3 6TB-AI 16ATB-AI 26BTB-AI 3 7TB-AO 17ATB-AO 27BTB-AO 3 8XXX PANEL NAME 9SITE NAME XXX 10WARNING, THERE MAY BE VOLTAGE IN THIS PANEL FROM MULTIPLE SOURCES			(GENERAL INSTRUMENT OR FUNCTION SYMBOLS) (NOT ALL SYMBOLS & NOTES WILL APPLY TO THIS PROJECT)									
H				ACRONYMS			SYMBOL	DESCRIPTION	INSTRUMENT/FUNCTION SYMBOLS				
G				EQUIPMENT				P =PURGE OR FLUSHING DEVICE R =RESET FOR LATCH-TYPE ACTUATOR I =UNDEFINED INTERLOCK LOGIC		PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
F								S =SOLENOID D =DIGITAL P =PILOT T =TRAP M =MAGNETIC FLOWMETER SP =SET POINT	DISCRETE INSTRUMENTS				
E								ROOT EXTRACTION BIAS MULTIPLY HIGH SELECTING LOW SELECTING HIGH LIMITING LOW LIMITING PROPORTIONAL REVERSE PROPORTIONAL SUMMING DIVIDING	SHARED DISPLAY, SHARED CONTROL				
D								EQUIPMENT TAG	COMPUTER FUNCTION				
C									PROGRAMMABLE LOGIC CONTROL				
B									SYMBOL	DESCRIPTION			
A										FLOW INDICATOR TO BE USED IN CONJUNCTION WITH P016			
										INSTRUMENTS SHARING COMMON HOUSING			
							PANEL MOUNTED PATCHBOARD POINT 12						
						INSTRUMENTATION IDENTIFICATION							
						TABLE							
							J-1 COMPONENT FUNCTION NUMBER J-2 COMPONENT SEQUENCE NUMBER J-2A COMPONENT SEQUENCE # CONT'D J-3 VENDOR DESIGNATION J-4 PANEL NUMBER J-5 APPLICABLE NOTES J-6 SYSTEM ACRONYM J-7 ASME TEST SYMBOL FOR TEST ONLY OR TEST PLUS NORMAL USE J-8 SET-POINT(S) J-9 FUNCTION (SEE INSTRUMENT/FUNCTION SYMBOLS)						
						NOTE: INSTRUMENTATION FUNCTION IDENTIFIERS (J-1) AND FUNCTION SYMBOLS PER ANSI/ISA 55.1.							
	LINE TYPES			GENERAL NOTES									
	SYMBOL	LINE TYPE	DESCRIPTION	xx									
		CONTINUOUS	PRIMARY PROCESS FLOW LINE										
		CONTINUOUS	SECONDARY PROCESS FLOW LINE										
		CONTINUOUS	INSTRUMENT SUPPLY OR CONNECTION TO PROCESS										
		CONTINUOUS	UNDEFINED SIGNAL										
		CONTINUOUS	PNEUMATIC SIGNAL *										
		HIDDENX2	ELECTRIC SIGNAL										
		CONTINUOUS	HYDRAULIC SIGNAL										
		CONTINUOUS	CAPILLARY TUBE										
		CONTINUOUS	ELECTROMAGNETIC OR SONIC SIGNAL** (GUIDED)										
		CONTINUOUS	ELECTROMAGNETIC OR SONIC SIGNAL** (NOT GUIDED)										
		CONTINUOUS	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)										
		CONTINUOUS	MECHANICAL LINK										
		CONTINUOUS	PNEUMATIC BINARY SIGNAL										
		DASHED2	ELECTRIC BINARY SIGNAL										
		CONTINUOUS	ELECTRICAL HEAT TRACING										
		CONTINUOUS/DASHED2	STEAM HEAT TRACING										
		DASHED2	BURIED LINES										
		PHANTOM	EXISTING										
		CENTER	FP – FLOOR PENETRATION RP – ROOF PENETRATION WP – WALL PENETRATION SB – SYSTEM BREAK										
	NOTES: "OR" MEANS USER CHOICE. CONSISTENCY IS RECOMMENDED.												
	* THE PNEUMATIC SIGNAL SYMBOL APPLIES TO A SIGNAL USING ANY GAS AS THE * SIGNAL MEDIUM. IF GAS OTHER THAN AIR IS USED, THE GAS MAY BE IDENTIFIED BY A NOTE ON THE SIGNAL SYMBOL OR OTHERWISE.												
	* ELECTROMECHANIC PHENOMENA INCLUDE HEAT, RADIO WAVES, NUCLEAR RADIATION, ** AND LIGHT.												

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FINAL DESIGN

NAVAJO TRIBAL UTILITY
AUTHORITY
PO BOX 170
FT. DEFIANC, AZ 86504
WSP PROJECT No:
2151700051

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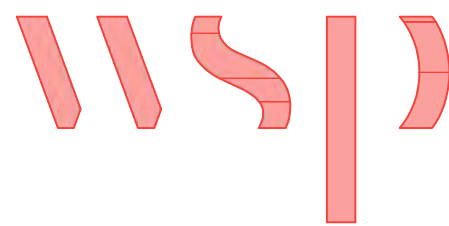
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APPROVED BY: PP
DATE: 20230324

SHEET TITLE:
PROCESS FLOW SYMBOLS &
NOTES PG. 2 - P & ID

N-A03

SHEET NUMBER:	REV. #
N-A03	RCA
SHEET 3 OF 21 SHEETS	

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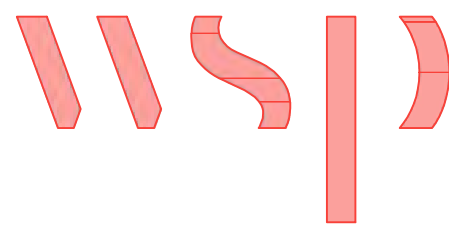
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PROCESS FLOW SYMBOLS &
NOTES PG. 2 - P & ID

N-A03

SHEET NUMBER:	REV. #
N-A03	RCA
SHEET 3 OF 21 SHEETS	

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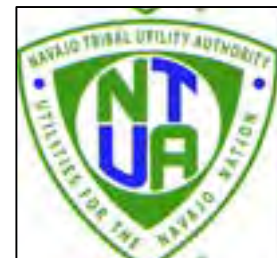
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PROCESS FLOW DIAGRAMS AND P&ID SYMBOLS (GENERAL INSTRUMENT OR FUNCTION SYMBOLS) (NOT ALL SYMBOLS & NOTES WILL APPLY TO THIS PROJECT)											
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	GENERAL NOTES	
	ANGLE VALVE		RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF		IN-LINE FILTER		AXIAL FAN		SINGLE DUCT VARIABLE VOLUME BOX	XX	
	BUTTERFLY VALVE		PILOT LIGHT X=COLOR R=RED G=GREEN		ATMOSPHERIC FILTER		AXIAL FAN WITH VARIABLE INLET VANES		WING TYPE FACE AND BYPASS DAMPER (A)		
	ROTARY VALVE		FLEX CONNECTION (RUBBER)		DOUBLE BASKET STRAINER		2-STAGE RECIPROCATING AIR COMPRESSOR		HW HEATING WATER DX DIRECT EXPANSION CH CHILLED WATER STM STEAM (B)		
	3-WAY VALVE		FLEX CONNECTION (STEEL BRAIDED)		HOSE REEL		SINGLE STAGE RECIPROCATING AIR COMPRESSOR		HCL HEATING COIL CCL COOLING COIL		
	4-WAY VALVE		SINGLE PITOT TUBE OR PITOT VENTURI TUBE		OPEN DRAIN (SHOWN)				CYCLONE SEPARATOR		
	OS & Y VALVE		FLOW METER		XX- DRAIN SYSTEM ANNOTATIONS DRAIN (PLAN VIEW)		RECIPROCATING PUMP		FLUID RECOVERY PUMP		
	DIAPHRAGM VALVE		FLOW NOZZLE OR VENTURI		CLEANOUT (PLAN VIEW)		PRESSURE VESSELS, VERTICAL (SHOWN) OR HORIZONTAL (TANKS, RECEIVERS, SEPARATORS, SUMPS ETC.)		DUAL SERVICE HEAT EXCHANGER		
	PRESSURE RELIEF		REDUCER		SANITARY VENT		HVAC COIL (A) HW HEATING WATER DX DIRECT EXPANSION CH CHILLED WATER STM STEAM (B) HCL HEATING COIL CCL COOLING COIL		MULTI BLADE DAMPER		
	DIAPHRAGM ACTUATOR		SCREWED CAP		SILENCER/MUFFLER		SINGLE BLADE DAMPER		MOTOR		
	TWO-WAY VALVE, FAIL CLOSED		PIPE CAP		SPACE PENETRATIONS		TEST PORT		PILOT LIGHT		
	TWO-WAY VALVE, FAIL OPEN		HOSE CONNECTION		FIXED LOUVERS		SEPARATOR		MIST ELIMINATOR		
	3-WAY VALVE W/DIAPHRAM ACTUATOR		FLANGED CONNECTION (PIPING OR EQUIP)		TRAP XX ANNOTATES FUNCTION		HUMIDIFIER		CARBON ABSORBER FILTER		
	4-WAY VALVE W/DIAPHRAM ACTUATOR		FLOW ORIFICE FIXED		LUBRICATOR		MANUAL BALANCE DAMPER		FILTER		
	SPRING-OPPOSED SINGLE-ACTING ACTUATOR		STRAINER WITH VALVE		55 GALLON DRUM		MULTI POINT PITOT TUBE ARRAY		SUCTION DIFFUSER		
	SPRING-OPPOSED DOUBLE-ACTING ACTUATOR		Y-STRAINER		THERMOSTATIC VENT		DAMPERS (NORMALLY OPEN) OR NORMALLY CLOSED		EVAPORATIVE AIR COOLER		
	ELECTROHYDRAULIC ACTUATOR		COMPRESSED AIR		SPRINKLER ALARM (WATER MOTOR GONG)		OPPOSED BLADE DAMPER FOR HVAC EQUIPMENT		BACKDRAFT DAMPER		
	HAND ACTUATOR OR HANDWHEEL		DUCTED AIR FLOW FROM SPACE		FLOW ALARM VALVE						
	RESTRICTION ORIFICE IN PROCESS LINE		CAPPED AIR DUCT		COOLING TOWER						
	RESTRICTION ORIFICE DRILLED IN VALVE		GATE VALVE (OPEN)		CHILLER						
	FLOW STRAIGHTENING VANE		GATE VALVE (CLOSED)		HORIZONTAL CENTRIFUGAL PUMP						
	DIAPHRAGM PRESSURE-BALANCED		GLOBE VALVE (OPEN)		CENTRIFUGAL FAN WITH VARIABLE INLET VANES						
	PRESSURE-REDUCING REGULATOR, SELF-CONTAINED, WITH HANDWHEEL ADJUSTABLE SET POINT		GLOBE VALVE (CLOSED)		BLOWER/CENTRIFUGAL FAN						
	PRESSURE-REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP		NEEDLE VALVE (OPEN)		ROTARY PUMP						
	DIFFERENTIAL-PRESSURE-REDUCING REGULATOR WITH INTERNAL AND EXTERNAL TAPS		NEEDLE VALVE (CLOSED)		VERTICAL WET PIT PUMP						
	BACKPRESSURE REGULATOR, SELF-CONTAINED		PLUG VALVE (OPEN)		PROGRESSIVE CAVITY PUMP						
	BACKPRESSURE REGULATOR WITH EXTERNAL PRESSURE TAP		PLUG VALVE (CLOSED)		VERTICAL SUMP PUMP						
	PRESSURE-REDUCING REGULATOR WITH INTEGRAL OUTLET PRESSURE RELIEF VALVE, AND OPTIONAL PRESSURE INDICATOR		BALL VALVE (OPEN)		HEATER						
	PRESSURE INDICATOR		BALL VALVE (CLOSED)		HEAT EXCHANGER						
	FLOW DIRECTION		ALARM VALVE								
	PRESSURE RELIEF OR SAFETY VALVE		AIR INTAKE FILTER								
	VACUUM RELIEF VALVE		ALARM								
	PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING- OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT		BUBBLE GAUGE								
	RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF										



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HIGH-PERFORMANCE
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFIANC, AZ 86504
WSP PROJECT No:
2151700051

REVISIONS			
NO.	DATE	BY	APPROVED
RCA	20230324	RSB	PP

DESIGNED BY:	RSB
DRAWN BY:	RSB
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APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
PROCESS FLOW SYMBOLS &
NOTES PG. 3 - P & ID

N-A04

SHEET NUMBER:	REV. #
N-A04	RCA
SHEET 4 OF 21 SHEETS	



PROJECT:
CHINLE WWTP
HIGH-PERFORMANCE
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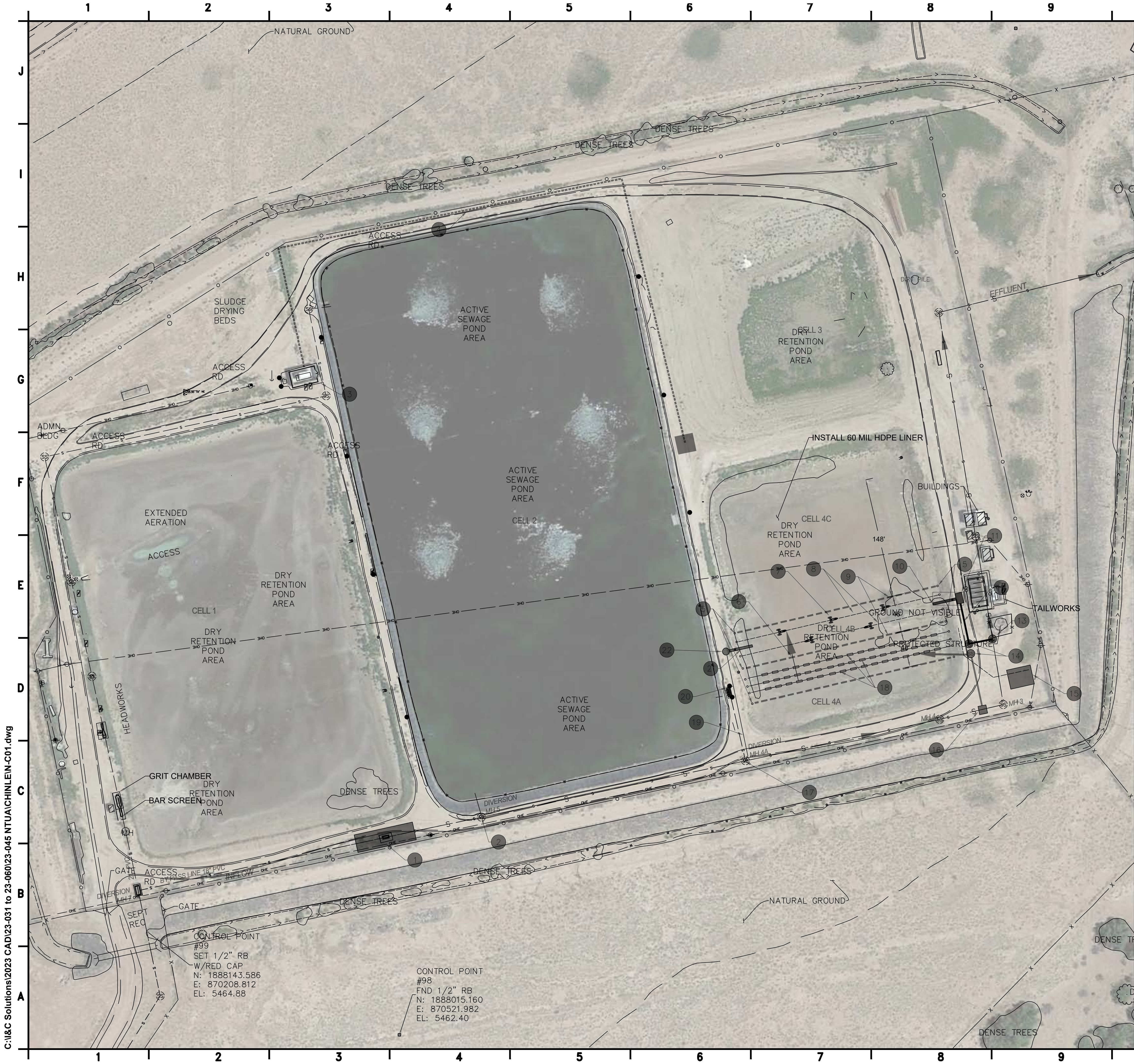
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AUTHORITY
PO BOX 170
FT. DEFIANCE, AZ 86504
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DATE:	20230324

HEET TITLE:
PROCESS FLOW SYMBOLS &
TES PG. 4 - P & ID

05

SHEET NUMBER:	REV. #
N-A05	RCA
SHEET 5 OF 21	SHEETS

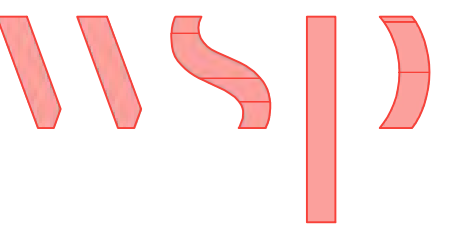


CONSTRUCTION NOTES:

- 1 NEW HEADWORKS (MANUAL BAR SCREEN)
- 2 INSTALL PORTABLE FLOW METER
- 3 TRANSFORMER AND EMERGENCY POWER GENERATOR
- 4 POWER EXTENSION
- 5 ANCHOR POSTS FOR BAFFLES, AERATORS, AND BIOFUSERS
- 6 4' X 3' WINDOW IN BAFFLE
- 7 INSTALL 5-15 HP AIRE-O2 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, AND MOORING CABLES, ETC.
- 8 MOORING CABLES FOR AERATORS
- 9 BAFFLES (FLOATING SYNTHETIC)
- 10 20' SECTION - 12" DI SANITARY SEWER SECTION WITH MJ GATE VALVE
- 11 NEW OUTLET BOX. SEE DISCHARGE STRUCTURE DETAILS SHEET C-XXX
- 12 NEW 12-INCH SDR 35PVC SEWER
- 13 TAP EXISTING SEWER MAIN
- 14 NEW MANHOLE
- 15 AERATION BLOWERS WITH CONCRETE PAD
- 16 4' X 4' DIVERSION BOX WITH 2 SLUICE GATES
- 17 TAP EXISTING MANHOLE
- 18 BIOLAC DIFFUSER AIR SYSTEM
- 19 8" PVC MLSS RECYCLE LINE
- 20 3" PVC WASTE MLSS LINE
- 21 20' SECTION - 8" DI PIPE WITH MJ GATE VALVE
- 22 MLSS PUMP STATION

SHEET GENERAL NOTES:

1. UTILITIES ILLUSTRATED ON PLAN ARE PRESENTED FOR CONTRACTOR INFORMATION, IF APPLICABLE. SUBSURFACE UTILITY LOCATES HAVE NOT BEEN FIELD VERIFIED, ACTUAL UTILITIES ARE SUBJECT TO CHANGE AND UNMARKED, UNKNOWN UTILITIES SHOULD BE MITIGATED IN THE FIELD PRIOR TO GROUND DISTURBANCES. COORDINATE WITH NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) IN CHINLE, AZ, AND ARIZONA ONE-CALL UTILITY LOCATE.



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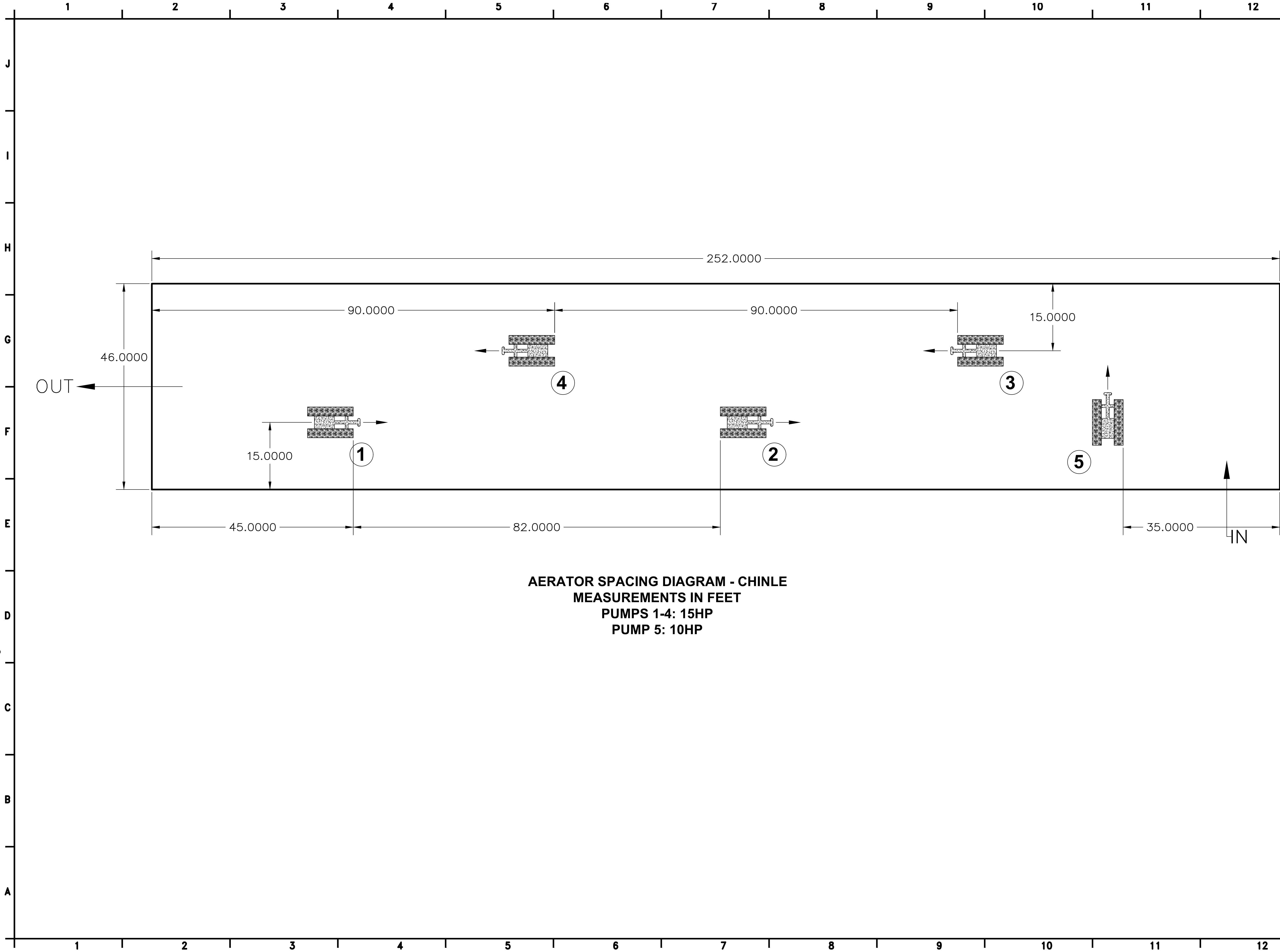
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AREA MAP AND
CONSTRUCTION
NOTES

N-C01

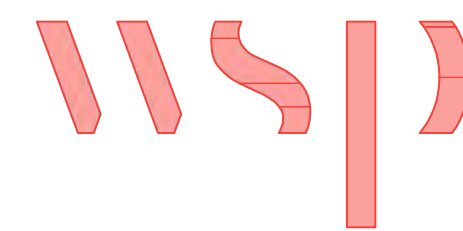
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N-C01	RCA
SHEET 6 OF 21 SHEETS	

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AERATOR SPACING DIAGRAM - CHINLE
MEASUREMENTS IN FEET
PUMPS 1-4: 15HP
PUMP 5: 10HP



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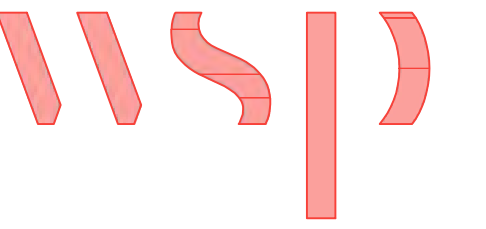
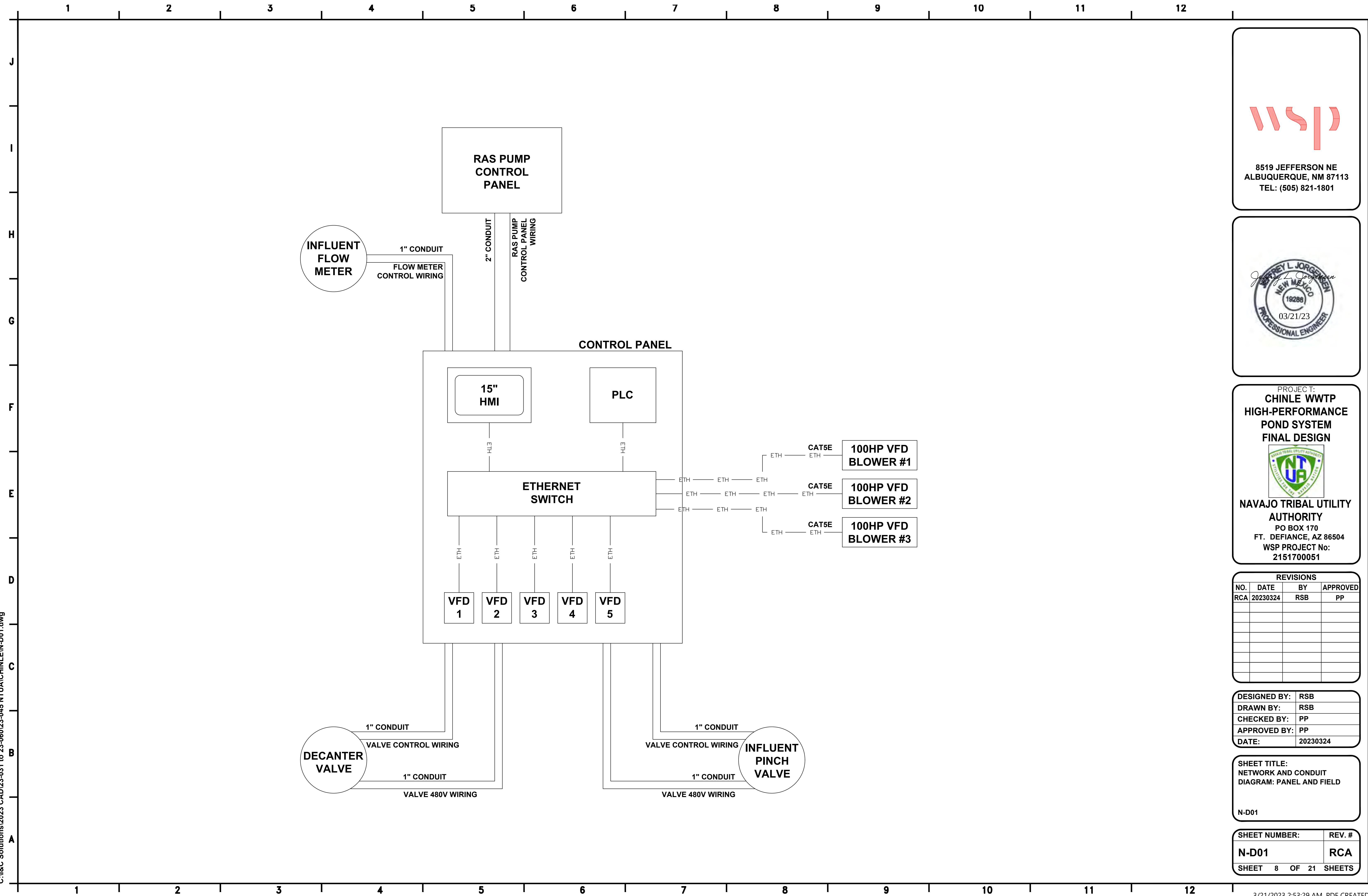
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SHEET TITLE:
AERATOR PUMP
PLACEMENT DIAGRAM

N-C02

SHEET NUMBER:	REV. #
N-C02	RCA
SHEET 7 OF 21 SHEETS	

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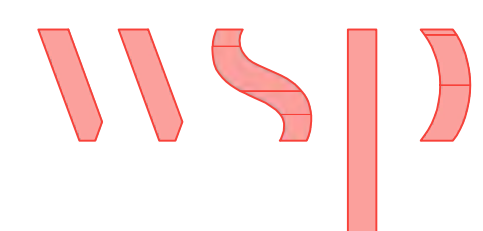
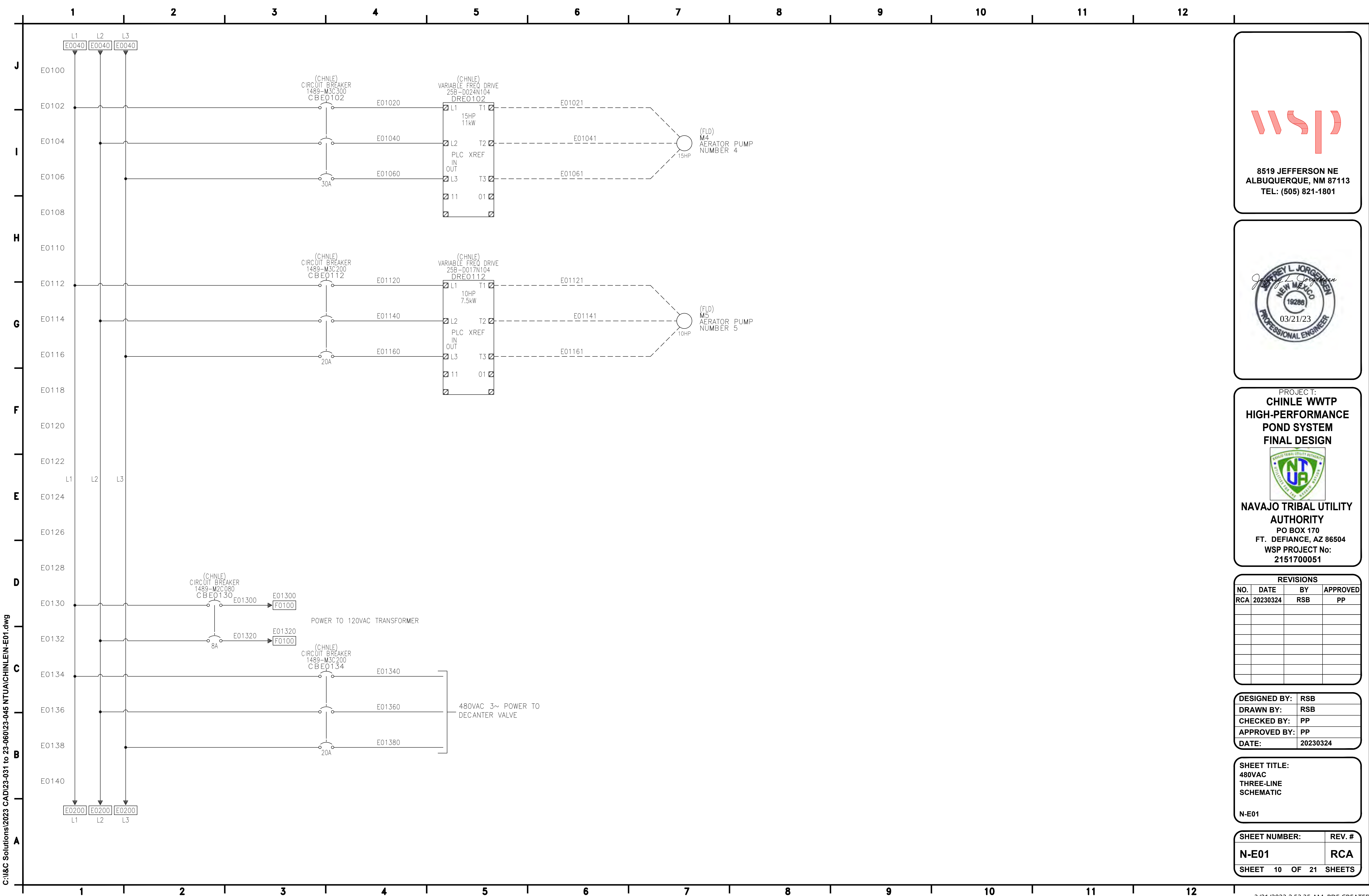
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APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
NETWORK AND CONDUIT
DIAGRAM: PANEL AND FIELD

N-D01

SHEET NUMBER:	REV. #
N-D01	RCA
SHEET 8 OF 21 SHEETS	

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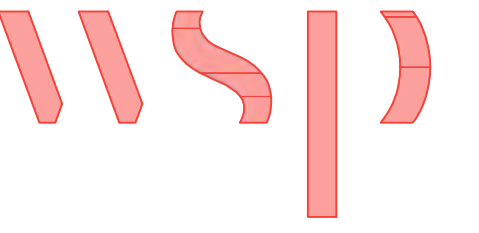
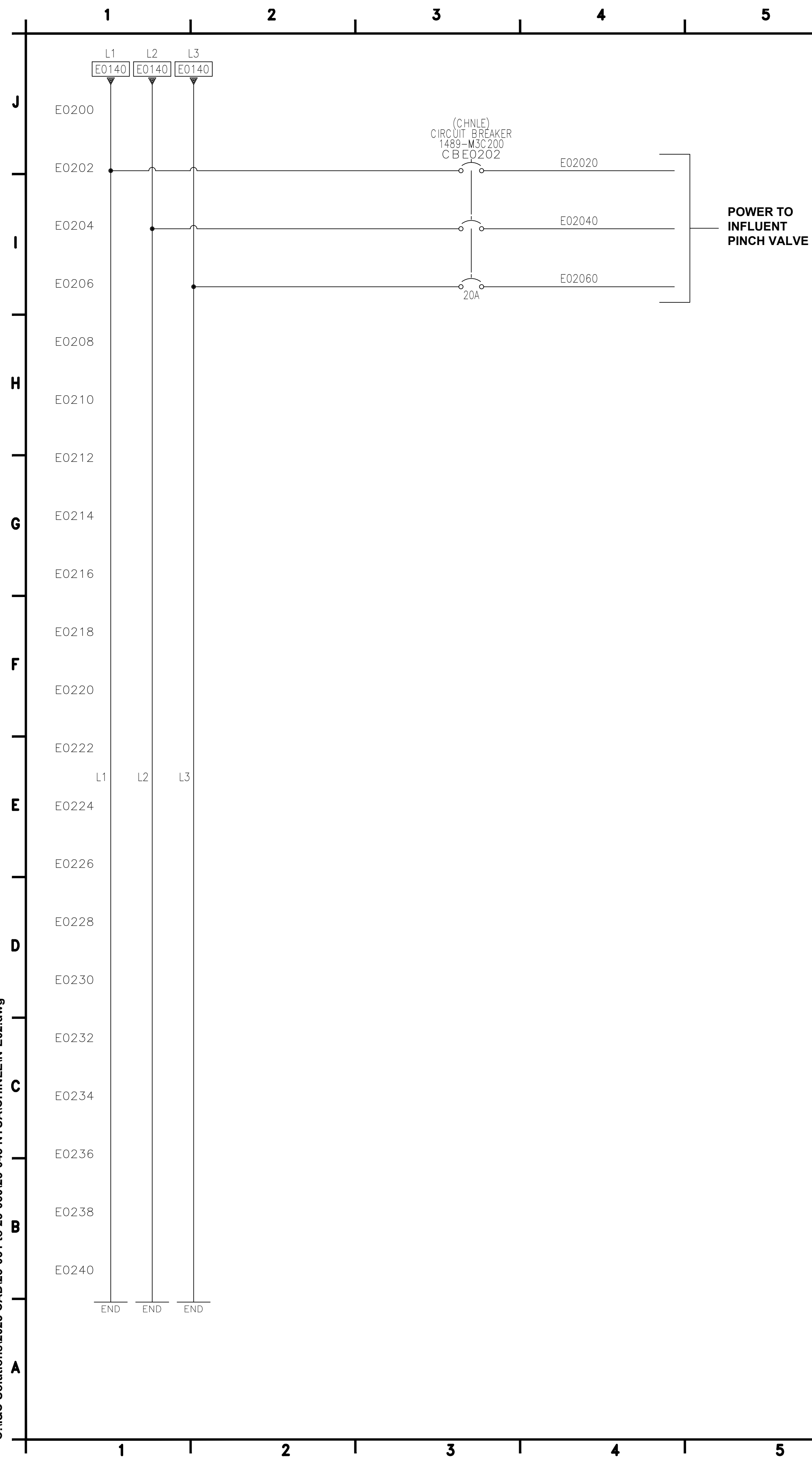
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SHEET TITLE:
480VAC
THREE-LINE
SCHEMATIC

N-E01

SHEET NUMBER:	REV. #
N-E01	RCA
SHEET 10 OF 21 SHEETS	



PROJECT:
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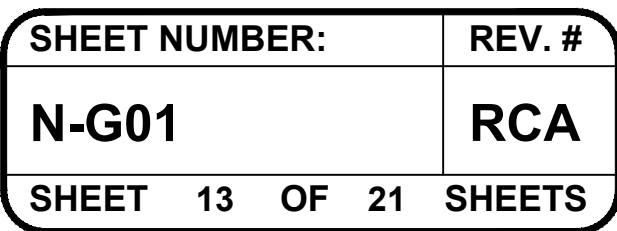
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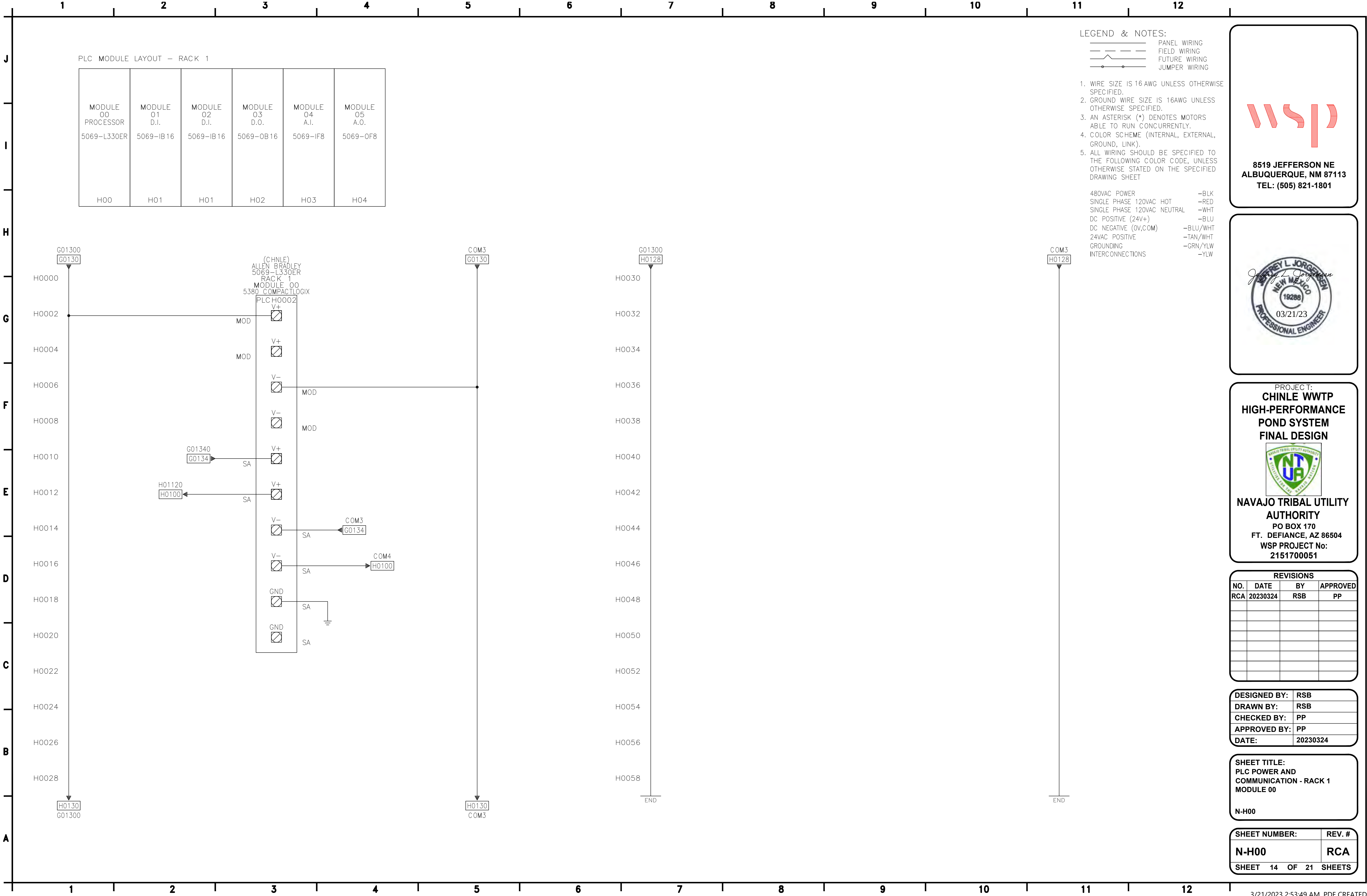
N-E02

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N-E02	RCA
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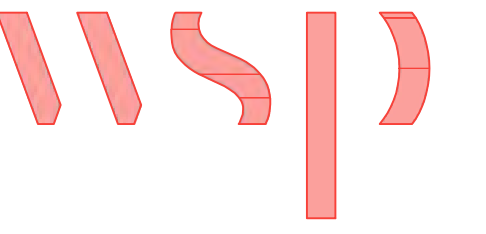
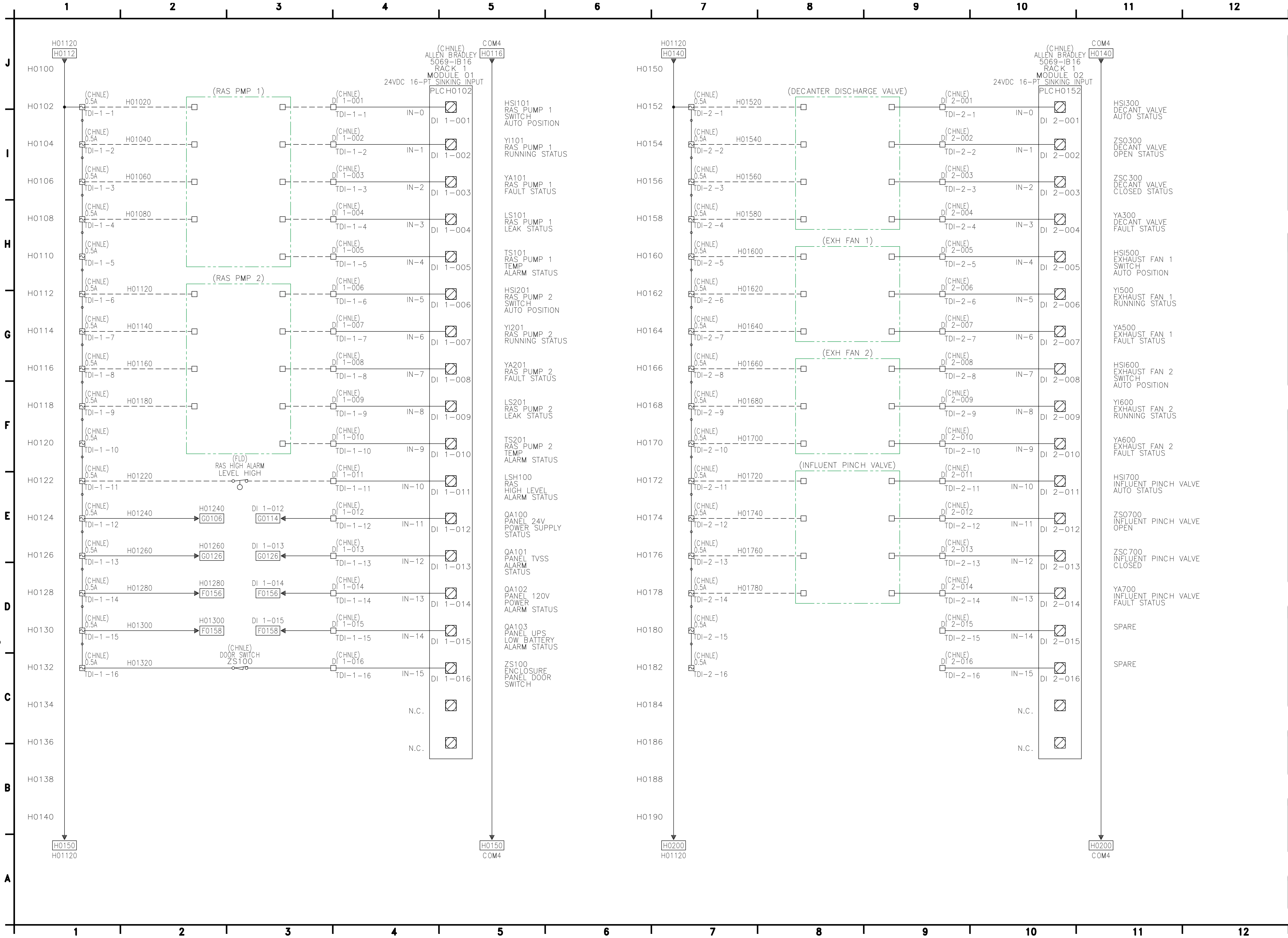




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RCA	20230324	RSB	PP

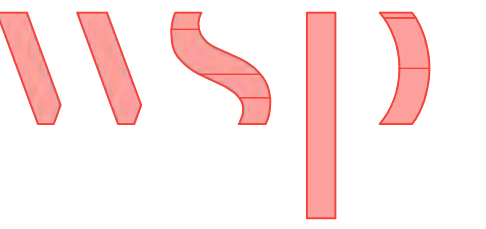
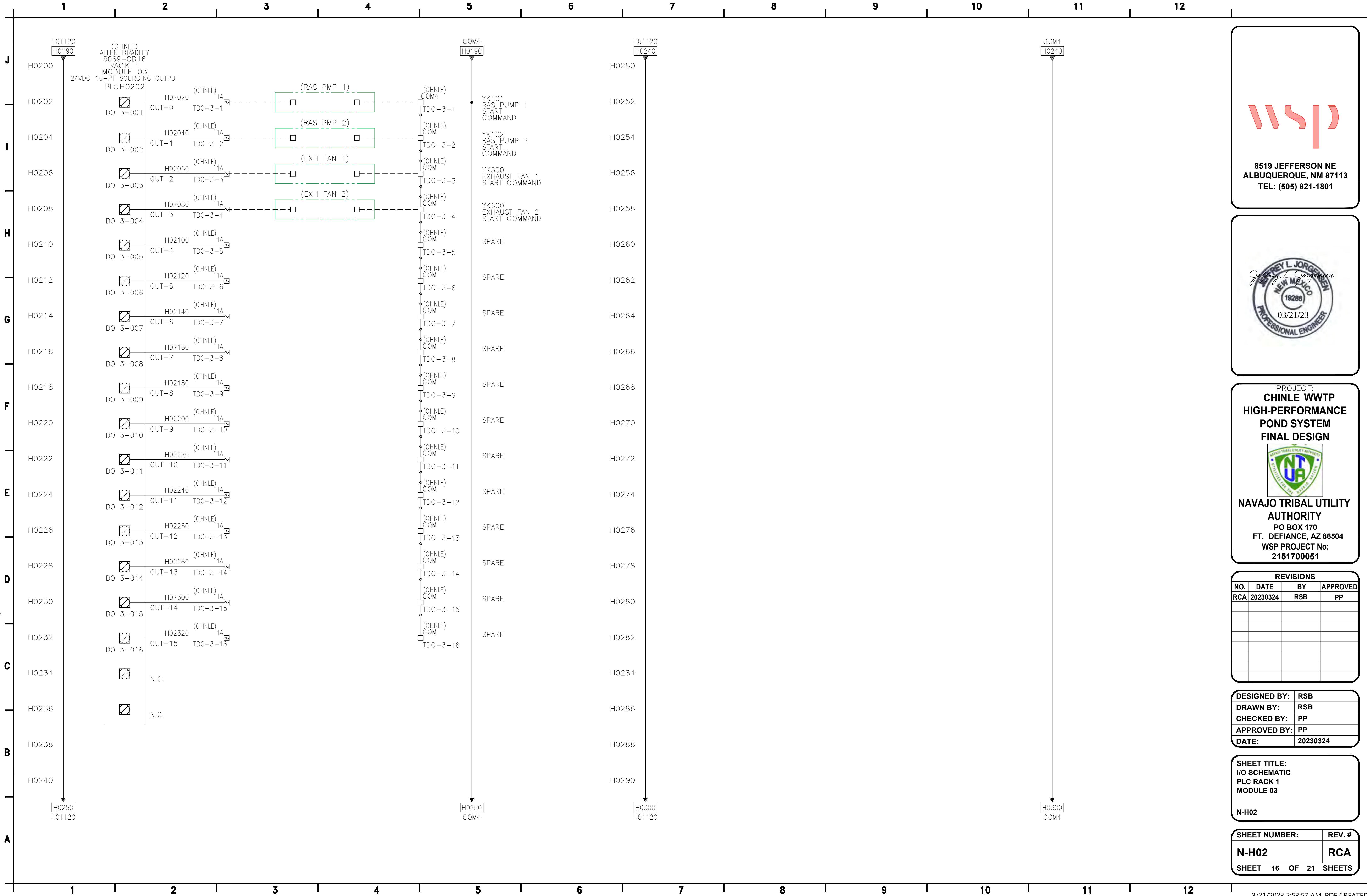
DESIGNED BY:	RSB
DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
I/O SCHEMATIC
PLC RACK 1
MODULES 01 & 02

N-H01

SHEET NUMBER:	REV. #
N-H01	RCA
SHEET 15 OF 21 SHEETS	

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PROJECT:
**CHINLE WWTP
HIGH-PERFORMANCE
POND SYSTEM
FINAL DESIGN**



**NAVAJO TRIBAL UTILITY
AUTHORITY**
PO BOX 170
FT. DEFIANC, AZ 86504
WSP PROJECT No:
2151700051

REVISIONS			
NO.	DATE	BY	APPROVED
RCA	20230324	RSB	PP

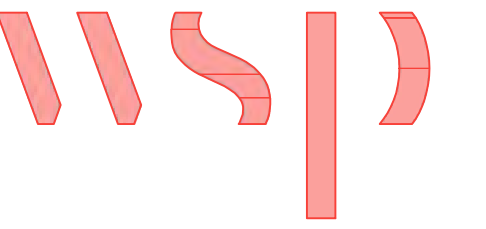
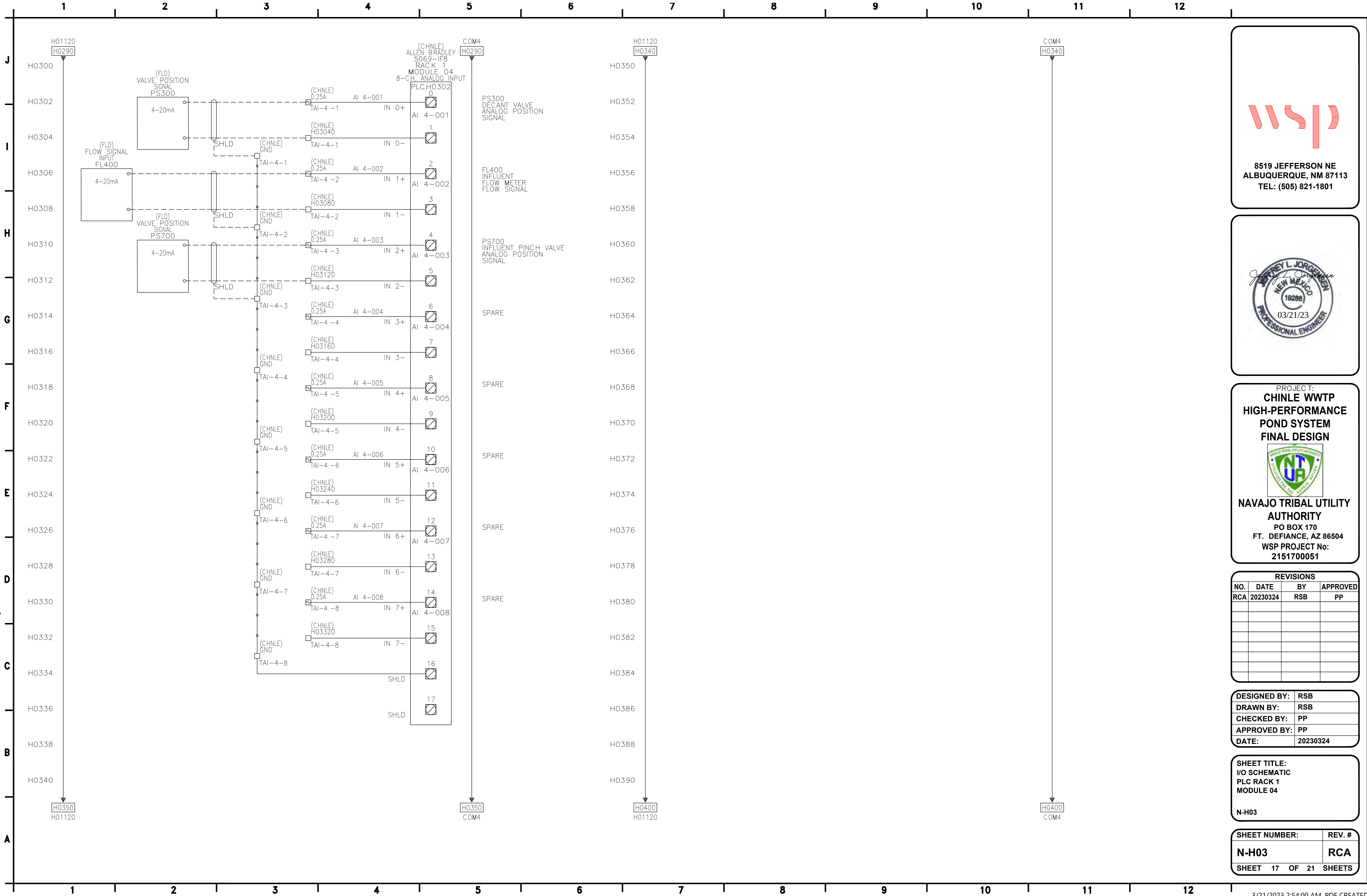
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DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
I/O SCHEMATIC
PLC RACK 1
MODULE 03

N-H02

SHEET NUMBER:	REV. #
N-H02	RCA
SHEET 16 OF 21 SHEETS	

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RCA	20230324	RSB	PP

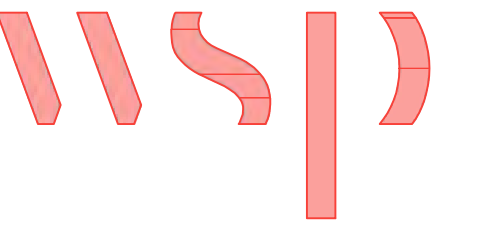
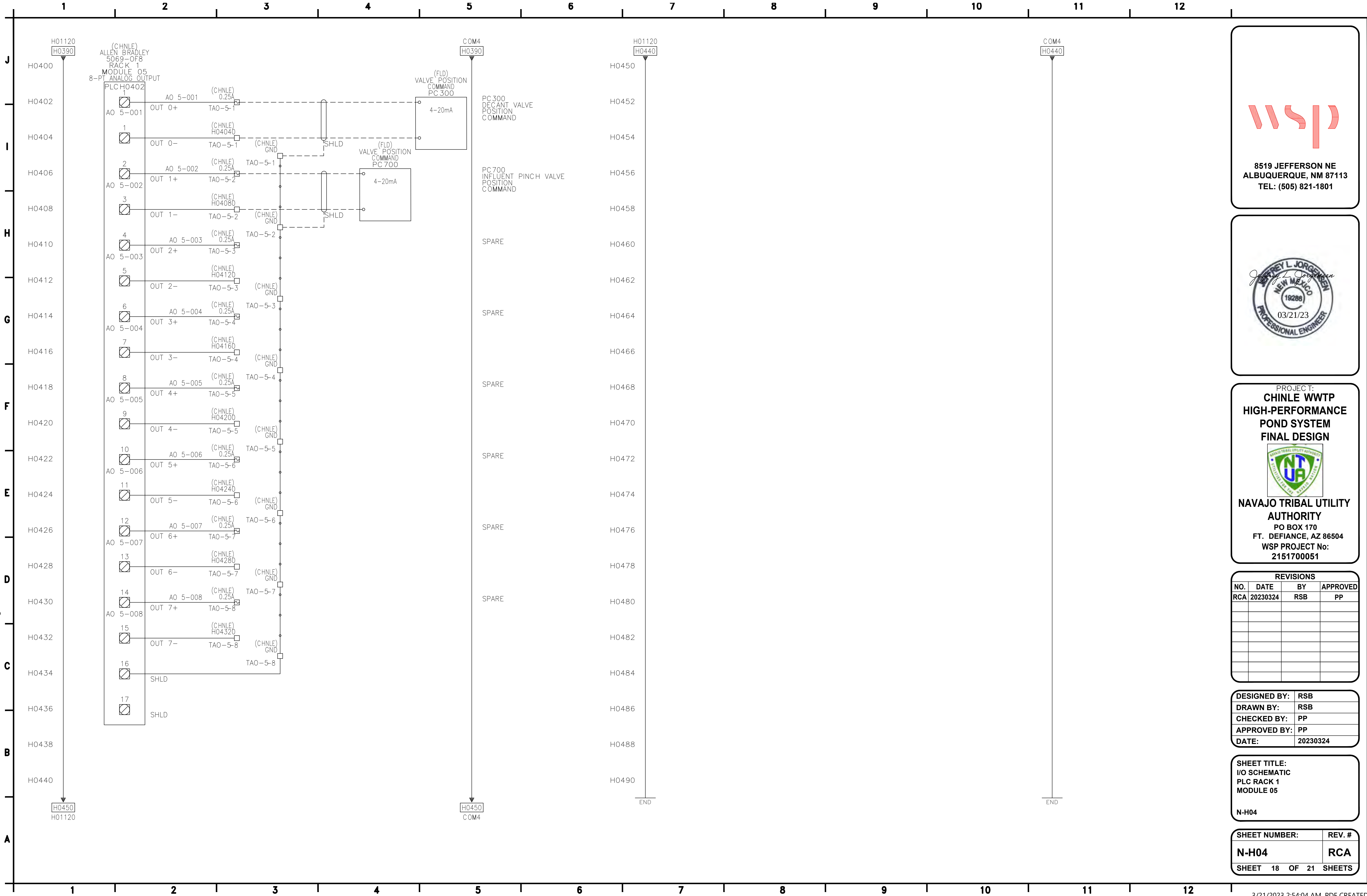
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CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
I/O SCHEMATIC
PLC RACK 1
MODULE 04

N-H03

SHEET NUMBER:	REV. #
N-H03	RCA
SHEET 17 OF 21 SHEETS	

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RCA	20230324	RSB	PP

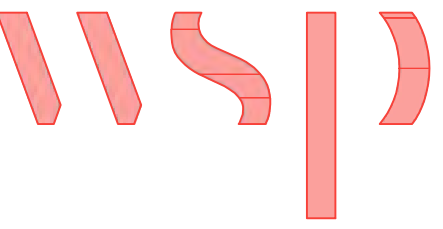
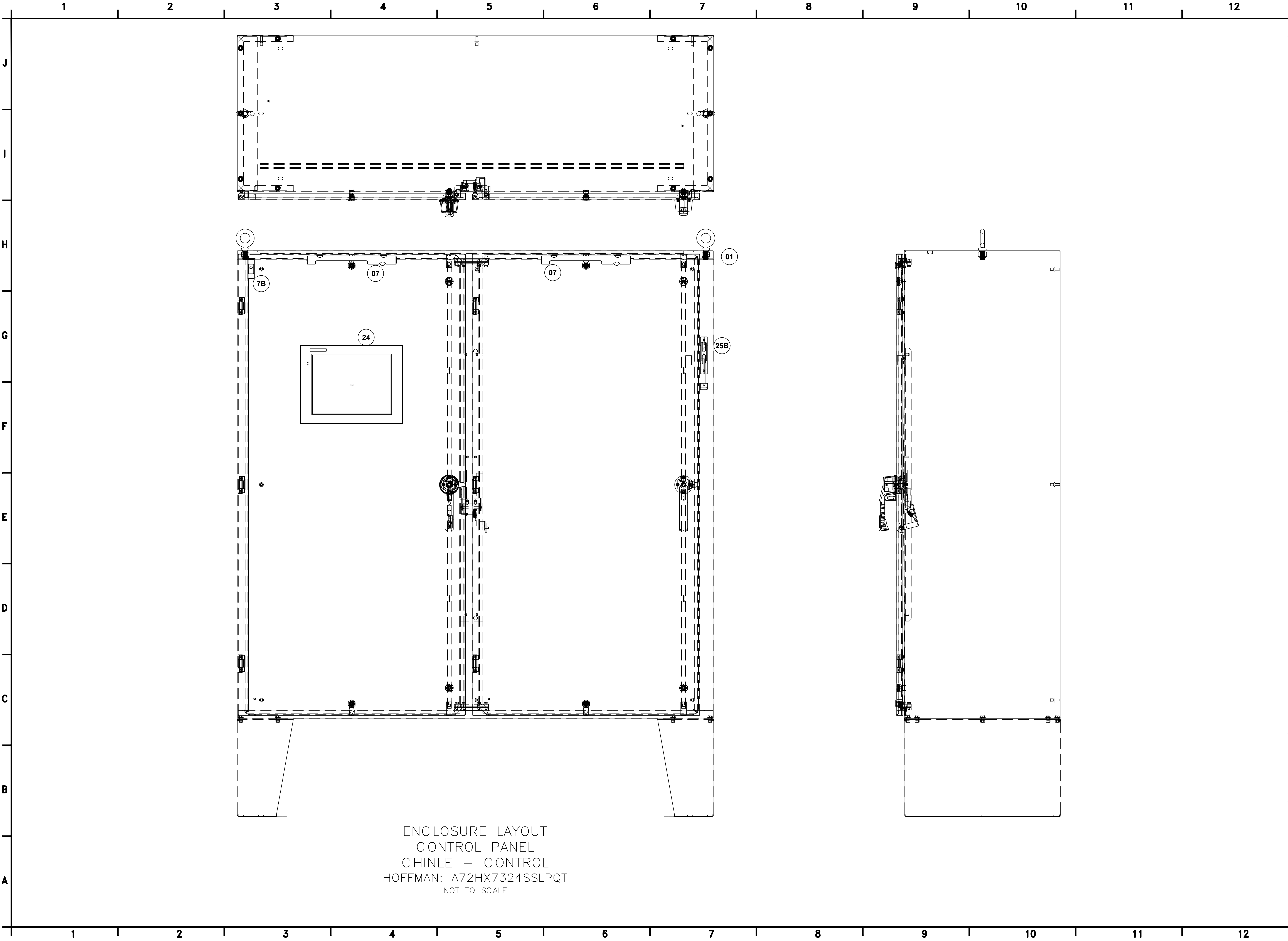
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DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
I/O SCHEMATIC
PLC RACK 1
MODULE 05

N-H04

SHEET NUMBER:	REV. #
N-H04	RCA
SHEET 18 OF 21 SHEETS	

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RCA	20230324	RSB	PP

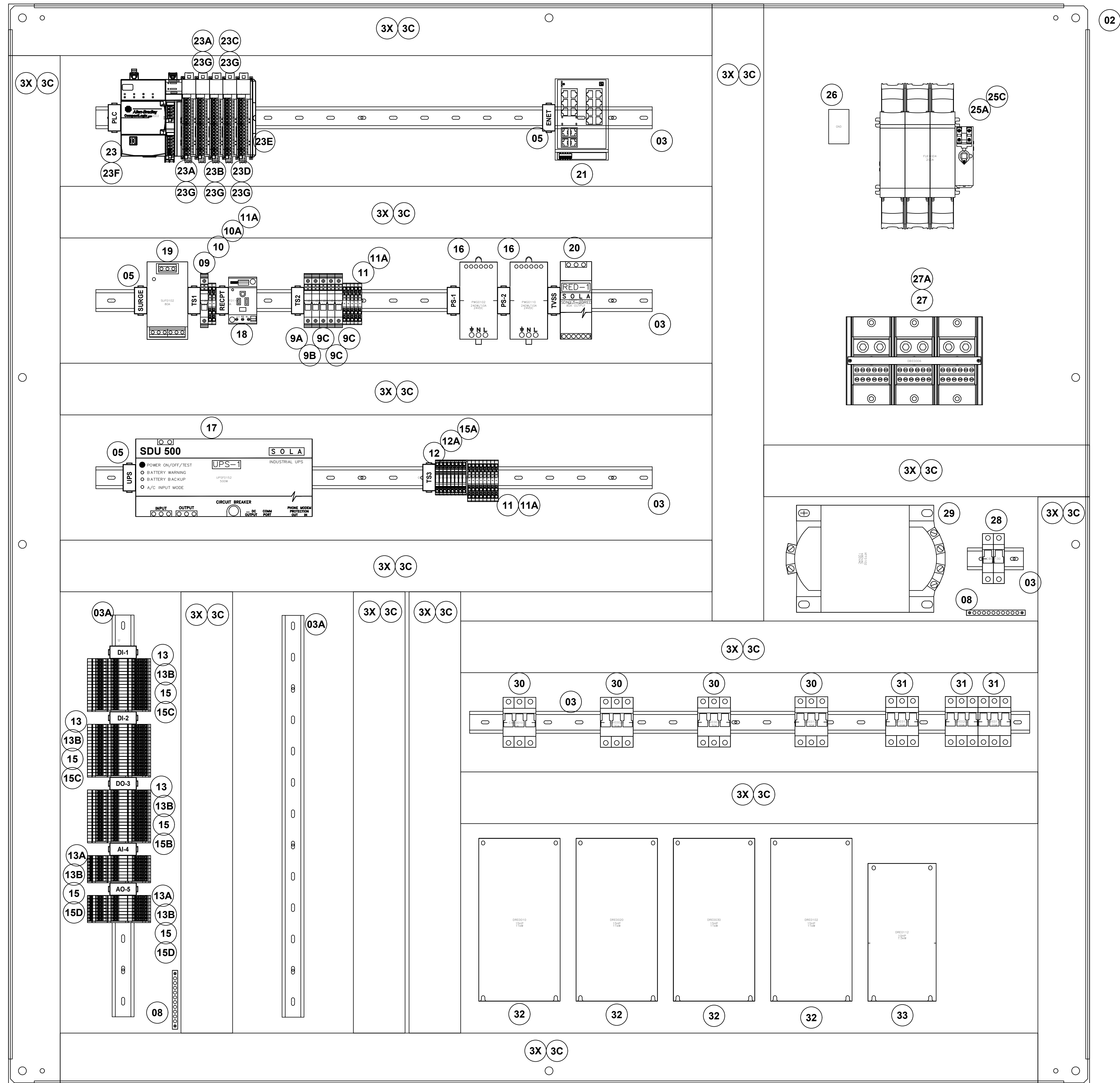
DESIGNED BY:	RSB
DRAWN BY:	RSB
CHECKED BY:	PP
APPROVED BY:	PP
DATE:	20230324

SHEET TITLE:
ASSEMBLY DRAWING
ENCLOSURE

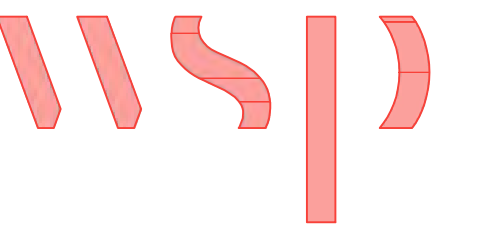
N-M01

SHEET NUMBER:	REV. #
N-M01	RCA
SHEET 19 OF 21 SHEETS	

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BACKPLATE LAYOUT
CONTROL PANEL
CHINLE – CONTROL
HOFFMAN: A72P72
NOT TO SCALE



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DATE:	20230324

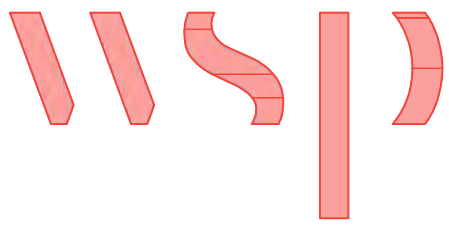
SHEET TITLE:
ASSEMBLY DRAWING
BACKPLATE

N-M02

SHEET NUMBER:	REV. #
N-M02	RCA
SHEET 20 OF 21 SHEETS	

C:\I&C Solutions\2023 CAD\23-031 to 23-060\23-045 NTUA\CHINLEIN-M03.dwg

	1	2	3	4	5	6	7	8	9	10	11	12
J												
I												
H												
G												
F												
E												
D												
C												
B												
A												
	ITEM	QTY	CATALOG	MFG	DESC	TAGS						
	01	1	A72HX7324SSLPQT	HOFFMAN	FLOOR-MOUNT DISCONNECT, 2-DOOR ENCLOSURE, 3-PT LATCH, TYPE 4X, 72x74x24, BRUSHED, SS304							
	02	1	A72P72	HOFFMAN	BACKPLATE, 68x68, MILD STEEL, PAINTED							
	03	A/R	0801733	PHOENIX CONTACT	DIN RAIL (35mm X 7.5mm X 1m)							
	03A	A/R	XUS001736	ENTRELEC	DIN RAIL, RAISED, (35mm X 50mm X 1m)							
	04	A/R	3022276	PHOENIX CONTACT	DIN RAIL ANCHOR, CLIP-FIX 35-5	(not shown)						
	05	A/R	0800307	PHOENIX CONTACT	DIN RAIL MARKER, UBE-D							
	07	2	EL1200M	HOFFMAN	ENCLOSURE LAMP KIT, LED, MOTION SENSOR	ILF0122,ILF0124						
	7B	1	ALFSWD	HOFFMAN	DOOR SWITCH, ENCLOSURE	ZS100						
	08	2	PK15GTA	SCHNEIDER ELECTRIC	GROUND BAR KIT, 10 POSITION, #14-#4AWG							
	09	1	0916612	PHOENIX CONTACT	120VAC CIRCUIT BREAKER 15A RATED (UT 6-TMC M 15A)	CBF0114						
	9A	1	0916610	PHOENIX CONTACT	120VAC CIRCUIT BREAKER 10A RATED (UT 6-TMC M 10A)	CBF0118						
	9B	1	0916607	PHOENIX CONTACT	120VAC CIRCUIT BREAKER 5A RATED (UT 6-TMC M 5A)	CBF0122						
	9C	3	0916606	PHOENIX CONTACT	120VAC CIRCUIT BREAKER 4A RATED (UT 6-TMC M 4A)	CBF0126,CBF0162,CBF0166						
	10	1	3211775	PHOENIX CONTACT	FEED THRU TERMINAL BLOCK, 32A, BLUE (PT4-TWIN-BU)	TS1						
	10A	1	3211780	PHOENIX CONTACT	FEED THRU TERMINAL BLOCK, 32A, GND (PT4-TWIN-PE)	TS1						
	11	11	3211771	PHOENIX CONTACT	FEED THRU TERMINAL BLOCK, 32A, GRAY (PT4-TWIN)	TS2,TS3						
	12	8	3211903	PHOENIX CONTACT	FUSE MODULAR TERMINAL BLOCK, LED (PT4-HESILED 24)	TS3						
	13	48	3213961	PHOENIX CONTACT	DI/DO TERMINAL BLOCK	TDI-1,TDI-2,TDO-3						
	13A	16	3213960	PHOENIX CONTACT	AI/AO TERMINAL BLOCK	TAI-4,TAO-5						
	13B	5	3213976	PHOENIX CONTACT	END PLATE FOR I/O TERMINAL BLOCK	TDI-1,TDI-2,TDO-3,TAI-4,TAO-5						
	15	64	3209248	PHOENIX CONTACT	5x20 24VDC FUSE HOLDER (P-FU 5X20 LED 24-5)	TDI-1,TDI-2,TDO-3,TAI-4,TAO-5						
	15A	8	GMA-2-R	BUSSMAN	2A FUSE, 5mm X 20mm	TS3						
	15B	16	GMA-1-R	BUSSMAN	1A FUSE, 5mm X 20mm	TDO-3						
	15C	32	GMA-500-R	BUSSMAN	500mA FUSE, 5mm X 20mm	TDI-1,TDI-2						
	15D	16	GMA-250-R	BUSSMAN	250mA FUSE, 5mm X 20mm	TAI-4,TAO-5						
	16	2	SDN-10-24-100C	SOLA	24VDC POWER SUPPLY, 10A/240W RATED	PWG0102,PWG0110						
	17	1	SDU500A	SOLA	UNINTERRUPTIBLE POWER SUPPLY, 500W	UPSFO152						
	18	1	0804155	PHOENIX CONTACT	120VAC DIN RAIL MOUNT RECEPTACLE	RECPTFO118						
	19	1	STV25K	SOLA	SURGE PROTECTION DEVICE	SUF0102						
	20	1	SDN-2.5-20RED	SOLA	TVSS DEVICE	PWG0118						
	21	1	2702910	PHOENIX CONTACT	ETHERNET SWITCH, 10x RJ45	ENG0126						
	23	1	5069-L330ER	ALLEN BRADLEY	COMPACTLOGIX 5380 SERIES PLC, 60 NODE, 3MB MEM, 3 IO RACK	PLCH0002						
	23A	2	5069-IB16	ALLEN BRADLEY	COMPACT 5000 I/O DIGITAL 16-POINT SINKING INPUT MODULE 24VDC	PLCH0102,PLCH0152						
	23B	1	5069-OB16	ALLEN BRADLEY	COMPACT 5000 I/O DIGITAL 16-POINT OUTPUT MODULE 24VDC	PLCH0202						
	23C	1	5069-IF8	ALLEN BRADLEY	COMPACT 5000 I/O ANALOG 8-POINT INPUT MODULE	PLCH0302						
	23D	1	5069-OF8	ALLEN BRADLEY	COMPACT 5000 I/O ANALOG 8-POINT OUTPUT MODULE	PLCH0402						
	23E	1	5069-ECR	ALLEN BRADLEY	COMPACT 5000 I/O END CAP, RIGHT							
	23F	1	5069-RTB64-SPRING	ALLEN BRADLEY	COMPACT 5000, 4&6 POS, SPRING TERMINAL	PLCH0002						
	23G	5	5069-RTB18-SPRING	ALLEN BRADLEY	COMPACT 5000, 18 POS, SPRING TERMINAL	PLCH0102,PLCH0152,PLCH0202,PLCH0302,PLCH0402						
	24	1	EA9-T15CL	AUTOMATION DIRECT	15" TOUCHSCREEN HMI	OIG0152						
	25A	1	194R-J200-1753	ALLEN BRADLEY	3PH FUSED DISCONNECT, 200A RATED	FUE0004						
	25B	1	194R-HM4	ALLEN BRADLEY	DISCONNECT HANDLE KIT, WITH CABLE	FUE0004						
	25C	3	JTD200ID	LITTELFUSE	J-SERIES FUSE, 200A RATED	FUE0004						
	26	1	LAMA1/0-14-QY	PANDUIT	GROUND LUG, #14-1/0AWG							
	27	1	1492-PD32127	ALLEN BRADLEY	POWER DISTRIBUTION BLOCK, 3PH, 760A RATED, AL, (2) 1/0AWG LINE, (14)#14-#4AWG LOAD	DBE0006						
	27A	1	1492-PBC3	ALLEN BRADLEY	COVER KIT FOR 1492-PD32127	DBE0006						
	28	1	1489-M2C080	ALLEN BRADLEY	CIRCUIT BREAKER, MINIATURE, 2-POLE, 8A, 480/277VAC, C-TRIP, NO NEUTRAL	CBE0130						
	29	1	Y2000	SOLA	CONTROL XFMR, 240X480V PRI, 120V SEC, 2KVA, SBE SERIES, OPEN STYLE, COPPER WOUND	XFF0102						
	30	4	1489-M3C300	ALLEN BRADLEY	CIRCUIT BREAKER, MINIATURE, 3-POLE, 30A, 480/277VAC, C-TRIP, NO NEUTRAL	CBE0010,CBE0020,CBE0030,CBE0102						
	31	3	1489-M3C200	ALLEN BRADLEY	CIRCUIT BREAKER, MINIATURE, 3-POLE, 20A, 480/277VAC, C-TRIP, NO NEUTRAL	CBE0112,CBE0134,CBE0202						
	32	4	25B-D024N104	ALLEN BRADLEY	POWERFLEX 525, 480VAC, 3PH, EMBEDDED ETHERNET/IP, FRAME D, 11KW, 15HP	DRE0010,DRE0020,DRE0030,DRE0102						
	33	1	25B-D017N104	ALLEN BRADLEY	POWERFLEX 525, 480VAC, 3PH, EMBEDDED ETHERNET/IP, FRAME C, 7.5KW, 10HP	DRE0112						



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RCA	20230324	RSB	PP

DESIGNED BY:	RSB
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SHEET TITLE:
BILL OF
MATERIALS

N-M03

SHEET NUMBER:	REV. #
N-M03	RCA
SHEET 21 OF 21 SHEETS	