GENERAL STRUCTURAL NOTES

GENERAL

1. THE SPECIFICATIONS AND REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL CONSTRUCTION AND INSPECTION REQUIREMENTS FOR THIS PROJECT AS INCLUDED IN THE PROJECT SPECIFICATIONS. ADDITIONAL AND MORE STRINGENT REQUIREMENTS ARE GIVEN IN THOSE SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THESE GENERAL NOTES AND THE REQUIREMENTS GIVEN IN THE PROJECT SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHICH PROVISION GOVERNS.
2. FOR LOCATION AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY AND COORDINATE PENETRATIONS SHOWN ON THE OTHER PROJECT DRAWINGS, WHETHER THEY ARE SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
3. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES, WATERSTOPS, CONDUITS, AND INSERTS SHALL ALL BE RIGIDLY INSTALLED IN PLACE BEFORE CONCRETE IS POURED. SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE, WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
4. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
5. DESIGN DETAILS AS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THE PROJECT, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN EACH LOCATION. CONSULT THE ENGINEER FOR CONCURRENCE PRIOR TO CONSTRUCTION.
6. SUBMIT DRAWINGS AND RECEIVE REVIEW OF ALL STRUCTURAL RELATED SHOP DRAWINGS PRIOR TO ERECTION OR CONSTRUCTION.
7. APPLICABLE BUILDING CODE FOR THE PROJECT IS THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) AND AMERICAN CONCRETE INSTITUTE (ACI) 350-06, "CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES."

SITE PREPARATION NOTES

1. PROVIDE AND PLACE 1'-0" MINIMUM COMPACTED THICKNESS OF TYPE G AGGREGATE BASE BENEATH ALL SLABS AND FOOTINGS. COMPACTED AGGREGATE BASE SHALL EXTEND FROM BOTTOM OF SLAB OR FOOTING, DOWN TO UNDISTURBED EARTH OR PROPERLY PREPARED SUBGRADE AND SHALL EXTEND A MINIMUM OF 1'-0" HORIZONTALLY BEYOND THE EDGE OF ALL FOOTINGS OR SLABS, UNLESS NOTED OTHERWISE.
2. FOUNDATIONS ARE DESIGNED FOR NET ALLOWABLE BEARING PRESSURE OF 1500 PSF.
3. OBTAIN APROVAL OF FOUNDATION EXCAVATION AND PLACEMENT OF STRUCTURAL FILL BY ENGINEER / SPECIAL INSPECTOR PRIOR TO PLACING CONCRETE FOUNDATIONS.

FORMWORK, SHORING, AND BRACING

1. CONFORM TO ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" FOR DESIGN AND CONSTRUCTION OF CONCRETE FORMWORK AND BRACING. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF FORMWORK AND BRACING.
2. STRUCTURES ARE SHOWN ON THESE DRAWINGS INDICATE THE FINAL CONDITION ONLY AND DO NOT INCLUDE THE NECESSARY COMPONENTS OR EQUIPMENT FOR STRUCTURAL STABILITY DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR WORK RELATED TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.
3. TEMPORARY SHORING TO REMAIN IN PLACE UNTIL ELEVATED CONCRETE SLABS HAVE REACHED MINIMUM 80% OF 28-DAY DESIGN STRENGTH AS DETERMINED BY CYLINDER BREAKS OR 7 DAYS, WHICHEVER IS LONGER.
4. DO NOT PLACE BACKFILL AGAINST CANTILEVERED WALLS UNTIL THE CONCRETE IN THOSE WALLS HAS ATTAINED 100% OF ITS SPECIFIED COMPRESSIVE STRENGTH.
5. PLACE NO BACKFILL AGAINST WALLS THAT ARE TIED TO ELEVATED SLABS OR DECKS UNTIL THE SLABS HAVE ATTAINED 100% OF THEIR SPECIFIED COMPRESSIVE STRENGTH AND ALL SLABS OR DECKS ARE IN PLACE AND WELDED OR SCREWED AS SPECIFIED.
6. DESIGN AND INSTALL ALL REQUIRED SHORING TO PREVENT SURSIDENCE AND DAMAGE TO ADJACENT EXISTING STRUCTURES, STREETS, UTILITIES, ETC.

CONCRETE

1. ALL CONCRETE CONSTRUCTION TO CONFORM TO ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", INCLUDING BAR BENDS AND HOOKS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THESE DRAWINGS.
2. CAST-IN-PLACE STRUCTURAL CONCRETE TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI.
3. USE CEMENT CONFORMING TO ASTM C595, TYPE IL (10) (MS), LOW ALKALI.
4. ALL CONSTRUCTION JOINTS, EXPANSION JOINTS, AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFICALLY SHOWN ON THE DRAWINGS TO BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
5. INSTALL CONTIUOUS WATERSTOPS IN ALL EXPANSION, CONTRACTION, CONTROL, AND CONSTRUCTION JOINTS OF WATER-HOLDING BASINS, CHANNELS, AND BELOW-GRADE STRUCTURES UNLESS SPECIFICALLY NOTED OTHERWISE.
6. PROVIDE 3/4-INCH CHAMFER AT ALL EXPOSED EDGES AND CORNERS UNLESS NOTED OTHERWISE.
7. BEFORE PLACING THE SECOND POUR AT CONSTRUCTION JOINTS, REMOVE LAITANCE, THOROUGHLY CLEAN, AND ROUGHEN ALL JOINT SURFACES TO MINIMUM AMPLITUDE OF 1/4 INCH.

REINFORCEMENT STEEL

1. PROVIDE REINFORCEMENT STEEL CONFORMING TO ASTM A615, GRADE 60 EXCEPT WHERE WELDING IS PERMITTED BY THE ENGINEER. PROVIDE STEEL CONFORMING TO ASTM A706 WHEN WELDING IS PERMITTED.
2. WHEN CALLED FOR, PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A185.
3. DIMENSIONS GIVEN FOR REINFORCING BARS ARE TO BAR CENTERS UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN BAR AND CONCRETE SURFACE. CLEARANCE FOR REINFORCEMENT BARS PER THE FOLLOWING UNLESS SHOWN OTHERWISE:

   WHEN PLACED AGAINST GROUND.....3"
   INTERIOR SURFACES OF WATER-BEARING STRUCTURES.....2"
   ELEVATED SLABS AND BEAMS .....1-1/2"
   ALL OTHER CONCRETE SURFACES .....2"

4. CONTINUE WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. EXTEND REINFORCEMENT INTO CONNECTING WALLS AND HOOK ON THE OPPOSITE FACE OF THE CONNECTING WALLS.
5. UNLESS OTHERWISE NOTED, ALL HOOKS SHOWN ARE 90° STANDARD HOOK AS DEFINED IN ACI 350.
6. LAP VERTICAL WALL BARS WITH DOWELS FROM BELOW AND EXTEND THROUGH SLABS ABOVE TO TOP FACE. BEND AND/OR LAP TO TOP SLAB REINFORCEMENT AS INDICATED.
7. UNLESS OTHERWISE INDICATED, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES ARE TO BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES ARE TO BE LOCATED AT SUPPORTS. MINIMUM LAP REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE INDICATED.

GRADE 60 LAP LENGTHS – CONCRETE

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE DESIGN STRENGTH = 4500 PSI								
LAP LENGTH	1'-8"	2'-0"	2'-4"	3'-4"	4'-0"	4'-9"	6'-0"	7'-0"

MASONRY

1. PROVIDE CONCRETE MASONRY UNITS CONFORMING TO ASTM C90 AND CONCRETE BRICK UNITS CONFORMING TO ASTM C55, MEDIUM DENSITY, WITH A COMPRESSIVE STRENGTH OF 2000 PSI BASED ON THE NET SECTION.
2. PROVIDE MORTAR CONFORMING TO ASTM C270, TYPE S, HYDRATED. DO NOT USE MASONRY CEMENT.
3. PROVIDE GROUT CONFORMING TO ASTM C476 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. DESIGN f'm FOR MASONRY ASSEMBLIES IS 2000 PSI.
5. NUMBER AND SIZE OF FOOTING DOWELS REQUIRED TO THE CONCRETE FOUNDATION SHALL BE PER MASONRY WALL ELEVATIONS AND FOUNDATION DETAILS. CONTRACTOR MUST COORDINATE SPACING AND LOCATION OF DOWELS.
6. WHERE MASONRY ELEVATIONS INDICATE MASONRY CONTROL JOINTS (MCJ), THE BOND BEAM STEEL SHALL BE CONTINUOUS OR DISCONTINUOUS AS SHOWN ON THE ELEVATION. WHERE STEEL IS TO BE CONTINUOUS, RAKE MORTAR JOINT ON BOTH SIDES OF WALL AND APPLY SEALANT TO MATCH CONTROL JOINT DETAILS.
7. SEE ARCHITECTURAL ELEVTIONS AND DETAILS FOR LOCATION AND TYPE OF MASONRY FINISHES.
8. NOMINAL BLOCK SIZES ARE INDICATED ON THE DRAWINGS
9. GROUT ALL CMU WALLS SOLID.
10. UNLESS SPECIFICALLY SHOWN ON DRAWINGS, PLACE THE MASONRY UNITS IN RUNNING BOND.
11. REINFORCEMENT TO HAVE A MINIMUM COVERAGE OF 2" FROM OUTSIDE FACE OF MASONRY. MAINTAIN A MINIMUM OF ½" GROUT BETWEEN REINFORCING STEEL AND MASONRY UNITS.
12. LAP REINFORCING BARS AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

GRADE 60 LAP LENGTHS – MASONRY

BAR SIZE	#3	#4	#5	#6	#7	#8	#9
SINGLE MAT (STANDARD CMU) – CENTERED IN WALL							
LAP LENGTH	1'-0"	1'-3"	2'-0"	3'-7"	5'-0"	6'-0"	MECH
SINGLE MAT (12" HI-R BLOCK) – SEE S/4214 FOR LOCATION							
LAP LENGTH	1'-3"	2'-2'	2'-4"	4'-6"	5'-3"	MECH	MECH

MECH = MECHANICAL SPLICE REQUIRED

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, PROVIDE STRUCTURAL STEEL CONFORMING TO ASTM A36. ROLLED WIDE FLANGE SHAPES TO CONFORM TO ASTM A992. PIPE TO CONFORM TO ASTM A53, TYPE E OR S, GRADE B. STRUCTURAL TUBING TO CONFORM TO ASTM A1085. FABRICATE AND ERECT ALL STRUCTURAL STEEL IN CONFORMANCE WITH AISC SPECIFICATIONS.
2. PROVIDE ANCHOR BOLTS CONFORMING TO ASTM F1554, GRADE 36 EXCEPT THAT STAINLESS STEEL ANCHORS SHALL BE USED FOR ALL ATTACHMENTS WITHIN WATER BEARING STRUCTURES OR OTHER SUBMERGED AREAS.
3. USE ONLY CERTIFIED WELDERS FOR ALL WELDING WORK. USE FILLER METAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI AND PERFORM ALL WORK IN ACCORDANCE WITH THE CURRENT STRUCTURAL WELDING CODE (AWS D1.1).
4. UNLESS OTHERWISE NOTED, COAT ALL STRUCTURAL STEEL COMPONENTS WITH PAINT OR OTHER PROTECTIVE COATINGS AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
5. MINIMUM THICKNESS FOR GUSSET PLATES IS 3/8 INCH.
6. STRUCTURAL STEEL, WHICH IS TO BE EMBEDDED INTO CONCRETE TO BE CLEAN AND FREE OF PAINT, OIL, OR DIRT.
7. PERFORM ALL WELDED OR BOLTED CONNECTIONS IN ACCORDANCE WITH THE DETAILS, SPECIFICATIONS, AND THE NINTH EDITION OF THE AISC HANDBOOK OF FRAMED BEAM CONNECTIONS. USE 3/4-INCH ASTM A325N BOLTS UNLESS OTHERWISE NOTED.

STAINLESS STEEL

1. WHERE REQUIRED, PROVIDE STAINLESS STEEL SHAPES, PLATES, BARS, AND RODS CONFORMING TO ASTM A666 AND A276, TYPE 316 OR 316L.
2. PROVIDE STAINLESS STEEL BOLTS AND NUTS CONFORMING TO ASTM F593 AND F594.

ALUMINUM

1. WHERE REQUIRED, PROVIDE ALLOY 6061-T6 FOR ALL ALUMINUM STRUCTURAL MATERIALS.
2. COAT ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS AS DETAILED IN THE SPECIFICATIONS TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.
3. PERFORM ALUMINUM WELDING TO CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.2).

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD. FOR THIS PROJECT THE FOLLOWING ARE DEFERRED SUBMITTALS:

   A. ROOF JOISTS

LOADING CRITERIA

1.	DEAD LOAD	CALCULATED FROM UNIT WEIGHT
2.	LIVE LOADS:	
	STAIRS / PLATFORMS	100 PSF
	MAIN FLOOR SLABS	150 PSF
	ALL FLOORS / SLABS NOT OTHERWISE INDICATED	50 PSF
	ROOF	20 PSF
3.	LATERAL EARTH PRESSURE (EFP)	
	NATIVE SATURAED	120 PCF
	STRUCTURAL FILL NON SATURATED	54 PCF
	STRUCTURAL FILL SATURATED	90 PCF
4.	HYDROSTATIC FLUID PRESSURE	62.4 PCF
5.	WIND LOAD:	
	BASIC WIND SPEED	109 MPH
	EXPOSURE	C
	K_{ZT}	1.0
6.	SNOW LOAD:	
	GROUND SNOW LOAD	27 PSF
	FLAT ROOF SNOW LOAD	21 PSF
	SNOW EXPOSURE COEFFICIENT	1.0
	SNOW IMPORTANCE FACTOR	1.1
	SNOW THERMAL FACTOR	1.0
7.	SEISMIC LOAD:	
	IBC MCE SPECTRA, 2% EXCEEDANCE IN 50 YEARS	
	RISK CATEGORY	III
	SITE CLASS:	D
	SEISMIC DESIGN CATEGORY:	D
	SPECTRAL RESPONSE ACCELERATIONS:	
	S_S	1.064g
	S_{DS}	0.762g
	S_1	0.378g
	S_{D1}	0.484g
8.	FROST DEPTH	30 INCHES

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH APPROPRIATE SECTIONS OF IBC 2018, CHAPTER 17 IS REQUIRED FOR THE PROJECT.
2. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE, TO THE BUILDING OFFICIAL AND THE ENGINEER.
3. AN APPLICATION FOR OFF-SITE FABRICATION JUST BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO FABRICATION.
4. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION MUST BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS. SPECIAL INSPECTION REQUIRED PER IBC SECTION 1704.2.
5. SPECIAL INSPECTION ITEMS REQUIRED AS FOLLOWS (C = CONTINUOUS, P = PERIODIC):

   CONCRETE: (TABLE 1705.3, 2018 IBC)
   - P PLACING REINFORCEMENT STEEL.
   - C WELDING REINFORCEMENT STEEL (IF APPROVED BY ENGINEER).
   - P VERIFY USE OF REQUIRED DESIGN MIX.
   - P PLACING ANCHOR BOLTS AND EMBEDDED PLATES.
   - P PLACING POST-INSTALLED ADHESIVE ANCHORS
   - C SAMPLING CONCRETE FOR STRENGTH TESTS.
   - P CURING TECHNIQUES AND APPLICATION.
   - C INSTALLATION OF MECHANICAL COUPLERS
   - P FORMING AND PLACING CONCRETE, SUBJECT TO EXCEPTIONS LISTED IN IBC
   - P VERIFICATION OF IN-SITU STRENGTH BEFORE REMOVING SHORING.

   MASONRY (LEVEL 2): (TABLE 4, TMS 602-16)
   - P VERIFICATION OF APPROVED SUBMITTAL DOCUMENTS FOR MATERIALS.
   - P CONSTRUCTION OF MORTAR JOINTS.
   - P VERIFICATION OF PROPORTIONS OF SITE-PREPARED MORTAR AND GROUT.
   - C PREPARATION OF REQUIRED MORTAR AND GROUT SPECIMENS AND PRISMS.
   - P PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION.
   - P GROUT SPACE PRIOR TO GROUTING.
   - P PLACEMENT OF GROUT.
   - P VERIFY SIZE AND LOCATION OF STRUCTURAL ELEMENTS.
   - P VERIFY TYPE, SIZE, AND LOCATION OF ANCHORS.
   - P VERIFY GRADE, SIZE, TYPE, AND LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS.
   - C WELDING REFINFORCEMENT STEEL (IF APPROVED BY ENGINEER).
   - P VERIFY PROTECTION OF MASONRY DURING COLD AND HOT WEATHER.

   STEEL (CHAPTER N, AISC 360-16)
   - P VERIFICATION OF MATERIALS FOR HIGH-STRENGTH BOLTS, NUTS, AND WASHERS, INCLUDING IDENTIFICATION MARKINGS TO CONFIRM ASTM REQUIREMENTS SPECIFIED IN APROVED CONSTRUCTION DOCUMENTS.
   - P WELD PROCEDURE SPECIFICATIONS AVAILABLE AND USE OF QUALIFIED WELDERS.
   - P MANUFACTURERS' CERTIFIED MILL TEST REPORTS.
   - C VISUAL ACCEPTANCE OF FIELD WELDED CONNECTIONS AFTER COMPLETION.
   - C VISUAL ACCEPTANCE OF HIGH-STRENGTH BOLTED CONNECTIONS AFTER COMPLETION.
   - P MATERIAL AND TEST REPORTS FOR COLD-FORMED STEEL DECK.
   - P ROOF DECK ATTACHMENTS.

   SOILS (TABLE 1705.6, 2018 IBC)
   - P VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY
   - P VERIFY EXCAVATIONS ARE EXTENDED TO THE PROPER DEPTH AND HAVE REACHED PROPER MATERIAL
   - P PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.
   - C VERIFY THE USE OF PROPER MATEIRALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL
   - P PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.

STRUCTURAL OBSERVATIONS

1. BOWEN COLLINS & ASSOCIATES SHALL BE NOTIFIED BY THE CONTRACTOR5 BUSSINESS DAYS BEFORE THE COMPLETION OF THE ITEMS LISTED IN THIS SECTION SO THAT STRUCTURAL OBSERVATION MAY BE PERFORMED IN ACCORDANCE WITH IBC SECTION 1704.5. THE OBSERVATION WILL BE PERFORMED AT THE DISCRETION BOWEN COLLINS & ASSOCIATES. COMPLETE OBSERVATION REPORTS WILL BE SUBMITTED TO THE BUILDING OFFICIAL.

   A. REBAR REINFORCING IN BASEMENT WALLS PRIOR TO CLOSURE OF FORMS FOR FIRST CONCRETE POUR.
   B. MASONRY WALLS BEFORE FIRST GROUT PLACEMENT.
   C. ROOF DECK ATTACHMENT AT COMPLETION OF FASTENING TO ROOF FRAMING.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12829530 KYLE ROBERT SMOOT STATE OF UTAH 12-15-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

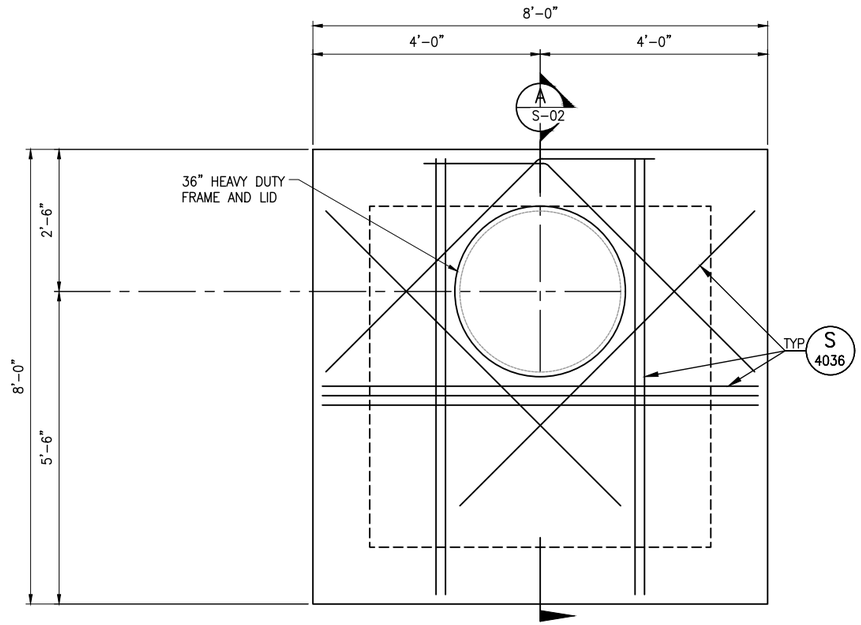
MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT
DRAWN K. SMOOT
REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

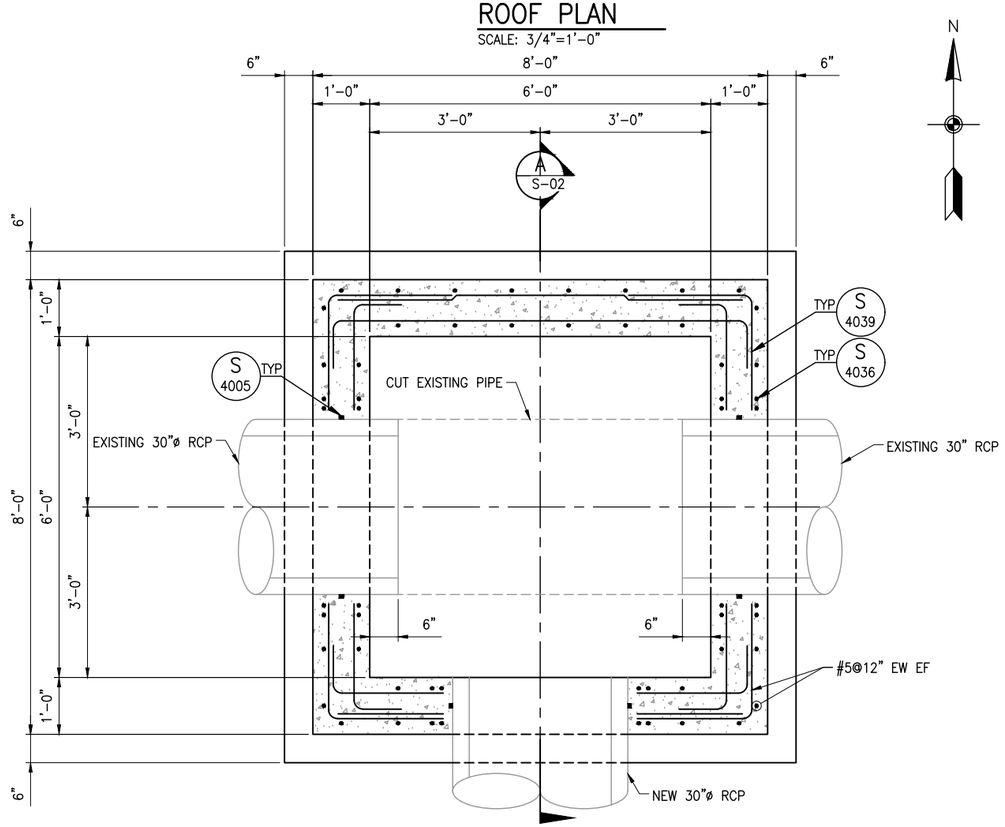
STRUCTURAL
GENERAL STRUCTURAL NOTES
DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO. S-01
SHEET 031 OF 126



ROOF PLAN

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

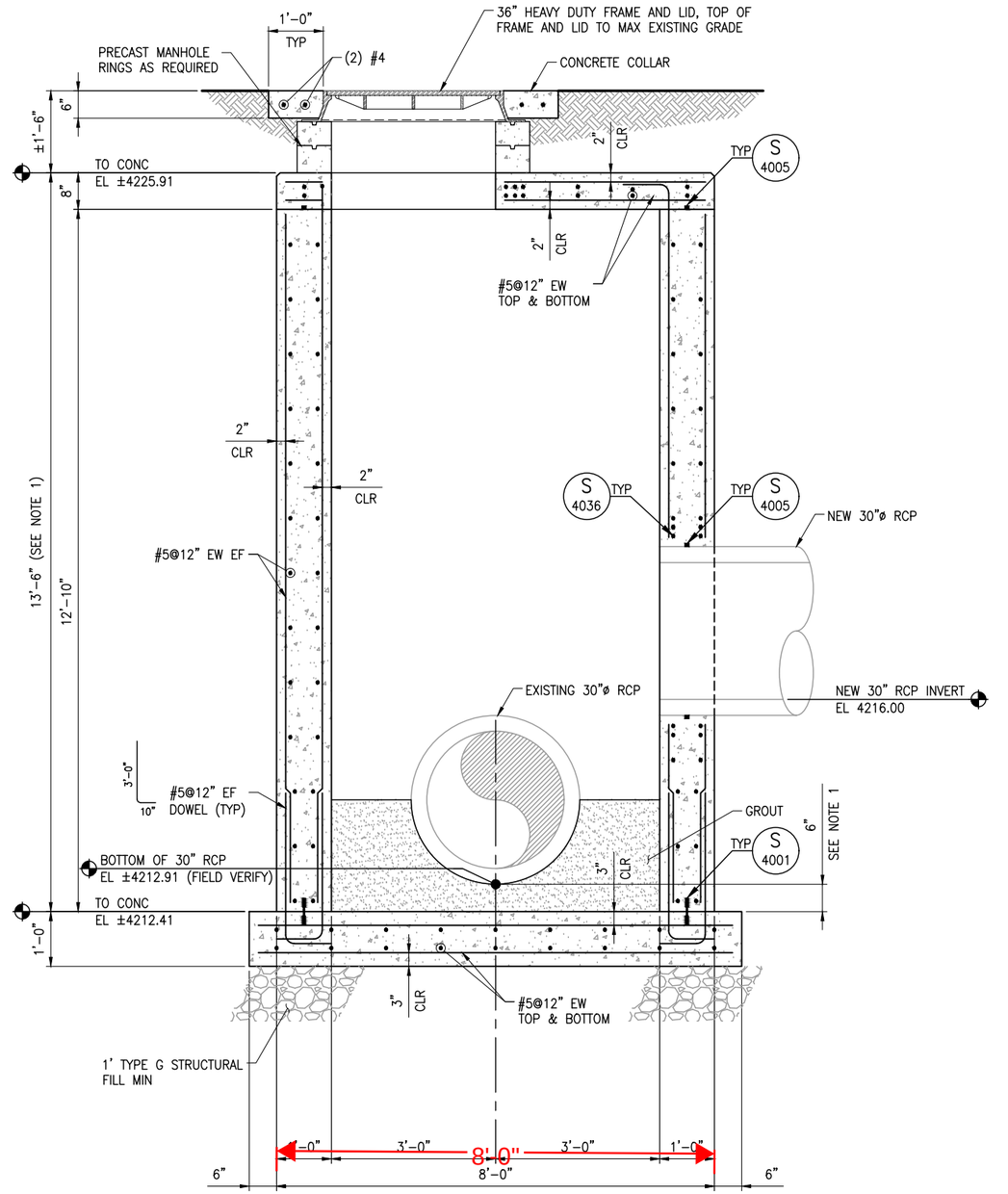


BASE PLAN

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

DRAWING NOTES:

1. FIELD VERIFY THE ELEVATION OF THE EXISTING 30"ø RCP AND ADJUST THE BASE ELEVATION OF THE MANHOLE AS NECESSARY TO MAINTAIN 6" BETWEEN THE BOTTOM OF THE PIPE AND THE TOP OF THE BASE SLAB.
2. FOR GENERAL STRUCTURAL NOTES, REFER TO DRAWING S-01.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTING.
4. OVEREXCAVATE BENEATH THE SLAB AND PLACE 1'-0" MINIMUM COMPACTED THICKNESS OF GRANULAR STRUCTURAL FILL. EXTEND MINIMUM OF 1'-0" BEYOND EDGE OF FOOTINGS.



SECTION

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

A
S-02

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12629530
KYLE ROBERT SMOOT
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

DIVERSION MANHOLE
PLANS AND SECTION

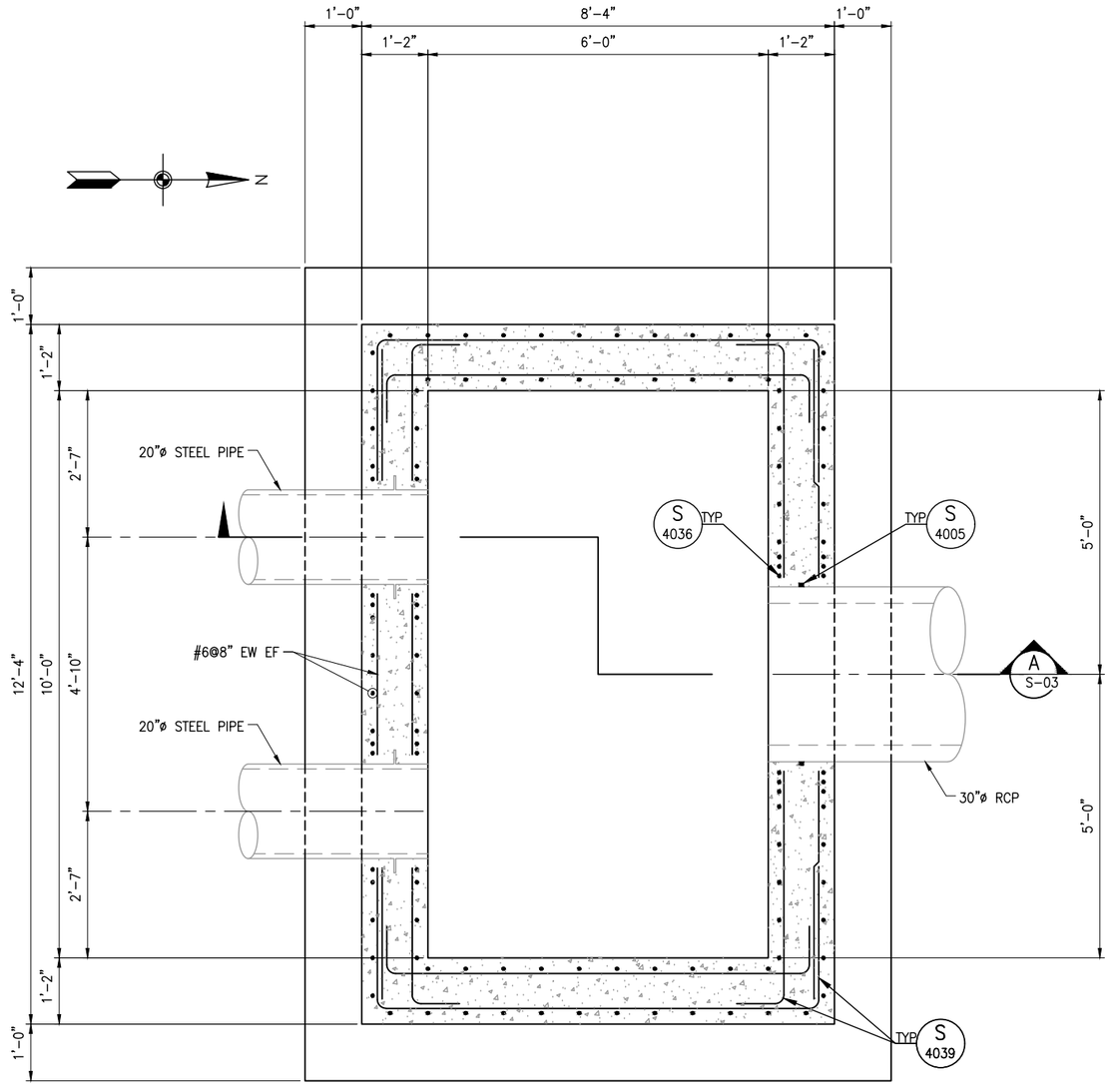
DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-02
SHEET 032 OF 126

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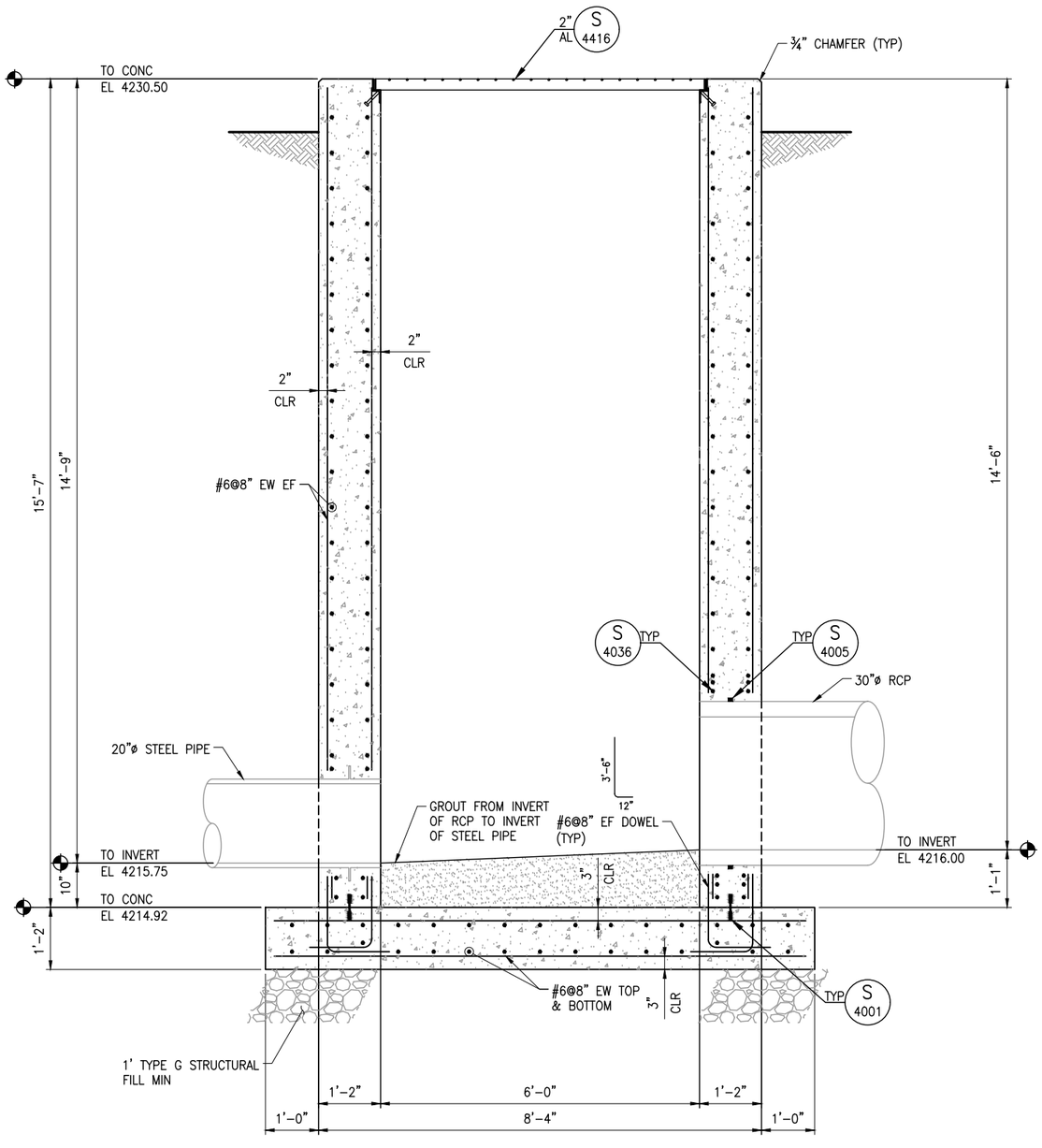
DRAWING NOTES:

1. FOR GENERAL STRUCTURAL NOTES, REFER TO DRAWING S-01.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTING.
3. OVEREXCAVATE BENEATH THE SLAB AND PLACE 1'-0" MINIMUM COMPACTED THICKNESS OF GRANULAR STRUCTURAL FILL. EXTEND MINIMUM OF 1'-0" BEYOND EDGE OF FOOTINGS.



SPLITTER BOX PLAN

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



SECTION

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

A S-03

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12-15-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT

MAGNA WRF REUSE PROJECT

MAGNA, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT

DRAWN K. SMOOT

REVIEW

CHECKED S. COHEN

APPROVED K. SMOOT

STRUCTURAL

SPLITTER BOX PLAN AND SECTION

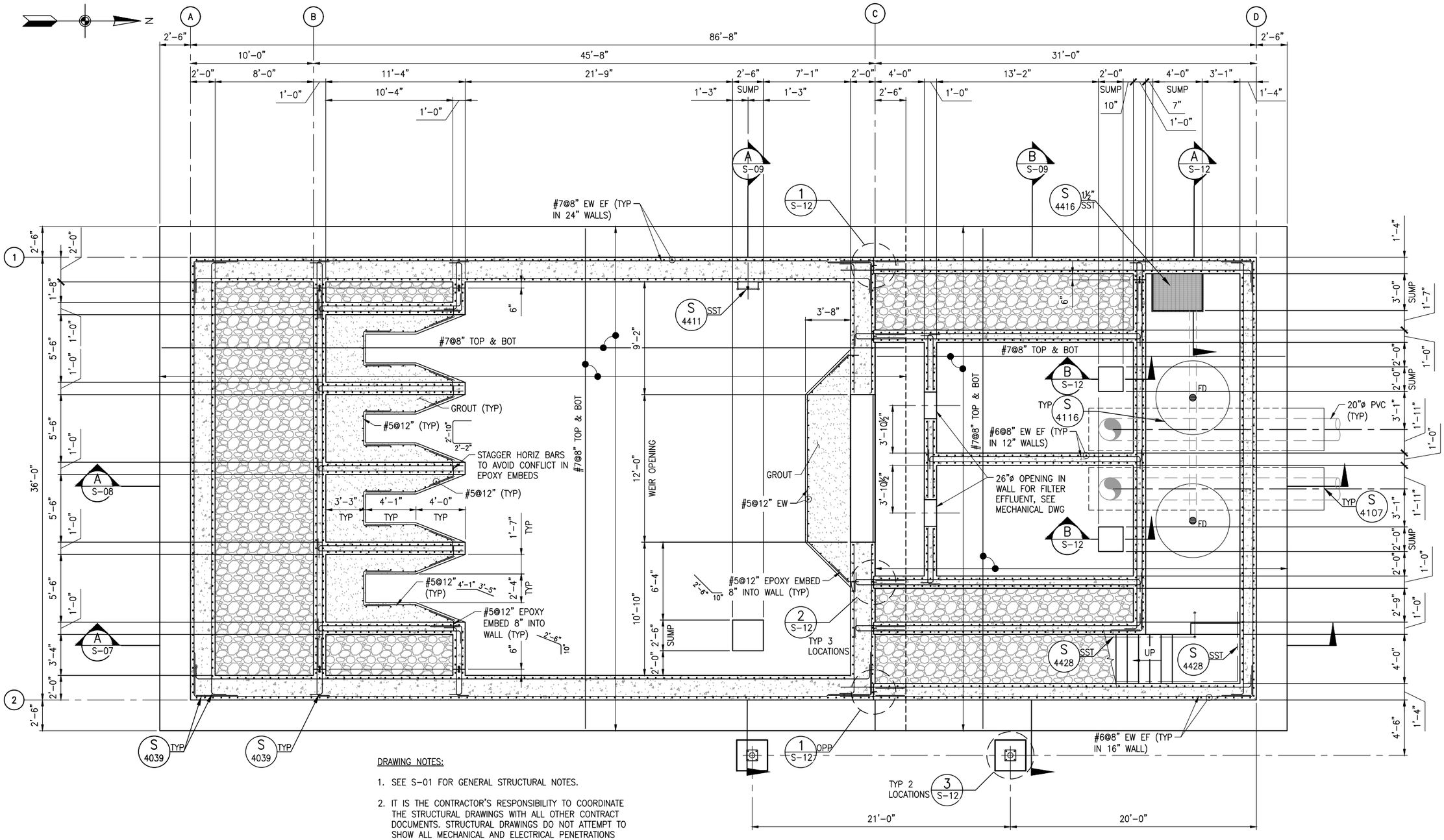
DATE: DECEMBER 2022

PROJECT NUMBER 483-20-02

DRAWING NO. S-03

SHEET 033 OF 126

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DRAWING NOTES:

1. SEE S-01 FOR GENERAL STRUCTURAL NOTES.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTING.
3. OVEREXCAVATE BENEATH THE SLAB AND PLACE 1'–0" MINIMUM COMPACTED THICKNESS OF GRANULAR STRUCTURAL FILL. EXTEND MINIMUM OF 4'–0" BEYOND EDGE OF FOOTINGS.
4. THE ABOVE–GRADE EXTERIOR FACES OF THE CONCRETE WALLS IN THIS STRUCTURE ARE ALL CLASSIFIED AS ARCHITECTURAL CONCRETE FOR PURPOSES OF FINISH REQUIREMENTS.

FOUNDATION PLAN

SCALE: 1/4"=1'–0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT

MAGNA WRF REUSE PROJECT

MAGNA, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT

DRAWN K. SMOOT

REVIEW

CHECKED S. COHEN

APPROVED K. SMOOT

STRUCTURAL

SECONDARY REUSE BUILDING FOUNDATION PLAN

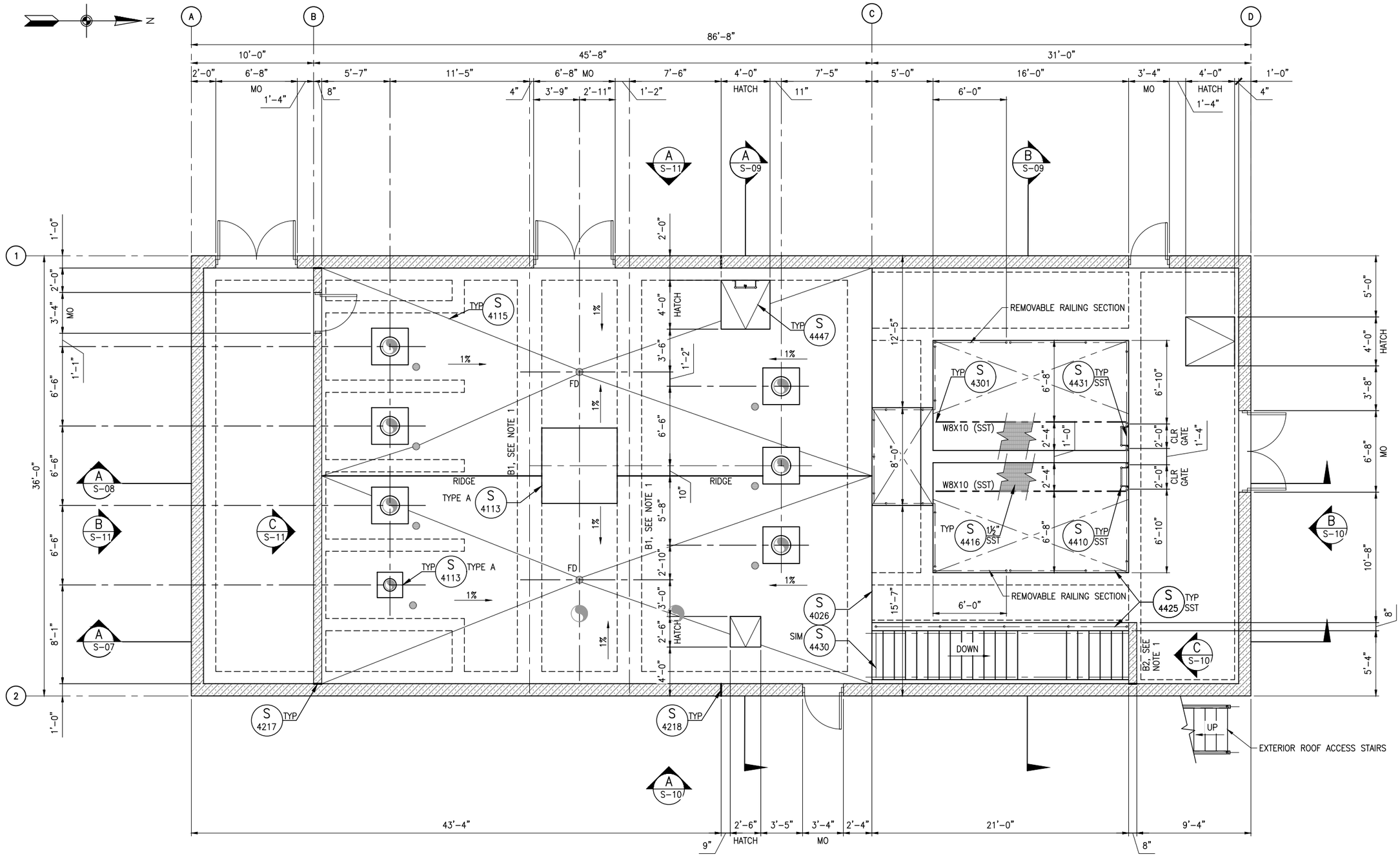
DATE: DECEMBER 2022

PROJECT NUMBER 483-20-02

DRAWING NO. S-04

SHEET 034 OF 126

P:\Magna Water District\483-20-02 Reuse Projects\FINAL DESIGN\2,0 Design Phase\2,9 Drawings\sht\4832002_S-04.dwg Plotted: 12/9/2022 2:52 PM By: Kyle Smoot



MAIN FLOOR PLAN

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

DRAWING NOTES:

1. SEE S-12 FOR CONCRETE BEAM DETAILS AND SCHEDULE.
2. SLAB REINFORCING NOT SHOWN FOR CLARITY. SLAB TO BE REINFORCED WITH #5@8" TOP AND BOTTOM EACH WAY. SLOPE TOP BARS WITH SLOPE OF FLOOR. AT SLAB JOINT ON GRID LINE C REINFORCING MAY BE LAP SPLICED ON THE NORTH SIDE OF THE JOINT.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12/15/2022

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			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. COHEN
APPROVED K. SMOOT

DESIGN DESIGN K. SMOOT
DRAWN K. SMOOT

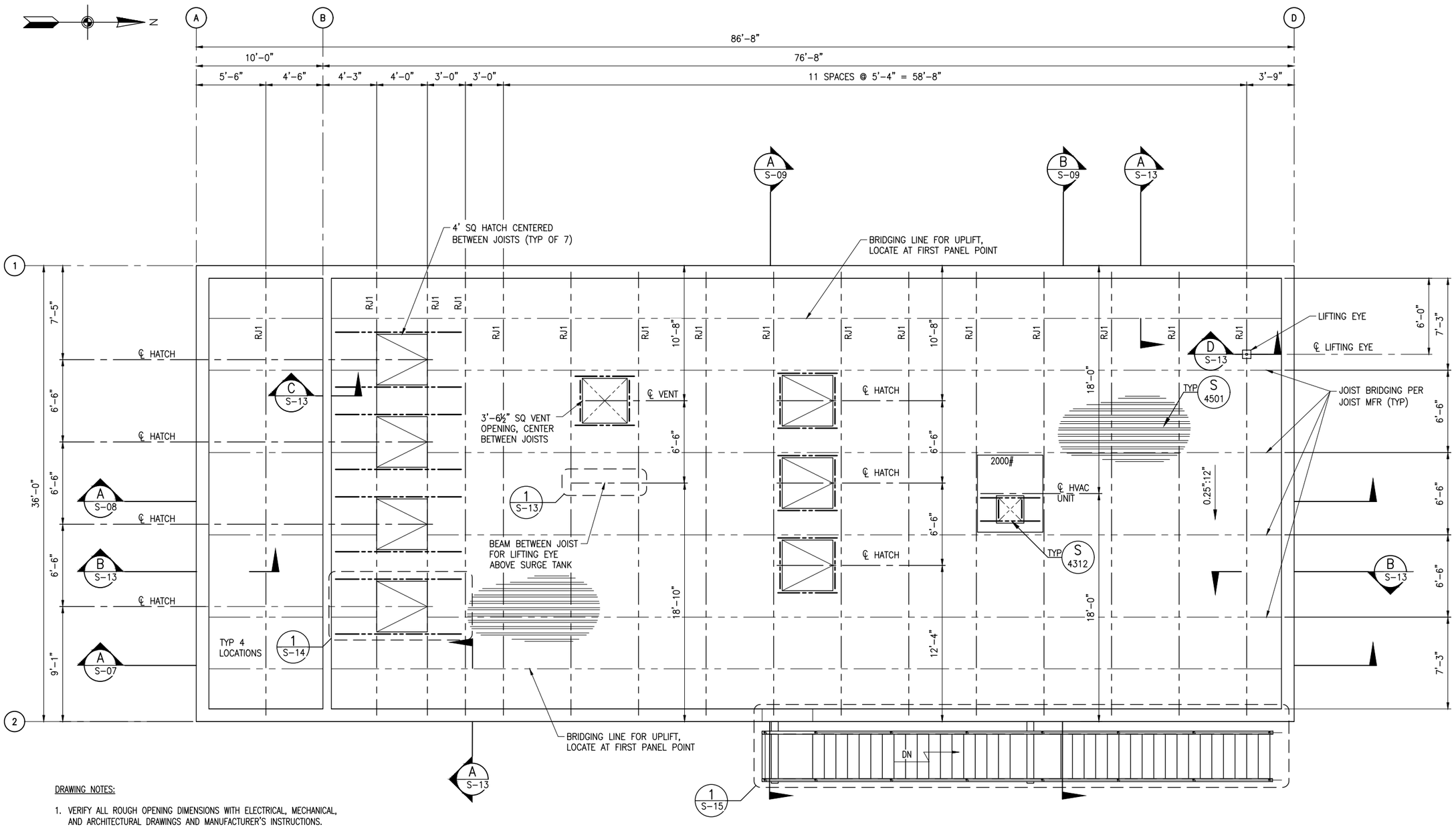
STRUCTURAL

SECONDARY REUSE BUILDING FLOOR PLAN

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO. S-05

SHEET 035 OF 126



DRAWING NOTES:

1. VERIFY ALL ROUGH OPENING DIMENSIONS WITH ELECTRICAL, MECHANICAL, AND ARCHITECTURAL DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
2. THE ARRANGEMENT AND TYPE OF LATERAL TRUSS BRIDGING IS TO BE PROVIDED BY THE JOIST MANUFACTURER. ONLY MINIMUM BRACING IS SHOWN ON THIS PLAN.
3. ROOF DECKING TO BE 1½" 18 GAGE GALVANIZED STEEL DECK PER DETAIL S/4501, ZONE 1, (ENTIRE ROOF).
4. JOIST MANUFACTURER TO DESIGN TOP CHORD OF JOISTS FOR NET WIND UPLIFT OF 10 PSF (ASD).
5. JOISTS SHOWN ARE AS FOLLOWS:
   RJ1 = STEEL JOIST 24KCS5

ROOF FRAMING PLAN

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

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12-9-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

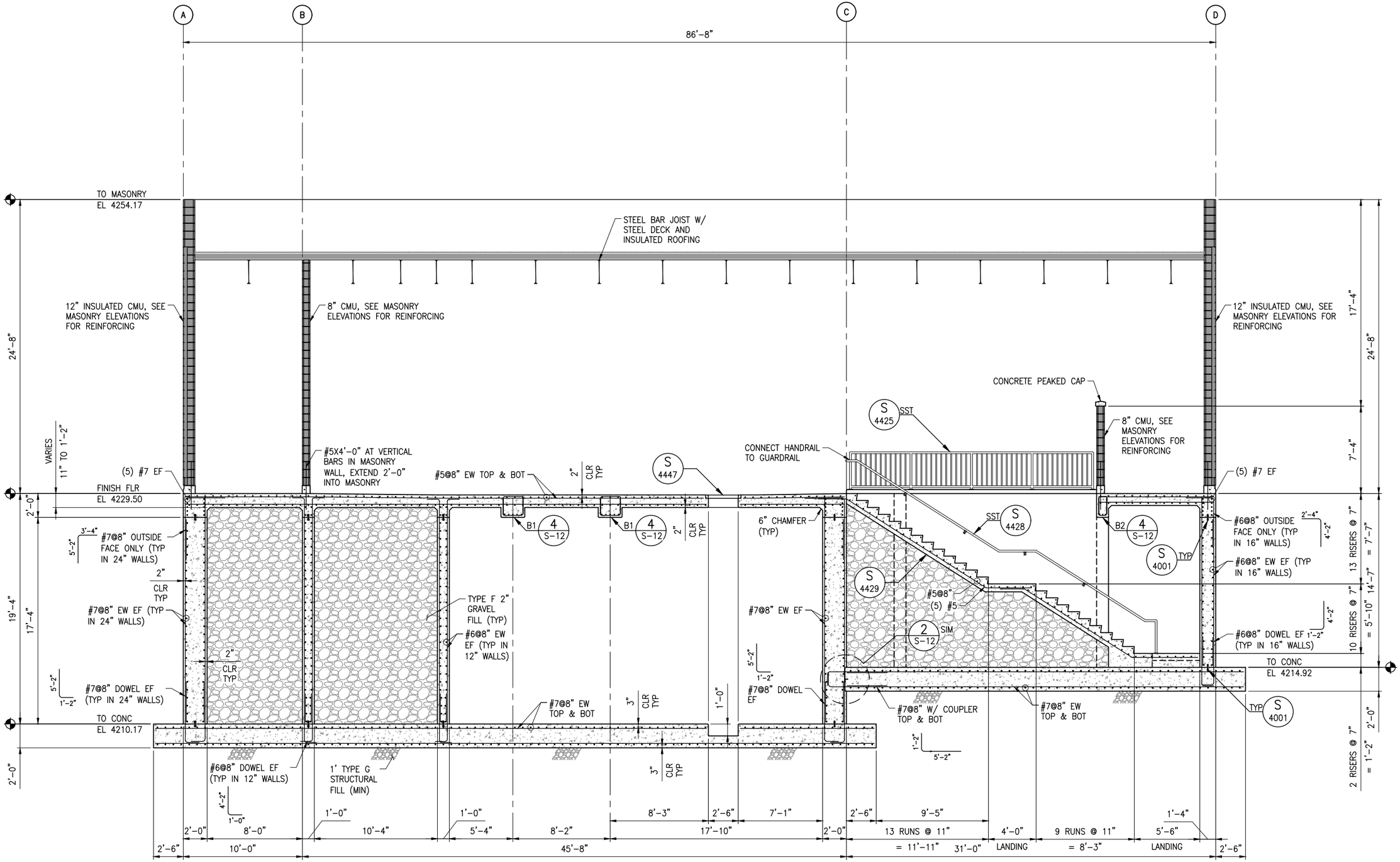
DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED S. COHEN
APPROVED K. SMOOT
REVIEW

STRUCTURAL
SECONDARY REUSE BUILDING
ROOF PLAN

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO. S-06

SHEET 036 OF 126



BUILDING SECTION

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

A
S-04
S-05
S-06

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PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
12-15-2022

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			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED S. COHEN
APPROVED K. SMOOT
REVIEW

STRUCTURAL

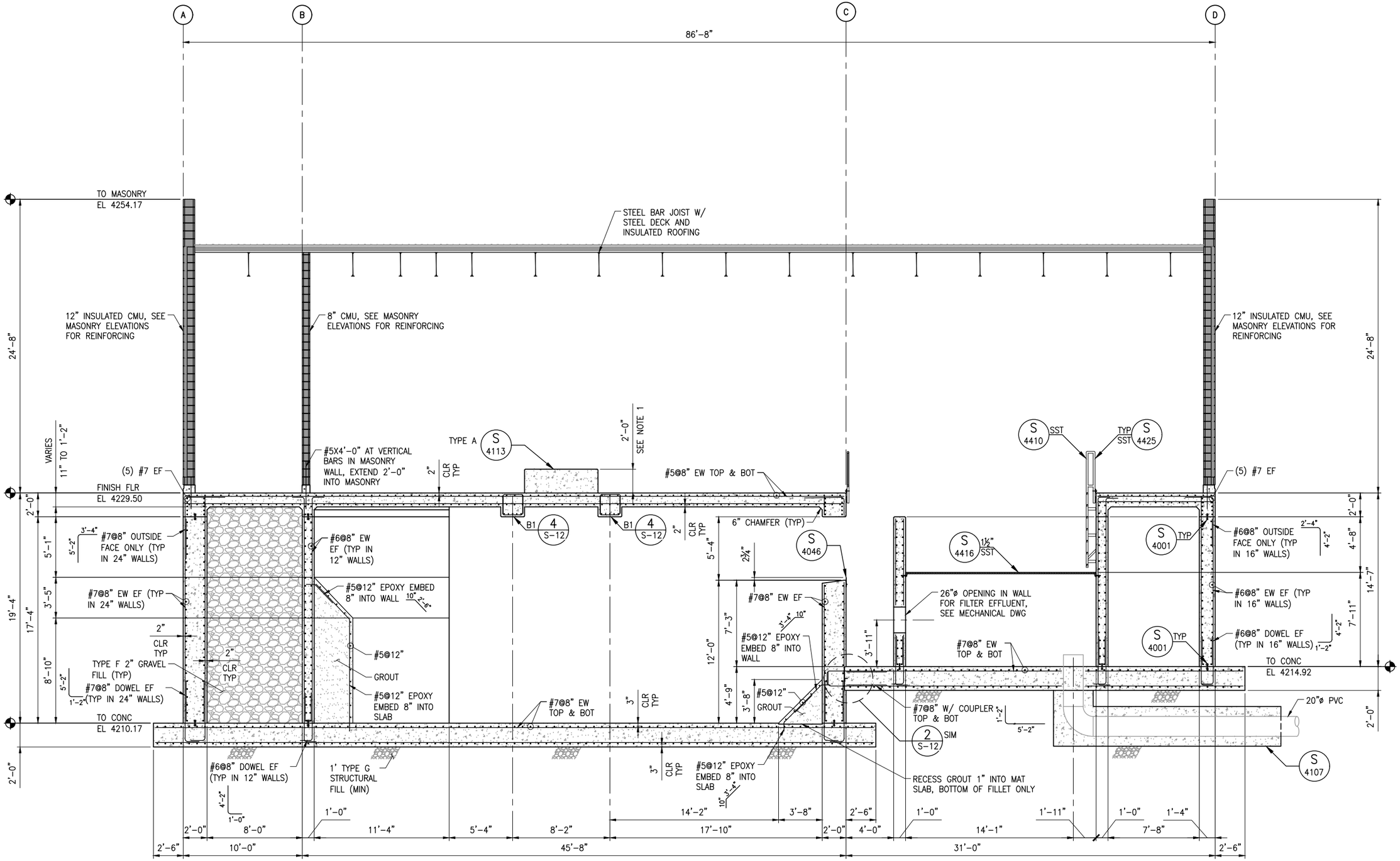
SECONDARY REUSE BUILDING SECTIONS - 1

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-07

SHEET 037 OF 126

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BUILDING SECTION

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

A
S-04
S-05
S-06

DRAWING NOTES:

1. FINAL HEIGHT OF EQUIPMENT PAD FOR THE SURGE TANK IS TO BE PROVIDED BY THE SURGE TANK MANUFACTURER.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN S. COHEN
DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED S. COHEN
APPROVED K. SMOOT

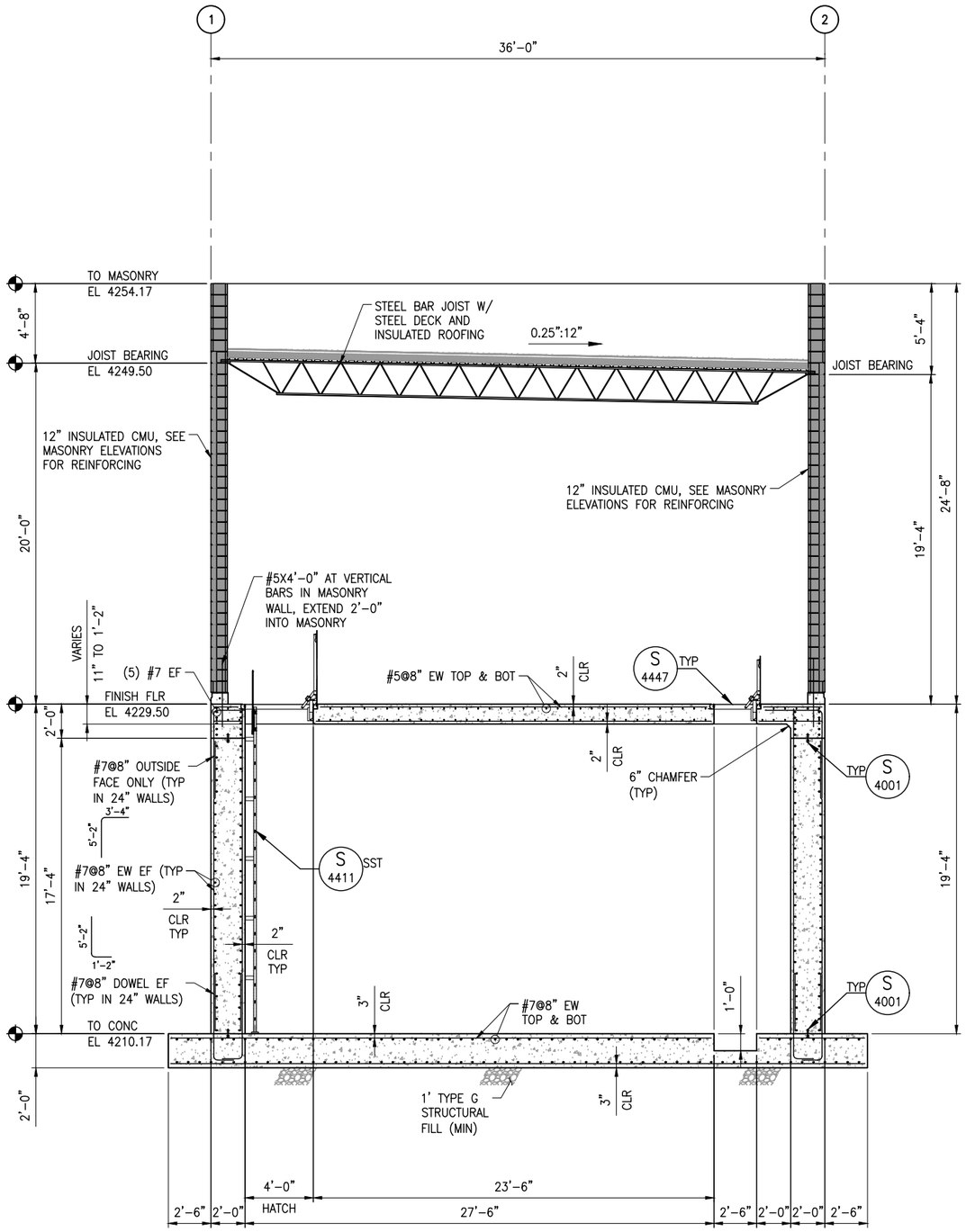
STRUCTURAL

SECONDARY REUSE BUILDING SECTIONS - 2

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-08

SHEET 038 OF 126

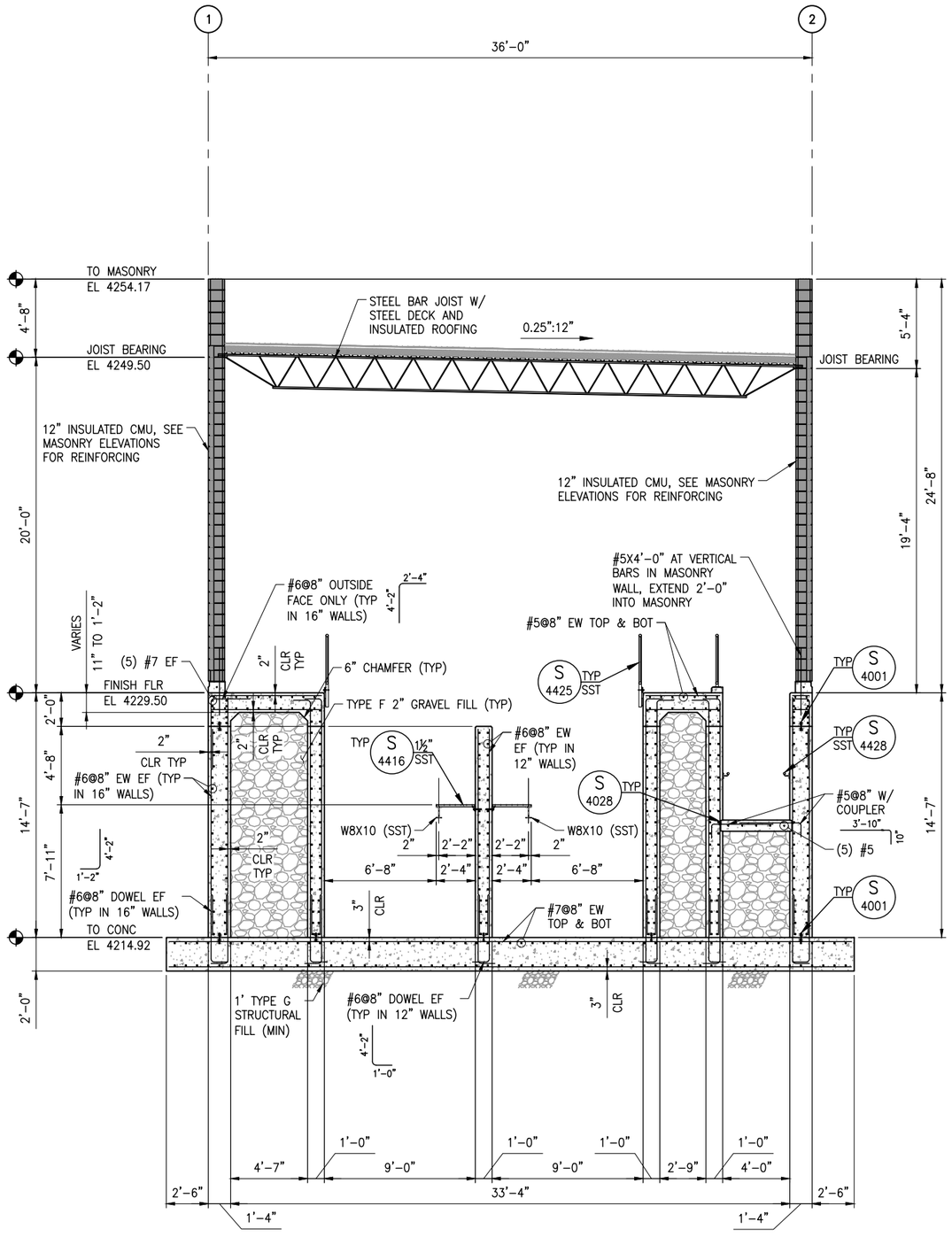


BUILDING SECTION

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

A

S-04
S-05
S-06



BUILDING SECTION

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

B

S-04
S-05
S-06

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PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
12-19-2022

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

MAGNA WATER DISTRICT

MAGNA WRF REUSE PROJECT

MAGNA, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

STRUCTURAL

SECONDARY REUSE BUILDING SECTIONS - 3

DATE: DECEMBER 2022

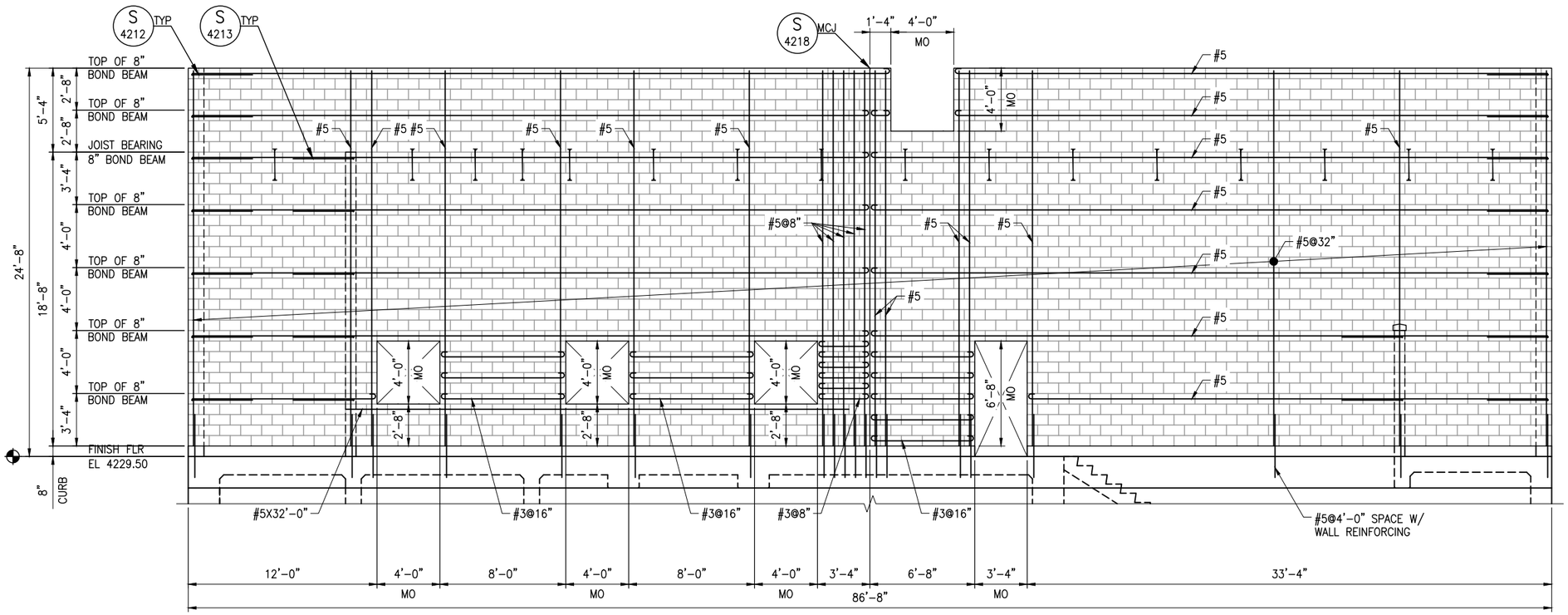
PROJECT NUMBER 483-20-02

DRAWING NO.

S-09

SHEET 039 OF 126

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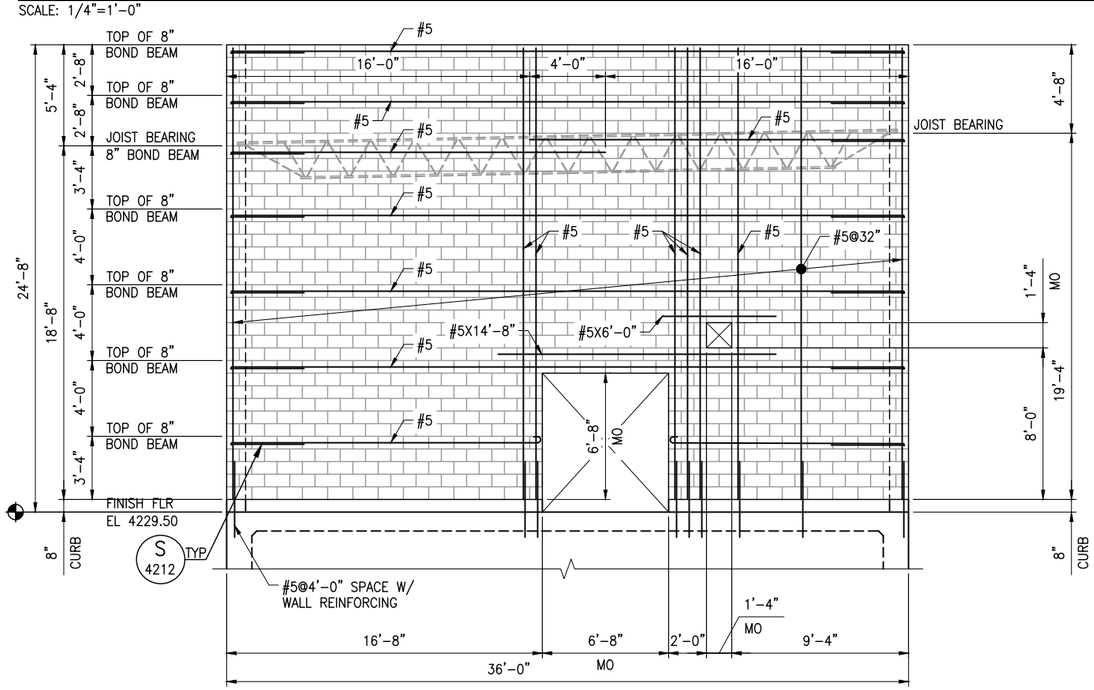
MASONRY ELEVATION

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

A S-05

DRAWING NOTES:

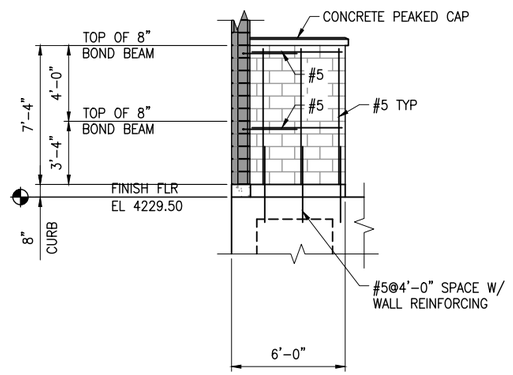
1. HORIZONTAL REINFORCING STEEL ABOVE AND BELOW OPENINGS IS TO EXTEND 2'-6" BEYOND LIMITS OF MASONRY OPENING IN FULLY GROUTED BOND BEAMS UON. USE #4 BARS IN 8" MASONRY AND #5 BARS IN 12" MASONRY. HOOK BARS WHERE THAT DISTANCE IS NOT AVAILABLE.
2. FOR GENERAL MASONRY NOTES, TYPICAL CORNER BOND BEAM, AND VERTICAL WALL REINFORCING DETAILS, SEE GENERAL DETAILS SHEET GS-05.
3. VERIFY LOCATIONS AND DIMENSIONS SHOWN FOR PENETRATIONS WITH PIPING AND EQUIPMENT FURNISHED.



MASONRY ELEVATION

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

B S-05



MASONRY ELEVATION

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

C S-05

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12629530 KYLE ROBERT SMOOT STATE OF UTAH 12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW CHECKED S. COHEN APPROVED K. SMOOT

DESIGN DESIGN K. SMOOT DRAWN K. SMOOT

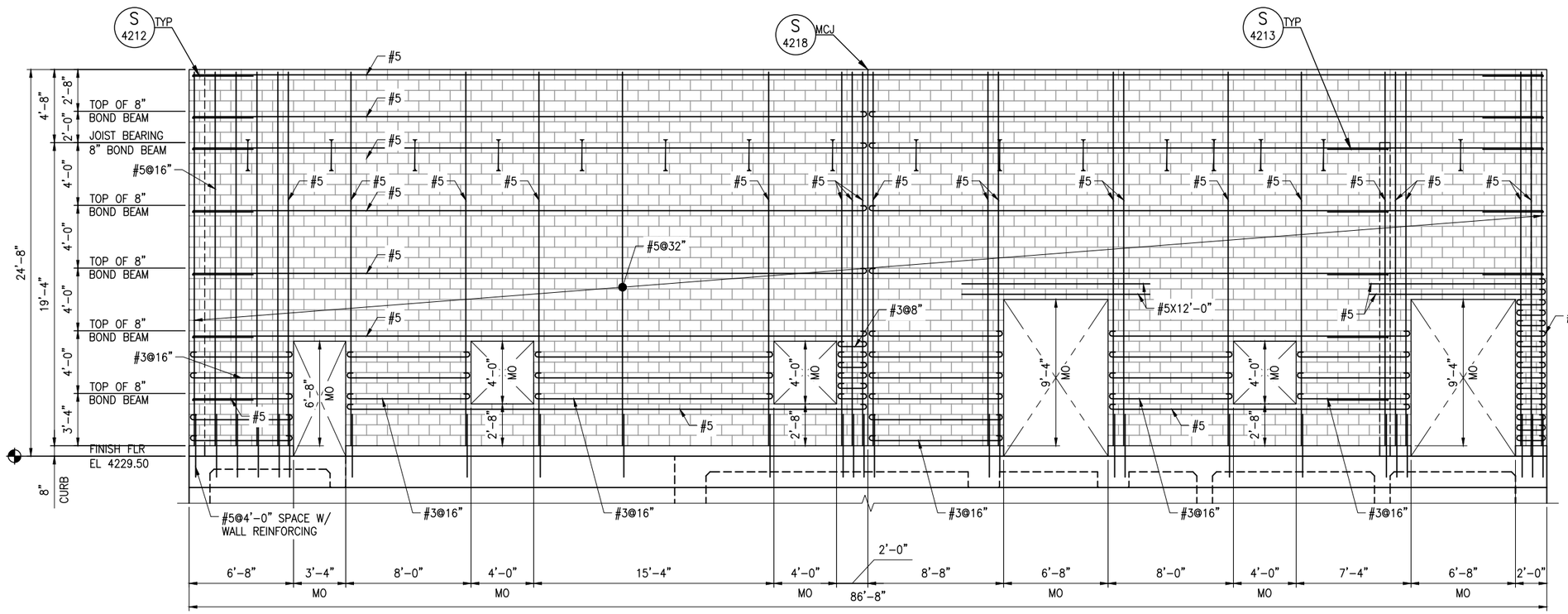
STRUCTURAL

SECONDARY REUSE BUILDING
MASONRY ELEVATION - 1

DATE: DECEMBER 2022 PROJECT NUMBER 483-20-02

DRAWING NO. S-10

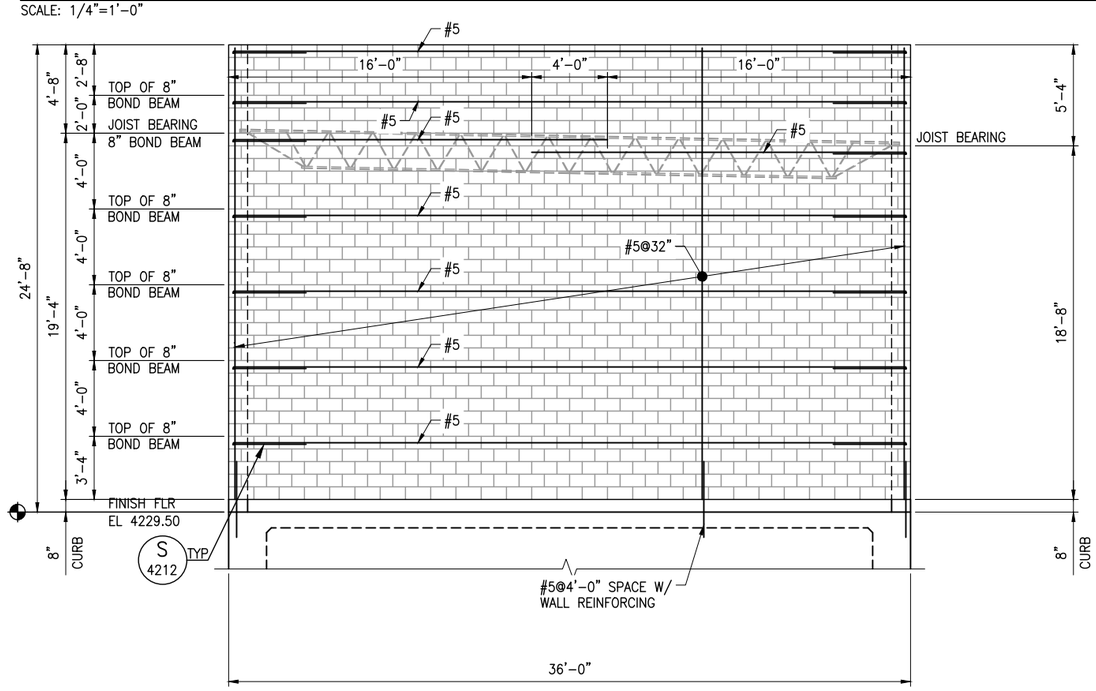
SHEET 040 OF 126



MASONRY ELEVATION

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

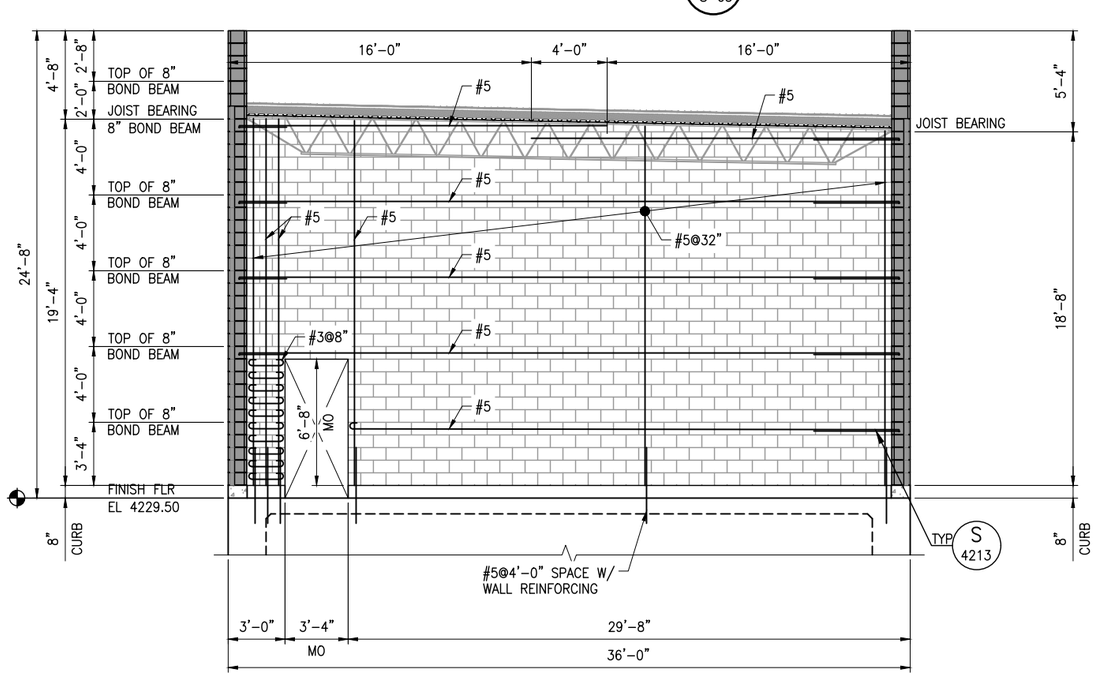
A S-05



MASONRY ELEVATION

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

B S-05



MASONRY ELEVATION

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

C S-05

DRAWING NOTES:

1. HORIZONTAL REINFORCING STEEL ABOVE AND BELOW OPENINGS IS TO EXTEND 2'-6" BEYOND LIMITS OF MASONRY OPENING IN FULLY GROUTED BOND BEAMS UON. USE #4 BARS IN 8" MASONRY AND #5 BARS IN 12" MASONRY. HOOK BARS WHERE THAT DISTANCE IS NOT AVAILABLE.
2. FOR GENERAL MASONRY NOTES, TYPICAL CORNER BOND BEAM, AND VERTICAL WALL REINFORCING DETAILS, SEE GENERAL DETAILS SHEET GS-05.
3. VERIFY LOCATIONS AND DIMENSIONS SHOWN FOR PENETRATIONS WITH PIPING AND EQUIPMENT FURNISHED.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12629530 KYLE ROBERT SMOOT STATE OF UTAH 12/9/2022

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

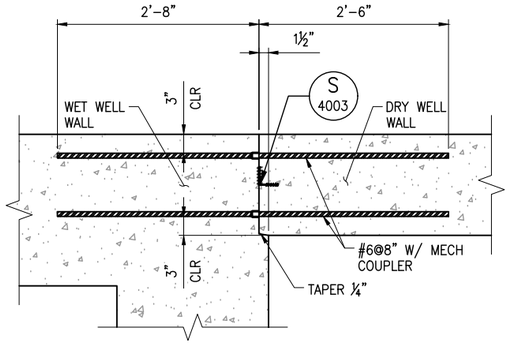
SECONDARY REUSE BUILDING
MASONRY ELEVATION - 2

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-11

SHEET 041 OF 126

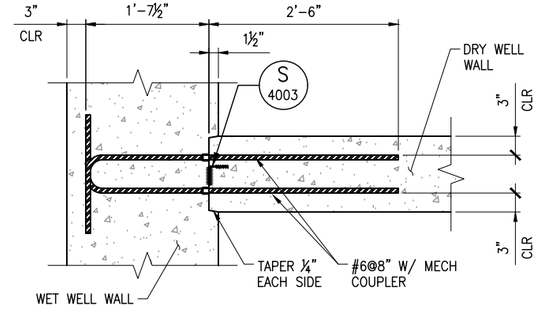
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DETAIL NOTE:

1. TYPICAL WALL REINFORCING NOT SHOWN FOR CLARITY. SEE S-04 FOR WALL REINF

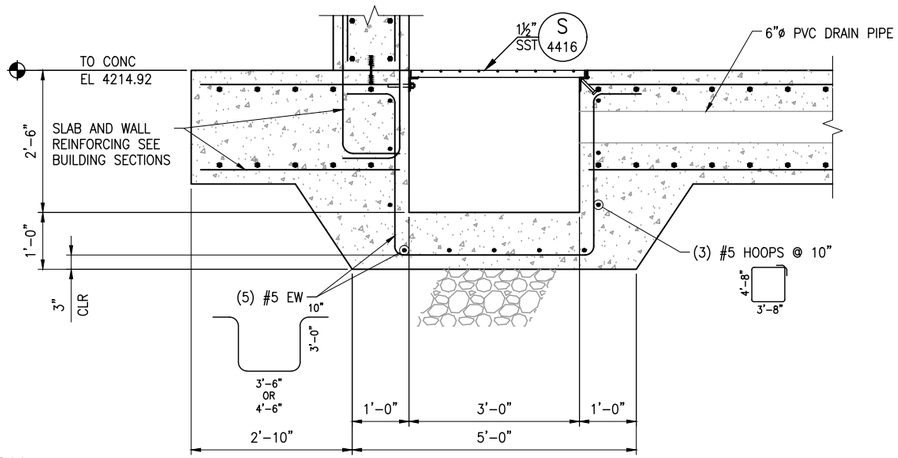
DETAIL 1 / S-04
SCALE: 1"=1'-0"



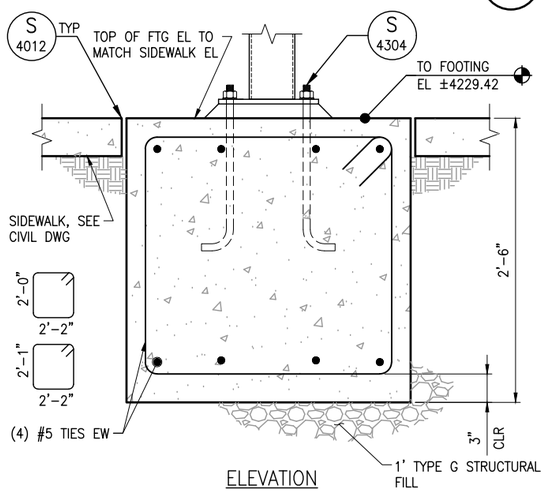
DETAIL NOTE:

1. TYPICAL WALL REINFORCING NOT SHOWN FOR CLARITY. SEE S-04 FOR WALL REINF

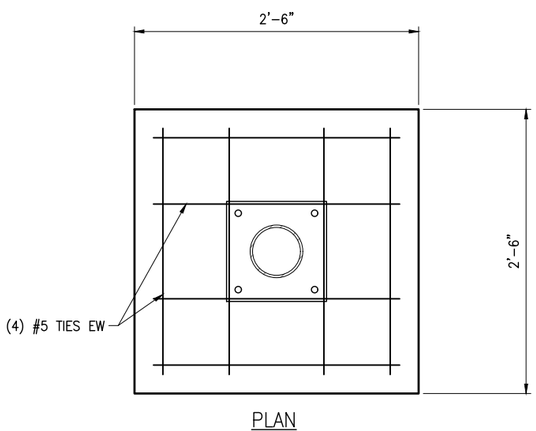
DETAIL 2 / S-04, S-07, S-08
SCALE: 1"=1'-0"



SECTION A / S-04
SCALE: 3/4"=1'-0"

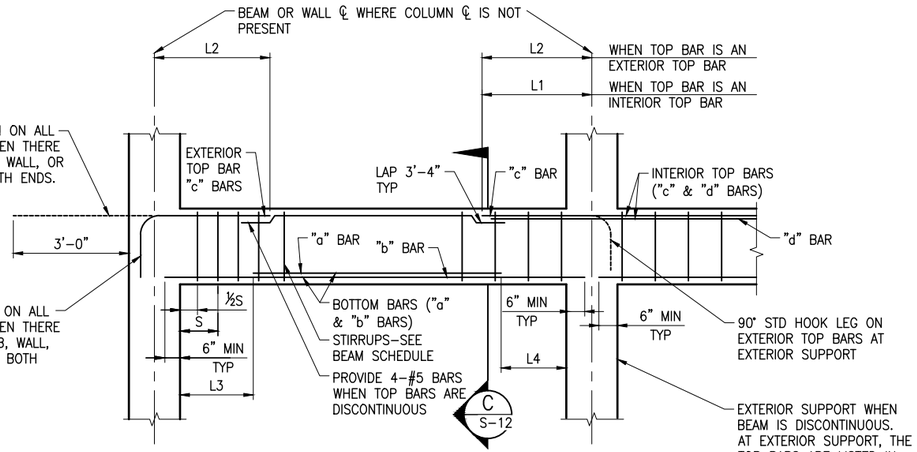


ELEVATION



PLAN

DETAIL 3 / S-04, S-15
SCALE: 1-1/2"=1'-0"



NOTES:

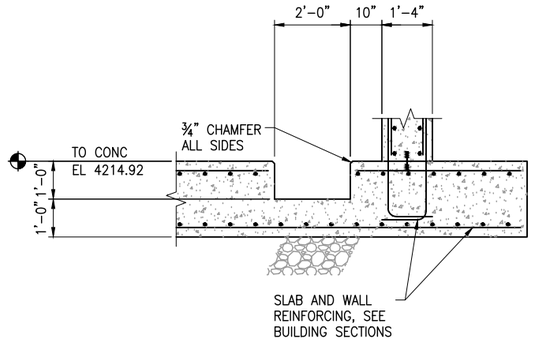
1. INTERIOR TOP BARS IN THE BEAM SCHEDULE ARE THOSE LOCATED AT SUPPORTS WHERE BEAMS ARE CONTINUOUS ACROSS THE SUPPORT.
2. STIRRUP SPACINGS (S) INDICATED IN THE SCHEDULES START AT THE FACE OF THE SUPPORT. IN ADDITION TO ALL SCHEDULED STIRRUPS, PROVIDE ONE ADDITIONAL STIRRUP AT ½ THE FIRST SCHEDULED SPACING AT EACH FACE OF EACH SUPPORT.

BEAM SCHEDULE

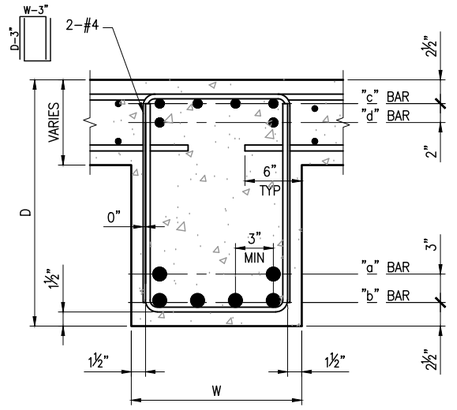
MARK	SIZE		BOTTOM BARS				INT TOP BARS			EXT TOP BARS			STIRRUPS		REMARKS
	W	D	"a"	"b"	L3	L4	"c"	"d"	L1	"c"	"d"	L2*	SIZE	SPACING (S)	
B1	24"	24"**	2#5	4#5						4#5	–	–	#4	12"	
B2	12"	24"		3#5						3#5	–	–	#4	12"	

*WHEN NO DIMENSION IS SHOWN FOR L2, TOP BARS ARE TO BE CONTINUOUS.
**AS MEASURED AT THE FULL DEPTH OF THE SLAB. DEPTH OF BEAM WILL VARY WITH FLOOR SLOPE. TOP REINFORCING TO SLOPE WITH FLOOR.

DETAIL 4 / S-05, S-07, S-08
SCALE: 3/4"=1'-0"



SECTION B / S-04
SCALE: 1/2"=1'-0"



SECTION C / S-12
SCALE: 1"=1'-0"

BOWEN COLLINS & ASSOCIATES
PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12/13/2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

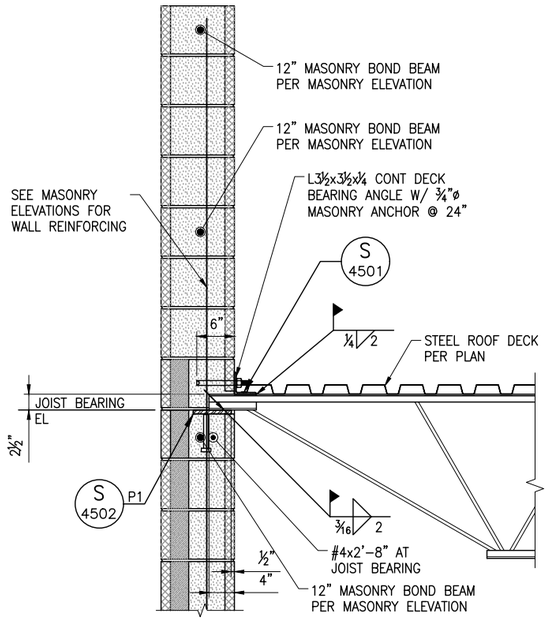
STRUCTURAL

SECONDARY REUSE BUILDING SECTIONS AND DETAILS - 1

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

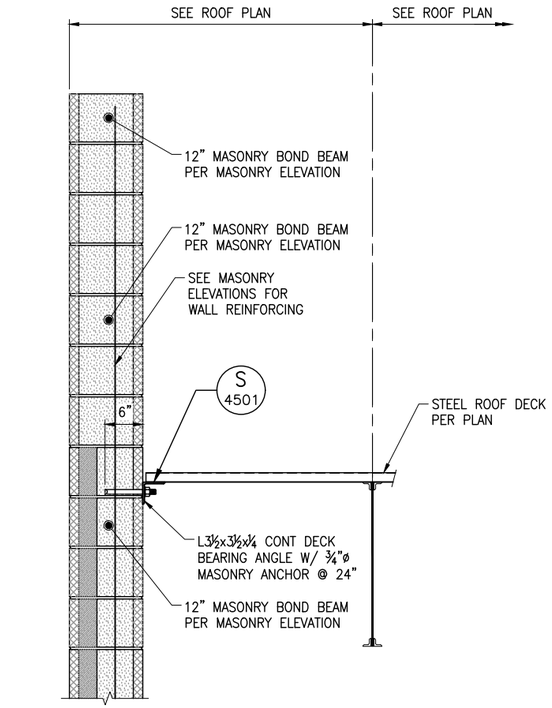
DRAWING NO.
S-12

SHEET 042 OF 126



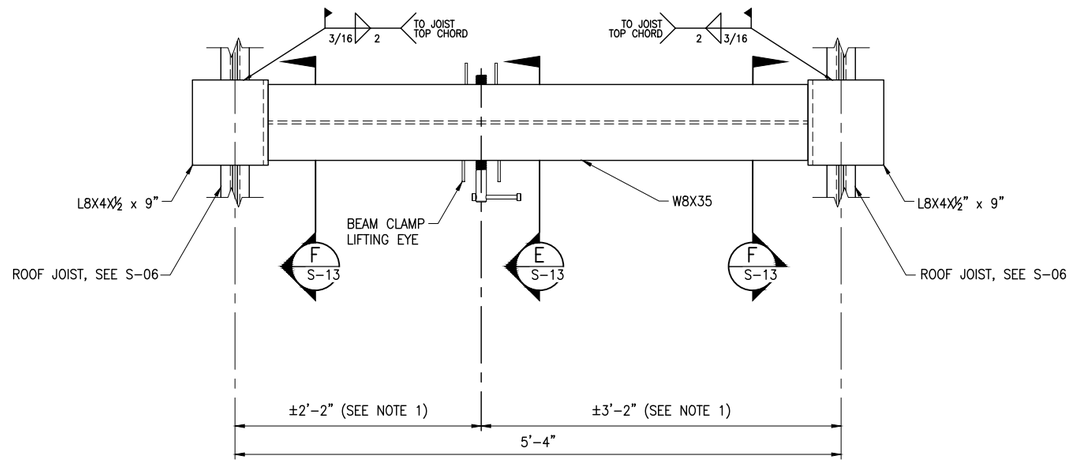
SECTION
SCALE: 1"=1'-0"

A S-06



SECTION
SCALE: 1"=1'-0"

B S-06

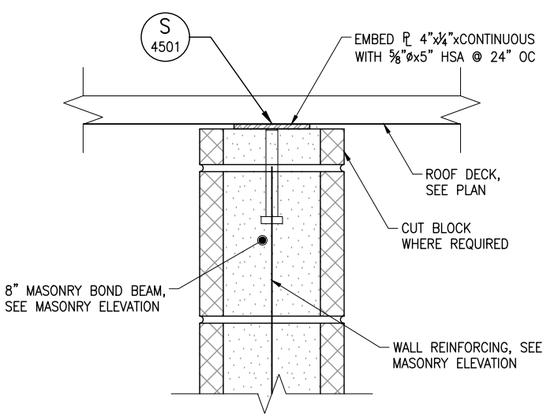


DETAIL
SCALE: 1-1/2"=1'-0"

1 S-06

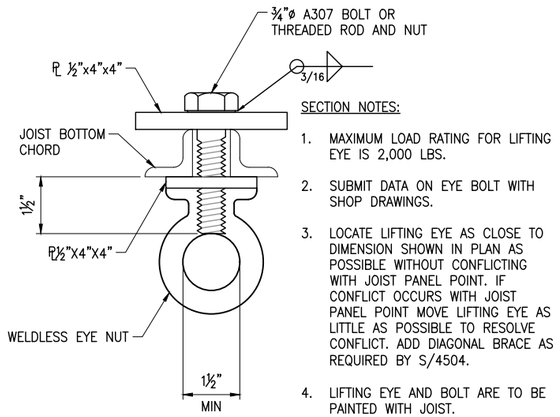
DETAIL NOTES:

1. BEAM CLAMP LIFTING EYE TO BE CENTERED OVER SURGE TANK. BEAM CLAMP LIFTING EYE CAN BE MOVED UP TO 6" IN EITHER DIRECTION TO ALIGN LIFTING EYE OVER THE CENTER OF THE SURGE TANK.



SECTION
SCALE: 3"=1'-0"

C S-06

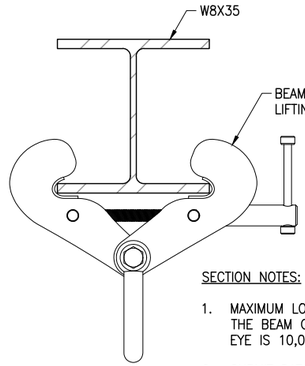


SECTION NOTES:

1. MAXIMUM LOAD RATING FOR LIFTING EYE IS 2,000 LBS.
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.
3. LOCATE LIFTING EYE AS CLOSE TO DIMENSION SHOWN IN PLAN AS POSSIBLE WITHOUT CONFLICTING WITH JOIST PANEL POINT. IF CONFLICT OCCURS WITH JOIST PANEL POINT MOVE LIFTING EYE AS LITTLE AS POSSIBLE TO RESOLVE CONFLICT. ADD DIAGONAL BRACE AS REQUIRED BY S/4504.
4. LIFTING EYE AND BOLT ARE TO BE PAINTED WITH JOIST.

SECTION
SCALE: 6"=1'-0"

D S-06

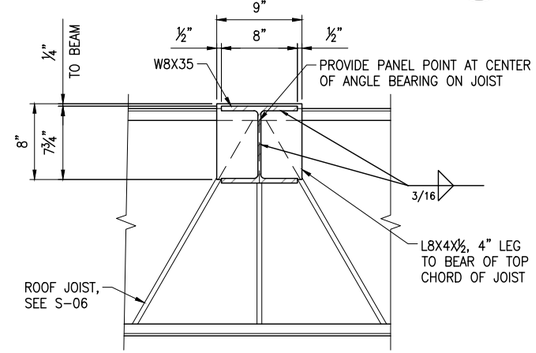


SECTION NOTES:

1. MAXIMUM LOAD RATING FOR THE BEAM CLAMP LIFTING EYE IS 10,000 LBS.
2. SUBMIT DATA ON BEAM CLAMP LIFTING EYE WITH SHOP DRAWINGS.

SECTION
SCALE: 3"=1'-0"

E S-13



SECTION NOTES:

1. JOISTS ON WHICH ANGLES BEAR TO BE DESIGNED FOR A POINT LOAD OF 7000 LBS AT LOCATION OF ANGLE BEARING ON JOIST. POINT LOAD IS NOT TO BE APPLIED WITH SNOW LOAD WITH ON ROOF.

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

F S-13

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12029530 KYLE ROBERT SMOOT STATE OF UTAH 12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. COHEN APPROVED K. SMOOT

DESIGN DESIGN K. SMOOT DRAWN K. SMOOT

STRUCTURAL

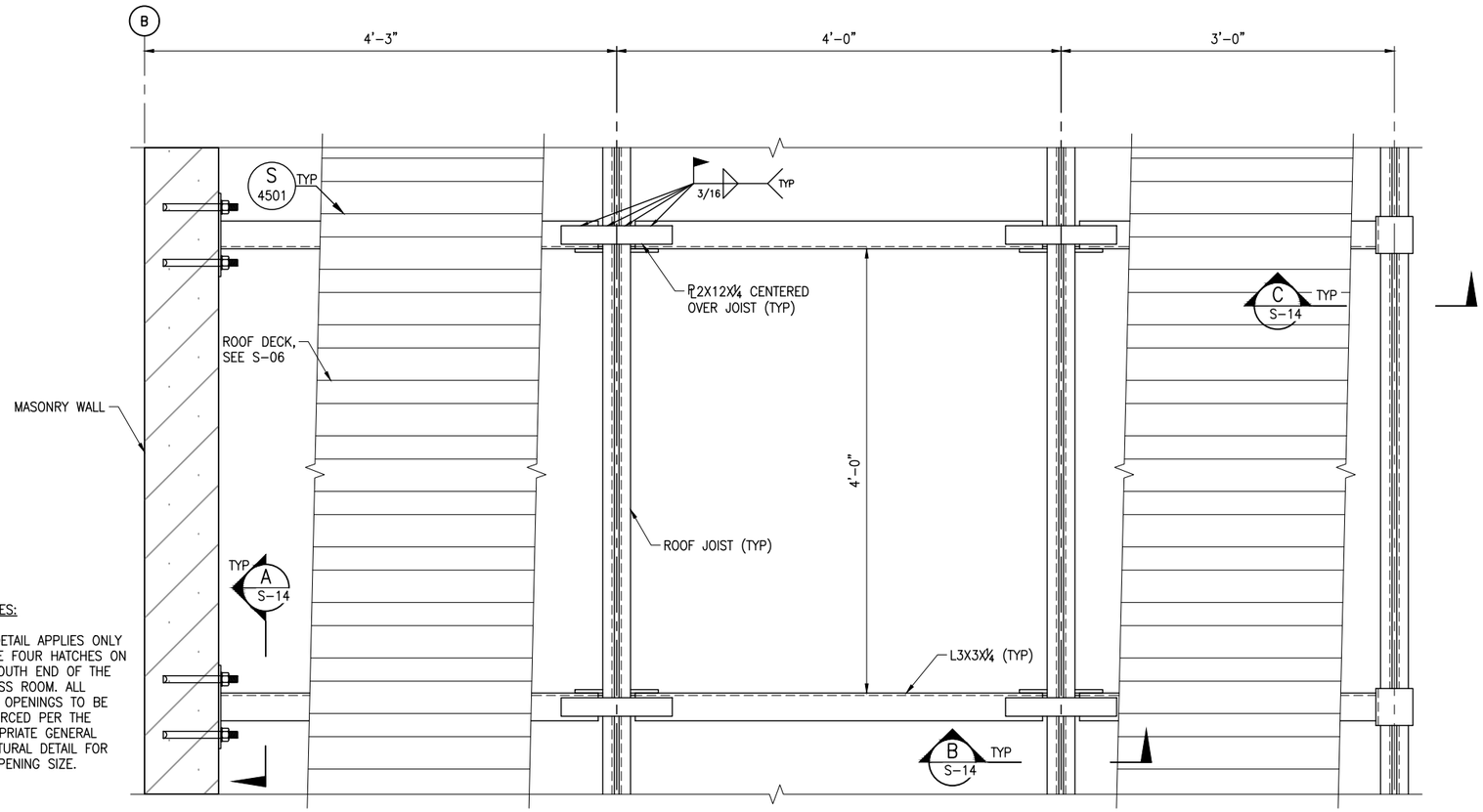
SECONDARY REUSE BUILDING SECTIONS AND DETAILS - 2

DATE: DECEMBER 2022 PROJECT NUMBER 483-20-02

DRAWING NO. S-13

SHEET 043 OF 126

P:\MAGNA WATER DISTRICT\483-20-02 REUSE PROJECTS\FINAL DESIGN\2.0 DESIGN PHASE\2_9 DRAWINGS\SHT\4832002_S-13.dwg Plotted: 12/9/2022 2:48 PM By: Kyle Smoot

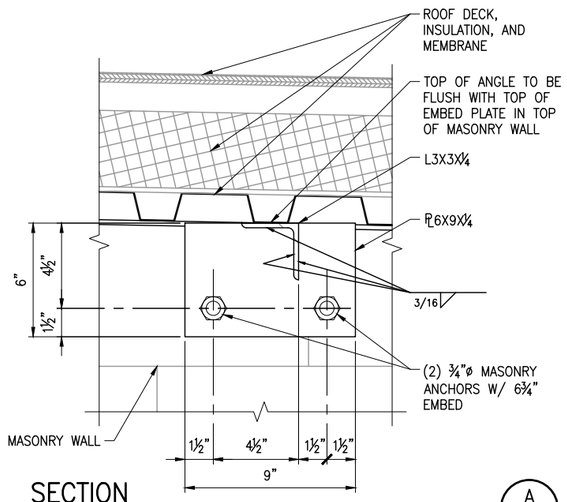


DETAIL NOTES:

1. THIS DETAIL APPLIES ONLY TO THE FOUR HATCHES ON THE SOUTH END OF THE PROCESS ROOM. ALL OTHER OPENINGS TO BE REINFORCED PER THE APPROPRIATE GENERAL STRUCTURAL DETAIL FOR THE OPENING SIZE.

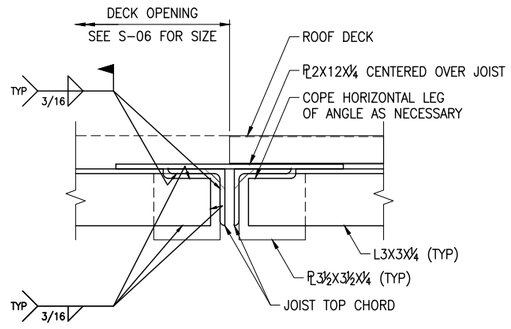
DETAIL
SCALE: 1-1/2"=1'-0"

1
S-06



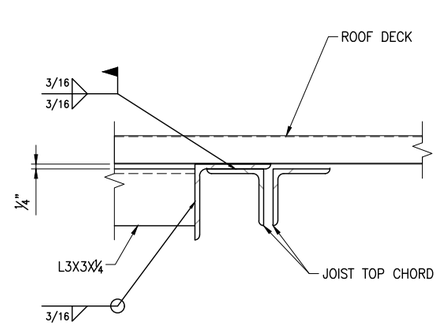
SECTION
SCALE: 3"=1'-0"

A
S-14



SECTION
SCALE: 3"=1'-0"

B
S-14



SECTION
SCALE: 3"=1'-0"

C
S-14

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
12-15-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

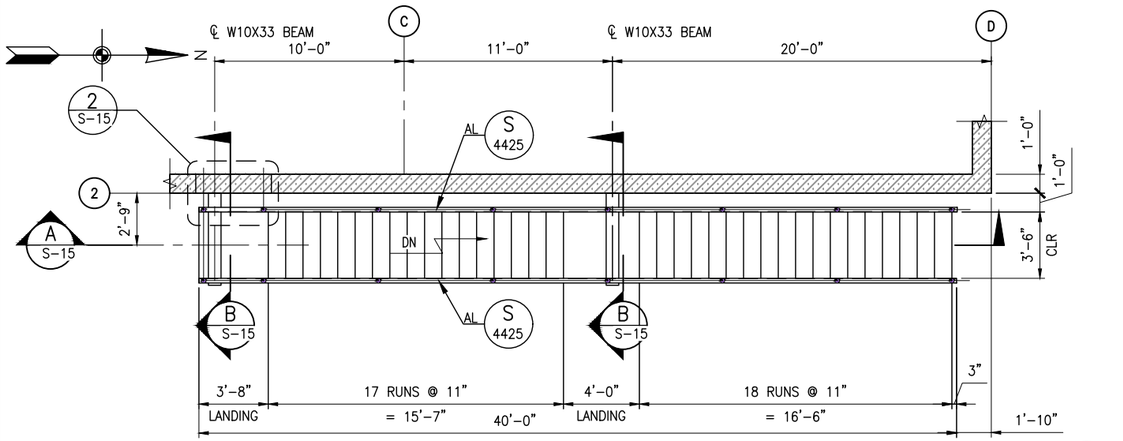
STRUCTURAL

SECONDARY REUSE BUILDING
SECTIONS AND DETAILS - 3

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-14

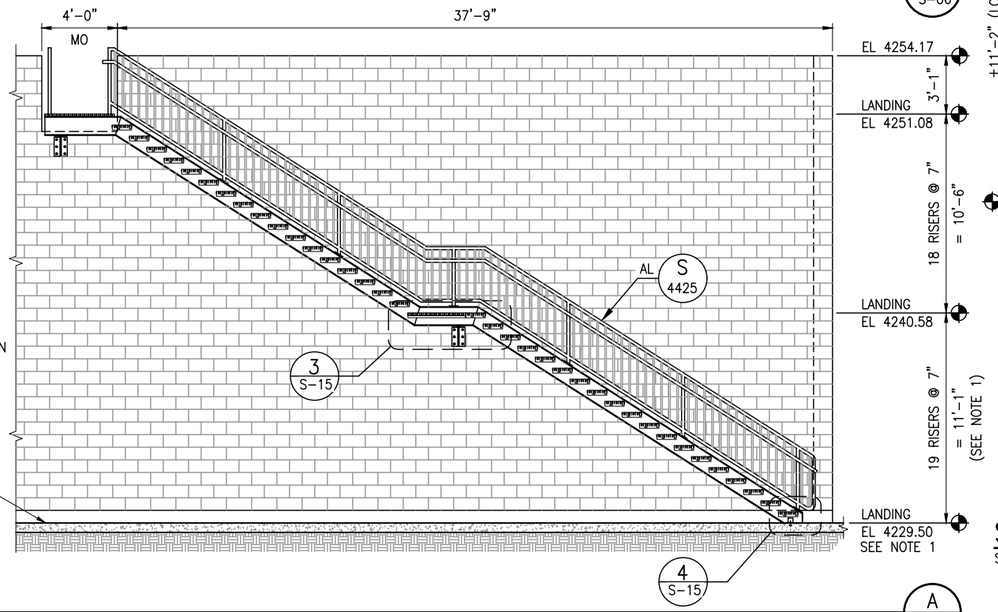
SHEET 044 OF 126



DETAIL

SCALE: 1/4"=1'–0"

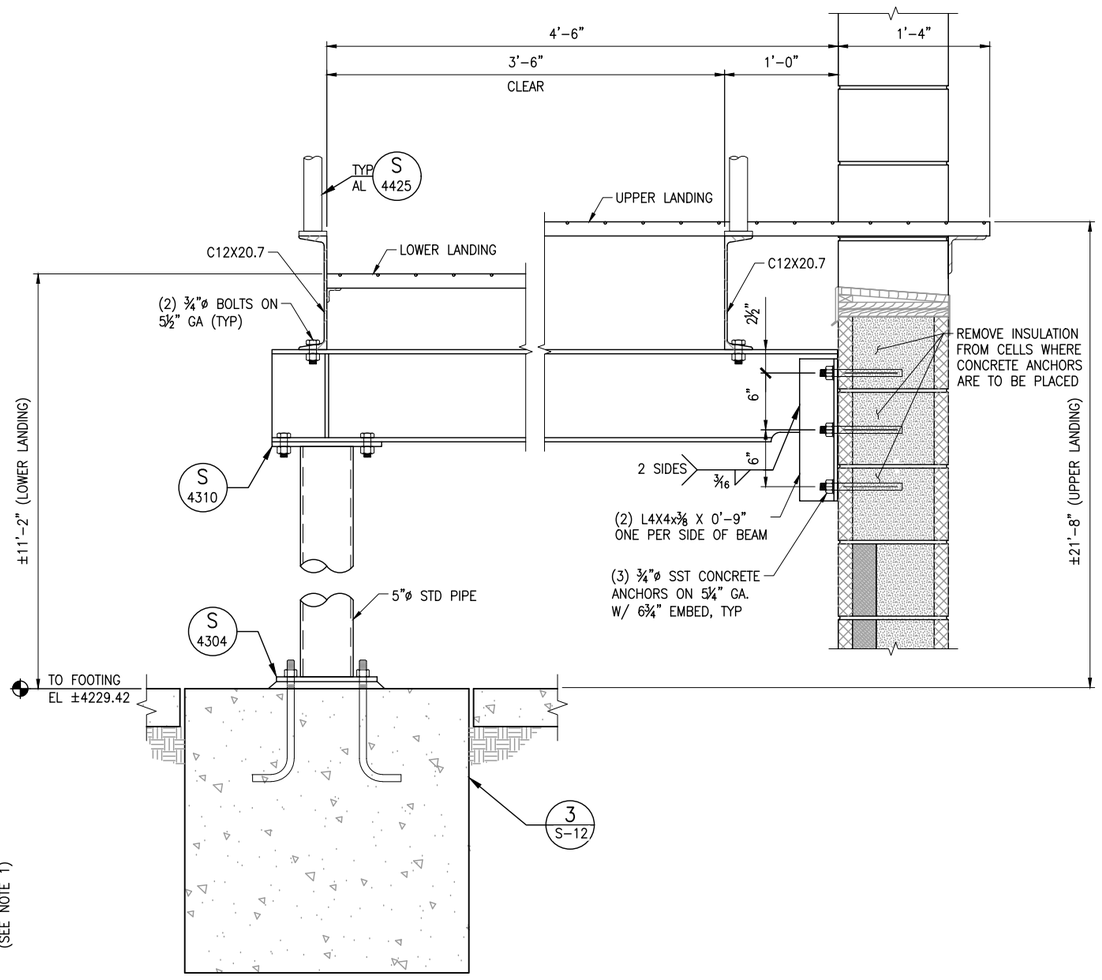
1 S-06



SECTION NOTES:

1. SIDEWALK ELEVATION AND DIMENSION FROM SIDEWALK TO FIRST LANDING IS MEASURED AT EXTERIOR FACE OF THE BUILDING.

SIDEWALK, SEE CIVIL DRAWINGS



SECTION

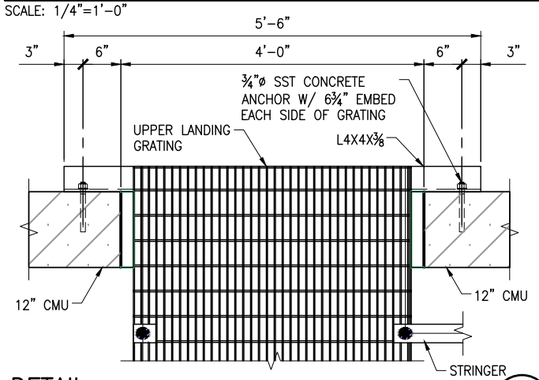
SCALE: 1–1/2"=1'–0"

B S-15

SECTION

SCALE: 1/4"=1'–0"

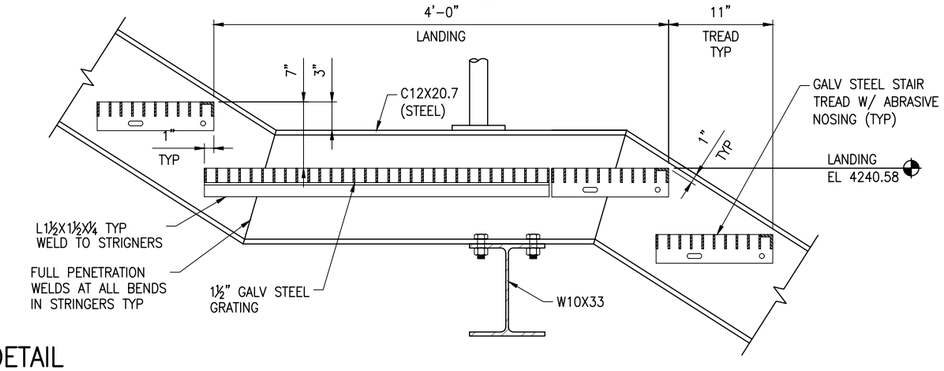
A S-15



DETAIL

SCALE: 1"=1'–0"

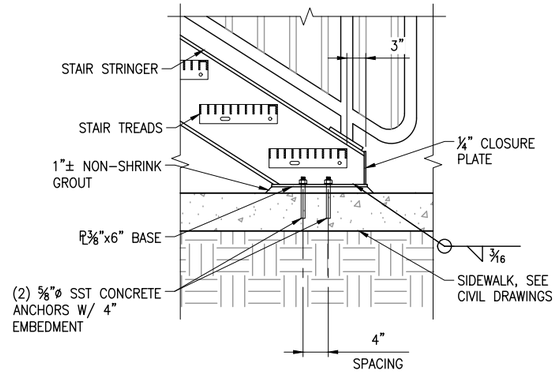
2 S-15



DETAIL

SCALE: 1–1/2"=1'–0"

3 S-15



DETAIL

SCALE: 1"=1'–0"

4 S-15

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT

MAGNA WRF REUSE PROJECT

MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED K. SMOOT

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

SECONDARY REUSE BUILDING SECTIONS AND DETAILS - 4

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
S-15

SHEET 045 OF 126

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FLUID ABBREVIATION	FUNCTION (SEE NOTE 5)	PIPING MATERIAL (SEE SCHEDULE AT RIGHT)				FIELD TEST REQUIRMENTS (SEE NOTE 3 AND NOTE 4)		
		EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MIN TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)
		2" DIA & SMALLER	2 1/2 " DIA & LARGER	2" DIA & SMALLER	2 1/2 " DIA & LARGER			
AV	AIR VENT	2, 16, 24, 29	2, 16, 24, 29	16, 24, 29	16, 24, 29	NOTE 7	--	--
ALM	ALUM	20	--	20	--	100	WATER	A
BR	BRINE	3, 4, 7, 16	8	36, 37	37	100	WATER	A
BWW	BACK WASH WATER	2, 16	2, 16	2, 16	2, 16	125	WATER	A
CE	CHLORINATED EFFLUENT	--	--	22	22	15	WATER	A
CTA	CITRIC ACID	16	16	16	16	125	WATER	A
CTM	CONTAINMENT	16	16	16	16	100	WATER	A
CLS	CHLORINE SOLUTION	16	--	16	--	125	WATER	A
D	DRAIN	27, 11	11, 12, 27	27	11, 12, 27	NOTE 6	WATER	A, E
EFR	EFFLUENT RETURN	--	8, 37	--	8, 37	225	WATER	A
FE	FINAL EFFLUENT	--	--	--	11, 22	15	WATER	A
HW	HOT WATER	24, 50	50	24	2, 24	3	3	A
IRR	IRRIGATION	16	16	16, 24	16, 24	225	WATER	A
LO	LUBE OIL	47	47	--	--	3	3	A, D
ML	MIXED LIQUOR	--	11	--	11	125	WATER	A
MLR	MIXED LIQUOR RECYCLE	--	11	--	--	125	WATER	A
NG	NATURAL GAS	9	9	--	--	3	3	A
NPW	NON POTABLE WATER	16	16	16, 24	16, 24	125	WATER	
ORD	OVERFLOW ROOF DRAIN	12	12		12	3	3	A
PA	PROCESS AIR	--	5, 39, 40	--	5, 39, 40	125	AIR	A
PDR	PLANT DRAIN RETURN	--	22	--	22	NOTE 6	WATER	C
PLS	POLYMER SOLUTION	16	16	16	16	125	WATER	A
PW	POTABLE WATER	2, 7, 16, 24	2, 16, 24, 36, 37, 38	16, 24, 36, 37	16, 24, 36, 37, 38	125	WATER	A
RAS	RETURN ACTIVATED SLUDGE	--	11	--	11	125	WATER	A
RD	ROOF DRAIN	12	12	--	12	3	3	A
RI	RAW INFLUENT	--	11	--	11, 22	12	WATER	A
RW	RAW WATER	2, 16, 24	2, 16, 24	16, 24	8, 16	AS NOTED	WATER	A
SD	STORM DRAIN	4, 12	4, 12	12	22	NOTE 7	--	--
SE	SECONDARY EFFLUENT	--	11	--	11	125	WATER	A
SA	SAMPLE	15, 16, 18, 24	--	15, 16, 18, 24	--	125	WATER	A
SPD	SUMP PUMP DISCHARGE	2, 16	16, 26	2, 16	16, 26	50	WATER	A
SR	SECONDARY RE-USE	3, 4, 7, 16	8	36, 37	37	225	WATER	A
SS	SANITARY SEWER	11,12	11, 12	--	12,22,27	NOTE 18	AIR	--
SV	SANITARY VENT	11, 27	11, 12, 27	27	11, 12, 27	NOTE 6	WATER	A
TW	TEMPERED WATER	50	50	24	24	3	3	
UD	UNDER DRAIN	--	--	--	27, 33	--	--	--
UW	UTILITY WATER	2, 16, 24	2, 11, 16	2, 16, 24	2, 11, 16	125	WATER	--
V	VENT	16, 24, 29	2, 16, 29	16, 24, 29	2, 16, 29	15 IN HG	NOTE 7	A, E
WAS	WASTE ACTIVATED SLUDGE	--	11	--	11	125	WATER	A

PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
1	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED	2-1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3. THREADED, BANDED, BLACK, 150 PSI OR STEEL, ANSI B16.9 BUTT-WELDED. 3-INCH AND LARGER, CAST IRON, ANSI B16.1, 125 PSI FLANGED OR MECHANICAL COUPLINGS.	BRONZE, THREADED, GATE, GLOBE, CHECK, STEEL LUBRICATED PLUG, ECCENTRIC PLUG.
2	STEEL, ASTM 53 SCHEDULE 40, GALVANIZED	2-1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, GALVANIZED 150 PSI, 3 INCH AND LARGER, CAST IRON ANSI B16.1, 125 PSI FLANGED OR MECHANICAL COUPLINGS.	2-1/2 INCH AND SMALLER, ECCENTRIC PLUG, SYNTHETIC RUBBER FACED, AWWA C500, BUTTERFLY, AWWA, FLANGED.
3	STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK.	FORGED STEEL, ANSI B16.11, SOCKET WELDED OR THREADED, BLACK, 2000 PSI, OR STEEL, ANSI B16.9, BUTT-WELDED, SCHEDULE 80.	CAST IRON, LUBRICATED PLUG.
4	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED	CAST IRON, ANSI B16.12, THREADED, DRAINAGE PATTERN.	--------
5	WELDED STEEL, AWWA C200, UNLINED.	WELDED STEEL, FABRICATED, AWWA C200, UNLINED.	AS INDICATED ON DRAWINGS.
6	STEEL, ASTM A106, OR A53, SCHEDULE 40, SEAMLESS, BLACK.	STEEL, ANSI B16.9, BUTT-WELDED, CAST IRON, ANSI B16.1, 125 PSI, FLANGED, FORGED STEEL, SOCKET WELDED, ANSI B16.11, 2000 PSI OR STEEL, ANSI B16.5, 150 PSI FLANGED.	CAST IRON, FLANGED, LUBRICATED PLUG.
7	STEEL, ASTM 53 SCHEDULE 40, GALVANIZED	MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, GALVANIZED, 300 PSI.	BRONZE, THREADED GLOBE, BALL, CHECK.
8	WELDED STEEL, AWWA C200.	WELDED, STEEL, AWWA C200, FABRICATED.	AS INDICATED ON DRAWINGS.
9	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED GRADE B, WALL THICKNESS OF WROUGHT STEEL PIPE.	2-1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI, 3-INCH AND LARGER, STEEL. ANSI B16.9, BUTT-WELDED.	ECCENTRIC PLUG, SEE SPECIFICATIONS FOR VALVES USED IN FUEL SYSTEM.
10	STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK.	1-1/4 INCH AND SMALLER, FORGED STEEL, ANSI B16.11, THREADED OR SOCKET WELDED, BLACK, 3000 PSI, WITH FLANGED AMMONIA UNIONS. 1-1/2 INCH AND LARGER, STEEL, ANSI B16.9, BUTT-WELDED OR FLANGED, SCHEDULE 80.	SEMI-PLUG AND YOKE TYPE OR BALL FOR CHLORINE SERVICE, FORGED CARBON STEEL.
11	DUCTILE IRON, ANSI A21.51, (AWWA C151), CLASS 51 (350 PSI), BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS (AWWA C111), OR 125 PSI FLANGED (TYPICAL SERVICE - WATER LINES) PER SPECIFICATION SECTION 02565.	DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECHANICAL JOINTS (AWWA C111), 250 PSI (PRESSURE RATING) 12-INCHES AND SMALLER, 150 PSI (PRESSURE RATING) 14-INCHES AND LARGER, WITH 125 PSI ANSI B16.1 FLANGES.	GATE, AWWA C-900, 'O' RING SEALS, MECHANICAL JOINT ENDS, BUTTERFLY C-504.
12	CAST IRON SOIL, ANSI/ASTM A-74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS, AT THE OPTION OF THE CONTRACTOR, DUCTILE IRON (GROUP NO. 11) MAY BE SUBSTITUTED.	CAST IRON SOIL, ANSI/ASTM A-74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS. AT THE OPTION OF THE CONTRACTOR, DUCTILE IRON (GROUP NO. 11) MAY BE SUBSTITUTED.	AS INDICATED ON DRAWINGS.
13	CORROSION RESISTANT (HIGH SILICON CONTENT) CAST IRON, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.	CORROSION RESISTANT (HIGH SILICON CONTENT) CAST IRON, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.	--------
14	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL, TYPE 316 ANSI B16.3, SCREWED, 150 PSI, ANSI B16.9, BUTT-WELDED, SCHEDULE 40S, OR 150 PSI FLANGED.	STAINLESS STEEL, BALL, FLANGED, CHECK, LADISH, AS SHOWN ON DRAWINGS.
15	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL, TYPE 316 ANSI B16.9, BUTT-WELDED SCHEDULE 10S OR 150 PSI FLANGED.	STAINLESS STEEL, AS INDICATED ON DRAWINGS.
16	POLYVINYL, CHLORIDE, SCHEDULE 80, NORMAL IMPACT, ASTM D1785.	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT, SOCKET SOLVENT WELD JOINTS, ASTM D2467.	POLYVINYL CHLORIDE, BALL, DIAPHRAGM, BUTTERFLY, BALL OR LIFT CHECK.
17	POLYPROPYLENE, ASTM D4101, SCHEDULE 40, WITH HEAT FUSED JOINTS.	POLYPROPYLENE, SCHEDULE 40, DRAINAGE TYPE WITH HEAT FUSED SOCKET JOINTS.	--------
18	FIBERGLASS REINFORCED PLASTIC, ASTM D2996, FILAMENT WOUND, SOCKET AND SPIGOT ENDS, ADHESIVE BONDED.	FIBERGLASS REINFORCED PLASTIC, FILAMENT-WOUND, SOCKET ENDS, ADHESIVE BONDED, OR FIBERGLASS FLANGED.	PLASTIC LINED, FLANGED, FLANGES TO MATCH 150 PSI ANSI B16.5 DIMENSIONS, OR AS INDICATED ON DRAWINGS.
19	POLYVINYL CHLORIDE PRESSURE PIPE ASTM D2241 WITH BELL AND SPIGOT JOINTS.	CAST IRON, 150 PSI, FOR POLYVINYL CHLORIDE PIPE, AWWA C110 CEMENT MORTAR LINED, AWWA C104.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINT ENDS, BUTTERFLY, AWWA C-504, ECCENTRIC PLUG, BALL.
20	CHLORINATED POLYVINYL CHLORIDE PRESSURE PIPE (CPVC), SCHEDULE 40, ASTM D1784.	CHLORINATED POLYVINYL CHLORIDE, SCHEDULE 40, SOCKET SOLVENT WELD JOINTS, ASTM D2467.	CHLORINATED POLYVINYL CHLORIDE, BALL, DIAPHRAGM, BUTTERFLY, BALL OR LIFT CHECK.
21	NOT USED		
22	REINFORCED CONCRETE, ASTM C76, GASKETED.	SAME AS GROUP NO. 8	--------
23	TEMPERED GLASS, (ARMORED, WHERE BURIED). ANSI/ASTM C599.	TEMPERED GLASS DRAINAGE TYPE WITH COMPRESSION COUPLINGS AND TEFLON JOINTS, ANSI/ASTM C599 (ARMORED WHERE BURIED).	--------
24	COPPER, ASTM B88, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED.	WROUGHT COPPER OR CAST BRONZE, ANSI B16.22, SOLDER JOINT, 150 PSI, OR COMPRESSION FITTINGS, (FOR OXYGEN PIPING USE SILVER SOLDER, FOR COMPRESSED AIR PIPING USE 95-5 TIN-ANTIMONY SOLDER).	BRONZE, SOLDER JOINT, GLOBE, CHECK, GATE, SEE SPECIFICATIONS.
25	STEEL, ASTM A106 OR A53, SCHEDULE 40, SEAMLESS, BLACK, SARAN OR POLYPROPYLENE-LINED.	STEEL, ANSI B16.5, 150 PSI FLANGED, SARAN OR POLYPROPYLENE-LINED.	CAST STEEL PLUG, DIAPHRAGM OR CHECK, 150 PSI FLANGED, SARAN OR POLYPROPYLENE-LINED.
26	SAME AS GROUP NO. 11 (TYPICAL SERVICE - SLUDGE AND SEWAGE LINES).	DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECHANICAL JOINTS (AWWA C111), 250 PSI (PRESSURE RATING) 12-INCHES AND SMALLER, 150 PSI (PRESSURE RATING) 14-INCHES AND LARGER, WITH 125 PSI ANSI B16.1 FLANGES.	SEE VALVE SCHEDULE AND SPECIFICATIONS.
27	POLYVINYL CHLORIDE GRAVITY SEWER PIPE, SDR 35 ASTM D3034, BELL AND SPIGOT.	POLYVINYL CHLORIDE, ANSI/ASTM D3034 & F679, BELL AND/OR SPIGOT, DRAIN, WASTE, AND VENT	--------
28	REINFORCED CONCRETE, AWWA C302, CLASS- SEE DRAWINGS. (TYPICAL SERVICE - PRESSURE PIPELINES).	SAME AS GROUP NO. 8.	AS INDICATED ON DRAWINGS.
29	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED	2-INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI, 2-1/2 INCH AND LARGER, STEEL ANSI B16.9, BUTT-WELDED.	SAME AS GROUP NO. 1, EXCEPT LUBRICATED PLUG SEE SPECIFICATIONS.
30	SAME AS GROUP NO. 11, GLASS-LINED OR STEEL ASTM A120, SCHEDULE 40, GLASS-LINED.	SAME AS GROUP NO. 11, GLASS-LINED OR STEEL, ANSI B16.9, SCHEDULE 40, GROOVED WITH MECHANICAL COUPLINGS, GLASS-LINED.	SEE SPECIFICATIONS.
31	2-1/2 INCH AND SMALLER, STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK. 3-INCH AND LARGER DUCTILE IRON, ANSI A21.51 (AWWA C151) OR CAST IRON ANSI A21.56 OR A21.8 MECHANICAL COUPLINGS OR 125 PSI FLANGED.	2-1/2 INCH AND SMALLER, FORGED STEEL, ANSI B16.11, SOCKET-WELDED OR THREADED, BLACK, 2000 PSI, OR STEEL, ANSI B16.9, BUTT-WELDED SCHEDULE 80. 3-INCH AND LARGER, DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, MECHANICAL COUPLING OR 125 PSI FLANGED.	CAST IRON, LUBRICATED PLUG.

PIPE MATERIAL SCHEDULE 1 OF 2
SCALE: NTS

M
3010

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NATHAN ROGERS
NO. 11683547
STATE OF UTAH
12-5-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

DESIGN
DESIGN N. ROGERS
DRAWN R. GARCIA

MECHANICAL

PIPE MATERIAL SCHEDULE - 1

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
M-01
SHEET 046 OF 126

P:\Magna Water District\483-20-02 Reuse Projects\FINAL DESIGN\2.0 Design Phase\2.9 Drawings\sht\4832002_M-01.dwg Plotted: 12/13/2022 4:20 PM By: Nate Rogers

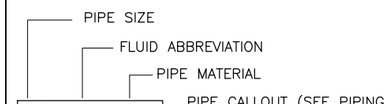
PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
32	PVC TYPE 1, GRADE 1, 18 ASTM D–1784 AWWA C–905.	SHORT BODY CAST IRON OR DUCTILE IRON AWWA C110.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINT ENDS, MUELLER A–2360; BUTTERFLY, AWWA C–504, ECCENTRIC PLUG, DEZURIK SERIES 118; BALL, PRATT.
33	CORRUGATED HDPE SLOTTED, SPLIT COUPLING JOINTS.	FABRICATED OR MOLDED.	––––––
34	FIBERGLASS DOUBLE CONTAINMENT (FOR USE WITH FLAMMABLE LIQUIDS) SEE SPECS.	FIBERGLASS.	AS PER MANUFACTURER'S RECOMMENDATIONS.
35	CENTRIFUGALLY CAST FIBERGLASS REINFORCED POLYMER MORTAR PIPE, SN–46, PER ASTM D3262 WITH FILAMENT WOUND SLEEVE COUPLINGS WITH ELASTOMERIC MEMBRANE GASKET JOINTS PER ASTM D–4161.	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN SEWER PIPE.	––––––
36	HIGH DENSITY POLYETHYLENE WATER PIPE PER AWWA C–901, 2 INCHES AND SMALLER, DR–7, 200 PSI, MEETING ASTM PE3406–3408, TABLE 6.	BRASS COMPRESSION OR PACK–JOINT FITTINGS MEETING AWWA C800. USE BRASS DOUBLE STRAP SERVICE SADDLES WITH CC THREAD.	BRASS CORPORATION STOPS, CURB STOPS PER AWWA C800.
37	HIGH DENSITY POLYETHYLENE PIPE PER ASTM PE 3408, TYPE III, CAT 5, CLASS C, GRADE P34, SECONDARY REUSE=SDR–11, EFFLUENT RETURN=SDR–17. MEETING ASTM D3350, ASTM F–714 WITH PURPLE STRIPE. JOINTS SHALL BE BUTT FUSION PER ASTM D2657 AND MANUFACTURER'S RECOMMENDATIONS, TO PROVIDE HEAT WELD AS STRONG AS PIPE WALL.	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN PIPE.	––––––
38	POLYVINYL CHLORIDE, DR–14, AWWA C–900, MADE TO DUCTILE IRON O.D. FOR "PUSH–ON" JOINTS. JOINTS SHALL BE BELL AND SPIGOT WITH ELASTOMERIC GASKET MEETING REQUIREMENTS OF ASTMD3139.	DUCTILE IRON, CLASS 250, MEETING AWWA C–110 WITH CEMENT LINING PER AWWA C–104 AND 1–MIL BITUMINOUS TAR COATING. JOINTS SHALL BE MECHANICAL JOINTS MEETING AWWA C–111. DUCTILE IRON FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT PER AWWA C–105.	IRON BODY, BONZE MOUNTED GATE VALVES MEETING AWWA C–509 WITH NON–RISING STEM DESIGN, "O"–RING SEALS, 2–INCH SQUARE OPERATING NUT. JOINTS SHALL BE FLANGED OR MECHANICAL JOINT, AS INDICATED.
39	STAINLESS STEEL, TYPE 304L, ASTM A774, SCH 105, 6–INCH AND SMALLER	STAINLESS STEEL, TYPE 304L, ANSI B16.9 BUTTWELDED, SCH 105 OR 150 PSI FLANGED.	TAINLESS STEEL, AS INDICATED ON DRAWINGS
40	STAINLESS STEEL, TYPE 304L ASTM A774, SCH 5S, 8–INCH AND LARGER	STAINLESS STEEL, TYPE 304L, ANSI B16.9 BUTTWELDED, SCH 5S OR 150 PSI FLANGED	STAINLESS STEEL, AS INDICATED ON DRAWINGS
41	MONEL TUBING, SERIES 400	MONEL COMPRESSION FITTINGS	STAINLESS STEEL, TYPE 316, BALL VALVES
42	STEEL, ASTM A 53/A 53M, TYPE E OR S, GRADE B, SCHEDULE 40, BLACK. WALL THICKNESS OF WROUGHT–STEEL PIPE SHALL COMPLY WITH ASME B36.10M.	1. MALLEABLE–IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN, WITH THREADED ENDS ACCORDING TO ASME B1.20.1. 2. STEEL THREADED FITTINGS: ASME B16.11, FORGED STEEL WITH THREADED ENDS ACCORDING TO ASME B1.20.1. 3. UNIONS: ASME B16.39, CLASS 150, MALLEABLE IRON WITH BRASS–TO–IRON SEAT, GROUND JOINT, AND THREADED ENDS ACCORDING TO ASME B1.20.1. 4. GASKET MATERIAL: THICKNESSS, MATERIAL, AND TYPE SUITABLE FOR FUEL OIL.	
43	FLEXIBLE UL 971 COMPLIANT, DOUBLE–CONTAINMENT PIPING. CARRIER PIPE PVDF COMPLYING WITH ASTM D 3222. CONTAINMENT PIPE PE ASTM D 4976.	PLASTIC TO STEEL PIPE TRANSITION FITTINGS: FACTORY–FABRICATED FITTINGS WITH PLASTIC END MATCHING OR COMPATIBLE WITH CARRIER PIPING, AND STEEL PIPE END COMPLYING WITH ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B.	
44	PVC SOLID WALL PIPE, ASTM D 2665. DRAIN, WASTE, AND VENT.	PVC SOCKET FITTINGS: ASTM D 2665, SOCKET TYPE, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS.	
45	STAINLESS STEEL PIPE, ASTM A312, TYPE 304/304L, FULL FINISHED ANNEALED AND CERTIFIED FOR USE WITH THE VIC–PRESS 304 PIPING SYSTEM. 1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: 1.1. VICTAULIC COMPANY, VIC–PRESS 304. 1.2. OR EQUAL.	PRESSURE FIT FITTINGS AND CONNECTION FOR PIPING SYSTEMS 2–INCH AND SMALLER, FITTINGS SHALL BE PRECISION, COLD DRAWN, AUSTENITIC STAINLESS STEEL WITH ELASTOMERIC O–RING SEALS, AND PRESSURE–SEALED ENDS.	
46	HARD COPPER, ASTM B88, TYPE L AND ASTM B 88, TYPE M DRAWN TEMPER.	1. CAST–COPPER SOLDER–JOINT FITTINGS: ASME B16.18, PRESSURE FITTINGS. 2. WROUGHT–COPPER SOLDER–JOINT FITTINGS: ASME B16.22, WROUGHT–COPPER PRESSURE FITTINGS. 3. BRONZE FLANGES: ASME B16.24, CLASS 150, WITH SOLDER–JOINT ENDS. 4. COPPER UNIONS: MSS SP–123, CAST–COPPER–ALLOY, HEXAGONAL–STOCK BODY, WITH BALL–AND–SOCKET, METAL–TO–METAL SEATING SURFACES, AND SOLDER–JOINT OR THREADED ENDS. 5. COPPER PRESSURE–SEAL–JOINT FITTINGS: a. MANUFACTURES: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: 1) ELKHART PRODUCTS CORPORATION; INDUSTRIAL DIVISION. 2) NIBCO INC. 3) VIEGA; PLUMBING AND HEATING SYSTEMS. b. NPS 2 AND SMALLER: WROUGHT–COPPER FITTING WITH EPDM–RUBBER O–RING SEAL IN EACH END. c. NPS 2–1/2 TO NPS 4: CAST–BRONZE OR WROUGHT–COPPER FITTING W/ EPDM–RUBBER O–RING SEAL IN EACH END.	
47	CARBON STEEL PIPE, FULLY ANNEALED, SEAMLESS C 1010 CARBON STEEL HYDRAULIC TUBING. ABOVEGROUND PIPING SIZE WALL THICKNESS PSI WORKING 5/8" 0.058 2550 3/4" 0.065 2350 7/8" 0.072 2200 1" 0.083 2250 1 1/4" 0.109 2350 1 1/2" 0.134 2450	FEROLUK "BITE TYPE" COMPRESSION FITTINGS FRATED AT MINIMUM 6,000 PSI WORKING PRESSURE MANUFACTURED BY PARKER HANNIFAN CORP OR APPROVED EQUAL.	
48	DOUBLE PASS WELDED CARBON STEEL, ASTM A106 GRADE B SEAMLESS. PIPE SHALL BE KEPT METICULOUSLY CLEAN. WELDING SHALL BE DONE WITH LOW HYDROGEN ROD 7018.	SOCKET WELD FORGED STEEL FITTINGS. SYSTEM SHALL BE INSTALLED SAE 4 BOLT FLANGES AND SAE WELD ADAPTORS WITH ABSOLUTE MINIMUM OF NPT CONNECTIONS.	
49	STEEL PIPE SHALL CONFORM TO ASTM A53/A 53M, TYPE E OR S, GRADE B, BLACK OR HOT–DIPPED ZINC COATED WITH ENDS THREADED ACCORDING TO ASME B1.20.1. 1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: 1.1. ANVIL INTERNATIONAL, INC. 1.2. STAR PIPE PRODUCTS	GROVED–END FITTINGS: ASTM A 47/A 47M, MALLEABLE–IRON CASTINGS OR ASTM A536 DUCTILE IRON CASTING; WITH GROOVES ACCORDING TO AWWA C606 AND DIMENSIONS MATCHING STEEL PIPE. COUPLINGS: AWWA C606 OR UL 213, FOR STEEL PIPE DIMENSIONS AND RATED FOR 300 PSIG MINIMUM WORKING PRESSURE. INCLUDE FERROUS HOUSING SECTIONS, GASKET SUITABLE FOR COMPRESSED AIR, AND BOLTS, AND NUTS. PROVIDE EPDM GASKETS FOR OIL FREE COMPRESSED AIR. PROVIDE NBR GASKETS IF COMPRESSED AIR CONTAINS OIL OR OIL VAPOR.	

GENERAL NOTES:

1. ALTHOUGH SEVERAL PIPING MATERIALS ARE SHOWN THAT MAY BE USED FOR A GIVEN FUNCTION, ONLY THE CALLED OUT PIPING MATERIAL SHOWN ON THE CONSTRUCTION DRAWINGS AND SPECIFICATION SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO USE A DIFFERENT MATERIAL.

TYPICAL PIPE DESIGNATION:



DRAWING NOTES:

1. PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO REQUIREMENTS OF THE SPECIFICATIONS.
2. LEAKAGE ALLOWANCE IS AS FOLLOWS:
   (A) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE.
   (B) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE FOR UNBURIED PIPE AND NOT MORE THAN 0.002 GALLON PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.
   (C) PIPES SO DESIGNATED SHALL NOT SHOW A LEAKAGE OF MORE THAN 0.15 GALLON PER HOUR PER INCH OF DIAMETER PER 100 FEET OF PIPE.
   (D) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF PRESSURE OF MORE THAN 5 PERCENT.
   (E) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF VACUUM OR MORE THAN 4 INCHES MERCURY COLUMN.
3. FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.
4. ANY DEVIATION FROM THE PIPING MATERIALS OR FIELD TEST REQUIREMENTS SHOWN WILL BE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
5. PIPING GROUP NUMBER SHOWN THUS * SHALL BE INSULATED, SEE PIPING SECTION OF SPECIFICATIONS FOR INSULATING MATERIALS.
6. STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.
7. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.
8. NO APPARENT LEAKS UNDER NORMAL OPERATING CONDITIONS.
9. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
10. PIPING MATERIALS SHALL BE IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
11. FOR VALVES 4 INCHES AND LARGER SEE VALVE SCHEDULE. FOR SPECIAL VALVES SEE SPECIFICATIONS.
12. CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED, THUS:
13. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.
14. EXPOSED PIPING SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY ENGINEER.
15. PIPING MATERIAL SHALL BE NON–ABRASIVE FLEXIBLE RUBBER HOSE AND QUICK CONNECTION COUPLINGS WITH GROUP NO. 1 AT EQUIPMENT.
16. VALVES 2–1/2 INCH AND SMALLER MAY HAVE SCREWED ENDS VALVES 3 INCH AND LARGER SHALL HAVE FLANGED ENDS. UNLESS OTHERWISE SHOWN OR SPECIFIED.
17. NO PVC PIPE FOR DRAIN OR SANITARY SEWER PLUMBING PIPE MAY NOT BE USED ABOVE GROUND OR BELOW GROUND FOR PLUMBING PURPOSES.
18. FOR COMPRESSED AIR PIPING ON PLUMBING DRAWINGS, SEE SPECIFICATION SECTION 15067.

PIPE MATERIAL SCHEDULE 2 OF 2
SCALE: NTS

M
3010

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NATHAN ROGERS
No. 11698
STATE OF UTAH
12-5-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

DESIGN
DESIGN N. ROGERS
DRAWN R. GARCIA

MECHANICAL

PIPE MATERIAL SCHEDULE - 2

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
M-02

SHEET 047 OF 126

GATE SCHEDULE

GATE NO.	LOCATION	DRAWING	SERVICE	TYPE	SIZE (H X W)*	MATERIAL	SEATING HEAD (FT)	UNSEATING HEAD (FT)	REMARKS
70-SG-0011	FILTER SPLITTER BOX	M-12	FILTER #1 INTAKE ISOLATION	UPWARD OPENING SLIDE	24" X 24"	316 SST	10	10	WHIPPS MODEL 825, SELF CONTAINED WITH CRANK OPERATOR, SUBMERGED SERVICE, OR ENGINEER APPROVED EQUAL
70-SG-0021	FILTER SPLITTER BOX	M-12	FILTER #2 INTAKE ISOLATION	UPWARD OPENING SLIDE	24" X 24"	316 SST	10	10	WHIPPS MODEL 825, SELF CONTAINED WITH CRANK OPERATOR, SUBMERGED SERVICE, OR ENGINEER APPROVED EQUAL
70-SG-0012	REUSE PUMP STATION	M-06, M-07	FILTER #1 EFFLUENT ISOLATION	UPWARD OPENING SLIDE	24" X 24"	316 SST	10	10	WHIPPS MODEL 825, NON-SELF CONTAINED WITH CRANK OPERATOR AND PEDESTAL, SUBMERGED SERVICE, OR ENGINEER APPROVED EQUAL
70-SG-0022	REUSE PUMP STATION	M-06, M-07	FILTER #2 EFFLUENT ISOLATION	UPWARD OPENING SLIDE	24" X 24"	316 SST	10	10	WHIPPS MODEL 825, NON-SELF CONTAINED WITH CRANK OPERATOR AND PEDESTAL, SUBMERGED SERVICE, OR ENGINEER APPROVED EQUAL

*NOMINAL DIMENSIONS LISTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO GATE FABRICATION.

VALVE SCHEDULE (SEE NOTE 1)

VALVE NO.	LOCATION	DRAWING	TYPE	SIZE (IN)	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	OPERATOR	VOLTAGE	PHASE	ACTUATOR TYPE
70-CV-0031	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	150	225	N/A	N/A	N/A	--
70-CV-0032	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	150	225	N/A	N/A	N/A	--
70-CV-0033	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	150	225	N/A	N/A	N/A	--
70-CV-0034	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	6	150	225	N/A	N/A	N/A	--
70-CV-0041	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	20	100	MANUAL	N/A	N/A	--
70-CV-0042	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	20	100	MANUAL	N/A	N/A	--
70-CV-0043	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	10	20	100	MANUAL	N/A	N/A	--
70-CV-0030	REUSE PUMP STATION	M-05	GLOBE STYLE SILENT CHECK VALVE	12	150	225	MANUAL	N/A	N/A	--
70-BFV-0031	REUSE PUMP STATION	M-05	BUTTERFLY	10	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0032	REUSE PUMP STATION	M-05	BUTTERFLY	10	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0033	REUSE PUMP STATION	M-05	BUTTERFLY	10	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0034	REUSE PUMP STATION	M-05	BUTTERFLY	6	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0041	REUSE PUMP STATION	M-05	BUTTERFLY	10	20	100	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0042	REUSE PUMP STATION	M-05	BUTTERFLY	10	20	100	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0043	REUSE PUMP STATION	M-05	BUTTERFLY	10	20	100	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0030	REUSE PUMP STATION	M-05	BUTTERFLY	12	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0031	REUSE PUMP STATION	M-05	BUTTERFLY	4	150	225	MANUAL	N/A	N/A	HANDWHEEL
70-BFV-0130	OUTSIDE OF REUSE PUMP STATION	C-04	BUTTERFLY	16	150	225	MANUAL	N/A	N/A	BURIED 2" SQUARE NUT
70-BFV-0140	OUTSIDE OF REUSE PUMP STATION	C-04	BUTTERFLY	16	20	100	MANUAL	N/A	N/A	BURIED 2" SQUARE NUT
70-BFV-0200	OUTSIDE OF REUSE PUMP STATION	C-08	BUTTERFLY	2	20	100	MANUAL	N/A	N/A	HANDWHEEL W/ EXTENSION AND FLOOR MOUNTED VALVE STAND

AIR VALVE SCHEDULE

VALVE NO.	LOCATION	DRAWING	WORKING PRESSURE (PSI)	TEST PRESURE (PSI)	AIR VALVE TYPE AND SIZE (IN)		AIR VALVE VENT PIPE & ISOLATION BFV DIAMETER
					SIZE (IN)	MANUFACTURER AND MODEL NO. (OR APPROVED EQUAL)	
70-AV-0030	REUSE PUMP STATION	M-05	150	225	1	AIR RELEASE VALVE, VALMATIC MODEL 22.3 WITH FUSION BONDED EPOXY INSIDE AND OUT	1"
70-AV-0031	REUSE PUMP STATION	M-05	150	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED	2"
70-AV-0032	REUSE PUMP STATION	M-05	150	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED	2"
70-AV-0033	REUSE PUMP STATION	M-05	150	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED	2"
70-AV-0034	REUSE PUMP STATION	M-05	150	225	1	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED	1"
70-AV-0040	REUSE PUMP STATION	M-05	20	225	1	AIR RELEASE VALVE, VALMATIC MODEL 22.3 WITH FUSION BONDED EPOXY INSIDE AND OUT	1"
70-AV-0041	REUSE PUMP STATION	M-05	20	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED, INCLUDE LOW DUROMETER SEAT	2"
70-AV-0042	REUSE PUMP STATION	M-05	20	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED, INCLUDE LOW DUROMETER SEAT	2"
70-AV-0043	REUSE PUMP STATION	M-05	20	225	2	AIR AND VACUUM VALVE FOR V.T.P. (WELL) SERVICE VALMATIC 100ST EPOXY LINED AND COATED, INCLUDE LOW DUROMETER SEAT	2"

TANK SCHEDULE

TANK NO.	LOCATION	DRAWING	MINIMUM VOLUME (GAL)	MAX ALLOWABLE PRESSURE (PSI)	TYPE	CONNECTION SIZE (IN)	REMARKS
70-TNK-0030	REUSE PUMP STATION	M-05	2,000	150	BLADDER TYPE SURGE TANK	12	SEE SPECIFICATIONS

METER SCHEDULE

METER NO.	LOCATION	DRAWING	WORKING PRESSURE (PSI)	TEST PRESURE (PSI)	TYPE	SIZE (IN)	REMARKS
70-FE-0030	REUSE PUMP STATION	M-12	150	225	ELECTROMAGNETIC FLOW METER	12	SEE SPECIFICATIONS
70-FE-0040	REUSE PUMP STATION	M-12	20	100	ELECTROMAGNETIC FLOW METER	12	SEE SPECIFICATIONS

PUMP SCHEDULE

PUMP NO.	LOCATION	DRAWING	SERVICE	TYPE	DISCHARGE SIZE (IN)	MAX FLOW (GPM)	MAX HEAD (FT)	VOLTAGE	PHASE	HP (MIN)	REMARKS
70-P-0031	REUSE PUMP STATION	M-05	SECONDARY REUSE	VTP W/VFD	10	1616	345	460	3	200	SEE SPECIFICATIONS
70-P-0032	REUSE PUMP STATION	M-05	SECONDARY REUSE	VTP W/VFD	10	1616	345	460	3	200	SEE SPECIFICATIONS
70-P-0033	REUSE PUMP STATION	M-05	SECONDARY REUSE	VTP W/VFD	10	1616	345	460	3	200	SEE SPECIFICATIONS
70-P-0034	REUSE PUMP STATION	M-05	SECONDARY REUSE	VTP W/VFD	6	550	298	460	3	60	SEE SPECIFICATIONS
70-P-0041	REUSE PUMP STATION	M-05	EFFLUENT RETURN	VTP W/VFD	10	1085	23	460	3	10	SEE SPECIFICATIONS
70-P-0042	REUSE PUMP STATION	M-05	EFFLUENT RETURN	VTP W/VFD	10	1085	23	460	3	10	SEE SPECIFICATIONS
70-P-0043	REUSE PUMP STATION	M-05	EFFLUENT RETURN	VTP W/VFD	10	1085	23	460	3	10	SEE SPECIFICATIONS
70-P-0011	REUSE PUMP STATION	M-07	BACKWASH WASTE	CFP	2	TBD BY MFR	35	460	3	5	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-P-0012 (FUTURE)	REUSE PUMP STATION	M-07	BACKWASH WASTE	CFP	2	TBD BY MFR	35	460	3	5	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-P-0021	REUSE PUMP STATION	M-07	BACKWASH WASTE	CFP	2	TBD BY MFR	35	460	3	5	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-P-0022 (FUTURE)	REUSE PUMP STATION	M-07	BACKWASH WASTE	CFP	2	TBD BY MFR	35	460	3	5	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-P-0051	REUSE PUMP STATION	M-11	SUMP PUMP	NON-CLOG	3	130	25	480	3	2	SEE SPECIFICATIONS
70-P-0052	REUSE PUMP STATION	M-11	SUMP PUMP	NON-CLOG	3	130	25	480	3	2	SEE SPECIFICATIONS
70-P-0061	REUSE PUMP STATION	M-05	CHLORINE BOOSTER	SINGLE STAGE	2	50	450	460	3	11	SEE SPECIFICATIONS

MISCELLANEOUS EQUIPMENT SCHEDULE

EQUIPMENT NO.	LOCATION	DRAWING	TYPE	CONNECTION SIZE (IN)	MAX FLOW (GPM)	VOLTAGE	PHASE	HP (MIN)	REMARKS
70-ME-0010	REUSE PUMP STATION	M-07	CLOTH DISC FILTER	10	3232	460	3	1	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-ME-0020	REUSE PUMP STATION	M-07	CLOTH DISC FILTER	10	3232	460	3	1	PROVIDED BY EQUIPMENT VENDOR, AQUA-AEROBICS
70-MX-0010	FILTER SPLITTER BOX	M-05	SUBMERSIBLE CHEMICAL MIXER	3/4	15	460	3	1.5	DENORA CHLOR-A-VAC CHEMICAL MIXER, MODEL 1422A, PROVIDED BY OWNER, INSTALLED BY CONTRACTOR**
70-CV-0090	REUSE PUMP STATION	M-05	CHEMICAL INJECTION VALVE	1-1/2	N/A	N/A	N/A	N/A	SAF-T-FLO MODEL HS-250
70-AE-0033	REUSE PUMP STATION	M-05	AUTO SAMPLER	3/8	1.25	115	1	N/A	HACH MODEL AS950, WITH 5.5 GALLON SAMPLE VOLUME

**CONTRACTOR TO PURCHASE AND INSTALL MIXER GUIDE RAIL ASSEMBLY AND WALL MOUNTED LIFTING CRANE ASSEMBLY, COORDINATE WITH OWNER ON MODEL REQUIRED.

NOTES:

1. VALVE SCHEDULE IS PROVIDED FOR VALVES 4" AND LARGER ONLY. ISOLATION VALVES FOR AIR VALVE ASSEMBLIES ARE ONLY SHOWN IN AIR VALVE SCHEDULE.
2. AIR VALVES SHALL BE RATED TO ACCOMMODATE THE SPECIFIED WORKING AND TEST PRESSURES SHOWN AT EACH LOCATION.
3. EQUIPMENT SCHEDULES ARE PROVIDED FOR CONVENIENCE. NOT ALL ITEMS MAY BE INCLUDED. SEE DRAWINGS AND TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION AND VERIFY DATA AND REQUIREMENTS.

LEGEND:

[ ] FUTURE EQUIPMENT (NOT COMPLETED UNDER THIS CONTRACT)

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NATHAN ROGERS 16340 STATE OF UTAH 12-5-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

DESIGN
DESIGN N. ROGERS
DRAWN R. GARCIA

MECHANICAL

MECHANICAL EQUIPMENT AND VALVE SCHEDULE

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
M-03
SHEET 048 OF 126

P:\Magna Water District\483-20-02 Reuse Projects\FINAL DESIGN\2.0 Design Phase\2.9 Drawings\sht\4832002_M-03.dwg Plotted: 12/13/2022 4:20 PM By: Nate Rogers

N

REUSE PUMP STATION
LAYOUT, SEE DRAWING M-05

FILTER AREA LAYOUT,
SEE DRAWING M-06

A B C D

86'-8"

1'-0"

1 2

8"

1'-0"

1'-0"

ELECTRICAL
ROOM

PUMP ROOM

FILTER BAY NO. 1

FILTER BAY NO. 2

FILTER
SPLITTER BOX
9
M-12

36'-0"

10'-0"

6'-0"

A
M-08

10
M-12
FLOW METER
VAULT

4'-0"

12'-0"

SECONDARY REUSE BUILDING
LAYOUT AND KEY – MAIN LEVEL
SCALE: 1/4"=1'-0"

LEGEND:

XX" XX (XX)	SEE DRAWINGS GM-01 AND GM-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING GM-07 THROUGH GM-12 FOR EQUIPMENT SCHEDULE.
×	REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY), SEE M 3389

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NATHAN ROGERS
No. 11693907
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

DESIGN
DESIGN N. ROGERS
DRAWN R. GARCIA

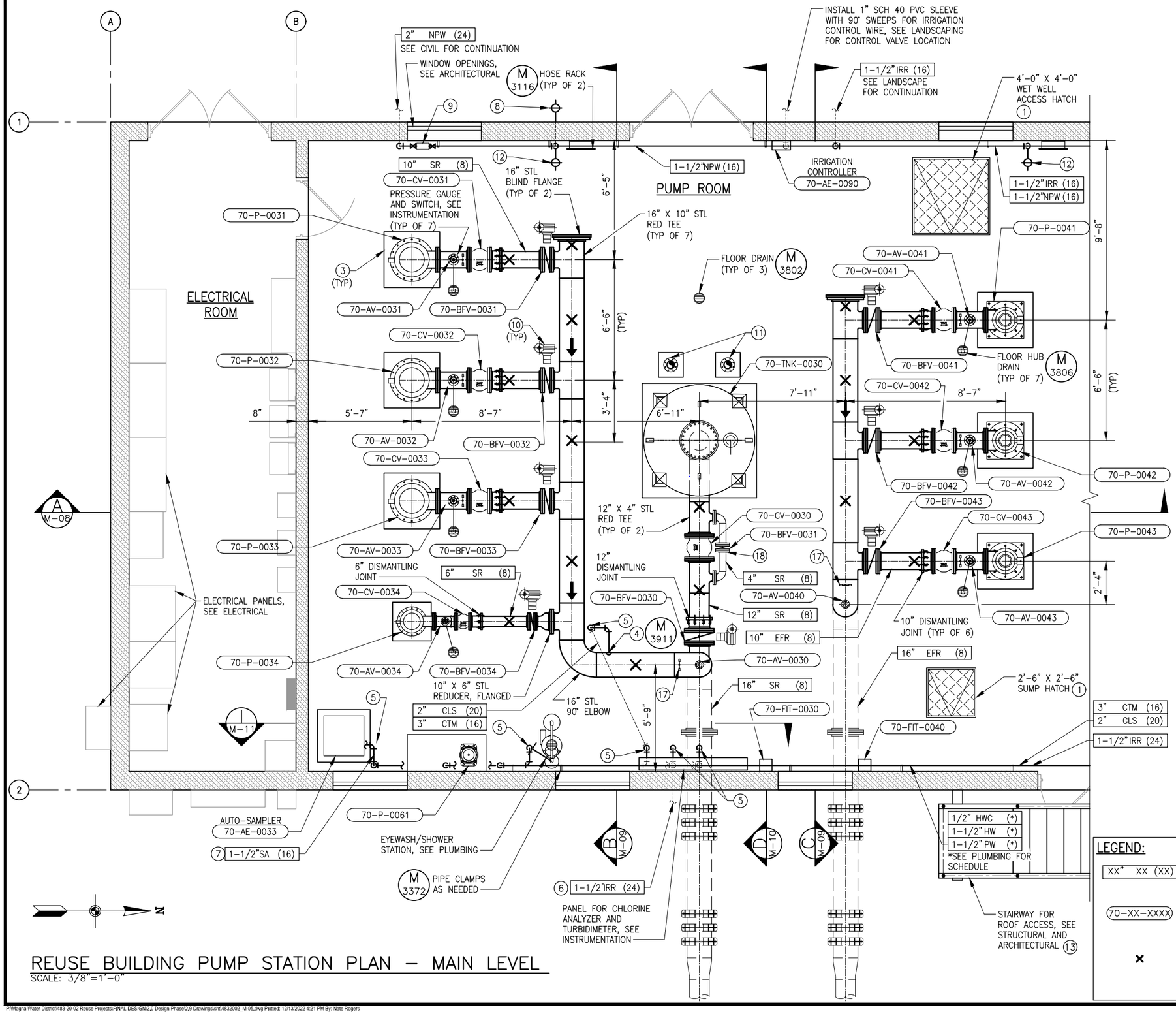
MECHANICAL
SECONDARY REUSE BUILDING
LAYOUT AND KEY -
MAIN LEVEL

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
M-04

SHEET 049 OF 126

P:\Magna Water District\483-20-02 Reuse Projects\FINAL DESIGN\2,0 Design Phase\2,9 Drawings\slh\4832002_M-04.dwg Plotted: 12/13/2022 4:20 PM By: Nate Rogers



REUSE BUILDING PUMP STATION PLAN – MAIN LEVEL

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

NOTES:

1. SEE STRUCTURAL DRAWINGS FOR ACCESS HATCH REQUIREMENTS.
2. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
3. HEIGHT OF PUMP PAD VARIES. CONTRACTOR TO COORDINATE INSTALLATION REQUIREMENTS WITH PUMP MFR TO ENSURE PROPER HEIGHT WHILE MAINTAINING MINIMUM CLEARANCES SHOWN.
4. PROVIDE A CONNECTION ON THE SIDE OF THE 16" PIPE AS SHOWN FOR CHEMICAL INJECTION QUILL, 70-CV-0090. INSTALL A 2" X 2-1/2" REDUCER AND 2" SCH 80 PVC PIPING TO CHLORINE BOOSTER PUMP THROUGH THE FLOOR. M 3911
5. FLOOR SLEEVE M 3300
6. INSTALL 1-1/2" SAMPLE/IRRIGATION LINE FROM FLOW METER VAULT. INSTALL WITH PRESSURE REDUCER SET TO 60 PSI, BRASS ISOLATION BALL VALVE AND A SMOOTH NOSE SAMPLING TAP. M 3110 (SIM)
7. INSTALL 1-1/2" SCH 80 PVC SLEEVE WITH 90° SWEEPS FOR SAMPLE TUBING FROM AUTO-SAMPLER. VERIFY TUBING SIZE WITH AUTO-SAMPLER MFR AND INCREASE SLEEVE SIZE IF REQUIRED.
8. EXTERIOR WALL MOUNTED HOSE BIBB M 3101
9. INSTALL 2" X 1-1/2" REDUCER, WITH PRESSURE REDUCING VALVE SET TO 60 PSI AND BRASS ISOLATION VALVES.
10. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
11. FLOOR SLEEVE WITH SCH 80 PVC BLIND FLANGE FOR WET WELL LEVEL TRANSMITTER, SEE INSTRUMENTATION.
12. INTERIOR WALL MOUNTED HOSE BIBB M 3110
13. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
14. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
15. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
16. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
17. PRESSURE TRANSMITTER WITH INDICATOR, SEE INSTRUMENTATION.
18. SURGE TANK BYPASS PIPING TO BE NOT RESTRICT ACCESS TO CHECK VALVE AND IS TO HAVE COMPLETE ACCESSIBILITY FOR MAINTENANCE.

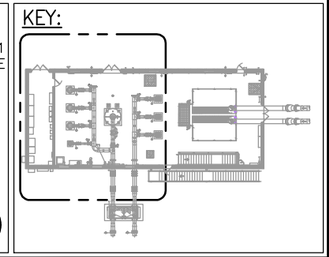
LEGEND:

XX" XX (XX) — SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.

70-XX-XXXX — SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.

× — REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY), SEE M 3389

KEY:



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NATHAN ROGERS — NO. 16384 — STATE OF UTAH — 12-5-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED J. BECKMAN — APPROVED N. ROGERS

DESIGN — DESIGN N. ROGERS — DRAWN R. GARCIA

MECHANICAL

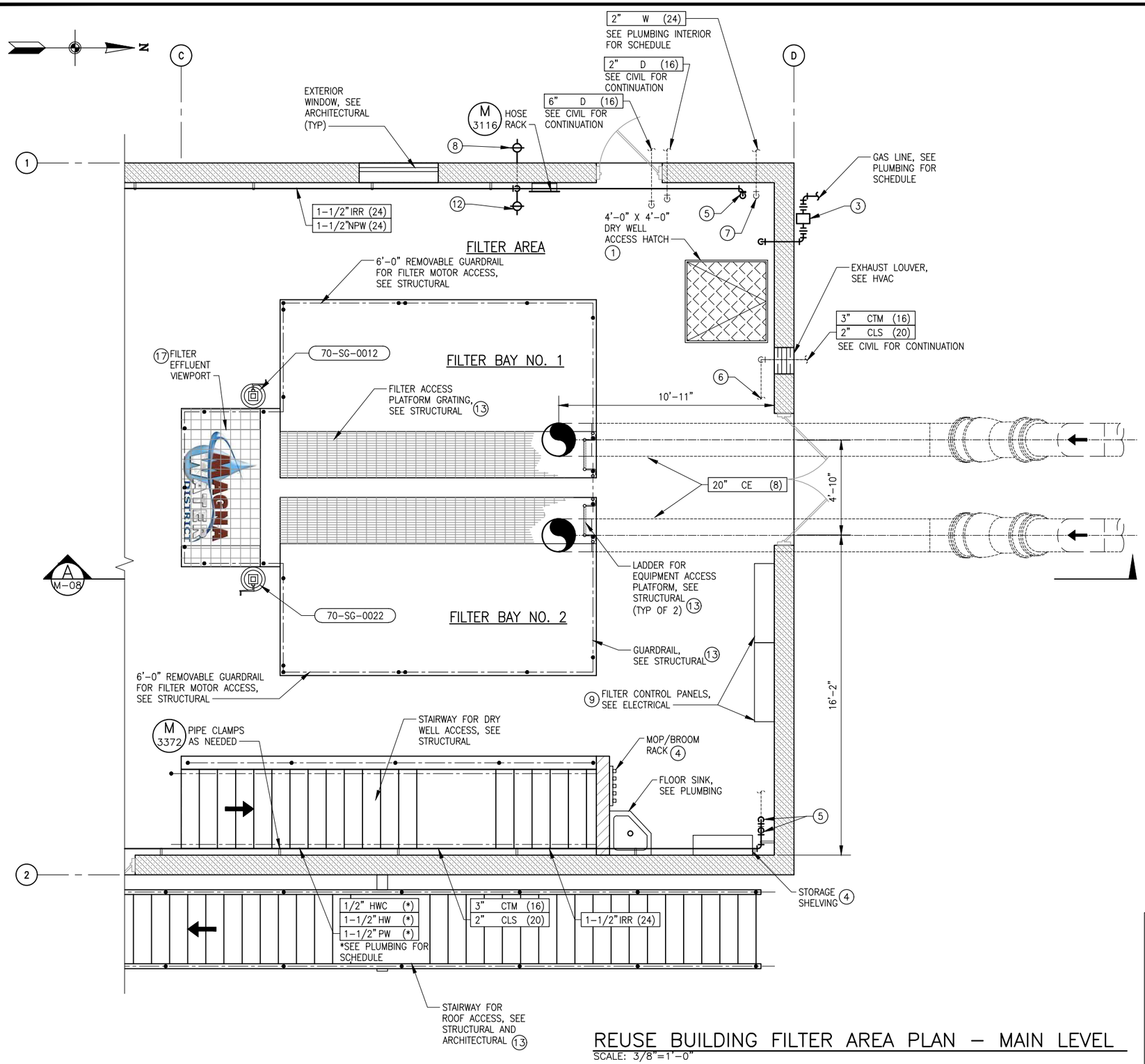
SECONDARY REUSE BUILDING PUMP STATION PLAN - MAIN LEVEL

DATE: DECEMBER 2022 — PROJECT NUMBER 483-20-02

DRAWING NO. M-05

SHEET 050 OF 126

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REUSE BUILDING FILTER AREA PLAN – MAIN LEVEL

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

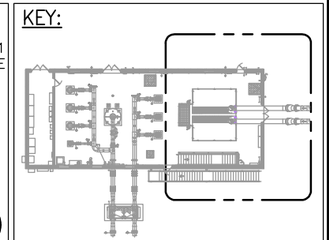
NOTES:

1. SEE STRUCTURAL DRAWINGS FOR ACCESS HATCH REQUIREMENTS.
2. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
3. INSTALL GAS METER WITH REGULATOR. SEE PLUMBING DRAWINGS.
4. CONTRACTOR TO PROVIDE MISCELLANEOUS EQUIPMENT. MOP RACK TO BE 24" BOBRICK MODEL B-239. SHELF TO BE SST, 36" WIDE, REGENCY MODEL 460SS18836KIT.
5. FLOOR SLEEVE (M 3300)
6. 2" CHLORINE PIPE IS TO ENTER INTO THE DRY WELL AND BE SECURED ALONG WALL WITH 3" CONTAINMENT PIPING, SEE DRAWING M-07.
7. SEE PLUMBING DRAWINGS FOR 2" WATER LINE CONNECTIONS.
8. EXTERIOR WALL MOUNTED HOSE BIBB (M 3101)
9. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
10. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
11. FLOOR SLEEVE WITH SCH 80 PVC BLIND FLANGE FOR WET WELL LEVEL TRANSMITTER, SEE DETAIL I-202 ON DRAWING I-11.
12. INTERIOR WALL MOUNTED HOSE BIBB (M 3110)
13. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
14. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
15. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
16. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
17. CONTRACTOR TO PROVIDE AND INSTALL TILE MOSAIC OF OWNER LOGO IN THE BOTTOM OF THE COMBINED FILTER EFFLUENT CHANNEL WITH APPROXIMATE DIMENSIONS OF 48" X 72". MOSIAC TO INCLUDE BORDER AROUND LOGO. THE REMAINDER OF THE EFFLUENT CHANNEL TO BE TILED WITH 4" X 4" WHITE TILES WITH SAME THICKNESS AS MOSAIC TILE. COORDINATE TILE TYPE, LOGO, MOSAIC STYLE AND GROUT COLOR WITH OWNER AND ENGINEER PRIOR TO ORDERING.

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.
×	REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY), SEE (M 3389)

KEY:



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NATHAN ROGERS — NO. 164807 — STATE OF UTAH — 12-5-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

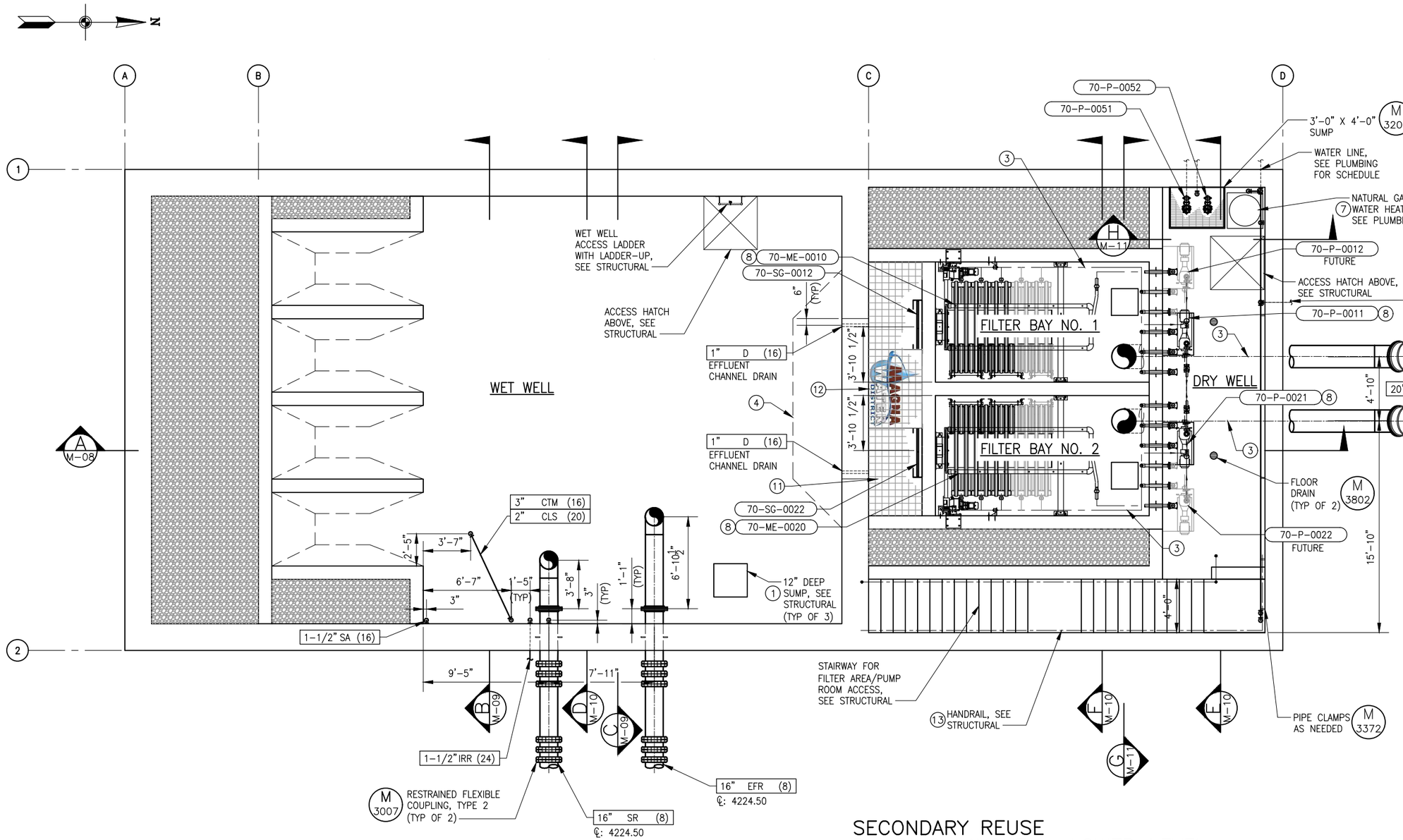
REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

DESIGN
DESIGN N. ROGERS
DRAWN R. GARCIA

MECHANICAL
SECONDARY REUSE BUILDING
FILTER AREA PLAN
- MAIN LEVEL

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
M-06
SHEET 051 OF 126



SECONDARY REUSE BUILDING LAYOUT – LOWER LEVEL

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

NOTES:

1. HATCH LOCATED ABOVE, NOT SHOWN FOR CLARITY.
2. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
3. PIPING CENTERLINE SHOWN ONLY FOR CLARITY.
4. INSTALL GROUTED SLOPE BELOW WEIR, EVENLY SLOPED TO WET WELL FLOOR.
5. WALL SLEEVE, METHOD "A" (M 3307)
6. 1" CHLORINE PIPE IS TO ENTER INTO THE DRY WELL AND BE SECURED ALONG WALL, SEE DRAWING M-07.
7. SEE PLUMBING DRAWINGS FOR WATER HEATER CONNECTIONS.
8. TREATMENT EQUIPMENT PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR, SEE SPECIFICATIONS.
9. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
10. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
11. INSTALL 4" X 4" CERAMIC TILE, COLOR TO MATCH BACKGROUND OF OWNER LOGO.
12. WALLS OF COMBINED EFFLUENT CHANNEL TO BE EPOXY COATED, COLOR TO BE WHITE. SEE REQUIREMENTS IN SPECIFICATION 09 90 00, SYSTEM 21A.
13. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
14. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
15. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
16. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
17. CONTRACTOR TO PROVIDE AND INSTALL CERAMIC TILE MOSAIC OF OWNER LOGO IN THE BOTTOM OF THE COMBINED FILTER EFFLUENT CHANNEL WITH APPROXIMATE DIMENSIONS OF 48" X 72". COORDINATE TILE TYPE, LOGO, MOSAIC STYLE AND GROUT COLOR WITH OWNER AND ENGINEER PRIOR TO ORDERING.

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.
×	REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY), SEE (M 3389)

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NATHAN ROGERS — NO. 16387 — STATE OF UTAH — 12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN N. ROGERS
DRAWN R. GARCIA
REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

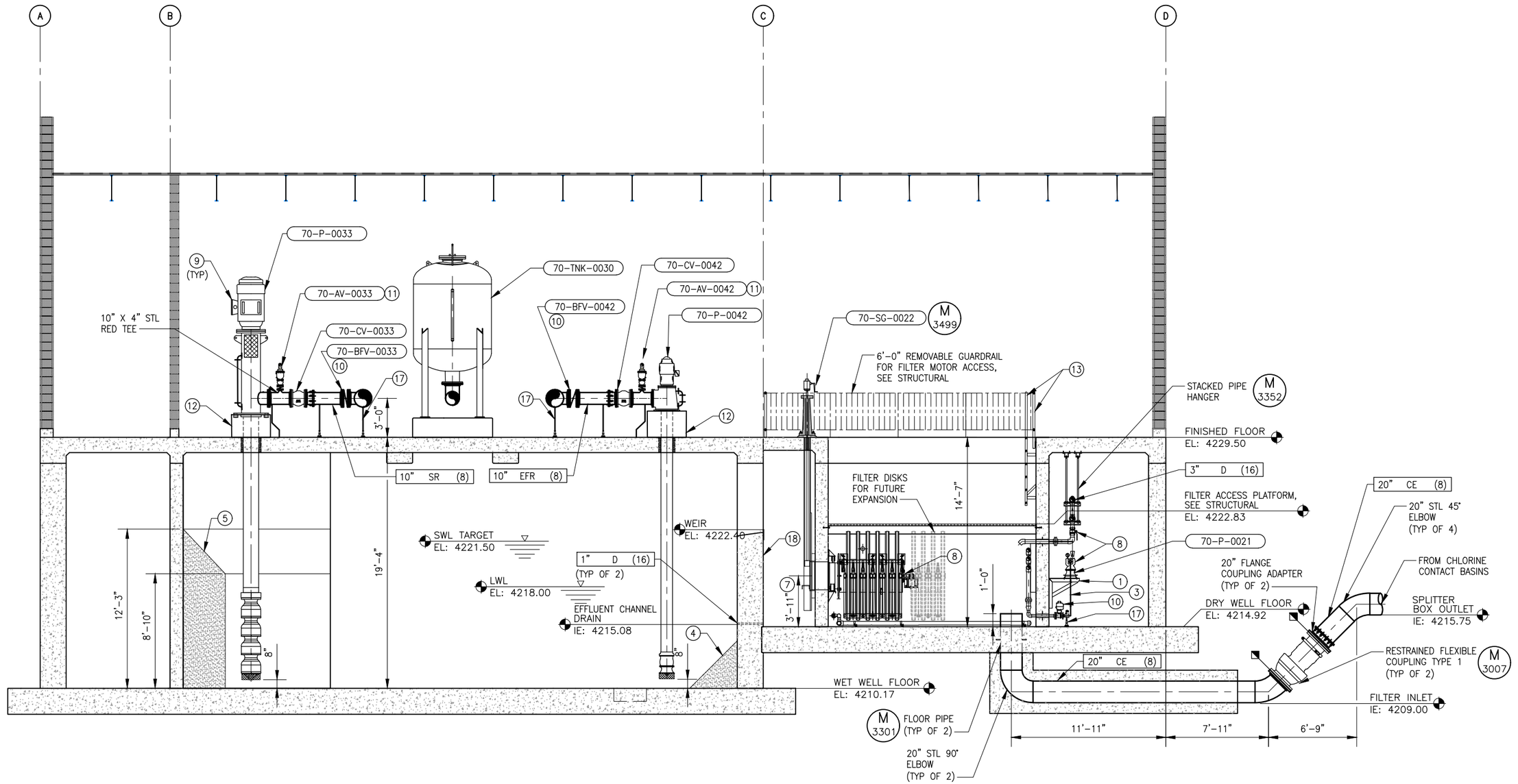
MECHANICAL

SECONDARY REUSE BUILDING LAYOUT - LOWER LEVEL

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO. M-07

SHEET 052 OF 126



SECTION

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

A — M-05, M-06

NOTES:

1. PUMP SHELF TO BE PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR.
2. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
3. PIPING CENTERLINE SHOWN ONLY FOR CLARITY.
4. INSTALL GROUTED SLOPE BELOW WEIR, EVENLY SLOPED TO WET WELL FLOOR.
5. INSTALL GROUTED WALL AND SLOPE AROUND PUMPS TO INDICATED DIMENSIONS.
6. INSTALL GROUTED SLOPE AND TAPER DOWN ALONG EACH WALL TO INDICATED DIMENSIONS, SEE LAYOUT VIEW.
7. SLIDE GATE TO LINE UP WITH EFFLUENT OPENING FOR TREATMENT EQUIPMENT.
8. TREATMENT EQUIPMENT PROVIDED BY AQUA-AEROBIC AND INSTALLED BY CONTRACTOR. PIPING TO BE PROVIDED AND INSTALLED BY CONTRACTOR, SEE SPECIFICATIONS AND AQUA-AEROBIC INSTALLATION PACKAGE.
9. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
10. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
11. AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY (M 3143)
12. COORDINATE WITH PUMP MANUFACTURER ON SIZE OF FLOOR OPENING REQUIRED FOR PUMP AND FINAL HEIGHT OF PUMP STAND.
13. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
14. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
15. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
16. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
17. PIPE SUPPORT (M 3389)
18. WALLS OF COMBINED EFFLUENT CHANNEL TO BE EPOXY COATED, COLOR TO BE WHITE. SEE REQUIREMENTS IN SPECIFICATION 09 90 00, SYSTEM 21A.

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NATHAN ROGERS — NO. 16387 — STATE OF UTAH — 12-15-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN N. ROGERS
DRAWN R. GARCIA
CHECKED J. BECKMAN
APPROVED N. ROGERS
REVIEW

MECHANICAL

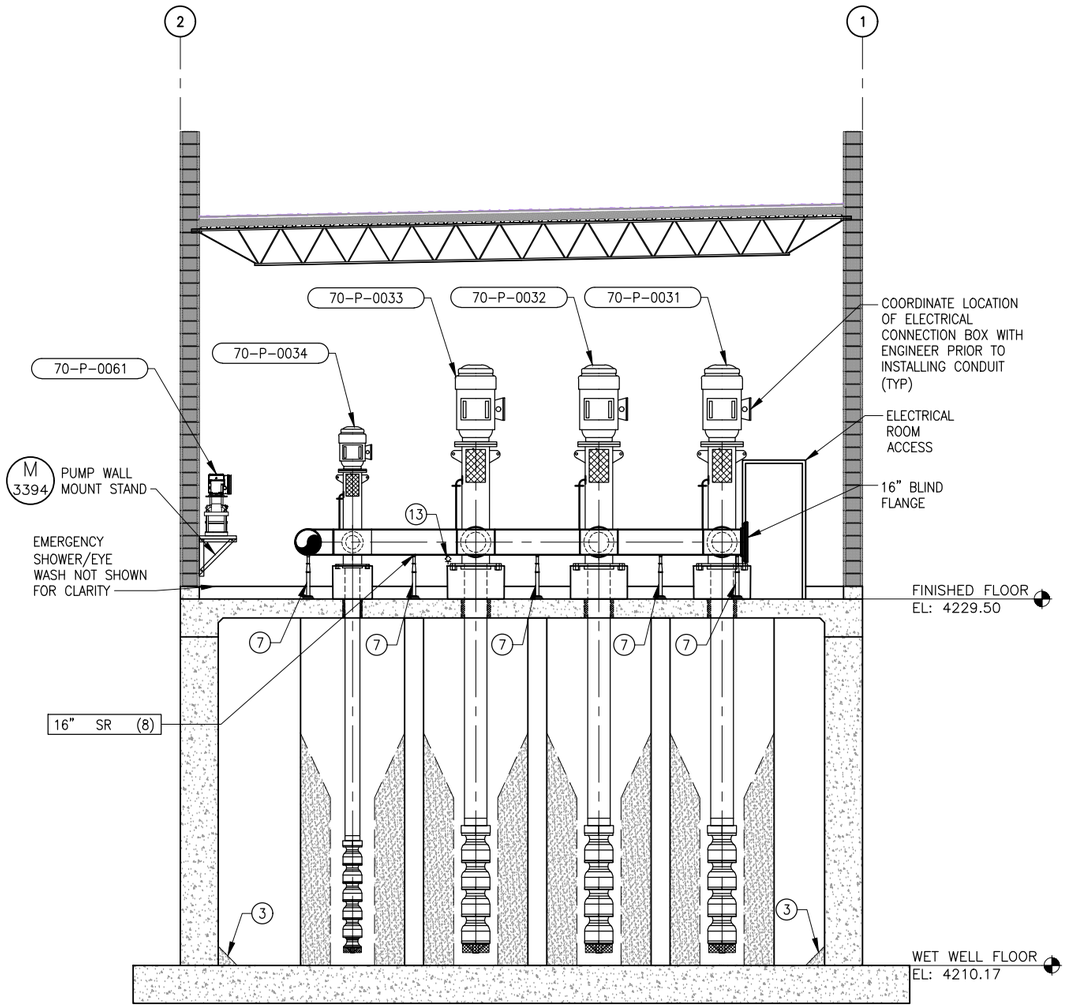
SECONDARY REUSE BUILDING SECTIONS - 1

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO. M-08

SHEET 053 OF 126

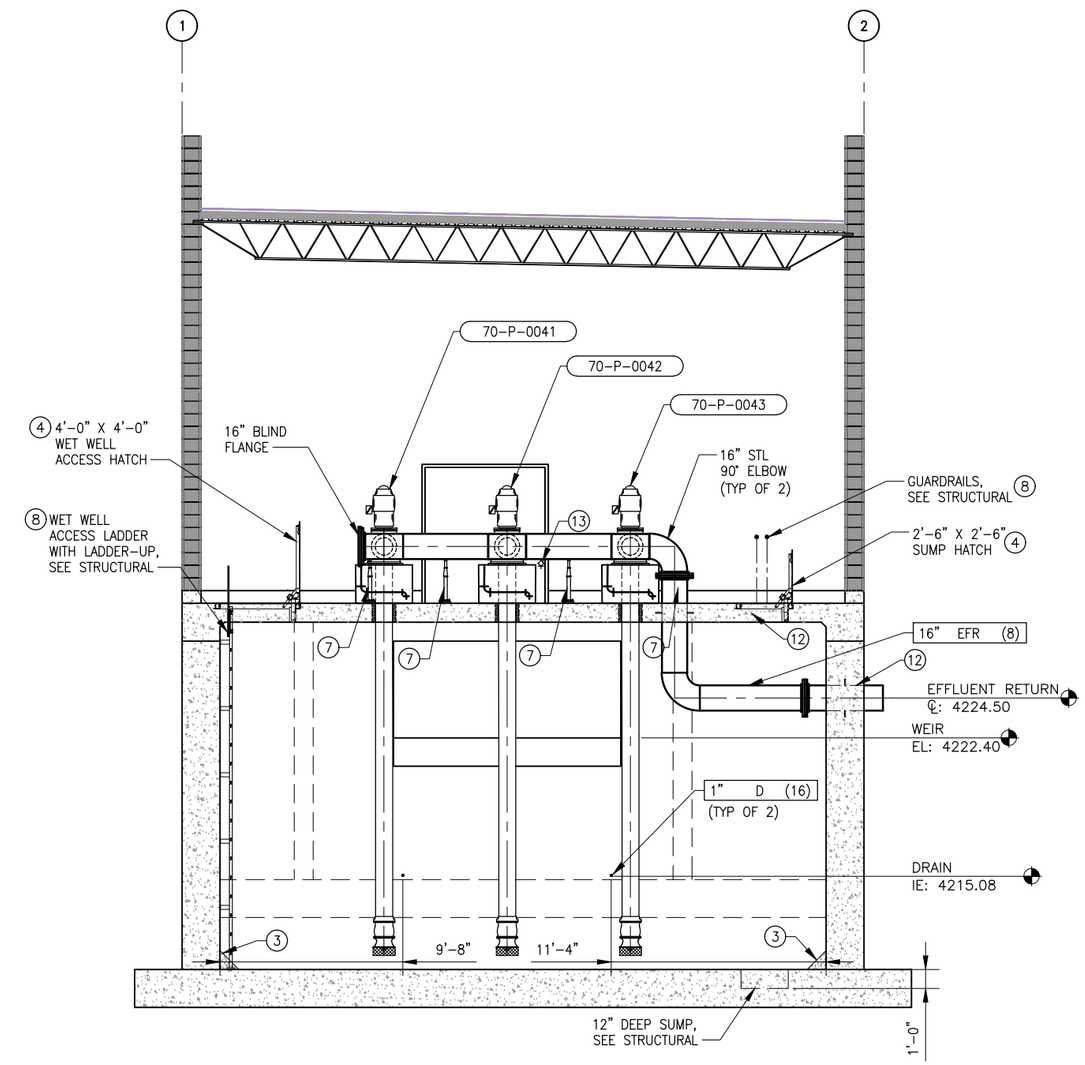
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SECTION B

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

M-05, M-07



SECTION C

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

M-05, M-07

NOTES:

1. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
2. PIPING CENTERLINE SHOWN ONLY FOR CLARITY.
3. INSTALL GROUTED SLOPE ALONG WET WELL WALLS
4. SEE STRUCTURAL DRAWINGS FOR ACCESS HATCH REQUIREMENTS.
5. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
6. COORDINATE WITH PUMP MANUFACTURER ON SIZE OF FLOOR OPENING REQUIRED FOR PUMP AND FINAL HEIGHT OF PUMP STAND.
7. PIPE SUPPORT (M 3389)
8. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
9. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
10. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
11. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
12. FABRICATED PIPE THIMBLE (M 3302)
13. HOSE BIBB (M 3000) (SIM)

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NATHAN ROGERS
No. 11682
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN N. ROGERS
DRAWN R. GARCIA
REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

MECHANICAL

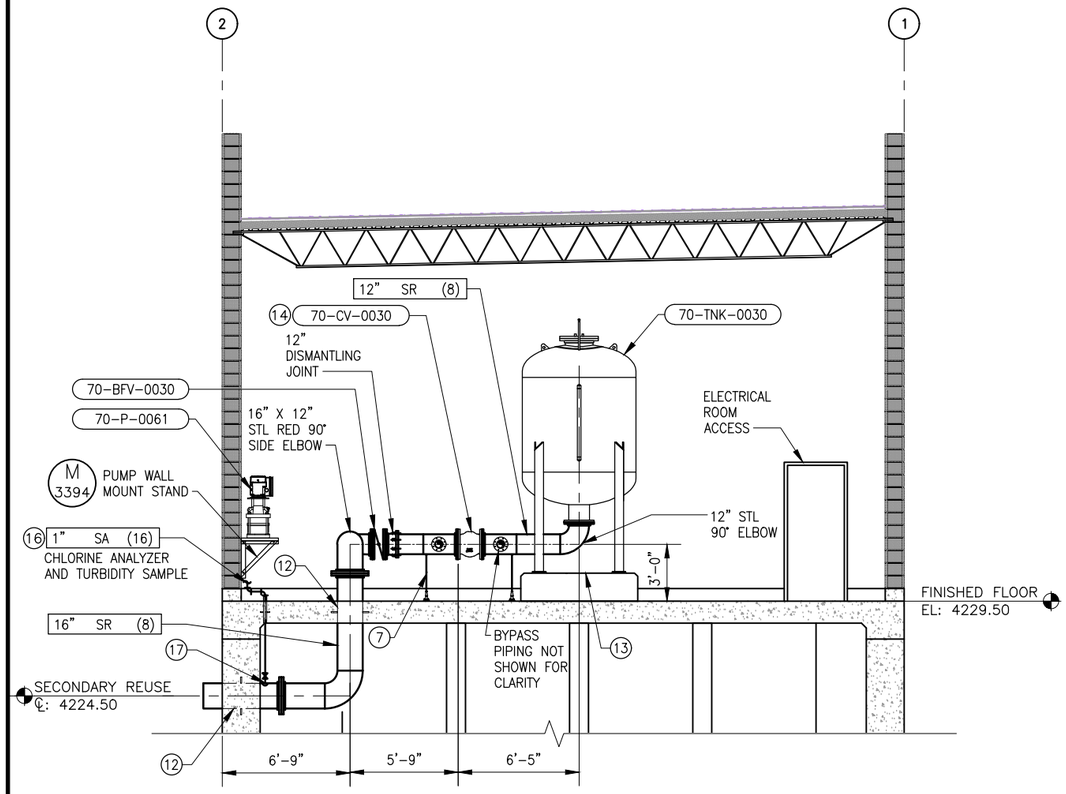
SECONDARY REUSE BUILDING SECTIONS - 2

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

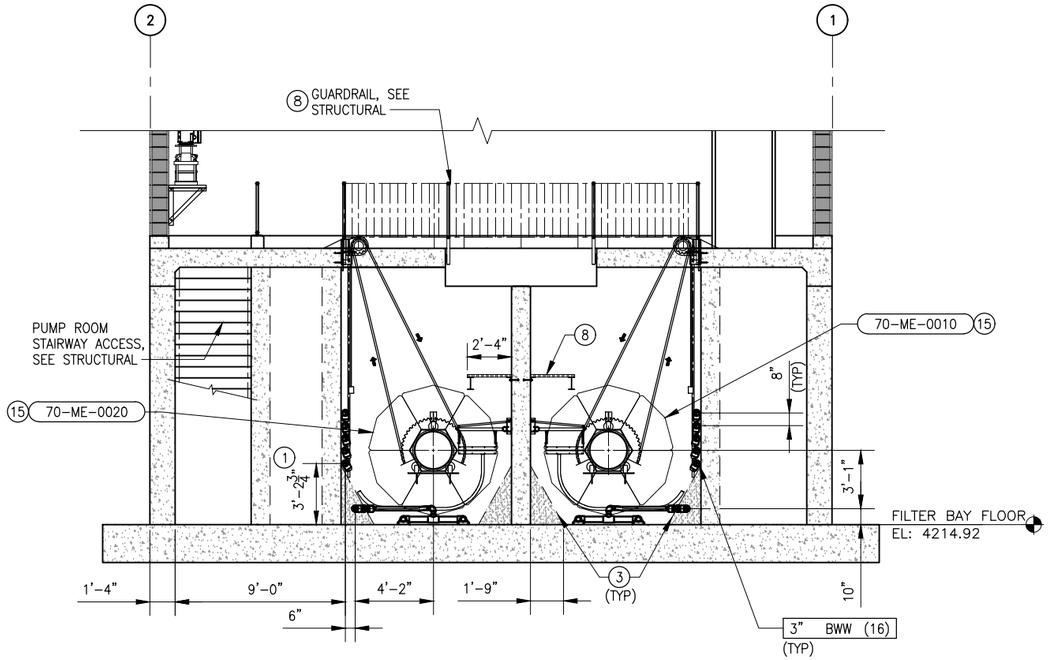
DRAWING NO.
M-09

SHEET 054 OF 126

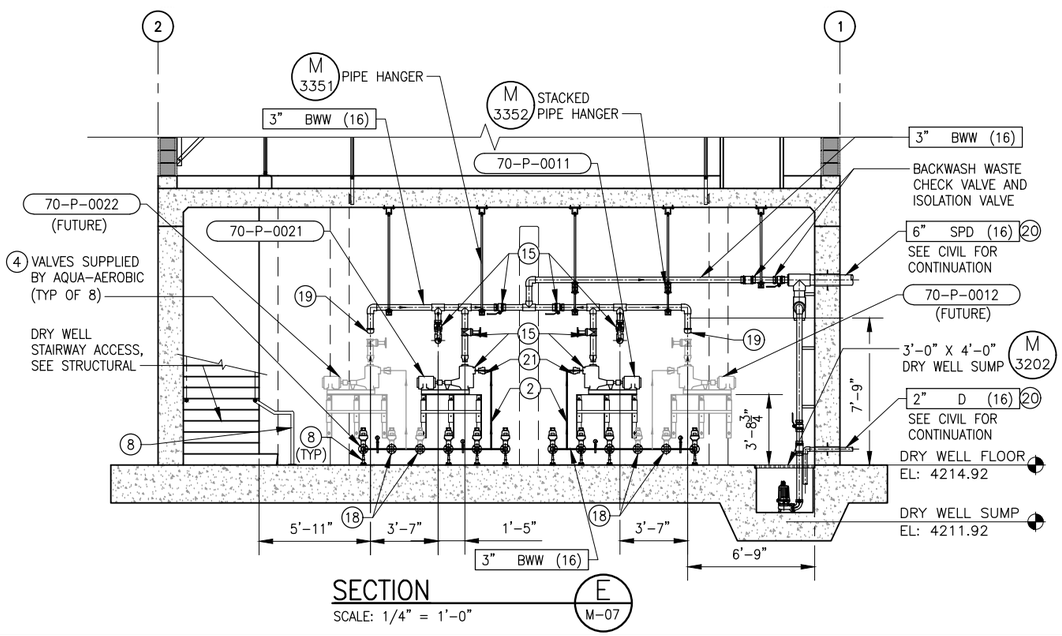
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SECTION D
SCALE: 1/4" = 1'-0"
M-05, M-07



SECTION F
SCALE: 1/4" = 1'-0"
M-07



SECTION E
SCALE: 1/4" = 1'-0"
M-07

NOTES:

1. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
2. PIPING CENTERLINE SHOWN ONLY FOR CLARITY.
3. INSTALL GROUTED SLOPE ALONG FILTER BAY WALLS.
4. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
5. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
6. COORDINATE WITH PUMP MANUFACTURER ON SIZE OF FLOOR OPENING REQUIRED FOR PUMP AND FINAL HEIGHT OF PUMP STAND.
7. PIPE SUPPORT (M 3389)
8. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
9. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
10. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
11. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
12. FABRICATED PIPE THIMBLE (M 3302)
13. FINAL HEIGHT OF HOUSEKEEPING PAD TO BE CONFIRMED BY TANK SUPPLIER. CONTRACTOR TO COORDINATE INSTALLATION REQUIREMENTS MFR TO ENSURE PIPE CENTERLINE HEIGHT IS MAINTAINED AS SHOWN.
14. CHECK VALVE IS TO INCLUDE BYPASS PIPING ON EACH SIDE WITH ISOLATION VALVES. CONTRACTOR TO VERIFY SIZE OF BYPASS PIPING WITH MFR TO MEET SURGE REQUIREMENTS.
15. TREATMENT EQUIPMENT PROVIDED BY AQUA-AEROBIC AND INSTALLED BY CONTRACTOR. PIPING TO BE PROVIDED AND INSTALLED BY CONTRACTOR, SEE SPECIFICATIONS AND AQUA-AEROBIC INSTALLATION PACKAGE.
16. INSTALL ISOLATION VALVE AND PRESSURE REDUCING VALVE ABOVE FINISH FLOOR PRIOR TO CONNECTION TO CHLORINE ANALYZER AND TURBIDITY INSTRUMENTS. PRESSURE REDUCING VALVE TO BE SET TO 60 PSI.
17. PROVIDE CONNECTION, ISOLATION BALL VALVE AND SLEEVE THROUGH THE WALL FOR SAMPLE LINE. (M 3167)
18. INSTALL A 2" PVC SCH 80 BLIND FLANGE FOR FUTURE CONNECTION.
19. INSTALL A 2" PVC SCH 80 CAP FOR FUTURE CONNECTION.
20. PIPE SLEEVE (M 3306)
21. 3" X 2" PVC SCH 80 REDUCER, CONTRACTOR TO INSTALL PER MANUFACTURER INSTRUCTIONS.

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NATHAN ROGERS
No. 16840
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

DESIGN N. ROGERS
DRAWN R. GARCIA
REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

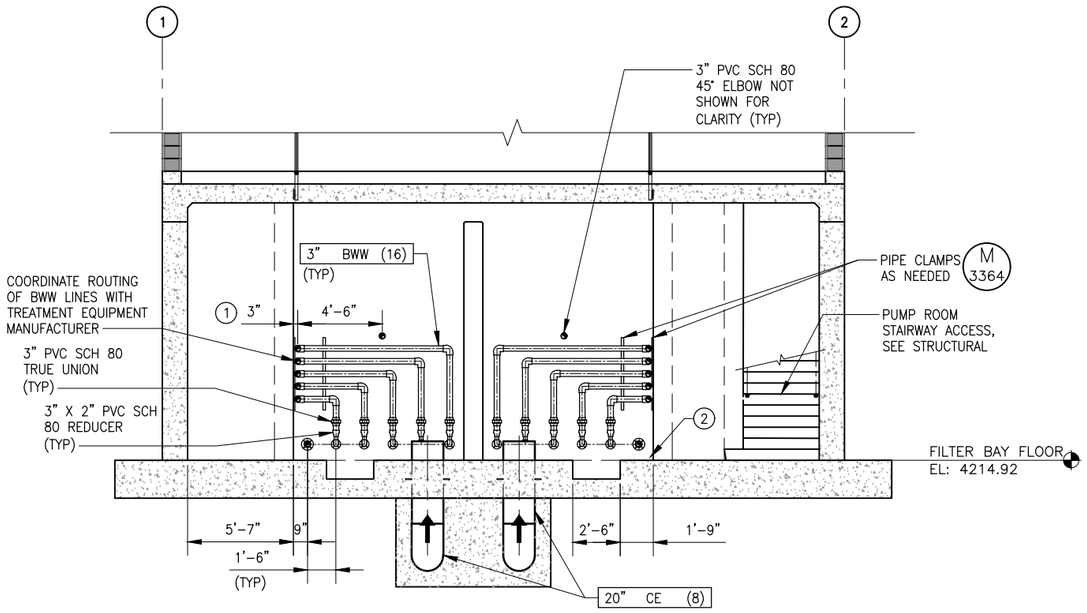
MECHANICAL
SECONDARY REUSE BUILDING SECTIONS - 3

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

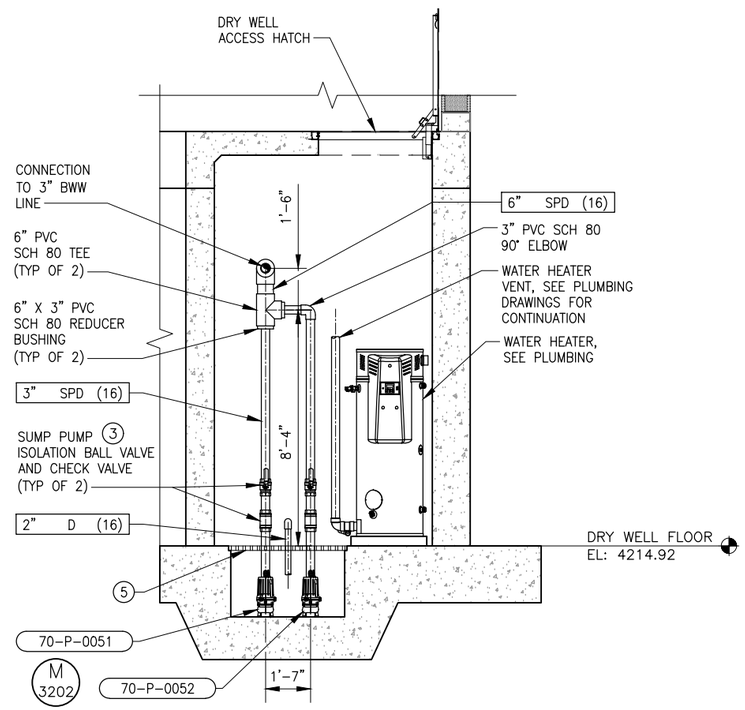
DRAWING NO.
M-10

SHEET 055 OF 126

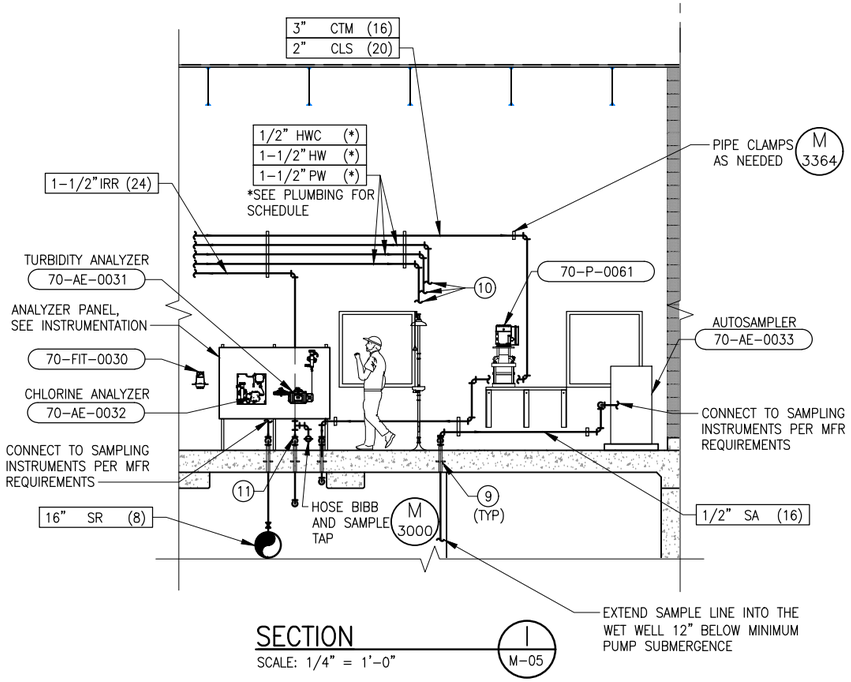
P:\Magna Water District\483-20-02 Reuse Projects\FINAL DESIGN\2.0 Design Phase\2.9 Drawings\sht\4832002_M-10.dwg Plotted: 12/13/2022 4:22 PM By: Nate Rogers



SECTION G
SCALE: 1/4" = 1'-0" M-07



SECTION H
SCALE: 3/8" = 1'-0" M-07



SECTION I
SCALE: 1/4" = 1'-0" M-05

NOTES:

1. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
2. GROUTED SLOPE ALONG FILTER BAY WALLS NOT SHOWN FOR CLARITY, GROUT AROUND PIPING TO MAINTAIN REQUIREMENT STATED IN NOTE (8).
3. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
5. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
6. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
7. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
8. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
9. FLOOR SLEEVE M 3300
10. CONNECT TO EMERGENCY SHOWER/EYEWASH, SEE PLUMBING.
11. INSTALL ISOLATION VALVE AND PRESSURE REDUCING VALVE PRIOR TO TEE AND SAMPLING TAP. PRESSURE REDUCING VALVE TO BE SET TO 60 PSI.

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NATHAN ROGERS No. 16842 STATE OF UTAH 12-5-2022

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

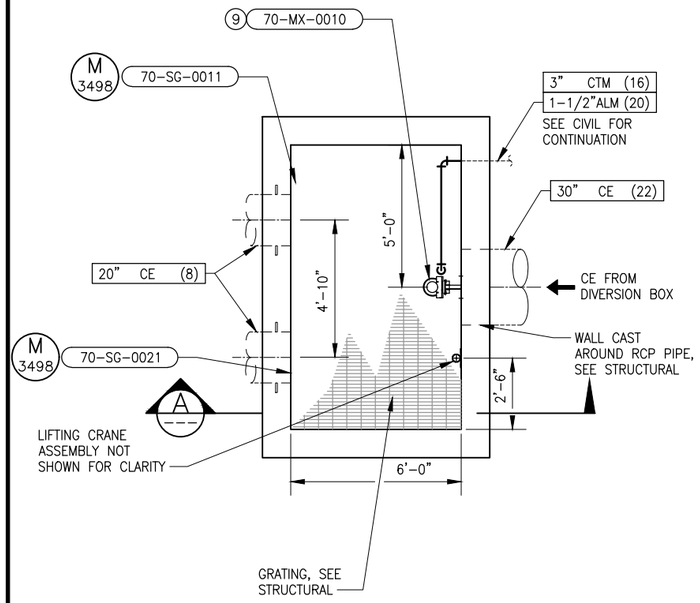
MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. BECKMAN
DRAWN N. ROGERS
REVIEW
CHECKED J. BECKMAN
APPROVED N. ROGERS

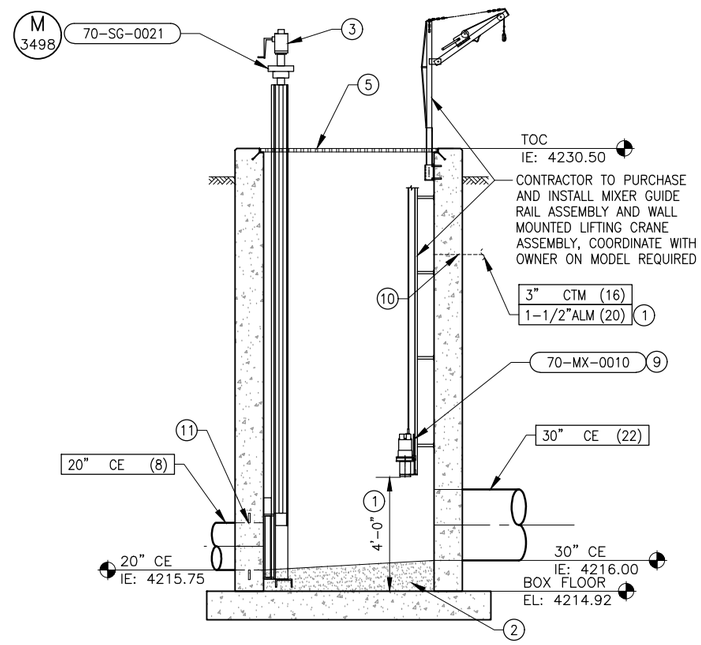
MECHANICAL
SECONDARY REUSE BUILDING SECTIONS - 4
DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO. M-11
SHEET 056 OF 126



FILTER SPLITTER BOX (9 / M-04)

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

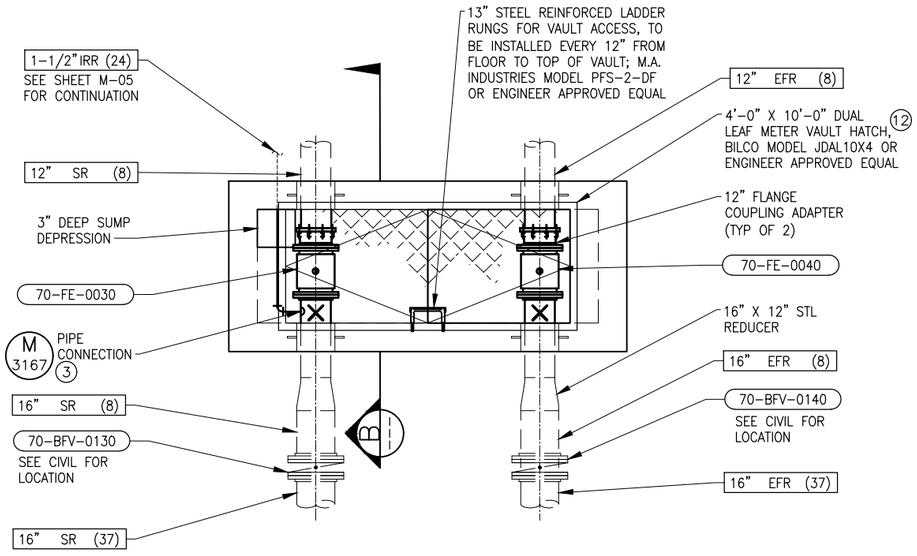


SECTION (A / ---)

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

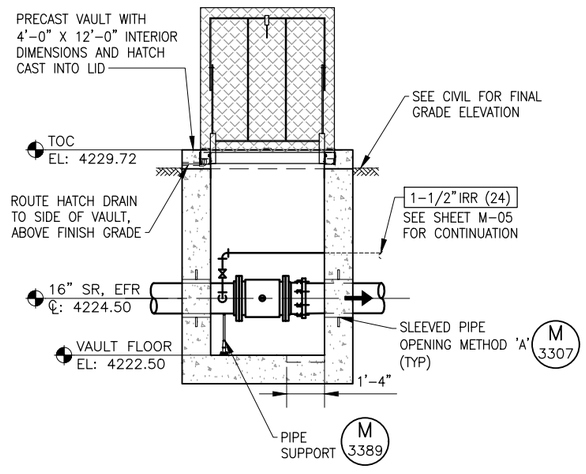
NOTES:

1. ITEMS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LAYOUT OF COMPONENTS PRIOR TO FABRICATION AND INSTALLATION.
2. INSTALL EVENLY GROUTED SLOPE FROM INVERT TO INVERT OF PIPE.
3. COORDINATE ORIENTATION OF VALVE ACTUATORS/INSTRUMENTS PRIOR TO INSTALLATION. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. CONTRACTOR SHALL COORDINATE WITH ENGINEER REGARDING THE FINAL LOCATION OF CONDUITS.
5. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
6. ALL PIPE, FLANGES, FITTINGS, VALVES, COUPLERS, EQUIPMENT AND COMPONENTS, ETC. SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 225 PSI. HYDROSTATIC TEST PRESSURE SHALL BE PER SECTION 33 13 00.
7. ALL EXPOSED BOLTS AND NUTS TO BE CARBON STEEL, COATED TO MATCH STEEL PIPING FOLLOWING INSTALLATION.
8. PROVIDE A MINIMUM OF 1'-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENTS PRIOR TO FABRICATION.
9. MIXER TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR. COORDINATE WITH ELECTRICAL ON PANEL PLACEMENT FOR MIXER POWER/CONTROLS.
10. PIPE SLEEVE (M 3306)
11. FABRICATED PIPE THIMBLE (M 3302)
12. HATCH TO BE CAST INTO PRE-CAST LID. COORDINATE WITH PRE-CAST SUPPLIER.



FLOW METER VAULT (10 / M-04)

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



SECTION (B / ---)

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

LEGEND:

XX" XX (XX)	SEE DRAWINGS M-01 AND M-02 FOR PIPE SCHEDULE.
70-XX-XXXX	SEE DRAWING M-03 FOR EQUIPMENT SCHEDULE.
×	REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY), SEE (M 3388)

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NATHAN ROGERS — NO. 11682021 — STATE OF UTAH — 12-5-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN — DESIGN J. BECKMAN — DRAWN N. ROGERS
REVIEW — CHECKED J. BECKMAN — APPROVED N. ROGERS

MECHANICAL

SECONDARY REUSE BUILDING
SECTIONS - 5

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
M-12

SHEET 057 OF 126

GENERAL NOTES

1. COORDINATE INSTALLATION OF PIPING AND DUCTWORK WITH STRUCTURAL COMPONENTS AND OTHER SYSTEM INSTALLATIONS. GENERAL CONTRACTOR TO SAW CUT AND CORE DRILL, PATCH AND REPAIR SURFACES AS REQUIRED.
2. DUCT PENETRATIONS THRU ROOF ARE TO BE COORDINATED WITH ROOF FRAMING. COORDINATE TO STRUCTURAL PLANS FOR EXACT LOCATIONS.
3. ALL DUCT DIMENSIONS SHOWN ARE INTERIOR DIMENSIONS.
4. VERIFY AND COORDINATE EXACT LOCATION OF T–STATS WITH ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION FOR CONDUIT AND BACKBOX.
5. COORDINATE EXACT LOCATION OF PANEL WITH ELECTRICAL CONTRACTOR. COORDINATE ACCESS PANELS FOR HARD CEILINGS WITH GENERAL CONTRACTOR.
6. COORDINATE LOCATION OF HVAC EQUIPMENT WITH ALL OTHER TRADES TO MAINTAIN ACCESS AND SERVICE CLEARANCE.
7. SEE ARCHITECTURAL SHEETS FOR BUILDING CODE REQUIREMENTS AND WALL, FLOOR AND ROOF RATINGS.
8. ALL RATED WALL AND FLOOR/CEILINGS PENETRATIONS SHALL BE SEALED AS REQUIRED IN SPECIFICATIONS.
9. REFERENCE CIVIL, PLUMBING, ELECTRICAL DRAWINGS. FIELD LOCATE UNDERGROUND LINES, MARK AND PROTECT AS NECESSARY. COORDINATE PROTECTION AND ANY AND ALL TEMPORARY DISRUPTIONS OF SERVICE WITH OWNER AS NECESSARY. PROVIDE ANY REQUIRED SHORING AND STRUCTURAL SUPPORTS OF PIPING AND CONDUITS AS REQUIRED. SCHEDULE WORK AND ANY REQUIRED INSPECTIONS TO MINIMIZE DISRUPTION OF SERVICE AS NECESSARY.
10. ALTHOUGH THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS, NOT EVERY FITTING OR ELBOW IS SHOWN & IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE WORK NEEDED TO COMPLY WITH THE INTENT.
11. ALL DUCTWORK TO BE CROSS–BROKE OR BEADED. USE SMACNA STANDARDS AS MINIMUM REQUIREMENT FOR DUCTWORK.
12. EQUIPMENT SIZES AND SERVICE SPACE REQUIREMENTS MAY VARY BETWEEN DIFFERENT MANUFACTURES. CONSULT THE MANUFACTURER SUBMITTED AND APPROVED, AND COORDINATE WITH THESE DOCUMENTS.
13. INSTALL SEISMIC AND RESTRAINT BRACING FOR ALL PIPING, DUCTWORK, TANKS AND ALL OTHER EQUIPMENT SUBJECT TO ASCE 7 REQUIREMENTS.

HVAC – MECHANICAL LEGEND

SYMBOL	DESCRIPTION
D	DRAIN
RS	REFRIGERANT SUCTION LINE
RL	REFRIGERANT LIQUID LINE
HG	REFRIGERANT HOT GAS LINE
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
G	GLOBE VALVE
	TRIPLE DUTY VALVE
	SWING CHECK VALVE
	STRAINER
	FLEX CONNECTOR
	HOSE END DRAIN VALVE
	PRESSURE REDUCING VALVE
	SAFETY RELIEF VALVE
	UNION
	MOTORIZED T.C. VALVE / 2–WAY
	MOTORIZED T.C. VALVE / 3–WAY
	ECCENTRIC PLUG BALANCING VALVE
	VALVE IN RISER
	TEE UP
	TEE DOWN

SYMBOL	DESCRIPTION
	ELBOW UP
	ELBOW DOWN
	PIPE SIZE CHANGE
M	MANUAL FLOW BALANCING VALVE (CIRCUIT SETTER)
A	AUTOMATIC FLOW BALANCING VALVE
	PIPE GUIDE
	PIPE ANCHOR
T	PRESSURE / TEMP. TEST PLUG
T	DIAL THERMOMETER
	CONNECT NEW WORK TO EXISTING
P	PRESSURE GAUGE W/ SNUBBER
T	THERMOSTAT/TEMPERATURE SENSOR
T	THERMOSTAT/TEMPERATURE SENSOR W/ GUARD
	ACOUSTICALLY LINED SHEET METAL DUCT
	MANUAL BALANCING DAMPER
	FLEX CONNECTOR
AD AD	ACCESS DOORS
FD	FIRE DAMPER

SYMBOL	DESCRIPTION
F/SD	FIRE/SMOKE DAMPER
M	MOTORIZED DAMPER
	TURNING VANE ELBOW
	45° LOW–LOSS TAKE–OFF FITTING W/ DAMPER & FLEX DUCT
	45° LOW–LOSS TAKE–OFF FITTING W/ DAMPER & RIGID ROUND DUCT
	RECTANGULAR/ROUND DUCT WITH 45° HIGH EFFICIENCY TAKE–OFF
	SUPPLY DIFFUSER W/ FLEX DUCT, THROW PATTERN SHOWN ON PLANS
	LAY–IN SUPPLY DIFFUSER W/ FLEX DUCT, THROW PATTERN SHOWN ON PLANS
	RETURN GRILLE
	EXHAUST GRILLE
	DIFFUSER, REGISTER OR GRILLE
SD–1 200	(PLAN CODE) (CFM)
SD	SMOKE DETECTOR
C	COMMON
(E)	EXISTING
BDD	BACKDRAFT DAMPER

HVAC ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	HZ	FREQUENCY	PSIA	PSI ABSOLUTE
ACFM	ACTUAL CFM	GA	GAGE OR GAUGE	PD	PRESSURE DROP
AHU	AIR HANDLING UNIT	GAL	GALLONS	PSIG	PSI GAUGE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	G.C.	GENERAL CONTRACTOR	R/O	RUN OUT
AMP	AMPERE (AMP, AMPS)	GPH	GALLONS PER HOUR	RA	RETURN AIR
APD	AIR PRESSURE DROP	GPM	GALLONS PER MINUTE	RPM	REVOLUTIONS PER MINUTE
APPROX	APPROXIMATE	GPD	GALLONS PER DAY	SH	SENSIBLE HEAT
BHP	BRAKE HORSEPOWER, BOILER HORSEPOWER	HD	HEAD	SPEC	SPECIFICATION
BTU	BRITISH THERMAL UNIT	HGT	HEIGHT	SP VOL	SPECIFIC VOLUME
BOD	BOTTOM OF DUCT	HP	HORSEPOWER	STD	STANDARD
MBH	BTU PER HOUR (THOUSAND)	RH	HUMIDITY, RELATIVE	SP	STATIC PRESSURE
C	COMMON	KW	KILOWATT	SUCT	SUCTION
CU FT	CUBIC FEET	KWH	KILOWATT HOUR	SA	SUPPLY AIR
CU IN	CUBIC INCH	LAT	LEAVING AIR TEMPERATURE	TEMP	TEMPERATURE
CFM	CUBIC FEET PER MINUTE	LWT	LEAVING WATER TEMPERATURE	TD	TEMPERATURE DIFFERENCE
COD	CENTER OF DUCT	LF	LINEAR FEET	T STAT	THERMOSTAT
SCFM	CFM, STANDARD CONDITIONS	MAX	MAXIMUM	TOD	TOP OF DUCT
DB	DECIBEL	MC	MECHANICAL CONTRACTOR	TONS	TONS OF REFRIGERATION
DIA	DIAMETER	MIN	MINIMUM	TC	TEMPERATURE CONTROL
ID	DIAMETER, INSIDE	NO	NORMALLY OPEN	VAC	VACUUM
OD	DIAMETER, OUTER	NC	NORMALLY CLOSED	VAV	VARIABLE AIR VOLUME
DBT	DRY–BULB TEMPERATURE	N/A	NOT APPLICABLE	VEL	VELOCITY
EAT	ENTERING AIR TEMPERATURE	NIC	NOT IN CONTRACT	V	VOLT
EC	ELECTRICAL CONTRACTOR	NTS	NOT TO SCALE	VOL	VOLUME
EDR	EQUIVALENT DIRECT RADIATION	NO	NUMBER	VFD	VARIABLE FREQUENCY DRIVE
EXP	EXPANSION	OBD	OPPOSED BLADE DAMPER	WPD	WATER PRESSURE DROP
EWT	ENTERING WATER TEMPERATURE	OA	OUTSIDE AIR	W/	WITH
F	FAHRENHEIT	%	PERCENT		
FPM	FEET PER MINUTE	PH	PHASE (ELECTRICAL)		
FPS	FEET PER SECOND	LBS	POUNDS		
FT	FOOT OR FEET	PSI	POUNDS PER SQUARE INCH		

Cushing Terrell
cushingterrell.com
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BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 7020476/2202
LAURA L. RANKIN
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
##	##	##	##

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW
CHECKED L. RANKIN
APPROVED L. RANKIN

DESIGN
DESIGN L. RANKIN
DRAWN J. WILSON

HVAC
HVAC ABBREVIATIONS, LEGEND AND NOTES
DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
H-01
SHEET 058 OF 126

FAN COIL INDOOR UNIT AND AIR COOLED HEAT PUMP CONDENSING UNIT SCHEDULE

PLAN CODE	MFGR	ROOM SERVED	MODEL NO.	INDOOR UNIT							
				COOLING BTUH	HEATING BTUH	SEER	FAN CFM	MCA	MOP	ELEC PWR(V/PH/HZ)	WEIGHT(LBS)
FCU-1	SAMSUNG	ELEC ROOM	AM048JNCDCH	45,000	40,600	17.2	918/1088/1286	1.4	15	208 / 1 / 60	93.7
FCU-2	SAMSUNG	ELEC ROOM	AM048JNCDCH	45,000	40,600	17.2	918/1088/1286	1.4	15	208 / 1 / 60	93.7

PLAN CODE	OUTDOOR UNIT							REMARKS
	MODEL NO.	AMBIENT TEMP (F)	REFRIGERANT	ELEC PWR(V/PH/HZ)	MCA	MOP	WEIGHT(LBS)	
HP-1	AM048TXMDCH	118 F	R-410A	208 /1/60	29	50	216.1	1, 2, 3, 4, 5, 6, 7
HP-2	AM048TXMDCH	118 F	R-410A	208/1/60	29	50	216.1	1, 2, 3, 4, 5,6, 7

SCHEDULE NOTES:
1. PROVIDE FAN COIL WITH CEILING SUSPENSION BOLT SYSTEM AND VIBRATION ISOLATION.
2. PROVIDE WITH PRE INSULATED EPDM REFRIGERATION LINE SET FROM INDOOR FAN COIL TO OUTDOOR HP UNIT.
3. COOLING CONDITIONS: INDOOR 80F DB/67 F WB, OUTDOOR 95F DB/75F WB.
4. PROVIDE WITH LOW AMBIENT COOLING OPTION TO -13 DEG F.
5. SIZE AND INSTALL REFRIGERANT PIPING PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
6. PROVIDE WITH CONDENSER BASE PAN HEATER.
7. PROVIDE HP OUTDOOR UNIT ON EQUIPMENT STAND SIMILAR TO MIRO HD MECHANICAL SUPPORT.

EVAPORATIVE COOLER SCHEDULE

PLAN CODE	MANUFACTURER	MODEL NO.	CFM	TSP (IN.W.C.)	ELECTRICAL FAN		ELECTRICAL PUMP		MEDIA THICKNESS	MEDIA FACE VELOCITY	EAT DB/WB	DISCHARGE TEMP (F)	WATER FLOW RATE (GPM)	WEIGHT(LBS)		PHYSICAL SIZE WIDE x HEIGHT x LENGTH	NOTES
					(V/PH/HZ)	H.P.	(V/PH/HZ)	H.P.						UNIT	CURB		
DEC-1	PREMIER INDUSTRIES	PCEC-120	11,000	0.71	460/3/60		115/1/60	3	12 INCHES	526 FPM	93 F / 65 F	68	2.24	1514	200	62" x 63" x 73"	1, 2, 3, 4, 5, 6, 7, 8, 9

SCHEDULE NOTES:
1. PROVIDE 14" HIGH PREFABRICATED ROOF CURB FOR SLOPED ROOF SIMILAR TO THYBAR CURB, NON INSULATED CURB FOR SINGLE PLY INSULATED ROOF.
2. PROVIDE FREEZE PROTECTION AND AUTOMATIC FLUSH SYSTEMS, SEE DETAIL A/GP-01 TO BE LOCATED INSIDE BUILDING.
3. PROVIDE STAINLESS STEEL FAN SECTION HOUSING AND STAINLESS STEEL GRADE 304 EVAPORATIVE COOLING MODULE TO ACCEPT KUUL MEDIA
4. PROVIDE UNIT DISCHARGE MODE SHALL BE DOWN WITH ODP BLOWER MOTOR.
5. PROVIDE EVAP COOLING SUMP WITH WELDED CORNERS AND JOINTS WITH MEDIA SUPPORT CHANNEL AND AIR BYPASS INHIBITOR PLATE, STAINLESS STEEL COUPLERS WITH PIPE THREADS FOR WATER, OVERFLOW AND DRAIN CONNECTIONS.
6. PROVIDE WATER DISTRIBUTION SYSTEM TO INCLUDE SUBMERSIBLE STAINLESS STEEL PUMP, MECHANICAL FLOAT VALVE ASSEMBLY, BLEED OFF SYSTEM.
7. PROVIDE INTERNAL PVC SCHEDULE 40 PLUMBING WITH BALANCING VALVE, HEADER PIPE FOR PROPER WATER FLOW OVER THE MEDIA.
8. PROVIDE FACTORY SUPPLIED TERMINAL BLOCK FOR DDC CONTROLLER TO PICK UP POINTS.
9. PROVIDE ALUMINUM FACE LOUVER PANEL WITH BIRD SCREEN DOWNSTREAM OF PANEL WITH WELDED LOUVER PANELS.

EXHAUST FAN SCHEDULE

PLAN CODE	MFGR	MODEL NO.	DRIVE	CFM	RPM	E.S.P. (IN)	HP	POWER (V/PH/HZ)	FAN TYPE	WEIGHT(LBS)	NOTES
EF-1	GREENHECK	CUBE-360-15	BELT	11,000	468	0.30	1 1/2	460/3/60	UPBLAST CENTRIFUGAL	350	2, 3
EF-2	GREENHECK	SQ-90	DIRECT	350	1527	0.40	1/10	115/1/60	CENTRIFUGAL INLINE FAN	53	1, 3

SCHEDULE NOTES:
1. FAN SELECTIONS ARE AT 4,200 FT ABOVE SEA LEVEL.
2. PROVIDE 14" ROOF CURB, GRAVITY BACKDRAFT DAMPER.
3. PROVIDE WITH FAN SPEED CONTROL, HANGING NEOPRENE VIBRATION ISOLATION KIT FOR WALL MOUNTING AND BRACKETS.

LOUVER SCHEDULE

PLAN CODE	MFGR	MODEL NO.	SERVICE	FRAME TYPE	W X H INCHES	CFM	BLADES	PRESSURE DROP (IN.W.C.)	MATERIAL	NOTES
LV-1	RUSKIN	ELF6375DX	EXHAUST DISCHARGE	BOX	16 X 16	350	FIXED, DRAINABLE	0.02	ALUMINUM	1, 2, 3

SCHEDULE NOTES:
1. PROVIDE LOUVER WITH BIRDSCREEN.
2. FACTORY PRIMED AND PAINTED IN NEUTRAL COLOR, LOUVERS TO BE PAINTED ON SITE.

GAS FIRED UNIT HEATER SCHEDULE

PLAN CODE	BASIS OF DESIGN MFGR	MODEL	CAPACITY		CFM	ELECTRICAL		COMBUSTION AIR / FLUE PIPE SIZE (IN)	FUEL	WEIGHT (LBS)	NOTES
			INPUT (MBTU/H)	OUTPUT (MBTU/H)		V / PH / HZ	HP				
GUH-1	REZNOR	UDZ 60	60	49.8	769	115/1/60	0.03	4" / 4"	NATURAL GAS	75	1, 2, 3, 4, 5
GUH-2	REZNOR	UDZ 60	60	49.8	769	115/1/60	0.03	4" / 4"	NATURAL GAS	75	1, 2, 3, 4, 5
GUH-3	REZNOR	UDZ 60	60	49.8	769	115/1/60	0.03	4" / 4"	NATURAL GAS	75	1, 2, 3, 4, 5

SCHEDULE NOTES:
1. UNIT CONTAINS INTEGRAL STEPDOWN TRANSFORMER FROM 115V TO 24V CONTROL POWER FOR THERMOSTAT.
2. PROVIDE UNIT WITH VERTICAL VENTING OF SEPARATED COMBUSTION UNIT THRU ROOF OR WALL.
3. PROVIDE BUILT IN DISCONNECT SWITCH.
4. PROVIDE GALVANIZED STEEL FLUE PIPE. COMBUSTION AIR PIPE TO BE PER MANUFACTURER'S RECOMMENDATION AND 2018 IFGC.
5. PROVIDE UNIT HEATER WITH SINGLE STAGE GAS VALVE.

DIFFUSER, REGISTER AND GRILLE SCHEDULE

PLAN CODE	MFGR	MODEL	NOMINAL FACE SIZE	NECK SIZE	MATERIAL	COLOR/ FINISH	NOTES
SG-1	TITUS	DL	50" x 15"	50" x 15"	STEEL	METAL	1

SCHEDULE NOTES:
1. MILL FINISH TO MATCH DUCTWORK.

Cushing Terrell
cushingterrell.com
800.767.9522

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 7020476-2202
LAURA L. RANKIN
STATE OF UTAH
12-15-2022

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION
#1	#1	#1	#1
#2	#2	#2	#2
#3	#3	#3	#3
#4	#4	#4	#4
#5	#5	#5	#5

PROJECT
MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJ
MAGNA, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

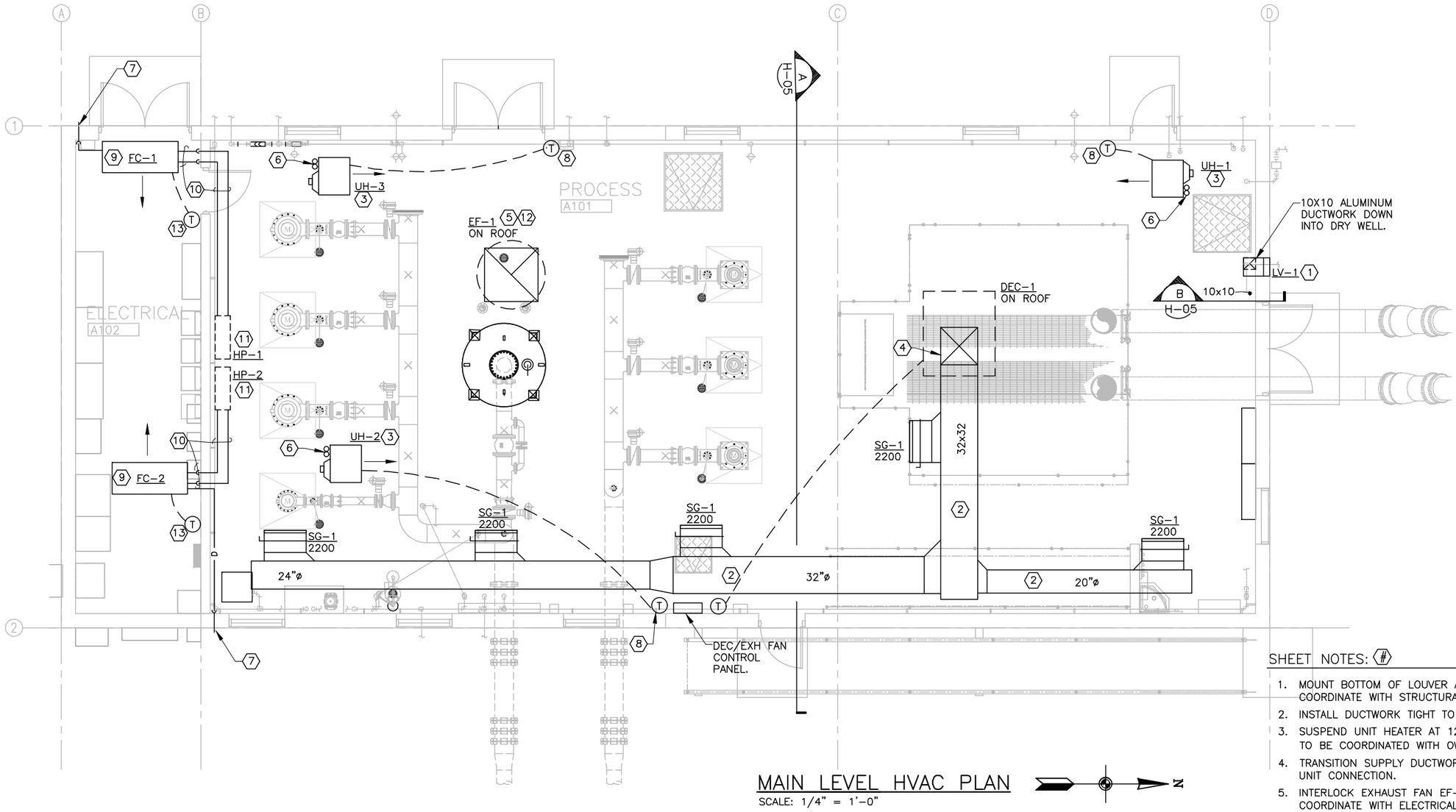
REVIEW
CHECKED L. RANKIN
APPROVED L. RANKIN

DESIGN
DESIGN L. RANKIN
DRAWN J. WILSON

HVAC
HVAC SCHEDULES

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
H-02
SHEET 059 OF 126



MAIN LEVEL HVAC PLAN

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

SHEET NOTES: (#)

1. MOUNT BOTTOM OF LOUVER AT 14FT ABOVE FLOOR AND COORDINATE WITH STRUCTURAL DRAWINGS.
2. INSTALL DUCTWORK TIGHT TO BOTTOM OF STRUCTURE.
3. SUSPEND UNIT HEATER AT 12FT ABOVE FLOOR. FINAL LOCATION TO BE COORDINATED WITH OWNER/ENGINEER.
4. TRANSITION SUPPLY DUCTWORK AS REQUIRED TO ROOFTOP DEC UNIT CONNECTION.
5. INTERLOCK EXHAUST FAN EF-1 WITH DEC-1 OPERATION. COORDINATE WITH ELECTRICAL DRAWINGS AND EVAP COOLING SPECIFICATION SECTION. SEE H-04 FOR CONTROL SEQUENCE.
6. PROVIDE UNIT HEATER 4" FLUE / 4" COMBUSTION AIR UP TO CONCENTRIC VENT THRU ROOF. SEE UNIT HEATER SCHEDULE FOR SIZES AND SEE DETAIL D/GH-01.
7. DAYLIGHT CONDENSATE DRAIN TO EXTERIOR.
8. PROVIDE CONDUIT AND BACKBOX FOR EACH THERMOSTAT. THERMOSTAT IS PROVIDED WITH UNIT HEATER.
9. HANG INDOOR FAN COIL FROM 4 SUSPENSION POINTS AT MOUNTING HEIGHT OF10FT. ROUTE REFRIGERANT PIPES UP THRU ROOF TO OUTDOOR CONDENSING UNIT ON ROOF.
10. SEE DETAILS E AND F ON GH-01 FOR PIPES UP THRU ROOF AND PIPE SUPPORTS ON ROOF.
11. PROVIDE OUTDOOR CONDENSING UNIT ON EQUIPMENT SUPPORT SIMILAR TO MIRO HD MECHANICAL UNIT SUPPORT. COORDINATE SIZE OF SUPPORT WITH CONDENSING UNIT SIZE.
12. FAN OPENING TO BE SAME SIZE AS ROOF OPENING.
13. HEAT PUMP SENSOR PROVIDED WITH UNIT. PROVIDE HEAT PUMP ROOM SENSOR 4 SQUARE BOX WITH A SINGLE GANG MUD RING ROUGH IN AT 48" AFF. PROVIDE CONDUIT FROM BOX TO HP UNIT.

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BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 7020476-2202
LAURA L. RANKIN
STATE OF UTAH
12-15-2022

NO.	DATE	REV. BY	DESCRIPTION
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REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW
CHECKED L. RANKIN
APPROVED L. RANKIN

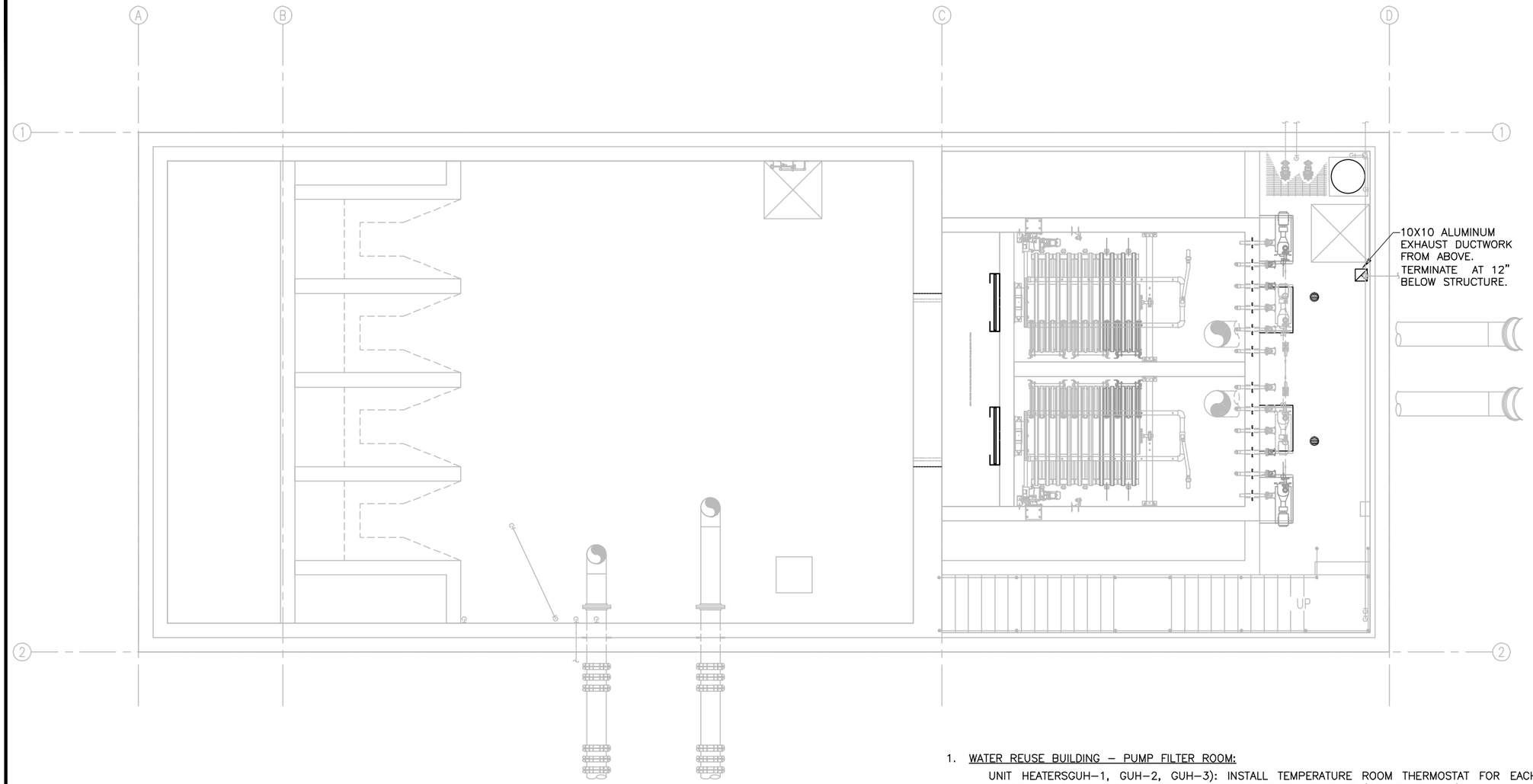
DESIGN
DESIGN L. RANKIN
DRAWN J. WILSON

HVAC
MAIN LEVEL HVAC PLAN

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
H-03
SHEET 060 OF 126

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LOWER LEVEL HVAC PLAN

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

1. WATER REUSE BUILDING – PUMP FILTER ROOM:

   UNIT HEATERSGUH–1, GUH–2, GUH–3): INSTALL TEMPERATURE ROOM THERMOSTAT FOR EACH UNIT HEATER TO CYCLE FAN MOTOR AND CYCLE GAS VALVE TO MAINTAIN SPACE TEMPERATURE (60 DEG F, ADJ.)

   DIRECT EVAP UNIT(DEC–1):PROVIDE SPACE TEMPERATURE SENSOR IN PUMP FILTER ROOM TO CONTROL COOLING SET POINT OF 78DEG F. EVAPORATIVE COOLING UNIT SHALL HAVE COOLING STAGES AS FOLLOWS:

   UPON A RISE IN AVERAGED SPACE TEMPERATURE ABOVE THE COOLING SET POINT OF 75DEG F AND OUTSIDE AIR TEMPERATURE IS ABOVE 55DEG F, OPEN MOTORIZED DAMPER ON THE INLET OF DEC UNIT AND ENERGIZE SUPPLY FAN.

   UPON A FURTHER RISE IN AVERAGED SPACE TEMPERATURE ABOVE 78DEG F, ENERGIZE THE SUMP PUMP FOR DIRECT EVAPORATIVE COOLING. UPON A DROP IN SPACE TEMPERATURE BELOW 70DEGF, DE ENERGIZE THE SUMP PUMP. UPON A FURTHER DROP IN SPACE TEMPERATURE DE ENERGIZE THE SUPPLY FAN AND CLOSE INTAKE DAMPER.

   PROVIDE EVAPORATIVE COOLER UNIT WITH MINIMUM RUNTIME ON THE SUPPLY FAN TO PREVENT RAPID CYCLING.

   SUMP WATER FILL AND DRAIN CONTROL: PROVIDE A 1/2" ACTUATED BALL VALVE ON WATER FILL LINE, 1/2" ACTUATED BALL VALVE ON THE FILL LINE DRAIN BACK AND 1" ACTUATED BALL VALVE ON THE DRAIN. WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 40DEGF, CLOSE THE FILL VALVE AND OPEN THE DRAIN VALVE. WHEN THE OUTDOOR AIR TEMPERATURE RISES ABOVE 70DEGF, OPEN THE FILL VALVE AND CLOSE THE DRAIN VALVE. THE SUMP SHALL BE AUTOMATICALLY DRAINED PER EVAPORATIVE COOLER MANUFACTURER RECOMMENDATION TO MAINTAIN SUMP WATER QUALITY.

   DIRECT EVAPORATIVE COOLING SHALL BE LOCKED OUT FROM OPERATION WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 50DEGF.

   PROVIDE INTERLOCK OF EXHAUST FAN EF–1 WITH DEC–1 UNIT.

2. WATER REUSE BUILDING – ELECTRICAL ROOM: INSTALL PROGRAMMABLE ROOM THERMOSTAT(FCU–1/HP–1 AND FCU–2/HP–2) AND ALL NECESSARY INTERLOCKS AND WIRING(IN CONDUIT) TO CONNECT INDOOR FAN COIL WITH OUTDOOR CONDENSING UNIT.

CONTROL SEQUENCE A

H–04

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 7020476-2202
LAURA L. RANKIN
STATE OF UTAH
12-15-2022

REVISIONS

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#2	#2	#2	#2
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#4	#4	#4	#4
#5	#5	#5	#5

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

VERIFY SCALE
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REVIEW
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APPROVED L. RANKIN

DESIGN
DESIGN L. RANKIN
DRAWN J. WILSON

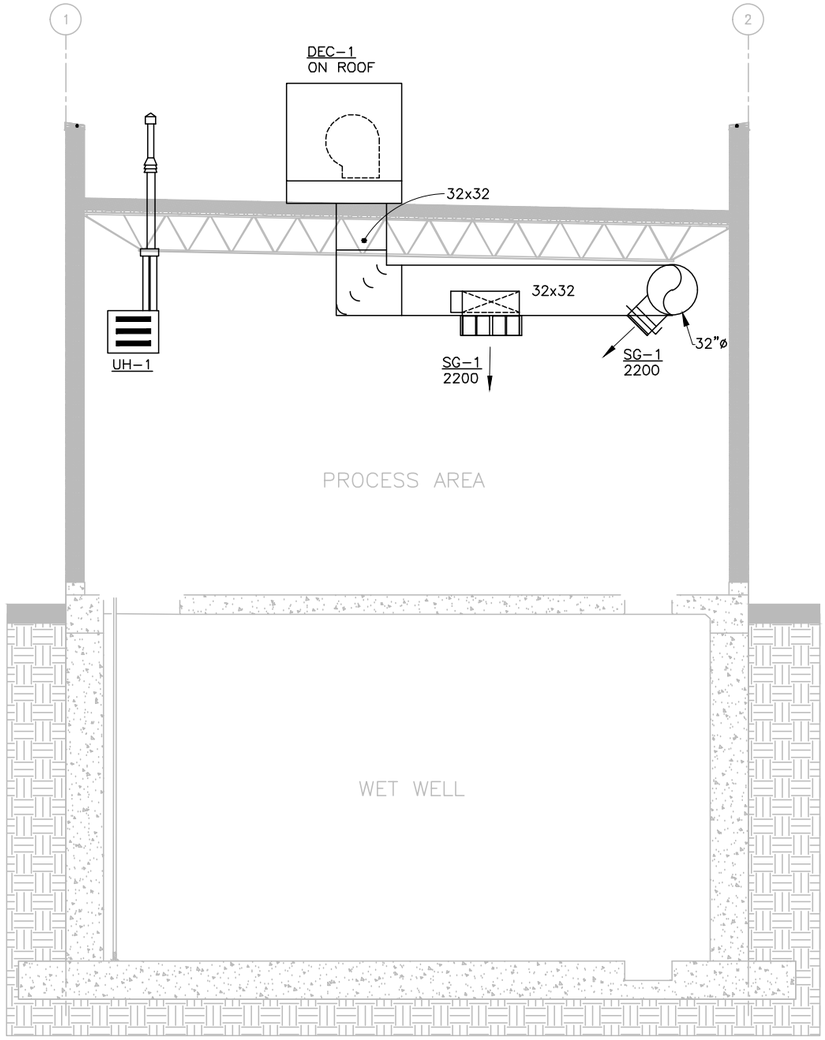
HVAC

LOWER LEVEL HVAC PLAN

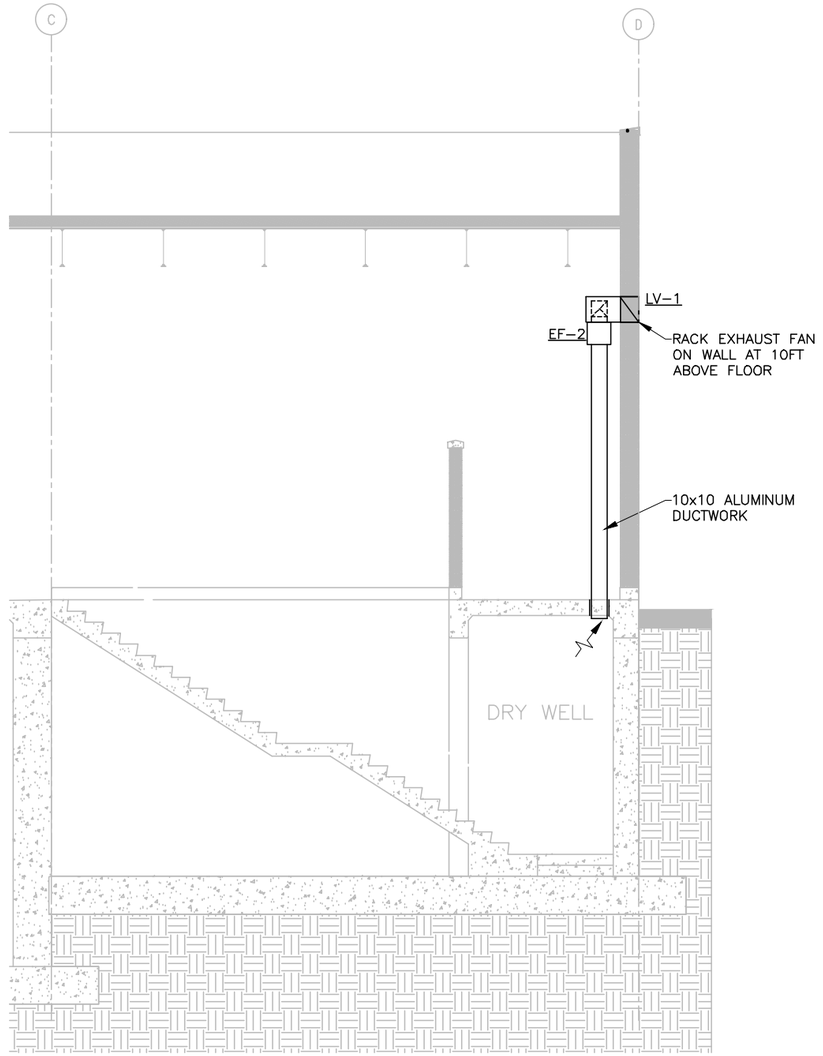
PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
H-04
SHEET 061 OF 126

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HVAC SECTION A
SCALE: 1/4" = 1'-0" H-05



HVAC SECTION B
SCALE: 1/4" = 1'-0" H-05

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MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

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DESIGN L. RANKIN
DRAWN J. WILSON

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HVAC

HVAC SECTIONS

PROJECT NUMBER 483-20-02

DATE: DECEMBER 2022

DRAWING NO.
H-05

SHEET 062 OF 126

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PLUMBING LEGEND

SYMBOL	DESCRIPTION
PW	POTABLE COLD WATER
HW	POTABLE HOT WATER
HWC	DOMESTIC HOT WATER RECIRC.
UW	UTILITY WATER
SPW	SOFT COLD WATER
SD	UNDERSLAB SANITARY DRAIN
SV	SANITARY VENT
FCO	FLOOR CLEAN OUT
GCO	GRADE CLEAN OUT
WCO	WALL CLEAN OUT
CD	CONDENSATE DRAIN
D	DRAIN
SS	UNDERSLAB SANITARY SEWER
F	FIRE SERVICE
CA	COMPRESSED AIR
CWV	UNDERGROUND COMBINATION WASTE VENT
PCR	PUMPED CONDENSATE RETURN
CR	CONDENSATE RETURN
S=.XXX	SLOPE DOWN IN DIRECTION OF FLOW
NG	NATURAL GAS
	SHUTOFF VALVE
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
G	GLOBE VALVE
(US)	UNDERSLAB
RWL	ROOF DRAIN
OFL	OVERFLOW ROOF DRAIN

SYMBOL	DESCRIPTION
	GAS SHUT-OFF COCK
	SWING CHECK VALVE
	SPRING CHECK VALVE
	STRAINER
	WATER OUTLET (TYPE INDICATED)
	BACKFLOW PREVENTER (TYPE INDICATED)
	SLEEVE (PIPE) THRU WALL OR FLOOR
	FLEX CONNECTOR (TYPE INDICATED)
	HOSE END DRAIN VALVE
	PRESSURE REDUCING VA.
	TEMP. & PRESSURE RELIEF VALVE
	AUTOMATIC AIR VENT
DE	DIELECTRIC UNION
	UNION
M	MANUAL FLOW BALANCING VALVE
A	AUTOMATIC FLOW BALANCING VALVE
T	DIAL THERMOMETER
P	PRESSURE GAUGE – PROVIDE WITH PIGTAIL FOR STEAM
X	PIPE ANCHOR
	SOLENOID VALVE
	L.P. VALVE
	ECCENTRIC PLUG BALANCING VALVE
	VALVE IN RISER
	TEE UP
	TEE DOWN
	ELBOW UP
	ELBOW DOWN
	PIPE CAP
	PIPE DRAIN & CAP
	CONNECT TO EXISTING

PLUMBING ABBREVIATIONS

AB.C.	ABOVE CEILING	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AV	ACID VENT	NG	NATURAL GAS
AW	ACID WASTE	(N)	NEW
BFF	BELOW FINISHED FLOOR	NO	NORMALLY OPEN (VALVE)
BG	BELOW GRADE	NC	NORMALLY CLOSED (VALVE)
CA	COMPRESSED AIR	OH	OVER HEAD
CD	CONDENSATE DRAIN	OFL	OVERFLOW RAIN WATER LEADER
C.I.N.H.	CAST IRON NO HUB	PW	POTABLE WATER
CO	CLEANOUT	(R)	PIPE RISE
CKV	CHECK VALVE	RD	ROOF DRAIN
CW	COLD WATER	RIO	ROUGH-IN ONLY
CX	CONNECT TO EXISTING	RWL	RAIN WATER LEADER
(A)	PIPE DROP	SHT	SHEET
D	DRAIN	SCW	SOFT COLD WATER
DN	PIPE DROP TO NEXT LEVEL	SOV	SHUT OFF VALVE
DTL	DETAIL	TPL	TRAP PRIMER LINE
(E)	EXISTING	UG	UNDERGROUND
F	FIRE SERVICE	UP	PIPE RISE TO NEXT LEVEL
FCO	FLOOR CLEANOUT	US	UNDER SLAB
FND	FOUNDATION DRAIN	UTR	UP THRU ROOF
GCO	GRADE CLEANOUT	V	VENT
HW	HOT WATER	VA	VALVE
HWC	HOT WATER CIRCULATION	VTR	VENT THRU ROOF
IDW	INDIRECT WASTE	W	WASTE
I.E.	INVERT ELEVATION	WCO	WALL CLEANOUT
IRR	IRRIGATION		
LPG	LIQUEFIED PETROLEUM GAS		
LWCO	LOW WATER CUTOFF		

PLUMBING GENERAL NOTES:

1. COORDINATE PLUMBING FIXTURES AND RELATED PIPING WITH ALL OTHER TRADES AS REQUIRED.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND INTERIOR ELEVATIONS FOR EXACT FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
3. LOCATE WATER PIPING IN HEATED AREAS ONLY. DO NOT LOCATE PIPING IN NON-INSULATED ATTIC, CEILING OR WALL SPACES. DO NOT LOCATE WATER PIPING IN ANY EXTERIOR WALL.
4. ACCESS PANEL LOCATIONS MUST BE COORDINATED WITH EITHER ARCHITECT OR GENERAL CONTRACTOR.
5. WALLS ARE SHOWN DASHED ON FOUNDATION PLAN FOR REFERENCE AND CLARITY ONLY. WASTE PIPING IS ROUTED UNDER FLOOR SLAB.
6. WASTE PIPING SMALLER THAN 4" IS TO BE SLOPED AT 1/4" PER FOOT. ALL WASTE PIPING 4" AND LARGER IS TO BE INSTALLED AT 1/8" SLOPE PER FOOT, UNLESS GREATER SLOPE IS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
7. ALL ROOF DRAIN PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT OF HORIZONTAL RUN.

PIPING SCHEDULE ON M-01, AND M-02 IS FOR PROCESS MECHANICAL AND CIVIL SHEETS. FOR PLUMBING WORK REFER TO DIVISION 22 PLUMBING, PIPING AND FITTINGS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 7020476/2202
LAURA L. RANKIN
STATE OF UTAH
12-15-2022

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW CHECKED L. RANKIN APPROVED L. RANKIN

DESIGN L. RANKIN DRAWN J. WILSON

PLUMBING

PLUMBING ABBREVIATIONS, LEGEND, AND NOTES

DATE: DECEMBER 2022 PROJECT NUMBER 483-20-02

DRAWING NO. P-01

SHEET 063 OF 126

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PLUMBING FIXTURE AND CONNECTION SCHEDULE

PLAN CODE	FIXTURE						TRIM			ACCESSORIES			CONNECTIONS				REMARKS
	ITEM	MFGR	MODEL	TYPE	MATERIAL	COLOR/FINISH	ITEM	MFGR	MODEL	ITEM	MFGR	MODEL	COLD	HOT	WASTE	VENT	
RD–1	ROOF DRAIN	JAY R SMITH	1015	GENERAL PURPOSE ROOF DRAIN	CAST IRON	STANDARD	UNDER DECK CLAMP, SUMP RECEIVER, CI DOME	JAY R SMITH	CL, R, C								1
OFD–1	OVERFLOW ROOF DRAIN	JAY R SMITH	1045	ROOF DRAIN WITH WATER DAM	CAST IRON	STANDARD	UNDER DECK CLAMP, SUMP RECEIVER, CI DOME	JAY R SMITH	CL, R, C								1
DSN–1	DOWNSPOUT NOZZLE	JAY R SMITH	1771	DOWNSPOUT NOZZLE	CAST IRON	STANDARD	BIRDSCREEN	JAY R SMITH					–	–			1
EWS–1	EMERGENCY EYEWASH SHOWER	HAWS	8330 8309	EMERGENCY SHOWER / EYEFACE WASHER	GALVANIZED	PAINTED	THERMOSTATIC MIXING VALVE	HAWS	9201H				1 1/4"	1 1/4"			4
FD–1	FLOOR DRAIN	JAY R SMITH	2110	MEDIUM DUTY FLOOR DRAIN	CAST IRON	CAST IRON							–	–			1
SS–1	SERVICE SINK	FIAT	TSB–3001	FLOOR MOUNTED 24 x 24	TERRAZZO	STONE	SERVICE FAUCET	FIAT	830–AA	MOP BRACKET	FIAT	889–CC	3/4"	3/4"	2"	2"	3
WPR–1	WATER PRESSURE REGULATOR	WATTS	LF25AUB–Z3	WATER PRESSURE REDUCING VALVE WITH INTEGRAL STRAINER	LEAD FREE BRONZE	BRASS							1 1/2"				2

SCHEDULE NOTES:
1. SIZE OF CONNECTION VARIES, SEE PLUMBING DRAWINGS FOR ACTUAL SIZES.
2. SEE GP–01 DRAWINGS FOR PRESSURE REDUCING VALVE INSTALLATION DETAIL.
3. PROVIDE SERVICE SINK WITH ACCESSORIES – STRAINER, MOP BRACKET, HOSE HANGER, HOSE AND BUMPER GUARD.
4. PROVIDE AND HANG EMERGENCY EYEWASH/SHOWER SIGN IN VISIBLE LOCATION. SET MIXING VALVE OUTLET WATER TEMPERATURE AT 80DEG F.

WATER HEATER SCHEDULE

PLAN CODE	MFGR	MODEL	TANK CAPACITY (GAL)	PERFORMANCE DATA					NOTES
				FUEL TYPE	INPUT (BTUH)	RECOVERY @ 100 DEG RISE	GAS VENT / INTAKE	ELECTRIC SERVICE	
WH–1	BOCK	OT199N	99	NAT GAS	199,000.0	229 GPH	(2) 3"	120V–1PH–60HZ	1,2, 3

SCHEDULE NOTES:
1. SEE DETAIL A SHEET GP–01. INSTALL WITH EXPANSION TANK AMTROL ST–20V–C.
2. PROVIDE DIELECTRIC COUPLINGS, UNIONS AND SHUT OFF VALVES AT WATER HEATER HOT AND COLD WATER CONNECTIONS.
3. PROVIDE 3" CPVC AIR INTAKE AND FLUE EXHAUST PIPED SEPARATELY TO THE OUTSIDE AND VENT THRU ROOF PER LOCAL CODE REQUIREMENTS.

DOMESTIC HW RECIRC PUMP SCHEDULE

PLAN CODE	MFGR	MODEL NO.	AMP RANGE	MOTOR WATTS	POWER (V/PH/HZ)	WEIGHT LBS	NOTES
RP–1	B&G	ECOCIRC +20–18	0.06–1.02	0–70	1115/1/60	9.5	1

SCHEDULE NOTES:
1. STAINLESS STEEL PUMP BODY, ECM MOTOR TYPE WITH CHECK VALVE, SET POINT TEMPERATURE PUMP CONTROL.

BACKFLOW PREVENTER SCHEDULE

PLAN CODE	MFGR	MODEL	TYPE	MATERIAL	SIZE	NOTES
RPBP–1	WATTS	LF009	REDUCED PRESSURE	BRONZE	1 1/2"	1, 2

SCHEDULE NOTES:
1. BACKFLOW PREVENTERS TO BE TESTED AND CERTIFIED PRIOR TO FINAL INSPECTION.
2. PROVIDE WITH SHUTOFF VALVES, STRAINER, AIR GAP AND AIR GAP PIPE TO SUMP.

PIPE SCHEDULE

PLAN CODE	ABOVEGROUND PIPING INSIDE BUILDING		UNDERGROUND PIPING INSIDE BUILDING TO 5FT OUTSIDE OF BUILDING	
	2" DIA & SMALLER	2–1/2" DIA & LARGER	2" DIA & SMALLER	2–1/2" DIA & LARGER
D	4, 5	4, 5	–	–
PW	1	1	2	
HW	1	1		
RWL/OFL	3, 4	3, 4	–	–
NG	2	2	6	6

PIPE MATERIAL LIST

SCHEDULE CODE	PIPE TYPE	SCHEDULE NOTES
1	NPS 6 AND SMALLER: COPPER, ASTM B88, TYPES L & M, WATER TUBING, DRAWN TEMPER ASME B16.22 WROUGHT COPPER PRESSURE FITTINGS WITH SOLDERED JOINTS	1, 2
2	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED OR THREADED, GRADE B, WALL THICKNESS OF WROUGHT STEEL PIPE.	4
3	CAST IRON SOIL ANSI/ASTM A–888 SERVICE WEIGHT, HUBLESS COUPLINGS WITH DWV SOIL FITTINGS.	3, 4
4	POLYVINYL CHLORIDE, PVC, SOLID WALL ASTM D 2665 PVC SOCKET FITTING FOR DWV SOIL SERVICE.	3, 4
5	POLYVINYL CHLORIDE, PVC, SCHEDULE 80, SOLID WALL ASTM D 2467 PVC SOCKET FITTING FOR PRESSURE SERVICE.	3, 4
6	PE, POLYETHYLENE PIPE, SDR 11, ASTM D2513 WITH SOCKET OR BUTT FUSION TYPE FITTINGS AND COUPLINGS.	4

SCHEDULE NOTES:
1. SEE SPECIFICATION 22 11 16 FOR ADDITIONAL REQUIREMENTS ON PIPE AND FITTING APPLICATION.
2. SEE SPECIFICATION 22 05 23 FOR VALVE TYPE FOR SERVICE.
3. SEE SPECIFICATION 22 13 16 FOR ADDITIONAL REQUIREMENTS ON PIPE AND FITTING APPLICATION.
4. SEE SPECIFICATION 23 11 23 FOR ADDITIONAL REQUIREMENTS ON PIPE AND FITTING APPLICATION.

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LAURA L. RANKIN
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#5	##	##	##

VERIFY SCALE
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MAGNA WATER DISTRICT
MAGNA WRF REUSE PROJECT
MAGNA, UT

REVIEW CHECKED L. RANKIN APPROVED L. RANKIN

DESIGN DESIGN L. RANKIN DRAWN J. WILSON

PLUMBING

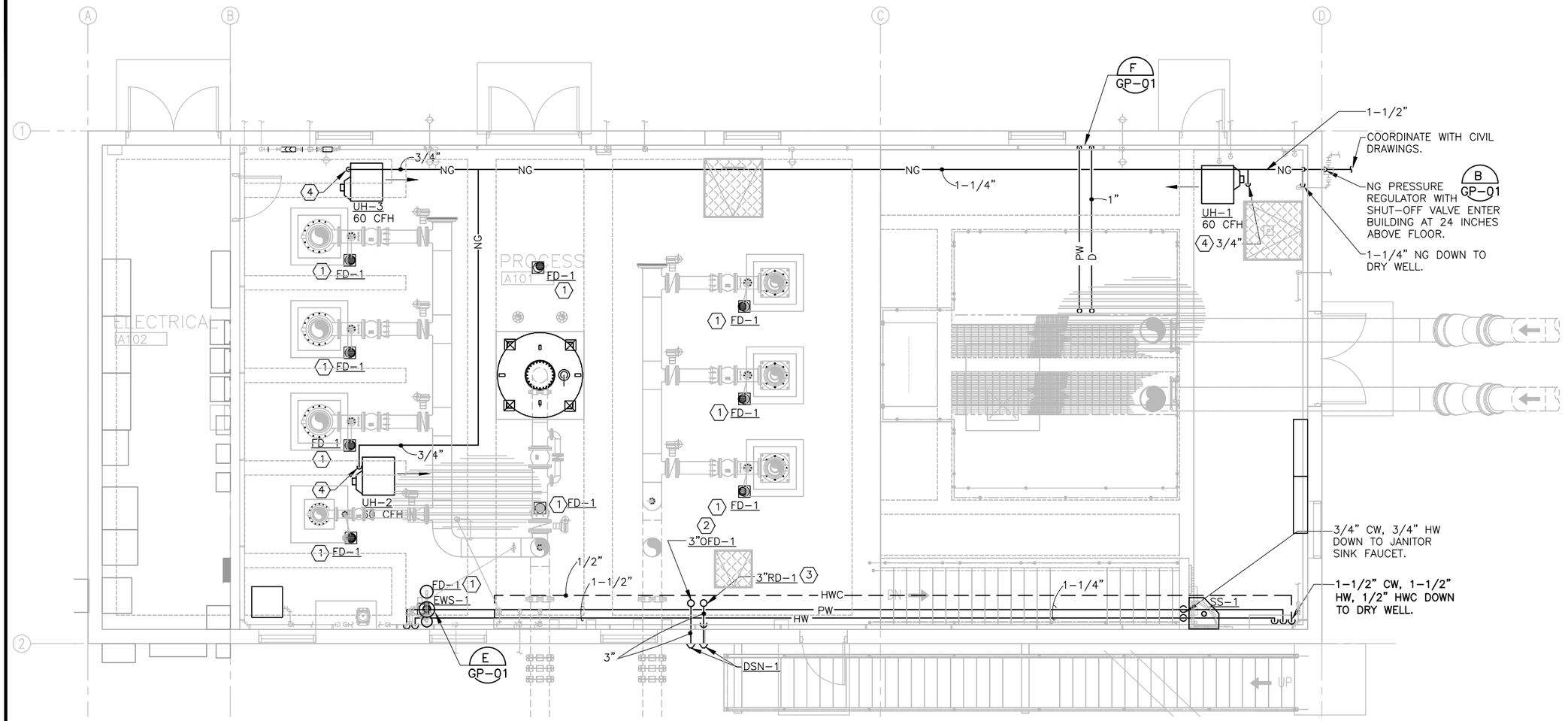
PLUMBING SCHEDULES

PROJECT NUMBER 483-20-02

DATE: DECEMBER 2022

DRAWING NO. P-02

SHEET 064 OF 126



MAIN LEVEL PLUMBING PLAN

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

SHEET NOTES: (#)

1. EXTEND 2" FROM FLOOR DRAIN TO DISCHARGE INTO WET WELL, NO P-TRAP ON FLOOR DRAIN (TYP).
2. DISCHARGE 3" OFL PIPE AT 24" BELOW ROOF.
3. 3" RWL UP TO RD-1 AND DISCHARGE PIPE AT 24" ABOVE FLOOR.
4. CONNECT 3/4" NG TO UNIT HEATER WITH SHUT-OFF VALVE AND DIRT LEG.

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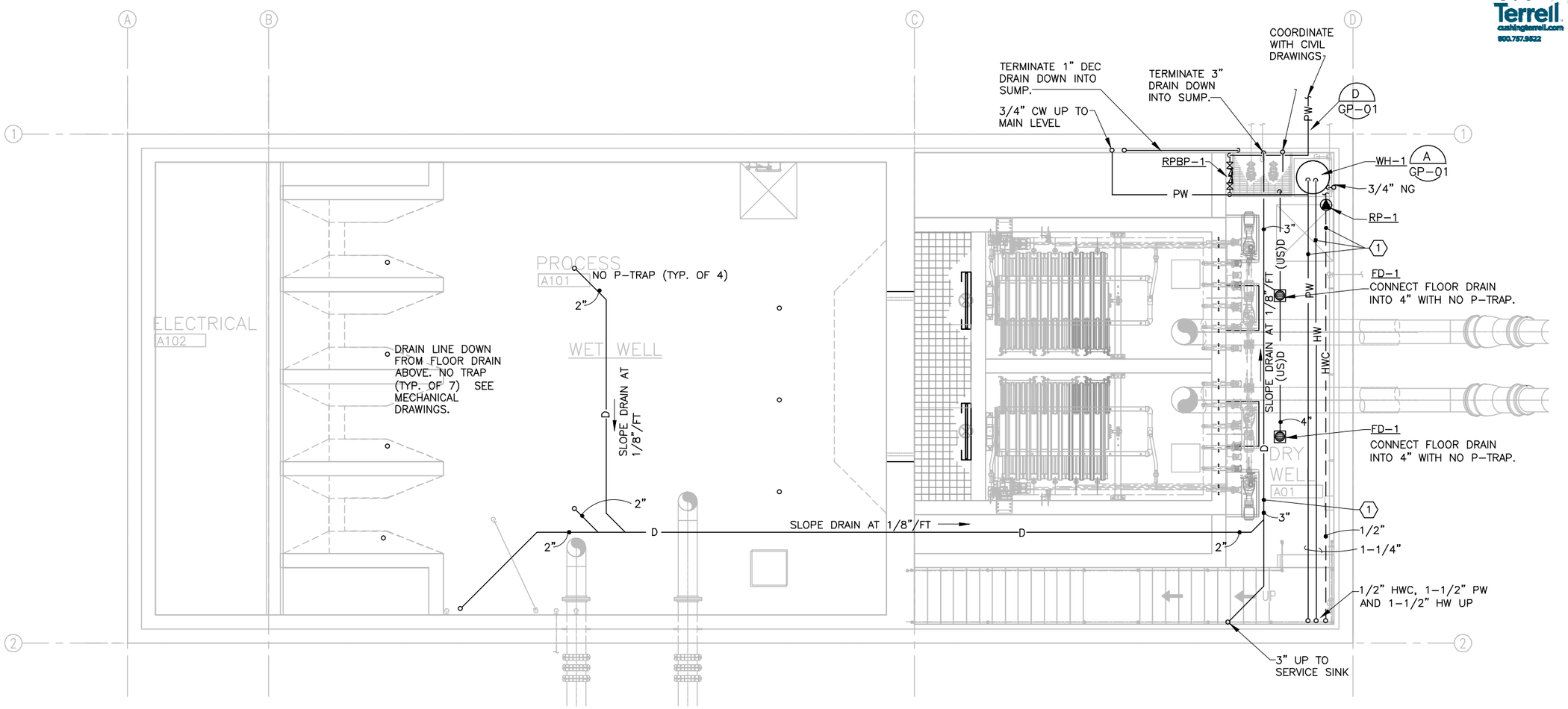
PLUMBING

MAIN LEVEL PLUMBING PLAN

PROJECT NUMBER 483-20-02
DATE: DECEMBER 2022

DRAWING NO.
P-03
SHEET 065 OF 126

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LOWER LEVEL PLUMBING PLAN

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

N

SHEET NOTES: (#)

1. WATER PIPING TO BE INSTALLED ALONG NORTH WALL OF DRY WELL TO AVOID ABILITY TO USE ACCESS HATCH. DRAIN AND WATER PIPING INSTALLATION IN DRY WELL TO AVOID ABILITY TO USE ACCESS HATCH.

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PLUMBING

LOWER LEVEL PLUMBING PLAN

DATE: DECEMBER 2022
PROJECT NUMBER 483-20-02

DRAWING NO.
P-04

SHEET 066 OF 126

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