GENERAL NOTES

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE OTHER PROJECT DRAWINGS AND SPECIFICATIONS.

SEE OTHER DISCIPLINE DRAWINGS FOR ANCHORS, PIPE SLEEVES, SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED IN OR PASS THROUGH THE CONCRETE. IN GENERAL, EMBEDMENTS AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS.

WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED SIZES.

DESIGN CRITERIA

BUILDING CODES: 2021 ARKANSAS FIRE PREVENTION CODE (2021 IBC) ASCE 7-22

CAST-IN-PLACE CONCRETE NOTES

REINFORCED CONCRETE SHALL CONFORM TO ACI 318, LATEST REVISION.

MINIMUM CONCRETE STRENGTH AT 28 DAYS:

CLASS A: CONCRETE FILL & PIPE ENCASEMENT	f'c = 2500 psi
CLASS B: CONCRETE SIDEWALKS & PAVEMENTS	f'c = 3500 psi
CLASS C: STRUCTURAL CONCRETE	f'c = 4000 psi

REINFORCING STEEL SHALL BE BILLET STEEL CONFORMING TO THE LATEST EDITION OF ASTM A615, GRADE 60.

REINFORCING STEEL FABRICATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI MANUAL OF STANDARD PRACTICE.

REINFORCING STEEL SHALL HAVE THE FOLLOWING MINIMUM CLEAR CONCRETE COVER

1. CONCRETE CAST AGAINST EARTH (i.e. BOTTOM OF SLABS, FOOTINGS, DRILLED PIERS, ETC.) - 3 INCHES
2. ALL OTHER CONCRETE SURFACES - 2 INCHES

MINIMUM TENSION LAP SPLICE LENGTHS FOR GRADE 60 REINFORCING BARS IN WALLS AND SLABS SHALL BE IN ACCORDANCE WITH DETAIL S101 THIS SHEET. UNLESS OTHERWISE NOTED ON THE DRAWINGS. LAP SPLICES NOT COVERED BY DETAIL S101 SHALL BE AS SHOWN ON THE DRAWINGS OR SHALL BE REFERRED TO THE ENGINEER FOR DETERMINATION OF REQUIRED LENGTH.

CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE 1" CHAMFER, UNLESS OTHERWISE NOTED.

BLOCKOUTS IN THE CONCRETE FORMWORK SHALL NOT BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

MODIFICATION AND REPAIR TO CONCRETE NOTES

SEE SPECIFICATION SECTION 03740 FOR EXPLANATION OF CONCRETE REMOVAL METHODS, CONNECTION METHODS AND MATERIALS USED.

CONNECTION METHODS ARE SPECIFIED IN DETAIL IN SPECIFICATION SECTION 03740.
METHOD A - CEMENT SLURRY BONDING
METHOD B - BONDING USING BONDING ADHESIVE
METHOD C - DRILLED DOWELS OR BOLTS USING DOWELING ADHESIVE
METHOD D - COMBINATION OF METHODS B AND C

CONCRETE JOINT NOTES

UNLESS OTHERWISE NOTED, PROVIDE SEALANT IN JOINTS AS SHOWN ON THE DRAWINGS AND AS FOLLOWS:

1. EXPANSION JOINTS SHALL HAVE SEALANT APPLIED TO BOTH SIDES OF THE JOINT, EXCEPT FOR THE SOIL SIDE OF A BASE SLAB JOINT.
2. CONTROL JOINTS AND CONSTRUCTION JOINTS WILL NOT REQUIRE SEALANT, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

UNLESS OTHERWISE NOTED, PROVIDE WATERSTOPS IN JOINTS AS SHOWN ON THE DRAWINGS AND AS FOLLOWS:

1. IN ALL EXTERIOR BELOW GRADE WALLS AND SLABS.

WATERSTOPS AT BOTH HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHALL BE CONTINUOUS, AS WELL AS AT THE INTERSECTION OF HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS. WATERSTOPS SHALL BE FIELD WELDED TO ACHIEVE SUCH CONTINUITY.

PROCEDURES FOR ROUGHENED JOINTS ARE DESCRIBED IN SPECIFICATION SECTION 03250.

STEEL NOTES

STRUCTURAL SHAPES SHALL CONFORM TO ASTM A992.

PLATES AND BARS SHALL CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED.

ALL STRUCTURAL STEEL SHALL BE FABRICATED, ERECTED, AND CONNECTED IN COMPLIANCE WITH THE LATEST AISC SPECIFICATIONS. MINIMUM THICKNESS OF CLIP ANGLES OR CONNECTOR PLATES SHALL BE 1/4".

STRUCTURAL STEEL FOR BUILDING CONSTRUCTION (I.E. COLUMNS, BEAMS, JOISTS, DECK, ETC.) SHALL BE SHOP PRIMED AND FIELD PAINTED AS SPECIFIED (UNLESS NOTED OTHERWISE). STRUCTURAL STEEL FOR ACCESS PLATFORMS, EQUIPMENT PLATFORMS, AND STAIRS SHALL BE HOT-DIP GALVANIZED.

BOLTED CONNECTIONS SHALL BE MADE USING TYPE 316 STAINLESS STEEL HIGH-STRENGTH BOLTS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED. ALL BOLTS SHALL BE 3/4" DIAMETER IN 13/16" DIAMETER HOLES UNLESS OTHERWISE SPECIFIED. PROVIDE A MINIMUM OF TWO (2) BOLTS PER CONNECTION.

ALL HARDWARE FOR ACCESS PLATFORMS AND STAIRS THAT ARE COMPOSED OF HOT-DIP GALVANIZED STRUCTURAL MEMBERS, ALUMINUM GRATING, AND ALUMINUM HANDRAIL SHALL BE TYPE 316 STAINLESS STEEL.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH LATEST EDITION OF THE STRUCTURAL WELDING CODE AWS D1.1. WELD FILLER METAL SHALL BE E70XX ELECTRODES, UNLESS OTHERWISE SPECIFIED. MINIMUM WELD SIZE SHALL BE 3/16 INCH FILLET WELD, UNLESS OTHERWISE NOTED. ALL WELDS SHALL BE FIELD PAINTED AS SPECIFIED, OR COATED WITH A MINIMUM OF TWO (2) COATS OF COLD GALVANIZING FOR GALVANIZED STEEL MEMBERS.

HOT-DIP GALVANIZING, SHOP PAINTING, AND FIELD PAINTING, AS REQUIRED, SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.

FOUNDATION NOTES

IN PREPARATION OF DRAWINGS AND SPECIFICATIONS, THE ENGINEER HAS RELIED UPON THE GEOTECHNICAL DESIGN REPORT PREPARED BY GTS, INC. DATED DECEMBER 7, 2023 AND AMENDED FEBRUARY 14, 2024 AND APRIL 15, 2024. THIS REPORT AND ITS AMENDMENTS IS PART OF THE CONTRACT DOCUMENTS.

ALL FOUNDATION BEARING SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.

STRUCTURAL EXCAVATION, BACKFILLING, AND GRADING

SEE SPECIFICATION SECTION 02316 FOR EXPLANATION OF STRUCTURAL EXCAVATION, BACKFILLING, AND GRADING PROCEDURES AND ACCEPTABLE MATERIALS.

CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING TEMPORARY EXCAVATION SUPPORT SYSTEMS, INCLUDING SHEETING, SHORING AND BRACING, TO INSURE THE SAFETY OF PERSONNEL AND PROTECT ADJACENT STRUCTURES, PIPING, ETC. (NEW OR EXISTING) IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND REQUIREMENTS.

ALUMINUM GRATING AND COVER PLATE NOTES

GRATING SHALL BE ALUMINUM OR FIBERGLASS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. ALUMINUM GRATING SHALL BE ALUMINUM ALLOY 6063-T6. GRATING SUPPORTS SHALL BE GALVANIZED STEEL WITH ONE (1) COAT OF COAL TAR EPOXY BETWEEN GRATING AND SUPPORTS TO PROVIDE DIELECTRIC SEPARATION.

COVER PLATES AND SUPPORTS SHALL BE ALL ALUMINUM CONSTRUCTION UNLESS OTHERWISE NOTED. COVER PLATES SHALL BE ALUMINUM ALLOY 6061-T6.

FASTENERS, ANCHORS, BOLTS, NUTS, AND WASHERS FOR ALUMINUM GRATING, COVER PLATES, AND SUPPORTS SHALL BE TYPE 316 STAINLESS STEEL.

BAND ALL GRATING ALONG EDGES AND AROUND OPENINGS WITH CONTINUOUS BAR EQUAL TO BEARING BARS.

ALL ANGLE FRAMES FOR GRATING ARE TO BE MITERED AND WELDED AT CORNERS.

ALL GRATING SHALL BE SECURELY FASTENED TO SUPPORTS WITH STAINLESS STEEL GRATING CLIPS AND ANCHORS, UNLESS OTHERWISE NOTED.

GRATING PANEL LAYOUT SHALL PROVIDE FOR THE REMOVAL OF GRATING AROUND PIPE AND OTHER GRATING PENETRATIONS. MAXIMUM GRATING PANEL WEIGHT SHALL BE 40-POUNDS.

ALL COVER PLATES SHALL BE SECURELY FASTENED TO SUPPORTS WITH 1/4" STAINLESS STEEL FLAT-HEAD MACHINE SCREWS AT 2'-0" ON CENTER, UNLESS OTHERWISE NOTED.

GRATING SIZE SHALL MEET THE FOLLOWING CRITERIA UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWING:

STEEL GRATING SPAN	RECTANGULAR BEARING BAR SIZE
TO 4'-6"	USE 1 1/2" x 3/16" MIN

FIELD VERIFY GRATING SUPPORT LOCATIONS BEFORE FABRICATING GRATING. PLACE SUPPORTS WITH EXTREME CARE TO PROVIDE TOLERANCES SHOWN OR SPECIFIED.

MASONRY NOTES

HOLLOW, LOAD-BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE I, LIGHTWEIGHT UNITS, AND INSTALLED IN RUNNING BOND PATTERN, UNLESS OTHERWISE NOTED.

MORTAR FOR REINFORCED MASONRY SHALL CONFORM TO ASTM C270, TYPE S, UNLESS OTHERWISE NOTED. GROUT SHALL CONFORM TO ASTM C476.

REFER TO PLANS AND SPECIFICATIONS FOR MASONRY REINFORCEMENT REQUIREMENTS, INCLUDING HORIZONTAL JOINT REINFORCEMENT. DEFORMED REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.

MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS, f'm = 1500 psi.

ALUMINUM HANDRAIL NOTES

ALUMINUM HANDRAIL SHALL BE MODULAR CONSTRUCTION AND SHALL BE SIMILAR AND EQUAL TO PEAK TO PEAK RAILINGS, WHEAT RIDGE, COLORADO; GOLDEN RAILING, BROOMFIELD, COLORADO; OR APPROVED EQUAL. FABRICATED HANDRAIL WILL NOT BE PERMITTED.

SYMBOLS

(E) INDICATES EQUIPMENT PAD. PER DETAIL S-03-107 THIS SHEET. COORDINATE SIZE WITH EQUIPMENT REQUIREMENTS.

(H) INDICATES HOUSEKEEPING PAD. PER DETAIL S-03-108 THIS SHEET. COORDINATE SIZE WITH EQUIPMENT REQUIREMENTS.

STANDARD DETAILS SHOWN ON THESE DRAWINGS SHALL BE USED AT ALL APLICABLE LOCATIONS, UNLESS NOTED OTHERWISE ON DRAWINGS.

LAP SPLICE LENGTHS
IN WALLS AND SLABS (INCHES)

BAR SIZE	2" COVER
3	20
4	24
5	30
6	36
7	42
8	48

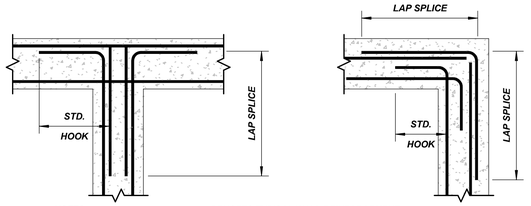
NOTES:

1. TABLE IS BASED ON ACI 318R-19 & f'c = 4000 PSI. BARS ARE UNCOATED.
2. MINIMUM BAR SPACING = 6" O.C.
3. LENGTHS FOR BEAMS AND COLUMNS SHALL BE AS SHOWN ON THE DRAWINGS.
4. LAP SPLICE LENGTHS SHALL BE INCREASED FOR LOWER CONCRETE COMPRESSIVE STRENGTH AS FOLLOWS:

f'c	MULTIPLIER
3000 PSI	1.16
3500 PSI	1.07

LAP SPLICE LENGTHS

DETAIL S101
N.T.S

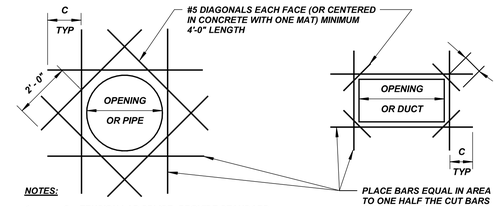


NOTES: DENOTES TYPICAL WALL REINFORCEMENT

1. SPLICE BARS TO BE SAME SIZE AND SPACING AS LARGER OF BARS BEING SPLICED. SPLICE BARS SHALL BE LAPPED WITH TYPICAL WALL REINFORCEMENT.
2. EXTEND BAR HOOKED ENDS TO FAR FACE OF WALL.
3. REINFORCING STEEL LAYOUT FOR WALLS WITH SINGLE MAT OF REINFORCEMENT SIMILAR TO ABOVE PATTERN FOR EXTERIOR MAT OF REINFORCEMENT.

CORNER REINFORCEMENT PLANS

DETAIL S102
N.T.S



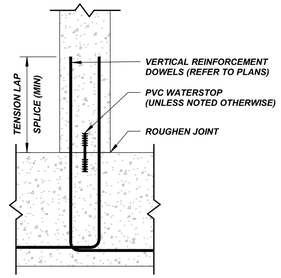
NOTES:

1. C = TENSION LAP SPLICE; PROVIDE STANDARD HOOK IF FULL DEVELOPMENT LENGTH IS NOT POSSIBLE.
2. REINFORCING STEEL IS TO BE CARRIED ACROSS ALL CONSTRUCTION JOINTS.
3. DETAIL IS TYPICAL FOR ALL OPENINGS GREATER THAN 10 INCHES IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE NOTED.
4. EXTRA BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.

PLACE BARS EQUAL IN AREA TO ONE HALF THE CUT BARS ON EACH SIDE OF OPENING UNLESS OTHERWISE DETAILED ON THE DRAWINGS

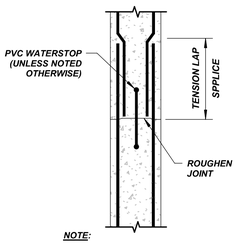
EXTRA REINFORCEMENT AT OPENINGS

DETAIL S103
N.T.S



WALL CONSTRUCTION JOINT AT SLAB

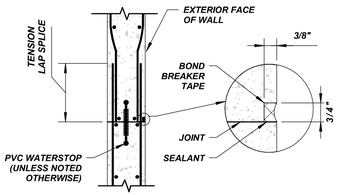
DETAIL S104
N.T.S



NOTE:
DETAIL SHOWN FOR WALLS; SLABS SIMILAR

CONSTRUCTION JOINT

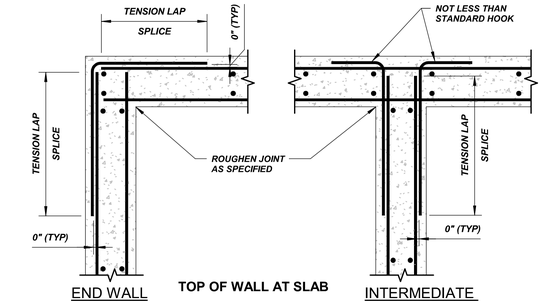
DETAIL S105
N.T.S



NOTE:
DETAIL SHOWN FOR WALLS; SLABS SIMILAR

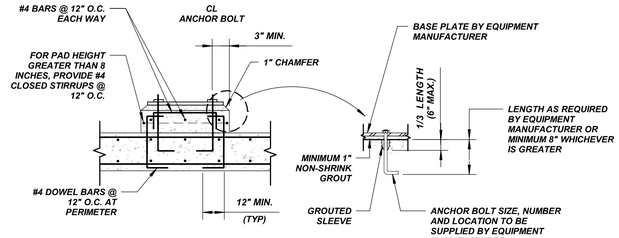
CONSTRUCTION JOINT AND SEALANT

DETAIL S106
N.T.S



TOP OF WALL AT SLAB

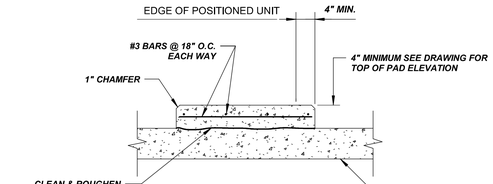
DETAIL S107
N.T.S



DIMENSIONS OF PAD AS REQUIRED TO SUIT EQUIPMENT (4" HEIGHT UNLESS PAD IS CAST INTEGRALLY WITH SLAB)

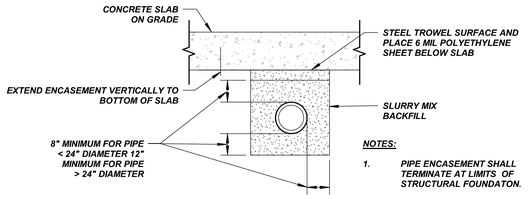
EQUIPMENT PAD

DETAIL S108
N.T.S



HOUSEKEEPING PAD

DETAIL S109
N.T.S



NOTES:

1. PIPE ENCASEMENT SHALL TERMINATE AT LIMITS OF STRUCTURAL FOUNDATON.

PIPE ENCASEMENT

DETAIL S110
N.T.S

1"
ONE INCH
AT FULL SIZE
IF NOT ONE INCH
SCALE ACCORDINGLY

REVISION	DATE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BRETT D. PETTY No. 8398 SHEET 1 OF 1

HAWKINS WEIR ENGINEERS, INC.
BLACK & VEATCH

ROGERS, ARKANSAS
ROGERS POLLUTION CONTROL FACILITY (PCF) SOLIDS HANDLING IMPROVEMENTS, PHASE II

STRUCTURAL DETAILS I

FOR: ROGERS WATER UTILITIES

DATE:	AUGUST 2024
SCALE:	AS SHOWN
DESIGNED BY:	BDP
DRAWN BY:	ADF
HWEI NO.:	2020043
FILENAME:	SZ1-SZ4

SHEET NO.
SZ-1