

STRUCTURAL NOTES :

A. GENERAL

1. THE STRUCTURAL NOTES ARE INTENDED TO COMPLEMENT THE PROJECT SPECIFICATIONS WHICH ARE PART OF THE CONSTRUCTION DOCUMENTS. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN ON CONTRACT DOCUMENTS, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO FABRICATION OR CONSTRUCTION OF ANY AFFECTED ELEMENTS.
3. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
4. OBSERVATION VISITS TO THE SITE BY ARW ENGINEERS FIELD REPRESENTATIVES SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
5. SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS. SUBMITTALS SHALL BE MADE IN A TIMELY MANNER AS INDICATED IN SPECIFICATIONS. REVIEW OF SUBMITTALS BY ARW ENGINEERS IS FOR GENERAL COMPLIANCE ONLY AND IS NOT INTENDED AS APPROVAL. SUBMITTALS WHICH ARE UNCLEAR OR DIFFICULT TO READ SHALL BE REJECTED.
6. DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.
7. TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN.
8. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH ANY CHANGES, MODIFICATIONS OR SUBSTITUTIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING FOR ALL STRUCTURAL ELEMENTS UNTIL THE ENTIRE STRUCTURAL SYSTEM IS COMPLETED. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL SHORING.
10. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT OR OTHER EQUIPMENT BEFORE FABRICATING AND ERECTING STRUCTURAL ELEMENTS.

B. SPECIAL INSPECTIONS

1. SPECIAL INSPECTION OF ALL CONCRETE SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED AS OUTLINED IN THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE AND COOPERATE WITH REQUIRED INSPECTIONS.

C. BASIS OF DESIGN

1. GOVERNING BUILDING CODE : ACI 318-14 / ACI 350 / ACI 350.3
 - a. SNOW LOAD = 86 PSF
 - b. DO NOT PLACE SOIL OVER LID

D. FOUNDATION

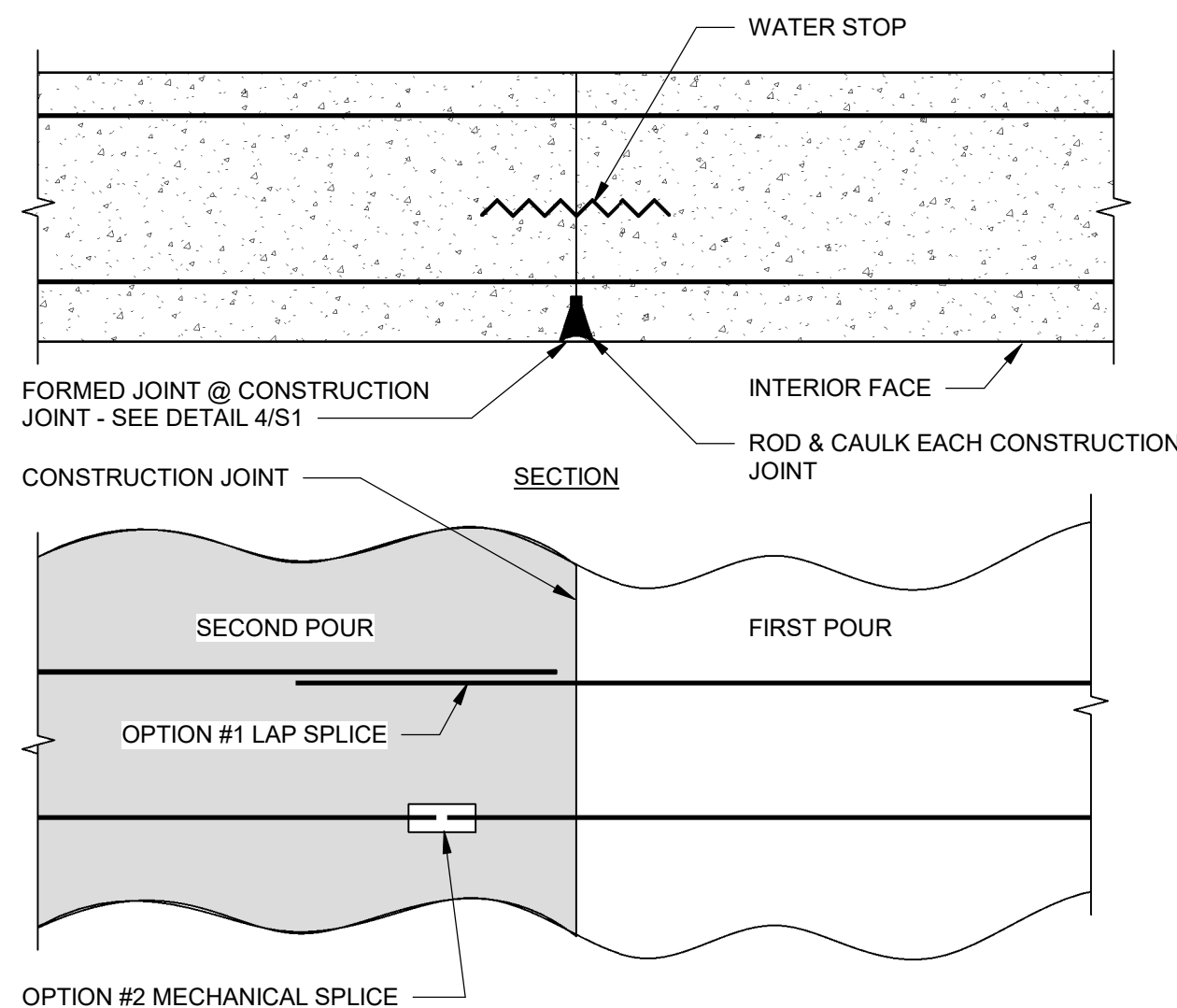
1. DESIGN SOIL PRESSURE : 3,000 PSF
2. SOILS REPORT BY : CHRISTENSEN GEOTECHNICAL
REPORT # : 133-014
DATED : JANUARY 7, 2021
3. SOIL PREPARATION UNDER FOOTINGS AND SLABS-ON-GRADE SHALL BE IN ACCORDANCE WITH THE SOILS REPORT.
4. UNLESS NOTED OTHERWISE, ALL FOOTINGS AT COLUMNS TO BE CENTERED BELOW COLUMNS

E. CONCRETE

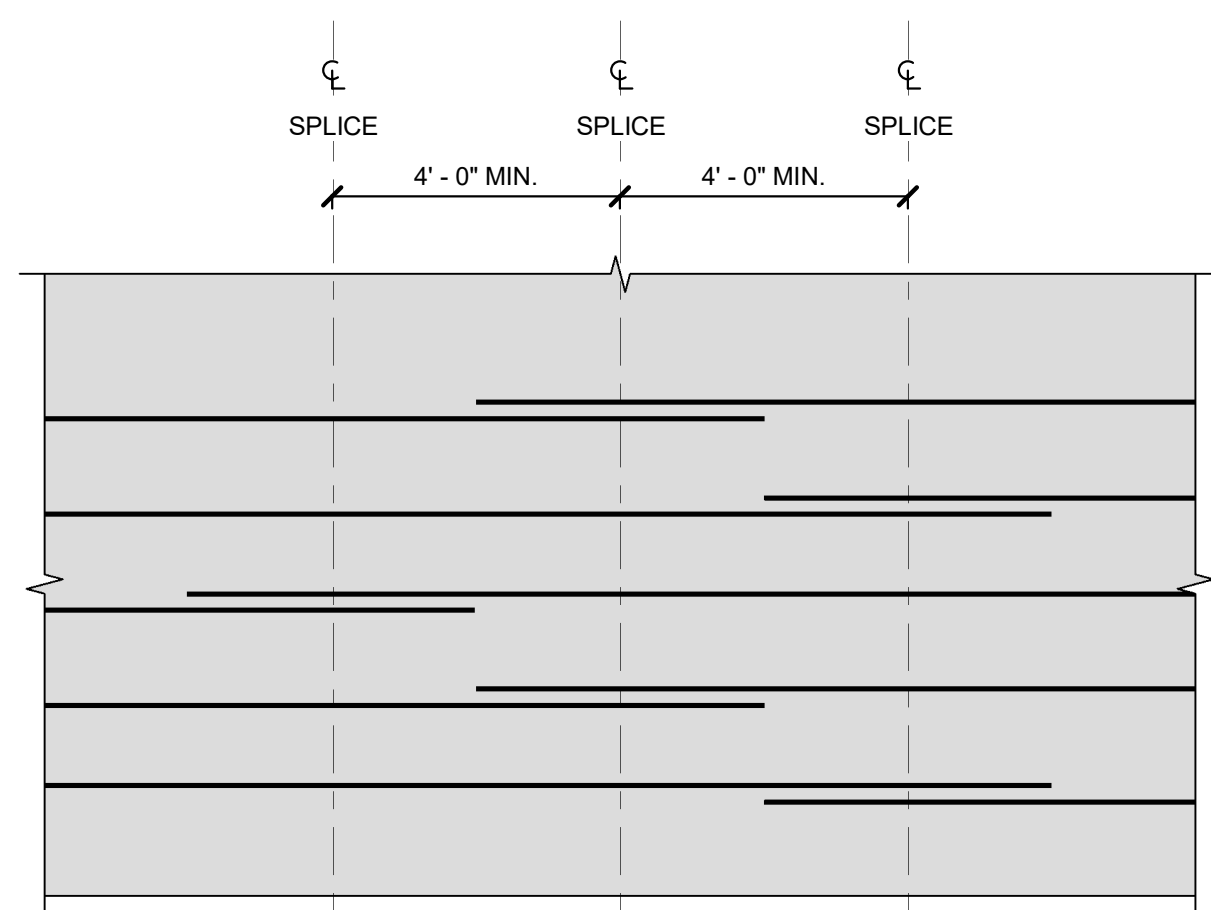
1. ALL CONCRETE SHALL HAVE A DESIGN 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS :
 - a. FOOTINGS, SLAB ON GRADE, COLUMNS, WALLS, AND ROOF SLAB - 4500PSI
 - b. ALL CONCRETE SHALL HAVE AN AIR CONTENT OF 5% AND MAXIMUM WATER / CEMENT RATIO OF 0.40
2. NO PIPES, DUCTS, SLEEVES, ETC. SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY STRUCTURAL ENGINEER. NO ALUMINUM PRODUCTS SHALL BE EMBEDDED IN CONCRETE. PENETRATIONS THRU WALLS WHEN APPROVED SHALL BE BUILT INTO THE WALL PRIOR TO PLACEMENT OF CONCRETE.
3. REFER TO OTHER (CIVIL, ETC.) DRAWINGS FOR EXTENT AND LOCATION OF DEPRESSIONS, CURBS, RAMPS, ETC.
4. AROUND OPENINGS IN SUSPENDED CONCRETE SLABS, ADD REINFORCING BARS EQUIVALENT TO BARS CUT BY OPENING WITH HALF ON EACH SIDE OF OPENING. BARS SHALL RUN FULL LENGTH OF SPAN. SEE DETAIL 3/S1.
5. CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE MADE AND LOCATED SO AS TO NOT IMPAIR THE STRENGTH OF THE STRUCTURE AND AS APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE WATERSTOP IN ALL VERTICAL AND HORIZONTAL JOINTS. ALL STEEL REINFORCING SHALL BE CONTINUOUS THROUGH COLD JOINTS, WITH LAP SPLICES AS INDICATED, UNLESS NOTED OTHERWISE.
6. SEE PROJECT SPECIFICATION FOR WATERPROOFING ADMIXTURE.

F. REINFORCING STEEL

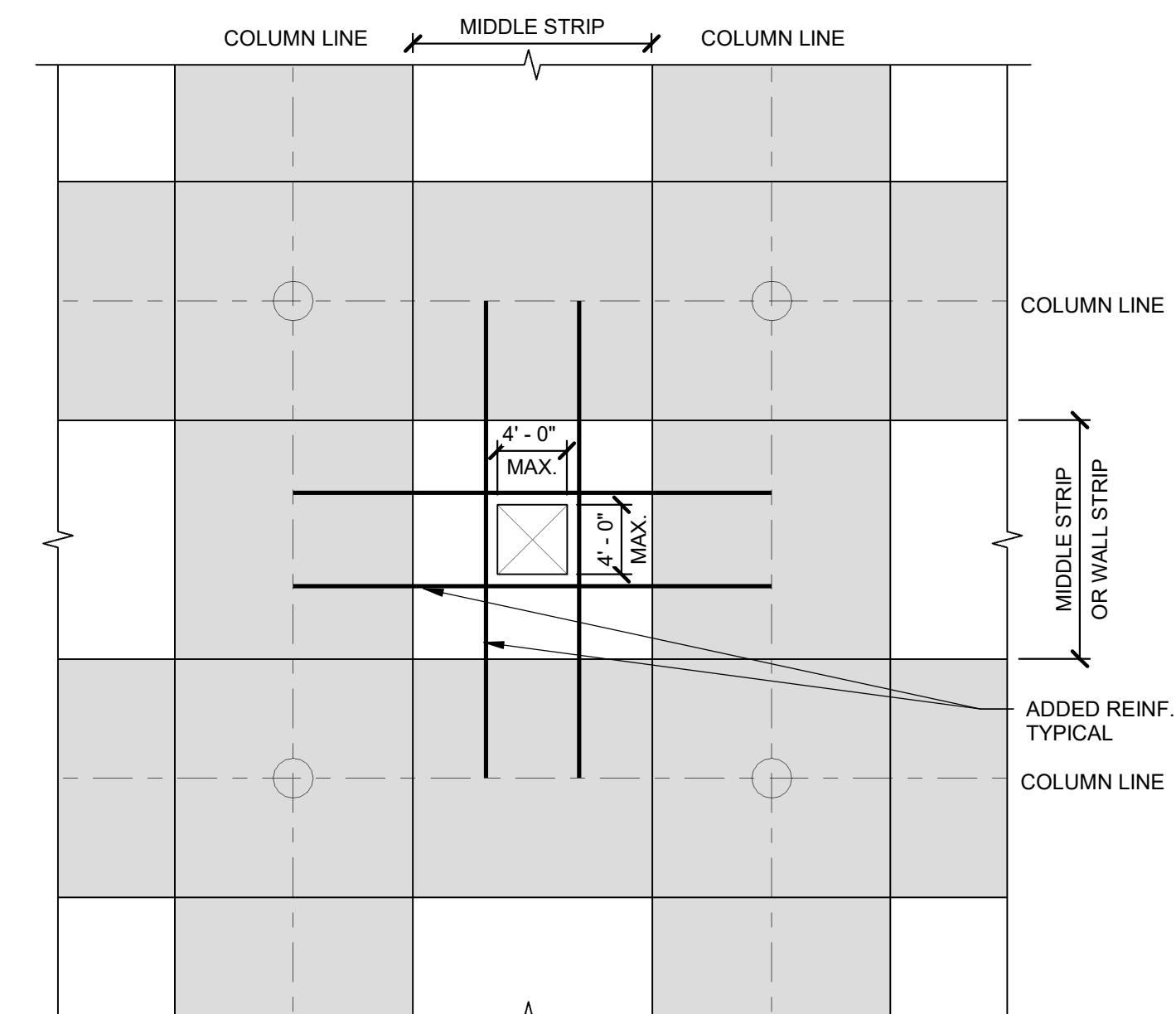
1. ALL REINFORCING BARS SHALL CONFORM TO ASTM STANDARD A-615 GRADE 60 ADEQUATELY TIE AND SUPPORT ALL REINFORCING STEEL AS SPECIFIED BY ACI 315, TO MAINTAIN EXACT REQUIRED POSITION. ALL FIELD BENT DOWELS SHALL BE GRADE 40 WITH SPACINGS INDICATED REDUCED BY 1/3.
2. REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVERAGE:
 - a. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - b. EXPOSED TO EARTH, WATER OR WEATHER:
 1. #6 & LARGER 2"
 2. #5 & SMALLER 2" (1 3/4" FOR #3 COLUMN TIES)
 - c. SLAB ON GRADE
 1. PLACE REINFORCING AT CENTER OF SLAB UNLESS INDICATED OTHERWISE.
3. EXCEPT WHERE NOTED, CONTINUOUS REINFORCEMENT SHALL BE SPLICED WITH LAP SPLICES AT POINTS OF MINIMUM STRESS AS FOLLOWS:
 - a. IN RESERVOIR WALLS, SEE DETAILS 1/S1, 2/S1 AND 1/S4.
 - b. IN COLUMNS, USE 35 INCH LAP
 - c. IN SUSPENDED SLAB, USE 48 BAR DIAMETER LAP AND STAGGER ADJACENT BAR SPLICES 24" MIN.
 - d. IN SLAB-ON-GRADE, USE 30 BAR DIAMETER LAP.
4. ALL VERTICAL REINFORCING SHALL BE DOWELED TO FOOTINGS OR STRUCTURE BELOW WITH DOWELS TO MATCH. SPLICE LENGTHS SHALL COMPLY WITH NOTE F.3. DOWELS INTO FOOTINGS SHALL TERMINATE WITH A STANDARD HOOK, AND SHALL EXTEND TO WITHIN 4" OF THE BOTTOM OF THE FOOTING, BUT NOT MORE THAN 14" INTO FOOTING. SEE DETAILS FOR REQ'D. EMBEDMENT OR DOWELS.
5. DO NOT WELD REINFORCING.



- NOTES:
1. FOR OPTION #1 - SPLICE LENGTHS ARE
 - a. #5 BARS - 39"
 - b. #6 BARS - 46"
 2. FOR OPTION #2 - USE MECHANICAL CONNECTORS WHICH ACHIEVE 125% OF THE STRENGTH OF THE BARS BEING SPLICED. SUBMIT A CURRENT ICC RESEARCH REPORT FOR APPROVAL PRIOR TO CONSTRUCTION.

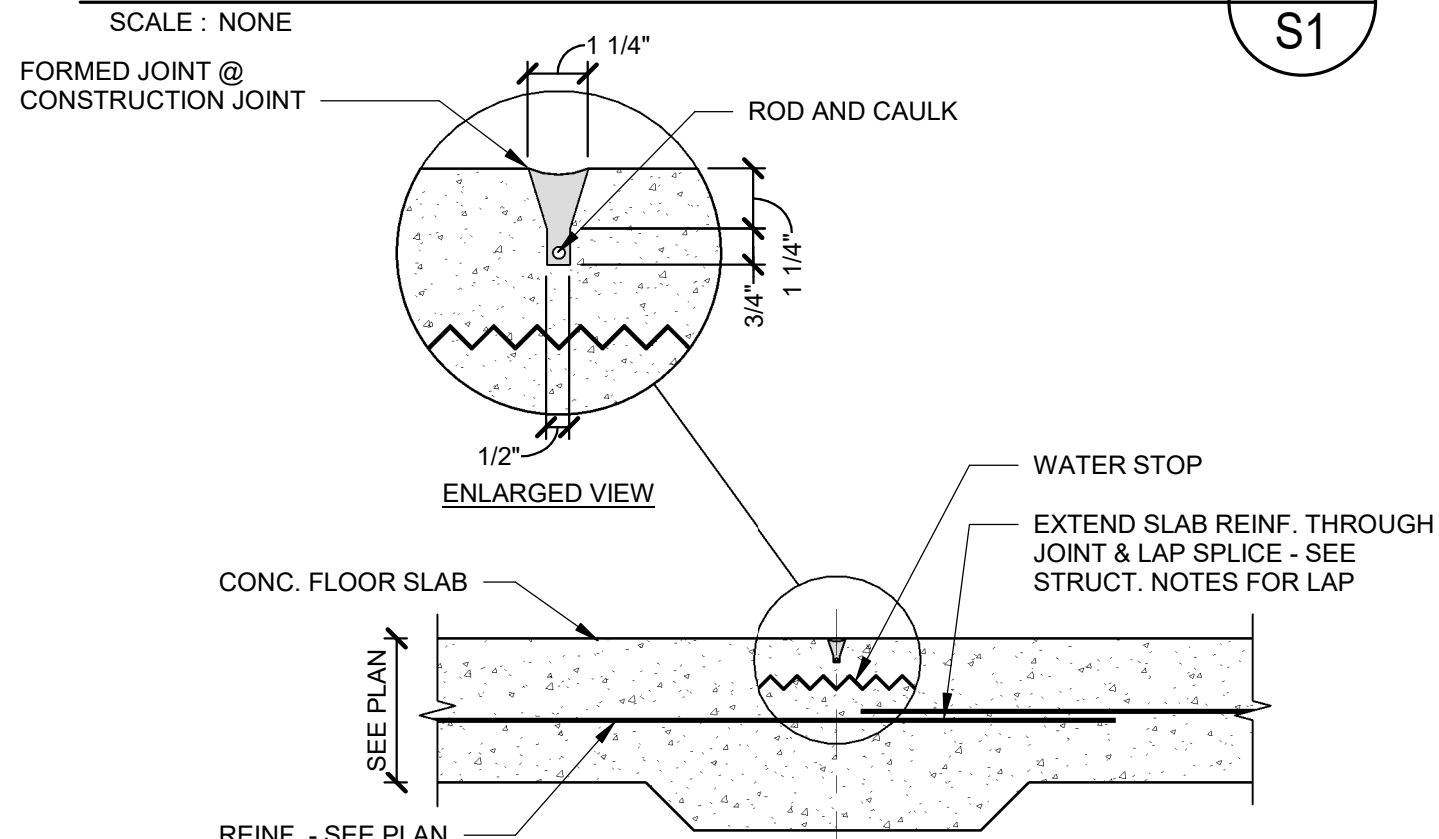


- NOTES:
- SPLICES SHALL NOT COINCIDE VERTICALLY MORE FREQUENTLY THAN EVERY THIRD BAR.
- SPLICE LENGTHS
- #5 BARS - 39"
 - #6 BARS - 46"



- NOTES:
1. ADD REINFORCING ON ALL SIDES OF OPENING EQUAL TO 1/2 THE AMOUNT CUT IN THAT DIRECTION. ADDED BARS TO EXTEND TO COLUMN LINES AS SHOWN.
 2. OPENINGS MAY ONLY OCCUR @ INTERSECTIONS OF MIDDLE STRIPS (OR INTERSECTION OF MIDDLE STRIP WITH WALL STRIP) AS SHOWN.

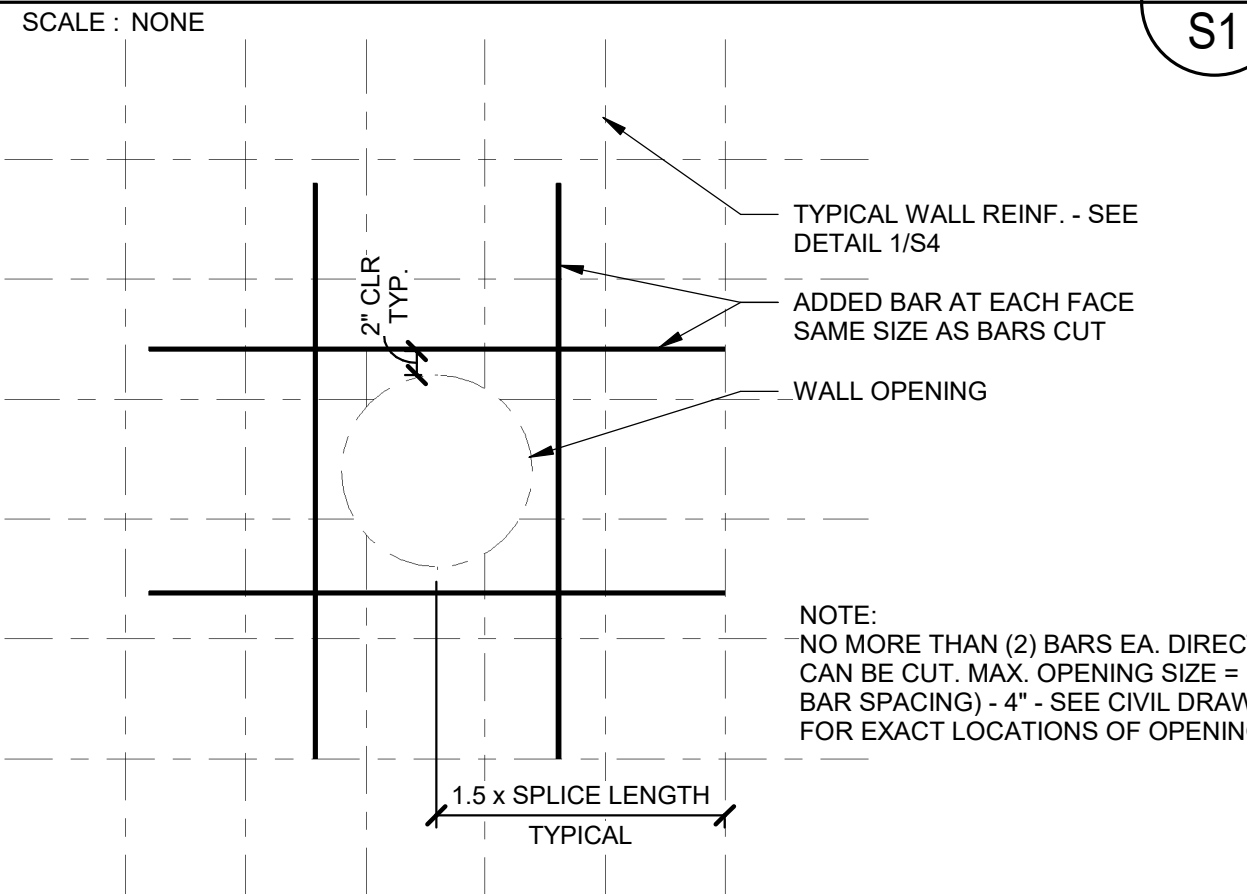
TYPICAL CONST. JOINT IN WALL DETAIL 1 S1



- NOTE:
- IT IS NOT ANTICIPATED THAT THIS DETAIL WILL BE REQ'D. IT IS ONLY PROVIDED TO GIVE THE CONTRACTOR THE OPTION OF POURING THE FLOOR WITH MULTIPLE POURS

TYP. CONST. JOINT IN FLOOR SLAB DETAIL 4 S1

TYPICAL HORIZONTAL REINF. BAR SPLICE DETAIL 2 S1



TYPICAL WALL OPENING DETAIL 5 S1

SPECIAL INSPECTION SCHEDULE 1, 2					
ESTABLISHED PER 2018 IBC SECTION 110 AND CHAPTER 17					
ITEM	CONTINUOUS ³	PERIODIC ³	REFERENCE	COMMENTS	
CONCRETE CONSTRUCTION (IBC 1705.3)					
REINFORCING STEEL PLACEMENT		●	SEE IBC TABLE 1705.3 - REF. NOTE C1	C.1.	SPECIAL INSPECTION IS NOT REQUIRED FOR CONC. ISOLATED SPREAD FOOTINGS, CONTINUOUS FOOTINGS, NON-STRUCTURAL SLABS, FOUNDATION WALLS, PATIOS, DRIVEWAYS, AND SIDEWALKS PROVIDED THE REQUIREMENTS OF IBC 1705.3 ARE MET.
WELDING OF REINFORCING STEEL	●	●	REFERENCE NOTE C2	C.2.	PERIODIC SPECIAL INSPECTION IS ALLOWED FOR VERIFICATION OF THE WELDABILITY OF REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR WELDING OF OTHER ASTM A 706 REINFORCING STEEL, NOT INCLUDED IN THE CONTINUOUS SPECIAL INSPECTION REQUIREMENTS NOTED ABOVE.
EMBEDDED BOLTS & PLATES	●	●		C.3.	PERFORM AIR, SLUMP AND TEMP. TESTS WHEN CONCRETE SAMPLES ARE CAST.
VERIFYING REQUIRED DESIGN MIX		●		C.4.	PERIODIC SPECIAL INSPECTION IS REQUIRED FOR VERIFICATION OF IN-SITU CONCRETE STRENGTH FOR POST-TENSIONED CONCRETE PRIOR TO TENSIONING TENDONS OR REMOVING SHORING OR FORMS.
CONCRETE PLACEMENT / SAMPLING	●	●	REFERENCE NOTE C3	C.5.	EPOXY AND EXPANSION ANCHORS INTO MASONRY OR CONCRETE MAY BE USED ONLY WHEN APPROVED BY ARCHITECT, AND/OR ENGINEER USING AN APPROVED PRODUCT WITH CURRENT PUBLISHED ICC RESEARCH REPORT NUMBERS. COORDINATE CONTINUOUS/PERIODIC SPECIAL INSPECTION REQUIREMENTS WITH ICC REPORT.
CURING TEMPERATURE / TECHNIQUES		●		F.1.	SPECIAL INSPECTION OF SOILS SHALL REFERENCE THE APPROVED SOILS REPORT TO DETERMINE COMPLIANCE.
EPOXY / EXPANSION ANCHOR PLACEMENT	●	●	REFERENCE NOTE C5	F.2.	WHERE SOILS REPORT IS NOT PROVIDED SPECIAL INSPECTIONS ARE REQUIRED TO VERIFY THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL IS NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D 1557.
SOILS (IBC 1705.6)					
VERIFY ADEQUATE MATERIALS BELOW FOOTINGS		●	REFERENCE NOTE F1		
EXCAVATIONS EXTEND TO PROPER DEPTH AND REACH PROPER MATERIAL		●	REFERENCE NOTE F2		
CLASSIFY & TEST CONTROLLED FILL MATERIALS		●	REFERENCE NOTE F2		
PERFORM MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	●		REFERENCE NOTE F1		
PROPERLY PREPARED SITE AND SUB-GRADE PRIOR TO FILL		●	REFERENCE NOTE F1		
GENERAL SPECIAL INSPECTION NOTES :					
1. THE ITEMS MARKED WITH A ● IN THE SPECIAL INSPECTION SCHEDULE SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS. REFER TO THE MATERIAL SAMPLING AND TESTING SECTION, THE PROJECT SPECIFICATIONS, AND THE SPECIFIC GENERAL NOTES SECTIONS. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT, ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL. ANY ITEMS WHICH FAIL TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL, ARCHITECT, AND ENGINEER PRIOR TO COMPLETION OF THAT PHASE OF WORK. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.					
2. ANY CONSTRUCTION OR MATERIAL THAT HAS FAILED INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT.					
3. CONTINUOUS SPECIAL INSPECTION MEANS THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. PERIODIC SPECIAL INSPECTION MEANS THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. (IBC SECTION 202)					

Structural Sheet Index	
SHEET NUMBER	SHEET NAME
S1	STRUCTURAL NOTES
S2	FOOTING & FOUNDATION PLAN
S3	ROOF FRAMING PLAN
S4	DETAILS

SCALE: AS NOTED
DATE: 02/14/22
DESIGN: M. WING
DRAWN: J. RHODES
CHECKED: M. WING

REVISIONS	DESCRIPTION	DATE

DWG :

STRUCTURAL NOTES
OSPREY RANCH WATER TANK
UT-158
EDEN, WEBER, UTAH

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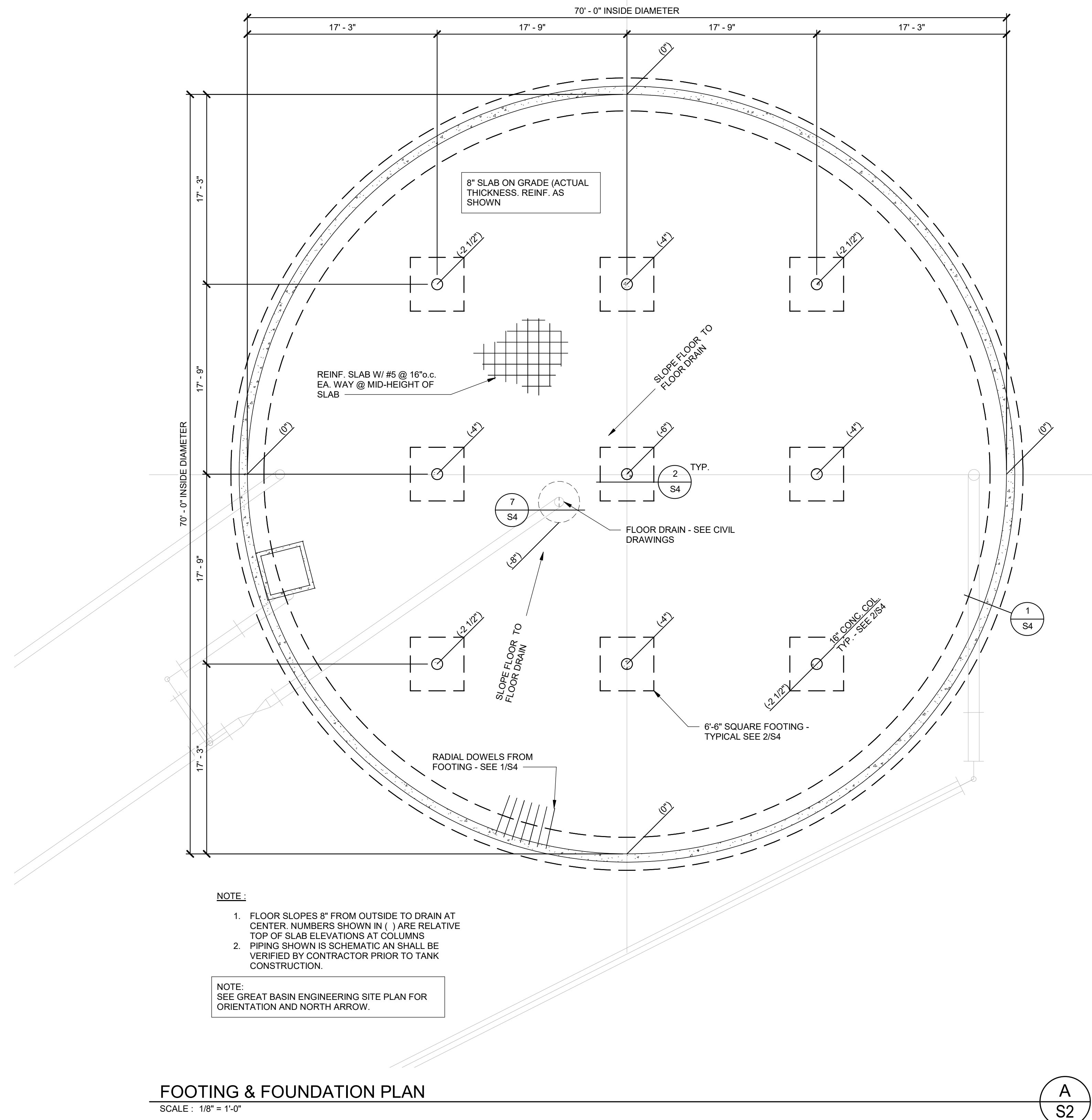
S1

ARW ENGINEERS
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1584 W. Park Dr. Ogden, Utah 84404
PH: 801.762.5555 arwengineers.com

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FOOTING & FOUNDATION PLAN
OSPREY RANCH WATER TANK
UT-158
EDEN, WEBER, UTAH

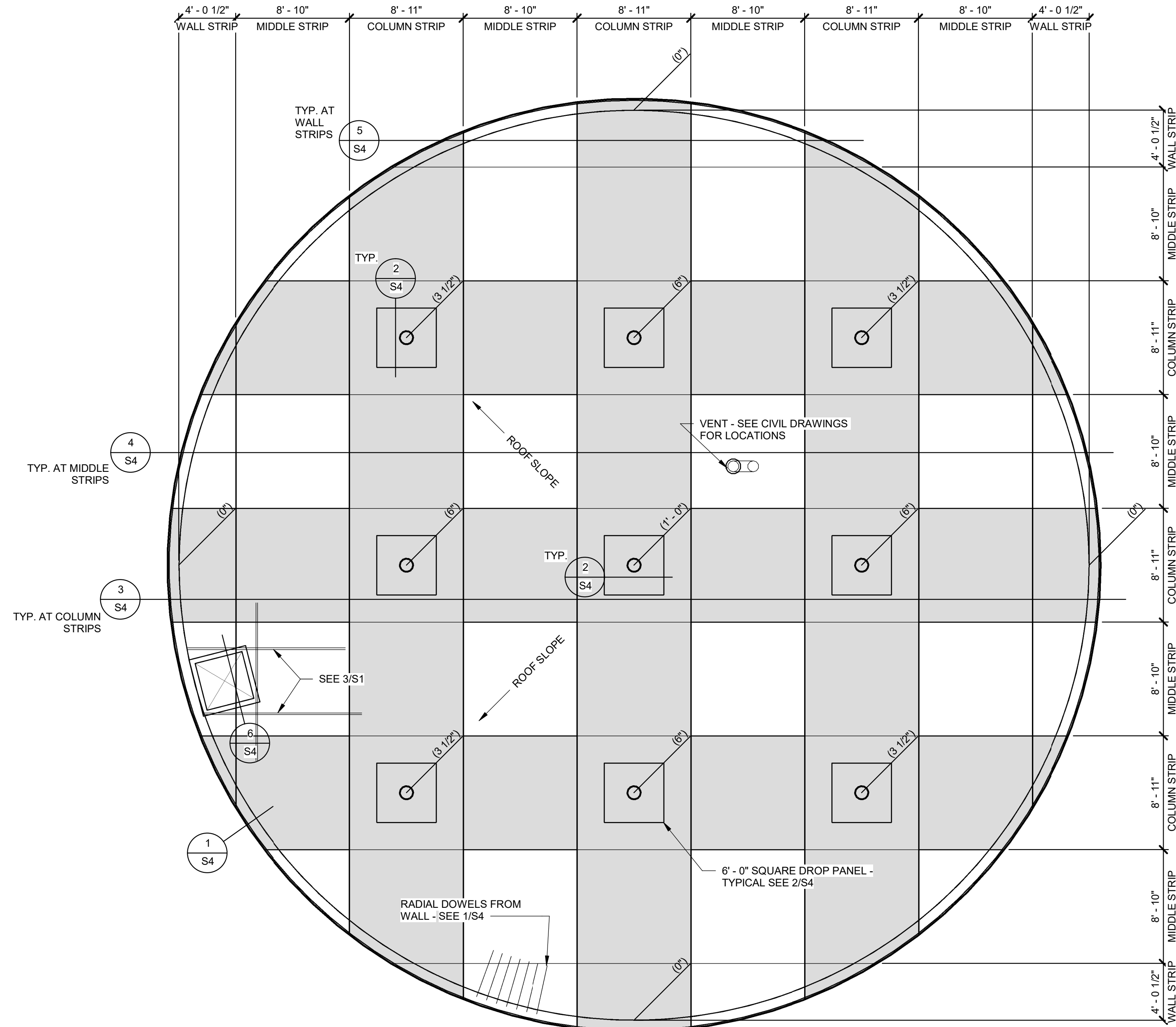
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S2

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NOTE:
 1. ROOF SLOPES 12" FROM CENTER TO EDGE.
 NUMBERS SHOWN IN () ARE RELATIVE TOP OF
 SLAB ELEVATIONS AT COLUMNS

NOTE:
 SEE GREAT BASIN ENGINEERING SITE PLAN FOR
 ORIENTATION AND NORTH ARROW.

ROOF SLAB PLAN
 SCALE : 1/8" = 1'-0"

A
S3

SCALE: AS NOTED
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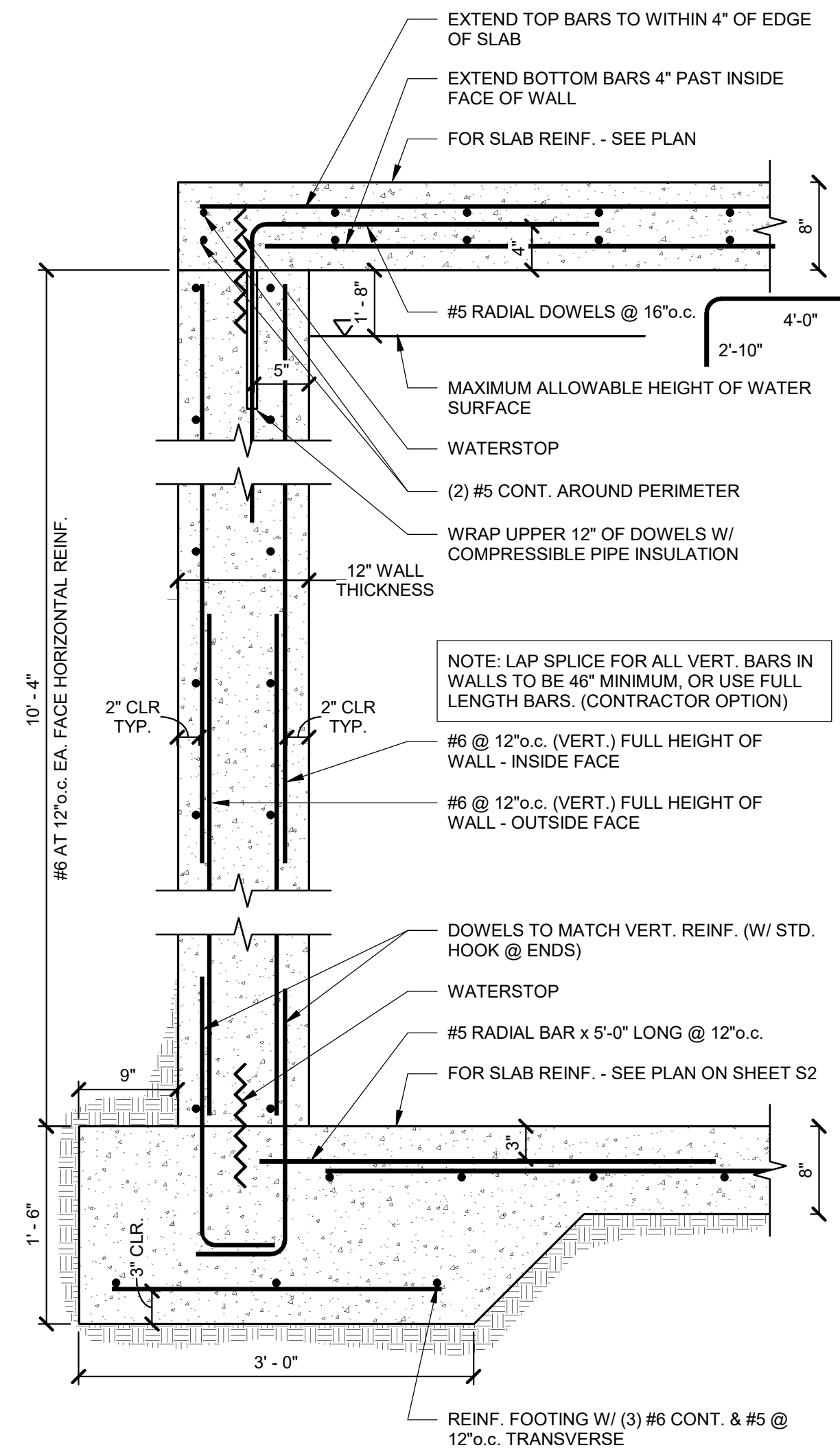
REVISIONS	DATE	DESCRIPTION



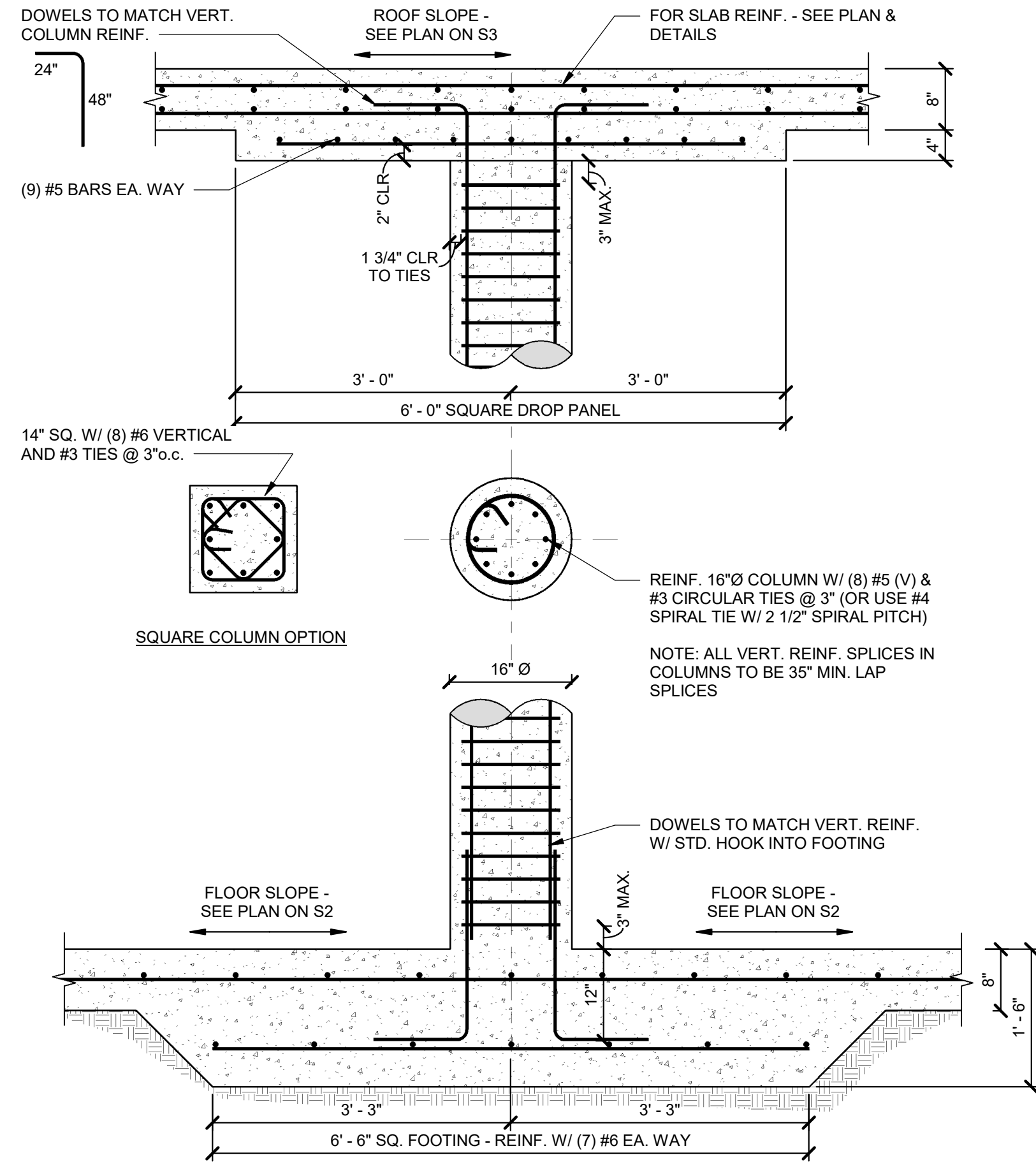
ROOF FRAMING PLAN
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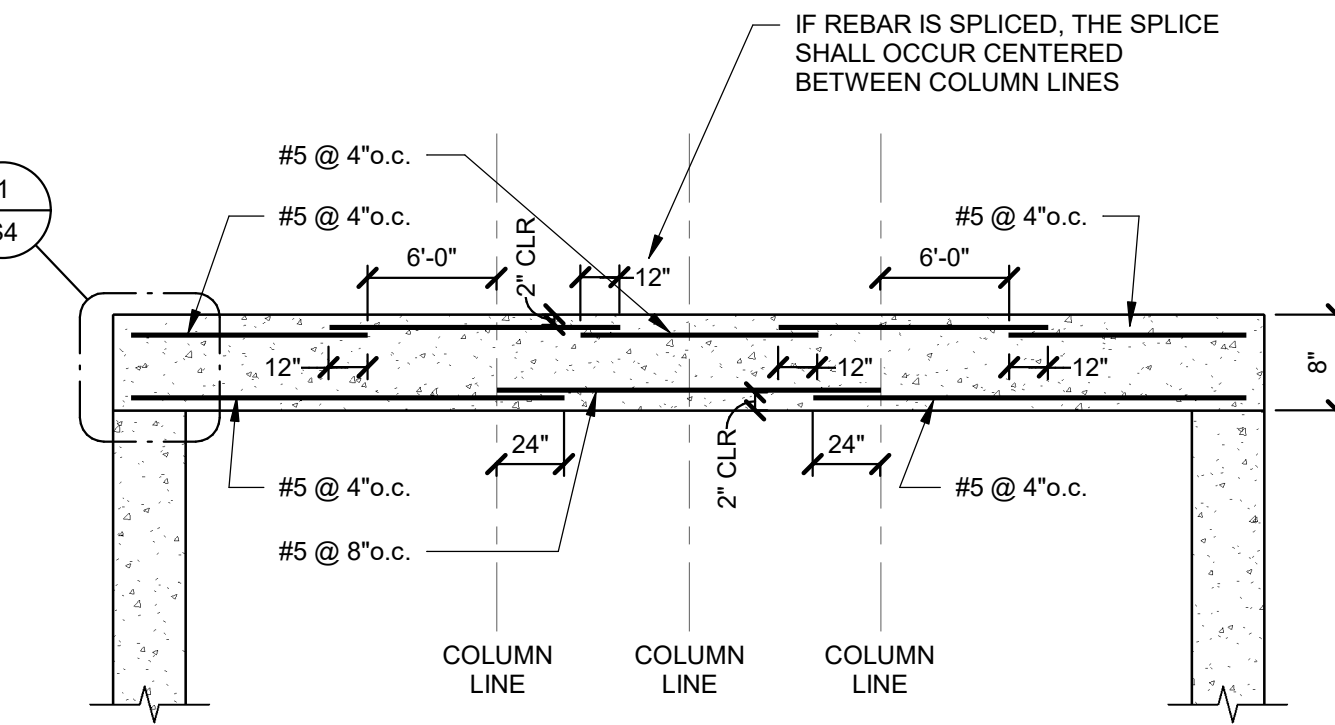
S3



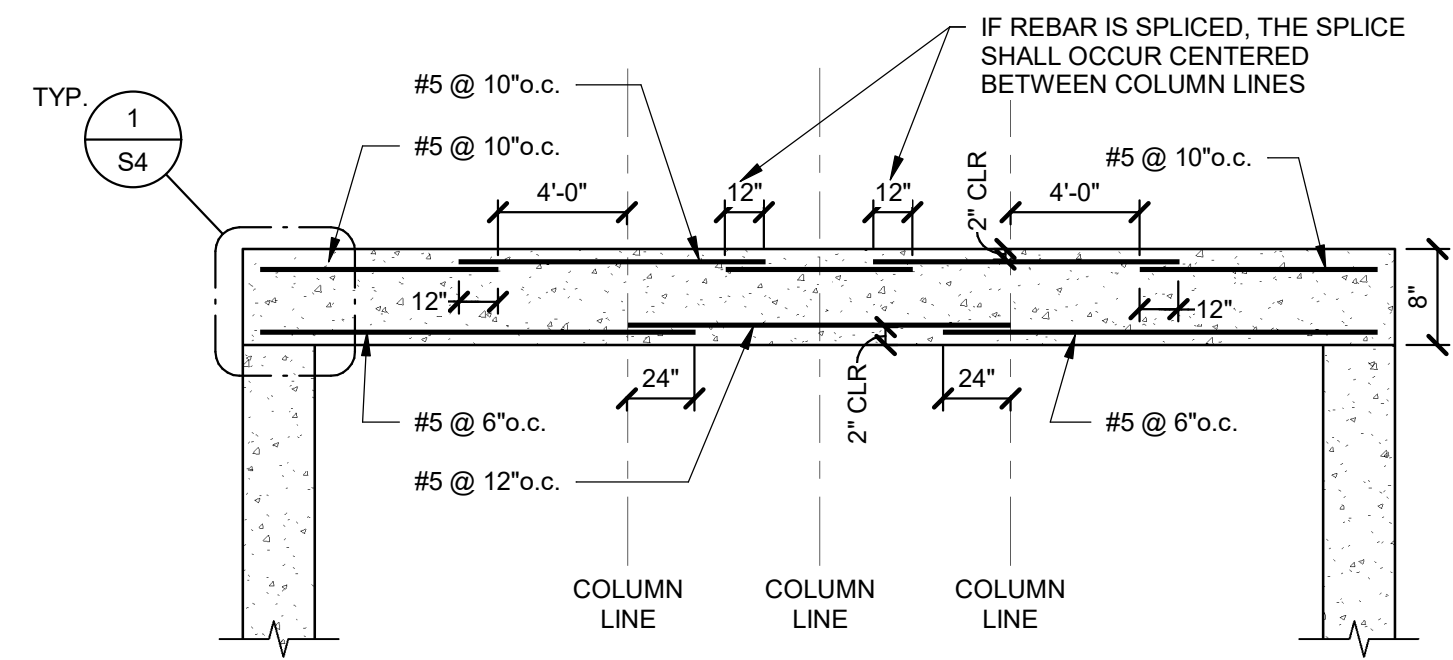
TYPICAL RESERVOIR WALL SECTION
SCALE: NONE



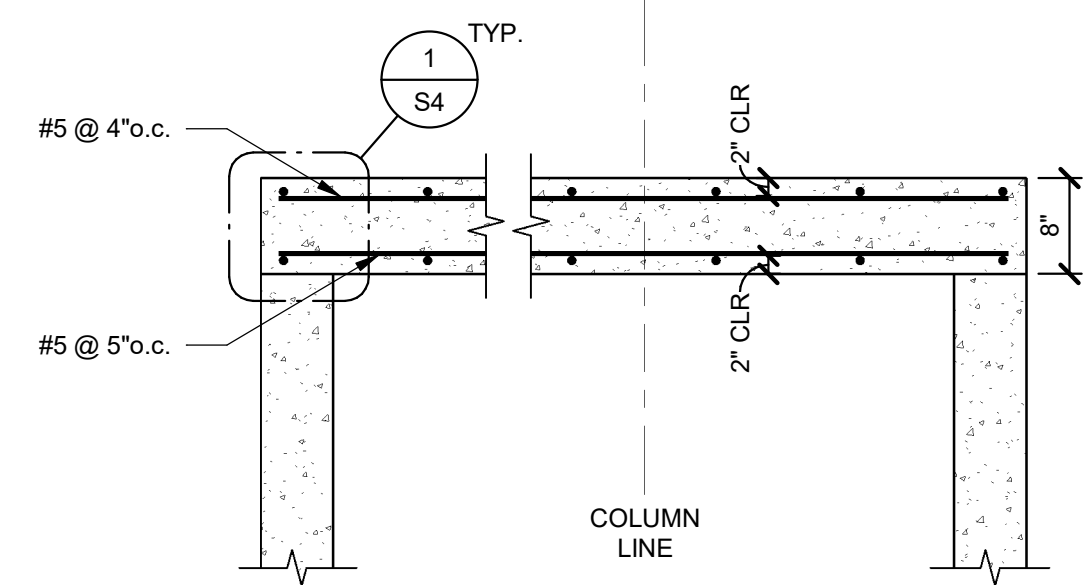
TYPICAL INTERIOR COLUMN
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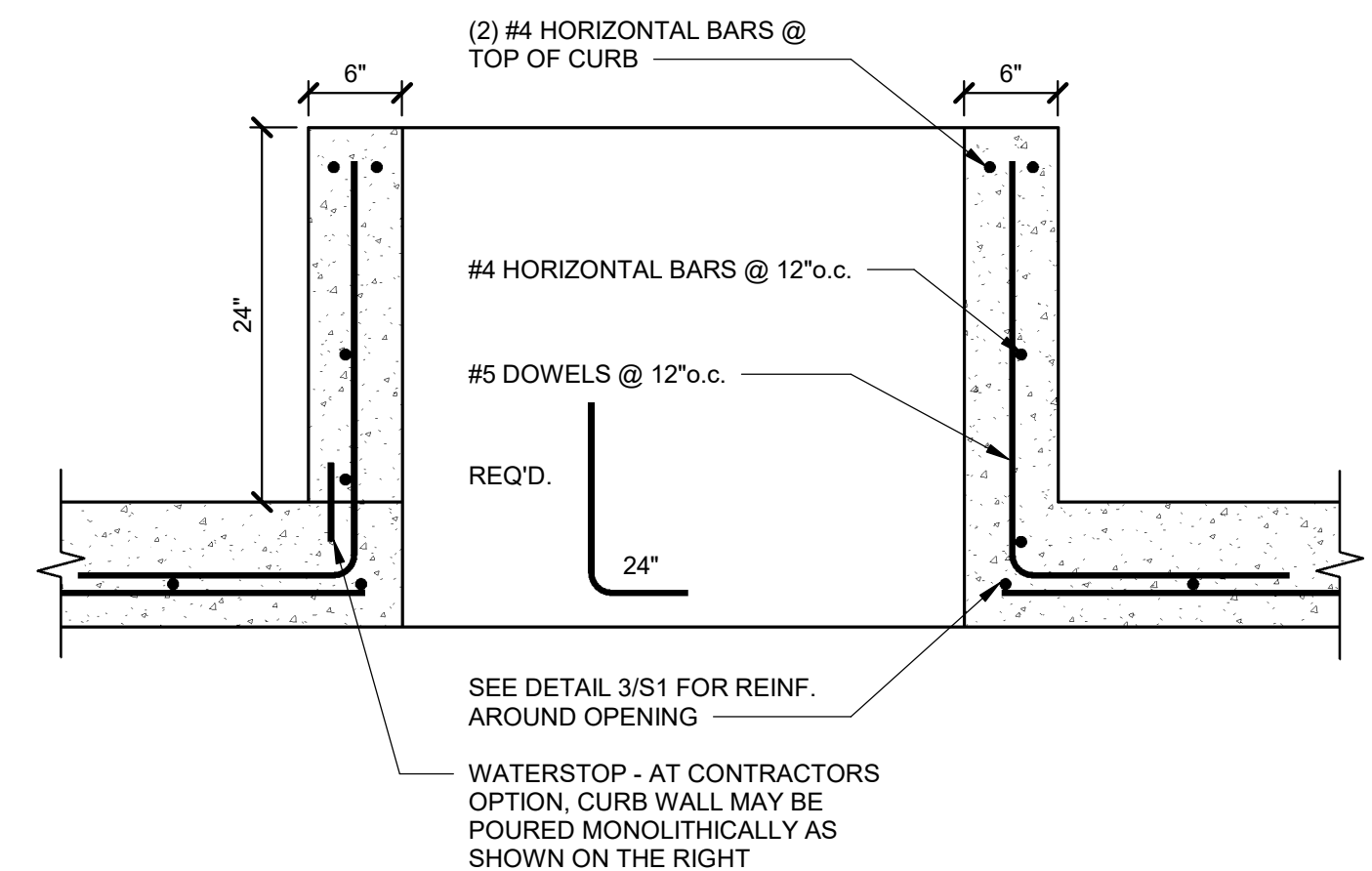
COLUMN STRIP (EACH DIRECTION)
SCALE: NONE



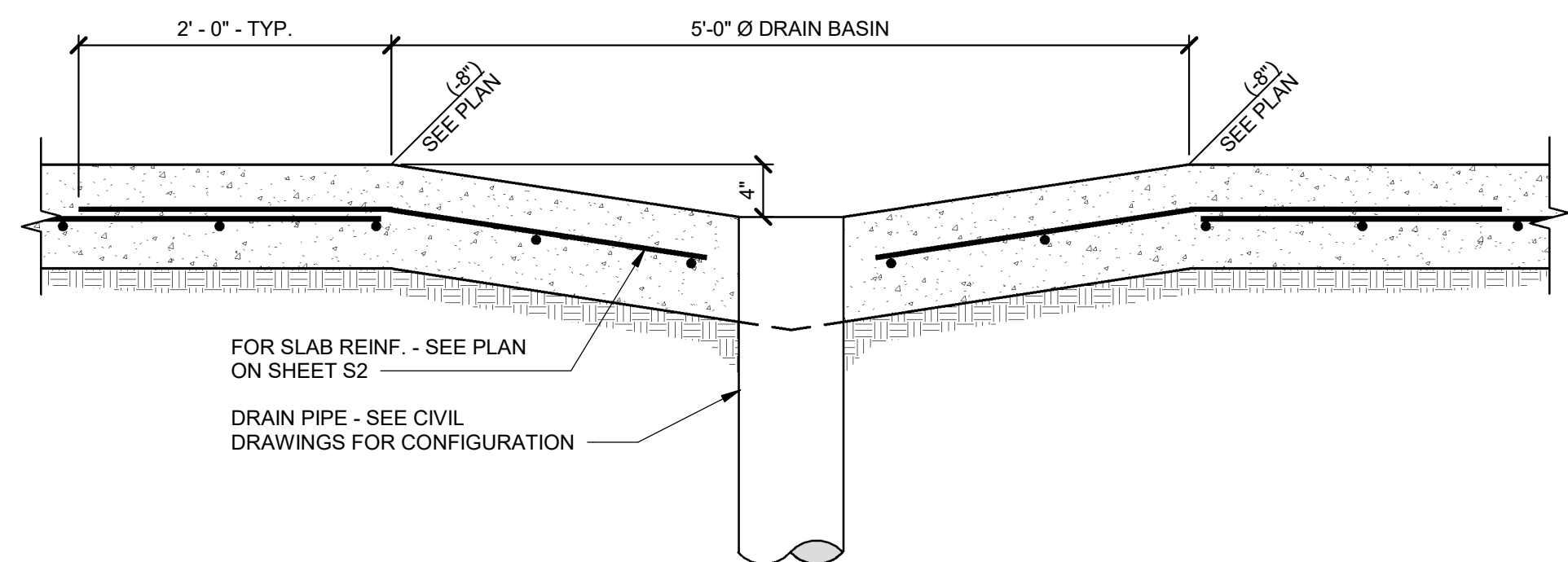
MIDDLE STRIP (EACH DIRECTION)
SCALE: NONE



WALL STRIP (EACH DIRECTION)
SCALE: NONE



CURB WALL SECTION
SCALE: NONE



DRAIN BASIN
SCALE: NONE

REVISIONS	DESCRIPTION	DATE



DETAILS
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S4

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