## **GENERAL**

- 1. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES. SEE SHEET S-002 FOR ADDITIONAL NOTES AND DESIGN LOAD DATA.
- 2. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES, SPECIFICATIONS, AND DESIGN MANUAL (LATEST EDITION UNLESS NOTED) AND
- REFERENCED STANDARDS: A. INTERNATIONAL CODE COUNCIL INTERNATIONAL BUILDING CODE (IBC-2015)
- B. AMERICAN SOCIENTY OF CIVIL ENGINEERS MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-10)
- C. AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, STANDARD (ACI 318-14)
- D. AMERICAN CONCRETE INSTITUTE CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI 350)
- E. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE F. STATE AND FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- REQUIREMENTS

1. REFER TO SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE NOTES OR DRAWINGS.

- 2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK; AND THE ENGINEER/ARCHITECT SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF
- 3. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
- 4. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE.

ANY DISCREPANCIES.

- 5. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF, AND RESOLVED WITH THE ENGINEER/ARCHITECT BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
- 6. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED BEFORE BEGINNING EXCAVATION.
- 7. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC.
- 8. RECESSES, DEPRESSIONS, DIMENSIONS, ELEVATIONS, OPENINGS, EQUIPMENT SUPPORTS, AND DETAILS SHALL BE VERIFIED BY REFERENCE TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. OPENINGS, REQUIRED BUT NOT SHOWN, MUST BE PLACED BETWEEN STRUCTURAL MEMBERS.
- 9. TEMPORARY BRACING:
- A. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.
- B. PROVIDE TEMPORARY BRACING FOR ALL BUILDING ELEMENTS AND COMPONENTS UNTIL THE STRUCTURE IS SUFFICIENTLY COMPLETE TO PROVIDE PERMANENT BRACING.

# FOOTINGS AND FOUNDATIONS

- 1. THE NET ALLOWABLE SOIL BEARING PRESSURE SHALL BE FIELD VERIFIED BY SOILS ENGINEER PRIOR TO PLACING FOOTINGS.
- 2. ALL SITE SOIL WORK SHALL BE DONE UNDER THE DIRECT OBSERVATION OF A SOILS ENGINEER.
- 3. WATER LEVELS INDICATED ON BORING LOGS ARE SUBJECT TO SEASONAL AND/OR ANNUAL VARIATIONS. IF NECESSARY A DEWATERING SYSTEM OF SUFFICIENT CAPACITY SHALL BE INSTALLED AND OPERATED TO MAINTAIN THE CONSTRUCTION AREA FREE OF WATER AT ALL TIMES.
- 4. MINIMUM DEPTH FROM EXTERIOR GRADE TO BOTTOM OF FOOTING NOT ADJACENT TO HEATED SPACE SHALL BE 60 INCHES.
- 5. PROTECT FOUNDATION EXCAVATIONS FROM FROST; DO NOT PLACE CONCRETE ON FROZEN GROUND.
- 6. FOUNDATION EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER AND SHALL BE CHECKED AND APPROVED BY THE SOILS ENGINEER BEFORE THE PLACEMENT OF ANY
- 7. WALL FOOTINGS ARE CONTINUOUS POURED CONCRETE WITH CONTINUOUS REINFORCING PLACED 3" CLEAR OF BOTTOM AND SIDES.
- 8. PROVIDE 24 DIA. LAP AT SPLICES AND FULL CROSSING LAP AT CORNERS AND INTERSECTIONS.
- 9. UNLESS OTHERWISE NOTED, WALL FOOTINGS ARE CENTERED UNDER WALLS AND COLUMN FOOTINGS
- 10. FOOTINGS FOR WALLS NOT NOTED SHALL BE 12" THICK WITH A MINIMUM PROJECTION OF 4" EACH SIDE
- 11. BOTH SIDES OF FOUNDATION WALLS SHALL BE BACKFILLED SIMULTANEOUSLY SO AS TO PREVENT OVERTURNING OR LATERAL MOVEMENT OF WALLS.

# REINFORCING STEEL

- 1. BAR REINFORCEMENT SHALL BE: ASTM A615, GRADE 60
- 2. WELDED WIRE FABRIC SHALL MEET ASTM A185.
- 3. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION AND INSTALLATION.
- 4. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS BEFORE PLACING CONCRETE OR GROUT.
- 5. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCING.
- 6. MINIMUM LAP SPLICES OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE: A. CONCRETE: CLASS B AS DEFINED IN ACI 318-14 OR CHART BELOW.

CONCRETE REINFORCING LAP SPLICE LENGTHS						
BAR SIZE	LAP LENGTH (3/4" CLR.) (INCHES)	LAP LENGTH (2" CLR.) (INCHES)				
#3	17	17				
#4	28	23				
#5	41	28				
#6	56	34				

- 7. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF COVER FOR CAST-IN-
- B. ALL OTHER CONCRETE SURFACES . . . . . 2"

# REINFORCED CONCRETE

- 1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.
- 2. CONCRETE SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH(fc), MAXIMUM WATER-CEMENT (W/C) RATIO AND MAXIMUM SLUMP AS GIVEN IN THE CONCRETE MIX DESIGN REQUIREMENTS SCHEDULE ON THIS PAGE. "WHERE COMPRESSIVE STREGTH, SLUMP, OR W/C/ ARE NOT GIVEN, PROVIDE A MIX DESIGN COMPLYING WITH ACI REQUIREMENTS FOR THE EXPOSURE CLASS GIVEN."
- 3. ADD AIR ENTRAINMENT PER ACI DURABILITY REQUIREMENTS FOR EXPOSURE CLASS.
- 4. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL 14 DAYS PRIOR TO FABRICATION AND INSTALLATION. ALL CONCRETE MIXES SHALL BE DESIGNED AND CERTIFIED BY A MATERIALS TESTING LABORATORY.
- 5. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER (CALCIUM CHLORIDE SHALL NOT BE
- 6. ADMIXTURES SHALL COMPLY WITH ASTM C494 AND BE OF A TYPE THAT INCREASES THE WORKABILITY OF THE CONCRETE, BUT SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT
- 7. CEMENT SHALL CONFORM TO ASTM C150, TYPE I.
- 8. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
- 9. REFER TO DRAWINGS OF OTHER DISCIPLINES FOR MOLDS, GROOVES, CLIPS, ORNAMENTS, GROUNDS, ETC. REQUIRED TO BE CAST INTO CONCRETE.
- 10. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4"
- 11. NO CONDUIT PLACED IN A CONCRETE SLAB SHALL HAVE AN OUTSIDE DIAMETER GREATER THAN 1/3 THE THICKNESS OF THE SLAB. NO CONDUIT SHALL BE EMBEDDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK. EXCEPT FOR LOCAL OFFSETS, MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6".

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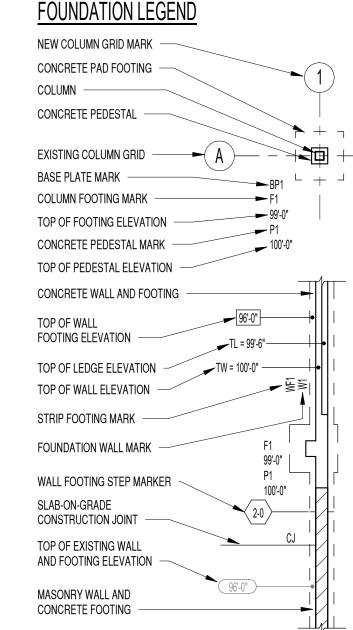
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Revisions:

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	CONCRETE MIX DESIGN REQUIREMENTS									
	MARK	ARK EXPOSURE CLASS					NAL MIX REQUI	REMENTS		
	Mark	<del>-</del>	S O	Ç C	W C C	f'c	SLUMP	MAX WC	Comments	
$\wedge$	FS1Δ	2	0 0	0	0 0	4500	4"	0.42	WATER-PROOFING ADMIXTURE REQ'D. A.E. OF 5.5%	
_1\				<del>, , , , , , , , , , , , , , , , , , , </del>			<del>, , , , , , , , , , , , , , , , , , , </del>		ASSUMES 1-1/2" AGGREGATE USED	
· ·	S1	2	0		0	4500	4"	0.45	A.E. OF 5.5% ASSUMES 1-1/2" AGGREGATE USED	
	S2	2	0	0	0	4500	4"	0.45	A.E. OF 5.5% ASSUMES 1-1/2" AGGREGATE USED	
	W1	2	0	0	0	4500	4"	0.45	A.E. OF 5.5% ASSUMES 1-1/2" AGGRAGATE USED	
,	W2D	2	مرسل المستر	ومرسول مرسم	the state of the s	4500	4,7,7,7	0.42	WATER-PROOFING ADMIXTURE REQ'D. A.E. OF 5.5%	
/1\									ASSUMES 1-1/2" AGGREGATE USED	

NOTE: PROVIDE CONCRETE GROUT MEETING EQUIVALENT MIX DESIGN REQUIREMENTS AS REQUIRED FOR THE SLABS AND WALLS UNDERLYING OR ADJACENT TO THE GROUT AREA  Sheet Number:

Designed by: Designer Drawn by:

**Project Number:** CHETW19001

<b>DESIGN DATA</b>	
STRUCTURE RISK CATEGORY	CATEGORY III

DESIGN DATA	
CLASSIFICATION	
STRUCTURE RISK CATEGORY	CATEGORY III
SNOW LOADS:	
GROUND SNOW LOAD (Pg)	50 PSF
DRIFT SURCHARGE LOAD ON LOWER ROOFS (Pd)	PSF
EXPOSURE FACTOR (Ce)	1.0
THERMAL FACTOR (Ct)	1.2
IMPORTANCE FACTOR (Is)	1.1
TYPICAL DESIGN LOAD (Pf)	46.2 PSF
LIVE LOADS:	
WALKWAY	100 PSF
SEISMIC LOADS:	
IMPORTANCE FACTOR (Ie)	1.25
SEISMIC DESIGN CATEGORY	A
	S <sub>S</sub> =0.044, S <sub>1</sub> =0.027, S <sub>DS</sub> =0.047, S <sub>D1</sub> =0.043
SITE CLASS	D
GEOTECHNICAL CRITERIA:	
NET ALLOWABLE SOIL DESIGN BEARING PRESSURE	1,500 PSF
AT REST EARTH PRESSURE (EQUIVALENT FLUID)	95 PSF/FT

# Construction Bulletin 05 - Attachment 2

		CONCRETE	SLAB	SCHEDULE
^	Mark	Reinforcement	Thickness	Comments
3//	S1	#5 @ 7" O.C. E.W. TOP	8"	
_	S2	#4 @ 9" O.C. E.W. TOP & BOTTOM	1' - 0"	#5 DOWEL W/ 90° STD HOOK @ 10" O.C. E.F. WALL LAP
\ \	$\sim\sim\sim\sim$		$\sim\sim\sim\sim$	HOOK TO TOP MAT
}	S3Δ	#4 @ 9" O.C. E.W. TOP & BOTTOM	1' - 0"	
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		-			
	munu				
	F	OUNDATION SLAE	3 SCHEDULE		
MARK	THICKNESS	REINFORCEMENT	COMMENTS		
FS1Δ	2' - 6"	<varies></varies>			

STRUCTURAL CAST-IN-PLACE CONCRETE WALL SCHEDULE									
MARK	WALL THICKNESS	HORIZONTAL REINFORCEMENT	VERTICAL REINFORCEMENT	Comments					
W1	12"	#4 @ 12" O.C.	#4 @ 12" O.C.	A.E. OF 5.5% ASSUMES 1-1/2" AGGRAGATE USED					
W2Δ	24"	#6 @ 10" O.C. E.F.	#6 @ 10" O.C. E.F., SUPPLEMENT DOWELS SHOWN IN 7/SD801 W/ ADDITIONAL #8 DOWELS @ 10" W/ STD HOOK. LAP HOOK TO BOTTOM MAT AND PROVIDE 7'-6" MIN. EMBEDMENT IN WALL	WATER-PROOFING ADMIXTURE REQ'D. A.E. OF 5.5% ASSUMES 1-1/2" AGGREGATE USED					

CONCRETE EQUIPMENT PADS1										
NOTE: 1. VERIFY CONCRET	TE BASE DIMENSIONS, ELEVAT PLACE "J" TYPE AS RECOMMEN	IONS, AND LOCATION(S) B	SASED ON APPROVED	EQUIPMENT SHOP DR	RAWINGS AND REQUIR	RED PIPE ELEVATIONS (IF N	NECESSARY) PRIOR TO BA	ASE CONSTRUCTION. AND	HOR BOLTS	
Mark	DESCRIPTION	CONCRETE BASE, L	CONCRETE BASE, W	CONCRETE BASE, D	CONCRETE BASE, H	CONCRETE BASE, A BARS	CONCRETE BASE, B BARS	CONCRETE BASE, C BARS	SPACING	
EP1		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	
EP2		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	
EP3		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	
EP4		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	
EP5		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	
EP6		2' - 0"	2' - 0"	4"	1' - 0"	#5	#5	#4	12" E.W.	

STRUCT

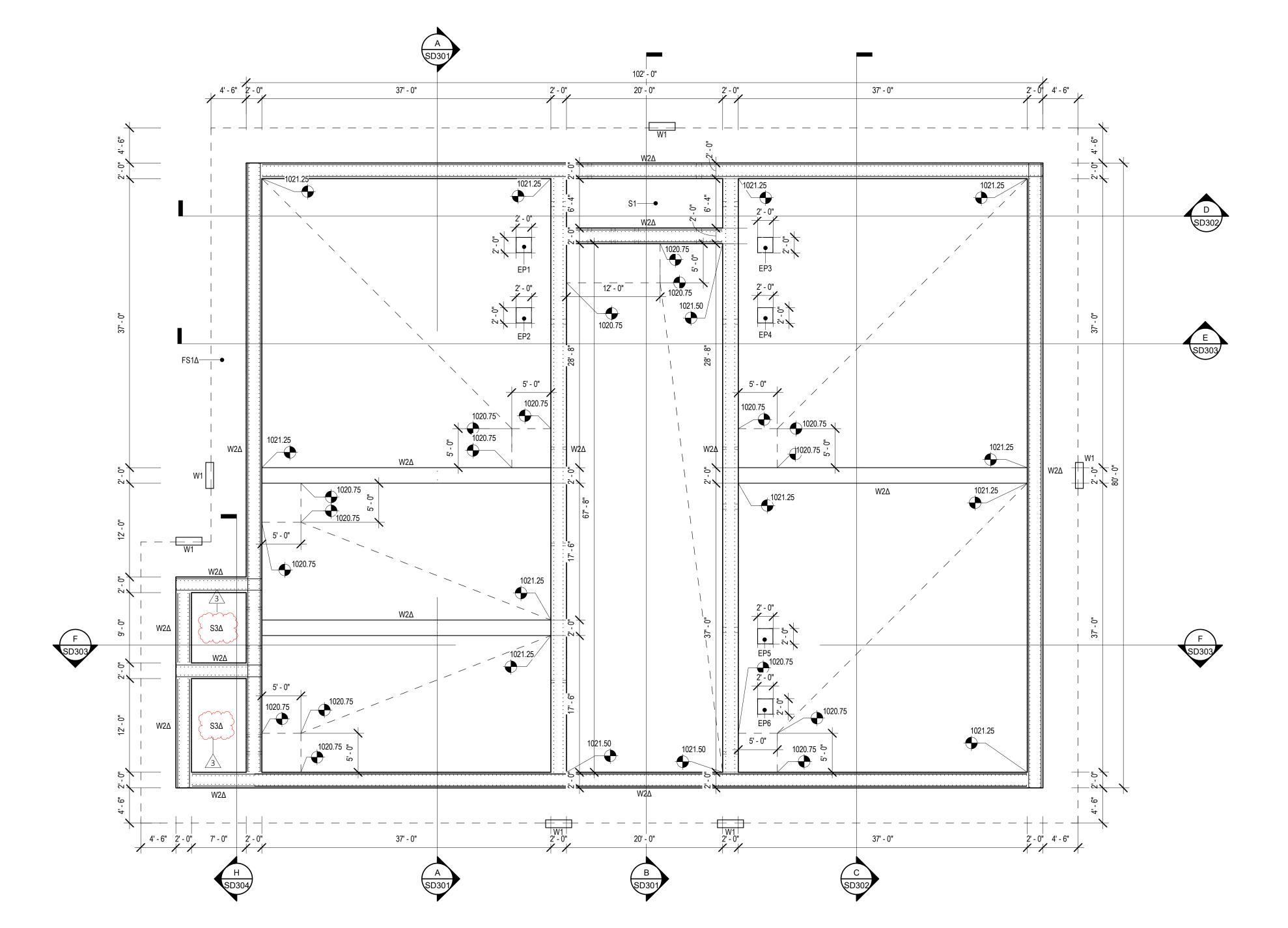
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Designed by:
Designer
Drawn by:
NJA
Project Number:

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# **FOUNDATION NOTES:**

- 1. B = BOTTOM, T = TOP, LW = LONG WAY, SW = SHORT WAY, EW = EACH WAY, EF = EACH FACE.
- 2. ALL REINFORCEMENT BARS TO BE BOTTOM BARS UNLESS NOTED OTHERWISE.
- 3.  $\Delta$  DENOTES LIQUID RETAINING STRUCTURES ARE TO BE CONSIDERED ENVIRONMENTAL CONCRETE ELEMENTS REQUIRING COMPLIANCE WITH ACI 350. USE WATERSTOP AT ALL CONSTRUCTION JOINTS
- 4. PIPE PENETRATIONS ARE APPROXIMATE. FINAL LOCATION TO BE COORDINATED WITH MECHANICAL.





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(SBR) **REACTORS FACILITY BATCH TREATMENT** SEQUENCING

<u>Issue:</u> **Date** 12-21-22 Issue for BID

<u>:</u>

STRUCT

Project Number: CHETW19001

# **BATCH REACTORS (SBR)** FACILITY TREATMENT

<u>Issue:</u> **Date** 12-21-22 Issue for BID

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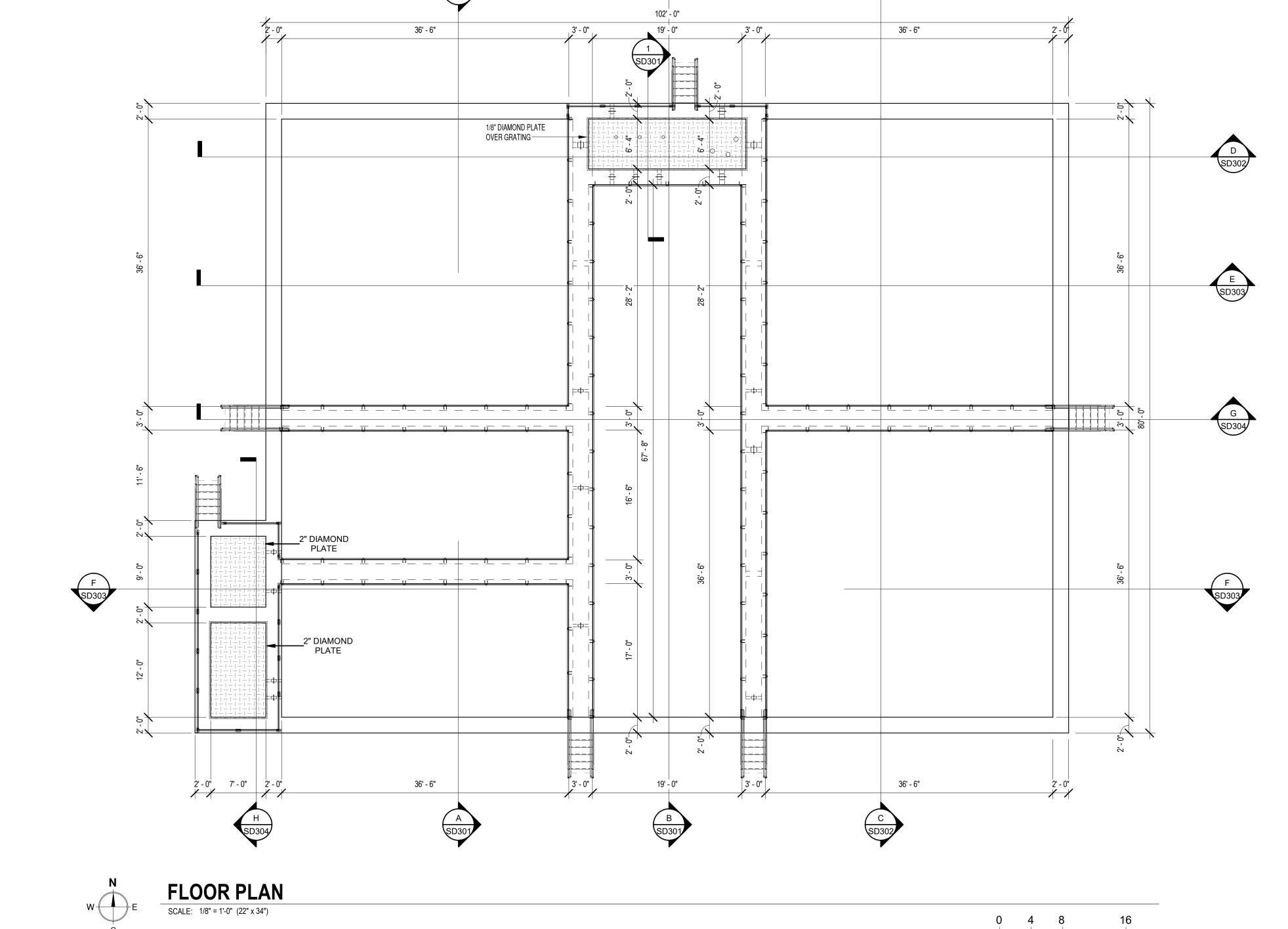
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**BATCH REACTORS (SBR)** 

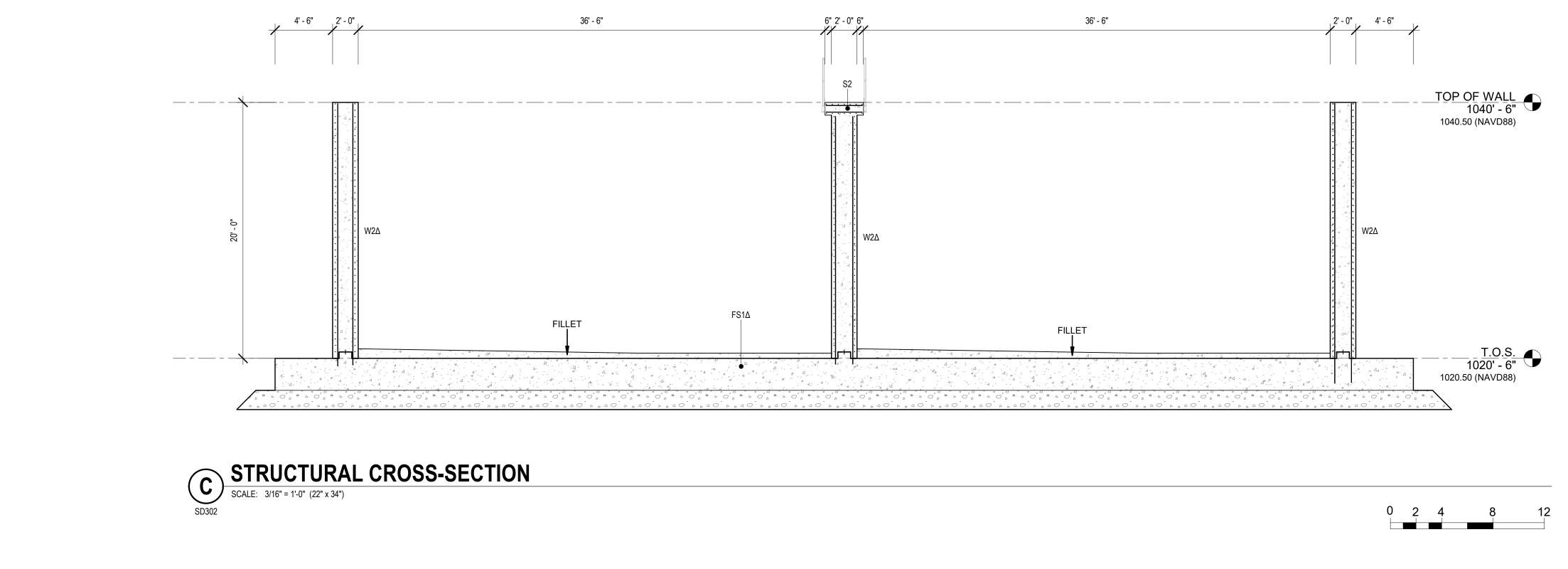
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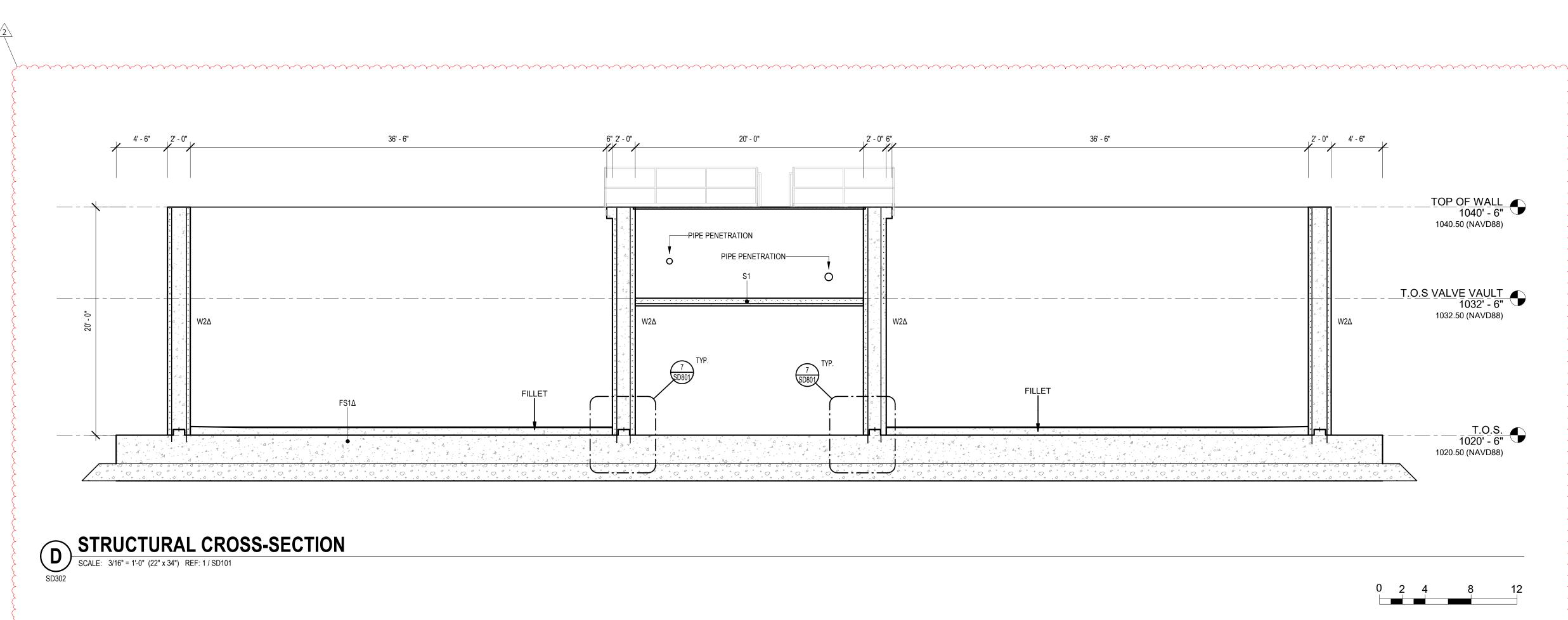
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WASTEWATER TREATMENT FACILITY
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**BATCH REACTORS (SBR)** WASTEWATER TREATMENT FACILITY SEQUENCING

Issue for 12-21-22

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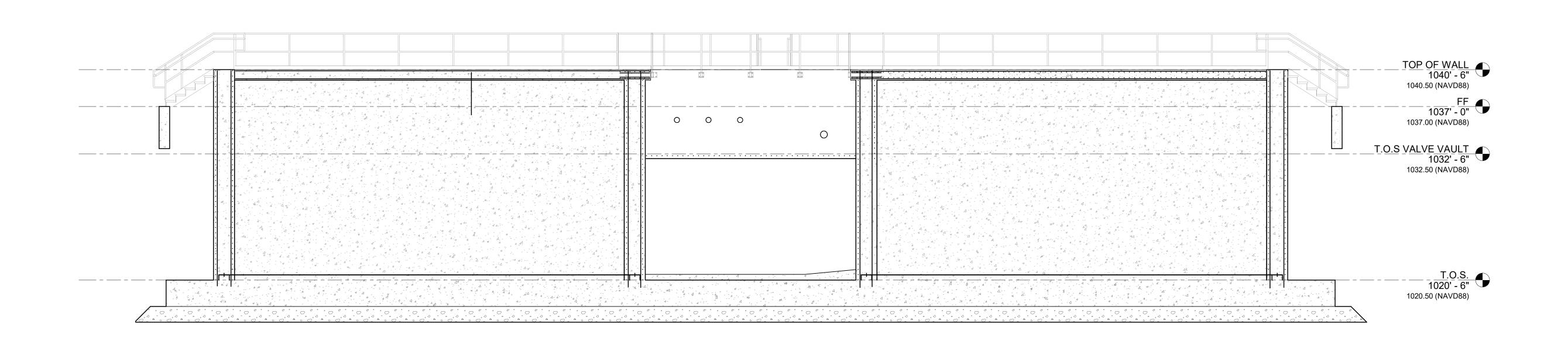
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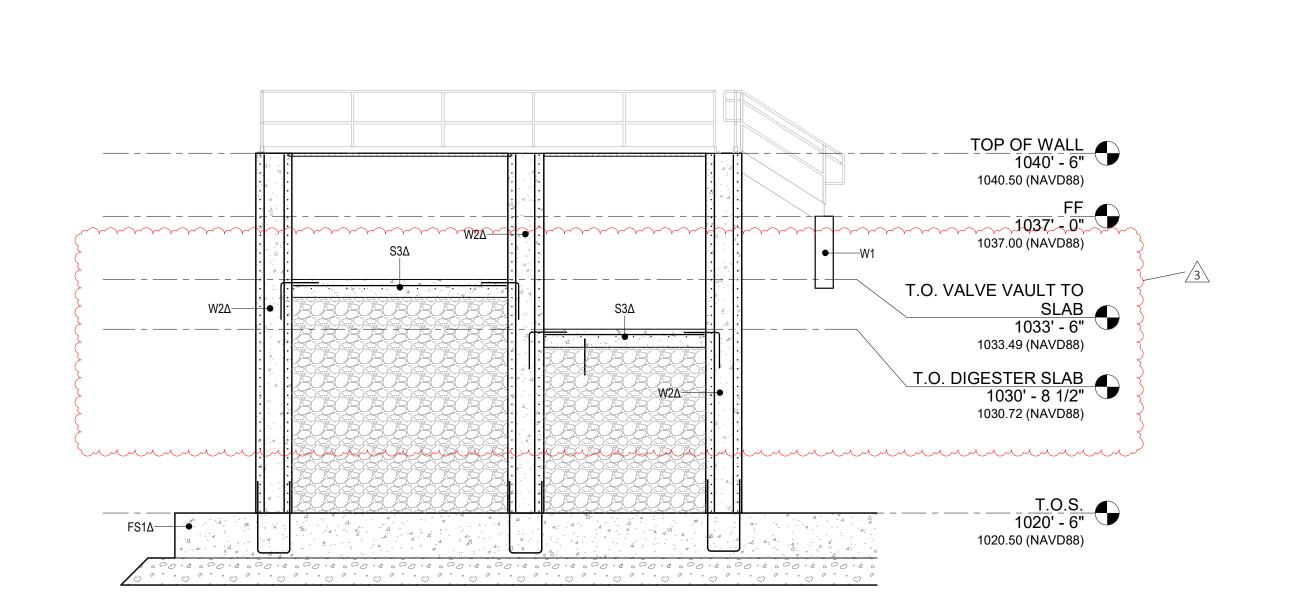
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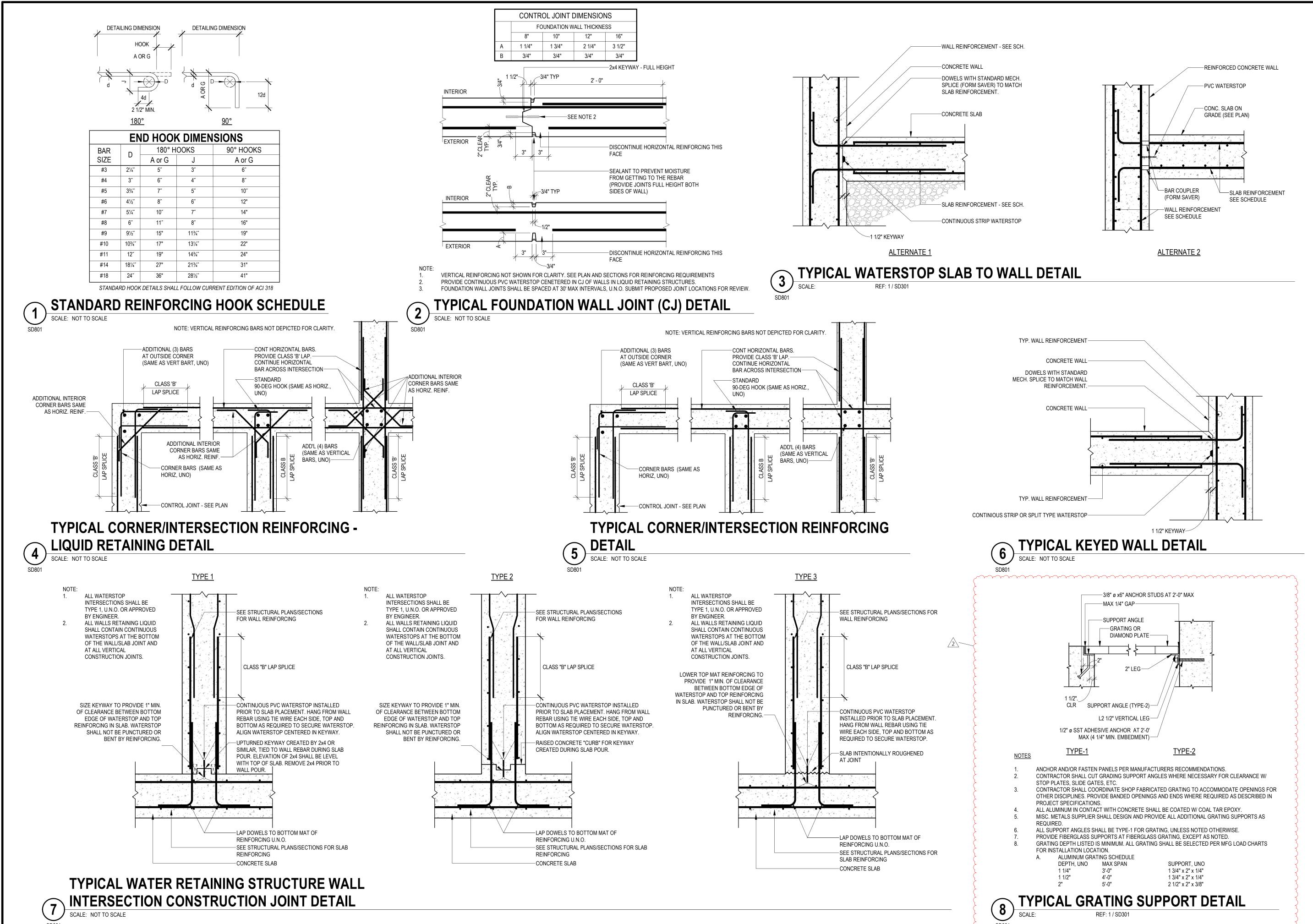
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STRUCTURAL CROSS-SECTION

SCALE: REF: 1 / SD102



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NJA
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