


[illegible]

	DESIGNED BY:	HU
	CONTRACT PROJECT NO.	1043925
DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING 75TH CIVIL ENGINEER GROUP	OTHER PROJECT NO.	7596233
	ISSUE DATE:	05/10/2022
ISSUE PROJECT MANAGER		SCOTT ARNOLD

HAFB 309th SWEG
ENGINEERING FACILITY

STRUCTURAL NOTES

S-001

- MASONRY (CMU)
- Concrete masonry units shall be medium weight, Grade N units conforming to ASTM Designation C90 and shall have a minimum compressive strength of 2000 PSI on the net section (Design strength, $f_m = 2000$ PSI).
 - Mortar shall conform to ASTM C270, Type "S" (Section 2103.2 of the International Building Code). Use Portland Cement, Type I or II.
 - All masonry shall be reinforced with both horizontal and vertical reinforcement. All grouted block cells or brick cavities with reinforcement shall be grouted full using 2500 PSI grout. Grout shall conform to the requirements of ASTM C476. Cells shall be aligned to preserve unobstructed vertical cavities of 2"x3" minimum. DO NOT SOLID GROUT WALLS UNLESS SPECIFICALLY NOTED ON THE PLANS.
 - Grout shall have 3/8" maximum size course aggregate with a slump between 8 and 11 inches so the concrete will flow into the block cells without leaving voids.
 - Masonry Reinforcement: Unless noted otherwise on the drawings, the minimum reinforcement in grouted cells for all masonry walls shall be as follows:

8" Walls: #5 @ 32" OC Vertical and (2) #4 @ 48" OC Horizontal
 - All horizontal reinforcing at ends of walls shall terminate with a hook around vertical reinforcing.
 - Reinforcement Protection (Cover):

A. Joint reinforcement shall have not less than 5/8" mortar coverage from the exposed face.

B. Other reinforcement shall have a minimum coverage of one bar diameter over all the bars, but not less than 3/4" when masonry is exposed to weather or soil.

Minimum coverage shall be 2".
 - Continue vertical reinforcing bars in masonry columns through foundation wall into footings with matching bars and dowels. Enclose these bars with same size ties at same spacing as in masonry column. Provide matching dowels for vertical bars in masonry walls to structure below.
 - Continue horizontal reinforcement in walls through masonry columns and pilasters. This reinforcement shall have matching dowels, corner bars, at corners and at intersections of the walls with required lap lengths.
 - Unless noted otherwise, hollow cells at all four (4) sides of openings in walls shall be grouted and reinforced with (2) #5, minimum, with 2'-8" projection beyond edges of openings at each end.
 - Horizontal bars shall be placed in bond beams filled with grout at the top of all walls and at 48" OC maximum between top of wall and foundation. Bond beam units and reinforcing shall continue uninterrupted around all corners and wall intersections. Where structural steel columns or beams interrupt the continuity of a bond beam, dowels matching bond beam reinforcement shall be welded to the structural steel to provide continuity.
 - All vertical reinforcing bars shall be doweled to structure below with bars of same size and spacing. Place all bars securely prior to grouting.
 - Stop grout pours 1/2" below top of block units between grout lifts.
 - All anchor bolts must be placed in grouted cells.
 - Where beams bear on concrete block walls, block cells shall be filled with grout 1'-4" wide to foundation and reinforce with a #5 each cell, unless otherwise shown.
 - An additional vertical bar (matching wall reinforcement) shall be placed at each corner, end of wall, and jamb of all openings.
 - All steel joist, joist girder, and steel beam pockets in masonry shall be grouted solid unless otherwise indicated on the drawings.
 - No masonry shall be laid when the temperature of the outside air is below 40 degrees Fahrenheit, unless approved methods are used during construction to prevent damage to the masonry. Such methods shall include protection of the masonry for a period of at least 48 hours.
 - All reinforcing shall be in place prior to grouting. Vertical reinforcing bars shall be held in position at the top, bottom and at intervals not farther apart than 200 bar diameters. Provide wire ties at all lap splices.
 - All masonry walls shall have vertical control joints at: Major changes in wall height, at changes in wall thickness, at building construction joints, and not farther apart than 40 feet elsewhere. Provide matching control joints for brick veneer. Consult Architectural Drawings for locations. Vertical cells each side of control joints shall be grouted and reinforced with rebars to match vertical reinforcement used throughout that wall. Horizontal rebars in bond beams shall continue through control joints. Provide full height hard rubber key at joint. Where joint locations are not shown on the drawings the Contractor shall submit proposed locations to Architect / Engineer for review.

- STRUCTURAL STEEL
- All structural steel and structural steel work shall comply with both the AISC "Manual of Steel Construction" containing the specifications for the design, fabrication and erection of structural steel buildings, including the "Code of Standard Practices" (latest edition), and with the IBC 2018 edition.
 - All wide flange structural steel shall be ASTM A992 and all miscellaneous shapes shall be ASTM A36, unless noted otherwise.
 - Structural steel tubing shall conform to ASTM A500 Grade B; Yield Stress = 46 KSI.
 - Structural steel pipe columns shall conform to ASTM A53, Grade B; Yield Stress = 35 KSI.
 - Use A325 Bolts for steel to steel connections, F1554 GR36 for Anchor Bolts, and A307 Bolts for all other connections (unless specified otherwise on drawings). Use 3/4" diameter minimum.
 - Prior to fabrication and erection, shop drawings for all steel items shall be reviewed by the Structural Engineer. The Contractor shall verify all shop drawing dimensions with Structural and Architectural plans and details.
 - All welds shall be made with E70XX electrodes and by welders certified by AWS Standards within the past 12 months; provide written certification if requested. All welds shall have a minimum Charpy V-Notch toughness of 20 foot-pound (27.1N-m) at 0° F, unless noted otherwise on the plans.
 - All high-strength bolts shall be tightened to the appropriate minimum bolt tension in accordance with AISC "Specifications for Structural Joints using ASTM A325 or A490 Bolts." The preferred method of tightening is by use of "Twist off type tension control bolt assemblies." "Direct Tension Indicator" and the Turn-of-Nut method may also be used.
 - Special Inspections and testing of welds as required by IBC 2018 shall be provided by the contractor (approved by the Owner).
 - All beam connections, not shown to be moment connections and not detailed otherwise shall be made using AISC Steel Construction Manual (15th Edition) Table 10-10 "Single Plate Connections" with the maximum number of rows shown for that beam.
 - Mechanical roof top units shall be placed over additional or special joists as shown on drawings. The weight, size and location of all proposed units and curbs shall be submitted to the Architect / Engineer for verification before fabrication of steel.
 - Frames for roof openings and supports for roof mounted mechanical equipment are indicated on drawings for bid purposes only. Upon receipt of mechanical submittals, the contractor shall furnish steel supplier supplementary drawings or other information necessary to layout and detail this portion of the work. Other steel work shall not be delayed by this portion of the work. Shop drawings shall be submitted to engineer for review.
 - All steel exposed to the elements shall be hot-dip galvanized in accordance with ASTM A-123 (Grade 100).

- METAL ROOF DECK
- Steel roof deck shall comply with the latest requirements of the Steel Deck Institute, SDI. Submit Evaluation Report with shop drawings.
 - Steel roof deck shall be 1 1/2" deep x 20 gage galvanized (G90), Type "B" wide rib deck with interlocking side seams. The following minimum properties must be satisfied:

$F_y = 50$ KSI

$I = 0.231$ in⁴/ft

$S_x = 0.230$ in³/ft

$S_y = 0.237$ in³/ft
 - Weld steel roof deck to supporting framing members with 3/4" diameter puddle welds at the following spacings:

(7) welds per 36-inch sheet to all supports perpendicular to deck corrugations.

6" OC to all supports parallel to deck corrugations.

6" OC over all drag struts, shear walls, braced frames and roof perimeter.
 - Attach overlapping seams with top seam welds @ 18" OC maximum between adjacent pieces of decking.
 - Provide a 2" minimum bearing and a 4" lap at the splice points of all pieces of deck.
 - Where possible, all deck shall be (3) span continuous minimum. In areas where (3) span conditions are not possible, the deck shall meet the loading criteria for the span condition. The contractor shall provide heavier gage deck as required for one or two span conditions.

TERMS AND ABBREVIATIONS	
ABBRV	TERM
(#)	Numerical quantities when enclosed in parentheses
A/E	Architect / Engineer
AB	Anchor Bolt
ABV	Above
ADDM	Addendum
AFF	Above Finished Floor
ALUM	Aluminum
APPROX	Approximately
ARCH	Architect (Architectural)*
ASTM	American Society for Testing and Materials
B PL	Base Plate
B/B	Back to Back
BLKG	Blocking
BLW	Below
BM	Beam
BOS	Bottom of Steel
BOT	Bottom
BRG	Bearing
BTWN	Between
C TO C	Center to Center
CD	Contract Documents
CIP	Cast-In-Place
CJ	Construction Joint (Control Joint)*
CL	Centerline
CMU	Concrete Masonry Unit
COL	Column
CONC	Concrete
CONN	Connection
CONT	Continuous (Continue)*
CONTR	Contractor
COORD	Coordinate
CTR	Center
D	Depth
d	Pennyweight Nail
DB	Deck Bearing
DBA	Deformed Bar Anchor
DBL	Double
DFS	Douglas Fir - South
DIA	Diameter
DIAG	Diagonal
DIM	Dimension
DL	Dead Load
DTL	Detail
DWG	Drawing
(E)	Existing
E	Modulus of Elasticity
EA	Each
EJ	Expansion Joint
EL	Elevation
ELEV	Elevator
ENGR	Engineer
EQ	Equal
EQL SP	Equally Spaced (Equal Spaces)*
EQUIP	Equipment
EQUIV	Equivalent
EST	Estimate
ETC	And so forth
EW	Each Way
EXCL	Exclude
EXP	Expansion
EXT	Exterior
(F)	Future
FDTN	Foundation
FFE	Finished Floor Elevation
FIN	Finish (Finished)*
FLR	Floor
FRMG	Framing
FSE	Finished Slab Elevation
FTG	Footing
FV	Field Verify
GA	Gage / Gauge
GALV	Galvanized
GLB	Glued Laminated Wood Beam
HGR	Hanger
HORIZ	Horizontal (Horizontally)*
HSA	Headed Stud Anchor
HSS	Hollow Structural Section
I	Moment of Inertia
ID	Inside Diameter
INT	Interior

TERMS AND ABBREVIATIONS	
ABBRV	TERM
JST	Joist
KIP (K)	Thousand Pounds
KIP FT	Thousand Foot/Pounds
KLF	KIPs per Lineal Foot
LB	Pound
LHS	Left Hand Shoe
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LONG	Longitudinal
LSL	Laminated Strand Lumber
LTWT	Lightweight
LVL	Laminated Veneer Lumber
MAX	Maximum
MECH	Mechanical
MFR	Manufacturer
MIN	Minimum
MISC	Miscellaneous
N/A	Not Applicable
NTS	Not to Scale
OC	On Center
OD	Outside Diameter
OPNG	Opening
OPP	Opposite
OPT	Optional
OSB	Oriented Strand Board
P/T	Pressure Treated
PERP	Perpendicular
PLF	Pounds per Lineal Foot
PSL	Parallel Strand Lumber
PT	Post Tensioned
QA	Quality Assurance
QC	Quality Control
(RE)	Remove Existing
REINF	Reinforce (Reinforced, Reinforcing)*
REQD	Required
RFI	Request for Information
RS	Rough Sawn
RTU	Roof Top Unit
SCHED	Schedule
SECT	Section
SF	Square Foot (Feet)*
SGL	Single
SHTHG	Sheathing
SIM	Similar
SL	Snow Load
SOG	Slab on Grade
SPCL	Special
SPEC	Specification
SQ	Square
STD	Standard
STIF	Stiffener
STRUCT	Structure (Structural)*
SYMM	Symmetrical
T&B	Top & Bottom
T&G	Tongue and Groove
THRU	Through
TO FDTN	Top of Foundation
TOB	Top of Beam
TOC	Top of Concrete
TOF	Top of Footing
TOJ	Top of Joist
TOM	Top of Masonry
TOP	Top of Parapet
TOS	Top of Steel
TOW	Top of Wall
TWS	Threaded Welded Stud
TYP	Typical
UNO	Unless Noted Otherwise
VERT	Vertical (Vertically)*
W/	With
W/O	Without
WL	Wind Load
WLD	Weld (Welded)*
WWF	Welded Wire Fabric
X	Extra Strong
XS	Double Extra Strong

NOTES

- * CONTEXT INDICATES WHICH ABBREVIATION TERM IS IMPLIED. CONTACT ENGINEER IF MEANING IS NOT OBVIOUS.
- NOT ALL ABBREVIATIONS ARE USED.
- MANY ABBREVIATIONS MAY BE MADE PLURAL BY ADDING AN S SUFFIX.
- FOR ABBREVIATIONS NOT LISTED, REFER TO **US NATIONAL CAD STANDARD, VERSION 3.1, TERMS AND ABBREVIATIONS SECTION**, OR CONTACT ENGINEER.



DESCRIPTION	DATE	APPR	MARK



DESIGNED BY: NM	CHECKED BY: HU	CAPITAL PROJECT NO. 1043925	SITE CODE #	OTHER PROJECT NO. 7596233	ISSUE DATE 05/10/2022
		BASE PROJECT MANAGER SCOTT ARNOLD			
		DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING			
		75TH CIVIL ENGINEER GROUP			

HAFB 309th SWEG ENGINEERING FACILITY	STRUCTURAL NOTES
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PROFESSIONAL STRUCTURAL ENGINEER
5-10-2022
HENNING T. UNGERMAN
#7801713
STATE OF UTAH

90° HOOK **180° HOOK** **90° HOOK** **135° HOOK**

STANDARD HOOKS **ALTERNATE HOOKS**

5757 01

5. ALL CONTINUOUS FOOTINGS SHALL BE FC2.0, AND SQUARE FOOTINGS SHALL BE FS3.0, MINIMUM, UNLESS NOTED OTHERWISE ON PLANS.

3731 01

Diagram illustrating the Masonry Beam Detail, showing the vertical and horizontal reinforcement details. The diagram includes the following components and labels:

- SCHEDULED WALL ABOVE BEAM, WHERE OCCURS**: Points to the top of the masonry wall above the beam.
- SCHEDULED TOP HORIZ REINF, EXTEND TOP BARS BEYOND OPENING, SEE NOTE 3.**: Points to the top horizontal reinforcement bars extending above the beam.
- 180° STD HOOK, ALTERNATE BARS**: Points to the 180° standard hook for alternate bars.
- SCHEDULED BEAM VERT REINF**: Points to the vertical reinforcement bars within the beam.
- SCHEDULED WALL HORIZ REINF**: Points to the horizontal reinforcement bars within the masonry wall.
- GROUT BEAM SOLID**: Points to the grout filling the beam.
- 180° STD HOOK, ALTERNATE BARS WHERE NOTED**: Points to the 180° standard hook for alternate bars where noted.
- SCHEDULED BOT HORIZ REINF**: Points to the bottom horizontal reinforcement bars within the beam.
- WHERE MORE THAN (2) BARS ARE REQD, PLACE (2) BARS IN EA HORIZ COURSE**: Points to the horizontal reinforcement bars.
- U BLOCK**: Points to the U-shaped block used in the beam.
- STD SPLICE**: Points to the standard splice of the vertical reinforcement bars.
- SCHEDULED DEPTH**: Points to the depth of the masonry wall.
- WIDTH**: Points to the width of the beam.
- MASONRY BEAM DETAIL**: The title of the diagram.

1. HORIZONTAL WALL REINFORCEMENT SHALL RUN CONTINUOUS THROUGH MASONRY COLUMNS.
2. GROUT ALL REINFORCED CELLS AND VOIDS SOLID.
3. MASONRY COLUMN REINFORCING SHALL EXTEND FULL HEIGHT FROM MARK ON PLAN UP TO FLOOR/ROOF. DOWEL VERT REINFORCING INTO FOUNDATIONS.
4. SEE ARCHITECTURAL DRAWINGS FOR SPECIAL COURSING ARRANGEMENTS
5. ALL TIES SHALL TERMINATE WITH A STANDARD MASONRY HOOK, SEE **B4/S-003**
6. SEE MASONRY REBAR SPlice SCHEDULE FOR REBAR LAP LENGTHS.
7. PLACE AN MC-1 COLUMN NEXT TO ALL: DOORS, WINDOWS, OPENINGS, CONTROL JOINTS, AND AT ENDS OF EACH WALL.

5753 01

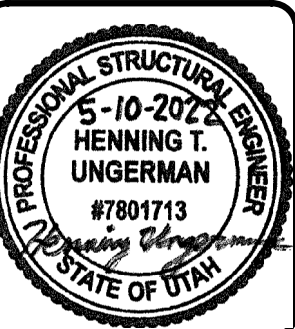
Diagram illustrating two types of steel reinforcement details for a wall:


TYPE 1: Shows a horizontal wall section. The reinforcement bars are extended through the masonry courses (MCs). The detail is labeled "EXTEND HORIZ WALL REINF THROUGH MCs, TYPE 1". The horizontal dimension is labeled "SCHEDULED LENGTH" and the vertical dimension is labeled "SCHEDULED WIDTH". A 2" CLR (clearance) is indicated at the top.

TYPE 2: Shows a vertical wall section. The reinforcement bars are extended through the masonry courses. The detail is labeled "STEEL COL. SEE PLAN. GROUT ALL AROUND". The horizontal dimension is labeled "SCHEDULED LENGTH" and the vertical dimension is labeled "SCHEDULED WIDTH". A 2" CLR (clearance) is indicated at the top.

3731 01

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	NM CAPITAL PROJECT NO. 1043925	HU SITE CODE 1	ISSUE DATE
			05/10/2022
DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING 75TH CIVIL ENGINEER GROUP		ORDER PROJECT NO. 7586233 7586233/0806 BASE PROJECT MANAGER SCOTT ARNOLD	

HAFB 309th SWEG
ENGINEERING FACILITY
STRUCTURAL SCHEDULES

S-004

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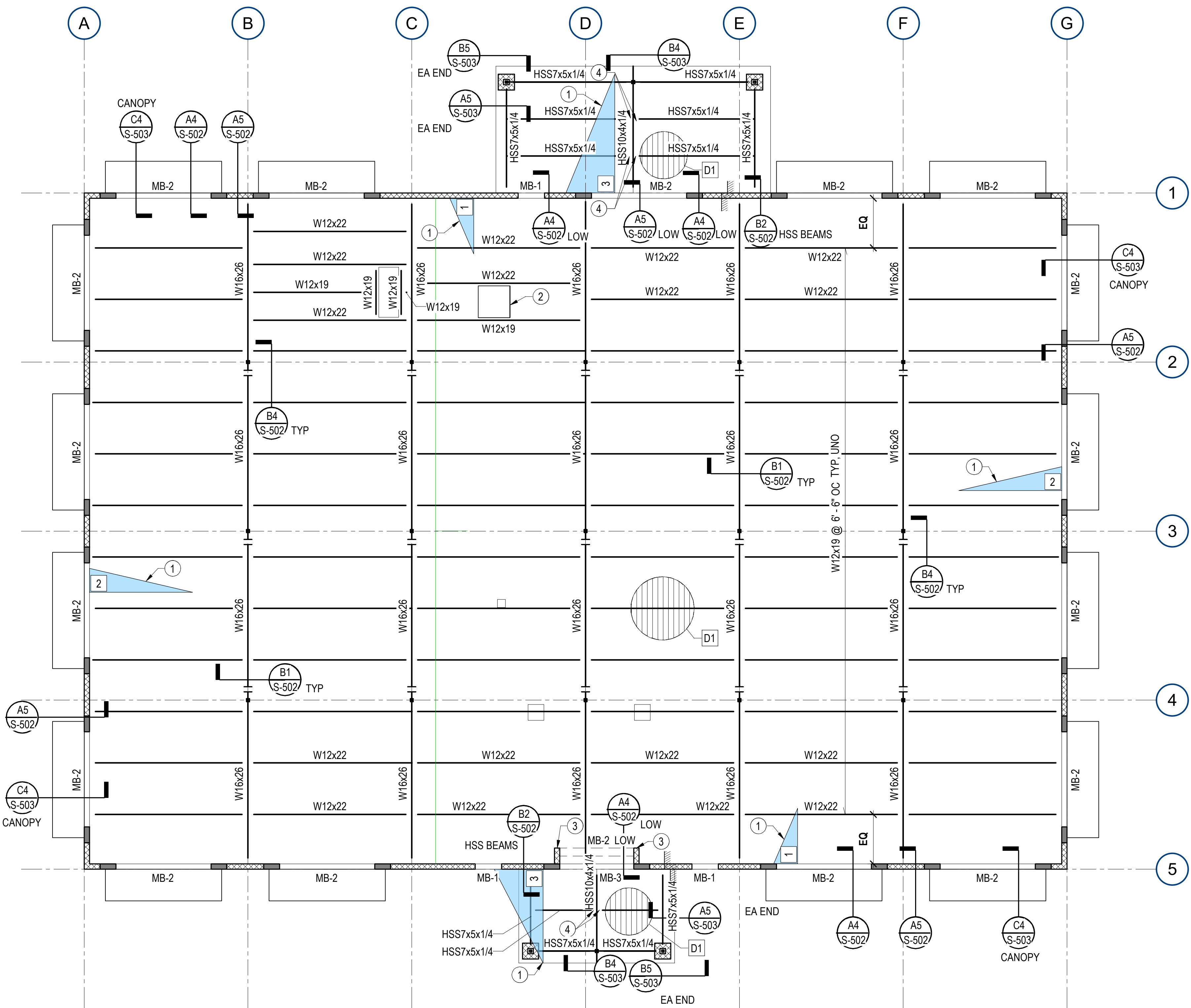


N MC# DENOTES MASONRY COLUMN, SEE SCHEDULE A2/S-003 FOR SIZE & REINFORCMENT. CONTINUE ALL MASONRY COLUMNS UP TO FLOOR OR ROOF DECK BEARING ABOVE, OR TO BEAM BEARING PLATE, TYP.

S1 SLAB ON GRADE SHALL BE 4" CONCRETE OVER 6" FREE-DRAINING GRAVEL, UNO. REINFORCE SLAB WITH 6x6-W1.4xW1.4 WWF (USE FLAT SHEETS).

STEEL COLUMN
WIDE FLANGE

SCHEDULE B4/S-003
MASONRY COLUMN
IN WALL ABOVE SEE



Roof Framing Plan
1/8" = 1'-0"

PLAN NOTES - ROOF FRAMING

- # NUMBERED NOTES BELOW ARE KEYED ON PLAN.
D# DENOTES DECK TYPES KEYED ON PLAN.
* SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, TYPICAL.
** NOT ALL NOTES MAY APPLY TO AREA SHOWN ON SHEET.
A SEE STRUCTURAL NOTES ON SHEET S-001 FOR ADDITIONAL INFORMATION.
B SEE DETAIL C4/S-502 FOR TYPICAL ROOF OPENINGS.
C [c = X"] DENOTES BEAM CAMBER.
D SEE DETAIL B1/S-502 FOR TYPICAL BEAM TO BEAM CONNECTION.
E SEE DETAIL B4/S-502 FOR TYPICAL GIRDER TO COLUMN CONNECTION.

PLAN NOTES - ROOF FRAMING

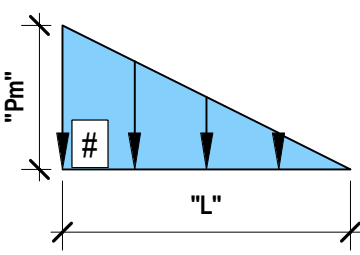
- F ALL CONTINUOUS DECK ANGLES TO BE FULL DEVELOPMENT WELDED AT SPLICES. SEE DETAIL C2/S-502.
G SEE ARCHITECTURAL DRAWINGS FOR TOP OF CMU WALL ELEVATIONS.
H SEE DETAIL C3/S-501 FOR CONTROL JOINTS IN MASONRY. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
J MB-# DENOTES MASONRY BEAM, SEE SCHEDULE C2/S-003 FOR SIZE & REINFORCEMENT.
K COORDINATE OPENINGS THRU ROOF DECK WITH MECHANICAL DRAWINGS. ROOF PENETRATIONS LARGER THAN 8" SHALL HAVE ANGLE FRAMING PER DETAIL C4/S-502. ROOF PENETRATIONS 8" OR SMALLER SHALL BE DETAILED PER C3/S-502.

PLAN NOTES - ROOF FRAMING

- 1 SNOW DRIFT LOAD DIAGRAM. DESIGN JOISTS FOR SNOW DRIFT LOAD IN ADDITION TO UNIFORM AND MECHANICAL LOADS, SEE SCHEDULE THIS SHEET.
2 PROVIDE DECK SUPPORT ANGLES FOR ROOF HATCH OPENINGS PER DETAIL C4/S-502.
3 DO NOT EXTEND MASONRY RETURN UP TO ROOF DECK, SEE ARCHITECTURAL DRAWINGS.
4 SEE B4.1/S503 FOR BEAM TO RIDGE CONNECTION
D1 ROOF DECK SHALL BE 1 1/2" VERCO TYPE "HSB-36", 20 GAUGE, GALVANIZED, OR EQUIVALENT. PLACE DECK 3 SPANS CONTINUOUS, MIN. ATTACH DECK AS FOLLOWS:
A. SPAN PERPENDICULAR TO SUPPORTS: (7) 3/4"Ø PUDDLE WELDS.
B. SPAN PARALLEL TO SUPPORTS: 3/4"Ø PUDDLE WELDS @ 6" OC.
C. SEAMS: 1 1/2" TOP SEAM WELDS @ 18" OC.

SCHEDULE - SNOW DRIFT

Mark	"L" - (Feet)	"Pm" - (PSF)	Notes
1	7' - 0"	18	
2	13' - 0"	33	
3	15' - 0"	74	



NOTES

1. ALL DRIFT LOADS TO RUN FULL LENGTH ALONG A WALL LINE, UNO.
2. DRIFT LOADS ON JOISTS THAT OCCUR 90° TO EACH OTHER SHALL BE APPLIED CONCURRENTLY EXCEPT THE TWO LOADS NEED NOT BE SUPERIMPOSED (REFER TO FIGURE 7.7-3 OF ASCE 7-16).
3. DRIFT LOAD IS IN ADDITION TO BASE REQUIRED SNOW LOAD.
4. THE DRIFT LENGTH "L" SHALL BE THE LESSER OF THAT SHOWN IN THE SCHEDULE AND THE ACTUAL LENGTH OF THE ROOF. IN EITHER CASE, THE MAGNITUDE SHALL TAPER TO 0 PSF AT THE END OF THE DRIFT LENGTH.

B5 SNOW DRIFT SCHEDULE

NO SCALE 1777_01

ROOF FRMG PLAN LEGEND

- CHANGE IN ELEVATION
 STEEL ROOF DECK W/ SPAN DIRECTION INDICATED
 STEEL COLUMNS: WIDE FLANGE, TUBE, PIPE
 SNOW DRIFT AREA
 SNOW DRIFT DIAGRAM, SEE SCHEDULE THIS SHEET
 MASONRY WALL
 MASONRY COLUMN IN WALL
 MASONRY BEAM MARK, SEE SCHEDULE C2/S-003
 BEAM SPLICE, SEE DETAIL B4/S-502



DATE	APPR	MARK
DESCRIPTION		



DESIGNED BY: NM	CHECKED BY: HU	DATE: 05/10/2022
CAPITAL PROJECT NO: 1043925	SITE CODE: -	ISSUE DATE: 05/10/2022
OTHER PROJECT NO: 7596233	PROJECT NO: KCSM200906	BASE PROJECT MANAGER: SCOTT ARNOLD
DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING 75TH CIVIL ENGINEER GROUP		

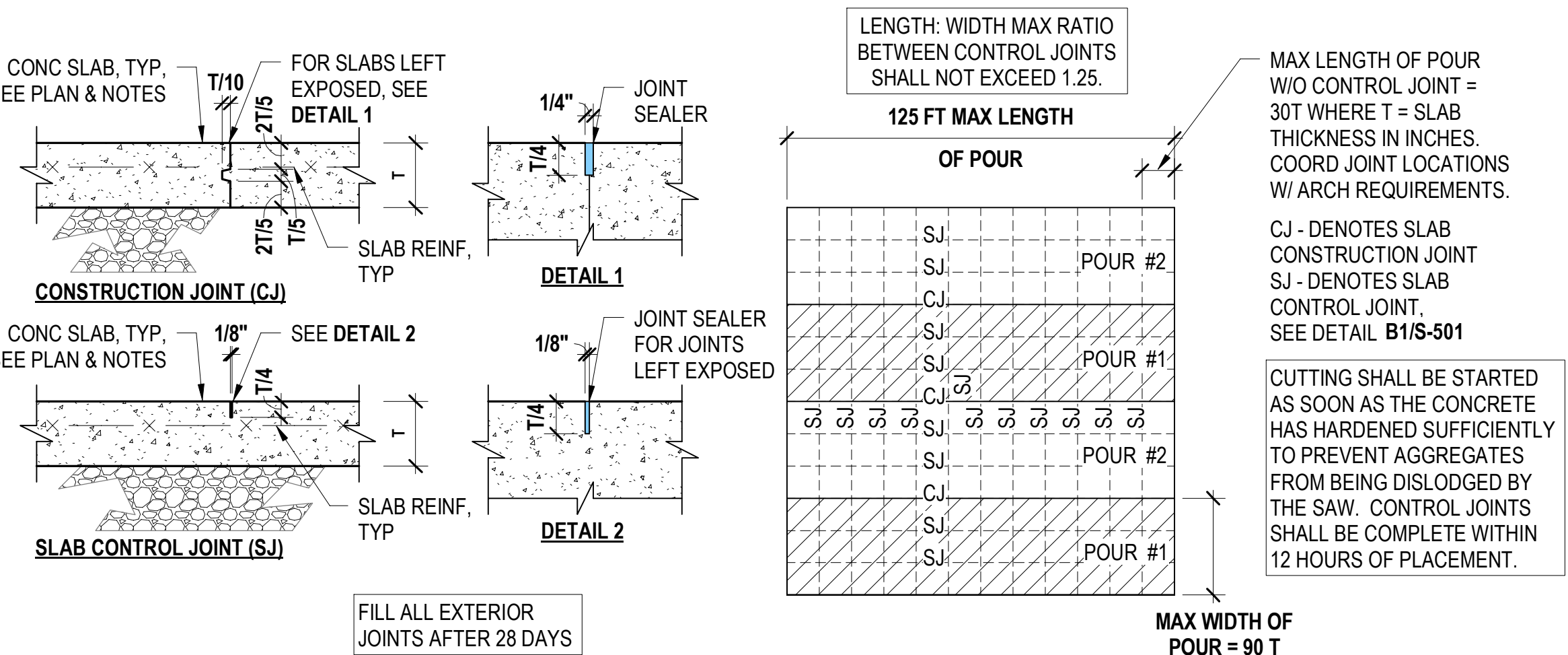
HAFB 309th SWEG
ENGINEERING FACILITY
ROOF FRAMING PLAN

S-102
SHEET 38 OF 123

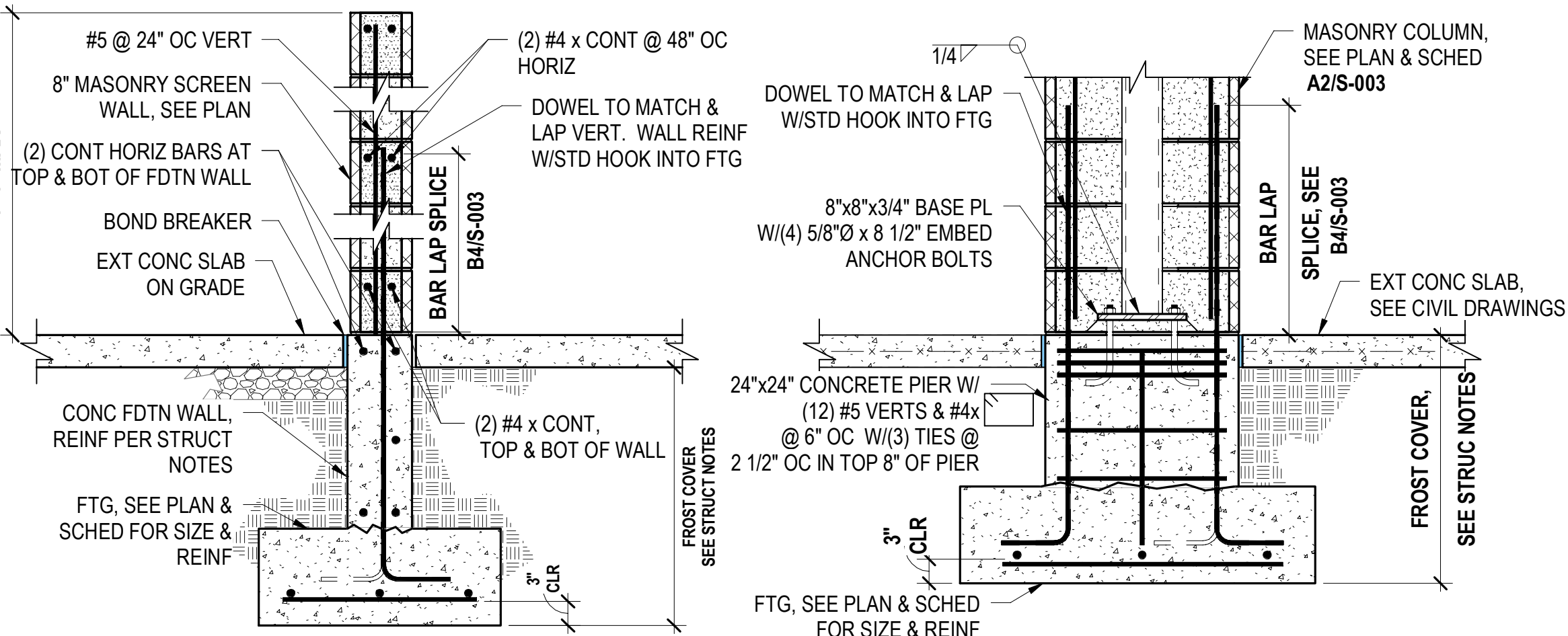
SCHEDULE - REINFORCING SPLICE LAP LENGTHS - f'c 3000 - 5000 PSI												
Bar Size	f'c = 3000psi				f'c = 4000psi				f'c = 5000psi			
	Regular		Top		Regular		Top		Regular		Top	
	Class A	Class B	Class A	Class B	Class A	Class B	Class A	Class B	Class A	Class B	Class A	Class B
#3	17"	22"	22"	28"	15"	19"	19"	24"	13"	17"	17"	22"
#4	22"	29"	29"	38"	18"	25"	26"	33"	17"	22"	23"	30"
#5	28"	36"	37"	48"	24"	31"	32"	42"	21"	28"	24"	37"
#6	33"	43"	45"	58"	29"	37"	39"	50"	26"	33"	35"	45"
#7	48"	63"	63"	82"	42"	55"	55"	71"	37"	48"	48"	62"
#8	55"	72"	72"	93"	48"	63"	63"	81"	42"	55"	55"	71"
#9	62"	81"	81"	105"	54"	71"	71"	92"	48"	62"	62"	80"
#10	70"	91"	91"	118"	61"	79"	79"	103"	54"	70"	70"	90"
#11	78"	101"	101"	131"	68"	88"	88"	114"	60"	77"	77"	100"

- NOTES:**
- THE SCHEDULE SHOWN APPLIES TO REGULAR WEIGHT CONCRETE WITH 60ksi GRADE REINFORCING BARS.
 - TOP BARS ARE HORIZONTAL BARS WITH 12" OR MORE OF FRESH CONCRETE CAST BELOW THE BARS.
 - CLASS "A" SPLICES SHALL BE USED WHEN 50% (OR LESS) OF BARS SPLICED WITHIN LAP.
 - CLASS "B" SPLICES SHALL BE USED FOR ALL ELSE, TYPICALLY WITH SHEARWALLS, COLUMNS, BEAMS AND SLABS.
 - FOR EPOXY COATED BARS, INCREASE LAP LENGTHS AS FOLLOWS:
TOP BARS: $L_d \times 1.7$
REGULAR BARS: $L_d \times 1.5$
 - FOR BUNDLED BARS, INCREASE LAP LENGTHS AS FOLLOWS:
BUNDLED BARS, THREE OR LESS: $L_d \times 1.2$
BUNDLED BARS, FOUR OR MORE: $L_d \times 1.33$
INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP.
 - LAP SPLICES ARE NOT ALLOWED FOR TIES AND STIRRUPS.

C1 SPLICE LAP LENGTHS SCHEDULE
NO SCALE

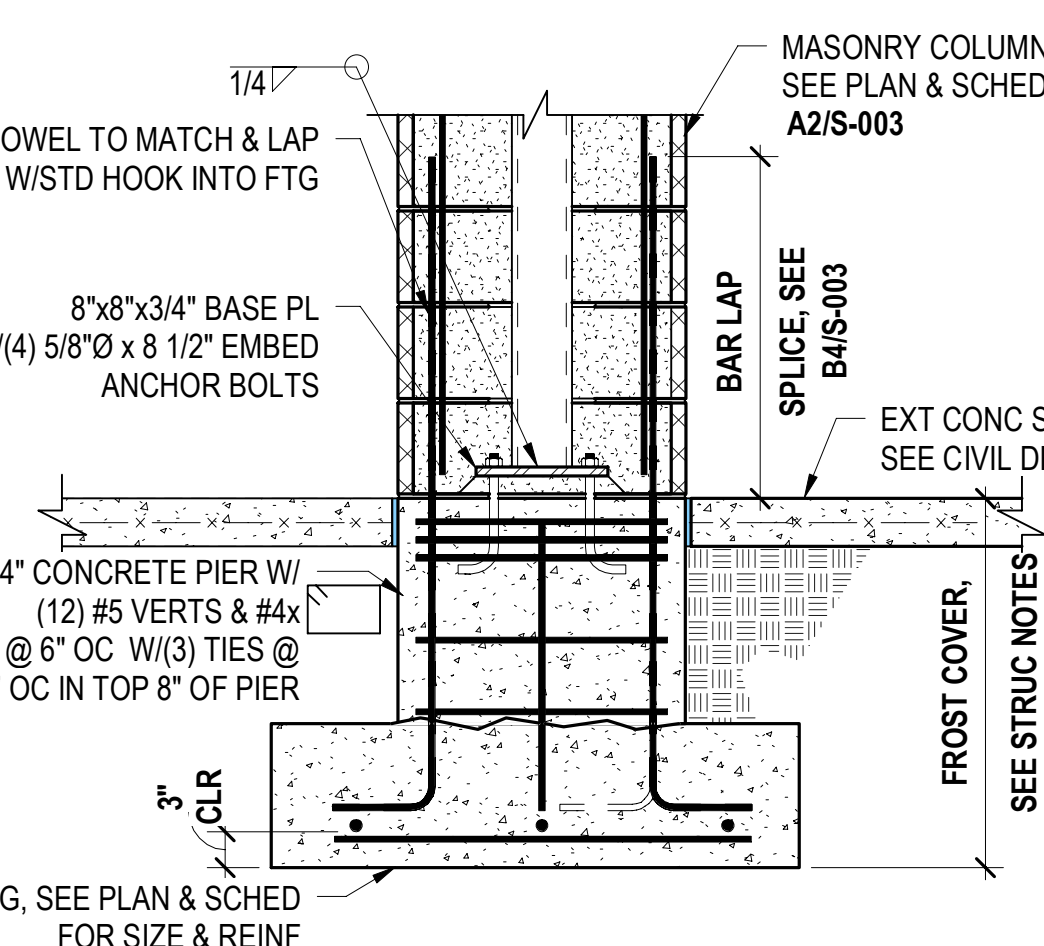


B1 TYPICAL SLAB JOINT DETAILS
NO SCALE

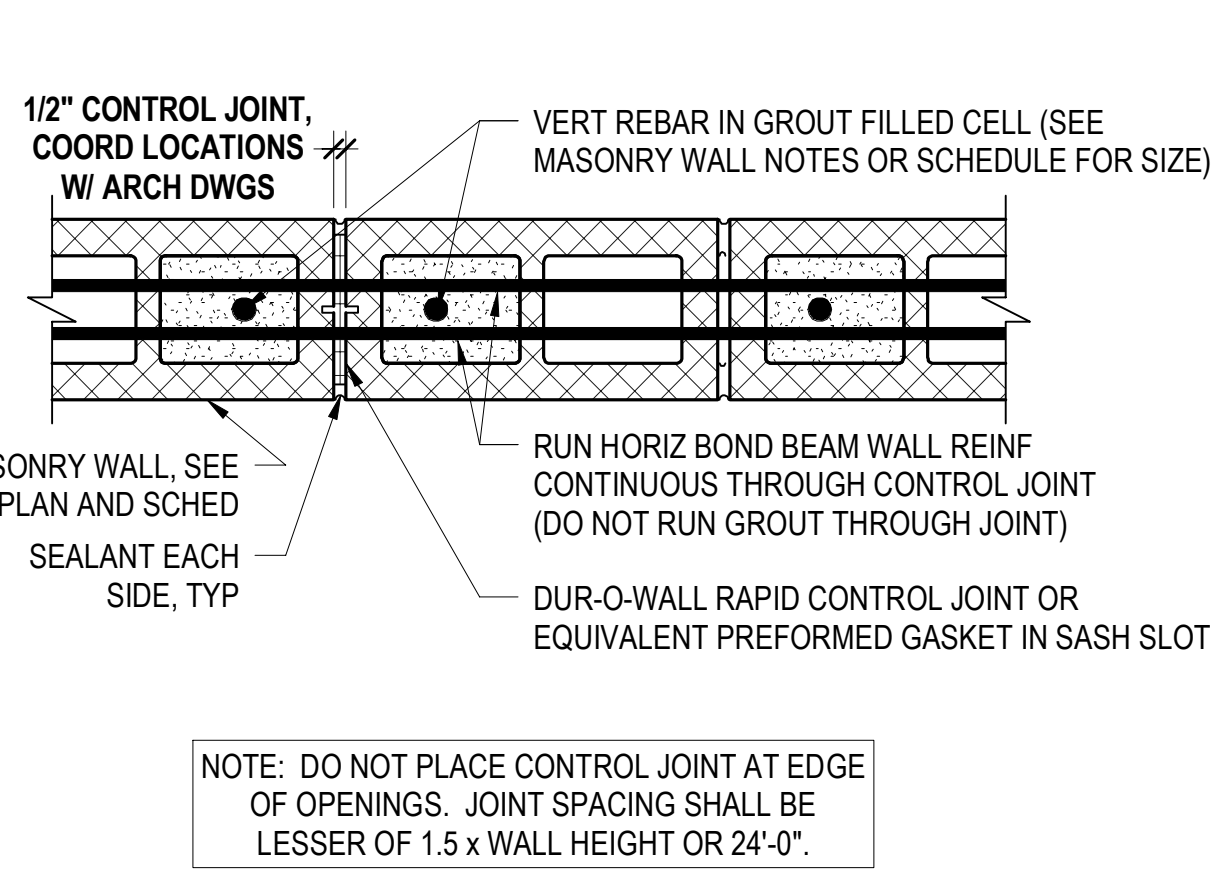


A1 MASONRY SCREEN WALL
3/4" = 1'-0"

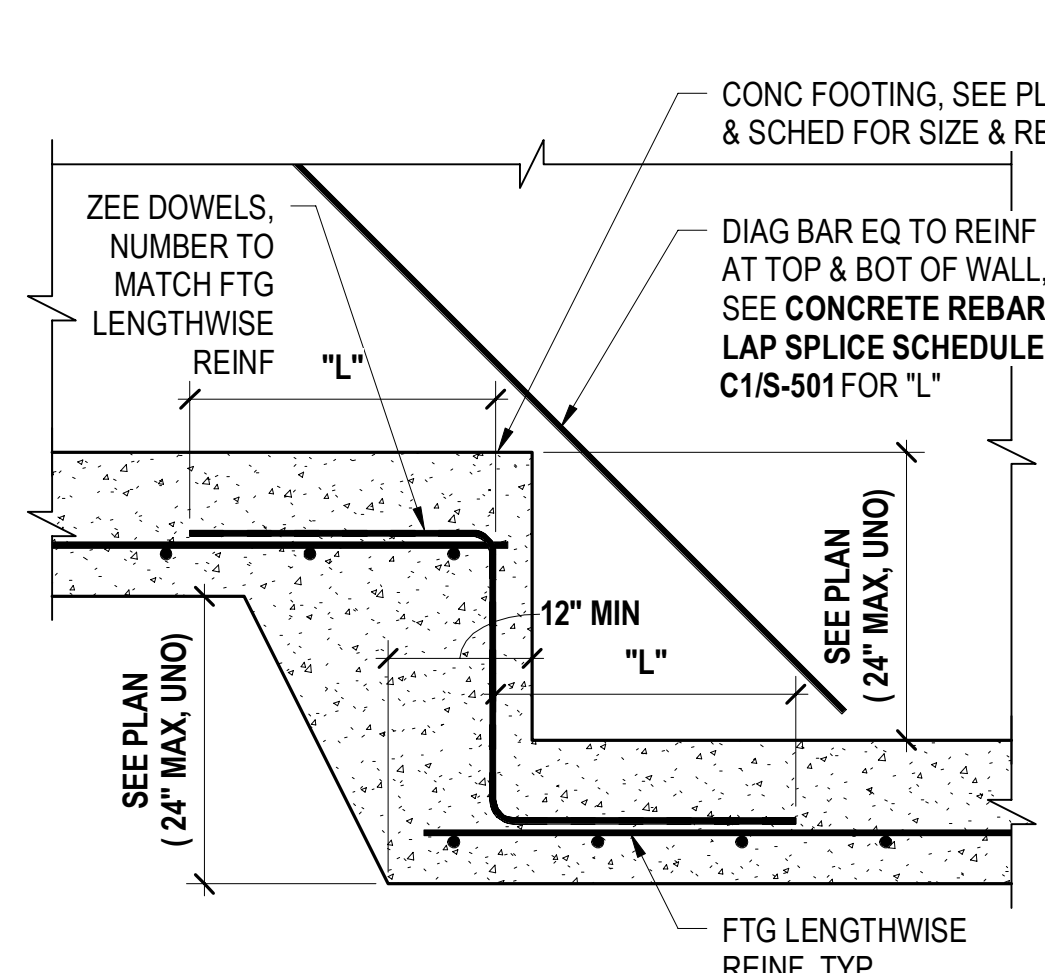
B2 SLAB CONTROL JOINT CRITERIA
NO SCALE



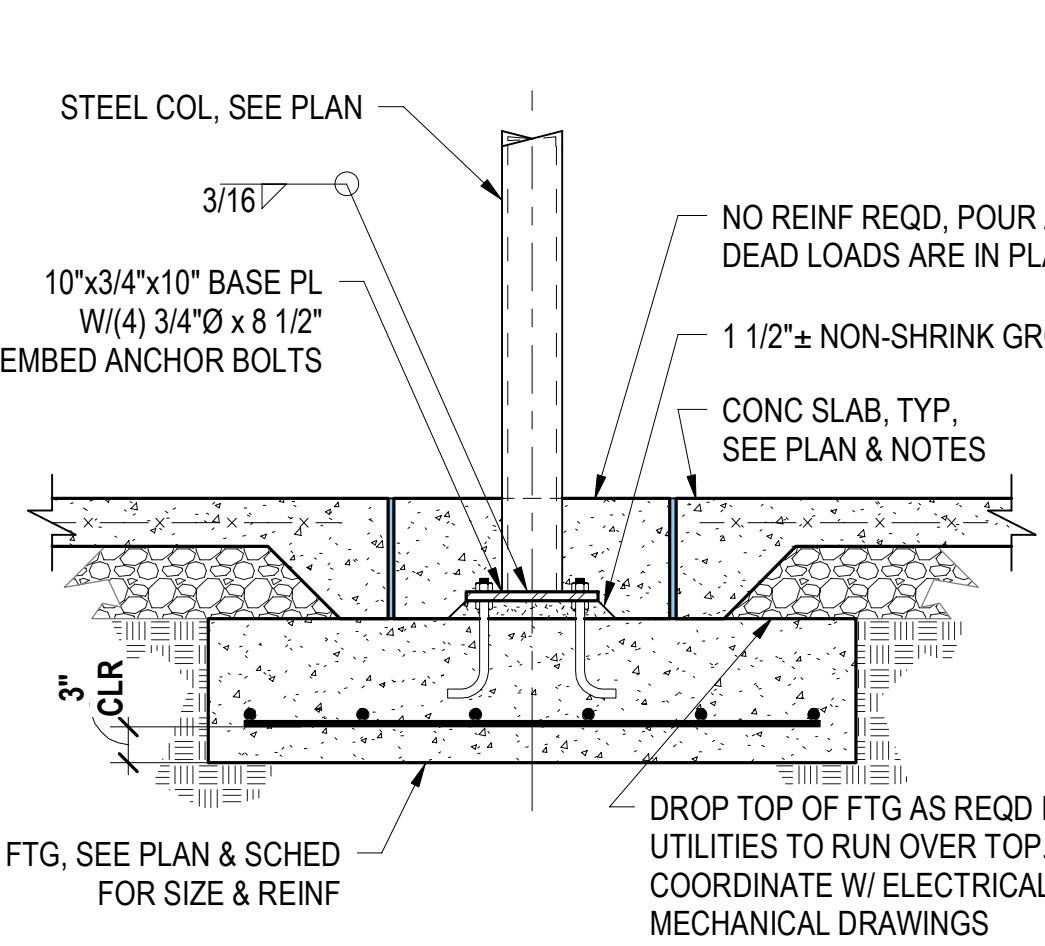
A2 MASONRY COLUMN DETAIL
3/4" = 1'-0"



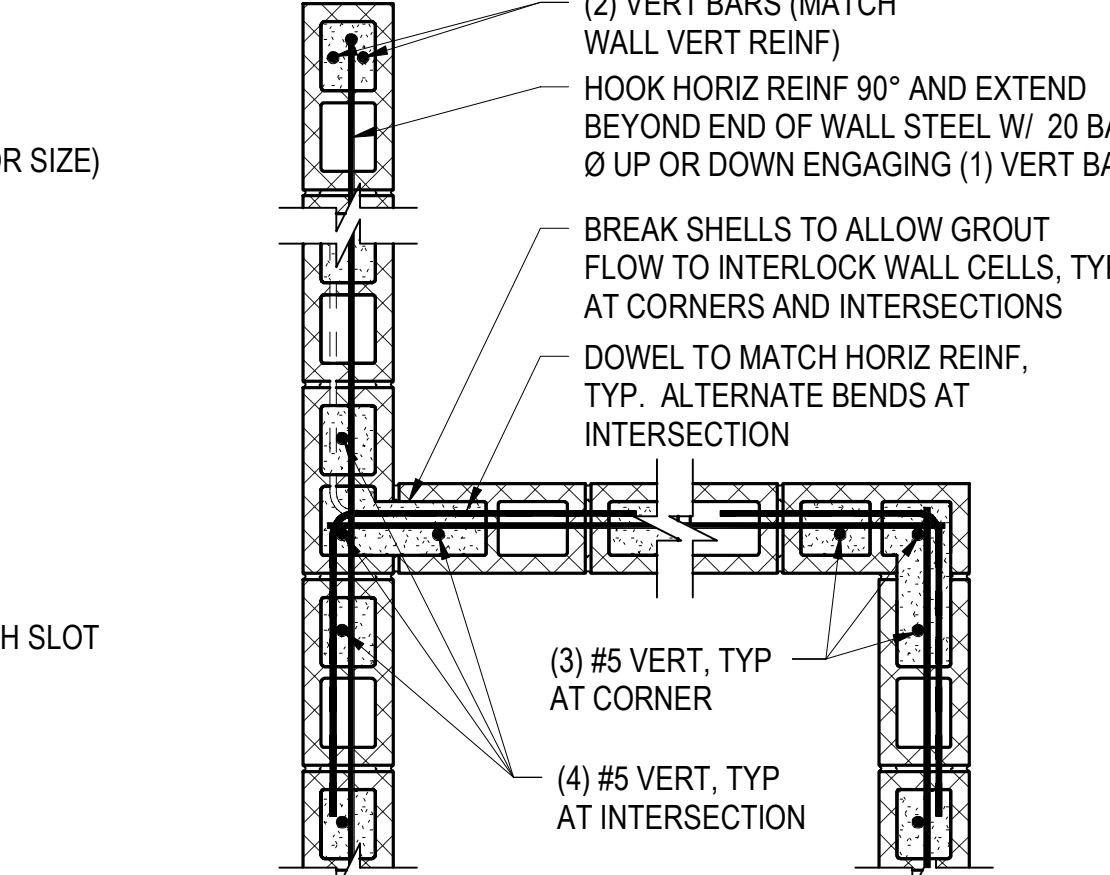
C3 TYP MASONRY CONTROL JT
1 1/2" = 1'-0"



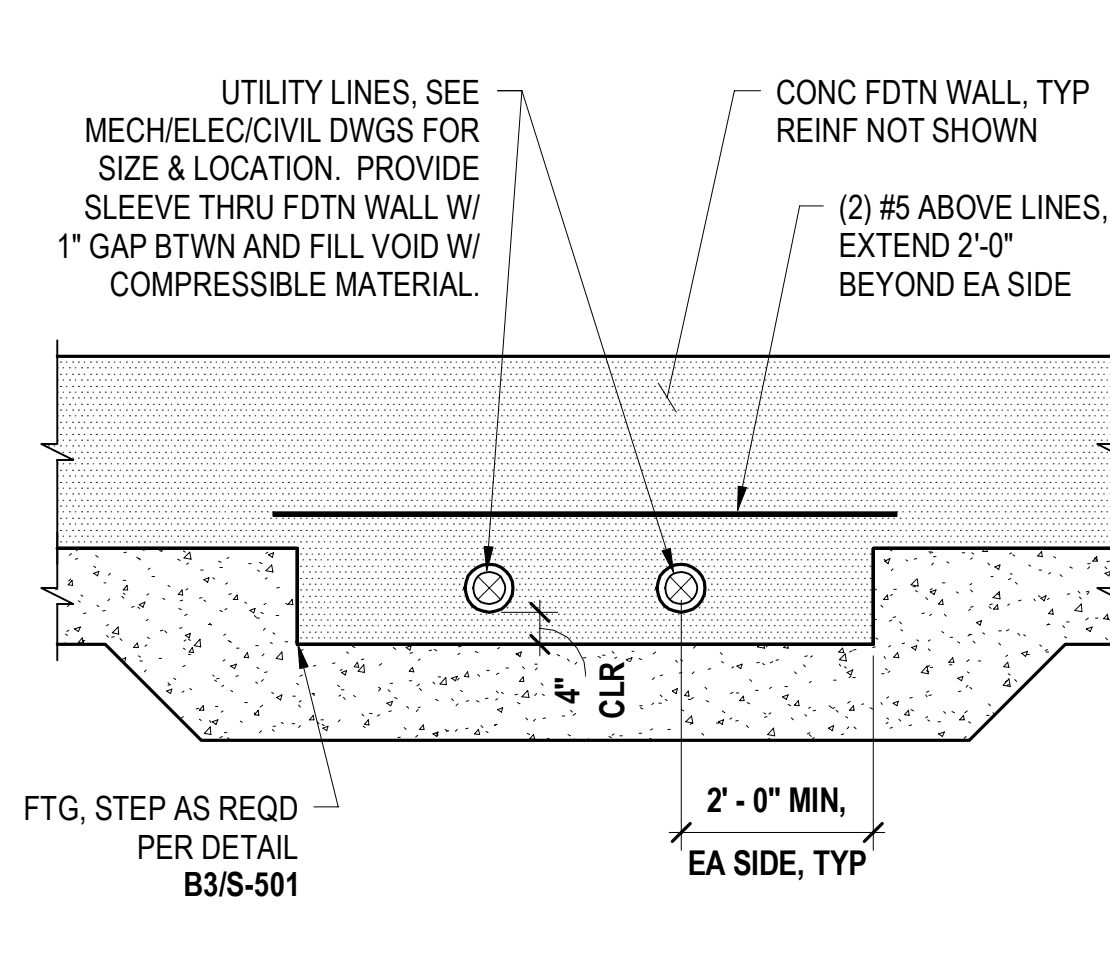
B3 FOOTING STEP (CONC FDTN)
NO SCALE



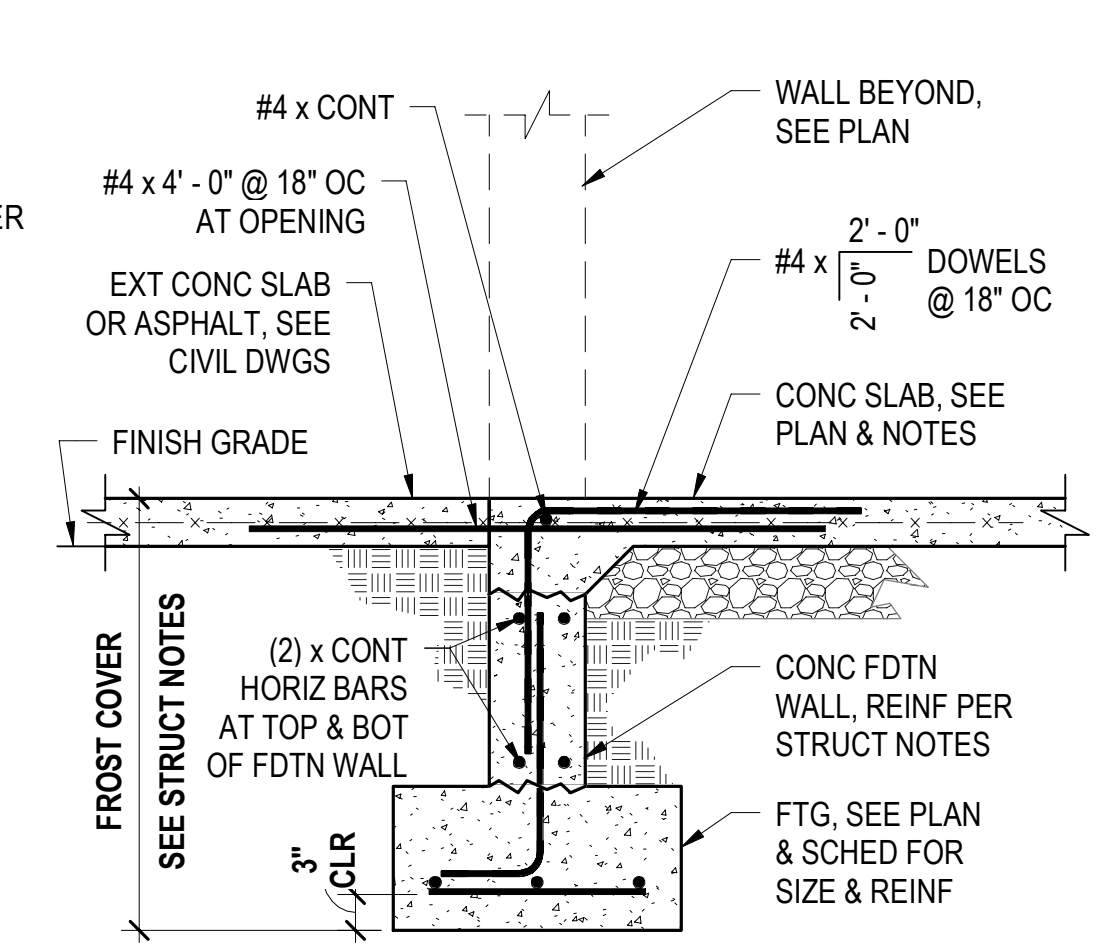
A3 INTERIOR STEEL COLUMN DETAIL
3/4" = 1'-0"



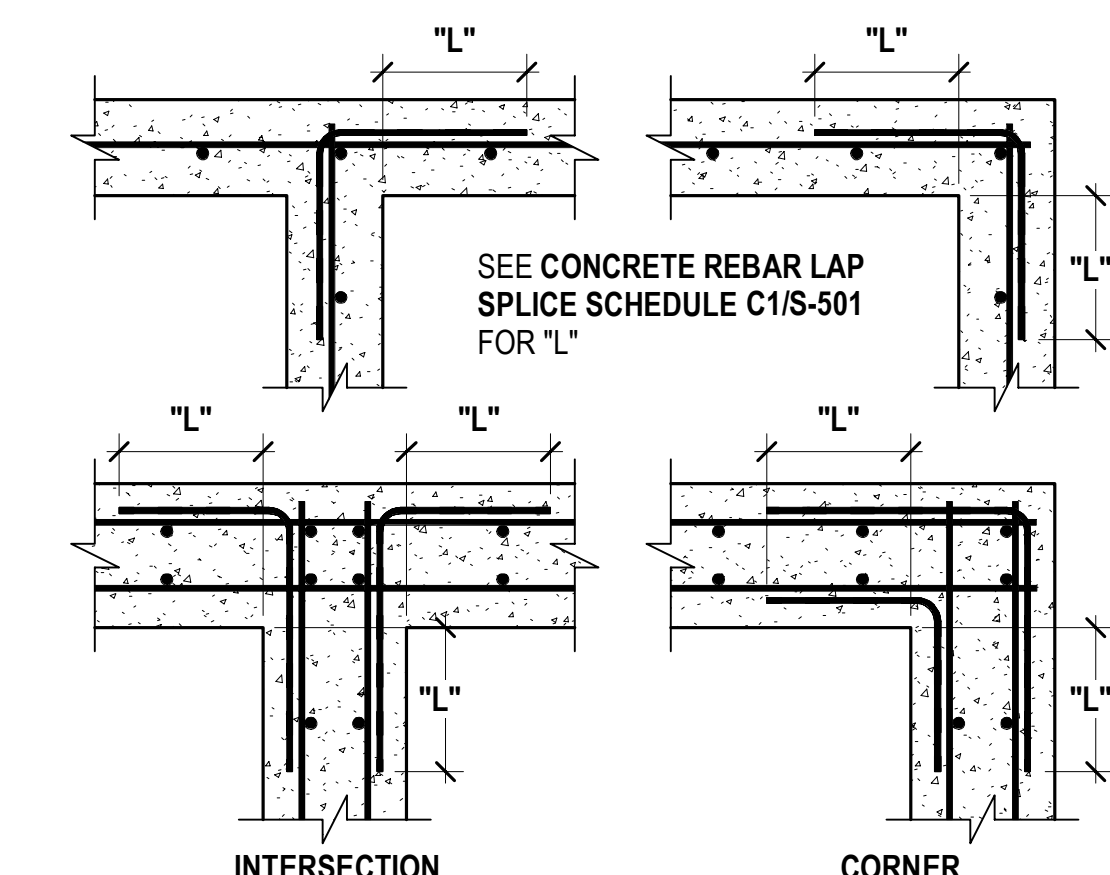
C4 MASONRY WALL DOWELS
3/4" = 1'-0"



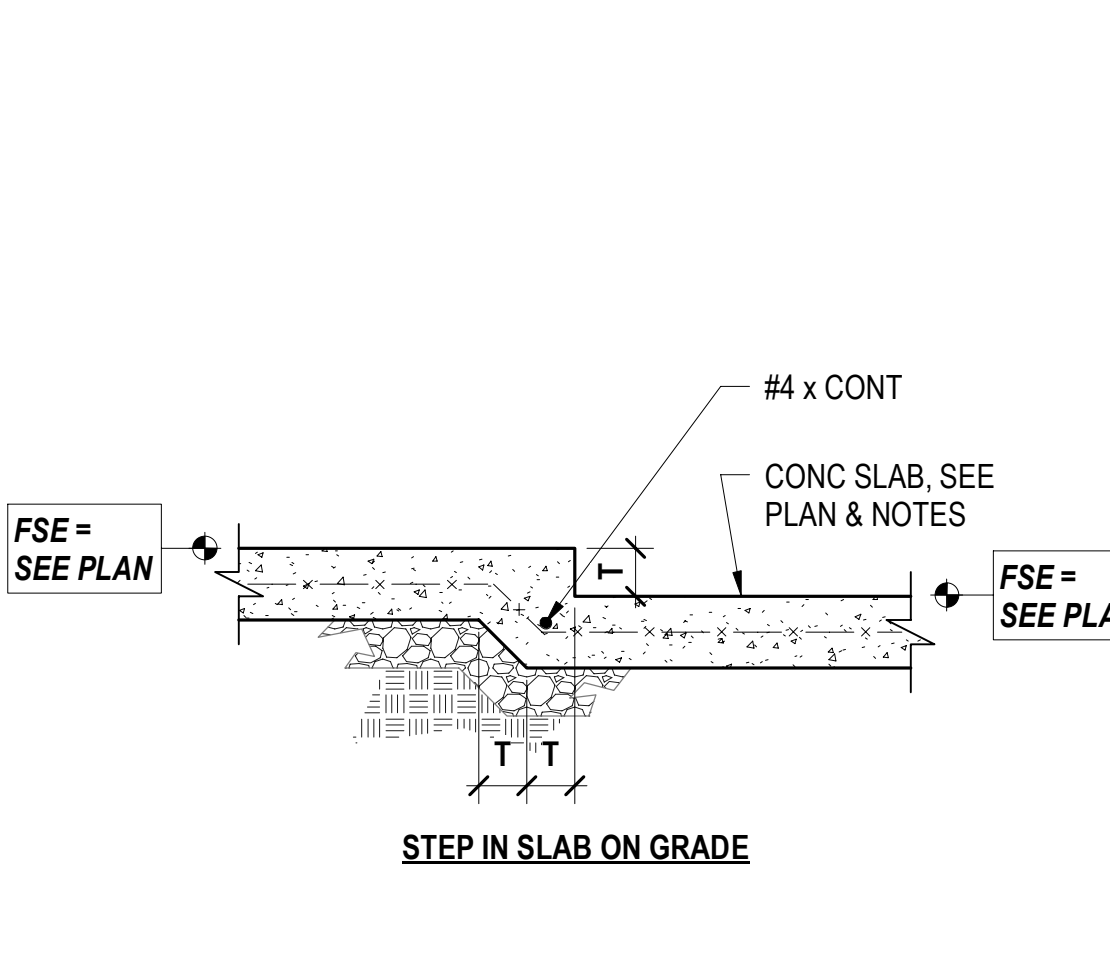
B4 FTG STEP FOR UTILITIES
1/2" = 1'-0"



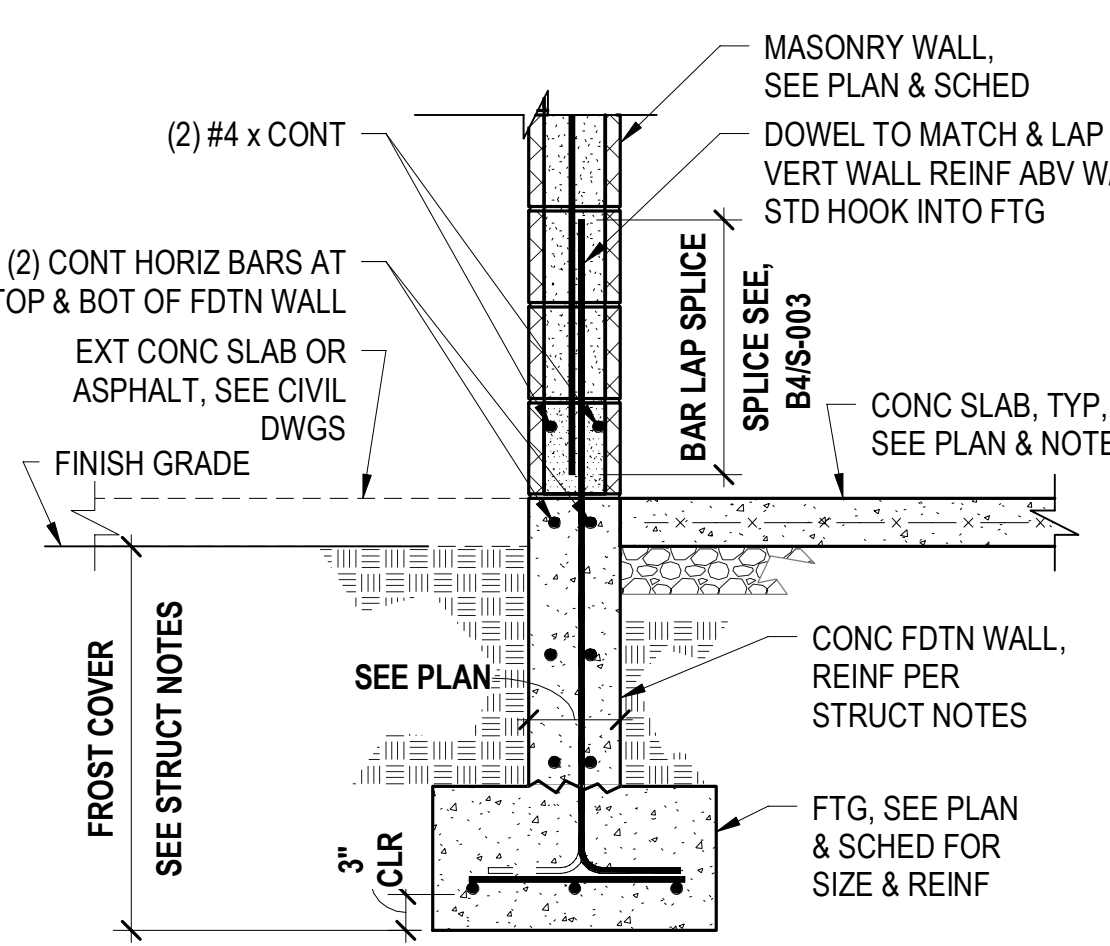
A4 EXT DOOR OPENING DETAIL
3/4" = 1'-0"



C5 CONCRETE WALL DOWELS
NO SCALE



B5 SLAB STEP DETAIL
3/4" = 1'-0"



A5 EXT MASONRY WALL
3/4" = 1'-0"

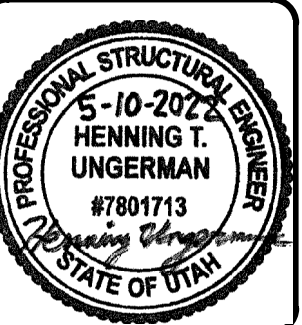



DATE / APPR MARK	
DESCRIPTION	



CHECKED BY: HU	DATE: 05/10/2022
DESIGNED BY: NM	PROJECT NO: 1043925
CAPITAL PROJECT NO: 1043925	OTHER PROJECT NO: 7596233
BASE PROJECT NO: KRS2M200006	BASE PROJECT MANAGER: SCOTT ARNOLD

HAFB 309th SWEG
ENGINEERING FACILITY
STRUCTURAL DETAILS

[illegible]

	NM	HU
	CAPITAL PROJECT NO. 1043925	SITE CODE —
DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING 75TH CIVIL ENGINEER GROUP	ORDER PROJECT NO. 7596233 KRSN200806 DMS PROJECT MANAGER	ISSUE DATE 05/10/2022
SCOTT ARNOLD		

<p>HAFB 309th SWEG ENGINEERING FACILITY</p>	<p>STRUCTURAL DETAILS</p>
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