## GENERAL STRUCTURAL NOTES

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE. VUSBC (2009 EDITION) EFFECTIVE MARCH 1, 2011.

REFER TO ARCHITECTURAL DRAWINGS FOR WATERPROOFING DETAILS. THE ENGINEER SHALL NOT HAVE THE AUTHORITY OR RESPONSIBILITY TO SUPERVISE OR

DIRECT THE CONSTRUCTION WORK. ALL SECTIONS AND DETAILS, WHETHER EXPLICITLY CUT ON PLAN OR NOT, SHALL BE

INFORMATION REGARDING STRUCTURAL MEMBERS INDICATED TO BE EXISTING WAS OBTAINED DURING FROM LIMITED AVAILABLE EXISTING DRAWINGS. ACTUAL CONDITIONS MAY DIFFER FROM THAT WHICH IS INDICATED. IF THE CONTRACTOR UNCOVERS EXISTING CONDITIONS THAT DIFFER FROM THAT WHICH IS INDICATED ON PLAN, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD OF THE DISCREPANCY IN ORDER THAT THE CONDITION MAY BE RESOLVED.

FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO THE CONSTRUCTION AND FABRICATION OF ANY NEW STRUCTURAL MEMBERS.

TEMPORARY SHORING AND PROTECTION OF EXISTING PROPERTY

CONSIDERED TYPICAL AND SHALL APPLY AT SIMILAR CONDITIONS.

THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. REASONABLE PROTECTION OF EXISTING STRUCTURE AND PROPERTY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ERECTION PROCEDURE AND SEQUENCE INCLUDING THE DESIGN ADEQUACY AND SAFETY OF VERTICAL AND LATERAL SUPPORT (ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC.) FOR SHORING OF EXISTING STRUCTURE DURING EXCAVATION. REMOVAL AND REPLACEMENT OF FOUNDATIONS. AND REMOVAL AND REPLACEMENT OF FLOORS, WALLS, AND ROOF SYSTEMS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SHORE AND SUPPORT EXISTING MASONRY AND EXISTING FRAMING ABOVE NEW OPENINGS DURING CONSTRUCTION.

SUBMIT COMPLETE TEMPORARY SHORING DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA FOR REVIEW AND APPROVAL BEFORE COMMENCEMENT OF THE WORK.

SPECIAL INSPECTIONS ARE REQUIRED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (CHAPTER 17). THE FOLLOWING IS A LIST OF ITEMS THAT REQUIRE SPECIAL INSPECTION. REFER TO FORM CO-6b FOR A SPECIFIC LISTING.

> STRUCTURAL STEEL FRAMING INCLUDING FASTENERS, WELD MATERIALS, INSTALLATION OF HIGH STRENGTH BOLTS, STEEL FRAMING AND CONNECTIONS, CAST-IN-PLACE CONCRETE AND MASONRY.

SHOP DRAWINGS: THE CONTRACTOR SHALL COORDINATE THE MECHANICAL. PLUMBING, AND ELECTRICAL REQUIREMENTS WITH THE STRUCTURAL DRAWINGS, INCLUDING THE LOCATION OF MISCELLANEOUS ITEMS AFFECTING THE STRUCTURAL WORK SUCH AS OPENINGS, INSERTS, ETC. PROMPTLY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS.

THE CONTRACTOR SHALL VERIFY ALL FLOOR AND ROOF MOUNTED MECHANICAL EQUIPMENT DIMENSIONS AND WEIGHTS, AND VERIFY ALL ROOF OPENING SIZES AND LOCATIONS, WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND REVIEWED SHOP DRAWINGS.

SHOP DRAWINGS ARE TO BE REVIEWED BY THE CONTRACTOR AND SUBCONTRACTOR PRIOR TO BEING SUBMITTED FOR APPROVAL.

#### **DESIGN LOADS**

A. BUILDING OCCUPANCY CATEGORY

MECH EQUIPMENT STAIRS RESIDENTIAL ROOMS AND COORDIORS SERVING LOBBIES AND LOUNGES

100 PSF 40 PSF + 15 PSF PARTITIONS 100 PSF 40 PSF

REFER TO PLAN

C. SNOW LOADS

PG=25 PSF (GROUND SNOW) CE=1.0 (SNOW EXPOSURE FACTOR) CT=1.0 (THERMAL FACTOR)

IS=1.1 (SNOW LOAD IMPORTANCE FACTOR: ASCE 7-05 TABLE 7-4) PF (SNOW LOAD FOR LOW-SLOPE ROOF)=0.7X(CE)X(CT)X(IS)X(PG) 0.7X1.0X1.0X1.1X25 = 19.25 PSF USE 30 PSF MIN

D. WIND LOADS

(SQ FT)

100

200

500

V=90 MPH (BASIC WIND SPEED: 3-SECOND GUST)

IW=1.15 (WIND IMPORTANCE FACTOR: ASCE 7-05 TABLE 6-1) EXPOSURE B

KD=0.85 (WIND DIRECTIONALITY FACTOR) KZT=1.0 (TOPOGRAPHIC FACTOR)

WIND LOAD DETERMINATION BY: ASCE 7-05, SECTION 6.5, METHOD 2 (ANALYTICAL PROCEDURE) WALL PRESSURES (PSF)

-19.52

-18.71

-17.64

-16.83

-16.02

+13.43 -14.94

EFFECTIVE ZONES 4,5 ZONE 4

+17.99

+17.18

+16.11

+15.30

+14.49

WIND AREA (+) (-)

ZONE 5 ( - )	
-24.09 -22.47 -20.33 -18.71 -17.09	a 5
-14.94	WAL

LL PRESSURE ZONES

OCCUPANCY CATEGORY = III, IE = 1.25 (ASCE 7-05 TABLE 11.5-1) SEISMIC DESIGN CATEGORY = B SECTION 3404.4 EXCEPTION APPLIES

FOUNDATIONS FOR THIS STRUCTURE ARE SPREAD FOOTINGS BEARING ON EITHER VIRGIN SOIL OR CONTROLLED COMPACTED FILL WITH AN ASSUMED SOIL BEARING CAPACITY OF

THE OWNER'S GEOTECHNICAL ENGINEER SHALL VERIFY, PRIOR TO POURING CONCRETE THAT THE SOIL IS CAPABLE OF SUPPORTING SUCH A LOAD AND IS CONSISTENT WITH THE GEOTECHNICAL REPORT.

THE CONTRACTOR SHALL PROTECT THE FOOTINGS AND SLABS FROM DAMAGE FROM FROST HEAVE DURING CONSTRUCTION UNTIL THE FINAL DESIGN STRUCTURE IS COMPLETE.

STEPS IN WALL FOOTINGS SHALL HAVE A MINIMUM SPACING OF DOUBLE THE CHANGE IN ELEVATION.

AT NON-RETAINING WALLS BELOW GRADE, BACKFILL AGAINST BOTH SIDES OF WALL SIMULTANEOUSLY SO THAT GRADE DIFFERENCE IS NO MORE THAN 1'-0" AT ANY TIME.

ALL CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301-05 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318-08 "BUILDING CODE

REQUIREMENTS FOR STRUCTURAL CONCRETE". fc=3500 PSI (SLABS-ON-GRADE AND ELEVATED SLABS)

f'c=3000 PSI (ALL OTHER CONCRETE) ASTM A185 (WELDED WIRE FABRIC - USE FLAT SHEETS ONLY)

ALL EXTERIOR EXPOSED CONCRETE SHALL BE FURNISHED WITH AN AIR-ENTRAINING ADMIXTURE PROVIDING AN AIR-CONTENT OF 6% (+/- 1 1/2%) AT POINT OF PLACEMENT - REFER TO SPECIFICATIONS.

ALL MASONRY WORK SHALL CONFORM TO THE REQUIREMENTS OF (ACI 530-08/ASCE 5-08/TMS 402-08) "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND (ACI 530.1-08/ASCE 6-08/TMS 602-08) "SPECIFICATION FOR MASONRY STRUCTURES".

> ASTM C90 (BLOCK) ASTM C270 (MORTAR) - TYPE S (CMU), TYPE N (BRICK) ASTM C476 (GROUT)

f'm=1500 PSI

ASTM A615 GRADE 60 (REINFORCING) SOLIDLY FILL COLLAR JOINTS WITH MORTAR AS THE WORK PROGRESSES.

PROVIDE STEEL SLEEVES AT PIPE PENETRATIONS (GALVANIZED AT EXTERIOR WALLS AND ALL BELOW GRADE WALLS).

GROUT ALL CELLS OF FOUNDATION WALLS SOLID UP TO FINISH GROUND FLOOR.

AT HOLLOW WALLS THAT CHANGE IN THICKNESS OR NUMBER OF WYTHES, PROVIDE A COURSE OF SOLID MASONRY OR GROUT FILLED UNITS BELOW THE TRANSITION.

ALL BLOCK CONTAINING VERTICAL REINFORCING SHALL HAVE TWO CELLS PER 16" BLOCK. CELLS SHALL ALIGN VERTICALLY. BARS SHALL BE HELD IN PLACE BY REBAR POSITIONERS OR OTHER SUITABLE DEVICES.

IN VERTICALLY REINFORCED WALLS, USE LADDER TYPE (NOT TRUSS TYPE) REINFORCING IN HORIZONTAL MORTAR JOINTS.

GROUT SLUMP SHALL BE 8" TO 11". PLACE GROUT PER ACI 530.1 SECTION 3.5 AND CONSOLIDATE BY VIBRATION. RECONSOLIDATE BY VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT.

AFTER STEEL ERECTION IS COMPLETE, FILL ALL POCKETS AT BEARING OF JOISTS AND BEAMS SOLID WITH MASONRY. BUILD TIGHT TO STEEL MEMBER.

ALL <u>STRUCTURAL STEEL</u> WORK SHALL CONFORM TO THE REQUIREMENTS OF AISC 360-05 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS". BOLTED CONNECTIONS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION UNLESS NOTED OTHERWISE ON PLAN. REFER TO DRAWINGS FOR CONNECTIONS.

> ASTM A992 (W-SHAPES AND WT-SHAPES) FY = 50 KSIASTM A500 GRADE B (SQUARE AND FY = 46 KSIRECTANGULAR HSS SHAPES) ASTM A36 (ANGLE, CHANNELS, PLATES, AND FY = 36 KSI

OTHER STRUCTURAL SHAPES) E70XX (SMAW PROCESS WELDING) E6022 (METAL DECK TO OWSJ OR STRUCTURAL STEEL - SMAW

PROCESS) E7XT-X (FCAW PROCESS WELDING)

ASTM A325-N (BOLTS) ASTM A563 (HEAVY HEX NUT) ASTM F436 (HARDENED STEEL WASHER)

ASTM F1554 FY=36 KSI (ANCHOR RODS UNO) ASTM A108 (HEADED SHEAR STUDS)

DETAILING AND ERECTION OF STRUCTURAL STEEL AND SHALL COMPLY WITH CURRENT OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY-SUBPART R -STEEL ERECTION.

#### LINTELS NOTES

MASONRY WALL THICKNESS	ROUGH OPENING WIDTH	<u>LINTEL</u>	
LESS THAN 4"	8" OR LESS UP TO 48"	NO LINTEL REQUIRED L3X3X1/4 STEEL ANGLE	
4" (NOM.)	12" OR LESS UP TO 48"	NO LINTEL REQUIRED 4X8 PRECAST CMU UNIT WITH (1)#3 TOP AND BOTTOM	
6" (NOM.)	UP TO 76"	6x8 PRECAST CMU UNIT WITH (1) #4 TOP AND BOTTOM	
8" (NOM.)	12" OR LESS UP TO 56"	NO LINTEL REQUIRED (2) 4X8 PRECAST CMU UNITS WITH (1) #4 TOP AND BOTTOM EACH	
4" CMU + 4" BRICK	UP TO 72"	(1) L5X3 1/2X5/16 (LLV) IN EA WYTHE	
(3) 4" WYTHE (EXISTING)	UP TO 24"	(1) L3X3X1/4 IN EA WYTHE	
BEAR STEEL ANGLES 6" EACH END ON SOLID MASONRY.			

ALL STRUCTURAL COLD-FORMED METAL FRAMING SHALL CONFORM TO THE S100-07 "NORTH AMERICAN SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS- BY AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL STUDS, JOISTS, AND ACCESSORIES SHALL BE GALVANIZED STEEL WITH THE TYPE, SIZE, GAUGE, AND SPACING INDICATED ON THE DRAWINGS. PROVIDE SHOP DRAWINGS FOR DMWPV REVIEW.

DESIGN MINIMUM YIELD STRENGTHS ARE AS FOLLOWS:

STRUCTURAL MEMBERS UNLESS NOTED OTHERWISE.

BEAR PRECAST LINTELS 8" EACH END ON SOLID MASONRY.

Fy=33 KSI FOR 54, 43 AND 33 MIL THICKNESS Fy=50 KSI FOR 97 AND 68 MIL THICKNESS

PUNCH OUTS SHALL NOT BE LOCATED WITHIN 10" OF END OF MEMBER OR INSIDE FACE OF SUPPORT. PROVIDE BRIDGING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS - NOT TO EXCEED 4'-0" OC IN VERTICAL WALL STUDS.

PAF USED TO CONNECT LIGHT GAGE STEEL MEMBERS OR CONNECTORS TO CONCRETE OR STRUCTURAL STEEL SHALL BE ONE OF THOSE INDICATED IN "POST INSTALLED ANCHOR" NOTES

USE NO. 10 SCREWS (MINIMUM SIZE) IN ALL CONNECTIONS OF LIGHT GAUGE STEEL

11. ALL POST-INSTALLED ANCHORS (IN CONCRETE OR CMU) ARE TO BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS (INCLUDING BUT NOT LIMITED TO DRILL BIT SIZE, PROPER CLEANING OF HOLES, INSTALLATION TORQUE, AND TEMPERATURE

WHEN A SPECIFIC PRODUCT AND MANUFACTURER IS REFERENCED IN THE CONTRACT DOCUMENTS, THAT SPECIFIC PRODUCT SHALL BE USED UNLESS THE CONTRACTOR SUBMITS A REQUEST FOR A PRODUCT SUBSTITUTION OF AN ANCHOR WITH EQUIVALENT RESISTANCE VALUES IN THE APPROPRIATE BASE MATERIAL. ALL REQUESTS FOR SUBSTITUTION SHALL INCLUDE PRODUCT SPECIFICATIONS AND DESIGN DATA FOR REVIEW BY THE STRUCTURAL ENGINEER OF RECORD (DMWPV). CONTRACTOR SHALL SUBMIT CALCULATIONS DEMONSTRATING PROPOSED SUBSTITUTION IS EQUAL TO APPROVED PRODUCTS.

CHEMICAL ANCHORING SYSTEMS USED IN HOLLOW MASONRY GENERICALLY REFERRED TO AS "EPOXY" ANCHORING SYSTEMS SHALL BE ONE OF:

HIT-HY 20 BY HILTI

AT ACRYLIC-TIE ANCHORING SYSTEM BY SIMPSON AC100+ GOLD BY POWERS FASTENERS

USE STAINLESS STEEL SCREEN TUBES BY THE SAME MANUFACTURER WHEN USING THESE ADHESIVES IN MASONRY WITH VOIDS OR HOLLOW CMU. INSTALL USING DRILL IN ROTATION- ONLY MODE TO KEEP FROM DAMAGING INSIDE OF FACE SHELL.

CHEMICAL ANCHORING SYSTEMS USED IN <u>SOLID OR GROUTED MASONRY</u> GENERICALLY REFERRED TO AS "EPOXY" ANCHORING SYSTEMS SHALL BE ONE OF:

> SET HIGH STRENGTH EPOXY BY SIMPSON STRONG TIE ANCHOR SYSTEMS HIT-HY 150 MAX BY HILTI

AC100 + GOLD BY POWERS FASTENERS THREADED ROD ANCHORS USED WITH THESE SYSTEMS SHALL BE STANDARD STRENGTH STEEL ROD (ASTM A36) UNLESS NOTED OTHERWISE. REINFORCING STEEL USED WITH THESE SYSTEMS

SHALL COMPLY WITH ASTM A615 GRADE 60. CHEMICAL ANCHORING SYSTEMS USED IN <u>CONCRETE</u> GENERICALLY REFERRED TO AS "EPOXY

ANCHORS" SHALL BE ONE OF: SET-XP BY SIMPSON STRONG TIE ANCHOR SYSTEMS

> HIT-RE 500-SD BY HILTI HIT-HY 150 MAX SD BY HILTI

PE1000 + BY POWERS FASTENERS

DO NOT USE CHEMICAL ANCHORS IN OVERHEAD APPLICATIONS.

FASTENERS GENERICALLY REFERRED TO AS "CONCRETE/MASONRY SCREWS" SHALL BE ONE OF:

KWIK-CON II + BY HILTI TITEN BY SIMPSON STRONG TIE ANCHOR SYSTEMS (DO NOT USE TITEN HD MINI) TAPPER BY POWERS FASTENERS (DO NOT USE TAPPER +)

FASTERNERS GENERICALLY REFERRED TO AS "PAF" (POWER ACTUATED FASTENERS) SHALL BE

## PAF INTO NORMAL WEIGHT CONCRETE:

	<u>ANCHOR</u>	MANUF	SHANK DIAMETER	MIN EMBEDMENT
1.	X-U	HILTI	0.157"	1 1/4"
2.	8 mm HEAD SPIRAL CSI PIN	POWERS FASTENERS	0.157"	1 1/4"
3.	SP SERIES	RAMSET	0.150"/0.180" TAPERED SHANK	1 1/4"
4.	PDPA	SIMPSON	0.157"	1 1/4"

## PAF INTO S

STR.	UCTURAL STEEL:		
	<u>ANCHOR</u>	MANUF	SHANK DIAMETER
	X-U 8 mm HEAD SPIRAL CSI PIN	HILTI POWERS FASTENERS	0.157" 0.157"
	SP	RAMSET	0.150"

PDPA SIMPSON 0.157" USE ONLY HILTI X-U PAF IN STRUCTURAL STEEL GREATER THAN 1/2" THICK. 1/2" MINIMUM POINT PENETRATION REQUIRED IN STRUCTURAL STEEL GRATER THAN 1/2" THICK.

#### 12.

FLR = FLOOR

FLT = FLAT BAR

FTG = FOOTING

GALV = GALVANIZED

HORIZ = HORIZONTAL

GT = GIRDER TRUSS

HS = HIGH STRENGTH

GA = GAUGE

HK = HOOK

HT = HEIGHT

INT = INTERIOR

FRT = FIRE RETARDANT TREATED

GC = GENERAL CONTRACTOR

<u>ABBREVIATIONS</u>	
AB = ANCHOR BOLT	JBE = JOIST BEARING ELEVATION
AFF = ABOVE FINISHED FLOOR	JT = JOINT
APC = ARCHITECTURAL PRECAST	LBS = POUNDS
CONCRETE	LGST = LIGHT GAGE STEEL TRUSS
ARCH = ARCHITECTURAL	LL = LIVE LOAD
BLDG = BUILDING	LLH = LONG LEG HORIZONTAL
BM = BEAM	LLV = LONG LEG VERTICAL
BOT = BOTTOM	LSH = LONG SIDE HORIZONTAL
BRG = BEARING	LSV = LONG SIDE VERTICAL
CANT = CANTILEVER CFS-S = COLD-FORMED STEEL- STRUCTURAL	LVL = LAMINATED VENEER LUMBER LW = LIGHT WEIGHT
CFS-NS= COLD-FORMED STEEL- STRUCTURAL	MAS = MASONRY
CIP = CAST-IN-PLACE	MAX = MAXIMUM
CJ = CONTROL JOINT	MECH = MECHANICAL
CL = CENTERLINE	MFR = MANUFACTURER
CLG = CEILING	MISC = MISCELLANEOUS
CLR = CLEAR	MIN = MINIMUM
CMU = CONCRETE MASONRY UNIT	[NC] = NON-COMPOSITE
COL = COLUMN	NO. = NUMBER
CONC = CONCRETE	NIC = NOT IN CONTRACT
CONN = CONNECTION	NTS = NOT TO SCALE
CONT = CONTINUOUS	NW = NORMAL WEIGHT
COORD = COORDINATE	OC = ON CENTER
DET = DETAIL DIA = DIAMETER	OPP = OPPOSITE OH = OPPOSITE HAND
DIA = DIAMETER DIAG = DIAGONAL	OWSJ = OPPOSITE HAND OWSJ = OPEN WEB STEEL JOIST
DIM = DIMENSION	PAF = POWDER ACTUATED FASTENER
DL = DEAD LOAD	PL = PLATE
DN = DOWN	PLF = POUNDS PER LINEAR FOOT
DWGS = DRAWINGS	POJ = PLANE OF JOIST
EA = EACH	PSF = POUNDS PER SQUARE FOOT
EJ = EXPANSION JOINT	PSI = POUNDS PER SQUARE INCH
EL = ELEVATION	REF = REFERENCE
ELEV = ELEVATOR	REINF = REINFORCING
EOS = EDGE OF SLAB	REQD = REQUIRED
EQ = EQUAL	SECT = SECTION
EQUIP = EQUIPMENT	SIM = SIMILAR
EXIST = EXISTING	SOG = SLAB-ON-GRADE
EW = EACH WAY EXP = EXPANSION	SPA = SPACE STD = STANDARD
EXT = EXTERIOR	STIFF = STIFFENER
FFE = FINISHED FLOOR ELEVATION	TBE = TRUSS BEARING ELEVATION
	TEL TROOPERING LLEVATION

T&B = TOP AND BOTTOM

TOC = TOP OF CONCRETE

WCJ = WALL CONTROL JOINT

WWF = WELDED WIRE FABRIC

TOB = TOP OF BEAM

TOS = TOP OF STEEL

TYP = TYPICAL

VERT = VERTICAL

WT = WEIGHT

(H) = HIGH

(L) = LOW

T&G = TONGUE AND GROOVE

UNO = UNLESS NOTED OTHERWISE

### VMDO ARCHITECTS

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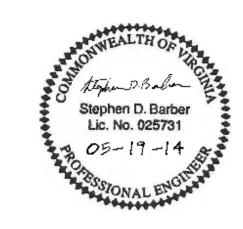
## RENOVATION OF THREE **RESIDENCE HALLS**

RADFORD UNIVERSITY RADFORD, VIRGINIA

VMDO Project Number

Project Code

217-17565-000



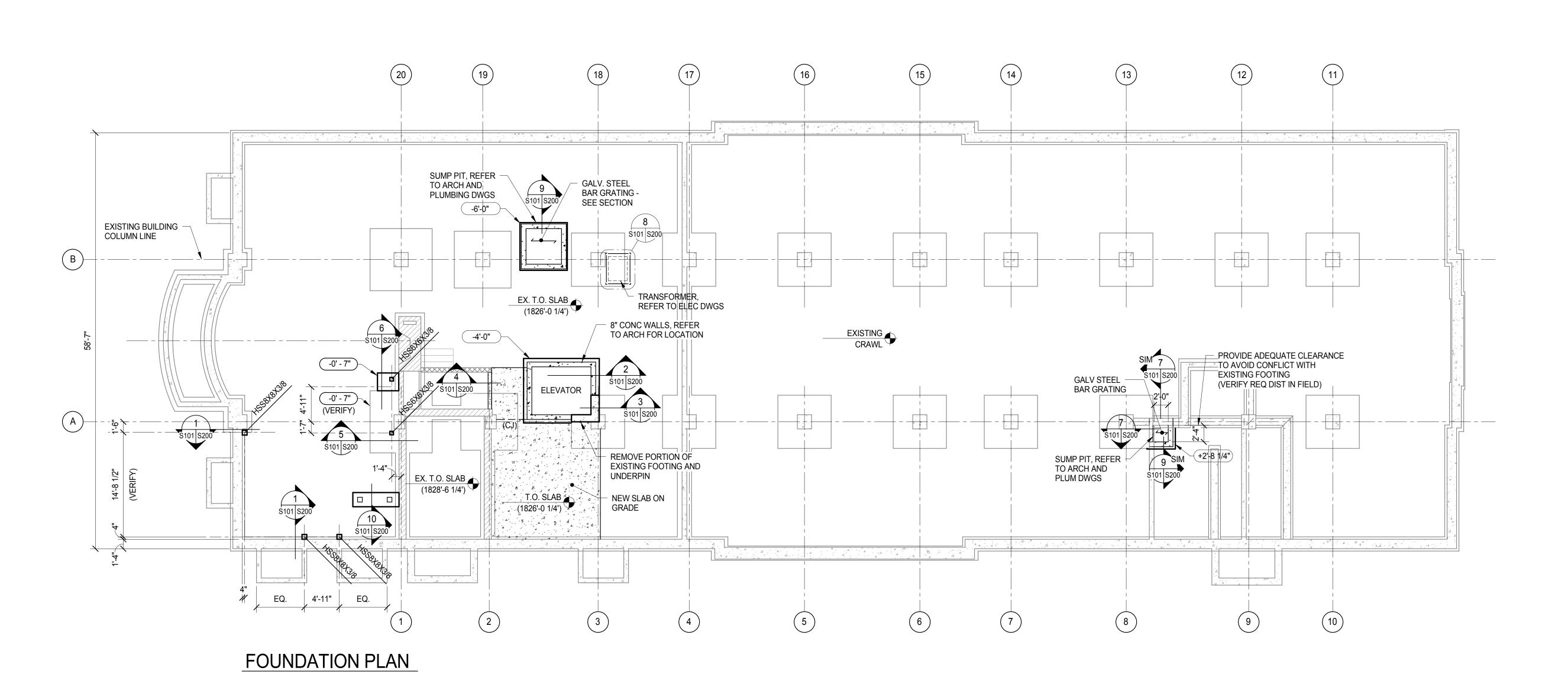
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ISSUES AND REVISIONS NO. SUBMITTAL

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GENERAL STRUCTURAL NOTES

DATE 05.19.14



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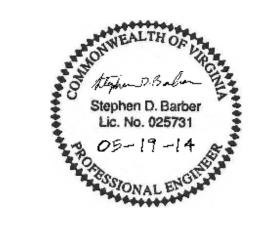


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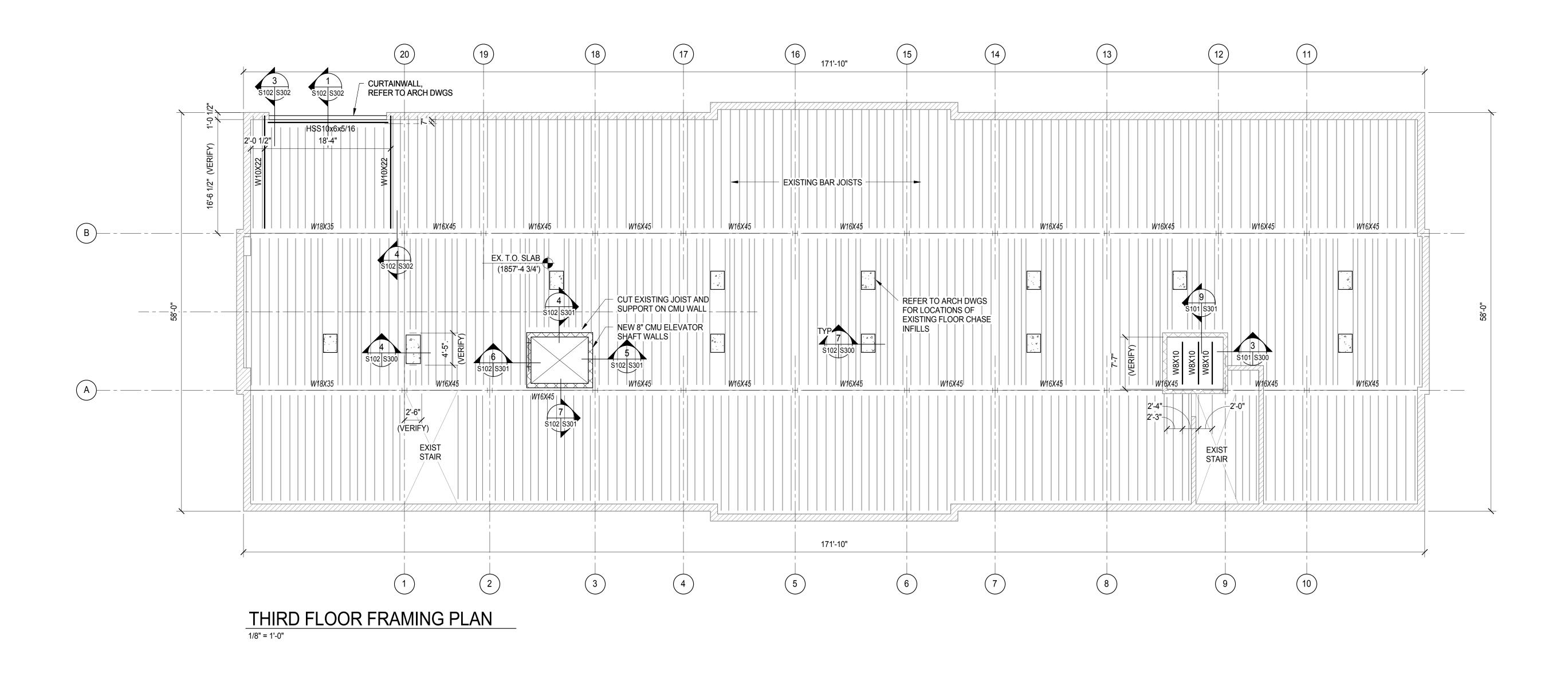
FOUNDATION AND FIRST FLOOR FRAMING PLANS

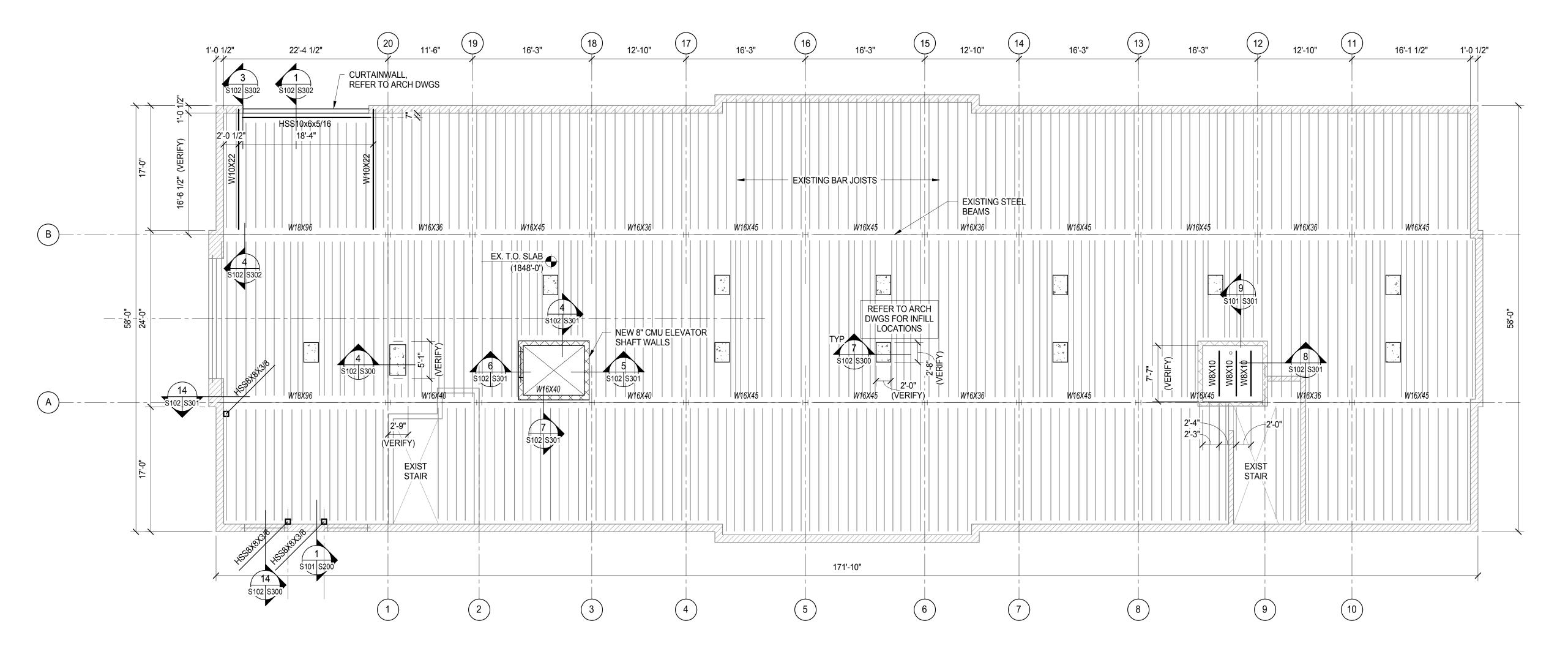
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S101

OVER 4" POROUS FILL.

1. TYPICAL NEW SLAB-ON-GRADE SHALL BE 4" NORMAL WEIGHT CONCRETE WITH 6X6-W1.4XW1.4 WWF AT MID-DEPTH, OVER VAPOR BARRIER/RETARDER (REF ARCH DWGS),





SECOND FLOOR FRAMING PLAN
1/8" = 1'-0"

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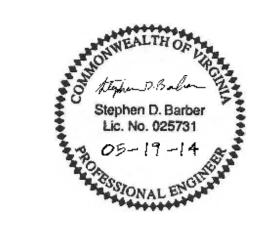


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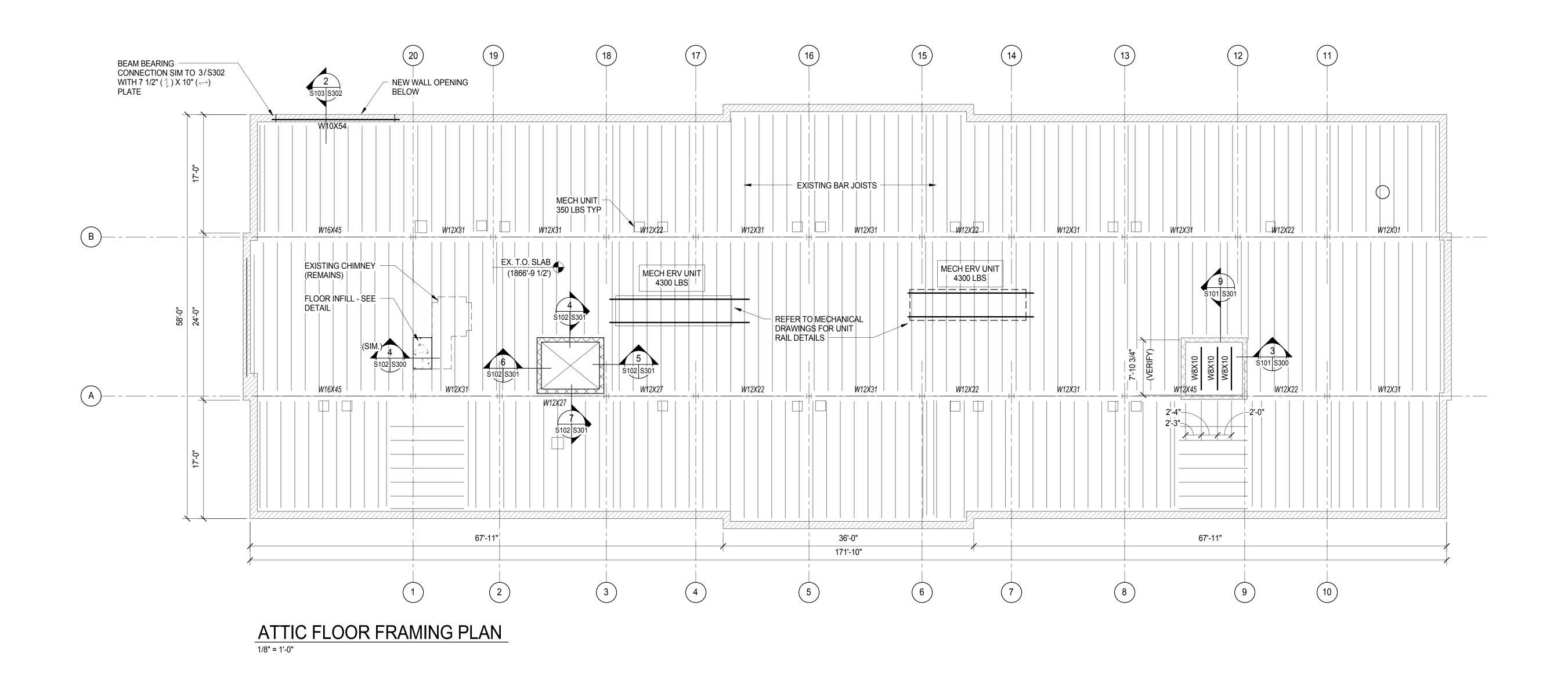
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SECOND AND THIRD FLOOR FRAMING PLANS

# ROOF FRAMING PLAN 1/8" = 1'-0"



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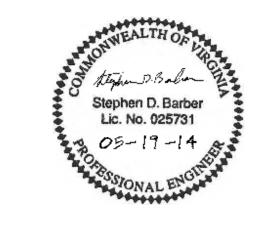


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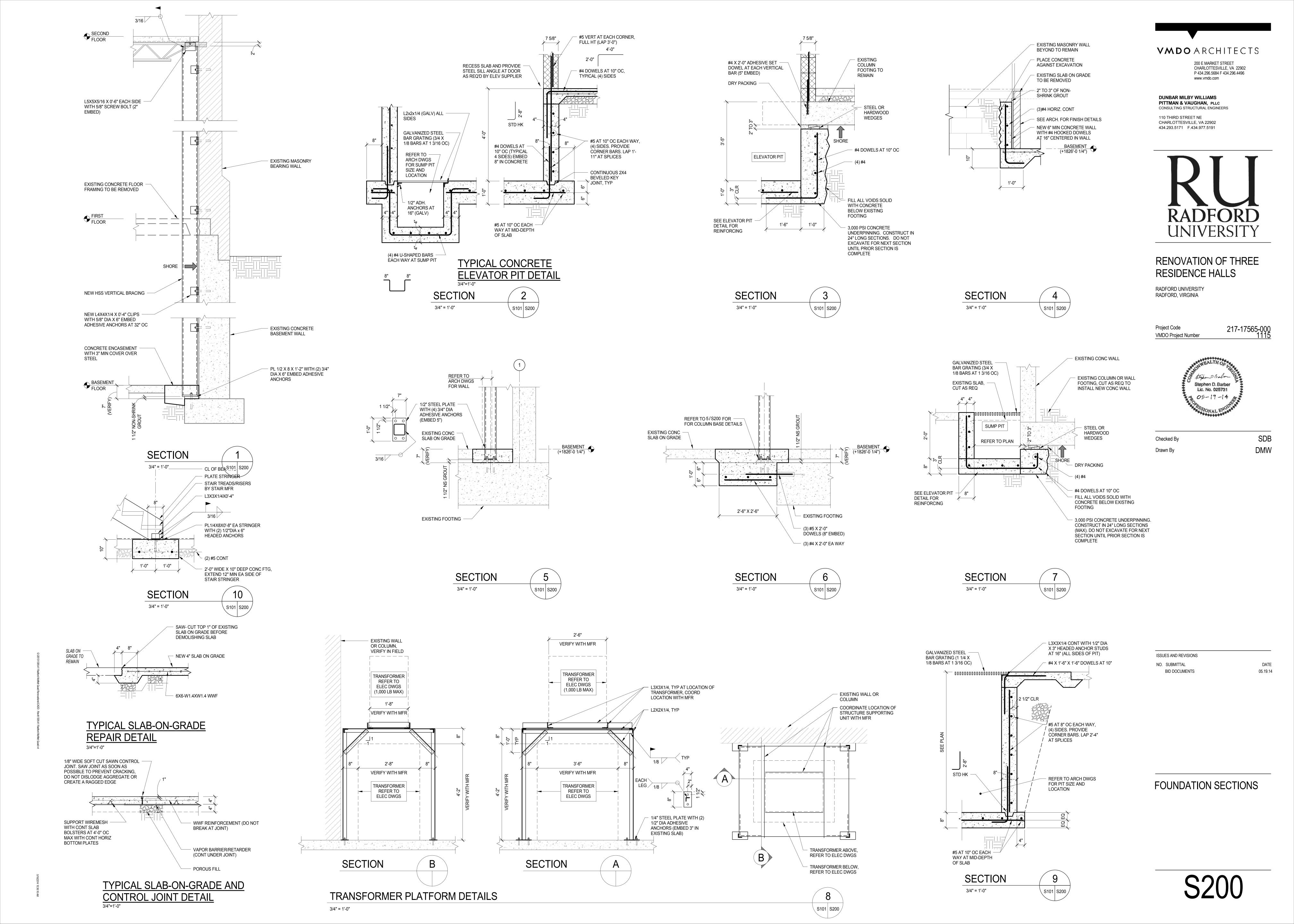
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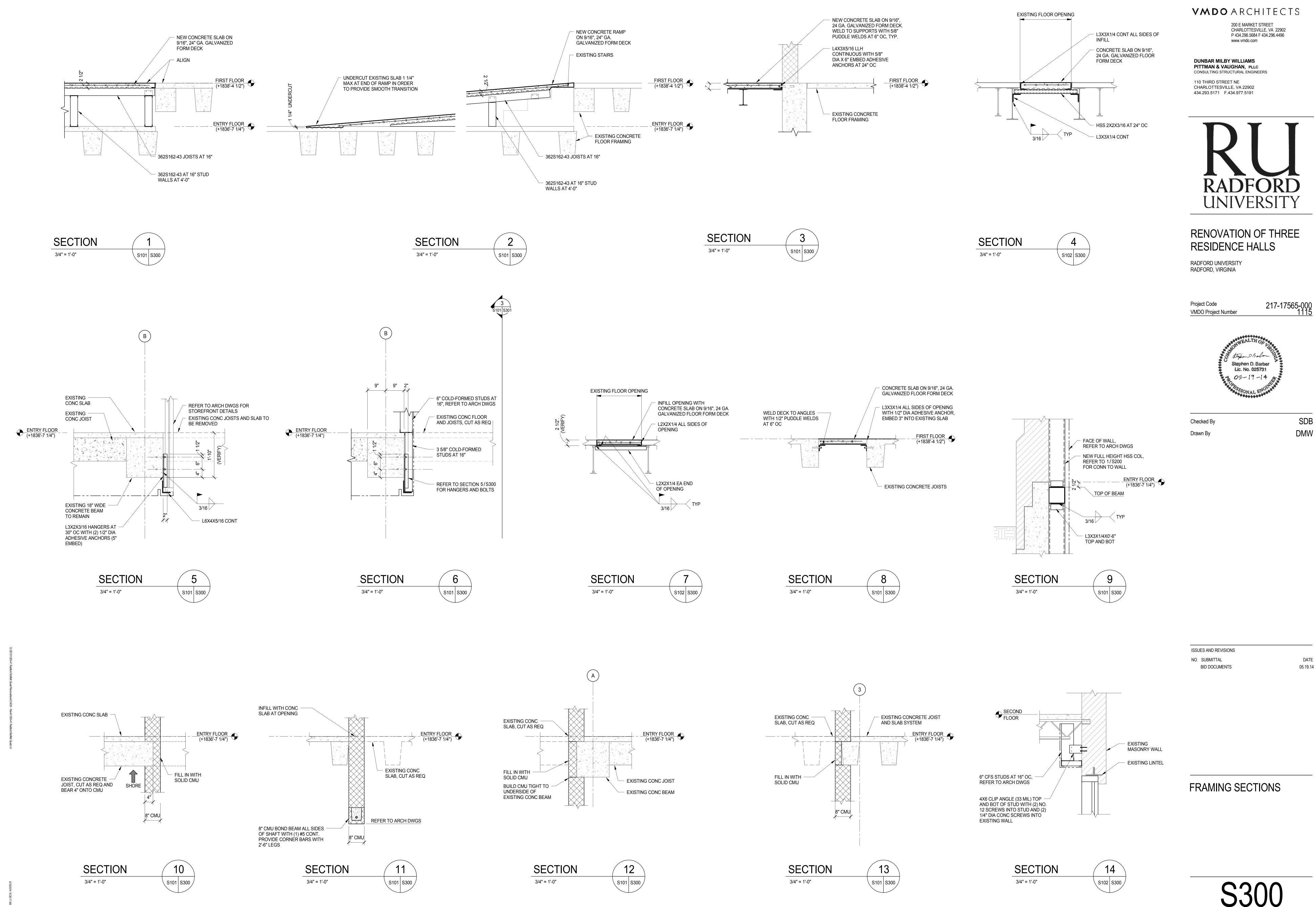
ATTIC FLOOR AND ROOF FRAMING PLANS

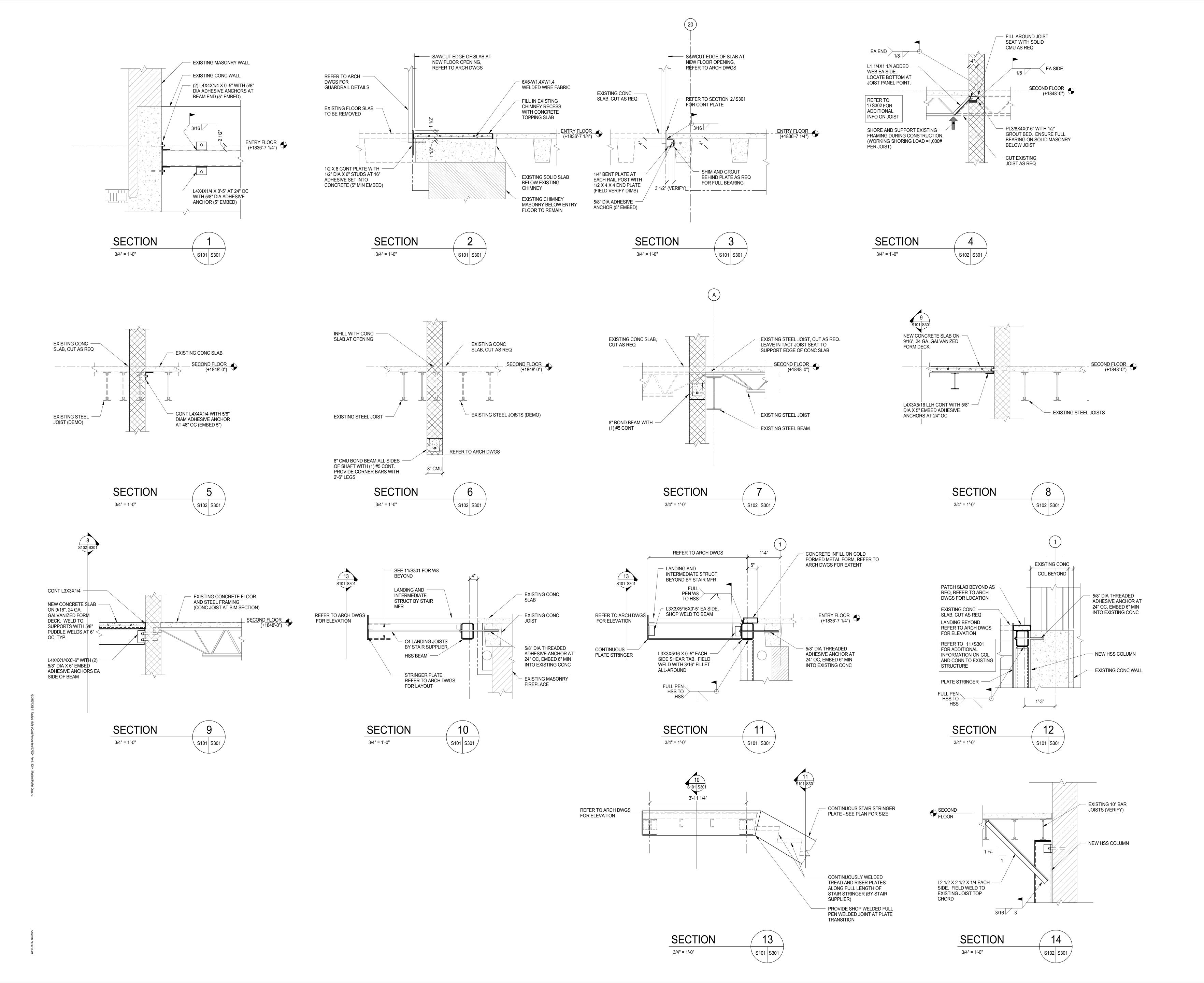
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S103







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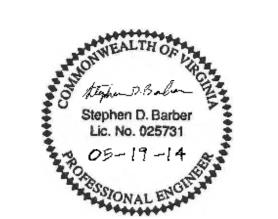
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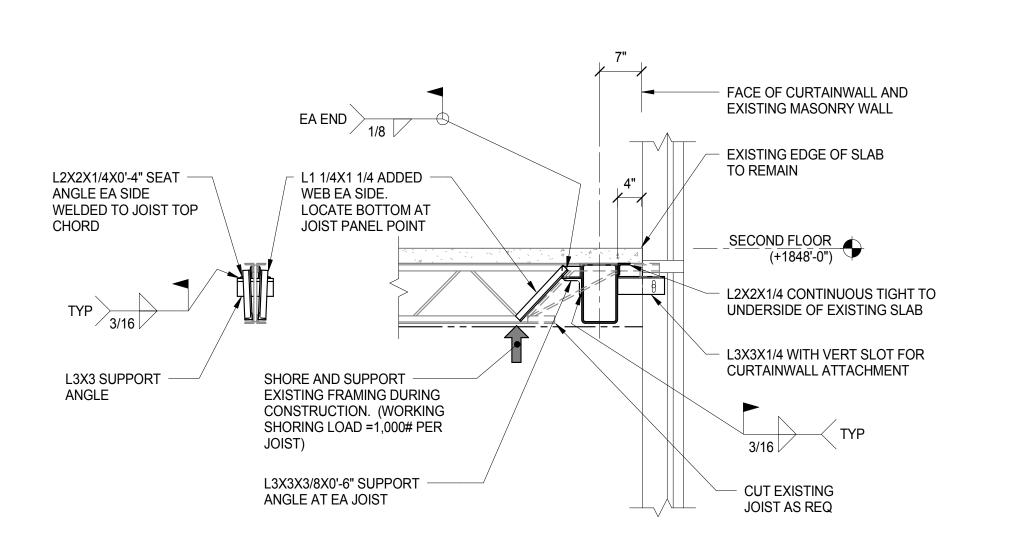
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FRAMING SECTIONS

S301



L7X4X3/8 CONT ALL SIDES

SUPPORTS WITH 5/8" DIA

PUDDLE WELDS AT 6" OC

NORMAL WEIGHT CONCRETE OVER 2", 18 GA GALVANIZED COMPOSITE STEEL DECK

WELD DECK TO ALL

SEE ARCH FOR -

BOND BEAM WITH -

(1) #4 ALL SIDES

**EXISTING ROOF** 

PRE-FORMED -

EXISTING W12

**GALVANIZED JOIST** 

(500# GRAVITY, 250#

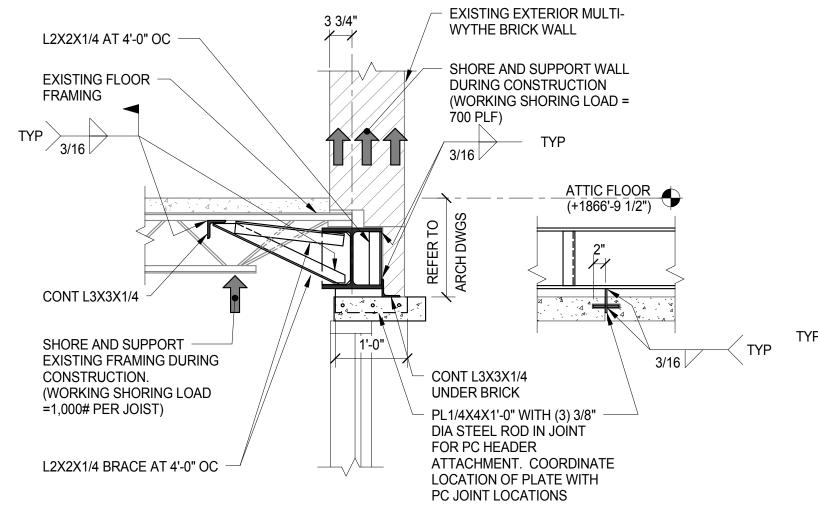
FRAMING

HANGER

UPLIFT)

OPENING

EXTENT OF LOUVER



L7X4X3/8 CONT ALL SIDES

SUPPORTS WITH 5/8" DIA

PUDDLE WELDS AT 6" OC

TREATED 2X6 WITH

ANCHORS AT 24" (6"

1/2" ADHESIVE

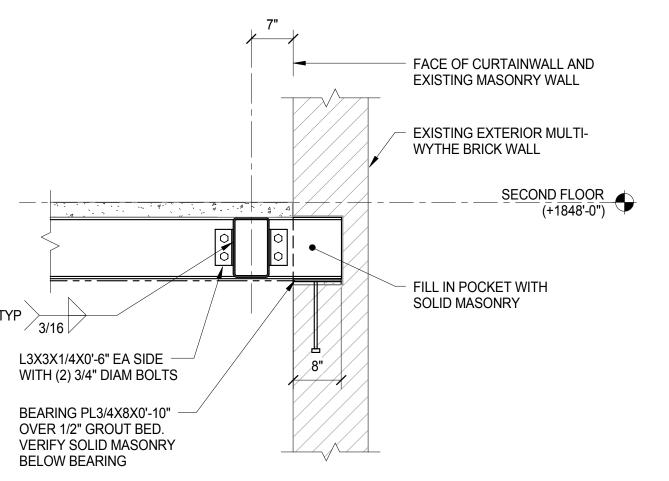
EMBED)

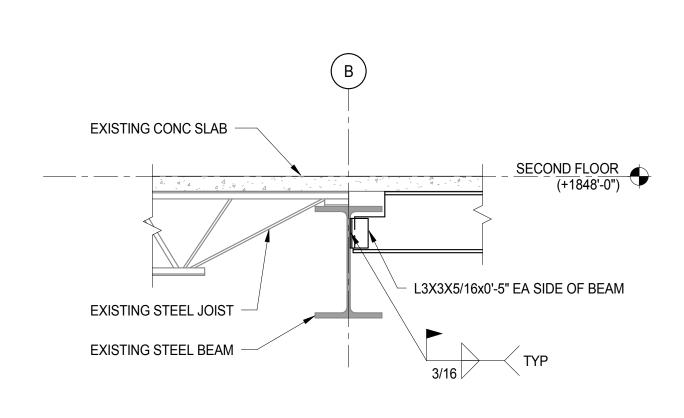
ELEVATOR

— 8" CMU

\ S103 | S302 /

WELD DECK TO ALL







**----**

W8 HOIST BEAM.

ON SOLID

ELEVATOR

SECTION

3/4" = 1'-0"

MASONRY

BEAR 6" EACH END

ADD 2X4 TIE AT EACH CUT RAFTER. FASTEN — EACH END WITH (3) 1/4" DIA X 3" STRUCTURAL WOOD SCREWS INTO EXISTING RAFTERS

- EXISTING ROOF FRAMING. BEAR RAFTERS OVER NEW LEDGER

PRE-FORMED LIGHT GAUGE

UPLIFT ANCHOR WITH MIN

250# UPLIFT CAPACITY, TYP AT EXISTING RAFTER

TREATED 2X12 LEDGER WITH (2)

ROWS OF 1/2" DIA X 6" EMBED `

ADHESIVE ANCHORS AT 32" OC

EXISTING TIE TO REMAIN (CUT

AT NEW SHAFT). ANCHOR TO

LEDGER WITH PRE-FORMED

GALVANIZED HANGER (250#

TREATED 2X6 LEDGER WITH 1/2" DIA X 6" EMBED ADHESIVE

ANCHORS AT 24" OC

(STAGGERED)

\ S103 | S302 ,

BEARINGS

(STAGGERED)

CAPACITY)



1/2" X 12" HEADED -

STUDS AT 16"

EXISTING ROOF -

PREFORMED 20 GA X 1 1/2

CONNECTOR ANGLE AT 24"

SECTION

3/4" = 1'-0"

OC WITH 10d X 1 1/2" NAILS

X 1 1/2 GALVANIZED

**EACH LEG** 

FRAMING





217-17565-000 Project Code VMDO Project Number

RENOVATION OF THREE

RESIDENCE HALLS

RADFORD UNIVERSITY RADFORD, VIRGINIA

VMDO ARCHITECTS

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Checked By Drawn By

ISSUES AND REVISIONS NO. SUBMITTAL

**BID DOCUMENTS** 

DATE

05.19.14

FRAMING SECTIONS

S302