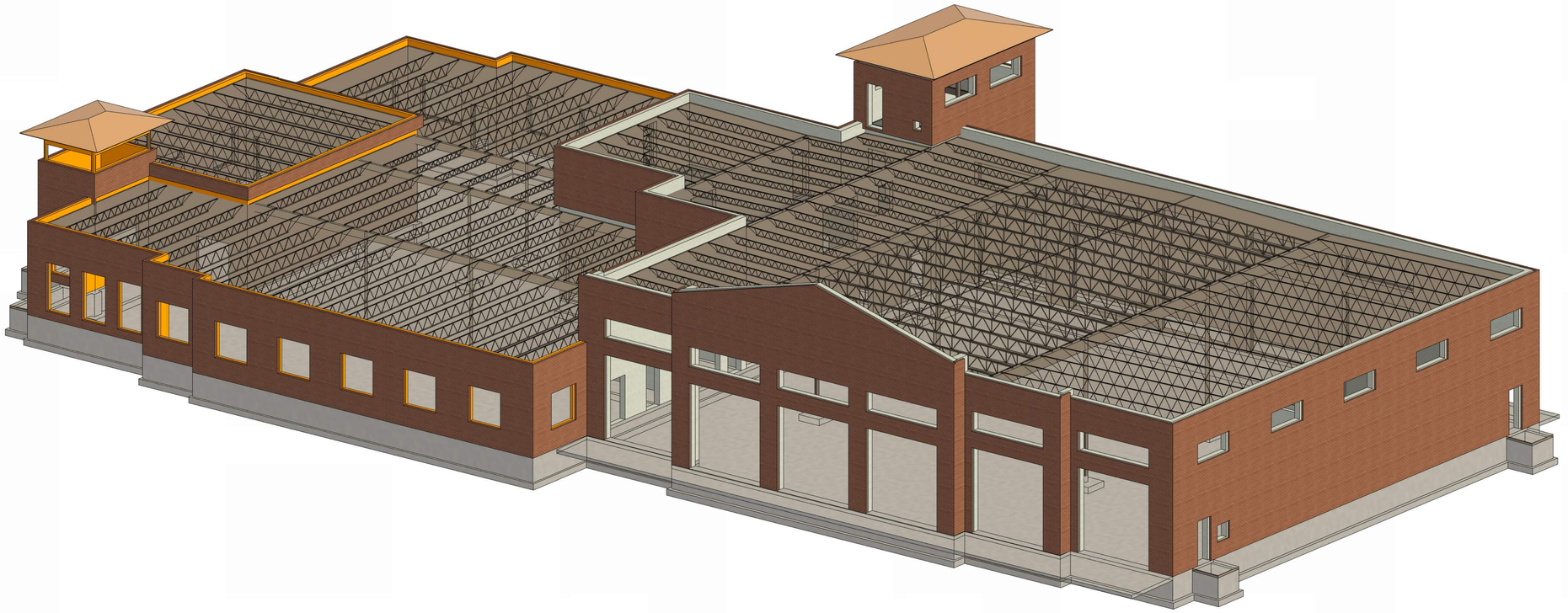
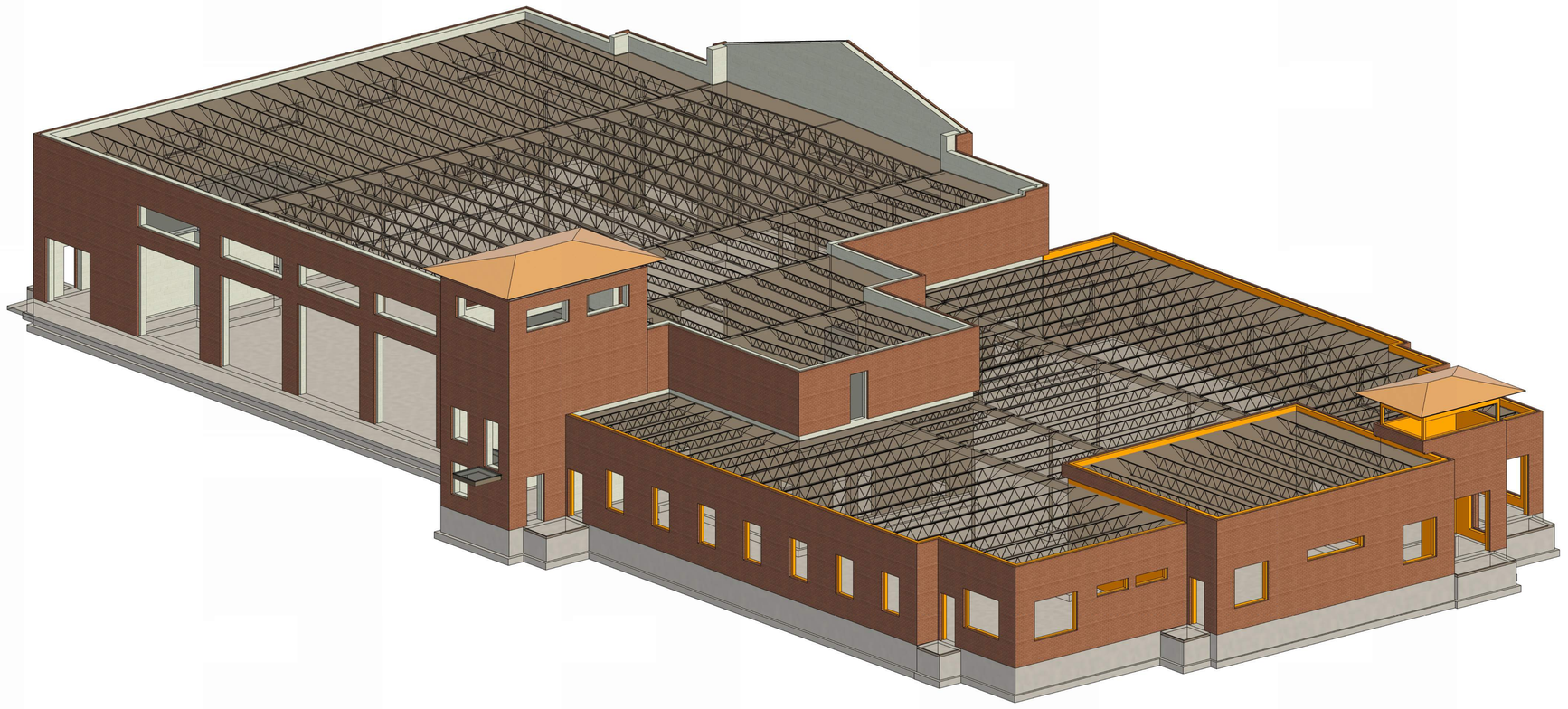


1 S001 ISOMETRIC VIEW



2 S001 ISOMETRIC VIEW

STRUCTURAL ABBREVIATION LIST:

ADD'L	ADDITIONAL
AHU	AIR HANDLING UNIT
ANCH.	ANCHOR
∠	ANGLE
APPROX.	APPROXIMATE
ARCH.	ARCHITECT
@	AT
B/W	BETWEEN
BLK.	BLOCK
B.O.	BOTTOM OF
BRG.	BEARING
BM.	BEAM
BOT.	BOTTOM
C.J.	CONSTRUCTION OR CONTROL JOINT
CL or C/L	CENTER LINE
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
CU. YD.	CUBIC YARD
DIA.	DIAMETER
DTL.	DETAIL
DWG.	DRAWING
DWLS.	DOWELS
EA.	EACH
E.F.	EACH FACE
ELEV.	ELEVATION
E.W.	EACH WAY
(E).	EXISTING
EXT.	EXTERIOR
F'c.	MINIMUM SPECIFIED COMPRESSIVE STRESS
FND.	FOUNDATION
FT.	FEET
FTG.	FOOTING
F.V.	FIELD VERIFY
Fy	MINIMUM SPECIFIED YIELD STRESS
GA.	GAUGE
GALV.	GALVANIZED
GL.	GLULAM
HSA	HEADED STUD ANCHOR
IN.	INCHES
INFO.	INFORMATION
INSUL.	INSULATION
INT.	INTERIOR
JST.	JOIST
K OR KIP	ONE THOUSAND POUNDS
KSI	KIPS PER SQUARE INCH
L	LENGTH
LB	POUND FORCE
LOC.	LOCATION
L.W.	LONG WAY
MANUF.	MANUFACTURERS
MAX.	MAXIMUM
M.C.	MOMENT CONNECTION
MECH.	MECHANICAL OR MECHANICAL ENGINEER
MIN.	MINIMUM
MPH	MILES PER HOUR
MTL.	METAL
#	NUMBER
No.	NUMBER
O.C.	ON CENTER
OPNG.	OPENING
OPP.	OPPOSITE
P.D.F.	POWER DRIVEN FASTENER
PL.	PLATE
PLF	POUNDS PER LINEAR FOOT
PLYWD.	PLYWOOD
PROJ.	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REINF.	REINFORCING
REQ'D.	REQUIRED
R/W	REINFORCED WITH
SIM.	SIMILAR
SP.	SPACES OR SPACING OR SPECIAL
SQ.	SQUARE
STL.	STEEL
STRUCT.	STRUCTURE OR STRUCTURAL
S.W.	SHORT WAY
THK.	THICK
T.O.	TOP OF
TRT'D	TREATED
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VFY	VERIFY
VSC	VERTICAL SLIP CONNECTION
W	WIDTH
WNDW	WINDOW
W/	WITH
WWF	WELDED WIRE FABRIC

Sheet List

Sheet Number	Sheet Name
S001	COVER SHEET
S002	STRUCTURAL NOTES
S003	LOAD MAP PLANS
S101	TYPICAL CONCRETE DETAILS
S102	TYPICAL CMU DETAILS
S103	TYPICAL STEEL DETAILS
S104	TYPICAL LIGHT GAUGE DETAILS
S105	TYPICAL TIE-OFF DETAILS
S201	FOUNDATION PLAN
S202	MEZZANINE - LOW ROOF FRAMING PLAN
S203	ROOF FRAMING PLAN
S204	TOWER ROOF PLAN - DETAILS
S301	FOUNDATION DETAILS
S401	FRAMING DETAILS
S402	FRAMING DETAILS
S403	FRAMING DETAILS

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

wendel
Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335

Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
04.24.2025
NOT FOR CONSTRUCTION

NO.	REVISIONS	DATE

DWG. TITLE

COVER SHEET

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	12" = 1'-0"
DWN.	HMM
CHK.	TDR
PROJ. No.	24-042
DWG. No.	S001

GENERAL

ALL TYPICAL DETAILS AND NOTES SHOWN ON DRAWINGS SHALL APPLY UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE DRAWINGS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

BUILDING CODE

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE BUILDING CODE. THE PUBLICATIONS LISTED BELOW ARE THE GOVERNING CODES AND STANDARDS AND ARE REFERENCED BY THEIR BASIC DESIGNATION. IN THE CASE OF CONFLICTING REQUIREMENTS, THE BUILDING CODE SHALL GOVERN.

APPLICABLE CODES AND STANDARDS

BUILDING CODE	INTERNATIONAL BUILDING CODE (IBC), 2015 EDITION, IN CONJUNCTION WITH THE 2018 STATE OF WISCONSIN ADMINISTRATIVE CODE SPS 362
ACI 318	AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE " 2014 EDITION
ACI 530	AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", 2013 EDITION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", 2010 EDITION
AISC 360	AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", 2010 EDITION
AISI	AMERICAN IRON AND STEEL INSTITUTE, "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 2012 EDITION
ASCE 7	AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", 2010 EDITION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM INTERNATIONAL)
AWS A2.4	AMERICAN WELDING SOCIETY, "SYMBOLS FOR WELDING AND NONDESTRUCTIVE TESTING", 2007 EDITION
AWS D1.1	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE – STEEL," CURRENT EDITION PER IBC
AWS D1.3	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE – SHEET STEEL", CURRENT EDITION PER IBC
AWS D1.8	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE – SEISMIC SUPPLEMENT", 2009 EDITION
ICC	INTERNATIONAL CODE COUNCIL, INTERNATIONAL CODE COUNCIL - EVALUATION SERVICES (ICC-ES)

STRUCTURAL DESIGN DATA

LOAD COMBINATIONS

LOAD COMBINATIONS ARE IN ACCORDANCE WITH SECTION 1605 OF THE BUILDING CODE.

LIVE LOADS

LIVE LOADS SHALL BE IN ACCORDANCE WITH THE BUILDING CODE (SECTION 1607) OR AS NOTED ON THE PLANS.

OFFICE: LL = 50 PSF + 15 PSF PARTITIONS
MECHANICAL/ MEZZANINE: LL = 125 PSF
STAIRS AND EXISTWAYS: LL = 100 PSF
DORM ROOMS: LL = 40 PSF
KITCHEN/ DAYROOM: LL = 60 PSF
APPARATUS BAY: HS20 AASHTO TRUCK LOADING

SNOW LOADS

SNOW LOADING AND SNOW DRIFT LOADING SHALL BE IN ACCORDANCE WITH THE BUILDING CODE (SECTION 1608).

GROUND SNOW LOAD: Pg = 30 PSF
IMPORTANCE FACTOR: Is = 1.2
SNOW EXPOSURE FACTOR: Ce = 1.0
THERMAL FACTOR: Ct = 1.0 (TYPICAL FLAT ROOF)
FLAT-ROOF SNOW LOAD: Pf = 25 PSF

THERMAL FACTOR: Ct = 1.1 (TRUSS ROOF)
GABLE-ROOF SNOW LOAD: Pf = 28 PSF

WIND LOADS

WIND PRESSURE SHALL BE IN ACCORDANCE WITH THE BUILDING CODE (SECTION 1609).

BASIC WIND SPEED: V_ult = 120 MPH (3-SECOND GUST)
V_asd = 93 MPH (3-SECOND GUST)
RISK CATEGORY: IV
EXPOSURE: C
ENCLOSURE CLASSIFICATION: ENCLOSED
INT. PRESSURE COEFFICIENT: GCpi = 0.18

WIND COMPONENTS AND CLADDING DESIGN WIND PRESSURE FOR 10 FT^2* TRIBUTARY AREA
ROOF – ZONE 1 = +18 PSF/ -47 PSF
ROOF – ZONE 2 = +18 PSF/ -57 PSF
ROOF – ZONE 3 = +18 PSF/ -98 PSF
WALL - ZONE 4 (INTERIOR) = +38 PSF/ -41 PSF
WALL – ZONE 5 (CORNER) = +38 PSF/ -50 PSF
*DESIGN C&C WIND PRESSURES FOR TRIBUTARY AREAS LARGER THAN 10 FT^2 MAY BE USED, AS APPLICABLE, IF DETERMINED BY CALCULATION, AND APPROVED BY ENGINEER OF RECORD.
** PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE BUILDING SURFACES.

SEISMIC LOADS

SEISMIC LOADING SHALL BE IN ACCORDANCE WITH THE BUILDING CODE (SECTION 1613).

BUILDING LOCATION: LATITUDE = 42.6982°N
LONGITUDE = -88.0510°W
OCCUPANCY CATEGORY: IV
IMPORTANCE FACTOR: $I_E = 1.5$
SITE CLASS: D (DEFAULT)

MAPPED SPECTRAL ACCELERATION PARAMETERS: $S_S = 0.099g$
$S_1 = 0.050g$
SPECTRAL RESPONSE COEFFICIENTS: $S_{DS} = 0.105g$
$S_{D1} = 0.081g$
SEISMIC DESIGN CATEGORY: C

LOAD PATH FOR LATERAL FORCES

LATERAL FORCES ARE CARRIED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE SHEAR WALLS, BRACED FRAMES, MOMENT FRAMES, ETC. MOMENTS, SHEARS, AND ROTATIONAL FORCES ARE DELIVERED TO THE FOUNDATION BY THE SHEAR WALLS, BRACED FRAMES, MOMENT FRAMES, ETC. IN PROPORTION TO THEIR ABILITY TO RESIST LATERAL DEFORMATION.

CONCRETE

1. MIXING, BATCHING, TRANSPORTING, PLACING, AND CURING OF ALL CONCRETE, AND SELECTION OF CONCRETE MATERIALS, SHALL CONFORM TO ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS," EXCEPT AS NOTED BELOW. PROPORTIONS OF AGGREGATE TO CEMENTITIOUS PASTE SHALL BE SUCH AS TO PRODUCE A DENSE, WORKABLE MIX THAT CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER.
2. ALL CONCRETE USED IN HORIZONTAL SURFACES EXPOSED TO THE WEATHER SHALL CONTAIN AN ACCEPTABLE ADMIXTURE TO PRODUCE AIR-ENTRAINED CONCRETE WITH TOTAL AIR CONTENT, AS NOTED IN THE CONCRETE MIX SPECIFICATION TABLE. TOLERANCE FOR AIR CONTENT SHALL BE +/-1 PERCENT. AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE OF THE TRUCK. IF CONCRETE IS PUMPED, AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE END OF THE PUMP LINE. TESTS FOR AIR CONTENT SHALL MEET ASTM C172 REQUIREMENTS.
3. MIX DESIGNS LISTED BELOW SHALL BE SUBMITTED TO THE ARCHITECT AND APPROVED PRIOR TO USE. SUBMITTALS SHALL INCLUDE TEST DATA THAT CONFIRMS THE STRENGTH OF EACH MIX PER ACI 318 CHAPTER 5. SELECTION OF CONCRETE MIX PROPORTIONS SHALL BE IN ACCORDANCE WITH ACI 301. MIX PROPORTIONS SHALL MEET OR EXCEED THE REQUIREMENTS LISTED BELOW FOR THE LOCATIONS NOTED. THE MORE STRINGENT OF THE REQUIREMENTS LISTED SHALL GOVERN.
4. MAXIMUM SIZE OF AGGREGATE SHALL BE AS LISTED BELOW. MAXIMUM FLY ASH AS A PERCENTAGE OF TOTAL WEIGHT OF CEMENTITIOUS MATERIAL SHALL BE 25 PERCENT. FLY ASH SHALL BE CLASS C OR F, MEETING ASTM C618 REQUIREMENTS. WATER/CEMENT RATIO SHALL BE BASED ON TOTAL CEMENTITIOUS MATERIAL, INCLUDING FLY ASH AND OTHER POZZOLANIC MATERIALS.
5. THE CONTRACTOR SHALL DETERMINE SLUMP. EACH CONCRETE MIX SUBMITTED SHALL HAVE THE SLUMP SPECIFIED. SLUMP SHALL BE MEASURED AT THE DISCHARGE OF THE TRUCK. IF CONCRETE IS PUMPED, SLUMP SHALL BE MEASURED AT THE DISCHARGE END OF THE PUMP LINE. SLUMPS SHALL BE WITHIN +1 INCH AND -2 INCHES OF THE SPECIFIED SLUMP.
6. THE USE OF SUPER PLASTICIZERS AND WATER REDUCERS IS ALLOWED, BUT NOT REQUIRED. ALL ADMIXTURES SHALL BE CHLORIDE FREE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

CONCRETE MIX DESIGN TABLE

LOCATION	f_c' (PSI)	TEST AGE (DAYS)	MAX W/C RATIO	AIR CONTENT (%)	MAX. AGGREGATE SIZE
MISCELLANEOUS CONCRETE, CURBS, SIDEWALKS	4,500	28	0.45	6.0	1”
EXTERIOR SLABS ON GRADE	4,500	28	0.45	6.0	1”
EXTERIOR CONCRETE ON STEEL DECK	4,500	28	0.44	6.0	3/4"
INTERIOR SLABS ON GRADE	4,000	28	0.50	-	1”
WALLS AND FOOTINGS	4,000	28	0.44	-	1”
TOPPING SLAB	3,000	28	0.50	-	3/8

FIBER REINFORCED CONCRETE

1. FIBER REINFORCED CONCRETE SHALL BE A SPECIAL MIX DESIGN PRODUCING A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AND SHALL CONFORM TO ACI REPORT 544.1R.
2. EITHER POLYPROPYLENE OR NYLON FIBERS MAY BE USED. POLYPROPYLENE FIBERS SHALL BE MANUFACTURED BY THE FIBERMESH COMPANY, NYCON COMPANY, OR APPROVED EQUAL AND SHALL COMPLY WITH ASTM C1116, TYPE III. NYLON FIBERS SHALL BE MANUFACTURED BY THE NYCON COMPANY OR APPROVED EQUAL. DOSAGE PER MANUFACTURER’S RECOMMENDATIONS.

REINFORCING STEEL

1. ALL REINFORCING SHALL BE NEW BILLET STOCK ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE. BARS SHALL BE SECURELY TIED IN PLACE WITH #16 DOUBLE-ANNEALED IRON WIRE. BARS SHALL BE SUPPORTED ON ACCEPTABLE CHAIRS. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES." CONTRACTOR SHALL COORDINATE REINFORCING STEEL PLACEMENT DETAILS AND PROVIDE TEMPLATES FOR PLACING STEEL IN CONGESTED AREAS AS NECESSARY. SHOP DRAWINGS (INCLUDING PLACING PLANS AND ELEVATIONS) SHALL BE SUBMITTED TO, AND REVIEWED BY, THE ARCHITECT/ENGINEER BEFORE STARTING FABRICATION.
2. NO REINFORCING BARS SHALL BE SPLICED BY WELDING. REINFORCING BARS SHALL BE LAP SPLICED FOR TENSION (LSB) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR TO PLATES, ANGLES, ETC, IS PROHIBITED.
4. MINIMUM CAST-IN-PLACE CONCRETE COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:
      ALL SIZES: 3 INCHES
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      #5 BAR OR SMALLER: 1 1/2 INCHES
      #6 BAR OR LARGER: 2 INCHES
   C. OTHER CONCRETE:
      WALLS - INTERIOR FACE:
      #11 BARS AND SMALLER: 3/4 INCH
      SLABS:
      #11 BARS AND SMALLER: 3/4 INCH

PRECAST CONCRETE

1. DESIGN OF ALL PRECAST ELEMENTS AND SYSTEMS SHALL BE GOVERNED BY “PCI DESIGN HANDBOOK” – SEVENTH EDITION AND ACI 318-11.
2. ALL PRECAST CONCRETE UNITS SHALL BE DESIGNED TO SUPPORT THE SUPERIMPOSED LOADS AS INDICATED ON THE CONTRACT DRAWINGS FOR THE INDICATED SPAN CONDITIONS. DESIGN SHALL BE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF THIS PROJECT.
3. PRECAST, PRESTRESSED MEMBERS HAVE BEEN INDICATED ON THE DRAWINGS BY GENERAL SIZE AND DEPTH. THE STRUCTURAL ANALYSIS AND DESIGN OF THESE ITEMS, AS WELL AS LIFTING DEVICES FOR ALL PRESTRESSED CONCRETE MEMBERS, SHALL BE PERFORMED BY THE MANUFACTURER OF THE PRESTRESSED MATERIALS.
4. DESIGN CALCULATIONS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS FOR ALL PRECAST, PRESTRESSED UNITS. CALCULATIONS SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER.
5. THE PRECAST MANUFACTURING PLANT SHALL BE CERTIFIED BY THE PRECAST/PRESTRESSED CONCRETE INSTITUTE PRIOR TO THE START OF ANY PRODUCTION.
6. ALL PRECAST CONCRETE UNITS SHALL HAVE REACHED THEIR DESIGN STRENGTH PRIOR TO SHIPMENT TO THE SITE.
7. PRECAST UNITS SHALL BE ERECTED SIMULTANEOUSLY ON EACH SIDE OF ALL SUPPORTING BEAMS OR WALLS. THE BEAMS SHALL BE BRACED TO PREVENT ROTATION UNTIL THE PRECAST UNITS ARE TOTALLY ERECTED.
8. PRECAST CONCRETE FABRICATOR TO SHOW ALL FIELD ANCHORAGE REQUIREMENTS, INCLUDING FIELD WELDING, ON SHOP DRAWINGS.
9. ALL PRECAST TO PRECAST CONNECTIONS SHALL BE DESIGNED BY PRECAST SUPPLIER BASED ON LOADS DESCRIBED IN GENERAL NOTES AND LOAD MAP PLANS. ALL SUPPLEMENTAL MATERIAL REQUIRED FOR PRECAST CONNECTIONS INCLUDING, BUT NOT LIMITED TO, ANGLES, PLATES, ETC. SHALL BE PROVIDED BY PRECAST SUPPLIER AND INSTALLED BY THE PRECAST ERECTOR.
10. ALL EXTERIOR EXPOSED PRECAST CONCRETE CONNECTIONS (PLATES, ANGLES, ETC) SHALL BE GALVANIZED STEEL. REMOVE GALVANIZING WHERE FIELD WELDING IS REQUIRED, AND PAINT FIELD WELDS WITH ONE COAT OF “GALVACON” OR APPROVED EQUAL.
11. SEE ARCHITECTURAL DRAWINGS AND DETAILS FOR ALL NON-STRUCTURAL TOPPING OR LIGHTWEIGHT CONCRETE LEVELING FILL OVER PRECAST CONCRETE UNITS.
12. PRESTRESSED FABRICATOR SHALL BE RESPONSIBLE FOR ALL OPENINGS THROUGH PRESTRESSED UNITS LARGER THAN 8” SQUARE OR 8” IN DIAMETER. ALL OTHER OPENINGS (LESS THAN 8”) SHALL BE CUT BY THE TRADE REQUIRING THEM AND THE LOCATION SHALL BE APPROVED BY THE PRECAST SUPPLIER. VERIFY SIZE, NUMBER AND LOCATION OF ALL OPENINGS WITH MECHANICAL, ELECTRICAL AND ARCHITECTURAL PLANS AND ALL CONTRACTORS.
13. ALL HEADERS AT OPENINGS THROUGH PRECAST UNITS SHALL BE PROVIDED BY PRECAST SUPPLIER. PRECAST UNITS ADJACENT TO OPENINGS SHALL BE DESIGNED FOR ADDITIONAL LOAD AT EACH HEADER LOCATION.
14. PROVIDE INSERTS AND ANCHORS IN PRECAST CONCRETE UNITS FOR SUPPORT OF MECHANICAL AND ELECTRICAL EQUIPMENT, ARCHITECTURAL ITEMS AND STRUCTURAL MEMBERS. SEE PLANS FOR LOCATION OF INSERTS AND ANCHORS. VERIFY LOCATION WITH ARCHITECT.
15. A BONDING AGENT IS REQUIRED WHEN CONCRETE TOPPING IS SHOWN ON DRAWINGS AS STRUCTURAL. BONDING AGENT BETWEEN GROUTED PLANK AND STRUCTURAL TOPPING SHALL BE ONE PART CEMENT 1.5 PARTS FINE SAND PASSING #8 SIEVE AND SUFFICIENT WATER TO ACHIEVE CONSISTENCY OF THICK PAINT & APPLIED PER ACI 302 SECTION 8.7.2.
16. CONTRACTOR SHALL PROVIDE WEEP HOLES IN THE CORES OF PRECAST PLANK AS REQUIRED IN ORDER TO NOT ALLOW WATER BUILD-UP IN THE CORES DURING CONSTRUCTION.
17. THE DESIGN OF ALL MEMBERS AND ELEMENTS SHOWN ON THE DRAWINGS IS FOR THE IN-PLACE COMPLETED BUILDING. ALL LOADING CRITERIA AND VERIFICATION OF DESIGN FOR LOADING SUCH AS STRIPPING, HANDLING, TRANSPORTATION AND ERECTION ARE THE SOLE RESPONSIBILITY OF THE PRECAST SUPPLIER.
18. ALL TEMPORARY SHORING PROVIDED BY THE PRECAST SUPPLIER SHALL BE DESIGNED, CERTIFIED AND COORDINATED WITH OTHER TRADES. THE DESIGN MUST INCLUDE TEMPORARY CONSTRUCTION LOADS AND BUILDING LIVE LOADS CAUSED BY THE DECKING BEING PLACED. THE TEMPORARY SHORING IS TO INCLUDE THE DESIGN AND SHOP DRAWING APPROVAL OF THE CONNECTION OF TEMPORARY SHORES TO THE OTHER ELEMENTS EVEN IF THE CONNECTION IS TO BE PROVIDED BY A COORDINATED TRADE SUCH AS STRUCTURAL STEEL OR CONCRETE SUPPLIER.

CONSTRUCTION JOINTS

1. ALL CONSTRUCTION JOINTS IN WALLS SHALL BE KEYED IN ACCORDANCE WITH THE TYPICAL CONSTRUCTION JOINT DETAILS SHOWN ON THE STRUCTURAL DRAWINGS OR, AT THE CONTRACTOR'S OPTION, SHALL BE INTENTIONALLY ROUGHENED IN ACCORDANCE WITH THE FOLLOWING: THE SURFACE OF ROUGHENED JOINTS SHALL BE SAND BLASTED OR ROUGHENED WITH A CHIPPING HAMMER TO EXPOSE THE AGGREGATE EMBEDDED IN THE PREVIOUS POUR. THE EXPOSED AGGREGATE SHALL PROTRUDE A MINIMUM OF 1/4 INCH. ALL SURFACES OF CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.
2. VERTICAL CONSTRUCTION JOINTS AND CONTROL JOINTS IN CONCRETE AND CMU WALLS SHALL BE HELD TO A MAXIMUM SPACING OF 30'-0". JOINTS SHALL BE PLACED WITHIN 15’-0” OF WALL CORNERS WHERE POSSIBLE.
3. ALL CONSTRUCTION, CONTROL, AND ISOLATION JOINTS FOR SLABS ON GRADE SHALL BE IN ACCORDANCE WITH THE TYPICAL SLAB ON GRADE DETAILS.
4. THE CONTRACTOR SHALL SUBMIT THE PROPOSED LOCATIONS OF CONSTRUCTION JOINTS TO THE ENGINEER FOR ACCEPTANCE BEFORE STARTING CONSTRUCTION.

SLEEVES

1. EXCEPT AS DETAILED ON STRUCTURAL DRAWINGS, NO CONCRETE FOOTINGS, BEAMS, OR GIRDERS SHALL BE SLEEVED FOR PIPING OR DUCTS, UNLESS APPROVED BY THE ENGINEER.

ANCHORAGE TO HARDENED CONCRETE

1. ANCHORAGE TO HARDENED CONCRETE SHALL INCLUDE MECHANICAL AND ADHESIVE ANCHORS OF SIZE, NUMBER, AND SPACING AS SHOWN ON THE DRAWINGS.
2. HOLES SHALL BE DRILLED AND CLEANED AND ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER’S PUBLISHED INSTRUCTIONS AND AN APPROVED ICC-ES REPORT.
3. INSPECTION AND TESTING SHALL BE PROVIDED IN ACCORDANCE WITH THE GENERAL NOTES AND THE APPROVED IDD-ES REPORT.
4. WHERE A SPECIFIC TYPE OF ANCHORAGE IS SPECIFIED ON THE DRAWINGS, SUBSTITUTION FOR A DIFFERENT TYPE OF ANCHORAGE (INCLUDING SUBSTITUTING FOR CAST-IN-PLACE ANCHORAGE) SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL.

MECHANICAL ANCHORS

1. ACCEPTABLE MECHANICAL ANCHORS SHALL BE AS FOLLOWS: HILTI “KWIK BOLT TZ” CARBON AND STAINLESS STEEL EXPANSION ANCHOR (ICC-ES ESR-1917), SIMPSON STRONG-TIE “STRONG-BOLT” WEDGE ANCHOR (ICC-ES ESR-1771), OR APPROVED ALTERNATIVE WITH A CURRENT ICC-ES REPORT INDICATING THAT THE ANCHOR IS PERMITTED FOR RESISTING THE APPLIED LOADS IN CRACKED CONCRETE.
2. UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM EFFECTIVE ANCHOR EMBEDMENT DEPTH SHALL BE 6.5 ANCHOR DIAMETERS, MINIMUM DISTANCE TO THE NEAREST CONCRETE EDGE SHALL BE 12 ANCHOR DIAMETERS, AND MINIMUM ANCHOR SPACING SHALL BE 8 ANCHOR DIAMETERS.
3. STAINLESS STEEL ANCHORS SHALL BE USED AT ALL EXTERIOR LOCATIONS AND WHERE SPECIFICALLY INDICATED ON THE DRAWINGS.
4. NO STEEL REINFORCEMENT SHALL BE CUT TO INSTALL ANCHORS.
5. DEFECTIVE OR ABANDONED HOLES SHALL BE FILLED WITH NON-SHRINK GROUT OR AN INJECTABLE ADHESIVE MATCHING THE ADJACENT CONCRETE COMPRESSIVE STRENGTH. NOTIFY THE STRUCTURAL ENGINEERS OF DEFECTIVE OR ABANDONED HOLES IN WALLS AND COLUMNS. THESE ELEMENTS MAY REQUIRE NON-SHRINK GROUT WITH A COMPRESSIVE MODULUS OF ELASTICITY MATCHING THAT OF THE ADJACENT CONCRETE.

ADHESIVE ANCHORS

1. ACCEPTABLE ADHESIVE (EPOXY) ANCHORS SHALL BE AS FOLLOWS:
   A. INSTALLED IN CONCRETE:
      - HILTI “HIT-HY 200” (ICC-ES ESR-3187)
      - SIMPSON STRONG-TIE “SET-XP” (ICC-ES ESR-2508)
      - APPROVED ALTERNATE WITH A CURRENT ICC-ES REPORT
   B. INSTALLED IN CONCRETE MASONRY:
      - HILTI “HIT-HY 70” (ICC-ES ESR-2682)
      - SIMPSON STRONG-TIE “SET” (ICC-ES ESR-1772)
      - APPROVED ALTERNATE WITH A CURRENT ICC-ES REPORT
2. UNLESS NOTED OTHERWISE, ANCHORS SHALL BE ASTM A36 THREADED ROD OR ASTM A615, GRADE 60 REINFORCING STEEL DOWELS.
3. UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM EFFECTIVE ANCHOR EMBEDMENT DEPTH SHALL BE 6.5 ANCHOR DIAMETERS, AND MINIMUM ANCHOR SPACING SHALL BE 6 ANCHOR DIAMETERS.
4. HOLES SHALL BE DRILLED WITH ROTARY IMPACT HAMMER OR EQUIVALENT METHOD TO PRODUCE A HOLE WITH A ROUGH INSIDE SURFACE. CORE DRILLING HOLES IS NOT PERMITTED.
5. NO REINFORCING SHALL BE CUT TO INSTALL ADHESIVE ANCHORS.
6. TWO-PART ADHESIVES SHALL BE MIXED, APPLIED, AND CURED IN STRICT ACCORDANCE WITH THE MANUFACTURER’S PUBLISHED INSTALLATION INSTRUCTIONS IN THE ICC-ES REPORT. ALL PLACEMENT AND CURING SHALL BE CONDUCTED WITH CONCRETE AND AIR TEMPERATURES ABOVE 50 DEGREES FAHRENHEIT. ADHESIVE SHALL BE APPLIED ONLY TO CLEAN, DRY CONCRETE. POSITIVE PROTECTION SHALL BE PROVIDED SO THAT ANCHORS ARE NOT DISTURBED DURING THE CURING PERIOD.
7. DEFECTIVE OR ABANDONED HOLES SHALL BE FILLED WITH NON-SHRINK GROUT OR AN INJECTABLE ADHESIVE MATCHING THE ADJACENT CONCRETE COMPRESSIVE STRENGTHS. NOTIFY THE STRUCTURAL ENGINEER OF DEFECTIVE OR ABANDONED HOLES IN WALLS AND COLUMNS. THESE ELEMENTS MAY REQUIRE NON-SHRINK GROUT WITH A COMPRESSIVE MODULUS OF ELASTICITY MATCHING THAT OF THE ADJACENT CONCRETE.

NONSHRINK GROUT FOR BASE PLATES, SLEEVES, AND EMBEDDED STEEL

1. GROUT SHALL BE AN APPROVED NONSHRINK CEMENTITIOUS GROUT CONTAINING NATURAL AGGREGATES DELIVERED TO THE JOB SITE IN FACTORY PREPACKAGED CONTAINERS REQUIRING ONLY THE ADDITION OF WATER.
2. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE AT LEAST 1,000 PSI HIGHER THAN THE SUPPORTING CONCRETE STRENGTH, UNLESS NOTED OTHERWISE.
3. GROUT SHALL BE MIXED, APPLIED, AND CURED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS. FOR GROUTING UNDER BASE PLATES, GROUT SHALL BE PROPORTIONED AS A FLOWABLE MIX. WHEN A FLOWABLE MIX DOES NOT PROVIDE THE REQUIRED STRENGTH OR WHEN A MINIMUM STRENGTH OF 10,000 PSI IS REQUIRED, AN EPOXY GROUT SHALL BE USED.

STRUCTURAL STEEL

ALL STEEL SHALL CONFORM TO THE FOLLOWING:

W-SHAPES	ASTM A992, Fy=50 KSI
ALL ANGLES, CHANNLES AND PLATES UNLESS NOTED OTHERWISE	ASTM A36, Fy=36 KSI
SQUARE OR RECTANGULAR STRUCTURAL TUBE (HSS)	ASTM A500, GRADE B, Fy=46 KSI

1. GENERAL NOTES FOR STEEL CONNECTIONS SHALL APPLY TO ALL STEEL CONNECTIONS UNLESS NOTED OTHERWISE.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATION. SHOP DRAWINGS SHALL BE SUBMITTED AND REVIEWED BY THE ARCHITECT/ENGINEER BEFORE COMMENCING FABRICATION.
3. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. DIMENSIONAL TOLERANCE FOR BUILT-UP MEMBERS SHALL BE PER AWS D1.1.
4. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSION POINTS AT THE MAXIMUM DECK SPAN LOCATION UNLESS NOTED OTHERWISE.
5. MINIMUM CONNECTIONS SHALL BE A TWO-BOLT CONNECTION USING 3/4 INCH DIAMETER A325 BOLTS IN SINGLE SHEAR. ALL HIGH-STRENGTH BOLTS SHALL BE INSTALLED, TIGHTENED AND INSPECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. THE CRITERIA FOR SLIP-CRITICAL CONNECTIONS SHALL APPLY TO ALL CONNECTIONS UNLESS NOTED OTHERWISE AS SNUG-TIGHT. BOLTS IN CONNECTIONS OF BEAM-TO-BEAM/GIRDER MAY BE SNUG TIGHT, UNLESS SPECIFICALLY CALLED OUT AS SLIP CRITICAL (SC). WHERE CONNECTIONS ARE NOTED AS SNUG-TIGHT, THE CONTRACTOR MAY INSTALL PER THE CRITERIA FOR SNUG-TIGHT BOLTS. SLIP-CRITICAL CONNECTIONS SHALL USE LOAD INDICATOR WASHERS OR TENSION CONTROL BOLTS. ALL ASTM A307 BOLTS SHALL BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS NOTED OTHERWISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SELECTION OF OPTIONAL DETAILS SHOWN ON THE DRAWINGS.
7. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL ERECTION AIDS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDS.

STRUCTURAL STEEL WELDING

1. STRUCTURAL STEEL SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS.
2. ALL WELDING SHALL BE DONE BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH AWS D1.1. WELDS SHOWN ON THE DRAWINGS ARE THE MINIMUM SIZES. INCREASE WELD SIZE TO AWS MINIMUM SIZES, BASED ON PLATE THICKNESS. THE MINIMUM WELD SIZE SHALL BE 3/16 INCH.
3. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.
4. ALL PARTIAL PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO EFFECTIVE THROAT THICKNESS.
5. ALL WELDS SHALL BE MADE USING LOW HYDROGEN ELECTRODES WITH MINIMUM TENSILE STRENGTH PER AWS D1.1 (MINIMUM 70 KSI). LOW HYDROGEN SMAW ELECTRODES SHALL BE USED WITHIN 4 HOURS OF OPENING THEIR HERMETICALLY SEALED CONTAINERS, OR SHALL BE REDRIED PER AWS D1.1, SECTION 4.5. ELECTRODES SHALL BE REDRIED NO MORE THAN ONE TIME, AND ELECTRODES THAT HAVE BEEN WET SHALL NOT BE USED.
6. ALL WELDING SHALL BE PERFORMED IN STRICT ADHERENCE TO A WRITTEN WELDING PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. ALL WELDING PARAMETERS SHALL BE WITHIN THE ELECTRODE MANUFACTURER'S RECOMMENDATIONS. WELDING PROCEDURES SHALL BE SUBMITTED TO THE OWNER'S TESTING AGENCY FOR REVIEW BEFORE STARTING FABRICATION OR ERECTION. COPIES OF THE WPS SHALL BE ON SITE AND AVAILABLE TO ALL WELDERS AND THE SPECIAL INSPECTOR.
7. ALL COMPLETE-PENETRATION WELDS SHALL BE ULTRASONICALLY TESTED UPON COMPLETION OF THE CONNECTION, EXCEPT PLATE LESS THAN OR EQUAL TO 1/4 INCH THICK SHALL BE MAGNETIC PARTICLE TESTED. REDUCTION IN TESTING MAY BE MADE IN ACCORDANCE WITH THE BUILDING CODE WITH APPROVAL OF THE ENGINEER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATIONS AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES, AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ANCHOR RODS

1. ANCHOR RODS SHALL BE ASTM F1554 GRADE 36 WITH CLASS 1A THREADS, UNLESS NOTED OTHERWISE.
2. ANCHOR RODS MAY BE HEADED BOLT OR UNHEADED ROD MATERIAL. PROVIDE HEAVY HEX NUT ON THE EMBEDDED END OF THE UNHEADED ROD AND WELD IN PLACE TO PREVENT IT FROM TURNING.
3. FURNISH HARDENED PLATE WASHERS, LOCK WASHERS, AND MATCHING HEAVY HEX NUTS FOR SECURING THE BASE PLATE TO THE ANCHOR RODS.
4. HOOKED ANCHOR RODS SHALL NOT BE USED EXCEPT WHERE NOTED.
5. A RIGID STEEL TEMPLATE SHALL BE USED TO LOCATE ANCHOR RODS WHILE PLACING CONCRETE.
6. ANCHOR RODS SHALL HAVE SUFFICIENT LENGTH TO PROVIDE THE MINIMUM EMBEDMENT SHOWN ON THE DRAWINGS, MEASURED FROM THE FACE OF THE CONCRETE TO THE NEAR FACE OF THE DOUBLE NUT, WITH ADEQUATE EXTENSION AS REQUIRED TO RECEIVE THE BASE PLATE WITH FULL THREAD PROJECTION FOR NUT INSTALLATION.
7. ANCHOR ROD INSTALLATION SHALL BE COORDINATED WITH REINFORCING AND FORMWORK.
8. LEVELING NUTS SHALL NOT BE USED EXCEPT AFTER EVALUATION BY THE CONTRACTOR'S ERECTION ENGINEER.
9. AFTER BASE INSTALLATION, ANCHOR ROD NUTS SHALL BE INSTALLED TO A SNUG-TIGHT CONDITION.
10. NO HEATING OR BENDING OF THE ANCHOR RODS IS PERMITTED.
11. HOLES IN THE BASE MATERIAL SHALL NOT BE ENLARGED BY BURNING.

STEEL ROOF DECK

1. THE STEEL ROOF DECK SHALL BE OF DEPTH SHOWN ON THE STRUCTURAL DRAWINGS.
2. STEEL DECK TYPES SHALL BE VULCRAFT TYPE B, VERCO TYPE HSB-36, ACS TYPE B, OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. MINIMUM GAUGE IS 22.
3. FIELD WELD STEEL ROOF DECK TO SUPPORTING MEMBERS WITH 5/8” DIAMETER PUDDLE WELDS AT A 36/4 PATTERN AT END LAPS AND AT INTERMEDIATE SUPPORTS. WHERE TWO UNITS ABUT, EACH UNIT SHALL BE SO FASTENED TO THE STEEL FRAMING.
4. THE SIDE LAPS OF ADJACENT UNITS SHALL BE FASTENED BETWEEN SUPPORTS BY #10 TEK SCREWS AT A MAXIMUM SPACING OF 2’-0” ON CENTER UNLESS NOTED OTHERWISE.
5. DECK UNITS SHALL BE CONNECTED TO THE STEEL SUPPORTS AT THE SIDE BOUNDARIES AT A MAXIMUM SPACING OF 1’-0” ON CENTER UNLESS NOTED OTHERWISE.
6. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING DECK GAUGE, LAYOUT, CONNECTIONS, AND CLOSURES.
7. GALVANIZED ROOF DECK AND ALL OF ITS ACCESSORIES SHALL CONFORM TO ASTM A653 STRUCTURAL QUALITY GRADE SS33. GALVANIZING SHALL CONFORM TO ASTM A924 WITH A MINIMUM COATING CLASS OF G30 AS DEFINED BY ASTIM A653.
8. SHEET STEEL FOR PRIME PAINTED ROOF DECK AND ALL OF ITS ACCESSORIES SHALL CONFORM TO ASTM A1008 WITH A MINIMUM YEILD STRENGTH OF 33 KSI.
9. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3.
10. UNITS SHALL SPAN OVER FOUR SUPPORTS, CONTINUOUS OVER THREE OR MORE SPANS, EXCEPT WHERE THE FRAMING DOES NOT PERMIT.
11. WHERE STEEL MEMBERS ARE PARALLEL TO THE DECK FLUTES AND AT THE SAME ELEVATION OF THE BOTTOM OF THE DECK, ADJUST DECK LAYOUT AND WELD DECK TO STEEL WITH SAME WELDING AS REQUIRED FOR SIDE BOUNDARIES.
12. STEEL DECK THAT IS TO BE COVERED WITH INSULATING CONCRETE SHALL BE SLOTTED OR PERFORATED TO PROVIDE A MINIMUM OF 1.5 PERCENT UNIFORMLY DISTRIBUTED VENTING.
13. PROVIDE FLASHING AND CLOSURE PLATES AT ALL PERIMETER LOCATIONS REQUIRING CLOSURE. THE DECK INSTALLATION, WHEN COMPLETE, SHALL BE READY TO RECEIVE INSULATING CONCRETE.

STEEL JOISTS

1. STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE “STANDARD SPECIFICATIONS” OF THE AMERICAN STEEL JOIST INSTITUTE (SJI). JOISTS SHALL BE CAMBERED FOR DEAD LOAD DEFLECTION.
2. JOIST DEPTH AND SPACING SHALL BE AS INDICATED ON PLANS. PROPOSED REVISIONS TO DEPTH AND SPACING MUST BE APPROVED BY THE ENGINEER.
3. FIELD WELD STANDARD K SERIES JOISTS TO SUPPORTING STEEL WITH A MINIMUM OF 1” X 1/8” FILLET WELD EACH SIDE OF BEARING PLATE AT ALL JOIST BEARING LOCATIONS UNLESS DETAILED OTHERWISE ON PLANS.
4. FIELD WELD STANDARD LH AND DLH SERIES JOISTS TO SUPPORTING STEEL WITH A MINIMUM OF 2” X 1/4" FILLET WELD EACH SIDE OF BEARING PLATE AT ALL JOIST BEARING LOCATIONS UNLESS DETAILED OTHERWISE ON PLANS.
5. MINIMUM BEARING OF STANDARD K-SERIES JOISTS SHALL BE 2 1/2" ON STEEL OR 4" ON MASONRY OR CONCRETE UNLESS DETAILED OTHERWISE ON PLANS.
6. MINIMUM BEARING OF LH AND DLH SERIES JOISTS SHALL BE 4" ON STEEL AND 6" ON MASONRY OR CONCRETE UNLESS DETAILED OTHERWISE ON PLANS.
7. INSTALL BRIDGING IN ACCORDANCE WITH SJI SPECIFICATION AND PROVIDE POSITIVE WALL ANCHORAGE FOR BRIDGING BETWEEN FIRST JOIST ON PARALLEL WALL.
8. ALL HEADER ANGLES FOR STEEL JOISTS ARE TO BE FURNISHED BY THE JOIST FABRICATOR. ALL OTHER ANGLES FOR OPENINGS BETWEEN JOISTS SHALL BE FURNISHED BE THE STRUCTURAL STEEL FABRICATOR.
9. WHERE SPECIAL ROOF LOADS ARE INDICATED ON THE DRAWINGS, JOISTS SHALL BE DESIGNED AND FURNISHED TO SAFELY CARRY THESE LOADS PLUS THE UNIFORM ROOF LOADING OF 25 PSF SNOW LOAD AND 18 PSF DEAD LOAD. JOISTS SHALL ALSO BE DESIGNED FOR AN ALLOWABLE UNIFORM UPLIFT OF 15 PSF.
10. SUBMIT SHOP DRAWINGS FOR ALL JOISTS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
11. AT COMPLETION OF MANUFACTURE, THE STEEL JOIST MANUFACTURER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IBC SECTION 1704.2.5.2 STATING THAT WORK WAS PERFORMED IN ACCORDANCE WITH CONSTRUCTION DOCUMENTS AND WITH SJI STANDARD SPECIFICATIONS.

GAUGE STEEL FRAMING

1. THE CONTRACTOR SHALL PROVIDE FULL-TIME QUALITY CONTROL OVER ALL FABRICATION AND ERECTION ACTIVITY THROUGH THE USE OF AN INDEPENDENT TESTING AGENCY AND/OR A QUALIFIED REPRESENTATIVE OF THE STEEL MANUFACTURER.
2. THE CONTRACTOR SHALL OBTAIN MILL CERTIFICATION FROM THE GAUGE STEEL MANUFACTURER OR SHALL SUBMIT TENSILE TESTS AND GALVANIZATION TESTS TO THE ENGINEER OF RECORD TO VERIFY THE ADEQUACY OF THE GAUGE MATERIALS.
3. GAUGE MATERIAL SHALL BE FORGED FROM GALVANIZED ASTM A653 STEEL. 54 MIL (16 GA.), 68 MIL (14 GA.) AND 97 MIL (12 GA.) MATERIAL SHALL BE GRADE 50 WITH A MINIMUM YIELD STRESS OF 50 KSI. 43 MIL (18 GA.) AND LIGHTER MATERIAL SHALL BE GRADE 33 WITH A MINIMUM YIELD STRESS OF 33 KSI. ALL MEMBERS TO BE GALVANIZED PER ASTM A653 WITH A MINIMUM G60 COATING
4. FRAMING MEMBERS SHALL HAVE THE MINIMUM EFFECTIVE PHYSICAL AND STRUCTURAL PROPERTIES AS PUBLISHED BY THE STEEL STUD MANUFACTURER’S ASSOCIATION (ICC ES ER-4943P) OR EQUIVALENT ICBO APPROVED FRAMING MEMBERS AT THE CONTRACTOR’S OPTION.
5. MEMBER DESIGNATION:

600	S	162	-	54
DEPTH (INCHES)	MEMBER TYPE	FLANGE WIDTH (INCHES)		MATERIAL THICKNESS (MILS)

6. WALL STUDS AND FRAMING AT WALL OPENINGS SHALL BE PER THE DRAWINGS. STUDS SHALL BE SHEATHED ON BOTH SIDES EXCEPT WHERE NOTED. COLD ROLLED CHANNEL OR OTHER BRIDGING/BRACING SHALL BE PROVIDED WHERE SHEATHING ONLY OCCURS ON ONE SIDE. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
7. WALL STUD BRIDGING SHALL BE INSTALLED IN A MANNER TO PREVENT STUD ROTATION. BRIDGING ROWS SHALL BE SPACED PER THE MANUFACTURER’S PUBLISHED RECOMMENDATIONS. THE MAXIMUM SPACING FOR BRIDGING SHALL BE 5’-0” ON CENTER FOR WALLS RESISTING HORIZONTAL WIND LOADS ONLY AND 3’-4” ON CENTER FOR AXIAL LOADED WALLS
8. PREFABRICATED MEMBERS SHALL BE AS SHOWN IN THE DRAWINGS AND SHALL BE ASSEMBLED SQUARE WITH THE FASTENERS INDICATED IN THE DRAWINGS. ALL FRAMING MEMBERS SHALL BE CUT SQUARELY AND SHALL BE POSITIVELY HELD IN PLACE UNTIL PROPERLY FASTENED. HANDLING AND LIFTING OF PREFABRICATED MEMBERS SHALL BE DONE IN A MANNER AS TO NOT CAUSE DISTORTION OF ANY MEMBERS.
9. SPLICES IN AXIALLY LOADED STUDS SHALL NOT BE PERMITTED.
10. GAUGE STEEL ACCESSORIES SHALL OF THE TYPE, SIZE AND SPACING SHOWN ON THE DRAWINGS, 54 MIL (16 GA.) MINIMUM UNLESS DETAILED OTHERWISE.
11. ERECT FRAMING PLUMB, LEVEL AND SQUARE IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.
12. TEMPORARY BRACING OF WALL FRAMING SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED AND REMOVED ONLY AFTER THE FRAMING HAS BEEN SECURED WITH PERMANENT SUPPORT.

GAUGE STEEL FASTENERS

1. FASTENING OF GAUGE STEEL COMPONENTS SHALL BE BY WELDING OR SCREWING OR BY OTHER MEANS OF FASTENING AS INDICATED IN THE DRAWINGS.
2. ALL FASTENERS SHALL BE OF THE TYPE AND SIZE SHOWN IN THE DRAWINGS TO ACCOMMODATE THE CONNECTIONS. FASTENERS INSTALLED IN CONCRETE SHALL BE INSTALLED ONLY AFTER THE SPECIFICED 28-DAY COMPRESSIVE STRENGTH OF THE CONCRETE HAS BEEN OBTAINED.
3. FASTENERS USED IN PULLOUT CONDITIONS SHALL BE LOAD TESTED IN TENSION TO 2 TIMES THE ALLOWABLE LOAD EVERY 50 FASTENERS.
4. SCREWS:
   A. ALL SCREWS (REFFERRED TO AS TEK) SHALL BE SELF-TAPPING SELF-DRILLING FASTENERS THAT ARE ZINC COATED AS MANUFACTURED BY ITW BUILDEX TEK/TRAXX, ELCO DRIL-FLEX, HILTI KWIK-FLEX, OR APPROVED EQUAL.
   B. THE MINIMUM SCREW SIZE/TYPE/POINT SHALL BE #8-18 (#2 POINT) OR #10-16 (#2 POINT) TEK FOR USE IN 33 MIL (20 GA.) THROUGH 54 MIL (16 GA.) MATERIAL, AND #10-16 (#3 POINT) OR #12-14 (#2 OR #3 POINT) TEK FOR MATERIAL HEAVIER THAN 54 MIL (16GA.) UNLESS NOTED OTHERWISE.
   C. SCREWS FOR SHEATHING CONNECTIONS SHALL BE OF THE PROPER SIZE AND TYPE FOR A POSITIVE SHEATHING-TO-METAL CONNECTION.
   D. ALL SCREW CONNECTIONS SHALL BE MADE FROM THE LIGHTER MATERIAL INTO THE HEAVIER MATERIAL UNLESS NOTED OTHERWISE.
   E. SCREWS SHALL HAVE A MINIMUM PROJECTION OF 3 THREADS THROUGH THE LAST MATERIAL JOINED AND SHALL HAVE MINIMUM EDGE DISTANCES AND CENTER-TO-CENTER SPACINGS OF ½ INCH.
   F. ALL SCREWS SHALL CONFORM TO SAE J78 AND SHALL BE COATED WITH A CORROSIVE-RESISTANT COATING. THE SCREW MANUFACTURER SHALL PROVIDE VERIFICATION OF THE FASTENERS RESISTANCE TO HYDROGEN EMBRITTELMENT.
5. WELDS:
   A. WELDS SHALL BE OF THE TYPE, SIZE AND SPACING SHOWN ON THE DRAWINGS AND OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION.
   B. ALL WELDING OF GAUGE STEEL MATERIAL SHALL BE IN ACCORDANCE WITH AWS D1.3.
   C. WIRE TYING OF COMPONENTS SHALL NOT BE PERMITTED.
   D. ALL WELDS SHALL BE TOUCHED UP WITH A ZINC-RICH PAINT.
6. POWDER DRIVEN FASTENERS (P.D.F.):
   A. POWDER DRIVEN FASTENERS INSTALLED IN CONCRETE OR STEEL SHALL BE AS MANUFACTURED BY HILTI, INC. (ICC ES ESR-2269) OR APPROVED EQUAL AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER’S PUBLISHED RECOMMENDATIONS AND THE GUIDELINES OF THE EVALUATION REPORT.

PREFABRICATED LIGHT GAUGE ROOF TRUSSES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF PREFABRICATED LIGHT GAUGE STEEL ROOF TRUSSES. THESE MEMBERS SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH THE “SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTRAL MEMBERS” AND STANDARD FOR COLD-FORMED STEEL FRAMING – GENERAL PROVISION,” LATEST EDITION, BY THE AMIERICAN IRON AND STEEL INSTITUE, FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS. THE FOLLOWING TRUSS LOADING IS TYPICAL UNLESS NOTED OTHERWISE ON PLANS AND/OR LOAD MAPS.

TOP CHORD LIVE LOAD (SNOW)	28 PSF
TOP CHORD DEAD LOAD	10 PSF
BOTTOM CHORD DEAD LOAD	10 PSF
TOTAL LOAD	48 PSF

2. ROOF TRUSSES SUPPORTING SNOW LOADS SHALL BE DESIGNED TO RESIST THE SNOW LOADS SET FORTH IN ACSE 7, CHAPTER 7.
3. ROOF TRUSS DEFLECTION SHALL MEET THE MINIMUM IBC REQUIREMENTS UNLESS A MORE STRINGENT CRITERIA IS NOTED ON THE PLANS.
4. LIGHT GAUGE STEEL TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES AND FASTENERS.
5. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS COMPLETE WITH STRESS DIAGRAMS FOR REVIEW A MINIMUM OF TWO WEEKS PRIOR TO FABRICATION. SUBMITTED DOCUMENTS SHALL BEAR THE STAMP AND SIGNATURE OF AN ENGINEER LICENSED TO PERFORM THE WORK IN THE JURISDICTION WHERE THE PROJECT IS LOCATED. PROVIDE FOR SHAPES, BEARING POINTS, GIRDER TRUSSES, INTERSECTIONS, HIPS, VALLEYS, ETC. SHOWN ON THE DRAWINGS. EXACT COMPOSITION OF SPECIAL HIP, VALLEY, AND INTERSECTION AREAS (USE OF GIRDER TRUSSES, JACK TRUSSES, STEP-DOWN TRUSSES, ETC) SHALL BE DETERMINED BY THE CONTRACTOR UNLESS SPECIFICALLY INDICATED ON THE PLANS.
6. PROVIDE FOR ALL TRUSS-TO-TRUSS AND TRUSS-TO-GIRDER TRUSS CONNECTION DETAILS AND REQUIRED CONNECTION MATERIALS. PROVIDE FOR ALL TEMPORARY AND PERMANENT TRUSS BRACING AND BRIDGING.

PLYWOOD

1. PLYWOOD SHEATHING SHALL BE GRADE C-D EXTERIOR GLUE OR STRUCTURAL II. EXTERIOR GLUE SHALL BE IN CONFORMANCE WITH THE BUILDING CODE, UNITED STATES VOLUNTARY PRODUCT STANDARDS PS-1 AND PS-2.
2. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING, AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD.

ROOF SHEATHING

1. PROVIDE FIRE TREATED 5/8-INCH CDX PLYWOOD, INDEX 32/16, UNBLOCKED, LAID UP WITH FACE GRAIN PERPENDICULAR TO FRAMING BELOW. STAGGER PANEL END JOINTS, PROVIDE APPROVED EDGE CLIPS AT 24 INCHES ON CENTER AT UNBLOCKED ROOF SHEATHING EDGES. PROVIDE 1/8-INCH GAP BETWEEN ALL ABUTTING PANEL EDGES. PROVIDE THE FOLLOWING MINIMUM FASTENING UNLESS NOTED OTHERWISE ON PLANS:

#8 AT 6 INCHES ON CENTER	ALL SUPPORTED PANEL EDGES, DIAPHRAGM BOUNDARIES AND OVER EXTERIOR WALLS AND SHEAR WALLS
#8 AT 12 INCHES ON CENTER	FIELD NAILING

MASONRY

1. MASONRY CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE BUILDING CODE.
2. ALL HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT, TYPE 1, MOISTURE CONTROLLED. MINIMUM REQUIRED BLOCK COMPRESSIVE STRENGTH IS 3,250 PSI.
3. GROUT SHALL CONFORM TO ASTM C476, FINE GROUT. MAXIMUM SIZE OF AGGREGATE SHALL BE 3/8 INCH. FLY ASH AS A PERCENTAGE OF TOTAL WEIGHT OF CEMENTITIOUS MATERIAL SHALL NOT EXCEED 40 PERCENT PER ASTM C595. FLY ASH SHALL BE CLASS C OR F, MEETING ASTM C618 REQUIREMENTS. SLUMP SHALL BE 8 TO 11 INCHES. WATER-REDUCING ADMIXTURES MAY BE USED. MINIMUM GROUT COMPRESSIVE STRENGTH BASED ON 28-DAY TESTS SHALL BE 2,500 PSI AND GREATER THAN OR EQUAL TO THE SPECIFIED MINIMUM DESIGN STRENGTH.
4. ALL LOAD BEARING CONCRETE MASONRY UNITS (CMU) SHALL BE LAID IN A RUNNING BOND USING TYPE S MORTAR CONFORMING TO ASTM C270.
5. REQUIRED MORTAR PROPORTIONS BY VOLUME:

TYPE	PORTLAND CEMENT	HYDRATED LIME	AGGREGATE MEASURED IN A DAMP, LOOSE CONDITION
S	1	OVER 1/4 TO 1/2	NOT LESS THAN 2 1/4 AND NOT MORE THAN 3 TIMES THE SUM OF THE VOLUMES OF THE CEMENT

6. MASONRY ASSEMBLY MINIMUM DESIGN STRENGTH IS f'm = 2,500 PSI.
7. ALL BELOW GRADE MASONRY SHALL HAVE ALL CORES FILLED SOLID WITH CONCRETE GROUT.
8. ALL CORES CONTAINING REINFORCEMENT SHALL BE FILLED SOLID WITH CONCRETE GROUT.
9. GROUT SHALL BE VIBRATED WHILE PLACING TO ENSURE THAT CORES ARE COMPLETELY FILLED.
10. WHEN GROUTING IS STOPPED FOR ONE HOUR OR MORE, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR 1½” BELOW THE TOP OF THE UPPERMOST UNIT.
11. GROUT PLACEMENT AND LIFT HEIGHTS SHALL BE IN ACCORDANCE WITH ARTILE 3.5 OF THE SPECIFICATION FOR MASONRY STRUCTURES, TMS 602/ACI 530.1/ASCE6.
12. PROVIDE 9 GAUGE GALVANIZED LADDER TYPE HORIZONTAL REINFORCING AT EVERY OTHER BLOCK COURSE IN ALL MASONRY WALLS, UNLESS DETAILED OTHERWISE.
13. REINFORCE ALL BOND BEAMS WITH (2) #5 BOTTOM BARS, UNLESS DETAILED OTHERWISE.
14. SEE TYPICAL MASONRY DETAILS MINIMUM REINFORCING REQUIREMENTS.
15. SUBMIT GROUT MIXES TO ARCHITECT FOR REVIEW BEFORE COMMENCING MASONRY CONSTRUCTION.

FOUNDATIONS

1. COLUMN DOWELS SHALL BE INSTALLED WITH A TEMPLATE TO HOLD BARS IN THE PROPER POSITION AND SHALL BE PLACED WITH A TOLERANCE OF +/- 1/4 INCH.
2. SPREAD FOOTINGS:
   A. DESIGN SOIL BEARING PRESSURE = 6,000 PSF.
   B. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL AND SHALL BE LOWERED TO FIRM BEARING IF SUITABLE SOIL IS NOT FOUND AT ELEVATIONS DETERMINED BY TOP OF FOOTING ELEVATION AND FOOTING DEPTH.
   C. REFER TO THE PROJECT GEOTECHNICAL EVALUATION REPORT FOR SOIL CONDITIONS AND RECOMMENDATIONS
      - PREPARED BY: CGC, INC.
      - PROJECT NO.: CM25037
      - DATED: APRIL 17, 2025
   D. SITE AND BUILDING SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT.

STRUCTURAL FILL

1. ALL FILL PLACED TO SUPPORT SLABS ON GRADE, BEHIND PERMANENT WALLS, AND AROUND ALL DRAINS SHALL CONSIST OF WELL GRADED, GRANULAR MATERIAL PER THE SPECIFICATIONS.
2. SOILS FOR STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
3. STRUCTURAL FILL SHALL BE PLACED ON SOUND NATIVE MATERIAL.
4. PROOF-ROLL CUT AREAS WHICH PROVIDE SUPPORT FOR PERMANENT STRUCTURES.
5. AREAS WHICH ARE EXCESSIVELY YIELDING, AS DETERMINED BY THE CONTINUOUS OBSERVATION OF THE GEOTECHNICAL ENGINEER, SHALL BE OVEREXCAVATED AND REPLACED WITH STRUCTURAL FILL.
6. STRUCTURAL FILL SHALL BE PLACED PER THE SPECIFICATION.

STAIRS AND MISCELLANEOUS METALS

1. UNLESS SHOWN AND DETAILED IN THE STRUCTURAL DRAWINGS, ALL STAIRS ARE TO CONSIST OF A PRE-FABRICATED AND PRE-ENGINEERED STAIR, LANDING, AND RAILING SYSTEM DESIGNED BY THE CONTRACTOR OR STAIR SUPPLIER. SEE THE ARCHITECT FOR STAIR SYSTEM LAYOUT, DIMENSIONS, AND CONFIGURATION OF RISE AND RUN. THE CONTRACTOR SHALL BE RESPONSIBLE TO DESIGN AND PROVIDE THE STAIR SYSTEM INCLUDING ALL CONNECTIONS AND SECONDARY SUPPORT FRAMING.
2. THE CONTRACTOR SHALL DESIGN AND SUPPLY ALL ADDITIONAL MISCELLANEOUS METALS THAT ARE INDICATED IN THE ARCHITECTURAL DRAWINGS OR THOSE METALS WHICH ARE FOUND TO BE NECESSARY TO SUPPORT THE ARCHITECTURAL FINISHES OR OTHER BUILDING SYSTEMS.
3. ALL FRAMING AND CONNECTIONS DESIGNED BY THE CONTRACTOR SHALL NOT RESULT IN ECCENTRIC LOADS BEING APPLIED TO THE PRIMARY STRUCTURE NOR LATERAL LOADS BEING APPLIED TO THE BOTTOM FLANGE OF STEEL BEAMS. THE CONTRACTOR’S DESIGN SHALL VERIFY THAT THE CONNECTIONS DO NOT RESULT IN ADVERSE LOCAL CONNECTION STRESSES OCCURRING WITHIN THE PRIMARY STRUCTURE. SUBMIT CALCULATIONS STAMPED BY A STRUCTURAL ENGINEER LICENSED TO PERFORM THE WORK IN THE JURISDICTION WHERE THE PROJECT IS LOCATED AND SHOP DRAWINGS INDICATING IMPOSED LOADS ON THE PRIMARY STRUCTURE.

MECHANICAL/ELECTRICAL/PLUMBING SYSTEM SUPPORTS

1. THE CONTRACTOR SHALL DESIGN AND SUPPLY ALL ADDITIONAL MISCELLANEOUS METALS AND SYSTEM SUPPORT COMPONENTS THAT ARE NECESSARY TO SUPPORT ALL MECHANICAL, ELECTRICAL (TELECON, AUDIO VISUAL, ETC.), AND PLUMBING/FIRE-PROTECTION SYSTEMS. SUCH METALS AND SUPPORT COMPONENTS AND THEIR CONNECTIONS SHALL BE PROVIDED AS NECESSARY TO DIRECTLY AND CONCENTRICALLY IMPOSE LOADS ON THE PRIMARY STRUCTURE.
2. STEEL ROOF DECK SHALL NOT DIRECTLY SUPPORT THESE SYSTEMS.
3. THE CONNECTIONS TO THE PRIMARY STRUCTURE ARE SUBJECT TO THE REQUIREMENTS OF THE MISCELLANEOUS METALS SECTION ABOVE.

SECONDARY SUPPORT FRAMING

1. SECONDARY SUPPORT FRAMING FOR CONNECTING NON-STRUCTURAL COMPONENTS TO THE PRIMARY STRUCTURE SHALL BE DESIGNED, SUPPLIED AND INSTALLED BY OTHERS.
2. SHOP DRAWINGS FOR SECONDARY SUPPORT FRAMING SHALL BE SUBMITTED FOR REVIEW ALONG WITH THE SUPPORTING CERTIFIED STRUCTURAL CALCULATIONS. SUBMITTAL SHALL IDENTIFY THE LOADS IMPOSED UPON THE PRIMARY STRUCTURE AT THE CONNECTION POINTS OF THE SECONDARY SUPPORT FRAMING.
3. UNISTRUT, OR EQUIVALENT, AND ITS CONNECTIONS SHALL BE CONSIDERED SECONDARY SUPPORT FRAMING, UNLESS SPECIFICALLY NOTED OTHERWISE.

INTERIOR STEEL STUD FRAMING

1. INTERIOR PARTITIONS SHALL CONSIST OF METAL STUD TYPE FRAMING THAT HAS CURRENT ICC-ES EVALUATION REPORTS.
2. CONNECTION OF STUDS, TRACK, AND OTHER ITEMS BY MEANS OF EITHER DRILLED-IN ANCHORAGE OR POWDER DRIVEN FASTENERS SHALL OCCUR WITH FASTENERS AS INDICATED IN THE METAL STUD ICC-ES REPORTS. CONNECTIONS SHALL ALLOW FOR THE BUILDING MOVEMENTS CITED ABOVE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF SOFFITS, SUSPENDED WALLS, CEILINGS, OR CONDITIONS WHERE THE STUD FRAMING IS USED TO SUPPORT CASEWORK OR SIZEABLE DOOR/WINDOW HARDWARE; THE METAL STUD FRAMING; AND ANY MISCELLANEOUS STEEL FRAMING THAT IS DETERMINED TO BE NECESSARY BASED ON THE CONTRACTOR’S DESIGN. SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS INDICATING IMPOSED LOADS ON THE PRIMARY STRUCTURE FOR THESE CONDITIONS. SUBMITTED DOCUMENTS SHALL BEAR THE STAMP AND SIGNATURE OF AN ENGINEER LICENSED TO PERFORM THE WORK IN THE JURISDICTION WHERE THE PROJECT IS LOCATED.

SEQUENCING CONSTRUCTION AND LATERAL STABILITY

1. THE STRUCTURAL COMPONENTS BY THEMSELVES ARE A NON-SELF-SUPPORTING STRUCTURE. LATERAL FORCES DUE TO WIND, EARTHQUAKE, OR SOIL ARE CARRIED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE LATERAL SYSTEM. CERTAIN ELEMENTS SHOWN ON THE STRUCTURAL DRAWINGS (SUCH AS BRACING, ROOF AND FLOOR SLABS, AND CONCRETE IN COMPOSITE COLUMNS) ARE REQUIRED FOR OVERALL OR LOCAL STABILITY OF OTHER ELEMENTS (SUCH AS BEAMS, COLUMNS, AND WALLS).
2. IF, DUE TO SEQUENCING OF CONSTRUCTION, THESE STABILITY ELEMENTS ARE NOT IN PLACE, THE CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED TO PERFORM THE WORK IN THE JURISDICTION WHERE THE PROJECT IS LOCATED, WHO SHALL INVESTIGATE WHERE TEMPORARY SHORING/BRACING IS REQUIRED, AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING. THE CONTRACTOR SHALL PROVIDE THIS SHORING/BRACING UNTIL THE REQUIRED STRUCTURAL ELEMENTS AND THEIR CONNECTIONS HAVE BEEN INSTALLED AND REACH THEIR FINAL DESIGN STRENGTHS.

DEFERRED STRUCTURAL SUBMITTALS

1. SOME STRUCTURAL SYSTEMS ARE DEFINED AS VENDOR-DESIGNED COMPONENTS PER THE STRUCTURAL DOCUMENTS. THESE ELEMENTS OF THE DESIGN ARE DEFERRED SUBMITTAL COMPONENTS AND HAVE NOT BEEN PERMITTED UNDER THE BASE BUILDING APPLICATION. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT THE STAMPED COMPONENT SYSTEM DOCUMENTS TO THE BUILDING OFFICIAL FOR APPROVAL.
2. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT, WHO SHALL REVIEW THEM FOR GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE CONTRACTOR SHALL SUBMIT THESE REVIEWED DEFERRED SUBMITTAL DOCUMENTS TO THE BUILDING OFFICIAL. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
3. THE FOLLOWING LIST INCLUDES THE ITEMS THAT ARE DEFINED AS DEFERRED STRUCTURAL SUBMITTAL COMPONENTS. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND CIVIL DRAWINGS FOR ADDITIONAL DEFERRED SUBMITTAL COMPONENTS.
4. DEFERRED STRUCTURAL SUBMITTAL COMPONENTS:
   A. PRECAST FLOOR PLANKS
   B. STEEL STAIRS, LANDINGS AND CONNECTIONS
   C. LIGHT GAUGE ROOF TRUSSES
   D. SECONDARY SUPPORT FRAMING AND CONNECTIONS

BUILDING TOLERANCES

1. STANDARD TOLERANCES SHALL BE BASED ON THE REQUIREMENTS OF THE AISC CODE OF STANDARD PRACTICE AND ACI 117, "STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."

MISCELLANEOUS

1. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, ELEVATOR, OR OTHER SPECIALTY ENGINEERING DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING BUT NOT LIMITED TO: SIZE AND LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL AND FLOOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, ANCHOR BOLTS, EMBEDDED ITEMS, ARCHITECTURAL TREATMENT, ETC. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND RESOLVE DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
2. WHERE SECTIONS ARE INDICATED ON THE PLAN BY A NUMBER AND A DRAWING NUMBER THUS, 1/S5.01, THE INDICATED SECTION (1) IS SHOWN ON STRUCTURAL DRAWING S5.01.

SPECIAL INSPECTION

1. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION AND TESTING PER IBC SECTION 1704.
2. THIS WORK SHALL BE PERFORMED BY A SPECIAL INSPECTOR CERTIFIED BY THE GOVERNING BUILDING OFFICIAL TO PERFORM THE TYPES OF INSPECTIONS AND TESTS SPECIFIED.
3. THE FREQUENCY OF INSPECTIONS AND TESTING SHALL BE AS OUTLINED IN THE IBC TABLE ITEMS LISTED BELOW.
4. DEFICIENCIES SHALL BE REPORTED DAILY TO THE CONTRACTOR.
5. SUMMARY REPORTS SHALL BE DISTRIBUTED WEEKLY TO THE OWNER, ARCHITECT, CONTRACTOR, BUILDING OFFICIAL, AND STRUCTURAL ENGINEER. THE CONCRETE SUPPLIER SHALL BE INCLUDED IN THE DISTRIBUTION OF ALL SUMMARY REPORTS FOR CONCRETE TESTING.
6. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTION AND TESTING.

SPECIAL INSPECTION TABLE

ITEM	DESCRIPTION (SEE IBC SECTS. 1704 & 1705)	IBC REQUIREMENT
CONCRETE	CONCRETE THAT IS PART OF THE STRUCTURE	TABLE 1705.3 ITEMS 5, 6, 7, 8, 10, AND 12
BOLTS INSTALLED IN CONCRETE	ANCHOR BOLTS, HEADED STUDS (EXCEPT AT BEAM-TO-DECK INSTALLATION)	TABLE 1705.3 ITEM 3
REINFORCING STEEL	A. PLACEMENT OF REINFORCING STEEL	TABLE 1705.3 ITEM 1
STRUCTURAL STEEL	A. STRUCTURAL STEEL THAT IS PART OF THE STRUCTURE	IBC SECTION 1705.2.1 AISC 360 CHAPTER N
	B. WELDING, HIGH STRENGTH BOLTING, AND DETAILS	AISC 360 SECTION N5
	C. FIELD CUT SURFACES	AISC 360 SECTION M2.2
	D. FIELD HEATING FOR STRAIGHTENING	AISC 360 SECTION M2.1
	E. TOLERANCES FOR FIELD ERECTION	CODE OF STANDARD PRACTICE SECTION 7.13
STEEL OTHER THAN STRUCTURAL STEEL	A. COLD-FORMED STEEL DECK THAT IS PART OF THE STRUCTURE	IBC SECTION 1705.2.2
	B. WELDING OF COLD-FORMED STEEL DECK	TABLE 1705.2.2 ITEM 2a
	C. WELDING AND OTHER FASTENING COMPONENTS TO WIND FORCE RESISTING COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SYSTEM INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, DRAG STRUTS, AND HOLDOWNS	SECTION 1705.10.2
SOILS, SPECIAL GRADING, EXCAVATION AND FILLING	A. FOUNDATION EXCAVATIONS AND BEARING STRATA	TABLE 1705.6 ITEMS 1 AND 2
	B. TESTING, PREPERATION, PLACEMENT, AND COMPACTION	TABLE 1705.6 ITEMS 3, 4, AND 5
POST INSTALLED ANCHORS OR DOWELS	ALL POST-INSTALLED ANCHORS/ DOWELS SHALL BE SPECIALLY INSPECTED AS REQUIRED BY TABLE 1705.3 ITEM 4 AND AS REQUIRED BY THE APPROVED ICC-ES REPORT	
EPOXY OR CEMENT GROUTED DOWELS OR ANCHORS	-OBSERVE DRILLED HOLES AFTER CLEANING AND INSTALLATION OF ANCHOR -ANCHORS SUBJECT TO SUSTAINED TENSION SHALL BE CONTINUOUSLY INSPECTED AND INSTALLED BY A CERTFIED INSTALLER IN ACCORDANCE WITH THE MANUFACTUREER’S PRINTED INSTALLATION INSTRUCTIONS AND ACI 318, CHAPTER D	

SHOP DRAWINGS

1. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION:
   A. REINFORCING STEEL
   B. STRUCTURAL STEEL
   C. STEEL JOISTS
   D. EXTERIOR STEEL STUD WALLS AND CONNECTIONS
   E. PRECAST CONCRETE FLOOR PLANKS
   F. STEEL STAIRS, LANDINGS AND CONNECTIONS
   G. LIGHT GAUGE ROOF TRUSSES
   H. SECONDARY SUPPORT FRAMING AND CONNECTIONS
2. THE CONTRACTOR SHALL SUBMIT CONCRETE WALL ELEVATION DRAWINGS OF AT LEAST 1/8 " = 1'-0" SCALE INDICATING LOCATIONS OF CONNECTION EMBEDMENTS AND WALL OPENINGS FOR REVIEW PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH REINFORCEMENT DRAWINGS.
3. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD; THEREFORE, THEY SHALL BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY THE ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE ONE ELECTRONIC COPY TO BE MARKED AND RETURNED.
4. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED, AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWINGS SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.
5. SHOP DRAWINGS FOR DEFERRED SUBMITTALS THAT ARE DEFINED AS DESIGN-BUILD COMPONENTS IN THE CONSTRUCTION DOCUMENTS SHALL INCLUDE THE DESIGNING PROFESSIONAL ENGINEER'S STAMP FOR THE JURISDICTION WHERE THE PROJECT IS LOCATED AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE. DESIGN CALCULATIONS SHALL BE INCLUDED IN THE SUBMITTAL.

WINTER CONSTRUCTION

1. ALL SOIL BELOW FOOTINGS SHALL BE PROTECTED FROM FREEZING BY ALL NECESSARY MEANS (e.g. TEMPORARY HEAT AND BLANKETS, TEMPERATURE PROBES, ETC.).
2. ALL CONCRETE SHALL BE PREVENTED FROM FREEZING AFTER POURING, AS DIRECTTED BY THE CONCRETE SPECIAL INSPECTOR, BY ALL NECESSARY MEANS (e.g. TEMPORARY HEAT, BLANKETS, ETC.).
3. ALL BACKFILL MUST BE PLACED ON UNFROZEN GROUND, IN UNFROZEN STATE AND COMPACTED PER THE GEOTECHNICAL REPORT.

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UNION GROVE, WI 53182

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wendel
Five Bugles Design
+
MA Mitchell Associates Architects

204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335

Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland
Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

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NO.	REVISIONS	DATE

DWG. TITLE

STRUCTURAL NOTES

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING.
IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE 04.24.2025
SCALE
DWN. HMM CHK. TDR
PROJ. No. 24-042
DWG. No.

S002

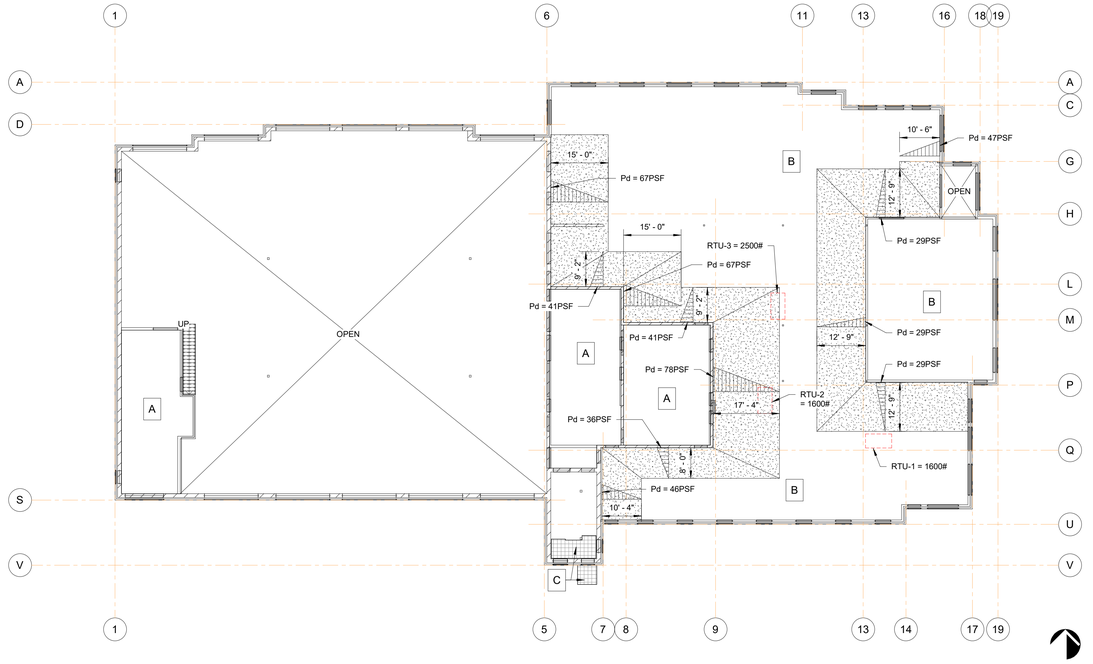
MEZZANINE LOADING PLAN NOTES:

1. SEE LOAD MAP DESIGNATIONS FOR UNIFORM FLOOR AND ROOF LOADING.
2. VERIFY ANY EQUIPMENT LOADS BEARING ON PRECAST PLANK WITH MECHANICAL.
3. CONTRACTOR TO PROVIDE ALL SECONDARY SUPPORT FRAMING REQUIRED AT HANGING EQUIPMENT LOCATIONS. COORDINATE LOCATIONS AND SUPPORT REQUIREMENTS WITH ARCHITECTURAL DRAWINGS AND EQUIPMENT SUPPLIER.
4. PRECAST PLANK SHALL BE DESIGNED TO DELIVER 750 PLF (ULTIMATE) TO CMU SHEAR WALLS FOR IN-PLANE SHEAR DUE TO WIND LOAD.

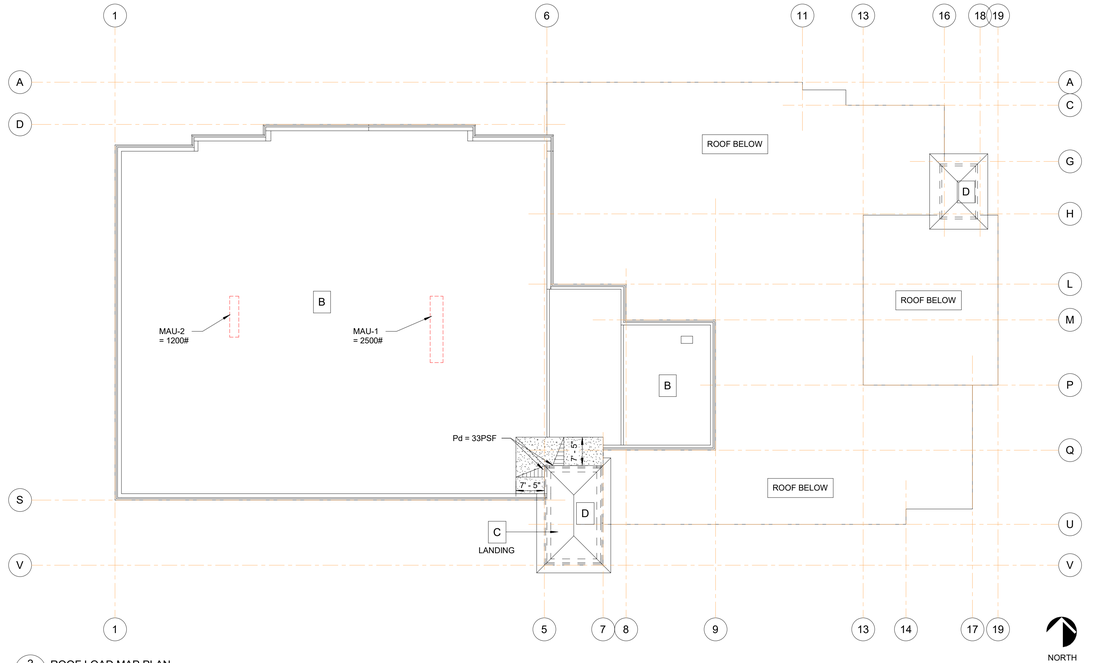
LOW ROOF & UPPER ROOF LOADING PLAN NOTES:

1. SEE STRUCTURAL NOTES FOR UNIFORM DESIGN ROOF SNOW LOAD.
2. SNOW DRIFT LOADING (Pd) SHOWN ON LOADING PLAN IS IN ADDITION TO THE UNIFORM DESIGN SNOW LOAD.
3. VERIFY SIZE, LOCATION AND WEIGHT OF ALL ROOFTOP MECHANICAL UNITS PRIOR TO STEEL FABRICATION. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. CONTRACTOR TO PROVIDE ALL SECONDARY SUPPORT FRAMING REQUIRED AT HANGING EQUIPMENT LOCATIONS. COORDINATE LOCATIONS AND SUPPORT REQUIREMENTS WITH ARCHITECTURAL DRAWINGS AND EQUIPMENT SUPPLIER.

LOAD MAP DESIGNATIONS			
A	**MECHANICAL / ELECTRICAL & MEZZANINE STORAGE :**		
	DL	SELF WEIGHT OF STRUCTURE	
	SDL	MECH. / ELEC. / MISC.	10 PSF
	LL	LIVE LOAD (OR EQUIP. WEIGHT, WHICHEVER IS GREATER)	125 PSF
B	**TYPICAL FLAT ROOF:**		
	DL	SELF WEIGHT OF STRUCTURE	
	SDL	ADHERED EPDM / INSULATION / MECH. / ELEC. / MISC.	18 PSF
	SL	SNOW LOAD (SEE LOAD MAPS FOR ADD'L DRIFT LOADING)	25 PSF
C	**STAIRS AND LANDING:**		
	DL	SELF WEIGHT OF STRUCTURE	
	SDL	MECH. / ELEC. / ROOFING / MISC.	10 PSF
	LL	LIVE LOAD	100 PSF
D	**TRUSS ROOF:**		
	DL	SELF WEIGHT OF STRUCTURE	
	SDL	ROOFING MATERIAL / MECH. / ELEC. / MISC.	20 PSF
	SL	SNOW LOAD (SEE LOAD MAPS FOR ADD'L DRIFT LOADING)	28 PSF



1 / S003 MEZZANINE / LOW ROOF LOAD MAP PLAN
1/16" = 1'-0"



2 / S003 ROOF LOAD MAP PLAN
1/16" = 1'-0"

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wendel
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Mitchell Associates Architects
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LOAD MAP PLANS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM CHK. TDR
PROJ. No.	24-042
DWG. No.	

S003

NOTES:

1. NOTATIONS:
   db: NOMINAL BAR DIAMETER (INCHES)

   L_D : TENSION DEVELOPMENT LENGTH (INCHES) FOR REINFORCEMENT SATISFYING THE FOLLOWING REQUIREMENTS:
   - SLABS AND WALLS: CLEAR SPACING > 2 db, AND CONC. CLEAR COVER > db
   - BEAMS AND COLUMNS: CLEAR SPACING > db, AND CONC. CLEAR COVER > db

   L_T : DEVELOPMENT LENGTH OF TOP BARS IN TENSION = 1.3 x L_D (INCHES)

   L_B : DEVELOPMENT LENGTH OF BARS OR DOWELS IN COMPRESSION = 19 x db (INCHES)

   L_C : TIED COLUMN LAP SPLICE IN COMPRESSION = 30 x db (INCHES)

   L_{CS} : SPIRAL COLUMN LAP SPLICE IN COMPRESSION = 22.5 x db (INCHES)

   L_{SB} : TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS = 1.3 x L_D (INCHES)

   L_{SBT} : TENSION LAP SPLICE LENGTH OF TOP BARS = 1.7 x L_D (INCHES)
2. MULTIPLY VALUES IN THE TABLE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET THE REQUIREMENTS FOR LD IN NOTE 1
3. MULTIPLY VALUES IN THE TABLE BY 1.2 FOR EPOXY COATED BARS WITH CLEAR SPACING AND COVER MEETING THE REQUIREMENTS FOR L_D IN NOTE 1, OTHERWISE MULTIPLY VALUE BY 1.5.
4. TOP BARS: HORIZONTAL BEAM REINFORCING WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW.
5. THE DEVELOPMENT AND SPLICE LENGTHS ARE BASED ON REINFORCEMENT STRENGTH Fy = 60 KSI
6. #14 AND #18 BARS SHALL NOT BE LAP SPLICED. SEE GENERAL NOTES.
7. MULTIPLY VALUES IN THE TABLE BY 1.33 FOR USE WITH LIGHTWEIGHT AGGREGATE CONCRETE.

CONCRETE fc = 4,000 PSI				
BAR SIZE	L_D	L_T	L_{SB}	L_{SBT}
#3	15	20	20	26
#4	19	25	25	33
#5	24	32	32	42
#6	29	38	38	50
#7	42	55	55	72
#8	48	63	63	82
#9	54	71	71	93
#10	61	80	80	104
#11	67	88	88	115
#14	81	106	-	-
#18	108	141	-	-

CONCRETE ALL STRENGTHS			
BAR SIZE	L_B	L_C	L_{CS}
#3	8	12	12
#4	10	15	12
#5	12	19	14
#6	15	23	17
#7	17	26	20
#8	19	30	23
#9	22	34	26
#10	24	38	29
#11	27	42	32
#14	33	-	-
#18	43	-	-

MASONRY				
BAR SIZE	TENSION		COMPRESSION	
	L_D	L_{SB}	L_B	L_C
#3	24	24	24	24
#4	24	24	24	24
#5	30	25	24	24
#6	36	30	27	24
#7	42	35	32	26
#8	48	40	36	30
#9	54	45	41	34
#10	60	50	45	38
#11	66	55	50	41

1 S101 TYPICAL REINFORCING BAR DEVELOPMENT AND SPLICE LENGTH TABLES
NOT TO SCALE

TABLE A

MINIMUM TENSION EMBEDMENT LENGTHS, (L_{DH}) FOR STANDARD END HOOKS ON GRADE 60 BARS

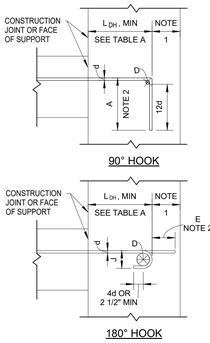
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c (psi)					
	3,000	4,000	5,000	6,000	7,000	8,000
#3	6"	6"	6"	6"	6"	6"
#4	8"	7"	7"	7"	7"	7"
#5	10"	9"	8"	7"	7"	7"
#6	12"	10"	9"	8"	8"	8"
#7	14"	12"	11"	10"	9"	9"
#8	16"	14"	12"	11"	10"	10"
#9	18"	15"	14"	13"	12"	11"
#10	20"	17"	15"	14"	14"	14"
#11	22"	19"	17"	16"	15"	15"
#14	37"	32"	29"	27"	25"	25"
#18	50"	43"	39"	35"	33"	31"

END HOOK
ALL GRADES
(D) FINISHED BEND DIAMETER

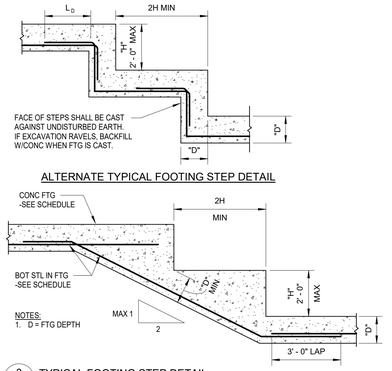
BAR SIZE	D	180° HOOKS E	180° HOOKS J	90° HOOKS A
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	24"
#14	18-1/4"	27"	21-3/4"	31"
#18	24"	36"	28-1/2"	41"

NOTES:

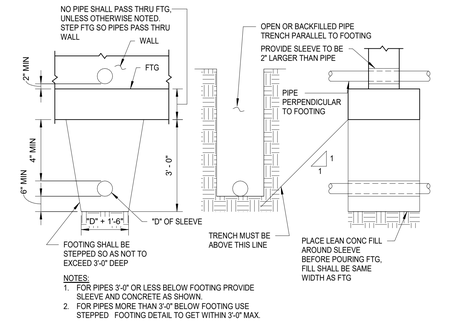
1. BAR DIMENSION REQUIRED TO MANUFACTURE HOOK.
2. FOR EPOXY COATED HOOKS, INCREASE THE ABOVE EMBEDMENT LENGTHS BY 20%.
3. ABOVE VALUES VALID FOR ALL CASES IF:
   SIDE COVER >= 2-1/2"
   END COVER >= 2"



2 S101 TYPICAL REINFORCING BAR STANDARD HOOK AND EMBEDMENT TABLES
NOT TO SCALE



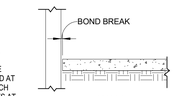
3 S101 TYPICAL FOOTING STEP DETAIL
NOT TO SCALE



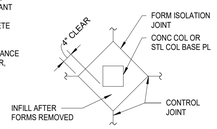
4 S101 TYPICAL DETAIL @ PIPES PERPENDICULAR TO FTGS
NOT TO SCALE

NOTES:

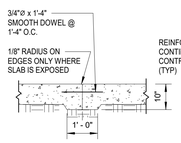
1. SEE PLAN FOR SLAB ON GRADE THICKNESS.
2. LOCATE CONSTRUCTION JOINTS UNDER PARTITIONS OR ON COLUMN LINES. PROVIDE CONTROL JOINTS ON ALL COLUMN LINES AND AT 30x SLAB THICKNESS MAXIMUM SPACING EACH WAY IN BETWEEN. PROVIDE CONTROL JOINTS AT ALL RE-ENTRANT CORNERS.
3. SAWED JOINTS SHALL BE MADE AS SOON AS THE JOINT CAN BE CUT WITHOUT EDGES RAVELING AND WITHIN 24 HOURS OF SLAB PLACEMENT. SAWED JOINTS SHALL BE FILLED WITH SEALANT AS COORDINATED WITH THE ARCHITECT.
4. SEE GENERAL NOTES FOR SPECIAL CONCRETE MIX DESIGN.
5. FOLLOW RECOMMENDATIONS GIVEN IN GEOTECHNICAL REPORT IN STRICT ACCORDANCE IN REGARDS TO THE USE OF VAPOR BARRIER, CRUSHED STONE AND SOIL COMPACTION.



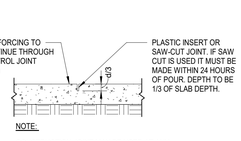
WALL



ISOLATION JOINT AT COLUMN

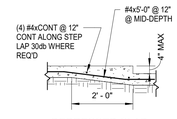


CONSTRUCTION JOINT

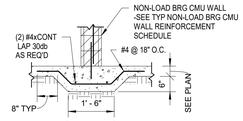


NOTE:
CONSTRUCTION JOINT MAY BE USED AT ANY CONTROL JOINT LOCATION.

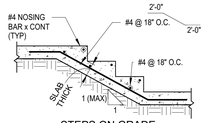
SAWED CONTROL JOINT



DEPRESSED SLAB

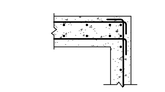


THICKENED SLAB

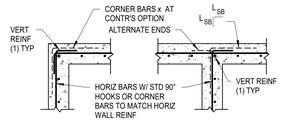


STEPS ON GRADE

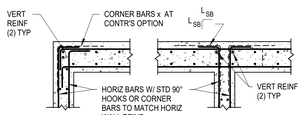
5 S101 TYPICAL FIBER REINFORCED SLAB ON GRADE
NOT TO SCALE



WALL/FTG INTERSECTION OF SINGLE AND DOUBLE LAYER REINFORCING

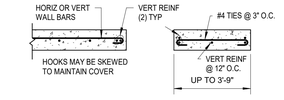


WALL/FTG CORNER WALL/FTG INTERSECTION



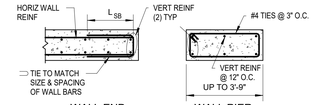
WALL/FTG CORNER WALL/FTG INTERSECTION

WALL/FTG CORNER OF SINGLE AND DOUBLE LAYER REINFORCING



WALL END WALL PIER

SINGLE LAYER REINFORCING



WALL END WALL PIER

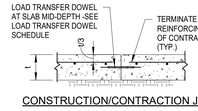
DOUBLE LAYER REINFORCING

6 S101 TYPICAL CONCRETE WALL / FOOTING REINFORCING
NOT TO SCALE

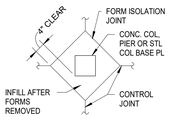
NOTES:

1. SEE PLAN FOR SLAB ON GRADE THICKNESS
2. LOCATE CONSTRUCTION JOINTS UNDER PARTITIONS OR ON COLUMN LINES. PROVIDE CONTROL JOINTS ON ALL COLUMN LINES AND AT 30x SLAB THICKNESS MAXIMUM SPACING EACH WAY IN BETWEEN. PROVIDE CONTROL JOINTS AT ALL RE-ENTRANT CORNERS.
3. SAWED JOINTS SHALL BE MADE AS SOON AS THE JOINT CAN BE CUT WITHOUT EDGES RAVELING AND WITHIN 24 HOURS OF SLAB PLACEMENT. SAWED JOINTS SHALL BE FILLED WITH SEALANT AS COORDINATED WITH THE ARCHITECT.
4. FOLLOW RECOMMENDATIONS GIVEN IN GEOTECHNICAL REPORT IN STRICT ACCORDANCE IN REGARDS TO THE USE OF VAPOR BARRIER, CRUSHED STONE AND SOIL COMPACTION.

TYPICAL SLAB REINFORCING	
SLAB THICKNESS	
7"	#4 @ 1'-4" O.C. EACH WAY LOCATE 1/3 THE SLAB THICKNESS FROM THE TOP



CONSTRUCTION/CONTRACTION JOINT



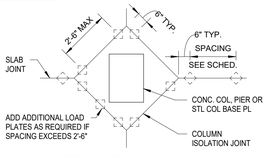
ISOLATION JOINT AT COLUMN

DEPRESSED SLAB

LOAD TRANSFER SCHEDULE				
SLAB THICKNESS	ROUND DOWEL SIZE	SPACING	DIAMOND DOWEL SIZE	SPACING
7"	1"ø x 1'-4" LONG	1'-0" O.C.	3/8" x 4 1/2" x 4 1/2"	1'-6" O.C.

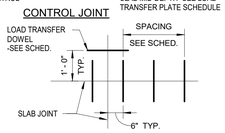
LOAD TRANSFER NOTES:

1. DOWELS SHALL BE SMOOTH, ROUND AND FREE OF ANY RUST OR DEBRIS.
2. AT CONTRACTOR'S OPTION, THE EQUIVALENT DIAMOND DOWEL SYSTEM BY PNA CONSTRUCTION TECHNOLOGIES MAY BE USED IN LIEU OF ROUND DOWELS .
3. ANY ALTERNATE LOAD TRANSFER SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR.
4. SEE PLAN FOR JOINT LAYOUT. SUBMIT ANY LAYOUT REVISION FOR REVIEW PRIOR TO CONSTRUCTION.

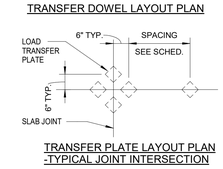


TRANSFER PLATE LAYOUT PLAN -TYPICAL COLUMN ISOLATION JOINT

CONTROL JOINT



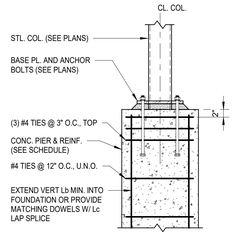
TRANSFER DOWEL LAYOUT PLAN



TRANSFER PLATE LAYOUT PLAN -TYPICAL JOINT INTERSECTION

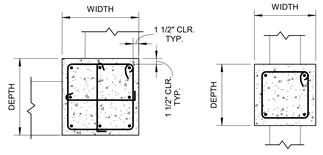
7 S101 TYPICAL STEEL REINFORCED SLAB ON GRADE
NOT TO SCALE

CONCRETE PIER SCHEDULE					
PIER MARK	SIZE WIDTH	SIZE DEPTH	PIER TYPE	REINFORCING	REMARKS
P-1	1'-10"	1'-10"	A	(8) #5	
P-2	1'-6"	1'-6"	B	(4) #6	



NOTES:

1. SEE CONCRETE PIER SCHEDULE FOR TYPE OF REINFORCING CONFIGURATION.
2. A TYPICAL CROSSTIE SHALL HAVE A 135 DEGREE HOOK AT ONE END AND A 90 DEGREE HOOK AT THE OTHER END. AT CONTRACTOR'S OPTION, THE 135 DEGREE HOOK MAY BE REPLACED WITH A 180 DEGREE HOOK, AND THE 90 DEGREE HOOK MAY BE REPLACED WITH A 135 DEGREE HOOK.
3. CROSSTIES WITH 90 DEGREE HOOKS SHALL HAVE THE CONSECUTIVE CROSSTIES ALTERNATED END FOR END ALONG THE LONGITUDINAL REINFORCEMENT.
4. CONTINUE HORIZONTAL WALL REINFORCING THROUGH CONCRETE PIER, SEE PLAN FOR WALL SIZE & LOCATIONS, IF WALLS OCCUR.

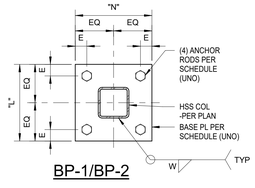


8 S101 TYPICAL CONCRETE PIER
NOT TO SCALE

COLUMN BASE PLATE SCHEDULE							
MARK	COLUMN SIZE	BASE PLATE THICKNESS	BASE PLATE WIDTH = "N"	BASE PLATE LENGTH = "L"	ANCH. ROD SIZE	EDGE DIST = E	FILLET WELD = W
BP-1	HSS3x3	3/4"	9"	9"	3/4"	1 1/2"	1/4"
BP-1	HSS4x4	3/4"	10"	10"	3/4"	1 1/2"	1/4"
BP-1	HSS5x5	3/4"	11"	11"	3/4"	1 1/2"	1/4"
BP-1	HSS6x6	3/4"	12"	12"	3/4"	1 1/2"	1/4"
BP-2	HSS5x5	1"	12"	12"	1"	2"	5/16"

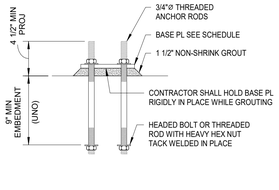
NOTES:

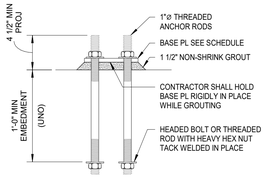
1. TIGHTEN ANCHOR RODS SNUG TIGHT AND TACK WELD NUT TO ROD TO PREVENT LOOSENING.
2. BASE PLATE HOLE DIAMETER AND PLATE WASHER SHALL BE SIZED PER "AISC MANUAL - TABLE 14-2" UNLESS NOTED OTHERWISE.
3. SEE "TYPICAL ANCHOR ROD DETAIL" FOR ADDITIONAL INFORMATION.



BP-1/BP-2

9 S101 TYPICAL COLUMN BASE PLATE - BRG. ON CONC.
NOT TO SCALE





10 S101 TYPICAL ANCHOR ROD DETAILS
NOT TO SCALE

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

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Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335

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Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
04.24.2025
NOT FOR CONSTRUCTION

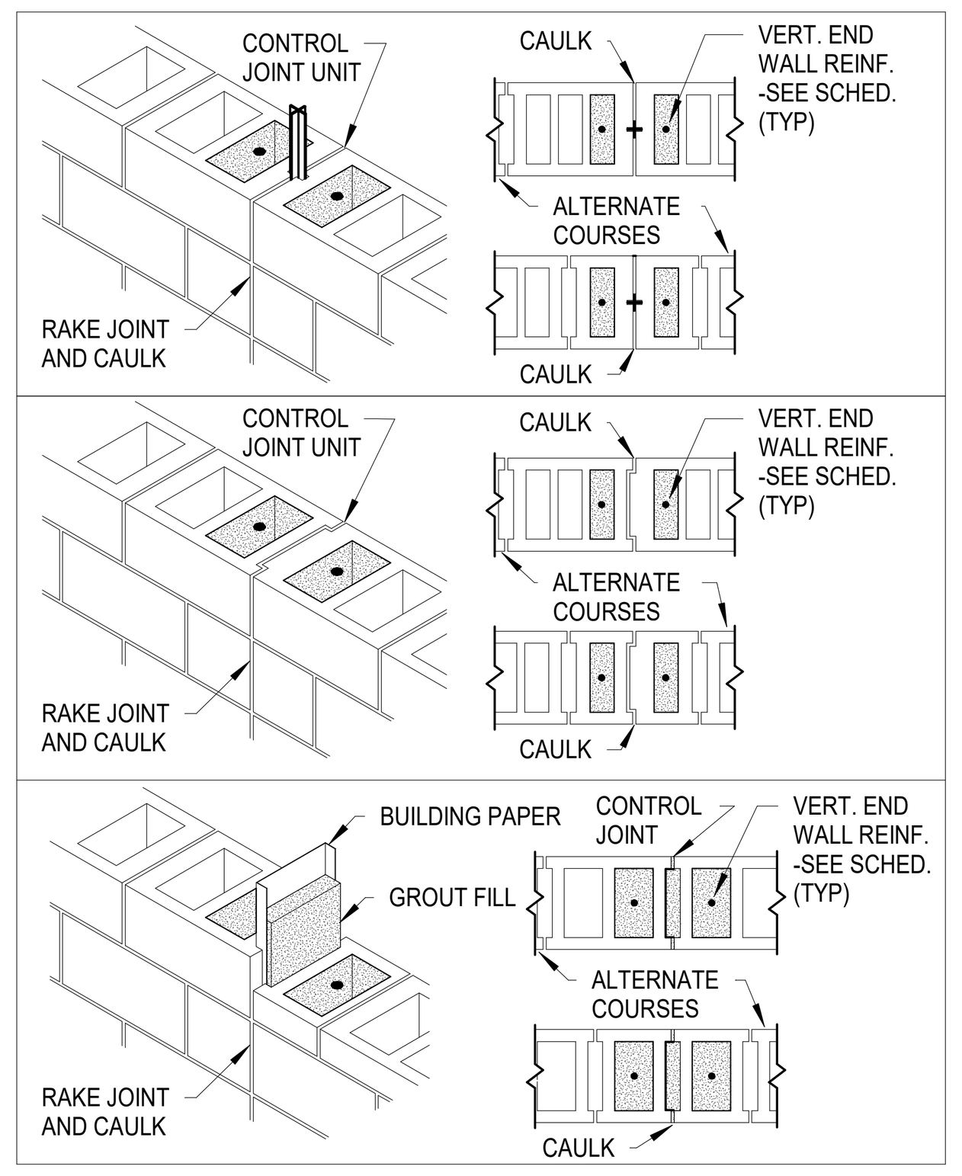
NO.	REVISIONS	DATE
1	questions	??????

DWG. TITLE

TYPICAL CONCRETE DETAILS

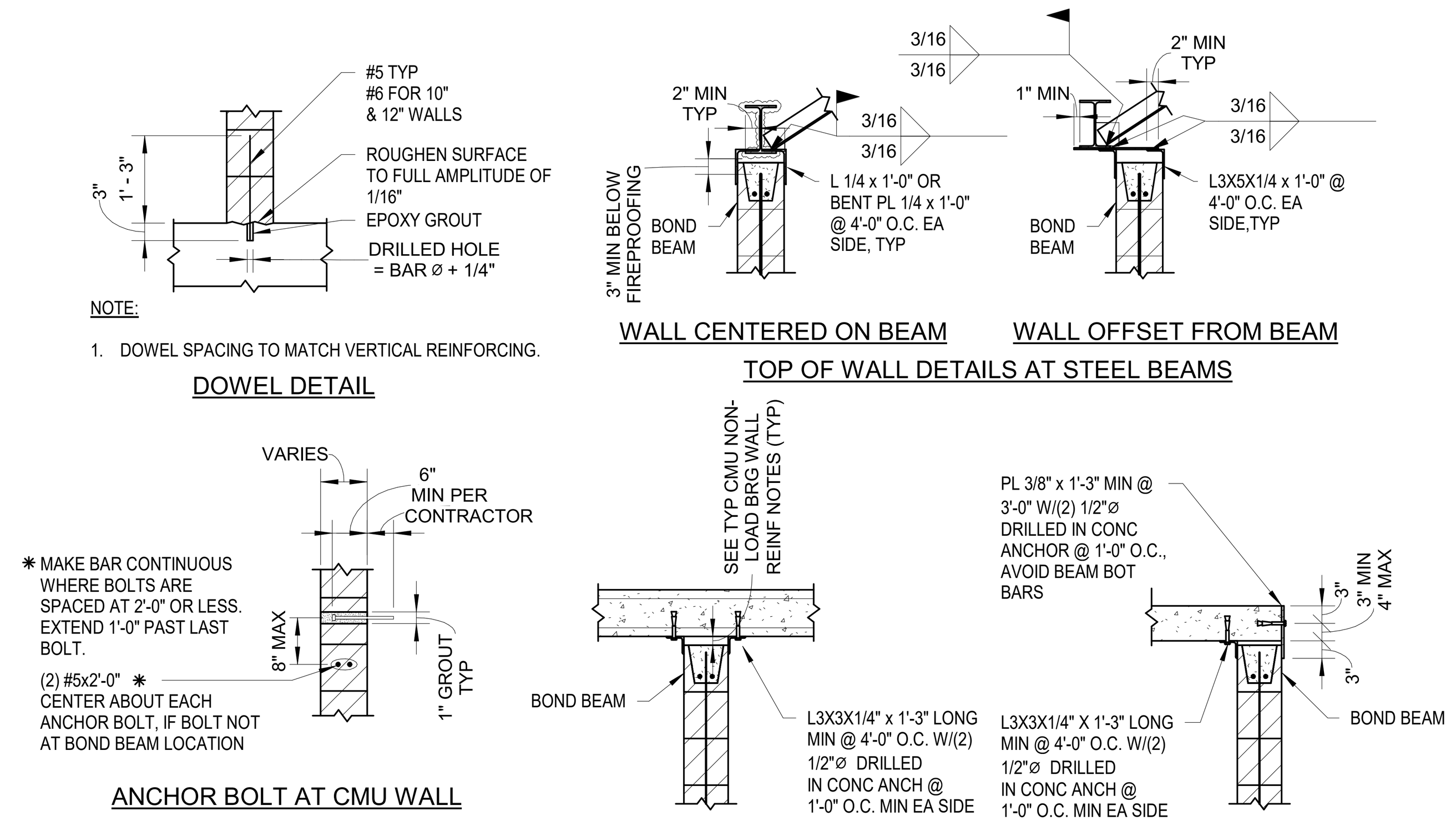
GENERIC SCALE BAR
0 1" 2"
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM
CHK.	TDR
PROJ. No.	24-042
DWG. No.	S101



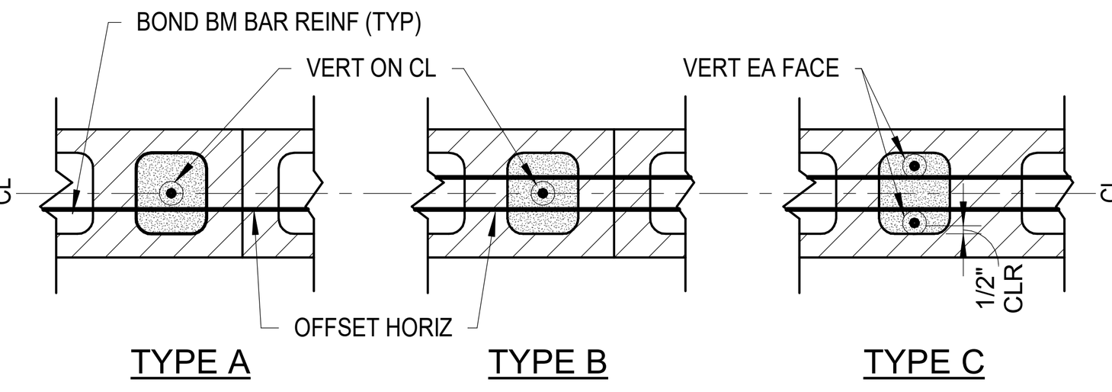
NOTE:
1. INTERRUPT 50% OF BOND BEAM AND LADDER TYPE REINFORCING AT CONTROL JOINT LOCATIONS (TYP)

1 / S102 TYPICAL CMU CONTROL JOINT METHODS
NOT TO SCALE



NOTE:
1. DOWEL SPACING TO MATCH VERTICAL REINFORCING.

2 / S102 TYPICAL CMU NON-LOAD BEARING WALL DETAILS
NOT TO SCALE



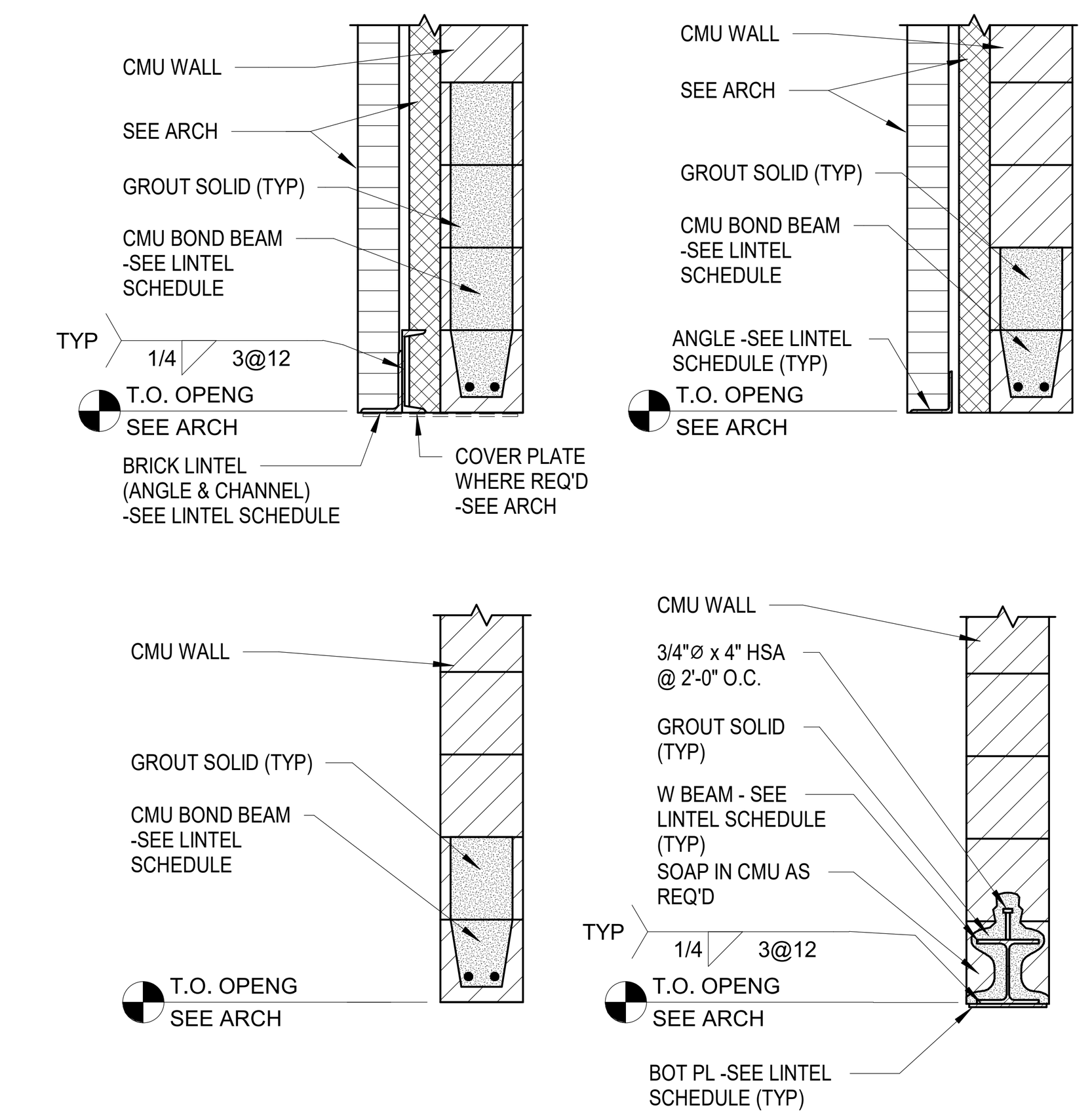
BAR LOCATION TYPES

NON-LOAD BEARING CMU REINFORCING SCHEDULE

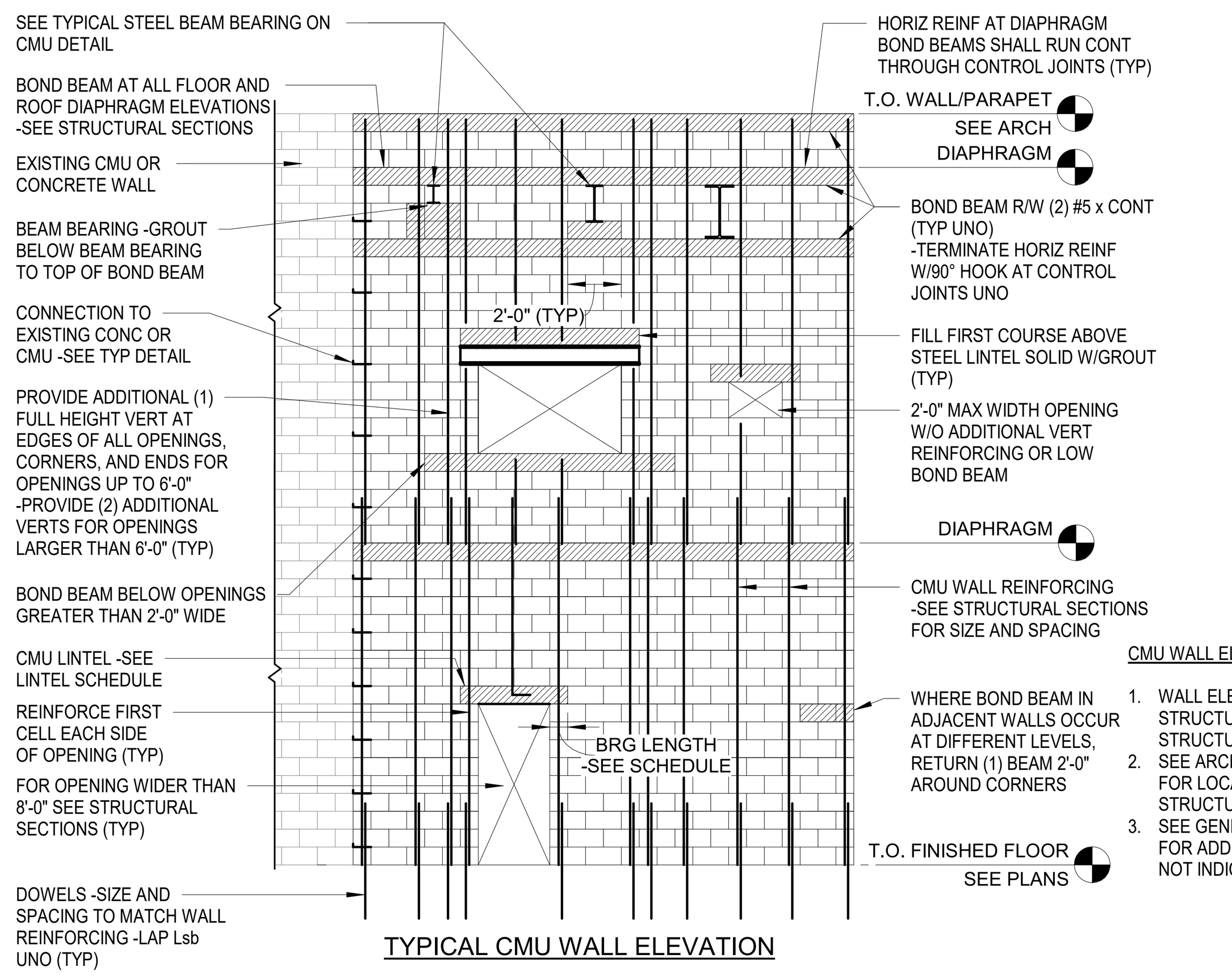
NOMINAL WALL THICKNESS	BOND BEAM REINF		VERTICAL REINFORCING			BOND BM BAR LOCATION TYPE	MAXIMUM WALL HEIGHT
	NUMBER AND SIZE	LAP LENGTH	NUMBER AND SIZE	SPACING	LAP LENGTH		
6"	(2) #5	30"	(1) #5	48"	30"	B	15'-0"
8"	(2) #5	30"	(1) #5	48"	30"	B	18'-0"
10"	(2) #5	30"	(1) #5	48"	30"	B	21'-0"
10"	(2) #5	30"	(2) #5	48"	30"	C	26'-0"
12"	(2) #5	30"	(2) #5	48"	30"	C	32'-0"

NOTES:
1. BOND BEAM REINFORCEMENT ABOVE AND BELOW OPENINGS SHALL BE CONTINUOUS (UNSPLICED) AND EXTENDED 2'-0" MINIMUM BEYOND OPENING.
2. WHERE BOND BEAM DOES NOT ALIGN WITH TOP OR BOTTOM OF OPENINGS, ADD A BOND BEAM COURSE EXTENDING 2'-0" BEYOND THE OPENING.
3. BOND BEAM BARS MAY BE USED TO ARRIVE AT TOTAL STEEL AREA REQUIRED BY REINFORCING SCHEDULE.
4. GROUT ALL CELLS THAT CONTAIN REINFORCEMENT OR EMBEDDED ITEMS.
5. PACK TOP COURSE CELLS SOLID WITH GROUT, TYPICAL.
6. PROVIDE 3/4" MINIMUM, 1 1/2" MAXIMUM CLEAR SPACE BETWEEN TOP WALL AND BOTTOM OF PLATE, DECK OR FIREPROOFING ON BEAMS.
7. FOR DRILLED IN CONCRETE ANCHORS IN BOTTOM OF SLAB, EMBED SO THAT THEY EXTEND A MINIMUM OF 1" ABOVE THE UPPER PART OF THE DECK FLUTES.
8. PROVIDE SPECIAL INSPECTION FOR DRILLED IN CONCRETE ANCHORS AT WALLS 16'-0" AND HIGHER.
9. LOCATE BRACE FOR BEAM BOTTOM FLANGE, AT EACH CONCRETE MASONRY UNIT TOP SUPPORT, AT 4'-0" O.C. MAXIMUM.

3 / S102 TYPICAL CMU NON-LOAD BEARING WALL REINFORCING SCHEDULE AND NOTES
NOT TO SCALE



4 / S102 TYPICAL SECTION @ LINTELS
NOT TO SCALE



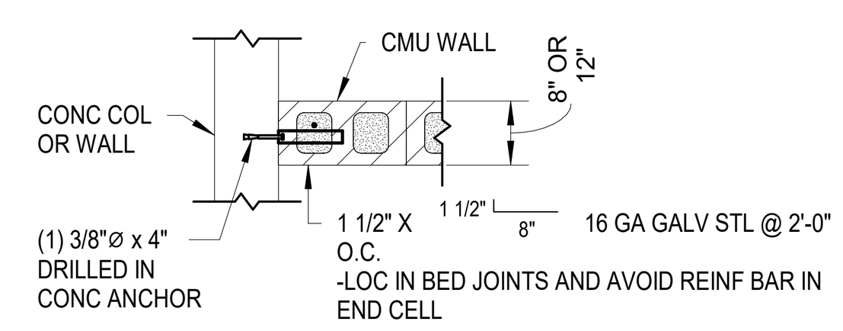
TYPICAL CMU WALL ELEVATION

NON LOAD-BEARING CMU LINTEL SCHEDULE

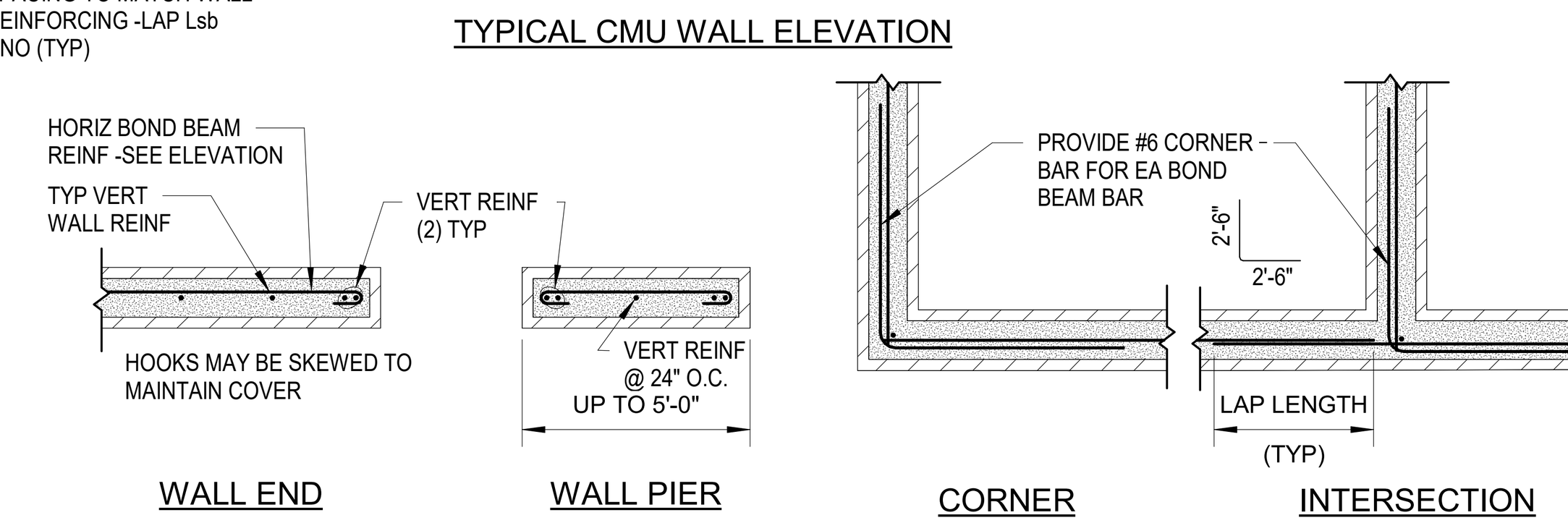
THICKNESS	CLEAR SPAN	DEPTH (INCH)	HORIZONTAL REINFORCING
8"	4'-0" OR LESS	8	(2) #5 BOT
	4'-0" TO 6'-4"	16	(2) #5 BOT
	6'-4" TO 8'-0"	16	(2) #6 BOT
10" OR 12"	4'-0" OR LESS	8	(2) #5 BOT
	4'-0" TO 6'-4"	16	(2) #5 BOT
	6'-4" TO 8'-0"	16	(2) #6 BOT

*SEE PLANS FOR LINTELS AND LINTEL SCHEDULE AT BEARING WALLS

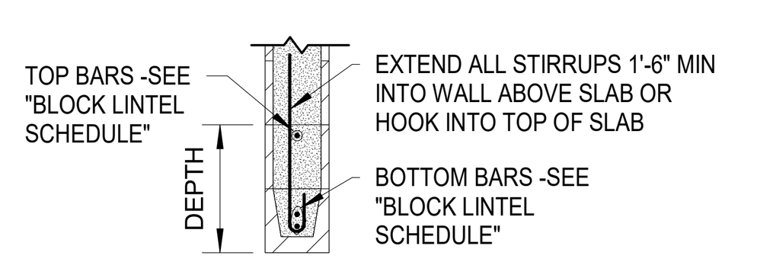
CMU WALL ELEVATION NOTES:
1. WALL ELEVATION IS TYPICAL FOR STRUCTURAL AND NON-STRUCTURAL CMU WALLS.
2. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NON-STRUCTURAL CMU WALLS.
3. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION NOT INDICATED.



CONNECTION TO EXIST CONCRETE OR CMU



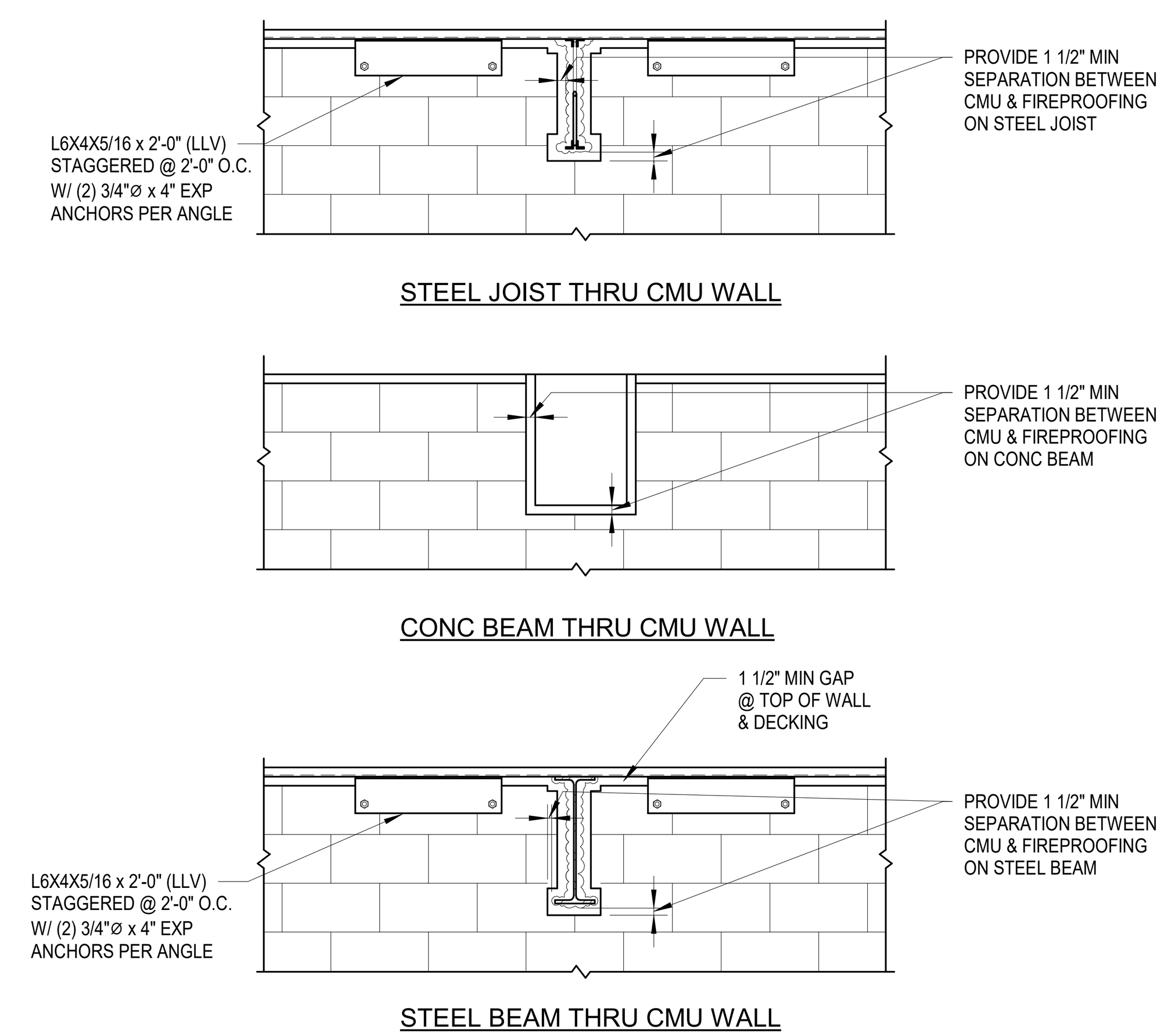
HORIZONTAL BEAM DETAILS



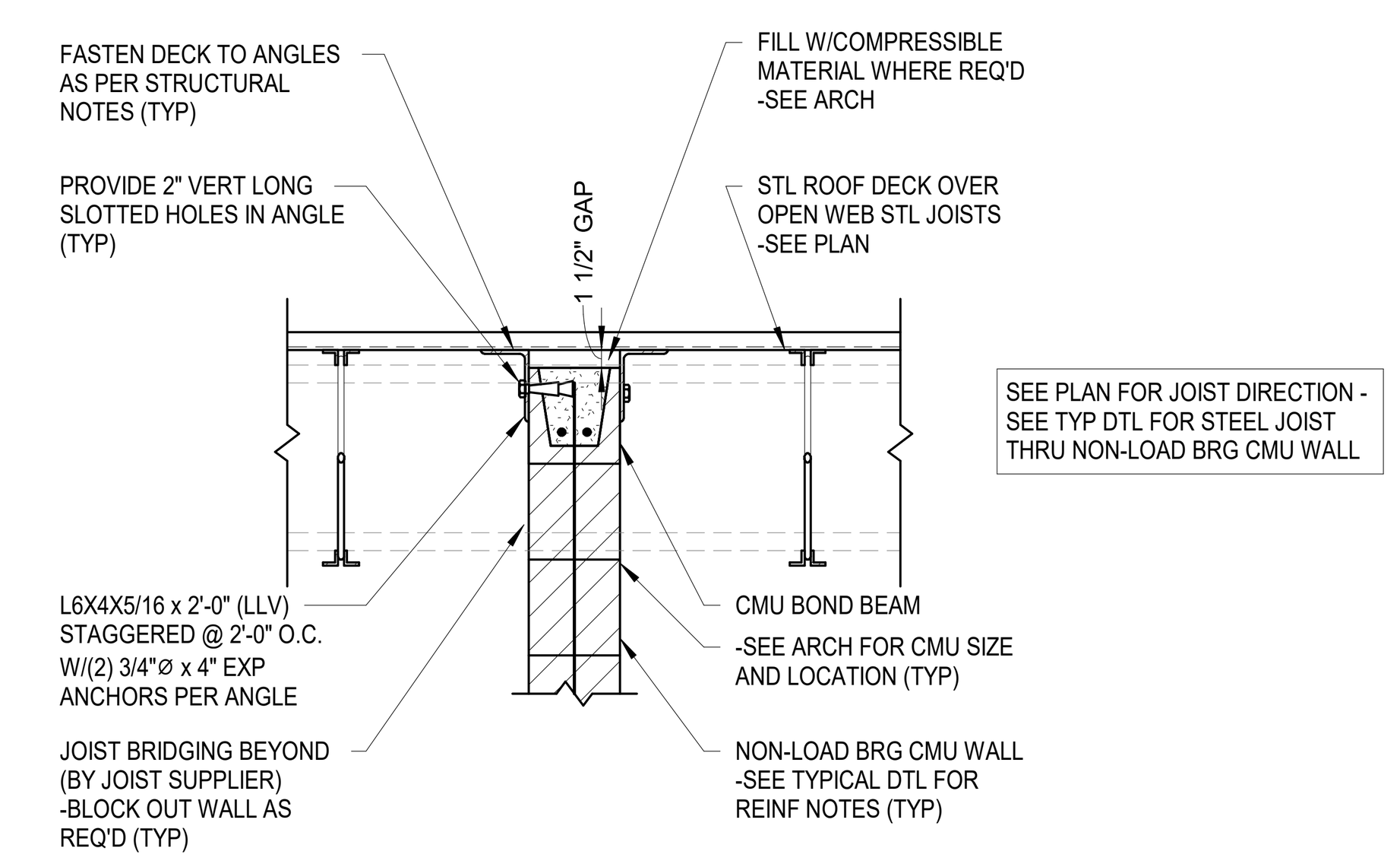
CMU LINTEL BEAM NOTES:
1. WHERE "BLOCK LINTEL SCHEDULE" INDICATES 16 INCHES DEPTH, USE 8 INCH DEEP LINTEL BLOCK AND REGULAR 8 INCH DEEP BLOCK WITH INNER WEBS REMOVED. FILL 16 INCH DEPTH WITH ONE MONOLITHIC CONCRETE GROUT POUR.

LINTEL BEAM DETAIL

5 / S102 TYPICAL CMU WALL ELEVATION AND DETAILS
NOT TO SCALE



6 / S102 TYPICAL CMU NON-LOAD BEARING WALL
NOT TO SCALE

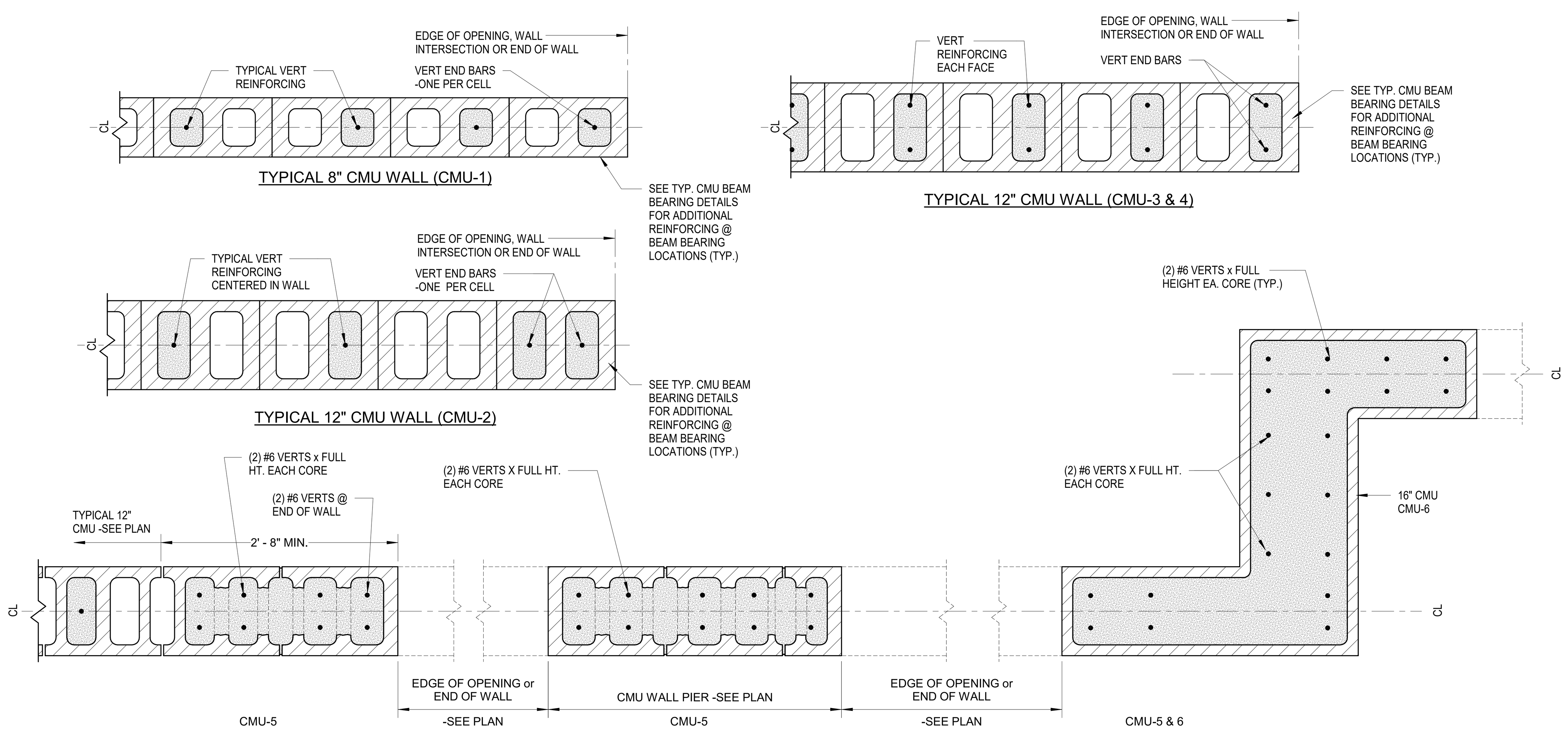


7 / S102 TYPICAL CMU NON-LOAD BEARING WALL DETAIL
NOT TO SCALE

CMU REINFORCING SCHEDULE

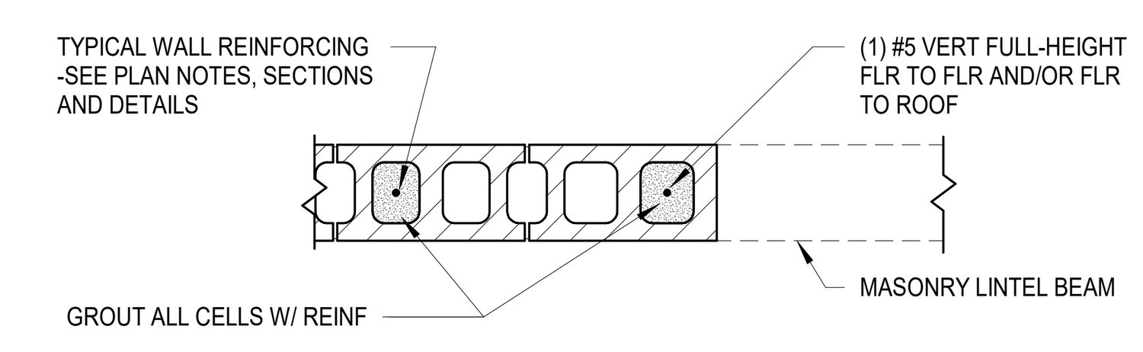
WALL MARK (SEE PLAN)	NOMINAL WALL THICKNESS	BOND BEAM REINF		VERTICAL REINF		VERT END WALL REINF
		NUMBER AND SIZE	SPACING	NUMBER AND SIZE	SPACING	NUMBER AND SIZE
CMU-1	8"	(2) #5	10'-0" O.C. U.N.O.	(1) #5	32" O.C.	(1) #5
CMU-2	12"	(2) #5	10'-0" O.C. U.N.O.	(1) #5	32" O.C.	(2) #5
CMU-3	12"	(2) #5	10'-0" O.C. U.N.O.	(2) #5	24" O.C.	(2) #5
CMU-4	12"	(2) #5	10'-0" O.C. U.N.O.	(2) #6	16" O.C.	(2) #6
CMU-5	12"	(2) #5	10'-0" O.C. U.N.O.	(2) #6	8" O.C.	NA
CMU-6	16"	(2) #5	10'-0" O.C. U.N.O.	(2) #6	8" O.C.	NA

NOTES:
1. ALL 12" CMU TO BE CMU WALL TYPE CMU-2 UNLESS NOTED OTHERWISE ON PLAN.
2. ALL CMU WALLS BETWEEN WALL PIERS IN APPARATUS BAY ABOVE OPENINGS SHALL BE CMU-3 UNLESS NOTED OTHERWISE. EXTEND HORIZONTAL BOND BEAM REINFORCING THRU CMU PIERS.
3. ALL CMU SHALL HAVE A COMPRESSIVE STRENGTH OF F'M = 2,500 PSI
4. SEE ADDITIONAL REINFORCING REQUIREMENTS AT TIE-OFF ATTACHMENT. VERIFY LOCATION OF TIE-OFF ATTACHMENT WITH ARCHITECTURAL.
5. BOND BEAM REINFORCEMENT ABOVE AND BELOW OPENINGS SHALL BE CONTINUOUS (UNSPLICED) AND EXTENDED 2'-0" MINIMUM BEYOND OPENING.
6. WHERE BOND BEAM DOES NOT ALIGN WITH TOP OR BOTTOM OF OPENINGS, ADD A BOND BEAM COURSE EXTENDING 2'-0" BEYOND THE OPENING.
7. LOCATE SCHEDULED BARS FROM TABLE EACH SIDE OF EACH OPENING, EACH CORNER AND WALL ENDS
8. BOND BEAM BARS MAY BE USED TO ARRIVE AT TOTAL STEEL AREA REQUIRED BY REINFORCING SCHEDULE.
9. GROUT ALL CELLS THAT CONTAIN REINFORCEMENT OR EMBEDDED ITEMS.
10. BOND BEAMS SHALL BE LOCATED AT EACH FLOOR LEVEL AND INTERMEDIATE STAIR LANDING ELEVATIONS AND AT SPACING SPECIFIED IN SCHEDULE. SEE THE ELEVATION ON TYPICAL LOAD BEARING CMU WALL FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
11. BOND BEAM SPACING SHOWN ABOVE CAN BE REDUCED TO ALIGN WITH LINTEL BEAMS AND ADDITIONAL HORIZONTAL REINFORCING SHOWN IN DETAILS.



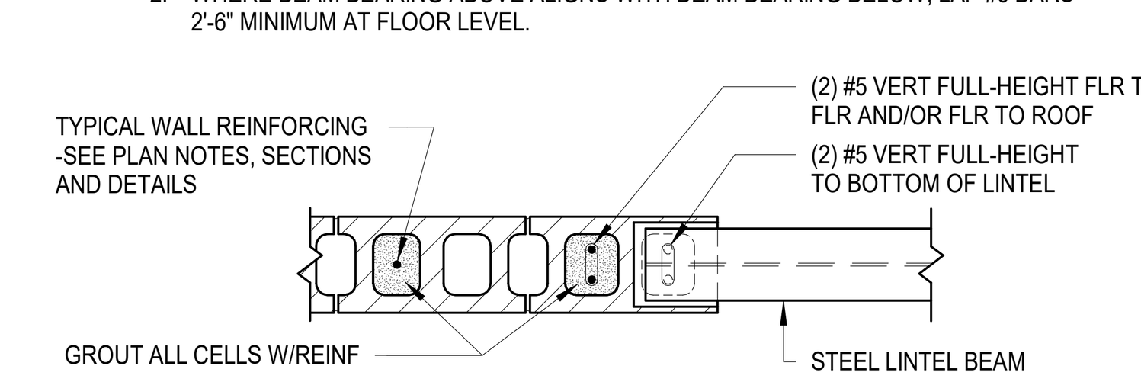
CMU WALL PIERS ADJACENT TO OVERHEAD DOORS - APPARATUS BAY (CMU-5 & 6)

8 / S102 TYPICAL CMU LOAD BEARING WALL REINFORCING SCHEDULE AND NOTES
NOT TO SCALE



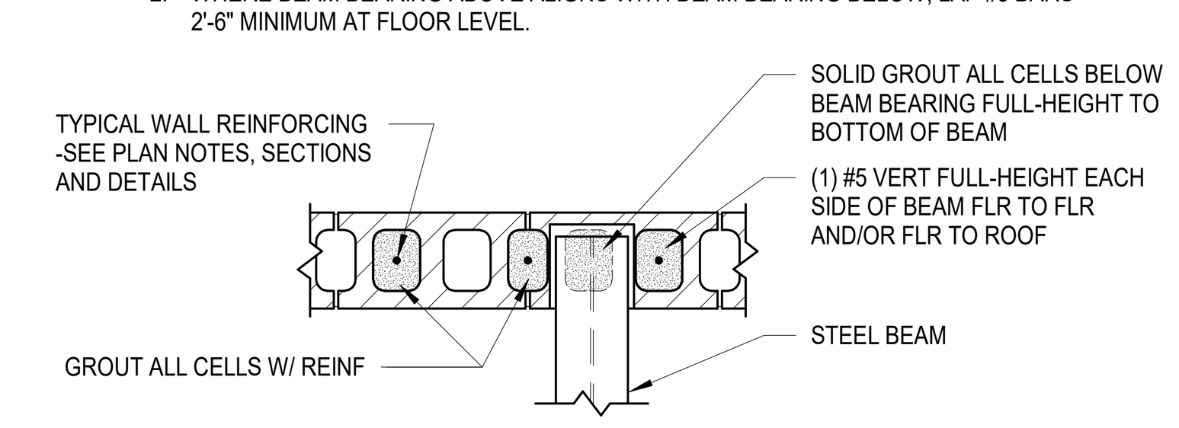
PLAN VIEW @ CMU LINTEL BEAM

NOTES:
1. EXTEND #5 VERT. BARS 2'-0" MINIMUM IN FOUNDATION WALL BELOW OR EPOXY DOWEL PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
2. WHERE BEAM BEARING ABOVE ALIGNS WITH BEAM BEARING BELOW, LAP #5 BARS 2'-6" MINIMUM AT FLOOR LEVEL.



PLAN VIEW @ STEEL LINTEL BEAM

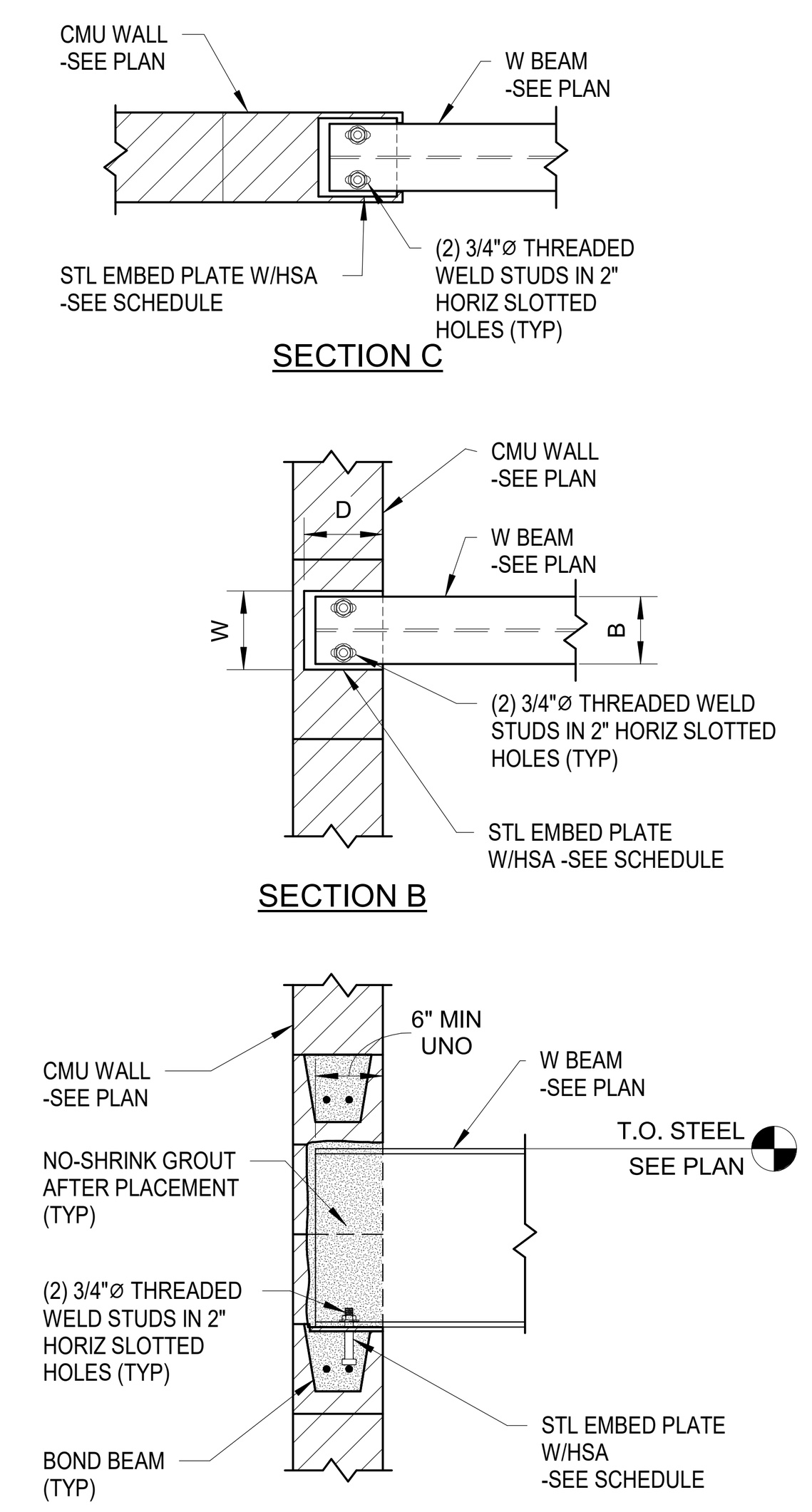
NOTES:
1. EXTEND #5 VERT BARS 2'-0" MINIMUM IN FOUNDATION WALL BELOW OR EPOXY DOWEL PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
2. WHERE BEAM BEARING ABOVE ALIGNS WITH BEAM BEARING BELOW, LAP #5 BARS 2'-6" MINIMUM AT FLOOR LEVEL.



PLAN VIEW @ STEEL BEAM

NOTES:
1. EXTEND #5 VERT BARS 2'-0" MINIMUM IN FOUNDATION WALL BELOW OR EPOXY DOWEL PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
2. WHERE BEAM BEARING ABOVE ALIGNS WITH BEAM BEARING BELOW, LAP #5 BARS 2'-6" MINIMUM AT FLOOR LEVEL.

9 / S102 TYPICAL CMU WALL REINFORCING AT BEAM BEARING
NOT TO SCALE



EMBED PLATE SCHEDULE
(TYP UNLESS NOTED OTHERWISE ON PLANS)

BEAM WIDTH	BASE PLATE SIZE (TxWxD)		# OF HSA 1/2"Øx4"
	8" CMU	12" CMU	
B <=4"	3/8"x6"x6"	3/8"x6"x6"	1 CTR'D
4"< B <= 6"	1/2"x7"x7"	1/2"x7"x7"	2
6"< B <= 8"	1/2"x8"x7"	1/2"x10"x7"	2
8"< B <= 10"	- - -	5/8"x12"x11"	3
10"< B <= 12"	- - -	5/8"x14"x11"	3
12"< B <= 14"	- - -	5/8"x16"x11"	4
K-SERIES JST	3/8"x7"x7"	3/8"x7"x7"	2
LH-SERIES JST	1/2"x10"x7"	1/2"x10"x7"	2

NOTES:
1. SEE "TYPICAL CMU WALL REINFORCING AT BEAM BEARING" DETAIL FOR ADDITIONAL INFORMATION.
2. PROVIDE STANDARD HOLE IN LIEU OF SLOTTED HOLES WHERE BEAM IS NOTED AS DRAG STRUT ON PLAN.

10 / S102 TYPICAL STEEL BEAM BEARING ON CMU DETAILS
NOT TO SCALE

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

wendel
Five Bugles Design
+
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335
Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
04.24.2025
NOT FOR CONSTRUCTION

NO.	REVISIONS	DATE
1	questions	??????

DWG. TITLE
TYPICAL CMU DETAILS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025		
SCALE	As indicated		
DWN.	HMM	CHK.	TDR
PROJ. No.	24-042		
DWG. No.	S102		

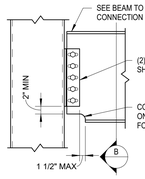
TABLE A		
WIDE-FLANGE BEAM DEPTH	BUILT-UP BEAM DEPTH (INCH)	MINIMUM NUMBER OF BOLTS REQUIRED
W8, W10	8 TO 10	2
W12, W14	TO 14	3
W16, W18	TO 18	4
W21, W24	TO 24	5
W27	TO 27	6
W30	TO 30	7
W33	TO 33	8
W36	TO 36	9
W40, W44	TO 40	10

NOTES:

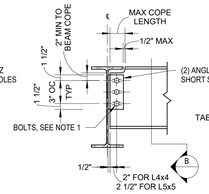
THESE NOTES APPLY TO ALL CONNECTIONS UNLESS NOTED OTHERWISE.

1. SEE PLANS FOR BEAM REACTIONS WHERE NO DETAIL IS NOTED. USE APPROPRIATE TYPICAL DETAIL.
2. THE MINIMUM NUMBER OF BOLTS IN A BEAM WEB CONNECTION SHALL BE SHOWN IN "TABLE A".
3. BEAMS SHALL HAVE STANDARD ROUND HOLES (STD), AND SHEAR TAB PLATES SHALL HAVE HORIZONTAL SHORT SLOTTED HOLES (SSL) UNLESS NOTED OTHERWISE.
4. BOLTS IN CONNECTIONS OF BEAM TO BEAM / GIRDER SHALL BE SNUG TIGHT UNLESS SPECIFICALLY CALLED OUT AS SLIP CRITICAL (SC.).
5. WHEN CONDITIONS VARY FROM THOSE SHOWN IN THE "TYPICAL STEEL DETAILS", OR WHEN THE CONTRACTOR WANTS TO USE ALTERNATE DETAILS: DETAIL CONSTRUCTION ACCORDING TO THE "AISC MANUAL OF STEEL CONSTRUCTION". SUBMIT CALCULATIONS FOR ENGINEER'S APPROVAL.
6. CONTRACTOR SHALL COORDINATE THE BOLT SELECTION AND USE BETWEEN FABRICATOR AND ERECTOR.
7. WHEN THE ACTUAL WEB THICKNESS IS LESS THAN THAT SHOWN IN THE APPLICABLE CONNECTION TABLE, SEE "TYPICAL WEB DOUBLER" DETAIL OR SCALE THE MAXIMUM REACTION BY THE RATIO OF ACTUAL WEB THICKNESS TO MINIMUM WEB THICKNESS.
8. SEE "GENERAL NOTES FOR COPED BEAMS" FOR ADDITIONAL REQUIREMENTS WHEN BEAMS ARE COPED.

1 S103 GENERAL NOTES FOR STEEL CONNECTIONS



BEAM TO COLUMN FLANGE

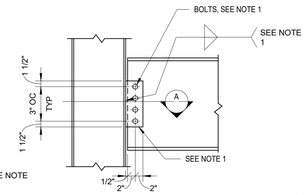


BEAM TO BEAM

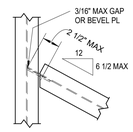
NOTES:

1. SEE "TABLE B" FOR ADDITIONAL CONNECTION REQUIREMENTS.
2. WHEN REQUIRED NUMBER OF BOLTS DOES NOT FIT WITHIN BEAM DEPTH, OR WHEN THE REACTION IS MORE THAN THE MAXIMUM IN "TABLE B", USE DETAIL "DOUBLE ANGLE SHEAR CONNECTIONS".
3. FOR SKEWED BEAMS NOT MEETING THE LIMITS SHOWN IN SECTION, SEE "TYPICAL SKEWED BEAM CONNECTION".
4. SEE "GENERAL NOTES FOR COPED BEAMS".

2 S103 SINGLE PLATE SHEAR CONNECTIONS - TYPE C1
NOT TO SCALE



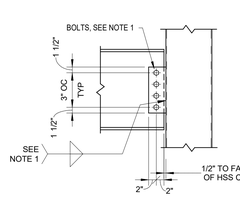
BEAM TO COLUMN FLANGE



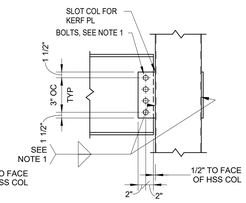
A SKEWED BEAM

TABLE B								
	MAXIMUM REACTION				NO COPE	TOP COPE ONLY		TOP & BOTTOM COPE
					Fy = 50 KSI	Fy (BEAM) = 50 KSI		Fy (BEAM) = 50 KSI
	NUMBER OF BOLTS	MAXIMUM REACTION (KIPS)	PLATE THICK (A36) (INCH)	WELD SIZE (INCH)	MINIMUM WEB THICK (INCH)	MINIMUM WEB THICK (INCH)	MAXIMUM COPE LENGTH (INCH)	MINIMUM WEB THICK (INCH)	MAXIMUM COPE LENGTH (INCH)
3/4" ø A325 BOLTS	2	13	5/16	1/4	0.17	0.17	2 1/2	0.17	0 1/2
	3	24	5/16	1/4	0.18	0.20	3 1/2	0.20	2
	4	41	5/16	1/4	0.18	0.24	4	0.25	3 1/2
	5	51	5/16	1/4	0.18	0.24	4	0.25	4
	6	62	3/8	5/16	0.18	0.25	4 1/2	0.25	4
	7	72	3/8	5/16	0.18	0.25	5	0.25	5
	8	83	3/8	5/16	0.18	0.25	6 1/2	0.25	8
	9	93	1/2	3/8	0.18	0.25	7 1/2	0.25	8
	10	99	1/2	3/8	0.17	0.24	7 1/2	0.24	7 1/2
	11	109	1/2	3/8	0.17	0.24	7	0.24	7 1/2
	12	114	1/2	3/8	0.16	0.23	8 1/2	0.23	7 1/2

3 S103 SINGLE PLATE SHEAR CONNECTIONS - TYPE C1A
NOT TO SCALE



SINGLE SHEAR PLATE CONN



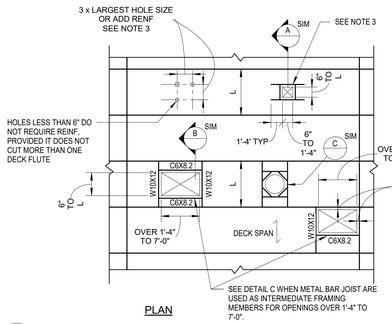
KERF PLATE CONN

NOTES:

1. SEE "TABLE B" FOR ADDITIONAL CONNECTION REQUIREMENTS AND ALLOWABLE LOADS.
2. WHEN SINGLE PLATE CONNECTION EXCEEDS EITHER OF THE LIMITS OF "TABLE C" PROVIDE KERF PLATE CONNECTION.

TABLE G		
	RECTANGULAR HSS (Fy = 46 KSI)	
CONNECTION PL THICK (IN)	MIN WALL THICK (IN)	MAX WALL WIDTH
5/16	0.22	9
3/8	0.28	11
1/2	0.34	14

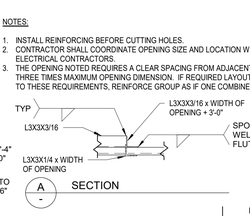
4 S103 DOUBLE ANGLE SHEAR CONNECTIONS - TYPE C2
NOT TO SCALE

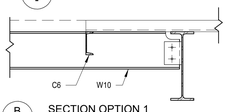


PLAN

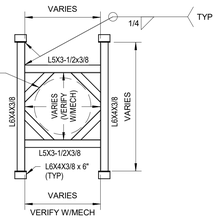
NOTES:

1. INSTALL REINFORCING BEFORE CUTTING HOLES.
2. CONTRACTOR SHALL COORDINATE OPENING SIZE AND LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
3. THE OPENING NOTED REQUIRES A CLEAR SPACING FROM ADJACENT OPENINGS OF THREE TIMES MAXIMUM OPENING DIMENSION. IF REQUIRED LAYOUT CANNOT CONFORM TO THESE REQUIREMENTS, REINFORCE GROUP AS IF ONE COMBINED PENETRATION.





B SECTION OPTION 1



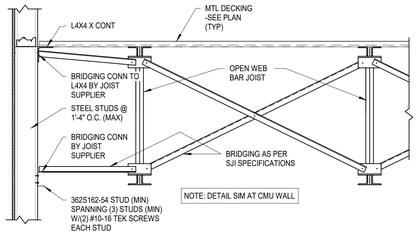
REFER TO MECH DRAWINGS FOR ALL OPENING LOCATIONS AND SIZES

NOTE:

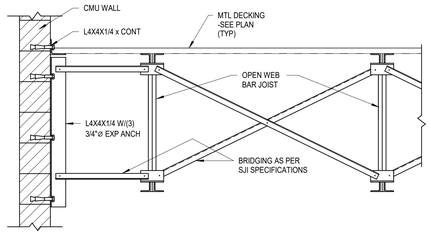
WHEN JOIST SPACING IS GREATER THAN 5'-0" USE L8X8X1/2 PRIMARY FRAMING MEMBERS.

C TYP ROOF OPENING FRAME OPTION 2

8 S103 TYPICAL ROOF DECK OPENING - 7'-0" OPENINGS & LESS
NOT TO SCALE



11 S103 TYPICAL CROSS BRIDGING DETAIL AT STEEL STUD WALL
NOT TO SCALE

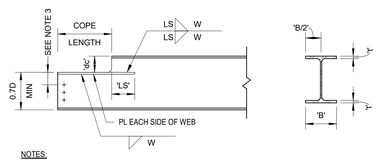


12 S103 TYPICAL CROSS BRIDGING DETAIL AT CMU
NOT TO SCALE

TABLE C									
	MAXIMUM REACTION				NO COPE	TOP COPE ONLY		TOP & BOTTOM COPE	
					Fy = 50 KSI	Fy (BEAM) = 50 KSI		Fy (BEAM) = 50 KSI	
	NUMBER OF BOLTS	MAXIMUM REACTION (KIPS)	ANGLE THICK (A36) (INCH)	WELD SIZE (INCH)	MINIMUM WEB THICK (INCH)	MINIMUM WEB THICK (INCH)	MAXIMUM COPE LENGTH (INCH)	MINIMUM WEB THICK (INCH)	MAXIMUM COPE LENGTH (INCH)
3/4" ø A325 BOLTS	2	16	3/8	5/16	0.15	0.20	1 1/2	0.21	0 1/2
	3	32	3/8	5/16	0.23	0.26	3 1/2	0.26	2
	4	48	3/8	5/16	0.28	0.29	5	0.29	3 1/2
	5	62	3/8	5/16	0.30	0.30	5	0.30	4
	6	87	3/8	5/16	0.35	0.35	6 1/2	0.35	4
	7	113	3/8	5/16	0.36	0.39	6	0.39	5
	8	156	3/8	5/16	0.36	0.47	13	0.47	8
	9	189	3/8	5/16	0.36	0.50	15 1/2	0.51	9
	10	210	3/8	5/16	0.36	0.50	16	0.51	10
	11	231	3/8	5/16	0.36	0.50	15	0.51	12
	12	251	3/8	5/16	0.36	0.50	18	0.51	14

MINIMUM SUPPORT THICKNESS WHEN WELDED TO SUPPORT	
BOLT ø	Fy = 50 KSI
3/4"	0.24
7/8"	0.24
1"	0.36

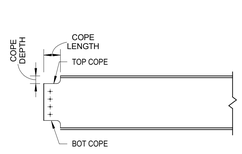
5 S103 TYPICAL COPE WEB STIFFENER
NOT TO SCALE



NOTES:

1. "W" SHALL BE 0.35I OR AISC MINIMUM.
2. "LS" SHALL BE THE GREATER OF THREE TIMES THE PLATE WIDTH OR TWO TIMES THE COPE DEPTH (dc).
3. ADJUST BOLT LOCATION AS REQUIRED.

6 S103 TYPICAL COPED BEAM DETAIL
NOT TO SCALE

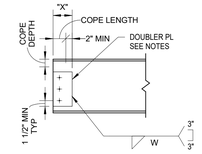


NOTES:

THESE NOTES APPLY TO ALL COPED BEAMS UNLESS NOTED OTHERWISE:

1. COPED BEAMS SHALL BE CHECKED FOR MINIMUM WEB THICKNESS AND MAXIMUM COPE LENGTH PER APPLICABLE TABLE. COPE LENGTH IS AS SHOWN IN THE CONNECTION DETAILS.
2. MAXIMUM TOP COPE DEPTH IS 2" FOR BEAM DEPTHS UP TO W18, 3" FOR BEAM W21 AND DEEPER. WHEN ACTUAL COPE DEPTH EXCEEDS MAXIMUM COPE DEPTH, ADD STIFFENERS PER "TYPICAL COPE WEB STIFFENER" DETAIL.
3. WHEN ACTUAL COPE LENGTH IS GREATER THAN SHOWN IN APPLICABLE TABLE, SEE "TYPICAL COPE WEB STIFFENER" DETAIL OR REDUCE THE MAXIMUM REACTION BY THE RATIO OF MAXIMUM COPE LENGTH TO ACTUAL COPE LENGTH. THESE REDUCTIONS ARE NOT ALLOWED BELOW THE HEAVY LINES SHOWN IN THE TABLES.

7 S103 TYPICAL WEB DOUBLER
NOT TO SCALE



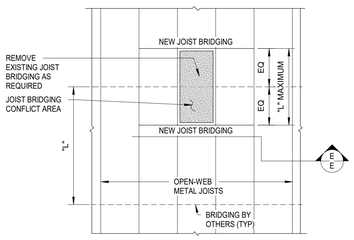
NOTES:

1. USE THE FOLLOWING FORMULA TO DETERMINE DOUBLER PLATE THICKNESS: (MINIMUM WEB THICKNESS PER CONNECTION "TABLE B" OR "TABLE C") MINUS (BEAM WEB THICKNESS) PLUS (COEFFICIENT).

X (INCHES)	COEFFICIENT (INCHES)
5	1/8
7	1/4
10 1/2	3/8

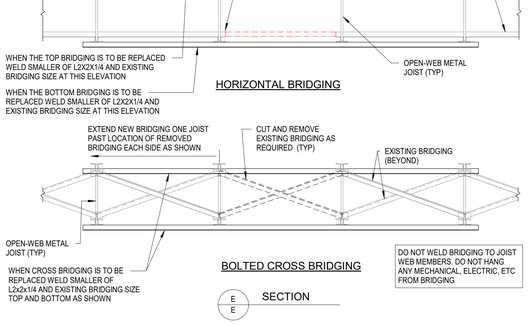
2. MINIMUM PLATE THICKNESS SHALL BE 1/4 INCH: MINIMUM WIDTH 5 INCHES.
3. PLATE SHALL BE SAME GRADE STEEL AS BEAM.
4. WELD SIZE (W) SHALL BE 1/16 INCH LESS THAN PLATE THICKNESS.

9 S103 TYPICAL JOIST BRIDGING CONFLICT
NOT TO SCALE



PLAN

INSTALL NEW BRIDGING PRIOR TO THE REMOVAL OF EXISTING BRIDGING



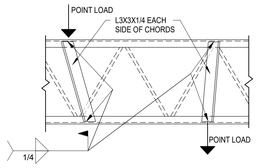
HORIZONTAL BRIDGING

BOLTED CROSS BRIDGING

DO NOT WELD BRIDGING TO JOIST WEB MEMBERS. DO NOT HANG ANY MECHANICAL, ELECTRIC, ETC FROM BRIDGING

E SECTION E

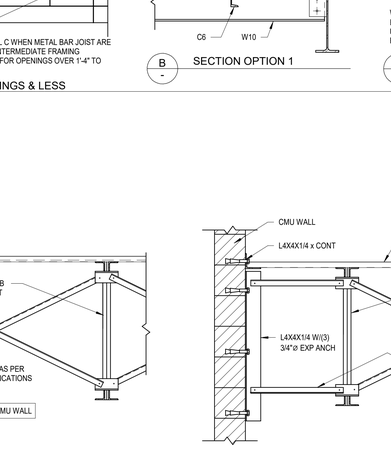
10 S103 POINT LOAD REINFORCEMENT SECTION
NOT TO SCALE



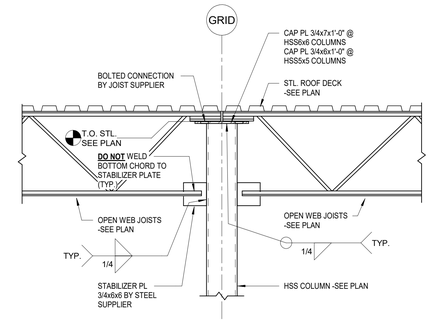
THE POINT LOAD AS SHOWN SHALL BE PLACED AT A PANEL POINT OR FIELD WELD DOUBLE ANGLES, AS SHOWN, FROM THE POINT OF LOAD TO THE NEAREST PANEL POINT ON THE OPPOSITE CHORD.

NOTE:

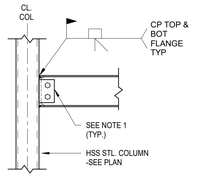
1. POINT LOAD REINFORCING IS NOT REQUIRED IF THE LOAD IS LESS THAN 100 POUNDS.



13 S103 TYPICAL BEAM SPLICE DETAIL @ ROOF/FLOOR
NOT TO SCALE



14 S103 SECTION @ COLUMN AT JOIST BRG.
NOT TO SCALE



NOTES:

1. SEE SINGLE PLATE SHEAR CONNECTION FOR ADDITIONAL CONNECTION REQUIREMENTS.
2. CP = COMPLETE PENETRATION WELD-ULTRASONIC TEST

15 S103 TYPICAL MOMENT CONNECTION @ HSS COLUMN
3/4" = 1'-0"

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

wendel
Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335

Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
04.24.2025
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NO.	REVISIONS	DATE
1	questions	???????

DWG. TITLE

TYPICAL STEEL DETAILS

GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

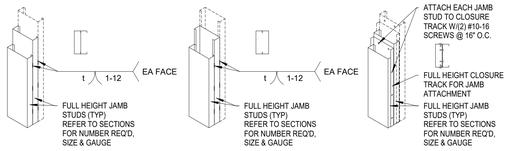
DATE	04.24.2025
SCALE	As indicated
DWN.	HMM
CHK.	TDR
PROJ. No.	24-042
DWG. No.	S103

FASTENER NOTES:

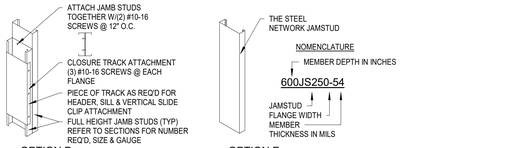
1. ALL PDF'S ATTACHED TO STRUCTURAL STEEL ARE TO BE HILTI X-EDNI, RAMSET 1500/1600, POWERS DRIVE PIN, OR EQUAL. TYPICAL THRU-OUT.
2. ALL PDF'S ATTACHED TO CONCRETE ARE TO BE HILTI X-DNI, RAMSET 1500/1600, POWER DRIVE PIN, OR EQUAL. TYPICAL THRU-OUT.
3. ALL SCREWS ARE TO BE ITW BUILDEX TEKS OR EQUAL. TYPICAL THRU-OUT.

MILS TO GAUGE CONVERSION CHART	
MILS	GAUGE
33 MILS	20 GAUGE
43 MILS	18 GAUGE
54 MILS	16 GAUGE
68 MILS	14 GAUGE
97 MILS	12 GAUGE

WELD THICKNESS	
STEEL STUD THICKNESS IN MILS	WELD THICKNESS (t)
33 MILS	NO WELDING
43 MILS	1/8"
54 MILS	1/8"
68 MILS	1/8"
97 MILS	5/32"



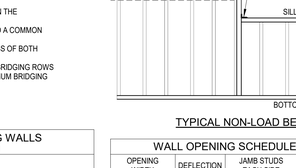
OPTION A | OPTION B | OPTION C



OPTION D | OPTION E

1 S104 TYPICAL JAMB STUD ATTACHMENT DETAILS - CONTRACTORS OPTION
NOT TO SCALE

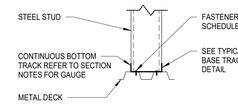
2 S104 TYPICAL BRIDGING ATTACHMENT DETAILS - CONTRACTORS OPTION
NOT TO SCALE



OPTION B

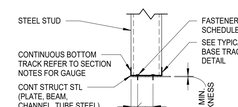
NOTE:
1. 6" MIN LENGTH FOR TRACK OR GUSSET PLATE
2. TRACK OR GUSSET PLATE TO BE SAME WIDTH AND GAUGE AS STUD

3 S104 TYPICAL STUD BASE DETAILS
NOT TO SCALE



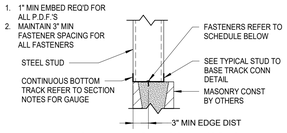
BASE DETAIL @ METAL DECK

LOCATION	NUMBER OF FASTENERS REQ'D
TYPICAL FRAMING	(2) #10-16 SCREWS @ 8" O.C.
JAMB STUDS	(4) #10-16 SCREWS @ EACH JAMB



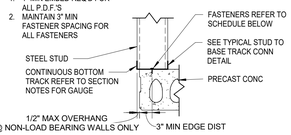
BASE DETAIL @ STRUCTURAL STEEL

LOCATION	NUMBER OF FASTENERS REQ'D
TYPICAL FRAMING	(2) 0.145" DIA. P.D.F.'S @ EACH STUD
JAMB STUDS	(4) 0.145" DIA. P.D.F.'S @ EACH JAMB



BASE DETAIL @ MASONRY/CONC.

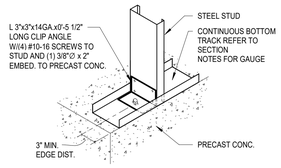
LOCATION	NUMBER OF FASTENERS REQ'D
TYPICAL FRAMING	(2) 0.145"ø P.D.F.'S @ EACH STUD
JAMB STUDS	(4) 0.145"ø P.D.F.'S @ EACH JAMB

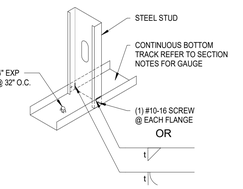


BASE DETAIL @ PRECAST CONCRETE

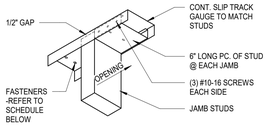
LOCATION	NUMBER OF FASTENERS REQ'D
TYPICAL FRAMING	(2) 0.145"ø P.D.F.'S @ EACH STUD
JAMB STUDS	(4) 0.145"ø P.D.F.'S @ EACH JAMB

4 S104 STUD BASE CONNECTION DETAIL
NOT TO SCALE





5 S104 TYPICAL STUD TO BASE TRACK CONNECTION
NOT TO SCALE



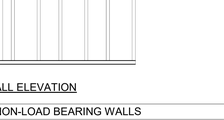
LOCATION	NUMBER OF FASTENERS REQUIRED	EDGE DISTANCE	FASTENER SPACING
STRUCTURAL STEEL	(4) 0.145"ø P.D.F.'S (2) EACH SIDE OF JAMB	1/2" MIN.	1 1/2" MIN.
METAL DECK	(4) #10-16 SCREWS (2) EACH SIDE OF JAMB	N/A	1 1/2" MIN.
PRECAST CONCRETE	(4) 0.145"ø P.D.F.'S (2) EACH SIDE OF JAMB	3" MIN.	3" MIN.

6 S104 TYPICAL STUD TO TOP TRACK CONNECTION
NOT TO SCALE

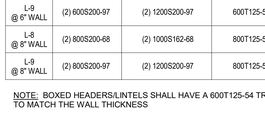
7 S104 TYPICAL PUNCHOUT REINFORCING
NOT TO SCALE

OPTION A

8 S104 TOP DETAIL @ STEEL ANGLE
NOT TO SCALE

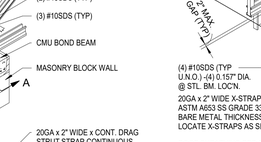


9 S104 SLIP TRACK TO STEEL ANGLE
NOT TO SCALE



10 S104 SLIP TRACK TO PRECAST
NOT TO SCALE

11 S104 SLIP TRACK TO STEEL BEAM
NOT TO SCALE



SHEAR WALL SCHEDULE

SHEAR WALL TYPE	MIN. STUD MIL. (GAUGE)	APA RATED SHEATHING	FASTENER SPACING AT PANEL EDGE	TRACK CONNECTION TOP & BOTTOM	BOTTOM TRACK TO CONCRETE BELOW	ALLOWABLE CAPACITY (LBS/FT)
SW-1	43 (18)	SUREBOARD ONE SIDE	6" O.C.	(2) ROWS NO. 8 SCREWS @ 8" O.C.	5/8"ø AR'S @ 24"O.C.	562

NOTES:
1. REFER TO GENERAL NOTES AND TYPICAL DETAILS FOR STUD FRAMING REQUIREMENTS
2. SCREWS SHALL BE NO. 8x1.25" SELF-DRILL/SELF-TAPPING BUGLE HEAD SCREWS.
3. USE SURE-BOARD SERIES 200 STRUCTURAL PANEL (ICBO #ER-5762) OR APPROVED EQUAL. SEE ARCH FOR WALL BOARD THICKNESS AND TYPE.
4. INSTALL SCREWS TO INTERMEDIATE MEMBERS AT 12" ON CENTER, UNLESS NOTED OTHERWISE.
5. PROVIDE BLOCKING (43 MIL. MIN) BETWEEN STUDS WHEN TOP OR BOTTOM PANEL EDGE DOES NOT BREAK ON A CONTINUOUS TRACK.
6. REFER TO PLAN FOR SHEAR WALL END CONDITIONS.
7. COORDINATE MINIMUM STUD GAUGE REQUIREMENTS WITH LIGHT GAUGE STEEL FRAMING SCHEDULE. THE HEAVIER GAUGE GOVERNS.

SHEAR WALL LEGEND

LEGEND

12 S104 SLIP TRACK REINFORCING
NOT TO SCALE

HOLDOWN SCHEDULE				
HOLDOWN TYPE	ROD SIZE	EMBEDMENT DEPTH	REQ'D MIN. END STUD THICKNESS	REQ'D #5 VERTS AT HD
S/HDU4	5/8"ø	8"	(2) 18 GA STUDS	1
S/HDU6	5/8"ø	12"	(2) 18 GA STUDS	1
S/HDU8	7/8"ø	12"	(2) 16 GA STUDS	2
S/HDU9	7/8"ø	16"	(2) 16 GA STUDS	2

13 S104 SILL - JAMB DETAIL
NOT TO SCALE

14 S104 HEADER - JAMB DETAIL - LOAD BEARING
NOT TO SCALE

15 S104 HEADER - JAMB DETAIL - LOAD BEARING
NOT TO SCALE

16 S104 HEADER - JAMB DETAIL - LOAD BEARING
NOT TO SCALE

17 S104 TYPICAL WALL INTERSECTION DETAIL
NOT TO SCALE

18 S104 TYPICAL SHEAR WALL ATTACHMENT TO COLUMN
NOT TO SCALE

19 S104 TYPICAL HSS COLUMN HOLDOWN (PLAN VIEW)
NOT TO SCALE

STEEL STUD FRAMING NOTES:

1. ALL STEEL STUDS, JOISTS, AND ACCESSORIES SHALL BE ASTM A653/A653M, GRADE 33 OR 50 (FY = 33,000 PSI AND 50,000 PSI, RESPECTIVELY) SEE STUD SCHEDULE(S) BELOW.
2. TOP AND BOTTOM TRACK SECTIONS TO MATCH STUD THICKNESS.
3. ALL STEEL STUD AND JOIST FASTENERS SHALL BE WELDED CONNECTIONS, OR SHALL BE "TEKS" SCREWS, MANUFACTURED BY "ITW BUILDEX" OR APPROVED EQUAL.
4. STUDS SHALL HAVE FULL BEARING AGAINST INSIDE TRACK WEB, PRIOR TO STUD AND TRACK ATTACHMENT.
5. SPLICES IN AXIALLY LOADED STUDS SHALL NOT BE PERMITTED.
6. FRAMING COMPONENTS MAY BE PRE-ASSEMBLED INTO PANELS PRIOR TO ERECTING. PREFABRICATED PANELS SHALL BE SQUARE, WITH COMPONENTS ATTACHED IN A MANNER AS TO PREVENT ROCKING.
7. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS. MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
8. ERECT FRAMING AND PANELS PLUMB, LEVEL AND SQUARE IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.
9. HANDLING AND LIFTING OF PREFABRICATED PANELS SHALL BE DONE IN A MANNER AS TO NOT CAUSE DISTORTION IN ANY MEMBER.
10. TRACK SHALL BE SECURELY ANCHORED TO THE SUPPORTING STRUCTURE AS SHOWN ON THE FABRICATION AND ERECTION DRAWINGS.
11. AT TRACK BUTT JOINTS, ABUTTING PIECES OF TRACK SHALL BE SECURELY ANCHORED TO A COMMON STRUCTURAL ELEMENT, OR THEY SHALL BE BUTT-WELDED OR SPLICED TOGETHER.
12. STUDS SHALL BE PLUMBED, ALIGNED AND SECURELY ATTACHED TO THE FLANGE OR WEBS OF BOTH UPPER AND LOWER TRACKS.
13. WALL STUD BRIDGING SHALL BE ATTACHED IN A MANNER TO PREVENT STUD ROTATION. BRIDGING ROWS SHALL BE SPACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION. THE MINIMUM BRIDGING SHALL BE 4'-0" O.C. FOR WIND LOADED WALLS AND 3'-4" O.C. FOR AXIAL LOADED WALLS.

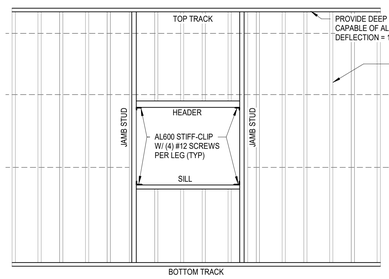
STUD SCHEDULE FOR INTERIOR NON-LOAD BEARING WALLS
(FOR TYPICAL WALL CONSTRUCTION W/ L/240 DEFLECTION LIMIT)

HEIGHT	STUD SIZE & SPACING	REMARKS
UP TO 15'-0"	362S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
15'-0" TO 18'-0"	362S137-43 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
18'-0" TO 20'-0"	362S137-54 (Fy = 50) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
UP TO 24'-0"	600S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
UP TO 31'-0"	800S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS

STUD SCHEDULE FOR INTERIOR NON-LOAD BEARING WALLS
(FOR WALL CONSTRUCTION WITH TILE OR STONE VENEER W/ L/360 DEFLECTION LIMIT - SEE ARCH FOR ALL LOCATIONS)

HEIGHT	STUD SIZE & SPACING	REMARKS
UP TO 14'-0"	362S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
UP TO 21'-0"	600S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS
UP TO 27'-0"	800S137-33 (Fy = 33) @ 1'-4" OC	ALL FULL HEIGHT INTERIOR WALLS

22 S104 TYPICAL INTERIOR NON-LOAD BEARING STEEL STUD WALL FRAMING NOTES AND SCHEDULES
NOT TO SCALE



TYPICAL NON-LOAD BEARING WALL ELEVATION

WALL OPENING SCHEDULE @ 3 5/8" NON-LOAD BEARING WALLS

OPENING WIDTH	DEFLECTION	JAMB STUDS EACH SIDE	HEADER AND SILL
UP TO 6'-0"	L/360	(2) WALL STUDS	(2) 362S137-33 BOX HEADER W/ T&B TRACKS, SINGLE SILL TRACK
>6'-0" TO 8'-0"	L/360	(3) WALL STUDS	(2) 362S137-54 BOX HEADER W/ T&B TRACKS, SINGLE SILL TRACK
>8'-0" TO 10'-0"	L/360	(3) WALL STUDS	(2) 600S162-33 BOX HEADER W/ T&B TRACKS. SEE 2/S1.0 FOR SILL
>10'-0" TO 12'-0"	L/360	(3) WALL STUDS	(2) 600S162-54 BOX HEADER W/ T&B TRACKS. SEE 2/S1.0 FOR SILL

WALL OPENING SCHEDULE @ 6" NON-LOAD BEARING INTERIOR AND EXTERIOR WALLS

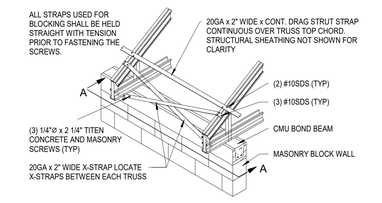
OPENING WIDTH	DEFLECTION	JAMB STUDS EACH SIDE	HEADER AND SILL
UP TO 6'-0"	L/360	(2) WALL STUDS	(2) 600S162-33 BOX HEADER W/ T&B TRACKS, SINGLE SILL TRACK
>6'-0" TO 8'-0"	L/360	(3) WALL STUDS	(2) 600S167-43 BOX HEADER W/ T&B TRACKS, SINGLE SILL TRACK
>8'-0" TO 10'-0"	L/360	(3) WALL STUDS	(2) 600S162-54 BOX HEADER W/ T&B TRACKS. SEE 2/S1.0 FOR SILL
>10'-0" TO 12'-0"	L/360	(3) WALL STUDS	(2) 600S162-68 BOX HEADER W/ T&B TRACKS. SEE 2/S1.0 FOR SILL

23 S104 TYPICAL BEARING STEEL STUD WALL FRAMING ELEVATION
NOT TO SCALE

LIGHT GAUGE STEEL STUD LINTEL SCHEDULE

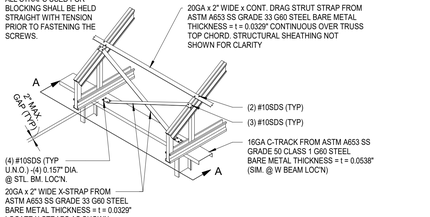
MARK	FULL HT. JAMB STUD	HEADER / LINTEL	SILL (IF APPLICABLE)	SHOULDER STUD
L-7	(2) 600S162-54	(2) 800S162-54	600T125-54	(1) 600S162-54
L-8 @ 6" WALL	(2) 600S200-68	(2) 1000S162-68	600T125-54	(1) 600S162-68
L-9 @ 6" WALL	(2) 600S200-97	(2) 1200S200-97	600T125-54	(1) 600S162-68
L-8 @ 8" WALL	(2) 800S200-68	(2) 1000S162-68	800T125-54	(1) 800S162-68
L-9 @ 8" WALL	(2) 800S200-97	(2) 1200S200-97	800T125-54	(1) 800S162-68

NOTE: BOXED HEADERS/LINTELS SHALL HAVE A 600T125-54 TRACK TOP AND BOTTOM TO MATCH THE WALL THICKNESS



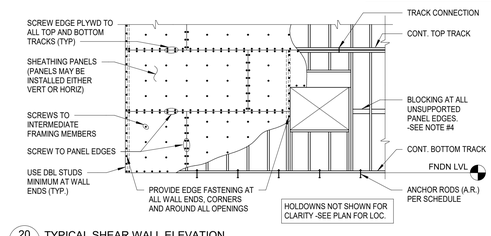
SECTION A - A

24 S104 HEEL STRAPPING DETAIL @ CMU WALL
NOT TO SCALE

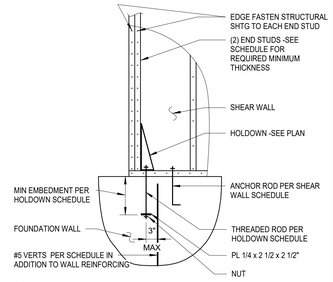


SECTION A - A

25 S104 HEEL STRAPPING DETAIL @ LIGHT GAUGE WALL
NOT TO SCALE



20 S104 TYPICAL SHEAR WALL ELEVATION
NOT TO SCALE



21 S104 TYPICAL HOLDOWN TO FOUNDATION
NOT TO SCALE

UNION GROVE, WI 53182

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04.24.2025
NOT FOR CONSTRUCTION

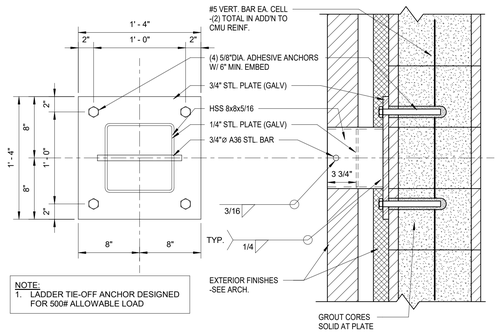
NO.	REVISIONS	DATE
1	questions	??????

DWG. TITLE

TYPICAL LIGHT GAUGE DETAILS

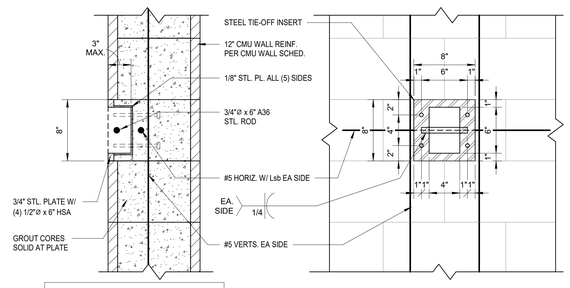
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM
CHK.	TDR
PROJ. No.	24-042
DWG. No.	S104



NOTE:
1. LADDER TIE-OFF ANCHOR DESIGNED FOR 500# ALLOWABLE LOAD

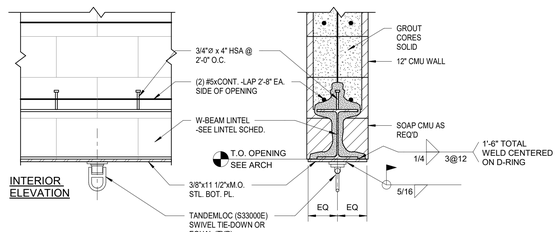
1 S105 RECESSED LADDER TIE-OFF ATTACHMENT DETAIL @ EXTERIOR CMU WALL
NOT TO SCALE



NOTE:
1. LADDER TIE-OFF ANCHOR DESIGNED FOR 500# ALLOWABLE LOAD

INTERIOR ELEVATION

2 S105 RECESSED LADDER TIE-OFF ATTACHMENT DETAIL @ INTERIOR CMU WALL
NOT TO SCALE



NOTE:
1. ANCHOR DESIGNED FOR 10,000# MAXIMUM ULTIMATE LOAD PER NFPA 1402 SECTION 11.2.1
2. SEE ARCH. FOR FINISHES TO STEEL
3. DESIGNED FOR USE IN 10'-0" MAX. OPENING WIDTH.

SEE ARCH. FOR ALL INTERIOR TIE-OFF LOCATIONS

3 S105 TIE-OFF ATTACHMENT DETAIL @ INTERIOR CMU WALL OPENINGS
NOT TO SCALE

NOTE:
1. ANCHOR DESIGNED FOR 10,000# MAXIMUM ULTIMATE LOAD PER NFPA 1402 SECTION 11.2.1

INTERIOR ELEVATION

4 S105 TIE-OFF DETAIL @ INTERIOR WALL
NOT TO SCALE

NOTE:
1. ANCHOR DESIGNED FOR 10,000# MAXIMUM ULTIMATE LOAD PER NFPA 1402 SECTION 11.2.1
2. SEE ARCH. FOR FINISHES TO STEEL
3. DESIGNED FOR USE IN 3'-8" MAX. OPENING WIDTH.

SEE ARCH. FOR ALL INTERIOR TIE-OFF LOCATIONS

5 S105 TIE-OFF ATTACHMENT DETAIL @ INTERIOR CMU WALL OVER OPENINGS
1 1/2" = 1'-0"

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NO.	REVISIONS	DATE
1	questions	??????

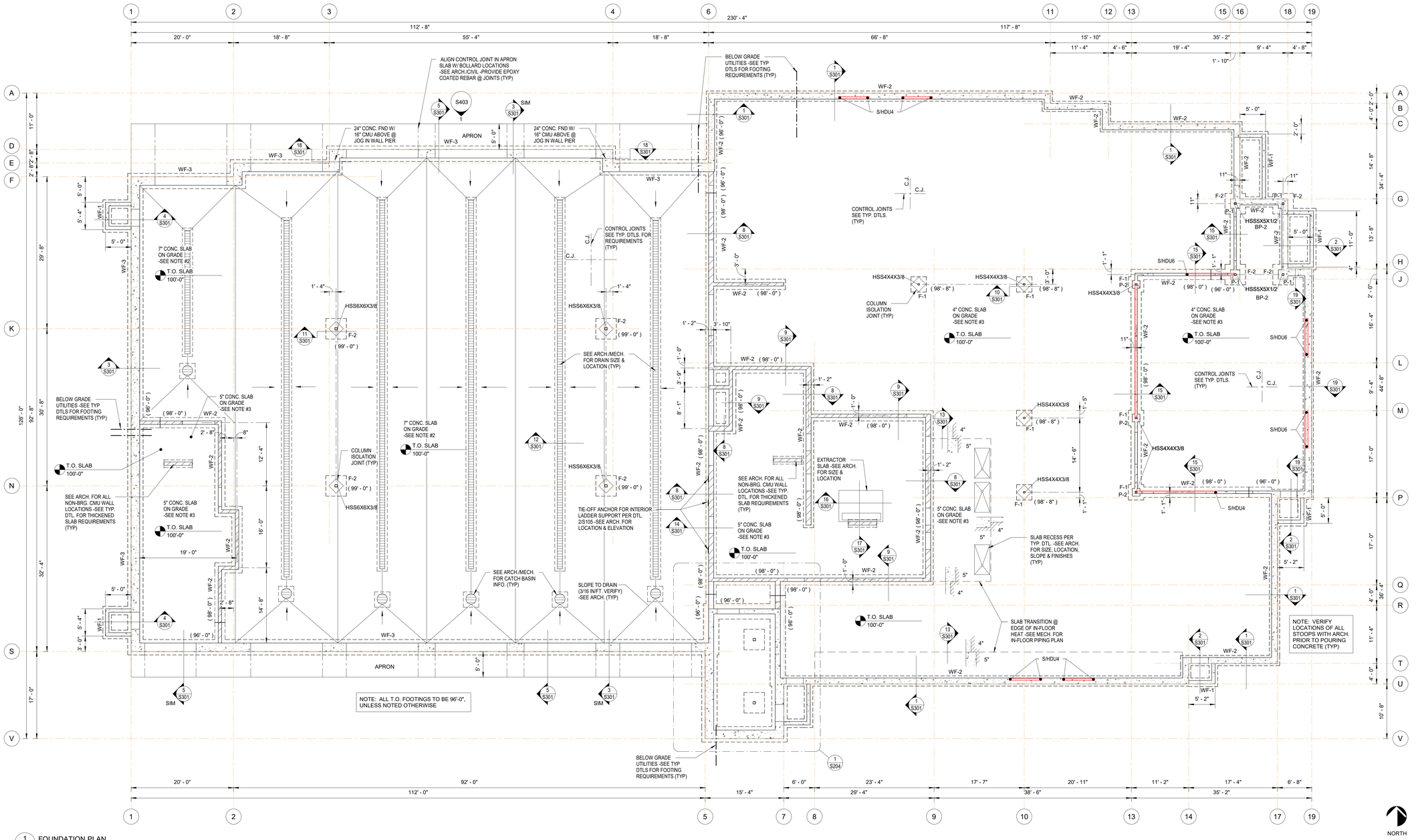
DWG. TITLE

TYPICAL TIE-OFF DETAILS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING.
IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM CHK. TDR
PROJ. No.	24-042
DWG. No.	

S105



1 S201 FOUNDATION PLAN
1/8" = 1'-0"

FOUNDATION PLAN NOTES:

1. REFERENCE MAIN FLOOR ELEVATIONS IS 100'-0" (CIVIL ELEVATION 790.75'). TOP OF SLAB ON GRADE IS AT THE REFERENCE FLOOR ELEVATION, UNLESS NOTED OTHERWISE.
2. SLAB ON GRADE IS REINFORCED W/ #4 BARS @ 1'-4" O.C. EA. WAY AT TOP THIRD OF SLAB DEPTH (SEE PLAN FOR THICKNESS), UNLESS NOTED OTHERWISE. SEE TYPICAL DETAILS FOR SLAB REINFORCING, CONTROL JOINT REQUIREMENTS, ETC. SLAB ON GRADE SHALL BE PLACED ATOP COMPACTED STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
3. SLAB ON GRADE IS A FIBER REINFORCED CONCRETE SLAB (SEE PLAN FOR THICKNESS), SEE TYPICAL FIBER REINFORCED SLAB ON GRADE DETAILS. SLAB ON GRADE SHALL BE PLACED ATOP COMPACTED STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
4. "(X'-X")" INDICATES TOP OF FOOTING ELEVATION. ALL EXTERIOR FOOTINGS TO BE AT ELEVATION 96'-0" UNLESS NOTED OTHERWISE. ALL INTERIOR FOOTINGS TO BE AT ELEVATION 98'-0" UNLESS NOTED OTHERWISE. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SUBGRADE OR STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
5. "F-1" AND "WF-1" INDICATES FOOTING MARK. SEE FOOTING SCHEDULE FOR SIZE AND REINFORCING.
6. "P-1" INDICATES CONCRETE PIER MARK. SEE TYPICAL CONCRETE PIER DETAIL FOR SIZE AND REINFORCING. TOP OF PIER TO BE 8" BELOW TOP OF SLAB HEIGHT (ELEVATION 99'-4") UNLESS NOTED OTHERWISE.
7. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR SIDEWALKS, PAVING, BOLLARDS AND SITE DETAILS AT BUILDING EXTERIOR.
8. "S/HDU" INDICATES HOLDOWN -SEE TYPICAL HOLD-DOWN TO FOUNDATION DETAIL.
9. FRAMING CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL HOLDOWN THREADED ROD ANCHOR LOCATIONS WITH THE CONCRETE CONTRACTOR.
10. ---------- INDICATES FOOTING STEP. SEE TYPICAL FOOTING STEP DETAIL FOR SIZE AND REINFORCING.
11. REFERENCE ALL CONSTRUCTION DOCUMENTS FOR SIZE, EXTENT AND LOCATION OF CONCRETE CURBS, HOUSEKEEPING PADS, NON-LOAD BEARING CMU WALLS, SLAB PENETRATIONS, SLAB RECESSES AND ALL OTHER ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
12. "BP-1" INDICATES BASE PLATE MARK. ALL BASE PLATES SHALL BE BP-1 UNLESS NOTED OTHERWISE. SEE TYPICAL COLUMN BASE PLATE DETAIL FOR REQUIREMENTS.
13. COORDINATE UNDERSLAB UTILITIES WITH MECHANICAL/PLUMBING AND CIVIL. SEE TYPICAL DETAIL AT PIPES PERPENDICULAR TO FOOTINGS FOR PIPES ABOVE OR BELOW FOOTINGS. STEP FOOTINGS AS REQUIRED TO AVOID CONFLICTS.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	Comments
F-1	3'-0" SQUARE x 1'-0" DEEP COLUMN FTG.	(3) #5 EACH WAY, BOTTOM	
F-2	4'-0" SQUARE x 1'-0" DEEP COLUMN FTG.	(4) #5 EACH WAY, BOTTOM	
WF-1	1'-8" WIDE x 1'-0" DEEP x CONT. WALL FTG.	(2) #5 x CONT., BOTTOM	
WF-2	2'-0" WIDE x 1'-0" DEEP x CONT. WALL FTG.	(2) #5 x CONT., BOTTOM	
WF-3	3'-0" WIDE x 1'-0" DEEP x CONT. WALL FTG.	(3) #5 x CONT., BOTTOM	

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DWG. TITLE

FOUNDATION PLAN

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	1/8" = 1'-0"
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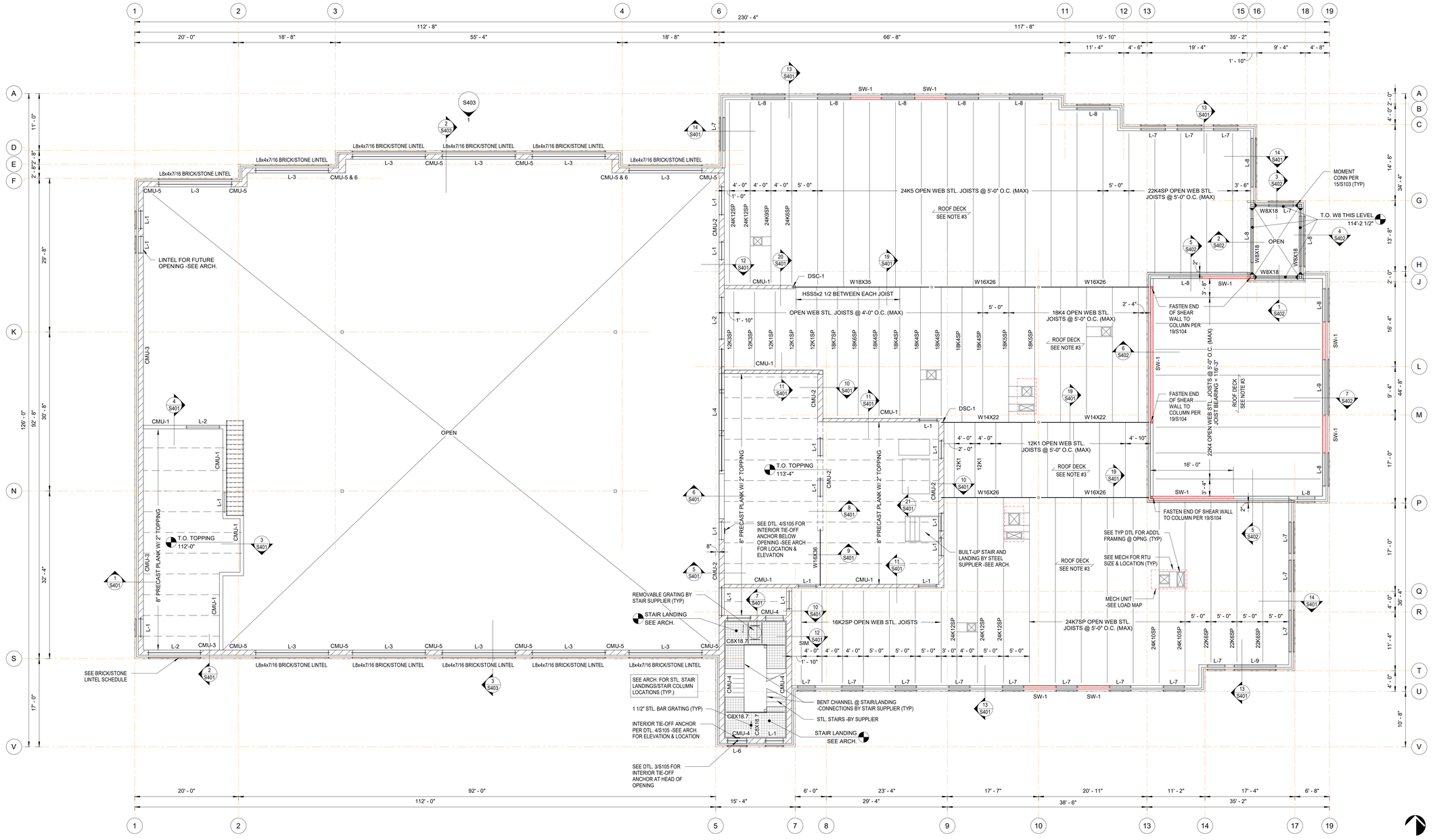
S201



1 S202 MEZZANINE / LOW ROOF FRAMING PLAN
1/8" = 1'-0"

MEZZANINE FLOOR FRAMING PLAN NOTES:

1. SEE PLAN FOR FLOOR ELEVATION. TOP OF TOPPING IS AT THE REFERENCE FLOOR ELEVATION, UNLESS NOTED OTHERWISE.
2. FLOOR FRAMING CONSISTS OF A 2 INCH CONCRETE TOPPING OVER 8 INCH PRECAST CONCRETE PLANK, UNLESS NOTED OTHERWISE.
3. PRECAST PLANK BEARING IS 10" INCHES BELOW THE REFERENCE FLOOR ELEVATION, UNLESS NOTED OTHERWISE.
4. "L-1" INDICATES STRUCTURAL LINTEL AT ARCHITECTURAL OR MECHANICAL WALL OPENING. SEE LINTEL SCHEDULE FOR STRUCTURAL FRAMING REQUIREMENTS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
5. COORDINATE LOCATION OF ALL EMBEDS WITH MECHANICAL, ELECTRICAL, PLUMBING AND EXTERIOR WALL SYSTEMS PRIOR TO FABRICATION OF FLOOR PLANKS.
6. COORDINATE ALL MECHANICAL FLOOR PENETRATIONS WITH THE ARCHITECT AND MECHANICAL PRIOR TO FABRICATION.
7. SEE MECHANICAL DRAWINGS FOR SIZE, LOCATION, WEIGHT AND HOUSEKEEPING PAD REQUIREMENTS AT ALL MECHANICAL UNITS. VERIFY FINAL LOCATIONS, SIZES AND WEIGHTS PRIOR TO FABRICATION.
8. MECHANICAL TO COORDINATE ALL SMALL MECHANICAL WALL PENETRATIONS, WHERE LINTELS ARE NOT SHOWN, WITH PRECAST SUPPLIER.

LOW ROOF FRAMING PLAN NOTES:

1. REFERENCE ROOF ELEVATION IS 114'-0", UNLESS NOTED OTHERWISE. STEEL JOIST BEARING IS AT THE REFERENCE ROOF ELEVATION, UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES AND DRAINS.
2. (XXX'-XX") INDICATES TOP OF STRUCTURAL STEEL WHERE NOTED.
3. STRUCTURAL ROOF DECK IS 1 1/2 INCH STEEL 1.5B22GA DECK SPANNING BETWEEN FRAMING SUPPORTS. SEE THE STEEL ROOF DECK SECTION OF THE STRUCTURAL NOTES FOR DECK REQUIREMENTS.
4. SEE TYPICAL DETAILS FOR DECK SUPPORT AT SLOPED ROOFS AND STEPS.
5. SEE TYPICAL DETAILS FOR REINFORCING AROUND OPENINGS IN STEEL ROOF DECK. NOTIFY STRUCTURAL ENGINEER OF ANY OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS FOR WHICH THE TYPICAL DETAILS DO NOT APPLY. ADDED FRAMING MAY BE REQUIRED.
6. SEE MECHANICAL DRAWINGS FOR SIZE, LOCATION AND CURB REQUIREMENTS AT ROOFTOP MECHANICAL UNITS. COORDINATE FINAL LOCATIONS WITH JOIST MANUFACTURER. SEE LOAD MAPS FOR MAXIMUM UNIT WEIGHTS. SEE TYPICAL DETAILS FOR FRAMING REQUIREMENTS AT OPENINGS IN STEEL ROOF DECK.
7. "L-1" INDICATES LINTEL OVER WALL OPENING. SEE LINTEL SCHEDULE FOR FRAMING REQUIREMENTS. SEE ARCH. & MECH. FOR SIZE & LOCATION OF OPENING.
8. "SW-1" INDICATES STEEL STUD SHEAR WALL SHEATHED WITH SURE-BOARD. SEE SHEAR WALL SCHEDULE ON SHEET S104.
9. MECHANICAL UNIT SUPPORT STRUCTURE ATTACHED TO ROOF JOISTS DESIGNED AND INSTALLED BY MECHANICAL SUPPLIER. SEE POINT LOAD REINFORCEMENT SECTION FOR JOIST REINFORCING AT POINT LOAD LOCATIONS.
10. "C.J." INDICATES SUGGESTED LOCATION FOR VERTICAL CONTROL JOINTS IN CMU WALL. SEE TYPICAL CMU CONTROL JOINT DETAIL. CONTRACTOR TO PROVIDE FINAL CONTROL JOINT LAYOUT FOR REVIEW PRIOR TO BUILDING WALL. CONTROL JOINTS TO BE A MINIMUM 2'-8" FROM EDGES OF WALL OPENINGS.

LINTEL SCHEDULE

Mark	Description	Type Comments
L-1	16" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-2	24" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-3	32" DEEP CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	
L-4	32" DEEP x CONT CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	SEE ELEVATION X/SX
L-5	W8x24 STEEL BEAM W/ 3/8" x 7 1/2" x M.O. STL BOTTOM PL	
L-6	W10x33 STEEL BEAM W/ 3/8" x 11 1/2" x M.O. STL BOTTOM PL	
L-7	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-8	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-9	SEE LIGHT GAUGE SCHEDULE 23/S104	

BRICK/STONE LINTEL SCHEDULE

Span	Description	Comments
UP TO 6'-0"	L4x4x3/8 W/ 8" MIN. BRG. EA. END	
6'-0" TO 9'-0"	L8x4x3/8 (LLV) W/ 8" MIN. BRG. EA. END	
9'-0" TO 12'-0"	C8x13.7 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	
12'-0" TO 16'-0"	C10x20 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	

LINTEL SCHEDULE NOTES:

1. EXTEND BOND BEAM REINFORCING 2'-8" PAST EDGE OF OPENING ON EACH SIDE OF OPENING, U.N.O.
2. STEEL BEAM LINTELS SHALL BEAR 8" MINIMUM EACH SIDE OF OPENING. SEE TYPICAL STEEL BEAM BEARING ON CMU DETAILS FOR ADDITIONAL INFORMATION.
3. STEEL BEAM LINTELS W/ CMU ABOVE SHALL HAVE 1/2" DIAMETER x 4" LONG H.S.A.'S @ 16" O.C.
4. ML-X INDICATES LINTEL OVER MECHANICAL PENETRATION. SEE LINTEL SCHEDULE FOR FRAMING REQUIREMENTS. SEE MECH. FOR SIZE & LOCATION OF OPENING.
5. FOLLOW BRICK/STONE LINTEL SCHEDULE FOR REQUIRED OPENINGS, U.N.O. ON PLAN.

UNION GROVE, WI 53182

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NO.	REVISIONS	DATE

DWG. TITLE

MEZZANINE - LOW ROOF FRAMING PLAN

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

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PROJ. No.	24-042
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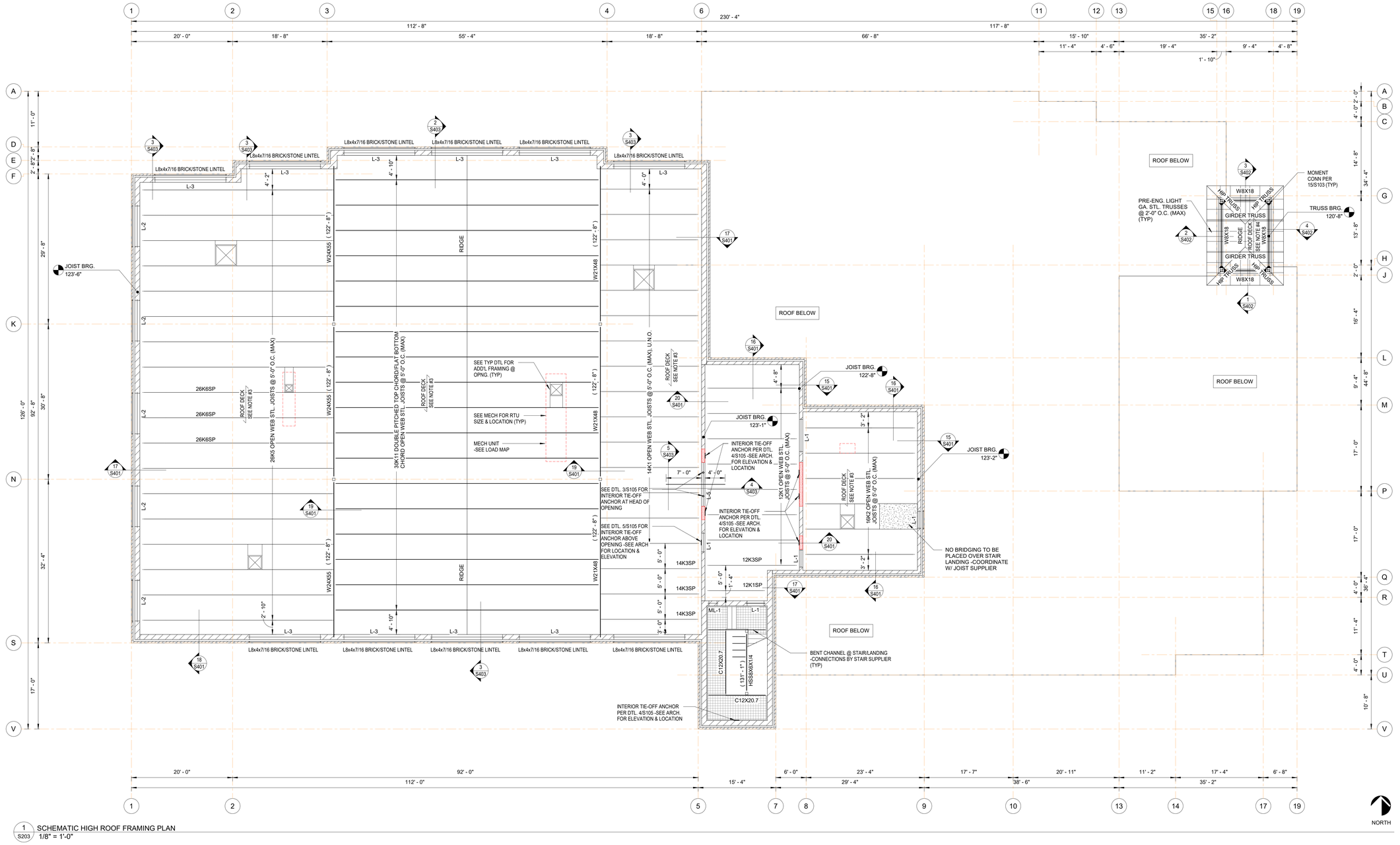
S202



1 S203 SCHEMATIC HIGH ROOF FRAMING PLAN
1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFERENCE ROOF ELEVATION VARIES, SEE PLAN. SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES AND DRAINS.
2. TOP OF STRUCTURAL STEEL IS NOTED ON PLAN, THE STEEL FRAMING SHALL BE PLACED WITH THE TOP OF STEEL AT THE SPECIFIED ELEVATION .
3. STRUCTURAL ROOF DECK IS 1 1/2 INCH STEEL 1.5B22 DECK SPANNING BETWEEN FRAMING SUPPORTS UNLESS NOTED OTHERWISE. SEE THE STEEL ROOF DECK SECTION OF THE STRUCTURAL NOTES FOR DECK REQUIREMENTS.
4. STRUCTURAL ROOF DECK IS 5/8" FIRE TREATED PLYWOOD ROOF SHEATHING GRADE C-D EXTERIOR GLUE OR STRUCTURAL I FASTEN TO SUPPORTS W/ #8 COUNTERSUNK TAPPING SCREWS (IAW ASTM C1513) @ 6" O.C. AT ALL PANEL EDGES AND 12" O.C. IN THE FIELD OF THE PANEL.
5. SEE PLAN FOR LIGHT GAUGE ROOF TRUSS SPAN CONDITIONS AND SPACING REQUIREMENTS. TRUSS LOCATIONS SHOWN ON PLAN ARE FOR REFERENCE ONLY, SEE ROOF TRUSS SHOP DRAWINGS FOR EXACT LAYOUT.
6. SEE TYPICAL DETAILS FOR DECK SUPPORT AT SLOPED ROOFS AND STEPS.
7. SEE TYPICAL DETAILS FOR REINFORCING AROUND OPENINGS IN STEEL ROOF DECK. NOTIFY STRUCTURAL ENGINEER OF ANY OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS FOR WHICH THE TYPICAL DETAILS DO NOT APPLY. ADDED FRAMING MAY BE REQUIRED.
8. SEE MECHANICAL DRAWINGS FOR SIZE, LOCATION AND CURB REQUIREMENTS AT ROOFTOP MECHANICAL UNITS. COORDINATE FINAL LOCATIONS WITH JOIST MANUFACTURER. SEE LOAD MAPS FOR MAXIMUM UNIT WEIGHTS.
9. "L-1" INDICATES LINTEL OVER WALL OPENING. SEE LINTEL SCHEDULE FOR FRAMING REQUIREMENTS. SEE ARCH. & MECH. FOR SIZE & LOCATION OF OPENING.

LINTEL SCHEDULE

Mark	Description	Type Comments
L-1	16" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-2	24" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-3	32" DEEP CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	
L-4	32" DEEP x CONT CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	SEE ELEVATION X/SX
L-5	W8x24 STEEL BEAM W/ 3/8" x 7 1/2" x M.O. STL BOTTOM PL	
L-6	W10x33 STEEL BEAM W/ 3/8" x 11 1/2" x M.O. STL BOTTOM PL	
L-7	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-8	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-9	SEE LIGHT GAUGE SCHEDULE 23/S104	

BRICK/STONE LINTEL SCHEDULE

Span	Description	Comments
UP TO 6'-0"	L4x4x3/8 W/ 8" MIN. BRG. EA. END	
6'-0" TO 9'-0"	L6x4x3/8 (LLV) W/ 8" MIN. BRG. EA. END	
9'-0" TO 12'-0"	C8x13.7 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	
12'-0" TO 16'-0"	C10x20 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	

LINTEL SCHEDULE NOTES:

1. EXTEND BOND BEAM REINFORCING 2'-8" PAST EDGE OF OPENING ON EACH SIDE OF OPENING, U.N.O.
2. STEEL BEAM LINTELS SHALL BEAR 8" MINIMUM EACH SIDE OF OPENING. SEE TYPICAL STEEL BEAM BEARING ON CMU DETAILS FOR ADDITIONAL INFORMATION.
3. STEEL BEAM LINTELS W/ CMU ABOVE SHALL HAVE 1/2" DIAMETER x 4" LONG H.S.A.'S @ 16" O.C.
4. ML-X INDICATES LINTEL OVER MECHANICAL PENETRATION. SEE LINTEL SCHEDULE FOR FRAMING REQUIREMENTS. SEE MECH. FOR SIZE & LOCATION OF OPENING.
5. FOLLOW BRICK/STONE LINTEL SCHEDULE FOR REQUIRED OPENINGS, U.N.O. ON PLAN.

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DWG. TITLE
ROOF FRAMING PLAN

0 1" 2"
GENERIC SCALE BAR
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CHK.	TDR
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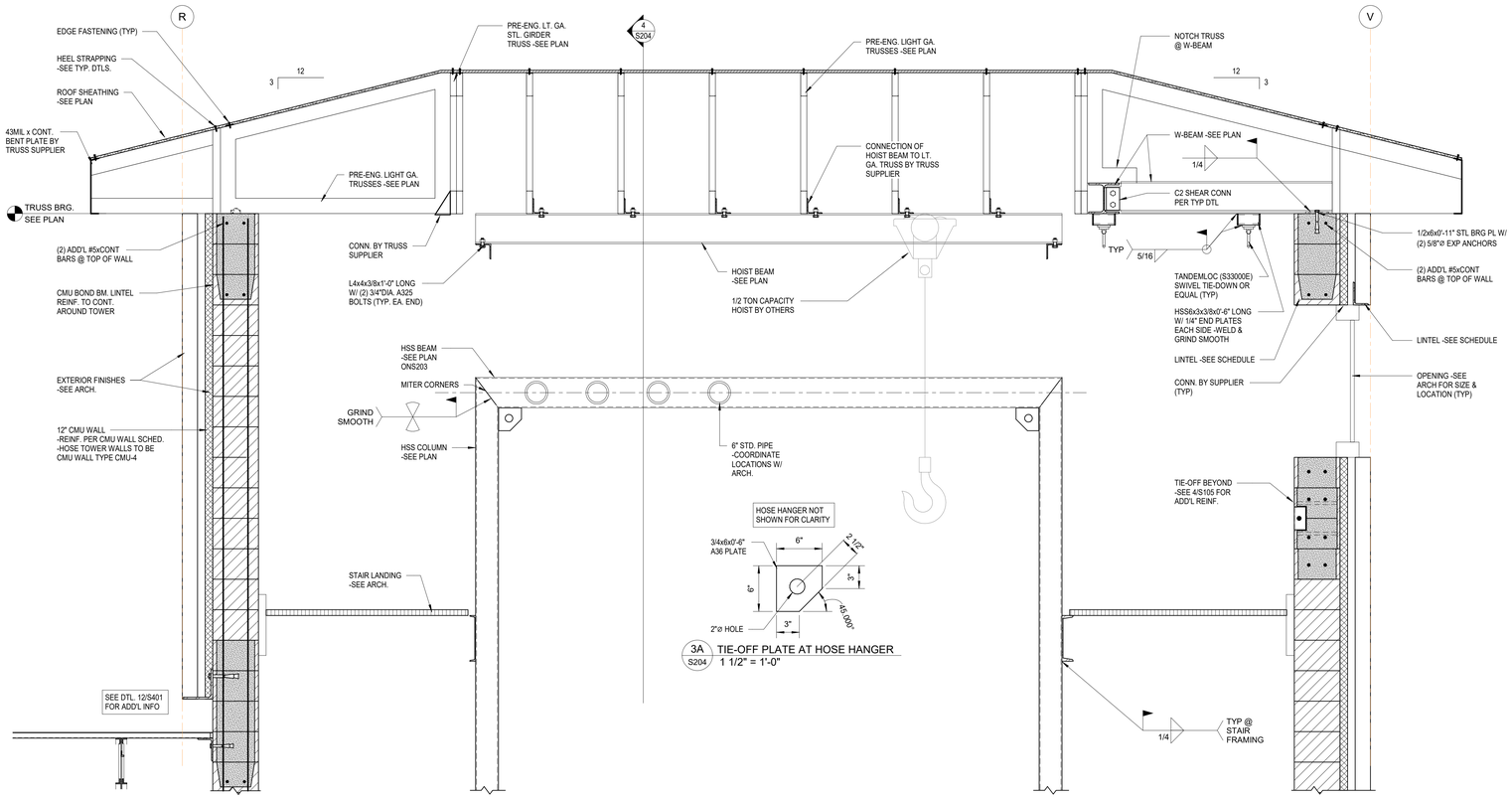
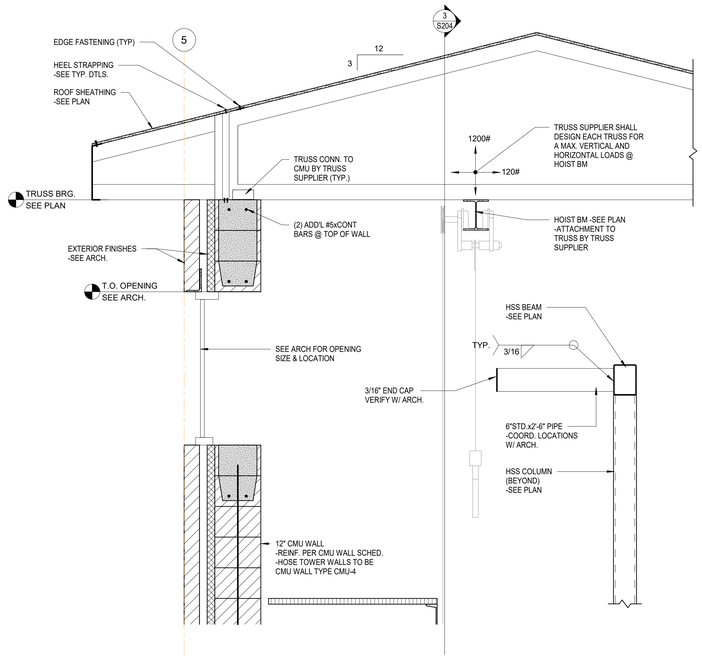
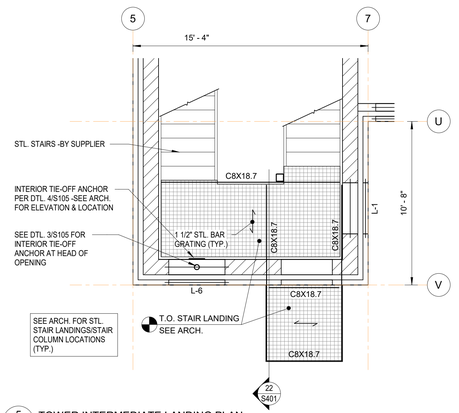
S203



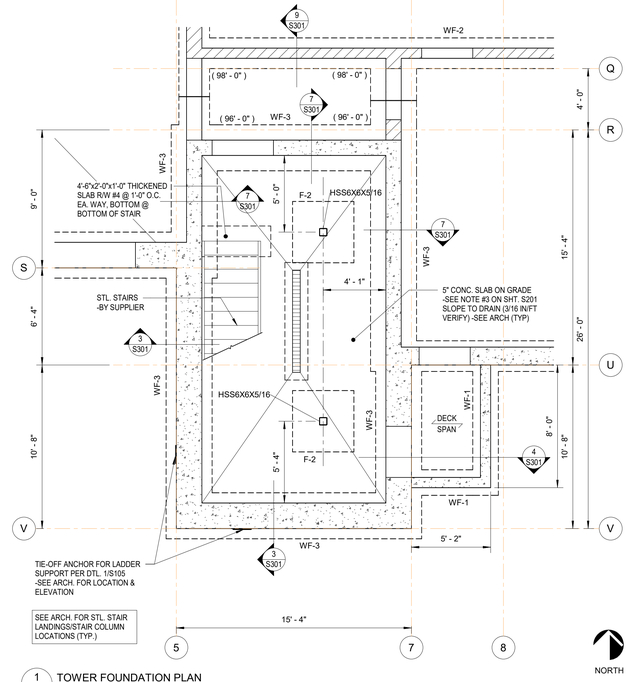
3 S204 SECTION @ TOWER ROOF
3/4" = 1'-0"



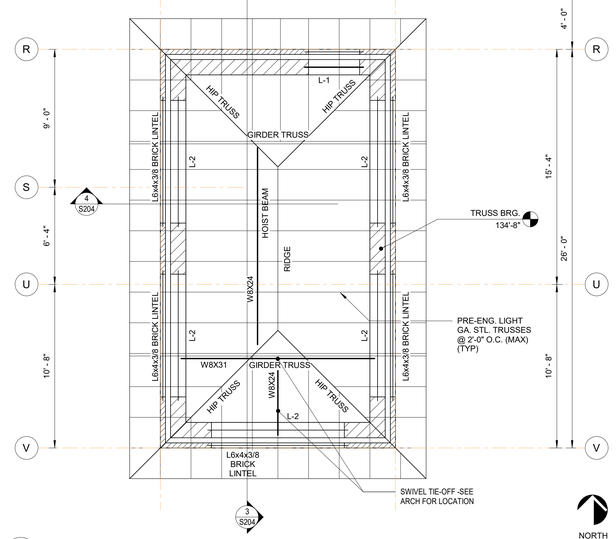
4 S204 SECTION @ TOWER ROOF
3/4" = 1'-0"



5 S204 TOWER INTERMEDIATE LANDING PLAN
1/4" = 1'-0"



1 S204 TOWER FOUNDATION PLAN
1/4" = 1'-0"



2 S204 TOWER ROOF FRAMING PLAN / SECTIONS / DETAILS
1/4" = 1'-0"

TOWER ROOF FRAMING PLAN NOTES:

1. ROOF ELEVATION IS 134'-8". TOP OF CMU WALL AT REFERENCE ROOF ELEVATION, U.N.O.. SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES AND DRAINS.
2. STRUCTURAL ROOF DECK IS 5/8" FIRE TREATED PLYWOOD ROOF SHEATHING GRADE C-D EXTERIOR GLUE OR STRUCTURAL II FASTEN TO SUPPORTS W/ #8 COUNTERSUNK TAPPING SCREWS (IAW ASTM C1513) @ 6" O.C. AT ALL PANEL EDGES AND 12" O.C. IN THE FIELD OF THE PANEL.
3. SEE PLAN FOR LIGHT GAUGE ROOF TRUSS SPAN CONDITIONS AND SPACING REQUIREMENTS. TRUSS LOCATIONS SHOWN ON PLAN ARE FOR REFERENCE ONLY, SEE ROOF TRUSS SHOP DRAWINGS FOR EXACT LAYOUT.
4. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL ROOF OPENINGS.
5. SEE MECHANICAL DRAWINGS FOR SIZE, LOCATION AND CURB REQUIREMENTS AT ROOFTOP MECHANICAL UNITS. COORDINATE FINAL LOCATIONS WITH TRUSS MANUFACTURER. SEE ROOF LOADING PLAN FOR MAXIMUM UNIT WEIGHTS.

LINTEL SCHEDULE

Mark	Description	Type Comments
L-1	16" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-2	24" DEEP CMU BOND BEAM R/W (2) #5 BOT. BARS	
L-3	32" DEEP CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	
L-4	32" DEEP x CONT CMU BOND BEAM R/W (2) #6 TOP & BOT. BARS	SEE ELEVATION X/SX
L-5	W8x24 STEEL BEAM W/ 3/8" x 7 1/2" x M.O. STL BOTTOM PL	
L-6	W10x33 STEEL BEAM W/ 3/8" x 11 1/2" x M.O. STL BOTTOM PL	
L-7	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-8	SEE LIGHT GAUGE SCHEDULE 23/S104	
L-9	SEE LIGHT GAUGE SCHEDULE 23/S104	

LINTEL SCHEDULE NOTES:

1. EXTEND BOND BEAM REINFORCING 2'-8" PAST EDGE OF OPENING ON EACH SIDE OF OPENING, U.N.O.
2. STEEL BEAM LINTELS SHALL BEAR 8" MINIMUM EACH SIDE OF OPENING. SEE TYPICAL STEEL BEAM BEARING ON CMU DETAILS FOR ADDITIONAL INFORMATION.
3. STEEL BEAM LINTELS W/ CMU ABOVE SHALL HAVE 1/2" DIAMETER x 4" LONG H.S.A.'S @ 16" O.C.
4. ML-X INDICATES LINTEL OVER MECHANICAL PENETRATION. SEE LINTEL SCHEDULE FOR FRAMING REQUIREMENTS. SEE MECH. FOR SIZE & LOCATION OF OPENING.
5. FOLLOW BRICK/STONE LINTEL SCHEDULE FOR REQUIRED OPENINGS, U.N.O. ON PLAN.

BRICK/STONE LINTEL SCHEDULE

Span	Description	Comments
UP TO 6'-0"	L4x4x3/8 W/ 8" MIN. BRG. EA. END	
6'-0" TO 9'-0"	L6x4x3/8 (LLV) W/ 8" MIN. BRG. EA. END	
9'-0" TO 12'-0"	C8x13.7 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	
12'-0" TO 16'-0"	C10x20 W/ L4x4x3/8 - 8" MIN. BRG. EA. END	

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DWG. TITLE
TOWER ROOF PLAN - DETAILS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

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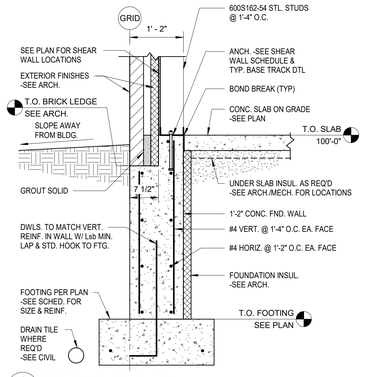
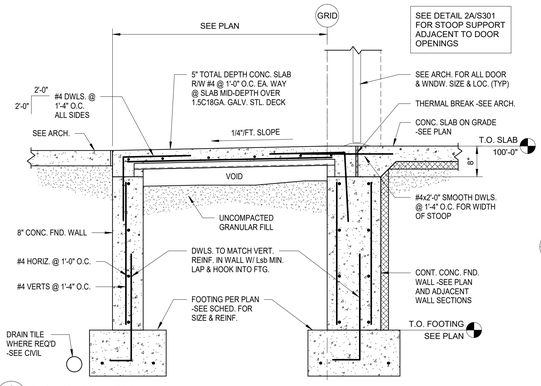
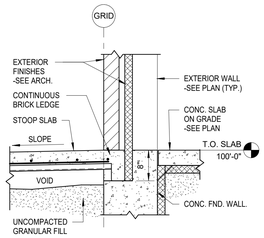


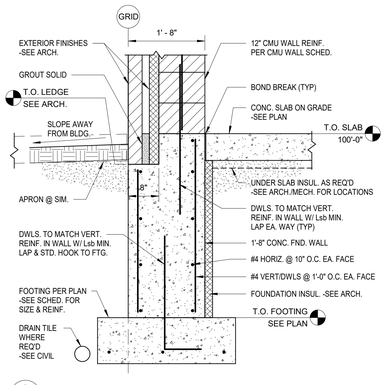
1 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



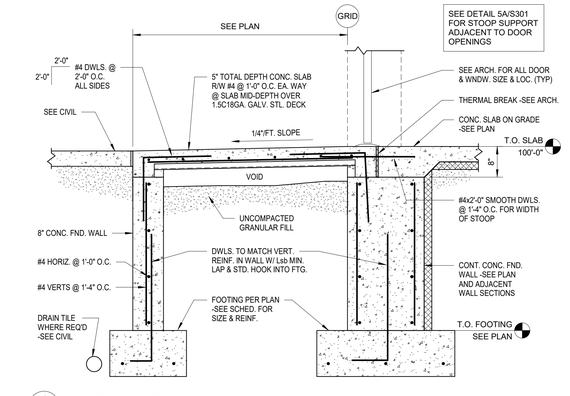
2 S301 SECTION @ STOOP
3/4" = 1'-0"



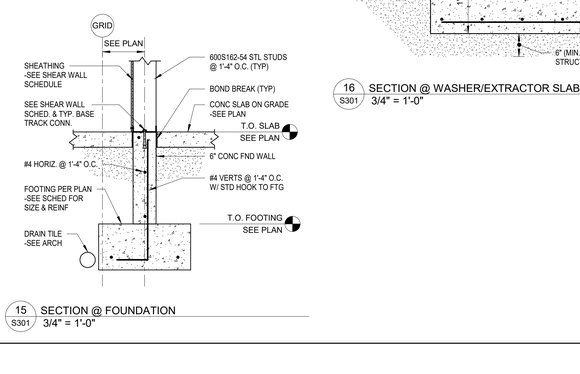
2A S301 STOOP SUPPORT ADJACENT TO DOOR OPENINGS
3/4" = 1'-0"



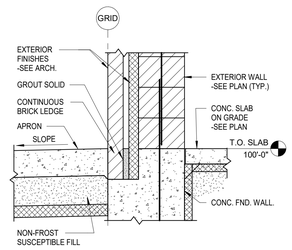
3 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



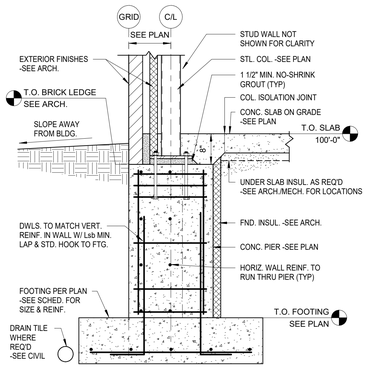
4 S301 SECTION @ STOOP
3/4" = 1'-0"



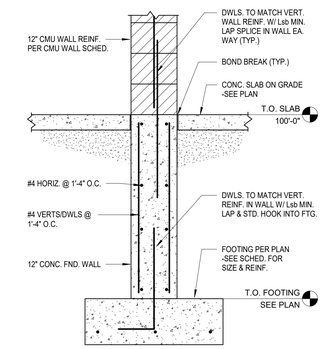
5 S301 SECTION @ APRON
3/4" = 1'-0"



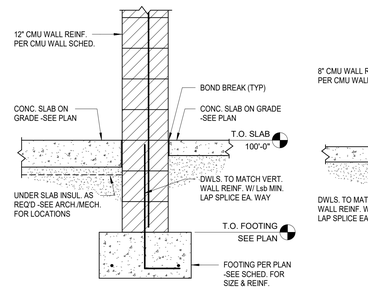
5A S301 APRON ADJACENT TO OVERHEAD DOOR OPENINGS
3/4" = 1'-0"



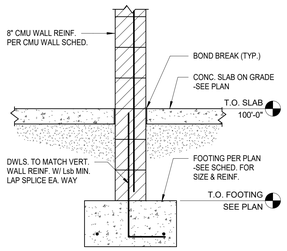
6 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



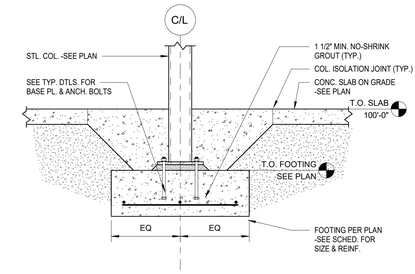
7 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



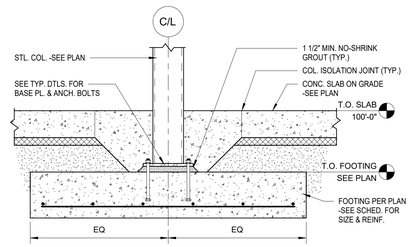
8 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



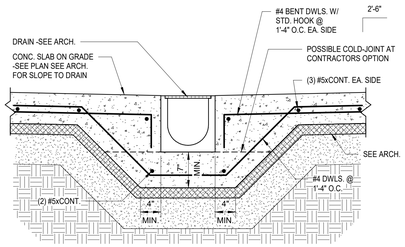
9 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



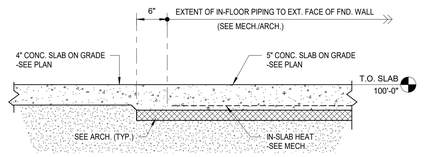
10 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



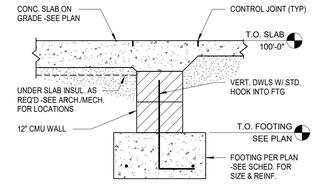
11 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



12 S301 SECTION @ FLOOR DRAIN
1" = 1'-0"

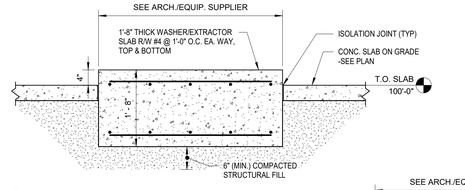


13 S301 SECTION @ HEATED SLAB TRANSITION
1" = 1'-0"

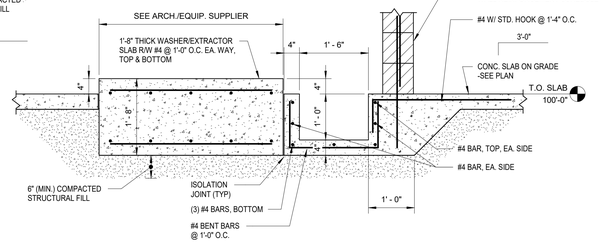


14 S301 SECTION @ FOUNDATION
3/4" = 1'-0"

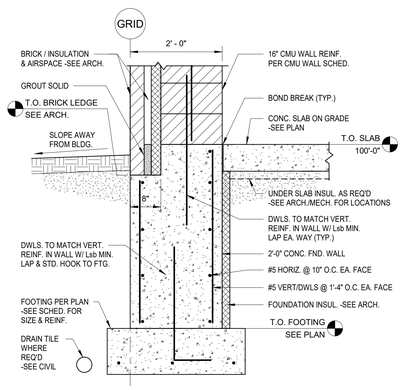
15 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



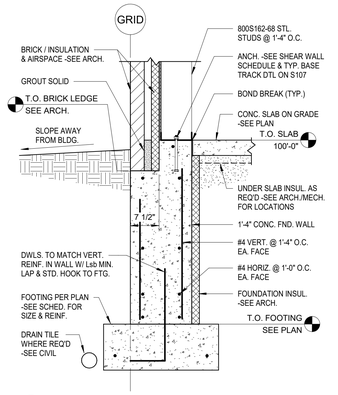
16 S301 SECTION @ WASHER/EXTRACTOR SLAB
3/4" = 1'-0"



17 S301 SECTION @ WASHER/EXTRACTOR SLAB
3/4" = 1'-0"



18 S301 SECTION @ FOUNDATION
3/4" = 1'-0"



19 S301 SECTION @ FOUNDATION
3/4" = 1'-0"

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

wendel
Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335
Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland
Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
04.24.2025
NOT FOR CONSTRUCTION

NO.	REVISIONS	DATE

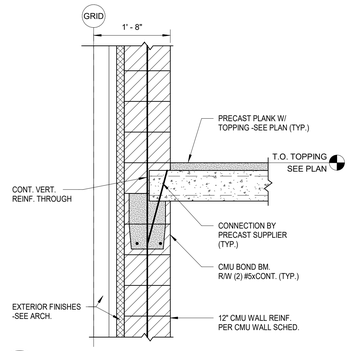
DWG. TITLE

FOUNDATION DETAILS

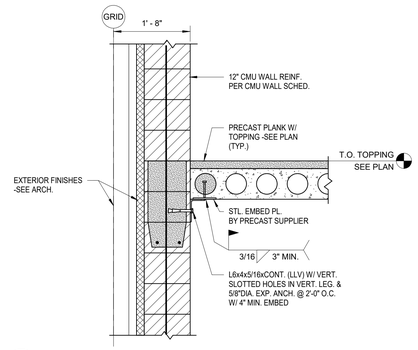
0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM CHK. TDR
PROJ. No.	24-042
DWG. No.	

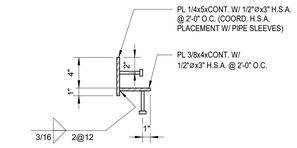
S301



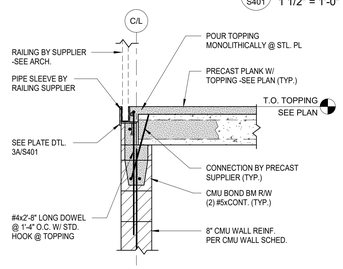
1 S401 SECTION @ FLOOR
3/4" = 1'-0"



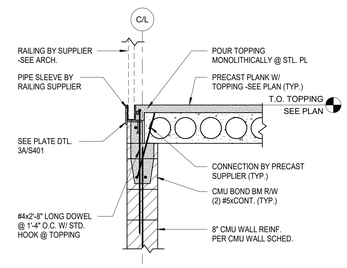
2 S401 SECTION @ FLOOR
3/4" = 1'-0"



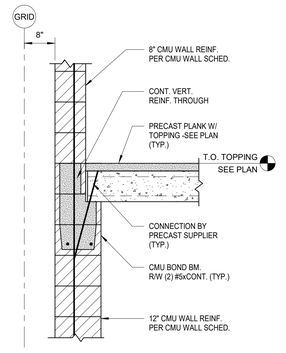
3A S401 DETAIL @ REMOVABLE RAIL PLATE
1 1/2" = 1'-0"



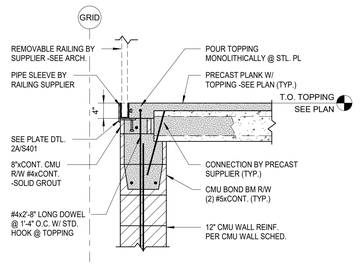
3 S401 SECTION @ MEZZANINE
3/4" = 1'-0"



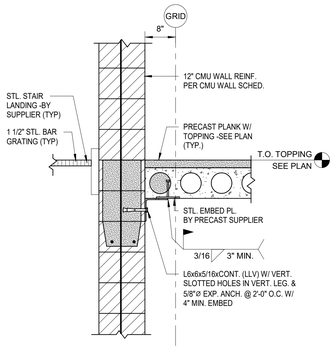
4 S401 SECTION @ MEZZANINE
3/4" = 1'-0"



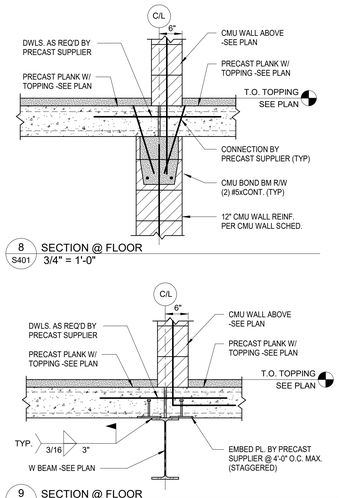
5 S401 SECTION @ FLOOR
3/4" = 1'-0"



6 S401 SECTION @ MEZZANINE
3/4" = 1'-0"

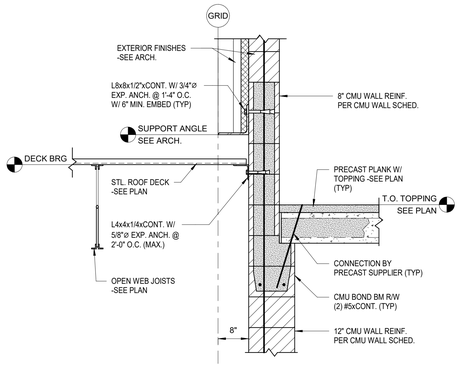


7 S401 SECTION @ FLOOR
3/4" = 1'-0"

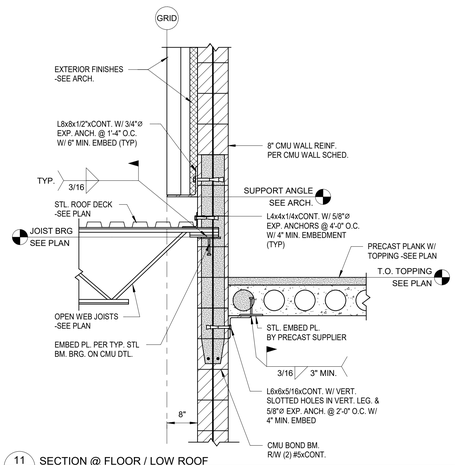


8 S401 SECTION @ FLOOR
3/4" = 1'-0"

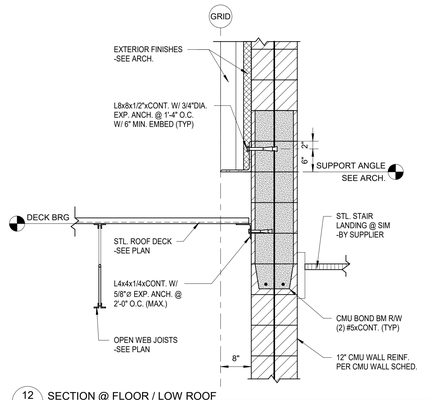
9 S401 SECTION @ FLOOR
3/4" = 1'-0"



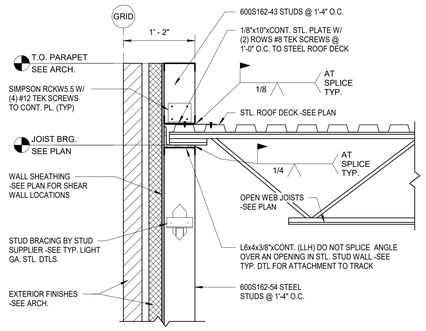
10 S401 SECTION @ FLOOR / LOW ROOF
3/4" = 1'-0"



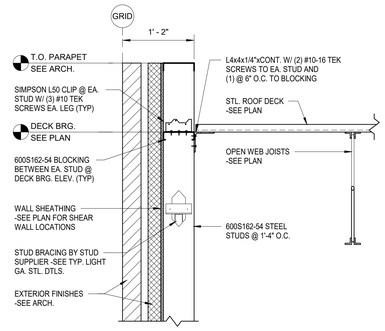
11 S401 SECTION @ FLOOR / LOW ROOF
3/4" = 1'-0"



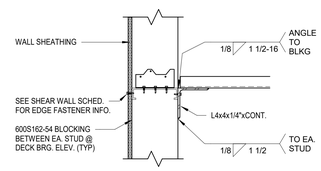
12 S401 SECTION @ FLOOR / LOW ROOF
3/4" = 1'-0"



13 S401 SECTION @ ROOF
1" = 1'-0"

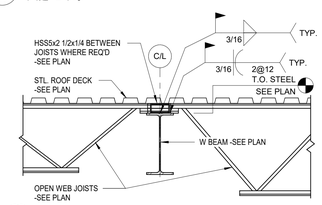


14 S401 SECTION @ ROOF
1" = 1'-0"

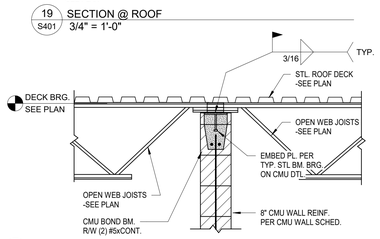


ALTERNATE CONNECTION DETAIL
1. AT CONTRACTORS OPTION, WELDS SHOWN MAY BE USED IN LIEU OF SCREWS.
2. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR THE TYPE OF WELDS AND MATERIALS SHOWN.
3. SPECIAL INSPECTION IS REQUIRED FOR WELDING SHOWN.

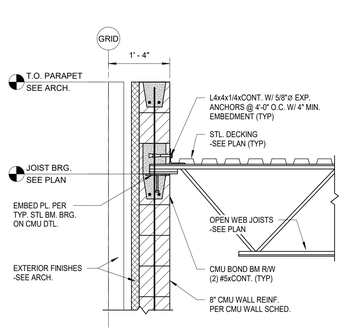
14A S401 ALT SECTION @ DECK BRG. MTL. STUD WALL
1 1/2" = 1'-0"



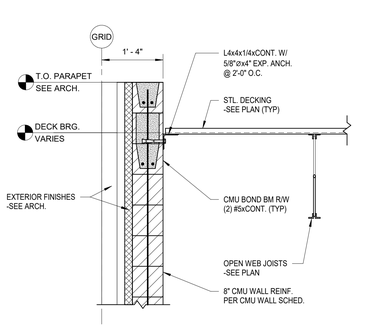
19 S401 SECTION @ ROOF
3/4" = 1'-0"



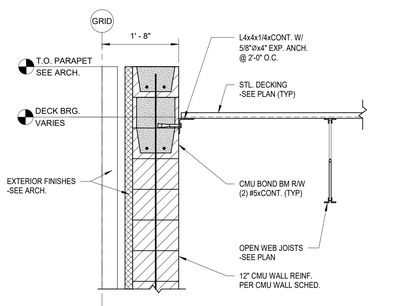
20 S401 SECTION @ ROOF
3/4" = 1'-0"



15 S401 SECTION @ ROOF
3/4" = 1'-0"

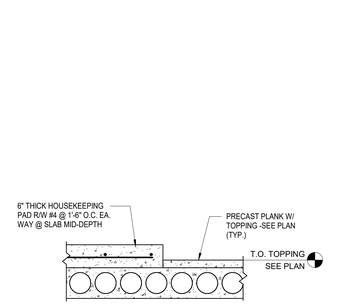


16 S401 SECTION @ ROOF
3/4" = 1'-0"

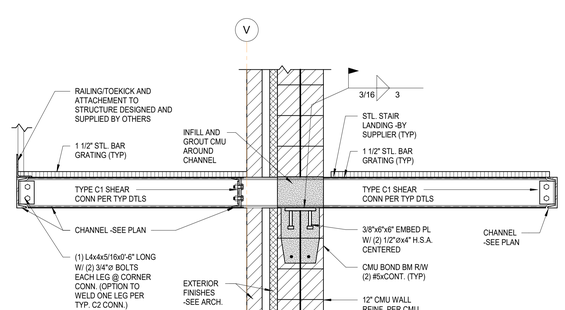


17 S401 SECTION @ ROOF
3/4" = 1'-0"

18 S401 SECTION @ ROOF
3/4" = 1'-0"



21 S401 SECTION @ FLOOR
3/4" = 1'-0"



22 S401 SECTION @ EXTERIO PLATFORM
3/4" = 1'-0"

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION DESIGN DEVELOPMENT

wendel
Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335

Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C

Northland Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(V)218-727-5995, (F)218-727-7779

PROGRESS PRINT
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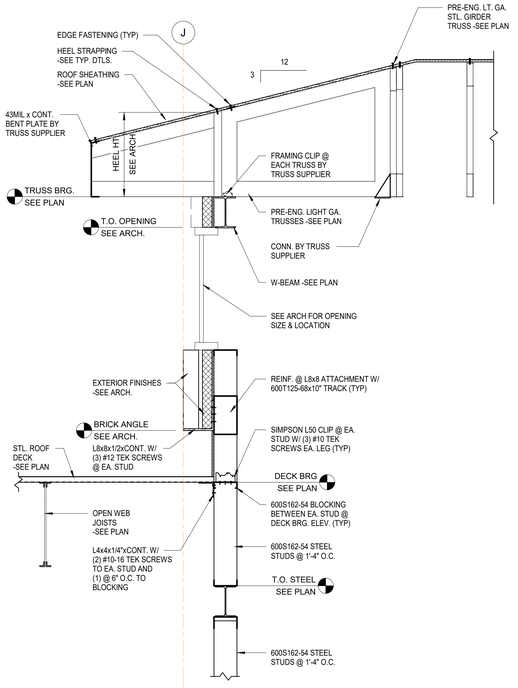
NO.	REVISIONS	DATE

DWG. TITLE

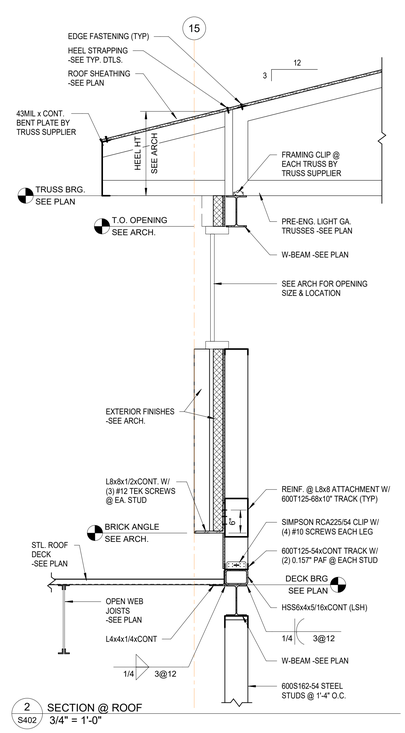
FRAMING DETAILS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

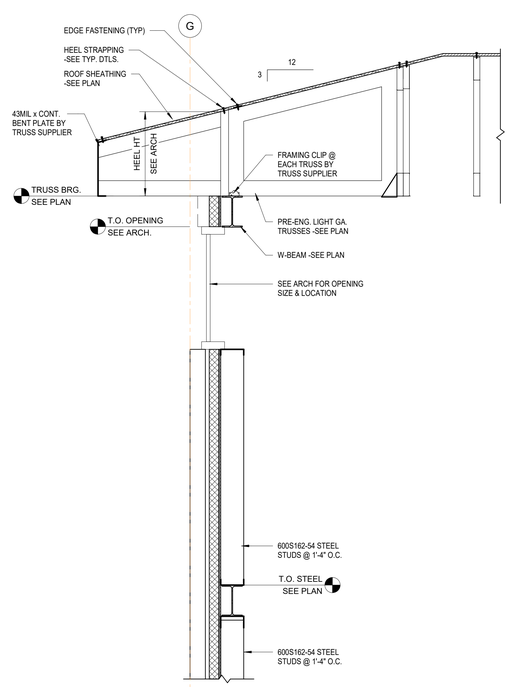
DATE	04.24.2025
SCALE	As indicated
DWN.	HMM CHK. TDR
PROJ. No.	24-042
DWG. No.	S401



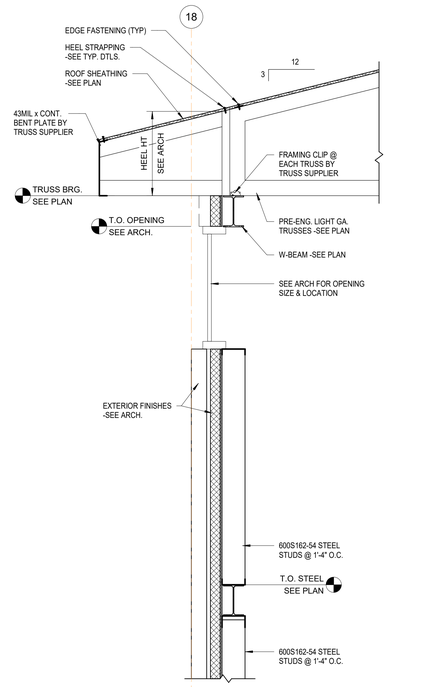
1 S402 SECTION @ ROOF
3/4" = 1'-0"



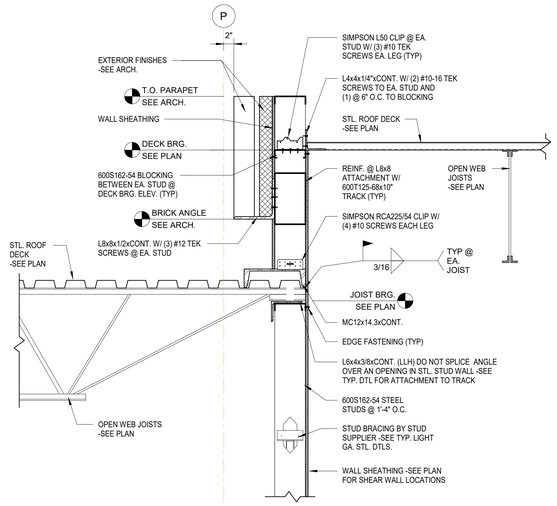
2 S402 SECTION @ ROOF
3/4" = 1'-0"



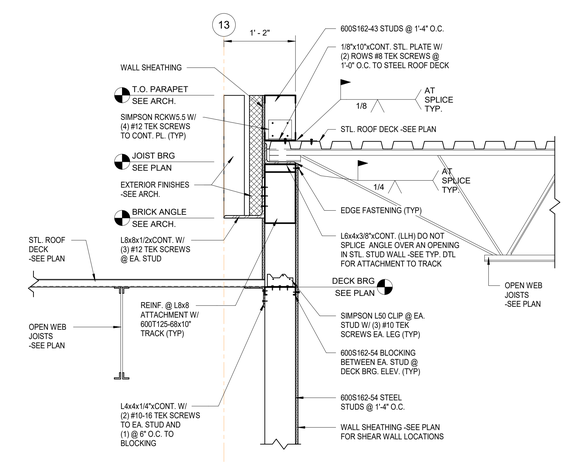
3 S402 SECTION @ ROOF
3/4" = 1'-0"



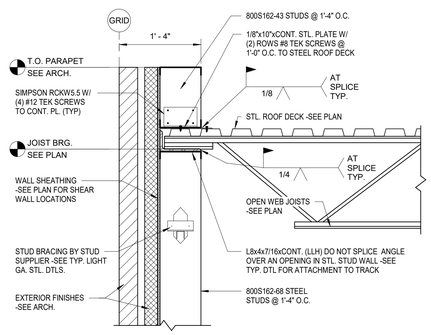
4 S402 SECTION @ ROOF
3/4" = 1'-0"



5 S402 SECTION @ ROOF
1" = 1'-0"



6 S402 SECTION @ ROOF
1" = 1'-0"



7 S402 SECTION @ ROOF
1" = 1'-0"

UNION GROVE, WI 53182

UNION GROVE YORKVILLE FIRE STATION
DESIGN DEVELOPMENT

wendel
Five Bugles Design
Mitchell Associates Architects
204 E. Grand Avenue, Suite 200
Eau Claire, WI 54701
www.wendelcompanies.com
p:716.688.0766 tf:877.293.6335
Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C
Northland Consulting Engineers L.L.P.
Structural, Civil and Forensic Engineering
102 South 21st Ave. West, Duluth, MN 55806
(W)218-727-5995, (F)218-727-7779

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FRAMING DETAILS

0 1" 2"
GENERIC SCALE BAR
SCALE BAR SHOWN IS TWO INCHES ON THE ORIGINAL DRAWING. IF NOT TWO INCHES ON THIS SHEET, ADJUST ACCORDINGLY

DATE	04.24.2025
SCALE	As indicated
DWN.	HMM CHK. TDR
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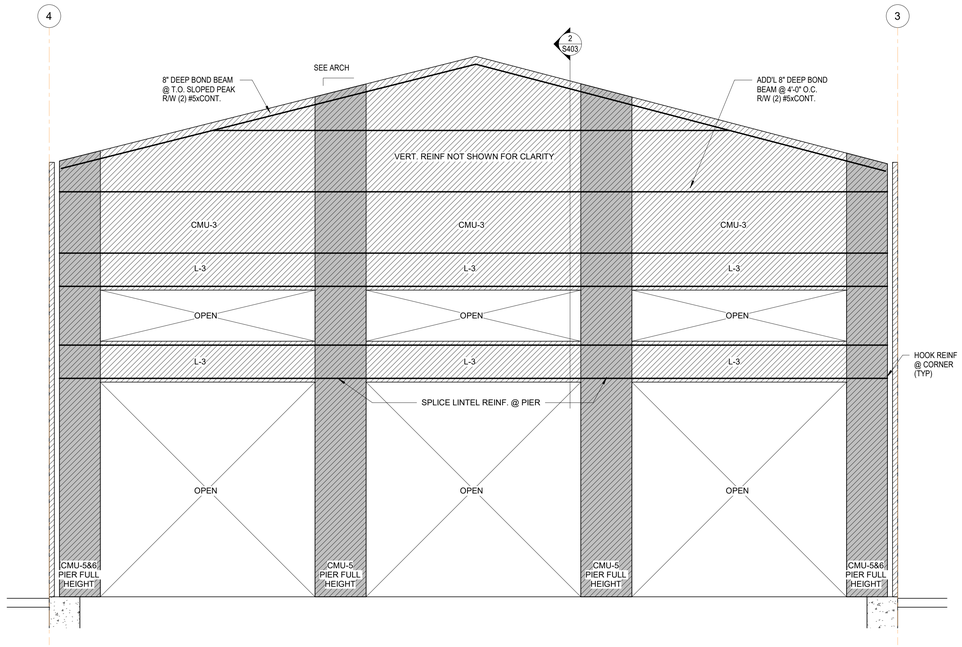
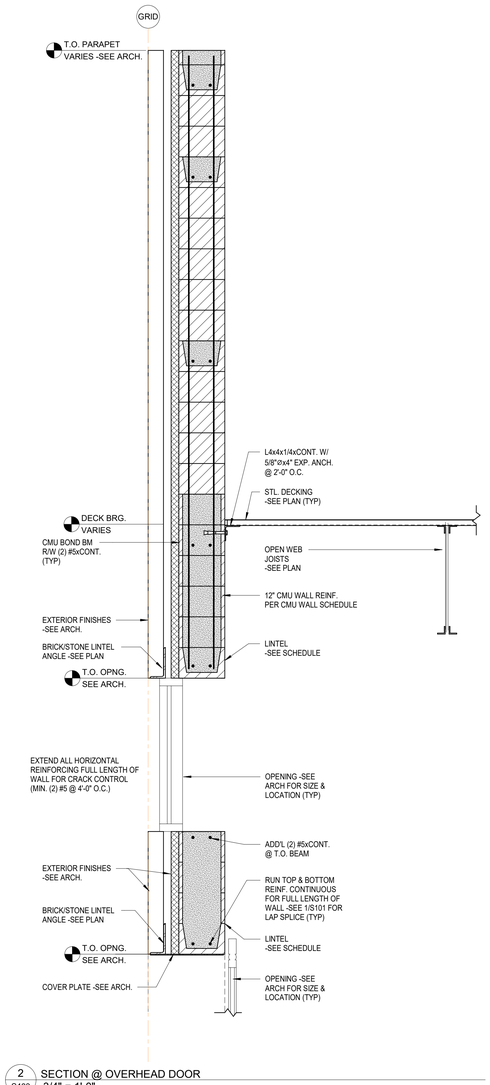
DWG. No.	

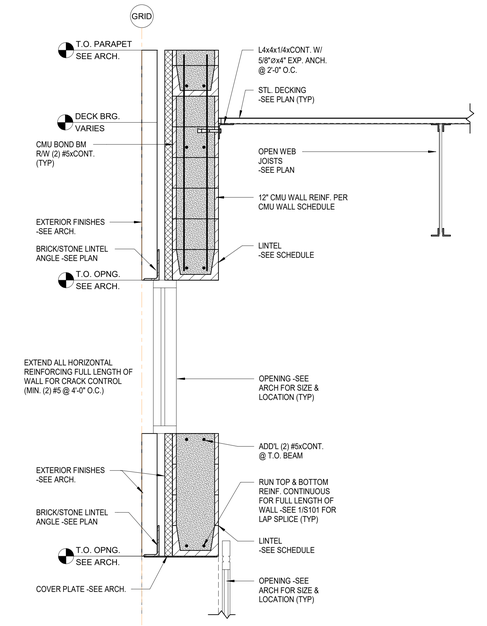
S402



1 S403 ELEVATION @ OVERHEAD DOORS
1/4" = 1'-0"

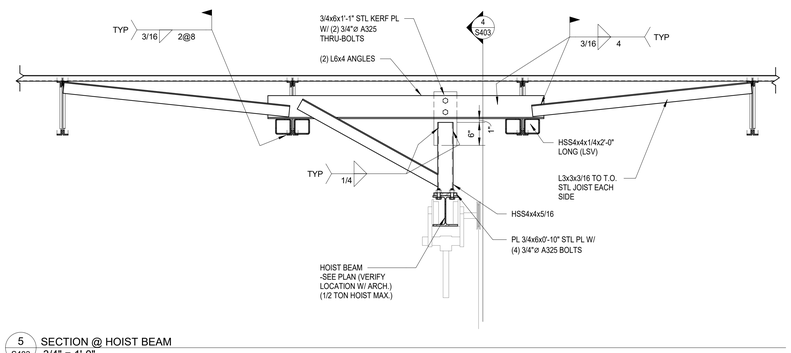


2 S403 SECTION @ OVERHEAD DOOR
3/4" = 1'-0"



3 S403 SECTION @ OVERHEAD DOOR
3/4" = 1'-0"

4 S403 SECTION @ HOIST BEAM
3/4" = 1'-0"



5 S403 SECTION @ HOIST BEAM
3/4" = 1'-0"

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