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STRUCTURAL GENERAL NOTES

GENERAL NOTES:

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE OTHER PROJECT DRAWINGS AND SPECIFICATIONS. THE MATERIAL REQUIREMENTS IN THESE NOTES ARE TO BE CONSIDERED AS MINIMUM. SPECIFICATIONS SHALL GOVERN WHEN MORE STRINGENT.

VERIFY ALL DIMENSIONS SHOWN WITH ARCHITECTURAL DRAWINGS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. DISCREPANCIES SHALL BE RESOLVED BEFORE PROCEEDING WITH CONSTRUCTION. CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND MAKE NECESSARY INVESTIGATIONS AND FIELD MEASUREMENTS. INFORM ENGINEER OF ALL DISCREPANCIES.

THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATIONS OF PENETRATIONS AND EMBEDDED ITEMS THROUGH THE STRUCTURE FOR ALL TRADES. PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER.

SEE MECHANICAL, ELECTRICAL, ARCHITECTURAL DRAWINGS FOR ANCHORS, PIPE SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED IN OR PASS THROUGH CONCRETE. IN GENERAL, EMBEDMENTS AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.

SEE ARCHITECTURAL DRAWINGS FOR DOOR HEIGHTS AND WALL OPENING DIMENSIONS.

STRUCTURAL ELEMENTS ARE NON-SELF SUPPORTING AND REQUIRE INTERACTION WITH OTHER ELEMENTS FOR STABILITY. FRAMING AND WALLS SHALL BE TEMPORARILY BRACED BY THE CONTRACTOR UNTIL PERMANENT BRACING, FLOOR AND ROOF DECKS AND WALLS HAVE BEEN INSTALLED AND CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.

SUPPORT OF ALL NON-STRUCTURAL ELEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NON-STRUCTURAL ELEMENTS ARE THOSE THAT DO NOT CONTRIBUTE TO THE DIRECT LOAD PATH OF BOTH THE GRAVITY AND LATERAL FORCE RESISTING SYSTEMS. THESE ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO PARTITIONS, FINISHES, MILLWORK, MECHANICAL EQUIPMENT, DUCTWORK, PIPING, LIGHT FIXTURES, ELECTRICAL CONDUIT, STORAGE RACKS, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THESE ELEMENTS ARE ADEQUATELY CONNECTED TO THE STRUCTURE TO RESIST ALL APPLIED LOADS. NOTIFY THE STRUCTURAL ENGINEER OF RECORD IF UNUSUAL SUPPORT CONDITIONS EXIST.

WORK REQUIRING SPECIAL INSPECTIONS SHALL BE INSPECTED ACCORDING TO THE BUILDING CODE AND INCLUDES: CONCRETE, REINFORCING STEEL, STRUCTURAL WELDING, HIGH-STRENGTH BOLTING, AND MASONRY. RE: SPECIAL INSPECTION PROGRAM TABLE WHEN APPLICABLE.

DESIGN CRITERIA:

BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE CITY OF MANHATTAN, KANSAS.

LIVE LOADS:  
ROOF: 20 PSF

SNOW LOADS:  
GROUND SNOW LOAD, Pg: 20 PSF  
FLAT-ROOF SNOW LOAD, Pf: 20 PSF  
SNOW EXPOSURE FACTOR, Ce: 0.9  
SNOW LOAD IMPORTANCE FACTOR, Is: 1.0  
THERMAL FACTOR, Ct: 1.0

WIND LOAD:  
BASIC WIND SPEED: 115 MPH  
EXPOSURE CATEGORY: C  
WIND IMPORTANCE FACTOR, Iw: 1.0  
BASIC INTERNAL PRESSURE COEFFICIENT, Gcpi: ±0.18  
BASIC COMPONENTS AND CLADDING PRESSURE (ADJUSTED TO COMPLY WITH BUILDING CODE):  
±20 PSF @ INTERIOR ZONES  
±25 PSF @ END ZONES

SEISMIC LOAD:  
SEISMIC IMPORTANCE FACTOR, Ie: 1.0  
SPECTRAL RESPONSE ACCELERATIONS:  
Ss: 0.1563  
S1: 0.0570  
SPECTRAL RESPONSE COEFFICIENTS:  
Sds: 0.167  
Sd1: 0.091  
SITE CLASS: D  
SEISMIC DESIGN CATEGORY: B  
BASIC SEISMIC-FORCE-RESISTING SYSTEM: LIGHT-FRAMED WALLS WITH WOOD STRUCTURAL PANELS & STEEL ORDINARY MOMENT FRAMES  
DESIGN BASE SHEAR: Cs x W  
SEISMIC RESPONSE COEFFICIENTS, Cs: 0.0256 & 0.0476  
RESPONSE MODIFICATION FACTOR, R: 6.5 & 3.5  
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

FOUNDATION AND EARTHWORK NOTES:

REFER TO THE GEOTECHNICAL EXPLORATION AND SUBGRADE RECOMMENDATIONS: ASPEN DENTAL-MANHATTAN, KANSAS/ COOK, FLATT & STROBEL ENGINEERS PA - KANSAS CITY, KANSAS (CFS NO. 21-5724)/OCTOBER 5, 2021

THE FOUNDATION BEARING MATERIAL SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER BEFORE FOUNDATIONS ARE CONSTRUCTED.

AT STEPPED FOOTINGS, THE LOWER FOOTING SHALL BE PLACED FIRST.

FOUNDATIONS HAVE BEEN DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF. FOUNDATIONS SHALL BEAR DIRECTLY ON A 24-INCH THICK, GEOGRID REINFORCED AGGREGATE PAD (GRAP) DESIGNED AND CONSTRUCTED AS OUTLINED IN THE GEOTECHNICAL REPORT, SECTION 7.2.

WALL FOUNDATION SHALL BEAR AT MINIMUM OF 3'-0" BELOW ADJACENT FINISH GRADE, UNLESS OTHERWISE NOTED.

UNUSUAL CONDITIONS OR CHANGES TO THE FOUNDATIONS AS REQUIRED BY FIELD CONDITIONS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREP REQUIREMENTS FOR SLAB-ON-GRADE CONSTRUCTION. PREPARED SUBGRADES EXCAVATED TO INSTALL UTILITIES BELOW FLOOR SLABS SHALL BE BACKFILLED AND COMPACTED AS SPECIFIED BY THE GEOTECHNICAL ENGINEER.

REFER TO GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS.

MAINTAIN ALL EXCAVATIONS FREE OF WATER.

CONCRETE NOTES:

CONCRETE SHALL HAVE THE FOLLOWING UNLESS OTHERWISE SPECIFIED (SELECT PROPORTIONS FOR CONCRETE IN ACCORDANCE WITH ACI 318):

	MAX WATER/CEMENT RATIO	MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS
INTERIOR SLAB ON GRADE	0.45	3,000 PSI
FOOTINGS	0.45	4,500 PSI
FOUNDATION WALLS	0.45	4,500 PSI
GRADE BEAMS	0.45	4,500 PSI
DRILLED PIERS	0.50	4,000 PSI
CONCRETE ON STEEL DECK	0.45	3,000 PSI

REINFORCING STEEL SHALL BE BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

CEMENT SHALL CONFORM TO ASTM C150, TYPE I OR II.

AGGREGATES SHALL CONFORM TO ASTM C33. COARSE AGGREGATE SHALL CONSIST OF 1" MAXIMUM AGGREGATE SIZE. COMBINED GRADATION SHALL HAVE A UNIFORM DISTRIBUTION AS FOLLOWS:  
5-20% RETAINED ON 3/4", 1/2", 3/8", NO. 4, NO. 8, NO. 16, NO. 30 AND NO. 50 SIEVES; LESS THAN 5% PASSING NO. 50 SIEVE.

MATERIALS AND ADMIXTURES SHALL NOT CONTAIN CALCIUM CHLORIDE.

ALL EXTERIOR AND CONCRETE EXPOSED TO FREEZE/THAW CYCLES SHALL BE AIR-ENTRAINED 6% (±) BY VOLUME. THIS INCLUDES BUT IS NOT LIMITED TO FOOTINGS, FOUNDATION WALLS AND GRADE BEAMS.

SLEEVES, OPENINGS, OR OTHER ATTACHMENTS NOT SHOWN ON DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.

MINIMUM TENSION LAP SPLICE LENGTHS AND TENSION DEVELOPMENT LENGTHS SHALL BE AS SCHEDULED, UNLESS NOTED OTHERWISE ON THE DRAWINGS. WELDED WIRE FABRIC SHALL LAP ONE (1) FULL SQUARE PLUS TWO (2) INCHES.

MAINTAIN CONCRETE COVER AS SCHEDULED.

REINFORCING STEEL FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI MANUAL OF STANDARD PRACTICE.

ALL REINFORCING AND EMBEDDED ANCHOR BOLTS SHALL BE ACCURATELY PLACED AND TIED PRIOR TO POURING CONCRETE. "STABBING" OF DOWELS OR ANCHOR BOLTS IS NOT ALLOWED.

CONSTRUCTION JOINTS IN WALLS AND ELEVATED FORMED SLABS SHALL BE KEYED (1 1/2" DEEP BY 1/3 MEMBER AREA) AND REINFORCING SHALL CONTINUE THROUGH JOINT OR BE TENSION LAP SPLICED. CONSTRUCTION JOINTS SHALL BE LOCATED BY THE CONTRACTOR TO LEAST IMPAIR THE STRUCTURE. JOINT LOCATIONS SHALL BE APPROVED BY THE ENGINEER.

EMBEDDED CONDUIT SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN 1/3 THE OVERALL THICKNESS OF SLAB, WALL OR BEAM IN WHICH THEY ARE EMBEDDED. THEY SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS OR WIDTHS ON CENTER.

CONDUIT LOCATED WITH CONCRETE SECTIONS SHALL COMPLY WITH ACI 318 REQUIREMENTS.

INTERIOR FLOOR SLABS SHALL COMPLY WITH ACI 117, SHALL MEET THE REQUIREMENTS OF A TYPE 5, SINGLE COURSE, HARD STEEL-TROWELED FINISH AS DESCRIBED IN ACI 302, AND SHALL ACHIEVE AN OVERALL FF25/FL20 TOLERANCE.

ADHESIVE ANCHORS IN CONCRETE OR FULLY GROUTED MASONRY SHALL BE ITW RAMSET/REDHEAD EPCON CERAMIC 6 SYSTEM, HILTI HY200, OR SIMPSON AT-XP. ADHESIVE ANCHORS FOR HOLLOW BLOCK AND OTHER MASONRY SHALL BE HILTI HY270 OR SIMPSON SET-XP.

STRUCTURAL STEEL ENCASED WITHIN CONCRETE SHALL COMPLY WITH AISC TOLERANCES.

MASONRY NOTES:

CONSTRUCT MASONRY IN ACCORDANCE WITH THE IBC. MASONRY REQUIRES LEVEL 1 QUALITY ASSURANCE (RE: SPECS). ALL MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND USING THE LOW-LIFT METHOD OF GROUTING. REFER ARCHITECTURAL PLAN FOR ALL BLOCK COURSING.

MASONRY DESIGN IS BASED ON A MINIMUM COMPRESSIVE STRENGTH (F'm) OF ASSEMBLY OF 1,500 PSI.

MASONRY UNITS SHALL MEET THE REQUIREMENTS OF ASTM C-90, GRADE N, WITH A NET AREA COMPRESSIVE STRENGTH OF 1,900 PSI.

MORTAR SHALL BE PREPARED IN ACCORDANCE WITH ASTM C-270. PROVIDE TYPE M MORTAR AT ALL MASONRY BELOW GRADE AND TYPE S AT ALL OTHER MASONRY.

GROUT SHALL BE PREPARED IN ACCORDANCE WITH ASTM C-476, WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS.

REINFORCING STEEL SHALL BE BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.

LAP SPLICE BAR REINFORCEMENT FOR MASONRY PER LAP SCHEDULE AND JOINT REINFORCEMENT A MINIMUM OF 6 INCHES.

CONCRETE MASONRY UNITS BELOW GRADE SHALL BE SOLID GROUTED.

CELLS WITH REINFORCING SHALL BE SOLID GROUTED AND VIBRATED.

STRUCTURAL STEEL NOTES:

STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:  
WIDE FLANGE SHAPES (W, WT): ASTM A992 (Fy=50 KSI)  
OTHER ROLLED SHAPES (M, S, HP, C, L): ASTM A36 (Fy=36 KSI)  
STEEL PIPE: ASTM A53, GRADE B (Fy=35 KSI)  
SQUARE AND RECTANGULAR TUBE: ASTM A500, GRADE B (Fy=46 KSI)  
ANCHOR BOLTS: ASTM F1554, GRADE 36  
HEADED ANCHOR STUDS: ASTM A108, GRADES 1010 TO 1020  
PLATES AND BARS: ASTM A36 (Fy=36 KSI)

SHEAR CONNECTORS AND HEADED WELDED STUDS OF TYPE AND SIZE NOTED SHALL BE TYPE B.

STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

PROPER FIT IN THE FIELD OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND IS THE RESPONSIBILITY OF THE CONTRACTOR.  
  
THE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PERFORMANCE OF ALL CONNECTIONS NOT FULLY DESIGNED OR DETAILED ON THE CONTRACT DOCUMENTS.

ANCHOR BOLTS SHALL BE ASTM F1554, A36 UNO. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES WITH THE APPROPRIATE BOLT PROJECTION, 4" MINIMUM UNO. PROVIDE DOUBLE NUTS AND DOUBLE WASHERS FOR STEEL COLUMN ANCHOR BOLTS TO ALLOW FOR ADJUSTMENT IN BASE PLATE ELEVATION.

NON-SHRINK GROUT UNDER BASE PLATES SHALL BE NON-METALLIC WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS.

HIGH STRENGTH BOLTED CONNECTIONS SHALL CONFORM TO THE AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 BOLTS. UNLESS OTHERWISE NOTED, HIGH STRENGTH BOLTS MAY BE TIGHTENED BY ANY METHOD THEREIN. REGARDLESS OF THE METHOD USED IN TIGHTENING, A HARDENED WASHER SHALL BE USED UNDER THE TURNED ELEMENT. UNLESS OTHERWISE NOTED, BOLTED CONNECTIONS SHALL BE MADE WITH 3/4"Ø, ASTM A325 HIGH STRENGTH BOLTS.

CONNECTIONS REQUIRING FULL PRETENSIONING ARE SLIP-CRITICAL, AND INCLUDE BOLTED COLUMN SPLICES AND CONNECTIONS SUBJECT TO DIRECT TENSION.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STRUCTURAL WELDING CODE, AWS D1.1. UNLESS NOTED OTHERWISE, MINIMUM WELD SIZE SHALL BE PER AISC 360, BUT SHALL BE NO LESS THAN 3/16" FILLET.

FIELD WELDING SHALL NOT BE STARTED UNTIL JOINT ELEMENTS ARE BOLTED IN INTIMATE CONTACT AND/OR ADJUSTED TO DIMENSIONS INDICATED WITH ALLOWANCE FOR EXPECTED WELD SHRINKAGE. MAINTAIN PLUMBNESS AND TRUENESS OF THE STRUCTURE.

FIELD WELDS FOR STRUCTURAL STEEL SHALL BE MADE WITH LOW HYDROGEN ELECTRODES. WELD FILLER METAL SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI.

WOOD NOTES:

GENERAL STRUCTURAL WOOD FRAMING SHALL MEET THE MINIMUM STRESS REQUIREMENTS FOR DOUGLAS-FIR #2 AND SHALL BEAR THE STAMP OF AN APPROVED TESTING AGENCY.

ROOF SHEATHING SHALL BE 5/8" (19/32" MIN) PLYWOOD WITH A SPAN RATING OF AT LEAST 32/16. PANELS SHALL BE NAILED WITH 10d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. 1/8" GAP BETWEEN INDIVIDUAL SHEETS. PLYWOOD SHALL BE APA RATED C-D EXTERIOR AND SHALL BEAR THE STAMP OF AN APPROVED TESTING AGENCY.

ALL WOOD-TO-WOOD CONNECTIONS SHALL MEET THE MINIMUM NAILING REQUIREMENTS OF THE BUILDING CODE.

PROVIDE SIMPSON CONNECTION HARDWARE AS SHOWN ON THE DRAWINGS. SUBSTITUTIONS MUST BE APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO USE. INSTALL CONNECTION HARDWARE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

WALL SHEATHING SHALL BE 1/2" OSB ON THE EXTERIOR FACE OF ALL EXTERIOR WALLS. PANELS SHALL BE NAILED WITH 10d GALVANIZED NAILS AT 4" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. ALL PANEL EDGES SHALL BE BLOCKED.

INSTALL ALL ROOF PLYWOOD SHEATHING WITH THE LONG DIMENSION OF THE PANEL PERPENDICULAR TO THE SUPPORTS WITH A MINIMUM OF TWO SPANS FOR EACH PANEL. STAGGER ALL END JOINTS. PROVIDE 1/8" SPACE AT PANEL JOINTS FOR EXPANSION PER APA.

PREFABRICATED WOOD TRUSS NOTES:

SPECIAL INSPECTIONS OF THE FABRICATION PROCESS OF PRE-FABRICATED WOOD STRUCTURAL ELEMENTS AND ASSEMBLIES SHALL BE IN ACCORDANCE WITH THE IBC.

TRUSSES SHALL BE CONFIGURED TO FOLLOW FINAL ROOF LINES, UNLESS NOTED OTHERWISE.

TRUSSES SHALL BE DESIGNED FOR ALL LOAD COMBINATIONS REQUIRED BY THE BUILDING CODE. IN NO CASE SHALL THE DEAD LOAD BE LESS THAN 15 PSF ON THE TOP CHORD AND 10 PSF ON THE BOTTOM CHORD.

TRUSS MANUFACTURER SHALL SUPPLY ALL TRUSS CONNECTIONS USING PREFABRICATED STEEL CONNECTORS AS REQUIRED.

CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY AND PERMANENT BRACING IN ADDITION TO ANY BRACING INDICATED ON THE PLANS.

ALL TEMPORARY AND PERMANENT BRACING FOR INDIVIDUAL TRUSS MEMBERS SHALL BE DESIGNED BY AND STAMPED BY A PROFESSIONAL ENGINEER PROVIDED BY CONTRACTOR AND/OR TRUSS MANUFACTURER. APPLIED ROOF SHEATHING AND OTHER ROOFING MATERIALS SHALL NOT BE ASSUMED TO PROVIDE SUFFICIENT BRACING FOR TRUSS CHORDS.

SHOP FABRICATED WOOD TRUSSES SHALL MEET DESIGN SPECIFICATIONS FOR METAL PLATE CONNECTED WOOD TRUSSES BY THE TRUSS PLATE INSTITUTE. PROVIDE PERMANENT AND TEMPORARY BRACING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

COORDINATE ALL TRUSS DETAILS WITH ARCHITECTURAL PLANS.

SPLICE & DEVELOPMENT LENGTHS FOR REINFORCEMENT  
(UNLESS NOTED OTHERWISE ON THE DRAWINGS)

fy = 60,000 psi  
f'c = 3,000 psi

BAR SIZE	LENGTH OF LAPPED SPLICES FOR REINFORCEMENT (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)			HOOK LENGTH	BAR SIZE
	TOP BARS*	OTHERS	TOP BARS*	OTHERS	HOOKEB BARS		
3	28	22	22	17	9	6	3
4	38	29	29	22	11	8	4
5	47	36	36	28	14	10	5
6	56	43	43	33	17	12	6
7	81	63	63	48	20	14	7
8	93	72	72	55	22	16	8
9	105	81	81	62	25	20	9
10	118	91	91	70	28	22	10
11	131	101	101	78	31	24	11
14	--	--	121	93	38	31	14
18	--	--	161	124	50	41	18

\*TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE TO BE CONSIDERED AS TOP BARS. VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.

UNLESS EITHER OF THE FOLLOWING TWO CASES EXIST FOR STRAIGHT BARS, THE DEVELOPMENT OR SPLICE LENGTH FOR STRAIGHT BARS IN THE ABOVE TABLE MUST BE MULTIPLIED BY 1.5:

I. THE CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS GREATER THAN OR EQUAL TO ONE BAR DIAMETER, THE CLEAR COVER IS GREATER THAN OR EQUAL TO ONE BAR DIAMETER, AND STIRRUPS OR TIES PROVIDED THROUGHOUT THE DEVELOPMENT OR SPLICE LENGTH MEET OR EXCEED THE CODE MINIMUM.

II. THE CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS GREATER THAN OR EQUAL TO TWO BAR DIAMETERS AND THE CLEAR COVER IS GREATER THAN OR EQUAL TO ONE BAR DIAMETER.

THE DEVELOPMENT LENGTH FOR HOOKED BARS, SIZE 11 AND SMALLER, PLACED WITH SIDE COVER GREATER THAN OR EQUAL TO 2 1/2" AND COVER ON THE BAR EXTENSION BEYOND THE HOOD (90° HOOK ONLY) GREATER THAN OR EQUAL TO 2", MAY BE MULTIPLIED BY 0.7.

VALUES IN THE ABOVE TABLE ARE NOT TO BE USED FOR EPOXY COATED REINFORCING AND/OR REINFORCING PLACED IN CONCRETE CONTAINING LIGHTWEIGHT AGGREGATE.

CONCRETE COVER FOR REINFORCEMENT  
(UNLESS NOTED OTHERWISE ON THE DRAWINGS)

LOCATION	MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 AND LARGER #5 AND SMALLER	2" 1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND: SLABS, WALLS, AND JOISTS: #14 AND LARGER #11 AND SMALLER BEAMS AND COLUMNS	1 1/2" 3/4" 1 1/2"

**CERTUS**

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Certificate Of Authorization

E-1392

Revit 2022 Local

MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SUBMISSION DATES  
04/04/2022

SHEET TITLE  
GENERAL NOTES

PROJECT NUMBER  
0210354

SHEET NUMBER  
S-001

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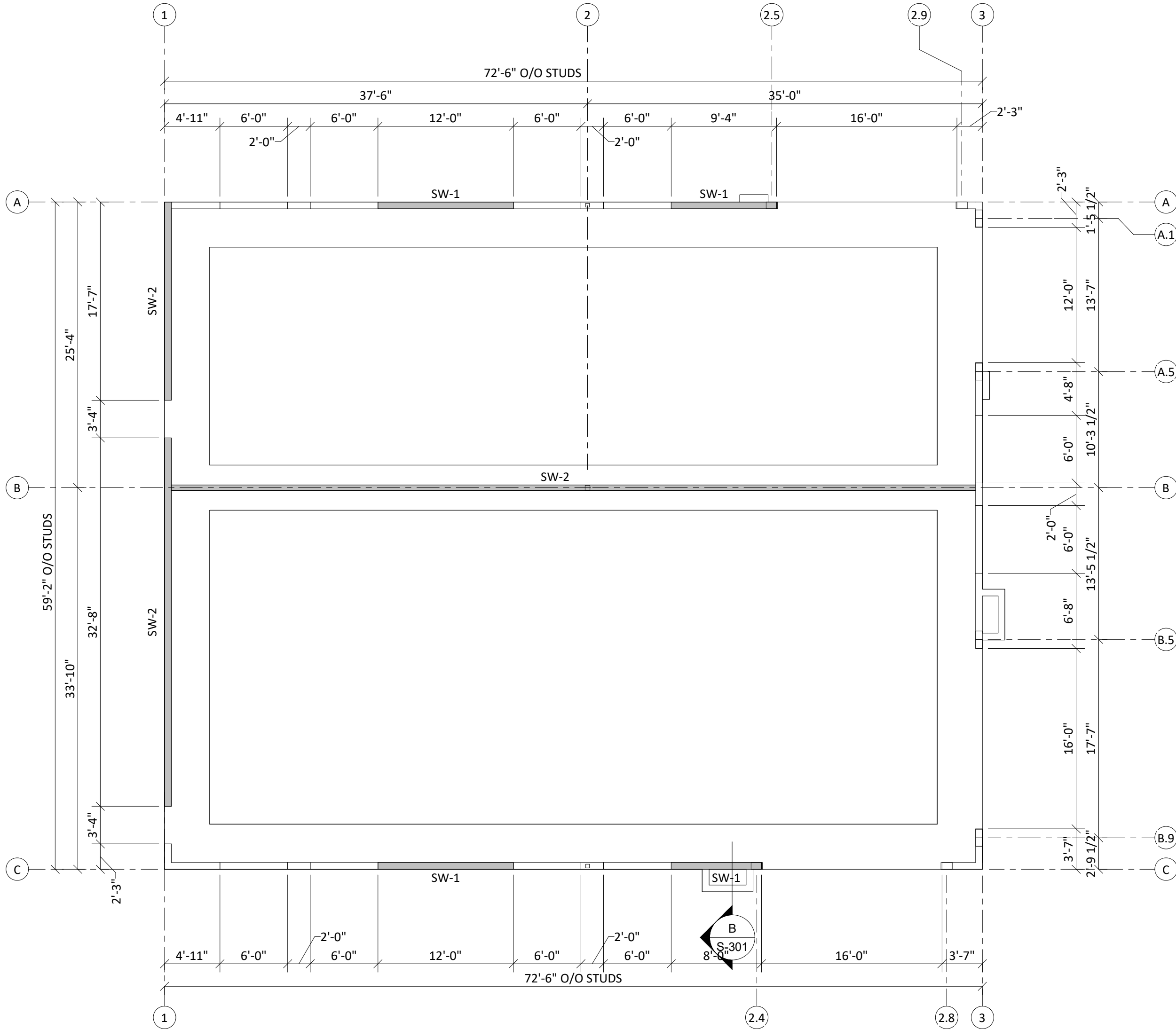
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C

B

A



WALL FRAMING PLAN

SCALE: 1/8" = 1'-0"

WALL CONSTRUCTION: TYPICAL EXTERIOR WALL CONSTRUCTION SHALL BE 2X8 WOOD STUDS @ 16" MAXIMUM ON CENTER. MINIMUM (2) TRIMMER STUDS AND (2) KING STUDS SHALL BE PROVIDED AT ALL OPENINGS IN EXTERIOR, BEARING, AND SHEAR WALLS. REFERENCE HEADER SCHEDULE FOR CONDITIONS REQUIRING ADDITIONAL STUDS. DOUBLE TOP PLATE SHALL BE CONTINUOUS AND SHALL BE SPLICED PER TYPICAL DETAIL. SEE SHEAR WALL SCHEDULE FOR FURTHER INFORMATION ON CONSTRUCTION OF SHEAR WALLS.

VERIFY ALL DIMENSIONS SHOWN WITH ARCHITECTURAL AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. INFORM ENGINEER OF ALL DISCREPANCIES.

**NOTE:** FACE OF STUD ALIGNS WITH THE CONCRETE SLAB EDGE FOR ALL EXTERIOR WALLS. ALL PLAN DIMENSIONS TO EXTERIOR WALLS ARE TO FACE OF STUD/FACE OF CONCRETE SLAB. ALL DIMENSIONS TO INTERIOR WALLS ARE TO FACE OF STUD/STRUCTURAL WALL.

WOOD SHEARWALL (SW) SCHEDULE							
MARK	STUD SIZE & SPACING	SHEATHING MATERIAL	EDGE NAILING	FIELD NAILING	COMPRESSION CHORD (MIN)	HOLDOWN	SILL PLATE ANCHOR BOLT AT FDN
SW-1	2x8@16	1/2" OSB ZIP SYSTEM PANELS BLOCKED ONE SIDE OF WALL	8d COMMON @4" OC	8d COMMON @12" OC	(3) 2x8 WD STUDS	HDU8-SD2.5 7/8" Ø AB	5/8" Ø AB AT 1'-4" OR 3/4" Ø AB AT 2'-0" OC
SW-2	2x8@16	1/2" OSB ZIP SYSTEM PANELS BLOCKED ONE SIDE OF WALL	8d COMMON @6" OC	8d COMMON @12" OC	(2) 2x8 WD STUDS	HDU4-SD2.5 5/8" Ø AB	5/8" Ø AB AT 2'-0" OR 3/4" Ø AB AT 2'-8" OC

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MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

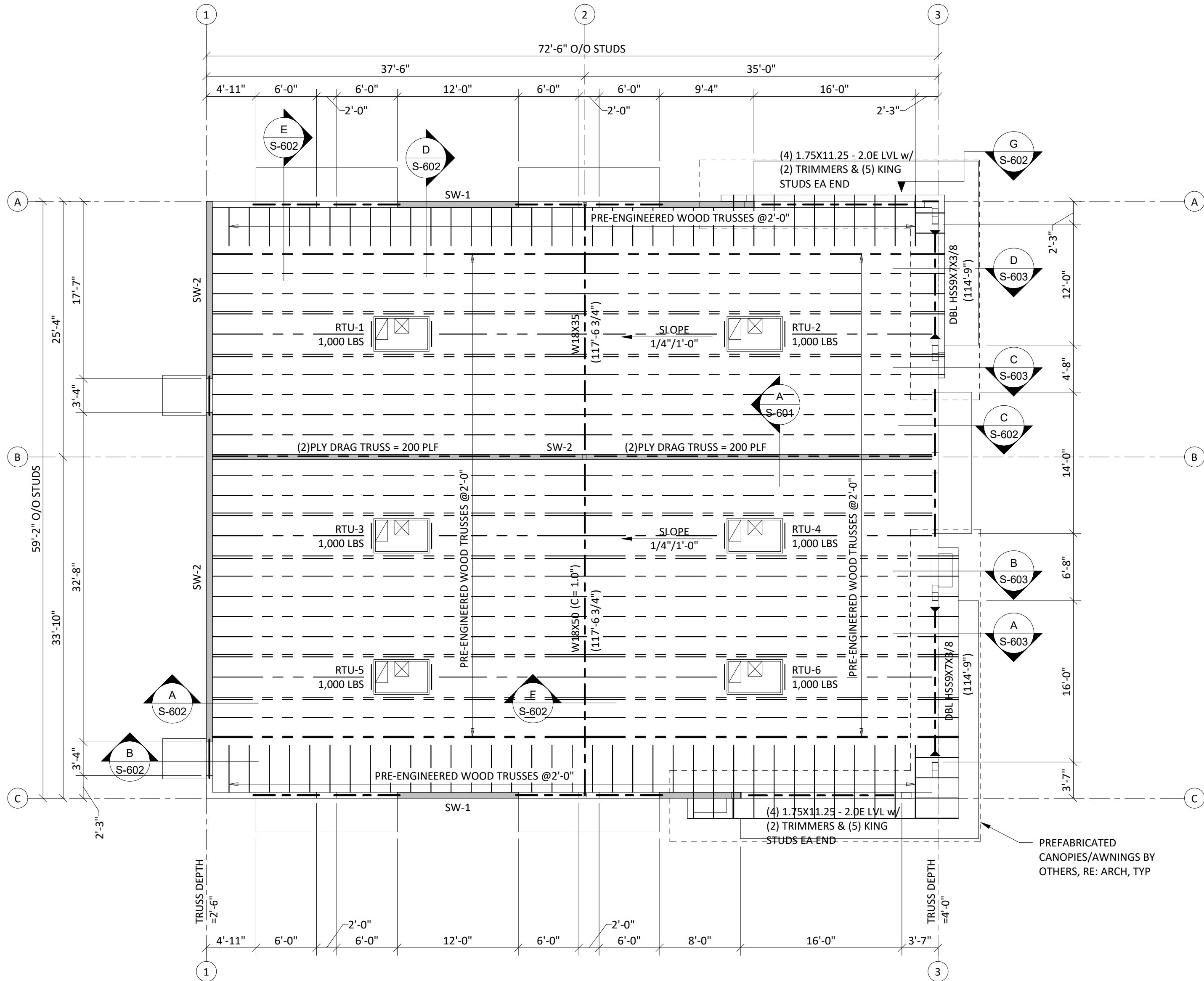
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SHEET TITLE  
WALL FRAMING PLAN

PROJECT NUMBER  
0210354

SHEET NUMBER  
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### ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

ROOF CONSTRUCTION: WOOD SHEATHING (19/32" MIN) OVER PREFAB WOOD ROOF TRUSSES @ 2'-0" OC MAX. SHEATHING SHALL BE CONTINUOUS UNDER AREAS OF OVERBUILD. REFERENCE GENERAL NOTES FOR SHEATHING SPECIFICATIONS AND ATTACHMENT.

DESIGN ALL TRUSSES FOR 15 PSF NET UPLIFT.

PROVIDE BRIDGING AS PRESCRIBED BY THE TRUSS MANUFACTURER REQUIREMENTS.

TOS - TOP OF STEEL ELEVATION: NOTED THUS (ELEV)

TOP OF PARAPET = 125-0 (MAX)

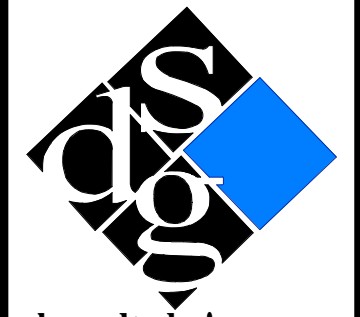
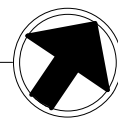
TRUSS BEARING ELEVATION = 115-0

TYPICAL HEADERS IN OPENINGS LESS THAN 4'-0" SHALL BE (4) 2X8 OR DEEPER, ALL HEADERS IN OPENINGS UP TO 6'-6" SHALL BE (4) 2X10 OR DEEPER, ALL HEADERS IN OPENINGS UP TO 8'-4" SHALL BE (4) 2X12. CONSTRUCT HEADERS PER "TYPICAL HEADER CONSTRUCTION" DETAIL. ALL HEADERS SHALL HAVE (1) TRIMMER MINIMUM AND (2) DEDICATED STUDS MINIMUM. PROVIDE (2) TRIMMERS AT OPENINGS LARGER THAN 7'-4".

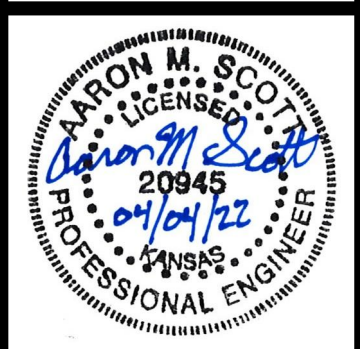
LINTELS: LOOSE BRICK LINTELS FOR DOOR AND WINDOW OPENINGS UP TO 8'-4" SHALL BE L5X5X3/8 GALVANIZED (ASTM A36)

DESIGN ROOF TRUSSES TO SUPPORT RTU LOADS AT LOCATIONS SHOWN. NOTIFY ENGINEER IF WEIGHTS, SIZES, OR LOCATIONS VARY FROM THAT SHOWN.

VERIFY ALL DIMENSIONS SHOWN WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. INFORM ENGINEER OF ALL DISCREPANCIES.



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**MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR**  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SUBMISSION DATES  
04/04/2022

SHEET TITLE  
ROOF FRAMING PLAN

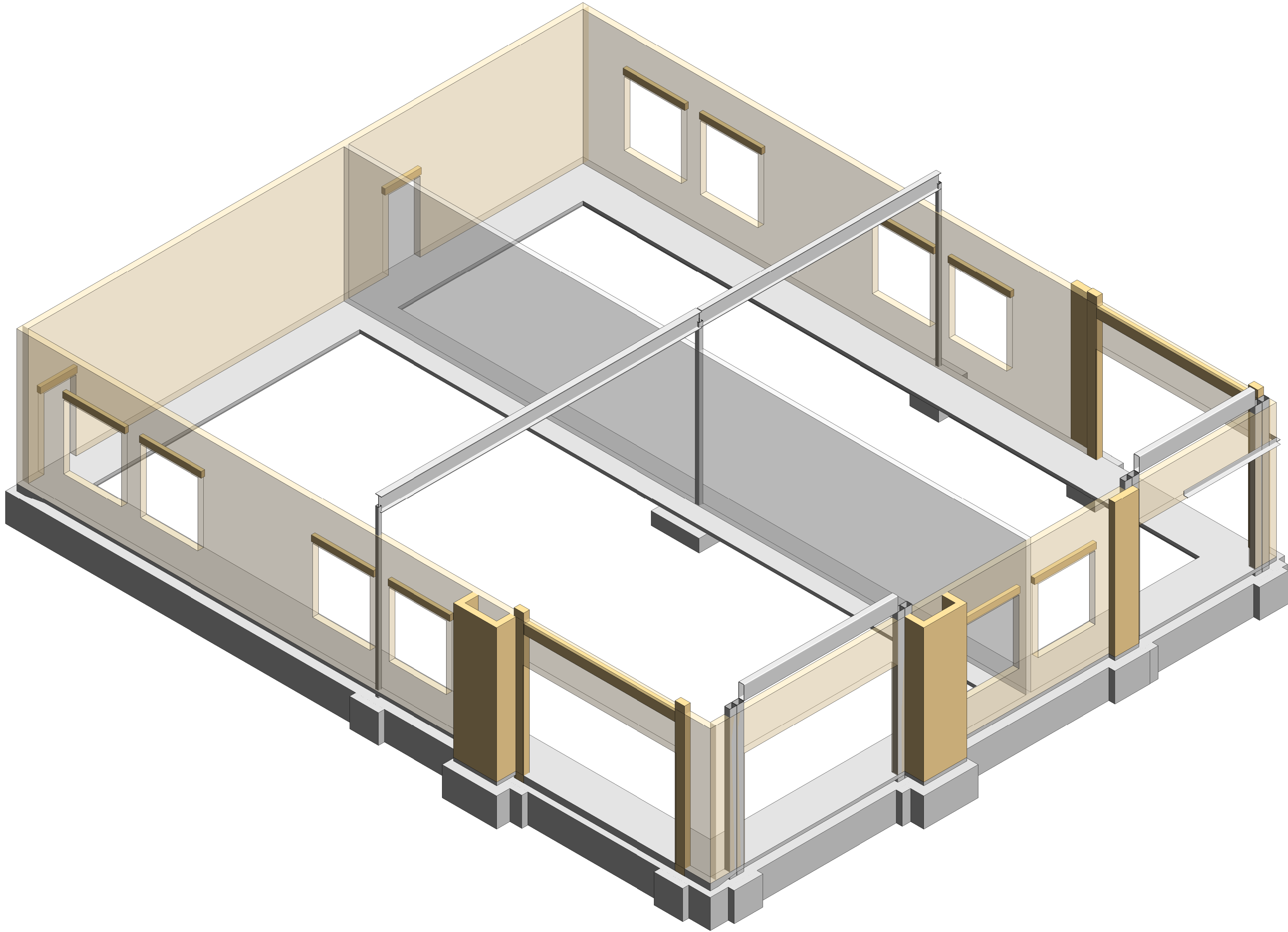
PROJECT NUMBER  
**0210354**

SHEET NUMBER  
**S-103**

**CERTUS**  
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DATE: 4/4/2022 4:47:32 PM  
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① STRUCTURAL STEEL ISOMETRIC VIEW FROM SE CORNER  
SCALE: NONE

ISOMETRIC VIEWS ARE INTENDED TO SHOW  
GENERAL FRAMING CONFIGURATIONS AND  
ARE FOR REFERENCE ONLY. IN NO WAY SHALL  
THESE VIEWS BE USED TO CONVEY THE FULL  
EXTENT OF FRAMING MATERIALS REQUIRED.  
QUANTITY OF MATERIALS SHALL BE BASED  
UPON STRUCTURAL PLANS, DETAILS,  
ARCHITECTURAL DRAWINGS, AND THE FULL  
EXTENT OF CONSTRUCTION DOCUMENTS.

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MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SUBMISSION DATES  
04/04/2022

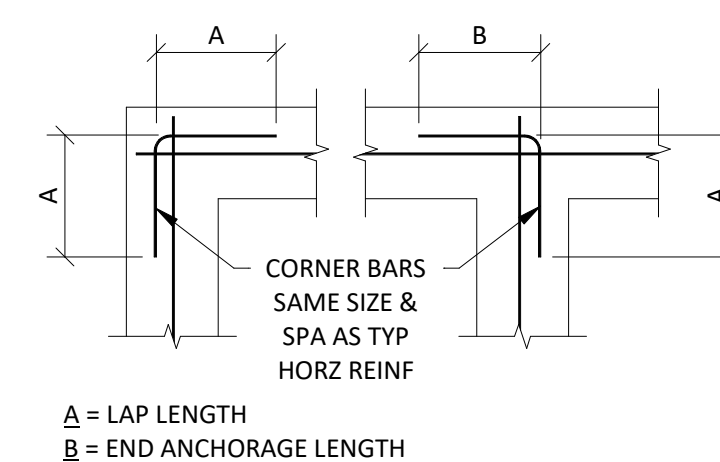
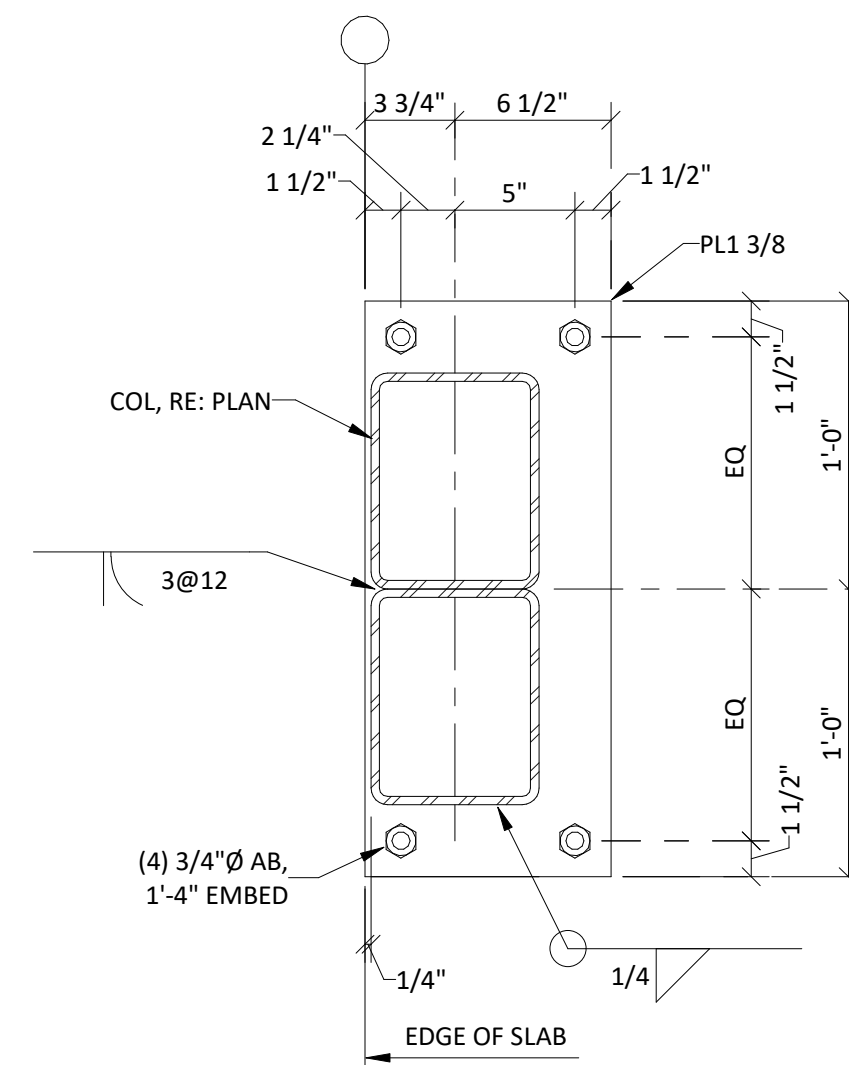
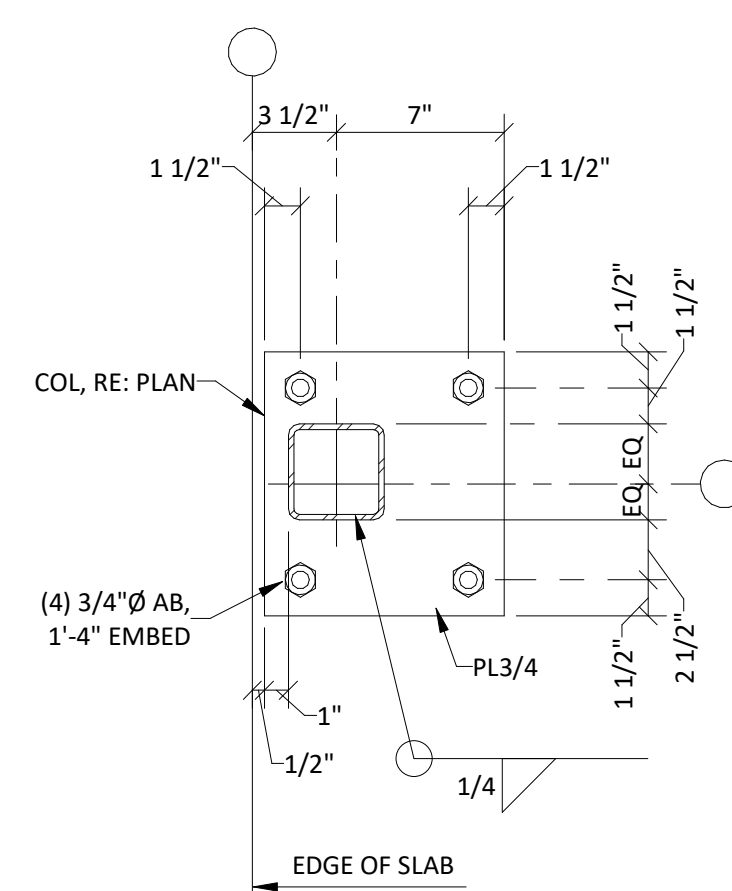
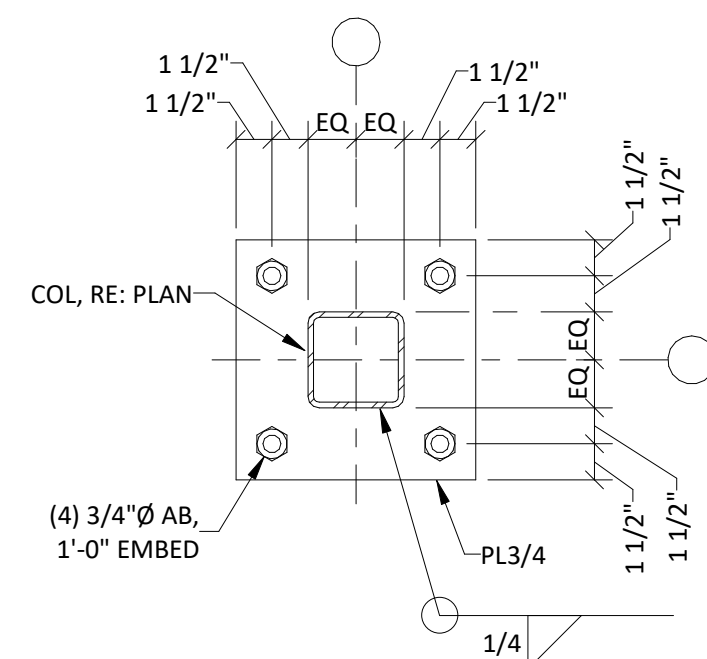
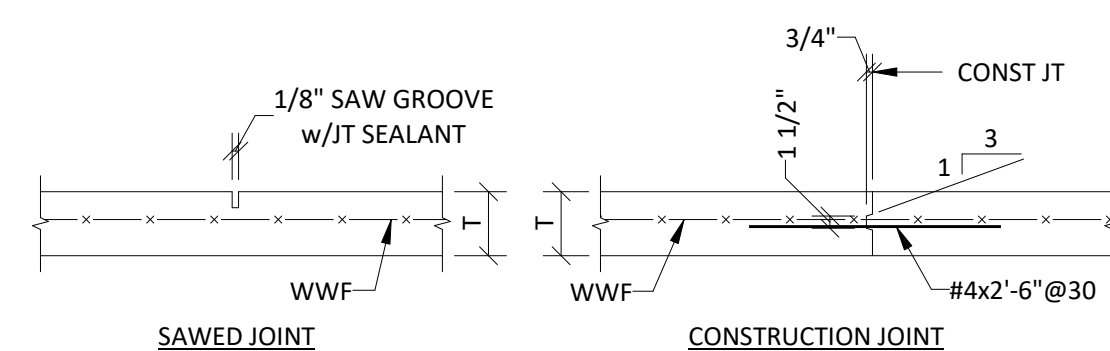
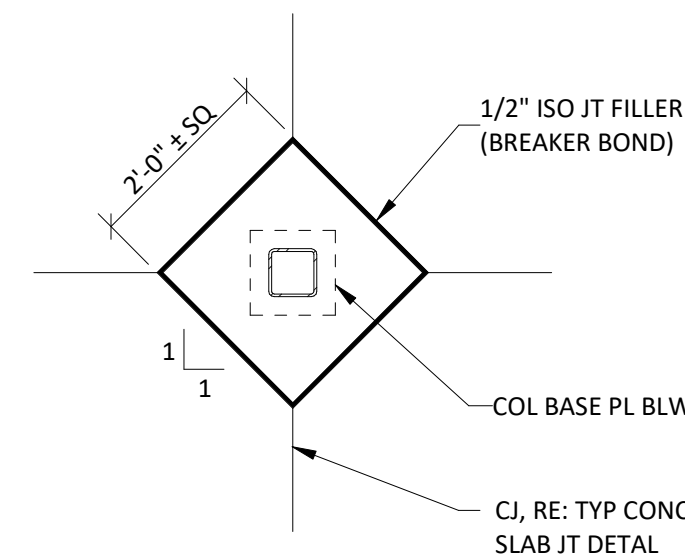
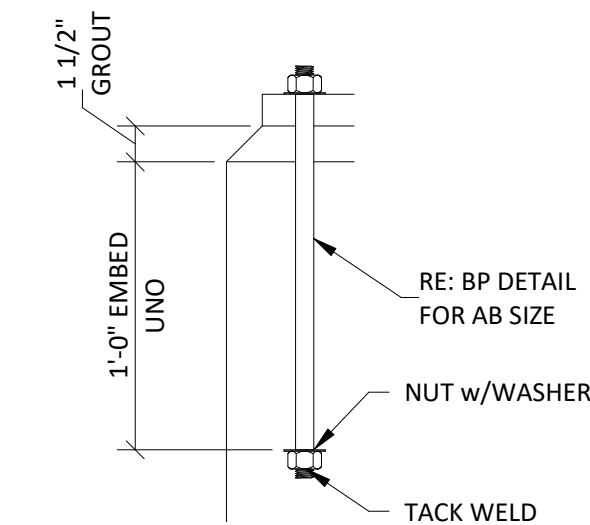
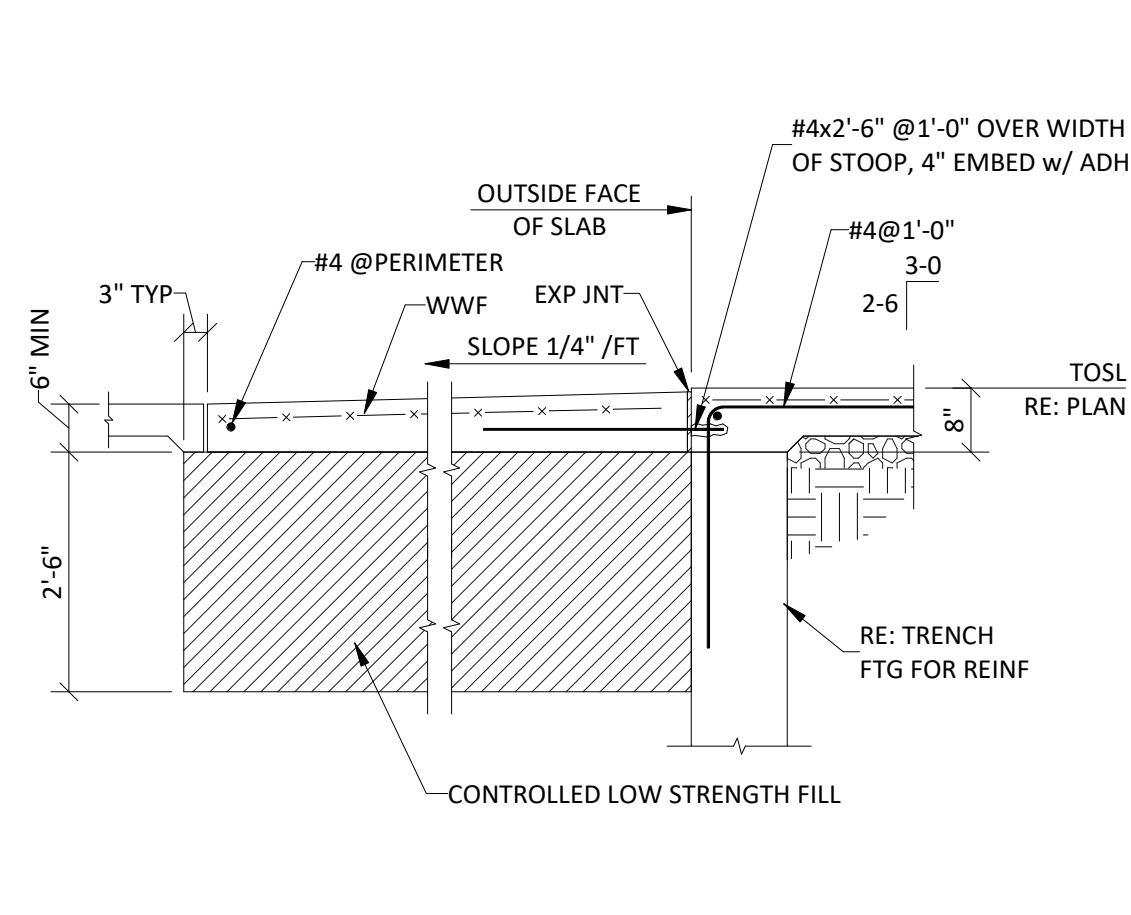
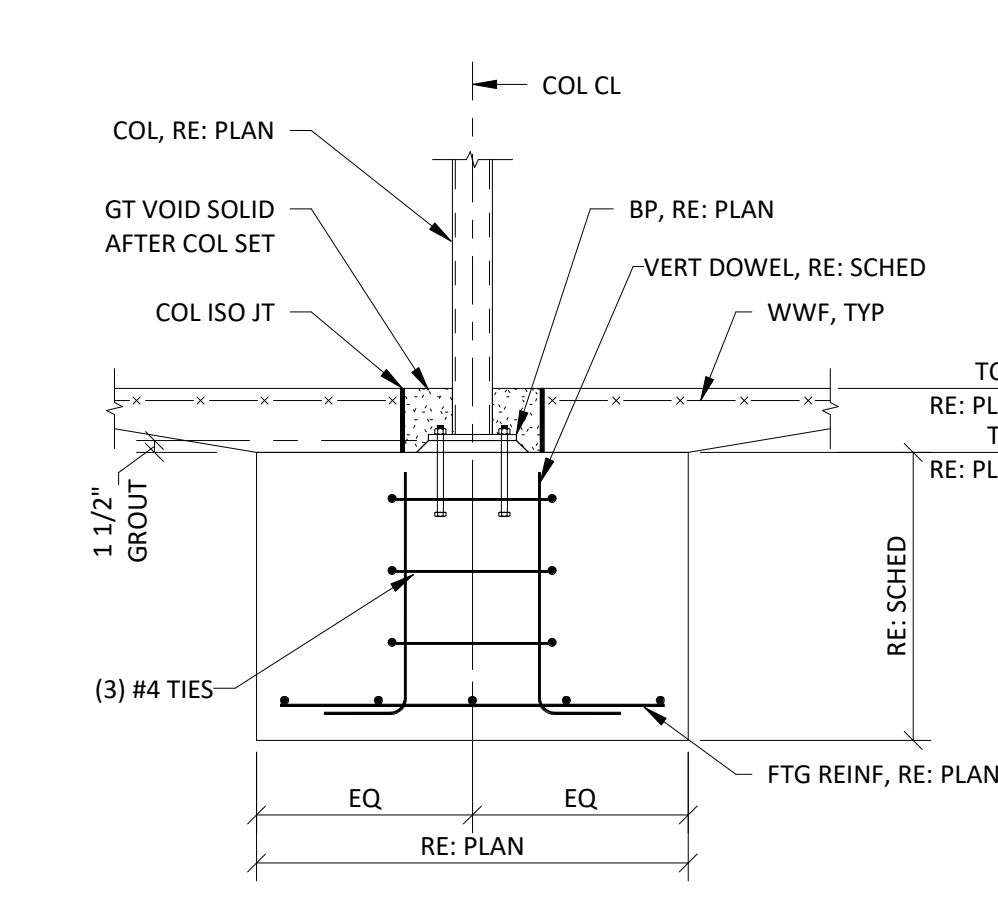
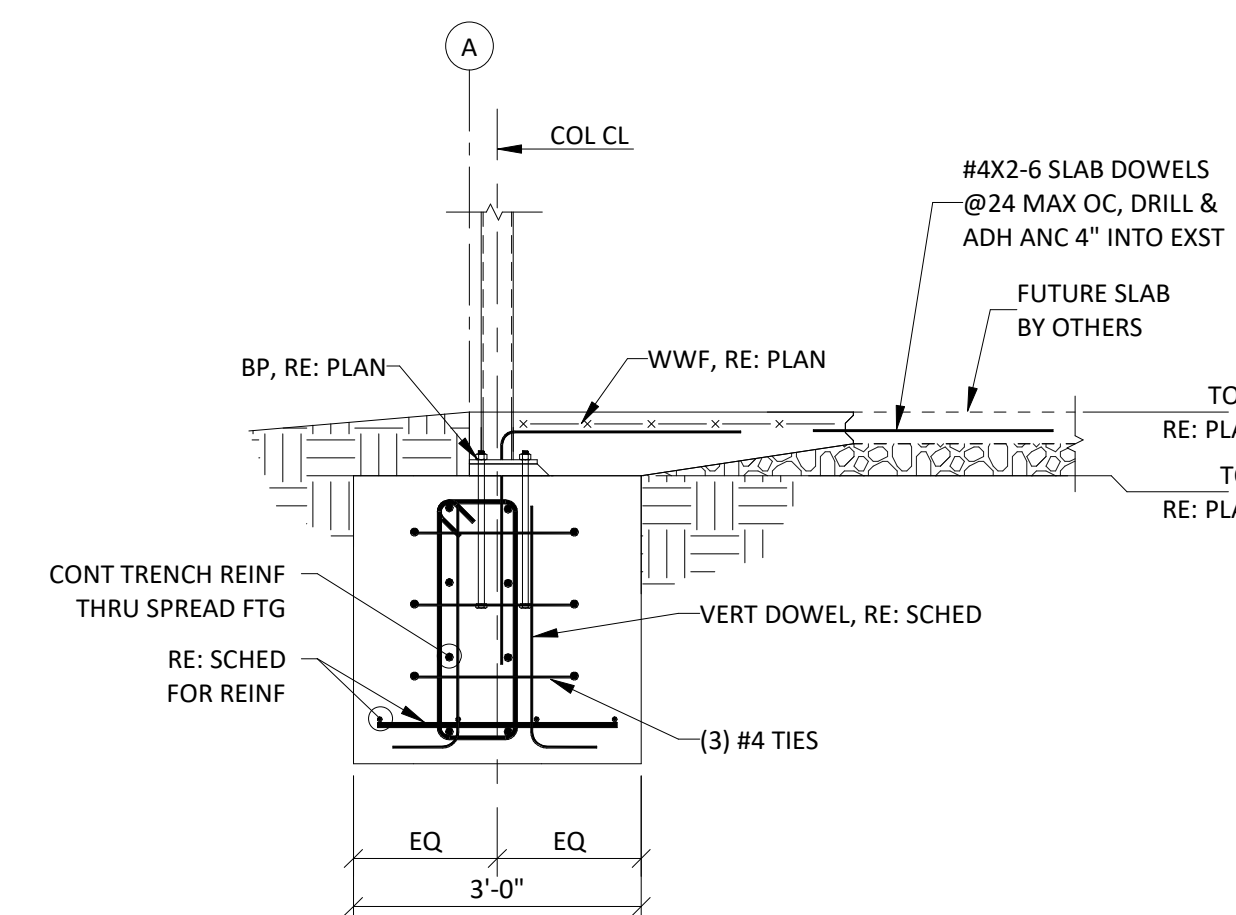
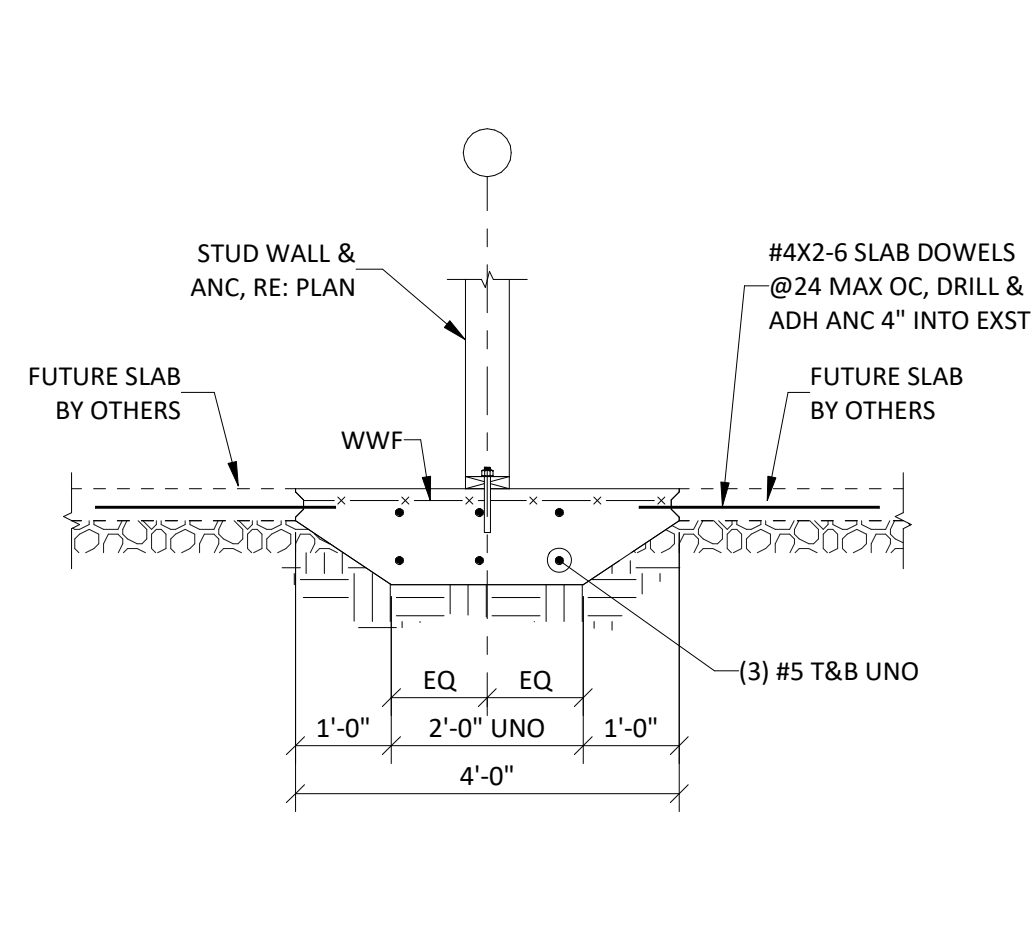
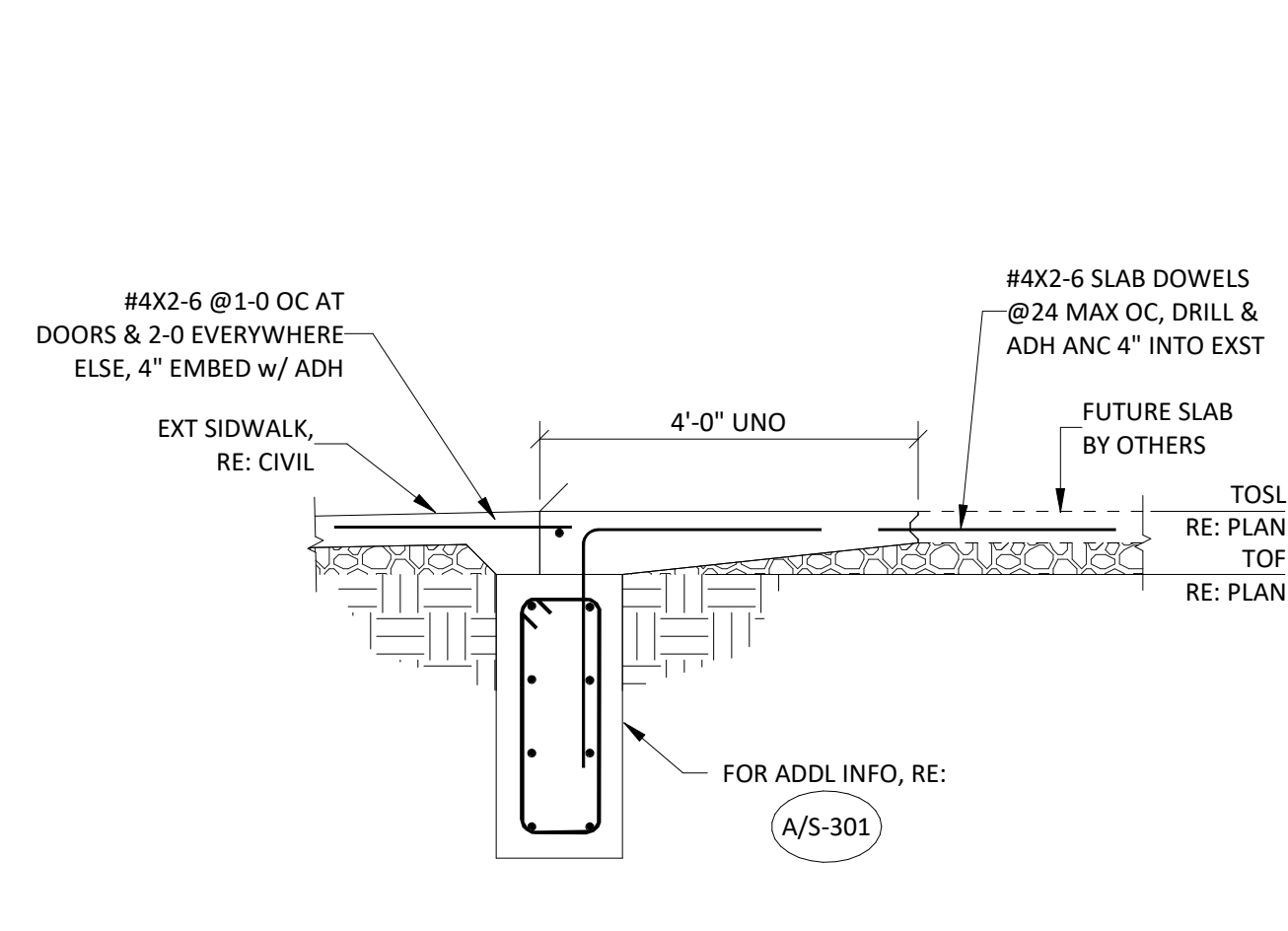
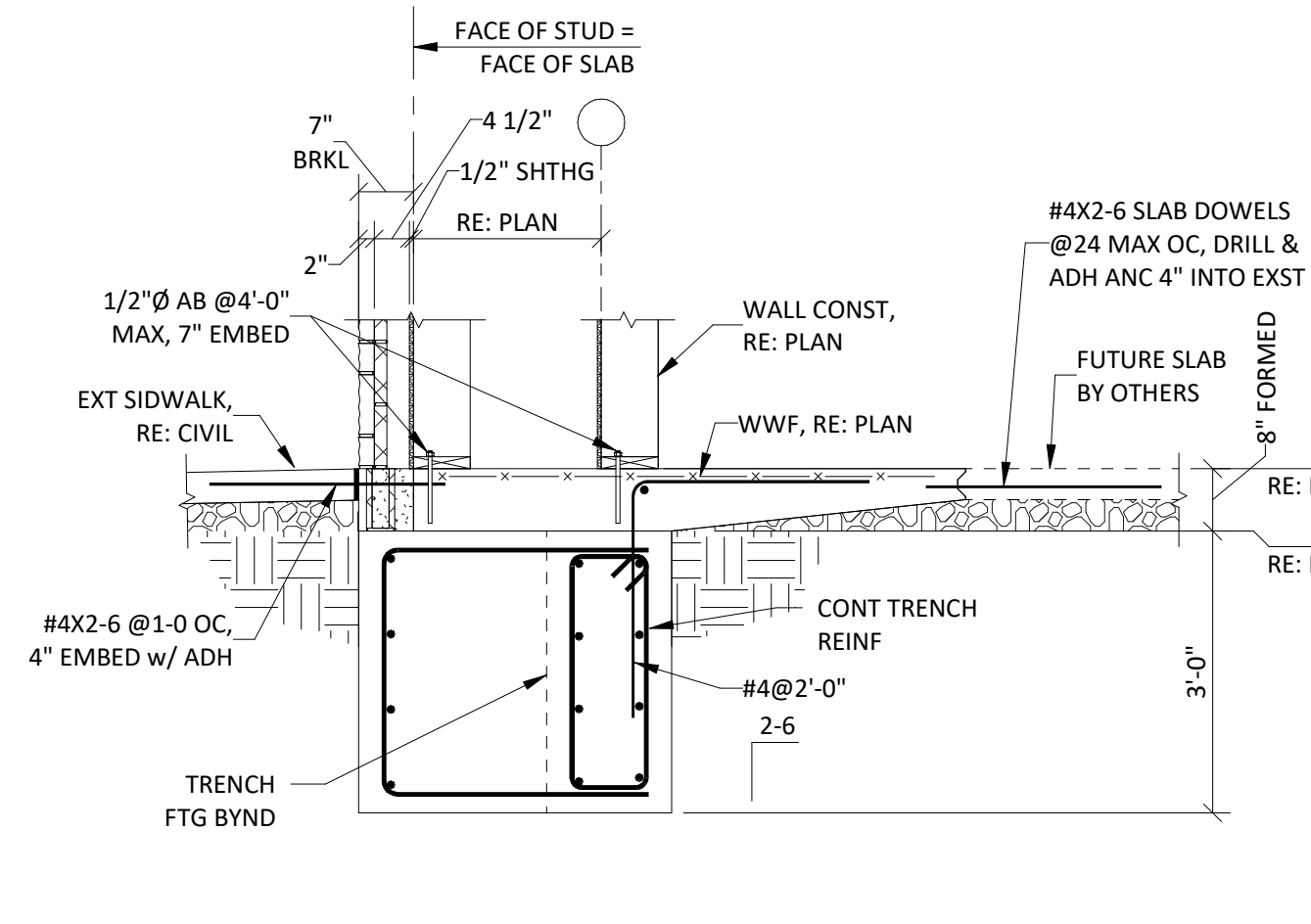
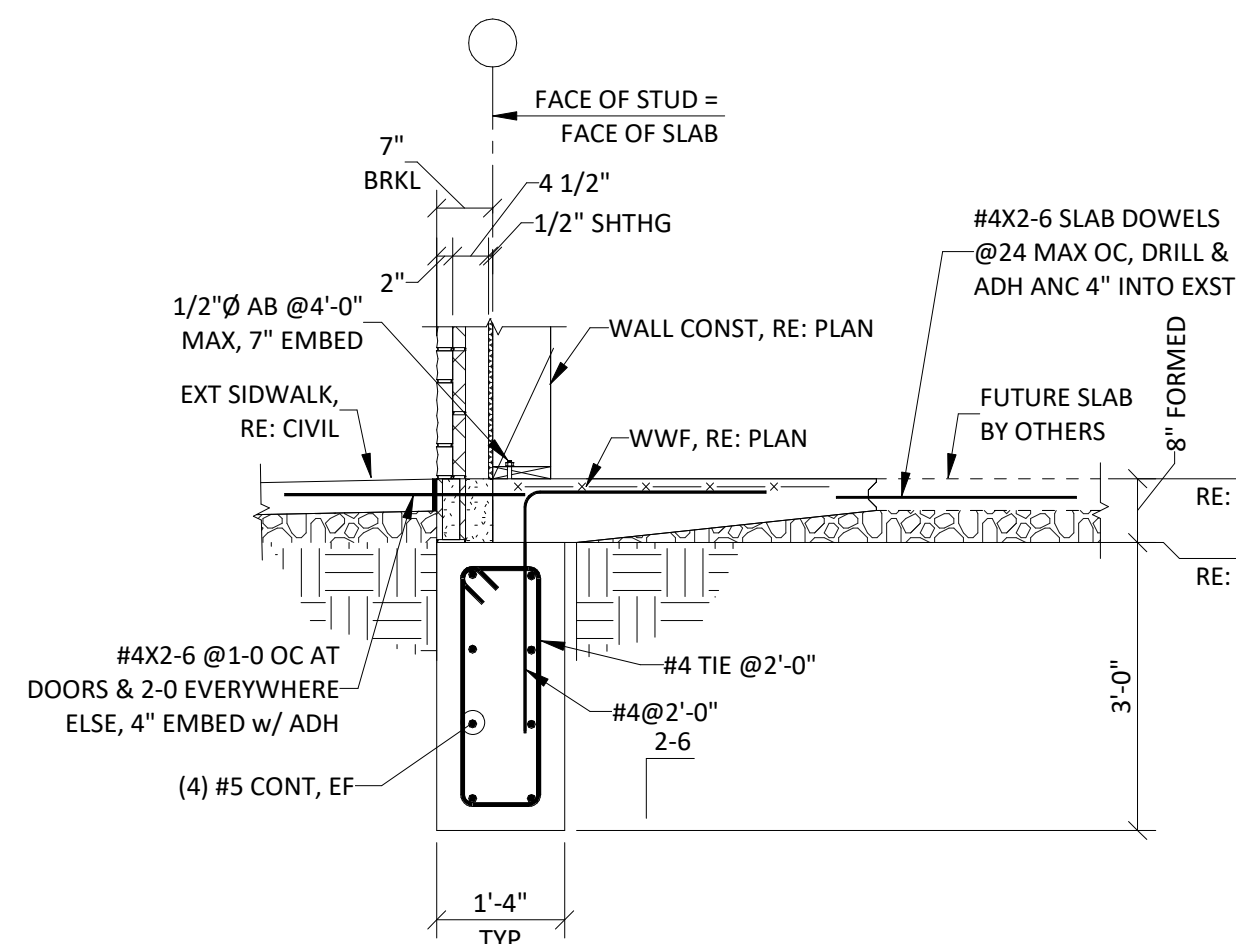
SHEET TITLE  
FRAMING ISOMETRIC

PROJECT NUMBER  
0210354

SHEET NUMBER  
S-201

**schwerdt design group**  
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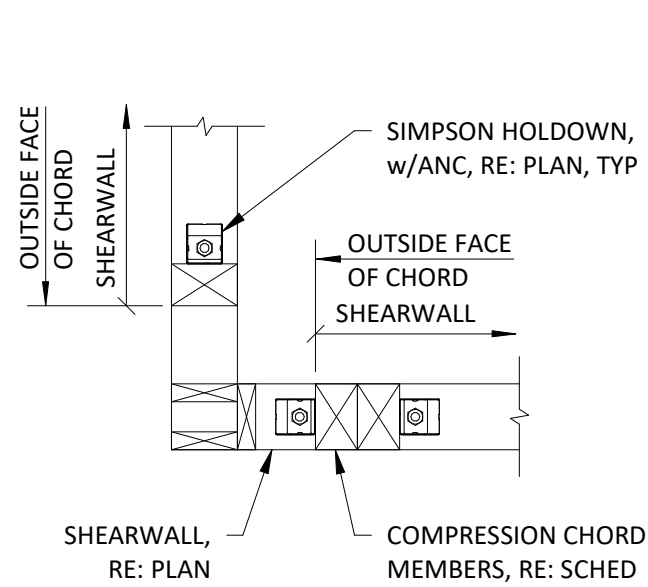




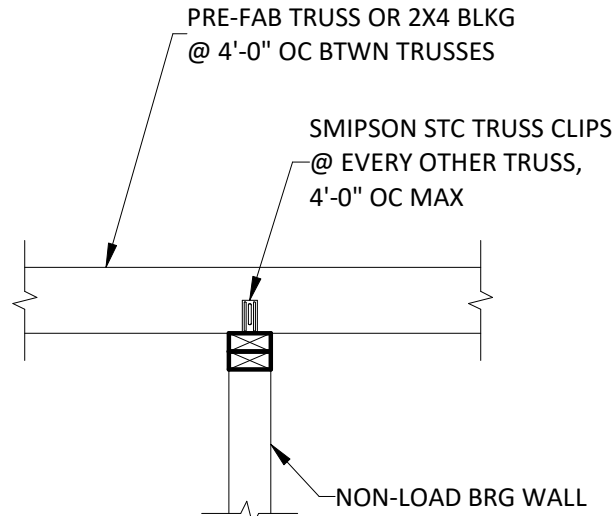
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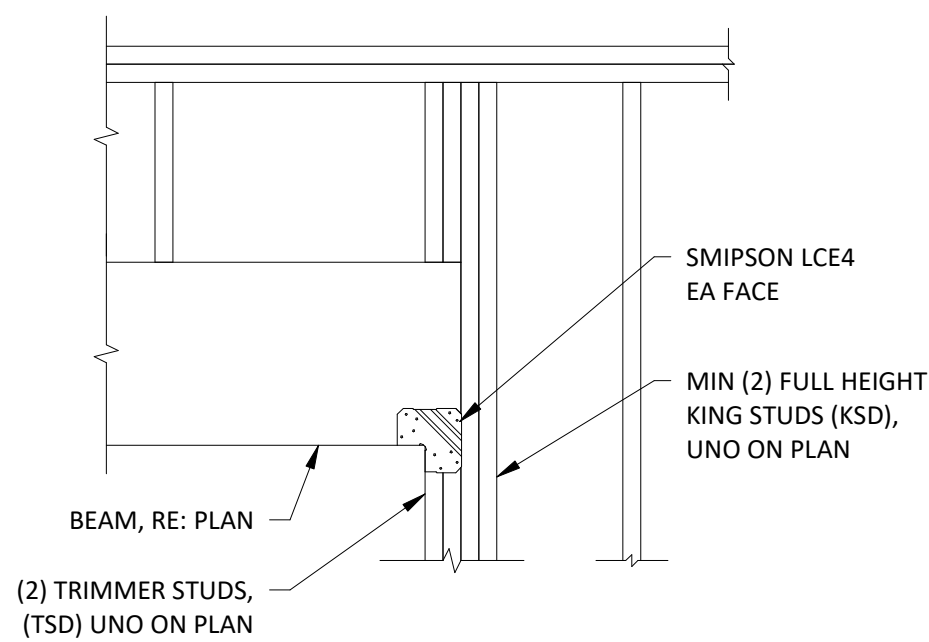




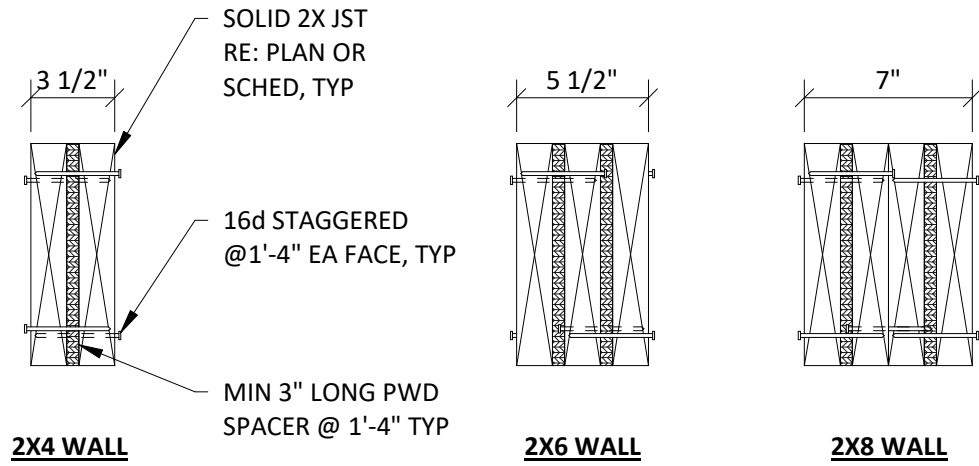
1 TYPICAL HOLDOWN ASSEMBLY CORNER (ALTERNATE)  
SCALE: NONE



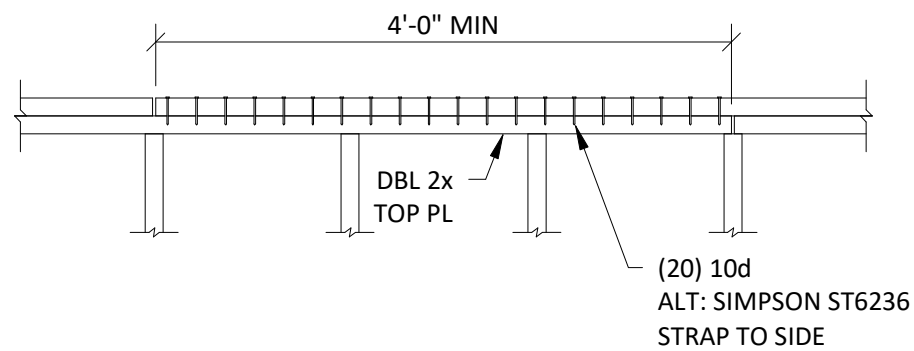
2 NON-LOAD BEARING WALL LATERAL SUPPORT DETAIL  
SCALE: NONE



3 TYPICAL HEADER CONSTRUCTION DETAIL  
SCALE: NONE

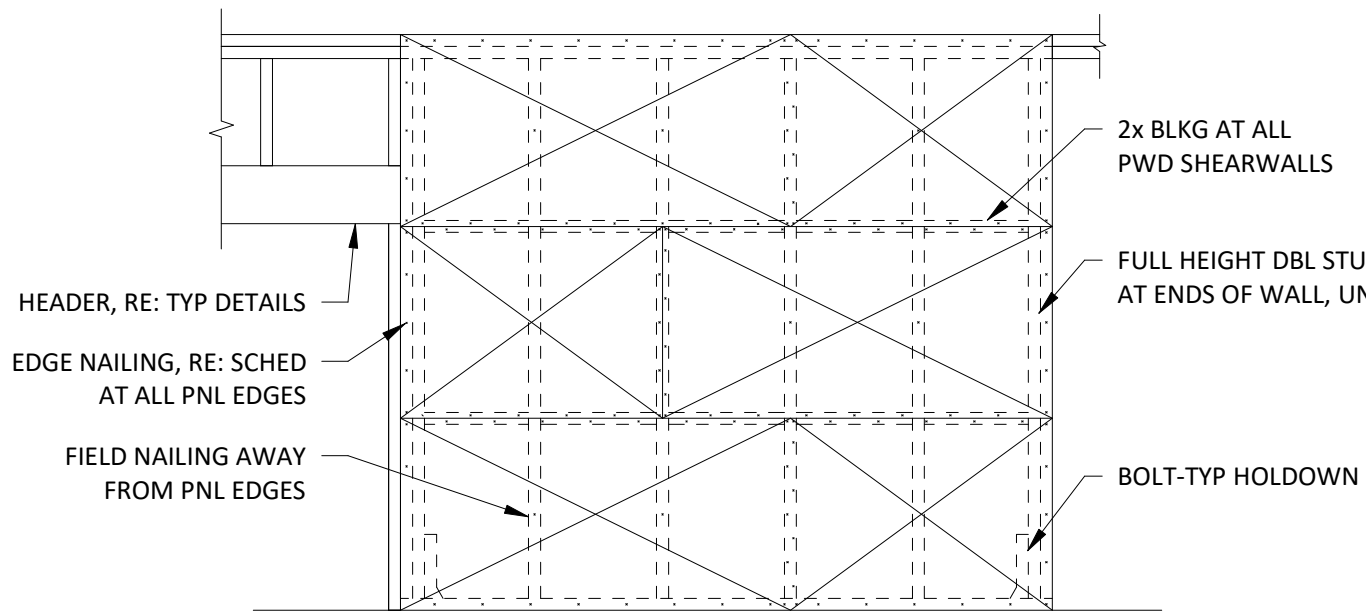


4 TYPICAL BUILT-UP HEADER CONSTRUCTION  
SCALE: NONE

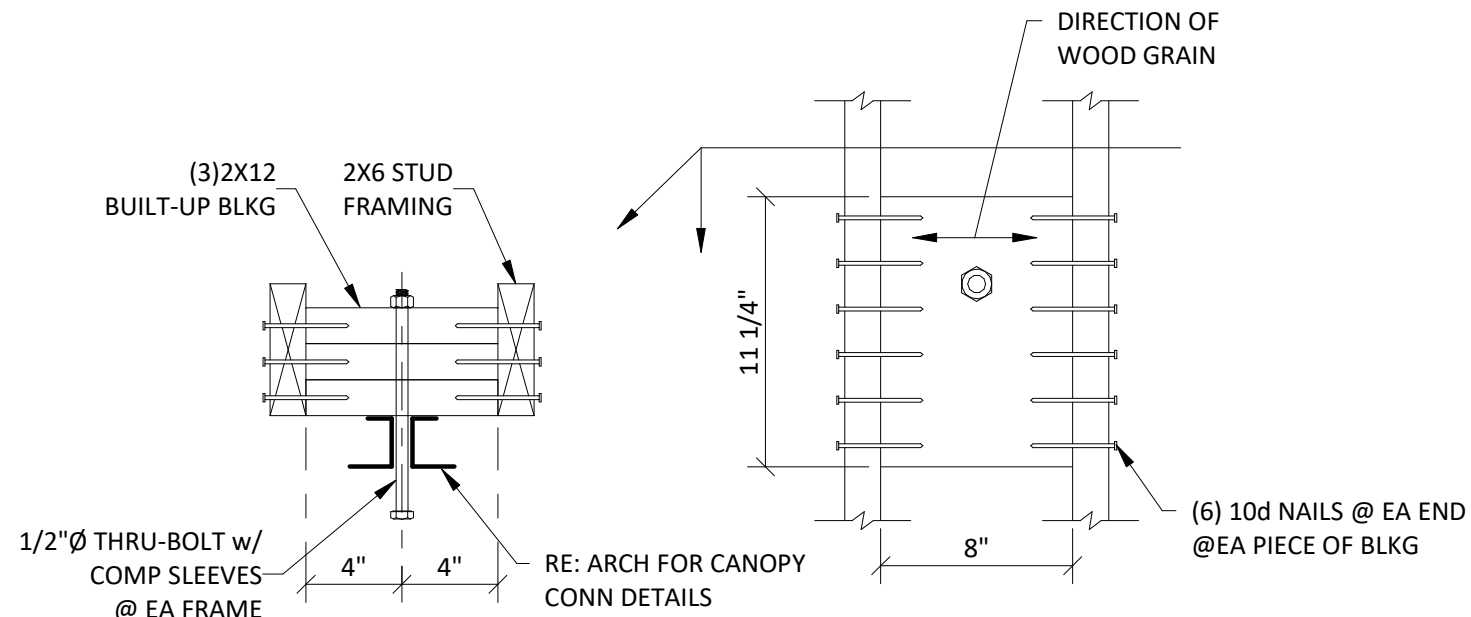


5 TYPICAL TOP PLATE SPLICE DETAIL  
SCALE: NONE

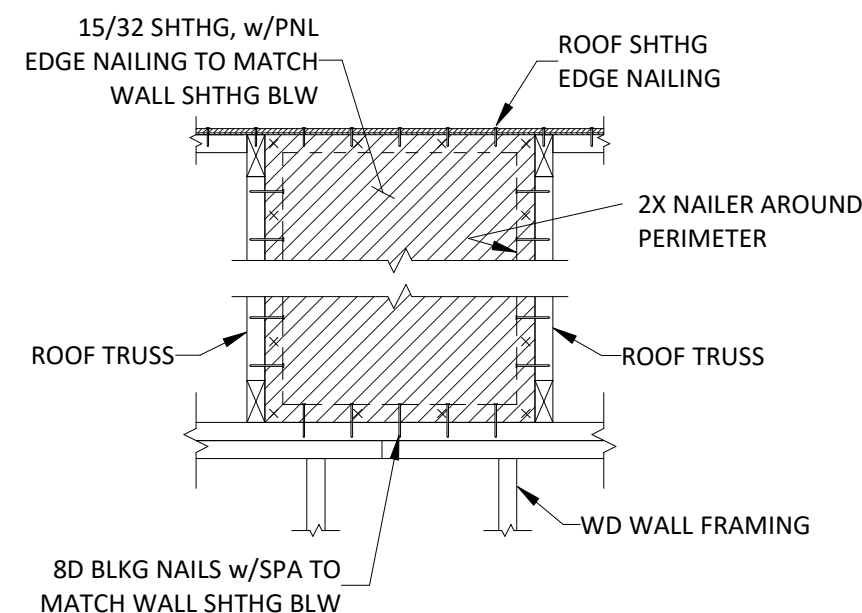
NOTES:  
1. SPLICE REQUIRED OVER ALL SHEARWALLS AND ALL EXTERIOR AND BEARING WALLS.  
2. SPECIFIC SPLICE REQUIREMENTS DO NOT APPLY TO INTERIOR NON-SHEARWALLS OR TOP OF PARAPET WALLS UNLESS NOTED OTHERWISE.



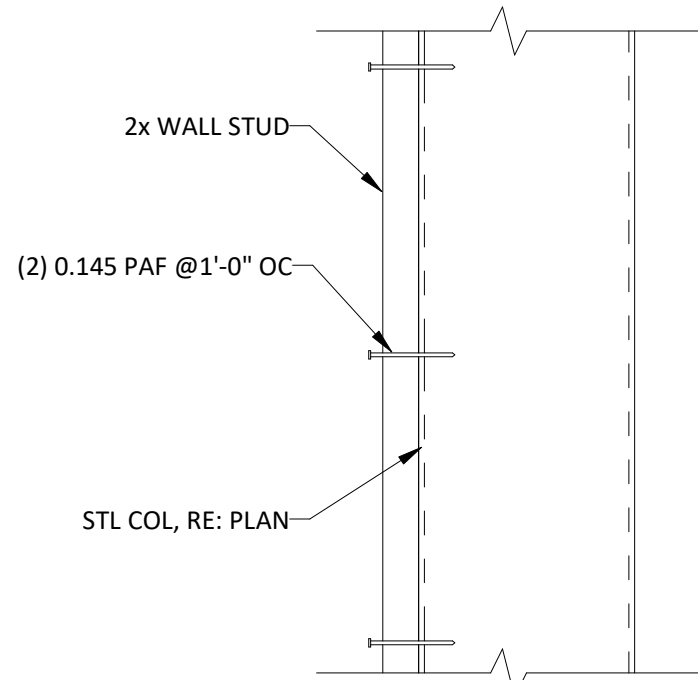
6 TYPICAL SHEARWALL CONSTRUCTION  
SCALE: NONE



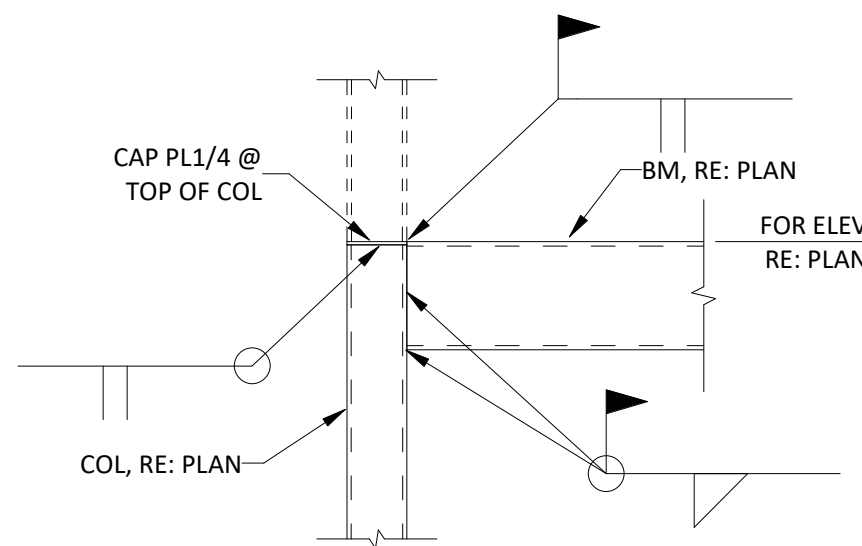
7 TYPICAL CANOPY CONNECTION BLOCKING DETAIL  
SCALE: NONE



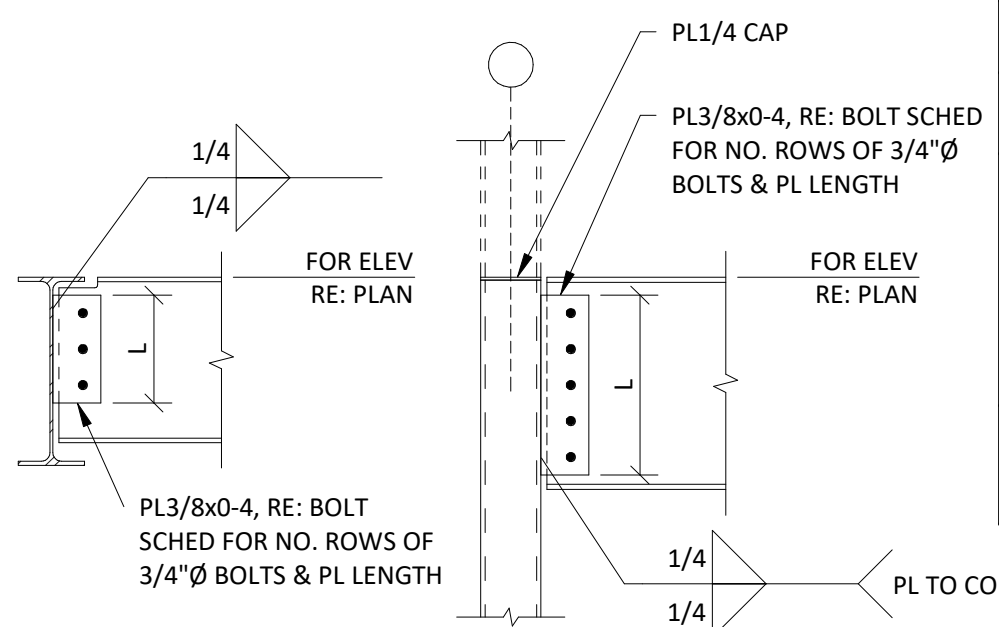
8 TYPICAL SHEAR BLOCKING BETWEEN TRUSSES  
SCALE: NONE



9 TYPICAL SHEARWALL TERMINATION AT STEEL COLUMN DETAIL  
SCALE: NONE



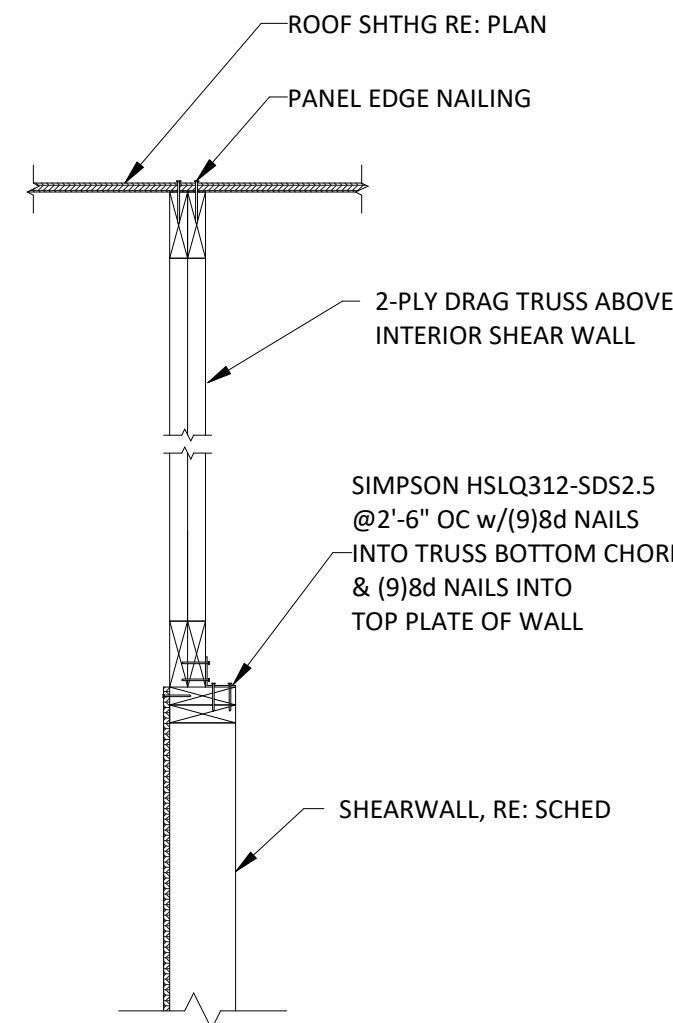
10 TYPICAL TUBE COLUMN TO BEAM CONNECTION  
SCALE: NONE



11 TYPICAL STEEL CONNECTIONS DETAIL (SHEAR TABS)  
SCALE: NONE

BOLT SCHEDULE		
CONNECTION BEAM SIZE	LENGTH (L)	(#) ROWS OF BOLTS
W8, W10	6"	2
W12, W14	9"	3
W16	1'-0"	4
W18	1'-3"	5
W21	1'-6"	6
W24, W27	1'-9"	7
W30, W33	2'-6"	10

NOTE: BOLTS SHALL BE 3/4" Ø A325 AT 3" CENTERS, UNLESS NOTED OTHERWISE



A SECTION  
SCALE: NONE

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**PROFESSIONAL ENGINEER**  
KANSAS  
20945  
04/04/22

MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SUBMISSION DATES  
04/04/2022

SHEET TITLE  
FRAMING DETAILS & SECTIONS I

PROJECT NUMBER  
0210354

SHEET NUMBER  
S-601

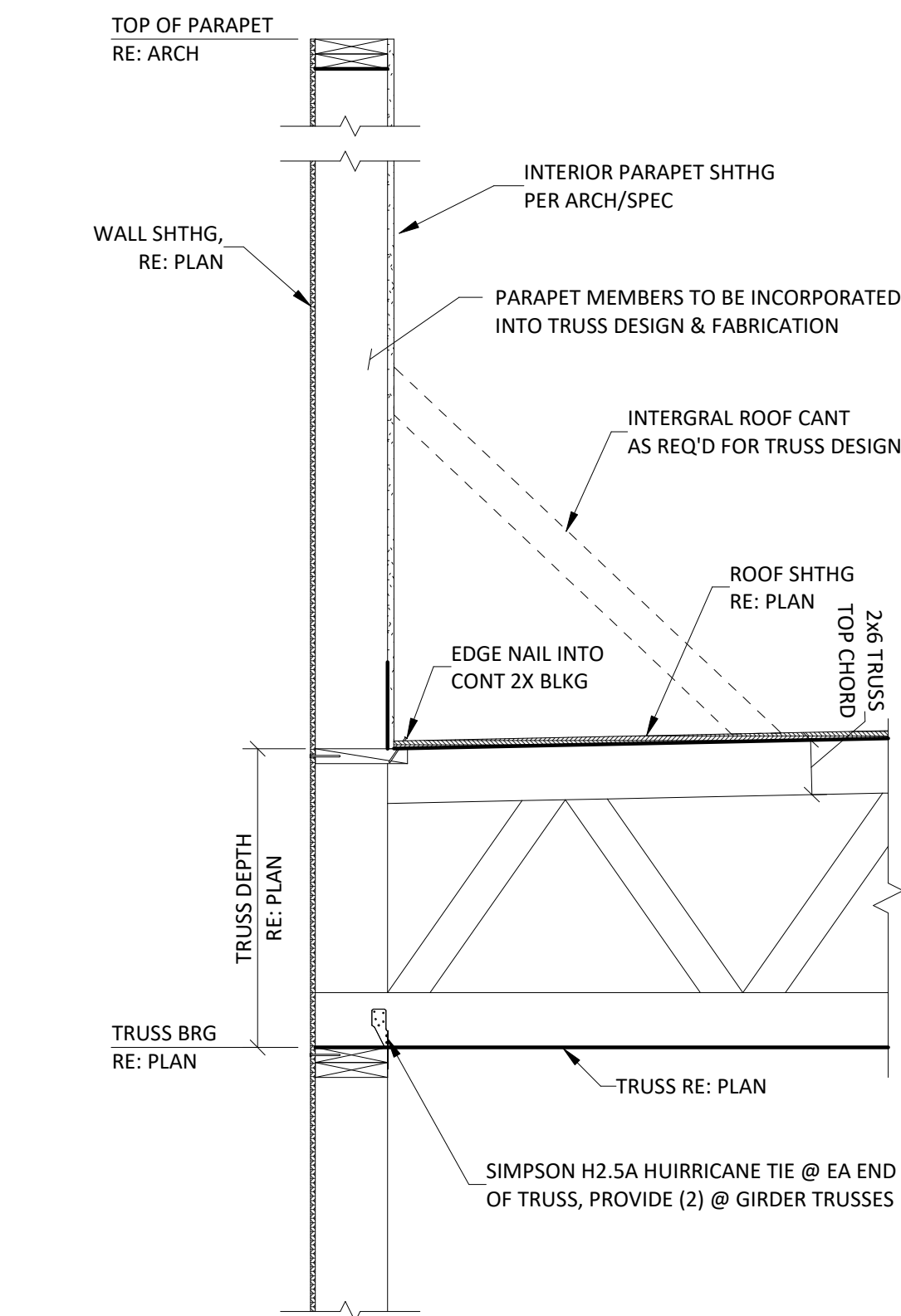
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D

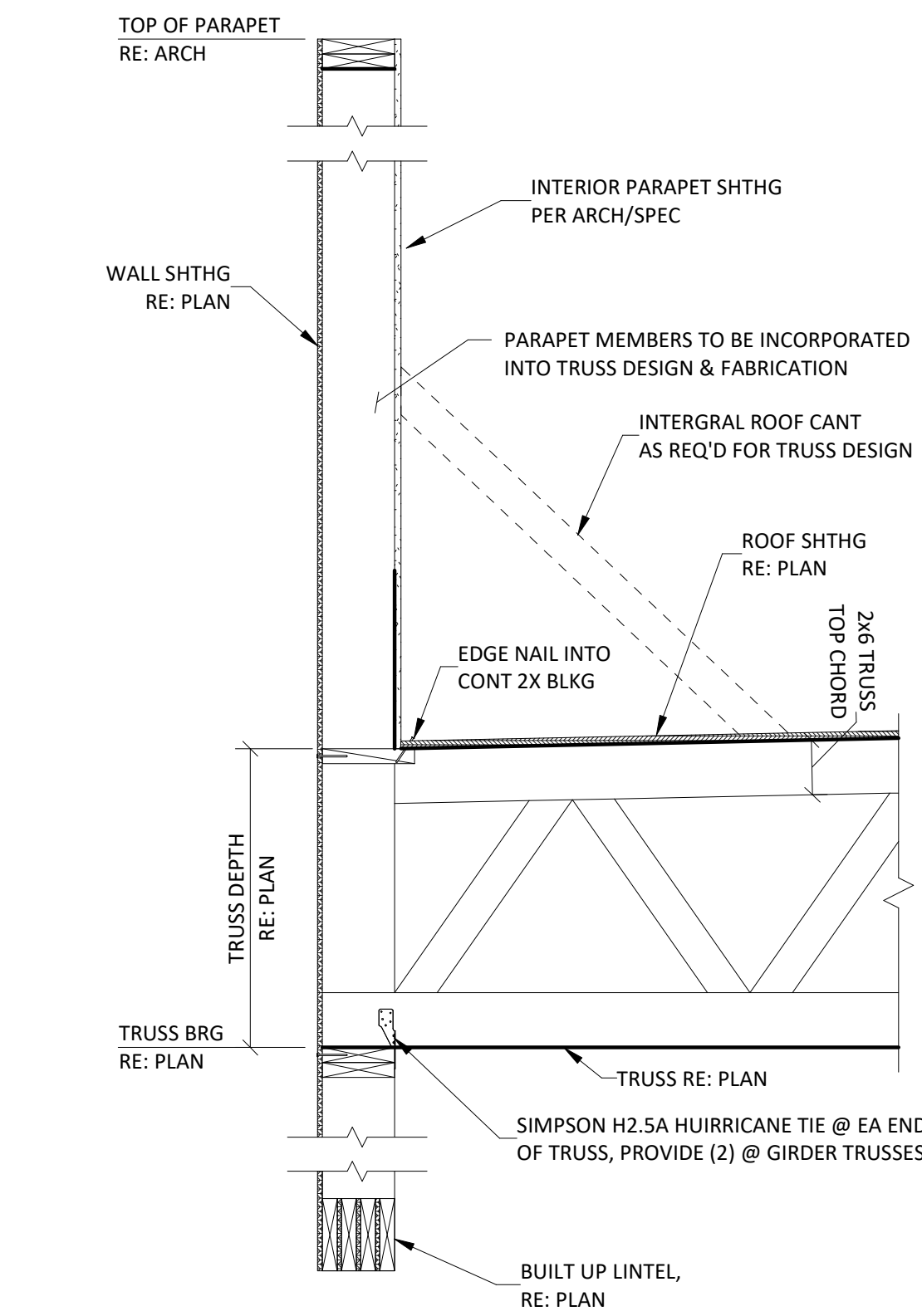
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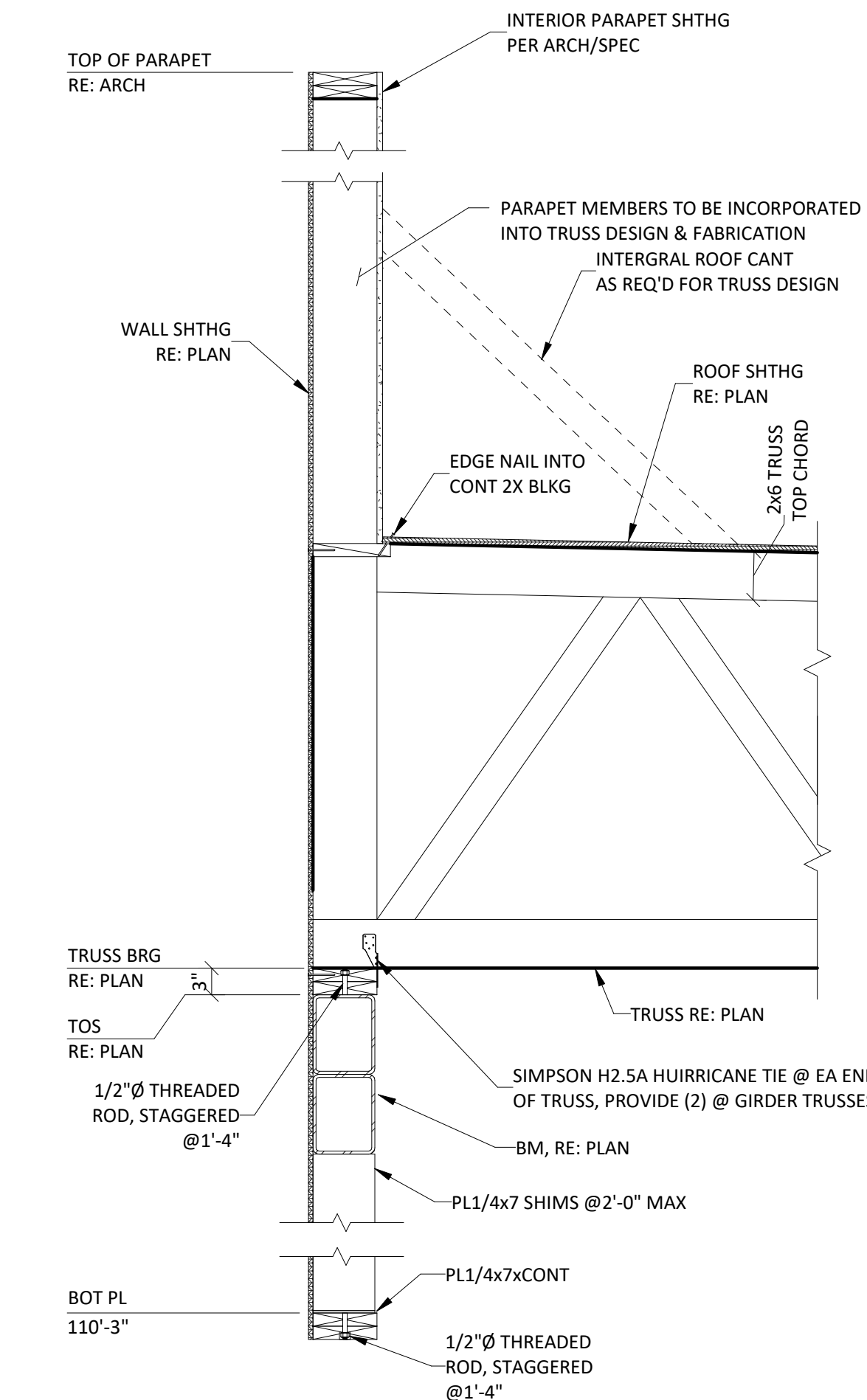
A



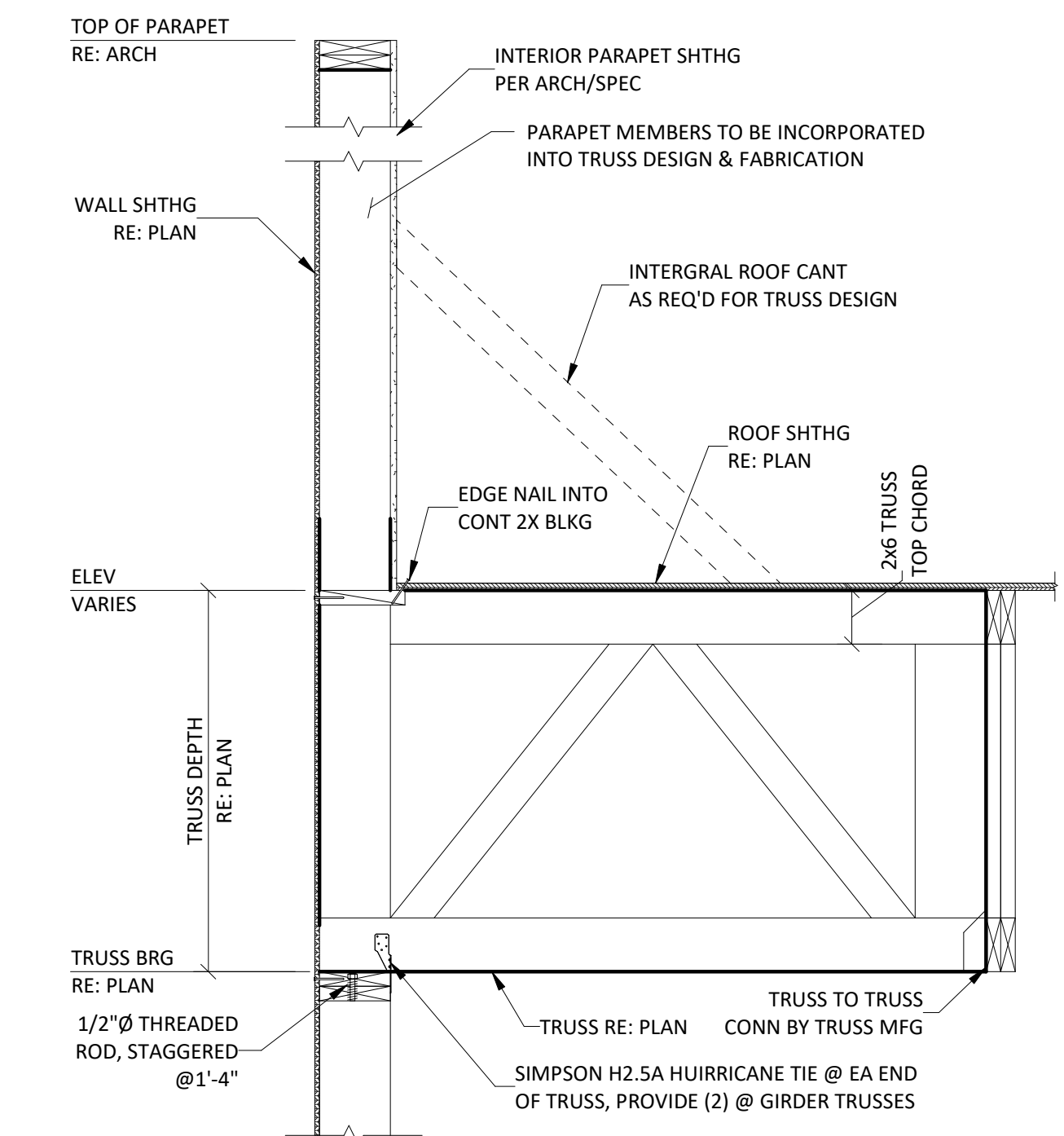
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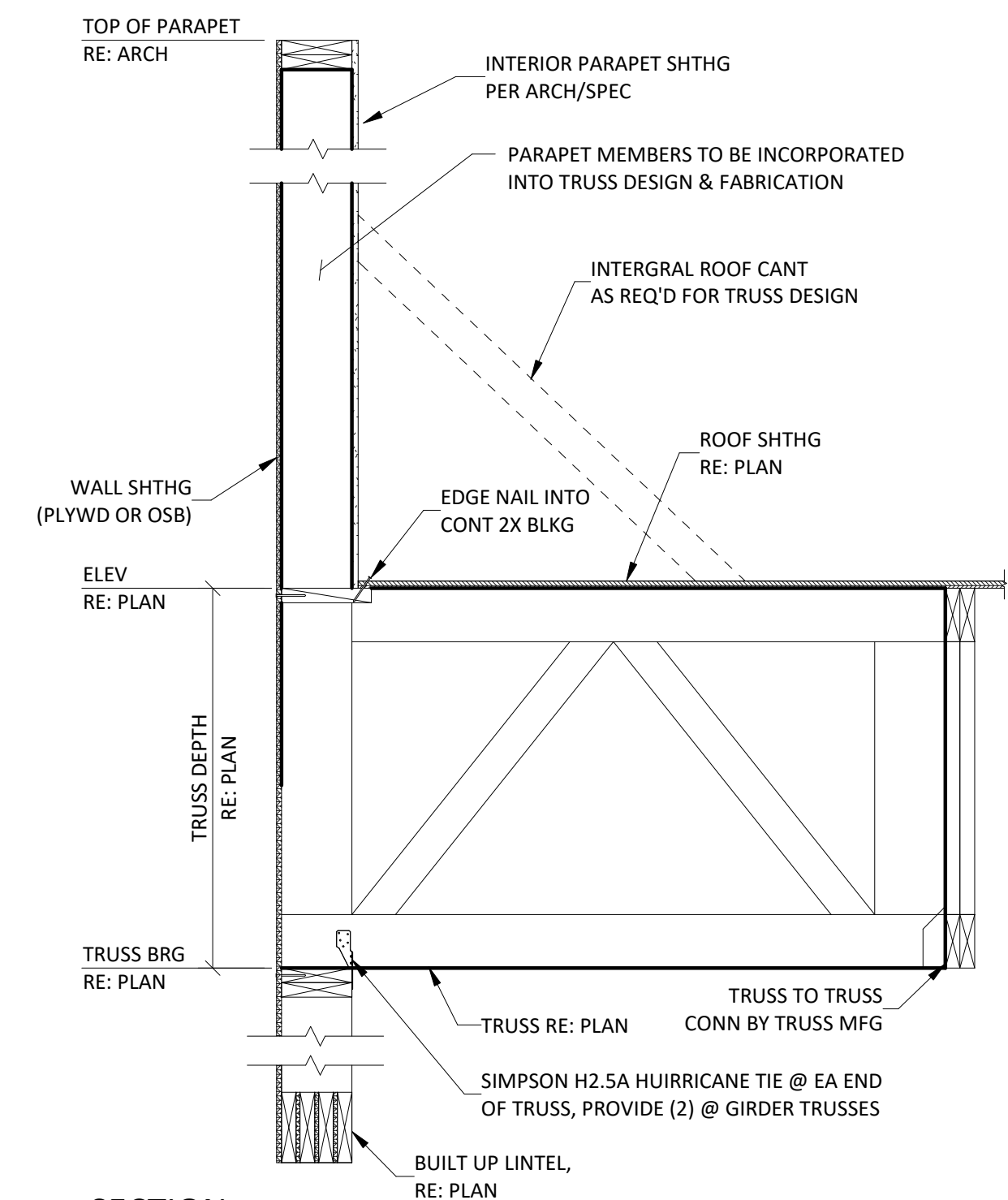
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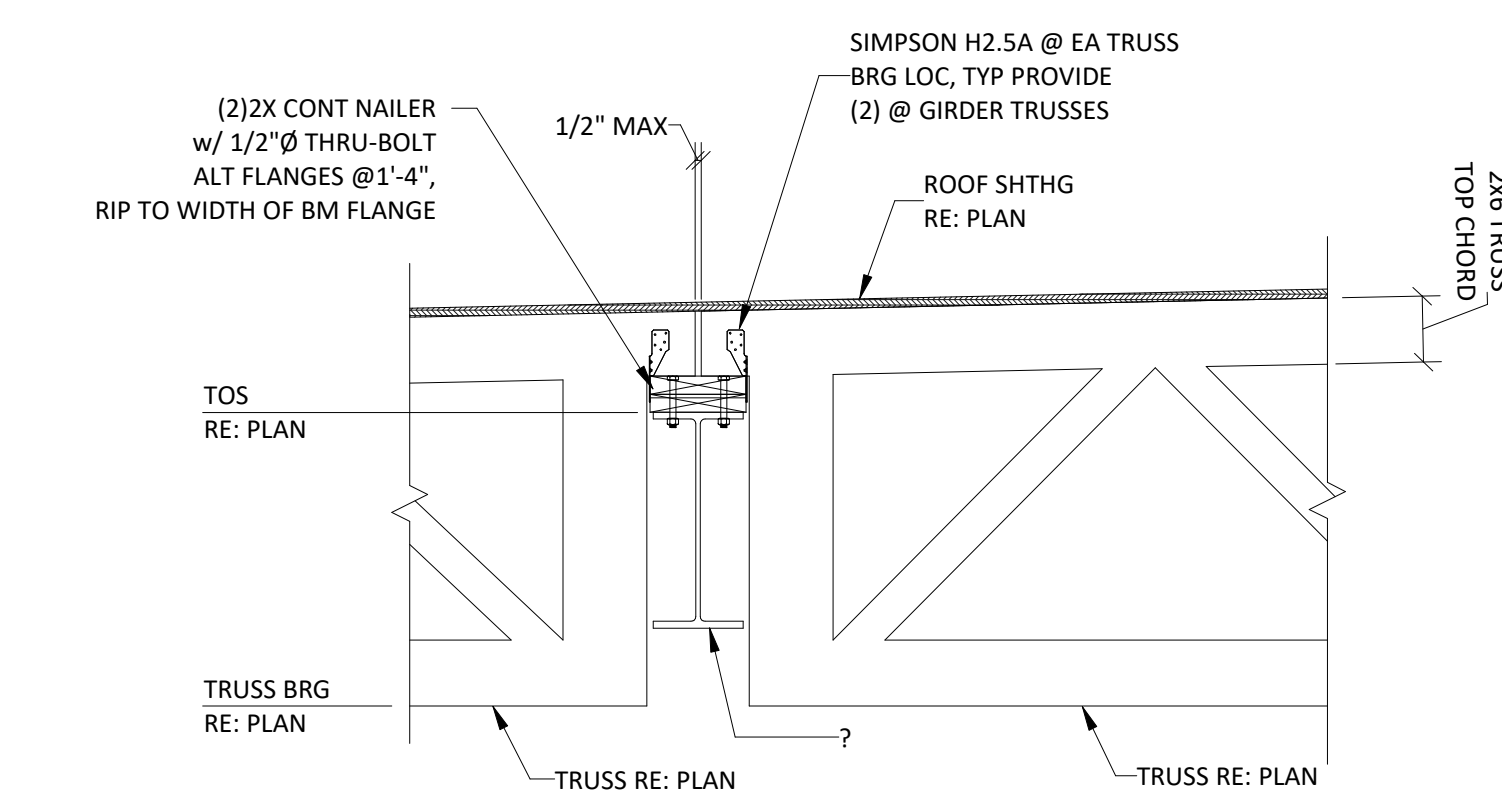
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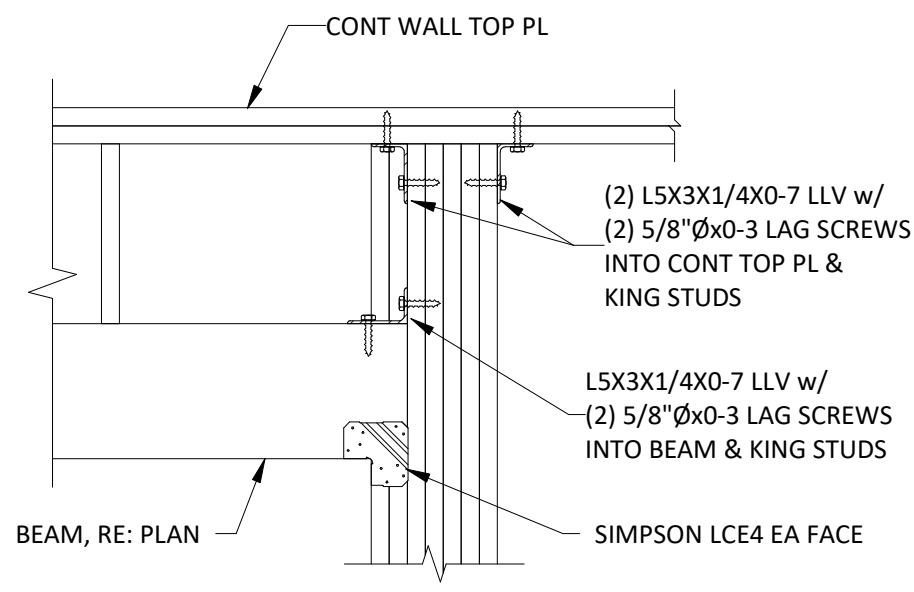
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**E** SECTION  
SCALE: NONE



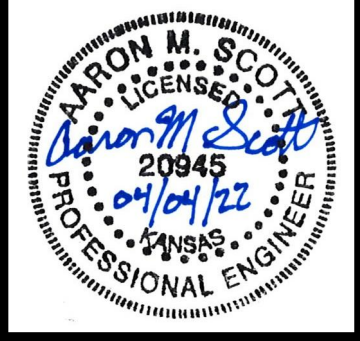
**F** SECTION  
SCALE: NONE



**G** SECTION  
SCALE: NONE

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**MULTI-TENANT BUILDING - PARCEL #9B  
LOT #9B OF WEST PRYOR**  
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SUBMISSION DATES  
04/04/2022

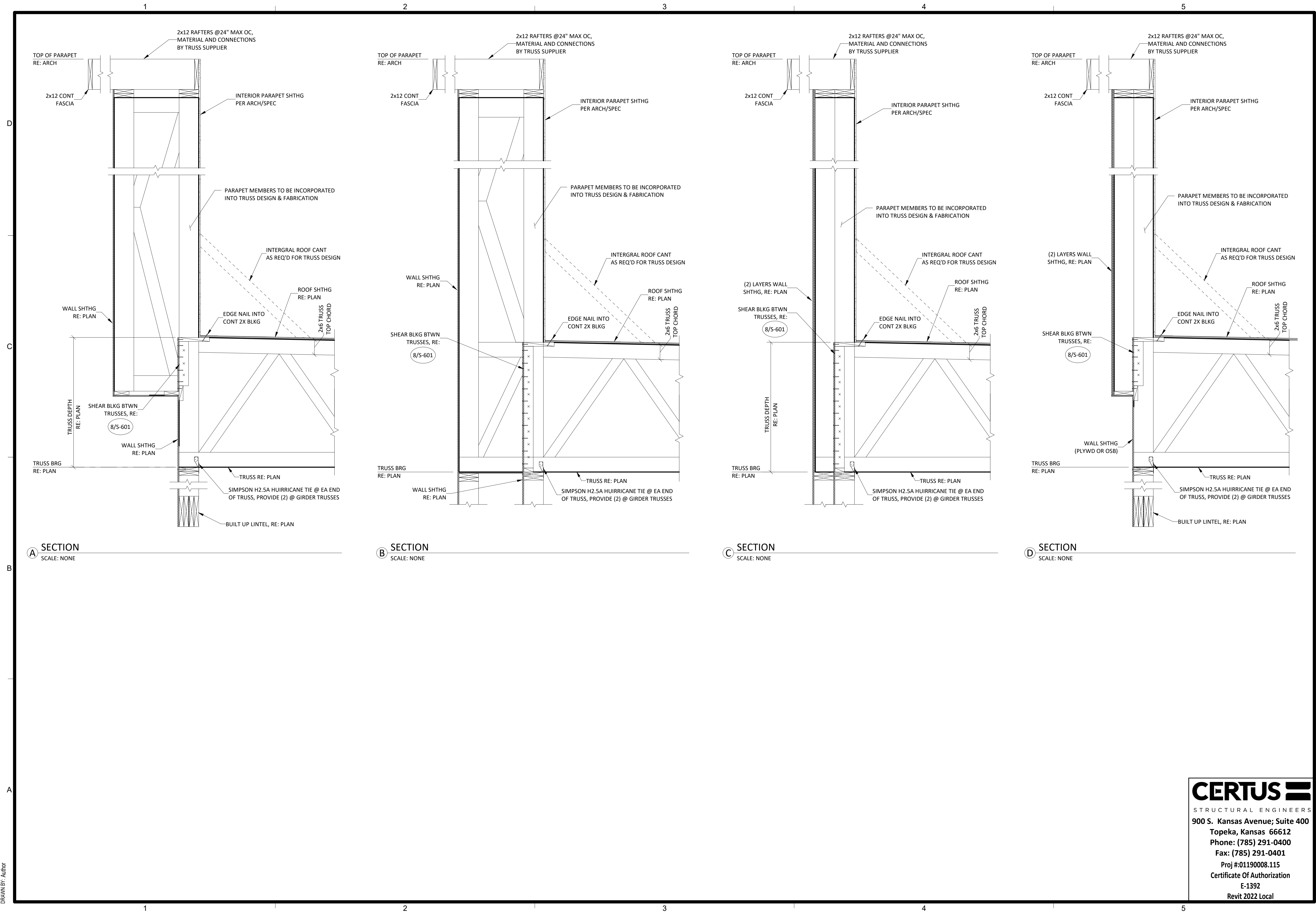
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FRAMING DETAILS &  
SECTIONS II

PROJECT NUMBER  
**0210354**

SHEET NUMBER  
**S-602**



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**NATHAN M. SCOTT**  
LICENSED PROFESSIONAL ENGINEER  
20945  
04/04/22  
KANSAS

**MULTI-TENANT BUILDING - PARCEL #9B**  
**LOT #9B OF WEST PRYOR**  
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04/04/2022

SHEET TITLE  
FRAMING DETAILS & SECTIONS III

PROJECT NUMBER  
**0210354**

SHEET NUMBER  
**S-603**