GENERAL STRUCTURAL NOTES:

1. THE GOVERNING BUILDING CODE IS THE MINNESOTA BUILDING CODE, 2015 EDITION AS APPROVED AND AMENDED BY THE CITY OF MAPLE GROVE, MN.
2. CONTRACT DOCUMENTS INCLUDE THE STRUCTURAL DRAWINGS AND SPECIFICATIONS, BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR OTHER SUBMITTALS BY THE CONTRACTOR.
3. CONTRACTOR SHALL CROSS VERIFY ALL CONTRACT DOCUMENTS, ELEVATIONS, DIMENSIONS, AND EXISTING CONDITIONS PRIOR TO STARTING WORK. DISCREPANCIES OR CONFLICTS SHALL BE NOTED TO THE EOR IMMEDIATELY FOR REMEDIATION. SPECIFIC NOTES AND DETAILS SHALL PRESIDE OVER GENERAL NOTES AND SPECIFICATIONS.
4. THE DIMENSIONS, LOCATIONS, AND DETAILS SHOWN ON THE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME OF THE DRAWINGS BEING ISSUED. DEVIATIONS WHICH ARE NECESSARY OR WHICH CONFLICT SHALL BE REPORTED TO THE EOR. CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR DEVIATIONS NOT APPROVED BY THE EOR.
5. COSTS OF ADDITIONAL DESIGN WORK DUE TO THE SELECTION OF AN OPTION OR DUE TO ERRORS OR OMISSION IN CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION. THE STRUCTURAL DRAWINGS REFLECT THE COMPLETED STRUCTURE. BRACING, SHORING, AND PROTECTION DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE SHALL NOT BE LOADED WITH CONSTRUCTION MATERIALS AND EQUIPMENT THAT EXCEEDS THE DESIGN LOADS.
7. PENETRATIONS NOT SHOWN ON THE DRAWINGS MUST BE APPROVED BY THE EOR BEFORE PLACING THROUGH STRUCTURAL ELEMENTS. CONTRACTOR SHALL PROVIDE A CAST-IN SLEEVE FOR ALL HORIZONTAL ELEMENTS THAT EXTEND THROUGH FOOTING AND FOUNDATION WALL, SUCH AS DRAIN TILE, CONDUIT, PIPING, ETC. COORDINATE SLEEVES WITH EOR. SEE MECHANICAL, ELECTRICAL, AND ARCHITECTURAL DRAWINGS FOR ALL PENETRATIONS AND EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
8. CONTRACTOR TO VERIFY ALL WEIGHTS, LOCATIONS & DIMENSIONS OF MECH. EQUIPMENT SHOWN AND NOTIFY THE EOR OF ANY DISCREPANCIES. COORDINATE THIS INFORMATION W/ ALL NECESSARY INDIVIDUALS.
9. PERIODIC SITE OBSERVATION BY REPRESENTATIVES OF SANDMAN STRUCTURAL ENGINEERS IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN GENERAL ACCORDANCE WITH THE STRUCTURAL CONTRACT DRAWINGS. A LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR. ALL MATERIALS AND WORKMANSHIP ARE SUBJECT TO THE REVIEW OF THE EOR.

DESIGN CRITERIA:

ROOF LOADS			
GROUND SNOW LOAD	Pg	50 PSF	
FLAT ROOF SNOW LOAD	Pf	38.5 PSF	TYPICAL
FLAT ROOF SNOW LOAD	Pf	42 PSF	CANOPY
SNOW IMPORTANCE FACTOR	Is	1.0	–
EXPOSURE FACTOR	Ce	1.0	–
SLOPE FACTOR	Cs	1.0	–
THERMAL FACTOR	Ct	1.1	TYPICAL
THERMAL FACTOR	Ct	1.2	CANOPY
NOTES: SEE PLAN FOR SNOW DRIFT LOADS			
ROOF DEAD LOAD	DL	20 PSF	DL TC = 12 / DL BC = 8

	FLOOR LOADS			
FLOOR	DESCRIPTION	DEAD LOAD	LIVE LOAD	NOTES
1ST	TYP RESIDENTIAL	95 / 131 PSF*	40 PSF	–
1ST	CORRIDORS	95 / 131 PSF*	100 PSF	–
1ST	STAIRS/LANDINGS	23 PSF	100 PSF	DL TC = 15 PSF / DL BC = 8 PSF
1ST	COMM. RM/LOBBY	95 / 131 PSF*	100 PSF	
1ST	TENANT STORAGE	95 / 131 PSF*	80 PSF	
2ND	EXERCISE ROOM	23 PSF	60 PSF	
2ND/3RD	TYP RESIDENTIAL	23 PSF	40 PSF	DL TC = 15 PSF / DL BC = 8 PSF
2ND/3RD	CORRIDORS/LOBBY	23 PSF	40 PSF	DL TC = 15 PSF / DL BC = 8 PSF
2ND/3RD	STAIRS/LANDINGS	23 PSF	100 PSF	DL TC = 15 PSF / DL BC = 8 PSF
2ND/3RD	DECKS	10 PSF	60 PSF	3RD DECKS: DESIGN FOR SL = 100 PSF
2ND/3RD	TENANT STORAGE	23 PSF	80 PSF	DL TC = 15 PSF / DL BC = 8 PSF
* DL BREAKDOWN (8" H.C.) = 60 PSF H.C. + 25 PSF TOPPING + 10 PSF S.I.				
* DL BREAKDOWN (12" H.C.) = 96 PSF H.C. + 25 PSF TOPPING + 10 PSF S.I.				
NOTE: DL OF COUNTERTOPS TO BE ADDED FOR TRUSS DESIGNS				

WIND LOADS			
ULT. DESIGN WIND SPEED	V–ult	115 MPH	–
NOMINAL DESIGN WIND SPEED	V–asd	90 MPH	–
RISK CATEGORY	–	II	–
EXPOSURE CATEGORY	–	C	–
INTERNAL PRESSURE COEFFICIENT	GCpi	+/– 0.18	–
C&C BASE PRESSURE	qh	31.5PSF(ULT)	–

EQUIVALENT LATERAL EARTH PRESSURES USED:			
SOIL	TYPE	PRESSURE	NOTES
ON–SITE CLAY (SM,SC)	AT REST	64 PCF	USED FOR BASEMENT WALL DESIGN
ON–SITE CLAY (SM,SC)	ACTIVE	43 PCF	USED FOR CANTILEVER STEM RETAINING WALL DESIGN
ON–SITE CLAY (SM,SC)	PASSIVE	332 PCF	USED FOR CANTILEVER STEM RETAINING WALL DESIGN
REFER TO GEOTECHNICAL REPORT FOR BACKFILLING REQUIREMENTS. SOIL RETAINING/BASEMENT WALLS ON PROJECT HAVE NOT BEEN DESIGNED TO WITHSTAND HYDROSTATIC PRESSURE.			

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FOUNDATION NOTES:

1. FOOTINGS ARE DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 3000 psf FOR STRIP FOOTINGS AND 3000 psf FOR PAD FOOTINGS. THESE VALUES ARE PER THE GEOTECHNICAL REPORT BY BRAUN INTERTEC ISSUED ON 12/16/16, REPORT #B1611164.
2. PROTECT FOOTING EXCAVATIONS FROM WATER, MOISTURE, OR FROST INFILTRATION. PRIOR TO PLACEMENT OF FOOTING CONCRETE, CLEAN FOOTING EXCAVATIONS OF SNOW, WATER, MUD, DIRT, AND DEBRIS. DO NOT PLACE FOOTINGS OR BACKFILL ON FROZEN SUB GRADE.
3. FROST COVER FOR FOOTINGS SHALL BE PER RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. SEE PLAN FOR TOP OF FOOTING ELEVATIONS AND DETAILS FOR FOOTING STEP REQUIREMENTS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE EOR IMMEDIATELY OF ANY SPECIAL SOIL OR WATER CONDITIONS THAT EXIST ON SITE.
5. BACKFILL & COMPACTION SHALL BE INSPECTED AND TESTED BY A LICENSED GEOTECHNICAL ENGINEER OR QUALIFIED FIELD TECH. THE SUBMITTAL OF TESTING REPORTS SHALL BE PER SPECIAL INSPECTION REQUIREMENTS.
6. BACKFILL SHALL BE COMPACTED BY MECHANICAL MEANS. WATER INFILTRATION SHALL NOT BE ALLOWED. BACKFILL SHALL BE PLACED IN ALTERNATIVE LIFTS ON EA SIDE OF THE FDN WALLS FOR STABILITY.
7. UNLESS SPECIFICALLY PRESCRIBED IN A GEOTECHNICAL REPORT, BACKFILL SHALL BE PLACED AND COMPACTED IN LOOSE LIFT THICKNESSES OF 6" OR LESS. MOISTURE CONTENT AT THE TIME OF COMPACTION SHOULD BE +/– 3% OF OPTIMUM MOISTURE AND IT IS RECOMMENDED ALL ENGINEERED FILL BELOW FOOTINGS BE COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAX DENSITY (ASTM D698–00a).
8. ALL WALL FOOTINGS ARE TO BE CENTERED ON WALLS U.N.O. ALL PAD FOOTINGS ARE TO BE CENTERED ON COLUMNS U.N.O.

CONCRETE AND STEEL REINFORCEMENT NOTES:

1. CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO AMERICAN CONCRETE INSTITUTION (ACI) CODES AND SPECIFICATIONS, LATEST EDITION.

   ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
   ACI 315 "DETAILS & DETAILING OF CONCRETE REINFORCEMENT"
   ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
   ACI 306R "COLD WEATHER CONCRETING"

2. CAST–IN–PLACE CONCRETE STRENGTHS (f'c) REQUIRED (28 DAY):

FOOTINGS	3000 PSI	PIERS	3000 PSI
EXTERIOR WALLS	3000 PSI	INTERIOR SLABS	3000 PSI
INTERIOR WALLS	3000 PSI	EXTERIOR SLABS	4500 PSI
PRECAST TOPPING	3000 PSI	(AIR ENTRAINED)	

3. SUBMIT CONCRETE MIX DESIGN & STRENGTH DATA TO E.O.R. FOR APPROVAL. ALL ADMIXTURES ARE THE RESPONSIBILITY OF THE CONCRETE SUPPLIER'S ENGINEER.
4. CAST–IN–PLACE CONCRETE SHALL BE SUBJECT TO TESTING BY AN INDEPENDENT TESTING LABORATORY, SEE SPECS AND SPECIAL INSPECTION REQUIREMENTS..
5. ALL CONCRETE SHALL BE PLACED PER ACI & THOROUGHLY CONSOLIDATED BY MEANS OF A VIBRATOR, ESPECIALLY AROUND REINFORCEMENT STEEL AND CORNERS OF FORM WORK.
6. REINFORCING STEEL SHALL BE GRADE 60 DEFORMED, BILLET–STEEL, ASTM A615, U.N.O. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
7. WELDED REINFORCING STEEL SHALL BE GRADE 60, LOW CARBON, ASTM A706, WHICH IS SPECIALLY MANUFACTURED TO BE WELDABLE.
8. WELDED WIRE FABRIC SHALL BE PLACED IN THE CENTER OF THE SLAB, U.O.N. LAP JOINTS A MINIMUM OF 6". EXTEND FABRIC TO BE WITHIN 1" OF SLAB EDGES.
9. PROVIDE ADEQUATE BOLSTERS, HIGH CHAIRS, SUPPORT BARS, ETC TO MAINTAIN THE SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING STEEL AND WELDED WIRE FABRIC.
10. PROVIDE EXTRA REINFORCEMENT AROUND ALL OPENINGS GREATER THAN 8" SQUARE OR ROUND. PROVIDE (2) #5 BARS @ 3" O.C. FOR EACH MAT OF BARS, AT EACH SIDE AND CORNER OF OPENING EXTENDING MINIMUM 18" PAST CORNER OF THE OPENING. PLACE 2" CLEAR FROM OPENING.
11. SEE DETAILS FOR REINFORCING LAP SPLICE SCHEDULE, UNLESS OTHERWISE NOTED ON PLAN OR DETAILS.
12. CAST DOWELS, WITH STD 90 DEG HOOK, IN FOOTINGS FOR CONCRETE PIERS AND WALLS ABOVE. DOWELS SHALL BE THE SAME SIZE AND QTY AS THE VERTICAL REINFORCING (U.N.O.)
13. SUPPLY 100 FEET EXTRA OF #5 REBAR FOR MISC. PLACEMENT AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL INCLUDE LABOR ALLOWANCE FOR PLACEMENT.
14. EXTERIOR SLABS SHALL DRAIN FREELY AWAY FROM THE BUILDING. SEE CIVIL AND ARCH. DRAWINGS FOR ELEVATIONS.
15. CONTROL SAWCUT JOINTS ARE TO BE EXECUTED AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT AGGREGATE FROM DISLODGING BY SAW AND PRIOR TO TO SHRINKAGE STRESS CRACKING. CONTROL JOINTS TO BE SPACED A MAXIMUM OF 10 FOOT SQUARES U.O.N. ON PLAN. A JOINT SHALL BE CUT TO EVERY CORNER OF COLUMN ISOLATION JOINTS.
16. CONCRETE FIBER REINFORCEMENT SPECIFIED ON THE DRAWINGS IS TO BE PROPEX FIBERMESH 300. APPLICATION RATE TO BE A MINIMUM OF 1.5 LBS/CUBIC YARD UNLESS HIGHER DOSAGE IS RECOMMENDED BY MANUFACTURER. FOLLOW MANUFACTURERS SPECS FOR MIXING & FINISHING CONCRETE W/ FIBER REINFORCEMENT.
17. SEE ARCH DRAWINGS FOR DIMENSIONS OF STOOPS, FOUNDATION WALL HOLDOUTS, SLAB RECESSES. SLOPED SLABS & FOUNDATION WALL INSULATION.

PRECAST / PRESTRESSED CONCRETE NOTES:

1. PRECAST CONCRETE UNITS SHALL BE DESIGNED TO SUPPORT THE LOADS DESCRIBED ON THE CONTRACT DOCUMENTS. MEMBER DESIGN SHALL BE PERFORMED ACCORDING TO THE ACI 318 AND PCI LATEST EDITIONS AND UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT.
2. ALL PRECAST TO PRECAST CONNECTIONS ARE THE RESPONSIBILITY OF PRECAST SUPPLIER. SHOW FIELD WELDS AND CONNECTION MATERIAL REQUIREMENTS ON SHOP DRAWINGS SUBMITTALS.
3. PRECAST MEMBERS HAVE BEEN INDICATED ON THE DRAWINGS BY GENERAL SIZE AND DEPTH. THE STRUCTURAL DESIGN OF THESE MEMBERS AND THEIR LIFTING ACCESSORIES SHALL BE BY A REGISTERED ENGINEER IN THE STATE OF THE PROJECT BY THE PRECAST MANUFACTURER.
   A. DESIGN DEVIATIONS WILL BE PERMITTED AFTER THE ENGINEERS APPROVAL OF THE MANUFACTURER'S PROPOSED DESIGN SUPPORTED BY CALCULATIONS AND DRAWINGS.
   B. DESIGN DEVIATIONS MUST PRODUCE AN INSTALLATION EQUIVALENT TO THE BASIC INTENT WITHOUT INCURRING ADDED COSTS.
5. ALL SUBMITTAL DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
6. HEADERS AT OPENINGS THROUGH PRECAST PLANK SHALL BE SUPPLIED BY THE PRECAST SUPPLIER. ADJACENT PRECAST UNITS SHALL BE DESIGNED FOR THE LOADS AT THE HANGER BEARING LOCATION.
7. PRECAST SUPPLIER SHALL BE RESPONSIBLE FOR OPENINGS 8" AND LARGER IN SIZE THROUGH PRECAST MEMBERS. HOLES LESS THAT 8" SHALL BE CUT BY THE TRADE WITH PRIOR APPROVAL OF THE PRECAST SUPPLIER.
8. PRECAST MEMBERS SHALL BE ERECTED SIMULTANEOUSLY ON EACH SIDE OF THE SUPPORTING WALLS AND BEAMS TO MAINTAIN STABILITY.
9. VERIFY WITH ALL TRADES IF ADDITIONAL EMBEDS ARE REQUIRED FOR TRADE COORDINATION AND INSTALLATION.
10. CONTRACTOR RESPONSIBLE TO CONTACT PRECAST SUPPLIER IF COMPONENTS ARE ATTACHED TO PRECAST EMBEDS INCORRECTLY OR MISALIGNED. CONTRACTOR TO WORK WITH PRECAST ENGINEER TO DEVELOP APPROPRIATE FIELD FIX, IF NECESSARY. ALL CORRESPONDENCES TO BE COPIED TO STRUCTURAL ENGINEER OF RECORD.

WOOD FRAMING NOTES:

1. WOOD AND TIMBER CONSTRUCTION SHALL COMPLY WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARD SPECIFICATIONS.
2. WOOD CONSTRUCTION SHALL CONFORM TO CHAPTER 23 (SECTIONS 2301, 2302, 2303, 2304, 2305, & 2306) OF THE 2012 IBC FOR MINIMUM REQUIREMENTS UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS. FOR MINIMUM FASTENING REFER TO TABLE IBC 2304.9.1. PER SECTION 2301.2, THE STRUCTURAL DESIGN OF THIS STRUCTURE HAS BEEN IN ACCORDANCE WITH THE "ALLOWABLE STRESS DESIGN" METHOD. PROVISIONS WITHIN SECTION 2308 "CONVENTIONAL LIGHT–FRAME CONSTRUCTION" DO NOT APPLY TO THIS STRUCTURE.
3. ALL FRAMING LUMBER SHALL BE INSTALLED WITH MOISTURE CONTENT OF 19% OR LESS INDICATING "S–DRY" ON THE GRADE STAMP.
4. ALL LUMBER IN CONTACT WITH CONCRETE, MASONRY OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED WITH WATERPROOFING TREATMENT, 28% MAX. MOISTURE CONTENT.
5. ALL SIMPSON STRONG–TIE CONNECTORS USED WITH PRESSURE TREATED LUMBER SHALL BE "Z–MAX" COATED AS A MINIMUM OR REQUIRED COATING TO PROTECT CONNECTORS FROM SURFACE CHEMICALS. PROVIDE A PRESERVATIVE–TREATED BARRIER BETWEEN TREATED PLATES AND HOLD–DOWNS.
6. LUMBER SHALL COMPLY WITH NATIONAL DESIGN SPECIFICATION (NDS), LATEST EDITION SUPPLEMENT FOR MINIMUM ALLOWABLE DESIGN STRESS VALUES FOR LUMBER GRADES SHOWN BELOW. ALL LUMBER FRAMING SHALL BE MARKED WITH A GRADE STAMP.

MINIMUM LUMBER DESIGN VALUES, U.N.O. ON PLAN OR DETAILS (PSI). DESIGN VALUES TAKEN FROM NDS SUPPLEMENT: TABLES 4A, 4B, & 4D						
SPECIES & GRADE	Fb	Ft	Fv	FcP	Fc	E
LOAD BEARING WALL STUDS						
SPF #1/#2	875	450	135	425	1150	1,400,000
HEADER/BEAMS/JOISTS						
HEM FIR #2	850	525	150	405	1300	1,300,000
TREATED BEAMS/JOISTS						
SOUTHERN PINE #2	1500	825	175	565	1650	1,600,000
TOP ℞/HEADER ℞/ABOVE GROUND SILL ℞						
SPF #1/#2	875	450	135	425	1150	1,400,000
TREATED SILL ℞						
SOUTHERN PINE #2	1500	825	175	565	1650	1,600,000
TREATED POSTS						
SOUTHERN PINE #2	850	550	165	375	525	1,200,000
NON–TREATED POSTS						
DOUG FIR #2	750	475	170	625	700	1,300,000
FLOOR TRUSS END RIBBONS						
SPF MSR 2400–2.0E	2400	1925	135	425	1975	2,000,000

IF ALTERNATIVE GRADE OR SPECIES OF LUMBER IS DESIRED THAT IS EQUAL OR GREATER THAN THE ABOVE REQUIREMENTS; CONTRACTOR TO SUBMIT REQUEST TO ENGINEER FOR APPROVAL PRIOR TO ORDERING OF MATERIAL. SPF–S #2 IS SPRUCE–PINE–FIR SOUTH & IS NOT EQUIVALENT TO SPF #1/#2

7. ANCHOR TREATED SILL PLATES TO CONCRETE/MASONRY WITH ½"ø GALV A.R.'S 4'–0" O.C. MINIMUM, U.N.O. ON PLAN. HOOKED ROD W/ MINIMUM EMBED = 7"; SEE STANDARD DETAILS. THERE SHALL BE A MINIMUM OF (2) ANCHORS PER PIECE OF SILL PLATE W/ (1) BOLT LOCATED NO MORE THAN 12" OR LESS THAN 4" FROM END OF EACH SILL PLATE PIECE.
8. DIMENSIONAL LUMBER USED FOR HEADERS SHALL HAVE NO SPLITS OR CHECKS.
9. PROVIDE WASHERS PER STRUCTURAL DETAILS FOR ALL BOLTS IN WOOD MEMBERS. RE–TORQUE NUTS 48 HOURS AFTER FIRST TIGHTENING.
10. NOTCHING OR CUTTING OF STRUCTURAL WOOD MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL FROM ENGINEER. HOLES BORED IN WALL STUDS OR JOISTS SHOULD BE IN THE CENTER HALF OF THE MEMBER AND SHALL NOT BE LARGER THAN ¼ OF THE DEPTH OF THE MEMBER. ALLOWABLE CUTTING, NOTCHING, AND BORED HOLE PROVISIONS OF IBC SECTION 2308 DO NOT APPLY TO THIS STRUCTURE.
11. LOAD BEARING STUD WALLS TO BE 2x6 @ 1'–4" O.C. U.N.O. SEE TABLE ABOVE FOR SPECIES & GRADE.
12. EXTERIOR WALLS AND LOAD BEARING WALLS SHALL BE CAPPED WITH DOUBLE TOP PLATES. THE PLATES SHALL OVERLAP AT CORNERS AND AT INTERSECTIONS WITH OTHER LOAD BEARING WALLS. SEE STANDARD DETAILS.
13. POSTS AND BEARING STUDS (JACKS/KINGS) FOR BEAMS AND HEADERS SHALL BE CONTINUOUS TO THE FOUNDATION LEVEL. PROVIDE SQUASH BLOCKING BETWEEN FLOOR LEVELS TO MATCH THE WIDTH OF THE POST/STUD ASSEMBLY FROM ABOVE.
14. TOP FLANGE OF ALL RAFTERS, JOISTS AND BEAMS TO BE LATERALLY SUPPORTED @ 24" O.C. MIN. PROVIDE BRIDGING FOR TOP FLANGE AS REQUIRED TO NEAREST FRAMING MEMBER OR PROVIDE ADEQUATELY SUPPORTED PLYWOOD DECKING.
15. PROVIDE SOLID BLOCKING AT BEARING POINTS OF ALL 2x JOISTS.
16. METAL FRAMING ANCHORS AND HARDWARE SHOULD BE AS NOTED IN DETAILS. ALTERNATIVE HARDWARE THAT IS EQUAL OR GREATER IN CAPACITY MUST BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
17. FASTENERS IN CONTACT WITH PRESERVATIVE–TREATED WOOD SHALL BE OF HOT–DIPPED ZINC–COATED GALVANIZED STEEL OR STAINLESS STEEL. THIS INCLUDES NAILS, TIMBER RIVETS, WOOD SCREWS, THRU BOLTS, AND LAG SCREWS.
18. STRUCTURAL LOAD BEARING OR LATERAL LOAD RESISTING WALLS ARE SHOWN ON THE PLAN. SEE ARCH DRAWINGS FOR PARTITION WALLS, PROVIDE NECESSARY CONNECTION/ALLOWANCE OF PARTITION WALLS TO UNDERSIDE OF FLOOR AND ROOF FRAMING TO ACCOUNT FOR FRAMING DEFLECTION.
19. DRILL BOLT/ANCHOR HOLES IN WOOD 1/16" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT. REPAIR OVERSIZED HOLES WITH BEARING PLATE WASHERS.
20. ALL JOISTS, TRUSSES, HEADERS, AND BEAMS SHALL HAVE FULL BEARING UNLESS NOTED OTHERWISE NOTED ON THE DETAILS.
21.

MINIMUM DESIGN VALUES FOR ENGINEERED WOOD MATERIALS. U.N.O. ON PLAN OR DETAILS (PSI)			
MATERIAL & FUNCTION	Fb	FcII	E
LVL BEAMS	3100	N/A	2,000,000
LSL BEAMS	2325	N/A	1,550,000
PSL BEAMS	2900	N/A	1,200,000
PSL COLUMNS	N/A	2500	1,800,000

22.

MINIMUM DIMENSIONS OF FASTENERS, U.N.O. [NDS APPENDIX L] UNITS = INCHES								
FASTENER TYPE	L	D	H		FASTENER TYPE	L	D	H
NAIL: 6d	2	0.113	0.266		NAIL: 16d	3½	0.162	0.344
NAIL: 8d	2½	0.131	0.281		NAIL: 30d	4½	0.207	0.438
NAIL: 10d	3	0.148	0.312		#6 TYPE S OR W DRYWALL SCREW	1⅞"	N/A	N/A

L = LENGTH, D = DIAMETER, H = HEAD

WOOD STRUCTURAL PANEL WALL SHEATHING (WOOD FRAMING):

1. ALL PANELS SHALL HAVE A GRADE STAMP BY AN AMERICAN PLYWOOD ASSOCIATION (APA APPROVED AGENCY MEETING THE PROJECT REQUIREMENTS. ALL PANELS SHALL BE EXPOSURE 1, MINIMUM.
2. TYPICAL EXTERIOR WALL SHEATHING, U.N.O. : NOMINAL THICKNESS = 7/16", SPAN RATING 24/16.
3. PANEL JOINTS SHALL BE AT STUD CENTERLINE AND SHALL BE OFFSET FROM ADJACENT PANELS. EDGES TO BE BUTT TIGHT @ JOINTS. PANELS LESS THAN 12" WIDE SHALL NOT BE USED.
4. FASTENERS SHALL BE SPACED @ 6" O.C. ALONG ALL PANEL EDGES & @ 12" O.C. IN THE FIELD OF THE PANELS. FASTENERS TO BE LOCATED NOT LESS THAN ⅜" IN FROM THE EDGE OF THE PANEL
5. MINIMUM FASTENERS SHALL BE: 8d COMMON NAILS, WITH A MINIMUM 1⅜" PENETRATION, FLUSH DRIVEN, U.N.O.
6. IN SHEARWALL APPLICATIONS, IF PRE–FABRICATED PANELS ARE USED, WALL SHEATHING MUST SPLICE @ STUD CENTERLINE AND NOT AT A JOINT BETWEEN WALL PANELS. IF SPLICE DOES HAPPEN BETWEEN WALL PANELS, AN ALTERNATE CONNECTION OF PANELS IS TO FASTEN END STUDS OF PANELS TOGETHER W/ 16d NAILS @ 6" O.C. STAGGERED FROM BOTH SIDES. IN BOTH CASES, FIELD INSTALL UPPER TOP PLATE FOR WALL CONTINUITY PER STANDARD DETAILS.
7. IN SHEARWALL APPLICATIONS: PANEL EDGES TO BE UNBLOCKED, U.N.O. PANELS SHALL NOT BE LESS THAN 4'x8', EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING. WALL OPENINGS, SUCH AS WINDOWS AND DOORS, DO NOT CONSTITUTE CHANGES IN FRAMING.
8. FASTENING REQUIREMENTS SHALL APPLY TO ALL STUDS, TOP & BOTTOM PLATES, & BLOCKING.
9. MINIMUM SPACING OF NAILS TO BE 3" O.C. FOR 2X LUMBER.
10. PROPOSED PENETRATIONS THROUGH SHEARWALL SHEATHING NEEDS TO BE SUBMITTED TO E.O.R. FOR APPROVAL PRIOR TO CUTTING IN THE FIELD.

ROOF / FLOOR WOOD SHEATHING DIAPHRAGM NOTES:

1. ALL PANELS SHALL HAVE A GRADE STAMP BY AN AMERICAN PLYWOOD ASSOCIATION (APA) APPROVED AGENCY MEETING THE PROJECT REQUIREMENTS. ALL PANELS SHALL BE EXPOSURE 1, MINIMUM. IF PANELS ARE EXPOSED TO WEATHER FOR EXTENDED PERIOD OF TIME, EXTERIOR GRADE PANEL ARE RECOMMENDED. OSB PANELS TO BE PROTECTED FROM EXCESSIVE MOISTURE IF USED HORIZONTAL SURFACES SUCH AS ROOF AND FLOOR PANELS.
2. ROOF PANEL: NOMINAL THICKNESS = ½", SPAN RATING 32/16.
   FLOOR PANEL: NOMINAL THICKNESS = ¾", SPAN RATING 48/24.
3. MINIMUM FASTENER REQUIREMENTS SHALL BE: 8d COMMON NAILS FOR ½" AND 10d COMMON NAILS FOR ¾", LOCATED 3/8" FROM PANEL EDGE, WITH A MINIMUM 1 ⅜" PENETRATION, FLUSH DRIVEN. FASTEN @ 6" O.C. @ SUPPORTED PANEL EDGES, AND 12" O.C. IN THE FIELD OF THE PANEL, UNLESS OTHERWISE NOTED ON THE DRAWINGS. IF 8d COOLER, DEFORMED, AND SMOOTH NAILS ARE USED AND INSTALLED WITH NAIL–GUN; MINIMUM FASTENING SPACING IS 4" O.C. AT SUPPORTED PANEL EDGES AND 8" O.C. IN THE FIELD OF THE PANEL.
4. AT ROOF OVERHANGS MINIMUM FASTENING TO BE: 8d COMMON, 6" O.C. IN FIELD & @ PANEL EDGES. IF INSTALLED WITH NAIL GUN USE 8d COOLER, DEFORMED, SMOOTH @ 4" O.C. IN FIELD AND @ PANEL EDGES.
5. PANEL JOINTS SHALL BE AT FRAMING CENTERLINE AND SHALL BE OFFSET FROM ADJACENT PANELS. PANELS SHOULD SPAN 2 OR MORE SPANS, WITH STRONG AXIS OF PANEL PERPENDICULAR TO FRAMING MEMBERS.
6. UNSUPPORTED EDGES SHALL HAVE A MINIMUM ONE PANEL EDGE CLIP, TONGUE AND GROOVE, OR BLOCKING. APA RECOMMENDS TONGUE AND GROOVE EDGES TO BE GLUED TOGETHER.
7. PANELS SHALL BE CONTINUOUS OVER 2 SPANS MINIMUM, AND SHALL HAVE THE FACE OF GRAIN PERPENDICULAR TO THE FRAMING DIRECTION.
8. MINIMUM SPACING OF NAILS TO BE 3" O.C. FOR 2X LUMBER.
9. ALL FASTENING MUST BE DRIVEN FLUSH WITH SHEATHING. IF MORE THAN 20% OF FASTENERS ARE OVERDRIVEN BY ⅛" – CONTACT ENGINEER FOR CORRECTIVE ACTION.
10. IF SHEATHING IS BEING USED WITH WOOD I–JOIST FRAMING; SHEATHING MUST BE GLUED TO I–JOIST FRAMING IN ADDITION TO TYPICAL FASTENING. GLUE SHOULD MEET AFG–01 OR ASTM D3498 SPECIFICATIONS.
11. ALL PANELS SHOULD BE LAYED OUT TO ACCOUNT FOR THERMAL EXPANSION OF THE PANELS AFTER INSTALLED. APA RECOMMENDS PROVIDING A ⅛" GAP @ ALL EDGES TO PREVENT BUCKLING CAUSED BY THERMAL STRESSES. COORDINATE SPACING WITH WITH LOCATION OF FRAMING MEMBERS BELOW.
12. ADDITIONAL PANEL CLIPS ARE REQUIRED @ UNSUPPORTED EDGES FOR PANEL WIDTHS LESS THAN OR EQUAL TO 24".

   16"–24" 2 PANEL CLIPS OR 2x4 BLOCKING
   <16" 2x4 BLOCKING EA EDGE

METAL PLATE CONNECTED WOOD TRUSS NOTES:

1. METAL PLATE CONNECTED WOOD TRUSSES SHALL BE ENGINEERED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT. A SEALED COVER SHEET SHALL BE SUBMITTED WITH THE SHOP DRAWINGS AT THE TIME OF SUBMITTAL. SHOP DRAWING DESIGN SUBMITTAL TO COMPLY WITH IBC SECTION 2303.4.
2. WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", AFPA, AND "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION."
3. TRUSSES TO BE DESIGNED TO SATISFY THE FOLLOWING DEFLECTION REQUIREMENTS. TRUSS SUPPLIER TO PROVIDE CAMBER AS NECESSARY TO COUNTER DL DEFLECTIONS.

   ROOF TL = L/240 * FLOOR TL = L/240 *
   ROOF SL = L/360 FLOOR LL = L/360

   * NET TL DEFLECTION MINUS CAMBER, NOT TO EXCEED ¾". PARTITION WALLS BELOW TRUSSES TO BE FRAMED TO ALLOW FOR THIS EXPECTED DEFLECTION.
4. TRUSS SUPPLIER TO MAKE EVERY EFFORT TO FOLLOW FRAMING SCHEME AS THE LOADS HAVE BEEN DISTRIBUTED TO THE FOUNDATION ACCORDINGLY. IF REVISED FRAMING DIRECTIONS ARE DESIRED BY SUPPLIER, PLAN MUST BE SUBMITTED FOR APPROVAL PRIOR TO FOUNDATION CONSTRUCTION.
5. UNLESS OTHERWISE NOTED ON DRAWINGS, EOR HAS NOT PROVIDED STRUCTURAL SHEATHING BENEATH THE BOTTOM CHORD OF ROOF OR FLOOR TRUSSES FOR BRACING.
6. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC) REQUIRED FOR CONNECTIONS BETWEEN TRUSSES SHALL BE DESIGNED AND SUPPLIED BY THE TRUSS ENGINEER AND SUPPLIER.
7. UNLESS NOTED OTHERWISE, ROOF TRUSSES SHALL BE ATTACHED TO THE TOP PLATE AT ALL BEARING CONDITIONS W/ SIMPSON H2.5T CLIPS INSTALLED PER MANUFACTURER'S INSTRUCTIONS. GIRDERS AND ROOF BEAMS SHOULD BE ATTACHED TO BEARING SUPPORTS WITH (2) H2.5T CLIPS.
8. DO NOT CUT OR REMOVE TRUSS MEMBERS OR MAKE FIELD ALTERATIONS TO THE TRUSSES.
9. LAYOUT AND SPACING GUIDELINES ON PLAN ARE FOR REFERENCE ONLY UNLESS SPECIFICALLY DIMENSIONED OR DETAILED.
10. THE METAL PLATE CONNECTED WOOD TRUSS SUPPLIER SHALL SUPPLY AN HIB–91 PUBLICATION OUTLINING THE PROPER HANDLING, ERECTING, AND BRACING OF TRUSSES.
11. SEE METAL PLATE CONNECTED WOOD TRUSS SHOP DRAWINGS FOR PERMANENT WEB AND CHORD BRACING LOCATIONS AND REQUIREMENTS.
12. GIRDER TRUSSES SHALL BE SUPPORTED BY SAME NUMBER OF STUDS AS TRUSS PLIES (MIN OF 2 STUDS) WITH CONTINUOUS SOLID BEARING TO THE FOUNDATION. AVOID BEARING GIRDER TRUSSES OVER WALL OPENINGS, UNLESS OTHERWISE DIMENSIONED ON PLAN.

MASONRY NOTES:

1. MASONRY CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTION (ACI) CODES AND SPECIFICATIONS, LATEST EDITION.

   ACI 530: "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"
   ACI 530.1: "SPECIFICATION FOR MASONRY STRUCTURES"

2. PROVIDE CONCRETE MASONRY UNITS (CMU) OF NORMAL WEIGHT, GRADE N, TYPE I OR II, CONFORMING TO ASTM C90 AND TESTED IN ACCORDANCE WITH ASTM C140. MASONRY ASSEMBLIES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF, f'm=1500 PSI. TESTED IN ACCORDANCE WITH THE PRISM METHOD (ASTM C1314) OR UNIT STRENGTH METHOD PER ACI 530.
3. MORTAR SHALL CONFORM TO ASTM C270 AND TESTED IN ACCORDANCE WITH ASTM C780. USE TYPE "M" BELOW GRADE AND TYPE "S" ABOVE GRADE.
4. MASONRY GROUT SHALL CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS, TESTED IN ACCORDANCE WITH ASTM C1019.
5. ALL BOND BEAMS SHALL HAVE (2) #5 BARS CONT. W/ CORNER BARS. PLACE BOND BEAMS WHERE SHOWN ON DETAILS AND AT TOP OF WALL. CONTINUE BOND BEAMS THROUGH CONTROL JOINTS.
6. PROVIDE FULL MORTAR BED AT FACE SHELLS AND CROSS WEBS ADJACENT TO GROUTED CORE LOCATIONS. PROVIDE FULL MORTAR BED AT BASE OR BOTTOM WALL COURSE AND UNDER ALL SOLID UNITS.
7. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONT. UNOBSTRUCTED VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS.
8. ALL CMU SHALL BE LAID IN A RUNNING BOND, U.N.O.
9. PROVIDE VERTICAL CONTROL JOINTS MEETING THE FOLLOWING CRITERIA (SEE ARCH DRAWINGS FOR CONTROL LOCATIONS). DEVIATION REQUIRES APPROVAL FROM ENGINEER AND ARCHITECT.

   MAX SPACING NOT TO EXCEED 25'–0"
   MAX OF 8'–0" FROM BUILDING CORNERS
   NO CLOSER THAN 2–0" TO OPENING EDGES
   NO CLOSER THAN 1'–4" TO BEAM OR JOIST BEARING LOCATION

10. VERTICAL REBAR SHALL BE LATERALLY SUPPORTED IN PROPER POSITION AT TOP AND BOTTOM OF BAR DURING GROUTING OF CELLS WITH WIRE POSITIONERS PRIOR TO GROUT PLACEMENT. "WET STICKING" OF REINFORCEMENT AND EMBEDS IS NOT ACCEPTABLE. SEE ACI SPECIFICATIONS FOR PLACEMENT TOLERANCES.
11. ALL VERTICAL REINFORCEMENT, INCLUDING JAMB REINFORCEMENT, SHALL BE DOWELED INTO FOUNDATION WALLS OR FOOTINGS.
12. IT IS THE CONTRACTORS RESPONSIBILITY TO BRACE WALLS UNTIL FLOOR OR ROOF CONNECTIONS ARE COMPLETED.
13. HORIZONTAL JOINT REINFORCING SHALL BE GALVANIZED 9 GA. WITH MAX SPACING OF 16" O.C. VERTICALLY; LAP 8" MIN. ALL CORNERS AND WALL INTERSECTIONS TO BE PREFABRICATED PIECES. JOINT REINFORCEMENT SHALL BE FULLY EMBEDDED IN MORTAR. TERMINATE JOINT REINFORCEMENT AT CONTROL JOINTS, U.O.N.
14. UNLESS NOTED OTHERWISE, TYPICAL CMU WALLS SHALL HAVE VERTICAL REINFORCING CONSISTING OF #5 BARS @ 4'–0" O.C. IN MASONRY GROUT.
15. PROVIDE (1) #5 EA SIDE OF CONTROL JOINT, AT END OF WALL SEGMENTS, AND AT WALL CORNERS.
16. SHOP DRAWING SUBMITTAL FOR WALL REINF. SHALL SHOW ALL WALL ELEVATIONS W/ REINF, CONTROL JOINTS, AND ALL WALL REINF. RELATED DETAILS.
17. MAX GROUT LIFT IS 5'–0"; UNLESS ALT. ACI METHOD IS APPROVED BY ENGINEER. GROUT SHALL BE CONSOLIDATED BY MECHANICAL MEANS. PLACE 2" COLD JOINT GROUT DEPRESSION AT TOP OF EACH INTERMEDIATE GROUT LIFT.
18. DO NOT PLACE ANY PIPES OR OTHER PENETRATIONS THROUGH MASONRY WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

ALUMINUM BALCONY/CANOPY NOTES:

1. THE DEFERRED ALUMINUM DESIGN SHALL CONFORM TO THE ALUMINUM DESIGN MANUAL (LATEST ADDITION). THIS DESIGN SHALL BE DONE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT.
2. THE ALUMINUM ASSEMBLIES SHALL BE DESIGNED FOR THE LIVE LOAD AND DRIFT LOADING LISTED UNDER THE DESIGN CRITERIA.
3. ALL CONNECTIONS TO THE BASE STRUCTURE SHALL BE FULLY DETAILED IN THE ALUMINUM APPROVAL SUBMITTAL AND CALCULATIONS SHALL BE PROVIDED. THE REACTIONS FROM THESE CONNECTIONS SHALL BE PROVIDED TO THE EOR TO CONFIRM THE CAPACITY OF THE SUPPORTING STRUCTURE.
4. A SEPARATION MATERIAL SHALL BE USED BETWEEN THE ALUMINUM ASSEMBLIES AND ANY DISSIMILAR METAL TO PREVENT CORROSION. THIS MATERIAL SHALL BE SHOWN ON THE SHOP DRAWINGS.
5. ALL SUBMITTAL CALCULATIONS SHALL BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

SHOP DRAWING & DEFERRED DESIGN SUBMITTAL NOTES:

1. CONTRACTOR TO FURNISH COMPLETE AND DETAILED SHOP DRAWING & SUBMITTALS FOR REVIEW AND APPROVAL BY THE EOR. THE FOLLOWING ARE REQUIRED FOR THIS PROJECT.

SHOP DRAWING OR SUBMITTAL	NOTES/COMMENTS
CONCRETE MIX DESIGN	–
CONCRETE REINFORCEMENT SHOP DRAWINGS	–
CMU, MORTAR, & GROUT MATERIAL SPECS	–
CMU REINFORCEMENT SHOP DRAWINGS	–
PRECAST CONCRETE SHOP DRAWINGS	DEFERRED SUBMITTAL: SEE NOTE #4
LUMBER MATERIAL GRADE SUBMITTAL	–
WOOD TRUSS SHOP DRAWINGS	DEFERRED SUBMITTAL: SEE NOTE #4
ALUMINUM DECK FRAMING SHOP DRAWINGS	DEFERRED SUBMITTAL: SEE NOTE #4
ELEVATOR SHOP DRAWINGS	PROVIDE LOADS @ STRUCTURAL SYSTEM
SHEAR WALL CONTINUOUS TIEDOWN SYSTEM	–

2. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS. ALL SHOP DRAWINGS MUST BEAR THE REVIEW STAMP OF THE CONTRACTOR BEFORE THEY ARE REVIEWED BY THE EOR.
3. SHOP DRAWINGS SHALL SHOW ALL FIELD DETAILS AND ADDITIONAL INFORMATION NEEDED FOR THE CONTRACTOR TO CONSTRUCT THE BUILDING PER THE CONTRACT DOCUMENTS.
4. SHOP DRAWINGS COMPONENTS DESIGNATED AS A DEFERRED SUBMITTAL "DESIGNED BY OTHERS" OR "PRE–ENGINEERED" SHALL INCLUDE A CALCULATION PACKAGE THAT IS TO BE STAMPED AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO SUBMITTAL FOR APPROVAL TO THE E.O.R.
5. SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE DURING TIMES OF INSPECTION AND SHALL BE CLEARLY INDICATED THEY HAVE BEEN REVIEWED AND APPROVED BY THE EOR.
6. REVIEW OF SUBMITTALS AND SHOP DRAWINGS BY THE EOR DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE STRUCTURAL ENGINEER. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR THE ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

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PRELIMINARY
NOT FOR CONSTRUCTION

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

JLG ARCHITECTS
BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE
11/20/17

PHASE
90% CDs

PROJECT
16098

SHEET
S001
STRUCTURAL NOTES

SPECIAL INSPECTIONS AND TESTING:

THIS PROJECT REQUIRES SPECIAL INSPECTION AND TESTING IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE, 2012 EDITION. THESE NOTES AND THE STATEMENT OF SPECIAL INSPECTIONS PREPARED FOR THE PROJECT OWNER ARE INTENDED TO INFORM THE CONTRACTOR OF THE QUALITY ASSURANCE PROGRAM AND THE EXTENT OF THE CONTRACTOR'S RESPONSIBILITIES. CONTRACTOR SHALL REFERENCE PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE TESTING AND INSPECTION SERVICES SECTION WILL CLARIFY WHO SHALL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM ALL INSPECTIONS, SPECIAL INSPECTIONS, AND TESTING FOR PROJECT.

GENERAL NOTES:

1. THE SPECIAL INSPECTION AND TESTING PROGRAM IS A QUALITY ASSURANCE PROGRAM INTENDED TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY TO COMPLY WITH THE OFFICIAL CONTRACT DOCUMENTS. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE OFFICIAL CONTRACT DRAWINGS. THE SPECIAL INSPECTOR DOES NOT REPLACE THE DUTIES OF THE BUILDING OFFICIAL NOR THE QUALITY CONTROL RESPONSIBILITIES AND PERSONNEL OF THE CONTRACTOR. JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN THE IBC SECTION 110 AND SPECIFIC STRUCTURAL OBSERVATION AS MAY BE REQUIRED BY THE CODE.
4. THOUGH NOT REQUIRED BY CODE, SPECIAL INSPECTORS AND/OR INSPECTION AGENCIES CAN DOCUMENT ACCEPTANCE OF THEIR RESPONSIBILITIES AND SCOPE OF WORK FOR A PROJECT BY SIGNING AN AGREEMENT THAT INCLUDES A DETAILED SCHEDULE OF SERVICES, COMMONLY KNOWN AS THE SPECIAL INSPECTION AND TESTING AGREEMENT AND THE SPECIAL INSPECTION AND TESTING SCHEDULE. THIS DOCUMENT MAY REFERENCE THIS SHEET AS THE "STATEMENT OF SPECIAL INSPECTIONS," (SSI).
5. THE STRUCTURAL DESIGN METHODS AND/OR ASSUMPTIONS UTILIZED ARE BASED UPON THE SPECIAL INSPECTIONS REQUIRED WITHIN THE CONTRACT DOCUMENTS.

CONTRACTOR RESPONSIBILITIES AND DUTIES:

1. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND PROVIDING ADEQUATE NOTICE TO THE SPECIAL INSPECTORS FOR ALL INSPECTIONS. THE CONTRACTOR SHALL REQUEST SPECIAL INSPECTION OF THE REQUIRED ITEMS PRIOR TO THOSE ITEMS BECOMING INACCESSIBLE AND UNOBSERVABLE DUE TO PROGRESSION OF WORK.
2. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO THE APPROVED CONTRACT DOCUMENTS. THESE DOCUMENTS INCLUDE SEALED DRAWINGS AND SPECIFICATIONS, ADDENDA, CHANGE ORDERS, APPROVED SHOP DRAWINGS, ISSUED SKETCHES AND REVISION DRAWINGS, AND ALL DIRECTIVES ISSUED BY THE ARCHITECT/ENGINEER. THIS CURRENT SET OF DOCUMENTS SHALL BE AVAILABLE AT THE JOB SITE.
3. THE CONTRACTOR IS TO CORRECT DISCREPANCIES AND DEVIATIONS AS DETERMINED BY SPECIAL INSPECTOR. ALL DISCREPANCIES AND DEVIATIONS OBSERVED SHALL BE RE-INSPECTED UNTIL THE SPECIAL INSPECTOR DEEMS CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR IS TO RETAIN SPECIAL INSPECTION RECORDS COMPLETED BY THE SPECIAL INSPECTORS AT THE JOB SITE.

SPECIAL INSPECTOR QUALIFICATIONS AND RESPONSIBILITIES:

1. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
2. SPECIAL INSPECTORS SHALL NOTIFY CONTRACTOR PERSONNEL OF THEIR PRESENCE AND RESPONSIBILITIES AT THE JOBSITE.
3. THE SPECIAL INSPECTOR/TESTING AGENCY SHALL BE INDEPENDENT OF THE CONTRACTOR TO AVOID CONFLICT OF INTEREST.
4. THE SPECIAL INSPECTOR IS OBLIGATED TO BOTH THE OWNER AND THE BUILDING OFFICIAL FOR OBSERVING THAT THE WORK IS EXECUTED IN ACCORDANCE WITH THE OFFICIAL CONTRACT DOCUMENTS. THESE DOCUMENTS INCLUDE SEALED DRAWINGS AND SPECIFICATIONS, ADDENDA, CHANGE ORDERS, APPROVED SHOP DRAWINGS, ISSUED SKETCHES AND REVISION DRAWINGS, AND ALL DIRECTIVES ISSUED BY THE ARCHITECT/ENGINEER.
5. SPECIAL INSPECTORS SHALL KEEP ORGANIZED RECORDS OF INSPECTIONS AND SUBMIT INSPECTION REPORTS WITH A MINIMUM WEEKLY FREQUENCY TO THE CONTRACTOR, BUILDING OFFICIAL, ENGINEERS, AND ARCHITECTS INDIVIDUALLY. REPORTS SHOULD INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION TO THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THEY SHOULD BE REPORTED TO THE BUILDING OFFICIAL AND TO THE ENGINEER OF RECORD.
6. A FINAL SIGNED REPORT IS TO BE SUBMITTED AT THE END OF THE PROJECT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES. THIS REPORT SHOULD STATE THAT ALL ITEMS REQUIRING SPECIAL INSPECTION AND TESTING WERE FULFILLED AND REPORTED TO THE BEST OF THEIR KNOWLEDGE IN CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS, AND THE APPLICABLE PROVISIONS OF THE IBC. ITEMS NOT IN CONFORMANCE, UNRESOLVED ITEMS, OR ANY DISCREPANCIES IN INSPECTION COVERAGE SHOULD BE SPECIFICALLY ITEMIZED.
7. THE FOLLOWING ARE THE QUALIFICATIONS FOR FOR INDIVIDUALS PERFORMING SPECIFIC INSPECTIONS OR TESTS INCLUDING IN THIS PROJECT'S SSI.

   A. AMERICAN CONCRETE INSTITUTE (ACI):
      - CONCRETE FIELD TESTING TECHNICIAN – GRADE 1 (ACI-CFTT)
      - CONCRETE CONSTRUCTION INSPECTOR (ACI-CCI)
      - LABORATORY TESTING TECHNICIAN – GRADE 1 OR 2 (ACI-LTT)
      - STRENGTH TESTING TECHNICIAN (ACI-STT)

   B. AMERICAN WELDING SOCIETY (AWS):
      - CERTIFIED WELDING INSPECTOR (AWS-CWI)
      - CERTIFIED STRUCTURAL STEEL INSPECTION (AWS/AISC-SSI)

   C. AMERICAN SOCIETY OF NON-DESTRUCTIVE TESTING (ASNT)
      - NON-DESTRUCTIVE TESTING TECHNICIAN – LEVEL II OR III (ASNT)

   D. INTERNATIONAL CODE COUNCIL (ICC):
      - STRUCTURAL MASONRY SPECIAL INSPECTOR (ICC-SMSI)
      - STRUCTURAL STEEL AND BOLTING SPECIAL INSPECTOR (ICC-SSSI)
      - STRUCTURAL WELDING SPECIAL INSPECTOR (ICC-SWI)
      - PRESTRESSED CONCRETE SPECIAL INSPECTOR (ICC-PCSI)
      - REINFORCED CONCRETE SPECIAL INSPECTOR (ICC-RCSI)
      - SOILS SPECIAL INSPECTOR (ICC-SSI)

   E. PROFESSIONAL STATE LICENSING:
      - PROFESSIONAL ENGINEER (PE)

STATEMENT OF SPECIAL INSPECTIONS (SSI):

1. THE FOLLOWING TABLES INDICATE THE MINIMUM SPECIFIC SPECIAL INSPECTION AND TESTING TO BE PERFORMED ON THIS PROJECT AND THE QUALIFICATIONS OF THE INDIVIDUAL INSPECTORS AND TESTING TECHNICIANS.

DEFINITIONS:

1. CONTINUOUS SPECIAL INSPECTION: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. 100% OF THE WORK MUST BE INSPECTED AND IT MUST BE INSPECTED AS THE WORK IS BEING PERFORMED.
2. PERIODIC SPECIAL INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN, OR IS BEING, PERFORMED AND AT THE COMPLETION OF WORK.
3. YES: THIS INSPECTION AND/OR TESTING IS REQUIRED BY THE BUILDING CODE AND MUST BE PERFORMED.
4. NO: THIS INSPECTION AND/OR TESTING IS NOT APPLICABLE TO THE PROJECT, AND NEED NOT BE PERFORMED.
5. SUGGESTED: THIS INSPECTION AND/OR TESTING IS NOT REQUIRED BY THE BUILDING CODE. HOWEVER, THE ENGINEER OF RECORD RECOMMENDS IMPLEMENTING THEM FOR QUALITY ASSURANCE. A POTENTIAL EXISTS FOR THESE MEASURES TO BE A VALUE ADDED SERVICE FOR THE OWNER TO ENSURE PROPER PROJECT COMPLETION.

SPECIAL INSPECTIONS – SOILS AND FOUNDATION

VERIFICATION AND INSPECTION	AGENCY QUALIFICATION	SCOPE	REFERENCED STANDARD	FREQUENCY OF INSPECTION	REQUIRED ON PROJECT
1. Shallow Foundations	ICC-SSI PE-GEOTECH.	Inspect Soils below footings for adequate bearing capacity and consistency with geotechnical report	N/A	Periodic testing to verify compliance with project specifications & geotechnical report	YES
2. Controlled Structural Fill	ICC-SSI PE-GEOTECH.	Perform applicable sieve tests and modified Proctor tests of each source of fill. Inspect placement, lift thickness, and compaction. Test density of each lift. Verify extent and slope of fill placement.	Applicable ASTM Specs	Periodic testing to verify compliance with project specifications & geotechnical report	YES
3. Deep Foundation: Driven Piles	PE-GEOTECH.	Inspect and log pile driving operations. Record pile driving resistance and verify compliance with driving criteria. Inspect piles for damage from driving and plumbness. Verify pile size, length and accessories.		Continuous	NO
4. Deep Foundation: Drilled Pier Foundations	PE-GEOTECH.	Inspect installation and maintain complete records for each pier. Verify pier diameter, bell diameter, lengths, embedment into bedrock and suitability of end bearing strata		Continuous	NO

SPECIAL INSPECTIONS – CAST-IN-PLACE CONCRETE

VERIFICATION AND INSPECTION	AGENCY QUALIFICATION	SCOPE	REFERENCED STANDARD	FREQUENCY OF INSPECTION	REQUIRED ON PROJECT
1. Mix Design	ACI-CCI ICC-RCSI	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added on site does not exceed that allowed by the mix design.	ACI 318	Prior to start of concrete construction on project, Periodic	YES
2. Material Certification	STRUCTURAL ENGINEER OF RECORD	Verify that concrete supplier's concrete components meet requirements set forth by applicable ASTM standards.	Applicable ASTM & ACI Specs	Prior to start of concrete construction on project	YES
3. Reinforcement Installation	ACI-CCI ICC-RCSI	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters	Applicable ACI Specs	Prior to each casting	YES
4. Welding of Reinforcing	AWS-CWI	Visually inspect all reinforcing steel welds. Verify weldability of reinforcing steel. Inspect preheating of steel when required	Applicable ASTM & AWS Specs	Continuous	YES
5. Anchor Rods	ACI-CCI ICC-RCSI	Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors	Applicable AISC & ACI Specs	Prior to each casting	YES
6. Concrete Placement	ACI-CCI ICC-RCSI	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	Applicable ACI Specs	Periodic	SUGGESTED
7. Sampling and Testing of Concrete	ACI-CFTT ACI-LTT ACI-STT	Test Concrete compressive strength, slump, air content and temperature	Applicable ACI and ASTM Specs	Not less than once a day, nor less than once for every 150 cubic yard, nor less than once for every 5000 SF of surface area for slabs or walls	YES
8. Curing and Protection	ACI-CCI ICC-RCSI	Inspect curing, cold weather protection and hot weather protection procedures	Applicable ACI Specs	Monitor on site after each casting	SUGGESTED
9. Post-Installed Anchors	ACI-CCI ICC-RCSI	Inspect installation for type of anchor, embedment, edge distances & adhesive required	ACI & Supplier's Specs	Continuous	YES
Exceptions per IBC 1705.3: Special Inspections are not required for the following unless otherwise required by the Building Official or Structural Engineer of the Record.					
1. Nonstructural concrete slabs supported directly on the ground.					
2. Concrete patios, driveways and sidewalks, on grade.					

SPECIAL INSPECTIONS – PRECAST CONCRETE

VERIFICATION AND INSPECTION	AGENCY QUALIFICATION	SCOPE	REFERENCED STANDARD	FREQUENCY OF INSPECTION	REQUIRED ON PROJECT
1. Supplier's Plant Certification/Quality Control Procdures	Per PCI requirements	Precast supplier to perform all work per PCI requirements. Maintain plant records and quality control program during production of precast components. All components of precast production to be tested per PCI requirements. Make records available upon request	Applicable PCI & ACI Specs	Per PCI requirements	YES
2. Erection of Precast Elements	ICC-SSSI	Inspect erection of precast concrete including member configuration, connections, welding and grouting	Applicable PCI & ACI Specs	Periodic	YES

SPECIAL INSPECTIONS – MASONRY LEVEL 1 INSPECTION

VERIFICATION AND INSPECTION	AGENCY QUALIFICATION	SCOPE/NOTES	REFERENCED STANDARD	FREQUENCY OF INSPECTION	REQUIRED ON PROJECT
1. Material Certification	STRUCTURAL ENGINEER OF RECORD	All CMU, mortar mixes & grout mixes to be submitted to Structural Engineer for approval prior to construction	ACI 530	Prior to Construction	YES
2. As masonry construction begins, these items to be verified to ensure compliance:					
2a. Proportions of site-prepared mortar	ICC-SMSI	–	ACI 530	Periodic	YES
2b. Construction of mortar joints	ICC-SMSI	–	ACI 530	Periodic	YES
2c. Location of reinforcement, connectors and anchorages.	ICC-SMSI	–	ACI 530	Periodic	YES
3. The inspection program shall verify:					
3a. Size and location of structural elements	ICC-SMSI	–	ACI 530	Periodic	YES
3b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction	ICC-SMSI	–	ACI 530	Periodic	YES
3c. Specified size, grade and type of reinforcement	ICC-SMSI	–	ACI 530	Periodic	YES
3d. Welding of reinforcement bars	ICC-SMSI	–	ACI 530	Continuous	YES
3e. Protection of masonry during cold weather and hot weather conditions	ICC-SMSI	–	ACI 530	Periodic	YES
4. Prior to grouting, the following shall be verified to ensure compliance:					
4a. Grout space is clean	ICC-SMSI	–	ACI 530	Periodic	YES
4b. Placement of reinforcement, connectors and anchorages	ICC-SMSI	–	ACI 530	Periodic	YES
4c. Proportions of site-prepared grout	ICC-SMSI	–	ACI 530	Periodic	YES
4d. Construction of mortar joints	ICC-SMSI	–	ACI 530	Periodic	YES
5. Grout placement shall be verified to ensure compliance with code and construction documents	ICC-SMSI	–	ACI 530	Continuous	YES
6. Preparation of any required grout specimens and/or prisms shall be observed	ICC-SMSI	–	ACI 530	Continuous	YES
7. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified	–	–	–	Periodic	YES
8. Evaluation of Masonry Strength	ICC-SMSI	Test compressive strength of mortar and grout cube samples. Test compressive strength of masonry prisms	ACI 530 and applicable ASTM Standards	Periodic	YES

SPECIAL INSPECTIONS – WOOD CONSTRUCTION

VERIFICATION AND INSPECTION	AGENCY QUALIFICATION	SCOPE	REFERENCED STANDARD	FREQUENCY OF INSPECTION	REQUIRED ON PROJECT
1. Fabricator Certification/Quality Control Procedures	–	Fabricated to be enrolled in a nationally accepted inspection program acceptable to the Structural drawings and specifications. The approved fabricator to submit a certification of compliance to the building official.		N/A	YES
2. Material Grading		Review sheathing, framing members, wall studs, plates for proper species and grade	Applicable APA & AITC Specs	Prior to Construction & Periodic during construction	YES
3. Connections		Inspect connection of framing members. Including nail and bolts for size and spacing. Verify metal hardware connectors for type and proper installation	ANSI/AF&PA & Supplier's Specs	Periodic	YES
4. Framing and Details		Inspect framing for plumbness, spacing, bearing length, and size. Verify bracing is installed as required.	ANSI/AF&PA	Periodic	YES
5. Diaphragms and Shearwalls		Inspect size, configuration, blocking and fastening of shearwalls and diaphragms. Verify panel grade and thickness. Verify size and installation of hold-downs and straps.	ANSI/AF&PA & Supplier's Specs	Periodic	YES
6. Prefabricated Wood Trusses & I-Joists		See Item #1. Inspect installation for location, spacing, bearing length, connectors, and permanent bracing.	ANSI/AF&PA & Supplier's Specs	Periodic	YES

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

JLG ARCHITECTS BOTTINEAU RIDGE II APARTMENTS MAPLE GROVE, MN

DATE 11/20/17
PHASE 90% CDs
PROJECT 16098
SHEET S002
SPECIAL INSPECTIONS

SANDMAN Structural Engineers
1587 30th Avenue South - Moorhead, MN 56560
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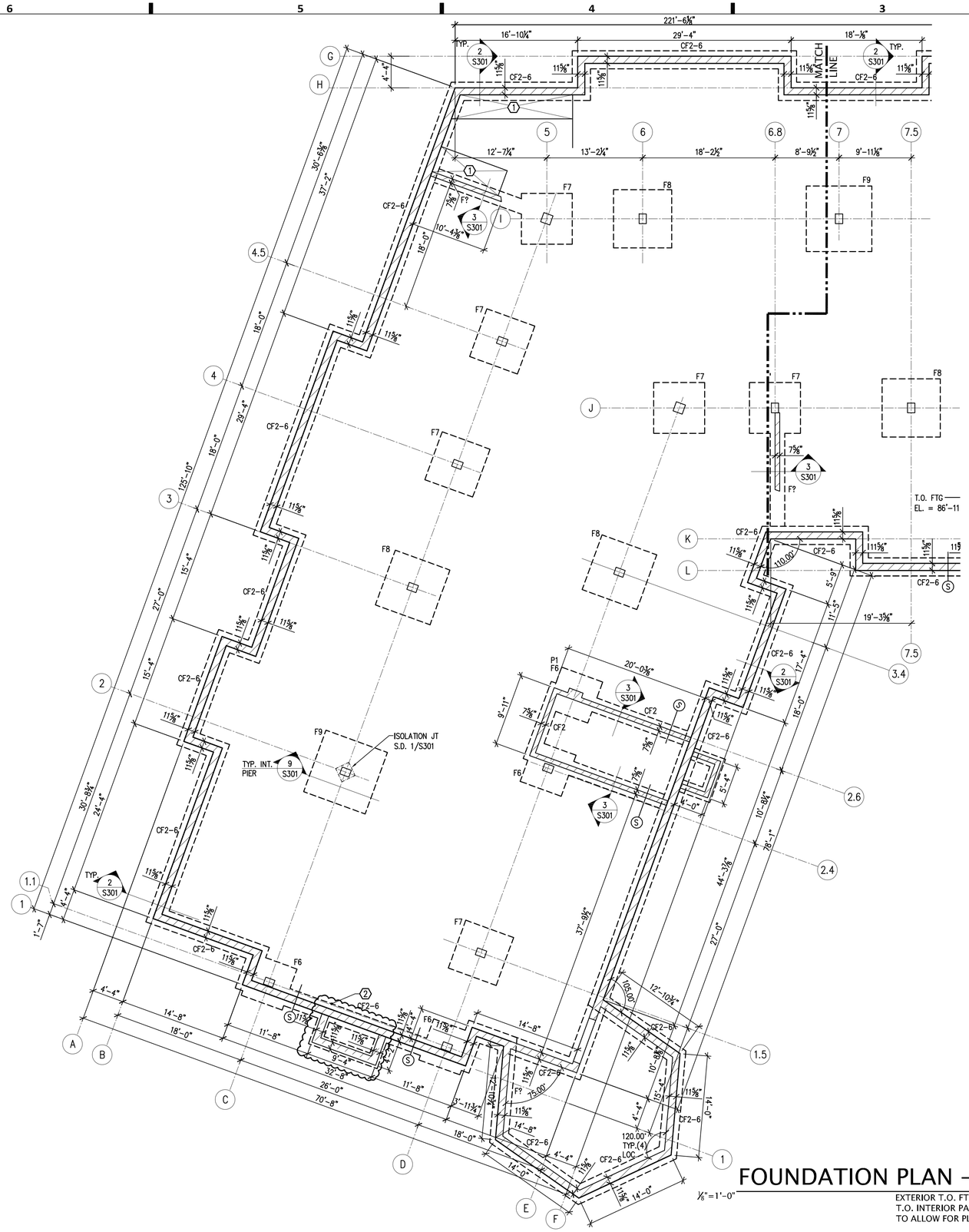


FOUNDATION PLAN NOTES:

1. SEE SHEET S301 FOR GENERAL FOUNDATION DETAILS & 10/S301 FOR STANDARD CMU DETAILS. SEE SHEET S001 FOR GENERAL CONCRETE AND FOUNDATION NOTES.
2. TYPICAL INTERIOR GARAGE SLAB ON GRADE, U.N.O.
   THICKNESS = 4"
   REINFORCEMENT = FIBERMESH.
   BASE = MIN OF 6" COMPACTED GRANULAR FILL
   VAPOR RETARDER/BARRIER = 10 MIL POLY
   T.O. SLAB ELEVATION = 89'-3", TYP – SEE ARCH FOR SLOPE LINES.
3. SEE ARCH FOR LOCATIONS OF CMU PARTITIONS. SEE DETAIL 5/S301 FOR SLAB AT CMU PARTITIONS.
4. (S) – DENOTES FOOTING STEP – S.D. 1/S301.
5. SEE S201 A/B FOR CMU WALL REINFORCING.

KEYNOTES

(1) 4" ELEVATED HOUSEKEEPING PADS. REINFORCE W/#4 REBAR @ 1'-6" O.C. EACH WAY. SEE ARCH/MECH FOR SIZE & LOCATION.

(2) PROVIDE FOOTING STEP AS REQUIRED TO MAINTAIN 3'-8" (MIN) FROM WELL FINISHED GRADE TO BOTTOM OF FOOTING.

ENGR. EDIT

FOOTING SCHEDULE

MARK	SIZE	THICKNESS	LONGITUDINAL REINFORCEMENT	TRANSVERSE REINFORCEMENT	NOTES/COMMENTS
CF2	2'-0" CONT.	1'-0"	(2) #5 CONT.	#4 @ 4'-0" O.C.	–
CF2-6	2'-6" CONT.	1'-0"	(2) #5 CONT.	#4 @ 4'-0" O.C.	–
F3					–
F4					–
F5					–
F6	6'-0" SQ.	1'-0"	(6) #6	(6) #6	–
F7	7'-0" SQ.	1'-2"	(7) #6	(7) #6	–
F8	8'-0" SQ.	1'-4"	(8) #6	(8) #6	–
F9	9'-0" SQ.	1'-6"	(9) #6	(9) #6	–
F10					–

ENGR. EDIT

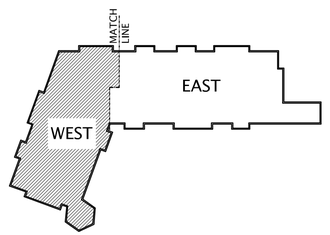
CONCRETE PIER SCHEDULE

MARK	DETAIL	NOTES/COMMENTS
P1	1/S302	–
P2	2/S302	–
P3	3/S302	–
P4	4/S302	–

FOUNDATION PLAN – WEST

½"=1'-0"

EXTERIOR T.O. FTG ELEV. = 88'-11" U.N.O.
T.O. INTERIOR PAD FTG = G.C. COORD. EL.
TO ALLOW FOR PLUMBING TO PASS ABOVE FTG



KEYPLAN
NO SCALE

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PROJECT
16098

SHEET
S101A
FOUNDATION PLAN
"WEST"

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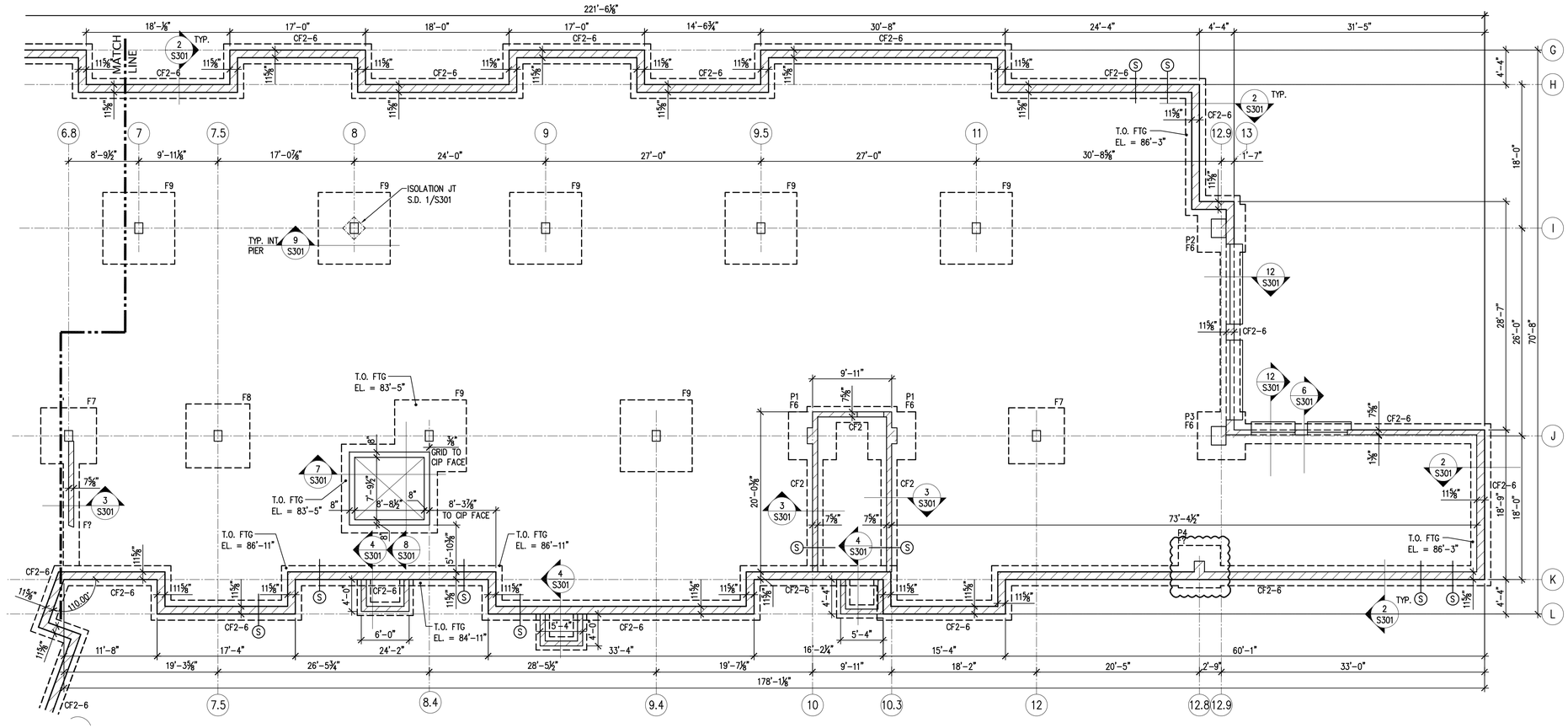

FOUNDATION PLAN – EAST

1/8"=1'-0"

EXTERIOR T.O. FTG ELEV. = 88'-11" U.N.O.
T.O. INTERIOR PAD FTG = G.C. COORD. EL.
TO ALLOW FOR PLUMBING TO PASS ABOVE FTG

FOUNDATION PLAN NOTES:

1. SEE SHEET S301 FOR GENERAL FOUNDATION DETAILS & 10/S301 FOR STANDARD CMU DETAILS. SEE SHEET S001 FOR GENERAL CONCRETE AND FOUNDATION NOTES.
2. TYPICAL INTERIOR GARAGE SLAB ON GRADE, U.N.O.
   THICKNESS = 4"
   REINFORCEMENT = FIBERMESH.
   BASE = MIN OF 6" COMPACTED GRANULAR FILL
   VAPOR RETARDER/BARRIER = 10 MIL POLY
   T.O. SLAB ELEVATION = 89'-3", TYP – SEE ARCH FOR SLOPE LINES.
3. SEE ARCH FOR LOCATIONS OF CMU PARTITIONS.
   SEE DETAIL 5/S301 FOR SLAB AT CMU PARTITIONS.
4. (S) – DENOTES FOOTING STEP – S.D. 1/S301.
5. SEE S201 A/B FOR CMU WALL REINFORCING.

KEYNOTES

1. 4" ELEVATED HOUSEKEEPING PADS. REINFORCE W/#4 REBAR @ 1'-6" O.C. EACH WAY. SEE ARCH/MECH FOR SIZE & LOCATION.
2. PROVIDE FOOTING STEP AS REQUIRED TO MAINTAIN 3'-8" (MIN) FROM WELL FINISHED GRADE TO BOTTOM OF FOOTING.

ENGR. EDIT

FOOTING SCHEDULE

MARK	SIZE	THICKNESS	LONGITUDINAL REINFORCEMENT	TRANSVERSE REINFORCEMENT	NOTES/COMMENTS
CF2	2'-0" CONT.	1'-0"	(2) #5 CONT.	#4 @ 4'-0" O.C.	–
CF2-6	2'-6" CONT.	1'-0"	(2) #5 CONT.	#4 @ 4'-0" O.C.	–
F3					–
F4					–
F5					–
F6	6'-0" SQ.	1'-0"	(6) #6	(6) #6	–
F7	7'-0" SQ.	1'-2"	(7) #6	(7) #6	–
F8	8'-0" SQ.	1'-4"	(8) #6	(8) #6	–
F9	9'-0" SQ.	1'-6"	(9) #6	(9) #6	–
F10					–

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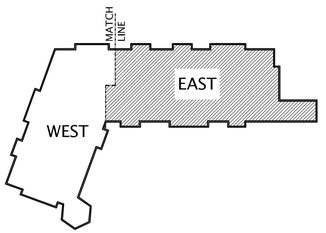
CONCRETE PIER SCHEDULE

MARK	DETAIL	NOTES/COMMENTS
P1	1/S302	–
P2	2/S302	–
P3	3/S302	–
P4	4/S302	–



KEYPLAN

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BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE 11/20/17
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PROJECT 16098
SHEET S101B
FOUNDATION PLAN "EAST"

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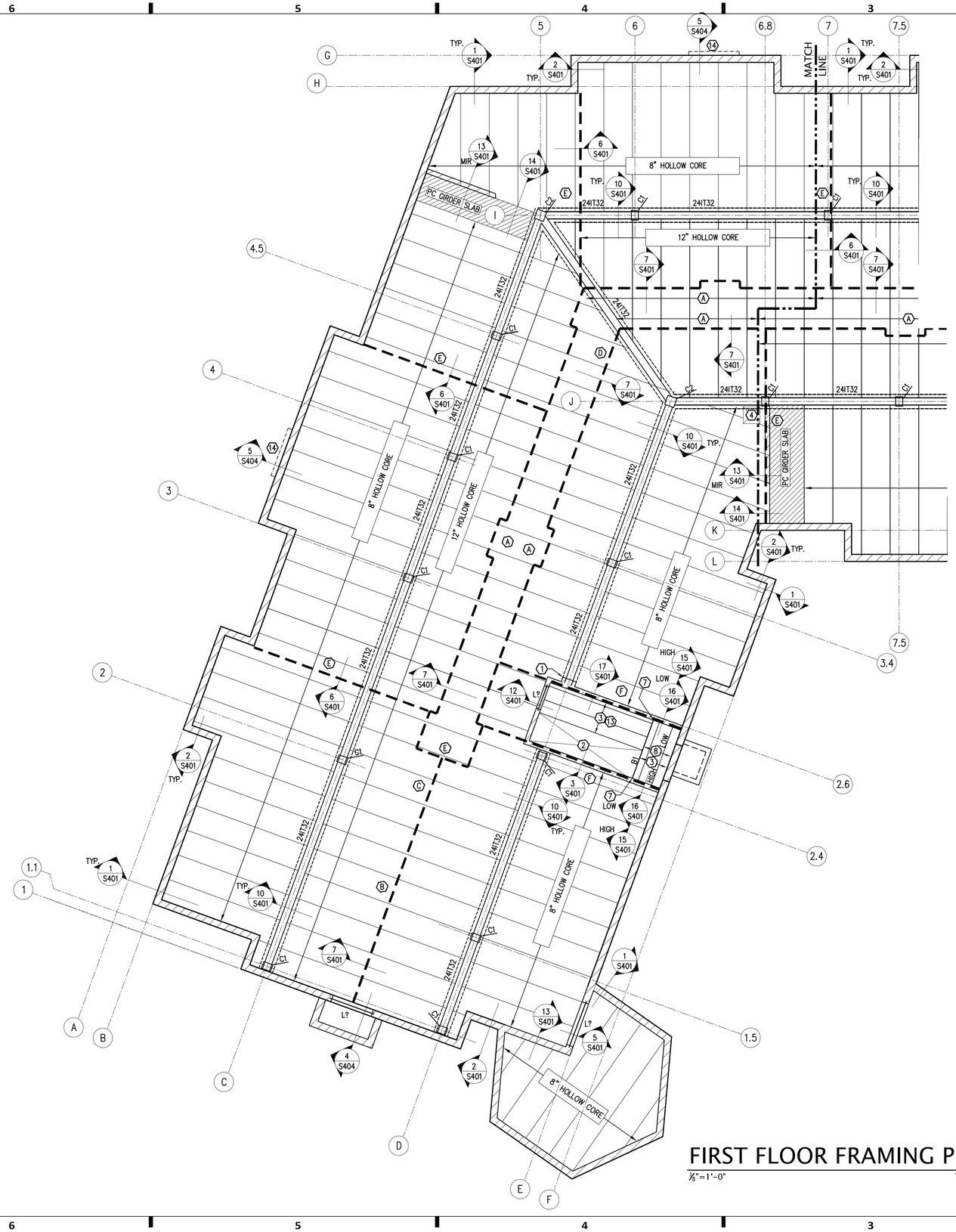

PRECAST & CMU PLAN NOTES:

1. TYPICAL REINFORCEMENT OF LOWER LEVEL TO BE:

   12" CMU –EXTERIOR WALLS, U.N.O.:
   #6 VERTS @ 1'–4" O.C. (INSIDE FACE)

   ALTERNATE:
   12" CAST–IN–PLACE CONCRETE WALLS IN LIEU OF 12" CMU WALLS. REINFORCING AND DETAILS TO BE PROVIDED IF ALTERNATE IS SELECTED.

   8" CMU INTERIOR/EXT. BRG. WALLS:
   #5 VERTS @ 2'–8" O.C. (CENTERED)

   SEE GENERAL NOTES ON S001, 10/S301, AND PLAN FOR ADDITIONAL REINFORCEMENT REQUIRED.

2. PRECAST SUPPLIER TO PROVIDE FRAMED FLOOR OPENING FOR ELECTRICAL FEED LINES. G.C. TO COORDINATE WITH ELECTRICAL.

3. PRECAST TOPPING TO BE 1" GYPCRETE. TOPPING TO BE NON–COMPOSITE FOR PRECAST DESIGN.

4. SEE SHEET S206/S207 FOR SHEAR WALL COMPONENTS EMBEDDED INTO CMU FOUNDATION WALLS

KEYNOTES

1. SEE DETAIL 9/S401 FOR PRECAST BEAM DETAIL.
2. SEE DETAIL 1/S202A FOR STAIR FRAMING.
3. 24" LANDING TRUSSES @ 2'–0" O.C. UNO
4. PRECAST SUPPLIER TO PROVIDE FRAMED OPENING FOR TRASH CHUTE. SEE MECH. FOR DIMENSION AND LOCATION.
5. SEE DETAIL 8/S401 FOR PRECAST BEAM BEARING.
6. INFILL W/CONC. TOPPING TO 100'–0" ELEV.
7. ATTACH STAIR HEADER TO GROUTED CMU W/ SIMPSON HU410 WITH TITEN SCREWS PER SIMPSON SPECS.
8. 2x12 LANDING JOISTS @ 16" O.C.
9. 4" CONC. SLAB W/ #4 E.W. @ 1'–0" O.C. OVER RIGID INSULATION. SEE ARCH FOR SLOPE & FINISH.
10. T.O.PLANK = 99'–3"
11. T.O.PLANK = 98'–11"
12. SEE DETAIL 9A/S401 FOR PRECAST BEAM BEARING.
13. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM.
14. ALUMINUM FRAMED DECK.

PRECAST LOADING KEYNOTES

SUPERIMPOSED LOADS PROVIDED ARE NOMINAL LOADS TO BE USED IN 2012 IBC COMBINATIONS WITH APPROPRIATE LOAD FACTORS. LIVE LOADS HAVE NOT BEEN REDUCED AS PER ASCE 7–10.

- (A) SUPERIMPOSED UNIFORM LINE LOAD DL=2.1 KLF, LL=2.3 KLF, SL=0.8 KLF
- (B) SUPERIMPOSED UNIFORM LINE LOAD DL=3.1 KLF, LL=3.7 KLF, SL=1.2 KLF
- (C) SUPERIMPOSED UNIFORM LINE LOAD DL=3.5 KLF, LL=4.2 KLF, SL=1.4 KLF
- (D) SUPERIMPOSED UNIFORM LINE LOAD DL=2.1 KLF, LL=3.7 KLF, SL=0.8 KLF
- (E) SUPERIMPOSED UNIFORM LINE LOAD DL=0.6 KLF, LL=0.3 KLF, SL=0.1 KLF
- (F) SUPERIMPOSED UNIFORM LINE LOAD DL=1.1 KLF, LL=1.6 KLF, SL=0.1 KLF
- G SUPERIMPOSED CONCENTRATED LOAD DL=4.5 K, LL=5.6 K, SL=4.8 K
- H SUPERIMPOSED CONCENTRATED LOAD DL=13.4 K, LL=14.9 K, SL=10.9 K
- I SUPERIMPOSED CONCENTRATED LOAD DL=17.0 K, LL=17.3 K, SL=12.3 K
- J SUPERIMPOSED CONCENTRATED LOAD DL=0.8 K, LL=2.9 K, SL=0 K
- K SUPERIMPOSED CONCENTRATED LOAD DL=14.4 K, LL=18.6 K, SL=9.4 K
- L SUPERIMPOSED CONCENTRATED LOAD DL=8.1 K, LL=10.1 K, SL=4.2 K

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COLUMN SCHEDULE			
MARK	SIZE	BASE PLATE	COMMENTS
C1	12"x16" PRECAST	BY SUPPLIER	–
C2	16"x16" PRECAST	BY SUPPLIER	–
C3	6x6 WOOD POST	SIMPSON ABW66Z (GROUT STANDOFF)	SIMPSON CCQ/ECCQ COL. CAP
C4			
C5			
C6			
C7			
C8			
C9			

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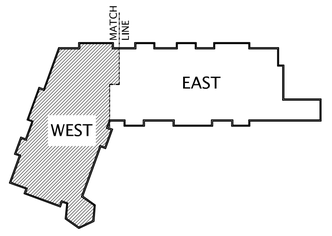
LINTEL SCHEDULE		
MARK	SIZE	COMMENTS
L1	L L 4x3½x5/16	S.D. 11/S401
L2	??	S.D. 11/S401



KEYPLAN
NO SCALE

FIRST FLOOR FRAMING PLAN – WEST

⅛"=1'-0" T.O. H.C. PLANK = 99'–11" U.N.O.

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

JLG ARCHITECTS
BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE
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PHASE
90% CDs

PROJECT
16098

SHEET
S201A
FIRST FLOOR FRAMING PLAN "WEST"

SANDMAN Structural Engineers
1587 30th Avenue South - Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

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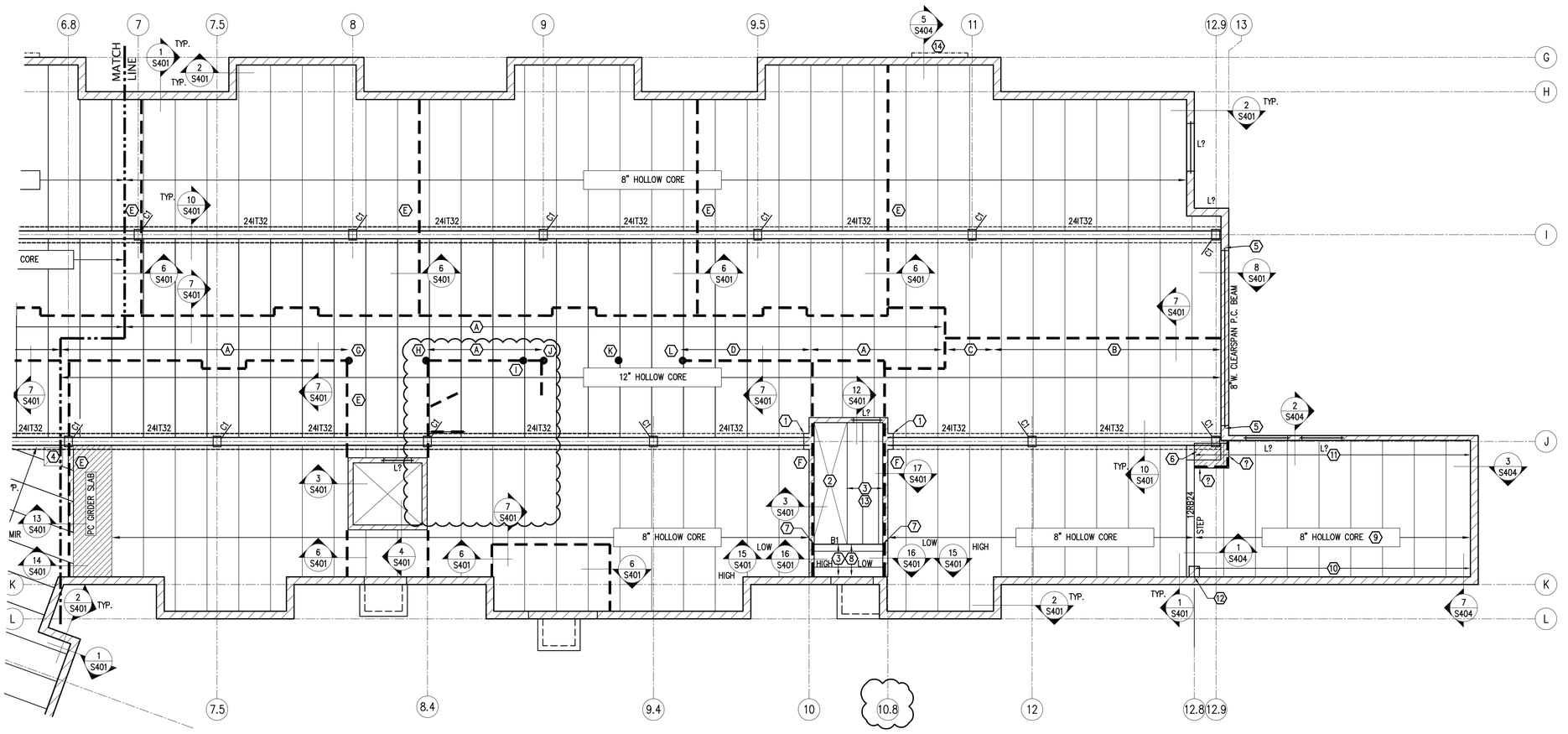

FIRST FLOOR FRAMING PLAN – EAST

1/8"=1'-0" T.O. H.C. PLANK = 99'-11" U.N.O.

N

COLUMN SCHEDULE			
MARK	SIZE	BASE PLATE	COMMENTS
C1	12"x16" PRECAST	BY SUPPLIER	–
C2	16"x16" PRECAST	BY SUPPLIER	–
C3	6x6 WOOD POST	SIMPSON ABW66Z (GROUT STANDOFF)	SIMPSON CCQ/ECCQ COL. CAP
C4			
C5			
C6			
C7			
C8			
C9			

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LINTEL SCHEDULE		
MARK	SIZE	COMMENTS
L1	∠4x3½x5/16	S.D. 11/S401
L2	??	S.D. 11/S401

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PRECAST & CMU PLAN NOTES:

1. TYPICAL REINFORCEMENT OF LOWER LEVEL TO BE:

   12" CMU –EXTERIOR WALLS, U.N.O.:
   #6 VERTS @ 1'–4" O.C. (INSIDE FACE)

   ALTERNATE:
   12" CAST–IN–PLACE CONCRETE WALLS IN LIEU OF 12" CMU WALLS. REINFORCING AND DETAILS TO BE PROVIDED IF ALTERNATE IS SELECTED.

   8" CMU INTERIOR/EXT. BRG. WALLS:
   #5 VERTS @ 2'–8" O.C. (CENTERED)

   SEE GENERAL NOTES ON S001, 10/S301, AND PLAN FOR ADDITIONAL REINFORCEMENT REQUIRED.

2. PRECAST SUPPLIER TO PROVIDE FRAMED FLOOR OPENING FOR ELECTRICAL FEED LINES. G.C. TO COORDINATE WITH ELECTRICAL.

3. PRECAST TOPPING TO BE 1" GYPCRETE. TOPPING TO BE NON–COMPOSITE FOR PRECAST DESIGN.

4. SEE SHEET S206/S207 FOR SHEAR WALL COMPONENTS EMBEDDED INTO CMU FOUNDATION WALLS

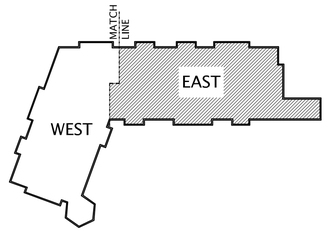
KEYNOTES

1. SEE DETAIL 9/S401 FOR PRECAST BEAM DETAIL.
2. SEE DETAIL 1/S202A FOR STAIR FRAMING.
3. 24" LANDING TRUSSES @ 2'–0" O.C. UNO
4. PRECAST SUPPLIER TO PROVIDE FRAMED OPENING FOR TRASH CHUTE. SEE MECH. FOR DIMENSION AND LOCATION.
5. SEE DETAIL 8/S401 FOR PRECAST BEAM BEARING.
6. INFILL W/CONC. TOPPING TO 100'–0" ELEV.
7. ATTACH STAIR HEADER TO GROUTED CMU W/ SIMPSON HU410 WITH TITEN SCREWS PER SIMPSON SPECS.
8. 2x12 LANDING JOISTS @ 16" O.C.
9. 4" CONC. SLAB W/ #4 E.W. @ 1'–0" O.C. OVER RIGID INSULATION. SEE ARCH FOR SLOPE & FINISH.
10. T.O.PLANK = 99'–3"
11. T.O.PLANK = 98'–11"
12. SEE DETAIL 9A/S401 FOR PRECAST BEAM BEARING.
13. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM.
14. ALUMINUM FRAMED DECK.

PRECAST LOADING KEYNOTES

SUPERIMPOSED LOADS PROVIDED ARE NOMINAL LOADS TO BE USED IN 2012 IBC COMBINATIONS WITH APPROPRIATE LOAD FACTORS. LIVE LOADS HAVE NOT BEEN REDUCED AS PER ASCE 7–10.

- A SUPERIMPOSED UNIFORM LINE LOAD DL=2.1 KLF, LL=2.3 KLF, SL=0.8 KLF
- B SUPERIMPOSED UNIFORM LINE LOAD DL=3.1 KLF, LL=3.7 KLF, SL=1.2 KLF
- C SUPERIMPOSED UNIFORM LINE LOAD DL=3.5 KLF, LL=4.2 KLF, SL=1.4 KLF
- D SUPERIMPOSED UNIFORM LINE LOAD DL=2.1 KLF, LL=3.7 KLF, SL=0.8 KLF
- E SUPERIMPOSED UNIFORM LINE LOAD DL=0.6 KLF, LL=0.3 KLF, SL=0.1 KLF
- F SUPERIMPOSED UNIFORM LINE LOAD DL=1.1 KLF, LL=1.6 KLF, SL=0.1 KLF
- G SUPERIMPOSED CONCENTRATED LOAD DL=4.5 K, LL=5.6 K, SL=4.8 K
- H SUPERIMPOSED CONCENTRATED LOAD DL=13.4 K, LL=14.9 K, SL=10.9 K
- I SUPERIMPOSED CONCENTRATED LOAD DL=17.0 K, LL=17.3 K, SL=12.3 K
- J SUPERIMPOSED CONCENTRATED LOAD DL=0.8 K, LL=2.9 K, SL=0 K
- K SUPERIMPOSED CONCENTRATED LOAD DL=14.4 K, LL=18.6 K, SL=9.4 K
- L SUPERIMPOSED CONCENTRATED LOAD DL=8.1 K, LL=10.1 K, SL=4.2 K



KEYPLAN

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MAPLE GROVE, MN

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PROJECT 16098
SHEET **S201B**
FIRST FLOOR FRAMING PLAN "EAST"

SANDMAN Structural Engineers
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218.227.0022 www.SandmanSE.com Project: 1623-9

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WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END

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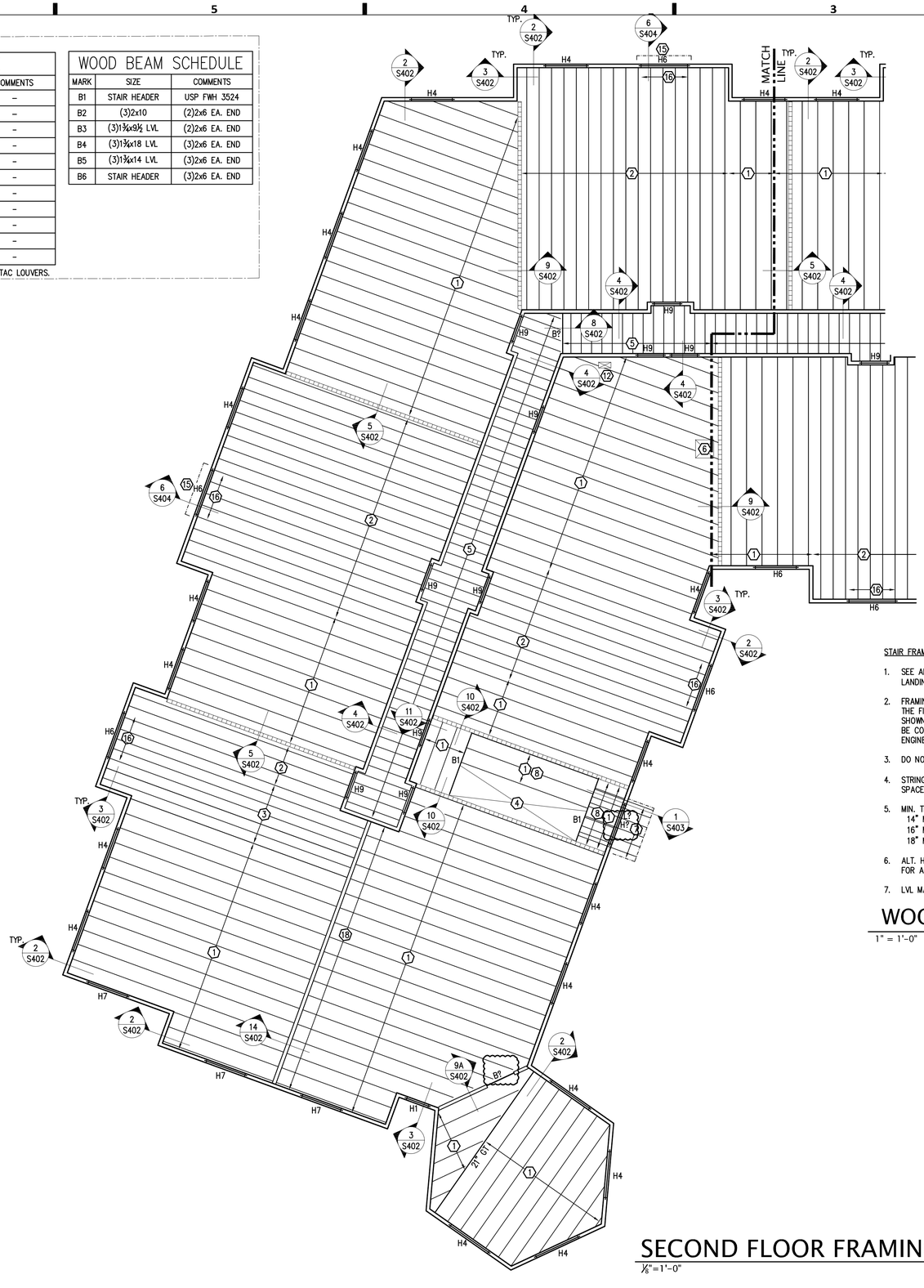
LINTEL SCHEDULE

MARK	SIZE	COMMENTS
L1	∠L4x3½x5/16	S.D. 11/S401
L2	??	S.D. 11/S401

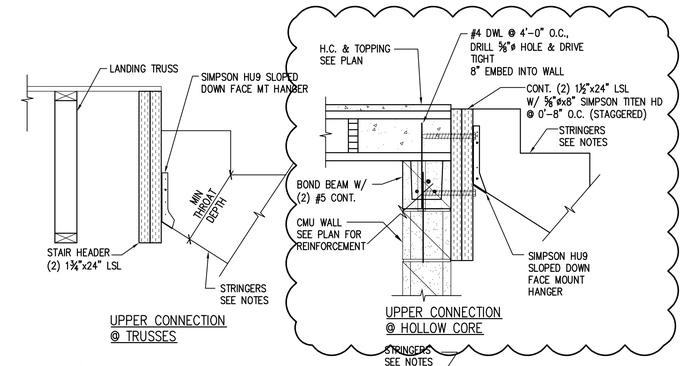


SECOND FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
4. WALL STUDS @ CORRIDOR TO BE (1) 2x6 SPF#2 @ 12" O.C.

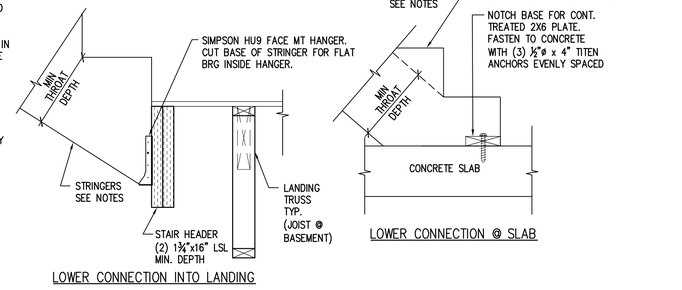
KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. 2x10 CANOPY JOIST @ 16" O.C.(MAX) UNO. COORDINATE W/ TRUSS LAYOUT. SL=110 PSF(INCLUDE DRIFT)
8. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
9. DESIGN GIRDER TRUSS FOR UNIFORM WALL LOAD W_{DL} =100plf.
10. 2-STORY 2x_ STUDS @ ?" O.C.
11. SEE DETAIL 1/S202B FOR STAIR FRAMING.
12. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
13. BEAM HANGER
14. S.D. 15/S402 FOR JOIST BEARING @ STUD WALL.
15. ALUMINUM FRAMED DECKS.
16. HEADER BOT. ℄ TO BE SP#2.
17. ALIGN WEB OPENINGS FOR DUCT RUN. SEE M2018



STAIR FRAMING NOTES

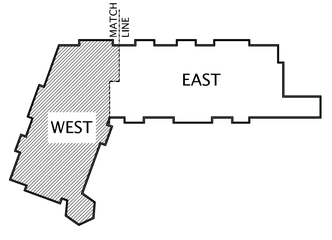
1. SEE ARCH FOR STAIR RISE/RUN AND LANDING DIMENSIONS
2. FRAMING CONDITIONS ENCOUNTERED IN THE FIELD THAT DO NOT MATCH THE SHOWN STRUCTURAL DETAILS, MUST BE COORDINATED WITH STRUCTURAL ENGINEER PRIOR TO WORK.
3. DO NOT OVERCUT TREADS
4. STRINGERS: (4) 1¾"x18" LVL EVENLY SPACED
5. MIN. THROAT DIMENSIONS:
   14" MEMBER = 8"
   16" MEMBER = 10"
   18" MEMBER = 12"
6. ALT. HANGERS MUST BE SUBMITTED FOR APPROVAL PRIOR TO WORK.
7. LVL MATERIAL TO BE 2.0E.



WOOD STAIR (@ FULL RUN STAIRS ONLY)

1" = 1'-0"

1 S202A



KEYPLAN

NO SCALE

SECOND FLOOR FRAMING PLAN – WEST

1/8"=1'-0"

FLOOR TRUSS BRG ELEV. = 109'-0 1/8"

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MAPLE GROVE, MN

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SHEET
S202A
SECOND FLOOR FRAMING PLAN "WEST"

SANDMAN Structural Engineers
1587 30th Avenue South · Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

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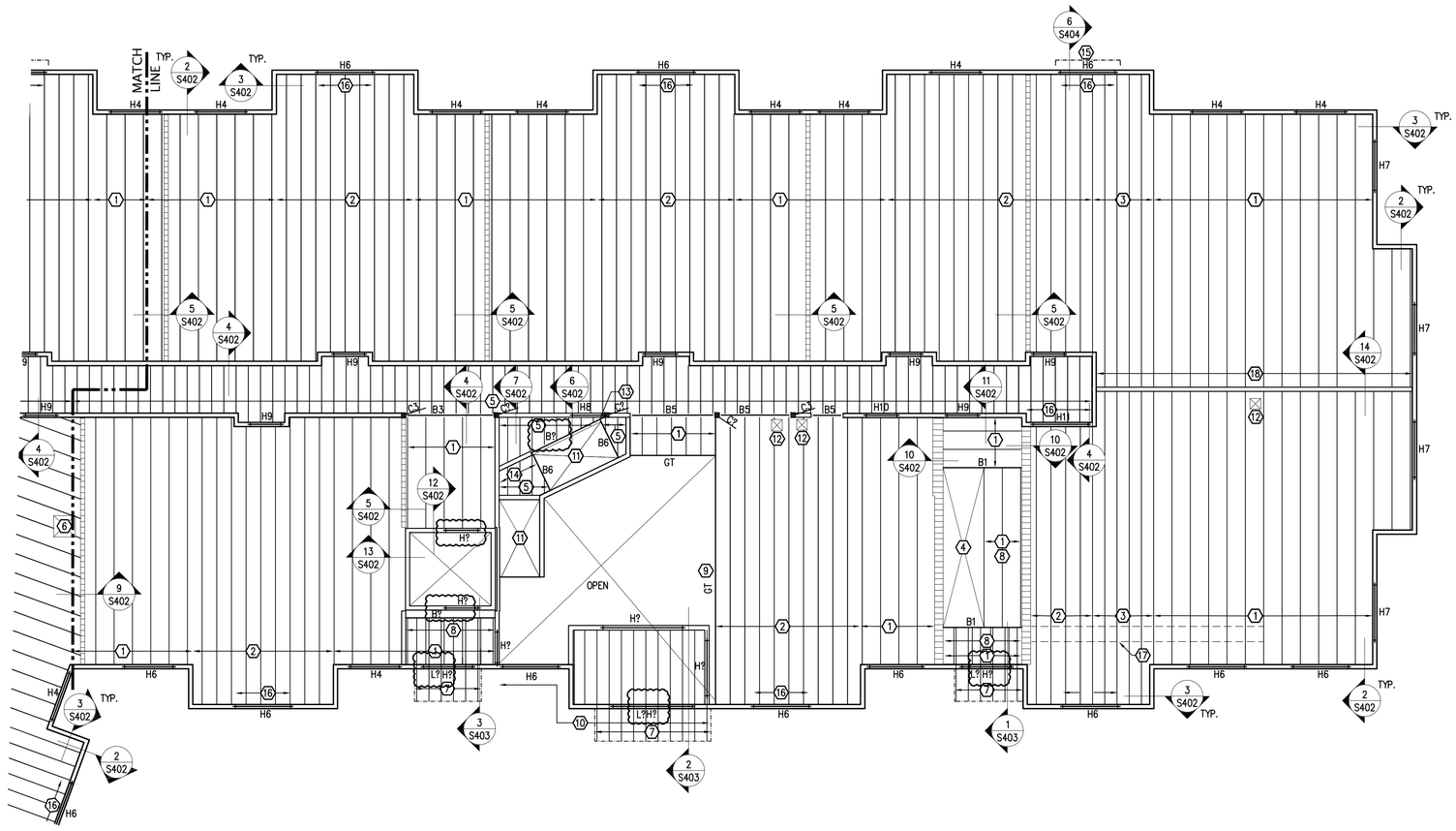


SECOND FLOOR FRAMING PLAN – EAST

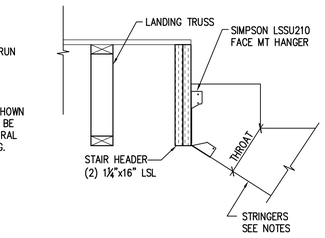
1/8"=1'-0"

FLOOR TRUSS BRG ELEV. = 109'-0 1/8"

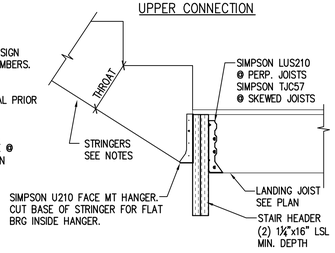
N

STAIR FRAMING NOTES

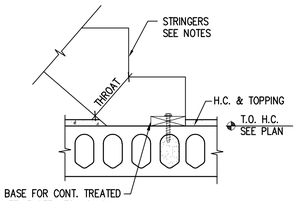
1. SEE ARCH FOR STAIR RISE/RUN AND LANDING DIMENSIONS
2. FRAMING CONDITIONS ENCOUNTERED IN THE FIELD THAT DO NOT MATCH THE SHOWN STRUCTURAL DETAILS, MUST BE COORDINATED WITH STRUCTURAL ENGINEER PRIOR TO FRAMING.
3. DO NOT OVERCUT TREADS
4. STRINGERS: (4) 1¾"x14" LSL EVENLY SPACED
5. MIN. THROAT DIMENSIONS:
   14" MEMBER = 8"
   16" MEMBER = 10"
   18" MEMBER = 12"
6. SEE S001 NOTES FOR DESIGN VALUES OF STRINGER MEMBERS.
7. ALT. HANGERS MUST BE SUBMITTED FOR APPROVAL PRIOR TO WORK.
8. PROVIDE 2x4 BRG. WALL W/ BEVELED TOP PLATE @ MID-SPAN OF UPPER RUN STAIRS.



UPPER CONNECTION



MID CONNECTION



LOWER CONNECTION @ H.C.

WOOD STAIR FRAMING DETAILS

1" = 1'-0"

1 S202B

ENGR. EDIT

WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END

SECOND FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
4. WALL STUDS @ CORRIDOR TO BE (1) 2x6 SPF#2 @ 12" O.C.

KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. 2x10 CANOPY JOIST @ 16" O.C.(MAX) UNO. COORDINATE W/ TRUSS LAYOUT. SL=110 PSF(INCLUDE DRIFT)
8. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
9. DESIGN GIRDER TRUSS FOR UNIFORM WALL LOAD W_{DL} =100plf.
10. 2-STORY 2x_ STUDS @ ?" O.C.
11. SEE DETAIL 1/S202B FOR STAIR FRAMING.
12. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
13. BEAM HANGER
14. S.D. 15/S402 FOR JOIST BEARING @ STUD WALL.
15. ALUMINUM FRAMED DECKS.
16. HEADER BOT. ℄ TO BE SP#2.
17. ALIGN WEB OPENINGS FOR DUCT RUN. SEE M201B. COORDINATE WITH MECHANICAL.
18. WALL STUDS TO BE (2)2x4 MSR2400-2.0E STAGGERED @ 16" O.C.

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COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	COMMENTS
C1	12"x16" PRECAST	BY SUPPLIER	–
C2	16"x16" PRECAST	BY SUPPLIER	–
C3	6x6 WOOD POST	SIMPSON ABW66Z (GROUT STANDOFF)	SIMPSON CCQ/ECCQ COL. CAP
C4			
C5			
C6			
C7			
C8			
C9			

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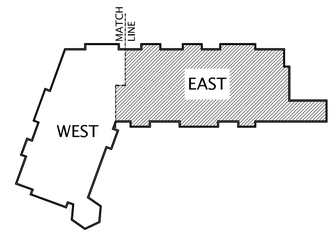
LINTEL SCHEDULE

MARK	SIZE	COMMENTS
L1	∠4x3½x5/16	S.D. 11/S401
L2	??	S.D. 11/S401



KEYPLAN

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MAPLE GROVE, MN

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PHASE 90% CDs
PROJECT 16098
SHEET S202B
SECOND FLOOR FRAMING PLAN "EAST"

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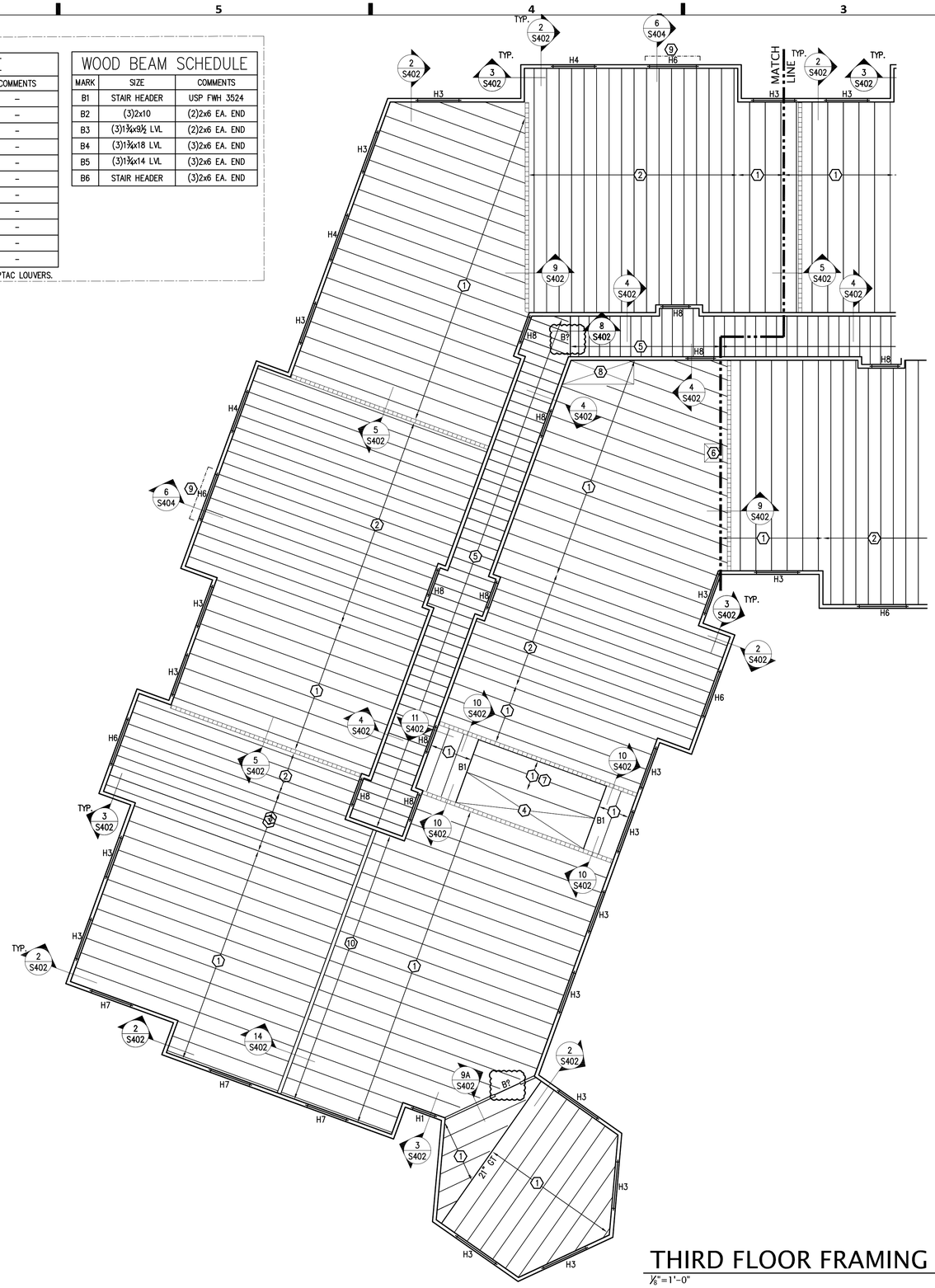
WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END



THIRD FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
4. WALL STUDS @ CORRIDOR TO BE (1) 2X6 SPF#2 @ 12" O.C.

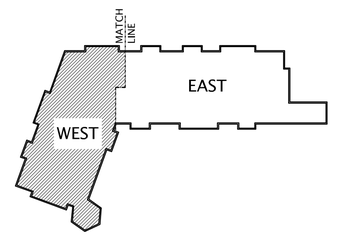
KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
8. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
9. ALUMINUM FRAMED DECKS.
10. WALL STUDS TO BE (2)2x4 SPF#2 STAGGERED @ 16" O.C.

THIRD FLOOR FRAMING PLAN – WEST

⅛"=1'-0"

FLOOR TRUSS BRG ELEV. = 120'-2"



KEYPLAN

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SHEET
S203A
THIRD FLOOR FRAMING PLAN "WEST"

SANDMAN Structural Engineers
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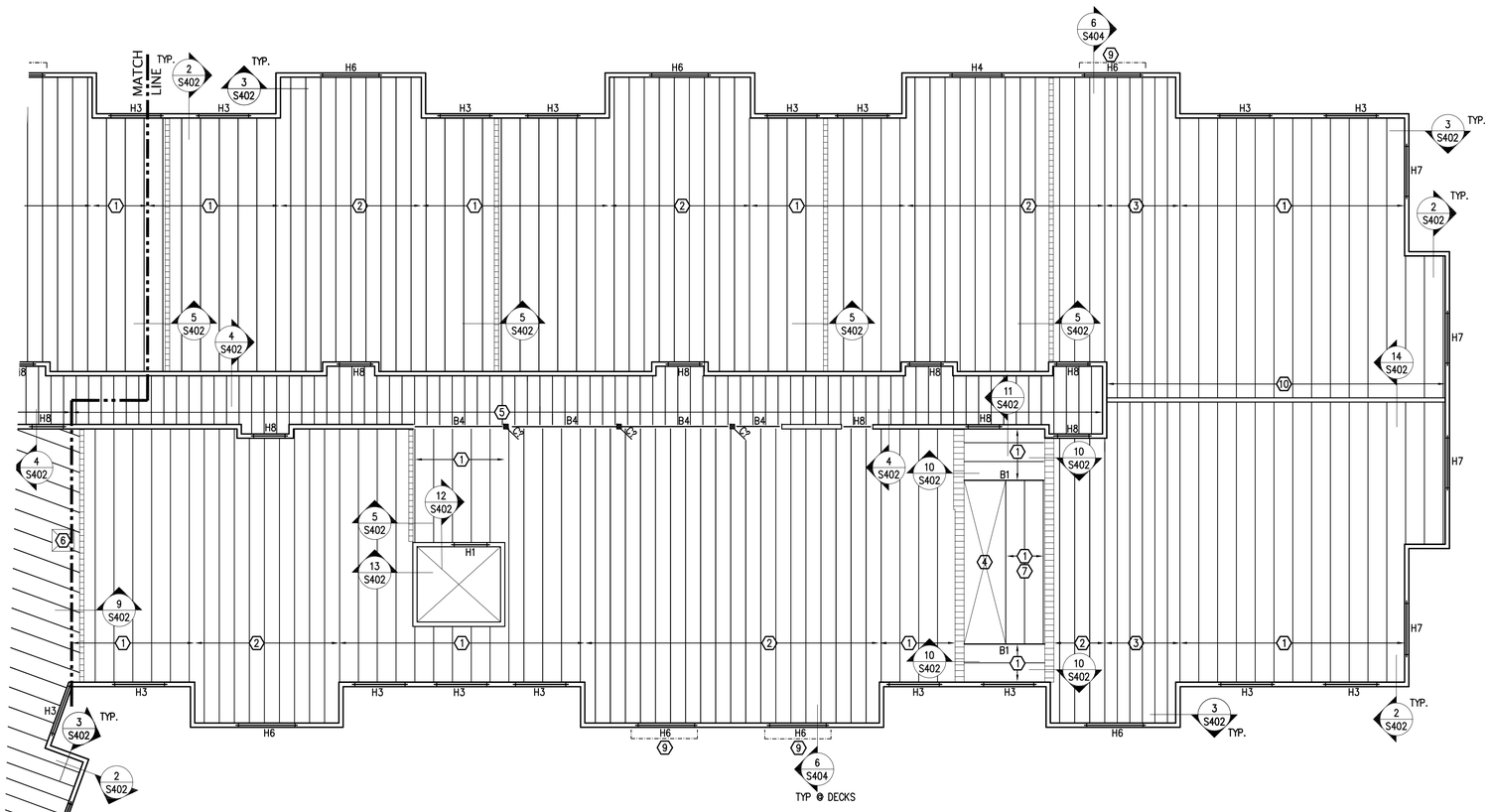

THIRD FLOOR FRAMING PLAN – EAST

1/8"=1'-0" FLOOR TRUSS BRG ELEV. = 120'-2"

ENGR. EDIT

WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END

THIRD FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
4. WALL STUDS @ CORRIDOR TO BE (1) 2X6 SPF#2 @ 12" O.C.

KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
8. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
9. ALUMINUM FRAMED DECKS.
10. WALL STUDS TO BE (2)2x4 SPF#2 STAGGERED @ 16" O.C.

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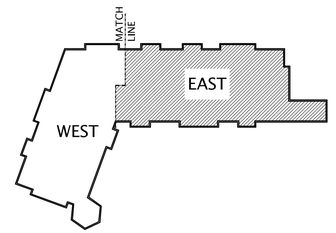
COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	COMMENTS
C1	12"x16" PRECAST	BY SUPPLIER	–
C2	16"x16" PRECAST	BY SUPPLIER	–
C3	6x6 WOOD POST	SIMPSON ABW66Z (GROUT STANDOFF)	SIMPSON CCQ/ECCQ COL. CAP
C4			
C5			
C6			
C7			
C8			
C9			



KEYPLAN

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MAPLE GROVE, MN

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SHEET
S203B
THIRD FLOOR FRAMING PLAN "EAST"

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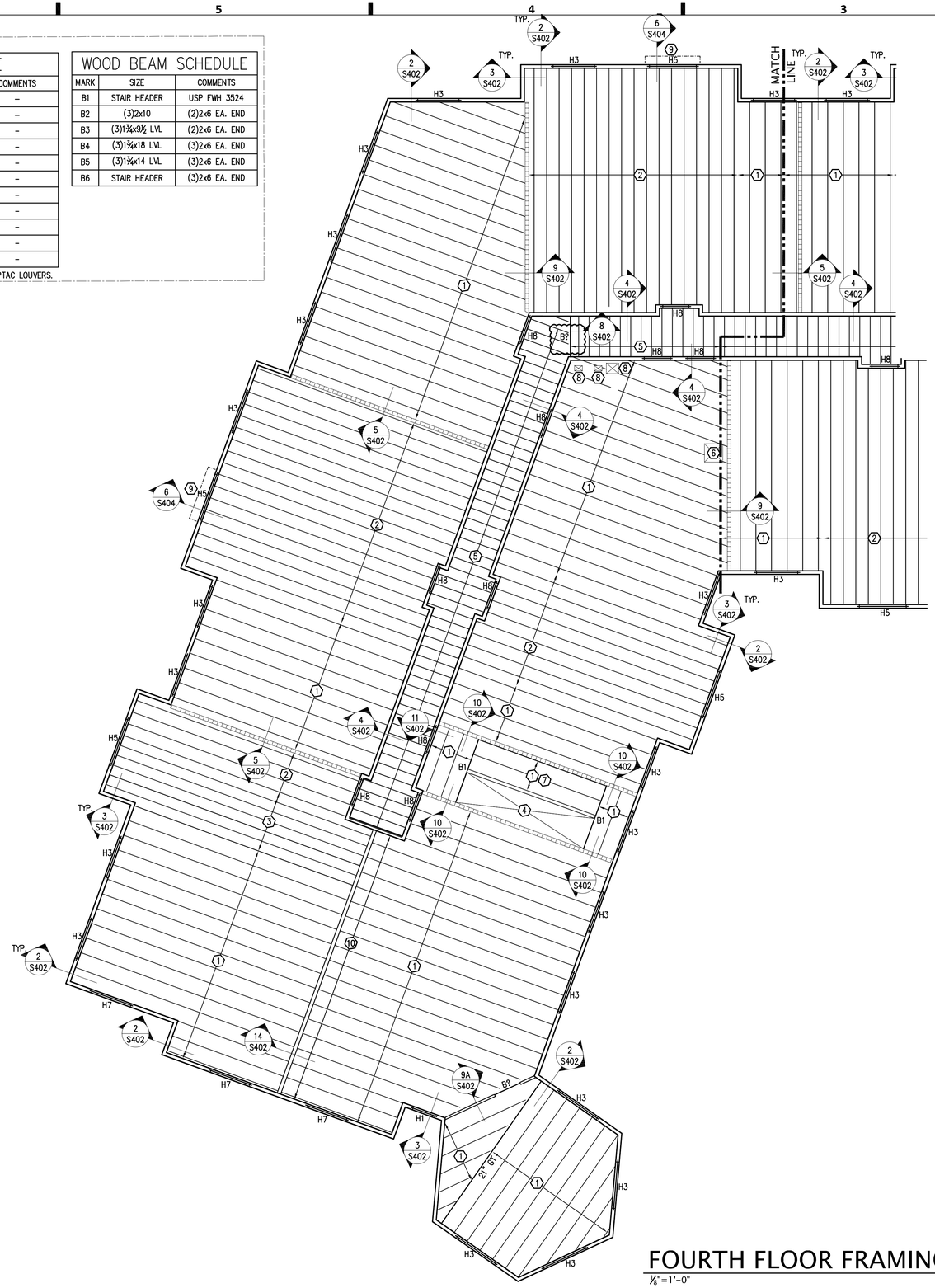
WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END



FOURTH FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.

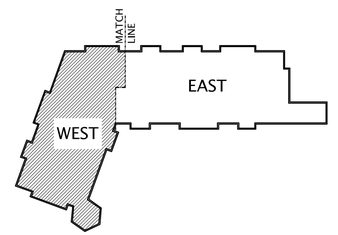
KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
8. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
9. ALUMINUM FRAMED DECKS.
10. WALL STUDS TO BE (2)2x4 SPF#2 STAGGERED @ 16" O.C.

FOURTH FLOOR FRAMING PLAN – WEST

⅛"=1'-0"

FLOOR TRUSS BRG ELEV. = 131'-3⅞"



KEYPLAN

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MAPLE GROVE, MN

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SHEET
S204A
FOURTH FLOOR FRAMING PLAN "WEST"

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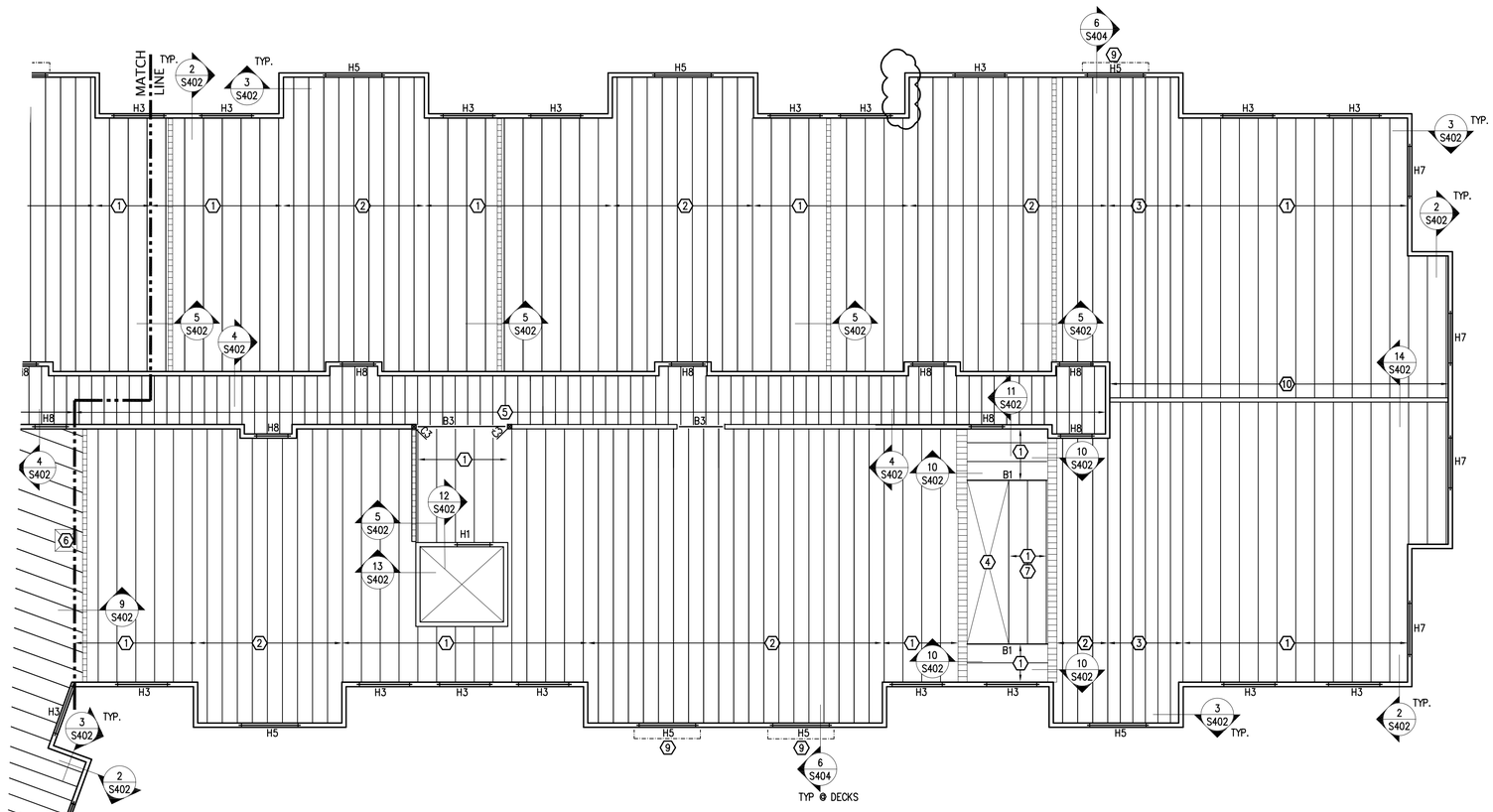


FOURTH FLOOR FRAMING PLAN – EAST

1/8"=1'-0"

FLOOR TRUSS BRG ELEV. = 131'-3⅞"

N

ENGR. EDIT

WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END

FOURTH FLOOR FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.
3. SEE SHEETS S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.

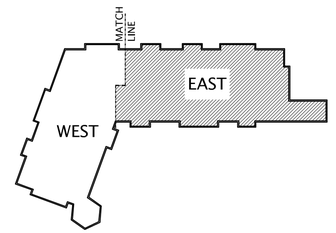
KEYNOTES:

1. 24" FLOOR TRUSSES @ 24" O.C. UNO
2. 24" FLOOR TRUSSES @ 19.2" O.C. UNO
3. 24" FLOOR TRUSSES @ 16" O.C. UNO
4. SEE DETAIL 1/S202A FOR STAIR FRAMING
5. 2x10 FLOOR JOIST @ 16" O.C. UNO
6. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR TRASH CHUTE.
7. SIMPSON LBV3.56/24 TOP FLANGE HANGER @ WOOD BEAM
8. FRAMED FLOOR OPENING BY TRUSS SUPPLIER FOR MECH.
9. ALUMINUM FRAMED DECKS.
10. WALL STUDS TO BE (2)2x4 SPF#2 STAGGERED @ 16" O.C.

ENGR. EDIT

COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	COMMENTS
C1	12"x16" PRECAST	BY SUPPLIER	–
C2	16"x16" PRECAST	BY SUPPLIER	–
C3	6x6 WOOD POST	SIMPSON ABW66Z (GROUT STANDOFF)	SIMPSON CCQ/ECCQ COL. CAP
C4			
C5			
C6			
C7			
C8			
C9			



KEYPLAN

NO SCALE

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PHASE
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PROJECT
16098

SHEET
S204B
FOURTH FLOOR FRAMING PLAN "EAST"

SANDMAN Structural Engineers
1587 30th Avenue South · Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

10/26/2017 3:52:24 PM

ENGR. EDIT

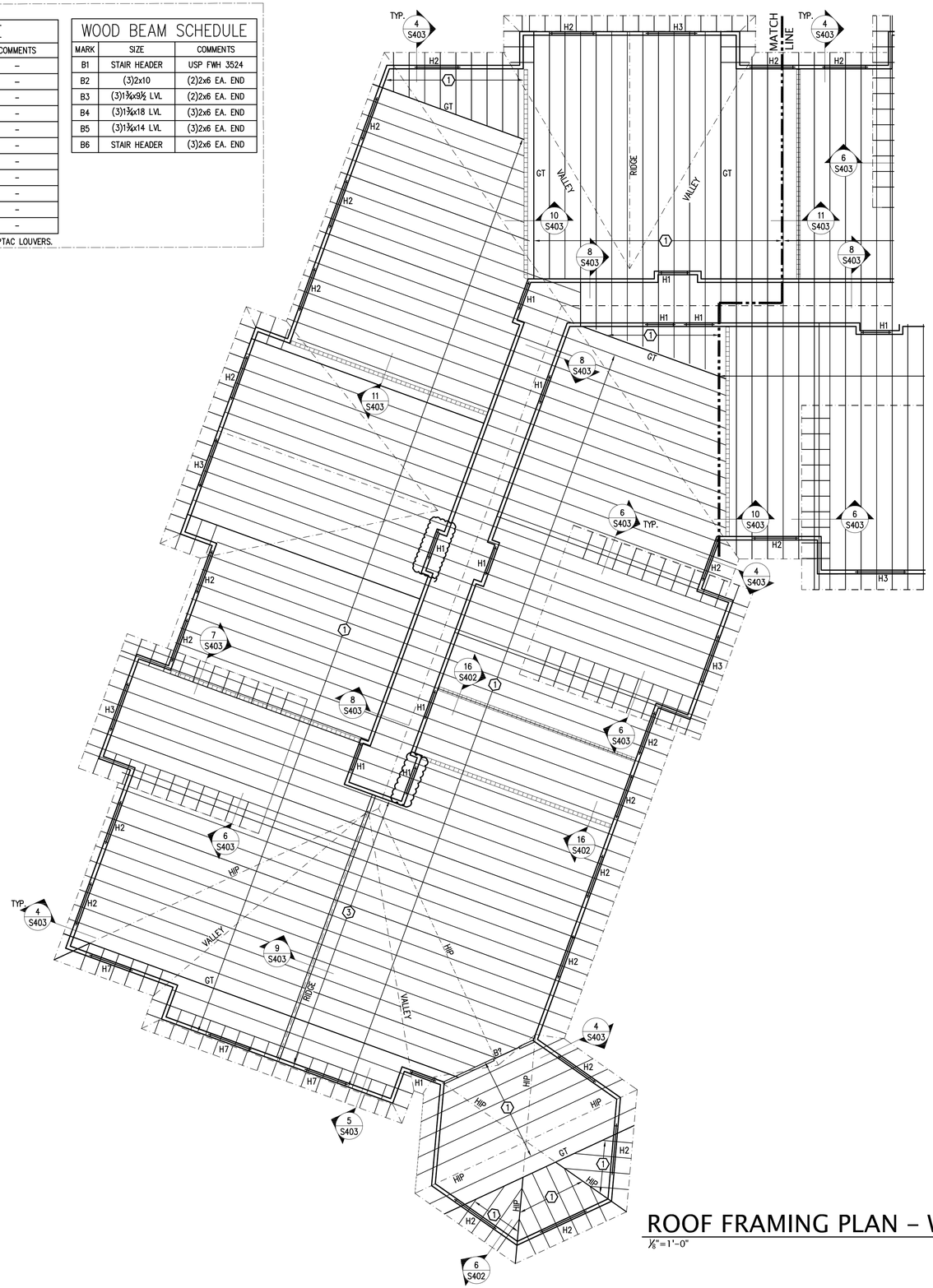
WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END



ROOF FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
3. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.

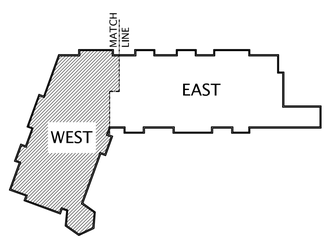
KEYNOTES:

1. ROOF TRUSSES @ 2'-0" O.C. UNO
2. _____ LVL ELEVATOR HOIST BEAM RATED FOR 7500# CONCENTRATED LOAD. S.D. 12/S403 FOR BEAM BEARING.
3. WALL STUDS TO BE (1)2x4 SPF#2 STAGGERED @ 16" O.C.

ROOF FRAMING PLAN – WEST

1/8"=1'-0"

ROOF TRUSS BRG ELEV. = 142'-5¾"



KEYPLAN

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16098

SHEET
S205A

ROOF FRAMING PLAN "WEST"

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1587 30th Avenue South · Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

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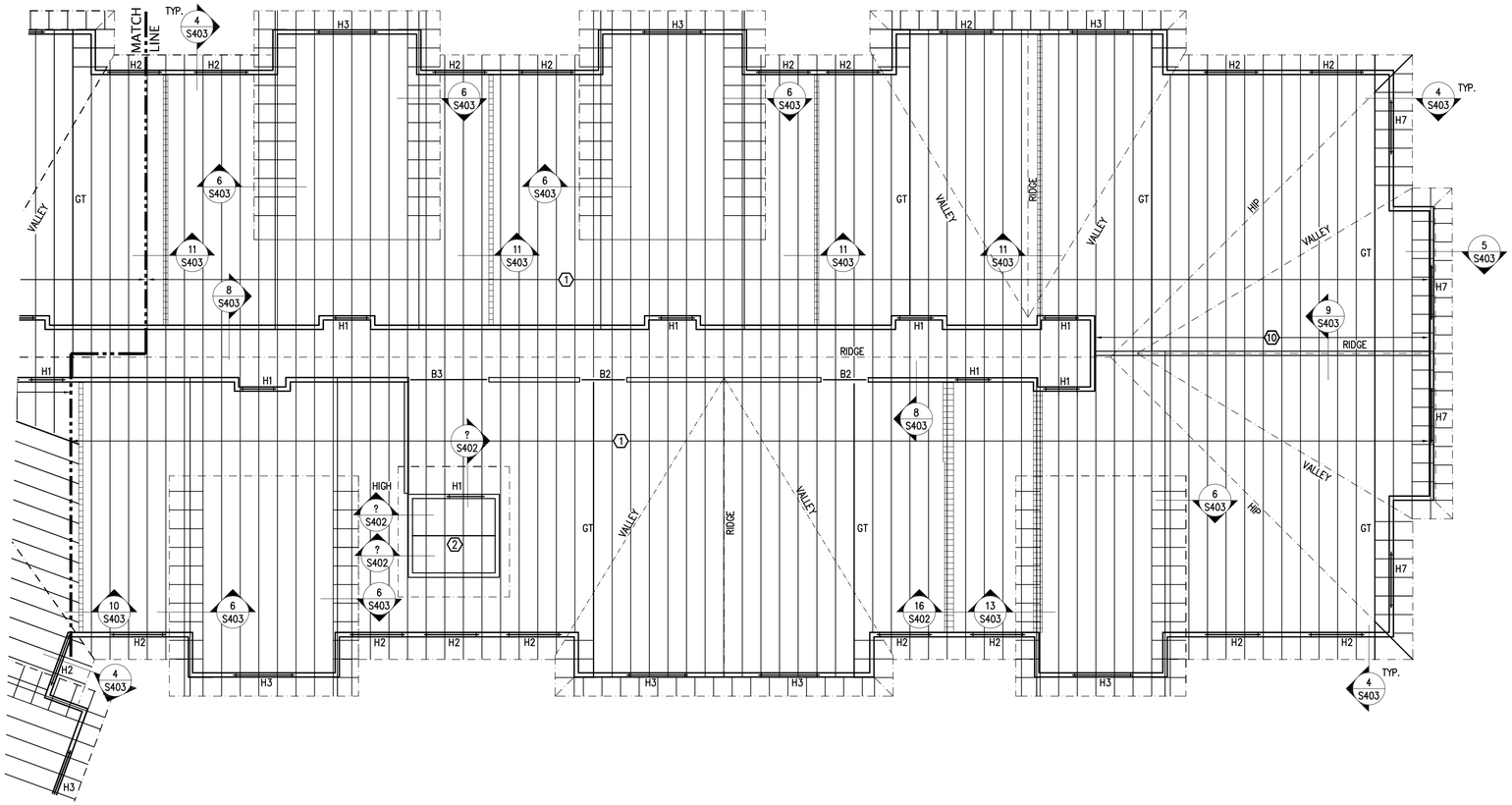


ROOF FRAMING PLAN – EAST

1/8"=1'-0"

ROOF TRUSS BRG ELEV. = 142'-5¼"

N

ENGR. EDIT

WOOD HEADER SCHEDULE

MARK	SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2)2x8	(1)2x6	(1)2x6	–
H2	(3)2x8	(1)2x6	(1)2x6	–
H3	(2)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H4	(2)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H5	(3)1¾x7¼ LVL	(2)2x6	(1)2x6	–
H6	(3)1¾x7¼ LVL	(3)2x6	(1)2x6	–
H7	(2)2x8	(1)2x6	(2)2x6	–
H8	(2)2x8	(2)2x6	(1)2x6	–
H9	(2)2x8	(3)2x6	(1)2x6	–
H10	(2)1¾x9½ LVL	(3)2x6	(1)2x6	–
H11	(2)1¾x11⅞ LVL	(3)2x6	(1)2x6	–

HEADER NOTES: 1. PROVIDE "H1" HEADERS AT EXTERIOR WALL PTAC LOUVERS.

WOOD BEAM SCHEDULE

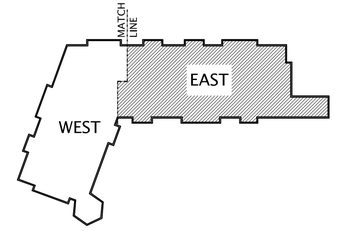
MARK	SIZE	COMMENTS
B1	STAIR HEADER	USP FWH 3524
B2	(3)2x10	(2)2x6 EA. END
B3	(3)1¾x9½ LVL	(2)2x6 EA. END
B4	(3)1¾x18 LVL	(3)2x6 EA. END
B5	(3)1¾x14 LVL	(3)2x6 EA. END
B6	STAIR HEADER	(3)2x6 EA. END

ROOF FRAMING PLAN NOTES:

1. SEE S001 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S206/S207 FOR SHEARWALL LAYOUT & SECTIONS. WOOD TRUSS SUPPLIER TO COORDINATE TRUSS LAYOUT W/ SHEARWALL LOCATIONS.
3. S.D. 1/S402 FOR STD WOOD FRAMING DETAILS.

KEYNOTES:

1. ROOF TRUSSES @ 2'-0" O.C. UNO
2. _____ LVL ELEVATOR HOIST BEAM RATED FOR 7500# CONCENTRATED LOAD. S.D. 12/S403 FOR BEAM BEARING.
3. WALL STUDS TO BE (1)2x4 SPF#2 STAGGERED @ 16" O.C.



KEYPLAN

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MAPLE GROVE, MN

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PHASE 90% CDs

PROJECT 16098

SHEET S205B

ROOF FRAMING PLAN "EAST"

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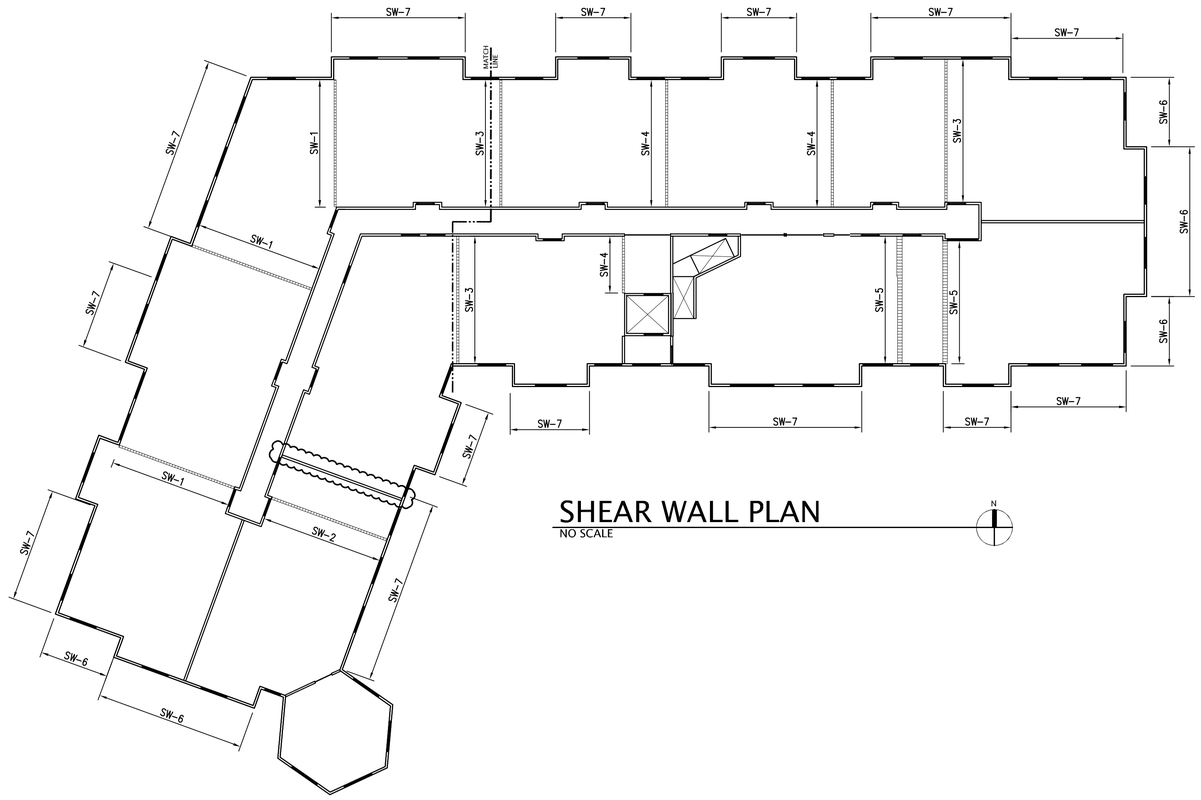

SHEAR WALL PLAN

NO SCALE

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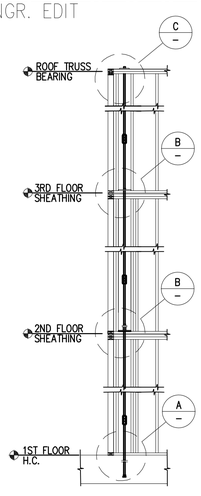
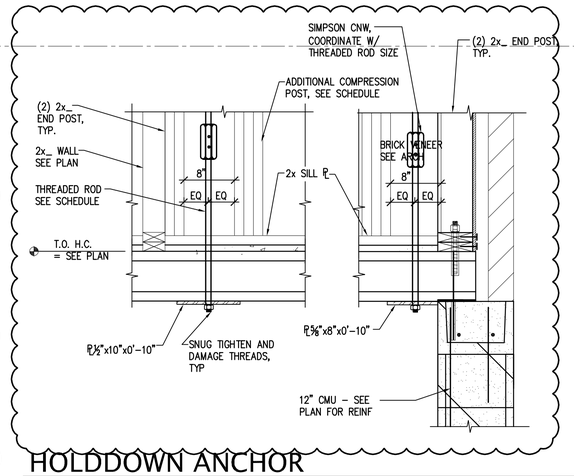


STRONG- ROD ATS

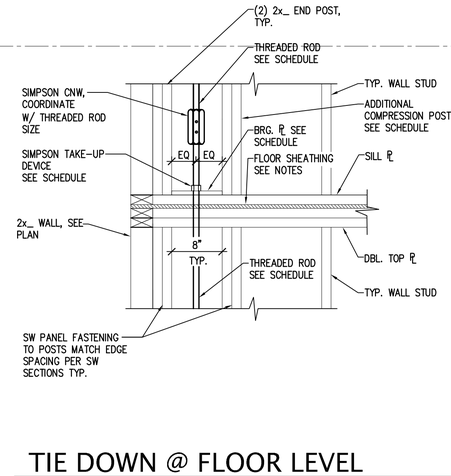
1/4"=1'-0"



HOLDDOWN ANCHOR

1" = 1'-0"

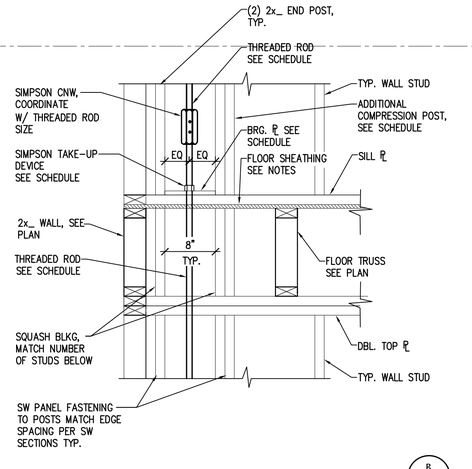
A



TIE DOWN @ FLOOR LEVEL

1" = 1'-0"

B



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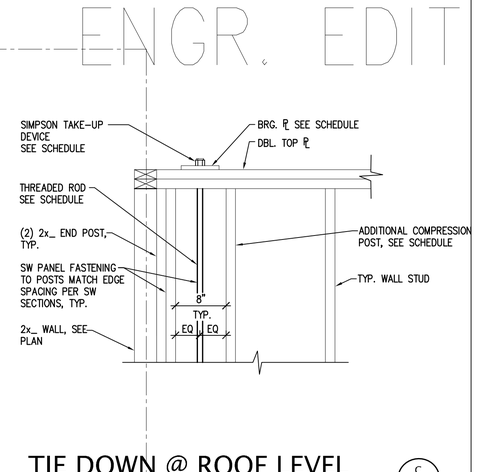

TIE DOWN @ ROOF LEVEL

1" = 1'-0"

C

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MAPLE GROVE, MN

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PROJECT
16098

SHEET
S206
SHEAR WALL PLAN, & DETAILS

SANDMAN
Structural Engineers
1587 30th Avenue South - Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

1
S206

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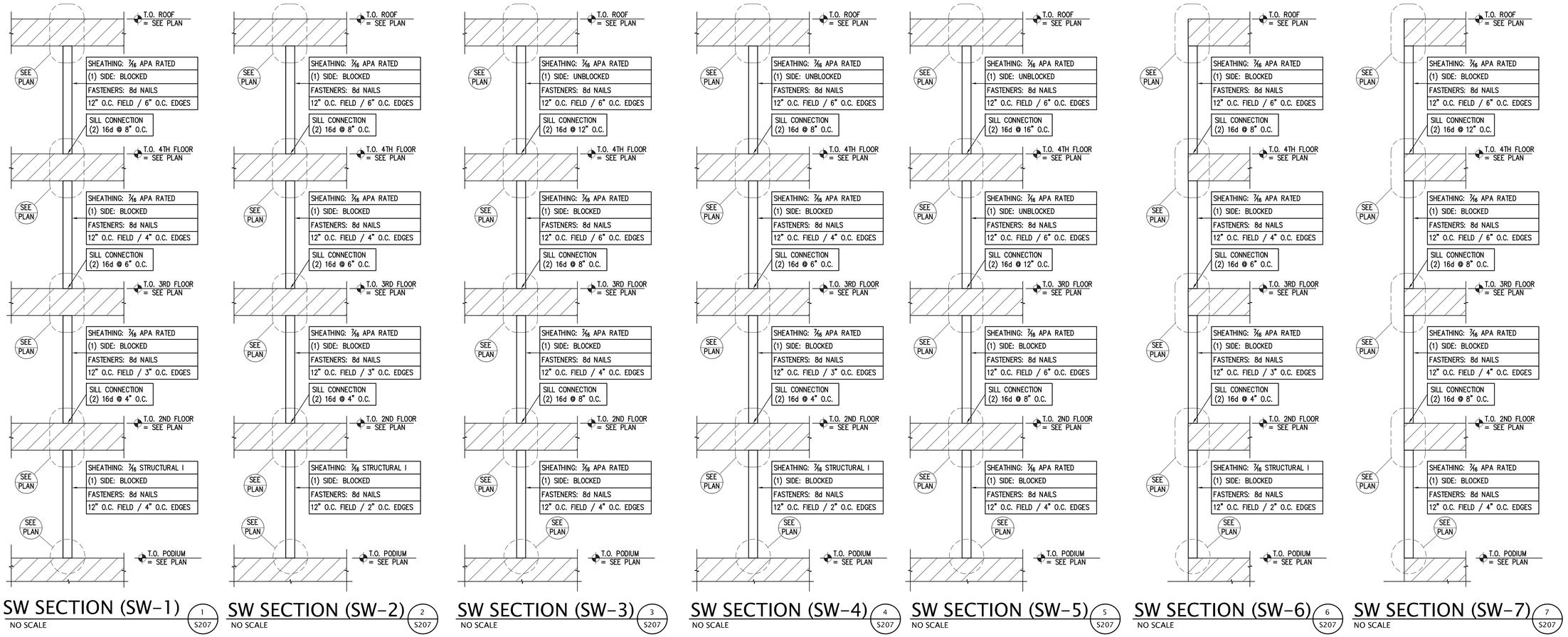

ENGR. EDIT

SHEAR WALL SCHEDULE

	4th LEVEL				3rd LEVEL				2nd LEVEL				1st LEVEL						ULTIMATE WIND LOAD TO PODIUM		RESISTING DL
LABEL	TENSION ROD	T.O. WALL TAKE-UP DEVICE	T.O. WALL BEARING PLATE	END POST/ COMP POST	TENSION ROD	T.O. WALL TAKE-UP DEVICE	T.O. WALL BEARING PLATE	END POST/ COMP POST	TENSION ROD	T.O. WALL TAKE-UP DEVICE	T.O. WALL BEARING PLATE	END POST/ COMP POST	TENSION ROD	T.O. WALL TAKE-UP DEVICE	T.O. WALL BEARING PLATE	END POST/ COMP POST	BASE TENSION ROD ANCHOR	SILL ℄ FASTENING @ BASE LEVEL	BASE LEVEL SHEAR TO P.C.	SW END FORCES TO P.C.	SW END VERTICAL FORCES
SW-1	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x6/ (2) 2x6	¾"ø THREADED ROD	SIMPSON RTUD6	SIMPSON BPRTUD5-6C	(2) 2x6/ (4) 2x6	¾"ø THREADED ROD w/9"-9" CONC EMBED	½"ø x5" SIMPSON TITEN HD ANCHORS @ 1'-6" O.C.	±23.8 KIP	±34.4 KIP	4.6 KIP
SW-2	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x4/ (1) 2x4	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x4/ (2) 2x4	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x4/ (7) 2x4	¾"ø THREADED ROD	SIMPSON RTUD6	SIMPSON BPRTUD5-6C	(2) 2x4/ (12) 2x4	¾"ø THREADED ROD w/9"-9" CONC EMBED	½"ø x5" SIMPSON TITEN HD ANCHORS @ 1'-6" O.C.	±26.1 KIP	±34.9 KIP	3.3 KIP
SW-3	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x6/ (2) 2x6	⅝"ø THREADED ROD w/9"-9" CONC EMBED	½"ø x5" SIMPSON TITEN HD ANCHORS @ 2'-0" O.C.	±21.9 KIP	±23.7 KIP	4.6 KIP
SW-4	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x6/ (2) 2x6	⅞"ø THREADED ROD	SIMPSON ATUD9	SIMPSON PL9-3X12	(2) 2x6/ (5) 2x6	⅞"ø THREADED ROD w/9"-9" CONC EMBED	½"ø x5" SIMPSON TITEN HD ANCHORS @ 1'-4" O.C.	±34.8 KIP	±38.2 KIP	2.1 KIP
SW-5	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x4/ (1) 2x4	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x4/ (1) 2x4	⅝"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x4/ (3) 2x4	⅞"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x4/ (6) 2x6	⅝"ø THREADED ROD w/9"-9" CONC EMBED	½"ø x5" SIMPSON TITEN HD ANCHORS @ 2'-8" O.C.	±16.8 KIP	±18.8 KIP	3.9 KIP
SW-6	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x6/ (2) 2x6	⅞"ø THREADED ROD	SIMPSON ATUD9	SIMPSON PL9-3X12	(2) 2x6/ (5) 2x6	⅞"ø THREADED ROD w/9"-9" CONC EMBED	½"ø CIP ANCHORS @ 1'-4" O.C. S.D. 1/S301	±21.7 KIP	–	–
SW-7	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	½"ø THREADED ROD	SIMPSON RTUD4	SIMPSON BPRTUD3-4	(2) 2x6/ (1) 2x6	½"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6A	(2) 2x6/ (1) 2x6	⅝"ø THREADED ROD	SIMPSON RTUD5	SIMPSON BPRTUD5-6B	(2) 2x6/ (2) 2x6	⅝"ø THREADED ROD w/9"-9" CONC EMBED	½"ø CIP ANCHORS @ 2'-0" O.C. S.D. 1/S301	±12.0 KIP	–	–

SHEARWALL NOTES: ENGR. EDIT

1. SEE GENERAL NOTES FOR TYPICAL SHEATHING REQUIREMENTS. NOT SHOWN ON WALL SECTIONS.
2. SEE S001 GENERAL NOTES FOR ADHESIVE REQUIREMENTS.
3. INTERIOR CORRIDOR BEARING WALL SILL PLATE FASTENING TO BE ½"ø x6½" SIMPSON TITEN HD ANCHORS @ 4'-0" O.C. U.N.O. IN SHEAR WALL SCHEDULE.
4. EXTERIOR BEARING WALL SILL PLATE FASTENING TO BE ½"ø x6½" SIMPSON TITEN HD ANCHORS @ 4'-0" O.C. U.N.O. IN SHEAR WALL SCHEDULE.
5. PROVIDE SIMPSON BPS½-3HDG SILL ANCHOR WASHERS AT ALL SHEAR WALLS.
6. MAXIMUM WALL STUD SPACING TO BE 16" O.C FOR ALL SHEAR WALLS, U.N.O.
7. SILL ANCHOR LENGTH BASED ON USE OF DBL. SILL PLATE.
8. TENSION ROD MATERIAL TO BE A193 GRADE B7, Fu=58 KSI.
9. NOMINAL FORCES IN SHEAR WALL SCHEDULE TO BE USED IN IBC 2012 LOAD COMBINATIONS WITH APPROPRIATE LOAD FACTORS.
10. H.S. DENOTES HIGH STRENGTH TENSION ROD (Fu=120 KSI).

KEYNOTES: ENGR. EDIT

1
2

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SHEET
S207
SHEAR WALL SECTIONS, & SCHEDULES

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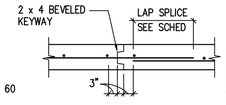
REINFORCING STEEL SPLICE LENGTHS FOR STANDARD NON-COATED BARS							
CONCRETE STRENGTH F'c	TYPE #1 SPLICE CLASS A SPLICE		TYPE #2 SPLICE CLASS B SPLICE		TYPE #3 SPLICE CLASS B SPLICE		TYPE #4 SPLICE COMPRESSION SPLICE
	#6 AND SMALLER	#7 AND LARGER	#6 AND SMALLER	#7 AND LARGER	#6 AND SMALLER	#7 AND LARGER	#4 AND LARGER
3000 psi	44 Bd	55 Bd	57 Bd	71 Bd	85 Bd	107 Bd	30 Bd
4000 psi	38 Bd	47 Bd	49 Bd	62 BD	74 Bd	92 Bd	30 Bd

Bd = BAR DIAMETER

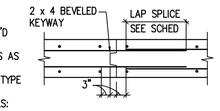
REBAR CLEAR COVER SCHEDULE	
CONCRETE REINFORCEMENT CLEAR COVER, U.N.O. (NON-PRESTRESSED)	
CONDITION & DESIGNATION	CLEAR COVER
CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 THRU #18	2"
CONCRETE EXPOSED TO EARTH OR WEATHER: #5 OR SMALLER	1½"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH	
SLABS, WALLS, JOISTS: #14 & #18	1½"
SLABS, WALLS, JOISTS: #11 & SMALLER	¾"
BEAMS, COLUMNS (PRIMARY REINF, TIES, STIRRUPS, SPIRALS)	1½"

NOTES:

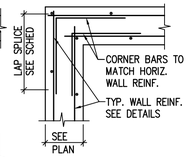
1. MIN. LAP: 18" FOR TYPE #1 THRU TYPE #3 & 12" FOR TYPE #4 SPLICES.
2. REQ'D. SPLICE LENGTH = LISTED SPLICE LENGTH X ADJUSTMENT FACTORS
   ADJUSTMENT FACTORS = 1.0 IF NONE BELOW APPLY
   A. FOR HORIZ. REINFORCING W/ MORE THAN 12" OF FRESH CONCRETE PLACED BELOW BAR – ADJUSTMENT FACTOR = 1.3
   B. FOR Fy OTHER THAN 60 KSI – ADJUSTMENT FACTOR = Fy (USED)/ 60
   C. FOR LIGHT WEIGHT CONCRETE – ADJUSTMENT FACTOR = 1.3
   D. TYPICAL EPOXY COATED REINFORCING – ADJUSTMENT FACTOR = 1.2
   E. EPOXY COATED REINFORCING W/ COVER LESS THAN Bd OR CLEAR SPACING LESS THAN 6 Bd – ADJUSTMENT FACTOR = 1.5
3. ALL ADJUSTMENT FACTORS THAT APPLY SHALL BE USED TO CALCULATE REQ'D SPLICE LENGTH.
4. UNLESS OTHERWISE NOTED ON PLAN OR DETAILS , LAP THE FOLLOWING BARS AS DEFINED IN LAP SPLICE TABLE ABOVE.
   A. VERTICAL HOOKED OR STRAIGHT BARS EXTENDING FROM FOOTINGS: TYPE #4 SPLICE
   B. HORIZONTAL BARS IN GRADE BEAMS, FOOTINGS, & FOUNDATION WALLS: TYPE #2 SPLICE
   C. VERTICAL BARS IN COLUMNS & PIERS: TYPE #4 SPLICE
   D. VERTICAL BARS IN BASEMENT & RETAINING WALLS: TYPE #3 SPLICE
   E. U.N.O ON PLAN OR DETAILS, LAP THE SLAB BARS WITH A LAP LENGTH OF 48 Bd.



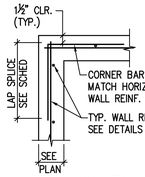
WALL CONSTRUCTION JOINT



WALL CONSTRUCTION JOINT



WALL CORNER



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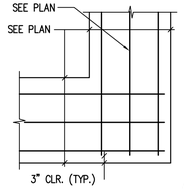
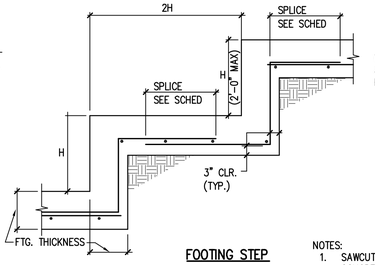
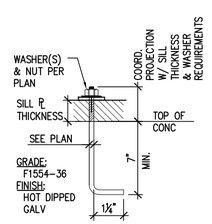


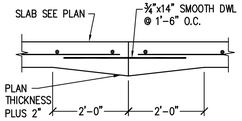
FOOTING CORNER



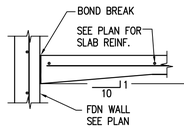
FOOTING STEP



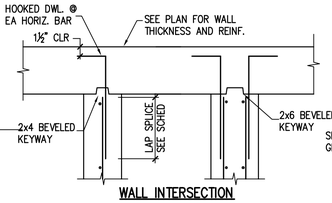
WOOD SILL PLATE ANCHOR



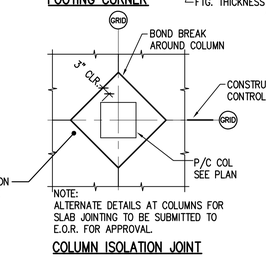
SLAB CONSTR. JT.



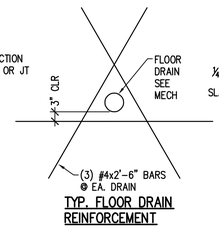
SLAB THICKENED EDGE



WALL INTERSECTION

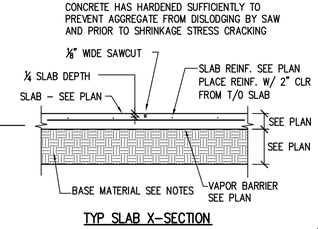


COLUMN ISOLATION JOINT



TYP. FLOOR DRAIN REINFORCEMENT

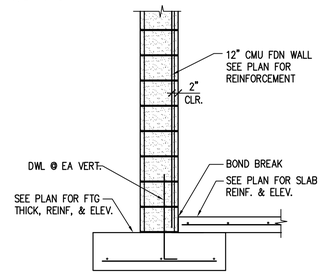
NOTES:
1. SAWCUT JT SHALL BE EXECUTED AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT AGGREGATE FROM DISLODGING BY SAW AND PRIOR TO SHRINKAGE STRESS CRACKING



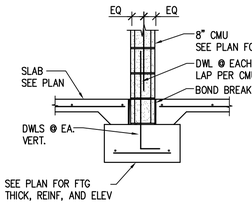
TYP SLAB X-SECTION

STANDARD FOUNDATION DETAILS

1 / 2"=1'-0" — 1 S301

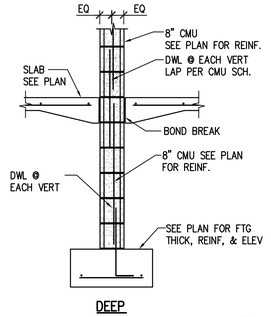


FDN DETAIL — 1/2"=1'-0" — 2 S301



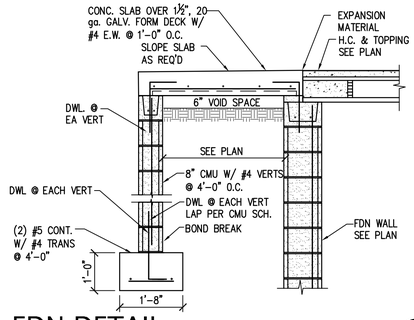
SHALLOW

FDN DETAIL — 1/2"=1'-0" — 3 S301

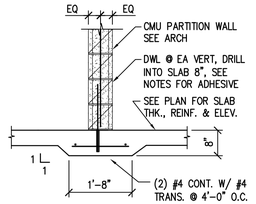


DEEP

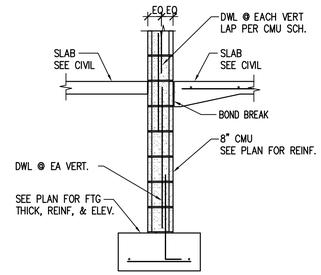
FDN DETAIL — 1/2"=1'-0" — 4 S301

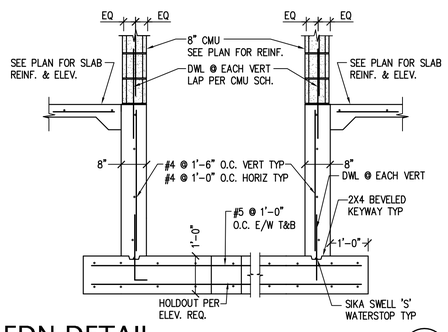


THICKENED SLAB — 1/2"=1'-0" — 5 S301

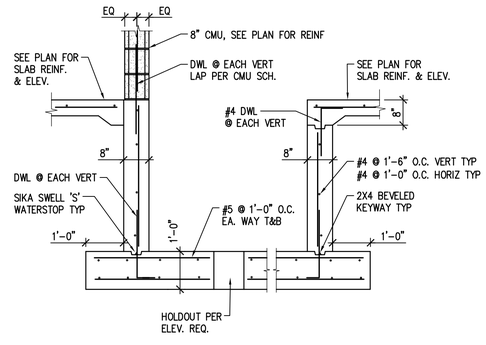


FDN DETAIL — 1/2"=1'-0" — 6 S301

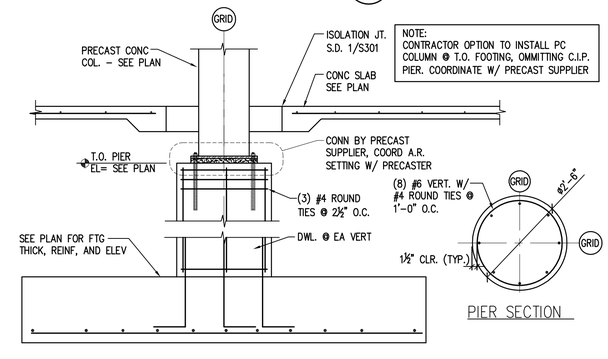




FDN DETAIL — 1/2"=1'-0" — 7 S301



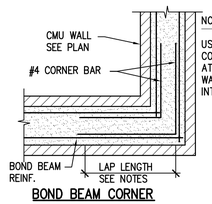
ELEVATOR PIT — 1/2"=1'-0" — 8 S301



NOTE:
CONTRACTOR OPTION TO INSTALL PC COLUMN @ T.O. FOOTING, OMMITTING C.I.P. PIER. COORDINATE W/ PRECAST SUPPLIER

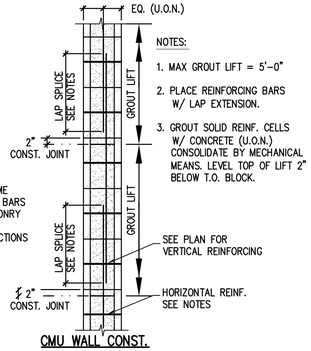
PC COLUMN FDN DETAIL — 1/2"=1'-0" — 9 S301

CMU REINF LAP SCHEDULE	
BAR	LAP LENGTH
#3	18"
#4	24"
#5	30"
#6	36"



NOTE:
USE SAME CORNER BARS AT MASONRY WALL INTERSECTIONS

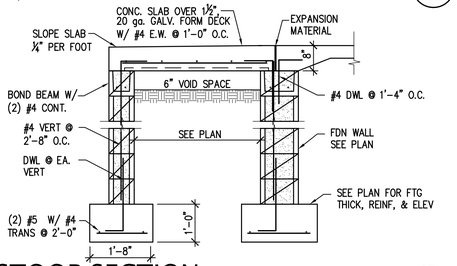
BOND BEAM CORNER



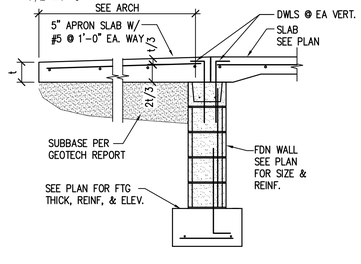
NOTES:
1. MAX GROUT LIFT = 5'–0"
2. PLACE REINFORCING BARS W/ LAP EXTENSION.
3. GROUT SOLID REINF. CELLS W/ CONCRETE (U.O.N.) CONSOLIDATE BY MECHANICAL MEANS. LEVEL TOP OF LIFT 2" BELOW T.O. BLOCK.

CMU WALL CONST.

STD CMU DETAILS — 1/2"=1'-0" — 10 S301



STOOP SECTION — 1/2"=1'-0" — 11 S301



FDN DETAIL — 1/2"=1'-0" — 12 S301

JLG architects
322 1st Ave N, Suite #600
Minneapolis, MN 55401
phone 6 1 2 7 4 6 4 2 6 0
facsimile 6 1 2 7 4 6 4 7 5 4
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PRELIMINARY
NOT FOR CONSTRUCTION

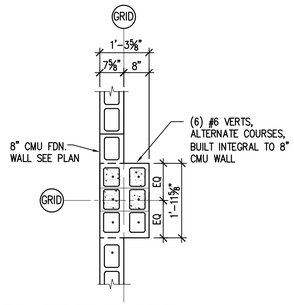
REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

JLG ARCHITECTS
BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE 11/20/17
PHASE 90% CDs
PROJECT 16098
SHEET S301
FOUNDATION DETAILS

SANDMAN Structural Engineers
1587 30th Avenue South · Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

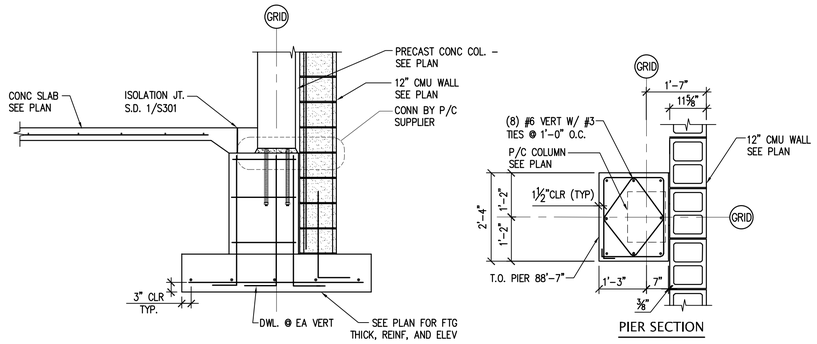
10/26/2017 3:52:24 PM



PIER DETAIL (P1)

1/2"=1'-0"

1 / S302

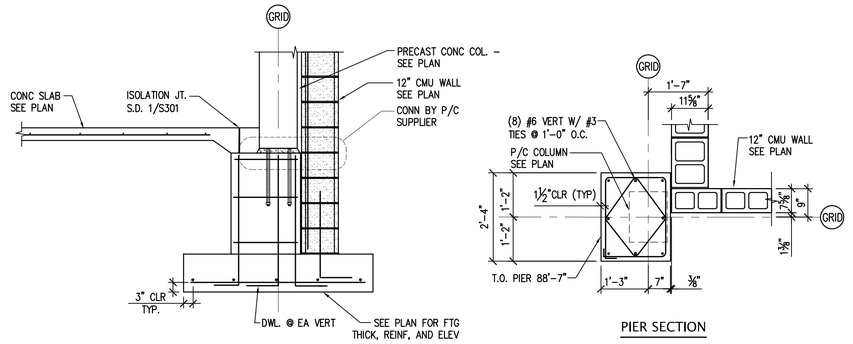


PIER SECTION

PIER DETAIL (P2)

½" = 1'-0"

2 / S301

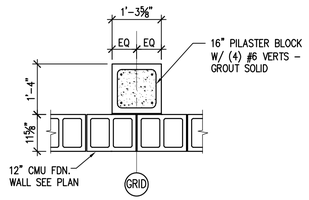


PIER SECTION

PIER DETAIL (P3)

½" = 1'-0"

3 / S301



PIER DETAIL (P4)

1/2"=1'-0"

4 / S302

JLG architects
322 1st Ave N, Suite #600
Minneapolis, MN 55401
phone 6 1 2.7 4 6.4 2 6 0
facsimile 6 1 2.7 4 6.4 7 5 4
www.jlgarchitects.com

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

JLG ARCHITECTS
BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE
11/20/17

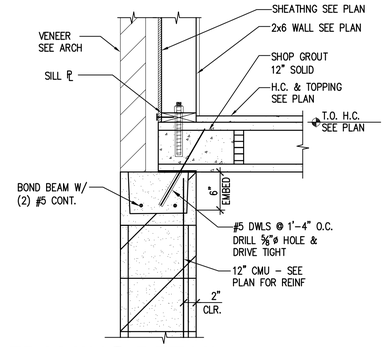
PHASE
90% CDs

PROJECT
16098

SHEET
S302
FOUNDATION DETAILS

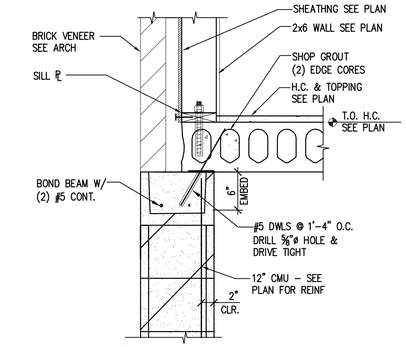
SANDMAN
Structural Engineers
1587 30th Avenue South - Moorhead, MN 56560
218.227.0022 www.SandmanSE.com Project: 1623-9

10/26/2017 3:52:24 PM



FRAMING DETAIL

1"=1'-0" — 1 / S401



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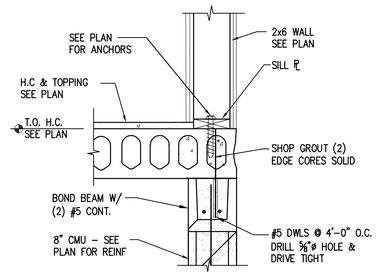

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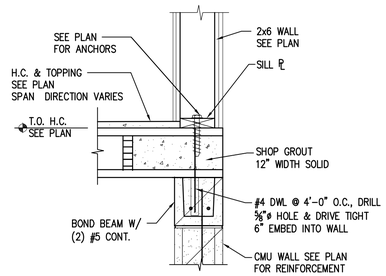

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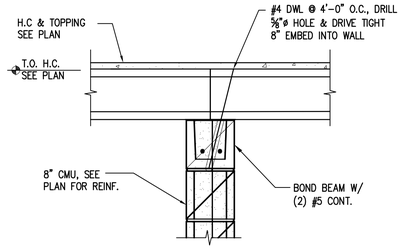

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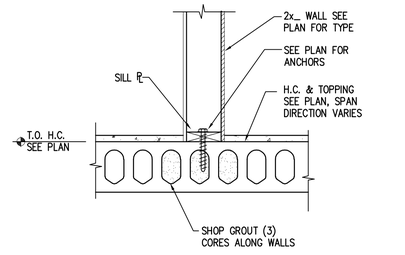

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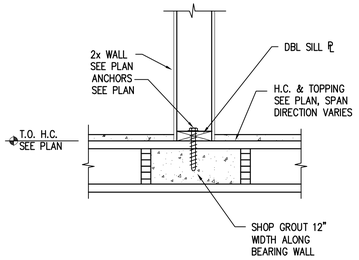

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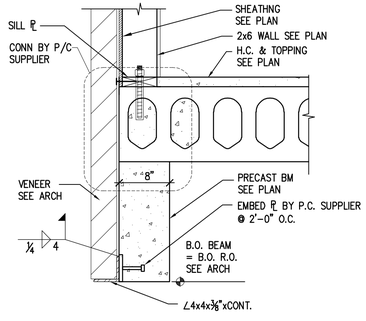

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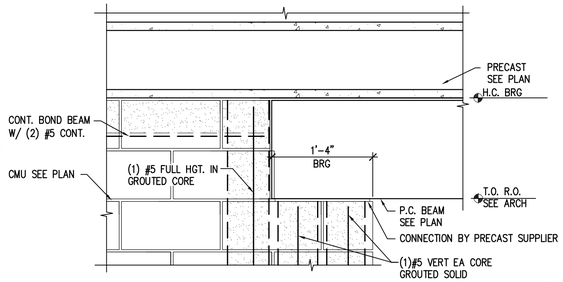
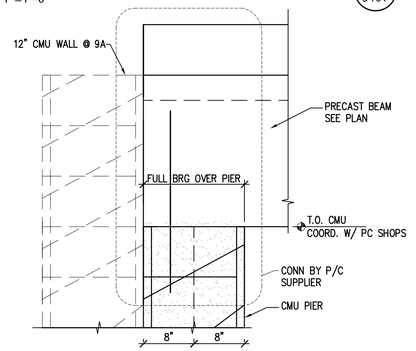
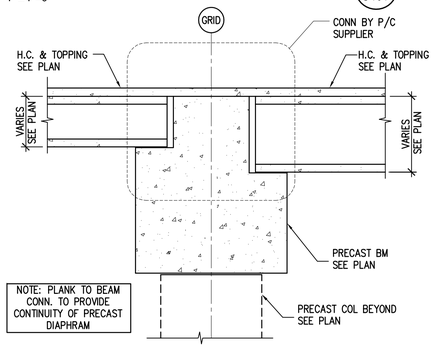




FRAMING DETAIL

1"=1'-0" — 9 / S401 — 9A / S401



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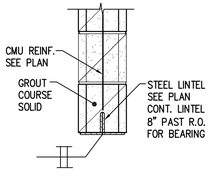
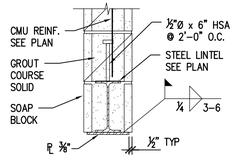


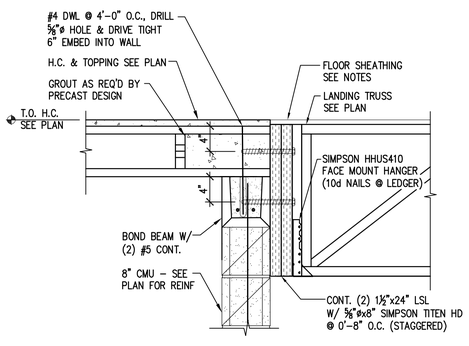
INTERIOR/EXTERIOR OPENING DOUBLE ANGLE



EXTERIOR OPENING WIDE FLANGE LINTEL

STL. LINTEL DTL.

1"=1'-0" — 11 / S401



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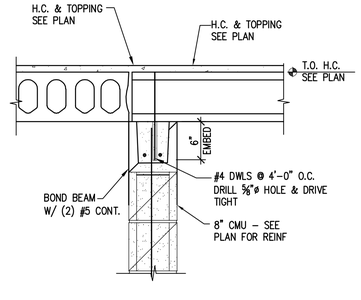
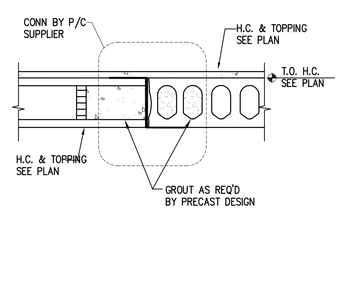


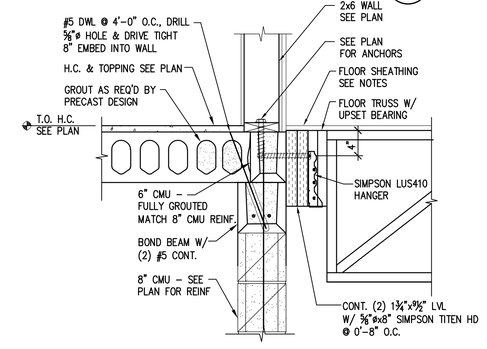
FRAMING DETAIL

1"=1'-0" — 13 / S401



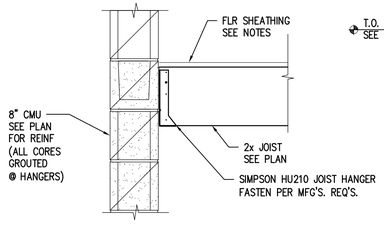
FRAMING DETAIL

1"=1'-0" — 14 / S401



FRAMING DETAIL

1"=1'-0" — 15 / S401



JOIST BEARING

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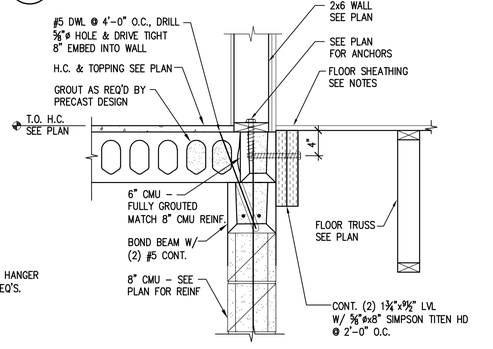

FRAMING DETAIL

1"=1'-0" — 17 / S401

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16098

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S401
FRAMING DETAILS

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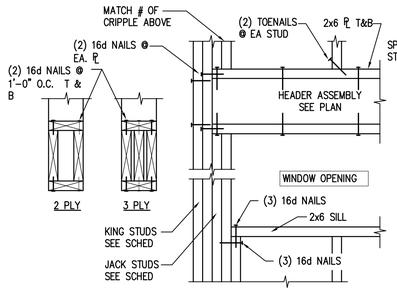

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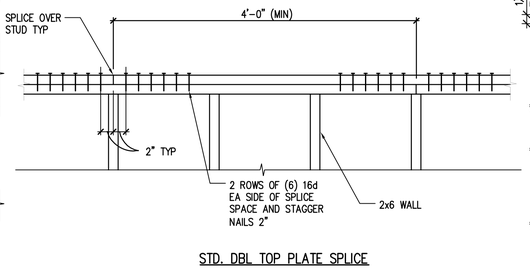
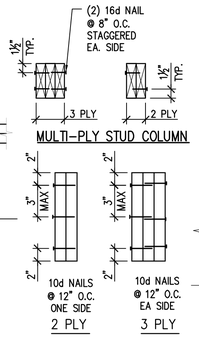


STD. DBL TOP PLATE SPLICE



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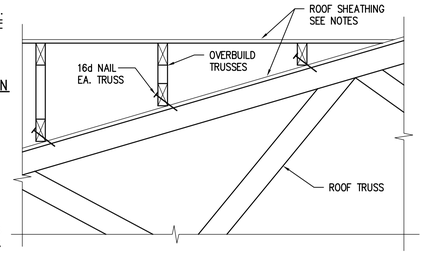

STANDARD WOOD & STEEL FRAMING DETAILS

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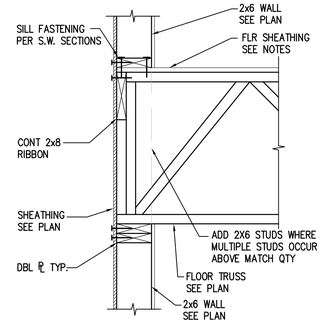

FRAMING DETAIL

1 S402

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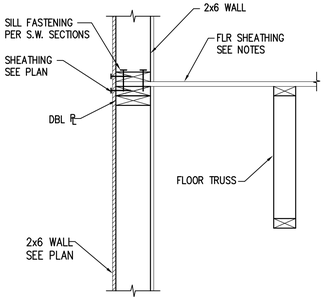

FRAMING DETAIL

2 S402

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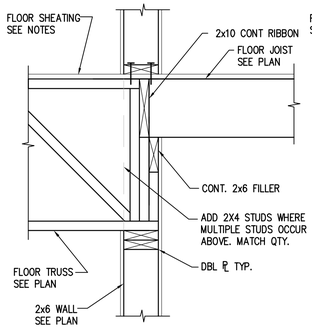
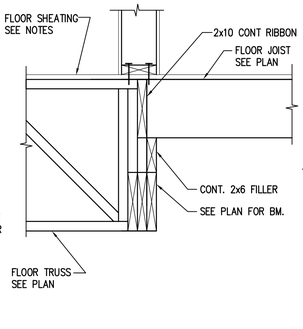


TYPICAL



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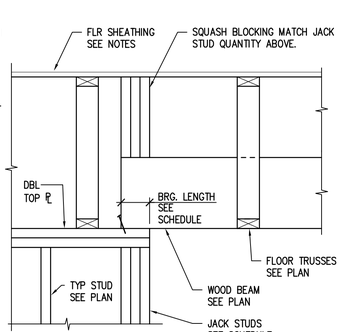
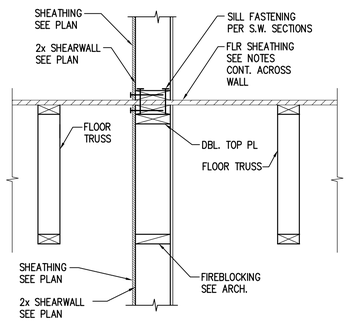


BM BRG.

TRUSS BEARING @ CORRIDOR

1" = 1'-0"

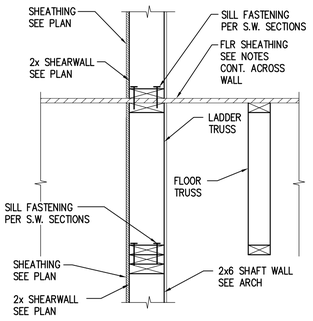
4 S402



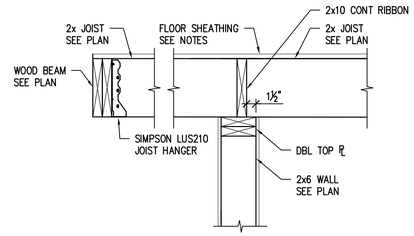
FRAMING DETAIL

5 S402

1" = 1'-0"



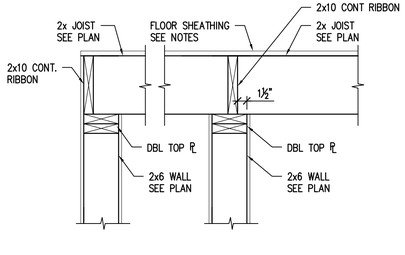
LADDER TRUSS OPTION



JOIST BEARING

1"=1'-0"

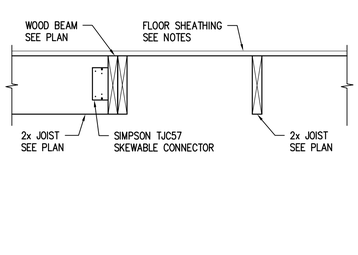
6 S402



JOIST BEARING

1"=1'-0"

7 S402



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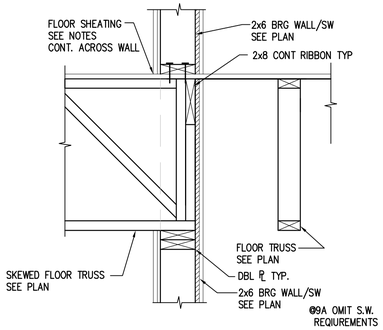
1"=1'-0"

8 S402

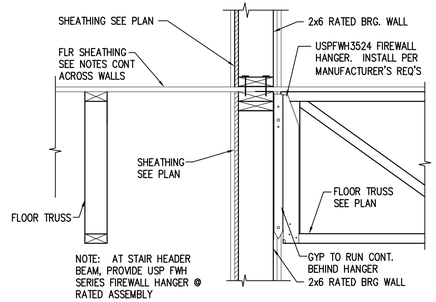


@9A OMIT S.W. REQUIREMENTS

FRAMING DETAIL

1" = 1'-0"

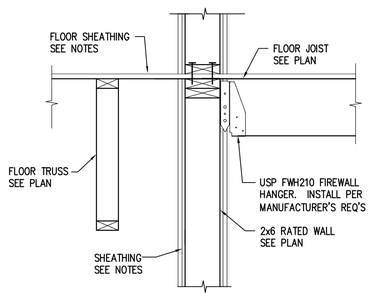
9 S402 9A S402



TRUSS BEARING

1" = 1'-0"

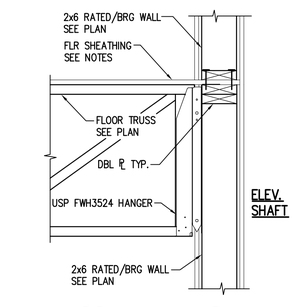
10 S402



JOIST BEARING

1"=1'-0"

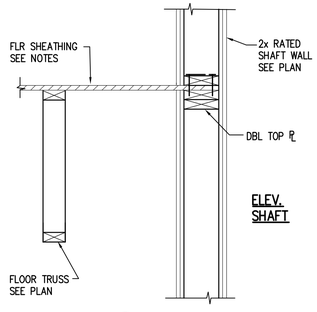
11 S402



TRUSS BEARING

1" = 1'-0"

12 S402



FRAMING DETAIL

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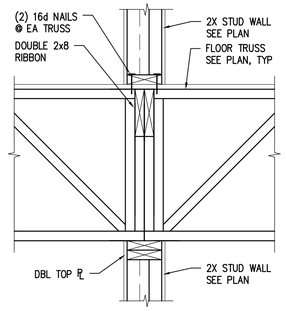
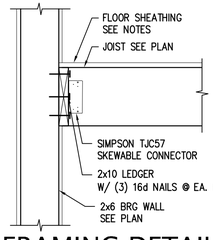
13 S402



DETAIL TITLE

1"=1'-0"

14 S402



FRAMING DETAIL

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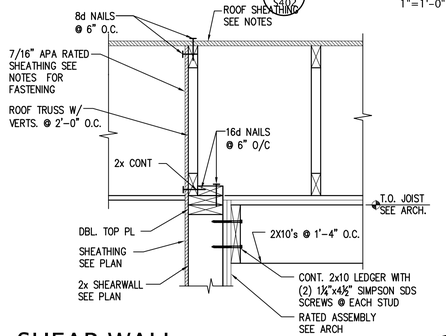
15 S402



SHEAR WALL

1" = 1'-0"

16 S402

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16098

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S402
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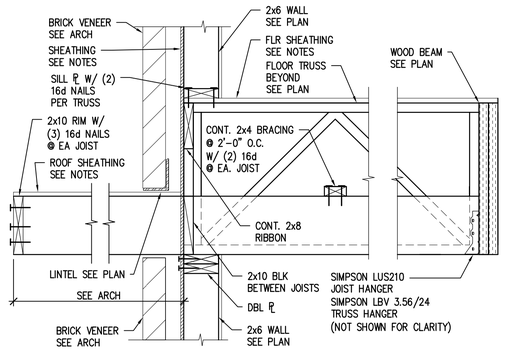
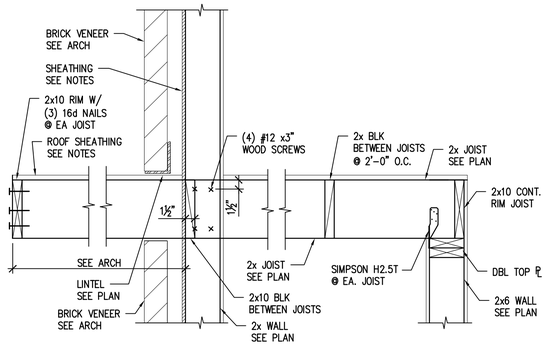


STAIR SHAFT

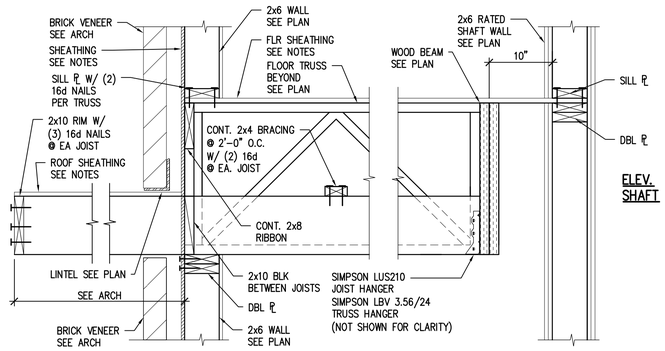
CANOPY FRAMING

1"=1'-0" — 1 / S403



CANOPY FRAMING

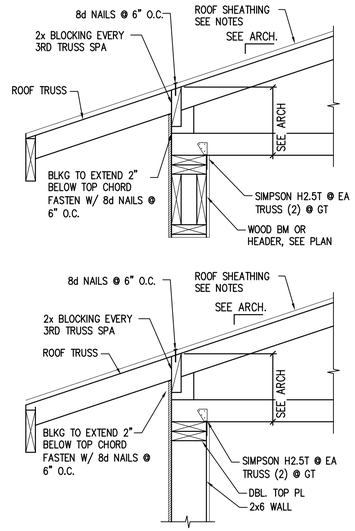
1"=1'-0" — 2 / S403



ELEV. SHAFT

CANOPY FRAMING

1"=1'-0" — 3 / S403



FRAMING DETAIL

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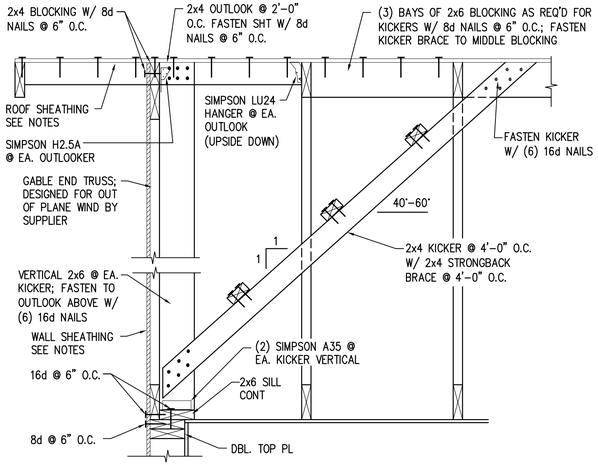
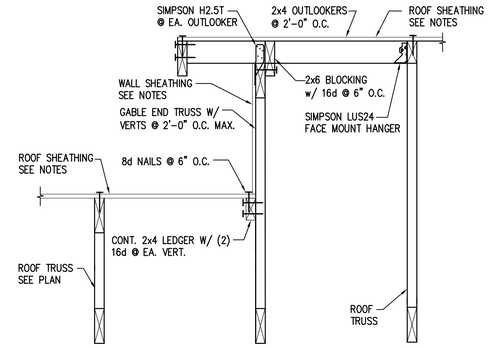


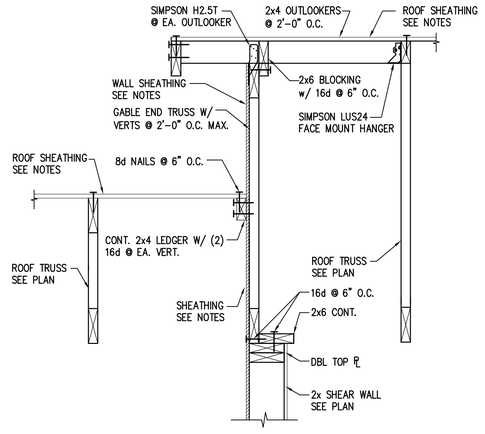
GABLE END WALL

1" = 1'-0" — 5 / S403



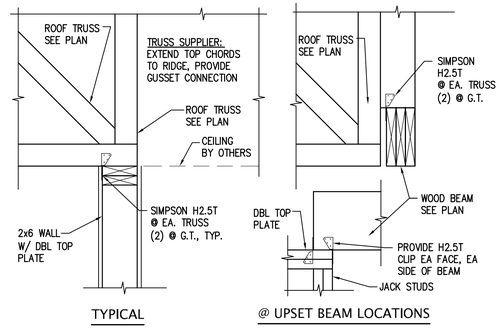
ROOF STEP DETAIL

1" = 1'-0" — 6 / S403



ROOF STEP DETAIL

1" = 1'-0" — 7 / S403



FRAMING DETAIL

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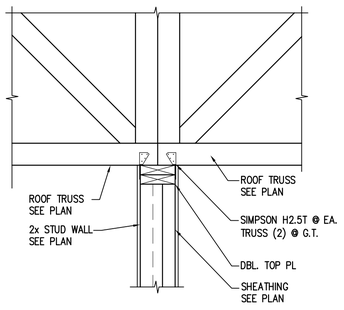

TRUSS BEARING

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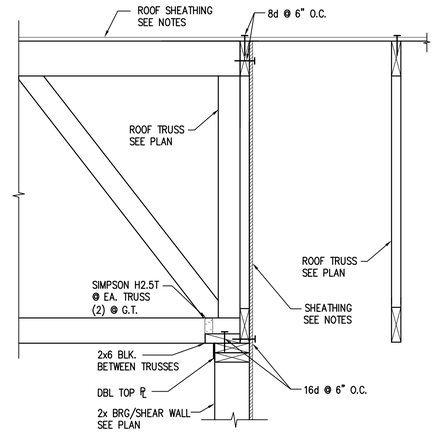

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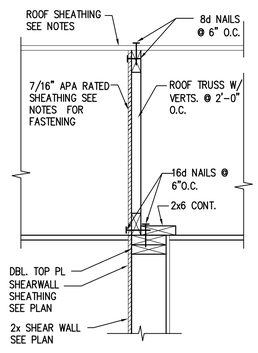
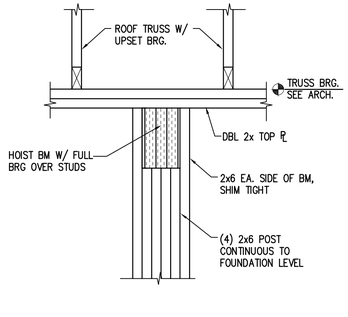


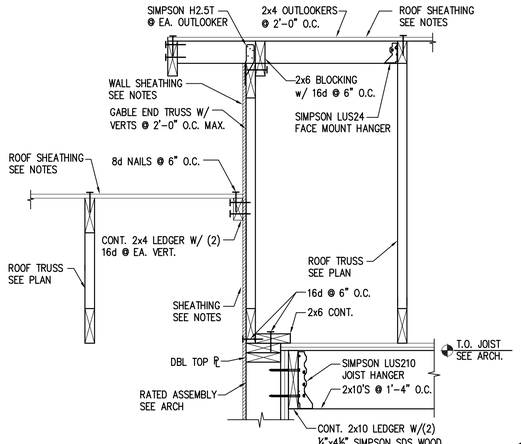
FRAMING DETAIL

1" = 1'-0" — 11 / S403



HOIST BEAM BRG.

1" = 1'-0" — 12 / S403



ROOF STEP DETAIL

1" = 1'-0" — 13 / S403

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MAPLE GROVE, MN

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PROJECT 16098
SHEET S403
FRAMING DETAILS

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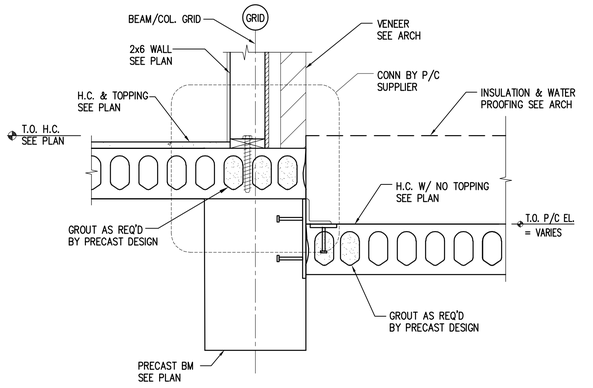
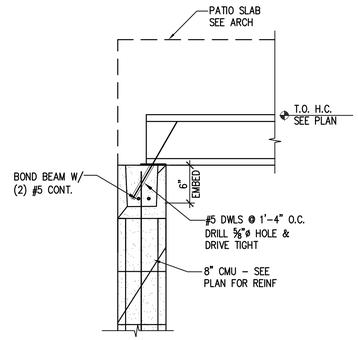


HOLLOW CORE BEARING

1" = 1'-0"

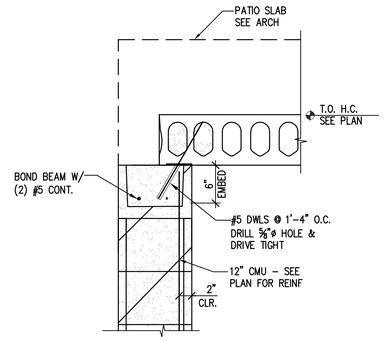
1 / S404



FRAMING DETAIL

1"=1'-0"

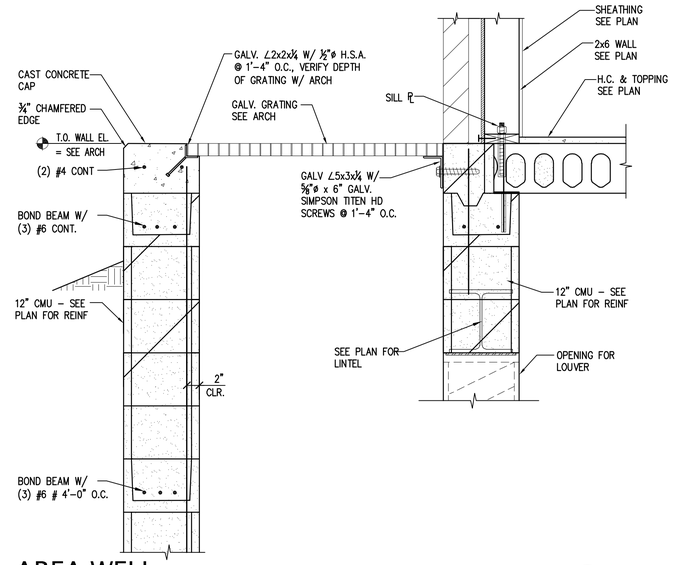
2 / S404



FRAMING DETAIL

1"=1'-0"

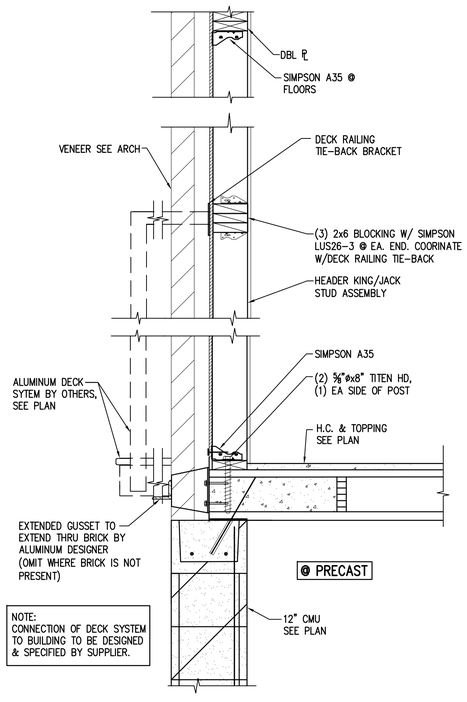
3 / S404



AREA WELL

1" = 1'-0"

4 / S404



DECK DETAIL

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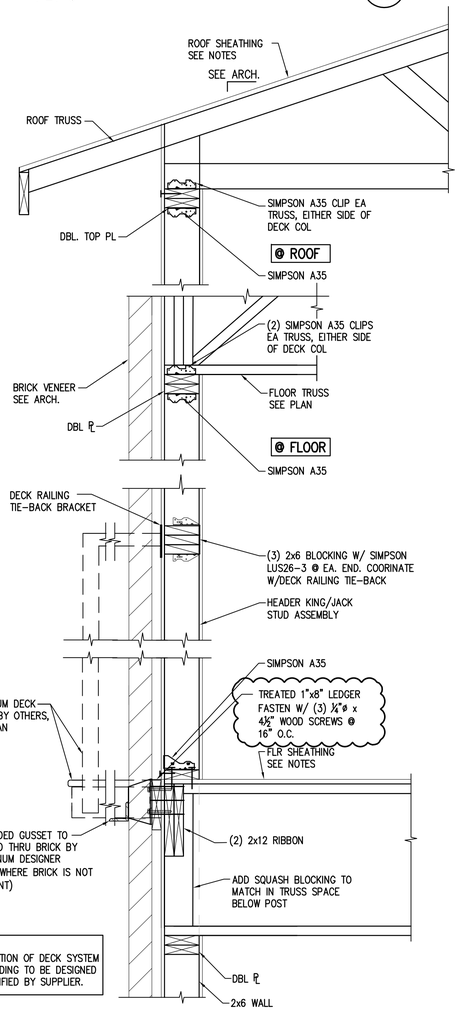
5 / S404



DECK DETAIL

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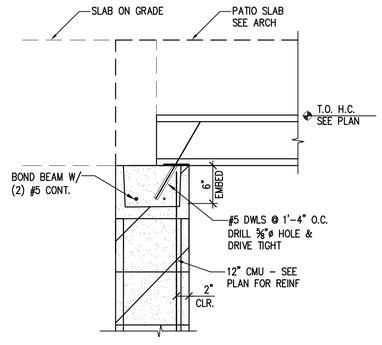
6 / S404



FRAMING DETAIL

1"=1'-0"

7 / S404

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