STRUCTURAL NOTES
DESIGN CODE: MINNESOTA STATE BUILDING CODE 2015 w/ IBC (2012)

DESIGN LOAD CRITERIA:

DEAD LOAD:	30 PSF
LIVE LOAD:	
ROOF -	20 PSF
TYPICAL RESIDENTIAL -	40 PSF
CORRIDORS -	100 PSF
STAIR/LANDINGS -	100 PSF
LOBBIES/LOUNGES/FITNESS -	100 PSF
STORAGE -	125 PSF
MECH -	125 PSF
SNOW LOAD:	
GROUND SNOW LOAD, Pg	50 PSF
IMPORTANCE FACTOR, Is	1.0
EXPOSURE FACTOR, Ce	1.0
THERMAL FACTOR, Ct	1.0
SNOW LOAD, Ps	35 PSF + DRIFT
WIND LOAD:	
WIND SPEED (3-SECOND GUST)	115 MPH
EXPOSURE	B
RISK CATEGORY	II
INTERNAL PRESSURE COEFFICIENTS,GCpi	+/- 0.18

ADDITIONAL LOAD CRITERIA -

DESIGN DEFLECTION CRITERIA (UNO) -

ROOF FRAMING	LIVE LOAD (LL): SPAN/360	TOTAL LOAD (TL): SPAN/240
FLOOR FRAMING	LIVE LOAD (LL): SPAN/360	TOTAL LOAD (TL): SPAN/240
MASONRY SUPPORT	LIVE LOAD (LL): SPAN/600	

MATERIAL & COMPONENT DESIGN CRITERIA:
FOUNDATIONS - REFERENCE GEOTECHNICAL REPORT BY NTI NORTHERN TECHNOLOGIES, LLC DATED MARCH 18, 2020.
SEE DIVISION 31: SITEWORK
ALLOWABLE SOIL BEARING PRESSURE (RAMMED AGGREGATE PIERS) = 4,000 PSF

CAST-IN-PLACE CONCRETE -

CONCRETE REINFORCING - BAR (TYPICAL)	ASTM A615, GR 60
CONCRETE REINFORCING - BAR (WELDABLE)	ASTM A706, GR 60
CONCRETE REINFORCING - WELDED WIRE FABRIC	ASTM A185 (PLAIN), ASTM A497 (DEFORMED)
CEMENT -	ASTM C150
AGGREGATE -	ASTM C33, ASTM C330

CONCRETE MIX CRITERIA -

CLASS	USE	CATEGORY F	S	P	C	F'c,PSI	WT,PCF	AGG,IN	AE, %
I	FTG/FDN	3	0	0	0	4500	145	1"	6 ± 1
II	INTERIOR SOG	0	0	0	0	4000	145	3/4"	NA
III	EXTERIOR	3	0	0	0	4500	145	3/4"	6 ± 1
IV	STRUCTURAL FRAME	0	0	0	0	4000	145	3/4"	NA
V	TOPPING/DECK	0	0	0	0	3000	145	3/8"	NA
VI	ALL OTHER	0	0	0	0	5000	145	3/4"	NA

REFERENCE ACI 318 CHAPTER 4 FOR ADDITIONAL INFORMATION REGARDING DURABILITY CATEGORY AND CLASS REQUIREMENTS.

CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR EACH CLASS IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN ACI 301, STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE. DOCUMENTATION SUBMITTED SHALL INCLUDE THE MIX PROPORTIONS, THE PLANT STANDARD DEVIATION, THE CALCULATED AVERAGE STRENGTH REQUIRED AND THE AVERAGE STRENGTH BASED ON HISTORICAL DATA OR TRIAL MIX DATA. FOR ADDITIONAL SUBMITTAL REQUIREMENTS, REFERENCE ACI 301. FOR REQUIREMENTS ON THE USE OF ADMIXTURES AND LIMITS ON THE WATER/CEMENTITIOUS MATERIALS RATIO FOR DURABILITY, REFERENCE THE PROJECT MANUAL/SPECIFICATIONS AND ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

STRUCTURAL MASONRY -
DESIGN COMPRESSIVE STRENGTH, F'm = 1500 PSI

CONCRETE MASONRY UNITS -	ASTM C90, NORMAL WT
REINFORCING STEEL (UNO):	
BAR REINFORCING (TYPICAL) -	ASTM A615, GR 60
BAR REINFORCING (WELDABLE) -	ASTM A706, GR 60
JOINT REINFORCEMENT -	ASTM A951
GROUT (F'c = 3000 PSI, 8" - 11" SLUMP) -	ASTM C476 AND ASTM C 1019
MORTAR, TYPE S -	ASTM C270 OR ASTM C780
NON-SHRINK GROUT UNDER PLATES (F'c = 8000 PSI)	ASTM C1107, GR A

STRUCTURAL STEEL -
STRUCTURAL SHAPES (UNO) -

WIDE FLANGE	ASTM A992 OR ASTM A572, GR 50
CHANNELS, ANGLES AND PLATES	ASTM A36 OR ASTM A572
HOLLOW STRUCTURAL SECTIONS	
HSS, (Fy = 46 KSI) -	ASTM A500, GR B
PIPE, (Fy = 35 KSI) -	ASTM A 53, GR B
BOLTS AND FASTENERS (UNO) -	
STRUCTURAL RODS -	ASTM A325
ANCHOR RODS -	ASTM F1554 GRADE 36
HEADED SHEAR STUDS -	AWS D1.1,TYPE B; ASTM A108

WELDED CONNECTIONS (E70XX ELECTRODES UNO) - CONFORM TO THE AMERICAN WELDING SOCIETY (AWS) CRITERIA. DEFINED WELD PROCEDURE TO BE APPROPRIATE FOR MATERIAL AND APPLICATION.

STRUCTURAL WOOD -
DIMENSION LUMBER (NOMINAL) -

2 X 8 AND WIDER	HEM FIR #2 OR BETTER
2 X 6 AND NARROWER	SPRUCE-PINE-FIR #2 OR BETTER

ENGINEERED LUMBER -

LAMINATED VENEER LUMBER (LVL)	Fb=2600 PSI (MIN), E=2.0x10^6 PSI (MIN)
PARALLEL STRAND LUMBER (PSL)	Fb=2900 PSI (MIN), E=2.0x10^6 PSI (MIN)
GLULAM LUMBER	
SINGLE SPAN	DF 24F-V4; Fb=2400 PSI, E=1.8x10^6 PSI (MIN)
CANTILEVER	DF 24F-V8; Fb=2400 PSI, E=1.8x10^6 PSI (MIN)

ENGINEERED WOOD TRUSSES -

ROOF TRUSSES	DESIGN FOR SNOW/LIVE LOAD BASED ON SPECIFIED CODE CRITERIA, INCLUDING DRIFTING AND UNBALANCED CONDITIONS, PLUS DEAD PSF TOP CHORD AND 10 PSF LOAD OF 15
BOTTOM CHORD.	
FLOOR TRUSSES	DESIGN FOR LIVE LOAD BASED ON SPECIFIED CODE CRITERIA PLUS DEAD LOAD OF 25 PSF.

SHEATHING -

ROOF	40 / 20 APA, EXPOSURE 1
WALL	24 / 16 APA, EXPOSURE 1
FLOOR	48 / 24 (T & G) APA, EXPOSURE 1

REQUIRED TESTS AND INSPECTIONS:
THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL TESTING, INSPECTIONS AND SITE OBSERVATIONS BY THE BUILDING OFFICIAL, INDEPENDENT TESTING FIRM, SPECIAL INSPECTOR OR THE ARCHITECT/ENGINEER. ARRANGEMENTS FOR THIS WORK SHALL BE MADE WITH ADEQUATE ADVANCE NOTICE TO INSURE THAT ALL INSPECTIONS, TESTS AND OBSERVATIONS ARE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS.

MATERIAL TESTS AND INSPECTIONS - REFERENCE THE PROJECT MANUAL/SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. STRUCTURAL TESTS AND INSPECTIONS SHALL BE COMPLETED FOR THE FOLLOWING, UNLESS NOTED OTHERWISE.
1. ENGINEERED BACKFILL MATERIAL ANALYSIS AND COMPACTION TESTING.
2. CONCRETE CYLINDER COMPRESSIVE TESTS.
3. STRUCTURAL MASONRY CONCRETE BLOCK, GROUT AND MORTAR COMPRESSIVE STRENGTH TESTS.

SPECIAL INSPECTIONS - INSPECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE AND SHALL INCLUDE WORK RELATED TO THE FOLLOWING.
1. CONCRETE PLACEMENT AND PLACEMENT OF REINFORCING.
2. MASONRY PLACEMENT AND PLACEMENT OF REINFORCING.
3. STRUCTURAL WELDING AND STRUCTURAL BOLTING INSPECTION, INCLUDING THE INSTALLATION OF ANCHORS IN CONCRETE OR MASONRY.

OSHA REGULATIONS:
ALL OSHA REGULATIONS INCLUDING THE STEEL ERECTION REGULATIONS (29 CFR 1926.750 THROUGH .761) SHALL BE MAINTAINED DURING CONSTRUCTION.

GENERAL NOTES
1. THESE STRUCTURAL NOTES AND GENERAL SPECIFICATIONS DO NOT REPLACE THE PROJECT SPECIFICATIONS OR DRAWINGS. THESE ARE APPLICABLE UNLESS NOTED OTHERWISE. NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.

2. REVIEW RELATED ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF ALL ROOF, FLOOR, AND WALL OPENINGS OR AND ANY OTHER PROJECT REQUIREMENTS NOT SHOW ON THE STRUCTURAL DRAWINGS. VERIFY OPENING DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH OTHER DISCIPLINE DRAWINGS OR THE CONTRACTOR REQUIRING THE OPENINGS.

3. IN NO CASE SHALL ANY STRUCTURAL COMPONENT BE MODIFIED OR ALTERED WITHOUT THE APPROVAL OF THE ENGINEER.

4. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL STRUCTURAL COMPONENTS AND SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH THE WORK. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5. SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. ANY REVIEW OF THE SHOP DRAWINGS BY THIS OFFICE IS ONLY FOR GENERAL CONFORMANCE TO THE STRUCTURAL REQUIREMENTS AND IN NO WAY GUARANTEES THE ACCURACY OR COMPLETENESS OF THE INFORMATION THEREON. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL THE CONSTRUCTION IS IN FULL COMPLIANCE WITH THE LATEST SET OF STRUCTURAL DRAWINGS.

6. PRIOR TO SUBMITTAL, THE CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS AND MAKE ANY CORRECTIONS REQUIRED. THE CONTRACTOR SHALL STAMP AND SIGN THE DRAWINGS AS EVIDENCE THAT HE HAS REVIEWED THEM.

7. MATERIALS AND PRODUCTS OTHER THAN THOSE SPECIFIED IN THE DRAWINGS AND SPECIFICATIONS MAY BE CONSIDERED FOR USE PROVIDED PRIOR APPROVAL IS OBTAINED FROM THE OWNER, ARCHITECT/ENGINEER AND THE BUILDING OFFICIAL. THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION THAT THE MATERIAL OR PRODUCT MEETS THE STRUCTURAL DESIGN CRITERIA AND ALL OTHER PERFORMANCE REQUIREMENTS OF THE PROJECT.

8. STRUCTURAL MEMBERS INCLUDING JOISTS, SLABS, BEAMS, TRUSSES, COLUMNS AND WALLS ARE DESIGNED FOR DESIGN CRITERIA FOR THE COMPLETED STRUCTURE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL BRACING AND SHORING UNTIL THE COMPLETION OF THE PROJECT.

9. STRUCTURAL INFORMATION SHOWN ON THE STRUCTURAL DRAWINGS SUPERSEDE CORRESPONDING STRUCTURAL INFORMATION SHOWN ON THE ARCHITECTURAL DRAWINGS. TYPICAL DETAILS APPLY WHERE SPECIFIC DETAILS OR SECTIONS ARE NOT PROVIDED.

10. OBSERVATION VISITS TO THE JOB SITE BY THE ENGINEER DO NOT INCLUDE INSPECTION OF CONSTRUCTION METHODS OR SAFETY CONDITIONS OF THE WORK SITE. THESE VISITS SHALL NOT BE CONSIDERED AS REPLACING THE MATERIAL INSPECTIONS REQUIRED BY THE PROJECT MANUAL OR THE SPECIAL INSPECTIONS REQUIRED BY THE BUILDING CODE.

EXISTING CONSTRUCTION NOTES
1. THE EXISTING STRUCTURE THAT IS TO REMAIN IS GENERALLY SHOWN AS SHADED ON THE DRAWINGS. STRUCTURE TO BE REMOVED IS GENERALLY NOT SHOWN.

2. VERIFY EXISTING ELEVATIONS, DIMENSIONS AND BUILDING CONDITIONS AND ALL ITEMS ON PLANS AND DETAILS NOTED "EXISTING" BEFORE PROCEEDING WITH WORK. NOTIFY THE ARCHITECT/ENGINEER OF ANY CONCERNS OR DISCREPANCIES THAT ARE NOTED PRIOR TO PROCEEDING WITH THE WORK.

3. WHERE NEW CONSTRUCTION ATTACHES TO OR IS ADJACENT TO EXISTING CONSTRUCTION, FIELD MEASUREMENTS SHALL BE TAKEN PRIOR TO FABRICATION OF COMPONENTS TO VERIFY PROPER FIT-UP OF NEW WORK.

4. ALL EXISTING CONSTRUCTION AFFECTED BY REMOVAL OF SUPPORTIVE MEMBERS SHALL BE TEMPORARILY SUPPORTED/SHORED UNTIL NEW SUPPORTIVE MEMBERS ARE IN PLACE. DESIGN AND PERFORMANCE OF THE TEMPORARY SHORING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

GENERAL SPECIFICATIONS

DIVISION 31: SITE WORK
SECTION 310100 - BUILDING EARTHWORK

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT GEOTECHNICAL INVESTIGATION/SOIL REPORT DATED MONTH, DAY, YEAR PREPARED BY:
NTI NORTHERN TECHNOLOGIES, LLC
6160 CARMEN AVENUE EAST
INVER GROVE HEIGHTS, MN 55076
(651) 389-4191
RECOMMENDATIONS AND SUGGESTIONS INCLUDED IN THE REPORT SHALL BE FOLLOWED UNLESS NOTIFIED OTHERWISE.

2. THE GENERAL CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE IN A CONDITION THAT ALLOWS WORK TO PROCEED. POSITIVE SURFACE DRAINAGE AWAY FROM THE STRUCTURE AND FOOTING TRENCHES SHALL BE MAINTAINED. PROVIDE BERMS, DAMS, CULVERTS, DRAINAGE TRENCHES WITH AUTOMATIC PUMPS, ETC. TO KEEP THE BUILDING SITE FREE OF STANDING WATER AND TO PREVENT SURFACE RUNOFF OR GROUNDWATER FROM DAMAGING THE FOOTINGS.

3. PRIOR TO CASTING FOOTINGS, A QUALIFIED GEOTECHNICAL ENGINEER SHALL VERIFY THAT THE ALLOWABLE BEARING CAPACITY OF THE SOIL AT THE FOOTING BEARING ELEVATION MEETS OR EXCEEDS THE DESIGN CRITERIA. IF THE BEARING CAPACITY IS NOT ADEQUATE, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND FOOTING CONSTRUCTION SHALL BE DELAYED UNTIL CORRECTIVE MEASURES ARE COMPLETED.

4. FOUNDATION TRENCHES SHALL BE BACKFILLED AS SOON AS POSSIBLE AFTER INSTALLATION OF FOOTINGS TO PREVENT DAMAGE DUE TO WATER INFILTRATION. FOOTINGS EXPOSED TO RAINWATER OR SURFACE RUNOFF SHALL BE REINSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING.

5. FOR BACKFILL MATERIAL SPECIFICATIONS AND COMPACTION REQUIREMENTS, REFERENCE THE PROJECT SPECIFICATION AND THE GEOTECHNICAL REPORT.

6. FOR SLAB-ON-GRADE BASE MATERIAL SPECIFICATIONS AND PLACEMENT REQUIREMENTS, REFERENCE THE PROJECT SPECIFICATION AND THE GEOTECHNICAL REPORT.

ACI LAP SPLICE LENGTHS (INCHES)

BAR SIZE	f'c = 3000 PSI				f'c = 3500 PSI				f'c = 4000 PSI			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	28	42	22	32	26	39	21	30	24	36	19	28
#4	37	56	29	43	35	52	27	40	32	48	25	37
#5	47	70	36	54	44	65	34	51	40	60	31	47
#6	56	84	43	64	52	78	40	60	48	72	37	56
#7	81	122	63	94	76	114	59	88	70	106	54	81
#8	93	139	72	107	87	130	67	100	80	121	62	93
#9	105	157	81	121	98	147	76	113	91	136	70	105
#10	118	177	91	136	110	165	85	127	102	153	79	118
#11	131	196	101	151	122	183	94	141	113	170	87	131

BAR SIZE	f'c = 4500 PSI				f'c = 5000 PSI				f'c = 6000 PSI			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	23	35	18	27	22	33	17	25	20	30	16	23
#4	31	46	24	35	29	43	22	33	26	40	20	31
#5	38	57	30	45	36	54	28	42	33	49	25	38
#6	46	69	35	53	43	65	33	50	40	59	31	46
#7	67	100	52	77	63	94	49	73	58	86	44	66
#8	76	115	59	88	72	108	55	83	66	98	51	76
#9	86	129	67	100	81	122	63	94	74	111	57	85
#10	97	145	75	112	91	137	70	105	83	125	64	96
#11	107	161	83	124	101	152	78	117	93	139	71	107

NOTES:
1. TABULATED VALUES ARE BASED ON GRADE 60 BARS AND NORMAL WEIGHT CONCRETE.
2. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER AND THE CENTER-TO-CENTER SPACING OF THE BARS, ARE DEFINED AS:

BEAMS OR COLUMNS: CASE 1:COVER AT LEAST 1.0 db AND C.C. SPACING OF AT LEAST 2.0 db.
CASE 2 COVER LESS THAN 1.0 db AND C.C. SPACING LESS THAN 2.0 db.

ALL OTHERS: CASE 1: COVER AT LEAST 1.0 db AND C.C. SPACING OF AT LEAST 3.0 db.
CASE 2: COVER LESS THAN 1.0 db AND C.C. SPACING LESS THAN 3.0 db.

3. TOP BARS ARE HORIZONTAL BEAM AND SLAB BARS WITH MORE THAN 12" OF CONCRETE BELOW THE BARS.
4. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
5. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY ONE OF THE FOLLOWING FACTORS:

CONCRETE COVER AND SPACING	TOP BARS	OTHER BARS
COVER < 3.0 DB OR C.C. SPACING < 7.0DB	1.7/1.3 = 1.31	1.50
COVER > 3.0 DB OR C.C. SPACING > 7.0DB	1.20	1.20

6. BAR DEVELOPMENT LENGTH = LAP SPLICE LENGTH/1.3.
7. WIRE MESH LAP:
LAP ALL WIRE MESH CROSS WIRES ONE CROSS WIRE SPACING PLUS 2", TYPICAL.

DIVISION 03: CONCRETE
SECTION 033300 - CAST-IN-PLACE CONCRETE

1. FOR PRODUCT MATERIAL SPECIFICATIONS AND CONCRETE CLASS REQUIREMENTS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

2. SUBMIT MIX DESIGN FOR EACH CLASS OF CONCRETE FOR REVIEW AND APPROVAL A MINIMUM OF 15 DAYS PRIOR TO COMMENCEMENT OF WORK. SUBMITTAL SHALL BE IN ACCORDANCE WITH THE PROCEDURE OUTLINED FOR THE SELECTION OF CONCRETE MIXTURE PROPORTIONS IN ACI 301, STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE, SECTION 4.2.3. PROVIDE THE HISTORICAL FIELD TEST OR TRIAL BATCH DATA.

3. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH ACI SP-66, ACI DETAILING MANUAL/ACI 315, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, FOR PLACEMENT AND FABRICATION OF ALL REINFORCEMENT. DRAWINGS SHALL INCLUDE SIZES, LENGTHS, SPACING, QUANTITIES, BEND SCHEDULES AND THE LOCATION AND LENGTH OF BAR SPLICES.

4. BEFORE PLACING CONCRETE, CLEAN REINFORCEMENT OF FOREIGN PARTICLES OR COATINGS. PLACE, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT. FOR CAST-IN-PLACE CONCRETE, PROVIDE COVER AS SHOWN BELOW, UNLESS NOTED OTHERWISE ON DRAWINGS, AND AS SPECIFIED IN ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, CHAPTER 7.

APPLICATION/CONDITION	REQUIRED COVER, INCHES
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER:	
NO. 6 THROUGH NO. 19 BARS	2"
NO. 5 BAR, W31 OR D31 WIRE, AND SMALLER	1 1/2"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS:	
NO. 14 AND NO. 18 BARS	1 1/2"
NO. 11 BAR AND SMALLER	3/4"
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1 1/2"
SHELLS, FOLDED PLATE MEMBERS:	
NO. 6 BAR AND LARGER	3/4"
NO. 5 BAR, W31 OR D31 WIRE, AND SMALLER	1/2"

5. REINFORCING IS SHOWN AS CONTINUOUS, BARS SHALL BE SPLICED USING EITHER LAP SPLICES, MECHANICAL CONNECTORS OR WELDED CONNECTIONS. MECHANICAL CONNECTORS AND WELDED CONNECTIONS SHALL DEVELOP A MINIMUM OF 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. THE LENGTH AND PLACEMENT OF LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. ALL LAP SPLICES NOT SPECIFICALLY DETAILED SHALL BE IN CONFORMANCE WITH THE TYPICAL SPLICE TABLES SHOWN ON THIS SHEET.

6. INSTALL WELDED STEEL WIRE FABRIC IN AS LONG LENGTHS AS PRACTICAL. LAP ADJOINING SHEETS AT LEAST ONE SPACING OF CROSS WIRES PLUS 2-INCHES.

7. UNLESS NOTED OTHERWISE, PROVIDE 2-#5 BARS, ONE EACH FACE, AROUND ALL OPENINGS IN CAST-IN-PLACE CONCRETE WALLS OR SLABS GREATER THAN 12"X12". EXTEND REINFORCING A MINIMUM OF 24-INCHES BEYOND THE EDGE OF THE OPENING IN BOTH DIRECTIONS. FOR LARGER OPENINGS, CONTACT THE ENGINEER FOR REINFORCING REQUIREMENTS.

8. WHERE SHOWN ON THE DRAWINGS PLACE ANCHORS, EMBEDMENTS, INSERTS OR OTHER COMPONENTS FURNISHED AND USED BY OTHERS AS REQUIRED. COMPONENTS SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT DURING CONCRETING.

9. ONE SET OF FOUR COMPRESSION TEST CYLINDERS SHALL BE TAKEN IN ACCORDANCE WITH ASTM C31 AND TESTED IN ACCORDANCE WITH ASTM C39 FOR EACH CLASS OF CONCRETE PLACED. ONE SET OF CYLINDERS SHALL BE TAKEN FOR EACH 150 CUBIC YARDS OR FRACTION THEREOF, AND FOR EACH 5000 SQUARE FEET OF WALL OR SLAB CAST, WHICHEVER IS MORE STRINGENT. ONE CYLINDER SHALL BE TESTED AT 7-DAYS AND TWO AT 28-DAYS UNLESS NOTED OTHERWISE WITH ONE HELD IN THE FIELD UNDER FIELD CURING CONDITIONS. ONE ADDITIONAL CYLINDER SHALL BE TAKEN AND FIELD CURED UNDER THE SAME CONDITION AS THE CONCRETE IT REPRESENTS. THE FIELD-CURED CYLINDER SHALL BE TESTED AT 28-DAYS UNLESS NOTED OTHERWISE.

10. FOR EACH SET OF COMPRESSION TEST CYLINDERS TAKEN, ONE SLUMP TEST SHALL BE TAKEN IN ACCORDANCE WITH ASTM C143.

11. FOR EACH SET OF COMPRESSION TEST CYLINDERS TAKEN, THE AIR CONTENT SHALL BE TESTED IN ACCORDANCE WITH ASTM A173, VOLUMETRIC METHOD FOR LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE OR ASTM C231, PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE.

12. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 305R, HOT WEATHER CONCRETING AND ACI 306R, COLD WEATHER CONCRETING. PROVISIONS FOR HOT WEATHER CONCRETING APPLY WHEN THE TEMPERATURE OF THE CONCRETE EXCEEDS 90-DEGREES FAHRENHEIT. PROVISIONS OF COLD WEATHER CONCRETING APPLY WHEN THE AVERAGE DAILY TEMPERATURE IS LESS THAN 40-DEGREES FAHRENHEIT AND THE AIR TEMPERATURE IS NOT GREATER THAN 50-DEGREES FOR MORE THAN ONE-HALF OF ANY 24 HOUR PERIOD.

13. ALL POST-INSTALLED MECHANICAL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S RECOMMENDATIONS AND THE INSTALLATION SHALL BE INSPECTED BY THE SPECIAL INSPECTOR. INDIVIDUAL PRODUCTS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

14. ALL EXPANSION BOLTS PLACED IN EXISTING CONCRETE ARE TO BE HILTI KWIK BOLT TZ EXPANSION ANCHORS AND ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

15. ALL DOWELS OR THREADED RODS PLACED IN EXISTING CONCRETE ARE TO BE SET IN HILTI HIT-RE 500 V3 ADHESIVE. ALL ADHESIVE IS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS INCLUDING SPECIAL INSPECTION.

16. CONCRETE WITH FIBERMESH REINFORCING SHALL CONTAIN ONLY 100 PERCENT VIRGIN POLYPROPYLENE FIBERS CONTAINING NO REPROCESSED OLEFIN MATERIALS AND SPECIFICALLY MANUFACTURED TO AN OPTIMUM GRADATION FOR USE AS CONCRETE SECONDARY REINFORCEMENT. FIBER APPLICATION RATE SHALL BE DESIGNED BY SUPPLIER AS TO MEET SPECIFIED CONCRETE STRENGTHS INDICATED IN CONCRETE MIX DESIGN TABLE.

17. MASS CONCRETE:
ALL CONCRETE POURS IN WHICH THE MINIMUM CROSS-SECTIONAL DIMENSION APPROACHES OR EXCEEDS 2 1/2 FEET OR WHEN CEMENT CONTENTS ABOVE 600LB PER CUBIC YARD ARE USED ARE TO BE CONSIDERED MASS CONCRETE.

CONTRACTOR SHALL PROVIDE SPECIAL MIX, PLACEMENT AND CURING PROCEDURES FOR ALL MASS CONCRETE TO PREVENT CRACKING. PROCEDURES ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.

ACCELERATING ADMIXTURES SHALL NOT BE USED IN MASS CONCRETE.

WITH THE APPROVAL OF THE STRUCTURAL ENGINEER, FLY ASH OR OTHER ACCEPTABLE POZZOLAN SHOULD BE UTILIZED TO REDUCE THE REQUIRED CEMENT CONTENT AND RESULTING HEAT OF HYDRATION.

CURING TEMPERATURE DIFFERENTIAL BETWEEN THE INTERIOR AND EXTERIOR CONCRETE SHALL NOT EXCEED 36 DEGREES. THIS REQUIREMENT MAY BE MAINTAINED THROUGH USE OF LOW INITIAL CONCRETE TEMPERATURES, INTERNAL COOLING, EXTERNAL INSULATING, ETC. CONTRACTOR TO SUBMIT A SPECIAL MIX DESIGN AND CURING PROCEDURE TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.

DIVISION 04: MASONRY
SECTION 042200 - UNIT MASONRY

1. FOR PRODUCT MATERIAL SPECIFICATIONS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

2. SUBMIT DOCUMENTATION DEMONSTRATING COMPLIANCE WITH THE SPECIFIED STRENGTH OF MASONRY, F'm, IN ACCORDANCE WITH THE (PRISM TEST METHOD OR THE UNIT STRENGTH METHOD) AS OUTLINED IN THE ACI 530, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, AND THE APPLICABLE BUILDING CODE. SUBMIT PRODUCT AND TEST DATA AS SPECIFIED FOR LEVEL 1 QUALITY ASSURANCE. THIS SHALL INCLUDE VERIFICATION OF F'm BOTH PRIOR TO CONSTRUCTION AND DURING AS WELL AS VERIFICATION OF MATERIALS AND PROPORTIONS FOR CONCRETE MASONRY UNITS, MORTAR AND GROUT CONSTRUCTION FOR EVERY 5000 SQUARE FEET OF MASONRY PLACED.

3. SUBMIT REINFORCING SHOP DRAWINGS SHOWING PLACEMENT OF ALL REINFORCEMENT AND EMBEDMENTS AND THE REINFORCING FABRICATION DIMENSIONS AND DETAILS.

4. PLACE CONCRETE MASONRY UNITS SUCH THAT THE VERTICAL CELLS TO BE GROUTED ARE ALIGNED AND PROVIDE UNOBSTRUCTED OPENINGS FOR GROUT PLACEMENT. FACE SHELLS OF BED JOINTS SHALL BE FULLY MORTARED. WEBS SHALL BE FULLY MORTARED IN ALL COURSES OF PIERS, COLUMNS AND PILASTERS, IN THE STARTING COURSE ON FOUNDATIONS, WHEN NECESSARY TO CONFINE GROUT OR LOOSE-FILL INSULATION AND WHEN OTHERWISE NOTED. HEAD JOINTS ARE TO BE MORTARED A MINIMUM DISTANCE FROM EACH FACE EQUAL TO THE FACE SHELL THICKNESS OF THE UNIT. UNLESS OTHERWISE REQUIRED, SOLIDLY FILL COLLAR JOINTS LESS THAN 3/4" WIDE WITH MORTAR AS THE WORK PROGRESSES.

5. PLACE REINFORCEMENT AND EMBEDMENTS IN ACCORDANCE WITH THE DRAWINGS. MAINTAIN A CLEAR DISTANCE BETWEEN THE REINFORCING BARS AND ANY FACE OF MASONRY UNIT OR FORMED SURFACE OF NOT LESS THAN 1/2" UNLESS NOTED OTHERWISE. WHERE REINFORCING BAR ARE SPLICED, PROVIDE A MINIMUM OF 48-BAR DIAMETER LAP OR A MECHANICAL SPLICE THAT PROVIDES 125% OF THE BAR CAPACITY. TOLERANCES FOR PLACEMENT OF REINFORCING BARS SHALL BE +/- 1/2-INCH PERPENDICULAR TO THE FACE OF THE MASONRY UNIT AND WITHIN 2-INCHES ALONG THE LENGTH OF THE WALL UNLESS NOTE OTHERWISE. REINFORCEMENT SHALL BE TIED IN PLACE OR OTHERWISE SUPPORTED TO PREVENT D

DIVISION 05: METALS
SECTION 051200 - STRUCTURAL STEEL FRAMING

1. FOR PRODUCT MATERIAL SPECIFICATIONS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

2. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, THE AISC CODE OF STANDARD PRACTICE AND THE OSHA RULES FOR STEEL ERECTION (29 CFR 1926.750 THROUGH .761). PROVIDE COMPLETE INFORMATION NECESSARY FOR THE FABRICATION AND ERECTION OF THE STRUCTURE, INCLUDING PROFILES, SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, CONNECTIONS, ATTACHMENTS, FASTENERS, CAMBERS AND LOADS. THE DRAWINGS SHALL CLEARLY DISTINGUISH BETWEEN SHOP AND FIELD BOLTS AND WELDS AND IDENTIFY THE TYPE OF HIGH STRENGTH BOLTED CONNECTION.

3. CONNECTION DESIGN SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS. UNLESS NOTED OTHERWISE, 3/4-INCH DIAMETER ASTM A325-N BOLTS SHALL BE USED. WELDS SHALL BE DEFINED USING AWS STANDARD WELD SYMBOLS. FOR BEAM TO BEAM CONNECTIONS, PROVIDE DOUBLE-ANGLE FRAMED BEAM CONNECTIONS OR SINGLE PLATE SHEAR CONNECTIONS. WHERE BEAMS FRAME OVER THE TOP OF COLUMNS PROVIDE A FULL DEPTH, FITTED STIFFENER IN LINE WITH THE COLUMN CENTERLINE, UNLESS NOTED OTHERWISE. FABRICATOR SHALL DESIGN ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON PLANS.

4. STEEL BEAM LINTELS BEARING ON MASONRY OR CONCRETE SHALL HAVE A MINIMUM BEARING LENGTH OF 8-INCHES. STEEL ANGLE LINTELS, INCLUDING LOOSE LINTELS, SHALL HAVE A MINIMUM BEARING LENGTH OF 6-INCHES.

5. UNLESS NOTED OTHERWISE, SHOP PAINT ALL STRUCTURAL STEEL USING THE FABRICATOR'S STANDARD PRIMER SYSTEM. SLIP-CRITICAL CONNECTIONS SHALL BE MASKED TO PREVENT PAINT FROM BEING APPLIED TO THE FAYING SURFACE.

6. ALL INSTALLED WELDS OR STRUCTURAL BOLTS SHALL BE VISUALLY INSPECTED FOR COMPLIANCE WITH THE PROJECT REQUIREMENTS PRIOR TO CONTINUING WITH WORK. SEE THE PROJECT MANUAL/SPECIFICATION FOR ADDITIONAL INSPECTION AND TESTING REQUIREMENTS.

7. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED ACCORDING TO THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) .

8. STEEL FABRICATOR SHALL BE AISC CERTIFIED SHOP FOR CATEGORY 1 STEEL STRUCTURES AND SHALL MAINTAIN DETAILED QUALITY CONTROL PROCEDURES.

9. SPLICING OF STRUCTURAL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL FROM THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE.

10. ALL SHOP CONNECTIONS MAY BE WELDED OR BOLTED USING ¾" MINIMUM DIAMETER A325 BOLTS. ALL FIELD CONNECTION BOLTED CONNECTIONS SHALL BE USING PRETENSIONED ¾" MINIMUM DIAMETER A325.

11. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1. ALL FILLERS MATERIAL SHALL HAVE MINIMUM YIELD STRENGTH OF 58 KSI.

12. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING HOLES AND TORCH CUTTING AT THE SITES IS NOT PERMITTED.

13. ALL STEEL FRAMING EXPOSED TO WEATHER, EXTERIOR BRICK SHELF ANGLES, AND EXTERIOR STEEL LINTELS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153. REPAIR OF GALVANIZED SURFACES SHALL BE PERFORMED WITH A MINIMUM OF 3 COATS OF COLD GALVANIZED FINISH.

14. GENERAL CONTRACTOR RESPONSIBLE TO ERECT AND MAINTAIN TEMPORARY BRACING TO INSURE THE ALIGNMENT AND STABILITY OF THE STRUCTURE DURING ERECTION UNTIL PERMANENT CONNECTIONS HAVE BEEN COMPLETED.

DIVISION 06: WOOD
SECTION 061000 - ROUGH CARPENTRY

DIMENSION LUMBER:

1. FOR PRODUCT MATERIAL SPECIFICATIONS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

2. COMPLY WITH APPLICABLE REQUIREMENTS IN AF&PA'S "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."

3. SUBMITTALS SHALL INCLUDE PRODUCT DATA FOR EACH TYPE OF PROCESS AND FACTORY-FABRICATED PRODUCT. PROVIDE INFORMATION REGARDING THE WOOD-PRESERVATIVE AND FIRE-RETARDANT TREATMENT FROM MANUFACTURER AND CERTIFICATION THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS. INCLUDE MATERIAL CERTIFICATES FOR DIMENSIONED LUMBER SPECIFIED TO COMPLY WITH THE MINIMUM ALLOWABLE UNIT STRESSES. INDICATE SPECIES AND GRADE SELECTED FOR EACH USE AND DESIGN VALUES APPROVED BY THE ALSC BOARD OF REVIEW. PROVIDE FULL-SIZE TEMPLATES FOR FASTENERS IN EXPOSED FRAMING.

4. LUMBER SHALL COMPLY WITH DOC PS 20 AND GRADING INDICATED. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF GRADING AGENCY. PROVIDE DRESSED LUMBER, S4S, UNLESS NOTED OTHERWISE.

5. PROVIDE ENGINEERED WOOD PRODUCTS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND FOR WHICH CURRENT MODEL CODE RESEARCH OR EVALUATION REPORTS EXIST THAT SHOW COMPLIANCE WITH THE BUILDING CODE IN EFFECT FOR THE PROJECT. LAMINATED-VENEER LUMBER AND PARALLEL-STRAND LUMBER SHALL COMPLY WITH ASTM D5456 AND BE MANUFACTURED WITH EXTERIOR-TYPE ADHESIVE COMPLYING WITH ASTM D2559. GLUE-LAMINATED TIMBER SHALL COMPLY WITH AITC 117 AND BE MANUFACTURED WITH WET-USE ADHESIVE COMPLYING WITH AITC A190.1. WOOD I-JOISTS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS OF AND WITH STRUCTURAL CAPACITIES ESTABLISHED AND MONITORED ACCORDING TO ASTM D5055. UNITS SHALL COMPLY WITH APA PRI-400 AND SHALL BE FACTORY MARKED WITH APA TRADEMARK INDICATING NOMINAL JOIST DEPTH, JOIST CLASS, SPAN RATINGS, MILL IDENTIFICATION, AND COMPLIANCE WITH APA STANDARD.

6. GENERAL INSTALLATION: PLACE ROUGH CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT, AND FITTED. COMPLY WITH AF&PA'S WCD 1, "DETAILS FOR CONVENTIONAL WOOD FRAME CONSTRUCTION." UNLESS OTHERWISE INDICATED. INSTALL ENGINEERED COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SECURELY ATTACH ROUGH CARPENTRY WORK TO SUBSTRATE BY ANCHORING AND FASTENING IN COMPLIANCE WITH NES NER-272 FOR POWER DRIVEN FASTENERS AND TABLE 2304.9.1, "FASTENING SCHEDULE," IN ICC'S INTERNATIONAL BUILDING CODE. USE STEEL COMMON NAILS UNLESS OTHERWISE INDICATED.

7. EXTERIOR WALL FRAMING INSTALLATION: PROVIDE 2x6 NOMINAL SIZE WOOD STUDS SPACED AT 16-INCHES ON CENTER UNLESS NOTED OTHERWISE. PROVIDE SINGLE BOTTOM PLATE AND DOUBLE TOP PLATE USING MEMBERS OF 2-INCH NOMINAL THICKNESS WHOSE WIDTH EQUALS THAT OF STUDS. CONSTRUCT CORNERS AND INTERSECTIONS WITH THREE OR MORE STUDS. FRAME OPENINGS WITH MULTIPLE STUDS AND HEADERS. PROVIDE NAILED HEADER MEMBER OF THICKNESS EQUAL TO WIDTH OF STUDS. SUPPORT HEADER ON JAMB STUDS; DOUBLE JAMB STUDS FOR OPENINGS OF 60 INCHES OR LESS IN WIDTH AND TRIPLE JAMB STUDS FOR WIDER OPENINGS.

8. FLOOR JOIST FRAMING INSTALLATION: INSTALL FLOOR JOISTS WITH CROWN EDGE UP AND SUPPORT ENDS OF EACH MEMBER WITH NOT LESS THAN 1-1/2 INCHES OF BEARING ON WOOD OR METAL AND 3 INCHES ON MASONRY. FRAME OPENINGS WITH HEADERS AND TRIMMERS SUPPORTED BY METAL JOIST HANGERS: DOUBLE HEADERS AND TRIMMERS WHEN SPAN OF HEADER EXCEEDS 48 INCHES. PROVIDE SOLID BLOCKING OF 2 INCH NOMINAL THICKNESS BY DEPTH OF JOIST AT ENDS OF JOISTS UNLESS NAILED TO HEADER OR BAND. PROVIDE SOLID BLOCKING BETWEEN JOISTS UNDER JAMB STUDS FOR OPENINGS. PROVIDE BRIDGING AT INTERVALS OF 96 INCHES (MAXIMUM) BETWEEN JOISTS.

9. CEILING JOIST AND RAFTER FRAMING INSTALLATION: INSTALL CEILING JOISTS WITH CROWN EDGE UP AND COMPLYING WITH REQUIREMENTS SPECIFIED FOR FLOOR JOISTS ABOVE. PROVIDE 1x6 INCH NOMINAL SIZE COLLAR BEAMS (TIES), UNLESS NOTED OTHERWISE, BETWEEN EVERY THIRD PAIR OF RAFTERS, BUT NOT MORE THAN 48 INCHES ON CENTER. LOCATE BELOW RIDGE MEMBER, AT THIRD PINT OF RAFTER SPAN. PROVIDE SPECIAL FRAMING, AS REQUIRED, FOR EAVES, OVERHANGS, DORMERS, AND SIMILAR CONDITIONS IF ANY.

10. TIMBER FRAMING INSTALLATION: INSTALL TIMBER WITH CROWN EDGE UP AND PROVIDE NOT LESS THAN 4 INCHES OF BEARING ON SUPPORTS. PROVIDE CONTINUOUS MEMBERS UNLESS OTHERWISE INDICATED; TIE TOGETHER OVER SUPPORTS IF NOT CONTINUOUS. WHERE BEAMS OR GIRDERS ARE FRAMED INTO POCKETS OF EXTERIOR CONCRETE OR MASONRY WALLS, PROVIDE 1/2 INCH AIR SPACE AT SIDES AND ENDS OF WOOD MEMBERS. INSTALL WOOD POSTS USING METAL ANCHORS. TREAT ENDS OF TIMBER BEAMS AND POSTS EXPOSED TO WEATHER BY DIPPING IN WATER-REPELLENT PRESERVATIVE FOR 15 MINUTES.

SECTION 061600 - SHEATHING

1. FOR PRODUCT MATERIAL SPECIFICATIONS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

2. FOR EACH TYPE OF FACTORY-FABRICATED PRODUCT, PROVIDE COMPONENT MATERIALS AND DIMENSIONS AND CONSTRUCTION AND APPLICATION DETAILS INCLUDING INFORMATION REGARDING THE WOOD-PRESERVATIVE AND FIRE-RETARDANT TREATMENT FROM MANUFACTURER AND CERTIFICATION THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS. PROVIDE ICC-ES EVALUATION REPORTS.

3. PLYWOOD SHALL COMPLY WITH DOC PS 1 AND ORIENTED STRAND BOARD SHALL COMPLY WITH DOC PS 2 UNLESS OTHERWISE INDICATED. THICKNESS AS NEEDED TO COMPLY WITH REQUIREMENTS SPECIFIED. FACTORY MARK PANELS TO INDICATE COMPLIANCE WITH APPLICABLE STANDARD.

4. FOR ROOF AND WALL SHEATHING, PROVIDE HOT-DIPPED ZINC COATED FASTENERS COMPLYING WITH ASTM A153.

5. DO NOT USE MATERIALS WITH DEFECTS THAT IMPAIR QUALITY OF SHEATHING OR PIECES THAT ARE TO SMALL TO USE WITH MINIMUM NUMBER OF JOINTS OR OPTIMUM JOINT ARRANGEMENT. ARRANGE JOIST SO THAT PIECES DO NOT SPAN BETWEEN FEWER THAN THREE SUPPORT MEMBERS. SECURELY ATTACH TO SUBSTRATE BY FASTENING IN COMPLIANCE WITH NES NER-272 FOR POWER DRIVEN FASTENERS AND TABLE 2304.9.1 "FASTENING SCHEDULE," IN ICC'S INTERNATIONAL BUILDING CODE. USE STEEL COMMON NAILS UNLESS OTHERWISE INDICATED. SELECT FASTENERS OF SIZE THAT WILL NOT FULLY PENETRATE MEMBERS WHERE OPPOSITE SIDE WILL BE EXPOSED TO VIEW OR WILL RECEIVE FINISH MATERIALS. INSTALL FASTENERS WITHOUT SPLITTING WOOD.

SECTION 061753 - SHOP FABRICATED WOOD TRUSSES

1. FOR PRODUCT MATERIAL SPECIFICATIONS, REFERENCE THE STRUCTURAL NOTES, MATERIAL & COMPONENT DESIGN CRITERIA AND THE PROJECT SPECIFICATION.

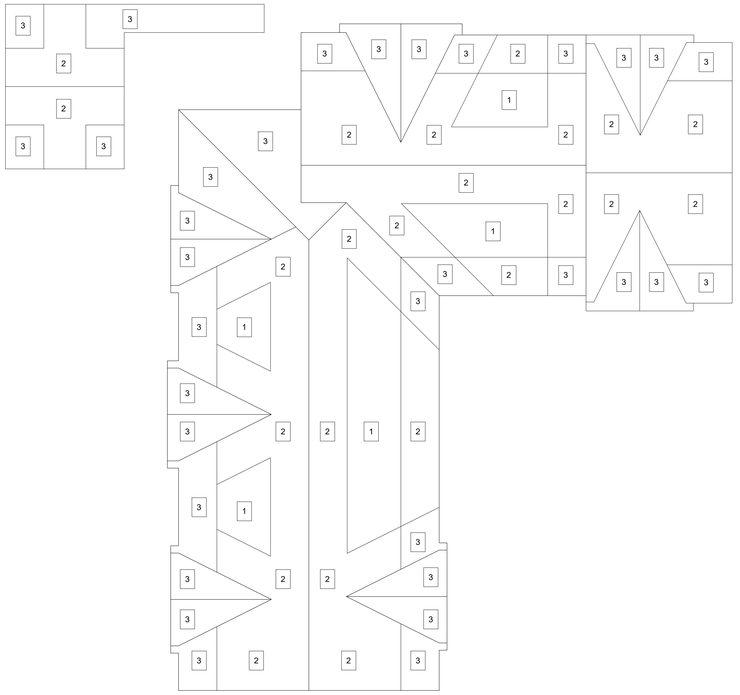
2. COMPLY WITH APPLICABLE REQUIREMENTS IN AF&PA'S "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION." TRUSSES SHALL COMPLY WITH APPLICABLE REQUIREMENTS AND RECOMMENDATIONS OF TPI 1, "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION", TPI DSB, "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES", TPI BCSI, "BUILDING COMPONENT SAFETY INFORMATION: GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING & BRACING METAL PLATE CONNECTED WOOD TRUSSES."

3. METAL CONNECTOR-PLATE MANUFACTURER QUALIFICATIONS: A MANUFACTURER THAT IS A MEMBER OF TPI AND THAT COMPLIES WITH QUALITY CONTROL PROCEDURES IN TPI 1 FOR MANUFACTURE OF CONNECTION PLATES.

4. PROVIDE DELEGATED-DESIGN SUBMITTAL INDICATING COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA CERTIFIED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION. THE METAL PLATE CONNECTED SHALL BE CAPABLE OF WITHSTANDING DESIGN CRITERIA LOADS AND DEFLECTION REQUIREMENTS SPECIFIED ON THE DRAWINGS.

5. PROVIDE SHOP DRAWINGS SHOWING FABRICATION AND INSTALLATION DETAILS FOR TRUSSES. SHOW LOCATION, PITCH, SPAN, CAMBER, CONFIGURATION, AND SPACING FOR EACH TYPE OF TRUSS REQUIRED. SHOW LOCATIONS, SIZES, AND MATERIALS FOR PERMANENT BRACING REQUIRED TO PREVENT BUCKLING OF INDIVIDUAL TRUSS MEMBERS DUE TO DESIGN LOADS. INDICATE TYPE, SIZE, MATERIAL, FINISH, DESIGN VALUES, ORIENTATION, AND LOCATION OF METAL CONNECTOR PLATES.

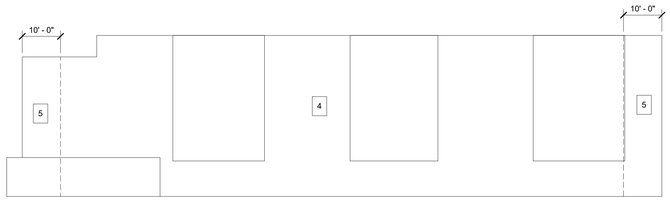
6. PROVIDE PRODUCT DATA FOR WOOD OR FIRE RETARDANT LUMBER, METAL-PLATE CONNECTORS, METAL TRUSS ACCESSORIES AND FASTENERS. PROVIDE INFORMATION REGARDING THE WOOD-PRESERVATIVE AND FIRE-RETARDANT TREATMENT FROM MANUFACTURER AND CERTIFICATION THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS. PROVIDE PRODUCT CERTIFICATES FOR THE TRUSSES SIGNED BY AN OFFICER OF THE TRUSS FABRICATING FIRM.
7. PROVIDE FASTENERS FOR USE WITH METAL FRAMING ANCHORS THAT COMPLY WITH WRITTEN RECOMMENDATIONS FROM THE MANUFACTURER. WHERE TRUSSES ARE EXPOSED TO WEATHER, IN GROUND CONTACT, MADE FROM PRESSURE PRESERVATIVE TREATED WOOD OR IN AN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HIT-DIP ZINC COATING COMPLYING WITH ASTM A153. NAILS, BRADS AND STAPLES SHALL COMPLY WITH ASTM F 1667.
8. INSTALL WOOD TRUSSES ONLY AFTER SUPPORTING CONSTRUCTION IS IN PLACE AND IS BRACED AND SECURED. INSTALL AND BRACE TRUSSES PLUMB, SQUARE, AND TRUE TO LINE AND SECURELY FASTEN TO SUPPORTING CONSTRUCTION IN ACCORDANCE WITH TPI RECOMMENDATIONS. DO NOT ALTER TRUSSES IN THE FIELD. DO NOT CUT, DRILL, NOTCH OR REMOVE TRUSS MEMBERS. REPLACE WOOD TRUSSES THAT ARE DAMAGED OR DO NOT MEET REQUIREMENTS.



1 S001 ROOF UPLIFT PLAN
1/16" = 1'-0"

ROOF WIND PRESSURE, 27° - 45°				
ZONE	< OR = 10 FT²	20 FT²	50 FT²	100 FT²
1	27.5	26.4	24	22.9
2	32.2	31.0	28.7	27.5
3	32.2	31.0	28.7	27.5

1. POSITIVE VALUES DENOTE DOWNWARD WIND PRESSURE. NEGATIVE VALUES DENOTE UPLIFT WIND PRESSURE.
2. INTERPOLATION IS ALLOWED
3. DL TO BE USED FOR JOIST UPLIFT CALCULATIONS 5 PSF PLUS JOIST SELF WEIGHT.



EAST VIEW

SOUTH VIEW

2 S001 WALL WIND PRESSURE
1/16" = 1'-0"

WALL WIND PRESSURE, 27° - 45°					
ZONE	20 FT²	50 FT²	100 FT²	200 FT²	> OR = 500 FT²
4	28.7	27.1	25.7	24.5	22.9
5	34.5	31.0	28.7	26.1	22.9

1. POSITIVE VALUES DENOTE DOWNWARD WIND PRESSURE. NEGATIVE VALUES DENOTE UPLIFT WIND PRESSURE.
2. INTERPOLATION IS ALLOWED.
3. DL TO BE USED FOR JOIST UPLIFT CALCULATIONS 5 PSF PLUS JOIST SELF WEIGHT.

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I hereby cetify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licened Engineer under the laws of the state of Minnesota.

Signed: Yendranata
Name: Yendranata
License No.: 40876

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE
06/19/2020
PHASE
CONSTRUCTION DOCUMENTS
PROJECT
20.033.00
SHEET
S001
GENERAL STRUCTURAL NOTES CONT.

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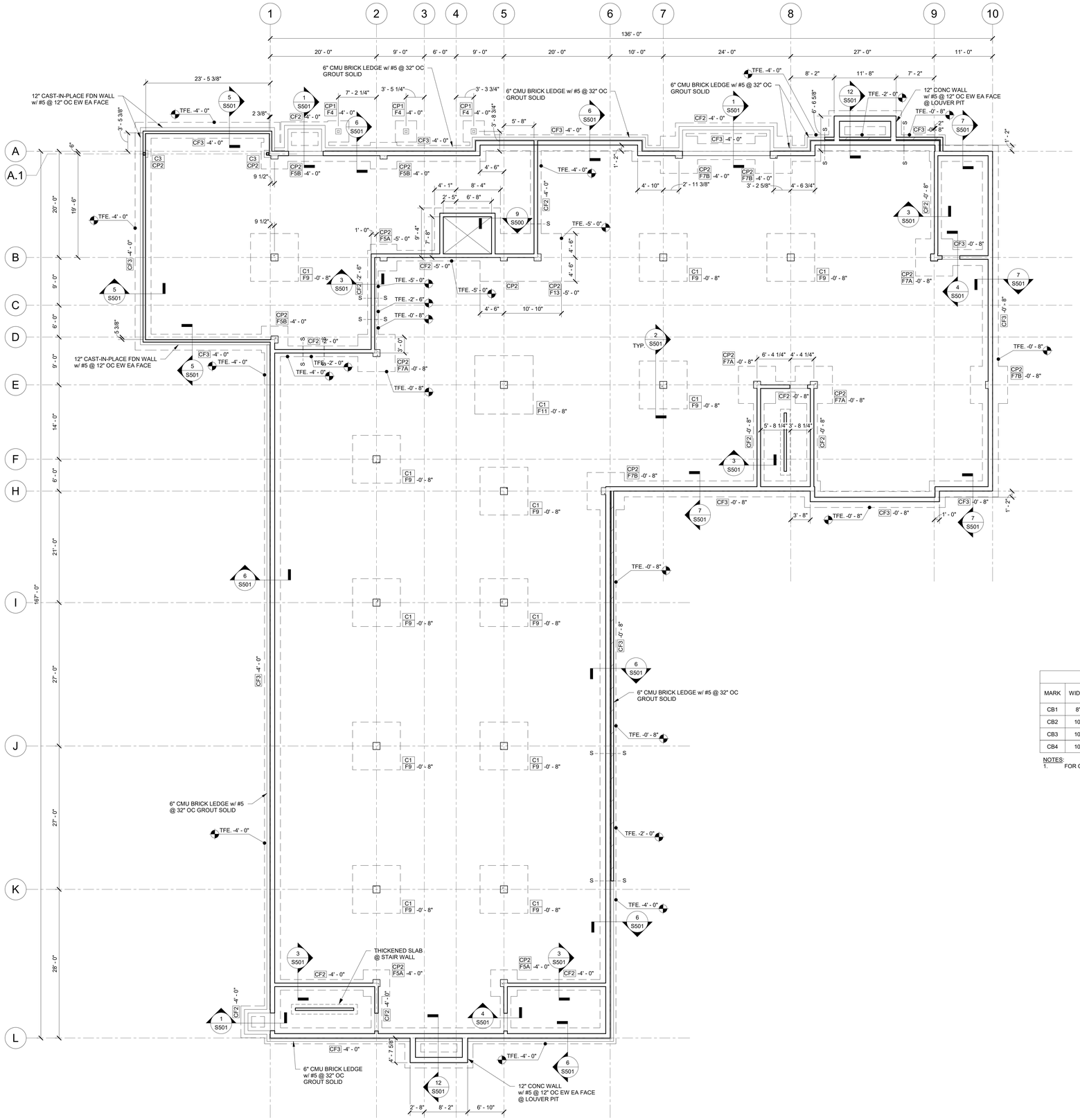

1 S100 FOUNDATION PLAN
1/8" = 1'-0"

FOOTING & FOUNDATION PLAN NOTES: (TYPICAL UNO)

1. TOP OF CONCRETE FLOOR EL. 0'-0" DATUM EL. 1143.00'.
2. TOP OF INTERIOR COLUMN PAD FOOTINGS TO BE EL. -0'-8", TOP OF EXTERIOR COLUMN & CONTINUOUS STRIP FOOTINGS TO BE EL. SEE PLAN.
3. S------S INDICATES STEP FOOTING LOCATIONS, SEE DETAIL 2 / S500
4. C.J. INDICATES SLAB CONTROL JOINT PATTERN, TO BE MAX. 15'x15' PATTERN. SEE 10 / S500 FOR TYPICAL SLAB CONSTRUCTION JOINT DETAIL.
5. FOR COLUMN ISOLATION JOINT SEE DTL 11 / S500 .
6. F1, CF1, P1, CP1 & C1 INDICATE FOOTINGS, CONTINOUS FOOTING, PIER, CONC. PILASTER & COLUMN DESIGNATIONS, SEE SCHEDULES.
7. CONCRETE SLAB ON GRADE TO BE 5" w/ (6x6-W2.9 x W2.9 WWF) OVER COMPACTED GRANULAR BASE. (SEE SOILS REPORT).
8. FOR CONC SLAB REINFORCING SEE DETAILS 13 / S500 & 14 / S500 .
9. EXTERIOR FOUNDATION WALL TO BE 10" CAST-IN-PLACE w/ #5 @ 12" OC EW. EA FACE INTERIOR CONC. WALLS TO BE 8" CAST-IN-PLACE w/ #5 @ 16" OC VERT & #5 @ 12" OC HORIZ.
10. SEE 4 / S500 - 7 / S500 FOR FOUNDATION WALL REINFORCING DETAILS.
11. SEE 1 / S500 & 2 / S500 FOR FOOTING REINFORCING DETAILS.
12. CONTRACTOR TO VERIFY FOUNDATION ELEVATIONS AND STEP LOCATIONS WITH FINAL GRADES.
13. PILASTER OR PIERS SHOWN WITHIN CONC. WALLS ARE TO EXTEND FROM BEAM/GIRDER BEARING TO TOP OF FTG. OR FOUNDATION WALL PILASTER.
14. SEE 3 / S500 FOR MEP PIPE SLEEVES UNDER FOOTING & FOUNDATION DETAILS.
15. SEE 8 / S500 FOR CONCRETE WALL OPENING DETAIL.
16. SEE 15 / S500 FOR HOUSEKEEPING PAD @ SLAB ON GRADE.
17. SEE 12 / S500 FOR SLAB ON GRADE OPEINING & CORNER REINFORCING DETAILS.
18. SEE 16 / S500 - 19 / S500 FOR CMU/BOND BEAM REINF, LOW LIFT GROUT & REBAR POSITIONEERS SECTIONS & DETAILS.
19. SEE MECHANICAL & ELECTRICAL PLANS FOR ANY & ALL LOCATIONS OF SLEEVED OPENINGS IN FOUNDATION WALLS.
20. GENERAL CONTRACTOR TO FIELD VERIFY ALL EXISTING STRUCTURE DIMENSIONS, ELEVATIONS, CONDITIONS, ETC., PRIOR TO COMMENCING WORK OF ADDING NEW STRUCTURE OR CONNECTING TO EXISTING STRUCTURE. IF ANY OF THESE ARE DIFFERENT FROM SHOWN HERE OR IN DETAILS, CONTACT ENGINEER FOR REVIEW. COMMENTS OR REDESIGN IF NECESSARY.

CONCRETE FOOTING SCHEDULE

MARK	LENGTH	WIDTH	THICKNESS	REINFORCING	REMARKS
CF2		2' - 0"	1' - 6"	(2) #5 CONT	
CF3		3' - 0"	2' - 0"	(3) #5 CONT & #4 TRANS @ 4'-0" OC	
F4	4' - 0"	4' - 0"	1' - 6"	(5) #5 EW BOT	
F5A	5' - 0"	5' - 0"	1' - 6"	(6) #5 EW BOT	
F5B	5' - 0"	5' - 0"	2' - 0"	(6) #5 EW BOT	
F7A	7' - 0"	7' - 0"	1' - 6"	(9) #5 EW BOT	
F7B	7' - 0"	7' - 0"	2' - 0"	(9) #5 EW BOT	
F9	9' - 0"	9' - 0"	1' - 6"	(8) #8 EW BOT	
F11	11' - 0"	11' - 0"	2' - 0"	(10) #8 EW BOT	
F13	13' - 10"	23' - 11"	2' - 0"		SEE PLAN

PRECAST/STEEL COLUMN SCHEDULE

MARK	SIZE	BASE PLATE TYPE	ANCHOR BOLT	REMARKS
C1	16 x 16 PRE-CAST			
C2	HSS5X5X1/2	3/4"x12"x1'-0"	4 - 3/4"x8"	EPOXY/GROUT. SEE 14/S711
C3	PSL 5 1/4 x 5 1/4	SIMPSON ABA66Z		PACK w/ HIGH STRENGTH GROUT UNDER 1" STANDOFF
CP1	12 x 12 CAST-IN-PLACE			(4) #5 VERT BAR & #4 STIRRUPS @ 12" OC
CP2	16 x 16 CAST-IN-PLACE			(4) #8 VERT & #4 STIRRUPS @ 16" OC. (3) #4 STIRRUPS @ 3" OC T&B

CIP CONCRETE EXTERIOR OPENING SCHEDULE

MARK	WIDTH	DEPTH	TOP LONG REINF	BOT LONG REINF	TYP STIRRUPS	STIRRUPS @ ENDS	DISTANCE FROM BEAM END FOR END STIRRUPS	REMARKS
CB1	8"	23"	(2) #5	2 ROWS OF (2) #5	NOT REQ	NOT REQ	N/A	INTERIOR OPENINGS
CB2	10"	11"	(2) #5	2 ROWS OF (2) #5	NOT REQ	NOT REQ	N/A	MAN DOOR @ L.1
CB3	10"	23"	(2) #5	2 ROWS OF (2) #5	#3 @ 10" OC	#3 @ 6" OC	2'-0" (SEE NOTES BELOW)	OPENINGS BTWN 3'-0" TO 7'-0" EXT
CB4	10"	37"	(2) #5	2 ROWS OF (3) #5	#3 @ 10" OC	#3 @ 4" OC	2'-0"	OPENINGS GREATER THAN 7'-0" @ EXT

NOTES:
1. FOR CB3 STIRRUPS ARE ONLY REQUIRED FOR LINTELS GREATER THAN 5'-0".

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I hereby cetify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licened Engineer under the laws of the state of Minnesota.

Signed: Yendranata
Name: Yendranata
License No.: 40876

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE 06/19/2020
PHASE CONSTRUCTION DOCUMENTS
PROJECT 20.033.00
SHEET S100
FOOTING & FOUNDATION PLAN

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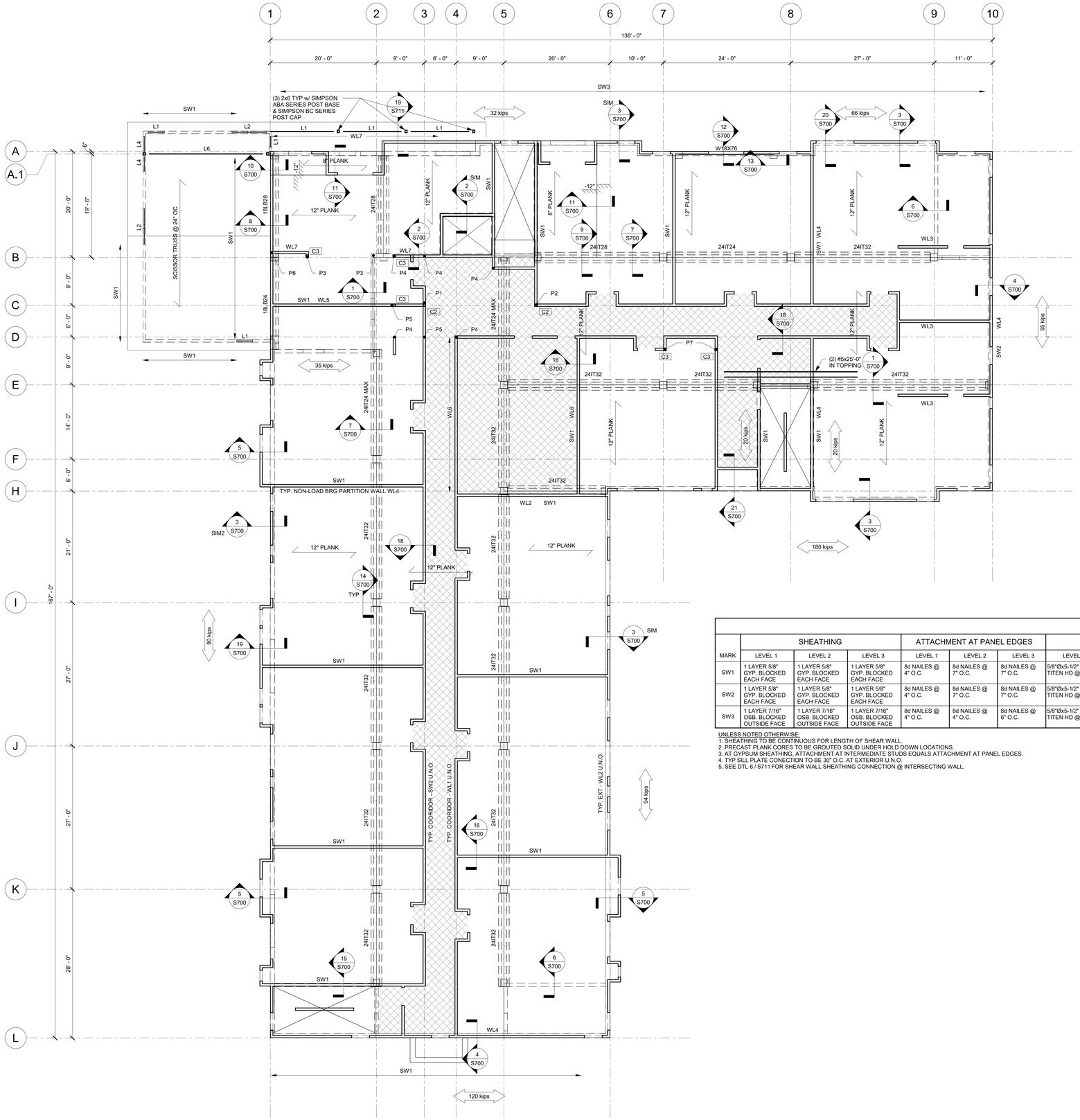

1 S101 LVL 1 FRAMING PLAN
1/8" = 1'-0"

FIRST FLOOR FRAMING PLAN NOTES: (TYPICAL UNO)

1. TOP OF 2" TOPPING AT NOMINAL EL. 10'-5". TOP OF PLANK EL = 10'-3" (UNO).
2. TOPPING TO BE NORMAL WEIGHT CONCRETE, REINFORCED w/ 6x6-W2.9xW2.9 WWF CENTERED IN TOPPING.
3. DESIGN OF PRECAST MEMBERS AND CONNECTIONS SHALL INCLUDE LOADING AND RESTRAINT CONDITIONS FROM INITIAL FABRICATION TO END USE INCLUDING FORM REMOVAL, STORAGE, FABRICATION AND ERECTION.
4. DESIGN OF ALL PRECAST ELEMENTS AND CONNECTIONS INCLUDING CONNECTION DETAILS BETWEEN PRECST CONCRETE AND CAST-IN-PLACE CONCRETE, PRECAST TO PRECAST AND ANY STEEL MEMBERS ARE THE RESPONSIBILITY OF THE PRECAST SUPPLIER.
5. STRUCTURE IS UNSTABLE UNTIL ALL CONNECTIONS ARE COMPLETE.
6. LOCATION AND SPACING OF TEMPORARY SHORES TO BE DETERMINED BY THE COORDINATED EFFORTS OF THE CONTRACTOR AND SUPPLIER.
7. ALL STEEL MEMBERS TO BE A572 - GRADE 50 UNO.
8. UNO ALL NON-CONTINUOUS BEAMS TO HAVE SHEAR CONNECTIONS DESIGNED BY THE FABRICATOR. SEE STRUCTURAL NOTES FOR BOLT SIZE & QUANTITY.
9. GENERAL CONTRACTOR TO VERIFY SIZE, LOADING AND LOCATION OF ALL MECHANICAL UNITS.
10. LX ON PLAN INDICATES LINTELS, SEE LINTEL SCHEDULE FOR SIZE AND REINFORCING.
11. XX kips — DENOTES IN-PLANE SHEAR WALL LFRD LOAD DUE TO WIND AND LATERAL EARTH EARTH PRESSURES. PRECASTER TO DESIGN DIAPHRAGM CAPABLE TO DELIVER SHEAR LOADS TO SHEAR WALLS.
12. CONTRACTOR TO FIELD VERIFY ALL EXISTING STRUCTURE DIMENSIONS, ELEVATIONS, CONDITIONS, ETC., PRIOR TO COMMENCING WORK OF ADDING NEW STRUCTURE OR CONNECTING TO EXISTING STRUCTURE. IF ANY OF THESE ARE DIFFERENT FROM SHOWN HERE OR IN DETAILS, CONTACT ENGINEER FOR REVIEW, COMMENTS OR REDESIGN IF NECESSARY.

WALL LOAD AND POINT LOAD SCHEDULE

MARK	DEAD LOAD	FLOOR LIVE LOAD	SNOW LOAD	COMMENTS
WL1	2.3 KLF	1.8 KLF	0.9 KLF	
WL2	2.1 KLF	1.5 KLF	0.9 KLF	
WL3	1.5 KLF	0.7 KLF	0.8 KLF	
WL4	0.5 KLF	0.3 KLF	0.3 KLF	
WL5	0.8 KLF	1.1 KLF	0.2 KLF	
WL6	1.2 KLF	3.1 KLF	0.2 KLF	
WL7	1.3 KLF	1.7 KLF	0.9 KLF	
P1	5K	10K	3K	
P2	20K	17K	7K	
P3	8K	12K	6K	NON-REDUCIBLE
P4	3.5K	6K		
P5	6K	10K		
P6	9K	4K	10K	
P7	11.5K	9K	4.5K	

UNLESS NOTED OTHERWISE:
1. POINT LOADS AT EA SIDE OF OPENING IS WALL LOAD LISTED ABOVE MULTIPLIED BY 1/2 THE WIDTH OF THE OPENING.
2. LOADS ARE REDUCIBLE PER ASCE 7.

SUPERIMPOSED UNIFORM LOAD TABLE

MARK	DEAD LOAD (PSF)	LIVE LOAD (PSF)	COMMENTS
1	2" TOPPING + 20 PSF	40 PSF	
2	2" TOPPING + 20 PSF	100 PSF	PUBLIC SPACE

WOOD SHEAR WALL SCHEDULE

MARK	SHEATHING			ATTACHMENT AT PANEL EDGES			SILL PLATE CONNECTION			END OF WALL JAMBS			HOLD DOWN			END VERT FORCE
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 1	LEVEL 2	LEVEL 3	
SW1	1 LAYER 5/8" GYP. BLOCKED EACH FACE	1 LAYER 5/8" GYP. BLOCKED EACH FACE	1 LAYER 5/8" GYP. BLOCKED EACH FACE	8d NAILES @ 4" O.C.	8d NAILES @ 7" O.C.	8d NAILES @ 7" O.C.	5/8"Øx5-1/2" SIMPSON TITEN HD @ 30" O.C.	(2) 10d NAILS @ 6" O.C.	(2) 10d NAILS @ 12" O.C.	(3) 2x6	(3) 2x6	(2) 2x6	SIMPSON HDU2 - SDS2.5	SIMPSON CS16	SIMPSON CS16	-2K/+8K
SW2	1 LAYER 5/8" GYP. BLOCKED EACH FACE	1 LAYER 5/8" GYP. BLOCKED EACH FACE	1 LAYER 5/8" GYP. BLOCKED EACH FACE	8d NAILES @ 4" O.C.	8d NAILES @ 7" O.C.	8d NAILES @ 7" O.C.	5/8"Øx5-1/2" SIMPSON TITEN HD @ 48" O.C.	(2) 10d NAILS @ 12" O.C.	(2) 10d NAILS @ 12" O.C.	(5) 2x6	(4) 2x6	(3) 2x6	N/A	N/A	N/A	+18K
SW3	1 LAYER 7/16" OSB. BLOCKED OUTSIDE FACE	1 LAYER 7/16" OSB. BLOCKED OUTSIDE FACE	1 LAYER 7/16" OSB. BLOCKED OUTSIDE FACE	8d NAILES @ 4" O.C.	8d NAILES @ 4" O.C.	8d NAILES @ 6" O.C.	5/8"Øx5-1/2" SIMPSON TITEN HD @ 24" O.C.	(2) 10d NAILS @ 6" O.C.	(2) 10d NAILS @ 6" O.C.	(3) 2x6	(3) 2x6	(2) 2x6	SIMPSON HDU2 - SDS2.5	SIMPSON CS16	SIMPSON CS16	+11K

UNLESS NOTED OTHERWISE:
1. SHEATHING TO BE CONTINUOUS FOR LENGTH OF SHEAR WALL.
2. PRECAST PLANK CORES TO BE GROUTED SOLID UNDER HOLD DOWN LOCATIONS.
3. AT GYPSUM SHEATHING, ATTACHMENT AT INTERMEDIATE STUDS EQUALS ATTACHMENT AT PANEL EDGES.
4. TYP SILL PLATE CONECTION TO BE 30" O.C. AT EXTERIOR U.N.O.
5. SEE DTL 6 / S711 FOR SHEAR WALL SHEATHING CONNECTION @ INTERSECTING WALL.

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Signed: Yendranata
Name: Yendranata
License No.: 40876

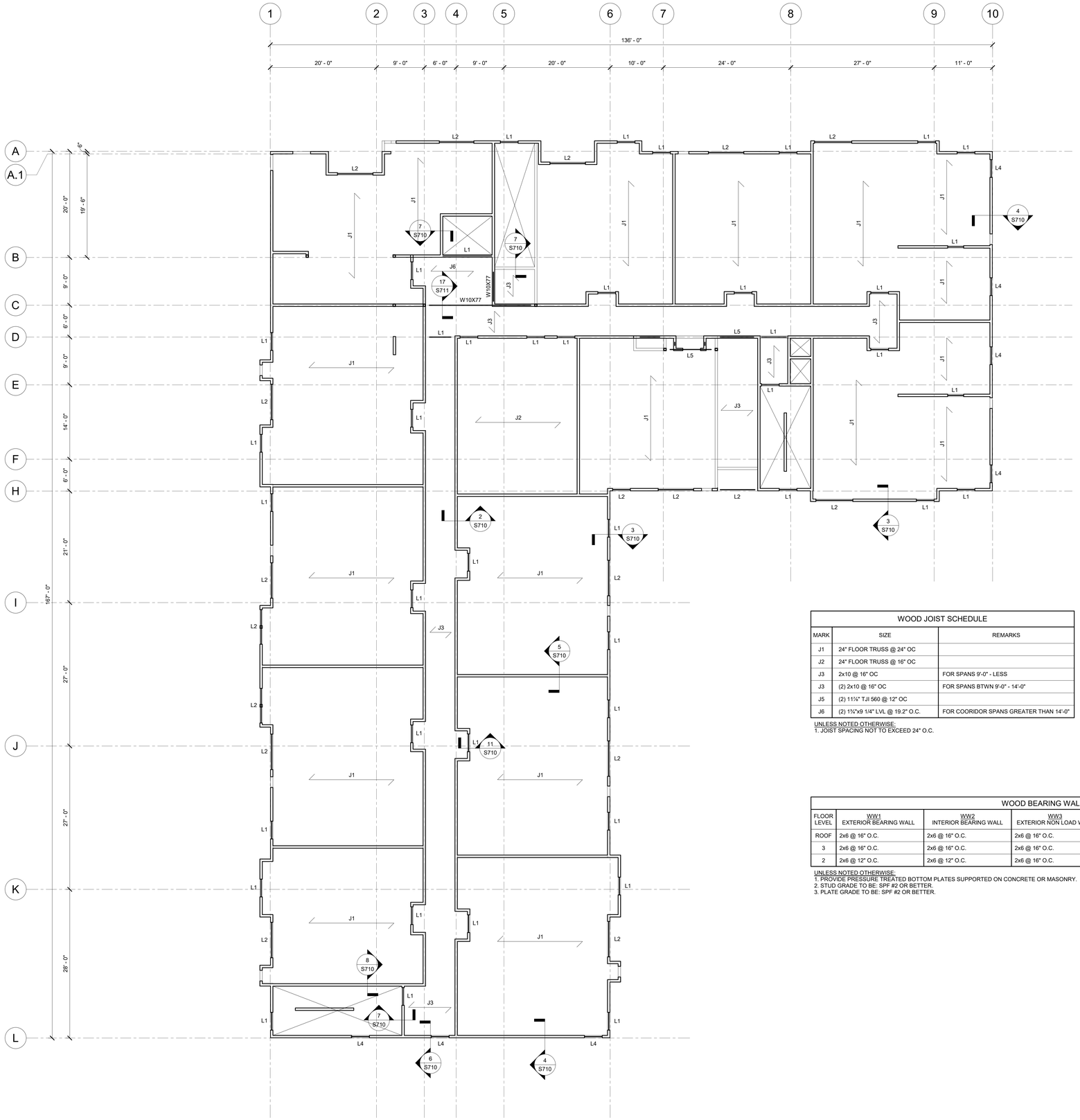
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE 06/19/2020
PHASE CONSTRUCTION DOCUMENTS
PROJECT 20.033.00
SHEET **S101**
LEVEL 1 FRAMING PLAN

6/19/2020 2:21:54 PM



1 S102 LVL 2 FRAMING PLAN
1/8" = 1'-0"

WOOD FRAMING PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SUBFLOOR ELEVATIONS.
2. SUBFLOOR SHALL CONSIST OF 3/4" TONGUE AND GROOVE APA RATED PLYWOOD/OSB GLUED AND SCREWED. ATTACH SUBFLOOR TO SUPPORT FRAMING MEMBERS PER TYPICAL WOOD FLOOR DIAPHRAGM DETAIL 19 / S710. SEE ARCH. FOR 3/4" GYPCRETE TOPPING OVER PLYWOOD.
3. FOR NAIL CONNECTIONS FOR WOOD ELEMENTS, SEE IBC TABLE 7304.9.1 WOOD FASTENING SCHEDULE.
4. VERIFY SIZE, LOCATION AND NUMBER OF ALL OPENINGS THROUGH FLOOR WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
5. MECHANICAL AND ELECTRICAL CONTRACTORS SHALL DESIGN THEIR SYSTEMS TO ACCOMMODATE VERTICAL SHRINKAGE OF THE STRUCTURE NOT TO EXCEED 3/8" PER FLOOR AT WOOD LEVELS.
6. SEE PLANS FOR WOOD SHEAR WALLS (SW), WOOD BEARING WALLS (WW), WOOD JOIST(J) & WOOD LINTELS (L) SCHEDULES. SEE PLANS FOR MARK DESIGNATIONS.
7. WOOD MEMBERS SHOWN ON PLAN ARE BELOW SUBFLOOR FOR EACH LEVEL.
8. SEE SHEET 20 / S700 FOR WOOD WALL HOLD DOWN AND WOOD POST BEARING LOCATIONS AND DETAILS.
9. SEE DETAIL 1 / S710 FOR TYPICAL HEADER OPENING FRAMING.
10. SEE DETAIL 4 / S711 & 5 / S711 FOR VERTICAL STUD & JOIST NOTCHES/BORING GUIDE.
11. XXK DENOTES SERVICE LOAD REACTION TO BE RESISTED BY THE PRECAST WALL PANEL, BEAM SPLICE OR BEAM TO COLUMN CONNECTION. REACTION IS THE SAME AT BOTH ENDS UNO.
12. W24x62 (pc1") — INDICATES CAMBER.
13. KIPS ON PLAN, INDICATES ADDITIONAL HORIZONTAL SHORT TERM AXIAL SERVICE LOAD TO BE RESISTED BY MEMBER AND MEMBER CONNECTION. FORCE IS SHOWN IN KIPS AND OCCURS IN EITHER DIRECTION.
14. CONTRACTOR TO FIELD VERIFY ALL EXISTING STRUCTURE DIMENSIONS, ELEVATIONS, CONDITIONS, ETC., PRIOR TO COMMENCING WORK OF ADDING NEW STRUCTURE OR CONNECTING TO EXISTING STRUCTURE. IF ANY OF THESE ARE DIFFERENT FROM SHOWN HERE OR IN DETAILS, CONTACT ENGINEER FOR REVIEW. COMMENTS OR REDESIGN IF NECESSARY.

WOOD JOIST SCHEDULE

MARK	SIZE	REMARKS
J1	24" FLOOR TRUSS @ 24" OC	
J2	24" FLOOR TRUSS @ 16" OC	
J3	2x10 @ 16" OC	FOR SPANS 9'-0" - LESS
J3	(2) 2x10 @ 16" OC	FOR SPANS BTWN 9'-0" - 14'-0"
J5	(2) 1¾" TJI 560 @ 12" OC	
J6	(2) 1¾"x9 1/4" LVL @ 19.2" O.C.	FOR COORIDOR SPANS GREATER THAN 14'-0"

UNLESS NOTED OTHERWISE:
1. JOIST SPACING NOT TO EXCEED 24" O.C.

WOOD LINTEL SCHEDULE

MARK	LINTEL SIZE	LEVEL 2 JACK STUDS	LEVEL 2 KING STUDS	LEVEL 3 JACK STUDS	LEVEL 3 KING STUDS	ROOF JACK STUDS	ROOF KING STUDS	REMARKS
L1	(3) 2x10	3	2	2	1	2	1	CORRIDOR
L2	(2) 1 3/4"x11 7/8" LVL	4	2	3	2	2	2	EXT WALL 4'-0" - 8'-0"
L3	(3) 1 3/4"x24" LVL							TO 5¼ x 5¼ PSL
L4	(2) 2x10	2	1	2	1	2	1	
L5	(3) 1 3/4"x9 1/4" LVL	3	2	2	2	2	2	
L6	(4) 1 3/4"x20" LVL							TO 5¼ x 5¼ PSL

UNLESS NOTED OTHERWISE:
1. SEE DETAIL 1 / S710 FOR TYPICAL WALL OPENING HEADER DETAIL.
2. AT LOCATIONS WHERE HEADERS DO NOT STACK, ADD POST MATCHING JACK AND KING STUD SIZE AND QUANTITY UNDER JACK AND KING STUDS.
3. PROVIDE SOLID VERTICAL BLOCKING AT ALL FLOORS AT ALL POST LOCATIONS.
4. BEAR LINTELS ON FULL WIDTH OF JACK STUDS.

WOOD BEARING WALL SCHEDULE

FLOOR LEVEL	WW1 EXTERIOR BEARING WALL	WW2 INTERIOR BEARING WALL	WW3 EXTERIOR NON LOAD WALL	WW4 INTERIOR NON LOAD WALL	
ROOF	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	
3	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	
2	2x6 @ 12" O.C.	2x6 @ 12" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	

UNLESS NOTED OTHERWISE:
1. PROVIDE PRESSURE TREATED BOTTOM PLATES SUPPORTED ON CONCRETE OR MASONRY.
2. STUD GRADE TO BE: SPF #2 OR BETTER.
3. PLATE GRADE TO BE: SPF #2 OR BETTER.

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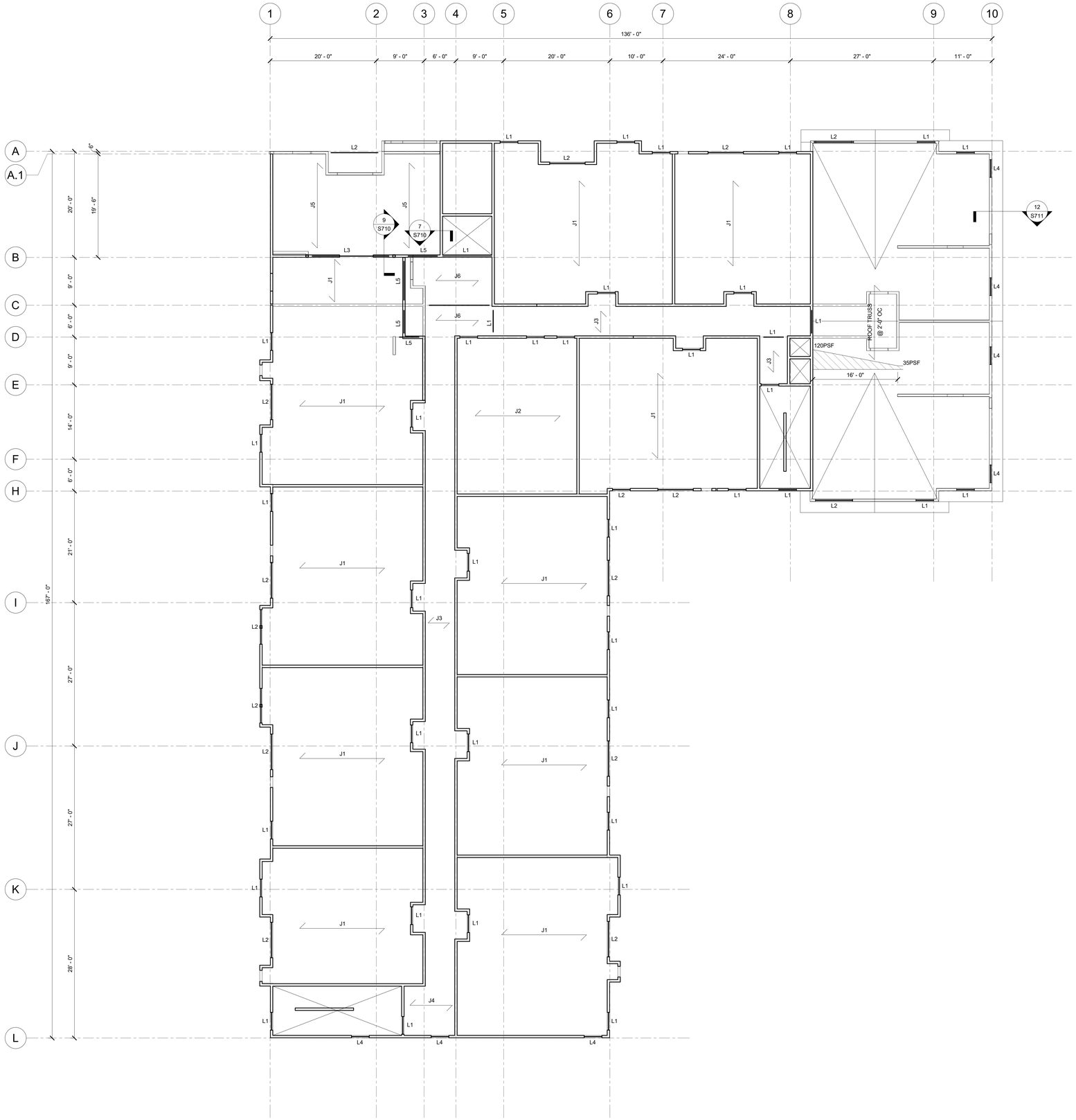
PROJECT 20.033.00
SHEET **S102**
LEVEL 2 FRAMING PLAN

6/19/2020 2:21:54 PM



1 S103 LVL 3 FRAMING PLAN
1/8" = 1'-0"

WOOD FRAMING PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SUBFLOOR ELEVATIONS.
2. SUBFLOOR SHALL CONSIST OF 3/4" TONGUE AND GROOVE APA RATED PLYWOOD/OSB GLUED AND SCREWED. ATTACH SUBFLOOR TO SUPPORT FRAMING MEMBERS PER TYPICAL WOOD FLOOR DIAPHRAGM DETAIL 19 / S710. SEE ARCH. FOR 1" GYPCRETE TOPPING OVER PLYWOOD.
3. FOR NAIL CONNECTIONS FOR WOOD ELEMENTS, SEE IBC TABLE 7304.9.1 WOOD FASTENING SCHEDULE.
4. VERIFY SIZE, LOCATION AND NUMBER OF ALL OPENINGS THROUGH FLOOR WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
5. MECHANICAL AND ELECTRICAL CONTRACTORS SHALL DESIGN THEIR SYSTEMS TO ACCOMMODATE VERTICAL SHRINKAGE OF THE STRUCTURE NOT TO EXCEED 3/8" PER FLOOR AT WOOD LEVELS.
6. SEE PLANS FOR WOOD SHEAR WALLS (SW), WOOD BEARING WALLS (WW), WOOD JOIST(J) & WOOD LINTELS (L) SCHEDULES. SEE PLANS FOR MARK DESIGNATIONS.
7. WOOD MEMBERS SHOWN ON PLAN ARE BELOW SUBFLOOR FOR EACH LEVEL.
8. SEE SHEET 20 / S700 FOR WOOD WALL HOLD DOWN AND WOOD POST BEARING LOCATIONS AND DETAILS.
9. SEE DETAIL 1 / S710 FOR TYPICAL HEADER OPENING FRAMING.
10. SEE DETAIL 4 / S711 & 5 / S711 FOR VERTICAL STUD & JOIST NOTCHES/BORING GUIDE.
11. CONTRACTOR TO FIELD VERIFY ALL EXISTING STRUCTURE DIMENSIONS, ELEVATIONS, CONDITIONS, ETC., PRIOR TO COMMENCING WORK OF ADDING NEW STRUCTURE OR CONNECTING TO EXISTING STRUCTURE. IF ANY OF THESE ARE DIFFERENT FROM SHOWN HERE OR IN DETAILS, CONTACT ENGINEER FOR REVIEW. COMMENTS OR REDESIGN IF NECESSARY.

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SHEET **S103**
LEVEL 3 FRAMING PLAN

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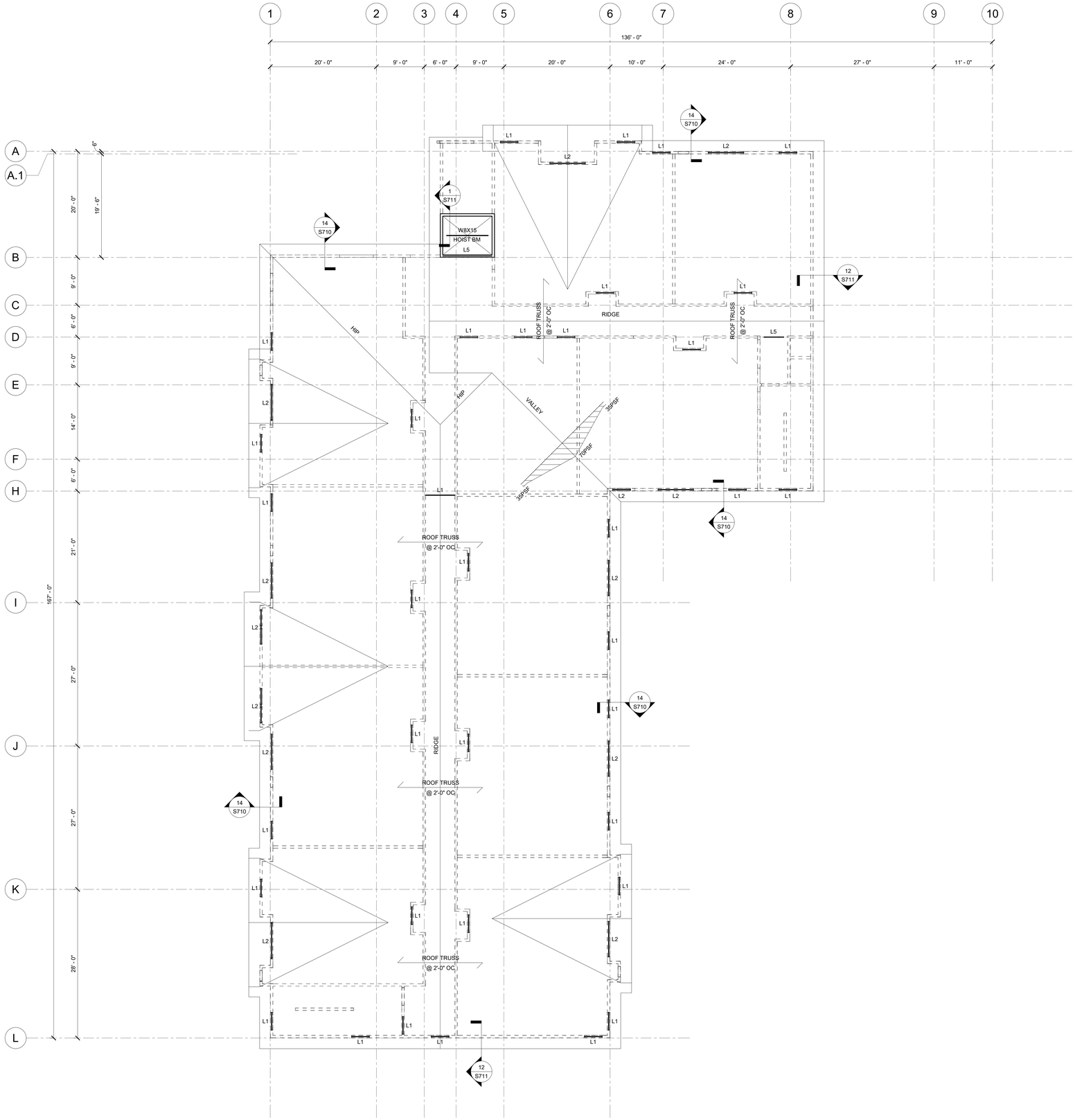

1 S104 ROOF FRAMING PLAN

1/8" = 1'-0"

ROOF WOOD FRAMING PLAN NOTES: (TYPICAL UNO)

1. SEE ARCHITECTURAL DRAWINGS FOR ROOF BEARING ELEVATION.
2. ROOF SHEATHING SHALL CONSIST OF 5/8" APA RATED PLYWOOD/OSB AND NAILED. USE SHEATHING CLIPS AT 24" OC. ATTACH SHEATHING TO SUPPORT FRAMING MEMBERS PER TYPICAL WOOD FLOOR DIAPHRAGM DETAIL 19 / S710.
3. FOR NAIL CONNECTIONS FOR WOOD ELEMENTS, SEE IBC TABLE 7304.9.1 WOOD FASTENING SCHEDULE.
4. VERIFY SIZE, LOCATION AND NUMBER OF ALL OPENINGS THROUGH ROOF WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
5. MECHANICAL AND ELECTRICAL CONTRACTORS SHALL DESIGN THEIR SYSTEMS TO ACCOMMODATE VERTICAL SHRINKAGE OF THE STRUCTURE NOT TO EXCEED 3/8" PER FLOOR AT WOOD LEVELS.
6. SEE PLAN & SHEET XXX FOR WOOD SHEAR WALLS(SWx), WOOD BEARING WALLS(WWx), WOOD JOIST(Jx) & WOOD LINTELS(Lx) SCHEDULES. SEE PLANS FOR MARK DESIGNATIONS.
7. WOOD MEMBERS SHOWN ON PLAN ARE BELOW SUBFLOOR FOR EACH LEVEL.
8. SEE SHEET20 / S700FOR WOOD WALL HOLD DOWN AND WOOD POST BEARING LOCATIONS AND DETAILS.
9. SEE DETAIL - / --- FOR ROOF FALL RESTRAINT ANCHORS IF REQUIRED.
10. SEE DETAIL 1 / S710 FOR TYPICAL HEADER OPENING FRAMING.
11. SEE DETAIL 4 / S711 & 5 / S711 FOR VERTICAL STUD & JOIST NOTCHES/BORING GUIDE.
12. SEE DETAIL - / --- FOR ROOF FALL RESTRAINT ANCHORS.
13. CONTRACTOR TO FIELD VERIFY ALL EXISTING STRUCTURE DIMENSIONS, ELEVATIONS, CONDITIONS, ETC., PRIOR TO COMMENCING WORK OF ADDING NEW STRUCTURE OR CONNECTING TO EXISTING STRUCTURE. IF ANY OF THESE ARE DIFFERENT FROM SHOWN HERE OR IN DETAILS, CONTACT ENGINEER FOR REVIEW. COMMENTS OR REDESIGN IF NECESSARY.

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SHEET **S104**
ROOF FRAMING PLAN

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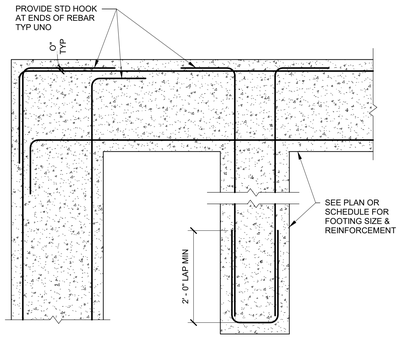
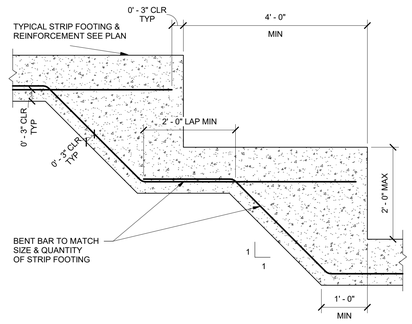
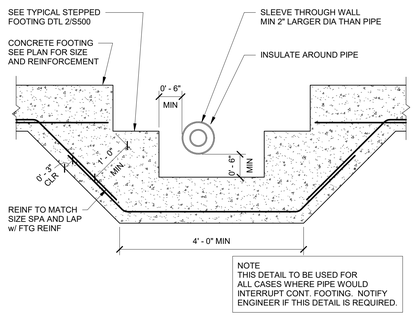


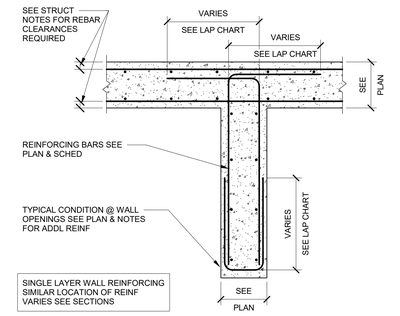
1 S500 DETAIL - CONC FOOTING CORNER OR INTERSECTION
3/4" = 1'-0"



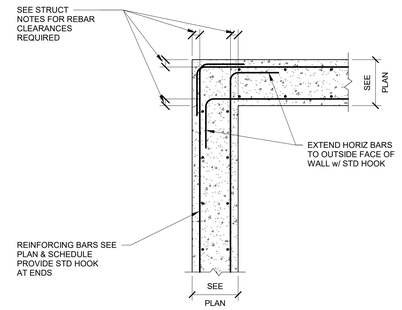
2 S500 SECTION - TYPICAL STEPPED FOOTING
3/4" = 1'-0"



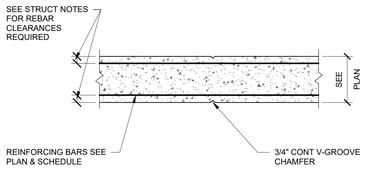
3 S500 SECTION - TYP UTILITY OPENING AT STEPPED FTG
3/4" = 1'-0"



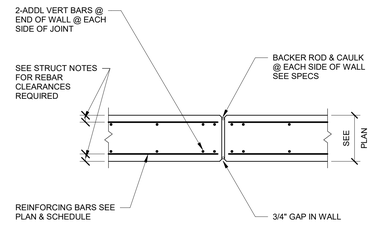
4 S500 SECTION - CONCRETE WALL INTERSECTION REINFORCING
3/4" = 1'-0"



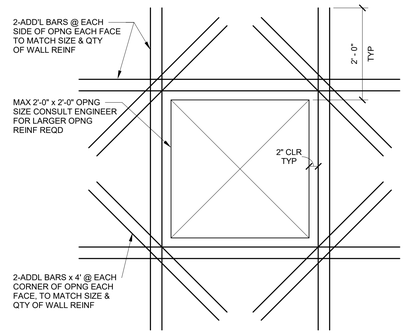
5 S500 SECTION - CONCRETE WALL REINFORCING AT CORNER
3/4" = 1'-0"



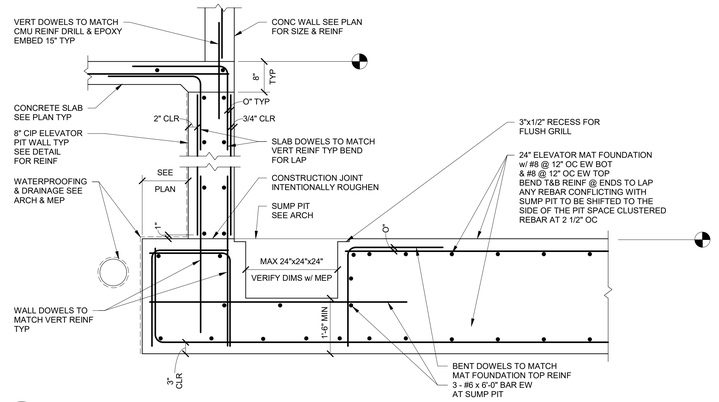
6 S500 SECTION - CONCRETE WALL VERTICAL CONTROL JOINT
3/4" = 1'-0"



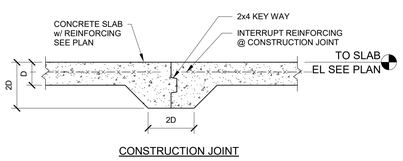
7 S500 SECTION - CONCRETE WALL VERTICAL EXPANSION JOINT
3/4" = 1'-0"



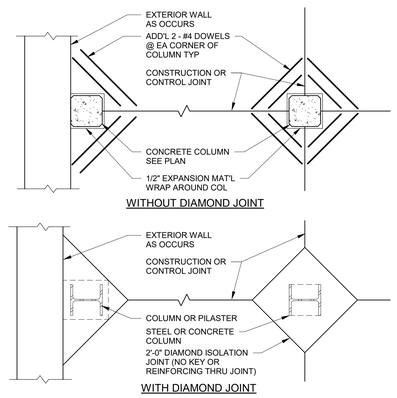
8 S500 DETAIL - CONCRETE WALL OPENING REINFORCING
3/4" = 1'-0"



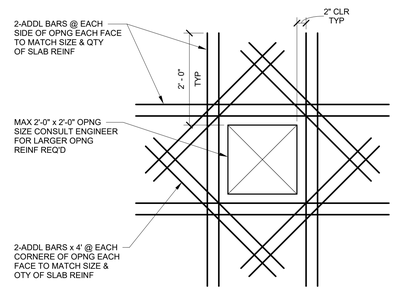
9 S500 SECTION - ELEVATOR PIT SUMP AT MAT FOUNDATION
3/4" = 1'-0"



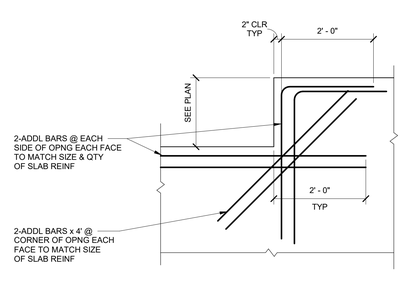
10 S500 SECTION - SLAB ON GRADE CONTROL & CONST JT
3/4" = 1'-0"



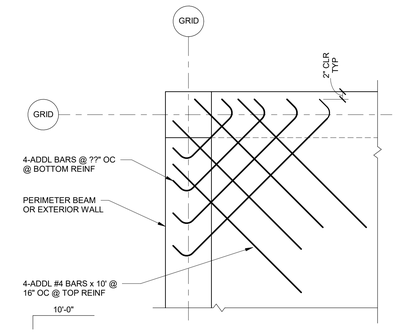
11 S500 DETAIL - COLUMN ISOLATION JOINT
3/4" = 1'-0"



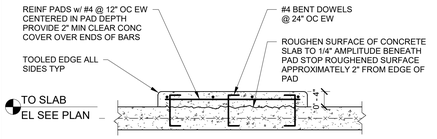
12 S500 DETAIL - CONCRETE SLAB OPENING REINFORCING
3/4" = 1'-0"



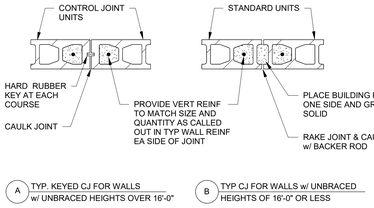
13 S500 DETAIL - ADDL SLAB REINFORCING @ RE-ENTRANT CORNER
3/4" = 1'-0"



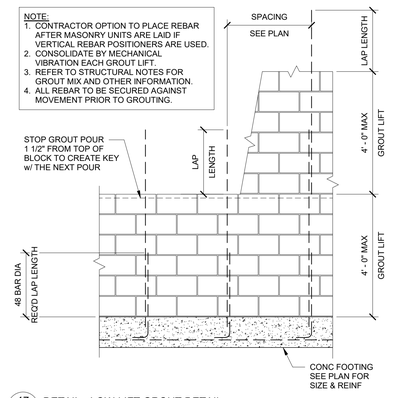
14 S500 DETAIL - ADDL SLAB REINFORCING @ EXTERIOR CORNER
3/4" = 1'-0"



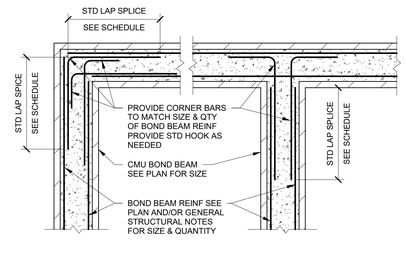
15 S500 SECTION - EQUIPMENT HOUSEKEEPING PAD
3/4" = 1'-0"



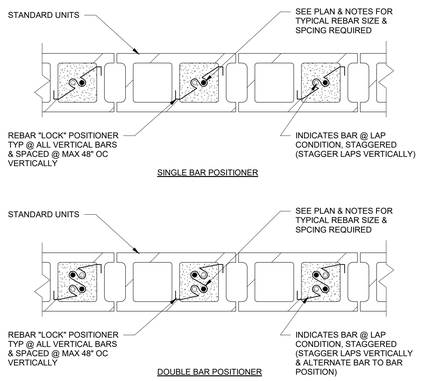
16 S500 DETAIL - TYP MASONRY WALL CONTROL JOINT
3/4" = 1'-0"



17 S500 DETAIL - LOW LIFT GROUT DETAIL
1/2" = 1'-0"



18 S500 DETAIL - TYP BOND BEAM REINFORCING
3/4" = 1'-0"



19 S500 DETAIL-TYP MASONRY WALL REINFORCMENT POSITIONERS
1 1/2" = 1'-0"

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Ph. 651.292.1125 Fax. 651.292.9065
14368 Creosote Road
Gulfport, Mississippi 39503
Ph. 228.868.0771 Fax. 228.868.0772

I hereby cetify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licened Engineer under the laws of the state of Minnesota.

Signed: Yendranata
Name: Yendranata
License No.: 40876

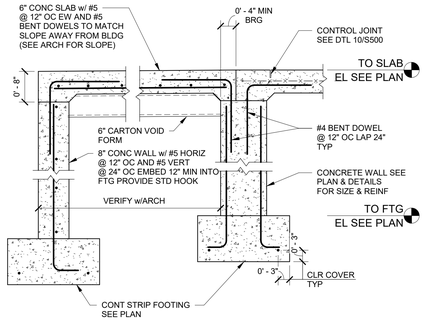
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

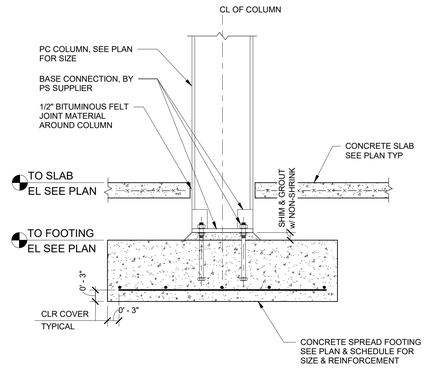
LWO DEVELOPMENT, LLC
# EASTGATE APARTMENTS
OWATONNA, MN

DATE 06/19/2020
PHASE CONSTRUCTION DOCUMENTS
PROJECT 20.033.00
SHEET **S500**
FOUNDATION SECTIONS & DETAILS

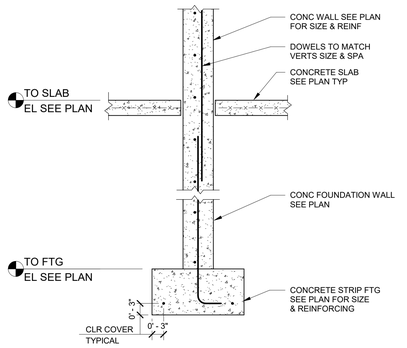
6/19/2020 2:21:58 PM



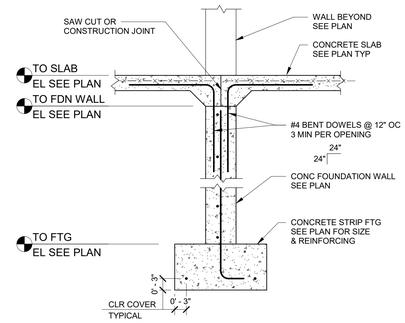
1 S501 SECTION - TYP CONCRETE STOOP (CONC STOOP WALL)
3/4" = 1'-0"



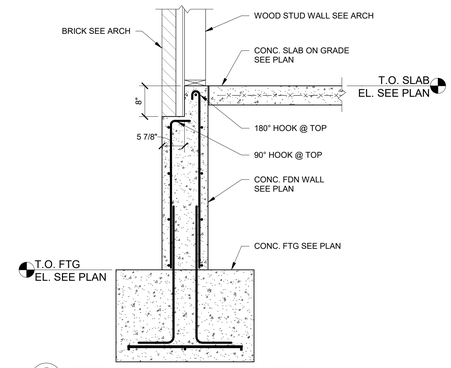
2 S501 SECTION - INTERIOR PC COLUMN SPREAD FOOTING
3/4" = 1'-0"



3 S501 SECTION - TYPICAL FOUNDATION WALL AT INTERIOR CONC WALL
3/4" = 1'-0"



4 S501 SECTION - OPENING AT INTERIOR CONC WALL
3/4" = 1'-0"



5 S501 SECTION - CONC. FDN WALL w/ BRICK LEDGE
3/4" = 1'-0"

6 S501 SECTION - TYP. FDN WALL w/ CMU BRICK LEDGE
3/4" = 1'-0"

7 S501 SECTION - CONC. FDN WALL
3/4" = 1'-0"

8 S501 SECTION - TRASH ENCLOSURE w/ PIER
3/4" = 1'-0"

9 S501 SECTION - TRASH ENCLOSURE
3/4" = 1'-0"

10 S501 SECTION - TRASH ENCLOSURE @ OPENING
3/4" = 1'-0"

SECTION

DEVELOPMENT LENGTH SCHEDULE		
TOP BAR		
SIZE	DEVELOPMENT LENGTH	ALT HOOK LENGTH
#5	36"	14"
TOP BAR		
#5	27"	14"

11 S501 DETAIL - CONCRETE WALL OPENING REINFORCING & LINTEL
3/4" = 1'-0"

12 S501 SECTION - TYP. FDN WALL @ LOUVER PIT
1/2" = 1'-0"

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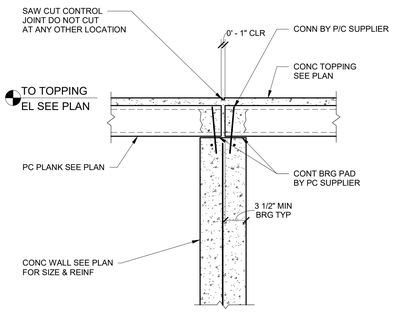
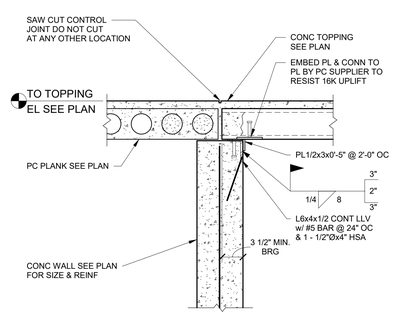
DATE
06/19/2020
PHASE
CONSTRUCTION DOCUMENTS
PROJECT
20.033.00
SHEET
S501
FOUNDATION SECTIONS & DETAILS

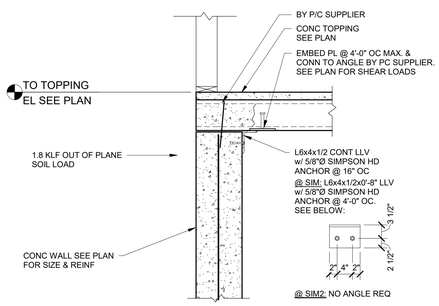
6/19/2020 2:21:59 PM



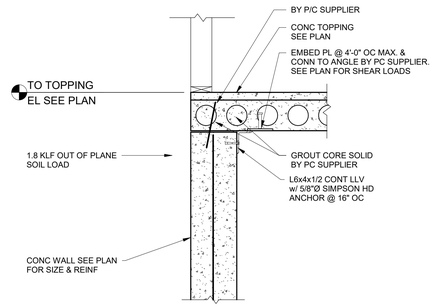
1 S700 SECTION - PLANK BEARING BOTH SIDES OF CONC WALL
3/4" = 1'-0"



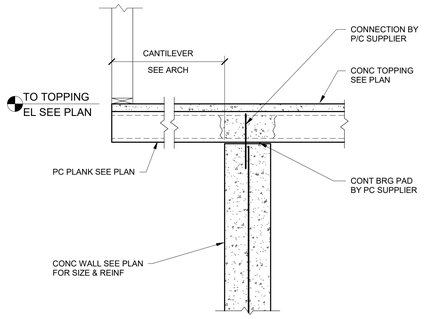
2 S700 SECTION - PLANK BEARING & LAP @ CONC WALL
3/4" = 1'-0"



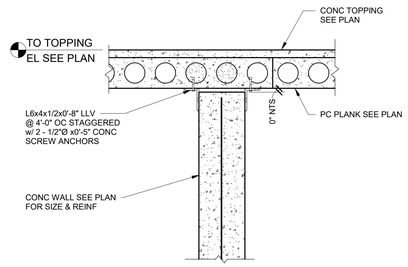
3 S700 SECTION - PLANK BEARING ONE SIDE @ CONC WALL
3/4" = 1'-0"



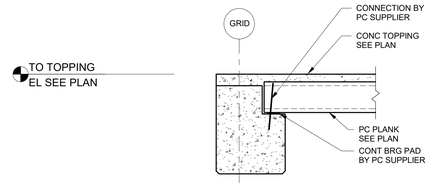
4 S700 SECTION - PLANK LAP ONE SIDE @ CONC WALL
3/4" = 1'-0"



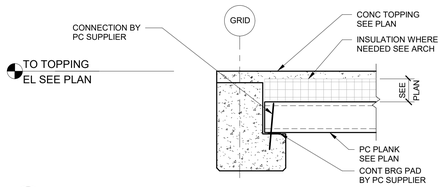
5 S700 SECTION - CANTILEVERED PLANK BRG AT CONC WALL
3/4" = 1'-0"



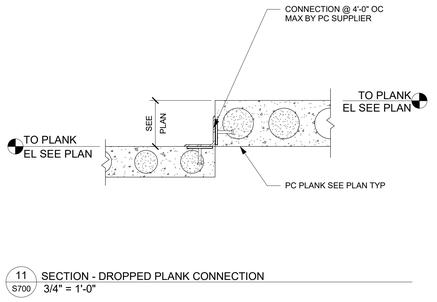
6 S700 SECTION - PLANK CONTINUOUS OVER NON-BEARING CONC WALL
3/4" = 1'-0"



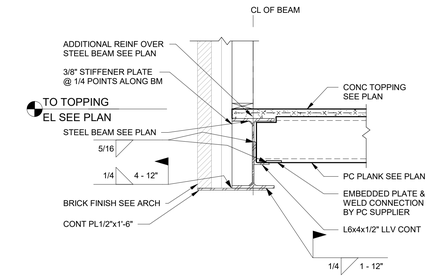
8 S700 SECTION - PLANK BEARING @ PRECAST LB BEAM
3/4" = 1'-0"



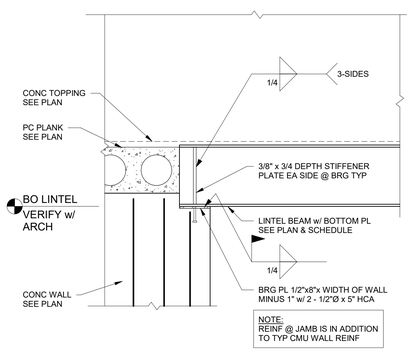
10 S700 SECTION - DROPPED PLANK BEARING @ PRECAST LB BEAM
3/4" = 1'-0"



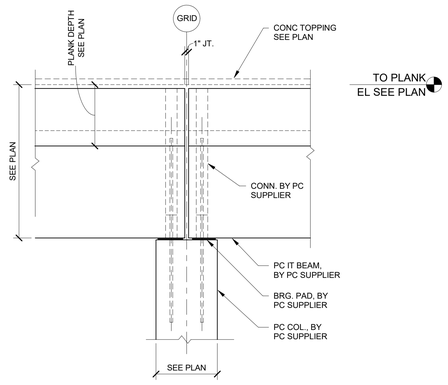
11 S700 SECTION - DROPPED PLANK CONNECTION
3/4" = 1'-0"



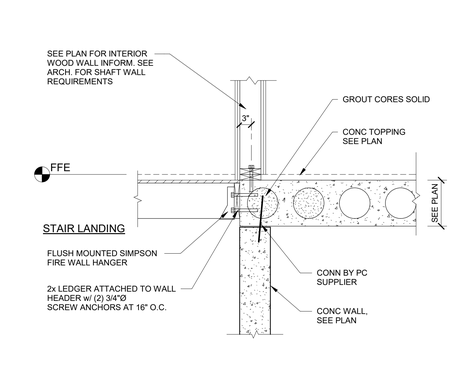
12 S700 SECTION - PLANK BEARING @ STEEL BEAM
3/4" = 1'-0"



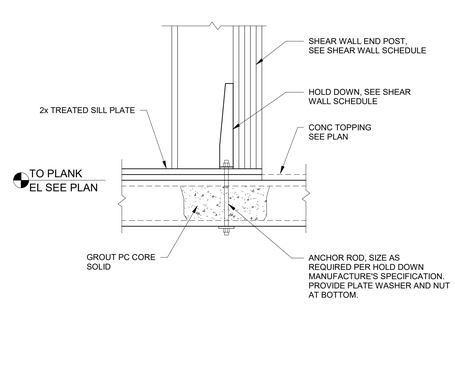
13 S700 DETAIL- TYP LINTEL BRG @ CONC WALL
3/4" = 1'-0"



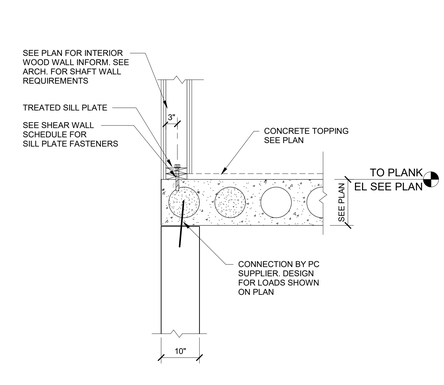
14 S700 SECTION - PC BEAM TO PC COLUMN
3/4" = 1'-0"



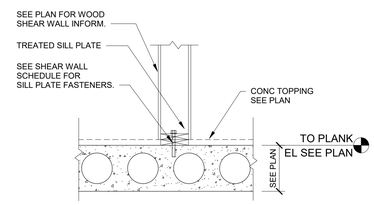
15 S700 SECTION - JOIST LEDGER AT PC PLANK
3/4" = 1'-0"



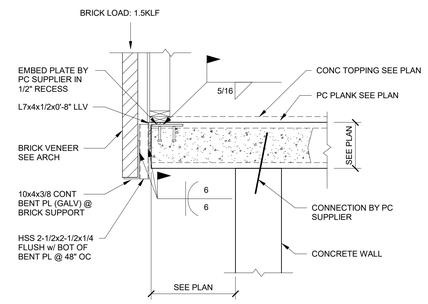
16 S700 SECTION - PC PLANK AT WOOD SHEAR WALL HOLD DOWN
3/4" = 1'-0"



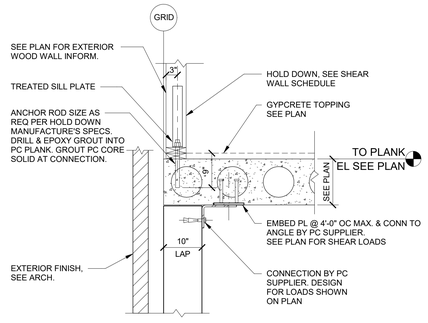
17 S700 SECTION - PC PLANK LAP TO ELEVATOR WALL
3/4" = 1'-0"



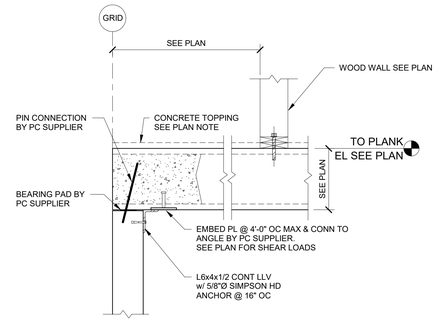
18 S700 SECTION - WOOD WALL TO PC PLANK
3/4" = 1'-0"



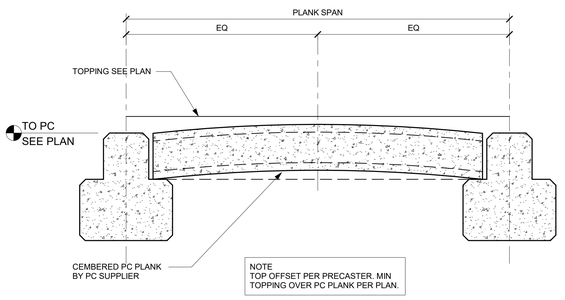
19 S700 SECTION - PC PLANK OVERHANG @ BRICK VENEER
3/4" = 1'-0"



20 S700 SECTION - WOOD WALL HOLD DOWN TO PC PLANK AT EXTERIOR
3/4" = 1'-0"



21 S700 SECTION - PC PLANK BRG. TO EXTERIOR WALL
3/4" = 1'-0"



22 S700 DETAIL - MIN TOPPING OVER PRECAST PLANK
3/4" = 1'-0"

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LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

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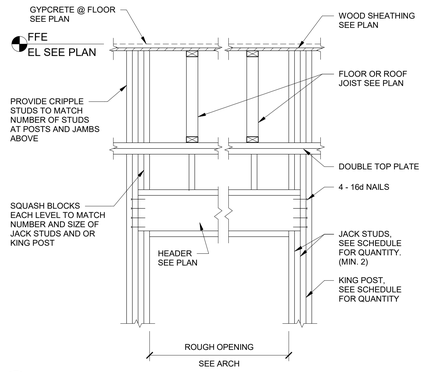
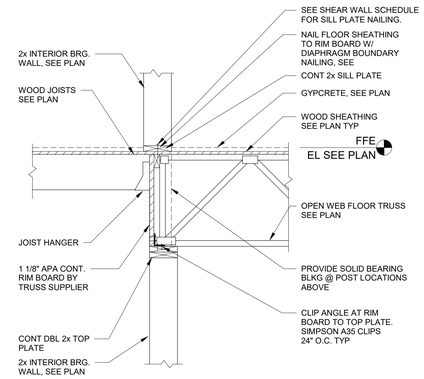
PROJECT 20.033.00
SHEET **S700**
PRECAST FRAMING SECTIONS & DETAILS

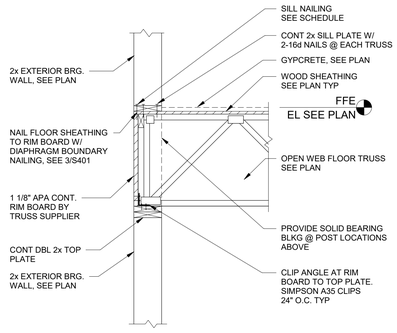
6/19/2020 2:21:59 PM



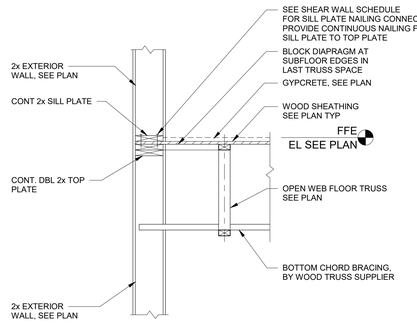
1 S710 DETAIL - TYP HEADER DETAIL
3/4" = 1'-0"



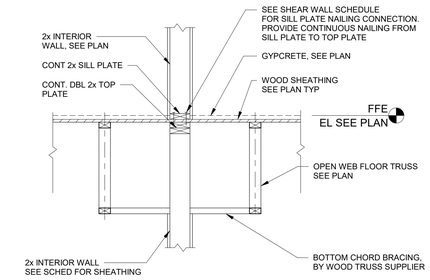
2 S710 SECTION - WOOD FLOOR TRUSS & JOIST BRG AT CORRIDOR
3/4" = 1'-0"



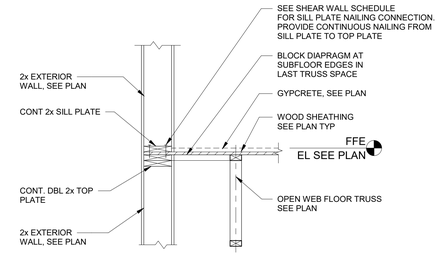
3 S710 SECTION - WOOD FLOOR TRUSS BRG AT EXTERIOR WALL
3/4" = 1'-0"



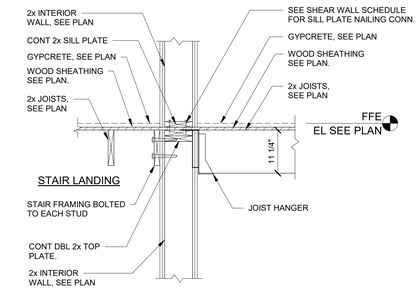
4 S710 SECTION - WOOD FLOOR TRUSS PARALLEL TO EXTERIOR WALL
3/4" = 1'-0"



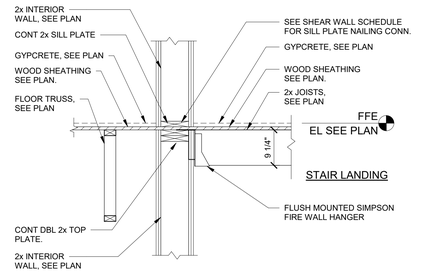
5 S710 SECTION - WOOD FLOOR TRUSS PARALLEL TO INTERIOR WALL
3/4" = 1'-0"



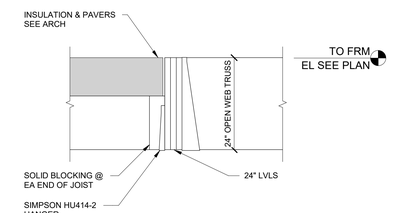
6 S710 SECTION - JOIST PARALLEL TO EXTERIOR WALL
3/4" = 1'-0"



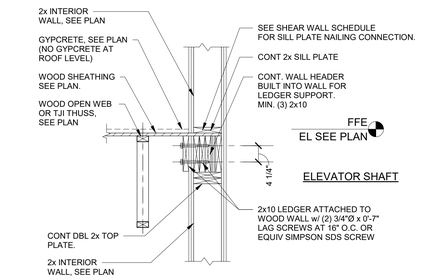
7 S710 SECTION - JOIST BRG. TO WOOD WALL
3/4" = 1'-0"



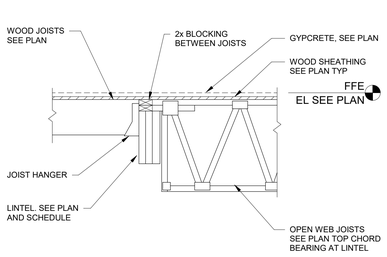
8 S710 SECTION - STAIR JOIST BRG. TO WALL
3/4" = 1'-0"



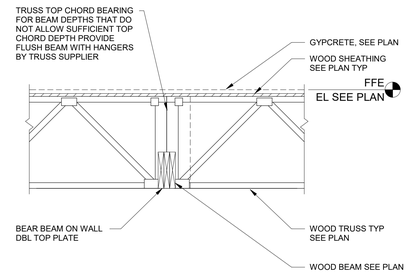
9 S710 SECTION - FLOOR TRUSS @ BALCONY
3/4" = 1'-0"



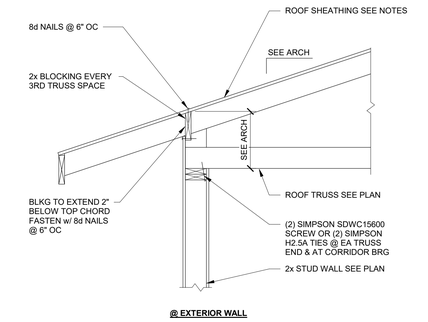
10 S710 SECTION - WOOD FLOOR TRUSS TO ELEVATOR WALL
3/4" = 1'-0"

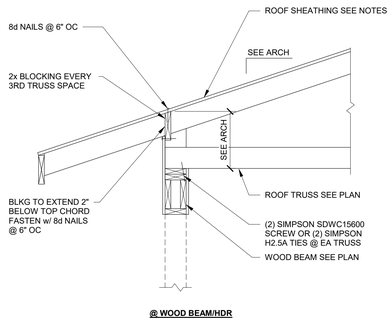


11 S710 SECTION - WOOD JOIST BRG AT CORRIDOR LINTEL
3/4" = 1'-0"

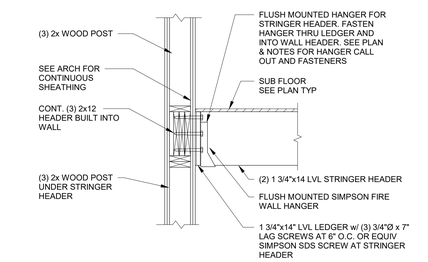


12 S710 SECTION - WOOD JOIST BRG @ BEAM
3/4" = 1'-0"

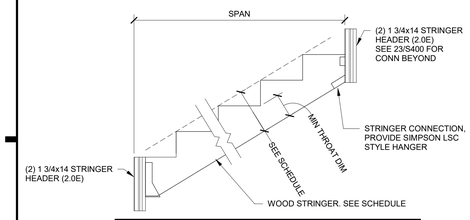




14 S710 DETAIL - ROOF TRUSS BRG AT EXTERIOR WALL
3/4" = 1'-0"



15 S710 SECTION - STRINGER HEADER TO SHAFT WALL
3/4" = 1'-0"

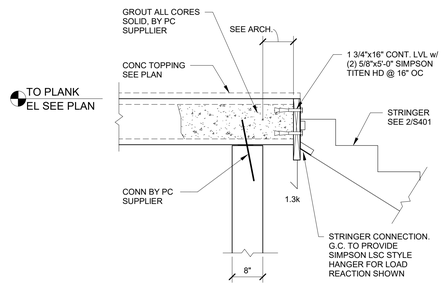


STAIR STRINGER SCHEDULE		
SPAN	STRINGER SIZE	MIN THROAT DEPTH
SPAN <= 9'-2"	(3) 1 3/4" x 11 7/8" LSL	5 7/8"
SPAN <= 15'-0"	(4) 1 3/4" x 16" LSL	10"

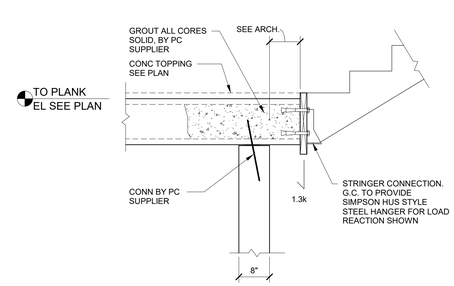
STAIR STRINGER AND HEADER FRAMING NOTES:
SEE PLAN, PLAN NOTES BELOW AND DETAIL 23/S400 FOR STRINGER HEADER FASTENERS TO WALL.
PROVIDE (3)2x6 POSTS UNDER STRINGER HEADER, EACH END AND IN CENTER WALL.

NOTES:
1. SEE ARCH. DRAWINGS FOR ALL STAIR DIMENSIONS.
2. STRINGERS TO BE SPACED (1) AT EACH SIDE AND REMAINDER EQUALLY SPACED ACROSS STAIR WIDTH.
3. STRINGER HEADER TO WOOD SHAFT WALL, SEE DETAIL 23/S400.
4. DO NOT OVERCUT STRINGER STEPS.
5. STAIR CONTRACTOR TO SELECT STRINGER CONNECTION AND FASTENERS BASED ON THE END OF STRINGER REACTION LOAD = 1400#.
6. MINIMUM 2x TREAD MATERIAL, MAXIMUM 24" SPAN.

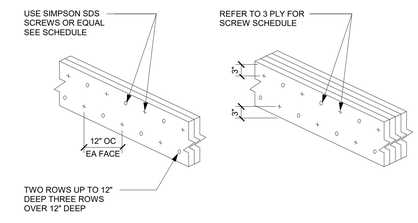
16 S710 STAIR STRINGER AND HEADER DETAILS
3/4" = 1'-0"



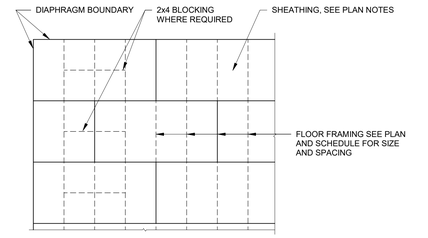
17 S710 SECTION - WOOD STRINGER TO PC PLANK
3/4" = 1'-0"



SDS SCREW SCHEDULE	
COMPONENTS	NOM SCREW LENGTH
2-PLY SCL	3 3/8"
3-PLY SCL	5"
4-PLY SCL	6 3/4"



18 S710 DETAIL - MULTI-PLY LVL CONNECTION
3/4" = 1'-0"



NOTES:
1. USE STAGGERED LAY-UP ORIENTED AS SHOWN FOR PLYWOOD.
2. PROVIDE CONTINUOUS SUPPORT AT DIAPHRAGM BOUNDARY.
3. PROVIDE ADHESIVE UNDER FLOOR SHEATHING AT ALL SUPPORTS.
4. NAIL WITH 8d COMMON NAILS (OR SCREWS) 1 3/8" MINIMUM PENETRATION AT 6" OC AT ALL SUPPORTED EDGES OF PLYWOOD.
5. NAIL WITH 8d COMMON NAILS (OR SCREWS) 1 3/8" MINIMUM PENETRATION AT 12" OC AT INTERMEDIATE FRAMING MEMBERS.
6. WHERE BLOCKED DIAPHRAGM IS NOTED ON PLAN, PROVIDE 2x4 BLOCKING AT 24" OC (AT ALL UNSUPPORTED EDGES AND FIELD).

19 S710 DETAIL - WOOD SUB FLOOR & ROOF SHEATHING
1/4" = 1'-0"

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I hereby cetify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licened Engineer under the laws of the state of Minnesota.

Signed: Yendranata
Name: Yendranata
License No.: 40876

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE
06/19/2020
PHASE
CONSTRUCTION DOCUMENTS
PROJECT
20.033.00
SHEET
S710
WOOD FRAMING SECTIONS & DETAILS

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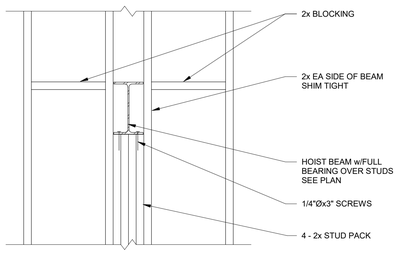
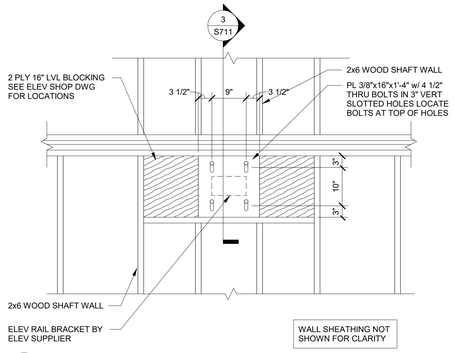
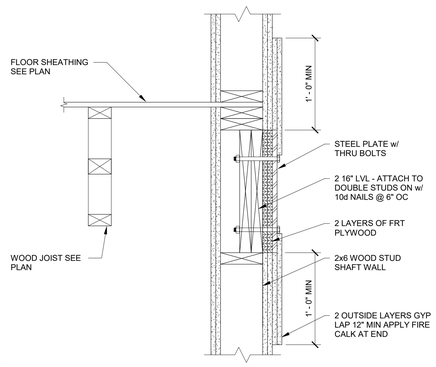


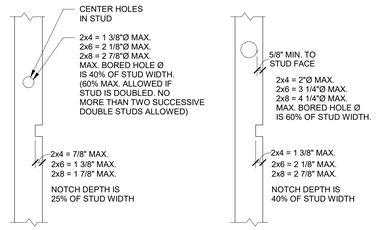
1 S711 DETAIL - WOOD FRAMING @ HOIST BEAM
1" = 1'-0"



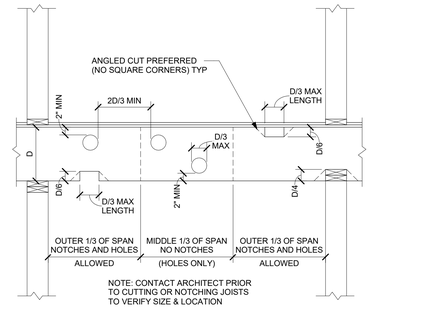
2 S711 DETAIL - RAIL SUPPORT @ ALL FLOORS
3/4" = 1'-0"



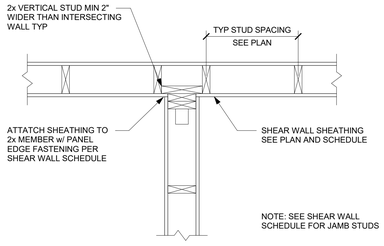
3 S711 SECTION - RAIL SUPPORT @ ALL FLOORS
1 1/2" = 1'-0"



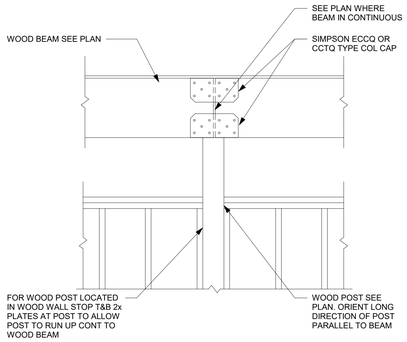
4 S711 SECTION - VERTICAL STUD NOTCHES/BORING GUIDE
3/4" = 1'-0"



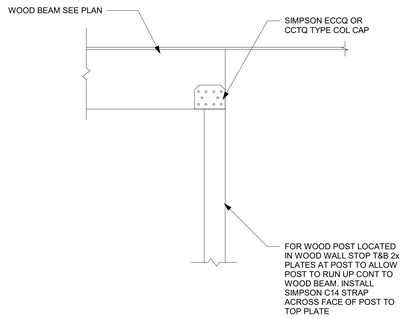
5 S711 SECTION - JOIST NOTCHES/BORING GUIDE
3/4" = 1'-0"



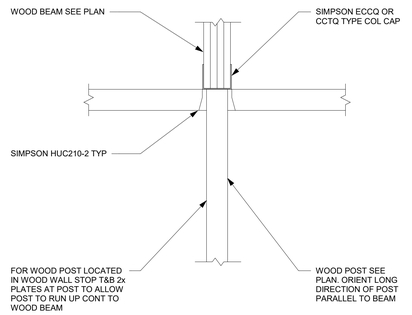
6 S711 DETAIL - SHEAR WALL SHEATHING CONNECTION @ INTERSECTING WALL
1" = 1'-0"



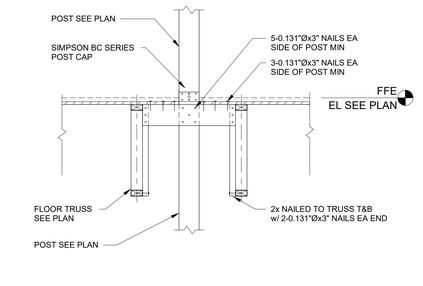
7 S711 SECTION - WOOD BEAM AT WOOD POST
3/4" = 1'-0"



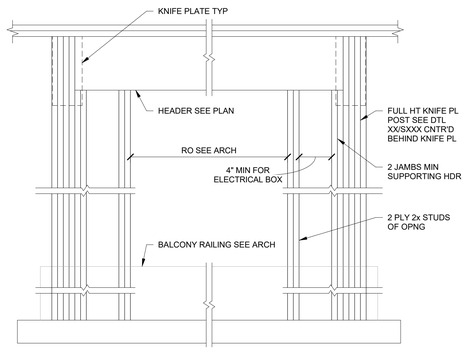
8 S711 SECTION - WOOD BEAM AT WOOD POST
3/4" = 1'-0"



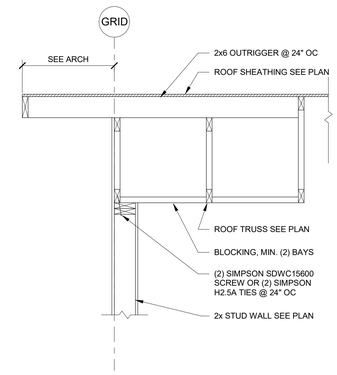
9 S711 SECTION - L6 WOOD BEAM AT WOOD POST
3/4" = 1'-0"



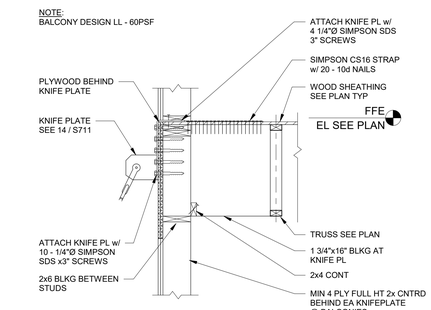
10 S711 SECTION - WOOD FLOOR TRUSS PARALLEL TO WOOD POST
3/4" = 1'-0"



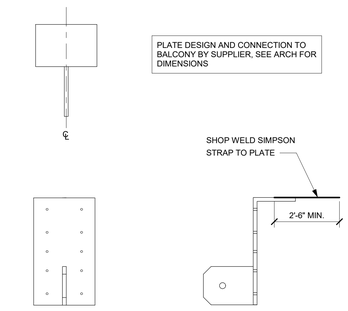
11 S711 DETAIL - ROUGH OPENING @ BALCONIES
3/4" = 1'-0"



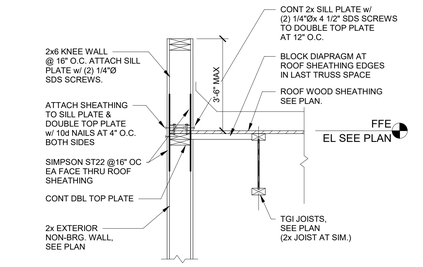
12 S711 SECTION - END ROOF TRUSS
3/4" = 1'-0"



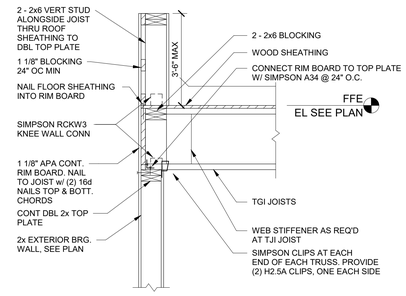
13 S711 SECTION - BALCONY KNIFE PLATE CONNECTION
3/4" = 1'-0"



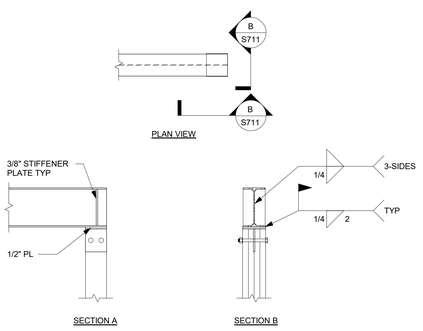
14 S711 DETAIL - BALCONY KNIFE PLATE
1 1/2" = 1'-0"



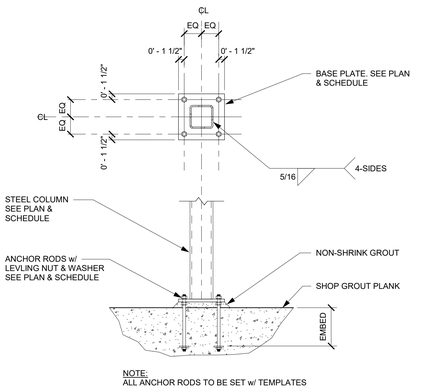
15 S711 SECTION - TGI JOIST PARALLEL AT EXTERIOR WALL
3/4" = 1'-0"



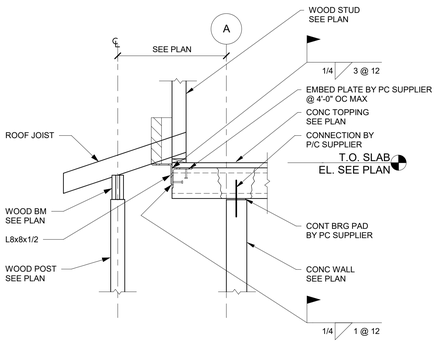
16 S711 SECTION - TGI JOIST BRG AT EXTERIOR WALL
3/4" = 1'-0"



17 S711 DETAIL - TYP STL BRG @ WOOD POST
3/4" = 1'-0"



18 S711 SECTION - HSS COLUMN BASE PL & ANCHOR BOLT SETTING
3/4" = 1'-0"



19 S711 SECTION - ENTRY ROOF CANOPY
1/2" = 1'-0"

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I hereby cetify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licened Engineer under the laws of the state of Minnesota.

Signed: Yendranata
Name: Yendranata
License No.: 40876

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

DATE 06/19/2020
PHASE CONSTRUCTION DOCUMENTS
PROJECT 20.033.00
SHEET **S711**
WOOD & STEEL FRAMING SECTIONS & DETAILS

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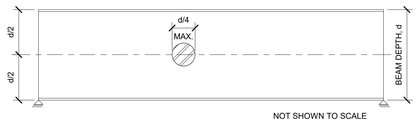


NOTE: "CIRCULAR OPENING IN WEB LIMITATIONS"

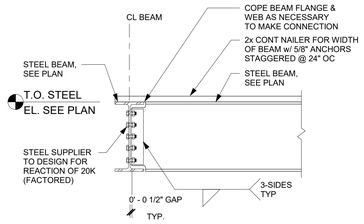
*THIS DETAIL MAY BE USED FOR UNIFORMLY DISTRIBUTED LOAD ONLY, (I.E. NO POINT LOADS FROM COLUMNS OR OTHER BEAMS CONNECTED TO THE BEAM IN QUESTION BETWEEN SUPPORTS.)

*MAXIMUM HOLE SIZE TO BE LIMITED TO d/4, (1/4 OF BEAM DEPTH)

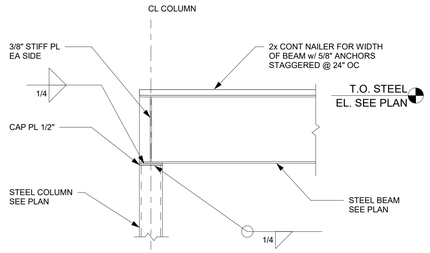
*HOLE SIZES LARGER THATN d/4, ARE OUTSIDE THE SCOPE OF THIS DETAIL AND SHALL BE INDIVIDUALLY REVIEWED BY THE ENGINEER ON A CASE BY CASE BASIS.

*HOLE MUST BE ON THE BEAM CENTERLINE.

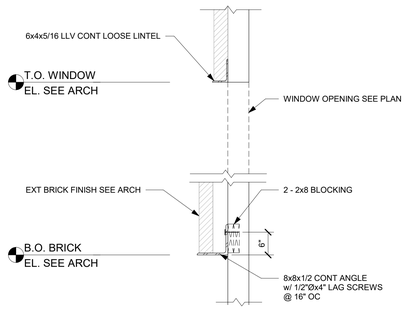
1 S712 DETAIL- PENETRATION OPENING IN BEAM WEB
3/4" = 1'-0"



2 S712 SECTION - SINGLE BEAM TO BEAM CONN.
3/4" = 1'-0"



3 S712 SECTION - END BEAM CONNECTION @ COLUMN
3/4" = 1'-0"



4 S712 SECTION - TYP BRICK LINTELS
3/4" = 1'-0"

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