GENERAL STRUCTURAL NOTES

A. BUILDING CODES AND STANDARDS

- THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION AND QUALITY CONTROL OF ALL WORK PERFORMED ON THE PROJECT. a. "INTERNATIONAL BUILDING CODE - 2018" INTERNATIONAL CODE COUNCIL, INC.
- b. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", (ANSI/ASCE 7) AMERICAN SOCIETY OF CIVIL ENGINEERS.
- ADDITIONAL DESIGN STANDARDS FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.

2 PSF

30 PSF

18.1 PSF

B. DESIGN LOADS

- GRAVITY SUPERIMPOSED DEAD LOADS
- a. ROOF (WOOD FRAMED) METAL ROOFING 2 PSF TRUSSES 5 PSF
- TOTAL

MEP

- 2. GRAVITY ROOF LIVE LOADS 20 PSF (NOT REDUCIBLE)
- a. LIVE LOAD b. SNOW LOAD (PLUS DRIFTING WHERE APPLICABLE)
- 1) GROUND SNOW LOAD (Pg) 2) SNOW EXPOSURE FACTOR (Ce) 1.0 3) SNOW LOAD IMPORTANCE FACTOR (Is) 1.0
- 4) THERMAL FACTOR (Ct) 23.1 PSF (USE 30 PSF FOR DESIGN) 5) FLAT ROOF SNOW LOAD (Pf)

3. LATERAL LOADS - WIND

- a. ANALYSIS PROCEDURE ASCE 7 / IBC b. ULTIMATE DESIGN WIND SPEED (3 SECOND GUST) 109 MPH
- c. NOMINAL WIND SPEED 84.4 MPH d. RISK CATEGORY II
- e. EXPOSURE CATEGORY
- f. INTERNAL PRESSURE COEFFICIENT ±0.18
- g. COMPONENTS AND CLADDING (1.0 W, ULTIMATE) EXPOSURE C
- DESIGN IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF ASCE 7 CHAPTER 30 AND IBC SECTION 1609
- h. NET WIND UPLIFT (1.0 W, ULTIMATE) FIELD OF MAIN ROOF
- 4. LATERAL LOADS SEISMIC
- a. SEISMIC IMPORTANCE FACTOR (le) 1.0 b. RISK CATEGORY II
- c. SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIOD (Ss) 0.122 d. SPECTRAL RESPONSE ACCELERATION FOR 1-SECOND PERIOD (S1) 0.044
- e. SPECTRAL RESPONSE COEFFICIENT (SDS) 0.131 f. SPECTRAL RESPONSE COEFFICIENT (SD1) 0.070
- g. SITE CLASS D
- h. SEISMIC DESIGN CATEGORY
- . BASIC SEISMIC FORCE RESISTING SYSTEM(S) LIGHT FRAME WALLS WITH SHEAR PANELS OF ALL OTHER MATERIALS
- RESPONSE MODIFICATION FACTOR(S) (R) 2.5 k. SEISMIC RESPONSE COEFFICIENT(S) (Cs) 0.052
- I. ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE PROCEDURE m. BASE SHEAR (1.0 E, ULTIMATE) 3.3 KIPS

WHICH WILL EXCEED THE DESIGN LIVE LOAD CAPACITIES NOTED.

- THE STRUCTURE HAS BEEN DESIGNED FOR THE DEAD, LIVE AND LATERAL LOADS INDICATED ABOVE. ANY INCREASE OF LOADS DUE TO CHANGE IN USAGE OR CONSTRUCTION MATERIALS, ETC. SHALL HAVE THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. THE CONTRACTOR IS CAUTIONED AS TO NOT STORE ANY CONSTRUCTION MATERIALS OR UNDERTAKE ANY CONSTRUCTION OPERATIONS
- WEIGHT OF EQUIPMENT SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN CONSIDERED IN THE FRAMING DESIGN. ANY ADDITIONAL EQUIPMENT NOT SHOWN ON THE STRUCTURAL DRAWINGS AND EXCEEDING 300 POUNDS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO INSTALLATION.

C. CONSTRUCTION

- a. THESE DRAWINGS REPRESENT THE COMPLETED PROJECT WHICH HAS BEEN DESIGNED FOR THE STRUCTURE DEAD LOADS AND FOR THE SUPERIMPOSED LIVE LOADS INDICATED IN THE DESIGN LOADS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE TEMPORARY BRACING, SHEETING AND SHORING, ETC.
- b. THE STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF THE ROOF. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE METHODS OF CONSTRUCTION AND SHALL PROVIDE ALL GUYS, BRACING AND SHORING REQUIRED TO ACCOMMODATE ALL INTERIM LOADING CONDITIONS FOR GRAVITY AND LATERAL RESISTING SYSTEMS, INCLUDING BUT NOT LIMITED TO, SIDE LOADED CONDITIONS AND/OR CONDITIONS RESULTING IN TEMPORARY UNRESTRAINED MEMBERS SUBJECT TO TORSIONAL LOADS DURING CONSTRUCTION.
- : IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES AND ALL OSHA REGULATIONS ARE THE SOLE
- d. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES AND DRAWINGS, THE MOST RIGID REQUIREMENT SHALL GOVERN.
- e. THE CONTRACTOR SHALL CHECK AND VERIFY DIMENSIONS AND ELEVATIONS FOR ALL WORK BEFORE PROCEEDING WITH THE CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY
- f. THE FRAMING MEMBERS INDICATED ON THE DOCUMENTS SHALL BE CONSIDERED A MINIMUM PROJECT REQUIREMENT. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SUPPLEMENTAL AND/OR ADDITIONAL FRAMING INCLUDING JOISTS, HEADERS, RAFTERS, BEAMS, ETC. AT NO ADDITIONAL COST TO THE OWNER, AS REQUIRED AND RESULTING FROM CONTRACTOR'S COORDINATION OF ALL PROJECT TRADES.
- g. WORK NOT INCLUDED ON THE DRAWINGS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE DRAWINGS SHALL BE REPEATED.
- h. ALL COSTS OF INVESTIGATION AND/OR REDESIGN, DUE TO THE CONTRACTOR'S MIS-LOCATION OF STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE PROJECT DOCUMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- i. ALL MECHANICAL BOLTS AND ADHESIVE ANCHORS SHALL BE SET IN FULLY CURED CONCRETE.
- STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATORY EQUIPMENT. PLACE VIBRATORY EQUIPMENT ON VIBRATION ISOLATORS APPROPRIATE FOR EQUIPMENT AND USE OF SPACE. VIBRATION ISOLATION HAS NOT BEEN PROVIDED BY THE STRUCTURAL ENGINEER.

SHOP DRAWINGS

- a. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS, INCLUDING ALL CONCRETE AND GROUT MIX DESIGNS AND ADMIXTURES, MUST BE SUBMITTED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE STRUCTURAL ENGINEER. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S APPROVAL STAMP CERTIFYING HE HAS VERIFIED ALL CONSTRUCTION CRITERIA INCLUDING FIELD MEASUREMENTS, MATERIAL AND SIMILAR DATA AND HAS CHECKED THE SUBMITTAL FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- b. UNAUTHORIZED REPRODUCTION OF ANY PORTION OF THE STRUCTURAL DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER MAY BE REJECTED AND RETURNED.
- c. IF THE CONTRACTOR OR OWNER FAILS TO OBTAIN THE STRUCTURAL ENGINEER'S REVIEW OF THE SHOP DRAWINGS, THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. SHOP DRAWINGS ARE REVIEWED BY THE STRUCTURAL ENGINEER AS A CONVENIENCE TO THE GENERAL CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.
- d. AT THE TIME OF SHOP DRAWING SUBMISSION, THE GENERAL CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER, IN WRITING, OF ANY DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS.

D. DELEGATED DESIGN SUBMITTALS

- STRUCTURAL SYSTEMS DESIGNATED TO BE DELEGATED DESIGNS SHALL BE PERFORMED BY THE CONTRACTOR'S SPECIALTY STRUCTURAL ENGINEER (SSE) WHO IS LICENSED IN THE PROJECT LOCATION. THE SPECIALTY STRUCTURAL ENGINEER IS RESPONSIBLE FOR THE DELEGATED PORTIONS OF THE WORK.
- AS THE STRUCTURAL ENGINEER OF RECORD (SEOR) FOR THE REMAINDER OF THE WORK OF THIS PROJECT (PORTIONS NOT DELEGATED), PROVIDENCE WILL PROVIDE DESIGN CRITERIA AND DESIGN INTENT FOR THE SPECIALTY STRUCTURAL ENGINEER'S USE IN PREPARING THE DELEGATED DESIGN. IF THE SPECIALTY STRUCTURAL ENGINEER DETERMINES THERE IS INSUFFICIENT DESIGN INFORMATION OR PROJECT LIMITATIONS, A TIMELY REQUEST FOR INFORMATION SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR RESOLUTION.

D. DELEGATED DESIGN SUBMITTALS (CONTINUED)

- 3. LOADS IMPOSED BY THE DELEGATED DESIGN ASSEMBLIES ON THE REMAINDER OF THE WORK SHALL BE CLEARLY PROVIDED BY THE SSE FOR REVIEW BY THE STRUCTURAL ENGINEER OF RECORD (PROVIDENCE).
- 4. THE CONTRACTOR SHALL SUBMIT DELEGATED DESIGN DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY THE SPECIALTY
- STRUCTURAL ENGINEER LICENSED IN THE PROJECT'S JURISDICTION. a. DELEGATED DESIGN SUBMITTALS SHALL INDICATE THAT PRODUCTS AND SYSTEMS COMPLY WITH PERFORMANCE AND DESIGN CRITERIA IN THE CONTRACT DOCUMENTS AND RELEVANT CODES. INCLUDE LIST OF LOADS, CODES AND OTHER RELEVANT
- b. CONTRACTOR IS SOLELY RESPONSIBLE TO PROVIDE MOST CURRENT CONTRACT DOCUMENTATION INCLUDING REVISIONS, ADDENDA, RFI RESPONSES, ETC. TO THE SPECIALTY STRUCTURAL ENGINEER(S). SPECIALTY STRUCTURAL ENGINEER(S) SHALL PROVIDE A LIST OF RELEVANT DOCUMENTS AND CORRESPONDING DATES OF ISSUANCE AS PART OF THEIR SUBMITTAL.
- c. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL CLEARLY SHOW THE LOAD REACTIONS AS APPLIED TO THE BUILDING
- d. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD (PROVIDENCE) SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS INDICATED ON THE CONTRACT DOCUMENTS. THE STRUCTURAL ENGINEER OF RECORD (PROVIDENCE) WILL CONFIRM THE DELEGATED DESIGN PARAMETERS (INPUT) CONFORM WITH THE SPECIFIED DESIGN CRITERIA AND DESIGN INTENT; HOWEVER, THE SPECIALTY STRUCTURAL ENGINEER IS SOLELY RESPONSIBLE FOR THEIR WORK.

5. LIST OF DELEGATED DESIGN ASSEMBLIES INCLUDED IN CONTRACT:

a. NO GEOTECHNICAL REPORT HAS BEEN PROVIDED FOR THIS PROJECT.

FACTORS USED IN PERFORMING THE DELEGATED DESIGN.

- a. WOOD TRUSSES 1) DESIGNS SHALL ACCOUNT FOR ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES INCLUDING: SPECIAL LOAD DIAGRAMS AND SPECIAL LOADS DEPICTED ON THE CONTRACT DOCUMENTS; NET WIND UPLIFT SHOWN IN THE DESIGN LOADS SECTION; THE WEIGHT OF SUPPORTED EQUIPMENT, PIPING AND CONDUIT; AND ALL CODE-REQUIRED LOAD
- 2) CONNECTION TO THE MAIN BUILDING STRUCTURE SHALL BE DESIGNED BY THE TRUSS MANUFACTURER AND SHALL MATCH SUPPORT LOCATIONS DESIGNATED BY THE STRUCTURAL ENGINEER OF RECORD.
- 3) SUBMIT CALCULATIONS SHOWING COMPLETE RATIONAL LOAD PATH, INCLUDING THE EFFECTS ON SUPPORTING MEMBERS. SUBMISSION SHALL CLEARLY SHOW LOAD REACTIONS APPLIED TO THE BUILDING STRUCTURE.

E. FOUNDATION

- b. ALL FOUNDATIONS HAVE BEEN DESIGNED FOR AN ASSUMED ALLOWABLE NET BEARING PRESSURE OF 2,000 PSF. IT SHALL BE THE OWNER'S RESPONSIBILITY TO SECURE AND PAY FOR THE SERVICES OF A GEOTECHNICAL ENGINEER FOR FIELD VERIFICATION OF THE ASSUMED SOIL BEARING PRESSURES. BEARING CAPACITY OF THE SOIL SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. SHOULD THE SOIL BEARING PRESSURE BE FOUND TO
- c. ALL EXTERIOR FOUNDATIONS SHALL BEAR A MINIMUM OF 4'-0" BELOW FINISHED GRADE. IN CASE OF CONFLICT, NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT. FOOTINGS SHALL BEAR ON APPROVED UNDISTURBED MATERIAL OR STRUCTURAL FILL.

BE LESS THAN 2.000 PSF, THE OWNER SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER.

- a. ALL EXCAVATION, BACKFILLING AND STRUCTURAL FILL PLACEMENT OPERATIONS BENEATH THE BUILDING AND FOUNDATIONS, AND ALL COMPACTION TESTS AND INSPECTIONS SHALL BE DONE UNDER THE DIRECTION AND SUPERVISION OF A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER. ALL FILL MATERIAL, COMPACTION EQUIPMENT AND PROCEDURES SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PERFORMING ANY EARTHWORK OPERATIONS.
- b. CONCRETE FOR FOUNDATIONS SHALL BE PLACED ON THE SAME DAY SUBGRADE APPROVAL IS GIVEN BY THE GEOTECHNICAL ENGINEER. SHOULD THE SOIL BEARING PRESSURE BE FOUND TO BE LESS THAN THE ALLOWABLE BEARING PRESSURES LISTED ABOVE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- c. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK.
- d. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES, EXISTING STRUCTURES, ETC., WHETHER INDICATED OR NOT, WHICH MAY BE AFFECTED BY THE CONSTRUCTION PROCESS. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.
- e. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL. STEP FOUNDATIONS UNDER UTILITIES AS REQUIRED WHERE UTILITIES OCCUR.
- f. THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOUNDATIONS SHALL NOT EXCEED 45 DEGREES WITH THE HORIZONTAL, UNLESS INDICATED OTHERWISE ON THE PLANS. MAINTAIN A 1:1 SLOPE FROM BOTTOM EDGE OF ANY EXCAVATION.
- g. FOLLOWING REQUIRED STRIPPING OPERATIONS, ANY PROOF ROLLING SHALL BE AS DIRECTED BY A QUALIFIED GEOTECHNICAL ENGINEER. THE PURPOSE FOR PROOF ROLLING WILL BE TO LOCATE ANY ISOLATED AREAS OF SOFT OR LOOSE SOILS REQUIRING IMPROVEMENT OR REPLACEMENT. SOFT AREAS SHALL BE UNDERCUT AND REPLACED BY PROPERLY COMPACTED MATERIALS AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- h. ALL SHORING, SHEETING AND DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ENGAGE AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION TO DESIGN ALL SHEETING AND SHORING.

a. ALL BACKFILL OPERATIONS SHALL BE PERFORMED IN HORIZONTAL LIFTS USING STRUCTURAL FILL MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER, AT THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL AND PROVIDING THE MINIMUM COMPACTION LEVEL STIPULATED IN THE GEOTECHNICAL ENGINEERING REPORT.

F. CAST-IN-PLACE CONCRETE

- 1. ALL CONCRETE WORK SHALL CONFORM TO ALL PROVISIONS OF THE FOLLOWING PUBLICATIONS:
- a. "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 301.
- b. "BUILDING CODE REQUIREMENTS FOR CONCRETE", ACI 318.
- c. "GUIDE TO HOT WEATHER CONCRETING", ACI 305.
- d. "GUIDE TO COLD WEATHER CONCRETING", ACI 306.
- e. "GUIDE TO FORMWORK FOR CONCRETE", ACI 347.

MATERIALS

a. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES MAX. SLUMP (IN) fc AT 28 DAYS WEIGHT PCF W/CM RATIO DRILLED PIERS

(*SLUMP: CONCRETE CONTAINING HRWR ADMIXTURE SHALL HAVE A MAXIMUM SLUMP OF 7" AFTER ADDITION OF HRWR TO A VERIFIED WATER SLUMP OF 2" TO 3" MAXIMUM)

b. CEMENT ASTM C150, TYPE I OR II

c. CEMENT SUBSTITUTES ASTM C595, ASTM C989, ASTM C618 (CLASS C OR F) MAXIMUM PERCENT OF TOTAL IN ACCORDANCE WITH ACI 318

f. "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION MATERIALS", ACI 117.

d. COARSE AGGREGATES ASTM C33 (NORMAL WEIGHT)

e. COARSE AGGREGATE SIZE SHALL BE:

1 1/2" MAX. / 1" TOP SIZE

f. FOR THE 1 1/2" MAX. / 1" TOP SIZE AGGREGATE, GRADATIONS SHALL BE 8-22% RETAINED ON EACH SIEVE BELOW THE TOP SIZE AND ABOVE THE NO. 100 SIEVE SIZE. IDEAL RANGE FOR THE NO. 30 AND NO. 50 SIEVE IS 8-15% RETAINED ON EACH SIEVE. FOR THE TOP SIZE, 0-4% SHALL BE RETAINED ON THE 1" SIEVE.

g. REINFORCEMENT: DEFORMED REINFORCING BARS ASTM A615, GRADE 60

- h. ADMIXTURES: NO ADMIXTURE CONTAINING CALCIUM CHLORIDE OR OTHER CHLORIDE CONTAINING AGENTS SHALL BE PERMITTED. WATER-REDUCING ADMIXTURES SHALL COMPLY WITH ASTM C494. CONCRETE SHALL HAVE A WATER SLUMP OF 2" TO 3" PRIOR TO INTRODUCTION OF ADMIXTURE TO THE CONCRETE MIX.
- SUBMIT CONCRETE DESIGN MIXES INCLUDING TEST RESULTS IN ACCORDANCE WITH ACI 318 TO VERIFY STRENGTH FOR ALL CLASSES OF CONCRETE TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO PLACING ANY CONCRETE.

F. CAST-IN-PLACE CONCRETE (CONTINUED)

- a. IT IS THE INTENT OF THESE DOCUMENTS TO STATE ABSOLUTELY THAT THE WATER/CEMENT RATIO OF THE APPROVED CONCRETE MIX SHALL NOT BE EXCEEDED. THUS, NO WATER CAN BE ADDED TO ANY CONCRETE ON SITE UNLESS THERE IS A HOLD BACK OF WATER IN THE MIX FROM THE READY-MIX PLANT. THE DELIVERY TICKETS SHALL STATE THE QUANTITY OF WATER THAT HAS BEEN HELD BACK. IF WATER IS ADDED ON SITE, IT SHALL BE DOCUMENTED ON THE DELIVERY TICKETS AND SHALL NOT EXCEED THE QUANTITY IN THE APPROVED MIX.
- b. ALL FORMWORK, SHORING, AND RESHORING, SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER LICENSED IN THE PROJECT'S
- c. NO SLEEVES SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, APPROVED SLEEVING SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.
- d. CORE DRILLING OF FOUNDATIONS SHALL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.

- a. "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", ANSI/AF&PA NDS (INCLUDING SUPPLEMENT "DESIGN VALUES FOR
- b. "STANDARD FOR WOOD PRODUCTS STRUCTURAL GLUE LAMINATED TIMBER" ANSI/AITC A190.1.
- c. "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION", ANSI/TPI1, TRUSS PLATE INSTITUTE

2. MATERIALS

a. DIMENSION LUMBER ALL DIMENSION LUMBER SHALL BE VISUALLY GRADED DIMENSION LUMBER, KILN-DRIED WITH A 19% MAXIMUM MOISTURE CONTENT. UNLESS NOTED OTHERWISE, LUMBER SHALL BE SPRUCE-PINE-FIR WITH THE FOLLOWING MINIMUM DESIGN VALUES

(WITHOUT THE APPLICABLE SIZE FACTOR CF): JOISTS/RAFTERS/HEADERS/BEAMS/STUDS: NUMBER 2 OR BETTER Fc = 1,150 PSI Fv = 135 PSI Fb = 875 PSI Ft = 450 PSI

PRESSURE TREATED PLATES AND SAWN LUMBER: SOUTHERN PINE NUMBER 2 OR BETTER (VALUES FOR 2x6 INDICATED BELOW. SEE NDS FOR OTHER SHAPES OF SOUTHERN PINE LUMBER) Fb = 1.000 PSI $F_{C} = 1.400 PSI$ Fv = 175 PSI Ft = 600 PSI

b. STRUCTURAL COMPOSITE LUMBER

1) LAMINATED VENEER LUMBER (LVL) FRAMING MEMBERS SHALL BE "MICROLLAM" AS MANUFACTURED BY WEYERHAEUSER, OR APPROVED EQUAL WITH THE FOLLOWING DESIGN PROPERTIES AND MINIMUM STRENGTH VALUES: Fb = 2,600 PSI Fc = 2,510 PSI Fv = 285 PSI

2)PARALLEL STRAND LUMBER (PSL)

COLUMN MEMBERS SHALL BE "PARALLAM" AS MANUFACTURED BY WEYERHAEUSER, OR APPROVED EQUAL WITH THE FOLLOWING DESIGN PROPERTIES AND MINIMUM STRENGTH VALUES: Fc = 2,500 PSIFv = 190 PSI

3. DIMENSION LUMBER/STRUCTURAL COMPOSITE LUMBER

RESPONSIBILITY OF THE CONTRACTOR.

- a. MEMBERS SHALL BE SET WITH CROWN SIDE UP AND HAVE A MINIMUM OF 2" BEARING.
- b. ALL BOLTS AND LAG BOLTS SHALL BE FITTED WITH GALVANIZED, MALLEABLE IRON OR STEEL PLATE WASHERS. c. ALL FASTENERS, INCLUDING BUT NOT LIMITED TO BOLTS, NAILS, SCREWS, LAG SCREWS, ETC., USED IN CONJUNCTION WITH
- PRESERVATIVE TREATED LUMBER SHALL BE HOT DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL. d. CONNECTIONS FOR WOOD MEMBERS SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS OR, IF NO DETAIL IS SHOWN, PROVIDE
- THE NUMBER AND SIZE OF FASTENERS SET FORTH IN THE "FASTENING SCHEDULE" TABLE IN CHAPTER 23 OF IBC. e. CONNECTION DETAILS SHOW ARRANGEMENT OF STRUCTURAL MEMBERS ONLY. FIT-UP OF MEMBERS SHALL BE THE
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE TEMPORARY BRACING OF ALL BUILDING ELEMENTS. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL PERMANENT BRACING IS INSTALLED, ATTACHED, AND CAPABLE OF SUPPORTING LOADS.

g. ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED.

- 4. WOOD PRESERVATIVE TREATMENT a. WHERE LUMBER IS INDICATED AS "TREATED" OR "PT", COMPLY WITH APPLICABLE REQUIREMENTS OF AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1 AND WITH AWPA STANDARDS LISTED BELOW. MARK EACH TREATED ITEM WITH THE AWPA QUALITY MARK REQUIREMENTS.
- b. PRESSURE TREAT ABOVE-GROUND INTERIOR ITEMS WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC2. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.
- c. PRESSURE TREAT ABOVE-GROUND EXTERIOR ITEMS WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC3B. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.
- d. PRESSURE TREAT EXTERIOR ITEMS IN CONTACT WITH THE GROUND WITH WATERBORNE PRESERVATIVES TO COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) U1-UC4B. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO A MAXIMUM MOISTURE CONTENT OF 10% AND 15%, RESPECTIVELY.

WOOD TRUSSES

- a. DESIGN 1)DESIGN OF TRUSSES, TRUSS BRACING AND DETAILING OF TRUSS CONNECTIONS ARE DELEGATED TO THE
- CONTRACTOR. SEE "DELEGATED DESIGN SUBMITTALS" SECTION FOR DESIGN AND SUBMITTAL REQUIREMENTS. 2)TRUSSES INDICATED ON DETAILS AND PLANS REPRESENT PROFILES AND BEARING LOCATIONS SCHEMATICALLY. FINAL TRUSS LAYOUT AND ACTUAL SIZES AND LOCATIONS OF THE TRUSS CHORDS AND WEBS IS THE RESPONSIBILITY OF THE TRUSS
- 3) TEMPORARY AND PERMANENT BRACING SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

- 1) SEE GENERAL NOTES FOR LOADING REQUIREMENTS.
- 2)ACCOUNT FOR SPECIAL CONDITIONS SHOWN ON THE STRUCTURAL PLANS SUCH AS DORMERS, VALLEY TRUSSES, MECHANICAL EQUIPMENT, MECHANICAL PIPING RUNS, SPRINKLER MAINS, ETC.
- 3)EACH MEMBER OF THE TRUSS SHALL BE DESIGNED TO RESIST THE LARGEST ANTICIPATED LOAD FROM THE APPLICABLE LOAD CASES SPECIFIED IN CHAPTER 16 OF THE IBC.

4)DESIGN TRUSSES FOR UNBALANCED SNOW AS INDICATED ON THE PLAN.

5)TRUSS BEARING LENGTHS SHALL LIMIT THE BEARING STRESS ON SUPPORTING WOOD PLATES TO NOT GREATER THAN 425 PSI. PROVIDE MULTI-PLY TRUSSES AND/OR BEARING BLOCKS WHERE REQUIRED TO REDUCE STRESS. TRUSS BEARING LENGTHS

SHALL BE PROVIDED ON THE SHOP DRAWINGS. c. CONSTRUCTION

- 1)SECURELY BRACE TRUSSES DURING ERECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE STRUCTURAL BUILDING COMPONENTS ASSOCIATION / TRUSS PLATE INSTITUTE "BUILDING COMPONENT SAFETY INFORMATION (BCSI), GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES". ERECTION BRACING SHALL HOLD TRUSSES STRAIGHT AND PLUMB UNTIL DECKING AND PERMANENT BRACING ARE INSTALLED. INSTALL PERMANENT BRACING AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY TRUSS DESIGN. INSTALL ALL PERMANENT BRACING PRIOR TO APPLICATION OF LOAD. TOP CHORDS SHALL BE FULLY SHEATHED INCLUDING AREAS BELOW INTERSECTING
- 2) SECURE TRUSSES TO THE SUPPORTING STRUCTURE WITH GALVANIZED FRAMING ANCHORS AS SHOWN ON THE DRAWINGS AND SUFFICIENT TO TRANSFER REACTIONS SHOWN ON TRUSS SHOP DRAWINGS.
- 3) FIELD CUTTING OR ALTERATIONS OF ANY TRUSS OR TRUSS MEMBERS IS NOT PERMITTED.

H. SPECIAL INSPECTION

- 1. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
- 2. THE OWNER SHALL EMPLOY SPECIAL INSPECTORS TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THIS SECTION AND AS REQUIRED BY THE CODE. THE SPECIAL INSPECTORS SHALL BE QUALIFIED PERSONS COMPETENT FOR INSPECTION OF CONSTRUCTION AND CONSTRUCTION OPERATIONS REQUIRING SPECIAL INSPECTIONS, AND WHOSE QUALIFICATIONS SATISFY THE REQUIREMENTS OF THE LOCAL BUILDING OFFICIAL OF THE JURISDICTION.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SPECIAL INSPECTOR(S) FOR ITEMS REQUIRING SPECIAL INSPECTIONS. THE CONTRACTOR SHALL PROVIDE ACCESS TO THE SITE, ADEQUATE NOTICE FOR SCHEDULING AND ACCESS TO APPROVED PLANS IN ORDER TO GIVE THE SPECIAL INSPECTOR(S) TIME TO PREPARE FOR INSPECTIONS.
- 4. SPECIAL INSPECTIONS REPORTS SHALL BE FURNISHED TO THE STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING CODE OFFICIAL. a. WORK IN VARIANCE WITH THE CONTRACT DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE CONTRACTOR FOR TIMELY
- b. WORK REMAINING IN VARIANCE WITH THE CONTRACT DOCUMENTS, OR WORK COVERED WITH OTHER MATERIALS PRIOR TO THE SPECIAL INSPECTOR'S CONFIRMATION, SHALL BE REPORTED TO THE STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING CODE

WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

REQUIRED IN ORDER FOR INSPECTIONS TO BE PROPERLY COMPLETED. d. WHEN INSPECTIONS ARE COMPLETE, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT STRUCTURAL WORK

c. IF THE CONTRACTOR COVERS UNINSPECTED WORK, REMOVAL OF SUCH MATERIALS AT THE CONTRACTOR'S COST WILL BE

5. REQUIRED SPECIAL INSPECTIONS AND REQUIRED FREQUENCY ARE DESIGNATED IN THE SCHEDULE BELOW.

SPECIAL INSPECTION SCHEDULE					
DESCRIPTION	EXTENT	REFERENCED STANDARD			
SOIL BEARING CAPACITY	PERIODIC	GEOTECHNICAL ENGINEER REQUIREMENTS			
EXCAVATION DEPTH AND BEARING MATERIAL	PERIODIC	GEOTECHNICAL ENGINEER REQUIREMENTS			
CONCRETE MIX DESIGN	PERIODIC	ACI			
HOT AND COLD WEATHER CONCRETE PLACEMENT REQUIREMENTS	PERIODIC	ACI			
CAST-IN-PLACE CONCRETE, PLACEMENT	PERIODIC	ACI			
WOOD FRAMING, GRAVITY LOAD BEARING MEMBER SIZES AND FASTENING	PERIODIC	NDS			
WOOD FRAMING, LATERAL LOAD BEARING MEMBER SIZES, FASTENING, AND DIAPHRAGMS	PERIODIC	NDS			



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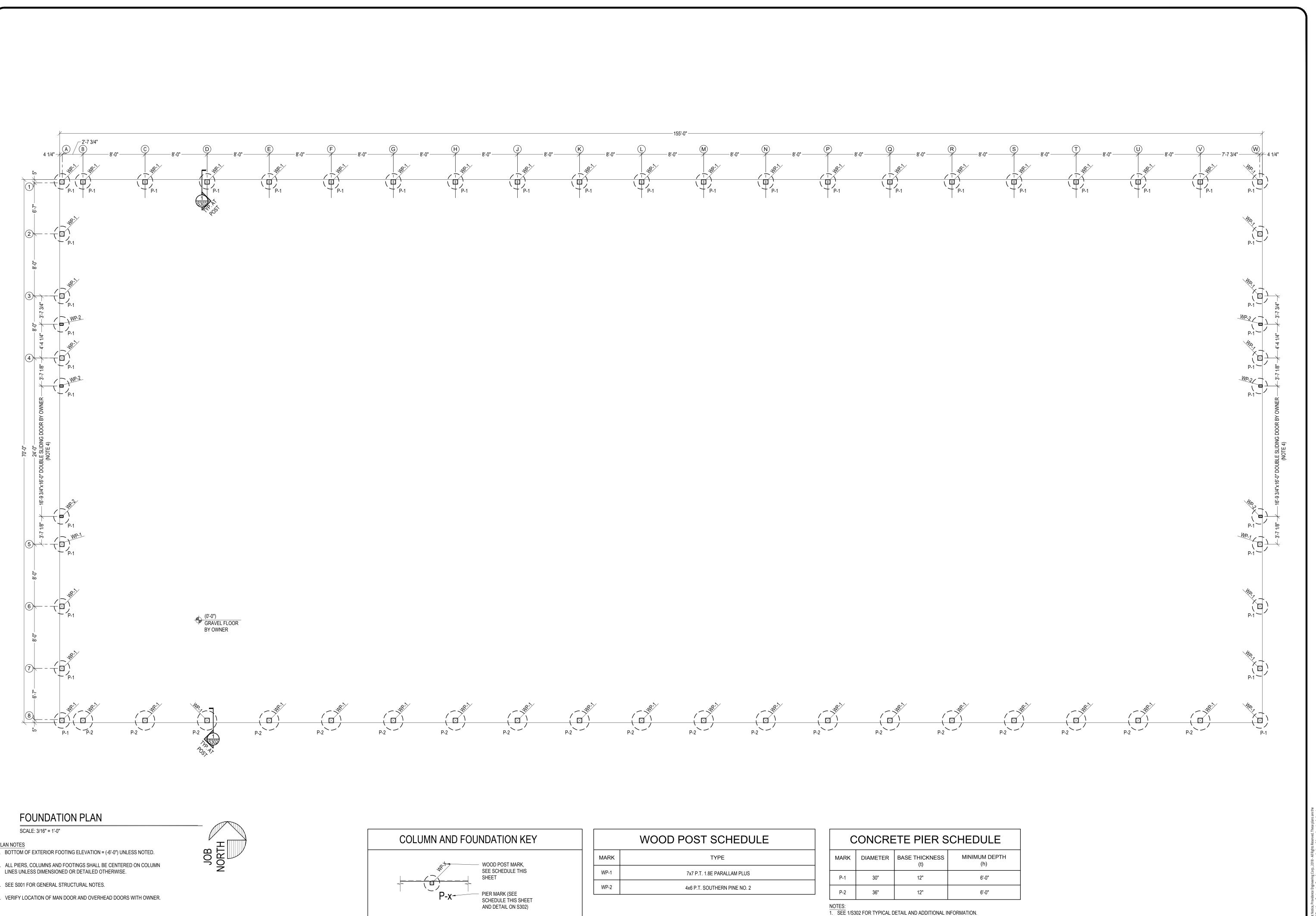
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2. USE P-2 AT OVERHEAD DOOR LOCATIONS.

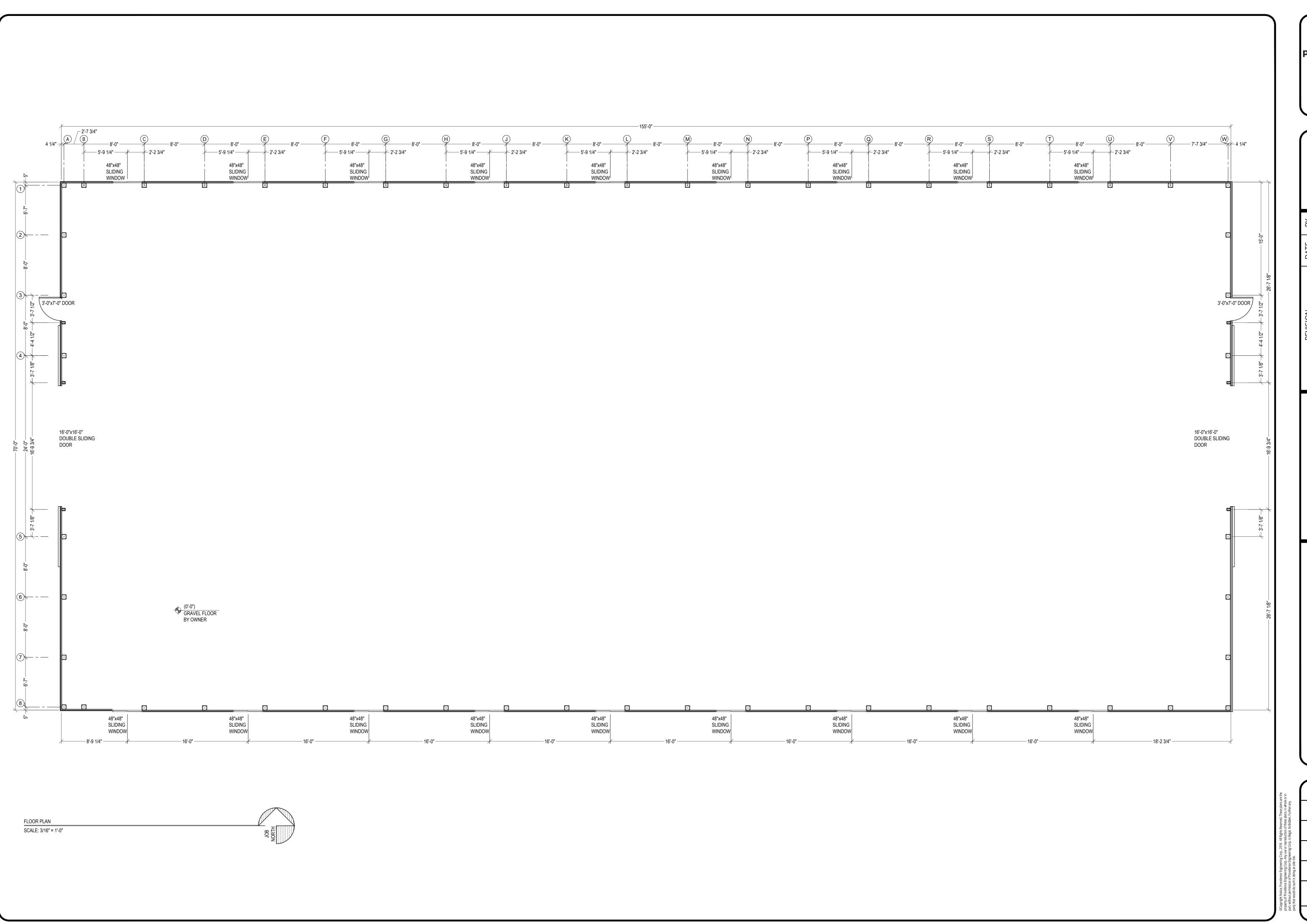
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FOUNDATION PLAN
STONY BROOK STABLES

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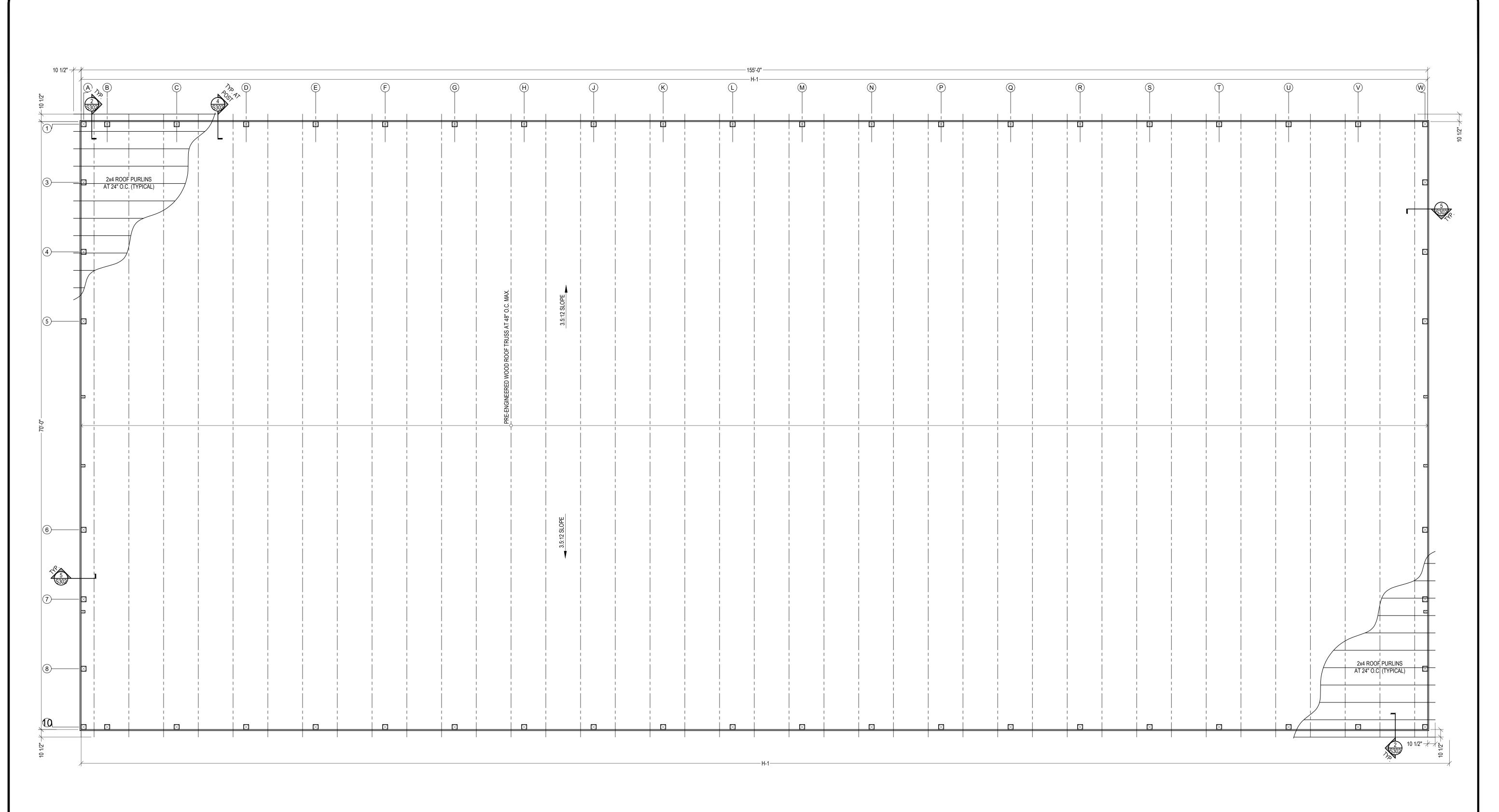


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	FLOOR FLAN			27 IOAT2 VOOGO VINOT2	SIONT BROOK SIABLES	973 COLD SOIL RD	PRINCETON, NJ 08540	

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ROOF FRAMING PLAN

SCALE: 3/16" = 1'-0"

PLAN NOTES

- 1. TRUSS BEARING ELEVATION = (+16'-0") ABOVE REFERENCE ELEVATION (0'-0") UNLESS NOTED.
- 2. REFER TO WOOD TRUSS MANUFACTURER'S SHOP DRAWINGS FOR TRUSS WEB AND CHORD BRACING REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY ERECTION BRACING b. ALL FASTENING FOR ROOFING TO PURLINS SHALL BE #10 x 1" SCREWS FASTENED AT 4 1/2" O.C. AT REQUIRED TO STABILIZE THE ROOF FRAMING UNTIL ALL PERMANENT BRACING, INCLUDING ROOF DECK, IS INSTALLED.
- 3. THE CONTRACTOR AND TRUSS SUPPLIER SHALL DESIGN AND SUPPLY ALL TEMPORARY TRUSS BRACING d. PROVIDE SNOW GUARDS AT EAVES
- AS REQUIRED DURING CONSTRUCTION. 4. REFER TO FRAMING SECTIONS AND DETAILS FOR UPLIFT SCREW/TIES AND FRAMING ANCHORS.
- 5. SEE S001 FOR GENERAL STRUCTURAL NOTES.
- SHEET AND DETAILS FOR ADDITIONAL INFORMATION.

METAL ROOFING

- a. METAL ROOFING, TRIM, FASCIA, ETC. BASIS OF DESIGN TO BE GRAND-RIB 3 BY FABRAL, 29 GA. GALVANIZED STEEL, 80 KSI YIELD. COLOR TO BE SELECTED BY OWNER.
- ENDS AND 9" O.C. IN THE FIELD.
- c. SIDE LAP SCREW SHALL BE #12 x 3/4" SHEET METAL STITCH SCREWS. ALL ACCESSORIES, FLASHING, AND SIDE LAPS SHALL BE FASTENED AT 12" O.C.

8. METAL SIDING

- a. METAL SIDING, TRIM, FASCIA, ETC. BASIS OF DESIGN TO BE GRAND-RIB 3 BY FABRAL, 29 GA.
- GALVANIZED STEEL, 80 KSI YIELD. COLOR TO BE SELECTED BY OWNER. b. ALL FASTENING FOR SIDING TO GIRTS SHALL BE #10 x 1" SCREWS FASTENED AT 4 1/2" O.C. AT ENDS
- AND 9" O.C. IN THE FIELD. 6. H-x - INDICATES HEADER BELOW REFERENCE ELEVATION OF PLAN. SEE HEADER SCHEDULE ON THIS c. SIDE LAP SCREW SHALL BE #12 x 3/4" SHEET METAL STITCH SCREWS AT 8" O.C. ALL ACCESSORIES
 - AND FLASHING SHALL BE FASTENED AT 12" O.C. d. 2x VERTICAL BLOCKING SHALL BE INSTALLED BETWEEN ALL GIRTS AT THE BUILDING POSTS. FASTEN EACH BLOCKING TO POST WITH (4) GRK RSS #10 x 4" SCREWS EQUALLY SPACED VERTICALLY.
 - 9. PROVIDE VENTED SOFFIT AT EAVES AND SOLID SOFFIT AT RAKES.



STRUCTURAL STEEL FRAMING KEY HEADER SIZE -WOOD POST (SEE FOUNDATION PLAN) —

HEADER SCHEDULE					
MARK	SIZE	REMARKS			
H-1	(2) 1 3/4x9 1/2 2.0E LVL	SEE 4/S302 FOR CONX TO POST			
H-2	(2) 1 3/4x22 2.0E LVL	SEE 3/S302 FOR BOX HEADER REQUIREMENTS SEE 4-B/S302 FOR CONX TO POST			

NOTE: SEE DETAIL C/S301 FOR SPACER BLOCKING

TYPICAL FASTENING				
MEMBER	FASTENING			
ROOF PURLINS	(2) GRK R4 #10 x 4" SCREWS TO EACH ROOF TRUSS, TYPICAL PROVIDE (3) SCREWS PER PURLIN AT LAP SPLICE			
2x6 GIRT WALLS	(2) GRK R4 #10 x 4" SCREWS TO EACH WOOD POST (2) EACH END AT BUTT SPACE, (4) WHERE INDICATED PAST POST			
2x8 SKIRT BOARD	(6) GRK R4 #10 x 4" SCREWS TO EACH WOOD POST (3) EACH END AT BUTT SPLICES, 6 WHERE CONTINUES PAST POSTS			

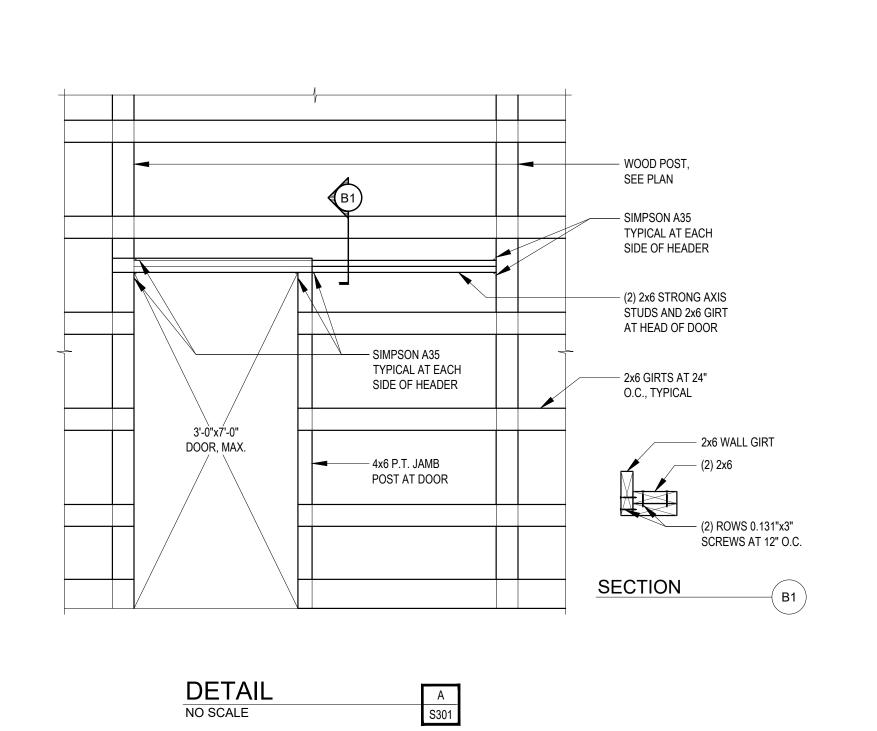
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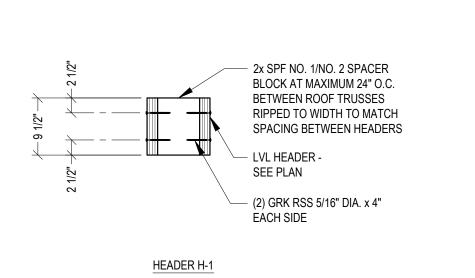
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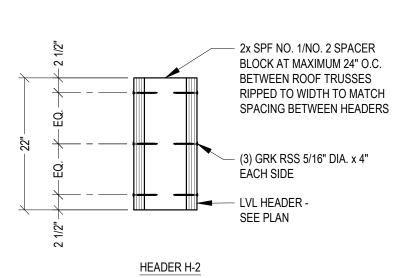
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FRAMING BROOK 973 COLD COLL

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LVL HEADER SPACER BLOCKING DETAIL NO SCALE

STRUCTURAL DETAILS

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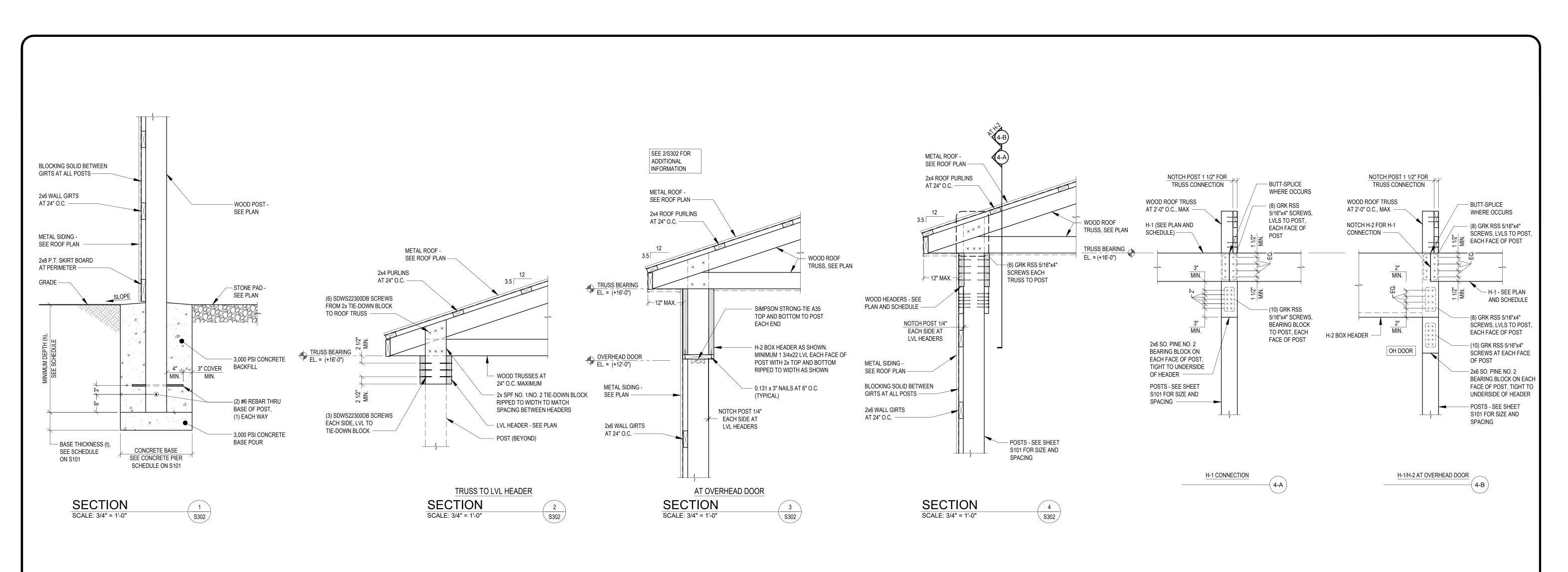
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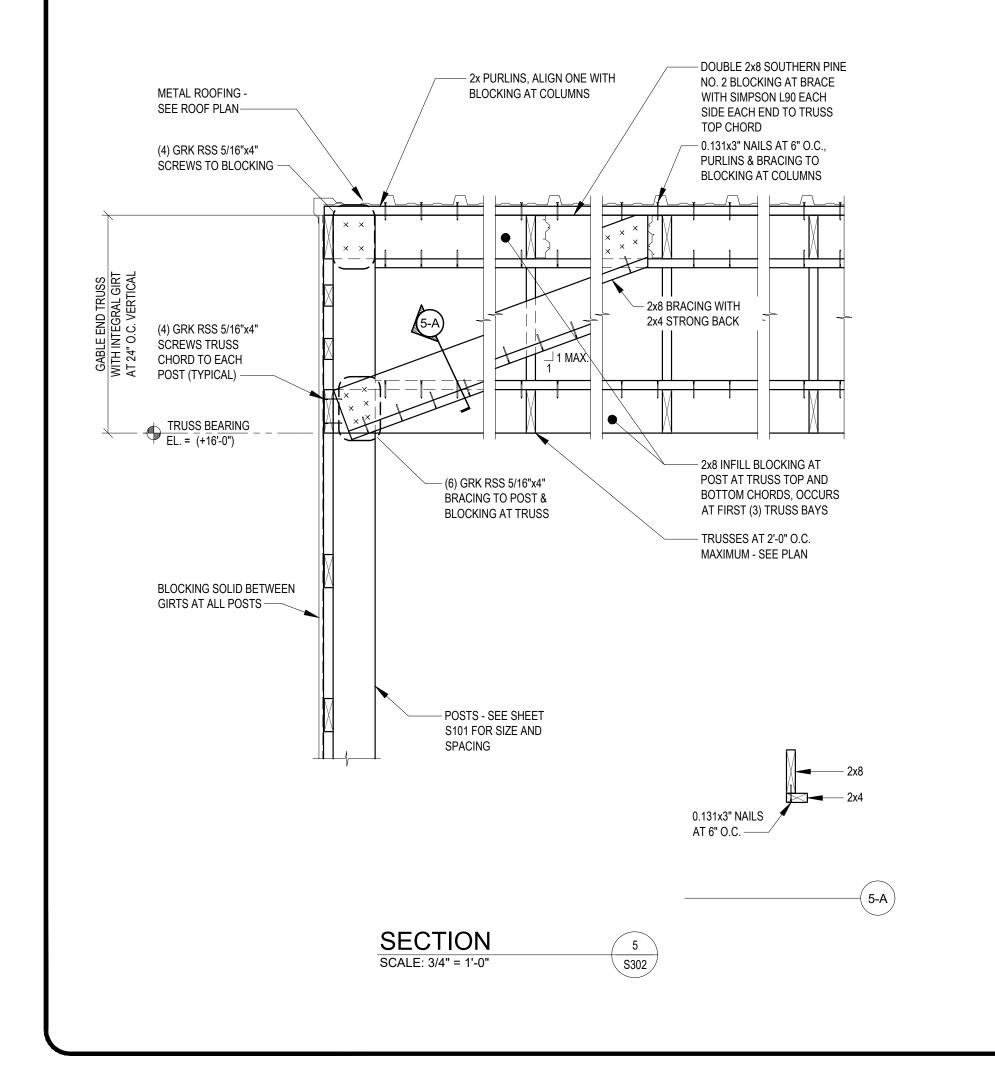
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