

**BASIS OF DESIGN**  
STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (USBC), (NOVEMBER 2005 INCORPORATION OF THE 2003 INTERNATIONAL CODES WITH AMENDMENTS).

DESIGN OF CONCRETE STRUCTURES IS BASED ON THE REQUIREMENTS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-05).

DESIGN OF LUMBER AND TIMBER PRODUCTS IS BASED ON THE REQUIREMENTS OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD PRODUCTS", ANSI/AF&PA NDS-2005.

**LOADS**

LIVE LOAD  
RESIDENTIAL LIVING AREAS & DECKS 40 PSF  
SLEEPING ROOMS 30 PSF  
ROOF AND ACCESSIBLE ATTIC SPACES 20 PSF  
\*LIVE LOADS HAVE BEEN REDUCED PER IBC EQ. 16-21 AND 16-24 WHERE APPLICABLE\*

WIND LOAD  
BASIC WIND SPEED: 90 MPH (3 SEC GUST)  
IMPORTANCE FACTOR (I): 1.0  
EXPOSURE: B

SNOW LOAD  
GROUND SNOW LOAD (PG): 30 PSF  
DRIFTS/SLIDING CALCULATED PER ASCE 7-02

**GENERAL REQUIREMENTS AND CONDITIONS**

WHERE A SECTION OR DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY TO ALL LIKE CONDITIONS EVEN THOUGH NOT SPECIFICALLY MARKED ON THE PLANS. THE CONTRACTOR SHALL PROTECT THE STRUCTURE DURING CONSTRUCTION AGAINST EARTH PRESSURE, WIND AND OTHER FORCES UNTIL PERMANENT SUPPORTS ARE IN PLACE.

WHERE NO SPECIFIC INFORMATION IS GIVEN, CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ARCHITECTURAL PLANS OR THE PRESCRIPTIVE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.

RELATED WORK SPECIFIED OR SHOWN ELSEWHERE  
REFER TO PROJECT SPECIFICATIONS AND OTHER PROJECT DRAWINGS FOR RELATED WORK SPECIFIED OR SHOWN ELSEWHERE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:  
1. PENETRATIONS, SLEEVES, OPENINGS.  
2. INSERTS, EMBEDS, ANCHOR BOLTS AND ANCHORAGE FOR ATTACHMENT OF NON-STRUCTURAL ITEMS.  
3. SIZES AND LOCATIONS OF EQUIPMENT FOUNDATIONS AND PADS  
4. RETAINING WALLS, UTILITY STRUCTURES, PAVEMENT, WALKS AND OTHER STRUCTURES OUTSIDE THE BUILDING LINE.  
5. FLOOR DEPRESSIONS, FLOOR SLOPES, AND FLOOR SLOPES TO DRAIN.

**FOUNDATIONS**

THE FOUNDATION HAS BEEN DESIGNED WITH A PRESUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF IN ACCORDANCE WITH THE PRESCRIPTIVE DESIGN VALUES FOUND IN TABLE 1804.2 OF THE INTERNATIONAL BUILDING CODE FOR SOILS CLASSIFIED AS CL, ML, MH, AND CH. FOOTINGS SHALL BEAR ON UNDISTURBED SOILS, CLEAN OF ALL ORGANIC OR OTHER UNSUITABLE MATERIALS IN CONFORMANCE WITH THE IBC TABLE AND BEARING PRESSURE NOTED ABOVE. THE BEARING CAPACITY IS ALSO ACCEPTABLE FOR USE WITH SOIL TYPES GW, GP, SW, SP, SM, SC, GM, AND GC, AS WELL AS SOUND SEDIMENTARY AND FOLIATED ROCK, AND CRYSTALLINE BEDROCK. IF THE BUILDING OFFICIAL DETERMINES THAT THE IN-PLACE SOILS ARE LIKELY TO HAVE AN IN PLACE BEARING CAPACITY OF LESS THAN 1500 PSF, THE BEARING CAPACITY SHALL BE DETERMINED BY A LICENSED GEOTECHNICAL ENGINEER AND NO WORK SHALL BE PERFORMED UNTIL THESE DRAWINGS HAVE BEEN RECERTIFIED BY THE EOR FOR THE NEW BEARING CAPACITY.

THE PREPARED FOUNDATION BEARING SOILS SHALL NOT BE LEFT EXPOSED DURING INCLEMENT WEATHER OR OPEN AND EXPOSED LONGER THAN 24 HOURS. PLACE A 2" THICK UNREINFORCED CONCRETE PAD OVER BEARING SOILS IF EXCAVATION WILL BE OPEN MORE THAN 24 HOURS OR INCLEMENT WEATHER IS EXPECTED.

ALL FOUNDATIONS SHALL BE CENTERED UNDER SUPPORTED WALLS AND COLUMNS, UNLESS NOTED OTHERWISE.

**CONCRETE**

CONCRETE SHALL BE PROVIDED BY AN APPROVED READY-MIX PLANT AS FOLLOWS:

DESCRIPTION	UNIT WEIGHT (PCF)	F'c AT 28 DAYS (PSI, MINIMUM)
FOOTINGS	150	3000
SLABS ON GRADE	150	3000
EXTERIOR FLOORING	150	4500

MINIMUM LAP OF REINFORCING BARS SHALL BE CLASS B, TENSION LAP CONFORMING TO ACI 318. STAGGER LAP SPICES, UNLESS INDICATED OTHERWISE.

PROVIDE THE MINIMUM CONCRETE COVER FOR REINFORCING BARS:  
CONCRETE CAST AGAINST/PERM. EXPOSED TO EARTH: 3"  
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 AND LARGER: 1 1/2"  
#5 AND SMALLER: 1"

CONCRETE NOT EXPOSED/IN CONTACT WITH GROUND:  
BEAMS AND COLUMNS, ABSOLUTE MIN.: 1 1/2"

REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.

TYPICAL SLAB ON GRADE SHALL BE 4" THICK CONCRETE REINFORCED WITH 6x6 W1.4 x W1.4 WELDED WIRE FABRIC ON 6 MIL MIN. VAPOR BARRIER ON POROUS FILL, UNLESS NOTED OTHERWISE. EXTERIOR SLABS MAY OMIT VAPOR BARRIER. ALL SLABS SHALL BE CUT ON 12' CENTERS, MAXIMUM, TO 1/3 OF THE SLAB DEPTH WITHIN 12 HOURS OF PLACEMENT OR AS SOON AS THE CONCRETE CAN SUPPORT THE WEIGHT OF CUTTING EQUIPMENT. CUTS SHALL OCCUR AT ALL REINFRANT CORNERS. DO NOT CUT REINF. BARS.

**LUMBER AND TIMBER**

LUMBER SHALL CONFORM TO SPECIES AND GRADES AS FOLLOWS, UNLESS OTHERWISE NOTED:  
BEAMS, JOISTS, RAFTERS: S. PINE No. 2 OR BETTER  
OTHER LUMBER: SPF No.1/No. 2 OR BETTER  
TIMBER: E. WHITE PINE, No.2 OR BETTER (OR EQUIV. STRENGTH SPECIES)  
PARALLEL STRAND LUMBER (PSL): TJ MACMILLAN PARALLAM, Fb=2900PSI; E=2.0x10<sup>6</sup> PSI  
LAMINATED VENEER LUMBER (LVL): TJ MACMILLAN MCROLLAM, Fb=2600PSI; E=1.8x10<sup>6</sup> PSI  
LVL AND PSL BEAMS SHALL BE CONTINUOUS OVER SUPPORTS WITHOUT SPLICES UNO.

BEARING FOR BEAM ENDS ON PIERS OR EXTERIOR FOUNDATION WALLS SHALL BE 4" MINIMUM.

WALL AND ROOF SHEATHING SHALL BE STRUCTURAL I GRADE, 7/8" MINIMUM, SECURED WITH 8d NAILS AT 6" o/c AT ALL EDGES AND 12" o/c IN FIELD, UNO. SUBFLOOR DIAPHRAGM SHALL BE STRUCTURAL I GRADE, COMBINATION SUBFLOOR-UNDERLAYMENT, 3/8" MINIMUM THICKNESS PLYWOOD, SECURED WITH CONSTRUCTION ADHESIVE AND #8 ROLLED THREAD WOOD SCREWS AT 6" o/c AT ALL EDGES AND 12" o/c IN FIELD, UNO.

ALL LUMBER NOT FULLY ENCLOSED WITHIN THE HEATED ENVELOPE OF THE STRUCTURE SHALL BE PRESERVATIVE TREATED FOR GROUND CONTACT. ALL LUMBER IN DIRECT CONTACT WITH OR WITHIN 4" OF SOIL SHALL BE "FOUNDATION GRADE" PRESERVATIVE TREATED. ALL FASTENERS USED IN CONTACT WITH TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED PER ASTM A153. ALL CONNECTORS USED IN CONTACT WITH TREATED LUMBER SHALL BE GALVANIZED PER ASTM A653 (G185). OPTIONAL: STAINLESS STEEL FASTENERS AND CONNECTORS MAY BE SUBSTITUTED FOR GALVANIZED PRODUCTS ONLY IF ALL GALVANIZED PRODUCTS ARE REPLACED WITH STAINLESS EQUIVALENTS - MIXING OF GALVANIZED AND STAINLESS PARTS IS STRICTLY PROHIBITED.

PEELED LOGS SHALL BE PINE, POPLAR, LOCUST, OAK, OR SIMILAR, WITH NO CHECKS OR SPLITS GREATER THAN 1" WIDE OR 6" LONG, 16% MAXIMUM MOISTURE CONTENT, AND LESS THAN 2" DEVIATION FROM STRAIGHT OF ENTIRE LENGTH. SIZE SHALL BE MEASURED AT TIP (SMALLEST) DIAMETER.

**PREFABRICATED WOOD TRUSSES**

TRUSSES SHALL BE DESIGNED FOR ALL LOADS AS REQUIRED BY LISTED DESIGN CODE, INCLUDING WIND, SNOW AND SEISMIC BUT SHALL NOT BE LESS THAN THE FOLLOWING MINIMUM LOADS:

LIVE LOADS:  
TOP CHORD: 20PSF  
BOTTOM CHORD: 10PSF

DEAD LOADS:  
DEAD LOADS SHALL BE COMPUTED FOR BUILDING MATERIALS AS INDICATED AND SHALL NOT BE LESS THAN:  
TOP CHORD: 10PSF  
BOTTOM CHORD: 5PSF

SNOW LOADS AND WIND LOADS SHALL BE BASED ON ASCE 7-05 OR PER LOCAL BUILDING CODE, WHICHEVER IS GREATER.

SCISSORS TRUSSES SHALL BE DESIGNED TO REACT ALL LATERAL THRUST WITHIN THE ROOF TRUSS ITSELF.

TRUSS BOTTOM CHORD DOES RECEIVE CONTINUOUS SHEATHING.

ROOF TRUSSES SHALL BE SPACED AT 24" O.C. MAXIMUM, UNLESS INDICATED OTHERWISE.

TRUSS ENDS SHALL BE DESIGNED TO REACT ALL LATERAL ROOF FORCES TO THE TOP PLATE OF THE BEARING WALL THROUGH MANUFACTURER SUPPLIED/SPECIFIED ANCHORS OR BLOCKING. TRUSS MANUFACTURER SHALL NOTE ALL LOCATIONS OF LATERAL LOAD TRANSFER TO THE BUILDING STRUCTURE ALONG WITH ASSOCIATED LOAD MAGNITUDES ON TRUSS SHOP DRAWINGS.

ALL TRUSSES WHICH CANNOT BE SHIPPED WHOLE AND REQUIRE A FIELD CONNECTION SHALL BE DESIGNED, DETAILED AND FABRICATED WITH BOLTED OR PLYWOOD GUSSETED JOINTS.

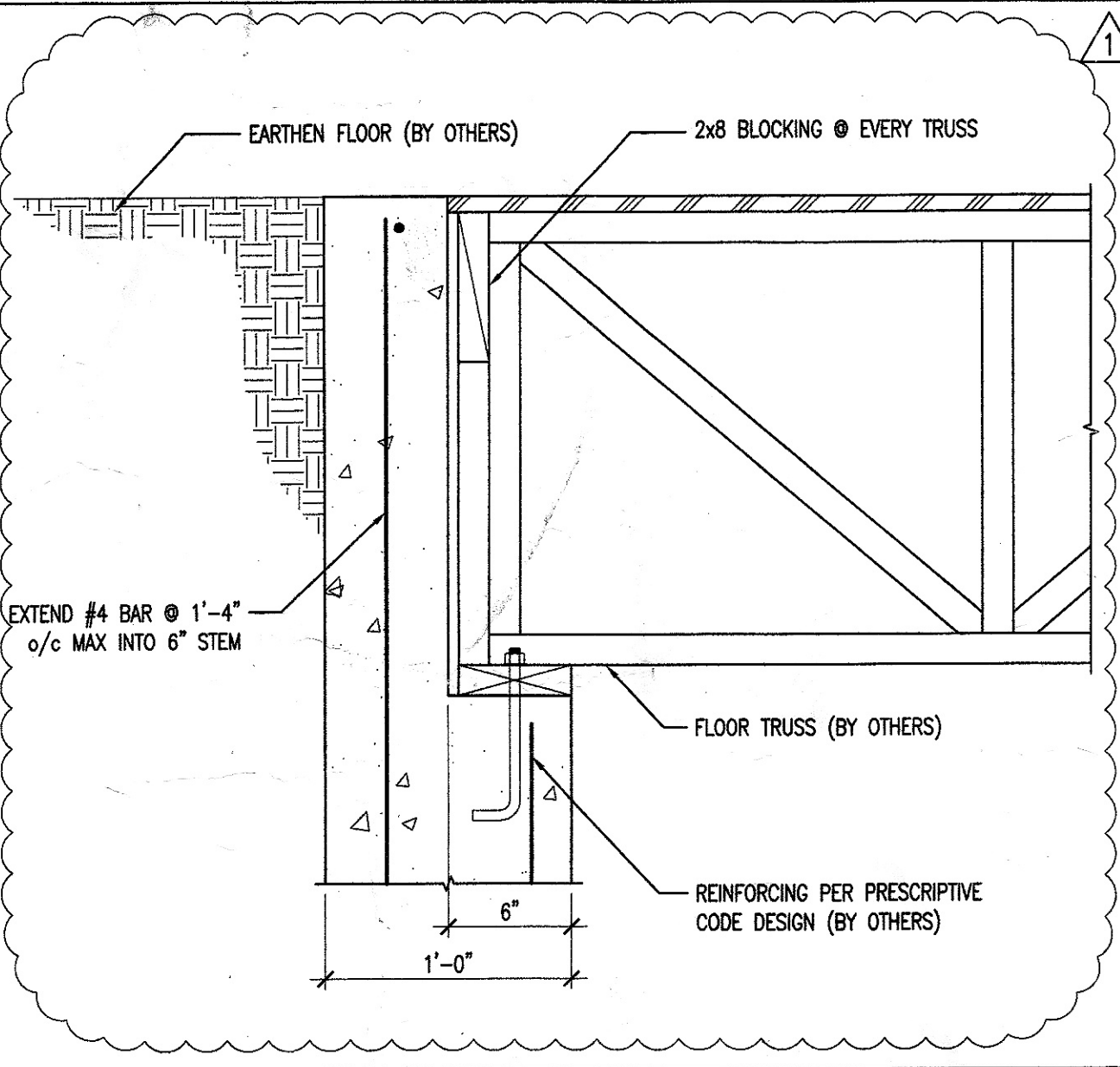
TRUSS MANUFACTURER SHALL INDICATE ALL REQUIRED INTERIOR WEB BRACING, BOTH TEMPORARY AND PERMANENT.

TRUSS ENDS SHALL BE DESIGNED TO REACT ALL LATERAL ROOF FORCES TO THE TOP PLATE OF THE BEARING WALL THROUGH MANUFACTURER SUPPLIED/SPECIFIED ANCHORS OR BLOCKING. TRUSS MANUFACTURER SHALL NOTE ALL LOCATIONS OF LATERAL LOAD TRANSFER TO THE BUILDING STRUCTURE ALONG WITH ASSOCIATED LOAD MAGNITUDES ON TRUSS SHOP DRAWINGS.

**SIMPSON STRONG-TIE STRAPS**

ALL X-BRACING STRAPS SHALL BE SST-CS16 COILED STRAPS. STRAPS SHALL BE CUT TO PROVIDE A MINIMUM NAILING LENGTH OF 12" ON BOTH THE TOP AND BOTTOM BAND. A MINIMUM OF 22-10d NAILS SHALL BE USED AT ALL NAILING LOCATIONS. SOUTHERN PINE No.2 2x12 RIBBON BAND SHALL BE USED BETWEEN ALL FLOOR TRUSSES IN ORDER TO PROVIDE PROPER NAILING LENGTH.

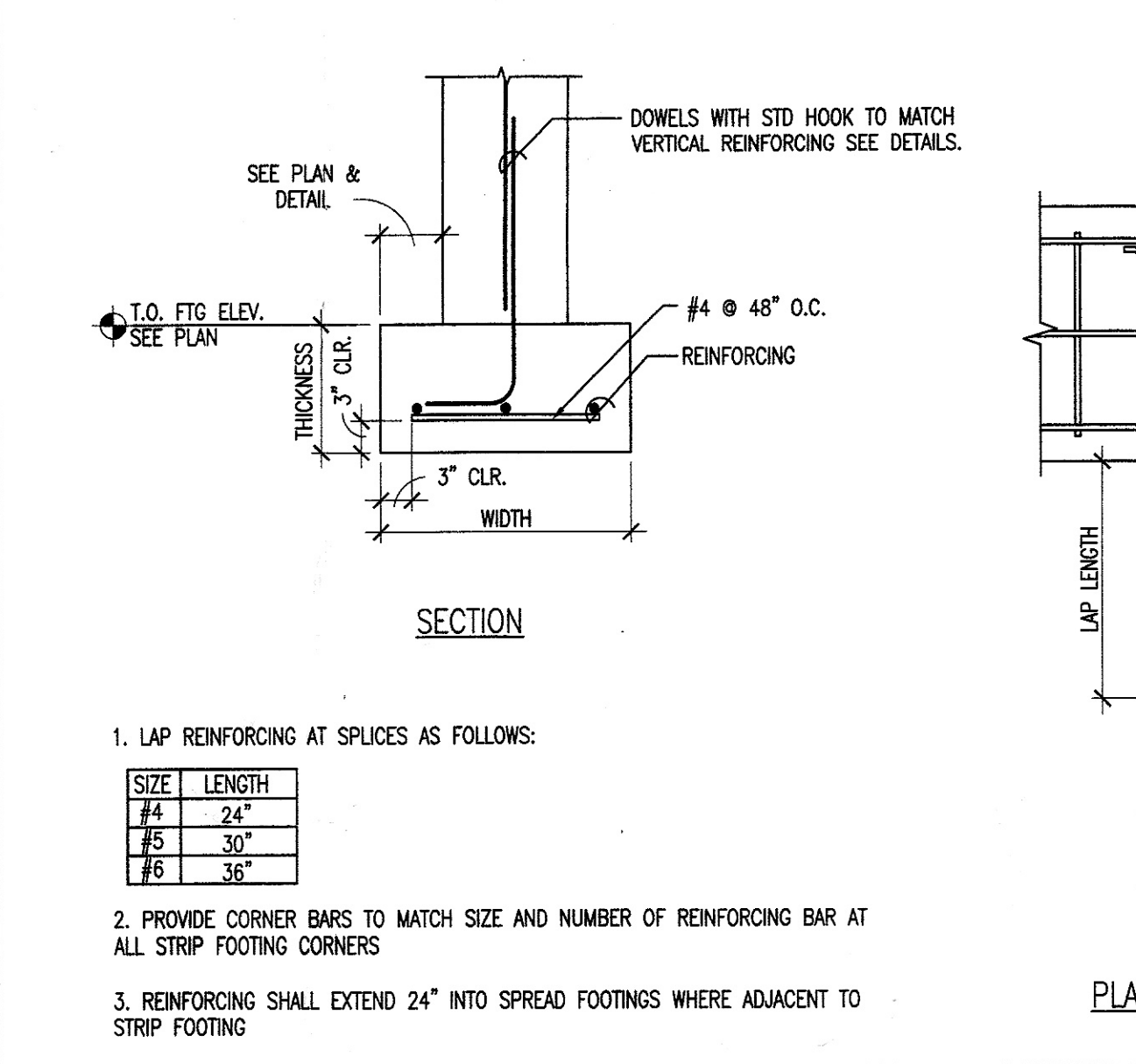
GENERAL NOTES (CONTINUED)



SECTION

ABBREVIATIONS	
AB	ANCHOR BOLT
ALT	ABOVE FINISH FLOOR
ARCH	ARCHITECTURAL
CJ	CONTROL JOINT
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
EB	EXPANSION BOLT
EJ	EXPANSION JOINT
EQ	EQUAL
EXT	EXISTING
EXT	EXTERIOR
FL	FLOOR
FRT	FIRE RETARDANT TREATED
GW	GYPSTUM WALL BOARD
HDS	HOT DIPPED GALVANIZED
NA	NOT APPLICABLE
NC	NOT IN CONTRACT
NTS	NOT TO SCALE
O/C	ON CENTER
PT	PRESERVATIVE TREATED
R	RADIUS
RO	ROUGH OPENING
SST	SIMPSON STRONG-TIE
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
W	WITH
W/O	WITHOUT
WWR	WELDED WIRE REINFORCEMENT

LEGEND



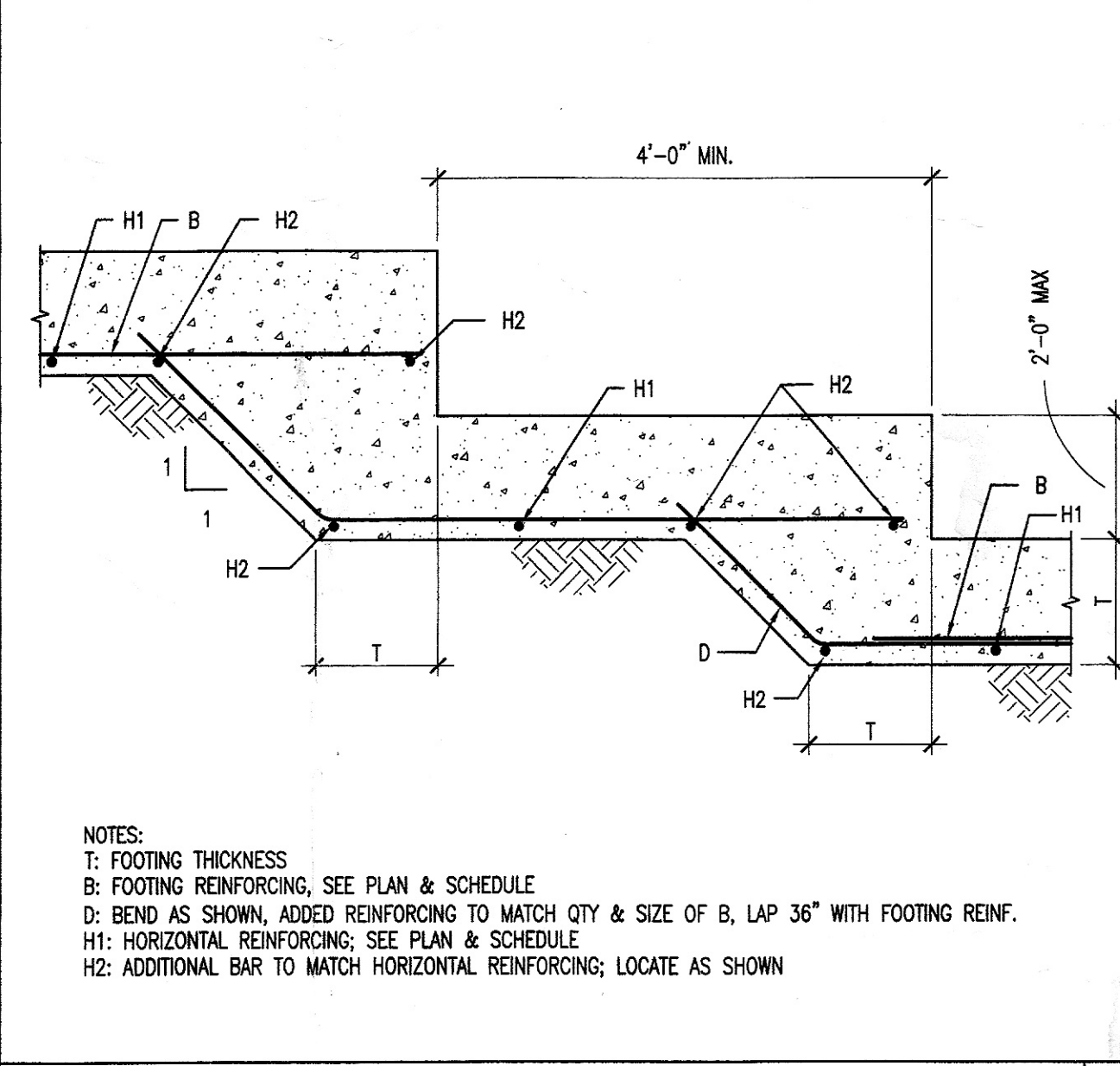
TYPICAL FOOTING REINFORCEMENT

COLUMN/POST SCHEDULE				
MARK	DESCRIPTION	BASE	CAP	REMARKS
C1	SOUTHERN PINE No.2 8x8	SST-CB88	NONE	8" MIN. PEELED LOG OPTIONAL
NOTES: SEE GENERAL NOTES FOR PEELED LOG SPECIFICATIONS.				

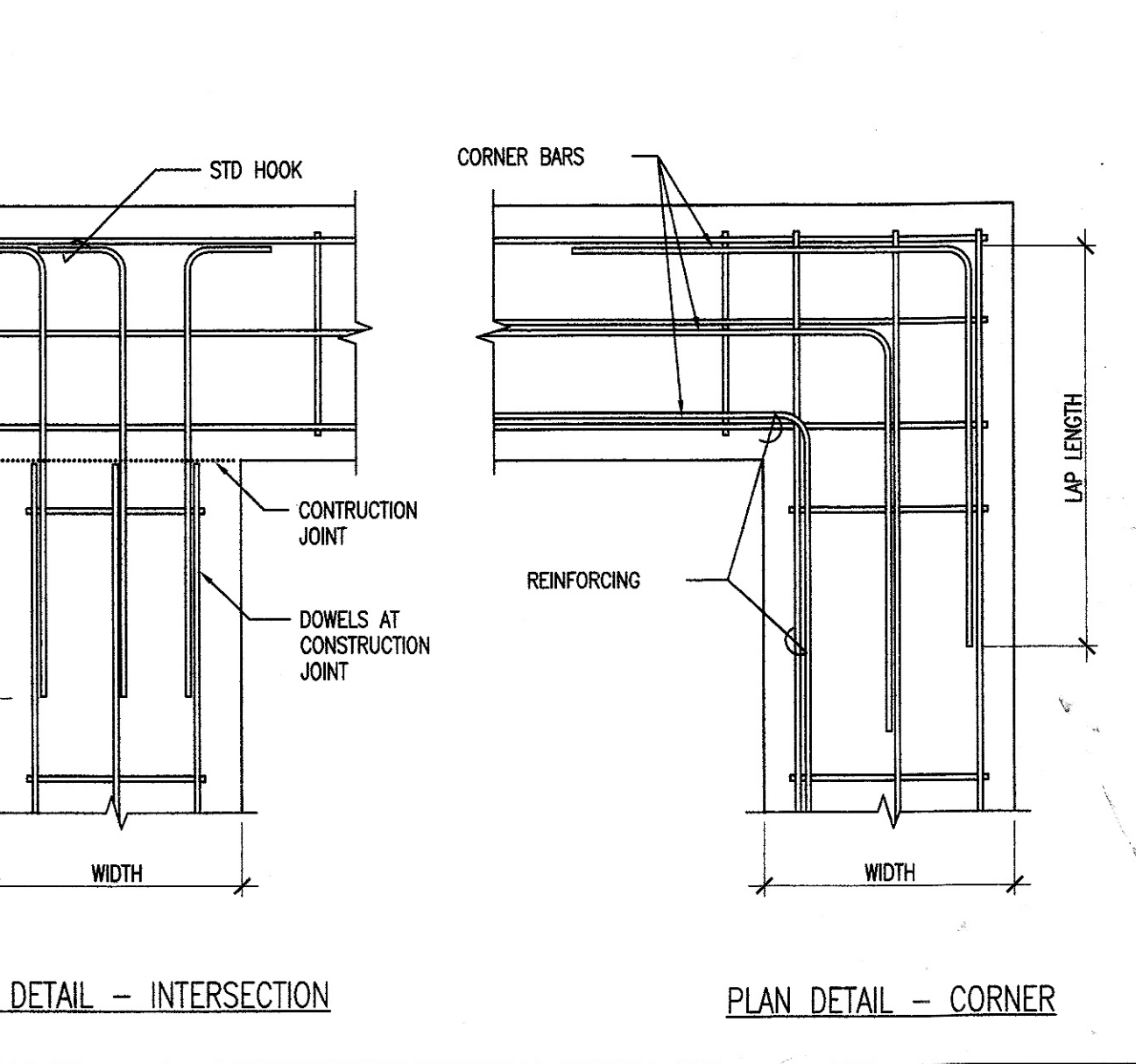
PIER SCHEDULE				
MARK	SIZE	REINFORCING		REMARKS
		VERT	TIES	
P1	1'-0" x 1'-0"	4 - #4	NONE	CONCRETE
NOTES: 1. BARS SHALL EXTEND INTO FOOTING w/ STANDARD HOOK.				

FOOTING SCHEDULE			
MARK	SIZE	THICKNESS	REINFORCING (BOTTOM U.N.O.)
F2	2'-0" x CONT.	12"	3 - #4 CONT. ON #4 @ 48" o/c
F20	2'-0" x 2'-0"	12"	3 - #4 BARS, EACH WAY
NOTES: FOOTINGS SHALL BE PLACED BELOW FROST DEPTH UNLESS THERMALLY PROTECTED BY AN APPROVED MEANS. WALL SHALL BE CENTERED ABOVE FOOTING UNLESS NOTED OTHERWISE. APPROVED CHAIRS SHALL BE USED TO HOLD REBAR IN PLACE; DO NOT DRIVE REBAR INTO SOIL.			

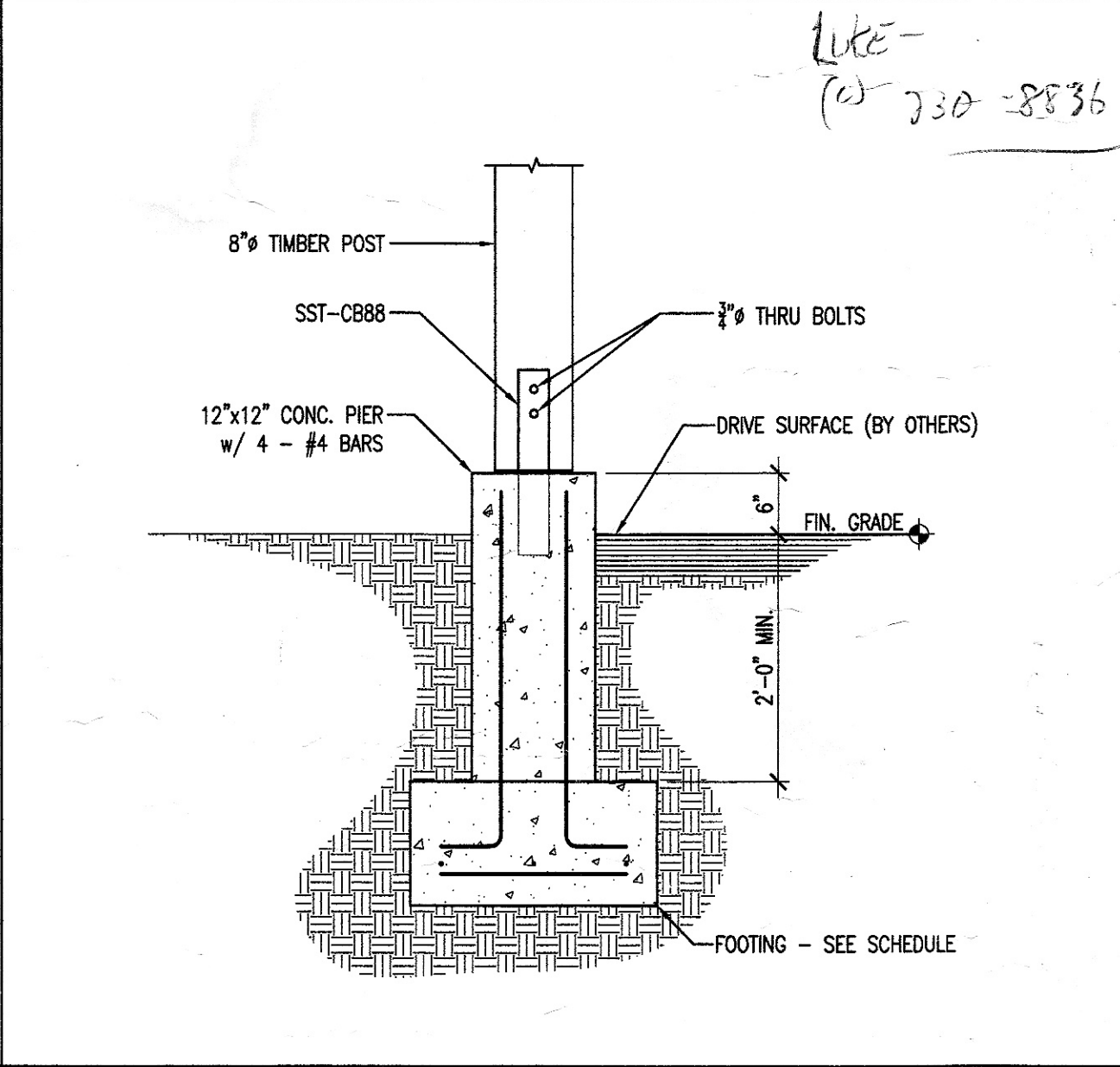
SCHEDULES



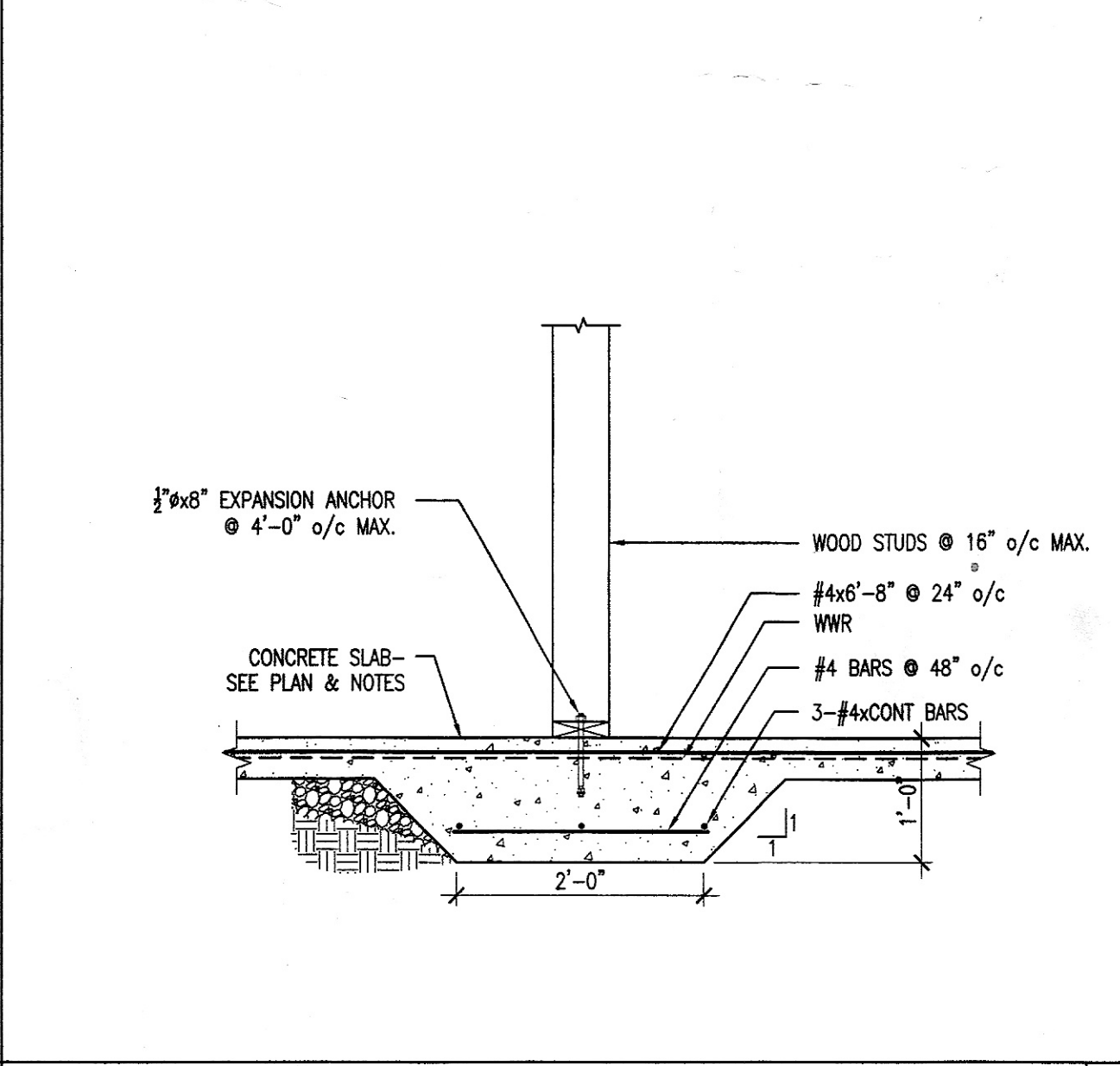
STEPPED FOOTING



PLAN DETAIL - INTERSECTION



FOOTING SECTION

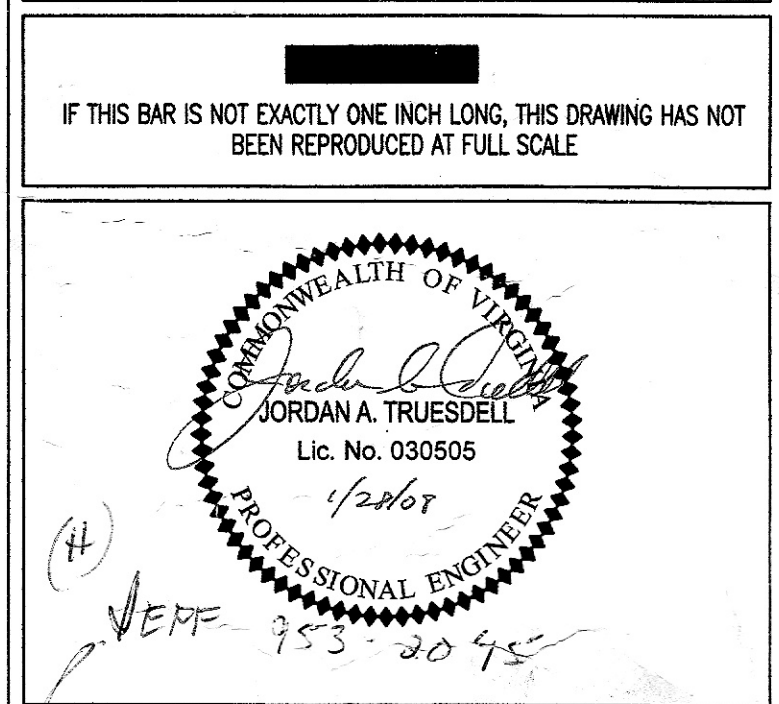


THICKENED SLAB

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NOT TO SCALE



PROJECT  
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PULASKI COUNTY, VIRGINIA

**TRUESDELL ENGINEERING, Inc.**

**Structural Design & Consulting**

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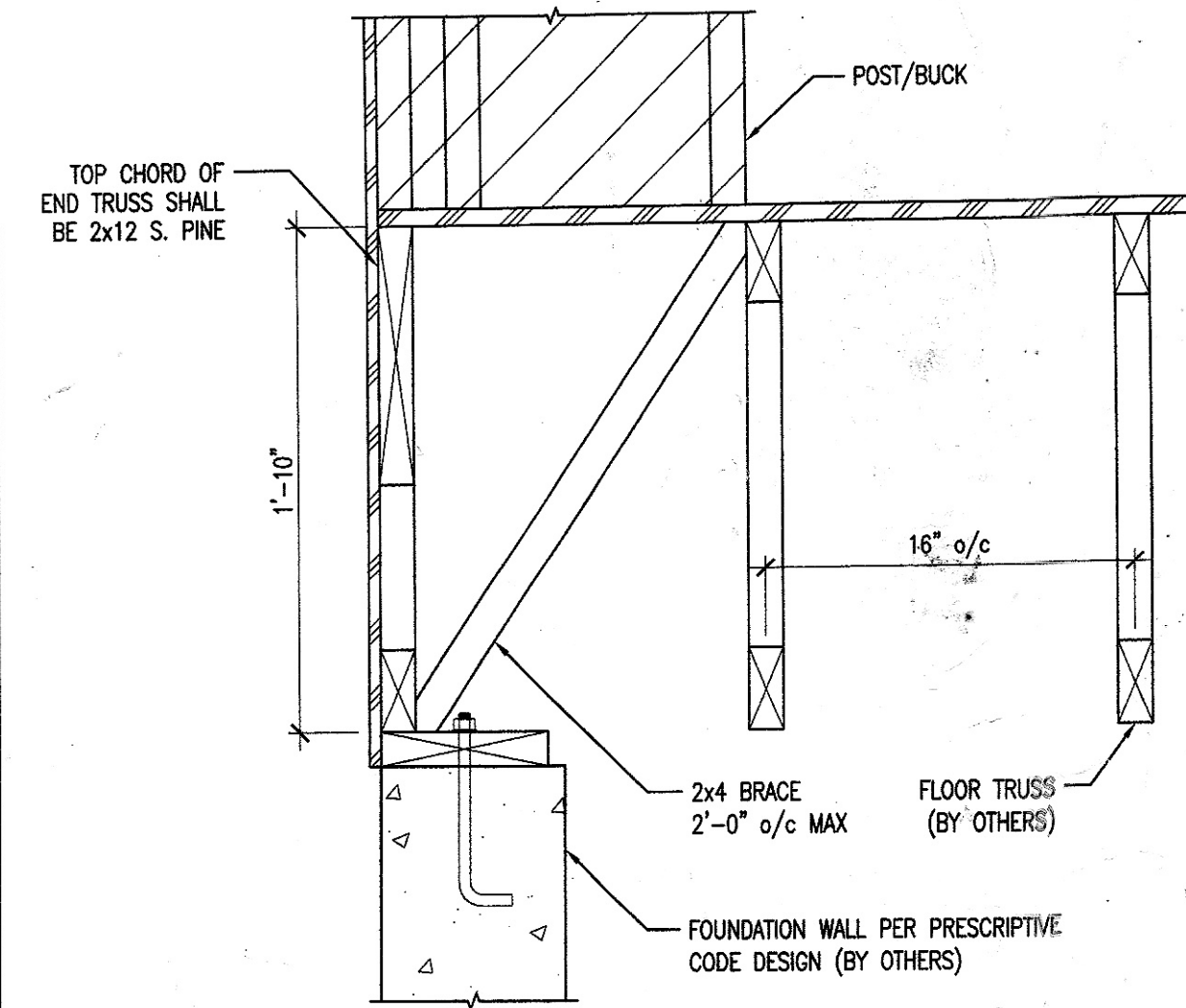
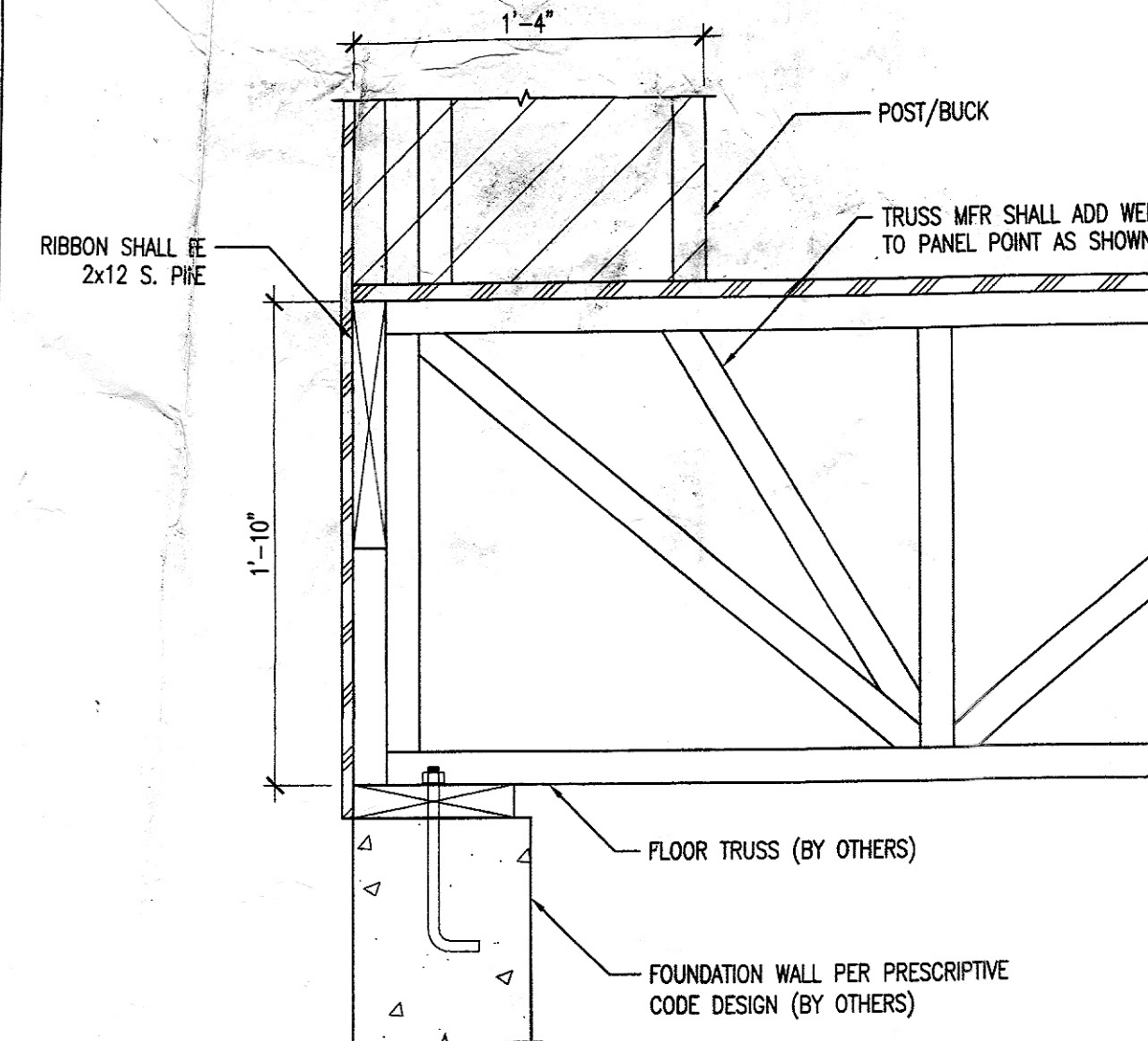
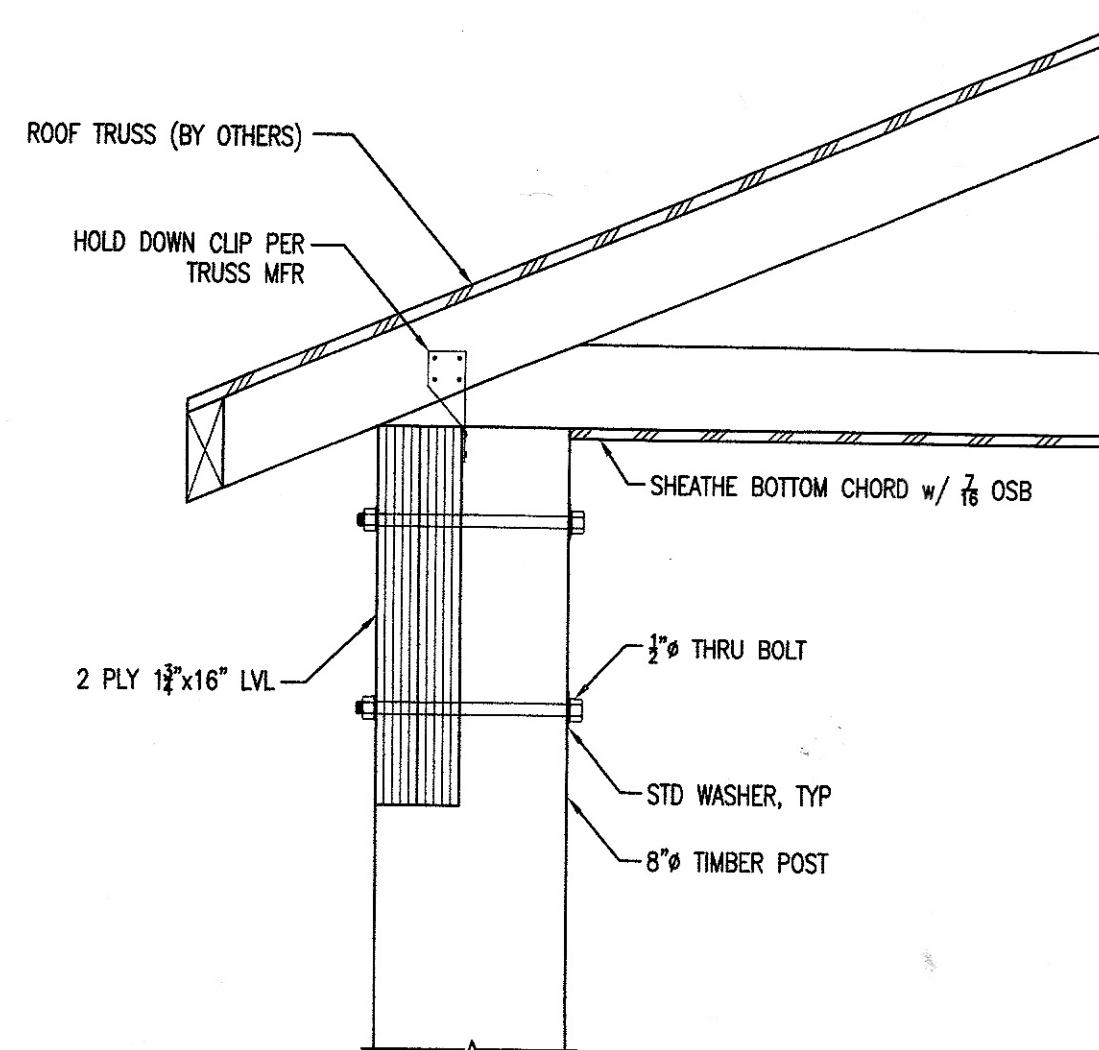
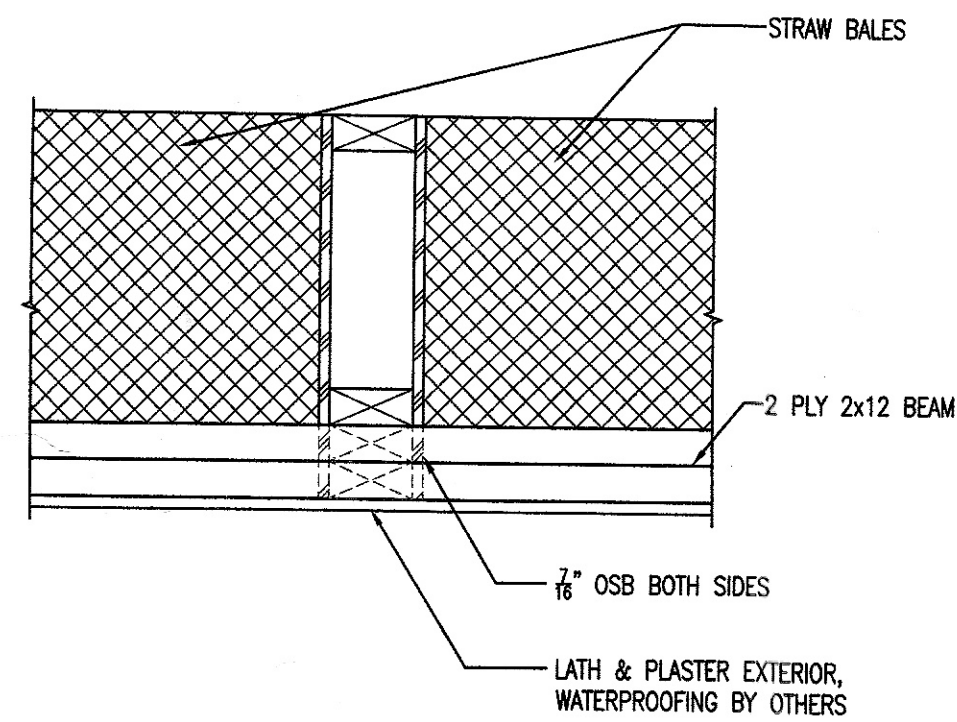
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PLAN & BRACING UPDATES		25-JAN-08
REV.	DESCRIPTION	DATE
1		

SHEET NAME  
GENERAL NOTES, LEGEND, SCHEDULES & DETAILS

PROJECT NO. 07-2114 DATE 28-DEC-07	SHEET S1 01 OF 03
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TOP VIEW OF WALL PERIMETER

SCALE: 1 1/2" = 1'-0"

6 SECTION

SCALE: 1 1/2" = 1'-0"

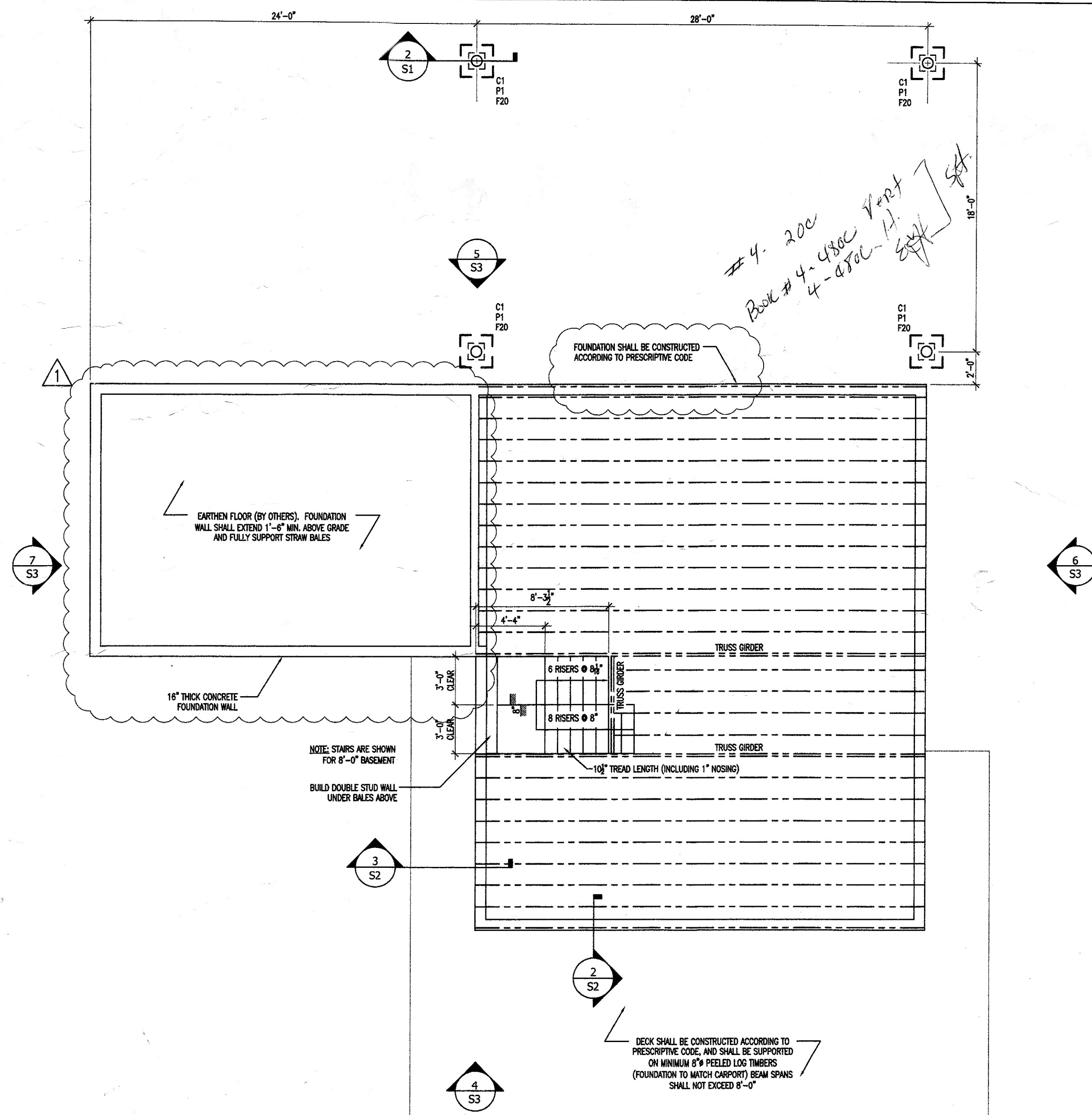
5 SECTION

SCALE: 1 1/2" = 1'-0"

3 SECTION

SCALE: 1 1/2" = 1'-0"

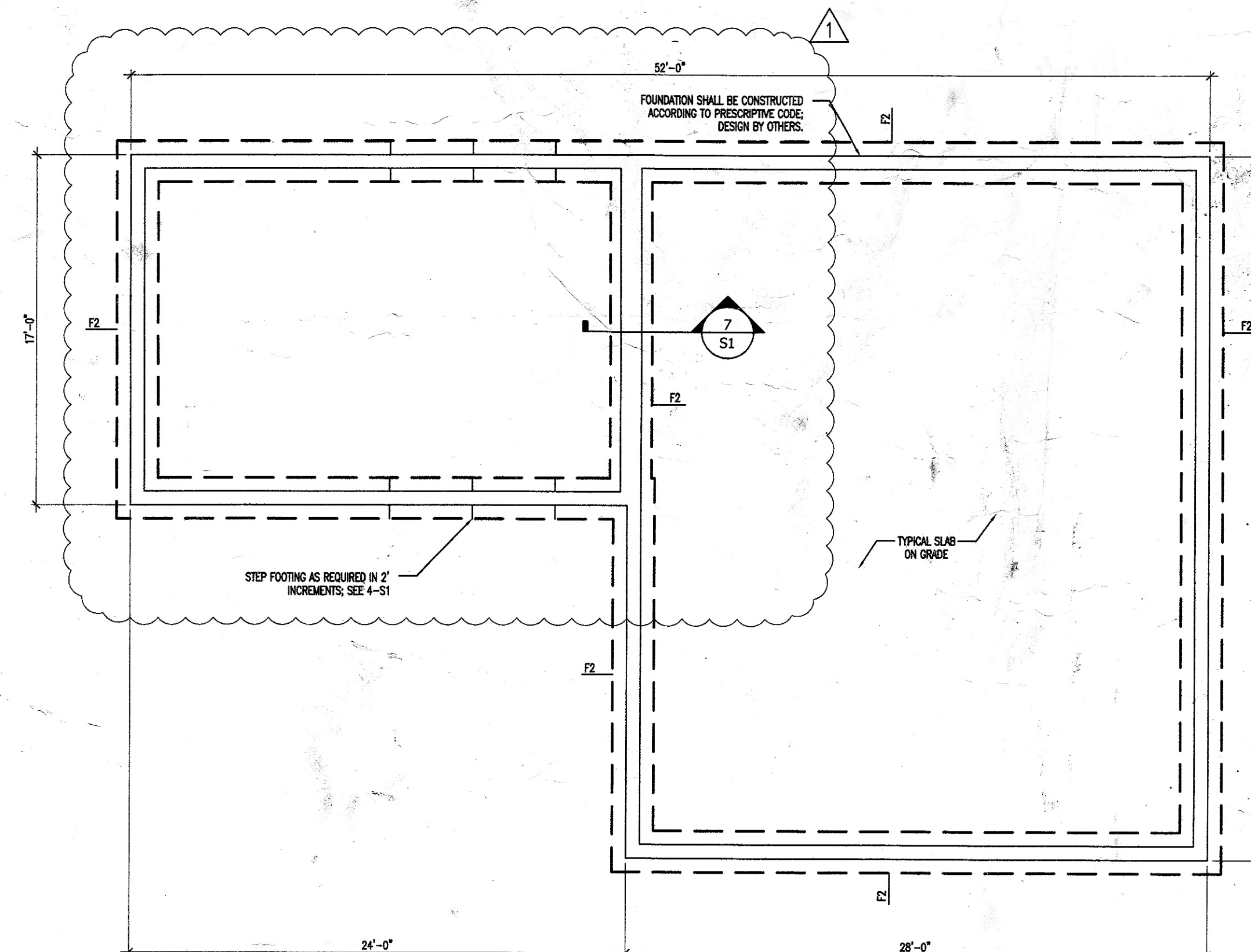
2



FIRST FLOOR FRAMING PLAN

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

4 FOUNDATION PLAN

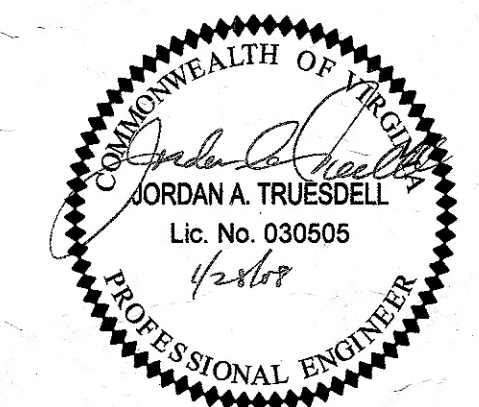


NOTE: OPENINGS NOT SHOWN, GC TO COORD. w/ OWNER

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

1

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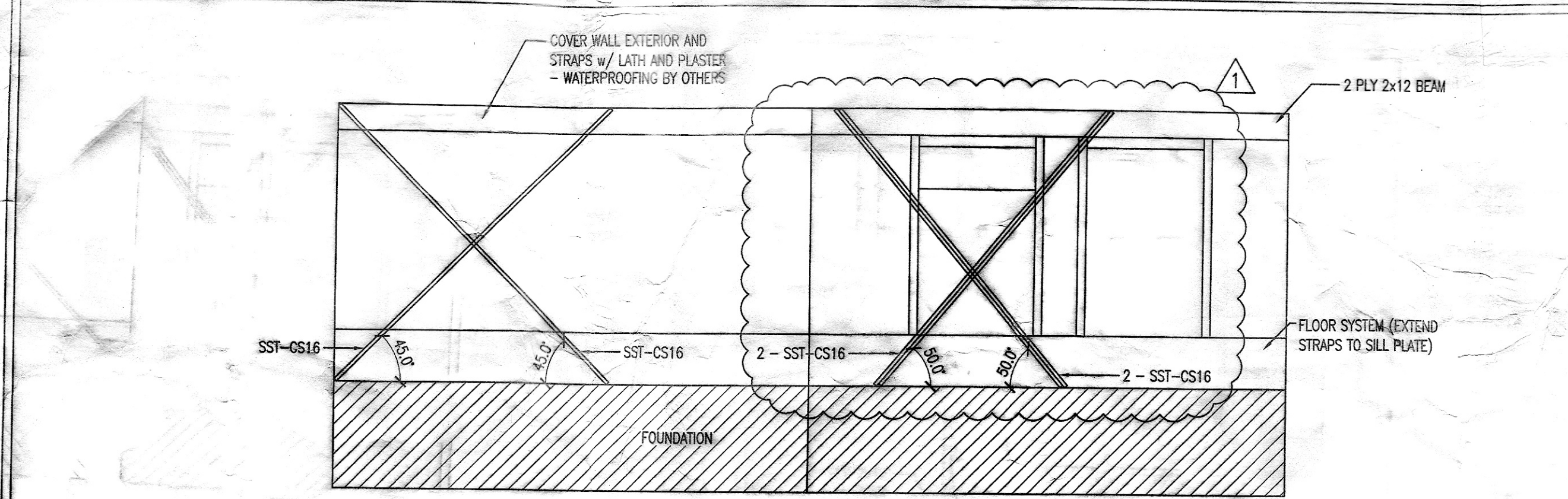
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1 PLAN & BRACING UPDATES 25-JAN-08  
REV. DESCRIPTION DATE

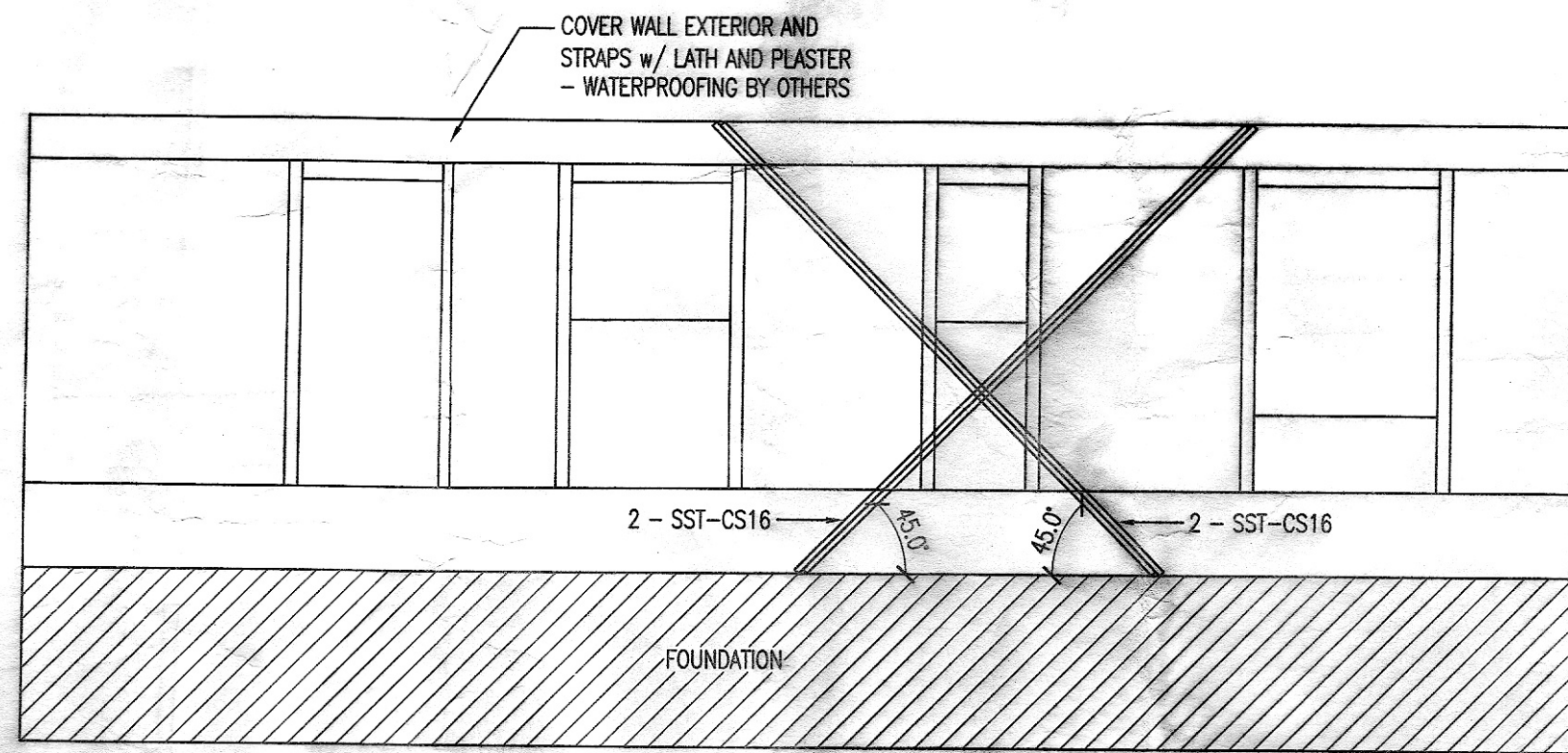
SHEET NAME  
FOUNDATION PLAN, FIRST FLOOR FRAMING PLAN, DETAILS & SECTIONS

PROJECT NO. 07-2114  
DATE 28-DEC-07  
SHEET S2  
02 OF 03

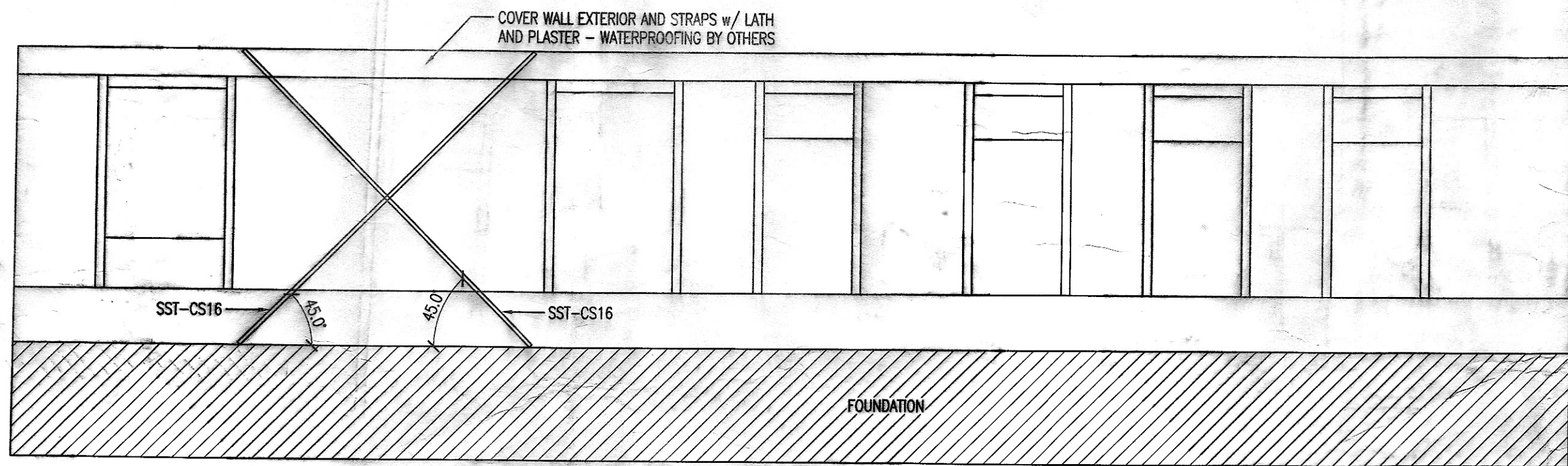




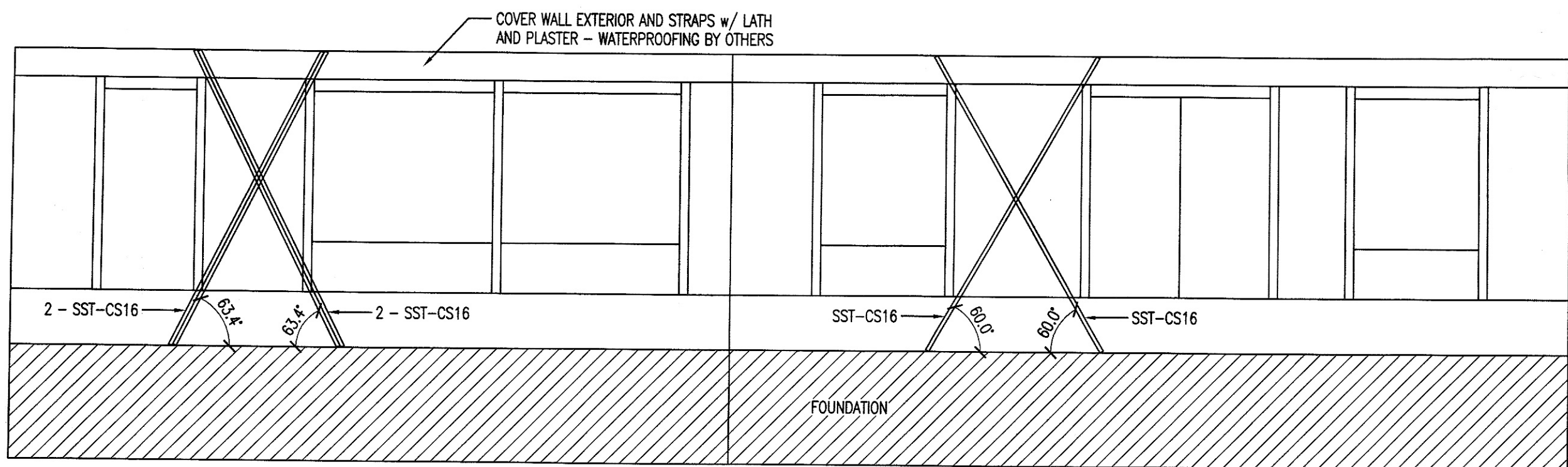
WEST ELEVATION - LATERAL STRAPS SCALE: 1/4" = 1'-0" 7



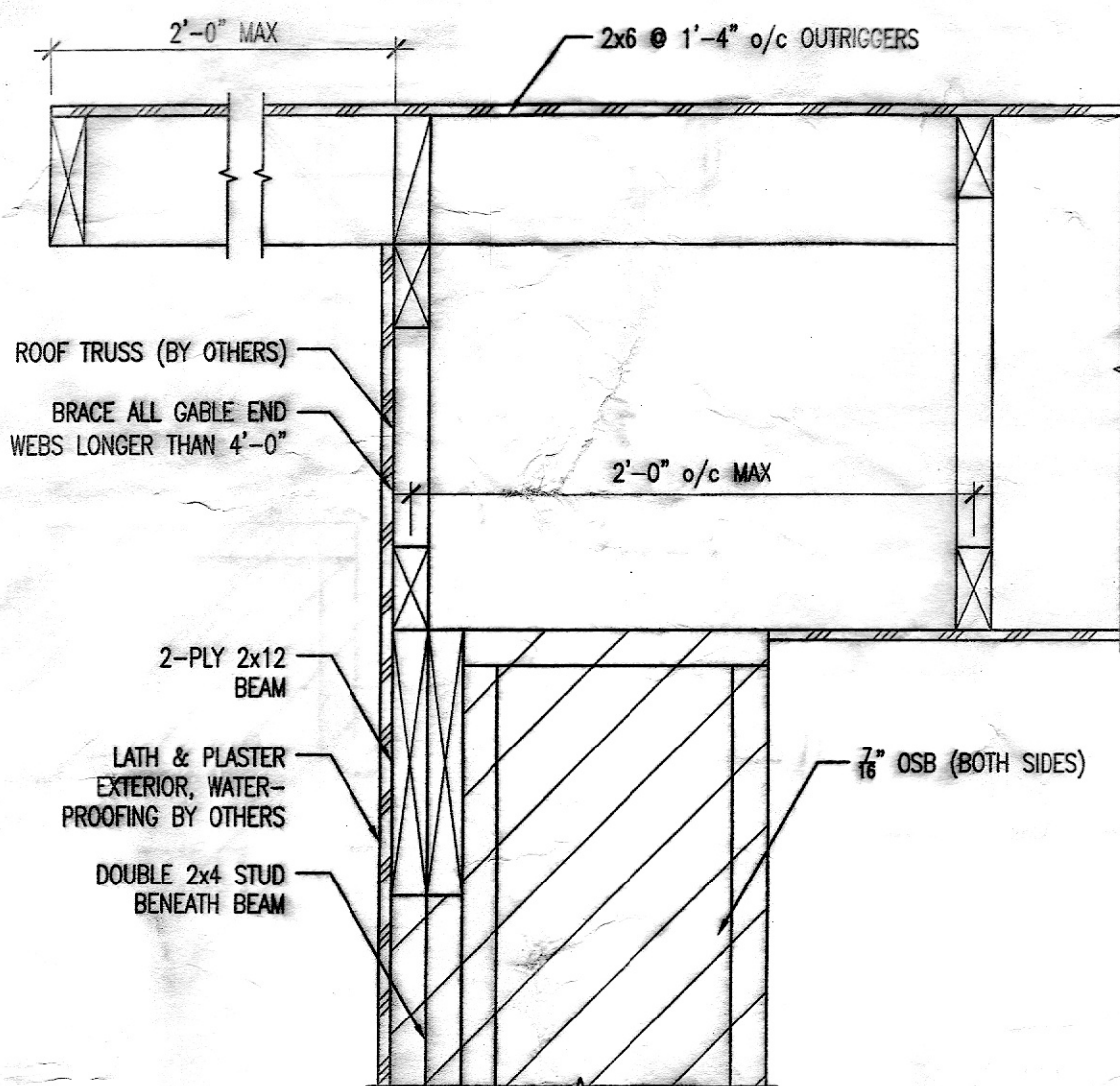
EAST ELEVATION - LATERAL STRAPS SCALE: 1/4" = 1'-0" 6



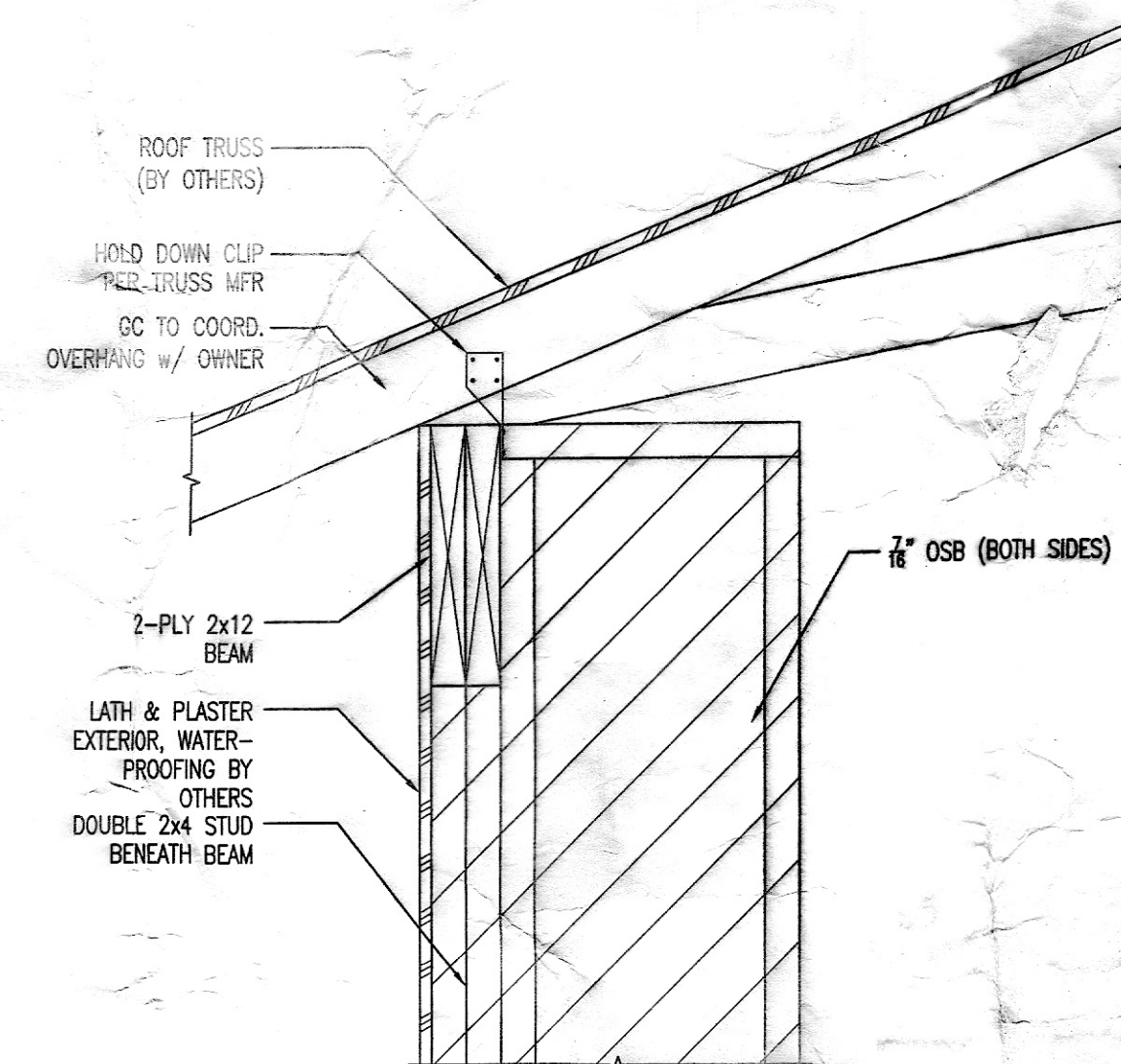
NORTH ELEVATION - LATERAL STRAPS SCALE: 1/4" = 1'-0" 5



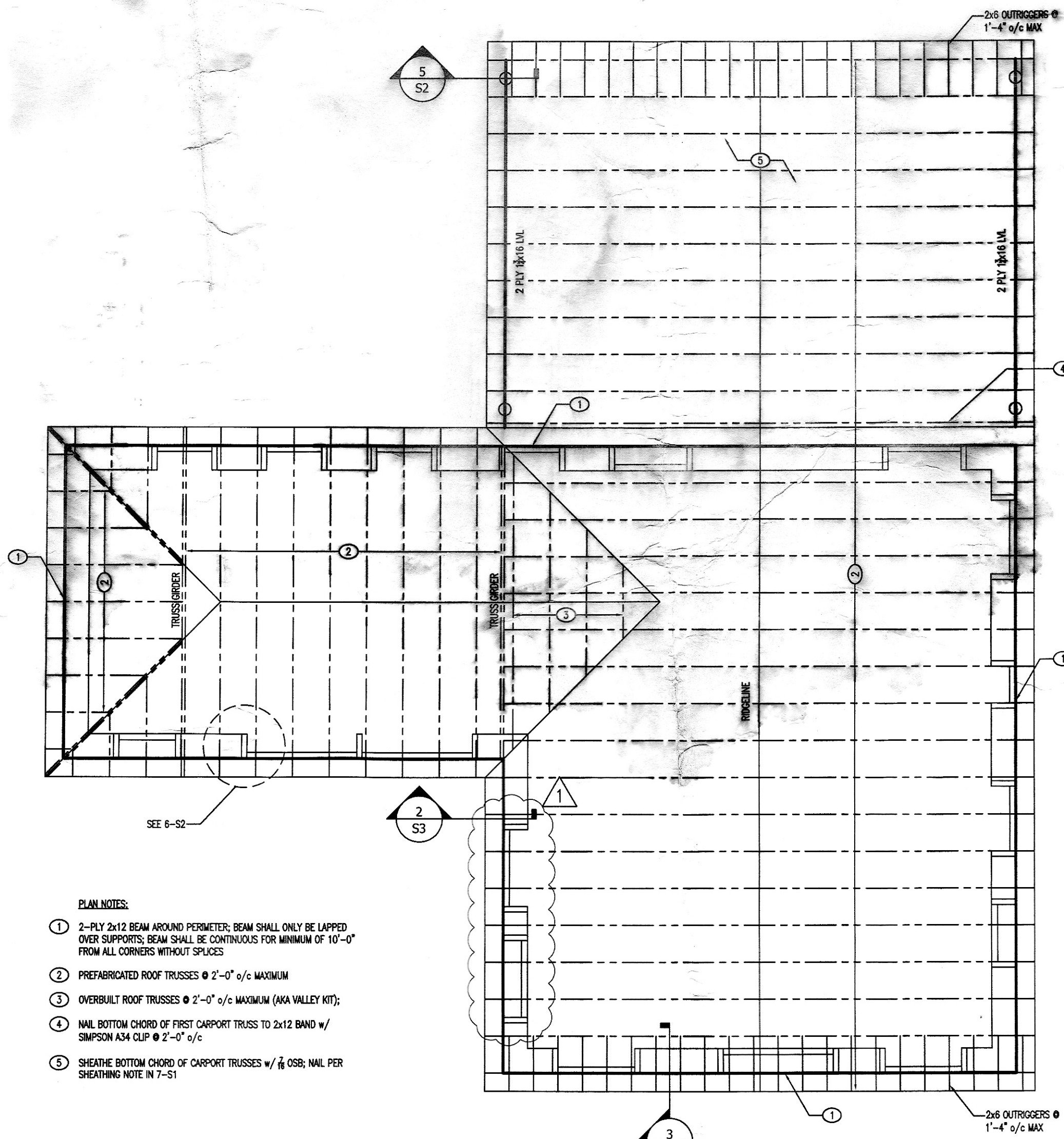
SOUTH ELEVATION - LATERAL STRAPS SCALE: 1/4" = 1'-0" 4



SECTION SCALE: 1 1/2" = 1'-0" 3



SECTION SCALE: 1 1/2" = 1'-0" 2



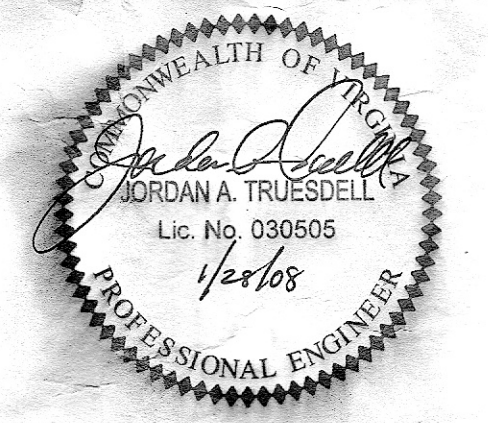
- PLAN NOTES:
- 2-PLY 2x12 BEAM AROUND PERIMETER; BEAM SHALL ONLY BE LAPPED OVER SUPPORTS; BEAM SHALL BE CONTINUOUS FOR MINIMUM OF 10'-0" FROM ALL CORNERS WITHOUT SPLICES
  - PREFABRICATED ROOF TRUSSES @ 2'-0" o/c MAXIMUM
  - OVERBUILT ROOF TRUSSES @ 2'-0" o/c MAXIMUM (AKA VALLEY KIT);
  - NAIL BOTTOM CHORD OF FIRST CARPORT TRUSS TO 2x12 BAND w/ SIMPSON A34 CLIP @ 2'-0" o/c
  - SHEATH BOTTOM CHORD OF CARPORT TRUSSES w/ 7/8" OSB; NAIL PER SHEATHING NOTE IN 7-S1

ROOF FRAMING PLAN SCALE: 3/16" = 1'-0" 1

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1	PLAN & BRACING UPDATES	25-JAN-0
REV.	DESCRIPTION	DATE

SHEET NAME  
**ROOF FRAMING PLAN, SECTIONS & ELEVATIONS**

PROJECT NO. **07-2114**  
DATE **28-DEC-07**  
SHEET **S3**  
**03 OF 03**