



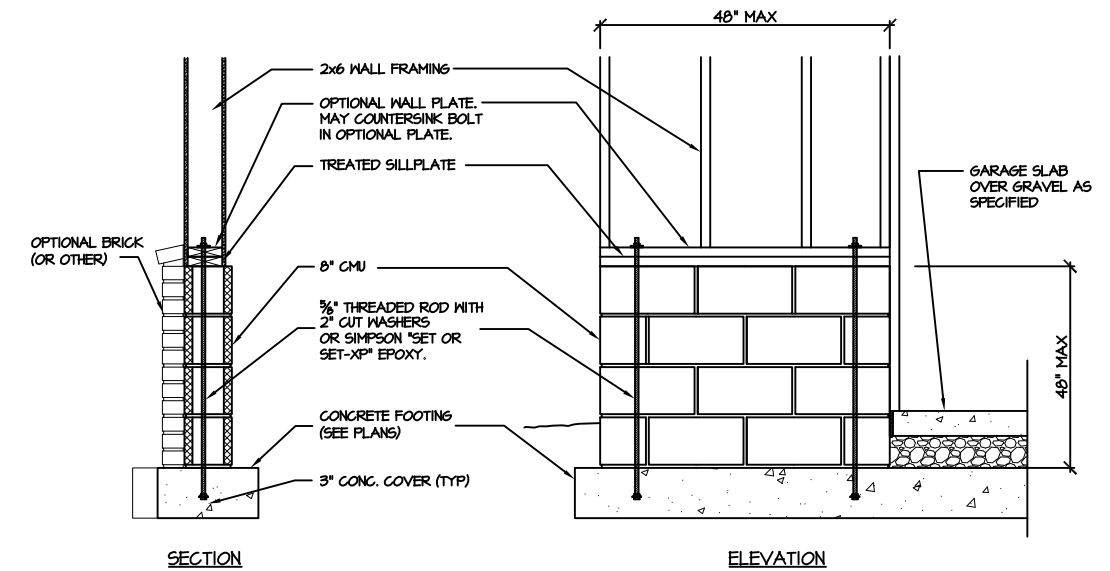
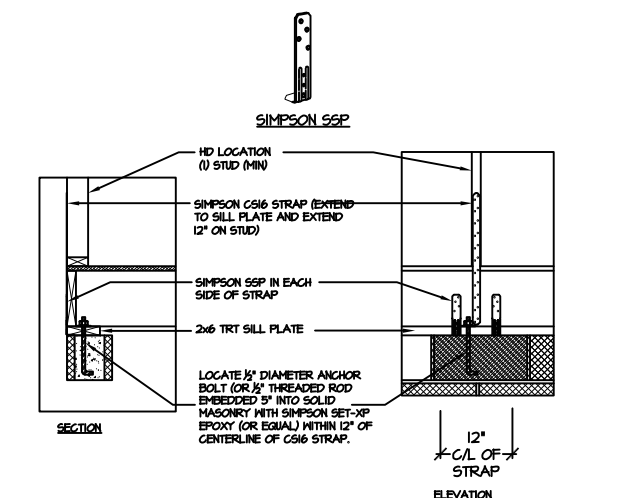
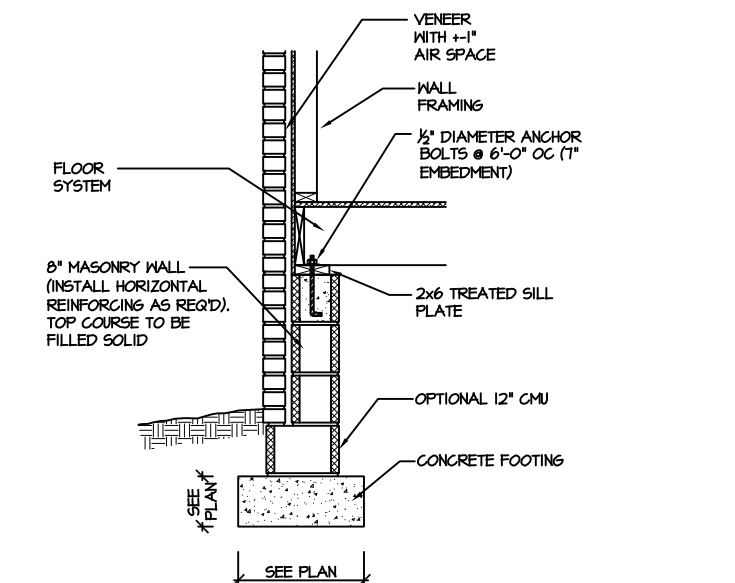
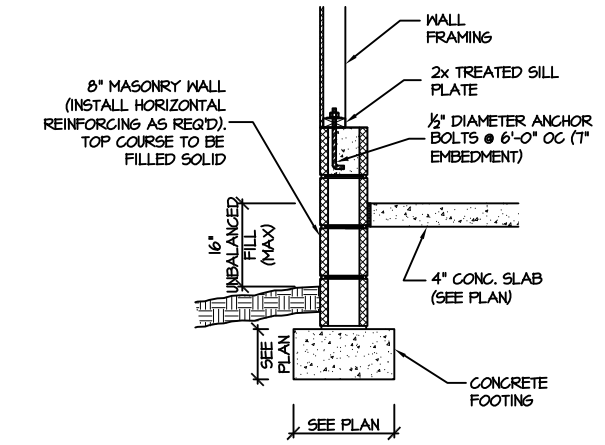
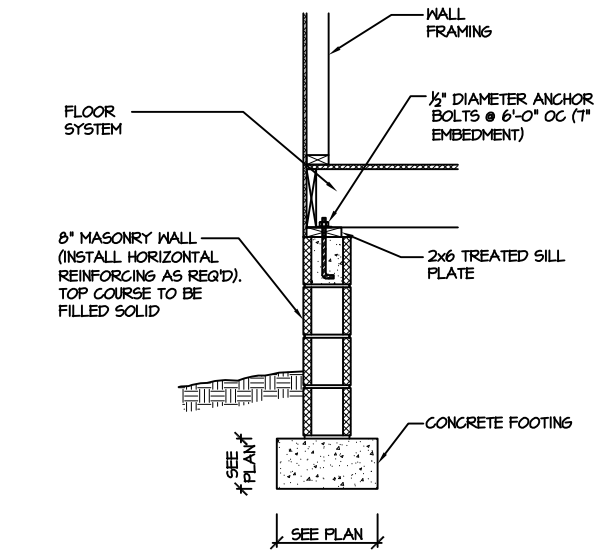
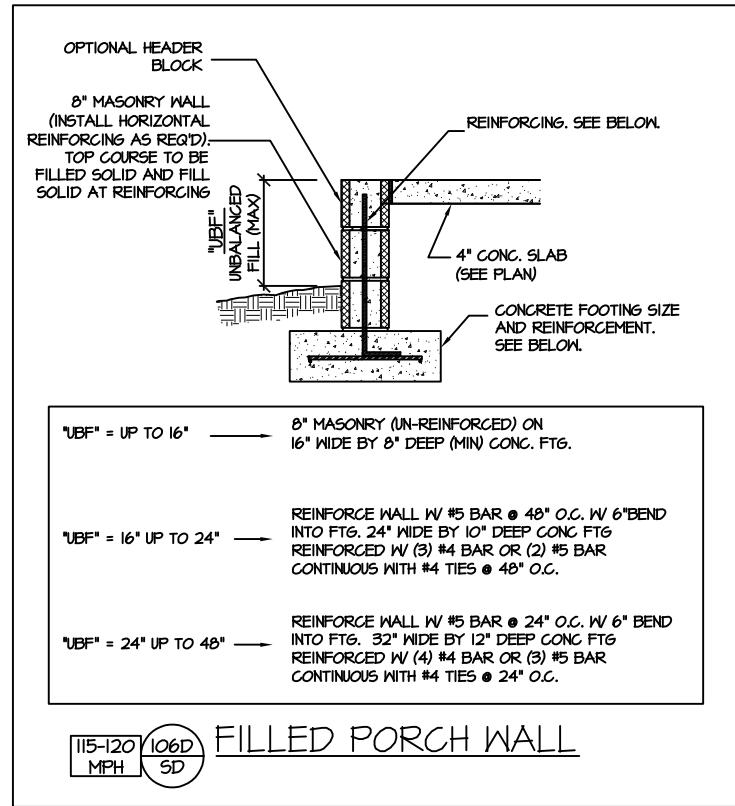
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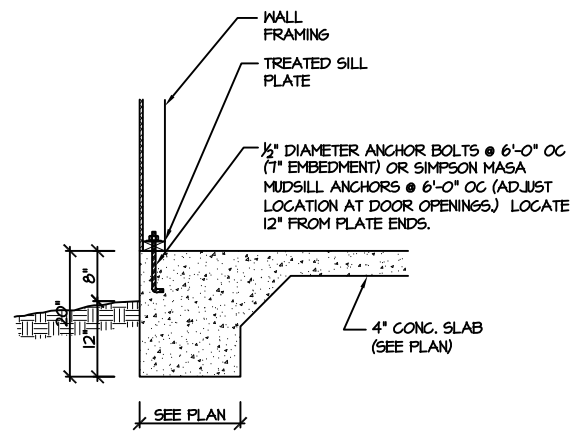
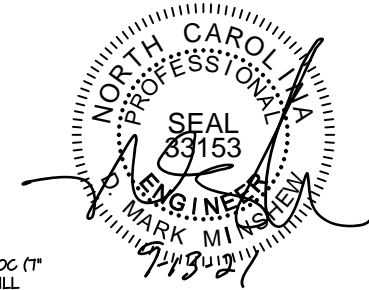
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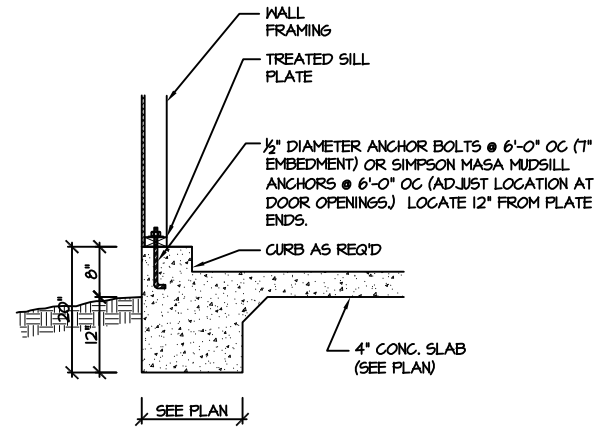
SD



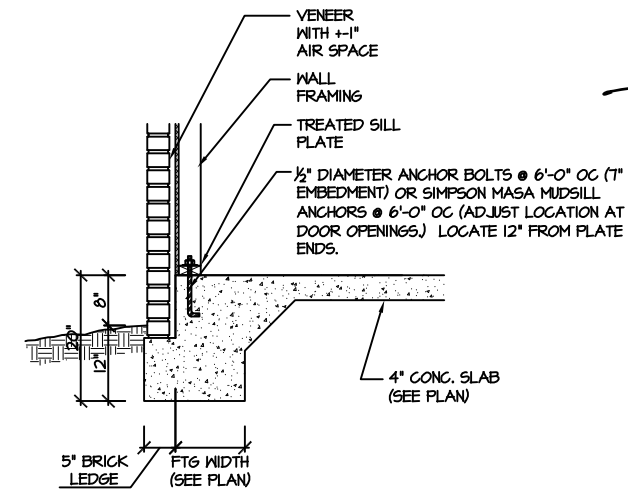
CRAWL SPACE FOUNDATION



115-120 MPH 100A SD **MONOLITHIC SLAB FOOTING**
(SIDING OR EQUAL)



115-120 MPH 101A SD **MONOLITHIC SLAB @ GARAGE**
(SIDING OR EQUAL)



115-120 MPH 102A SD **MONOLITHIC SLAB FOOTING**
(VENEER)

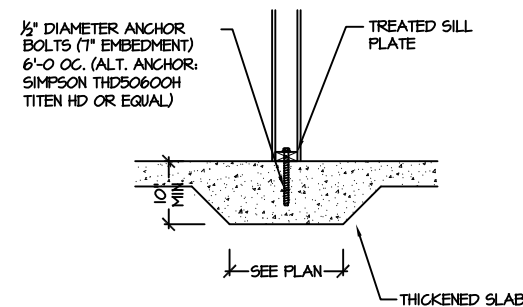
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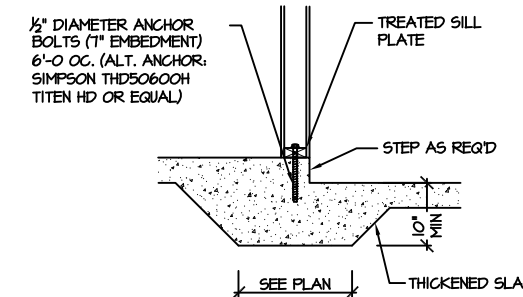
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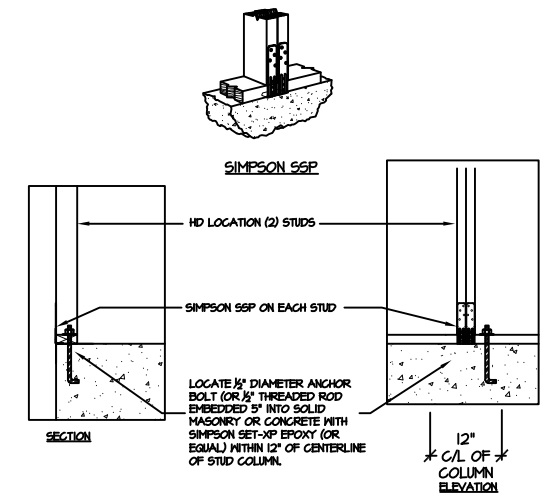
SD



115-120 MPH 104A SD **THICKENED SLAB**
(INTERIOR BEARING WALL)

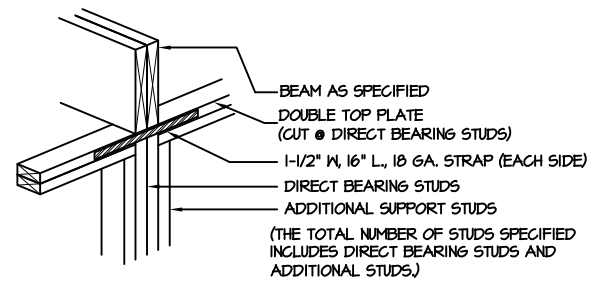


115-120 MPH 105A SD **THICKENED SLAB @ GARAGE**
(INTERIOR GARAGE WALL)

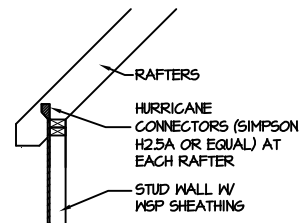


903 SD **BRACED WALL END CONDITION "HD" HOLD-DOWN DETAIL**
NOTE: SIMPSON DTT-1Z IS ACCEPTABLE ALTERNATE
NOTE: ALTERNATE HD HOLD-DOWN DEVICES OR SYSTEMS MAY BE USED TO MEET THE CODE REQUIRED 800 LB CAPACITY IN LIEU OF THE ABOVE DETAIL.

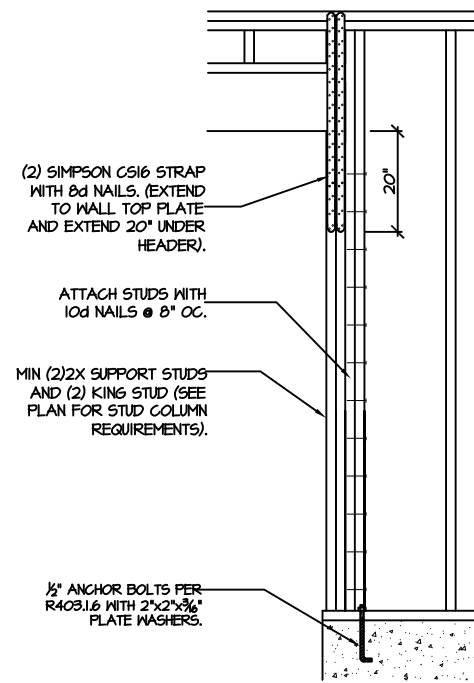
SLAB FOUNDATION



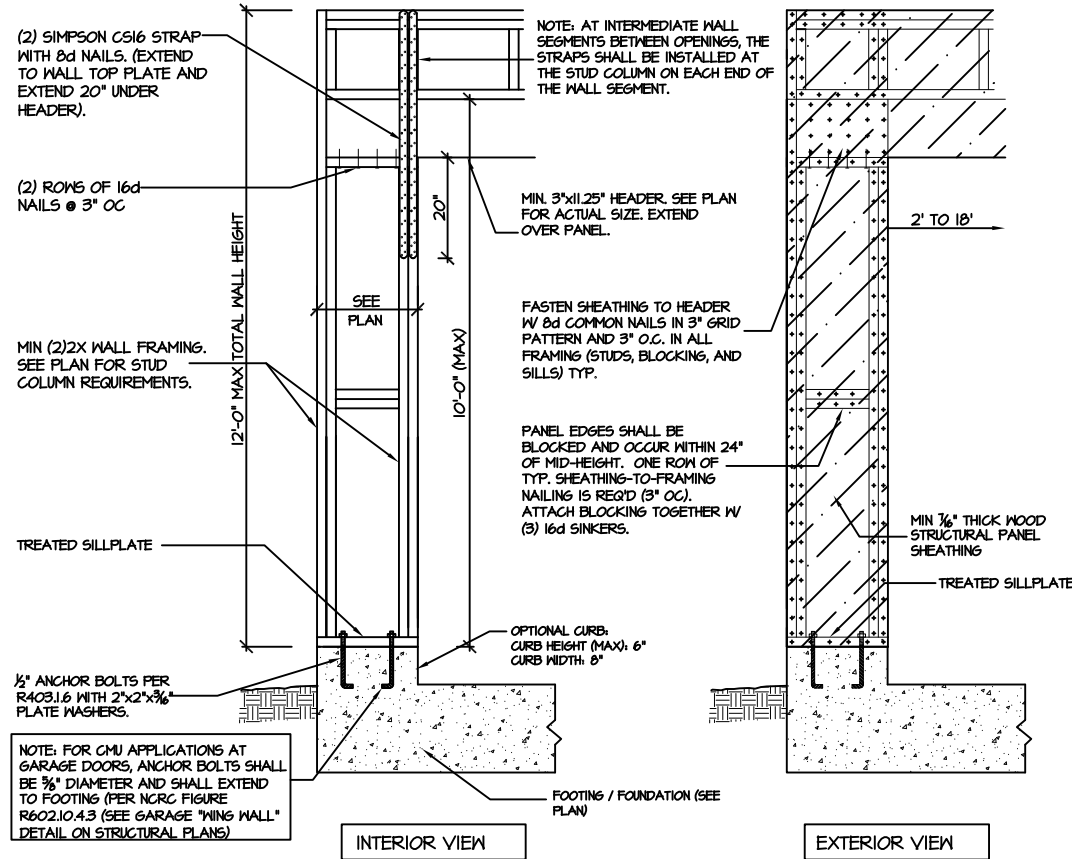
205A
SD
DIRECT STUD BEARING
NTS



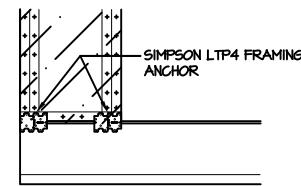
304A
SD
RAFTER TIE @ VAULT
NTS.



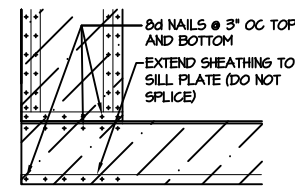
906
SD
CS-PF: END CONDITION DETAIL
(FOR USE WITH SINGLE CS-PF CONDITION)
DETAIL AND APPLICATION BASED ON NCRF FIGURE
R602.10.1 - PORTAL FRAME CONSTRUCTION



NOTE: FOR CMU APPLICATIONS AT GARAGE DOORS, ANCHOR BOLTS SHALL BE 3/8" DIAMETER AND SHALL EXTEND TO FOOTING (PER NCRF FIGURE R602.10.4.3 (SEE GARAGE "HING WALL" DETAIL ON STRUCTURAL PLANS))



FRAMING ANCHOR OPTION



WSP OVERLAP OPTION

CS-PF - OVER WOOD FLOOR

905
SD
CS-PF: CONTINUOUS PORTAL FRAME CONSTRUCTION
DETAIL AND APPLICATION BASED ON NCRF FIGURE
R602.10.1 - PORTAL FRAME CONSTRUCTION



STRUCTURAL NOTES

NC (2018 NCRF): Wind: 115-120 mph

- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPs, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM, FOOTING, AND PILING SYSTEM. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL. SOUTHERN ENGINEERS, P.A. CERTIFIES ONLY THE STRUCTURAL COMPONENTS AS SPECIFICALLY STATED.
- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE 2018 NC RESIDENTIAL CODE, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. "CONSTRUCTION REVIEW" SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.
- DESIGN LOADS (LISTED AS: LIVE LOAD, DEAD LOAD, DEFLECTION)
 - ROOMS OTHER THAN SLEEPING ROOMS: (40 PSF, 10 PSF, L/360)
 - SLEEPING ROOMS: (30 PSF, 10 PSF, L/360)
 - ATTIC WITH PERMANENT STAIR: (40 PSF, 10 PSF, L/360)
 - ATTIC WITHOUT PERMANENT STAIR: (20 PSF, 10 PSF, L/360)
 - ATTIC WITHOUT STORAGE: (10 PSF, 10 PSF, L/240)
 - STAIRS: (40 PSF, 10 PSF, L/360)
 - EXTERIOR BALCONIES: (60 PSF, 10 PSF, L/360)
 - DECKS: (40 PSF, 10 PSF, L/360)
 - GUARDRAILS AND HANDRAILS: (200 LBS)
 - PASSENGER VEHICLE GARAGES: (50 PSF, 10 PSF, L/360)
 - FIRE ESCAPES: (40 PSF, 10 PSF, L/360)
 - SNOW: (20 PSF)
- WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANELS. SEE FRAMING NOTES FOR THICKNESS AND NAILING REQUIREMENTS.
- SEE APPENDIX M (DCA6) FOR EXTERIOR DECK REQUIREMENTS INCLUDING ATTACHMENTS FOR LATERAL LOADS.
- CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (NO). AIR ENTRAINMENT PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP. CONTROL JOINTS IN SLABS SHALL BE SPACED ON A GRID OF +30 TIMES THE DEPTH (D). CONTROL JOINTS SHALL BE SAWCUT TO A DEPTH OF 1/4". (I.E. 4" CONCRETE SLABS SHALL HAVE 1/4" DEEP CONTROL JOINTS SAWCUT IN SLAB ON A +10'-0" x +10'-0" GRID).
- ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.
- ALL FRAMING LUMBER SHALL BE SPF #2 (F_b = 875 PSF) UNLESS NOTED OTHERWISE (NO). ALL TREATED LUMBER SHALL BE SYP #2. PLATE MATERIAL MAY BE SPF #3 OR SYP #3 (F_{c(perp)} = 425 PSI - MIN).
 - L.V.L. SHALL BE LAMINATED VENEER LUMBER: F_b=2600 PSI, F_v=285 PSI, E=1.9x10⁶ PSI.
 - P.S.L. SHALL BE PARALLEL STRAND LUMBER: F_b=2400 PSI, F_v=240 PSI, E=2.0x10⁶ PSI.
 - L.S.L. SHALL BE LAMINATED STRAND LUMBER: F_b=2250 PSI, F_v=400 PSI, E=1.55x10⁶ PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.
- ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.
- ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.
- REBAR SHALL BE DEFORMED STEEL, ASTM615, GRADE 60. LAP ALL REBAR SPLICES 30 BAR DIAMETERS.
- FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A325) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.
- BRICK LINTELS (WHEN REQUIRED) SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"x4"x5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0". SEE PLANS FOR SPANS OVER 9'-0". SEE ALSO SECTION R103.0.3 LINTELS.

PROJECT #
21-2967

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