

KATHRYN - A, B, C, D

PLAN ID: 2290 - RIGHT HAND - NORTH CAROLINA

DATE:	REVISION:
01/16/2018	INITIAL RELEASE OF PLANS
02/25/2019	ADDED LUXURY SHOWER TO SET
02/28/2020	CLIENT REVISIONS
07/02/2020	CLIENT REVISIONS
02/22/2021	CLIENT REVISIONS
04/16/2025	ELEVATION A/B REVISIONS

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REVIEWERS STAMP LOCATION



MODEL '2290' SQUARE FOOTAGES	
AREA	ELEV 'A'
1st FLOOR	2291 SF
TOTAL LIVING	2291 SF
GARAGE	609 SF
PORCH	15 SF
COVERED PATIO	202 SF

Eagle Creek
Lot 26
56 Greenwillow Drive
Fuquay Varina, NC 27526

COVERSHEET	'KATHRYN'
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PLAN REV DATE	04.16.25
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CS



Front Elevation 'A'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x17" LAYOUT



Front Elevation 'B'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x17" LAYOUT



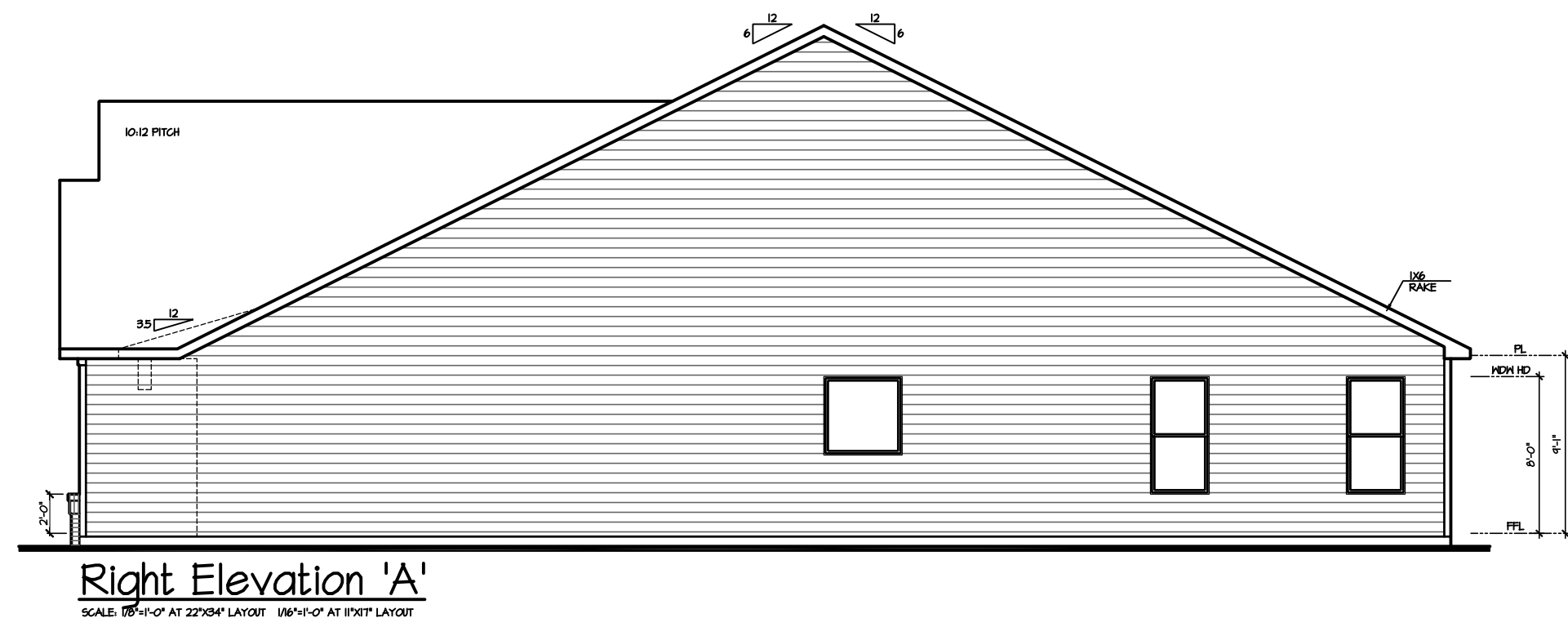
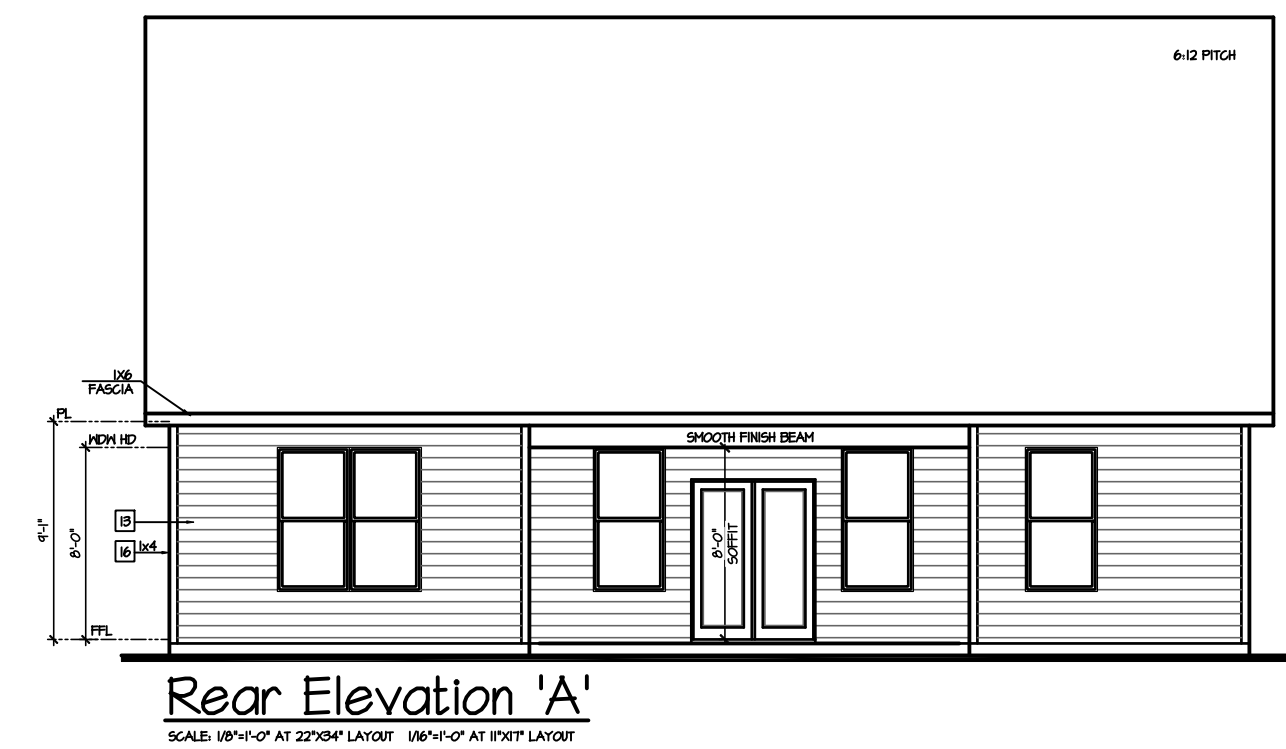
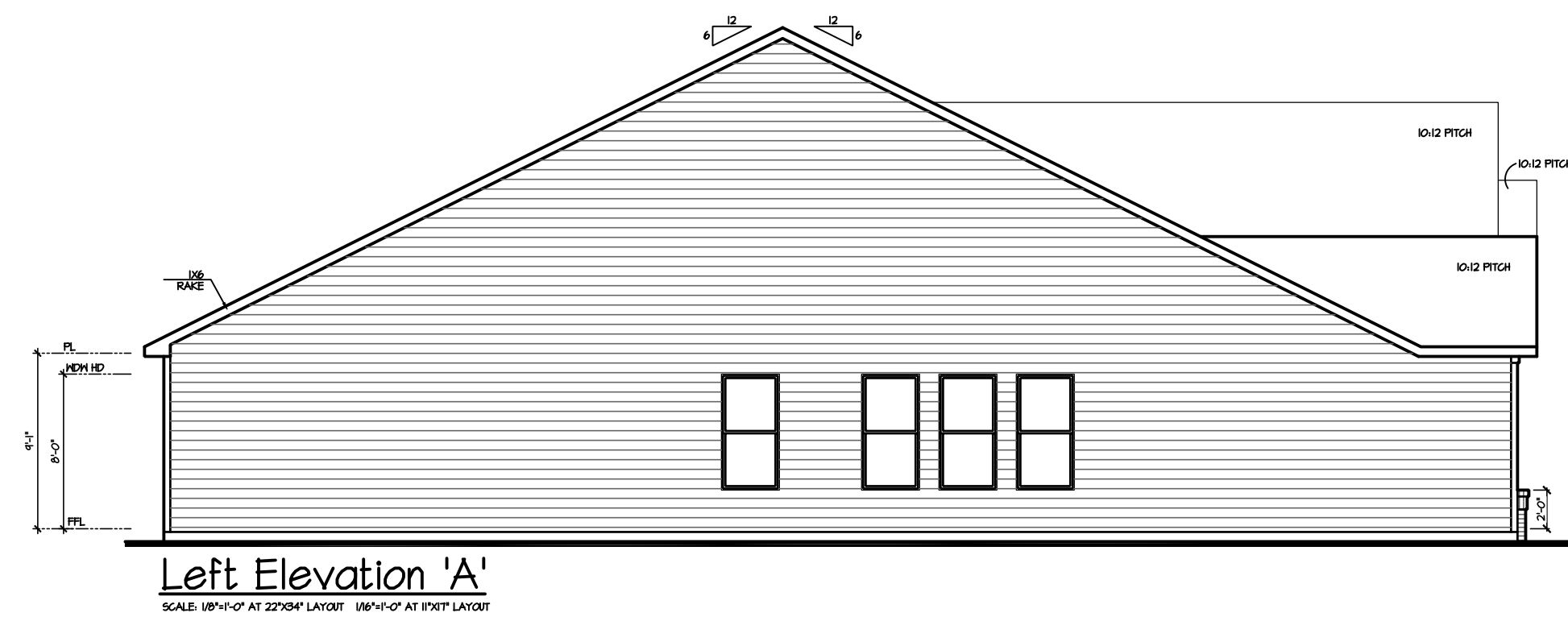
Front Elevation 'C'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x17" LAYOUT



Front Elevation 'D'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x17" LAYOUT



NOTES:

- GRADE CONDITIONS MAY VARY FOR INDIVIDUAL SITE FROM THAT SHOWN. BUILDER SHALL VERIFY AND COORDINATE PER ACTUAL SITE CONDITIONS.
- WINDOW HEAD HEIGHTS:
1ST FLOOR = 7'-6" U.N.O. ON ELEVATIONS.
2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS.
- ENTRY DOOR: AS SELECTED BY DEVELOPER.
- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
- ALL EXTERIOR MATERIALS TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROTECTION AGAINST DEGRAY:
(ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION: PER TABLE N102.1.2.
EXTERIOR WALLS: R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE: R-30 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE: R-14 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL: R-14 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING: R-14 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

- | | |
|---|---|
| 1 | ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED. |
| 2 | MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED. |
| 3 | MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED. |
| 4 | 8" SOLDIER COURSE. |
| 5 | ROWLOCK COURSE |

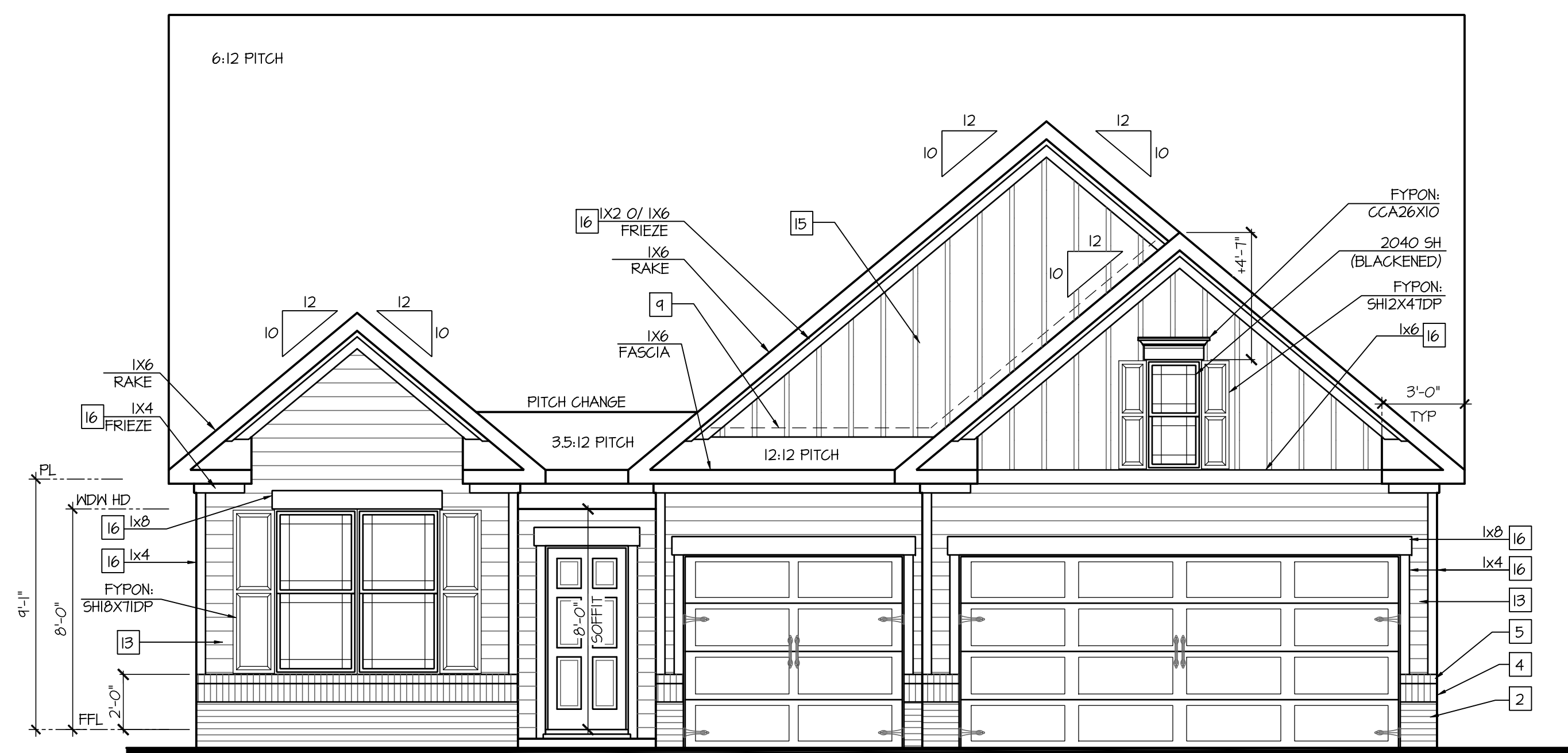
TYPICALS:

- | | |
|----|--|
| 7 | CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED. |
| 8 | CODE APPROVED TERMINATION CHIMNEY CAP. |
| 9 | CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRG R905.2.8.3 |
| 10 | STANDING SEAM METAL ROOF, INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS. |
| 11 | DECORATIVE WROUGHT IRON. SEE DETAILS. |

SIDING:

- | | |
|----|--|
| 12 | VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.) |
| 13 | VINYL LAP SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT LAP SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.) |
| 14 | VINYL WAVY SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT WAVY SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.) |
| 15 | VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.) |
| 16 | VINYL TRIM SIZE AS NOTED
(AT SPECIFIC LOCATIONS:
1X FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED) |
| 11 | FYPON SHUTTERS, TYPE AS SHOWN, SIZE AS NOTED.
(AT SPECIFIC LOCATIONS: FALSE VINYL SHUTTERS, TYPE AS SHOWN, SIZE AS NOTED.) |

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NRCG SECTION R312.2.1 AND R312.2.2.



Front Elevation 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

ELEVATIONS

'KATHRYN'

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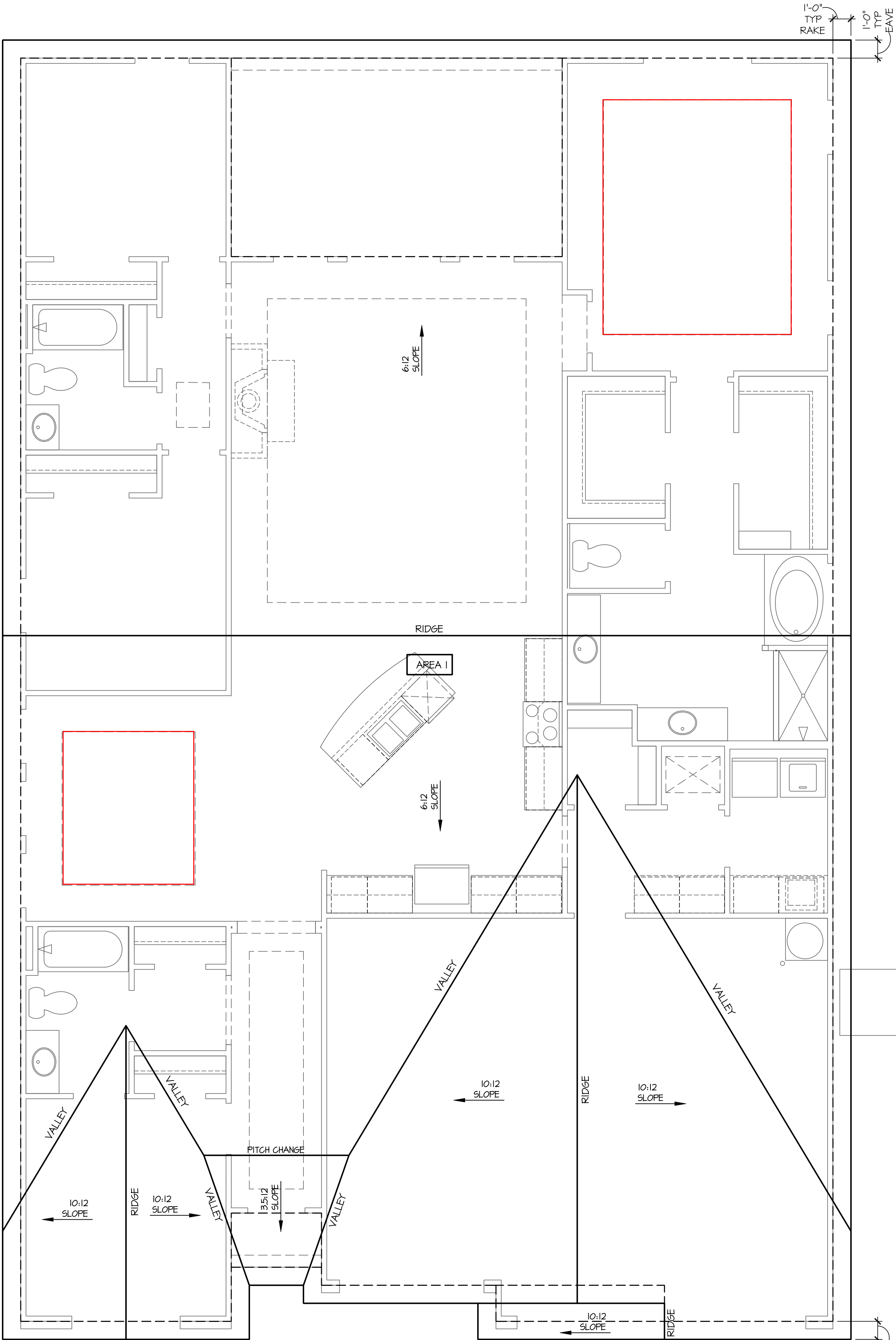
1A

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N.C ATTIC VENT CALCULATION FOR MODEL '2290': 1:150 RATIO.	
THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/500 OF THE AREA OF THE SPACE VENTILATED, PROVIDED THAT AT LEAST 50 PERCENT AND NOT MORE THAN 80 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. EXCEPTIONS: 1. ENCLOSED ATTIC/RAFTER SPACES REQUIRING LESS THAN 1,500 FT. OF VENTILATION MAY BE VENTED WITH CONTINUOUS SOFFIT VENTILATION ONLY. 2. ENCLOSED ATTIC/RAFTER SPACES OVER UNCONDITIONED SPACE MAY BE VENTED WITH CONTINUOUS SOFFIT VENT ONLY. GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL. ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION. BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS. PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.	(PER NCRC SECTION R302.2) 1 SQUARE INCH VENT FOR EVERY 150 SQUARE INCHES OF CEILING *144 SQ. IN. = 1 SQ. FT. BLDG. CEILING (SF) X 144 = BLDG (SQ. IN) BLDG. (SQ. IN) / 150 = SQ. IN. OF VENT REQUIRED SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW. ROOF AREA 1: = 3116 SF 3116 SQ. FT. X 144 = 448104 SQ. IN. 448104 SQ. IN. / 150 = 2981.36 SQ. IN. OF VENT REQ'D 2241.36 SQ. IN. / 2 = 1455.68 SQ. IN. 1455.68 SQ. IN. OF VENT AT HIGH & 1455.68 SQ. IN. OF VENT AT LOW REQUIRED.
NOTES: - ALL ROOF DRAINAGE SHALL BE PIPED TO STREET OR APPROVED DRAINAGE FACILITY. - DASHED LINES INDICATE HALL BELOW. - LOCATE GUTTER AND DOWNSPOUTS PER BUILDER. - PITCHED ROOFS AS NOTED. - TRUSS MANUFACTURER SHALL SUBMIT STRUCTURAL CALCS AND SHOP DRAWINGS TO THE BUILDER'S GENERAL CONTRACTOR AND BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATIONS. - ALL PLUMBING VENTS SHALL BE COMBINED INTO A MINIMUM AMOUNT OF ROOF PENETRATIONS. ALL ROOF PENETRATIONS SHALL OCCUR TO THE REAR OF THE MAIN RIDGE.	
N.C ATTIC VENT CALCULATION FOR MODEL '2290': 1:300 RATIO.	
AS AN ALTERNATE TO THE 1/500 RATIO LISTED ABOVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM - IN - WINTER SIDE OF THE CEILING. GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL. ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION. BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS. PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.	(PER NCRC SECTION R302.2) 1 SQUARE INCH VENT FOR EVERY 300 SQUARE INCHES OF CEILING *144 SQ. IN. = 1 SQ. FT. BLDG. CEILING (SF) X 144 = BLDG (SQ. IN) BLDG. (SQ. IN) / 300 = SQ. IN. OF VENT REQUIRED SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW. ROOF AREA 1: = 3116 SF 3116 SQ. FT. X 144 = 448104 SQ. IN. 448104 SQ. IN. / 300 = 1493.68 SQ. IN. OF VENT REQ'D 1493.68 SQ. IN. / 2 = 747.84 SQ. IN. 747.84 SQ. IN. OF VENT AT HIGH & 747.84 SQ. IN. OF VENT AT LOW REQUIRED.
BUILDER TO PROVIDE (2) LAYERS OF UNDERLAYMENT AT ANY ROOF W/ A SLOPE FROM 2:12 TO LESS THAN 4:12	

TRUSS MANUFACTURE TO VERIFY HEELS PER COMMUNITY STANDARDS, BUILDER TO VERIFY PRIOR TO CONSTRUCTION

AT SINGLE FAMILY DETACHED PLANS: PREFINISHED VENTED SOFFIT AT EAVE PER MANUFACTURER. (VERIFY FIRE SEPARATION DISTANCE FOR SOFFIT PROTECTION PER NCRC SECTION R302.1.1 AND TABLE R302.1)



Roof Plan 'A'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x17" LAYOUT

ELEVATIONS

'KATHRYN'

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SHEET NUMBER

1.1A

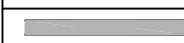
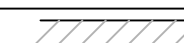
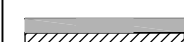
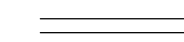
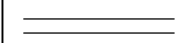
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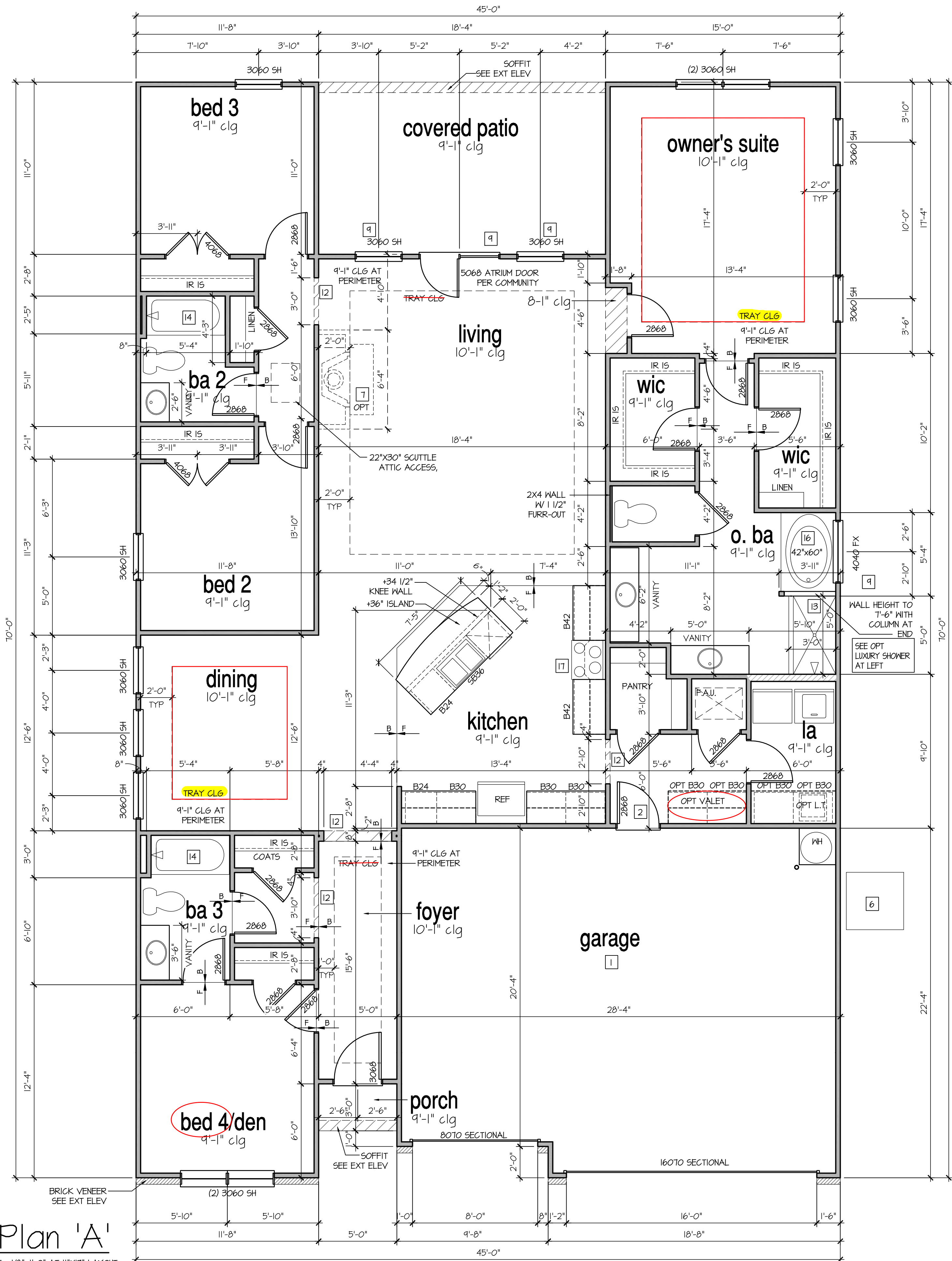
- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- WINDOW HEAD HEIGHTS:
1ST FLOOR = 7'-6" U.N.O. ON ELEVATIONS.
2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO CENTERLINE.

WALL LEGEND:

 FULL HEIGHT 2X4 WOOD STUD PARTITION	 FULL HEIGHT 2X6 WOOD STUD PARTITION
 BRICK / STONE VENEER	 STUD WALL BELOW HEIGHT AND STUD SIZE AS NOTED
 LOW GYPSUM BOARD WALL HEIGHT AND STUD SIZE AS NOTED	 DRYWALL OPENING, HEIGHT AS NOTED ON PLAN.

KEY NOTES FOR NORTH CAROLINA:

- FIRE PROTECTION:
- HOUSE TO GARAGE FIRE SEPARATION, GARAGE/HOUSE SEPARATION AT VERTICAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 1/2" GYPSUM BOARD. (PER NCRG TABLE R302.6.) GARAGE/HOUSE SEPARATION AT HORIZONTAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD. (PER NCRG TABLE R302.6.)
 - HOUSE TO GARAGE DOOR SEPARATION, PROVIDE 1-3/8" SOLID CORE DOOR OR APPROVED 20 MINUTE RATED DOOR. (PER NCRG SECTION R302.5.1.)
 - BENEATH STAIRS AND LANDINGS, 1/2" GYPSUM BOARD ON WALLS AND CEILING OF ENCLOSED ACCESSIBLE AREAS. (PER NCRG SECTION R302.7.) IN CONCEALED SPACES BETWEEN STAIR STRINGERS PROVIDE FIREBLOCKING PER R302.11 MEPS
 - GAS WATER HEATER ON 18" HIGH PLATFORM (PER CHAPTER 5 NCRG PLUMBING) (AT SPECIFIC LOCATIONS: ELECTRIC WATER HEATER PER LOCAL CODES)
 - OPTIONAL ATTIC LOCATION:
FAU 8'X8' PLATFORM U.N.O. VERIFY WITH TRUSS MANUFACTURER. (6'-6" MIN. CLEAR HEIGHT TO HORIZONTAL MEMBERS, 2'X6" OVER 2'X4" BOTTOM CHORD, OF TRUSS, VERIFY W/ TRUSSES.)
 - A/C CONDENSER PAD. (VERIFY)
 - PRE-FABRICATED METAL FIREPLACE, INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - ATTIC ACCESS LARGE ENOUGH TO REMOVE LARGEST PIECE OF EQUIPMENT BUT NOT LESS THAN 30"X20". FIRE RATED ACCESS AS NOTED. (PER NCRG SECTION R801.) ATTIC ACCESS LADDER, VERIFY LOCATION AND SIZE WITH TRUSSES. (25 1/2" X 54" SIZE) TYPICALS:
 - TEMPERED SAFETY GLASS. (PER NCRG SECTION 308.4)
 - PLYWOOD SHELF ABOVE WITH DRYWALL FINISH OVER. HEIGHT AS NOTED.
 - HALF WALL, HEIGHT AS NOTED.
 - INTERIOR SOFFITS: FFL = 0'-0" U.N.O. SFL = 7'-6" U.N.O. BATHS:
 - ACRYLIC SHOWER PAN W/ VIKRELL SURROUND, SIZE AS DIMENSIONED
 - 30"X60" TUB/SHOWER PAN W/ VIKRELL SURROUND
 - N/A
 - 42"X60" ACRYLIC ALCOVE TUB KITCHEN:
 - 30" SLIDE-IN ELECTRICAL RANGE W/ HOOD VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - 30" GAS COOKTOP AND HOOD, VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - ELECTRIC OVEN WITH MICROWAVE OVEN.



1st Floor Plan 'A'

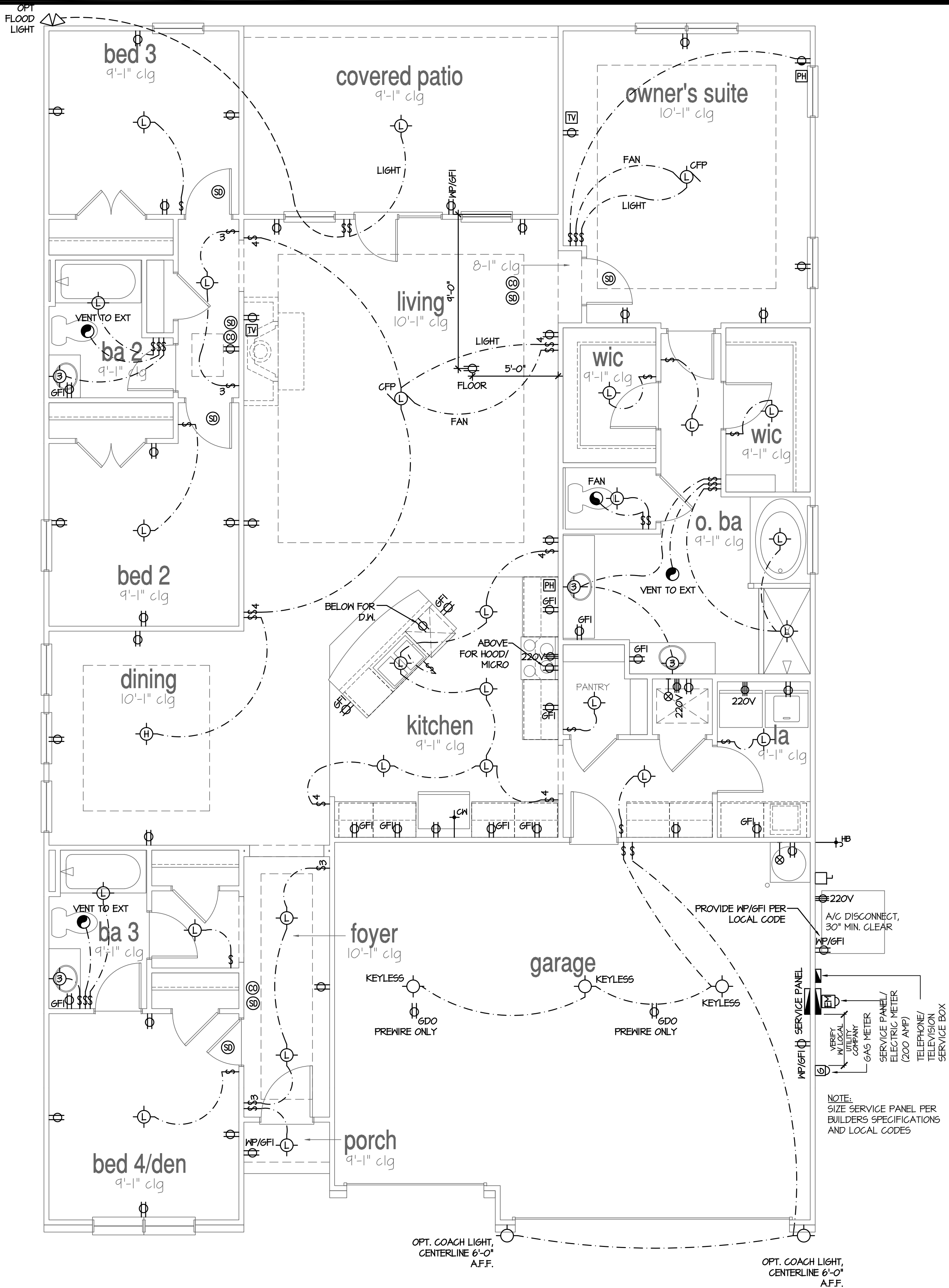
SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NOTES:

- PROVIDE GROUNDING ELECTRICAL ROD PER LOCAL CODES.
- PROVIDE AND INSTALL ARC FAULT CIRCUIT-INTERRUPTERS (AFCI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ALL EXHAUST FANS SHALL HAVE BACKDRAFT DAMPERS.
- FAN/LIGHTS IN WET/DAMP LOCATIONS SHALL BE LABELED "SUITABLE FOR WET OR DAMP LOCATIONS."
- ELECTRICAL SYSTEMS ARE SHOWN FOR INTENT ONLY. THESE SYSTEMS SHALL BE ENGINEERED BY OTHERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND PLACEMENT.
- PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS AND CO2 DETECTORS AS REQUIRED BY NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- PROVIDE AND INSTALL GROUND FAULT CIRCUIT-INTERRUPTERS (GFI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ELECTRICAL CONTRACTOR TO PROVIDE REQUIRED DIRECT HOOK-UPS/CUTOFFS.
- HVAC CONTRACTOR TO VERIFY THERMOSTAT LOCATIONS.
- ALL ELECTRICAL AND MECHANICAL EQUIPMENT (FURNACES, A/C UNITS, ELECTRICAL PANELS, SANITARY SUMP PITS, DRAIN TILE SUMP, AND WATER HEATERS) ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS.
- PROVIDE POWER, LIGHT AND SWITCH AS REQUIRED FOR ATTIC FURNACE PER CODE AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

LEGEND:

⏏	DUPLEX OUTLET	⦿	CEILING MOUNTED INCANDESCENT LIGHT FIXTURE
⏏WP/GFI	WEATHERPROOF GFI DUPLEX OUTLET	⦿	WALL MOUNTED INCANDESCENT LIGHT FIXTURE
⏏GFI	GROUND-FAULT CIRCUIT-INTERRUPTER DUPLEX OUTLET	⦿	RECESSED INCANDESCENT LIGHT FIXTURE (VP) = VAPOR PROOF
⏏	HALF-SWITCHED DUPLEX OUTLET	⦿	CEILING MOUNTED LED LIGHT FIXTURE (VP) = VAPOR PROOF
⦿220v	220 VOLT OUTLET	⦿	EXHAUST FAN (VENT TO EXTERIOR)
⦿	REINFORCED JUNCTION BOX	⦿	EXHAUST FAN/LIGHT COMBINATION (VENT TO EXTERIOR)
⦿	WALL SWITCH	⦿	FLUORESCENT LIGHT FIXTURE
⦿3	THREE-WAY SWITCH	⦿	TECH. HUB SYSTEM
⦿4	FOUR-WAY SWITCH	⦿	CEILING FAN (PROVIDE ADEQUATE SUPPORT)
⦿	CHIMES	⦿	CEILING FAN WITH INCANDESCENT LIGHT FIXTURE (PROVIDE ADEQUATE SUPPORT)
⦿	PUSHBUTTON SWITCH	⦿	GAS SUPPLY WITH VALVE
⦿	110V SMOKE ALARM W/ BATTERY BACKUP	⦿	HOSE BIBB
⦿	110V SMOKE ALARM CO2 DETECTOR COMBO	⦿	1/4" WATER STUB OUT
⦿	THERMOSTAT	⦿	WALL SCONCE
⦿	TELEPHONE		
⦿	TELEVISION		
⦿	ELECTRIC METER		
⦿	ELECTRIC PANEL		
⦿	DISCONNECT SWITCH		



1st Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"x34" LAYOUT 1/8"=1'-0" AT 11"x11" LAYOUT

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FLOOR PLANS
'KATHRYN'

PLAN REV DATE
04.16.25

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PLAN ID: 2290
NORTH CAROLINA

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH AND COORDINATED WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. THIS COORDINATION IS NOT THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD (SER). SHOULD ANY DISCREPANCIES BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY KSE ENGINEERING, P.C. BEFORE CONSTRUCTION BEGINS. IT IS THE INTENT OF THE ENGINEER LISTED ON THESE DOCUMENTS THAT THESE DOCUMENTS BE ACCURATE, PROVIDING LICENSED PROFESSIONALS CLEAR INFORMATION. EVERY ATTEMPT HAS BEEN MADE TO PREVENT ERROR. THE BUILDER AND ALL SUBCONTRACTORS ARE REQUIRED TO REVIEW ALL OF THE INFORMATION CONTAINED IN THESE DOCUMENTS PRIOR TO THE COMMENCEMENT OF ANY WORK. THE ENGINEER IS NOT RESPONSIBLE FOR ANY PLAN ERRORS, OMISSIONS, OR MISINTERPRETATIONS UNDETECTED AND NOT REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION. ALL CONSTRUCTION MUST BE IN ACCORDANCE TO THE INFORMATION FOUND IN THESE DOCUMENTS.

THIS PLAN HAS BEEN DESIGNED PER THE 2018 EDITION OF THE NC RESIDENTIAL CODE. WHERE FRAMING, FOUNDATION, OR OTHER STRUCTURAL ITEMS DO NOT COMPLY WITH THE PRESCRIPTIVE METHODS OF THE CODE, THOSE ITEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE PER NCRC R301.1.3.

DESIGN SPECIFICATIONS:

DESIGN BUILDING CODE (REFERRED TO HEREIN AS 'THE BUILDING CODE'):
• 2018 NORTH CAROLINA RESIDENTIAL CODE AND ENGINEERED DESIGN

DESIGN LIVE LOADS:
• ROOF = 20 PSF (LOAD DURATION FACTOR=1.25)
• UNINHABITABLE ATTICS WITH LIMITED STORAGE = 20 PSF (WHERE SPECIFIED ON PLANS)
• HABITABLE ATTICS AND ATTICS SERVED WITH FIXED STAIRS = 30 PSF
• FLOOR = 40 PSF
• FLOOR (SLEEPING AREAS) = 30 PSF
• DECK = 40 PSF
• BALCONY = 40 PSF
• STAIRS = 40 PSF

DESIGN DEAD LOADS:
• ROOF TRUSS = 17 PSF (TC=7, BC=10)
• FLOOR TRUSS = 15 PSF (TC=10, BC=5)
• FLOOR JOIST = 10 PSF
• STANDARD BRICK = 40 PSF
• QUEEN ANNE BRICK = 25 PSF
• TILE = 10 PSF (WHERE NOTED ON PLANS)

NOTE: STRUCTURAL FRAMING HAS NOT BEEN DESIGNED FOR GRANITE, MARBLE OR OTHER MATERIALS HEAVIER THAN THE ABOVE LOADING UNLESS SPECIFICALLY NOTED ON PLANS..

DESIGN WIND LOADS:
• ULTIMATE WIND SPEED = 115 MPH
• EXPOSURE CATEGORY = B

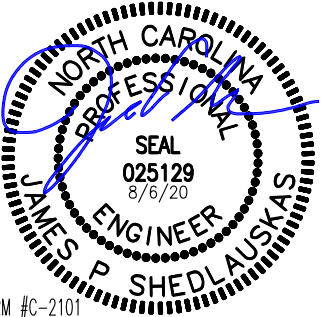
ASSUMED SOIL BEARING CAPACITY = 2000 PSF

ASSUMED LATERAL SOIL PRESSURE = 60 PCF

FROST DEPTH = 12"

SEISMIC DESIGN CATEGORY = B

ENGINEERED LUMBER SHALL HAVE THE FOLLOWING MINIMUM DESIGN VALUES:
• PRI-40s SERIES (DEPTH, SERIES AND SPACING PER PLANS)
• LVL: E=2,000,000 PSI, F_b=3,100 PSI, F_v=285 PSI, F_c=750 PSI





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Cover Sheet

'Kathryn' Plan ID: 2290 – RH
115 M.P.H.
North Carolina

Project #:	088-18001
Designed By:	JPS
Checked By:	
Issue Date:	1/24/19
Re-Issue:	8/3/20
Scale:	1/8"=1'-0" @ 11x17 1/4"=1'-0" @ 22x34

S-0

GENERAL STRUCTURAL NOTES:

- THE DESIGN PROFESSIONAL WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE STRUCTURAL ENGINEER OF RECORD (SER) FOR THIS PROJECT. THE SER BEARS THE RESPONSIBILITY OF THE PRIMARY STRUCTURAL ELEMENTS AND THE PERFORMANCE OF THIS STRUCTURE. NO OTHER PARTY MAY REVISE, ALTER, OR DELETE ANY STRUCTURAL ASPECTS OF THESE CONSTRUCTION DOCUMENTS WITHOUT WRITTEN CONSENT OF KSE ENGINEERING, P.C. OR THE SER. FOR THE PURPOSES OF THESE CONSTRUCTION DOCUMENTS, THE SER AND KSE ENGINEERING SHALL BE CONSIDERED THE SAME ENTITY.
- THE STRUCTURE IS ONLY STABLE IN ITS COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY BRACING DURING CONSTRUCTION TO STABILIZE THE STRUCTURE.
- THE SER IS NOT RESPONSIBLE FOR CONSTRUCTION SEQUENCES, METHODS, OR TECHNIQUES IN CONNECTION WITH THE CONSTRUCTION OF THIS STRUCTURE. THE SER WILL NOT BE HELD RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CONFORM TO THE CONTRACT DOCUMENTS, SHOULD ANY NON-CONFORMITIES OCCUR.
- THE SER DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF GEOMETRY. THE SER ASSUMES NO LIABILITY FOR CHANGES MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THE PLANS. THE SER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE NOTED ON THE PLANS.
- ANY STRUCTURAL ELEMENTS OR DETAILS NOT FULLY DEVELOPED ON THE CONSTRUCTION DRAWINGS SHALL BE COMPLETED UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. THESE SHOP DRAWINGS SHALL BE SUBMITTED TO KSE ENGINEERING FOR REVIEW BEFORE ANY CONSTRUCTION BEGINS. THE SHOP DRAWINGS WILL BE REVIEWED FOR OVERALL COMPLIANCE AS IT RELATES TO THE STRUCTURAL DESIGN OF THIS PROJECT. VERIFICATION OF THE SHOP DRAWINGS FOR DIMENSIONS, OR FOR ACTUAL FIELD CONDITIONS, IS NOT THE RESPONSIBILITY OF THE SER OR KSE ENGINEERING, P.C.
- VERIFICATION OF ASSUMED FIELD CONDITIONS IS NOT THE RESPONSIBILITY OF THE SER. THE CONTRACTOR SHALL VERIFY THE FIELD CONDITIONS FOR ACCURACY AND REPORT ANY DISCREPANCIES TO KSE ENGINEERING, P.C. BEFORE CONSTRUCTION BEGINS.
- THE SER IS NOT RESPONSIBLE FOR ANY SECONDARY STRUCTURAL ELEMENTS OR NON-STRUCTURAL ELEMENTS, EXCEPT FOR THE ELEMENTS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS.
- THIS STRUCTURE AND ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE BUILDING CODE AND ANY LOCAL CODES OR RESTRICTIONS.
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. ALL DIMENSIONS ARE TO FACE OF STUD OR TO FACE OF FRAMING UNLESS OTHERWISE NOTED.
- PROVIDE MOISTURE PROTECTION AND FLASHING PER ARCHITECTURAL DETAILS.

FOUNDATIONS:

- FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE BUILDING CODE.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE SUITABILITY OF THE SITE SOIL CONDITIONS AT THE TIME OF CONSTRUCTION. THE BUILDER SHALL FURNISH ANY AND ALL REPORTS RECEIVED FROM THE GEOTECHNICAL ENGINEER ON THE STUDY OF THE PROPOSED SITE TO THE DESIGNER, STRUCTURAL ENGINEER, AND GENERAL CONTRACTOR.
- MAXIMUM DEPTH OF UNBALANCED FILL AGAINST MASONRY WALLS TO BE AS SPECIFIED IN THE BUILDING CODE.
- THE SER HAS NOT PERFORMED A SUBSURFACE INVESTIGATION. VERIFICATION OF THE ASSUMED VALUE IS THE RESPONSIBILITY OF THE OWNER OR THE CONTRACTOR. SHOULD ANY ADVERSE SOIL CONDITION BE ENCOUNTERED, THE SER MUST BE CONTACTED BEFORE PROCEEDING.
- THE BOTTOM OF ALL FOOTINGS SHALL EXTEND BELOW THE FROST LINE FOR THE REGION IN WHICH THE STRUCTURE IS TO BE CONSTRUCTED, BUT NOT LESS THAN A MINIMUM OF 12" BELOW GRADE. ALL FOOTINGS TO HAVE A MINIMUM PROJECTION OF 2" ON EACH SIDE OF FOUNDATION WALLS. MAXIMUM FOOTING PROJECTION SHALL NOT EXCEED THE THICKNESS OF THE FOOTING.
- WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH ½" ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT, SPACED A MAXIMUM OF 6'-0" O.C. INSTALL MINIMUM 2 ANCHOR BOLTS PER SECTION, 12" MAXIMUM FROM CORNERS. ½" DIAMETER x 8" LONG SIMPSON TITEN HD OR USP SCREW-BOLT+ SCREWS MAY BE SUBSTITUTED ON A 1 FOR 1 BASIS.
- ANY FILL SHALL BE PLACED UNDER THE DIRECTION OR RECOMMENDATION OF A LICENSED PROFESSIONAL ENGINEER. THE RESULTING SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY.
- EXCAVATIONS OF FOOTINGS SHALL BE LINED TEMPORARILY WITH A 6 MIL POLYETHYLENE MEMBRANE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HOURS OF EXCAVATION.
- NO CONCRETE SHALL BE PLACED AGAINST ANY SUBGRADE CONTAINING WATER, ICE, FROST, OR LOOSE MATERIAL.
- PROVIDE FOUNDATION WATERPROOFING AND DRAIN WITH POSITIVE SLOPE TO OUTLET AS REQUIRED BY SITE CONDITIONS (SEE ARCHITECTURAL PLANS AND DETAILS).
- NONE OF THE FOUNDATION DETAILS IN THESE DOCUMENTS ARE SUITABLE FOR INSTALLATION IN SHRINK/SWELL CONDITIONS. REFER TO GEOTECHNICAL ENGINEER FOR APPROPRIATE DESIGN.
- LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST TEN FEET.
- CRAWL SPACE TO BE GRADED LEVEL AND CLEAR OF ALL DEBRIS.
- PROVIDE MINIMUM 6 MIL APPROVED VAPOR BARRIER. ALL JOINTS TO BE LAPPED MINIMUM 12" AND SEALED.

CONCRETE & REINFORCING

- CONCRETE DESIGN BASED ON ACI 318 AND ACI 318.1 OR ACI 332. CONCRETE SHALL HAVE A NORMAL WEIGHT AGGREGATE AND A MINIMUM COMPRESSIVE STRENGTH (f'c) = 3,000 PSI MINIMUM AT 28 DAYS PER CODE (VARIES W/ WEATHER), UNLESS OTHERWISE NOTED ON THE PLAN.
- CONCRETE SHALL BE PROPORTIONED, MIXED, AND PLACED IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 318: "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ACI 301: "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
- AIR ENTRAINED CONCRETE MUST BE USED FOR ALL STRUCTURAL ELEMENTS EXPOSED TO FREEZE/THAW CYCLES AND DEICING CHEMICALS. AIR ENTRAINMENT AMOUNTS (IN PERCENT) SHALL BE WITHIN -1% TO +2% OF 5% FOR FOOTINGS AND EXTERIOR SLABS.
- NO ADMIXTURES SHALL BE ADDED TO ANY STRUCTURAL CONCRETE WITHOUT WRITTEN PERMISSION OF THE SER. WATER ADDED TO CONCRETE ON SITE SHALL NOT EXCEED THAT ALLOWED BY THE MIX DESIGN.
- CONCRETE SLABS-ON-GRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 302.1R: "GUIDE FOR CONCRETE SLAB AND SLAB CONSTRUCTION".
- CONTROL OR SAW CUT JOINTS (CUT OR TOOLED) SHALL BE SPACED IN INTERIOR SLABS-ON-GRADE AT A MAXIMUM OF 15'-0" O.C. AND IN EXTERIOR SLABS-ON-GRADE AT A MAXIMUM OF 10'-0" UNLESS OTHERWISE NOTED. CARE SHALL BE TAKEN TO AVOID RE-ENTRANT CORNERS.
- CONTROL OR SAW CUT JOINTS SHALL BE PRODUCED USING CONVENTIONAL CUT OR TOOLED PROCESSES WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED.
- ALL WELDED WIRE FABRIC (W.W.F.) FOR CONCRETE SLABS-ON-GRADE SHALL BE PLACED AT MID-DEPTH OF SLAB. THE W.W.F. SHALL BE SECURELY SUPPORTED DURING THE CONCRETE POUR. FIBROUS CONCRETE REINFORCEMENT, OR POLYPROPYLENE FIBERS MAY BE USED IN LIEU OF W.W.F. APPLICATION OF POLYPROPYLENE FIBERS PER CUBIC YARD OF CONCRETE SHALL BE PER MANUFACTURER AND COMPLY WITH ASTM C1116, ANY LOCAL BUILDING CODE REQUIREMENTS AND SHALL MEET OR EXCEED CURRENT INDUSTRY STANDARD.
- POLYPROPYLENE REINFORCING TO BE 100% VIRGIN, CONTAINING NO REPROCESSED OLEFIN MATERIALS AND SPECIFICALLY MANUFACTURED FOR USE AS CONCRETE SECONDARY REINFORCEMENT.
- STEEL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.
- DETAILING, FABRICATION, AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315: "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES".
- HORIZONTAL FOOTING AND WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90° BENDS, OR CORNER BARS WITH THE SAME SIZE/SPACING AS THE HORIZONTAL REINFORCEMENT.
- PROVIDE REINFORCEMENT LAP AS NOTED BELOW, UNLESS NOTED OTHERWISE:
#4 BARS - 30" LENGTH
#5 BARS - 38" LENGTH
#6 BARS - 45" LENGTH
- WHERE REINFORCING DOWELS ARE REQUIRED, THEY SHALL BE EQUIVALENT IN SIZE AND SPACING TO THE VERTICAL REINFORCEMENT. THE DOWEL SHALL EXTEND 48 BAR DIAMETERS VERTICALLY AND 20 BAR DIAMETERS INTO THE FOOTING. SEE KSE FOUNDATION DETAILS.
- WHERE FOOTING BOTTOMS ARE TO BE STEPPED AT SLOPING GRADE CONDITIONS, PROVIDE CONTINUOUS REINFORCING WITH Z BARS (TO MATCH FOOTING REINFORCING) AS REQUIRED.
- BAR SUPPORT ACCESSORIES SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, EXCEPT THAT REINFORCING SHALL BE CHAIRED ON THE BOTTOM AND/OR THE SIDES ON BOLSTERS SPACED NOT MORE THAN 4 FEET ON CENTER. NO ROCKS, CMU, CLAY TILE, OR BRICK SHALL BE USED TO SUPPORT REINFORCING.
- FOR GRADE SUPPORTED SLABS, SLAB REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS AND ACCESSORIES AS DESCRIBED IN THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED A MAXIMUM OF 4'-0" O.C. BOTH WAYS IN STRAIGHT LINES ON THE MESH GRID.

MASONRY

- ALL MASONRY SHALL CONFORM TO ASTM C-90, F'm=1500 PSI. ALL BRICK SHALL CONFORM TO ASTM C-216, F'm=1500 PSI. ALL MORTAR SHALL BE TYPE 'S' (TYPE 'M' BELOW GRADE) AND CONFORM TO ASTM C-270. COARSE GROUT SHALL CONFORM TO ASTM C-476 WITH A MAXIMUM AGGREGATE SIZE OF ¾" AND A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI.
- ALL MASONRY WORK SHALL BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI 530/ASCE 5/TMS 402 AND "SPECIFICATIONS FOR MASONRY STRUCTURES" ACI 530.1/ ASCE 6/TMS 602.
- THE UNSUPPORTED HEIGHT OF SOLID MASONRY PIERS SHALL NOT EXCEED TEN TIMES THEIR LEAST DIMENSION. UNFILLED HOLLOW PIERS MAY BE USED IF THE UNSUPPORTED HEIGHT IS NOT MORE THAN FOUR TIMES THEIR LEAST DIMENSION.
- EACH CRAWL SPACE PIER SHALL BEAR IN THE MIDDLE THIRD OF ITS RESPECTIVE FOOTING AND EACH GIRDER SHALL BEAR IN THE MIDDLE THIRD OF THE PIERS. PLASTERS TO BE BONDED TO PERIMETER FOUNDATION WALL.
- TOP COURSE OF MASONRY SHALL BE GROUTED SOLID.
- HORIZONTAL WALL JOINT REINFORCEMENT SHALL BE STANDARD 9 GAGE GALVANIZED LADDER OR TRUSS TYPE SPACED AT 16" O.C., UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- SPLICED WIRE REINFORCEMENT SHALL BE LAPPED AT LEAST 6" AND CONTAIN AT LEAST ONE CROSS WIRE OF EACH PIECE OF REINFORCEMENT WITHIN THE 6". LAP WITH STANDARD 'T' AND 'L' SHAPED PIECES AT INTERSECTIONS AND CORNERS.

WOOD FRAMING:

- SOLID SAWN WOOD FRAMING MEMBERS SHALL CONFORM TO THE SPECIFICATIONS LISTED IN THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION": (NDS). UNLESS OTHERWISE NOTED, ALL WOOD FRAMING MEMBERS ARE DESIGNED TO BE:
SPRUCE-PINE-FIR (SPF) WITH THE FOLLOWING MINIMUM DESIGN VALUES:
E=1,400,000 PSI, F_b=875 PSI, F_v=135 PSI
1.1. FRAMING: SPF #2.
1.2. PLATES: SPF #2.
1.3. STUDS: SPF STUD GRADE.
- ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE SHALL BE PRESERVATIVE TREATED SOUTHERN YELLOW PINE #2 OR BETTER.
- ANCHOR SILL PLATES IN ACCORDANCE W/ GENERAL STRUCTURAL NOTES.
- ALL BEAMS SPECIFIED ARE MINIMUM SIZES ONLY. LARGER MEMBERS MAY BE SUBSTITUTED AS NEEDED FOR EASE OF CONSTRUCTION.
- NAILS SHALL BE COMMON WIRE NAILS UNLESS OTHERWISE NOTED.
- BOLT HOLES AND LEAD HOLES FOR LAG SCREWS SHALL BE IN ACCORDANCE WITH NDS SPECIFICATIONS.
- INDIVIDUAL STUDS FORMING A COLUMN SHALL BE ATTACHED WITH (2) ROWS 10d NAILS @ 6" O.C. STAGGERED. THE STUD COLUMN SHALL BE FULLY BLOCKED AT ALL FLOOR LEVELS TO ENSURE PROPER LOAD TRANSFER. WALL SHEATHING SHALL BE NAILED TO EDGE OF EACH STUD.
- FACE NAIL ALL MULTI-PLY BEAMS AND HEADERS WITH (2) ROWS 16d COMMON NAILS @ 16" O.C., STAGGERED, OR PER MANUFACTURER'S SPECIFICATIONS FOR ENGINEERED LUMBER. APPLY NAILING FROM BOTH FACES FOR (3) OR MORE PLIES.
- FASTEN 4-PLY BEAMS WITH (1) ½" DIAMETER THROUGH BOLT W/ NUTS AND WASHERS AT 12" O.C. STAGGERED TOP AND BOTTOM, 1½" MINIMUM EDGE DISTANCE. (UNLESS OTHERWISE NOTED)
- ALL BEAMS AND HEADERS SHALL HAVE (1)2x JACK STUD & (1)2x KING STUD UNLESS OTHERWISE NOTED. THE NUMBER OF STUDS INDICATED ON PLANS ARE THE TOTAL NUMBER OF JACK STUDS REQUIRED, UNLESS OTHERWISE NOTED.
- PROVIDE KING STUDS AT EACH END OF HEADERS AS NOTED BELOW.
(1) STUD UP TO 6' OPENING
(2) STUDS UP TO 8' OPENING
(3) STUDS UP TO 9' OPENING
- ALL BEAMS TO BE CONTINUOUSLY SUPPORTED Laterally AND SHALL BEAR FULL WIDTH ON THE SUPPORTING WALLS OR COLUMNS INDICATED WITH A MINIMUM OF TWO STUDS, UNLESS OTHERWISE NOTED. ALL BEAM SPLICES SHALL OCCUR OVER SUPPORTS.
- SOLID BLOCKING TO BE PROVIDED AT ALL POINT LOADS THROUGH FLOOR LEVELS TO THE FOUNDATION OR TO OTHER STRUCTURAL COMPONENTS.
- ALL LUMBER SPECIFIED ON DRAWINGS IS INTENDED FOR DRY USE ONLY (MOISTURE CONTENT <19%) UNLESS OTHERWISE NOTED.
- ALL WATERPROOFING AND FIRE SAFETY SYSTEMS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE DESIGNED AND DETAILED BY OTHERS.
- ANY WOOD FRAME INTERIOR BEARING WALL STUDS THAT HAVE HOLES IN THE CENTER OF THE STUD UP TO 1" DIAMETER SHALL HAVE STUD PROTECTION SHIELDS. ALL HOLES OVER 1" IN DIAMETER FOR PLUMBING LINES, ETC. SHALL BE REPAIRED WITH SIMPSON HSS2 OR USP STS1 STUD SHOES, TYPICAL, UNLESS OTHERWISE NOTED.
- BEARING WALLS SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE WITH OSB OR GYPSUM BOARD. BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE STUD IN LIEU OF SHEATHING.
- DIAGONAL BRACING SHALL BE INSTALLED AT EACH END OF BASEMENT BEARING WALLS AND NOT MORE THAN 20' ON CENTER.

EXTERIOR WOOD FRAMED DECKS:

- DECKS ARE TO BE FRAMED IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND AS REFERENCED ON THE STRUCTURAL PLANS, EITHER THROUGH CODE REFERENCES OR CONSTRUCTION DETAILS.
- PRESERVATIVE TREATED WOOD FRAMING TO BE SOUTHERN YELLOW PINE #2 OR BETTER.
- GUARD RAILS REQUIRED AT DECKS. DESIGN BY OTHERS TO MEET MINIMUM CODE REQUIREMENTS.
- PROVIDE DECK LATERAL LOAD AND BRACING CONNECTIONS PER BUILDING CODE.

RAFTER FRAMED ROOF CONSTRUCTION:

- PROVIDE 2x4x4'-0" RAFTER TIES AT 48" O.C.
- RAFTERS SHALL BE SUPPORTED BY PURLINS AND PURLIN BRACES AS SHOWN ON THE PLAN. PURLIN BRACES SHALL NOT BEAR ON ANY CEILING JOIST, STRONGBACK OR HEADER UNLESS SPECIFICALLY SHOWN ON PLAN. RAFTERS MAY BE SPLICED AT PURLIN LOCATIONS. CEILING JOISTS SHALL HAVE LATERAL SUPPORT W/ 1x4 FLAT BRACING ON TOP EDGE OF JOIST AT LOOSE JOIST ENDS (WHERE JOISTS NOT FASTENED TO RAFTERS) OR FULL DEPTH BLOCKING. FASTEN END OF BRACING TO RAFTER OR GABLE END FRAMING.
- FASTEN RAFTER AND CEILING JOIST WITH (6) 12d NAILS UNLESS OTHERWISE NOTED.
- PROVIDE VERTICAL 2x6 STRONGBACKS AT CEILING JOISTS @ 8'-0" O.C. TIE STRONGBACK ENDS TO GABLE STUDS OR RAFTERS WHERE POSSIBLE. PROVIDE BLOCKING BETWEEN TOP PLATES AND STRONGBACKS. PROVIDE 2x4 FLAT FASTENED TO EACH JOIST WITH (2) 12d NAILS. FASTEN STRONGBACK TO 2x4 FLAT WITH 12d NAILS @ 12" O.C. AND FASTENED TO EACH JOIST WITH (1) 12d TOENAIL.

WOOD TRUSSES (FLOOR & ROOF):

- THE WOOD TRUSS MANUFACTURER/FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF THE WOOD TRUSSES. SUBMIT SEALED SHOP DRAWINGS AND SUPPORTING CALCULATIONS TO THE SER FOR REVIEW PRIOR TO FABRICATION. THE SER SHALL HAVE A MINIMUM OF (5) DAYS FOR REVIEW. THE REVIEW BY THE SER SHALL BE FOR OVERALL COMPLIANCE OF THE DESIGN DOCUMENTS. THE SER SHALL ASSUME NO RESPONSIBILITY FOR THE CORRECTNESS OF THE STRUCTURAL DESIGN FOR THE WOOD TRUSSES.
- THE WOOD TRUSSES SHALL BE DESIGNED FOR ALL REQUIRED LOADINGS AS SPECIFIED IN THE LOCAL BUILDING CODE, THE ASCE STANDARD "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES." (ASCE 7), AND THE LOADING REQUIREMENTS SHOWN ON THESE SPECIFICATIONS. THE TRUSS DRAWINGS SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION DOCUMENTS AND PROVISIONS PROVIDED FOR LOADS SHOWN ON THESE DRAWINGS INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, PIPING, AND ARCHITECTURAL FIXTURES ATTACHED TO THE TRUSSES.
- THE TRUSSES SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI/TPI 1: "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION".
- THE TRUSS MANUFACTURER SHALL PROVIDE ADEQUATE BRACING INFORMATION IN ACCORDANCE WITH "BUILDING COMPONENT SAFETY INFORMATION GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES" (BCS1). THIS BRACING, BOTH TEMPORARY AND PERMANENT, SHALL BE SHOWN ON THE SHOP DRAWINGS. ALSO, THE SHOP DRAWINGS SHALL SHOW THE REQUIRED ATTACHMENTS FOR THE TRUSSES.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING TEMPORARY BRACING AND SHORING FOR THE FLOOR AND ROOF TRUSSES AS REQUIRED DURING CONSTRUCTION. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE LATEST BCSI. THE CONTRACTOR SHALL KEEP A COPY OF THE BCSI SUMMARY SHEETS ON SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PERMANENT TRUSS BRACING SHOWN IN THE STRUCTURAL DRAWINGS AND IN THE TRUSS DESIGNS. ALL CONTINUOUS LATERAL BRACING OF WEBS REQUIRES BRACES. REFER TO BCSI SUMMARY SHEET B3 FOR TYPES OF DIAGONAL BRACES TO PROVIDE AT EACH CONTINUOUS LATERAL BRACE LINE. SUCH DIAGONAL BRACES SHALL NOT BE SPACED MORE THAN 20 FEET O.C. DIAGONAL BRACES SHALL BE FASTENED TO EACH TRUSS WEB WITH A MINIMUM OF TWO 10d FACE NAILS. WHERE CONTINUOUS LATERAL BRACING CANNOT BE INSTALLED, DUE TO A MINIMUM OF THREE ADJACENT TRUSSES NOT BEING IDENTICAL, THE CONTRACTOR SHALL COORDINATE WITH THE TRUSS SPECIALTY ENGINEER/MANUFACTURER TO DETERMINE WHAT TYPE OF ALTERNATE BRACE (I.E., T OR L BRACE, ETC.) IS REQUIRED.
- ANY CHORDS OR TRUSS WEBS SHOWN ON THESE DRAWINGS HAVE BEEN SHOWN AS A REFERENCE ONLY. THE FINAL DESIGN OF THE TRUSSES SHALL BE PER THE MANUFACTURER.
- TRUSS LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN ON THE SEALED STRUCTURAL DRAWINGS. TRUSS PROFILES TO BE SEALED BY THE TRUSS MANUFACTURER. TRUSS PLANS TO BE COORDINATED WITH THE SEALED STRUCTURAL DRAWINGS.
- TRUSS MANUFACTURER TO PROVIDE REQUIRED UPLIFT CONNECTORS FOR ALL TRUSSES.
- PROVIDE SIMPSON H2.5A, USP RT7 OR EQUIVALENT AT EACH TRUSS TO TOP PLATE CONNECTION, UNLESS OTHERWISE NOTED.

WOOD STRUCTURAL PANELS:

- FABRICATION AND PLACEMENT OF STRUCTURAL WOOD SHEATHING SHALL BE IN ACCORDANCE WITH THE APA DESIGN/CONSTRUCTION GUIDE "RESIDENTIAL AND COMMERCIAL," AND ALL OTHER APPLICABLE APA STANDARDS.
- ALL REQUIRED WOOD SHEATHING SHALL BEAR THE MARK OF THE APA.
- WOOD WALL SHEATHING SHALL COMPLY WITH THE REQUIREMENTS OF LOCAL BUILDING CODES FOR THE APPROPRIATE STATE AS INDICATED ON THESE DRAWINGS. REFER TO WALL BRACING NOTES IN PLAN SET FOR MORE INFORMATION. EXTERIOR WALLS TO BE FULLY SHEATHED USING ¾" OSB OR PLYWOOD MINIMUM. AT BRACED WALL PANELS, PROVIDE BLOCKING AT ALL SHEET EDGES NOT FALLING ON STUDS OR PLATES.
- ROOF SHEATHING SHALL BE APA RATED SHEATHING EXPOSURE 1 OR 2. ROOF SHEATHING SHALL BE CONTINUOUS OVER TWO SUPPORTS MINIMUM AND ATTACHED TO ITS SUPPORTING ROOF FRAMING WITH 8d NAILS AT 6" O.C. AT PANEL EDGES AND AT 12" O.C. IN PANEL FIELD UNLESS OTHERWISE NOTED ON THE PLANS. SHEATHING SHALL BE APPLIED WITH THE LONG DIRECTION PERPENDICULAR TO FRAMING. SHEATHING SHALL HAVE A SPAN RATING CONSISTENT WITH THE FRAMING SPACING. PROVIDE SUITABLE EDGE SUPPORT BY USE OF PLYWOOD CLIPS OR LUMBER BLOCKING UNLESS OTHERWISE NOTED. PANEL END JOINTS SHALL OCCUR OVER FRAMING. ROOF SHEATHING TO BE ⅞" OSB MINIMUM.
- WOOD FLOOR SHEATHING SHALL BE APA RATED SHEATHING EXPOSURE 1 OR 2. ATTACH SHEATHING TO ITS SUPPORTING FRAMING WITH (1) 10d NAIL AT 6" O.C. AT PANEL EDGES AND AT 12" O.C. IN PANEL FIELD UNLESS OTHERWISE NOTED ON THE PLANS. SHEATHING SHALL BE APPLIED PERPENDICULAR TO FRAMING. SHEATHING SHALL HAVE A SPAN RATING CONSISTENT WITH THE FRAMING SPACING. PROVIDE SUITABLE EDGE SUPPORT BY USE OF T&G PLYWOOD OR LUMBER BLOCKING UNLESS OTHERWISE NOTED. PANEL END JOINTS SHALL OCCUR OVER FRAMING.
- SHEATHING SHALL HAVE A ½" GAP AT PANEL ENDS AND EDGES AS RECOMMENDED IN ACCORDANCE WITH THE APA.

STRUCTURAL FIBERBOARD PANELS:

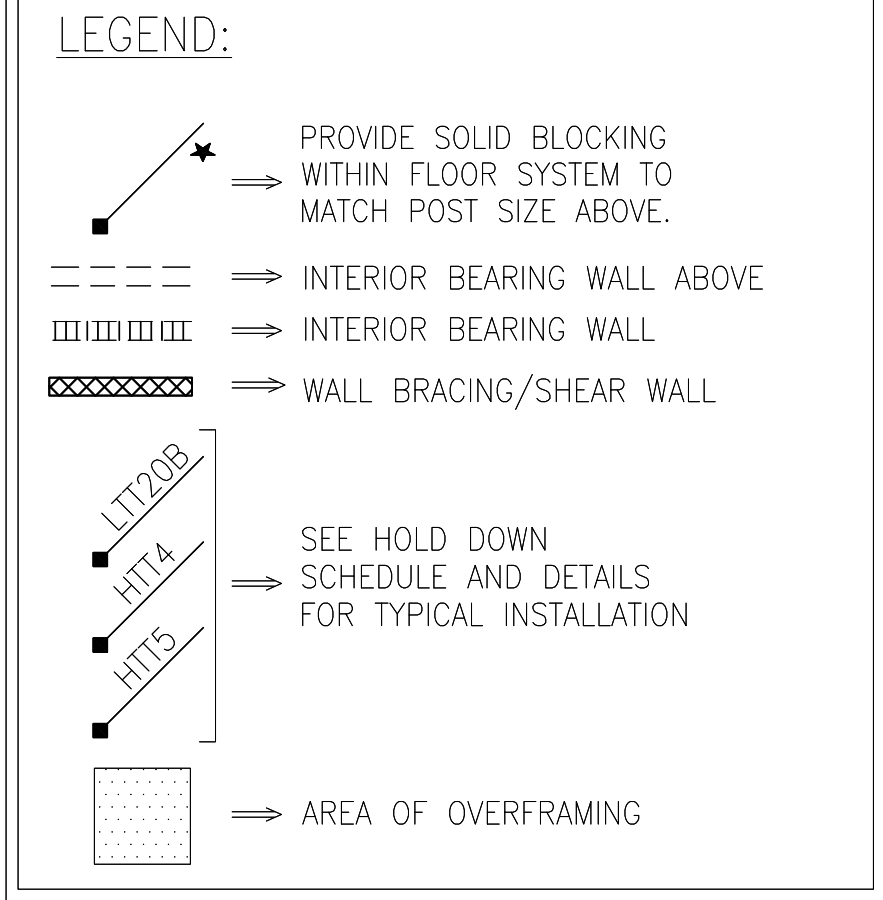
- STRUCTURAL FIBERBOARD SHEATHING SHALL ONLY BE USED WHERE SPECIFICALLY NOTED ON THE STRUCTURAL PLANS.
- FABRICATION AND PLACEMENT OF STRUCTURAL FIBERBOARD SHEATHING SHALL BE IN ACCORDANCE WITH THE APPLICABLE AFA STANDARDS.
- SHEATHING SHALL HAVE A ½" GAP AT PANEL ENDS AND EDGES AS RECOMMENDED IN ACCORDANCE WITH THE AFA.

STRUCTURAL STEEL:

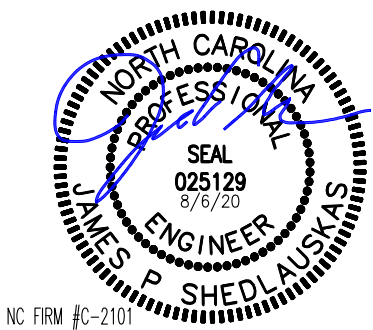
- STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AND OF THE MANUAL OF STEEL CONSTRUCTION "LOAD RESISTANCE FACTOR DESIGN" LATEST EDITIONS.
- ALL STEEL SHALL HAVE A MINIMUM YIELD STRESS (F_y) OF 50 KSI UNLESS OTHERWISE NOTED.
- WELDING SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY'S STRUCTURAL WELDING CODE AWA D1.1. ELECTRODES FOR SHOP AND FIELDING WELDING SHALL BE CLASS E70XX. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER PER THE ABOVE STANDARDS.
- ALL STEEL BEAMS TO BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3½" AND FULL FLANGE WIDTH UNLESS OTHERWISE NOTED. BEAMS MUST BE ATTACHED AT EACH END WITH A MINIMUM OF FOUR 16d NAILS OR (2) ½" x 4" LAG SCREWS UNLESS OTHERWISE NOTED.
- INSTALL 2x WOOD PLATE ON TOP OF STEEL BEAMS, RIPPED TO MATCH BEAM WIDTH. FASTEN PLATE TO BEAM W/ HILTI X-DNI 52 P8 PINS AT 12" O.C. STAGGERED OR ½" DIAMETER BOLTS AT 24" O.C.

MECHANICAL FASTENERS:

- ALL METAL HARDWARE AND FASTENERS TO BE SIMPSON STRONG-TIE OR APPROVED EQUIVALENT.
- ALL HARDWARE AND FASTENERS IN CONTACT WITH PRESERVATIVE PRESSURE AND/OR FIRE RETARDANT TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153, G-185.
- MANY OF THE NEW PRESSURE TREATED WOODS USE CHEMICALS THAT ARE CORROSIVE TO STEEL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE TYPE OF WOOD TREATMENT AND SELECT APPROPRIATE CONNECTORS THAT WILL RESIST THE APPLICABLE CORROSIVE CHEMICALS.



BRICK VENEER LINTEL SCHEDULE		
SPAN	LINTEL SIZE	END BEARING
UP TO 3'-0"	3½"x3½"x¼"	4"
UP TO 6'-3"	5"x3½"x⅝" L.L.V.	8"
UP TO 9'-6"	6"x3½"x⅝" L.L.V.	12"
LINTELS ARE NOT DESIGNED TO BE BOLTED TO HEADERS UNLESS SPECIFIED ON UNIT PLANS.		
SPANS OVER 4'-0" SHALL BE SHORED UP UNTIL CURED.		



General Structural Notes

'Kathryn' Plan ID: 2290 – RH
115 M.P.H.
North Carolina

Project #: 088-18001
Designed By: JPS
Checked By:
Issue Date: 1/24/19
Re-Issue: 8/3/20
Scale: 1/8"=1'-0" @ 11x17
1/4"=1'-0" @ 22x34

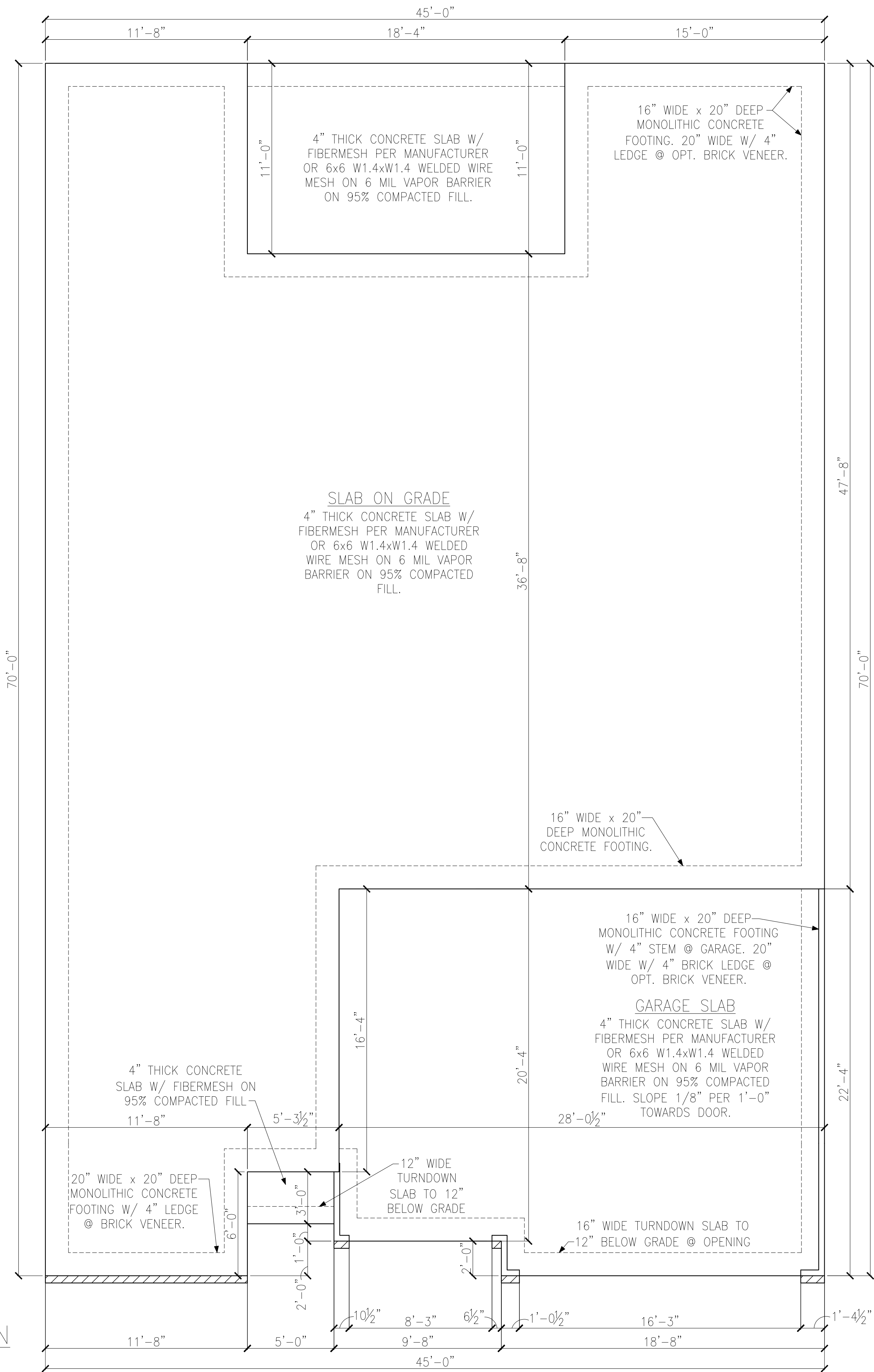
S-0.1

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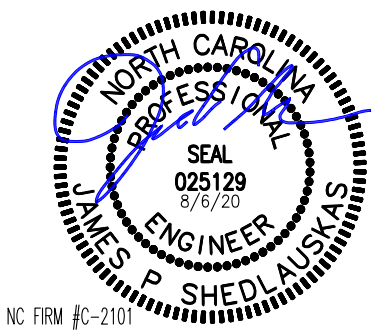
MONOLITHIC SLAB FOUNDATION PLAN
ELEVATION 'A'



LEGEND

- ★ ⇒ PROVIDE SOLID BLOCKING WITHIN FLOOR SYSTEM TO MATCH POST SIZE ABOVE.
- ⇒ BEARING WALL ABOVE
- ⇒ INTERIOR BEARING WALL
- ⇒ BRACED WALL PANEL (SEE KSE STRUCTURAL DETAILS SET FOR BRACED WALL PANEL SHEATHING FASTENING & BLOCKING DETAILS)
- 48" WSP

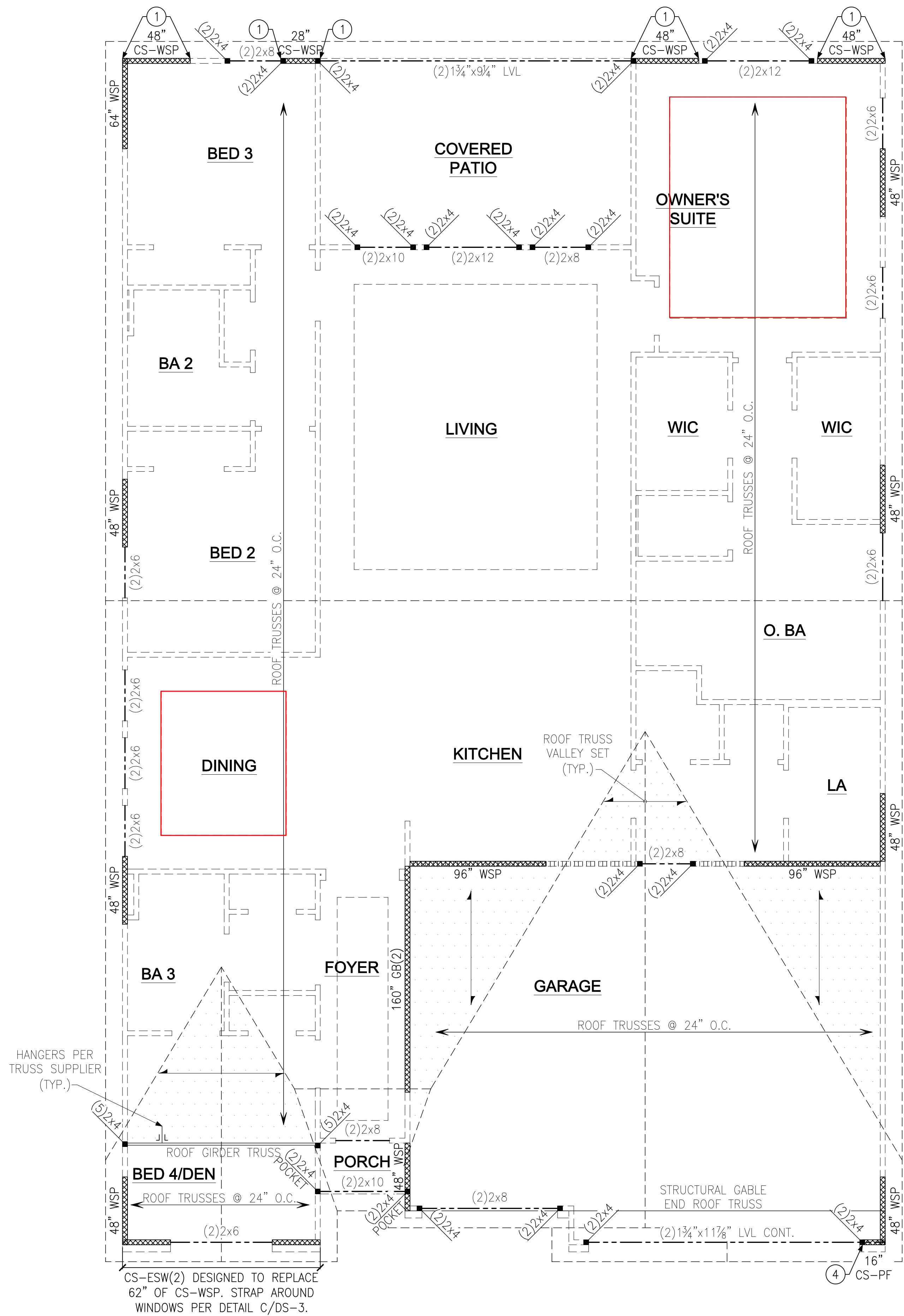
REFER TO KSE STRUCTURAL DETAILS SET FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS



Monolithic Slab Foundation Plan
Elevation 'A'
'Kathryn' Plan ID: 2290 - RH
115 M.P.H.
North Carolina

Project #: 088-18001
Designed By: JPS
Checked By:
Issue Date: 1/31/18
Re-Issue: 8/3/20
Scale: 1/8"=1'-0" @ 11x17
1/4"=1'-0" @ 22x34

S 3MS A



ROOF FRAMING PLAN
ELEVATION 'A'

LEGEND

- PROVIDE SOLID BLOCKING WITHIN FLOOR SYSTEM TO MATCH POST SIZE ABOVE.
- BEARING WALL ABOVE
- INTERIOR BEARING WALL
- BRACED WALL PANEL (SEE KSE STRUCTURAL DETAILS SET FOR BRACED WALL PANEL SHEATHING FASTENING & BLOCKING DETAILS)

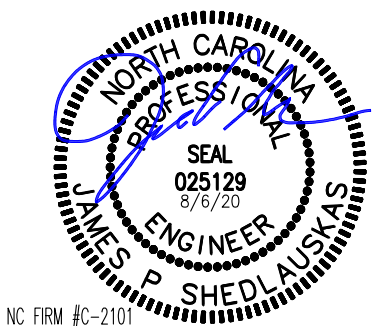
REFER TO KSE STRUCTURAL DETAILS SET FOR GENERAL STRUCTURAL NOTES, TYPICAL DETAILS AND ADVANCED FRAMING NOTES AND DETAILS

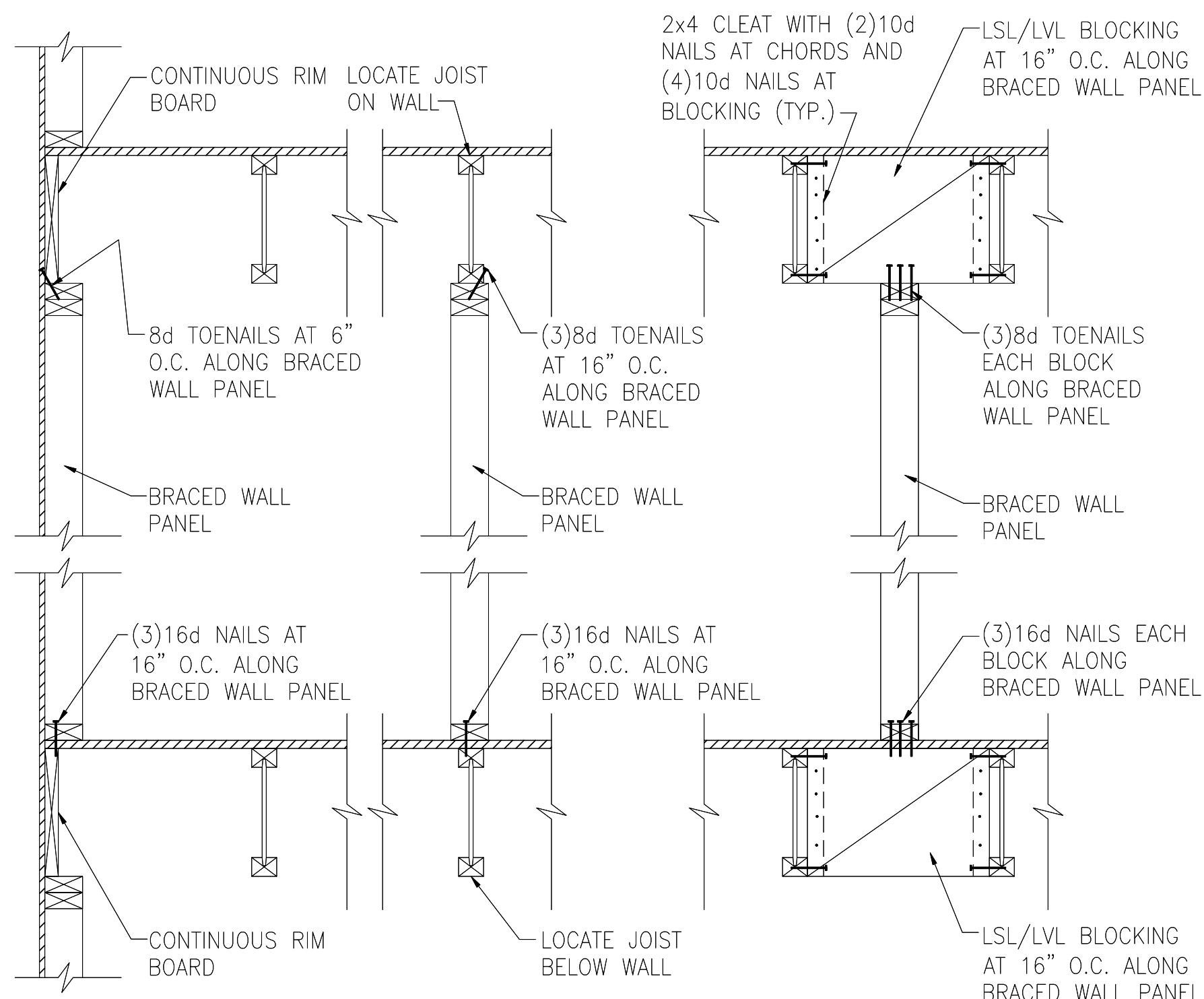
PLAN DESIGNED WITH 9' NOMINAL WALL PLATE HEIGHT

KEYNOTES:

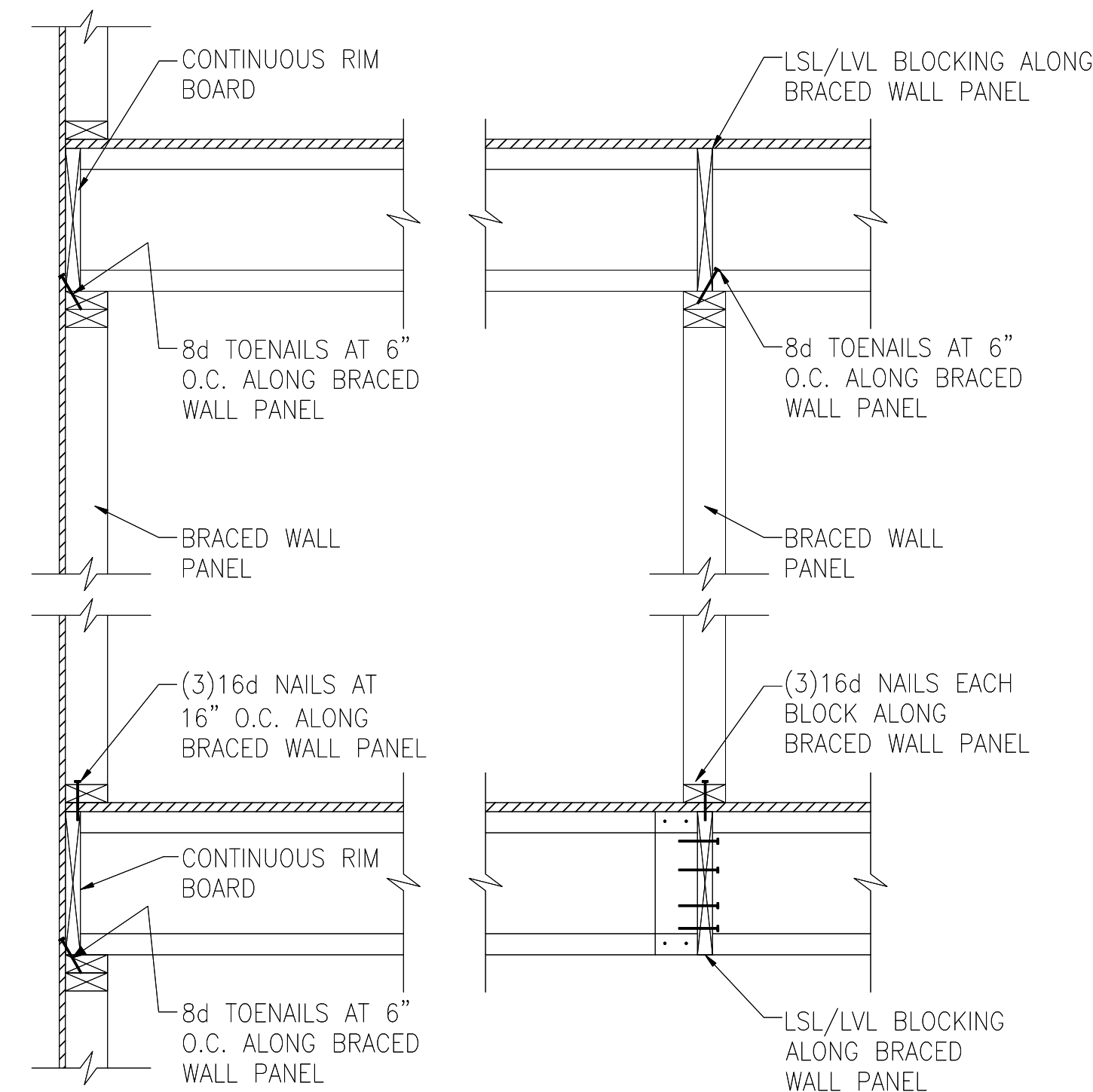
① IF WOOD FLOOR BELOW, CONNECT STUD AT END OF BRACED WALL PANEL TO FRAMING BELOW WITH A 30" LONG SIMPSON CS20-R (USP RS20-R) COIL STRAP WITH MIN 8-10d NAILS EACH END.
OR
IF SLAB FOUNDATION BELOW, CONNECT STUD TO FOUNDATION w/ SIMPSON DTT1Z (USP LTS19-TZ) w/ SIMPSON 3/8"x6" TITEN HD SCREW (USP 3/8"x6" SCREW BOLT+) ANCHOR AND 3 1/2" MINIMUM EMBEDMENT.

④ INSTALL ONE PANEL CS-PF PORTAL FRAME PER DETAIL A OR B/DS-4.

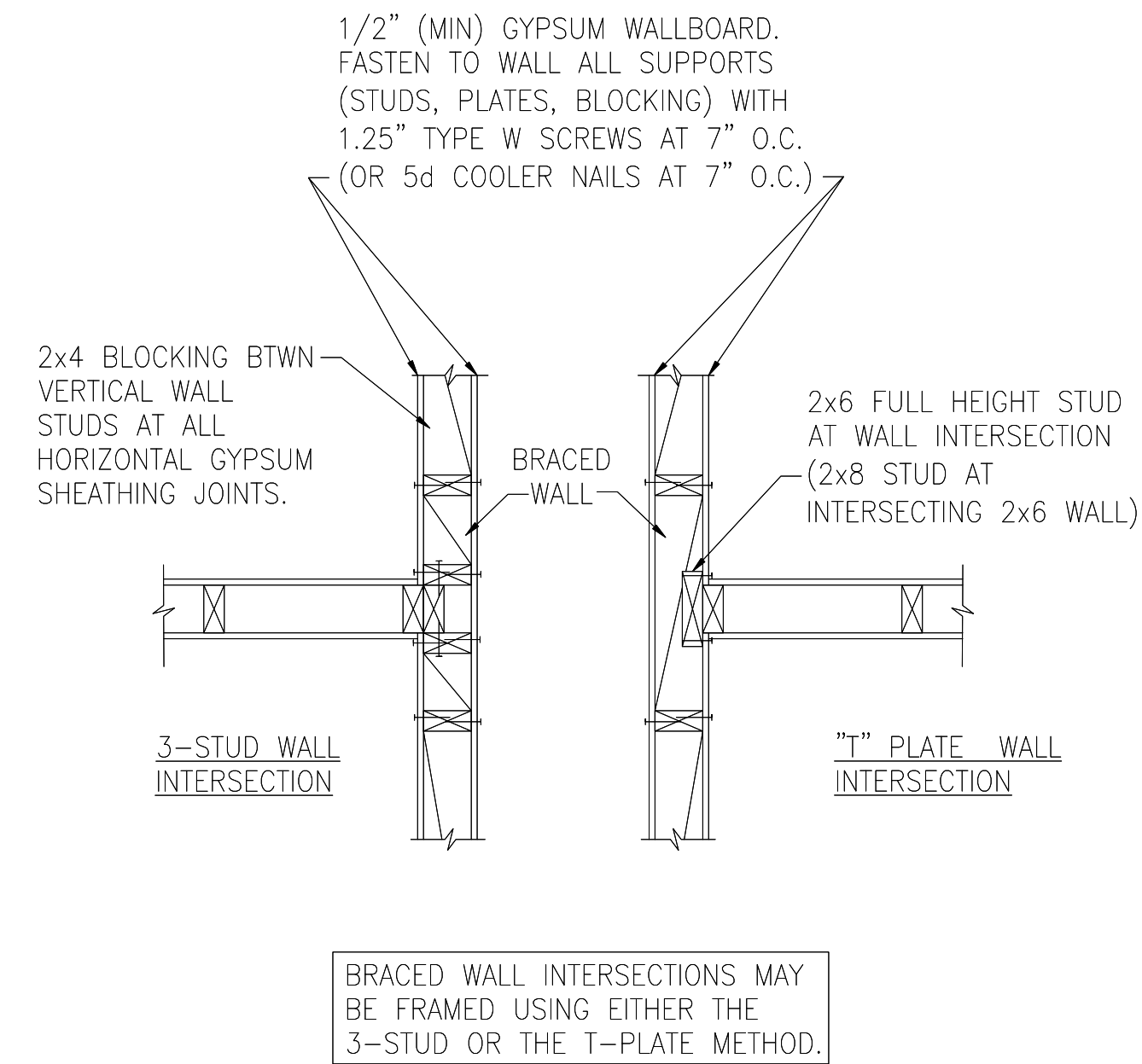




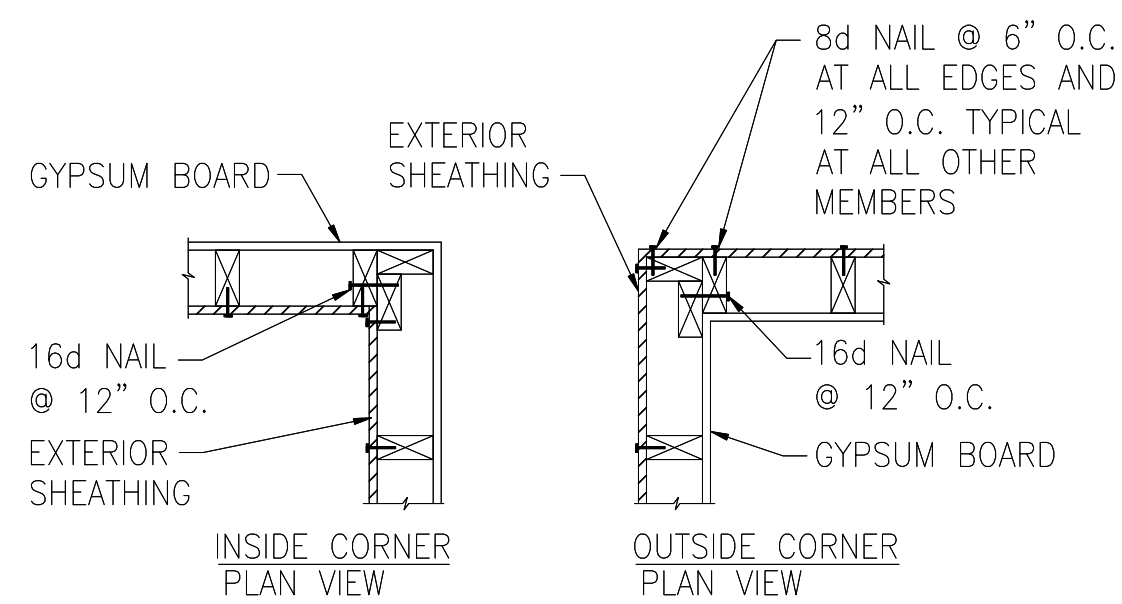
A TYPICAL BRACED WALL PANEL TO FLOOR/CEILING CONNECTION
BRACED WALL PANELS PARALLEL TO I-JOISTS



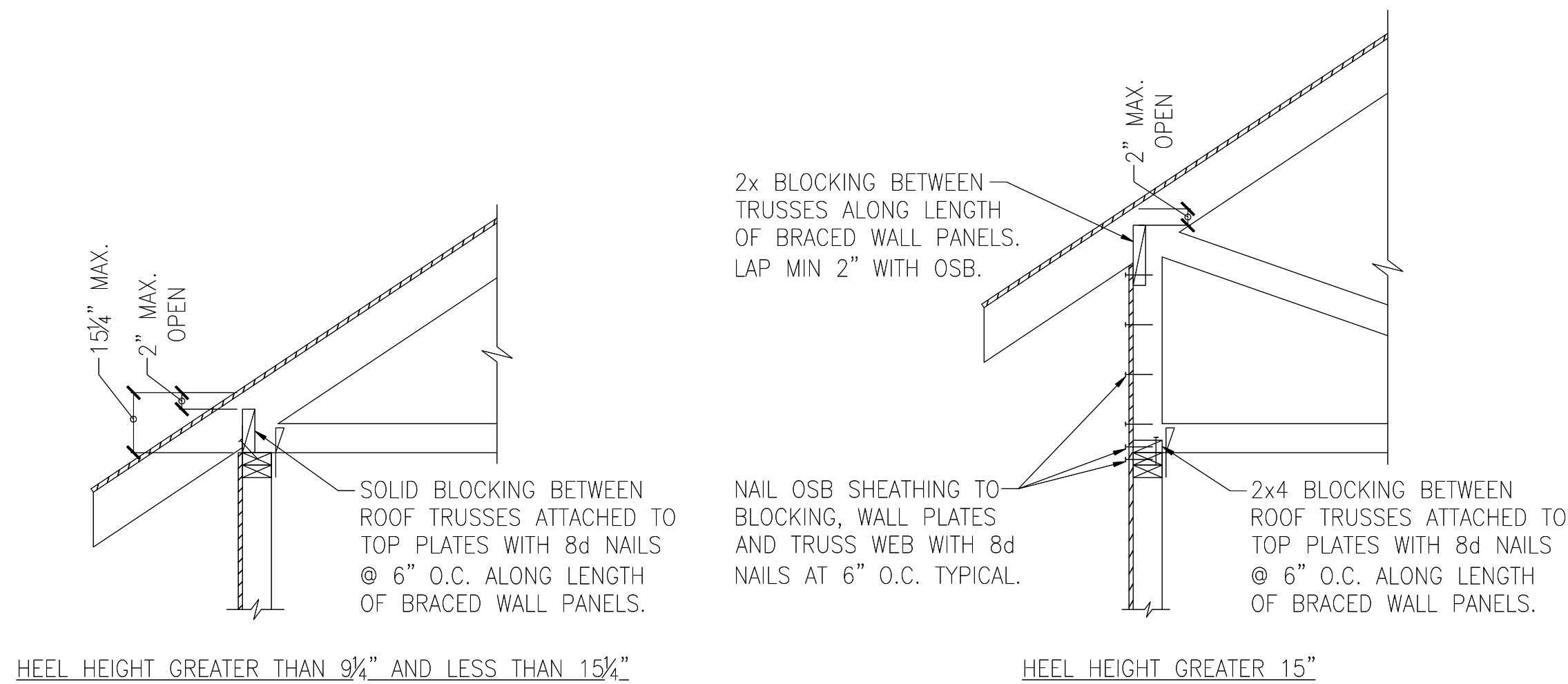
B TYPICAL BRACED WALL PANEL TO FLOOR/CEILING CONNECTION
BRACED WALL PANELS PERPENDICULAR TO I-JOISTS



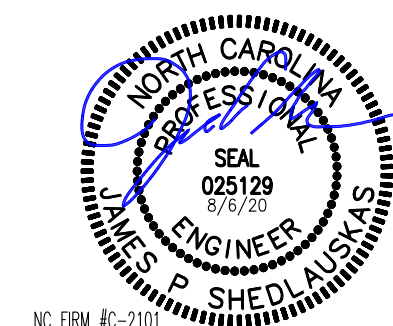
C METHOD GB(1) AND GB(2) INTERSECTION DETAILS



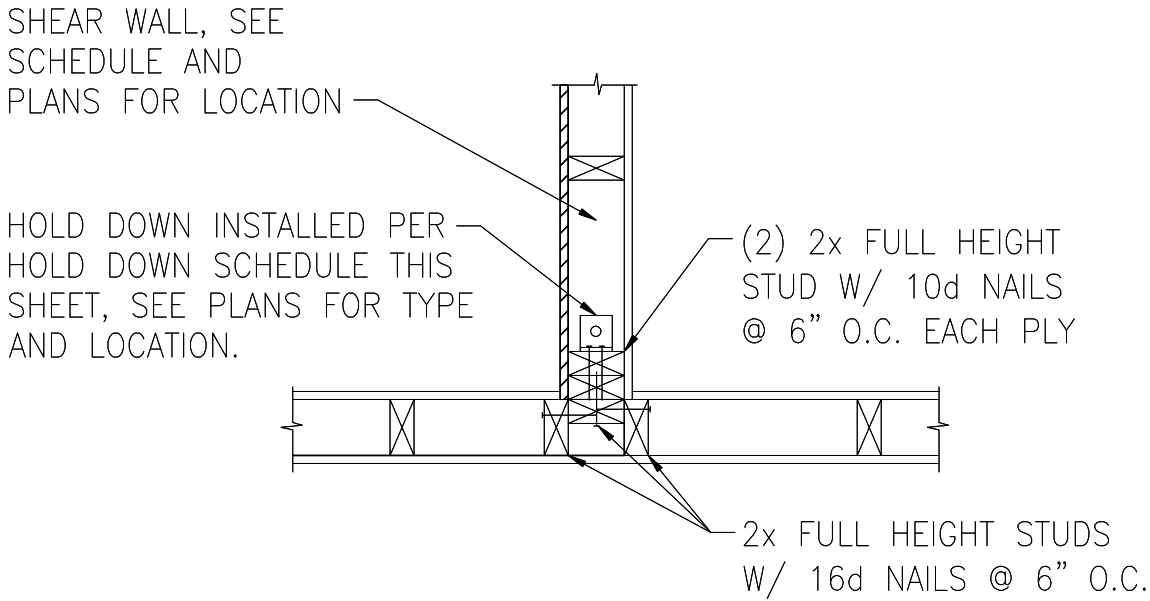
D TYPICAL EXTERIOR CORNER WALL FRAMING



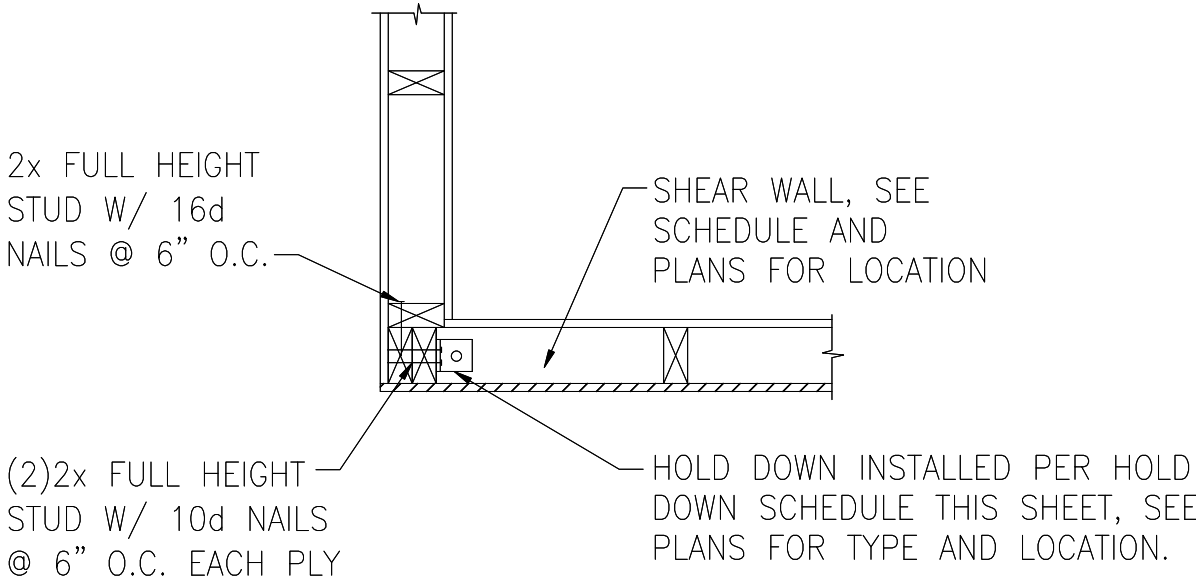
E ROOF TRUSS BEARING/BLOCKING AT BRACED WALL PANELS
ONLY REQUIRED AT BRACED WALL PANELS



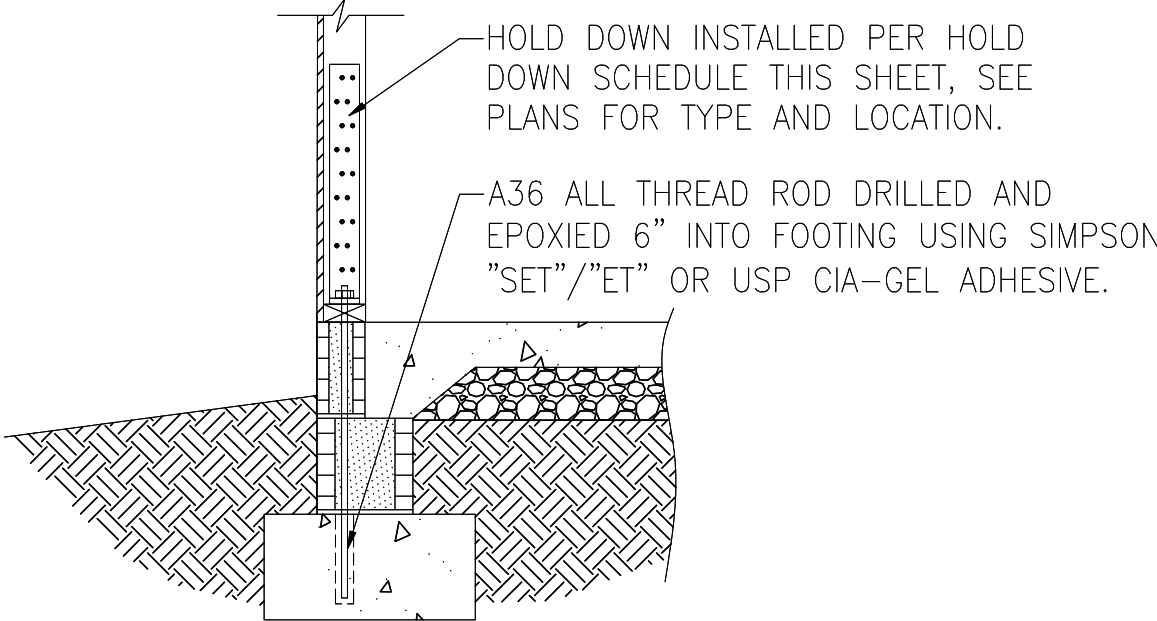
NC FIRM #C-2101



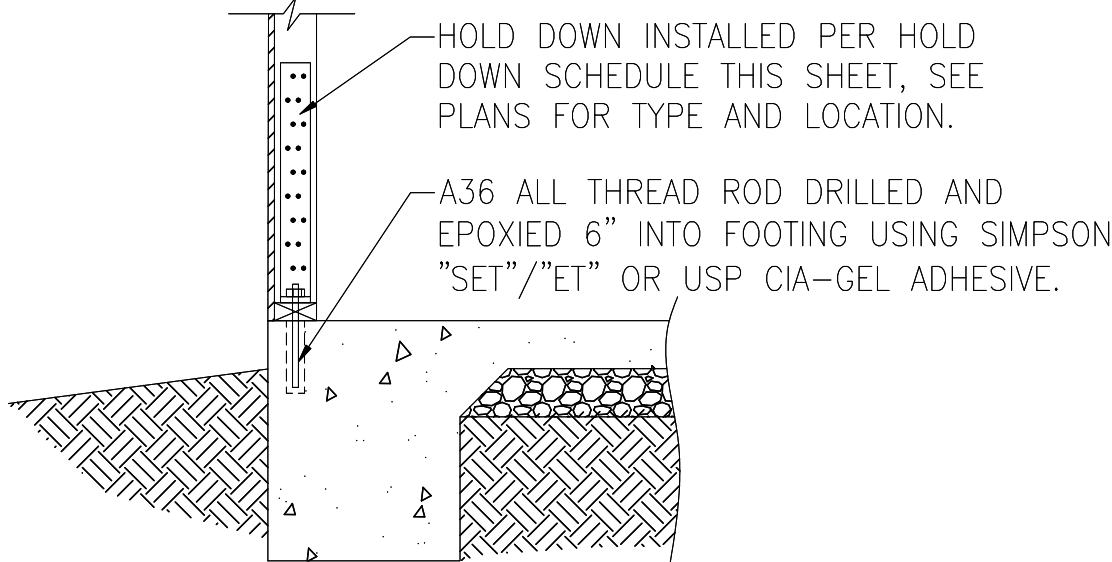
A TYPICAL HOLD DOWN DETAIL



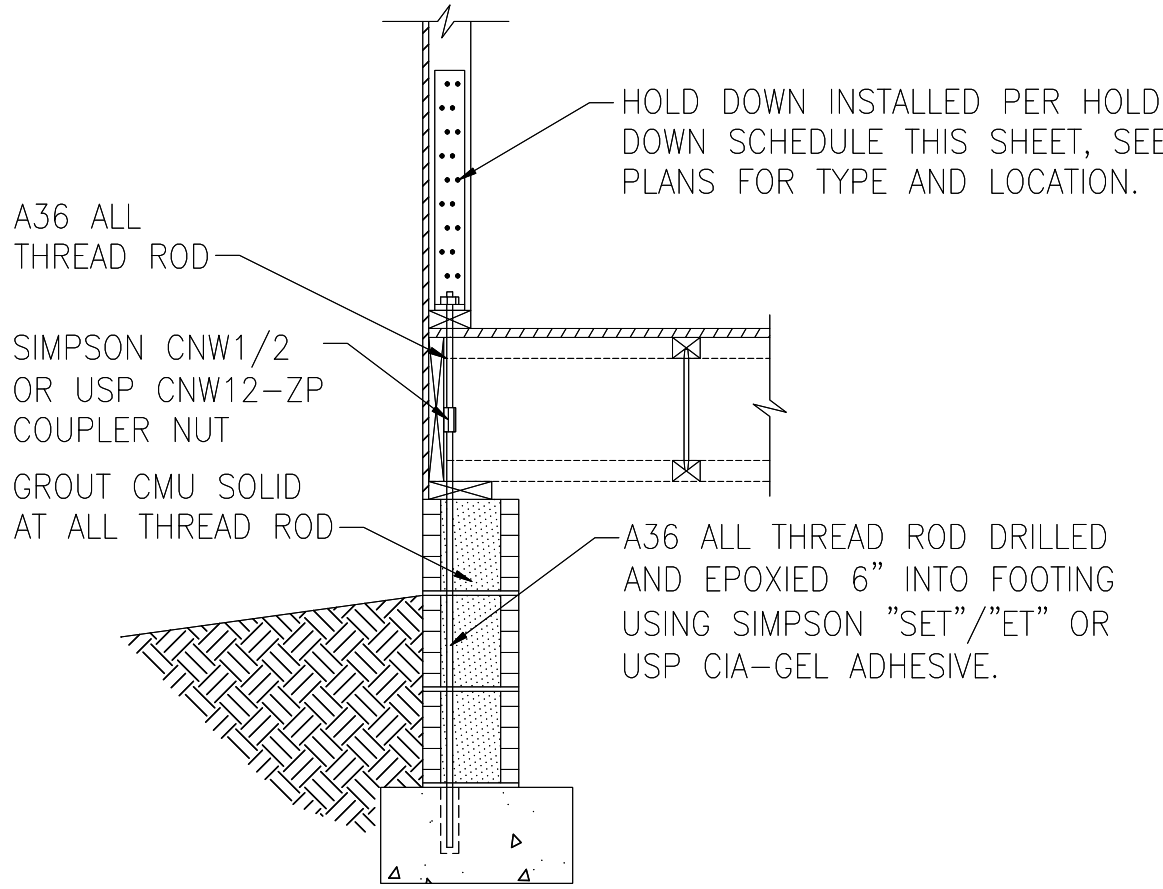
B TYPICAL HOLD DOWN DETAIL



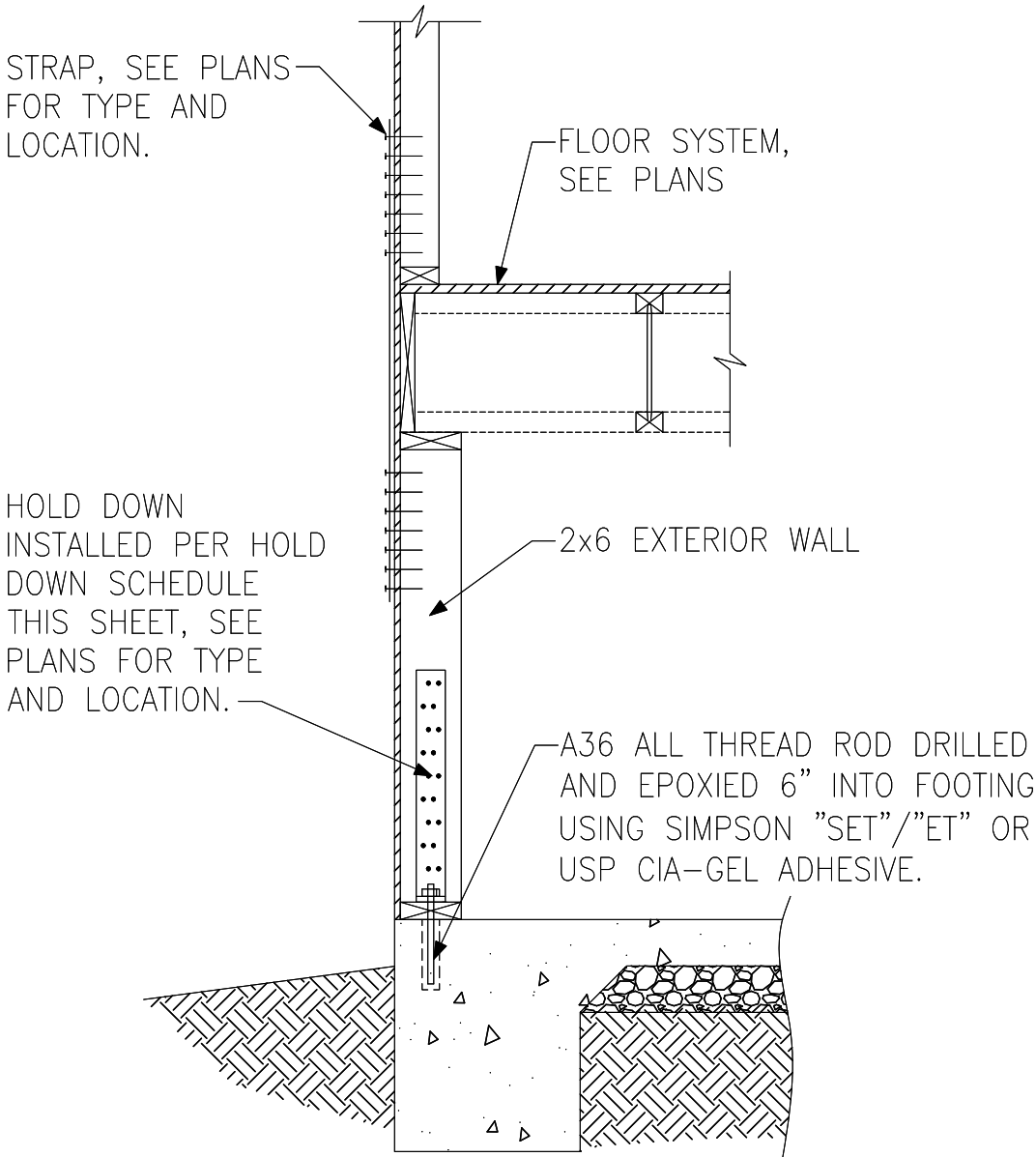
C HOLD DOWN AT STEMWALL SLAB FOUNDATION



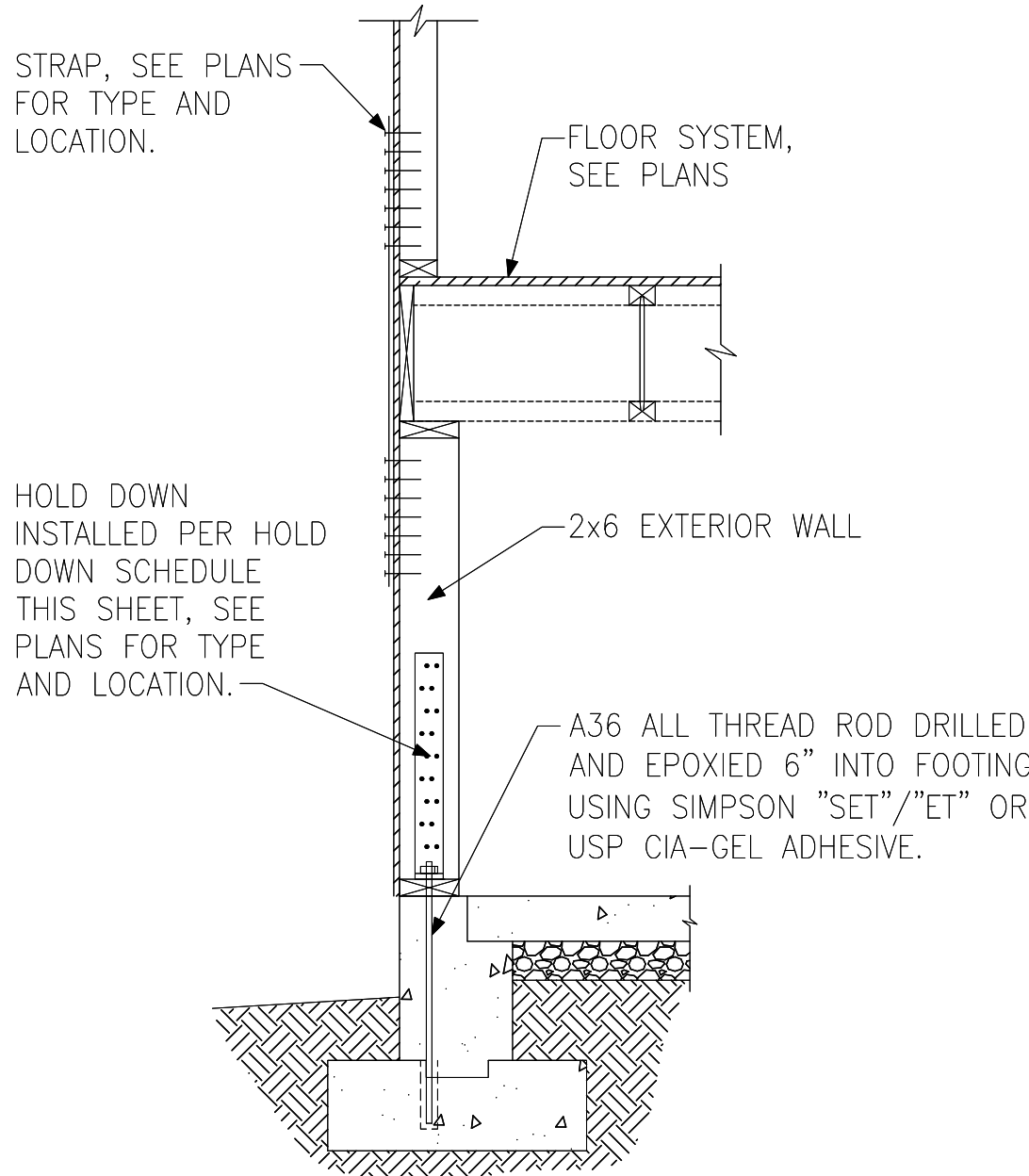
D HOLD DOWN AT MONOLITHIC SLAB FOUNDATION



E HOLD DOWN AT CRAWL SPACE FOUNDATION

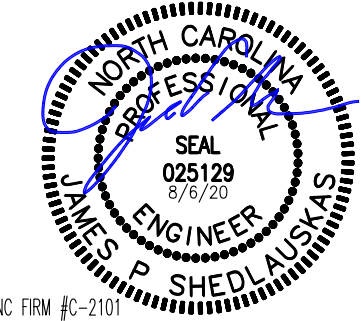


F HOLD DOWN AT BASEMENT FOUNDATION MONOLITHIC TURN-DOWN



G HOLD DOWN AT BASEMENT FOUNDATION STEM WALL

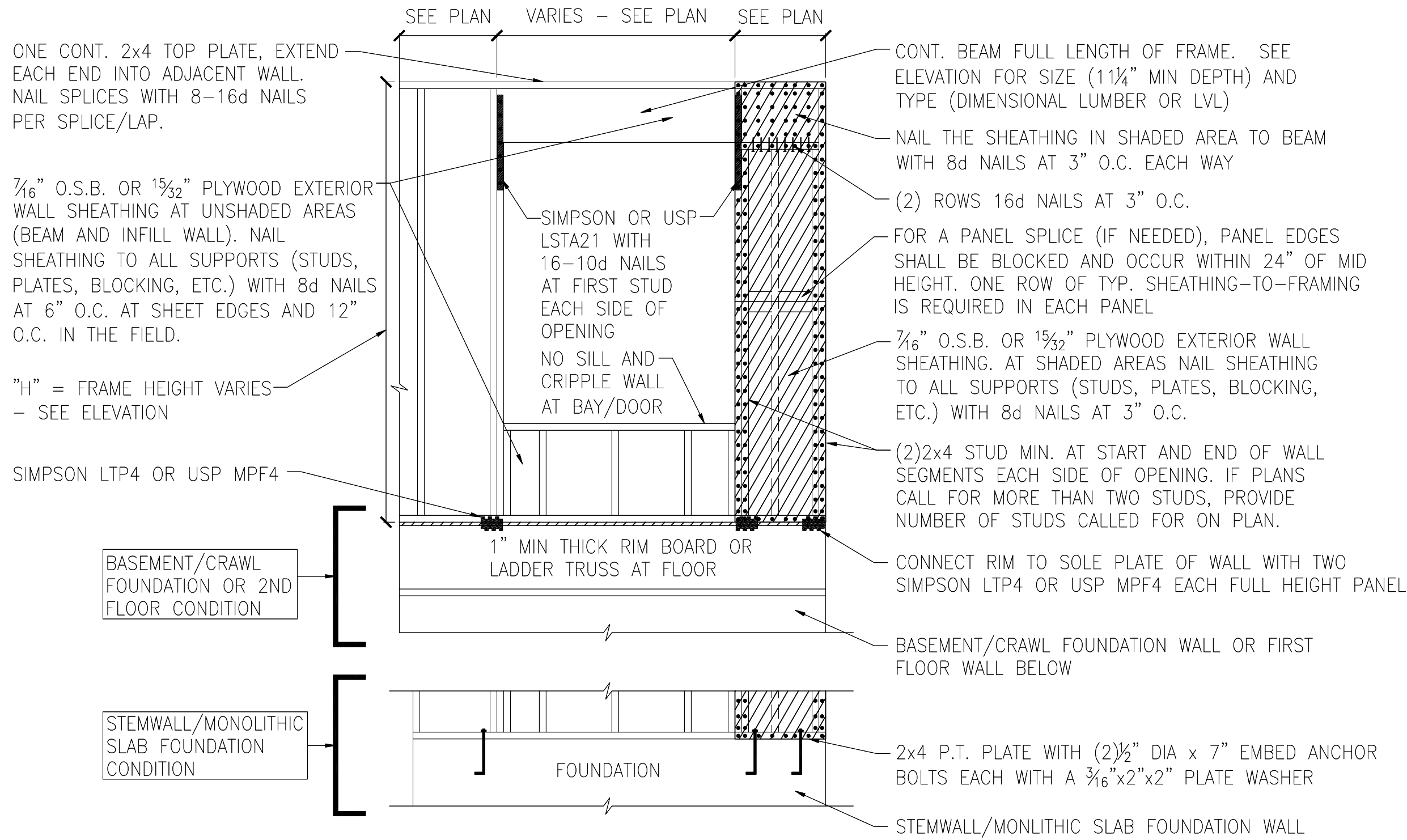
HOLD DOWN SCHEDULE			
HOLD DOWN		ALL THREAD ROD	FASTENERS
SIMPSON	USP		
LTT20B	LTS20B	½" DIA.	(10)10d NAILS
HTT4	HTT16	⅝" DIA.	(18)16dx2½" LONG NAILS
HTT5	HTT45	⅝" DIA.	(26)16dx2½" LONG NAILS



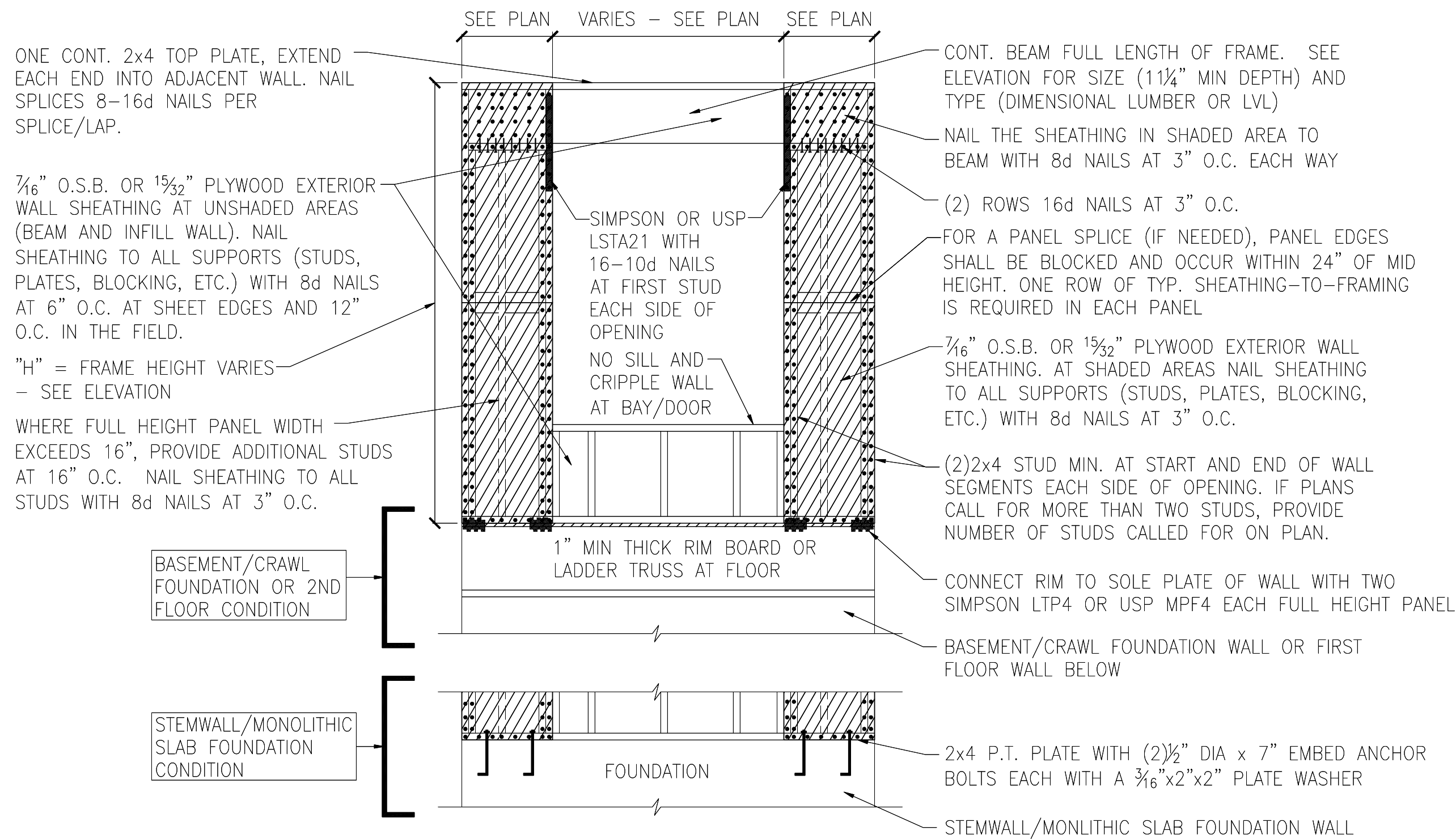
Hold Down Details

'Kathryn' Plan ID: 2290 – RH
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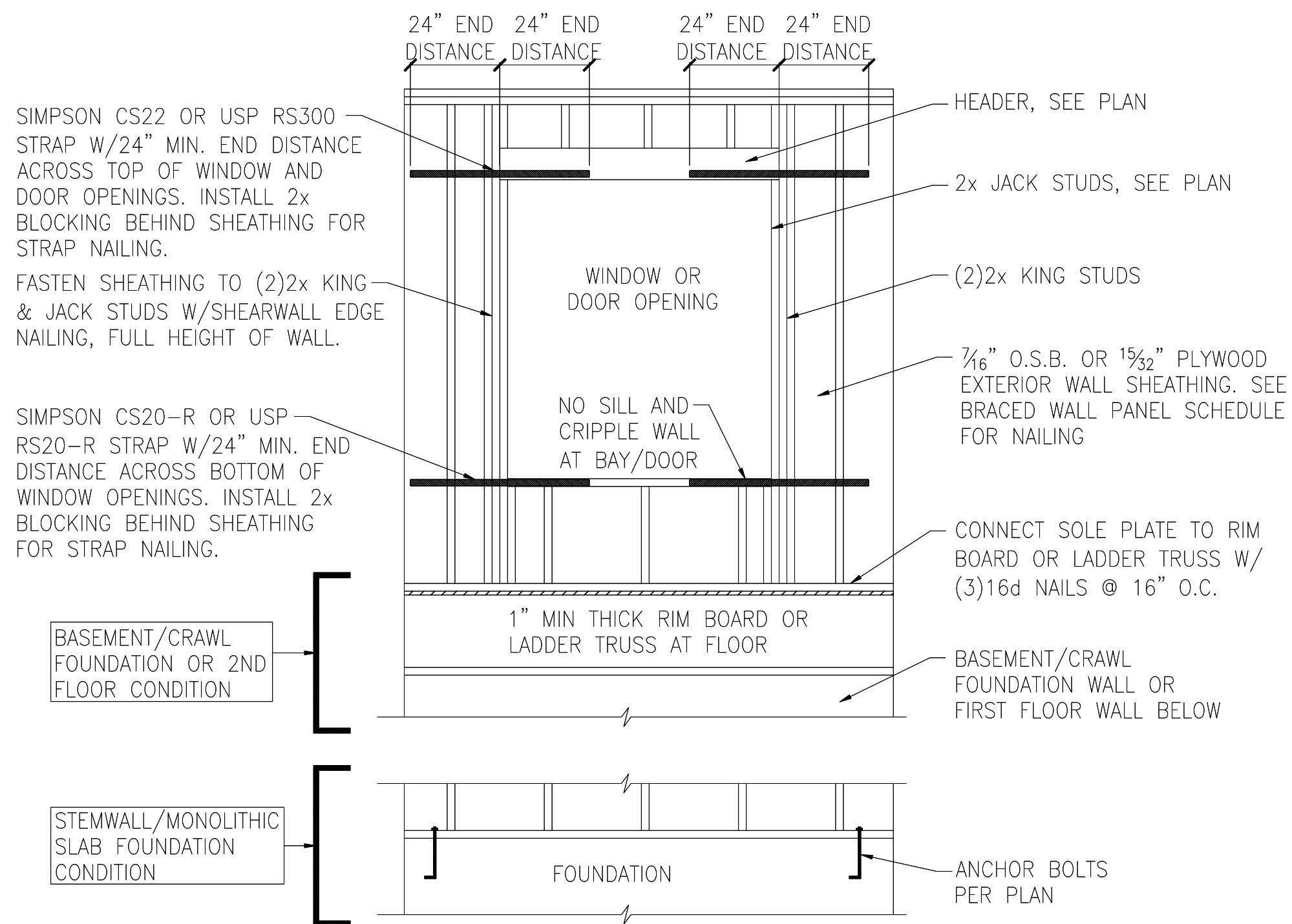
Project #: 088-18001
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Re-Issue: 8/3/20
Scale: 1/8"=1'-0" @ 11x17
1/4"=1'-0" @ 22x34



A METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
ONE BRACED WALL SEGMENT



B METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
TWO BRACED WALL SEGMENTS

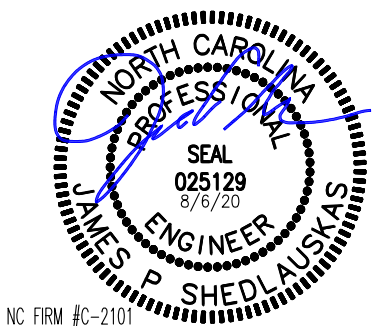


C WINDOW OR DOOR REINFORCEMENT IN ENGINEERED SHEAR WALL
ONLY REQUIRED WHERE SPECIFIED ON PLANS

BRACED WALL PANEL AND ENGINEERED SHEAR WALL SCHEDULE			
PANEL TYPES	PANEL TYPE	MATERIAL	FASTENERS
WSP	INTERMITTENT WOOD STRUCTURAL PANEL	7/16" OSB	6D OR 8D COMMON NAILS AT 6" O.C. AT SHEET EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. ENGINEERED ALTERNATIVE: 16 GAGE BY 1.75" LONG STAPLES AT 3" O.C. AT SHEET EDGES AND 6" O.C. AT INTERMEDIATE SUPPORTS
GB(1)	INTERMITTENT GYPSUM BOARD (SHEATHING ONE FACE OF WALL)	1/2" GYPSUM	1.5" LONG GALV. ROOFING NAILS, 6d COMMON NAILS, OR 1.25" LONG TYPE W DRYWALL SCREWS AT 7" O.C. AT SHEET EDGES AND INTERMEDIATE SUPPORTS.
GB(1)-4	INTERMITTENT GYPSUM BOARD (SHEATHING ONE FACE OF WALL)	1/2" GYPSUM	1.5" LONG GALV. ROOFING NAILS, 6d COMMON NAILS, OR 1.25" LONG TYPE W DRYWALL SCREWS AT 4" O.C. AT SHEET EDGES AND INTERMEDIATE SUPPORTS.
GB(2)	INTERMITTENT GYPSUM BOARD (SHEATHING BOTH FACES OF WALL)	1/2" GYPSUM	1.5" LONG GALV. ROOFING NAILS, 6d COMMON NAILS, OR 1.25" LONG TYPE W DRYWALL SCREWS AT 7" O.C. AT SHEET EDGES AND INTERMEDIATE SUPPORTS.
CS-WSP	CONTINUOUS SHEATHED WOOD STRUCTURAL PANEL	7/16" OSB	6D OR 8D COMMON NAILS AT 6" O.C. AT SHEET EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. ENGINEERED ALTERNATIVE: 16 GAGE BY 1.75" LONG STAPLES AT 3" O.C. AT SHEET EDGES AND 6" O.C. AT INTERMEDIATE SUPPORTS
CS-PF	CONTINUOUS SHEATHED PORTAL FRAME	7/16" OSB	NAILING PER DETAIL
PFH	PORTAL FRAME WITH HOLD DOWNS	7/16" OSB	NAILING PER DETAIL
CS-ESW(1)	ENGINEERED SHEAR WALL, TYPE 1	7/16" OSB	8D COMMON NAILS AT 6" O.C. AT SHEET EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. CONTINUOUS OSB AROUND DOOR/WINDOW OPENINGS
CS-ESW(2)	ENGINEERED SHEAR WALL, TYPE 2	7/16" OSB	8D COMMON NAILS AT 4" O.C. AT SHEET EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. CONTINUOUS OSB AROUND DOOR/WINDOW OPENINGS
CS-ESW(3)	ENGINEERED SHEAR WALL, TYPE 3	7/16" OSB	8D COMMON NAILS AT 3" O.C. AT SHEET EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. CONTINUOUS OSB AROUND DOOR/WINDOW OPENINGS

BRACED WALL PANEL NOTES:

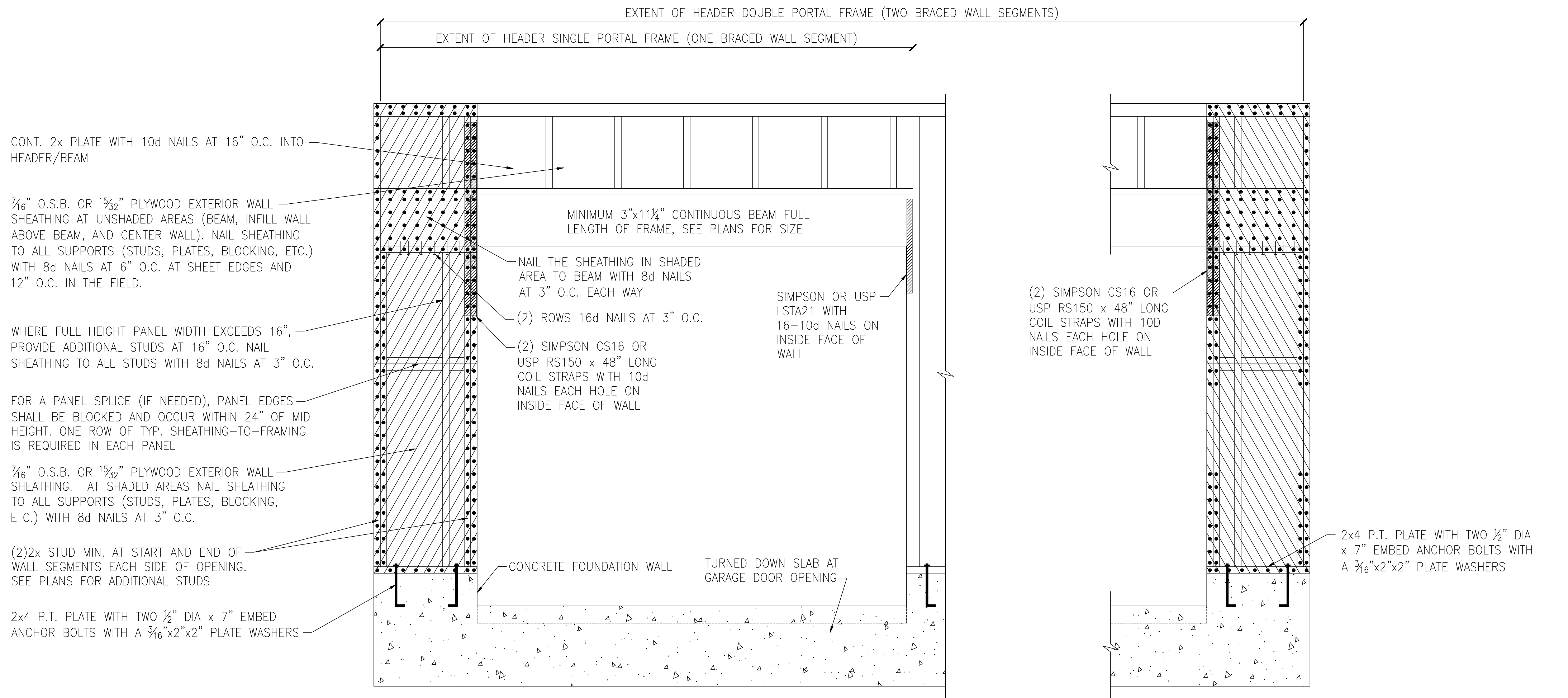
- ALL BRACED WALL PANELS, EXCEPT GB(1) & GB(2), SHALL HAVE 2x BLOCKING BETWEEN WALL STUDS AT ALL HORIZONTAL SHEET EDGES.
- PROVIDE NAILING/BLOCKING ABOVE AND BELOW ALL BRACED WALL PANELS PER KSE BRACED WALL DETAILS.
- SHEATH ALL EXTERIOR WALLS OF THE HOUSE WITH 7/16" O.S.B., OR 1 1/2" PLYWOOD, FASTENED PER NCRC. AT EXTERIOR CORNERS, SHEATHING SHALL BE FASTENED PER KSE BRACED WALL DETAILS. AT INTERIOR WALL INTERSECTIONS, FASTEN STUDS & WALL BRACING PER KSE BRACED WALL DETAILS.



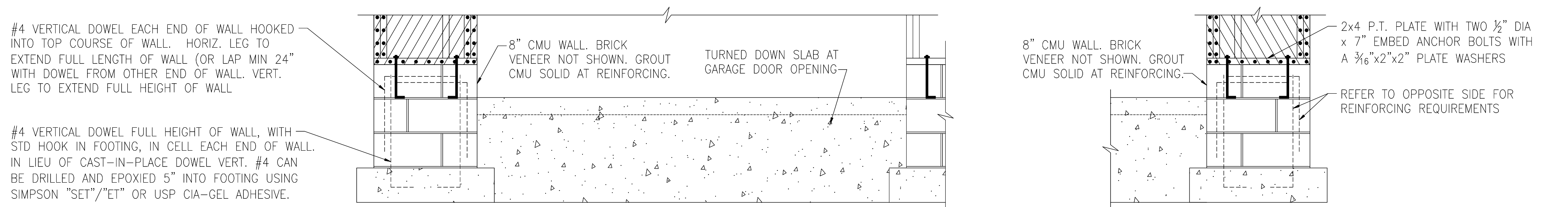
Braced Wall Notes & Details

'Kathryn' Plan ID: 2290 - RH
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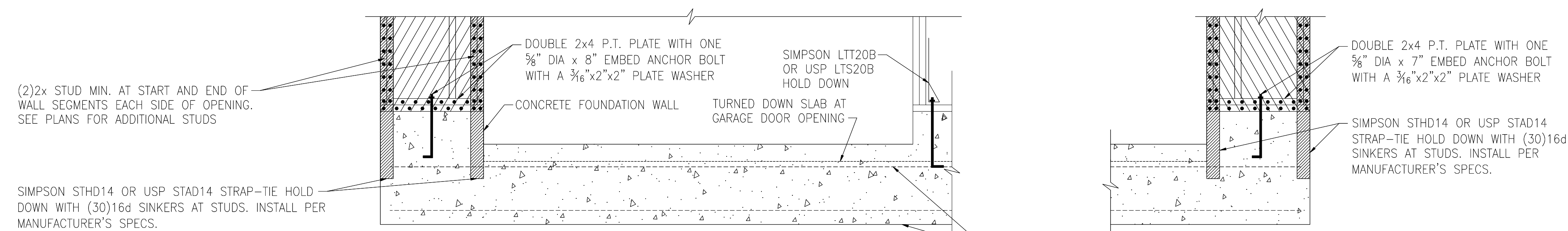
Project #: 088-18001
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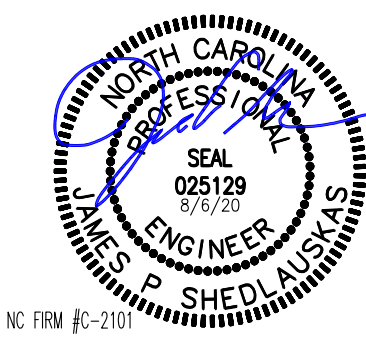
(A) METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
MONOLITHIC SLAB OR BASEMENT FOUNDATION

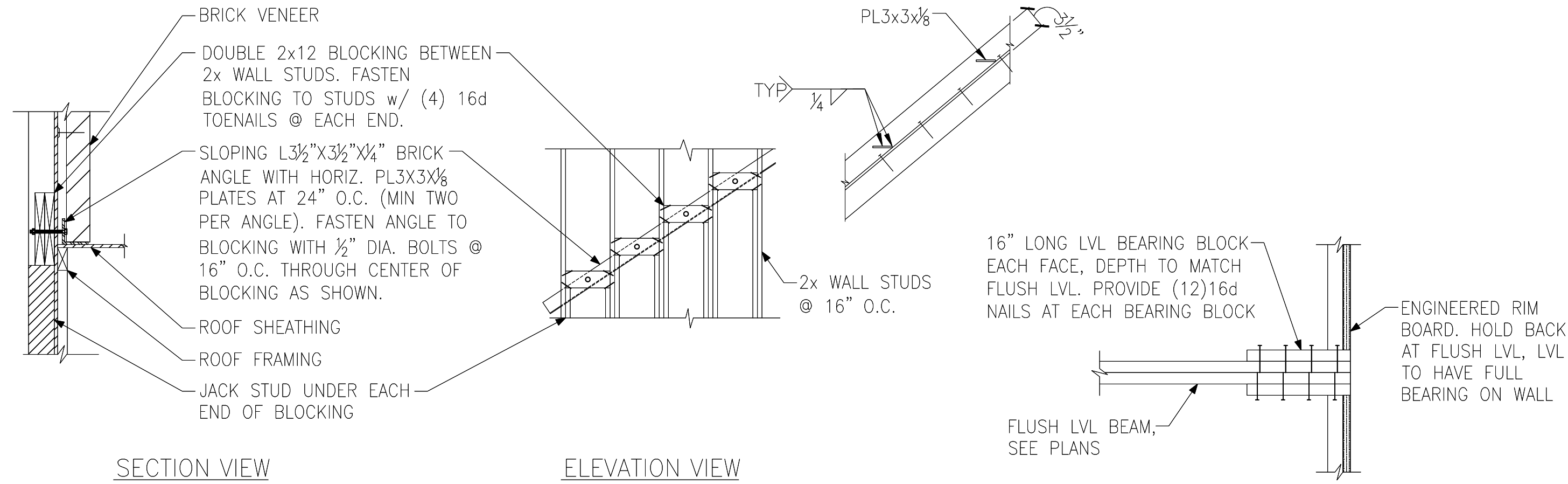


(B) METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
STEMWALL SLAB OR CRAWL SPACE FOUNDATION



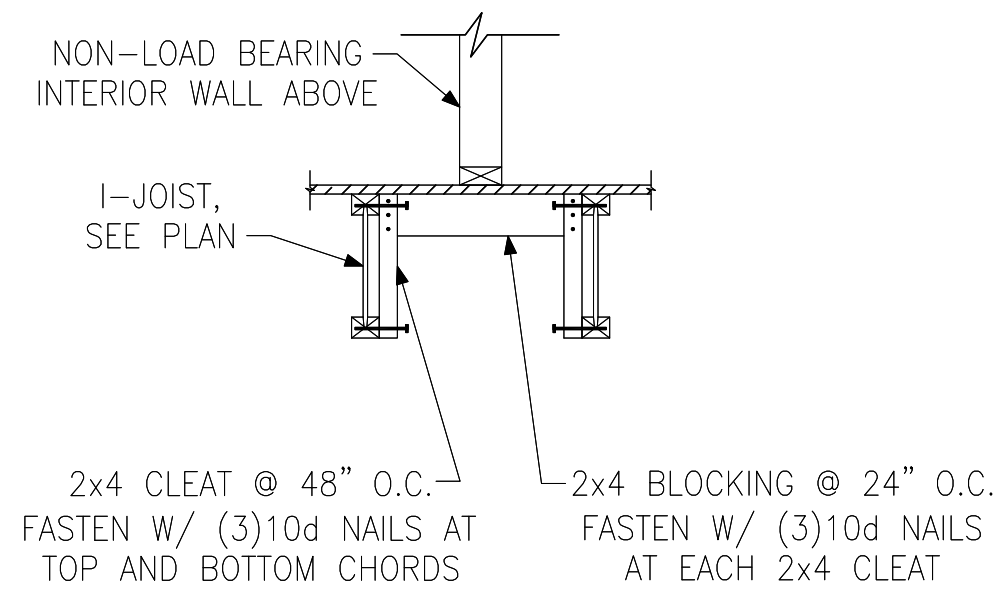
(C) METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS
MONOLITHIC SLAB OR BASEMENT FOUNDATION



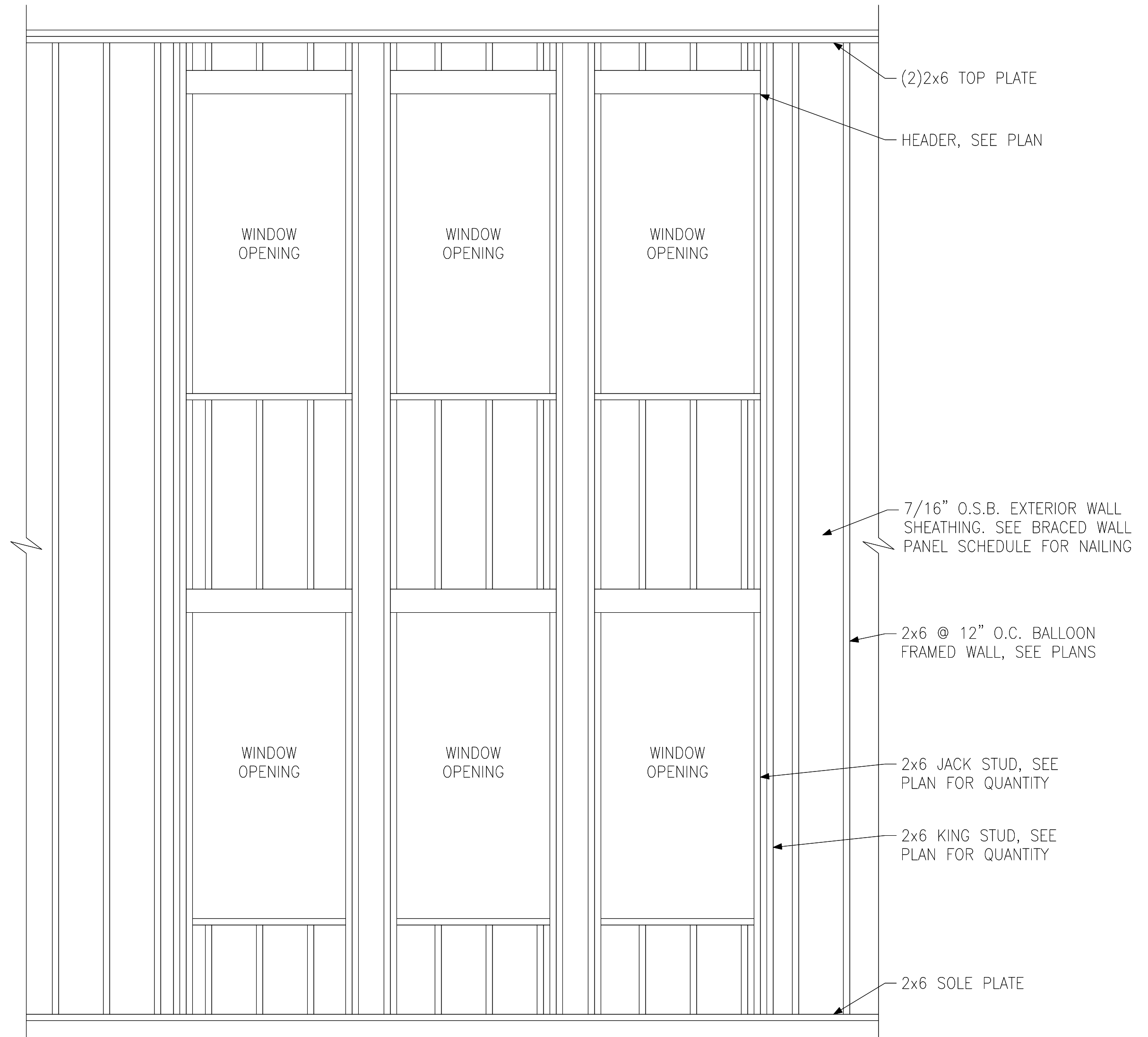


A BRICK LEDGER CONNECTION DETAIL

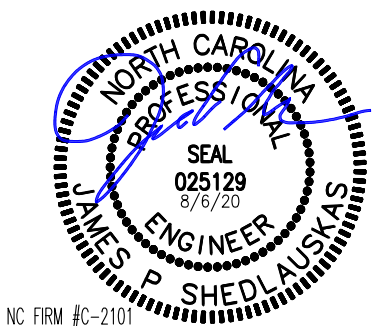
B BEARING ENHANCER FLUSH LVL

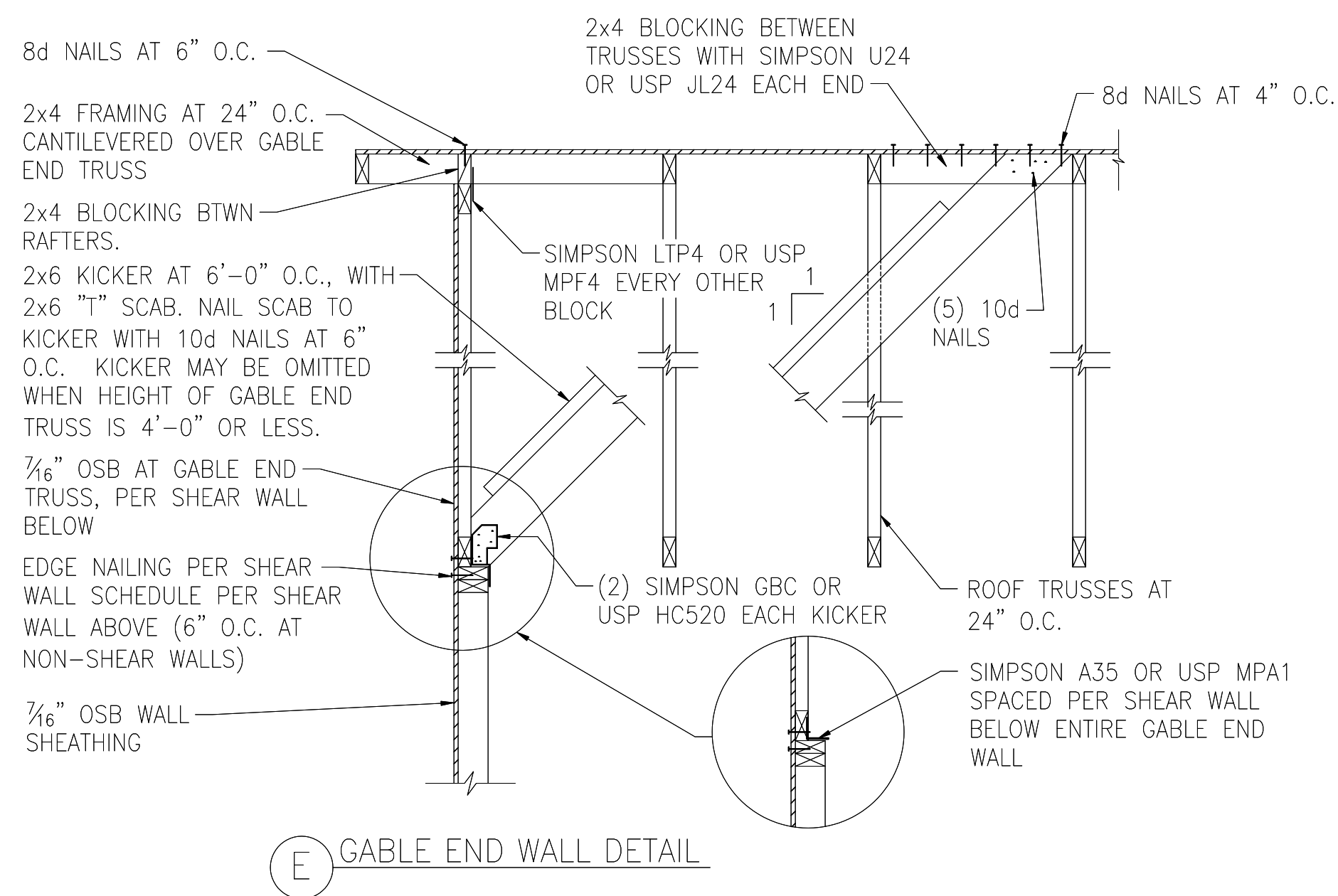
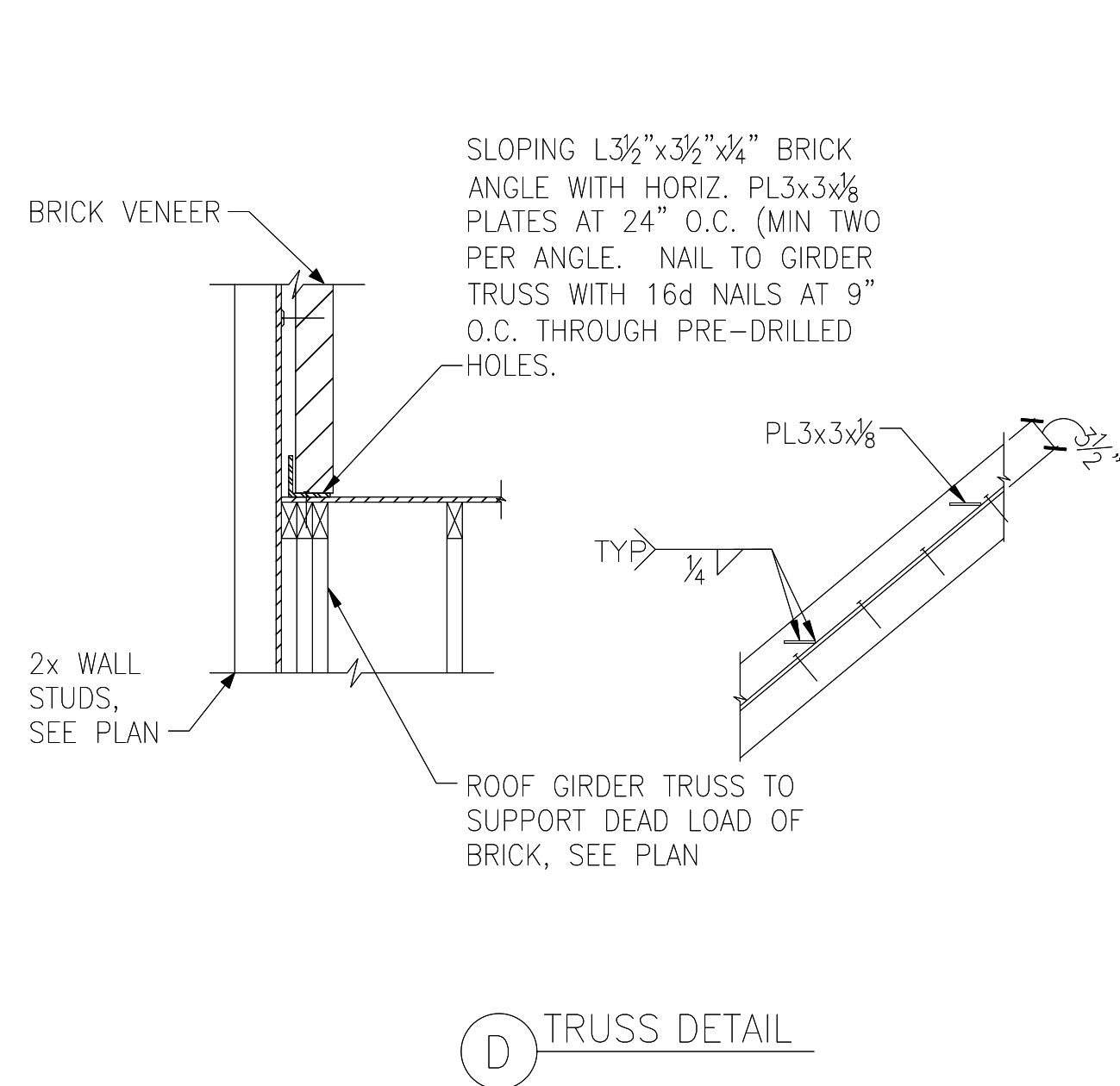
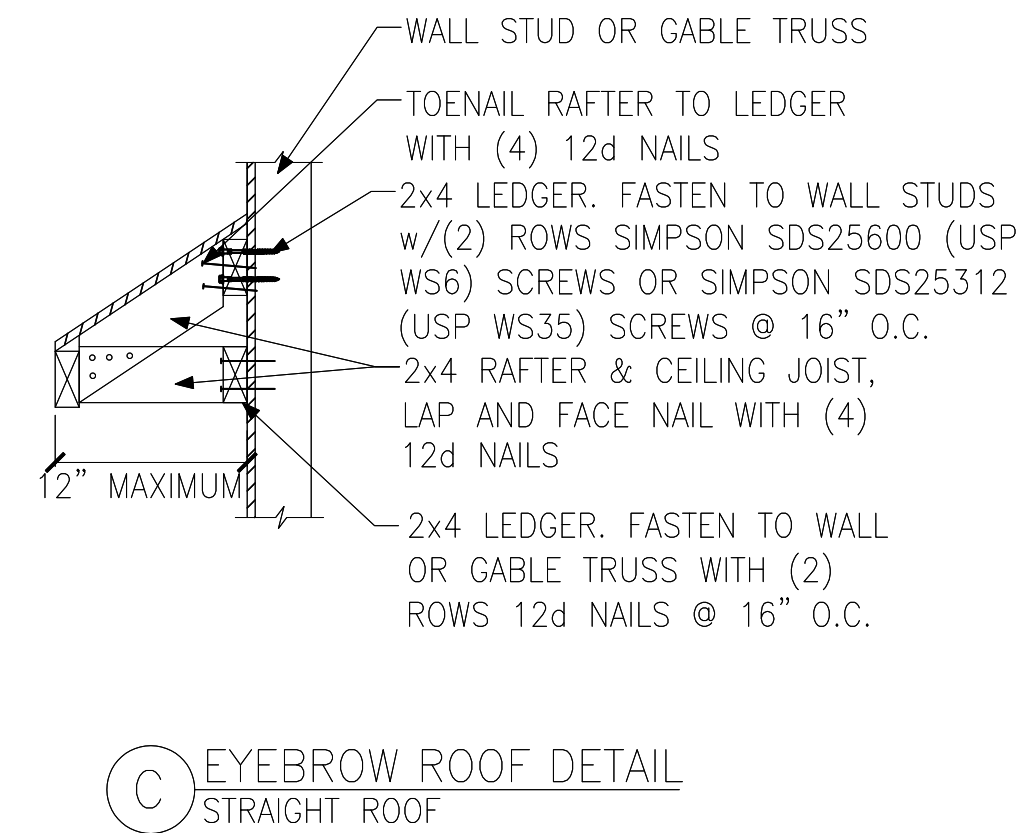
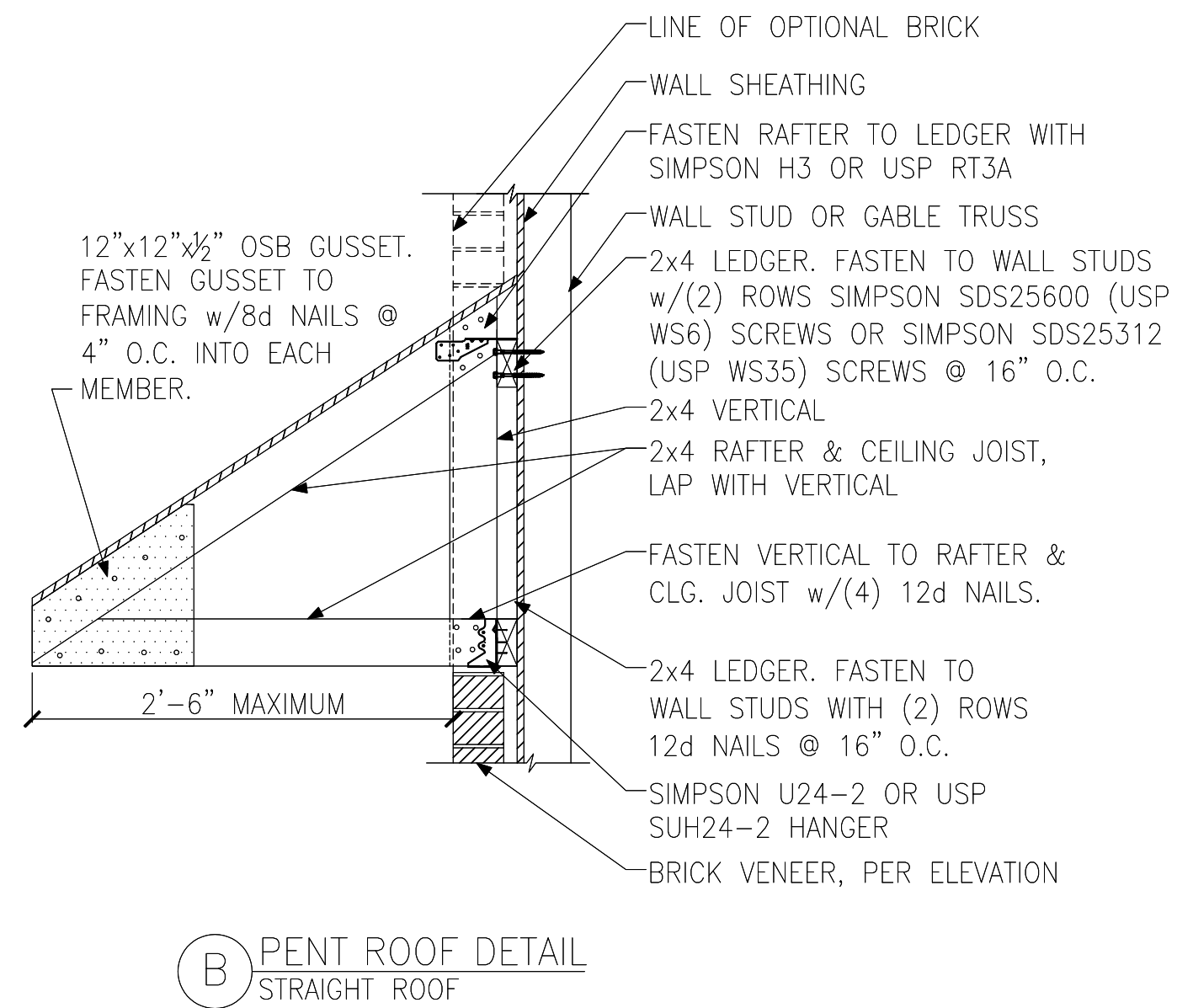
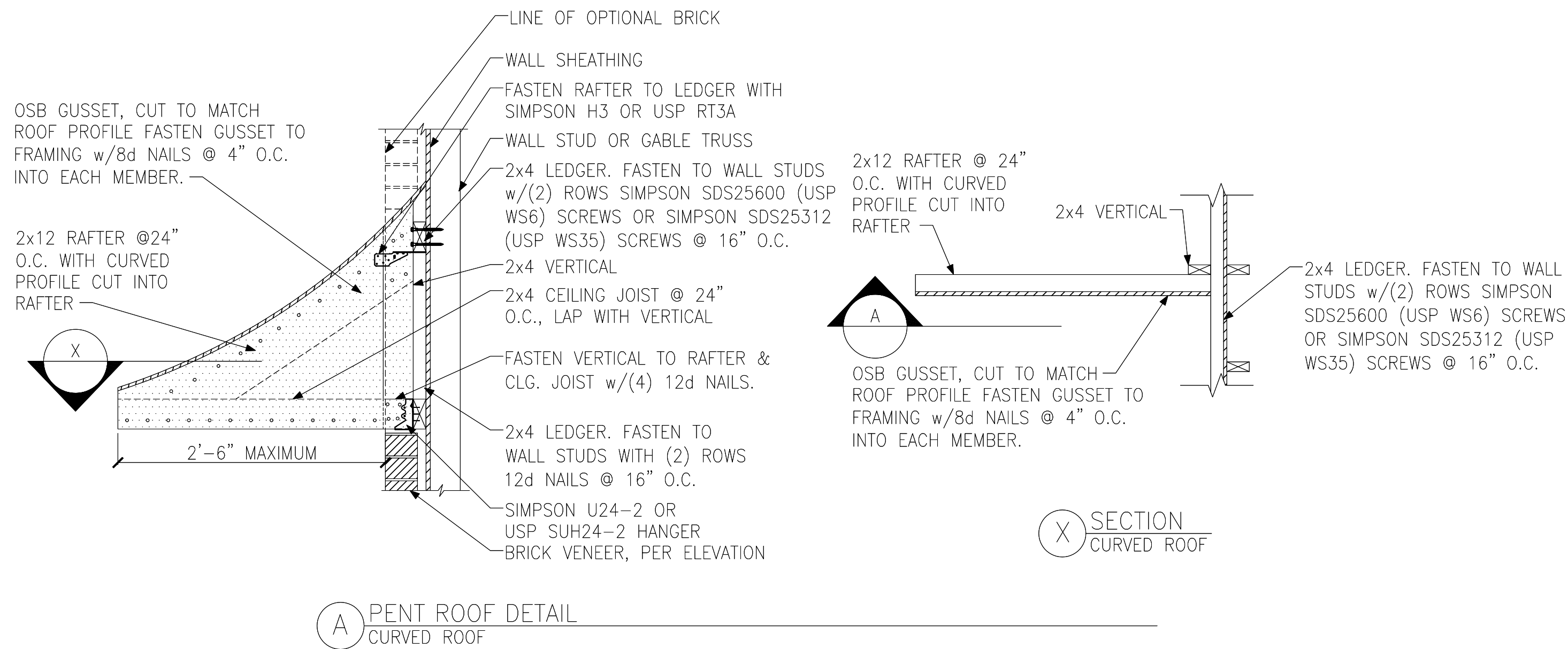


C I-JOIST LADDER BLOCKING AS REQUIRED @ PARALLEL WALLS



D BALLOON FRAMED WALL DETAIL N.T.S.





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Miscellaneous Framing Details

'Kathryn' Plan ID: 2290 – RH
115 M.P.H.
North Carolina

Project #: 088-18001

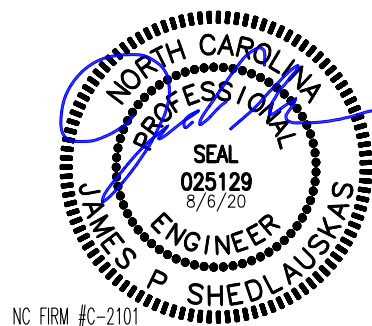
Designed By: JPS

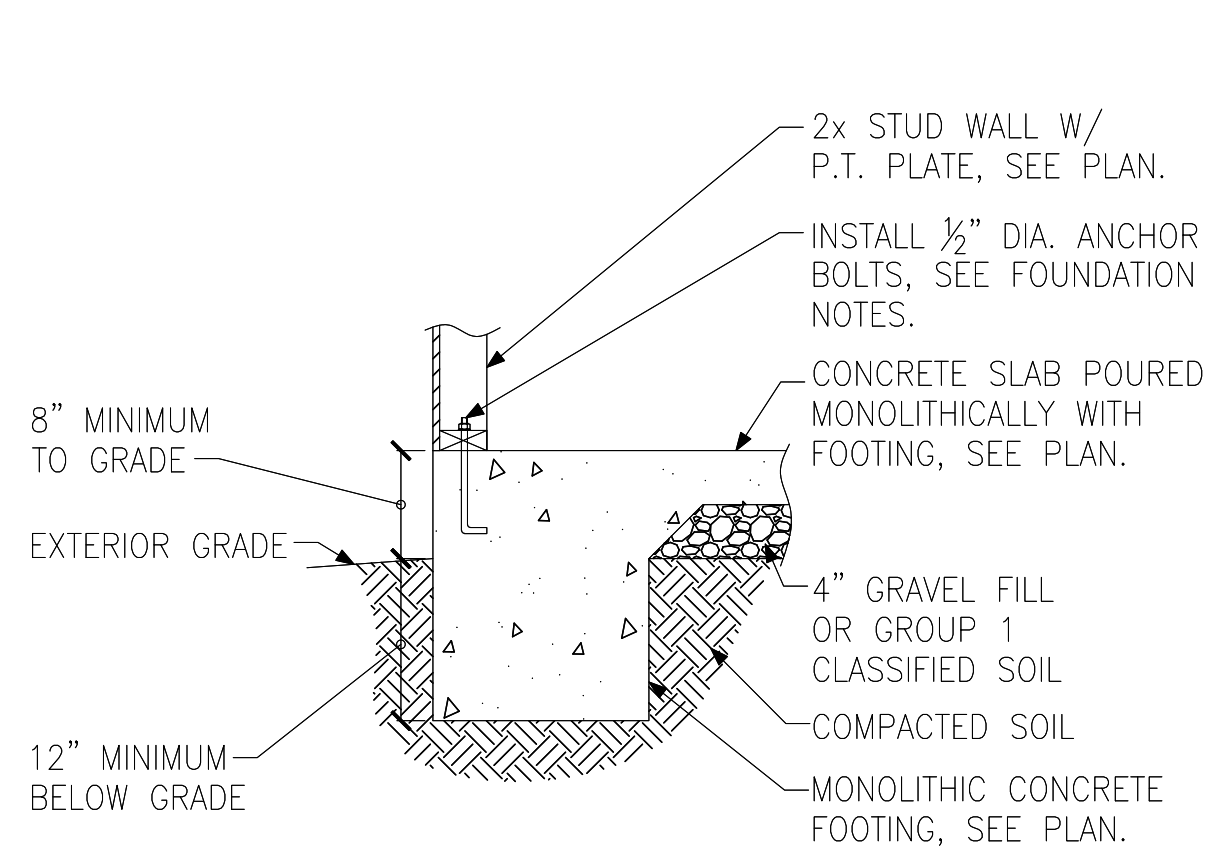
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Issue Date: 1/24/19

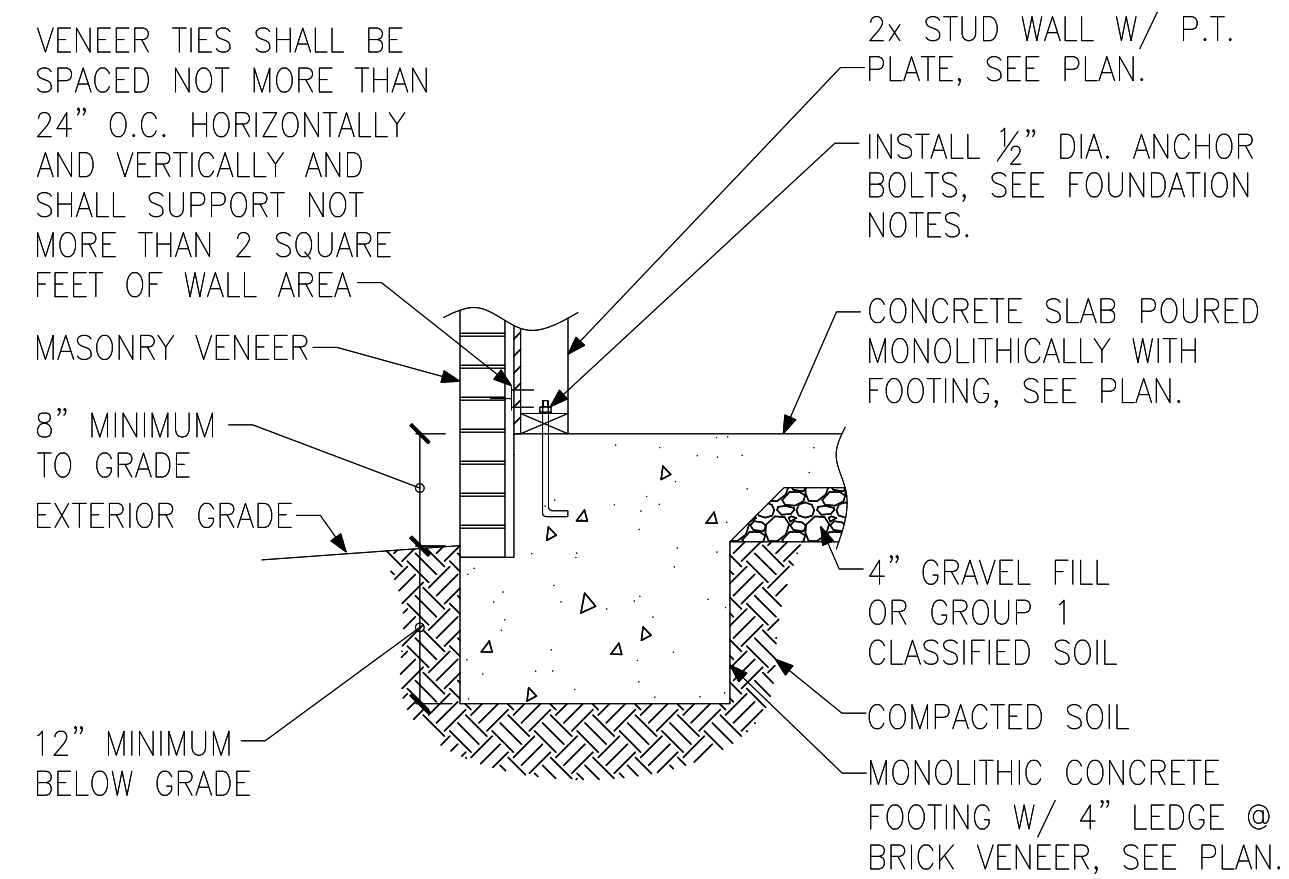
Re-Issue: 8/3/20

Scale: $1/8" = 1'-0"$ @ 11x17
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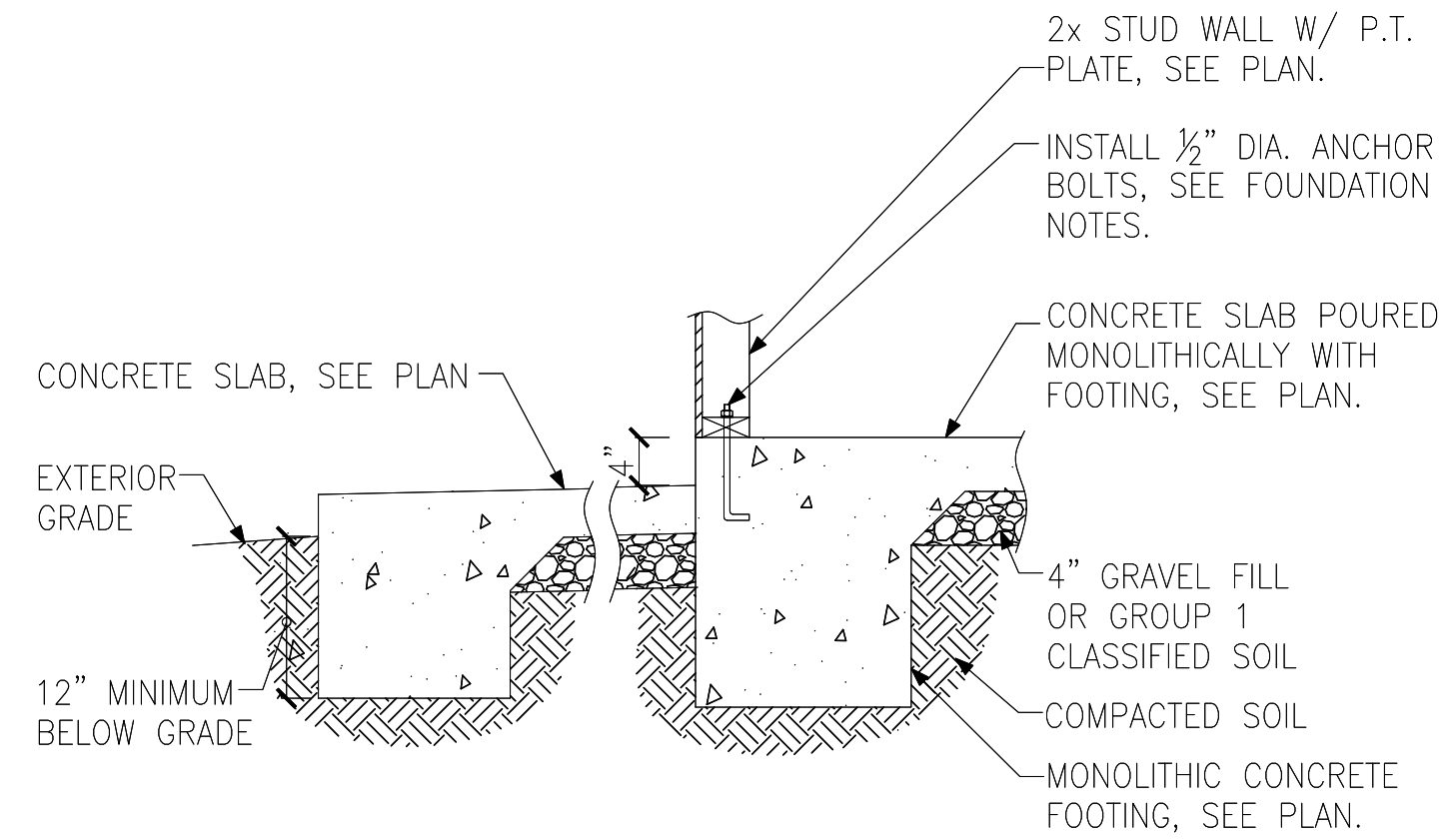




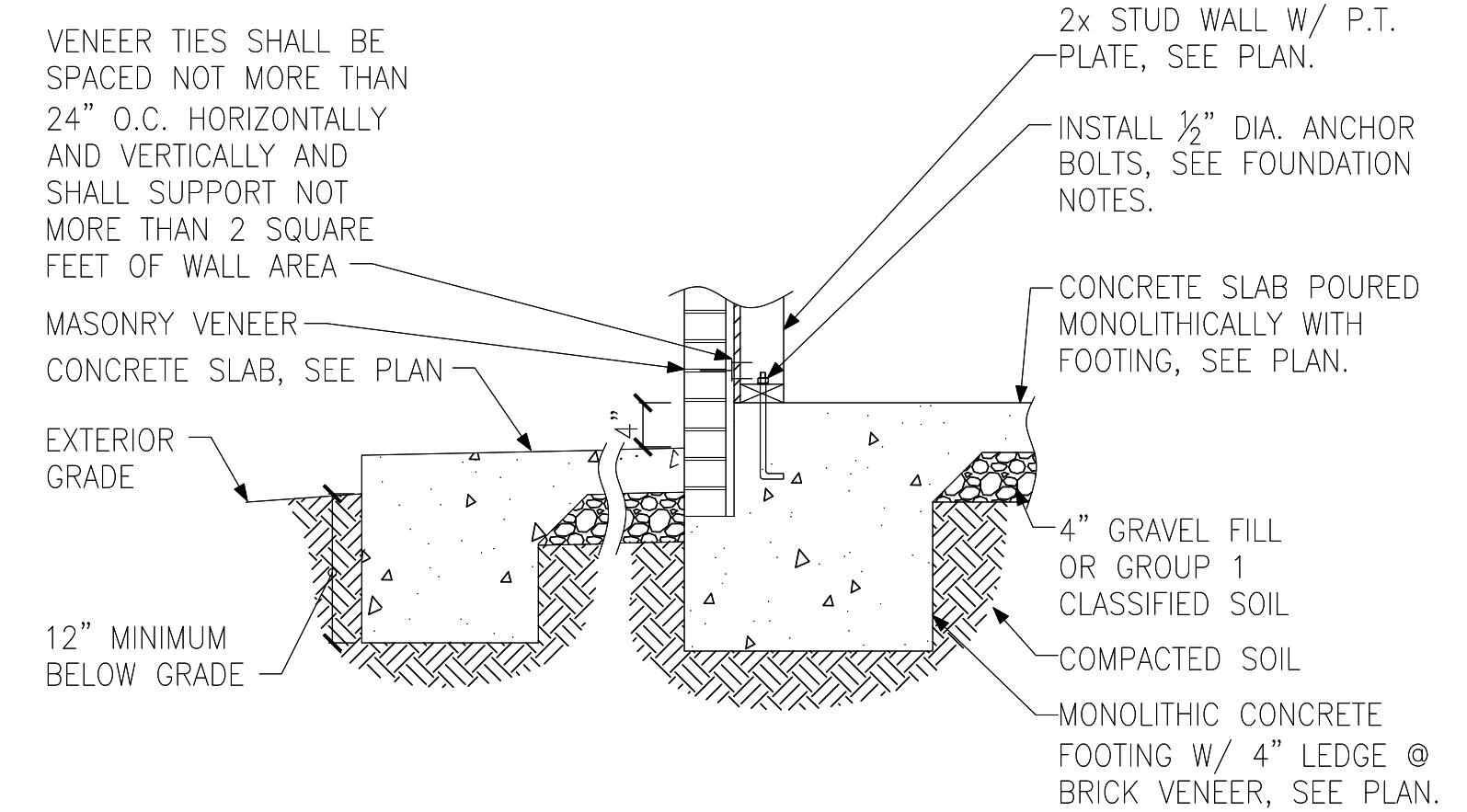
A FOUNDATION SECTION
EXTERIOR WALL



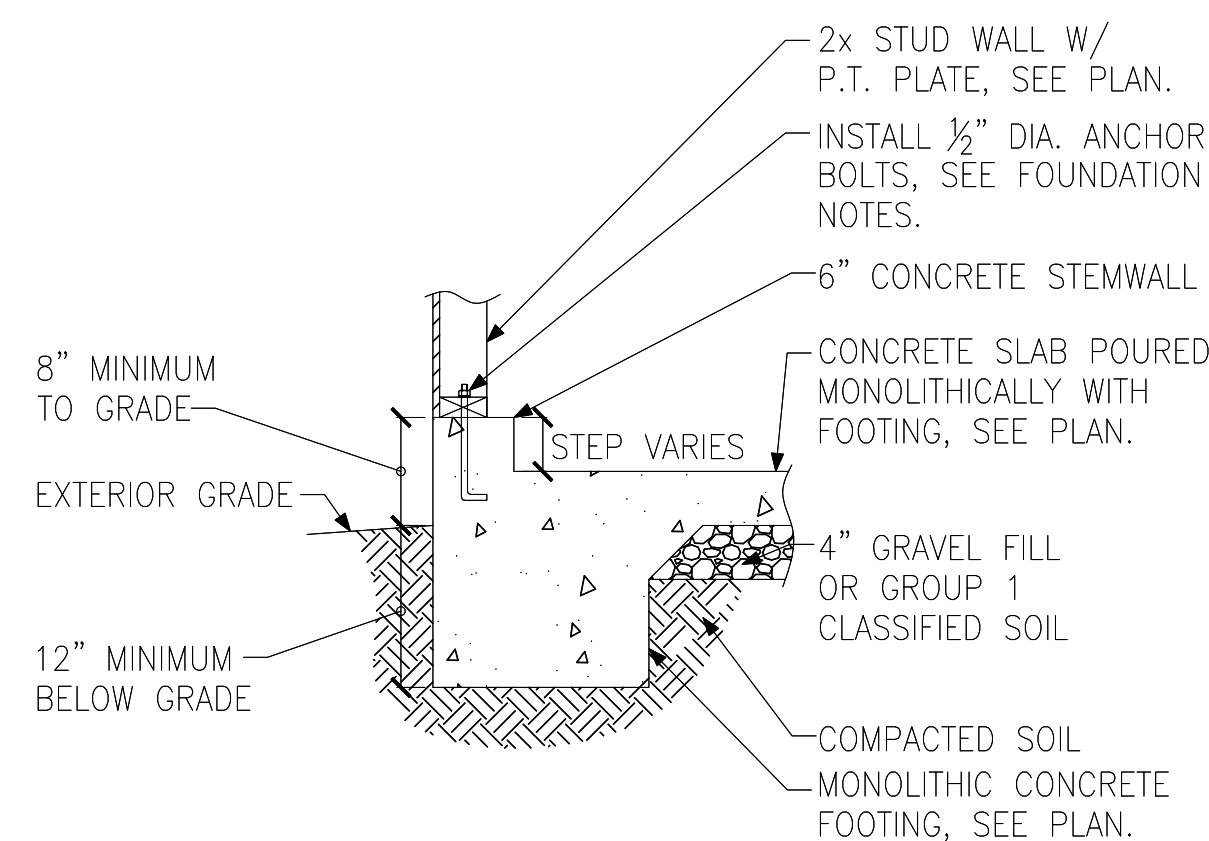
B FOUNDATION SECTION
EXTERIOR WALL @ MASONRY VENEER



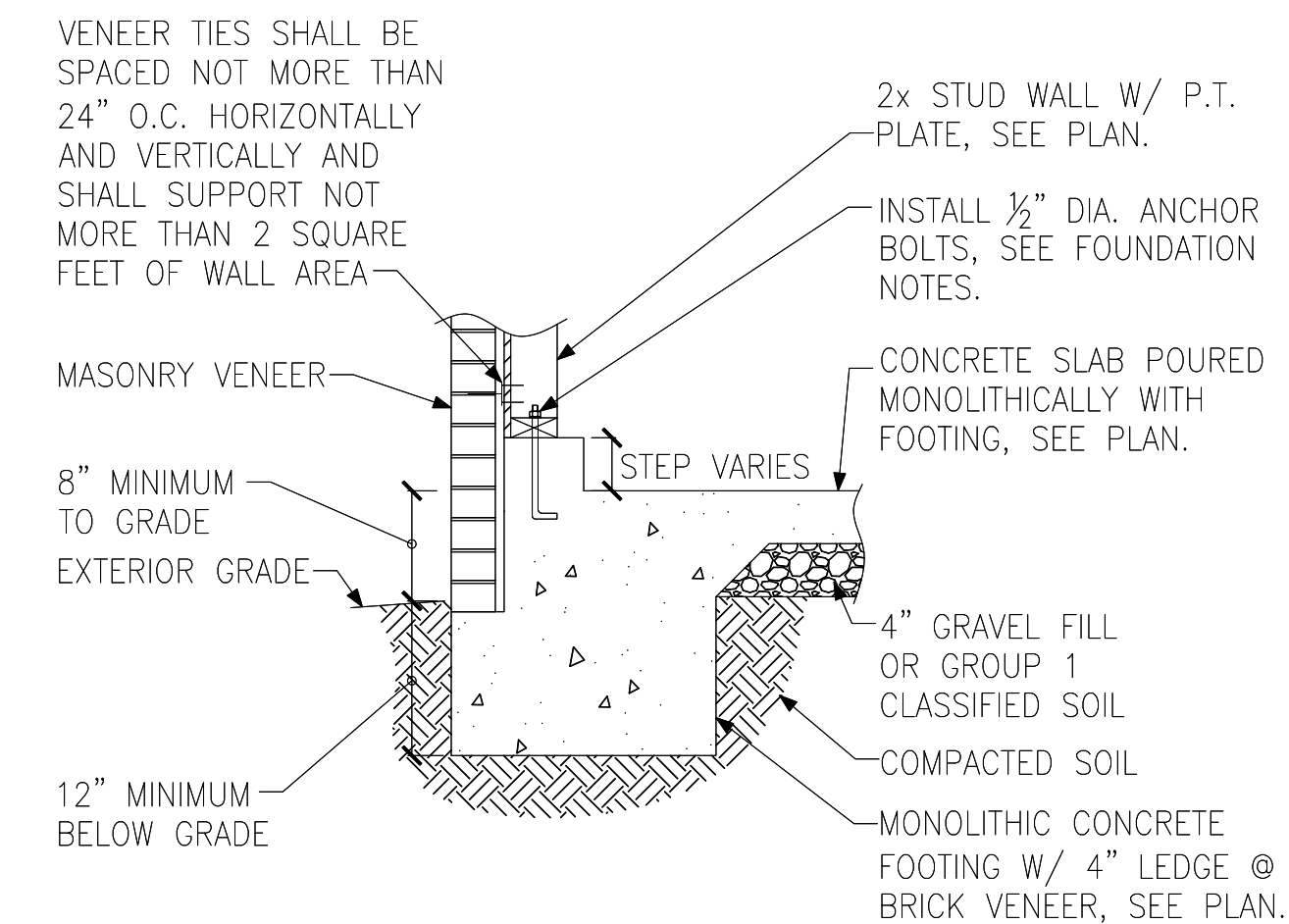
C FOUNDATION SECTION
EXTERIOR WALL AT PORCH



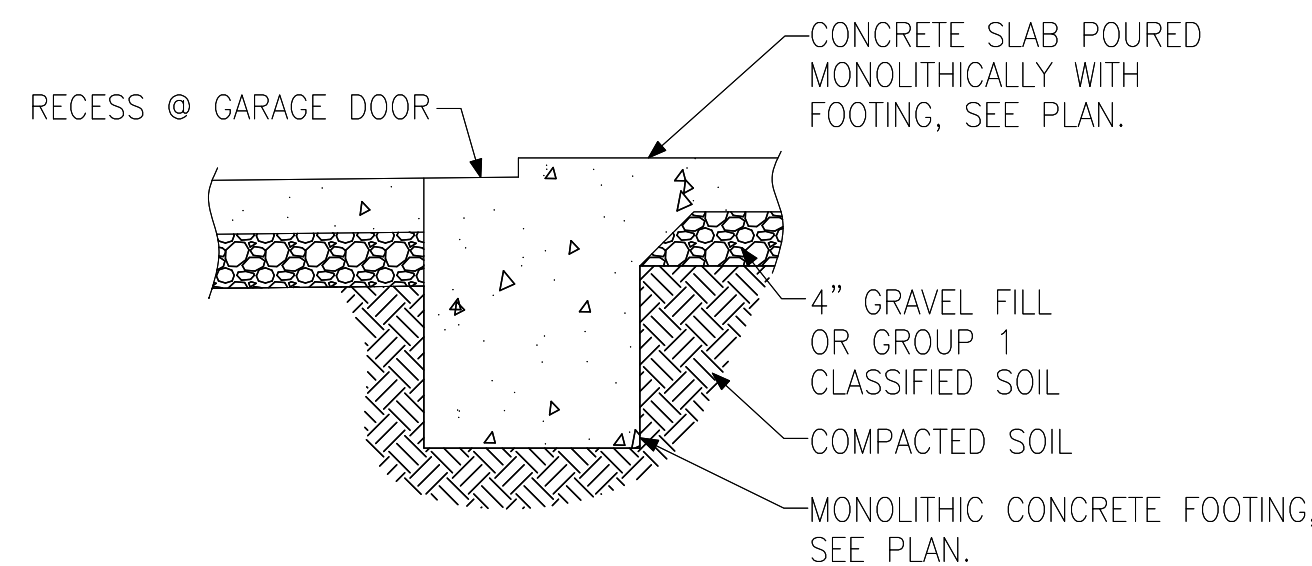
D FOUNDATION SECTION
EXTERIOR WALL AT PORCH W/ MASONRY VENEER



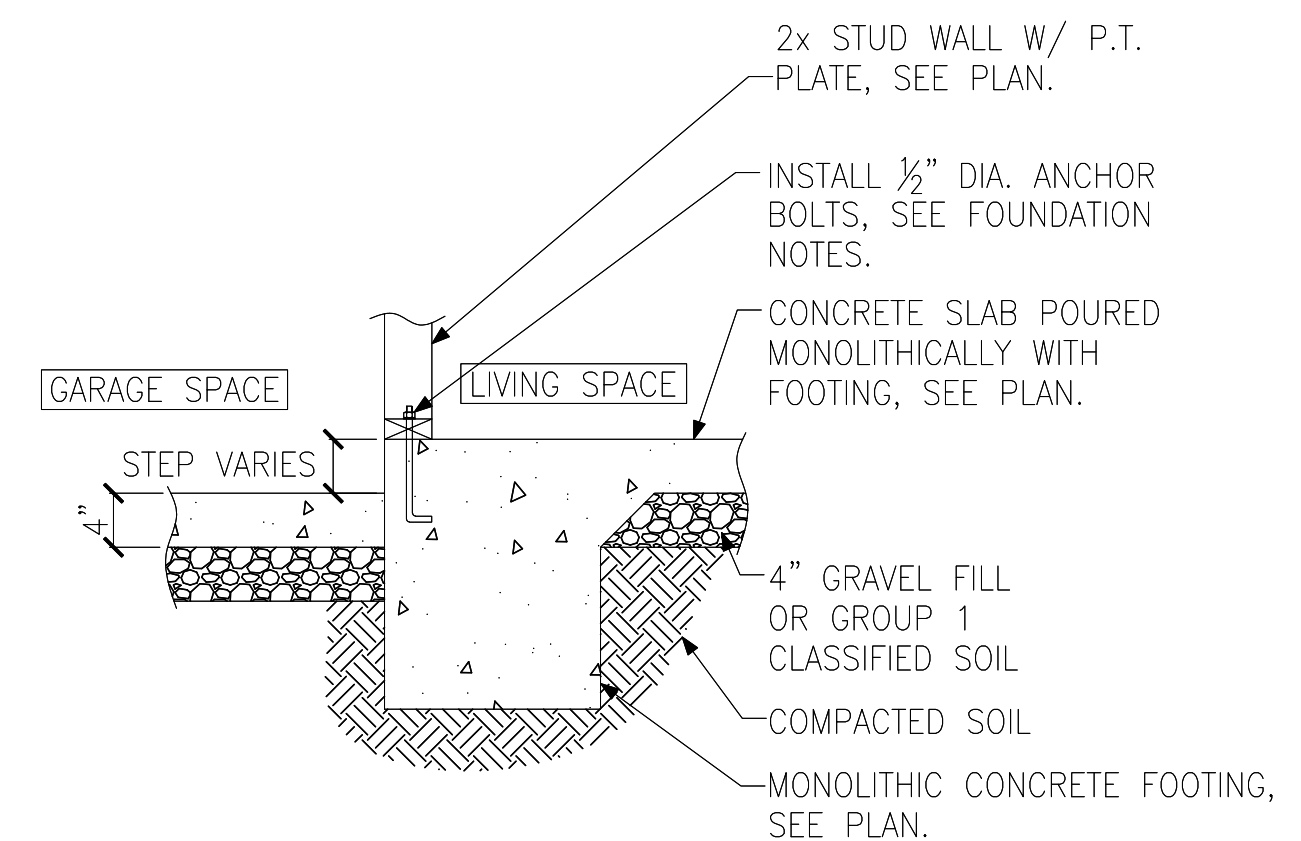
E FOUNDATION SECTION
EXTERIOR GARAGE WALL



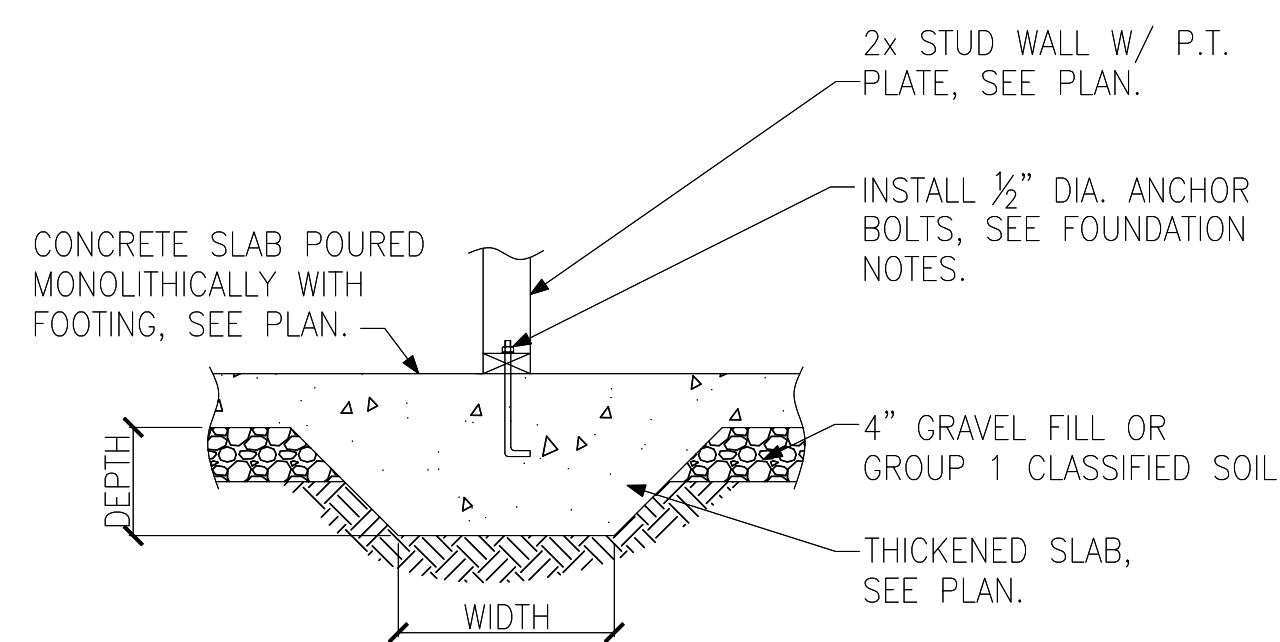
F FOUNDATION SECTION
EXTERIOR GARAGE WALL @ MASONRY VENEER



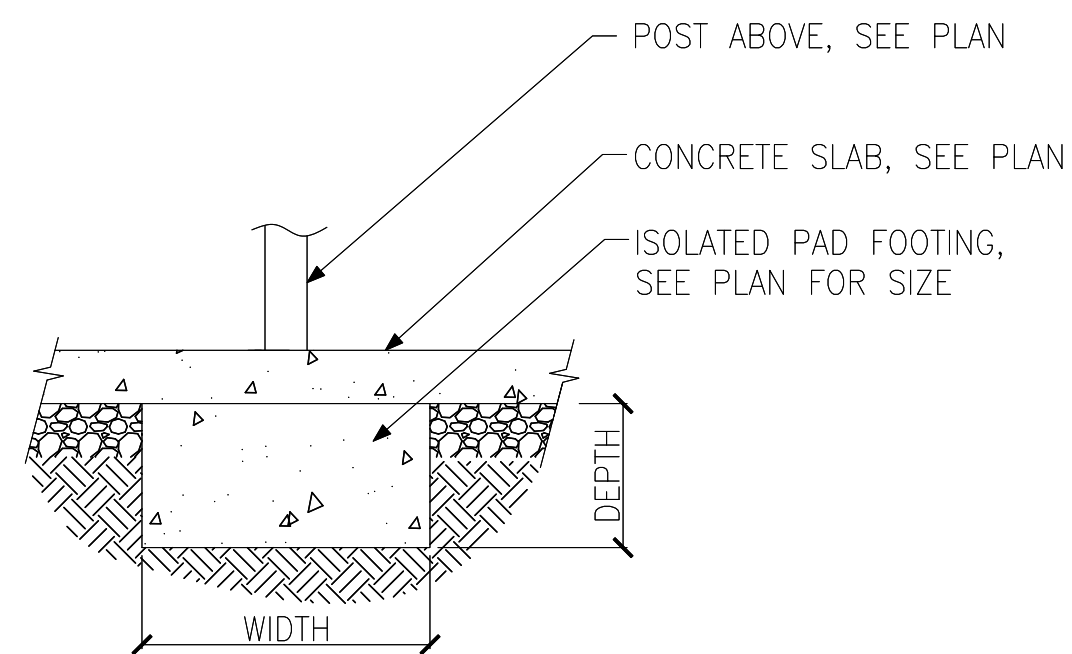
G FOUNDATION SECTION
GARAGE DOOR



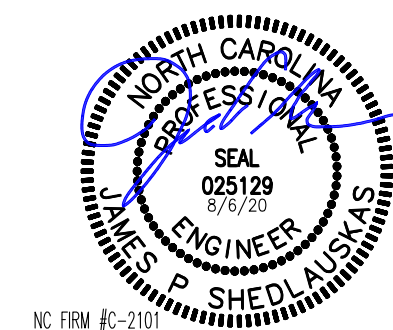
H FOUNDATION SECTION
INTERIOR GARAGE WALL



J FOUNDATION SECTION
THICKENED SLAB



K FOUNDATION SECTION
ISOLATED PAD FOOTING



Monolithic Slab Foundation Details

'Kathryn' Plan ID: 2290 - RH
115 M.P.H.
North Carolina

Project #: 088-18001
Designed By: JPS
Checked By:
Issue Date: 1/24/19
Re-Issue: 8/3/20
Scale: 1/8"=1'-0" @ 11x17
1/4"=1'-0" @ 22x34

FORMERLY SUMMIT ENGINEERING, LABORATORY, &
TESTING INC.

STANDARD DETAILS (OX-IS)

DR Horton Carolinas Division
8001 Arrowridge Blvd
Charlotte, NC 28273

AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
EW	EACH WAY	TJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TPY	TYPICAL
PF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Sheet No.	Description
CS1	Cover Sheet, Specifications, Revisions
D1m	Monolithic Slab Foundation Details
D1s	Stem Wall Foundation Details
D1c	Crawl Space Foundation Details
D1b	Basement Foundation Details
D1f	Framing Details

[illegible]

Manager	Signature
Operations	
Operations System	
Operations Product Development	

PROJECT: Standard Details (OX-IS)
Coversheet

SHEET

1. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.

1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'_c) at 28 days of 3000 psi, unless otherwise noted on the plan.
2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to $+2\%$ of target values as follows:
 - 3.1. Footings: 5%
 - 3.2. Exterior Slabs: 5%
4. No admixtures shall be added to any structural concrete without written permission of the SER.

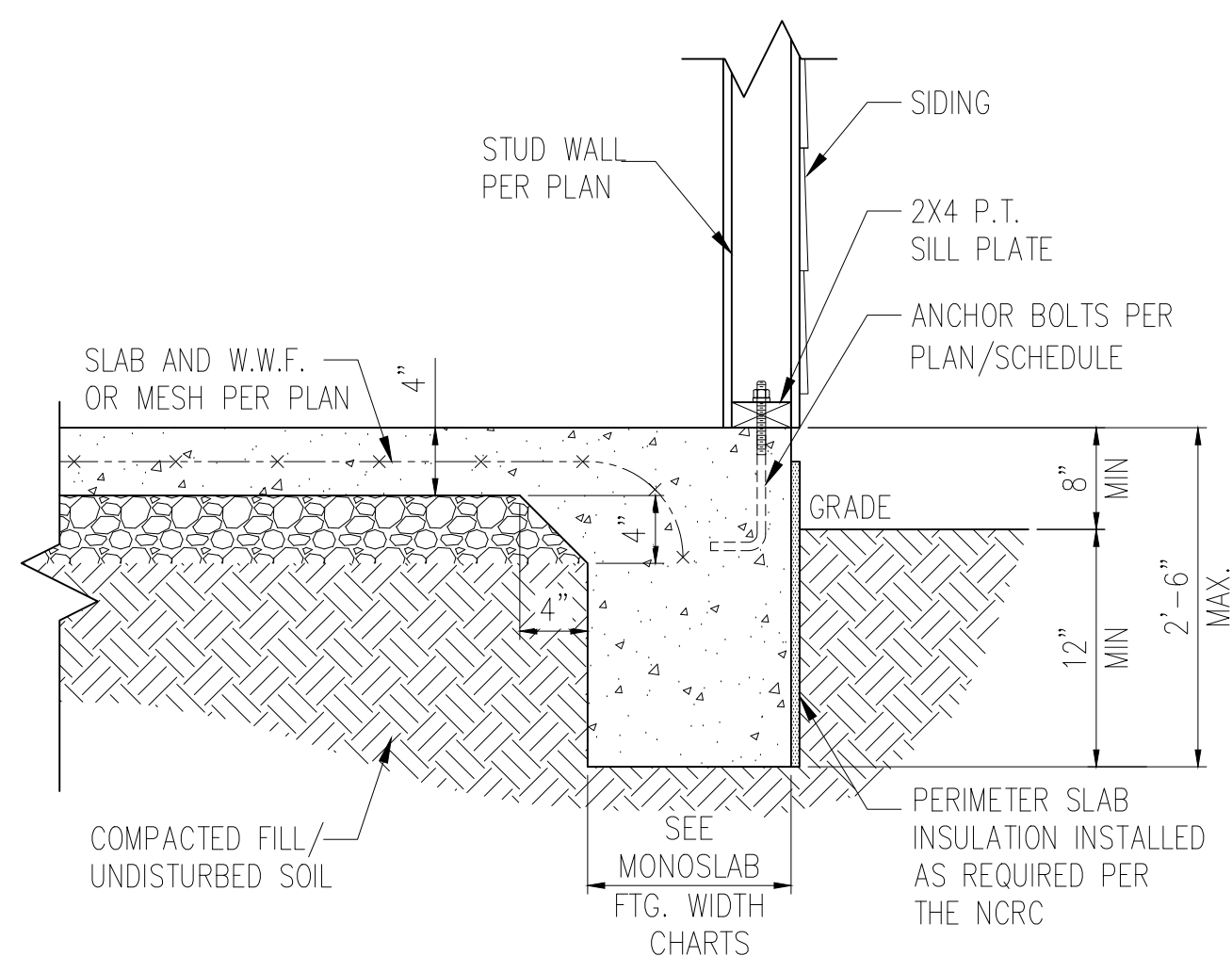
1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard)
4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
5. Steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
7. Horizontal folding and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.

- 2.1. E = 1,900,000 psi
- 2.2. F_b = 2600 psi
- 2.3. F_v = 285 psi
- 2.4. F_c = 700 psi
3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWP/A standard C-15. All other moisture exposed wood shall be treated in accordance with AWP/A standard C-2
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. All beams shall have full bearing on supporting framing members unless otherwise noted.
7. Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
8. Individual studs forming a column shall be attached with one 10d nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
9. Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C.

1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures." (ASCE 7-05), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction." (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
5. Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

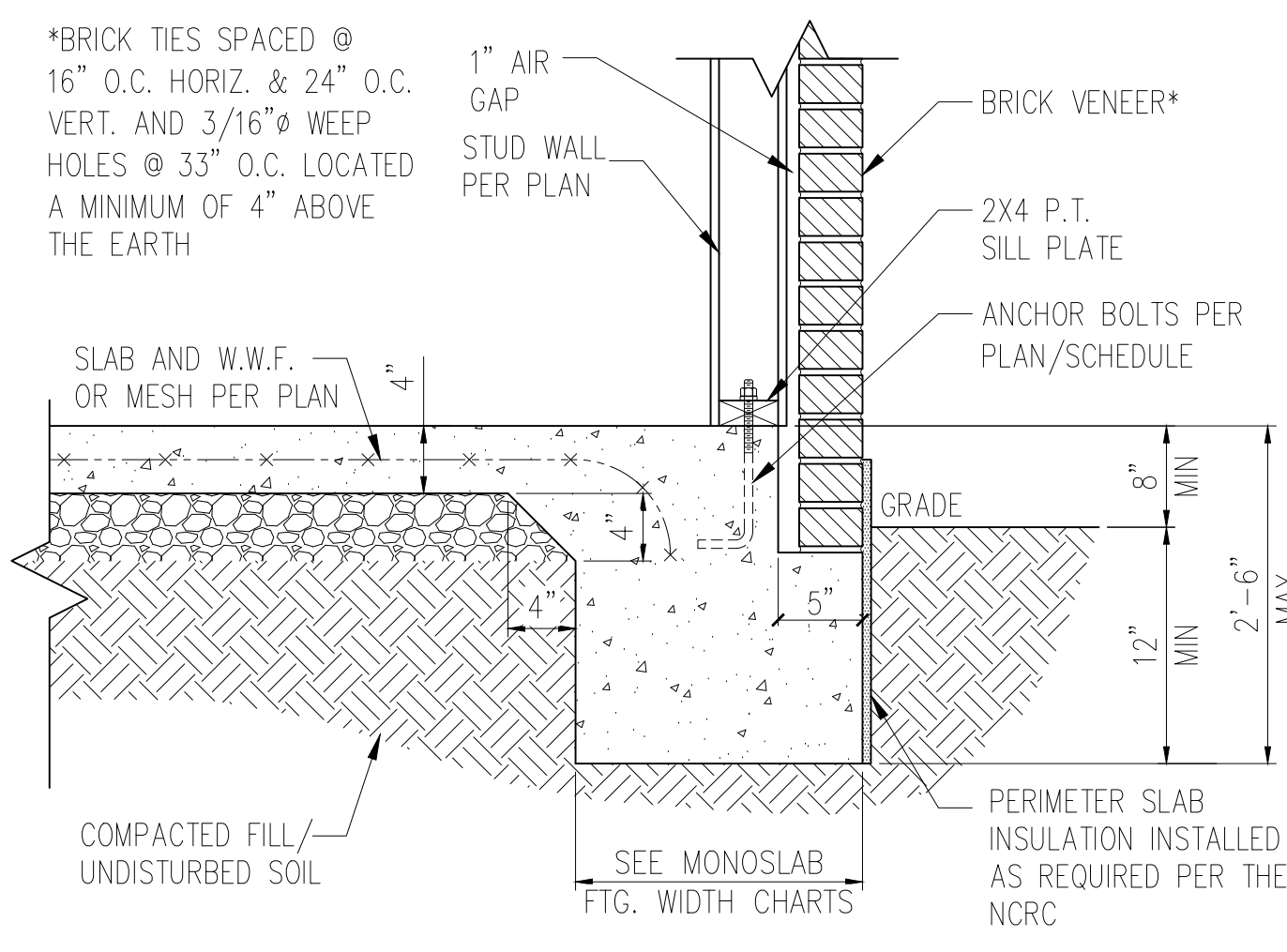
1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
2. All structurally required wood sheathing shall bear the mark of the APA.
3. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4. Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5. Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.



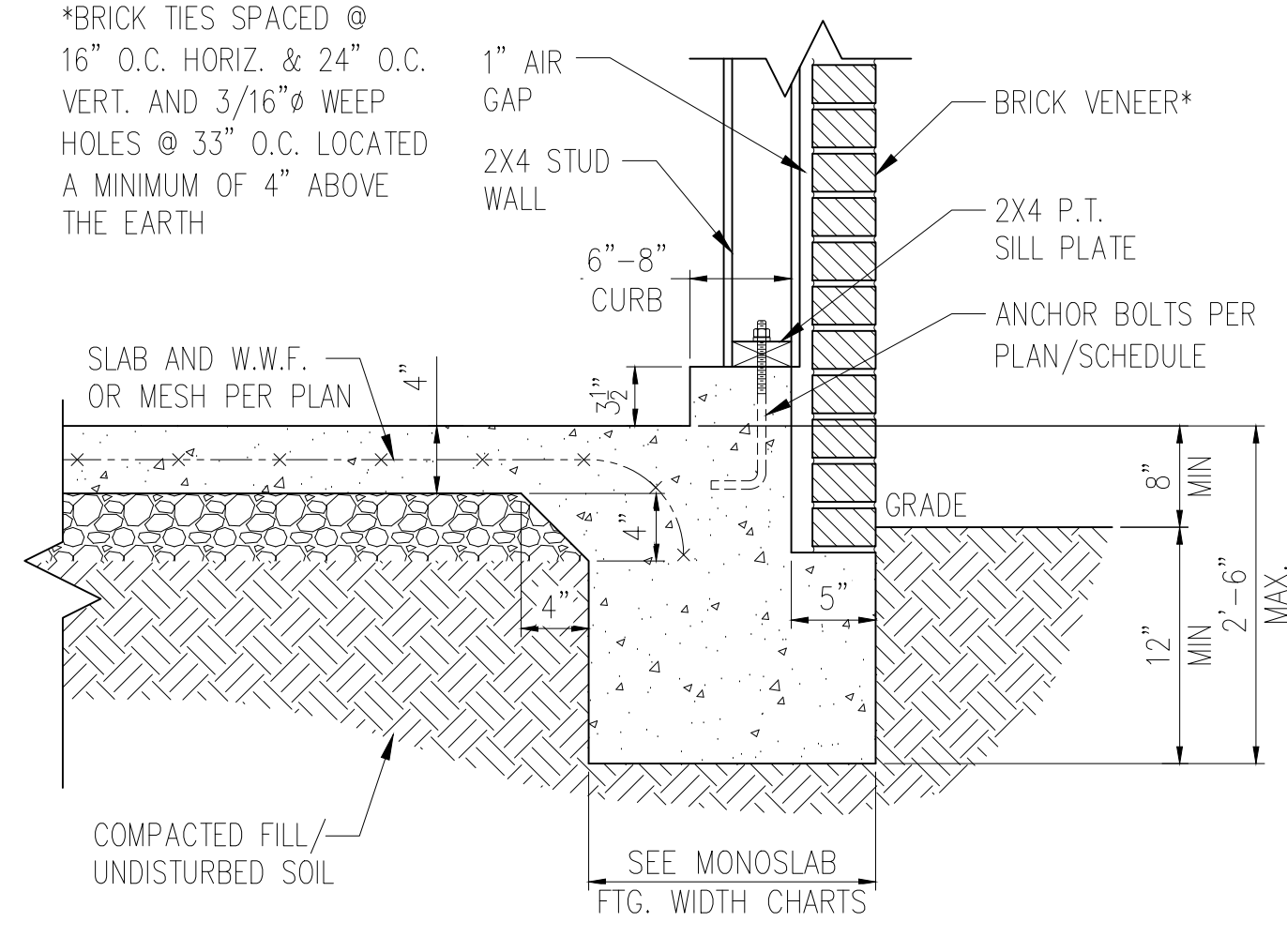
STANDARD – SIDING

1 TYP. SLAB DETAIL
D1m N.T.S.

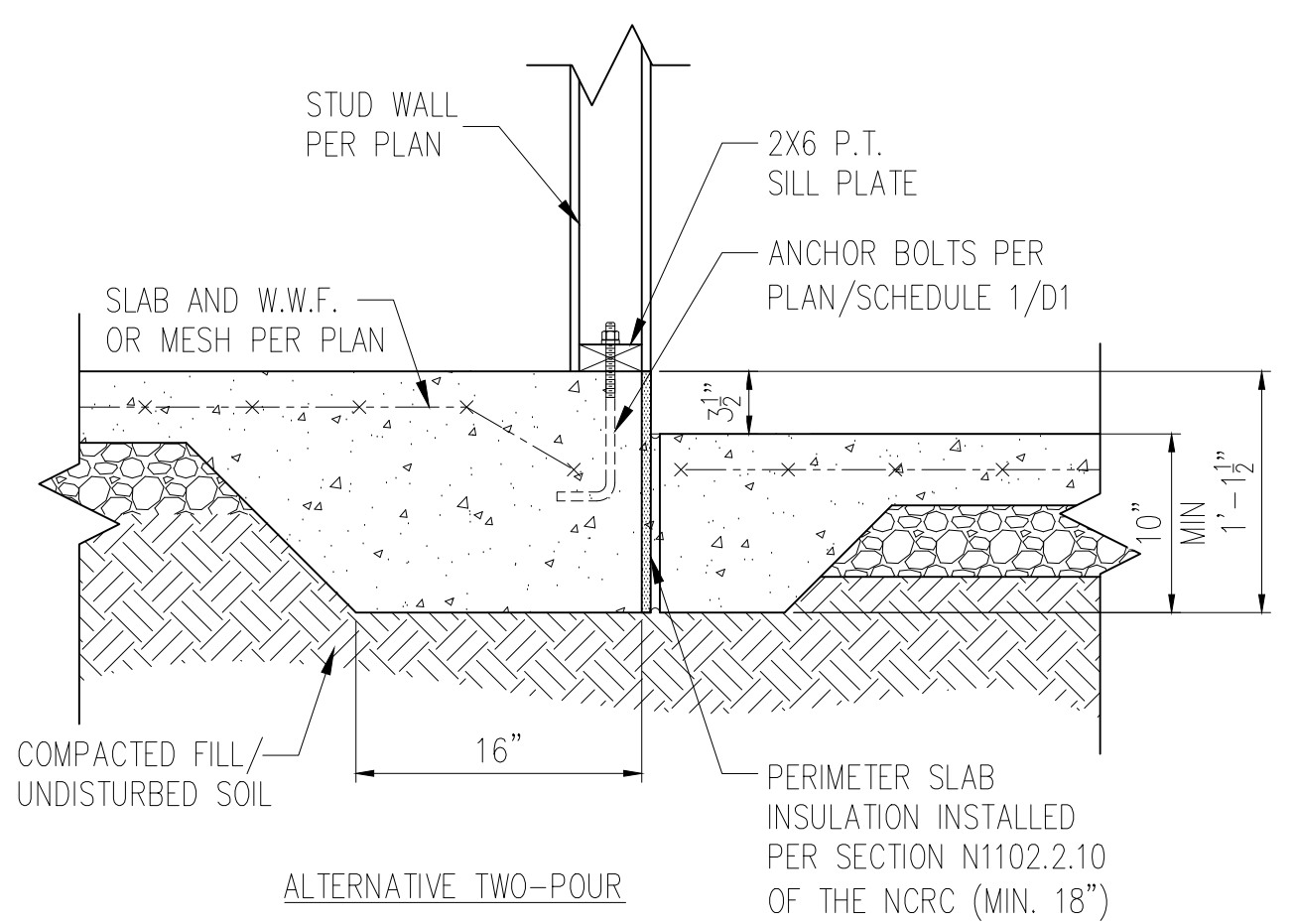


STANDARD – BRICK

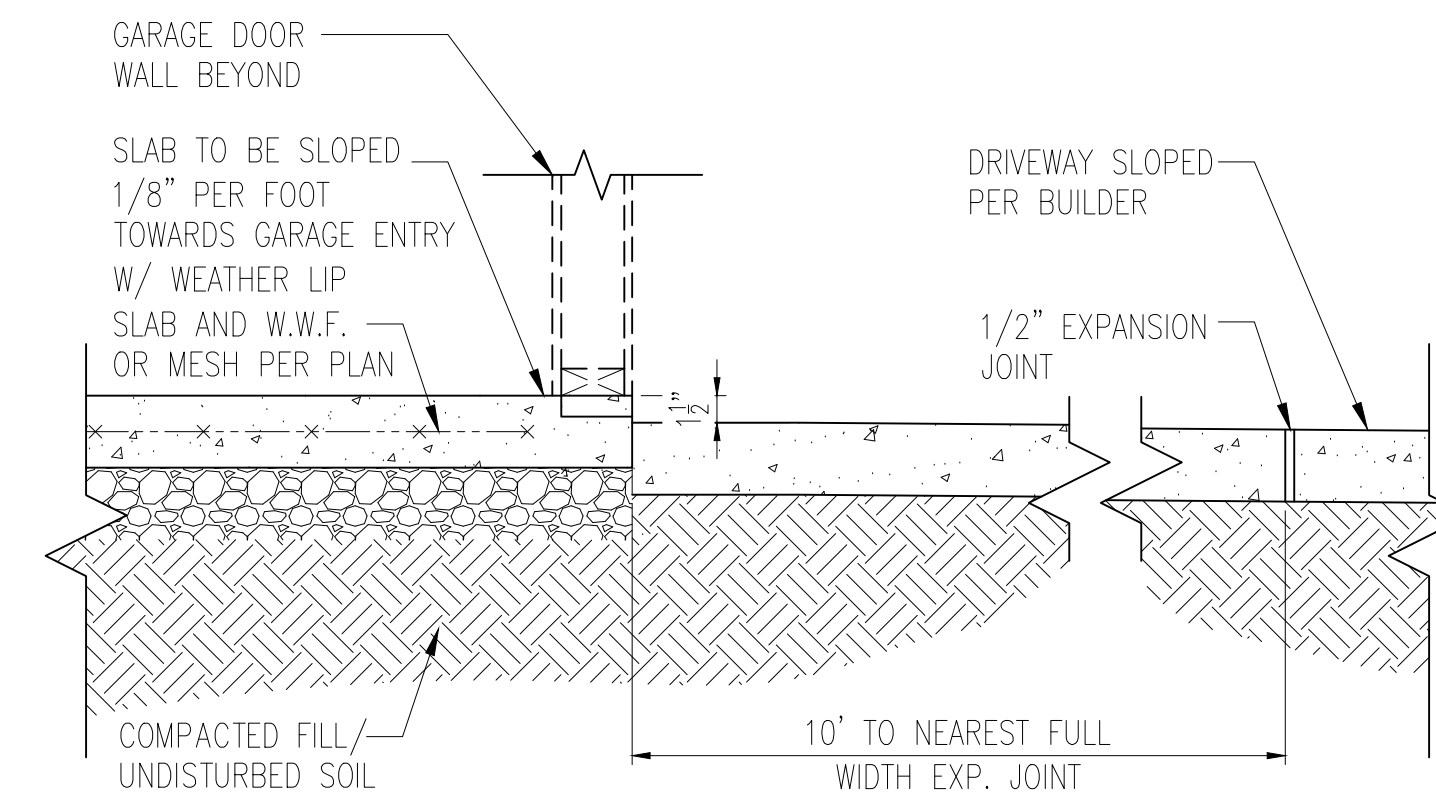
2 TYP. GARAGE CURB DETAIL
D1m N.T.S.



3 STEP IN GARAGE
D1m N.T.S.



3A ALTERNATE TWO-POUR DETAIL
D1m N.T.S.



5 TYP. THICKENED SLAB DETAIL
D1m N.T.S.

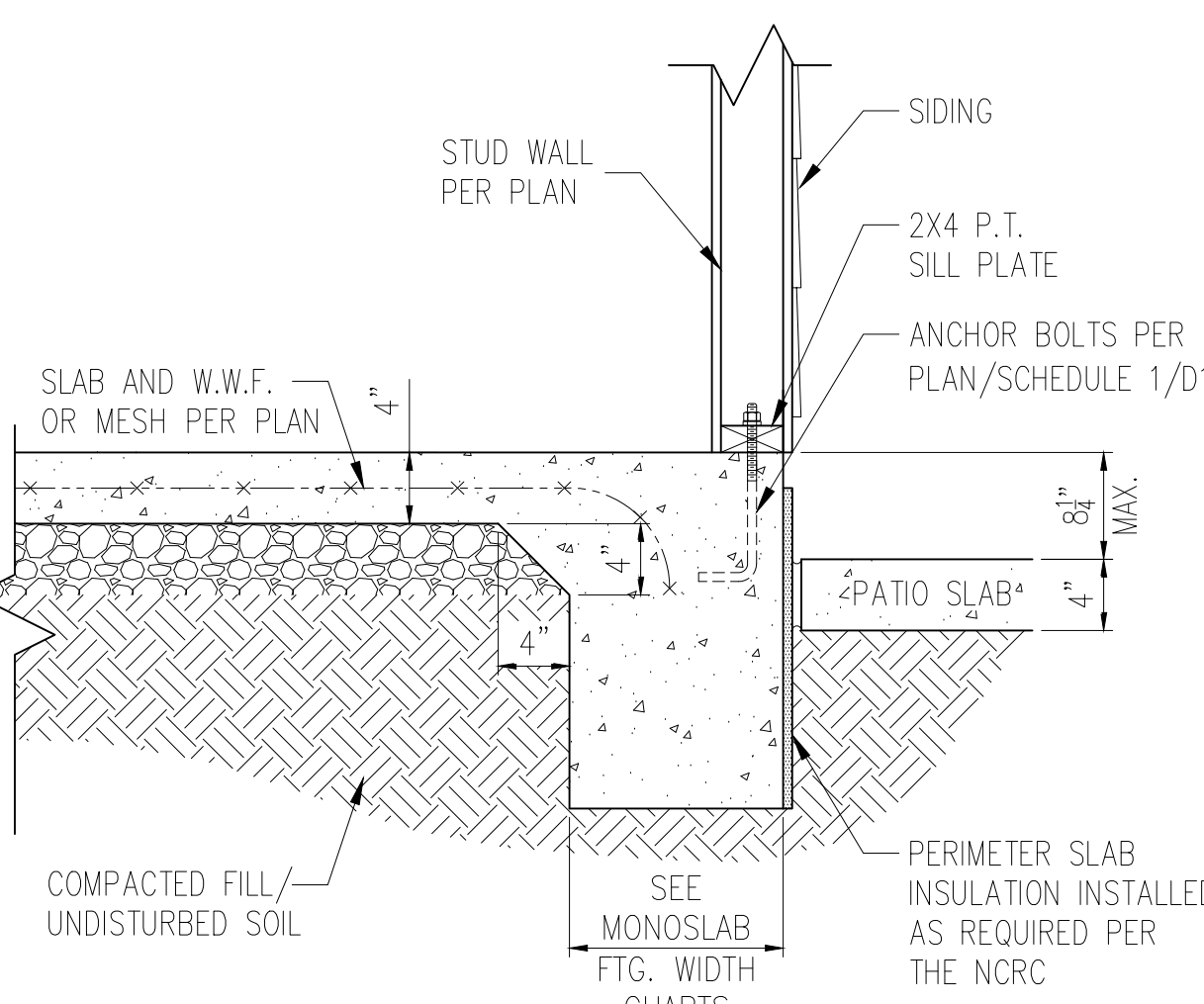
MONOLITHIC FOOTING WIDTH			
# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*

*5" BRICK LEDGE HAS BEEN ADDED TO THE MONOLITHIC FOOTING WIDTH FOR BRICK SUPPORT

WALL ANCHOR SCHEDULE				
TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING	INTERIOR WALL	EXTERIOR WALL
1/2" Ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST – MAS	4"	5'-0"	NO	YES
SIMPSON TITEN HD 1/2" Ø – 8"	6-1/2"	6'-0"	YES	YES
1/2" Ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'-0"	YES	YES
1/2" Ø HILTI KWIK BOLT, SST WEDGE-ALL, OR EQUIVALENT WEDGE ANCHOR	7"	6'-0"	YES	YES – 2

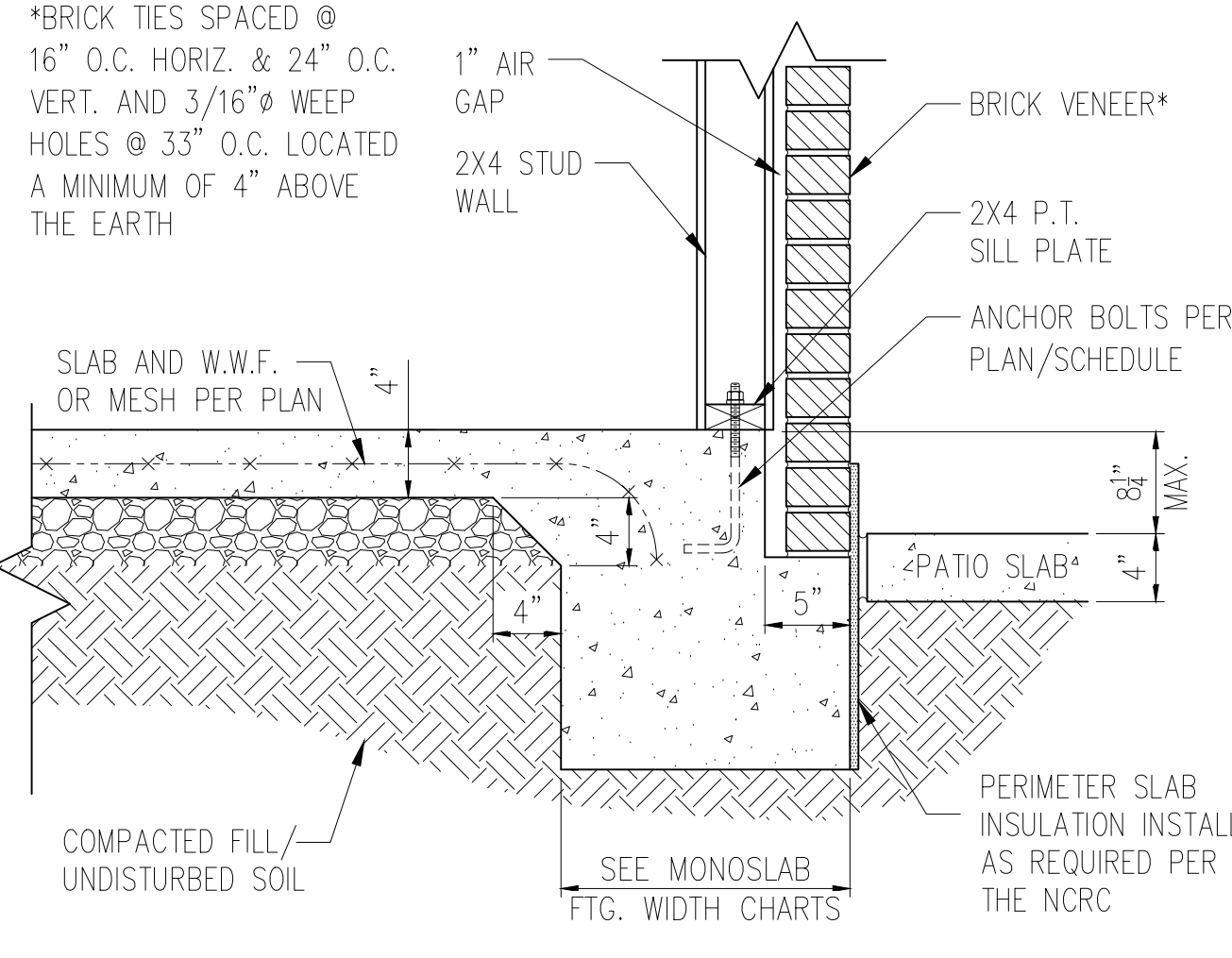
NOTE: 1. INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.
2. EXPANSION ANCHORS MAY BE INSTALLED ONLY AS ALLOWED PER MANUFACTURE SPECIFICATIONS.

- NOTES:
- REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
 - PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
 - SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
 - REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
 - REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
 - PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

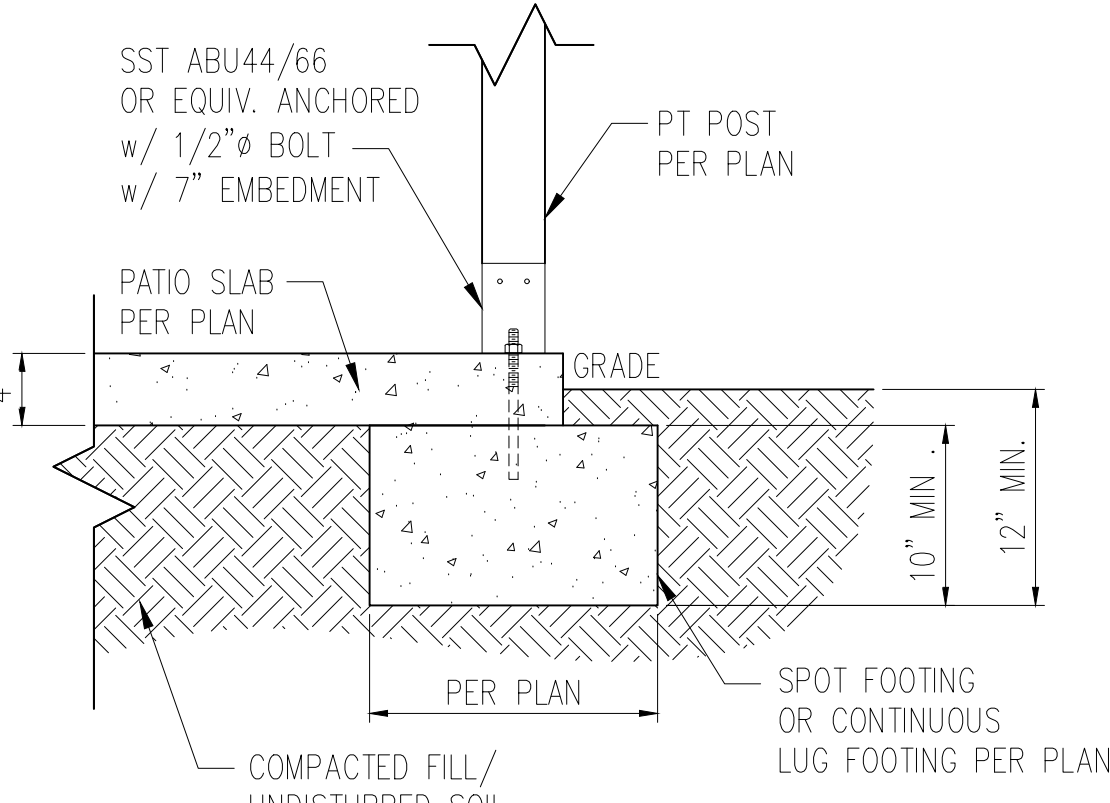


STANDARD – SIDING

6 PATIO SLAB DETAIL
D1m N.T.S.



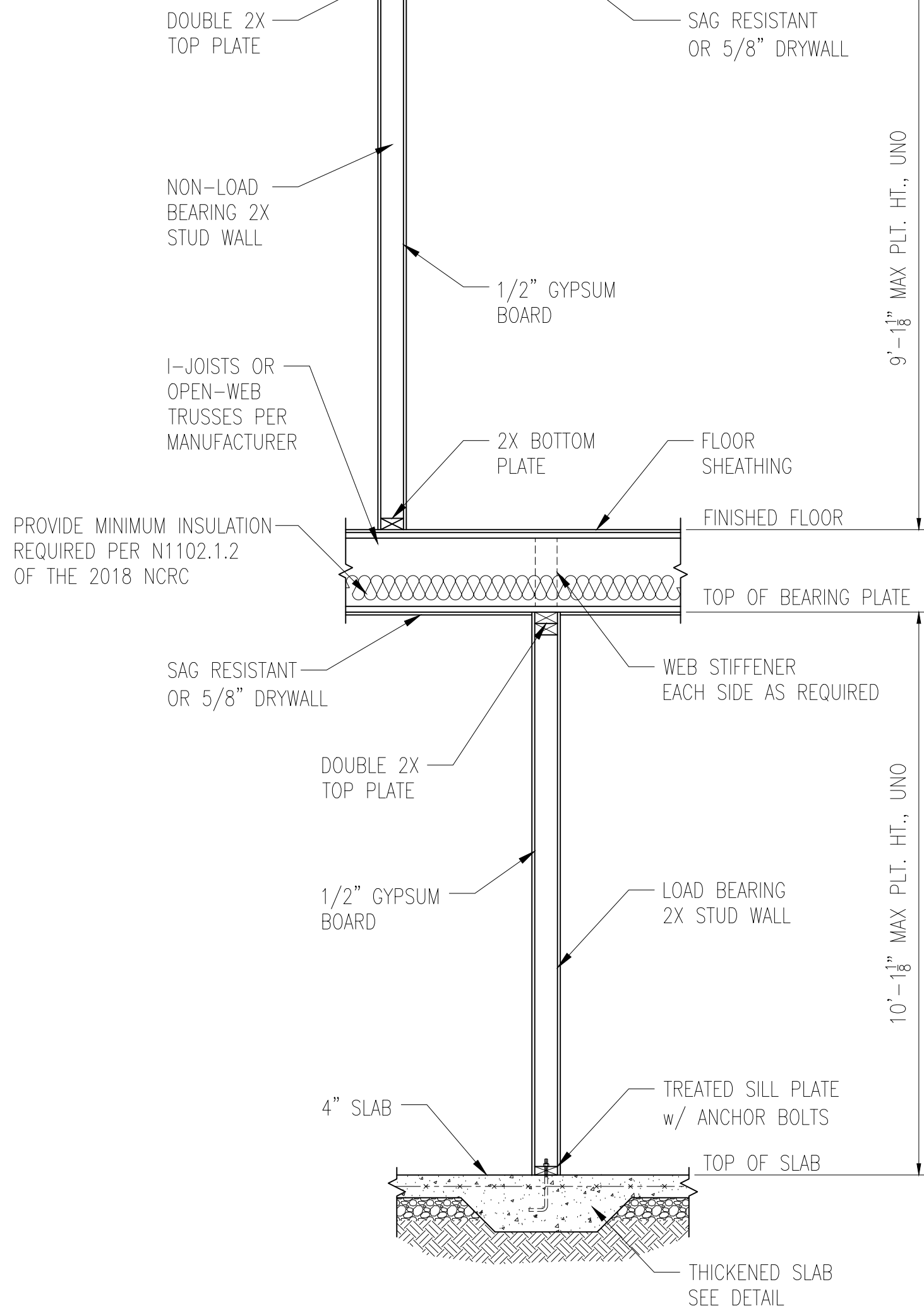
STANDARD – BRICK



6A COVERED PATIO DETAIL
D1m N.T.S.

MIN. 3/8" ROOF SHEATHING SECURED IN ACCORDANCE WITH FIGURE TABLE R602.3(1) (SEE NOTE G FOR ULTIMATE WIND SPEEDS GREATER THAN 120MPH). PROVIDE UNDERLAYMENT IN ACCORDANCE WITH CHAPTER 9 OF THE 2018 NCRC

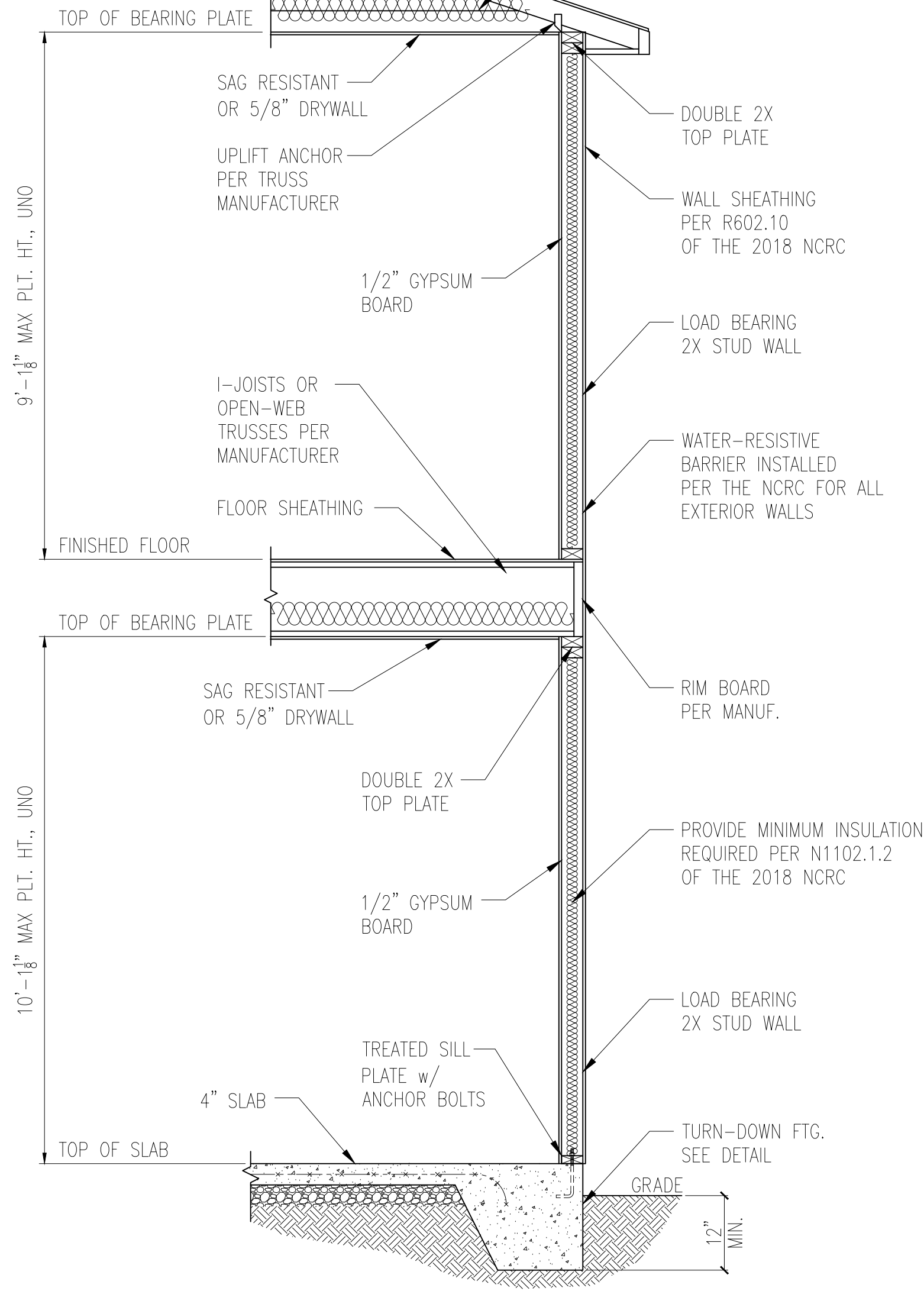
PROVIDE MINIMUM INSULATION REQUIRED PER N1102.1.2 OF THE 2018 NCRC



1 TYP. INTERIOR LOAD BEARING WALL SECTION
D2m N.T.S.

MIN. 3/8" ROOF SHEATHING SECURED IN ACCORDANCE WITH FIGURE TABLE R602.3(1) (SEE NOTE G FOR ULTIMATE WIND SPEEDS GREATER THAN 120MPH). PROVIDE UNDERLAYMENT IN ACCORDANCE WITH CHAPTER 9 OF THE 2018 NCRC

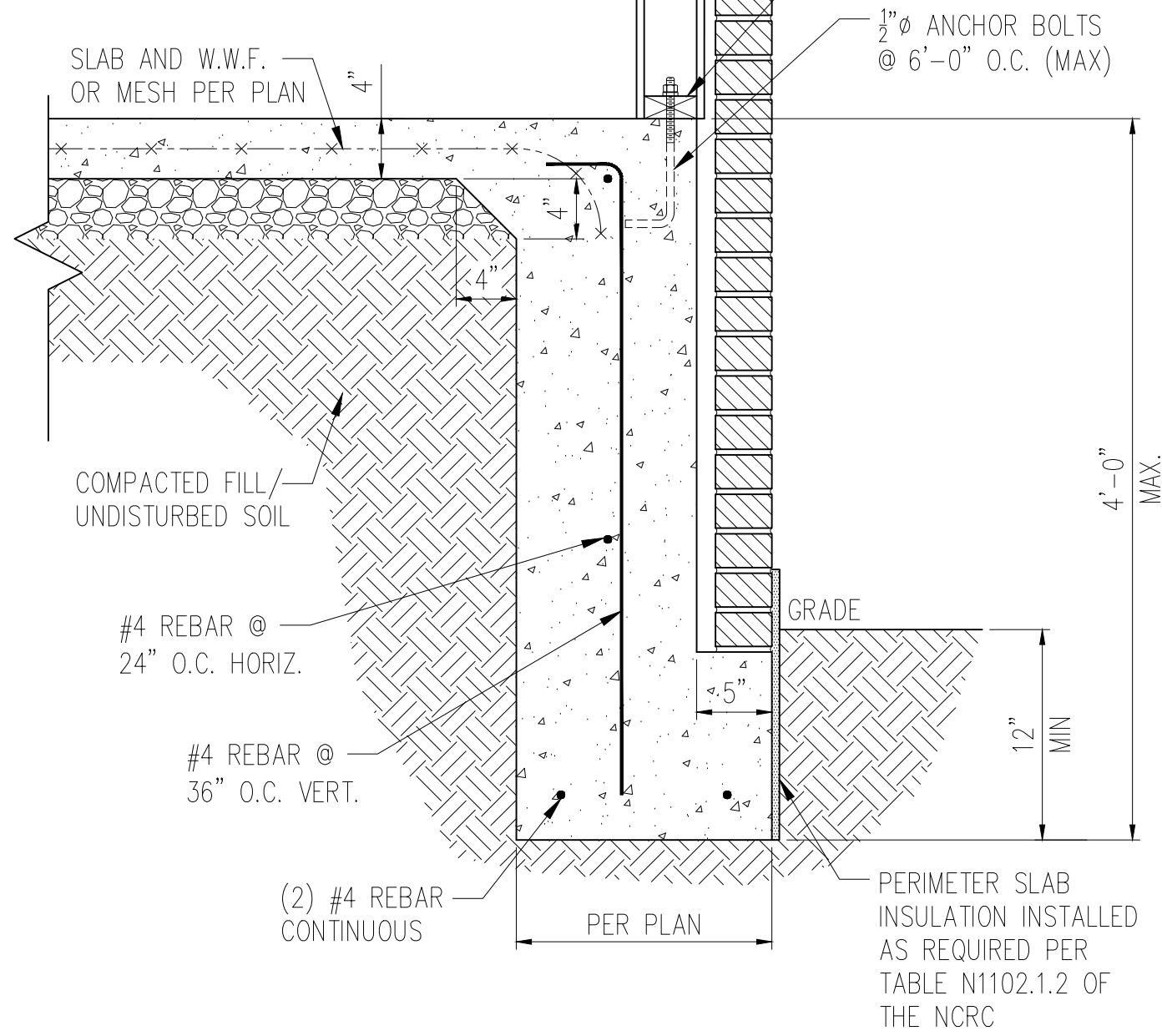
PROVIDE MINIMUM INSULATION REQUIRED PER N1102.1.2 OF THE 2018 NCRC



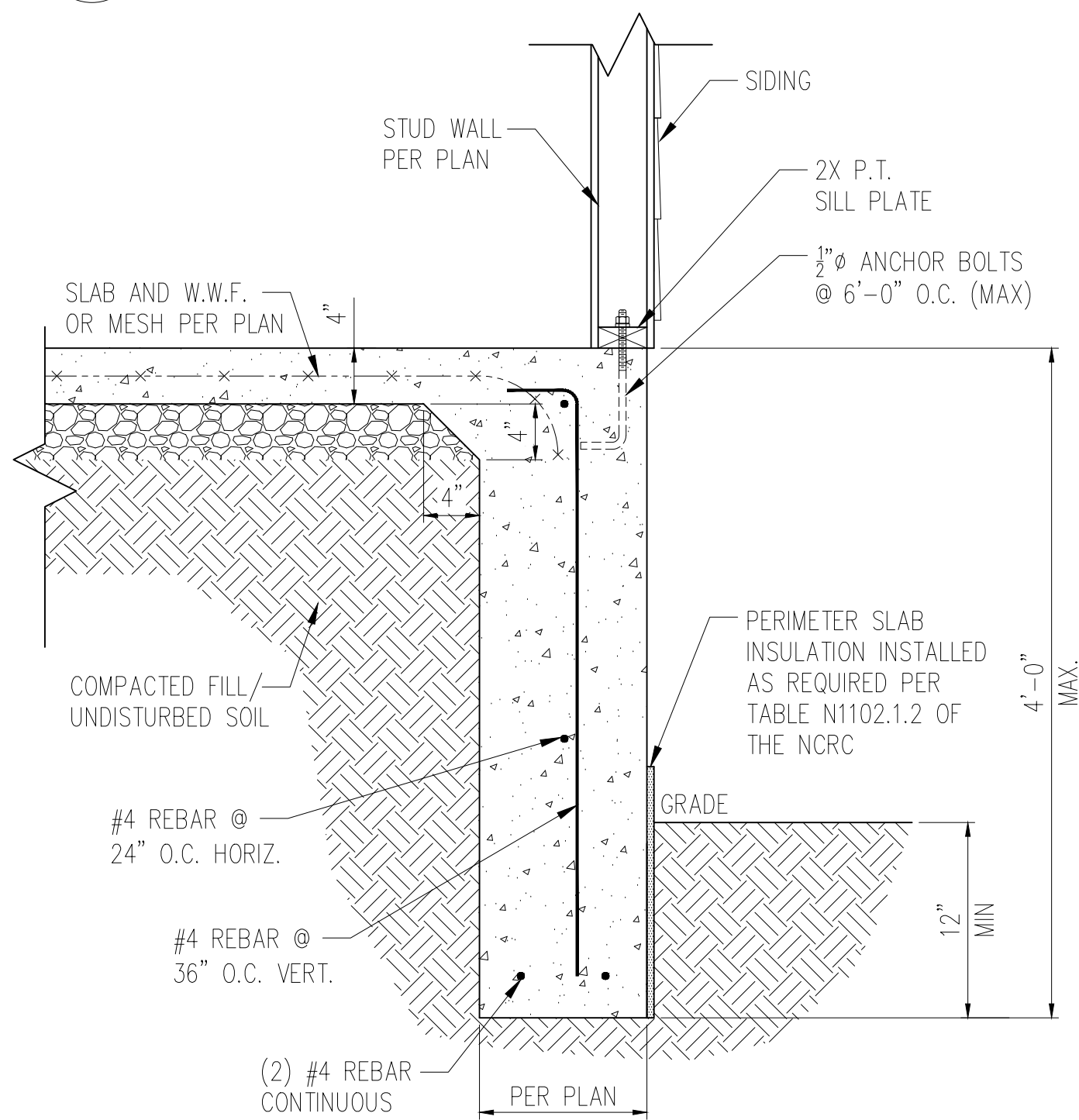
2 TYP. EXTERIOR LOAD BEARING WALL SECTION
D2m N.T.S.

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

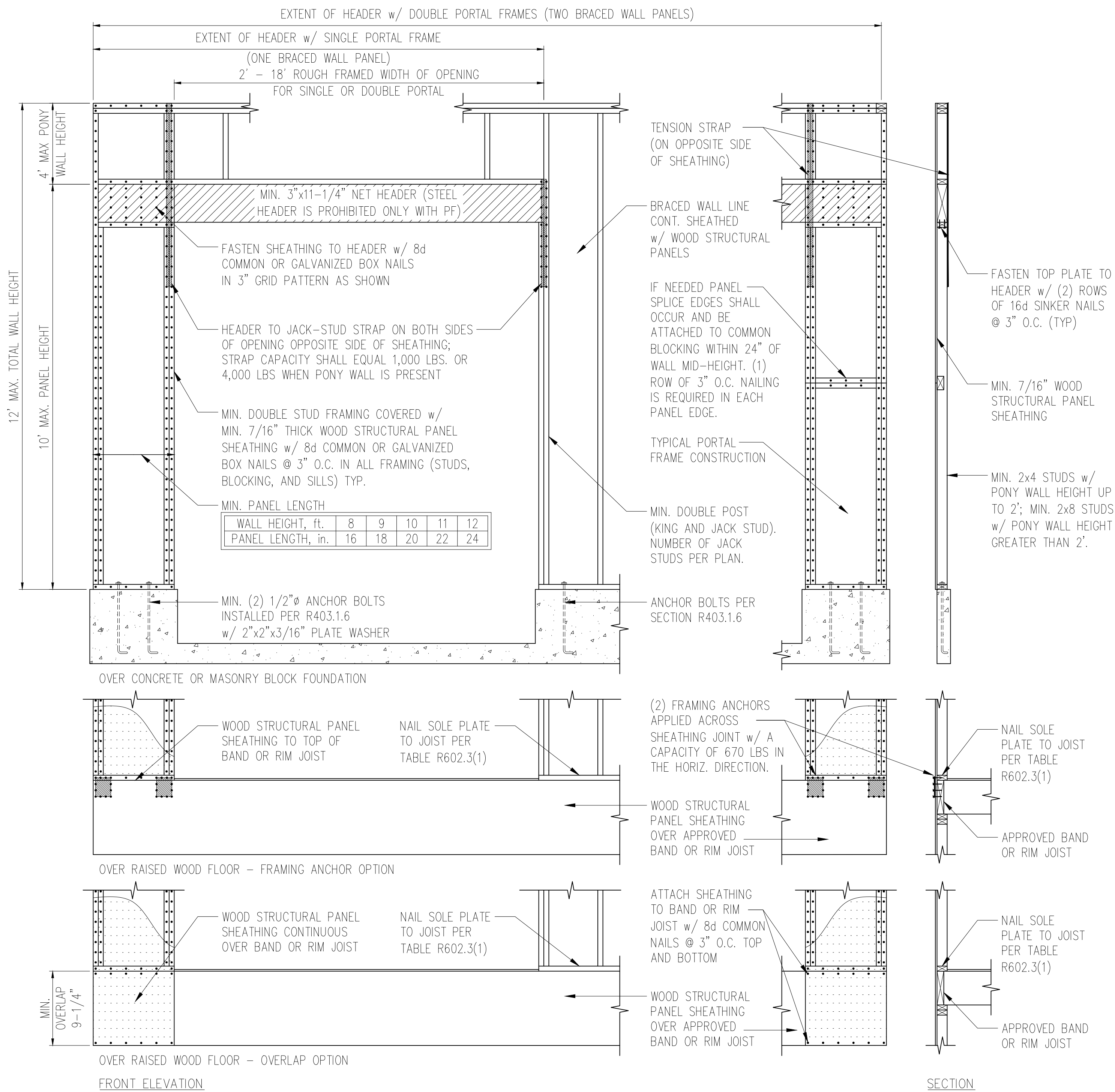


3 TALL SLAB DETAIL w/ BRICK VENEER
D2m N.T.S.

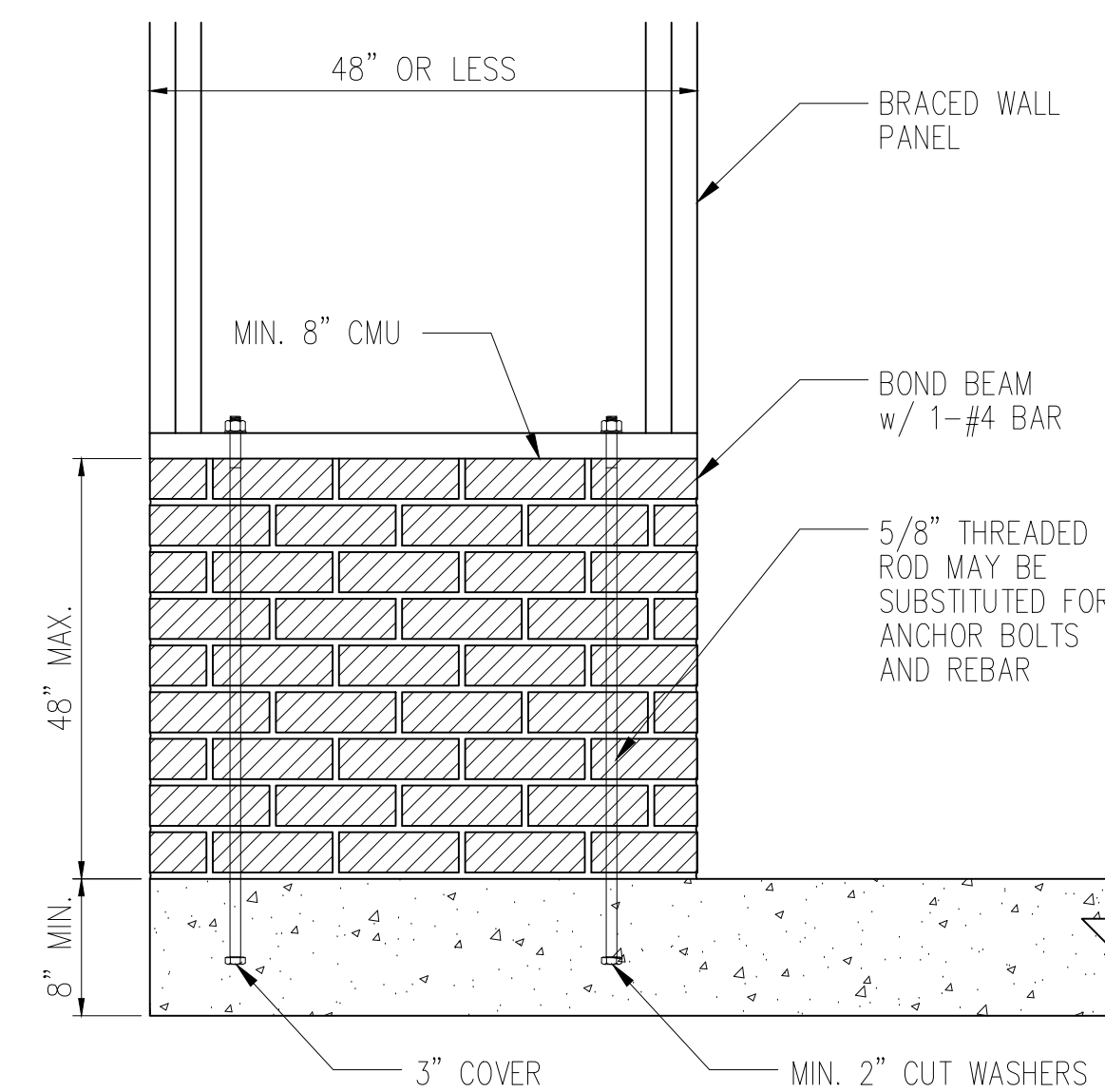
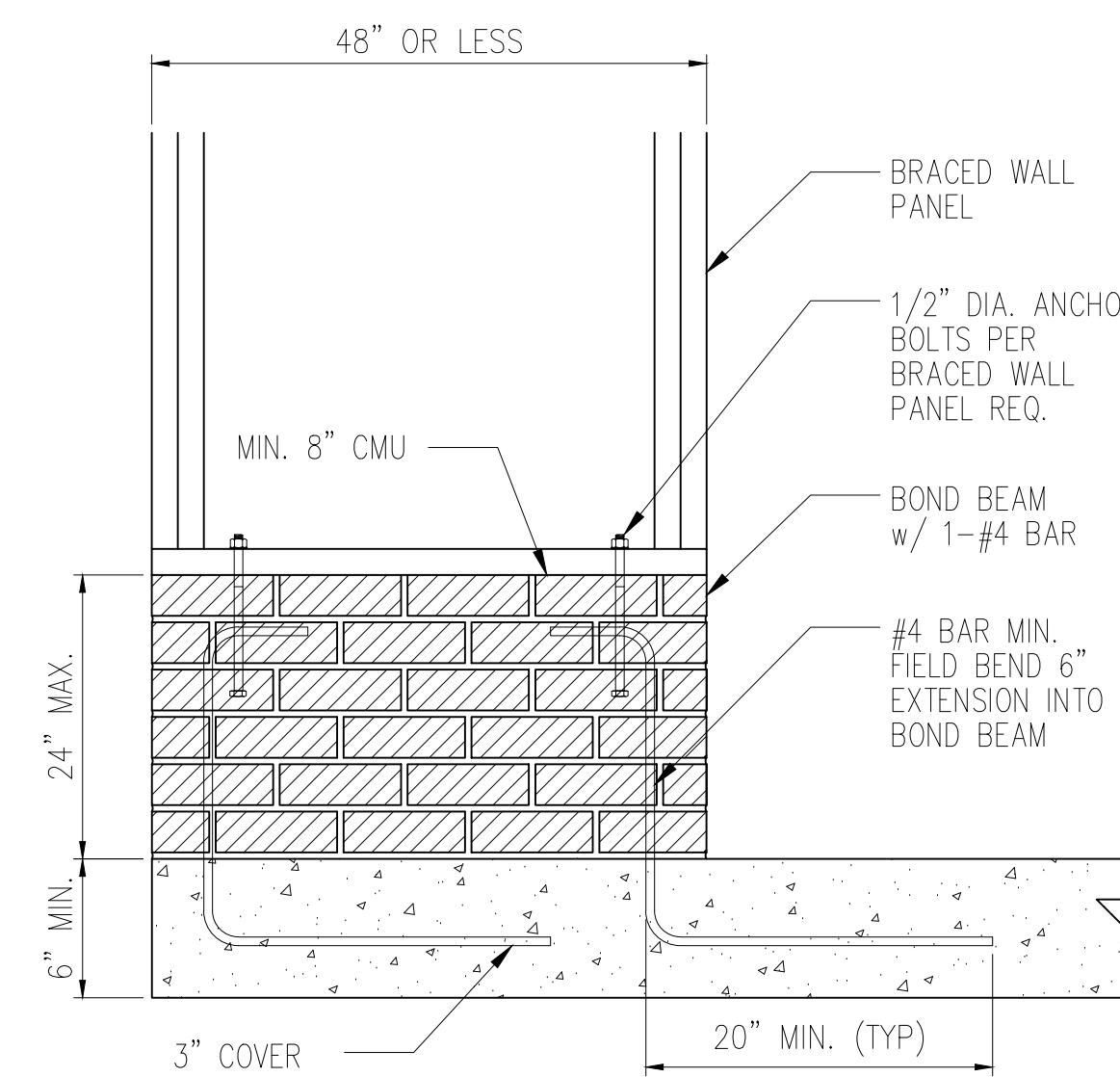


4 TALL SLAB DETAIL w/ SIDING
D2m N.T.S.

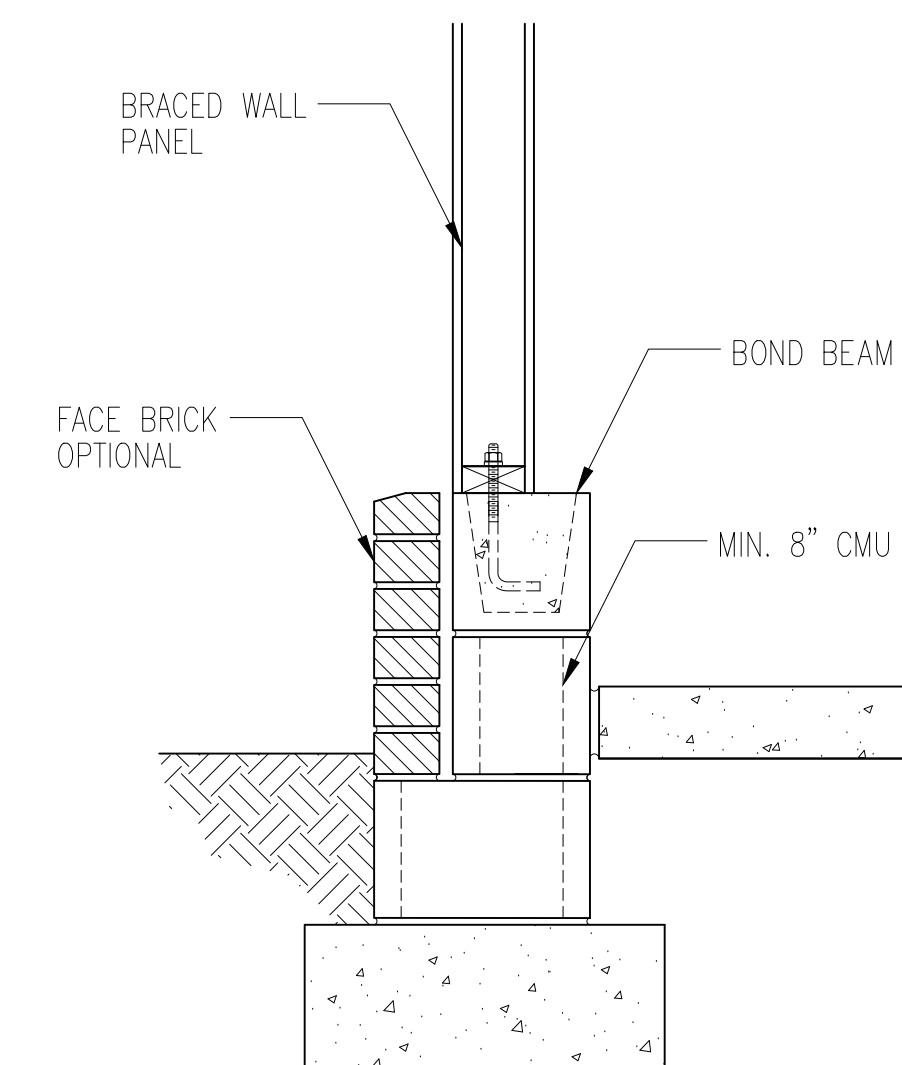
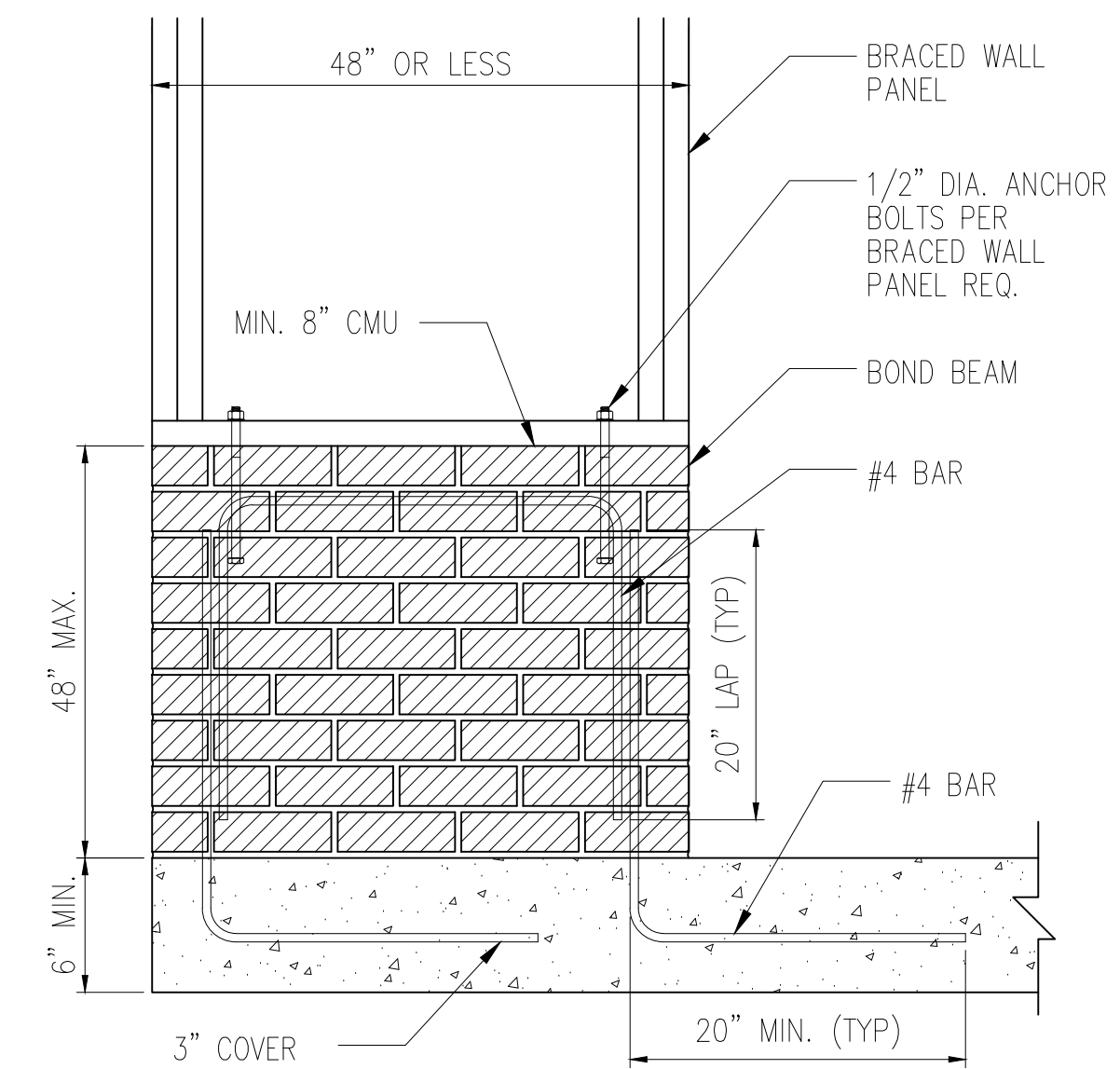
- NOTES:
- REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
 - PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
 - SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
 - REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
 - REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
 - PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC



1 METHOD PF: PORTAL FRAME DETAIL
3/8" = 1'-0"



2 MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS
D1f NTS

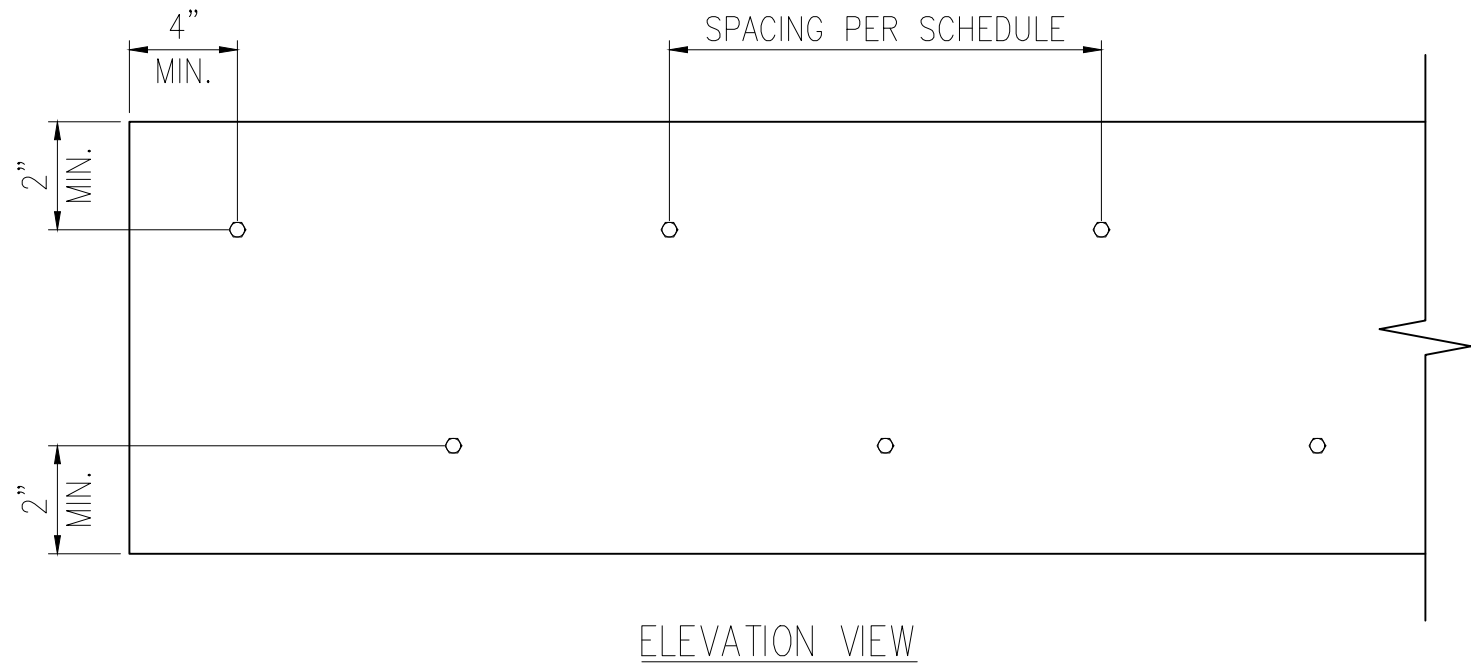


NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

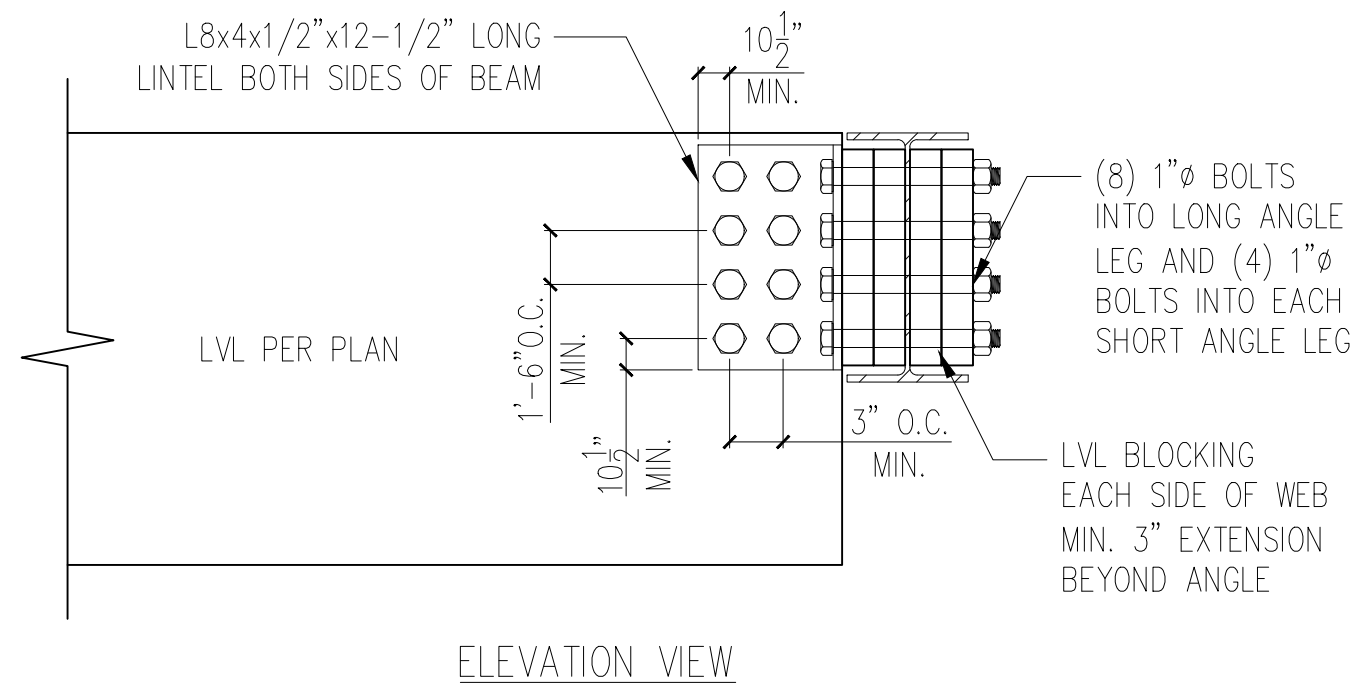
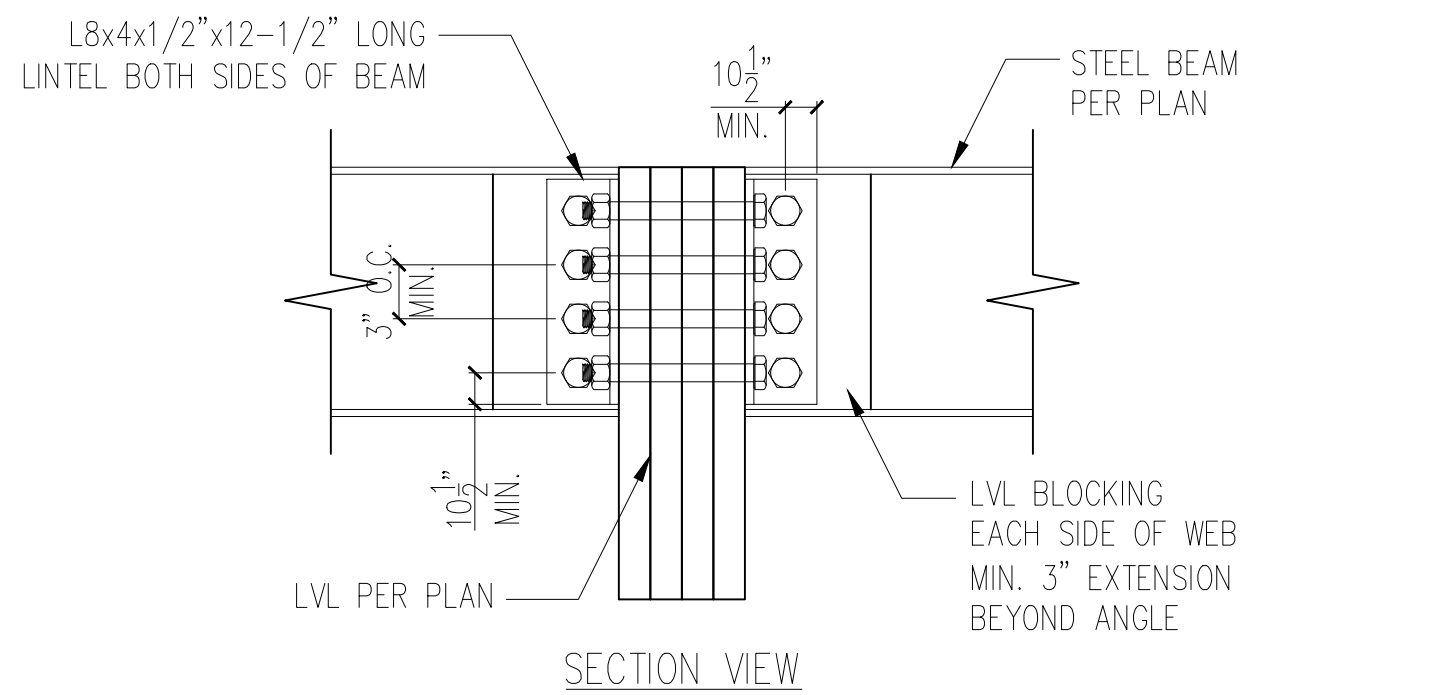
MINIMUM FASTENING
REQUIREMENTS FOR
TOP- AND SIDE-LOADED
MEMBERS

FASTENER TYPE	LVL DEPTH	3 1/2" WIDE	5 1/4" WIDE		7" WIDE		
10d (0.128" x 3") Nails	7/4" ≤ d < 14"	3 rows @ 12" o.c.	3 rows @ 12" o.c. (ES)	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. (ES)	-
	d ≥ 14"	4 rows @ 12" o.c.	4 rows @ 12" o.c. (ES)	4 rows @ 12" o.c.	-	4 rows @ 12" o.c. (ES)	-
16d (0.162" x 3 1/2") Nails	7/4" ≤ d < 14"	2 rows @ 12" o.c.	2 rows @ 12" o.c. (ES)	2 rows @ 12" o.c.	-	2 rows @ 12" o.c. (ES)	-
	d ≥ 14"	3 rows @ 12" o.c. (ES)	3 rows @ 12" o.c. (ES)	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. (ES)	-
1/2" Through Bolts	d ≥ 7 1/4"	2 rows @ 24" o.c.		2 rows @ 24" o.c.		2 rows @ 24" o.c.	
SDS 1/4" x 3 1/2", WS35, 3 3/8" TrussLok		2 rows @ 24" o.c.	2 rows @ 24" o.c. (ES)	2 rows @ 24" o.c.	-	2 rows @ 24" o.c. (ES)	-
SDS 1/4" x 6", WS6		-	-	-	2 rows @ 24" o.c. (ES)		
5" TrussLok		-	2 rows @ 24" o.c.		-		
6 3/4" TrussLok		-	-	-	2 rows @ 24" o.c.		

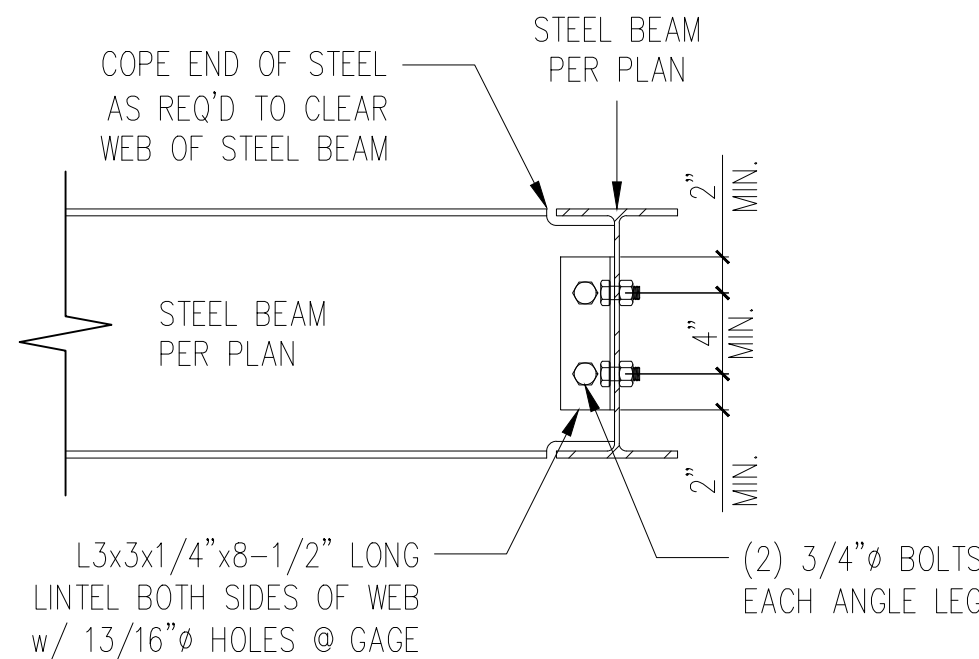
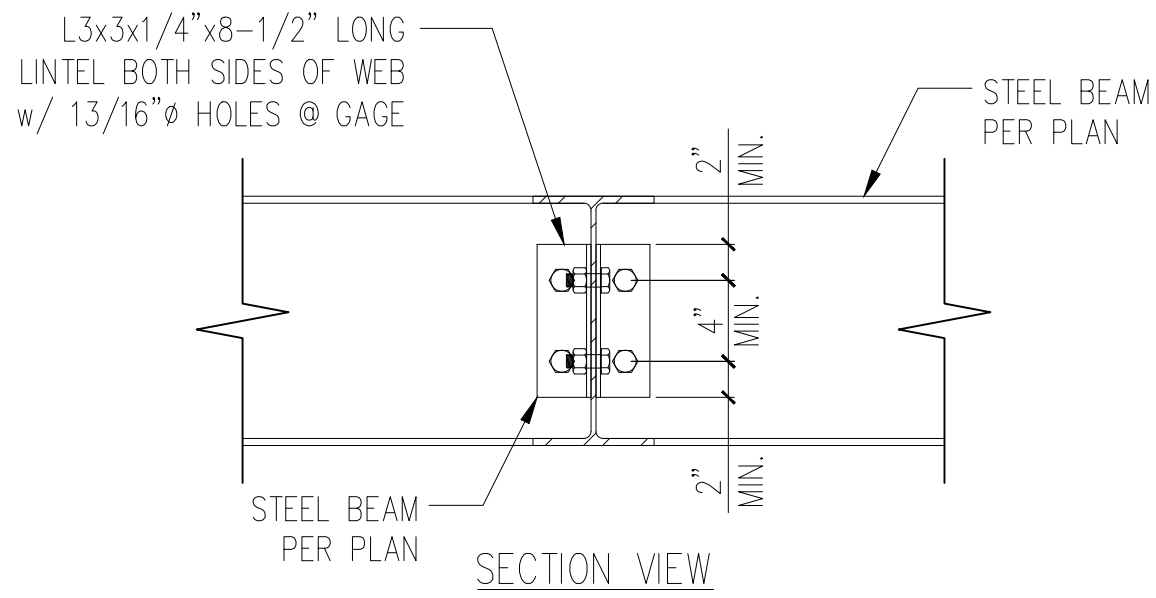
- NOTES:**
- All fasteners must meet the minimum requirements in the table above. Side-loaded multiple-ply members must meet the minimum fastening and side-loading capacity requirements given on page 48.
 - Minimum fastening requirements for depths less than 7 1/4" require special consideration. Please contact your technical representative.
 - Three general rules for staggering or offsetting for a certain fastener schedule:
(1) if staggering or offsetting is not referenced, then none is required;
(2) if staggering is referenced, then fasteners installed in adjacent rows on the front side are to be staggered up to one-half the o.c. spacing, but maintaining the fastener clearances above; and
(3) if "ES" is referenced, then the fastener schedule must be repeated on each side, with the fasteners on the back side offset up to one-half the o.c. spacing of the front side (whether or not it is staggered).



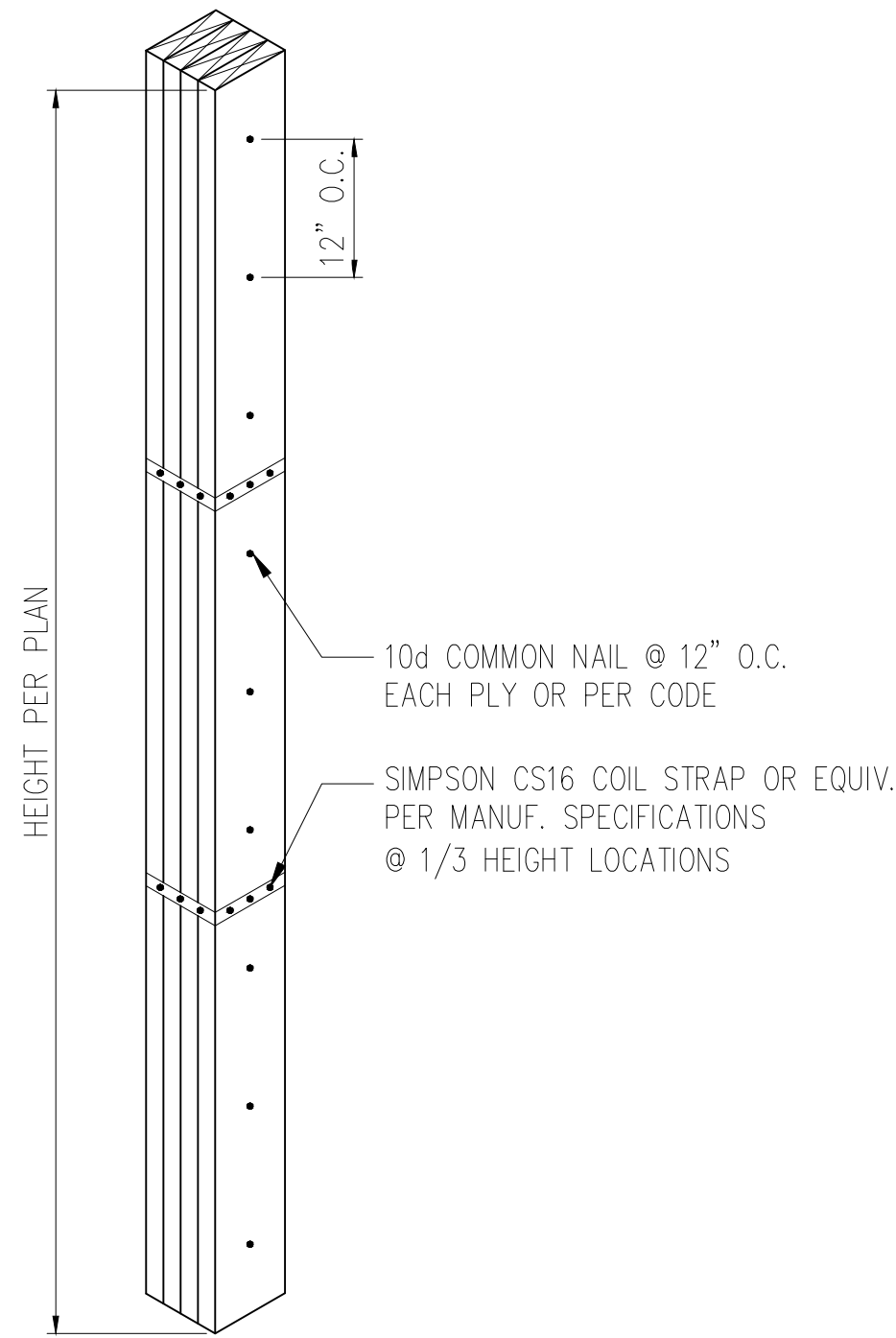
1 MULTI-PLY BEAM CONNECTION DETAIL
D3f N.T.S.



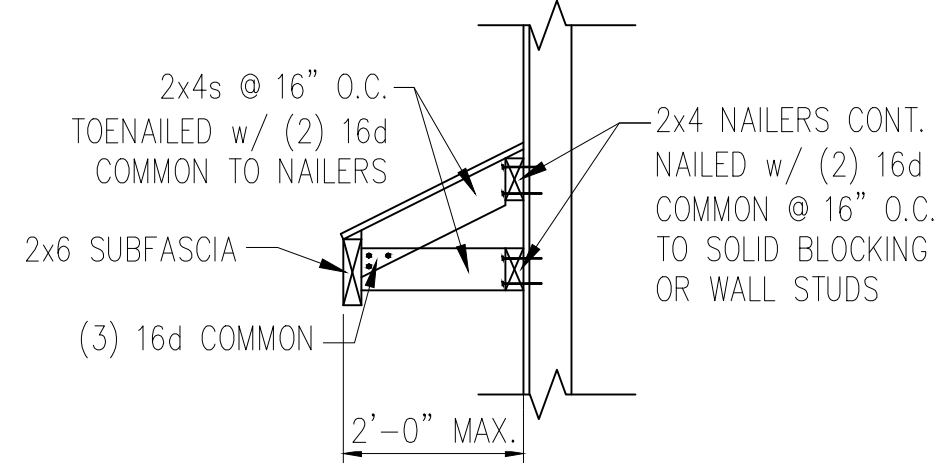
3 LVL TO STEEL DETAIL
D3f N.T.S.



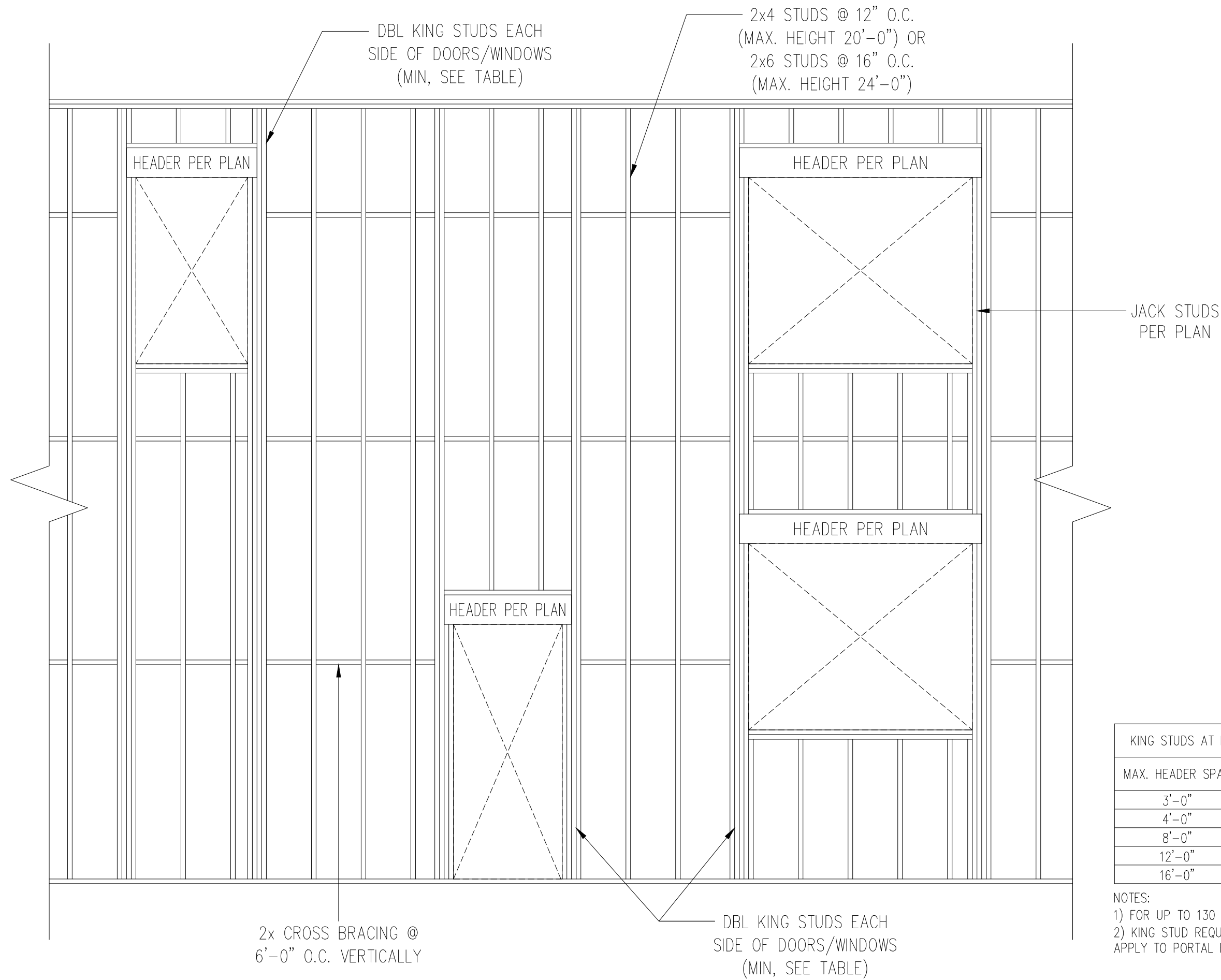
4 STEEL TO STEEL DETAIL
D3f N.T.S.



2 MULTI-PLY STUD CONNECTION DETAIL
D3f N.T.S. 4+ PLIES



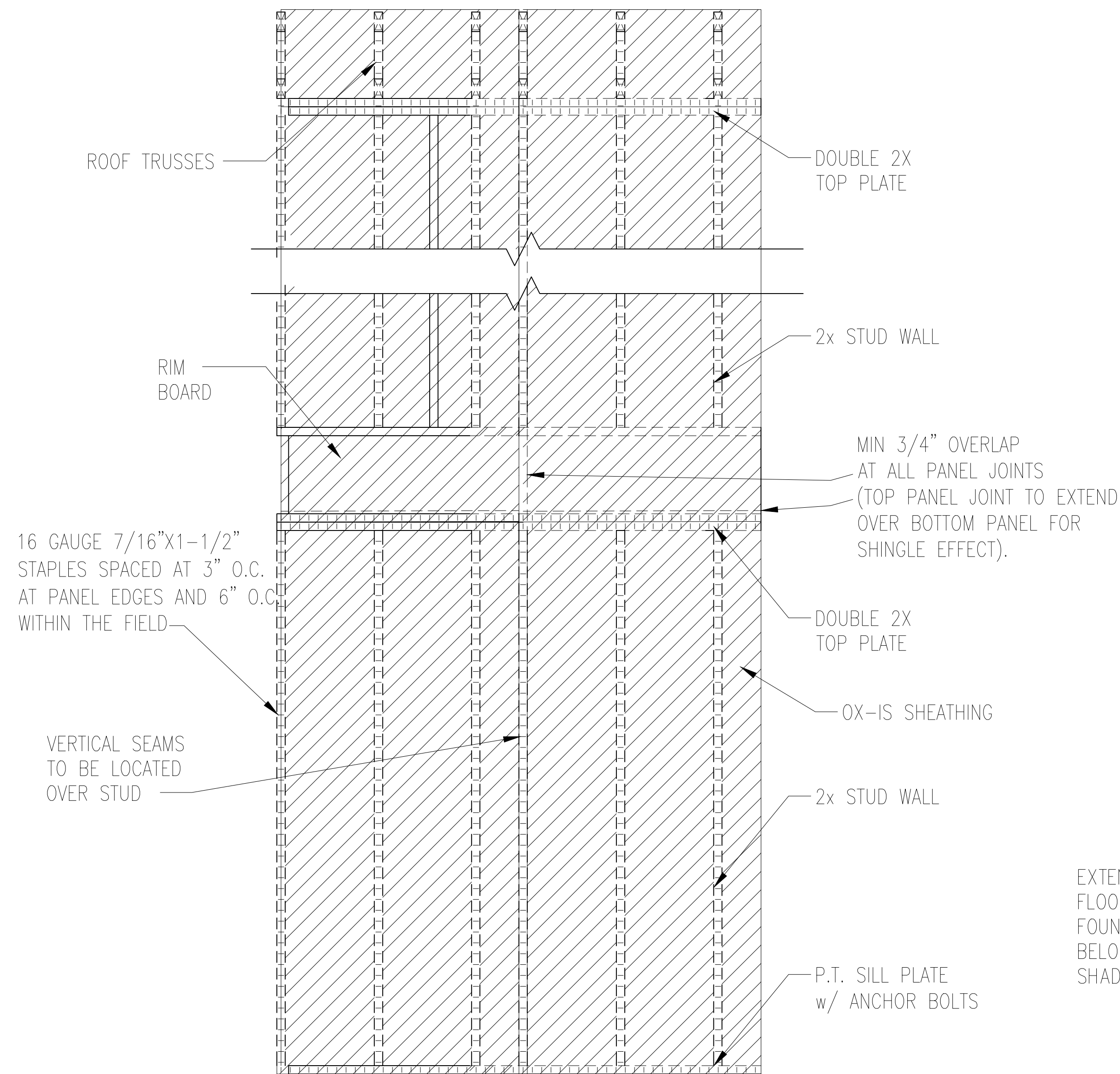
5 GABLE ROOF RETURN
D3f N.T.S.



KING STUDS AT EACH END OF HEADERS	
MAX. HEADER SPAN	STUDS (MIN.)
3'-0"	1
4'-0"	2
8'-0"	3
12'-0"	5
16'-0"	6

- NOTES:
- FOR UP TO 130 MPH, EXPOSURE B
 - KING STUD REQUIREMENTS DO NOT APPLY TO PORTAL FRAMED OPENINGS

6 TYP. BALLOON FRAMING DETAIL
D3f N.T.S.



TWO CONT. 2x_ TOP PLATE, EXTEND EACH END INTO ADJACENT WALL. NAIL SPLICES WITH 8-16d NAILS PER SPLICE/LAP.

CONT. 2x_ PLATE WITH 10d NAILS AT 16" O.C. INTO HEADER/BEAM

OX-IS EXT. WALL SHEATHING IN SHADED AREAS ATTACHED TO ALL SUPPORTS (STUDS, PLATES, BLOCKING, ETC) WITH 16 GA. STAPLES AT 3" O.C. EDGE AND 3" O.C. FIELD 1" MIN. EMBEDMENT.

(2)2x4 BLOCKING AT ALL PANEL EDGES (TYP.)

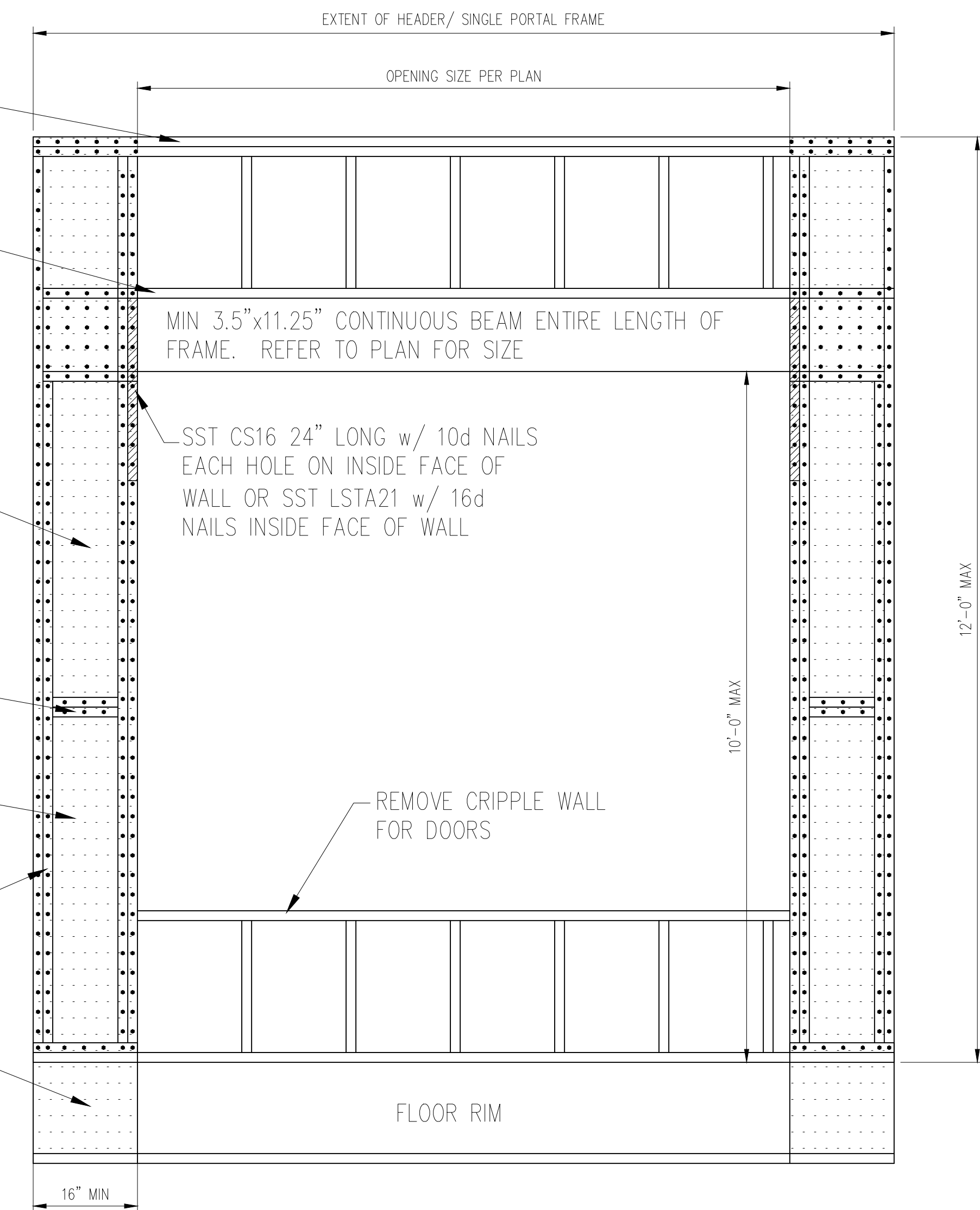
ADD ADDITIONAL STUDS IF WALL WIDTH EXCEEDS 16"

(2)2x_ STUDS (MIN) AT START/END OF WALL SEGMENTS EACH SIDE OF OPENING.

EXTEND OX-IS SHEATHING TO COVER FLOOR RIM AND ATTACH TO SILL PLATE ON FOUNDATION OR TOP PLATE OF WALL BELOW. SAME ATTACHMENT AS ALL OTHER SHADED AREAS.

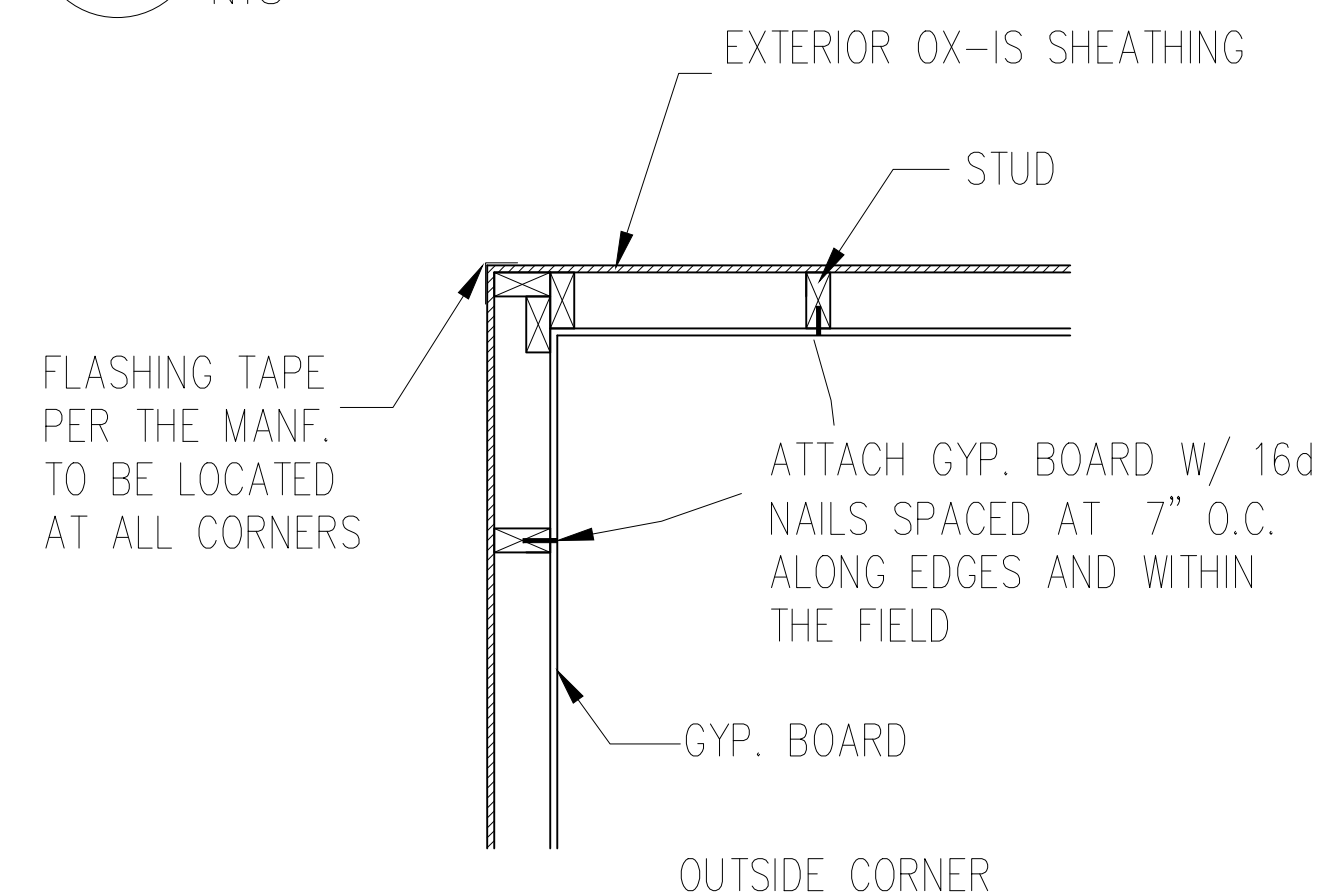
2x4 P.T. PLATE WITH (2)1/2" DIA ANCHOR BOLTS EMBEDDED IN CONC. 7" MIN. WITH 3/16"x2"x2" PLATE WASHERS

NOTES:
 -OX-IS MAY BE INSTALLED IN LIEU OF OSB FOR CS-WSP AND CS-PF BRACING METHODS SHOWN ON THE BRACING PLAN.
 BRACED WALLS SHALL BE INSTALLED PER LENGTHS SHOWN ON THE SEALED PLANS.
 -16 GA. STAPLES MAY BE SUBSTITUTED WITH 0.113-INCH DIAMETER (3/8" HEAD OR 2" CAP) NAILS WITH MINIMUM 1" EMBEDMENT.
 -STAPLES MAY RUN PARALLEL WITH WOOD GRAIN OF FRAMING STUDS AT SHEATHING SEAMS.
 -WHERE 3/4" OVERLAP IS NOT INSTALLED, CONTRACTOR MAY COVER SEAM WITH 5" BUTYL FLASHING TAPE.
 -FLASH WINDOWS AND DOORS PER MANF.
 -THE DETAILS ABOVE ARE LIMITED TO 130 MPH WIND ZONES.



3 METHOD PF: PORTAL FRAME DETAIL
 D4f NTS

1 TYP. WALL BRACING
 D4f NTS



2 TYP. EXTERIOR CORNER ATTACHMENT
 D4f NTS