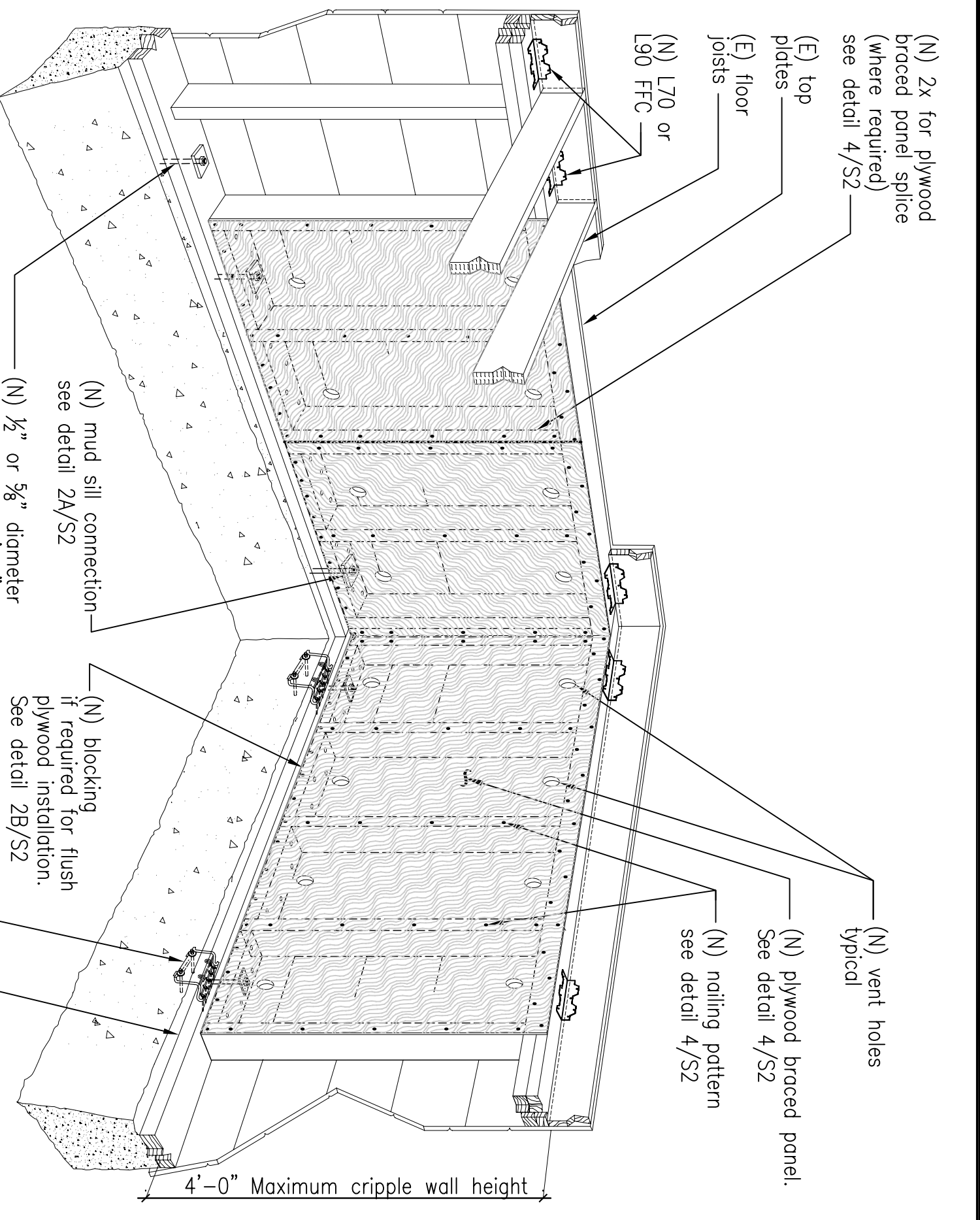


1 SAMPLE FOUNDATION AND PLYWOOD LAYOUT PLAN
SCALE: 3/16"=1'-0"



2 TYPICAL CRIPPLE WALL BRACING DETAIL

NOTES:

- This detail shows a sample cripple wall which has undergone a typical seismic retrofit.
- This detail is not intended to supersede requirements contained in the specific installation details on sheet S2.
- This isometric is viewed from the interior of the crawl space.

- A. GENERAL:**
- All existing concrete and wood material which will be part of the strengthening work shall be in sound condition and free from defects which would substantially reduce the capacity of the material. Any substandard material shall be repaired or replaced to meet minimum building code requirements. New foundations shall meet current Building Code requirements.
 - All metal connectors and hardware shall meet an approved standard for its intended use and be installed per manufacturer's instructions, and in accordance with the requirements of these standards. Alternate details may be approved by the building official provided detailed information and calculations are submitted and approved.
 - All existing under floor ventilation shall be maintained.
 - Due to the corrosive nature of new pressure treated wood fasteners in new pressure treated wood shall be hot dipped galvanized fasteners (meeting ASTM A153) and connectors (ASTM A 653 class G185 sheet), or better.
 - LEGEND: (E) = Existing construction; (N) = New construction

- B. MUDSILL CONNECTIONS:**
- New bolts or UFP10 anchors required by reinforcement schedule 4/S1 shall be installed within plywood braced panels. See detail 2/S2.
 - Where an existing continuous rim joist, end joist, or solid blocking between joists, does not exist above the perimeter cripple wall or mud sill, new blocking and/or supplemental connections shall be provided and subject to approval by the building official.
 - All new mud sill bolts shall have a 3" x 3" x 1/2" plate washer installed between the mud sill (or blocking) and the nut.
 - New bolts shall be 1/2" inches minimum from the edges of the mud sill and 6" from the ends.
 - Existing anchor bolts are generally not reliable and should not be considered as meeting the requirements of this plan set.

3 TECHNICAL NOTES

REINFORCEMENT SCHEDULE

GENERAL INFORMATION	PLYWOOD BRACING	MUDSILL ANCHORAGE	FLOOR TO CRIPPLE WALL / MUDSILL
CHECK THE BOX WHICH APPLIES TO YOUR HOME:	TOTAL FLOOR AREA (SF) (1)	MINIMUM TOTAL BRACING LENGTH EACH WALL LINE	MIN. NO. OF FLOOR FRAMING CLIPS (FC)(1/3) ALONG EACH WALL LINE (4)
	TOTAL LENGTH EACH WALL LINE	UFP10 (2)	NO. OF L70 (5/6)
	HEAVY OR LIGHT CONSTRUCTION	1/2" BOLT (5)	NO. OF L90 (10)
	HEAVY OR LIGHT CONSTRUCTION	5/8" BOLT (6)	
	HEAVY OR LIGHT CONSTRUCTION		

- New bolts or anchors within new braced panels shall be placed as follows:
 - one bolt or anchor at each end of the braced bay;
 - additional bolts or anchors at S2 on center or less;
 - additional foundation bolts or anchors as required by the schedule detail 4/S1.
- New mudsill plates shall be pressure-treated douglos-fir or foundation-grade rewood.
- New steel bolts shall conform to ASTM A307. Adhesive or expansion type anchors shall be installed per manufacturer's instructions. Third party special inspection is not required. Expansion bolts shall not be used when the installation causes cracking of the foundation wall at the location of the bolt. The use of "adhesive type" anchors is strongly encouraged.
- Provide new mudsill bolts or anchors outside of braced panels at 6'-0" on center or less.

- C. FLOOR TO CRIPPLE WALL / MUDSILL CONNECTION:**
- See "Reinforcement Schedule" 4/S1 and detail 5/S2 for required connection.
 - Increase length of nails 1/2" when attaching floor framing clips through plywood.
 - If splices in double top plates do not have a minimum 48" lap, provide a new minimum 4" strip. See detail 6A/S2.
 - Existing single top plates shall be reinforced with a 16ga x 48" metal strip. See detail 6B/S2.
 - Where plate strips occur within a braced panel, the strip shall be placed over the plywood and the plywood nails omitted where the strip is installed.
- D. PLYWOOD BRACED PANEL INSTALLATION:**
- See 4/S1 "Reinforcement Schedule" for the required length of new plywood panel bracing along each wall line. See "Sample Foundation Plan" for the definition of a "wall line" and an example of plywood panel layout.
 - Install plywood braced panels at each end of each wall line and space additional panels, as needed, along each wall line.
 - Plywood braced panels closest to the ends of wall panels shall be located away from the ends of a wall line when existing obstructions or limited clearance necessitates such relocation.
 - Plywood braced panels should be nearly equal in length and should be nearly equal in spacing along the length of the wall where possible.

4 REINFORCEMENT SCHEDULE

DEFINITIONS-- "LIGHT" AND "HEAVY" CONSTRUCTION

HEAVY CONSTRUCTION is your home constructed using any of the following:

- Stucco exterior wall finish
- Heavy roofing consisting of concrete or clay tiles (weighing up to 11 pounds per square foot)

NOTE:
Clay tile weighing more than 11 pounds per square foot may be considered on an individual basis. Check w/ your local Building Department.

ROOFING MATERIALS:
1. Wood shakes or shingles
2. Composition or asphalt shingles
3. Metal roofing (weighing 5 pounds per square foot or less)

EXTERIOR WALL FINISHES:
1. Wood panel siding
2. Wood board siding
3. Similar light board siding

INTERIOR WALL FINISHES:
1. Gypsum board
2. Gypsum or plaster lath

5 CONSTRUCTION DATA

GENERAL HOME INFORMATION:

A. Square footage calculation: _____ sf

- No. of stories above cripple wall/mud sill: _____
- Approximate 1st floor area over crawl space: _____ sf (Do not include areas above garage slab)
- Approximate 2nd floor area over crawl space: _____ sf (Do not include areas above garage slab)

Total floor area: _____ sf

B. Is your home of "Light" or "Heavy" construction? _____

1. See detail 4/S1 for definition of heavy versus light construction
 HEAVY construction LIGHT construction

FLOOR FRAMING CONNECTION:

FRAMING CLIP: _____
 FROM JOIST OR TOP PLATE: _____
 MANUFACTURER: _____
 PART NO.: _____
 LOAD VALUE PARALLEL TO CRIPPLE WALL AND/OR MUD SILL: _____

6 REINFORCEMENT SCHEDULE

FOOTNOTES FROM TABLE:

- See total floor area retrofit Construction Data.
- When UFP anchors and bolts are used in a single wall line, UFP anchors may be substituted for the number of bolts.
- Not more than one angle per joist unless joists are spaced 24 inches on center.
- Where practicable install angles between joists above plywood braced panel locations.
- Install L70 & L90 W/ 104 x 1/2" nails (148 x 1 1/2").
- H10 uses (8) 8d (131" dia.) x 1 1/2" into top plates.
8d (131" dia.) x 1 1/2" into top plates.
- H10 floor framing clip should be used as an alternate only where accessibility makes the use of L70 or L90 impractical. L70 and L90 clips are preferred over H10 FFC.

CONNECTOR CAPACITY and Connection Description

48# lbs.	L70 is 16 on 3" long uses (8) - 10d x 1-1/2" nails (148 x 1 1/2")
60# lbs.	190 is 16 on 3" long uses (10) - 10d x 1-1/2" nails (148 x 1 1/2")
50# lbs.	H10 anchor uses (8) - 8d x 1-1/2" nails (131 x 1 1/2")
820 lbs.	1/2" dia. bolt
1170 lbs.	5/8" dia. bolt
1540 lbs.	UFP10 - Universal plate anchor

GENERAL INSTRUCTIONS

READ FIRST:
To determine if your home qualifies please answer the following questions. If you answer yes to all of the following questions your home qualifies to use this standard. IF YOU ANSWER YES TO EACH OF THESE QUESTIONS, PROCEED TO APPLICANT INSTRUCTIONS.

DOES THIS PLAN SET APPLY TO YOUR HOME?

- Is your home a one or two family residential structure? YES NO
- Is your home two stories or less? YES NO
- Is your home wood-framed construction? YES NO
- Does the building have a continuous perimeter concrete foundation (ignoring the immediate area surrounding the fireplace?) YES NO
- Does your home have a crawl space? YES NO
- Are all the cripple walls less than 4 feet in height? (See detail 2/S1 in lower left corner of plan set for an example of a cripple wall) YES NO
- If your home has a brick or stone veneer along the exterior walls (excluding any chimneys), is the maximum height of the veneer 4 feet above the foundation? (If your home does not have any brick or stone veneer, you should answer this question as a YES.) YES NO
- If the roofing of your home is clay tile, are the tiles installed without the use of mortar along the tie edges. (If your home's roofing is a material other than clay tile, you should answer this question as a YES.) YES NO

IF YOU ANSWER NO TO ANY OF THESE QUESTIONS CONTACT YOUR LOCAL BUILDING DEPARTMENT FOR ASSISTANCE.

PURPOSE:
This plan set standards for strengthening may be approved by the building official without requiring additional plans or calculations. They provide an economical method to help improve your home's chances of surviving an earthquake. The intent of these standards is to promote public safety and welfare by reducing the risk of earthquake damage to existing wood-framed residential buildings.

- The requirements contained herein are prescriptive minimum standards intended to improve the seismic performance of earthquake damaged, not make your home earthquake proof. These recommendations are based on assumptions that apply to houses of average construction. You are encouraged to have a competent licensed engineer or architect review the plans & modify them as appropriate for your home.
- The prescriptive details and provisions are not intended to be the only acceptable strengthening methods permitted (alternate details and methods may be used when approved by the building official).
- When the building official determines that conditions exist that are beyond the scope of these prescriptive standards, analysis and documentation shall be prepared by a California licensed architect or engineer.
- This prescriptive plan addresses only seismic strengthening work. Alternative designs will be considered on a case-by-case basis. Work done under permit pursuant to this prescriptive plan does not legalize any previous work done without a permit.

APPLICATION INSTRUCTION:
1. Draw a scaled foundation plan of the house in the graph space provided on sheet S2 (refer to the "sample foundation and plywood layout plan", Detail 1/S1 for guidance).
2. Provide appropriate construction information in the "Construction Data", detail 5/S1. Determine the spacing requirements for the mudsill bolts or anchor plates to be used and identify the type of FFC clip to be used.
3. Based upon the homes square footage, number of stories and type of construction "heavy" or "light", determine the requirements for "plywood bracing, mudsill anchorage" and floor to cripple wall/mudsill connections". Based on the "Reinforcement Schedule", See detail 4/S1.
4. Identify on the "Foundation Plan" the direction of run of all your floor joists.
5. Identify on the "Foundation Plan" (along the perimeter walls) the location of all fireplaces.
6. For each wall segment on the foundation plan indicate the plan details which represent:
step1: the mud sill anchoring method. See detail 2/S2.
step2: the floor-to-cripple wall/mudsill attachment. See detail 5/S2.
step3: the cripple wall bracing method to be used. See detail 4/S2.
7. For each wall segment on the foundation plan indicate the maximum cripple wall height and the length and location of all plywood braced panels to be installed (identify all wall sections that do not have cripple walls).

GENERAL INSTRUCTIONS

REINFORCEMENT SCHEDULE

FOOTNOTES FROM TABLE:

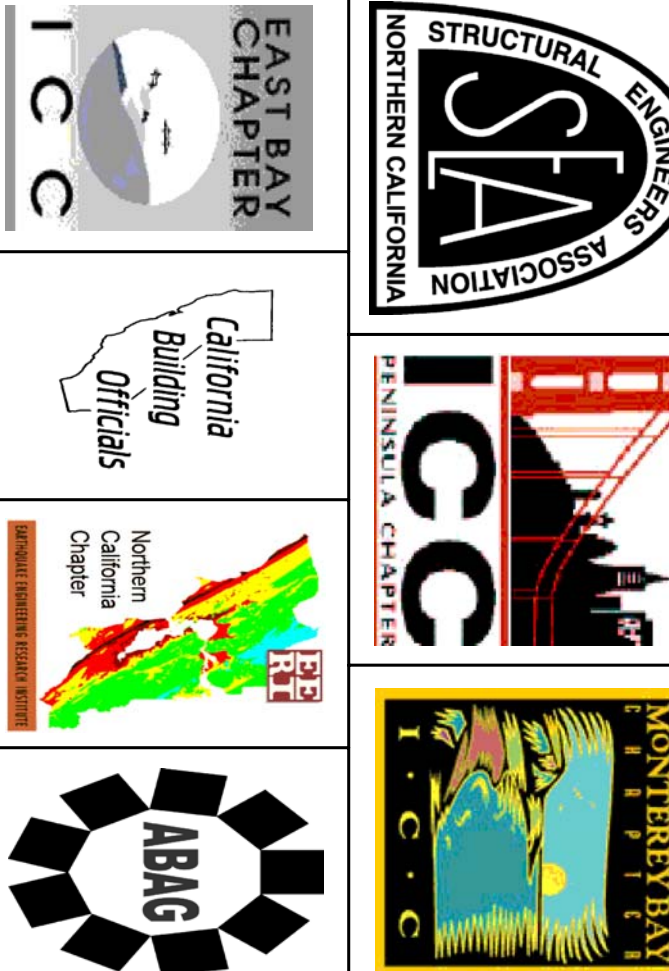
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STANDARD PLAN A (2008)
RESIDENTIAL SEISMIC STRENGTHENING PLAN
 PRESCRIPTIVE SEISMIC STRENGTHENING PLAN FOR CRIPPLE WALL BRACING AND FOUNDATION SILL PLATE ANCHORAGE OF LIGHT WOOD FRAMED RESIDENTIAL STRUCTURES.

APPLICANT INFORMATION	APPLICANT: _____
ADDRESS: _____	
TELEPHONE: _____	
PROPERTY ADDRESS: _____	
OWNER: _____	
APPLICANT'S SIGNATURE _____	



S1

1 OF 2

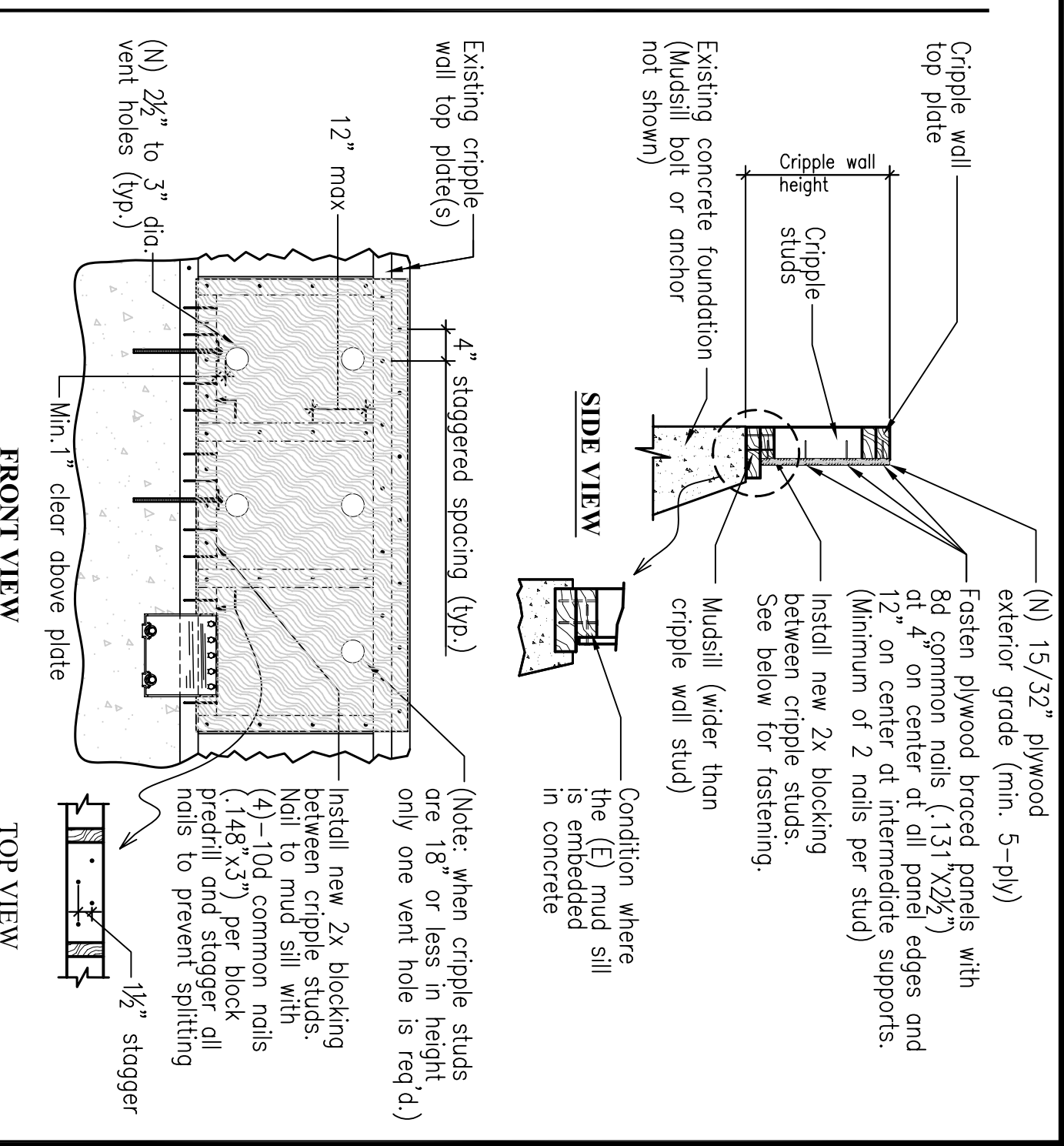
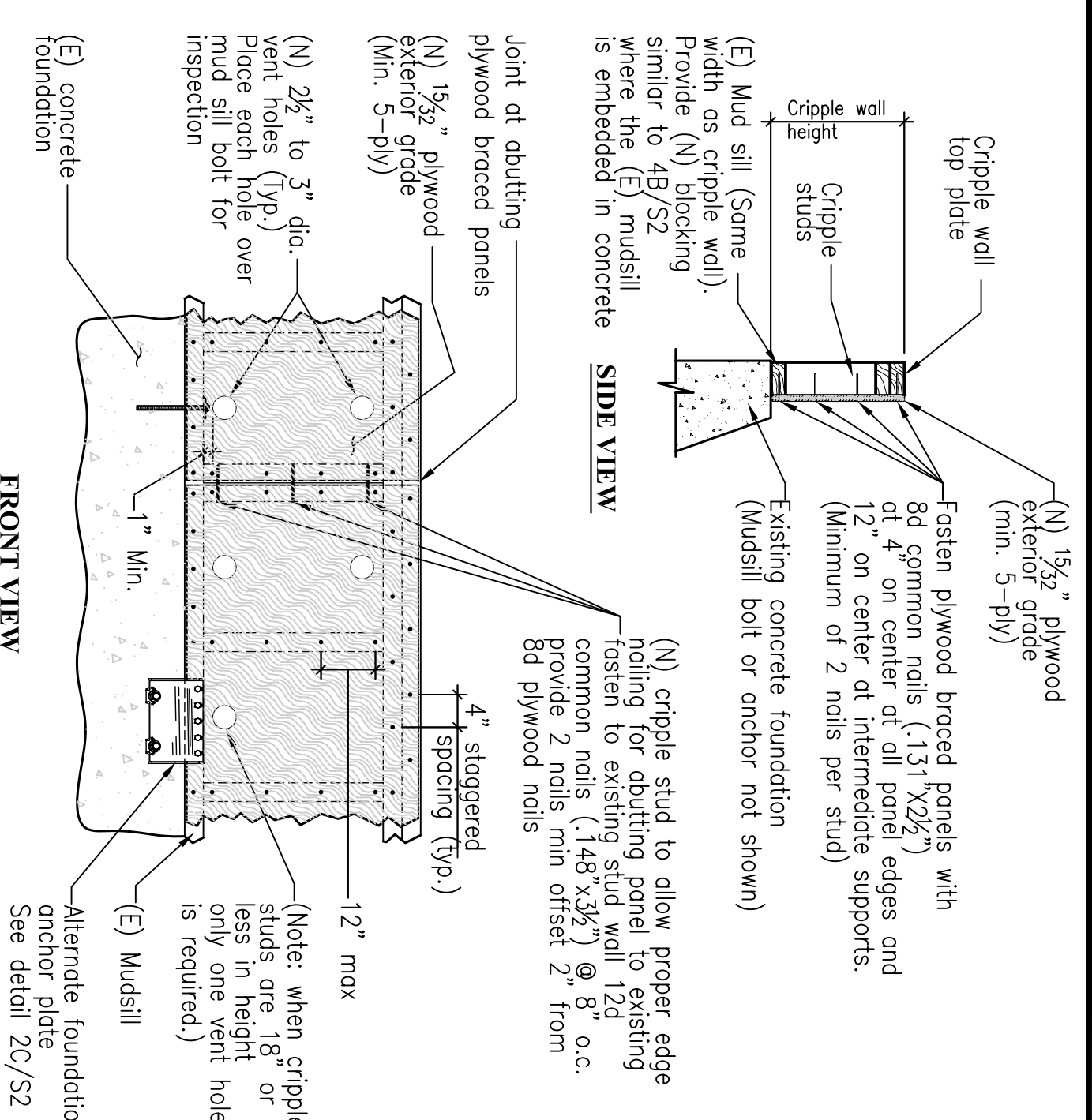
APPLICANT INFORMATION

APPLICANT: _____
 ADDRESS: _____
 TELEPHONE: _____
 PROPERTY ADDRESS: _____
 OWNER: _____
 APPLICANT'S SIGNATURE _____

STANDARD PLAN A (2008) RESIDENTIAL SEISMIC STRENGTHENING PLAN

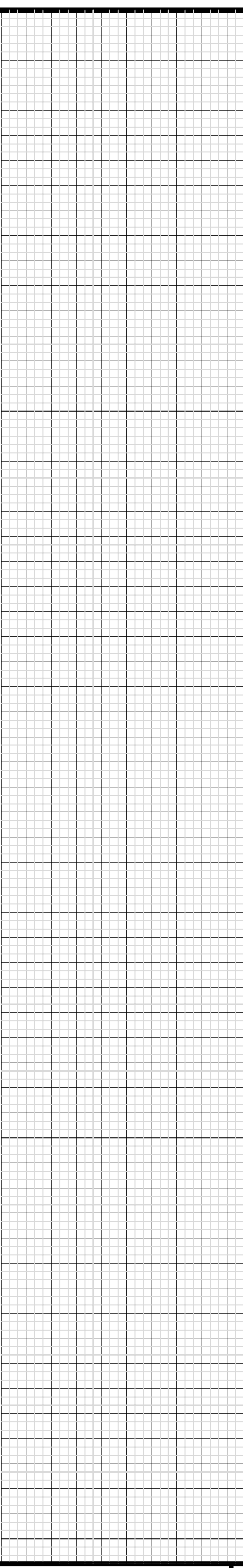
PRESCRIPTIVE SEISMIC STRENGTHENING PLAN FOR CRIPPLE WALL BRACING
 AND FOUNDATION SILL PLATE ANCHORAGE OF LIGHT WOOD FRAMED
 RESIDENTIAL STRUCTURES.

S2

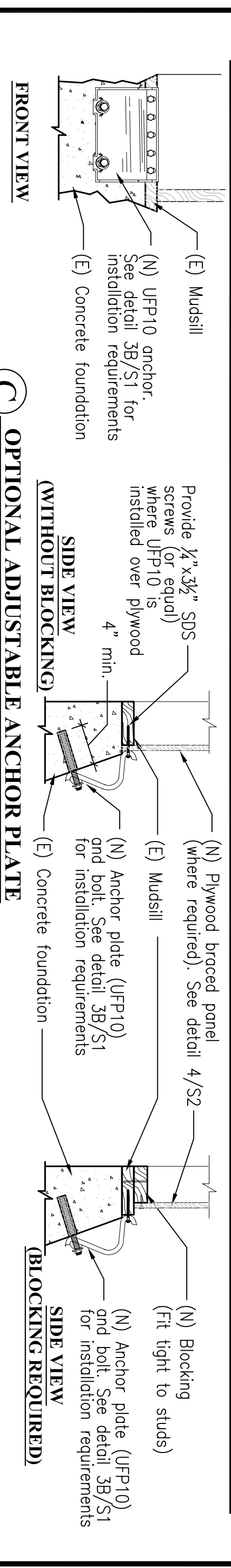
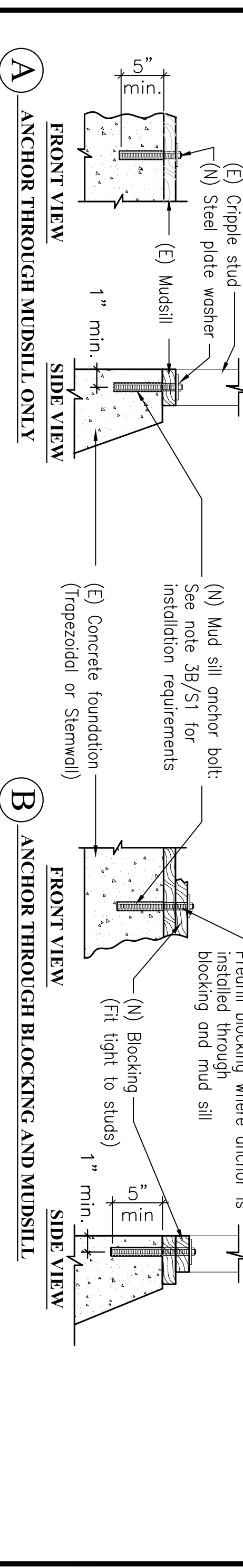


4 PLYWOOD BRACED PANEL INSTALLATION DETAIL
 SCALE: NTS

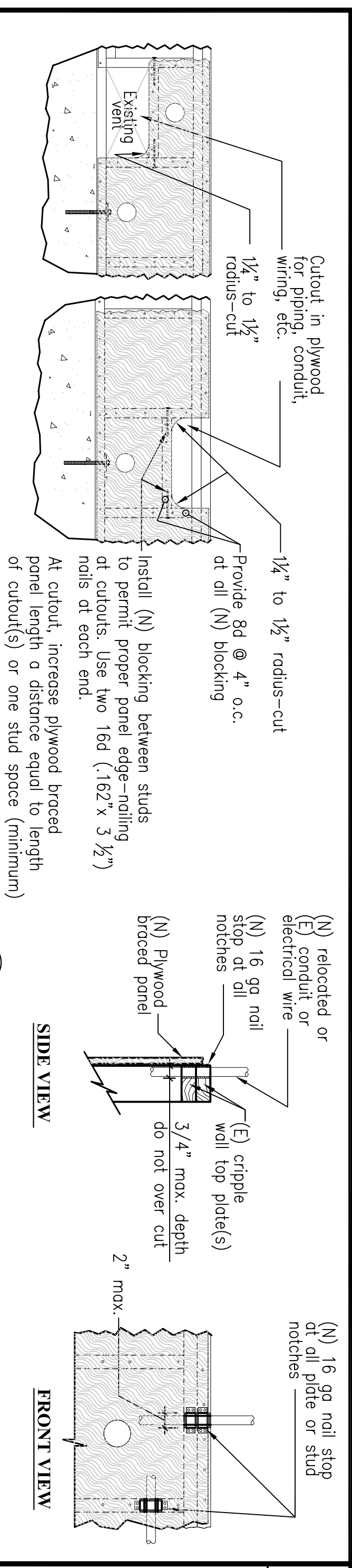
- A MUDSILL SAME WIDTH AS CRIPPLE WALL**
- B MUDSILL WIDER THAN CRIPPLE WALL**



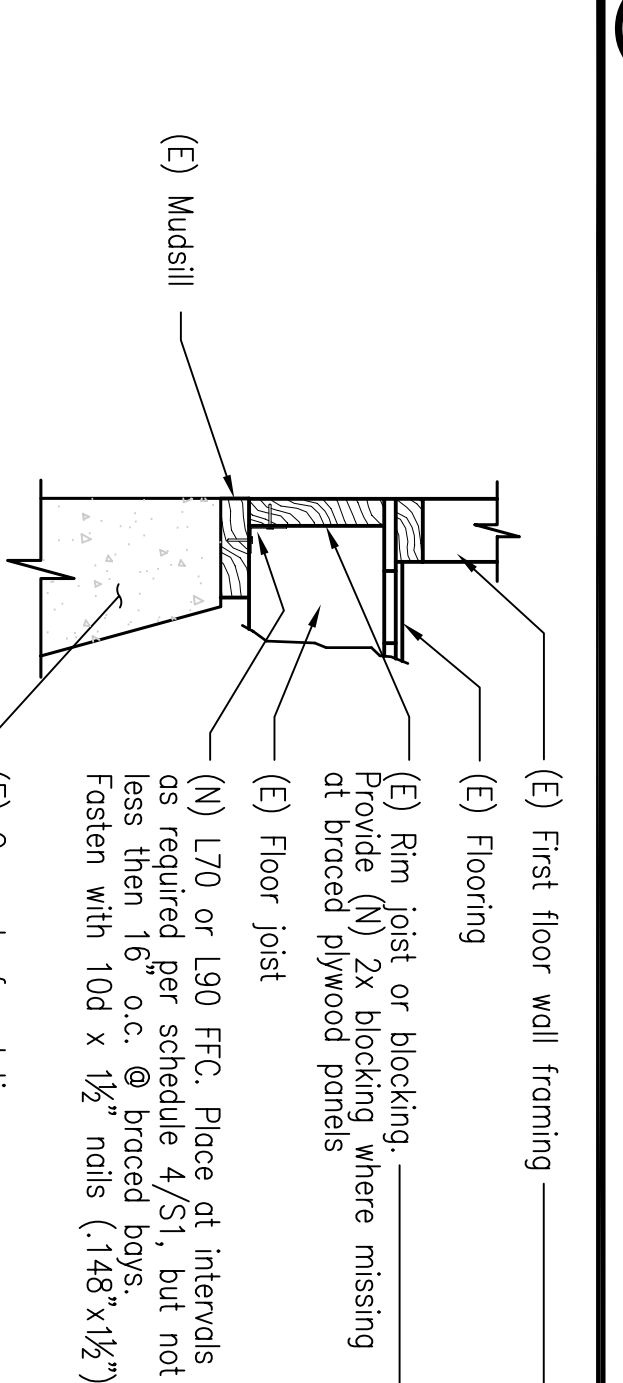
1 FOUNDATION PLAN
 CHECK SCALE: ONE SQUARE (1/4') = ONE FOOT



2 TYPICAL MUDSILL TO CONCRETE FOUNDATION CONNECTIONS
 SCALE: NTS

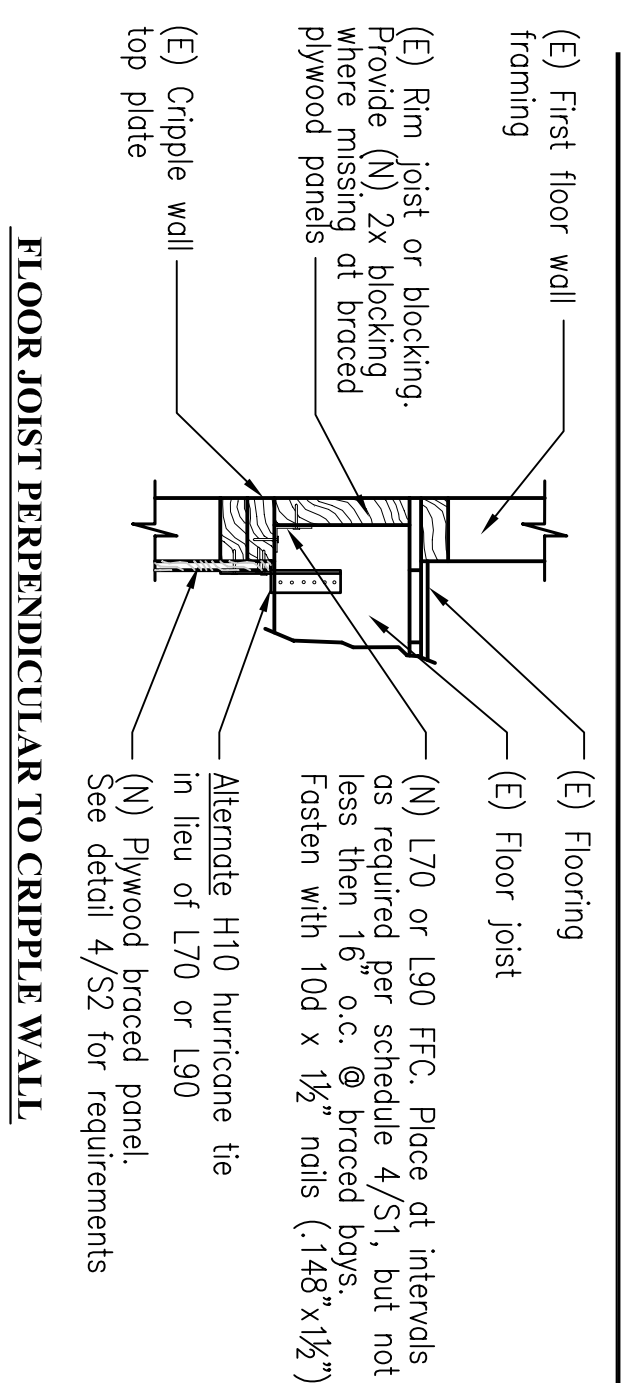


3 TYPICAL PANEL CUTOUTS & NOTCHING REQUIREMENTS
 SCALE: NTS



5 TYPICAL FLOOR-TO-CRIPPLE WALL OR FLOOR-TO-MUDSILL CONNECTIONS
 SCALE: NTS

- A TYPICAL FLOOR-TO-MUDSILL CONNECTIONS:**
- B FLOOR-TO-CRIPPLE WALL CONNECTIONS:**



6 TYPICAL TOP PLATE SPLICE DETAILS
 SCALE: NTS

ACKNOWLEDGMENTS
 This prescriptive plan set and the provisions for voluntary seismic retrofit of wood-frame homes were developed by a committee representing the East Bay and Peninsula chapters of the International Code Council (ICC). In addition, the plan development committee consisted of representatives from the following organizations who provided contributions and peer review:
 A. Association of bay area governments (ABA/G) earthquake program.
 B. Building contractors specializing in home retrofitting.
 C. California building officials (CALBO) emergency preparedness committee.
 D. California building officials (CALBO) seismic safety committee.
 E. Earthquake engineering research institute, Northern California chapter (EERI-NC)
 F. ICC, TR-1-chapter (East Bay Peninsula, Monterey Bay) plan check standards committee.
 G. Seismology & Structural standards, Light-Frame subcommittee, Existing building committee, Structural engineers association of Northern California (SEA/NC)

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 NOTE - Technical changes may not be made without the express permission of the committee.