3541-43 HAVEN LLC

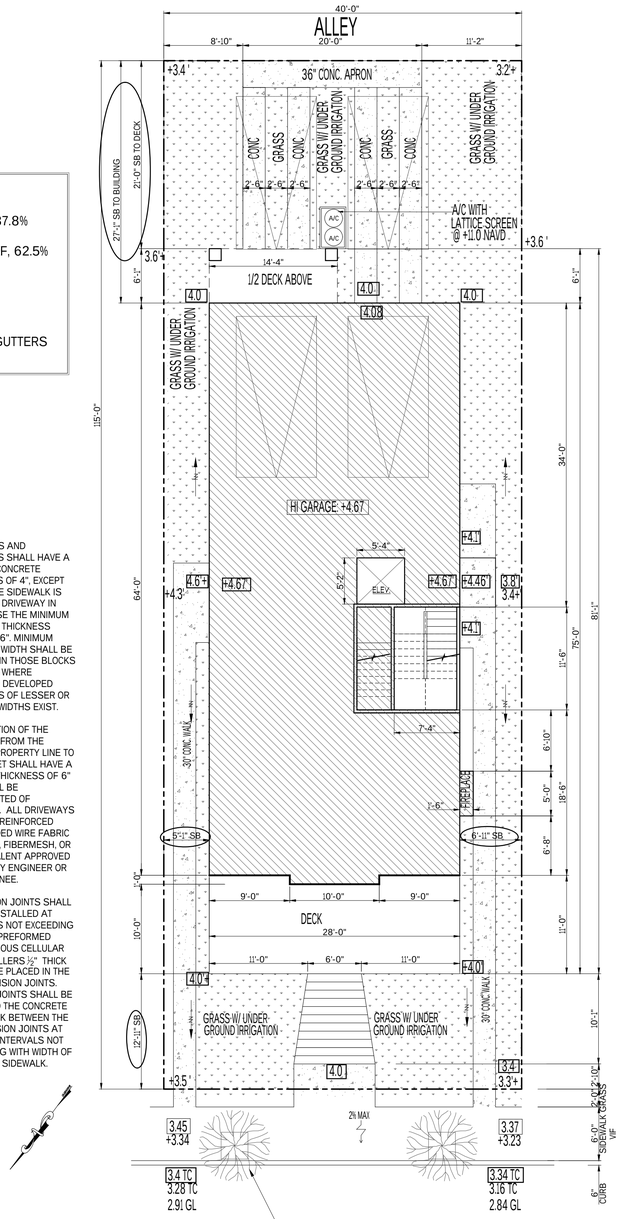
3541-43 HAVEN AVE

LOT 3 BLOCK 3504
LOT SIZE = 4,600
BUILDING COVERAGE = 1,740 SF, 37.8%
(ALLOWABLE = 1,748 SF, 38%)
IMPERVIOUS COVERAGE = 2,878 SF, 62.5%
(ALLOWABLE = 2,990 SF, 65%)
RIDGE EL. = 41.60'
HI GARAGE = +4.67' NAVD
FIRST FL. EL. = +12.0 NAVD
BFE = +9' NAVD
PROPOSED STRUCTURE TO HAVE GUTTERS AND DOWNSPOUTS

NOTE
SIDEWALKS AND DRIVEWAYS SHALL HAVE A MINIMUM CONCRETE THICKNESS OF 4", EXCEPT WHERE THE SIDEWALK IS PART OF A DRIVEWAY IN WHICH CASE THE MINIMUM CONCRETE THICKNESS SHALL BE 6". MINIMUM SIDEWALK WIDTH SHALL BE 6' EXCEPT IN THOSE BLOCKS OR AREAS WHERE PARTIALLY DEVELOPED SIDEWALKS OF LESSER OR GREATER WIDTHS EXIST.

THAT PORTION OF THE DRIVEWAY FROM THE INTERIOR PROPERTY LINE TO THE STREET SHALL HAVE A MINIMUM THICKNESS OF 6" AND SHALL BE CONSTRUCTED OF CONCRETE. ALL DRIVEWAYS SHALL BE REINFORCED WITH WELDED WIRE FABRIC (MIN. 6X6), FIBERMESH, OR AN EQUIVALENT APPROVED BY THE CITY ENGINEER OR HIS DESIGNEE.

EXPANSION JOINTS SHALL BE INSTALLED AT INTERVALS NOT EXCEEDING 20'. PREFORMED BITUMINOUS CELLULAR JOINT FILLERS ½" THICK SHALL BE PLACED IN THE EXPANSION JOINTS. FORMED JOINTS SHALL BE CUT INTO THE CONCRETE SIDEWALK BETWEEN THE EXPANSION JOINTS AT EQUAL INTERVALS NOT EXCEEDING WITH WIDTH OF THE SIDEWALK.



(2) REGENT SCHOLOR TREES 2.5"-3" CAL. / BB/ 12'-14' TALL W/ NO BRANCHES BELOW 7'-0" MIN. 30' FROM ADJACENT TREES, TYP.

HAVEN AVENUE

PLOT PLAN
SCALE: 1/8" = 1'-0"

HAVEN AVE ELEVATION

November 9, 2022
Working Drawings

BUILDING DATA

2018 INTERNATIONAL RESIDENTIAL CODE, NJ. ED.
USE GROUP = R5
CONSTRUCTION TYPE = 5B
TOTAL BLDG. SF = 3,634 SF
TOTAL STRUCTURAL VOLUME = 50,820 CF
BUILDING COVER (Not Impervious) = 2,268 SF
FLOOD ZONE = AE
BASE FLOOD ELEVATION = +9.0' NAVD 88

LIST OF DRAWINGS

DATE	PAGE #	TITLE
11-09-22	T-1	COVER SHEET & PLOT PLAN
11-09-22	A-1	LEFT & FRONT ELEVATIONS
11-09-22	A-2	RIGHT & REAR ELEVATIONS
11-09-22	A-3	GROUND & FIRST FLOOR PLANS
11-09-22	A-4	SECOND & ROOF PLANS
11-09-22	A-5	GROUND & 1ST FLOOR STRUCTURAL PLANS
11-09-22	A-6	2ND FLOOR STRUCTURAL & GROUND FLOOR ELECTRICAL PLANS
11-09-22	A-7	1ST & 2ND FLOOR ELECTRICAL PLANS
8-10-20	D20.1B	DETAILS
5-17-18	FR15	WOOD FRAMING DETAILS
12-14-16	TJI/HD	TJI/HD DETAILS
4-20-13	FS-1	FIRE STOPPING DETAILS

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TITLE

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Andrew Bechtold
17642
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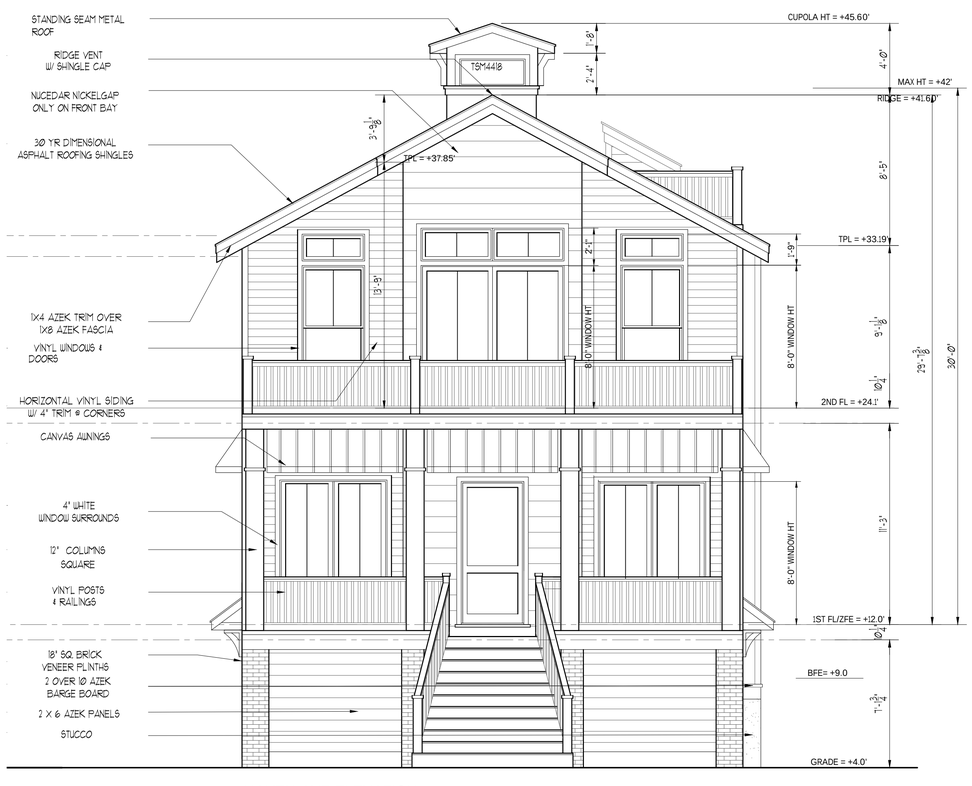
Revisions:

Date: 11-09-22	File No: 2102 2
Scale: AS NOTED	
Drawn: RMB/SLM	Dwg. No. T-1
Checked: GWT/ACB	

LEFT SIDE ELEVATION

NOTE: ALL WINDOWS MORE THAN 6'-0" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF



HAVEN AVE ELEVATION

NOTE: ALL WINDOWS MORE THAN 6'-0" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

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LEFT & FRONT ELEVATIONS

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Date: 11-09-22	File No: 21022
Scale: 1'4"=1'-0"	
Drawn: RMB/SLM	Dwg. No. A-1
Checked: GWT/ACB	

RIGHT SIDE ELEVATION

NOTE: ALL WINDOWS MORE THAN 6'-Ø" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

ALLEY ELEVATION

NOTE: ALL WINDOWS MORE THAN 6'-Ø" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

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RIGHT & REAR ELEVATIONS

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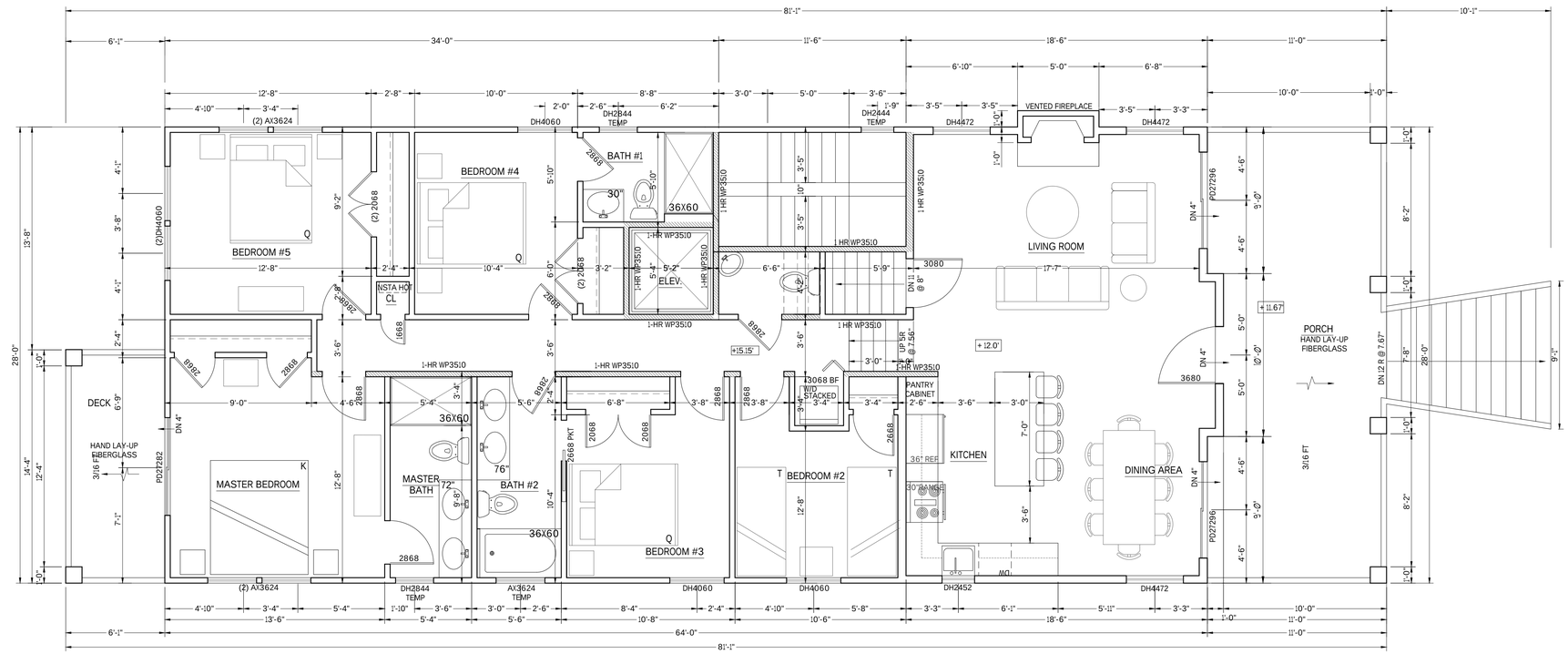
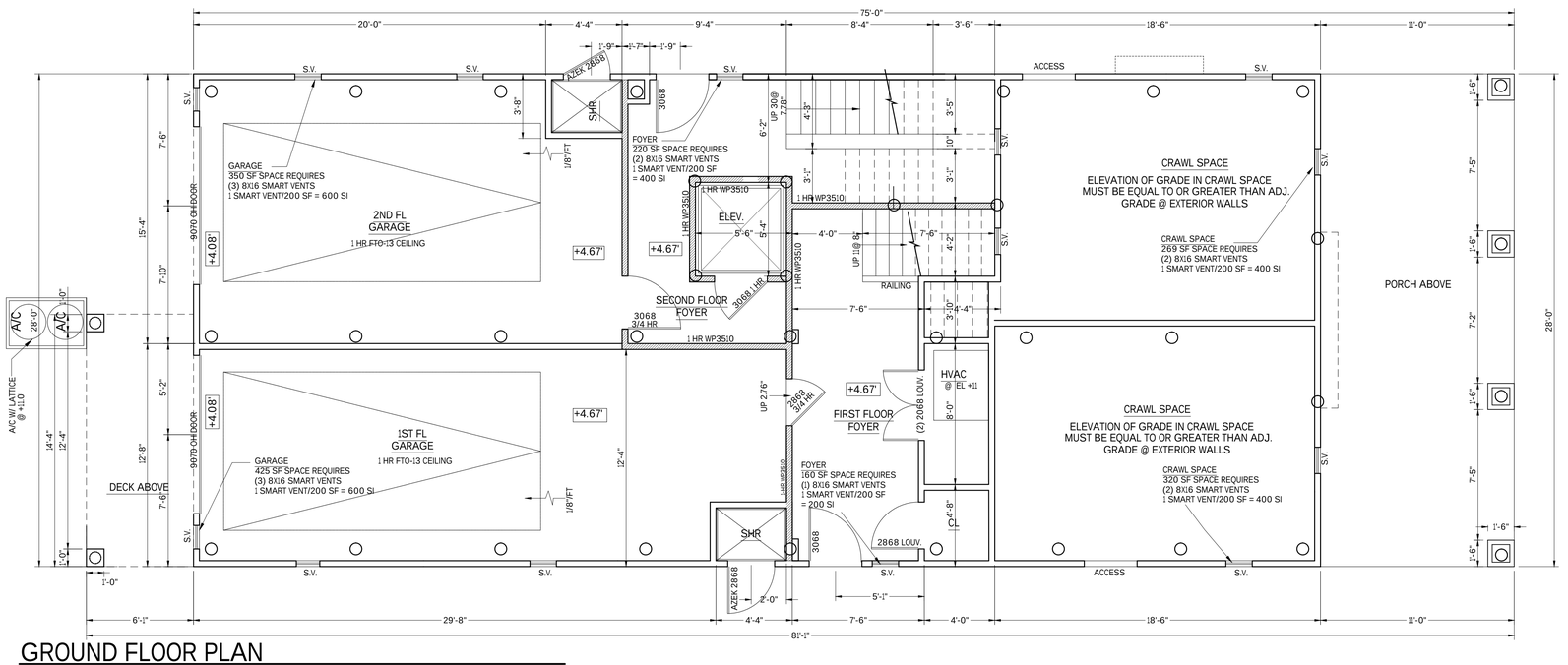


FIRST FLOOR PLAN

NOTE: ALL WINDOWS MORE THAN 6'-0" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

1,694 SF



GROUND FLOOR PLAN

ELEVATION OF GRADE IN GROUND FLOOR
MUST BE EQUAL TO OR GREATER THAN ADJ.
GRADE @ EXTERIOR WALLS

NOTE: ALL WINDOWS MORE THAN 6'-0" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

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GROUND & FIRST
FLOOR PLANS

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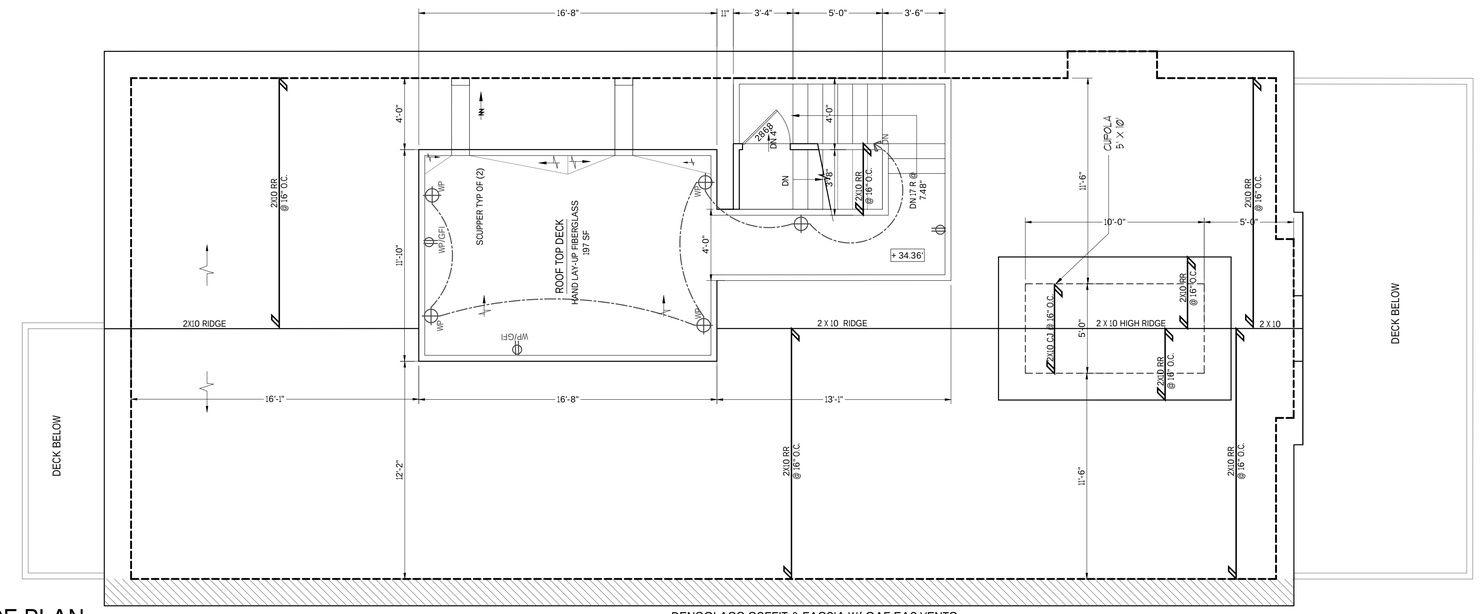
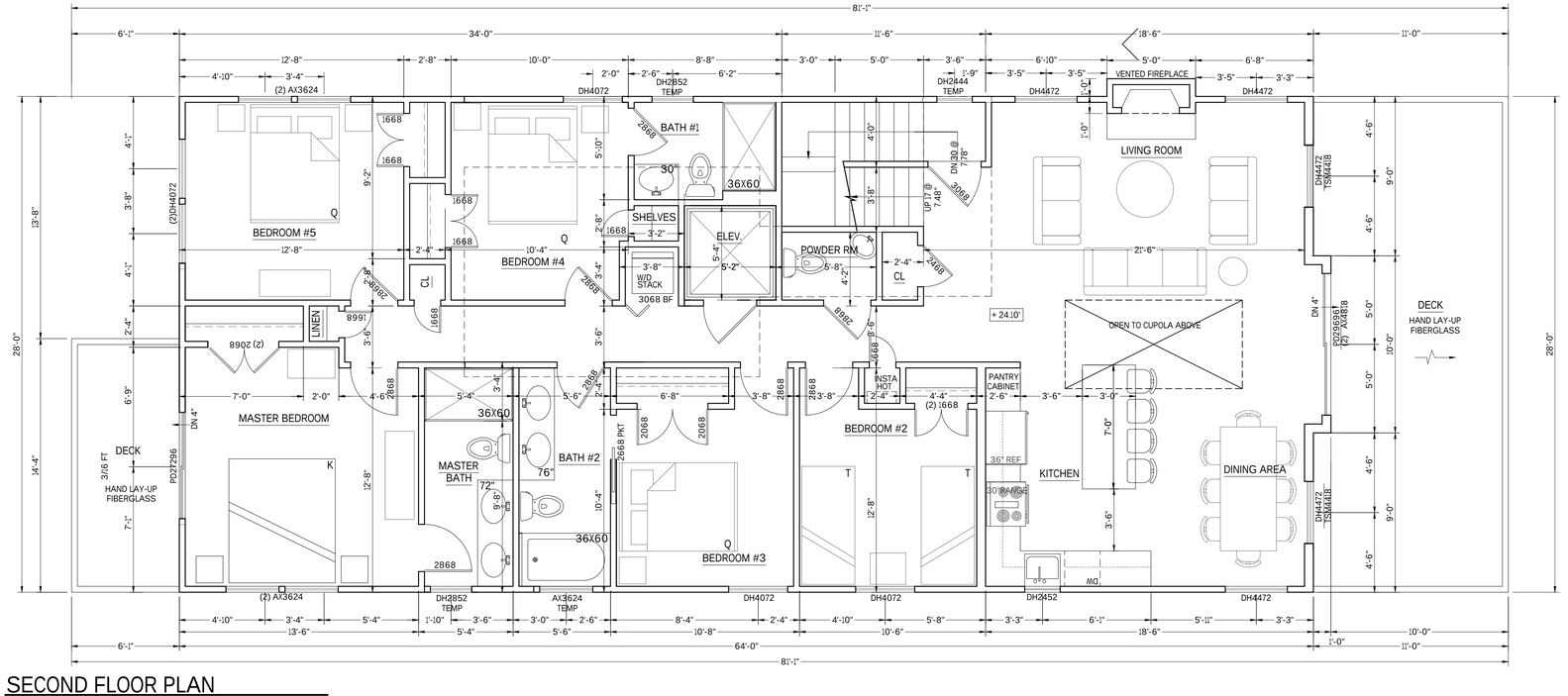


DENSGLASS SOFFIT & FASCIA W/ GAF EAC VENTS

ROOF PLAN

FLAT ROOF(LESS THAN 4 ON 12): 197 SF, 8.4%
1,053 SF/300=3.51 SF X 144= 505.44/65= 7.78= (8) GAF EACH 8"X16" SOFFIT VENTS
TOTAL= 8 VENTS X 128 = 1,024 SI/144= 7.11 SF/102= 6.9% OF SOFFITS TO BE VENTED
CUPOLA IS 50 SF / 2,068 SF (ROOF AREA) = 2.3%



SECOND FLOOR PLAN

1740 SF

NOTE: ALL WINDOWS MORE THAN 6'-0" ABOVE GRADE, DECKS OR PORCHES MUST HAVE SILLS 24 IN. AFF

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SECOND FLOOR & ROOF PLANS

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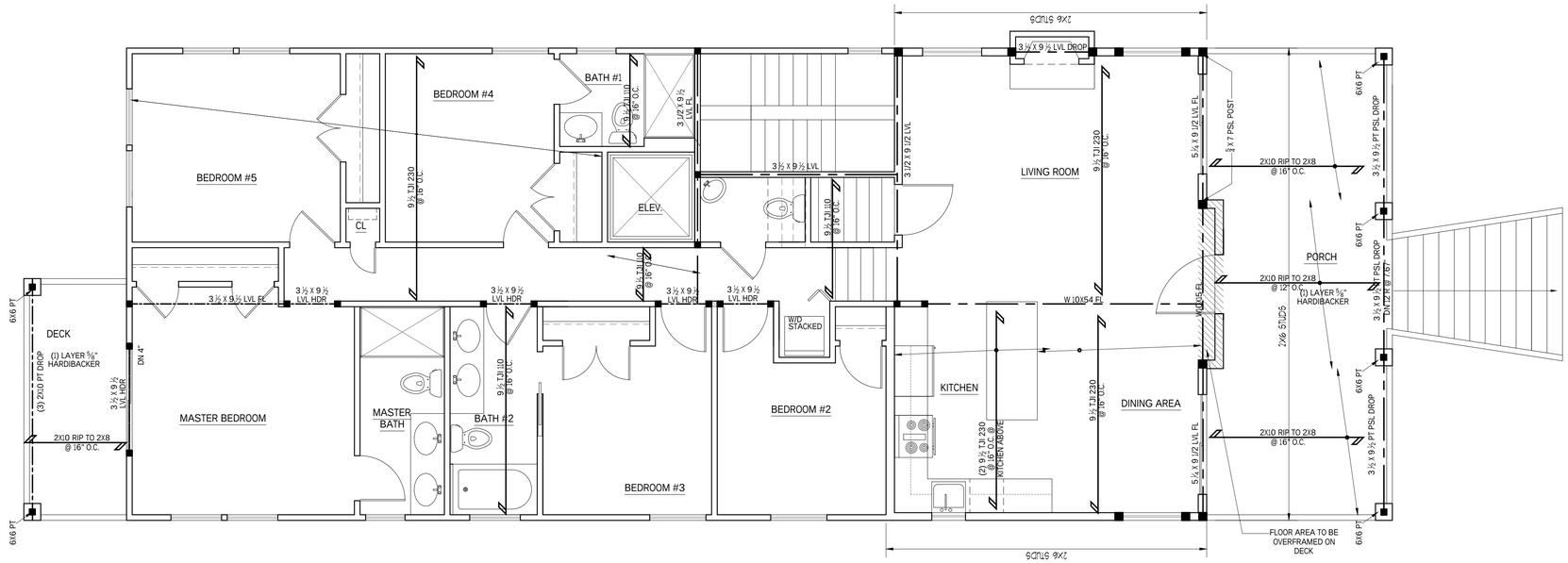
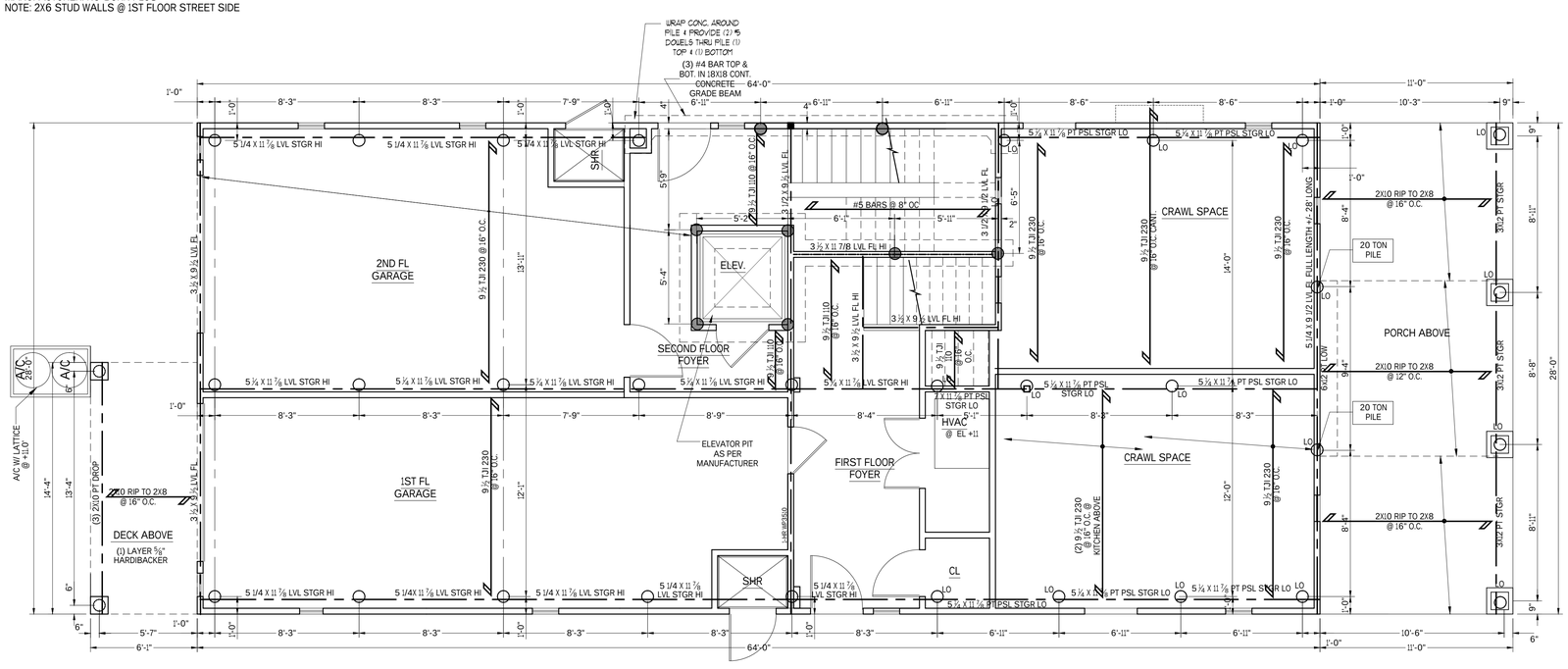


FIRST FLOOR PLAN

NOTE: PT LUMBER SHALL HAVE FIELD APPLIED COATING
MANUFACTURER: NO-BURN PLUS
NOTE: 2X6 STUD WALLS @ 1ST FLOOR STREET SIDE

1,694 SF



GROUND FLOOR PLAN

NOTE: PT LUMBER SHALL HAVE FIELD APPLIED COATING
MANUFACTURER: NO-BURN PLUS OR SAFE-T-GUARD BY FIRE TECT.

POST LEGEND
- POST FROM ABOVE
- MIN (3) 2X WALL THICKNESS UNLESS OTHERWISE NOTED

PILING LEGEND
- PILE STRINGER
- PILE GRADE BEAM

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GROUND & 1ST FLOOR
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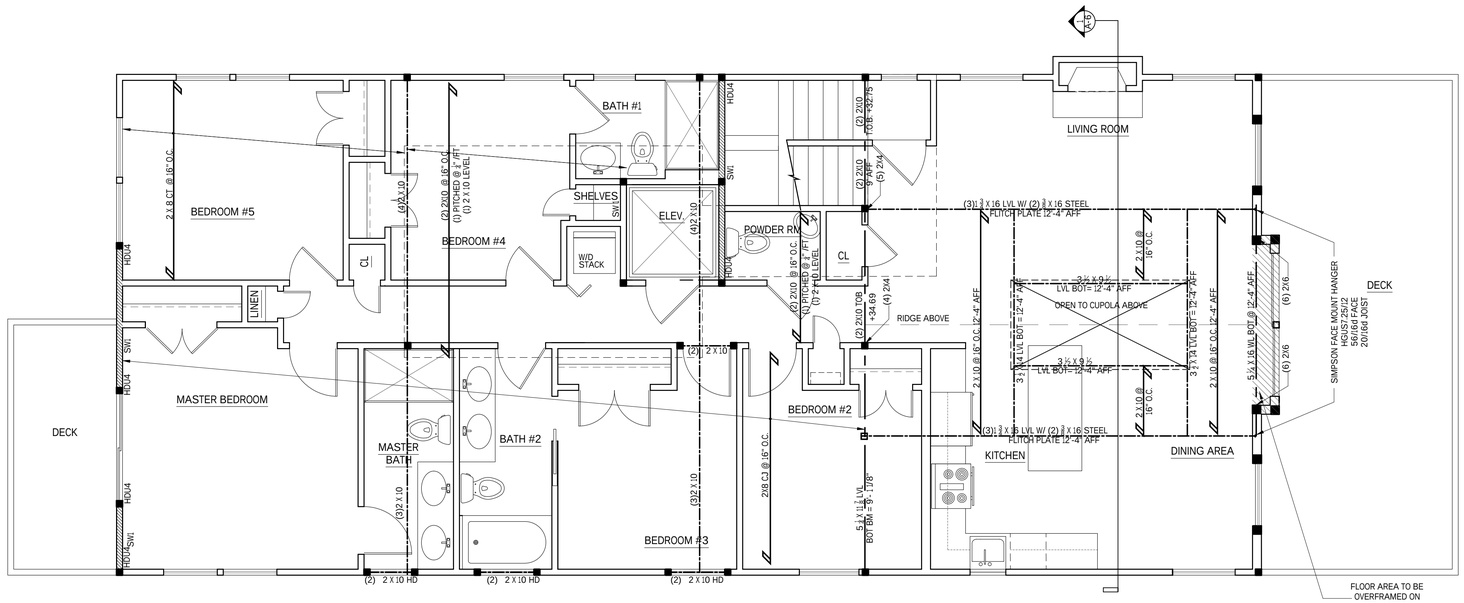
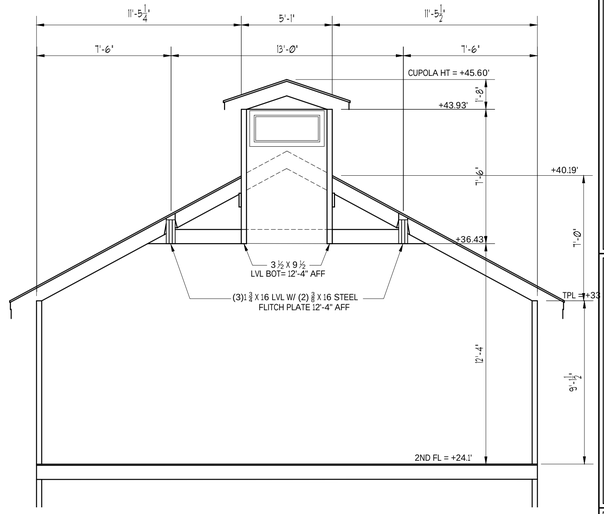


SECOND FLOOR PLAN

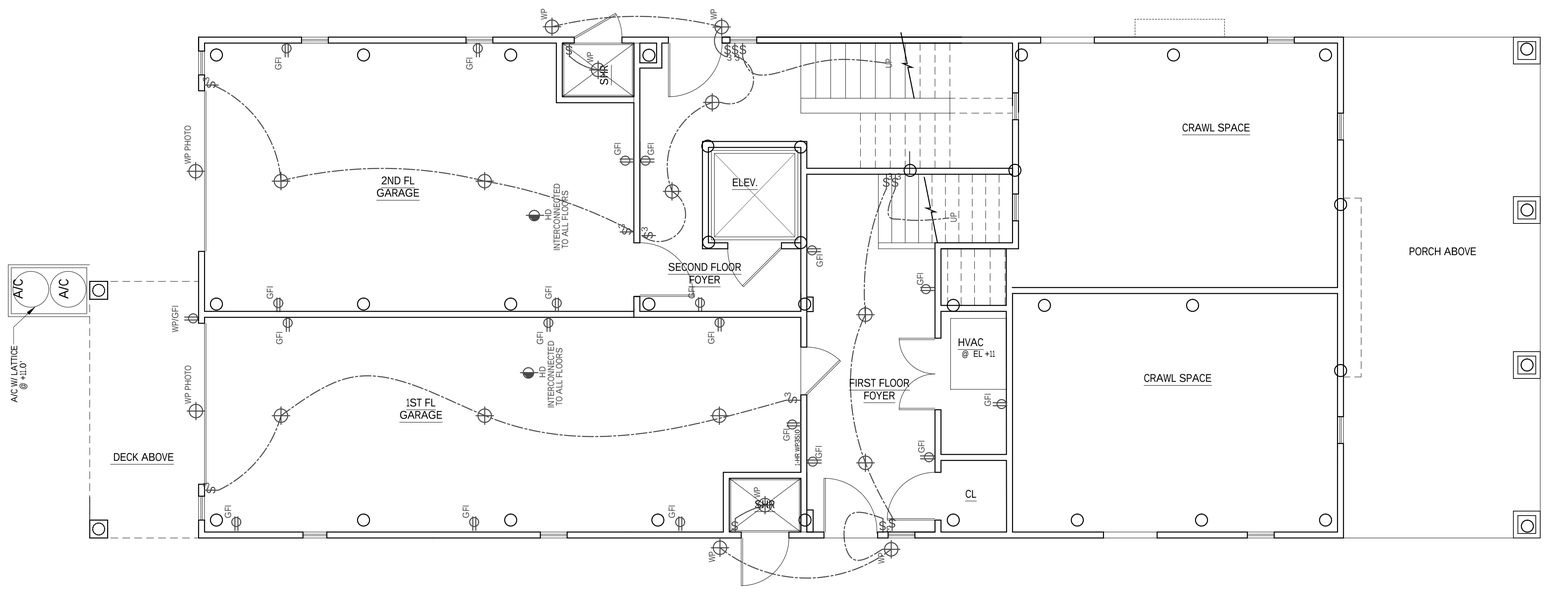
NOTE: PT LUMBER SHALL HAVE FIELD APPLIED COATING
MANUFACTURER: NO-BURN PLUS

1740 SF



1/A-6 SECTION @ CUPOLA

1/4"=1'



GROUND FLOOR PLAN

NOTE:
- ALL CEILING FANS TO HAVE LIGHTS.
- SD'S MUST BE LOCATED MIN OF 36" AWAY FROM TIPS OF FAN BLADES, BATHROOM DOORS W/ TUB / SHOWER, & HVAC SUPPLY OUTLETS, TYP.
- CARBON MONOXIDE ALARMS / DETECTORS, WHERE REQUIRED, SHALL BE INSTALLED NO MORE THAN 10'-0" FROM ALL SLEEPING ROOMS

ELECTRICAL LEGEND

- ELECTRIC FAN (EF)
- CABLE (C)
- SMOKE DETECTOR (SD)
- SMOKE DETECTOR & CARBON MONOXIDE (SD CM)
- ELECTRIC SWITCH ($)
- OUTLET
- FLOOR OUTLET
- GFI OUTLET (GFI)
- WATERPROOF GFI OUTLET (WP GFI)
- LIGHT
- PENDANT LIGHT (P)
- WATERPROOF LIGHT (WP)
- CHANDELIER
- FAN
- FAN WITH LIGHT

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2ND FLOOR
STRUCTURAL &
GROUND FLOOR
ELECTRICAL PLANS

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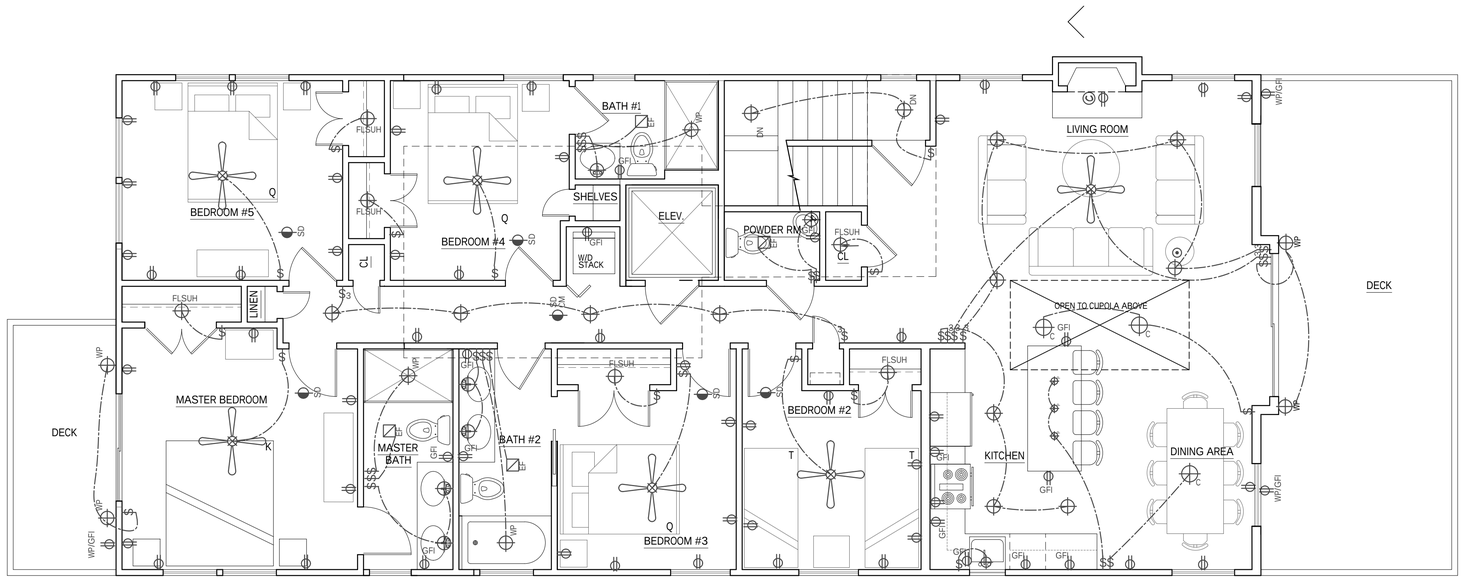
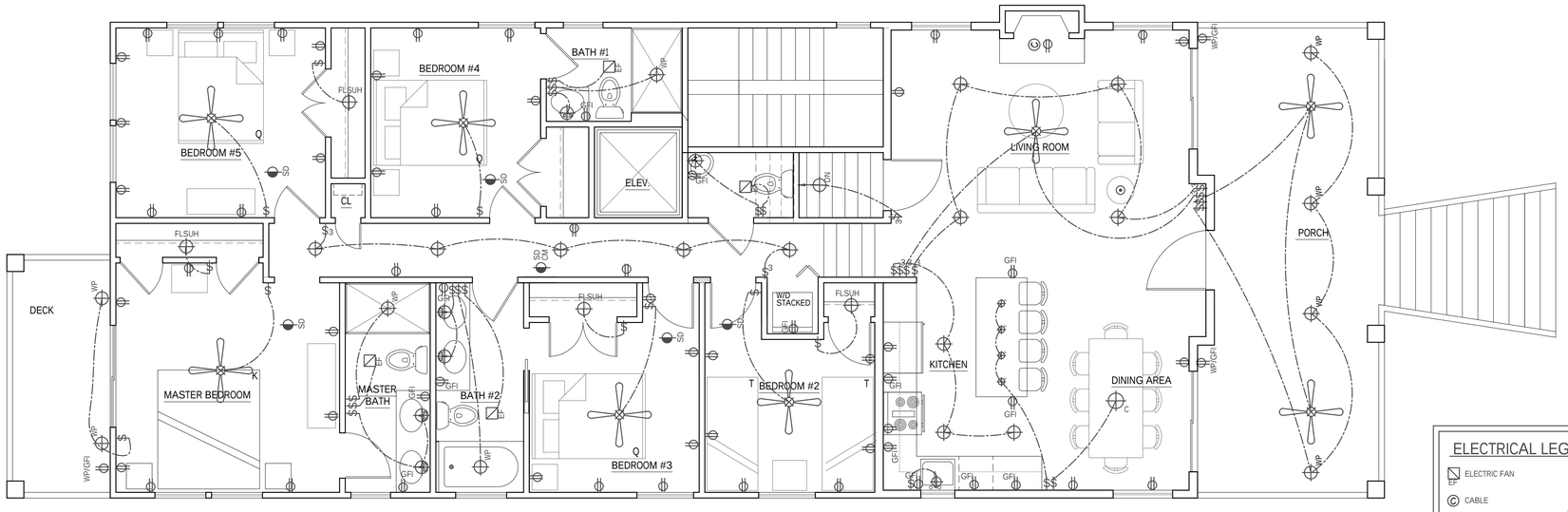


SECOND FLOOR PLAN

1740 SF

NOTE:
- ALL CEILING FANS TO HAVE LIGHTS.
- SD's MUST BE LOCATED MIN OF 36" AWAY FROM TIPS OF FAN BLADES,
BATHROOM DOORS W/ TUB / SHOWER, 4 HVAC SUPPLY OUTLETS, TYP.
- CARBON MONOXIDE ALARMS / DETECTORS, WHERE REQUIRED, SHALL BE
INSTALLED NO MORE THAN 10'-0" FROM ALL SLEEPING ROOMS



FIRST FLOOR PLAN

1,694 SF

NOTE:
- ALL CEILING FANS TO HAVE LIGHTS.
- SD's MUST BE LOCATED MIN OF 36" AWAY FROM TIPS OF FAN BLADES,
BATHROOM DOORS W/ TUB / SHOWER, 4 HVAC SUPPLY OUTLETS, TYP.
- CARBON MONOXIDE ALARMS / DETECTORS, WHERE REQUIRED, SHALL BE
INSTALLED NO MORE THAN 10'-0" FROM ALL SLEEPING ROOMS

ELECTRICAL LEGEND

- ELECTRIC FAN
- CABLE
- SMOKE DETECTOR (SD)
- SMOKE DETECTOR & CARBON MONOXIDE (SD CM)
- ELECTRIC SWITCH
- OUTLET
- FLOOR OUTLET
- GFI OUTLET
- WATERPROOF GFI OUTLET (WP/GFI)
- LIGHT
- PENDANT LIGHT (P)
- WATERPROOF LIGHT (WP)
- CHANDELIER
- FAN
- FAN WITH LIGHT

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1ST & 2ND FLOOR
ELECTRICAL PLANS

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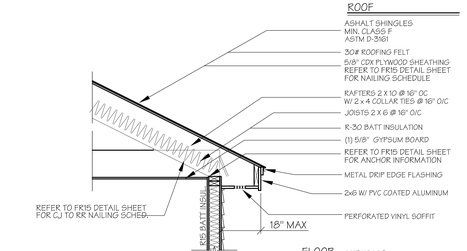

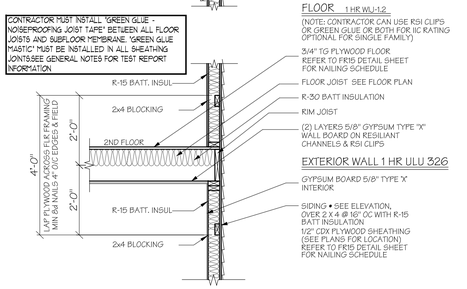

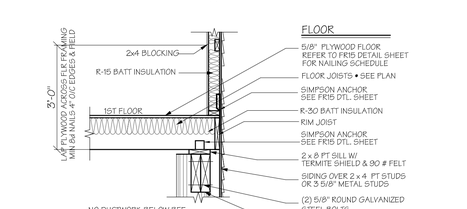

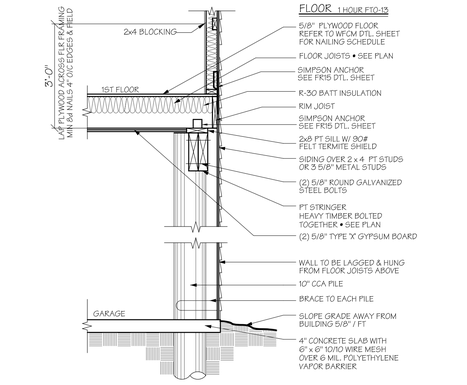

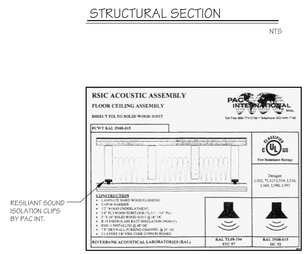

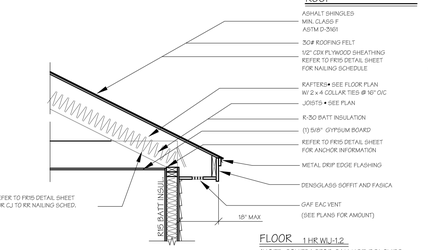

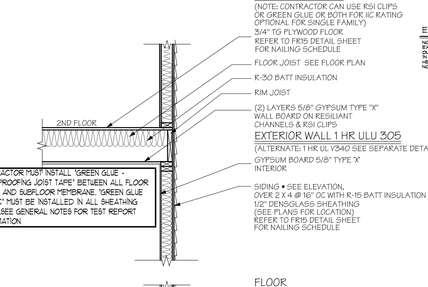

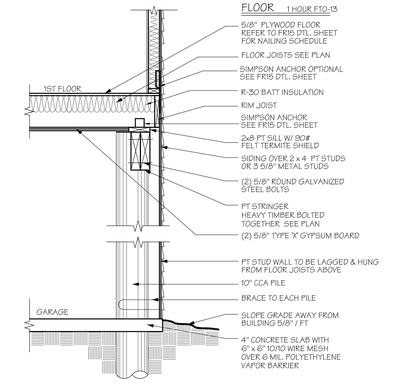

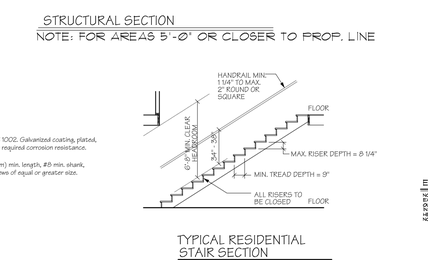

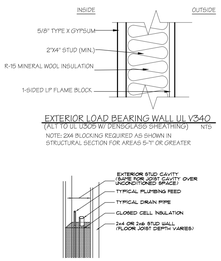

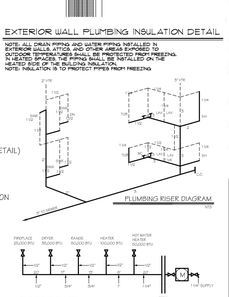

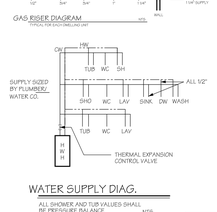

General Notes and Specifications

All Construction shall conform to the current: Uniform Construction Code, 2018 International Residential Code New Jersey Edition, 2018 International Plumbing Code, 2018 International Mechanical Code, 2017 NEC, WFCM for One and Two Family Dwellings, Local Ordinances and FEMA Flood Regulations.

Drawings and Design are the property of the architect and shall not be reproduced without expressed written consent of the architect.

Contractor shall check all dimensions and verify all existing conditions before proceeding with the work. The contractor is responsible to, immediately upon discovery, report to the Architect any omissions, inadvertent exclusions and inconsistencies within these documents. The Architect shall be notified, immediately, of any changes to the plans as specified. Any deviations from these plans as specified is strictly prohibited and must be coordinated through the Architect. DO NOT SCALE DRAWINGS.

Shop Drawing Submittal

The contractor is required to submit to the Architect for approval all shop drawings related to the design. Fabrication and installation of any material and equipment prior to the approval of shop drawings not permitted.

Dimensions

All dimensions are to be confirmed by the builder prior to commencing work. Any deviations or discrepancies are to be reported to the architect before proceeding. The builder's attention is specifically addressed to the height limitation established by the drawing.

Windows and Door Glazing

(a) Type and Manufacture - Viwinco S-Series or equal
(b) All exterior windows shall be complete with insulating glass and insect screens.
(c) At least one bedroom window shall exceed 5.7 sf net at egress area per code with maximum height of 44" above finished floor, net clear height opening of 24" and net clear width opening of 20". All egress windows must maintain a minimum 24" height to the sill from the interior finish floor for all windows that exceed a height of 84" from the window sill to the exterior grade or deck below.

Doors

(a) All exterior doors shall be flashed top and bottom, caulked, and weather-stripped and ermit thresholds provided.
(b) All interior doors to 1" undercut.
(c) Safety glass shall be used in all doors as required in the 2015 IRC section 308.4 and as noted on the drawings.
(d) All doors between garage and dwelling shall be 3/4 hour minimum.
(e) All doors shall have a max. 1/2" high threshold from finish floor.
(f) All garage doors must withstand 30 dp wind loads

Flashing

Flashing provided 26 ga. Economy stainless steel (ss) flashing over all windows and doors in exterior walls. Provide 26 ga. ss pan flashing at thresholds and sills of all exterior doors. Provide 26 ga. ss flashing at ridges, valleys, and drip edges of roof. Provide termite shield on top of all foundation walls. Provide wall flashing, base, cap, thru-wall and counter flashing, etc., as required to prevent entrance of moisture and water. Provide caulking at head, jamb and sills. Caulk all vertical and horizontal joints at trim, openings and penetrations, joints, etc.

Stair Railings

Railings shall be constructed so that a 4" diameter ball cannot pass through.

Guard rails shall be capable of resisting a concentrated load of 200 lbs/ft along the top railing and a uniform load of 50 plf. Intermediate rails shall be capable of a horizontal concentrated load of 100 lbs.

Stairs

(a) All risers shall be 8 1/4" max.
(b) All treads shall be 9" min.
(c) Min. width of stairs shall be 36".
(d) Landing depth shall be min. 36".
(e) Min. head room clearance 6'- 8'.
(f) Guard rails shall be 36" high min.
(g) Handrails shall be min. 1 1/4" diameter to 2" diameter max. and shall be mounted at 34" to 38" above tread nosing.
(h) All exterior stair lumber shall be pressure treated..
(i) All risers shall be closed.

Closets

Clothes closets shall have one shelf and pole (closets over 4'0" shall have shelf support), all linen closets shall have a minimum of 5 shelves.

Fireplaces

Fireplace hearth shall be constructed of noncombustible material and shall extend 18" in front and 8" on sides of openings less than 6 sf and 20" in front and 12" on sides for openings 6 sf or larger.

Gypsum Wallboard

(a) Minimum 1/2" thickness
(b) All gypsum wallboard in bathrooms and wet areas shall be water-resistant type.
(c) Wall finishes Below BFE: Exterior wall finish shall be stucco: Interior Fire rated walls shall be Dur-O-Rock. Interior non-fire rated walls may be plaster, wonder board, or dur-o-rock.

Materials Below Base Flood Elevation

Exterior wall finishes shall be stucco: Interior fire rated walls shall be Dur-O-Rock or Hardiplank. Interior non-rated fire walls shall be plaster, wonder board, Dur-O-Rock or Handiplank up to 12" above BFE . Framing below BFE shall be PT. Insulation below BFE shall be rigid polystyrene type insulation.

Access

(a) Provide 22"x 30" minimum access to attic.
(b) Provide crawl space access 18"x 24".
(c) Provide access to plumbing fixture control valves.

Vents

(a) Attic and soffit vents shall be screened.
(b) Flood vents shall be 8"x 16" Smart Vents as per NJAC7:13-11.5(n)3
(c) All sills to Crawl Space vents must be mounted maximum 6" above adjacent grade.
(d) All ridges shall be supplied with continuous ridge vents.

Air Leakage

(a) Building must meet air leakage requirements of 2015 IECC

Anchors

(a) Sill straps are not allowed in flood zone.
(b) Anchor bolts galv. must be 5/8" diameter, 18" long, 12" from all corners and end cuts of sill plates, then at 2'-8" on center. Each sill plate shall have a minimum 2 anchors per board. All Anchor Bolts must have 3" galvanized. washers
(c) Sheathing to lap floor box horizontally and shall extend equidistant on wall above as to wall below.
(d) On barrier islands, use specified hurricane clips and anchors to hold down floor joists and roof rafters at all levels. Simpson G185 (ZMAX) or equal for interior areas and stainless steel for ALL exterior applications NO EXCEPTIONS.
(e) All anchors that are in contact with any pressure treated wood shall be stainless steel - NO EXCEPTIONS.
(f) All nails used in galvanized hardware must be galvanized and all all nails used in stainless steel hardware must be stainless steel - NO EXCEPTIONS.caulk
(g) All specified hangers, clips, ties, hold downs, etc...are "Simpson Strong-Tie" brand. Before subtituting another brand, confirm load capacities based on reliable published testing data or calculations. All substitutions from the specified hangers, clips, ties, hold downs, etc...must be submitted the Architect for evaluation and written approval prior to installation

DESIGN LIVING LOADS

Living Areas 40#/sf
Sleeping Areas 30#/sf tread
Attic Storage 20#/sf
Deck Area Same as floor served
Balcony Area Same as floor served
Wind Load 125 MPH Ultimate Load / 97 MPH Design Load

The contractor shall perform work in a safe and non-hazardous manner. Shoring and structural supports shall be securely in place prior to any demolition of walls.

Contractor is responsible to keep site and structure free from miscellaneous debris and equipment and shall maintain the same to a clean, non hazardous, workable environment.

DWELLING UNIT RATED PENETRATIONS

ALL PENETRATIONS THROUGH A FIRE RATED WALL OR FLOOR ASSEMBLY SHALL BE PROTECTED. PROTECTIONS SHALL BE WITH A DEVICE OR FIRE STOPPING WHICH HAS A MINIMUM FIRE RESISTANCE RATING WHICH IS EQUAL TO THE FIRE RATED WALL OR FLOOR ASSEMBLY BEING PENETRATED

Timber Piling Foundation

(a) Timber piles shall be of Southern Yellow Pine and shall comply with the requirements of the standard specifications for round timber piles, AWPA U 1 . Minimum allowable bending strength Fb = 2,400 psi
(b) Two test piles shall be driven at opposites ends of the structure to determine final length of piles. All piles shall be natural taper shall be full length and unspliced and shall have a minimum butt diameter of 10" (31.5") measured 36" from the end of the butt.
(c) Piles shall be CCA 0.8 PCF pressure treated as per ASTM Use Category UC4C. The tops of all cut-off piles shall be field treated with a PT preservative in accordance with AWPA M4.
(d) Piles shall be driven through all fills and organic layers until the design bearing capacity is reached as determined by the Davidson & Townsend Formula. Min. depth 10' Below MSL.
(e) All piles shall be installed plumb and in their design location.
(f) If any pile is installed out of plumb more than 2 percent of the pile length, the pile shall be rejected unless the design of the foundation can be modified to adequately resist the resulting lateral forces as determined by the Engineer.
(g) A tolerance of 3 inches from the designated location will be permitted in the installation of individual piles.
(h) Should any pile be damaged during driving or be driven outside its specified tolerance for position or stated herein, otherwise not conform with requirements, it shall be abandoned and additional pile or piles shall be furnished and installed at locations designated by the Architect at no additional cost to the Owner.
(i) All unacceptable piles shall be cut off below grade as shown on the Drawings at the location.
(j) The Contractor shall establish and locate all lines and levels and shall be responsible for the correct location and cutoffs of all piles.
(k) All hardware to be hot dipped galvanized.
(l) All bolts in piling stringer connections, after tightening bolts over washers, to be peened with a chisel in a manner not to allow removal or loosening of nuts.
(m) All piles should be driven to 12 ton capacity unless otherwise noted.
(n) Architect/Engineer of record's office or representative is required to inspect the installation of all piles and shall be present during the installation of all piles. All pile logs shall be provided to the Architect/Engineer of record's office within 5 days of completion of driving piles.
(o) The pile contractor is responsible for protecting structures in the area from vibrations caused by the driving of all piles

Electrical

(a) All electrical work to conform with the 2017 National Electrical Code, latest revisions.
(b) Electrical contractor shall verify and check all conditions and equipment prior to proceeding with work. Any discrepancies shall be brought to the attention of the Architect. See other drawings for applicable information.
(c) Electrical contractor shall coordinate his work with the Atlantic Electric Co., and shall cooperate with them in determining loads, hookups, temporary service, etc.
(d) Contractor shall provide smoke detector of approved design in each level in locations as recommended by manufacturer and/or as shown on plans. Wire smoke detectors so that alarm signal can be relayed to all locations.
(e) All wire shall be a minimum No. 12 AWG Type THW copper rated at 75 degrees C and 167 degrees F to all kitchens, baths, appliances and equipment. Provide conduit where required by MEC (min. 1/2" conduit) home run circuits more than 75' from panel board shall be No. 10 AWG or larger as required. Remaining wiring shall be 14 AWG Type THW copper icreased to 12 AWG on homeruns greater than 75'.
(f) All bath and powder room convenience outlets shall be ground fault circuit interrupt type. Exterior outlets shall be wired to a ground fault circuit breaker and weatherproof. No more than 2 GFI outlets per 20 amp circuit.
(g) Where switches, receptacles and other outlets are shown back-to-back in interior partitions, they shall be staggered to prevent the transmission of sound through partition± when in fire rated wall assemblies, locate each outlet in a separate and adjacent stud space to avoid openings in both faces of fire rated wall in a single stud space.
(h) Do not scale drawings. Verify location of equipment and fixtures with other trades and at the job site.
(i) Circuit the lighting and receptacles on different circuits so that each space contains parts of at least two circuits.
(j) Provide a maximum of 8 convenience outlets on any one 20 amp circuit, maximum 6 on any one 15 amp circuit, and maximum 1 kitchen appliance receptacles on any one 20 amp circuit.
(k) See panel summary for individual outlet circuits.
(l) Telephone and computer outlets shall be prewired during construction with wall outlets.
(m) All lighting fixture selections and final locations to be by Owner.
(n) All reccessed lights shall be rated for insulation contact.
(o) All reccessed light fixtures housings in fire rated floor faming shall be U.L rated to match the required fire rating within said floor.

PANEL SUMMARY

120/240 volt, 200 amp, single phase, 3 wire

Description	Poles
Main Breaker	200/2
Range	60/2
A.C. Condensing Unit	30/2
Dryer	30/2
Microwave	20/1
Washer	20/1
Dishwasher	20/1
Refrigerator	20/1
Furnace	20/1
Waterheater (Optional)	20/1
General Lighting, outlets, etc.	20/1
Spares (2)	20/1
Total	30

HVAC

(a) All mechanical work and systems shall conform to 2018 IMC Code and to all other applicable codes and standards, latest revisions.
(b) Mechanical contractor shall verify and check all conditions, dimensions, and equipment installation prior to proceeding with the work.
(c) Mechanical contractor shall coordinate his work with all other trades.
(d) See other drawings for applicable information.
(e) Mechanical contractor shall balance entire system for proper and adequate heating/cooling of each space and provide all testing and adjustments.
(f) All piping ducts, etc. shall be run between joists, and/or between floor structure and ceiling in furred out spaces.
(g) Provide minimum 1" thick insulation around all pipes and/or ducts in unheated spaces.
(h) Provide flexible connections between duct work and air handling unit.
(i) Provide turning vanes at all 90 degree bends in duct work.
(j) All joints in duct work shall be made air tight.
(k) All registers shall have dampers and be fully adjustable.
(l) All natural gas piping shall be in accordance with AGA Standards and all applicable codes and standards.
(m) All breeching shall be of type and manufacture approved by heating unit manufacturer for specific unit provided.
(n) Fire damper approved by applicable codes shall be provided in all ducts penetrating fire-rated assemblies and/or required by codes.
(o) No duct shall be located below Base Flood Elevation.
(p) HVAC CONTRACTOR SHALL PROVIDE DUCT PLANS FOR PERMIT SUBMISSION. PLANS TO INCLUDE EQUIPMENT, DISTRIBUTION LOCATION, SIZE AND FLOW, LOCATION OF DAMPERS AND ALL MATERIALS
(q) HVAC Equipment condensate drains shall be min. $\frac{3}{4}$" pvc and shall drain to exterior of building.

Plumbing

(a) All plumbing work shall conform with the 2018 National Standard Plumbing Code, latest revisions.
(b) Plumbing contractor shall verify all conditions, equipment and fixture installations prior to proceeding with work. No cutting or nothing of wood joists, beams, or trusses shall be permitted. Any discrepancies report to architect prior to construction.
(c) Plumbing work shall be coordinated with all other trades.
(d) See also floor plans for applicable information.
(e) All water piping shall be copper or approved plastic.
(f) Provide shock absorbers at clothes washers and as required.
(g) Water piping shall be sloped to allow the entire system to be drained through drain vavles.
(h) Soil lines, vents, branch lines and stacks shall be PVC or cast iron "No Hub".
(i) All penetrations through fire rated assemblies shall be tightly packed-fire stopped in accordance with NFPA.
(j) All water piping in unheated areas shall be insulated.
(k) Each fixture shall be valved separately.
(l) All exterior hose bibbs shall be freezeproof type.
(m) All fixtures and colors shall be selected by Owner.
(n) Do not scale drawings. (drawings are schematic only)
(o) Minimum slope on soil/waste pipe 1/4" per foot.
(p) All water piping shall be sloped to allow the entire system to be drained thru drain valves which shall be placed at all low points in system. All utility lines into building and all soil/waste lines out of building shall be sleeved with proper caulking to prevent the seepage into the building of gas or other fumes.
(q) All piping in unheated area shall be protected from freezing. The stud cavity shall be filled fully with foam (closed cell, 2lb/cu ft, R factor is 7 per inch) Where possible 2x6 studs shall be utilized to to accommodate a minimum R-19. Incorporation of a heat source is preferred by placing adjacent ductwork or furnaces. Absent that heat tracing tape should be applied to all water supply lines.
(r) All drain piping installed in exterior walls, attics, and other areas exposed to outdoor temperatures shall be protected from freezing with pipe wrap by Reflectix R3 or equal.
(s) All condensate piping shall drain to a sump pit or to the exterior of the building above DFE.

Plumbing Schedule

Fixture	HW	CW	Waste	Remarks
Water Closet-----		1/2"	3"	
Lavatory---------	1/2"	1/2"	1 1/4"	
Tub--------------	1/2"	1/2"	1 1/2"	
Shower-----------	1/2"	1/2"	2"	
Sink-------------	1/2"	1/2"	1 1/2"	
Dishwasher-------	1/2"	--	--	Connect drain to sink drain
Washer----------	1/2"	1/2"	2"	
Hose Bibbs------	--	1/2"	--	Vacuum break and frost-free

Concrete

(a) Concrete shall conform to ASTM 694.69 with a minimum 28-day comprehensive strength of 3000 PSI.
(b) Reinforced Concrete shall be done in accordance with ACI Publication 318-77, all reinforcing steel shall conform to ASTM A-615 grade 60.
(c) Concrete slab on grade reinforcing can be eliminated in lieu of utilizing fiberglass reinforced concrete (fibermesh)

Concrete Masonry Units

(a) All concrete masonry units shall conform to ASTM C90 (Hollow Load Bearing), C129 (Hollow Non-Load Bearing) or C145 (Solid Load Bearing). All mortar Grade "M".

Wood Framing

Wood spans of structural wood members are based on a minimum fiber stress of 675 = fb and a minimum elastic modulus of 1,300,00 (E) such as Hem-Fir No. 2 or better. No utility grade or non stress grade lumber may be used structurally. Kiln Dried framing to be used through out.
(a) Headers shall be (2) 2"x 10" unless otherwise noted.(
(b) Bridging Joists shall have one row of bridging (1"x 3", metal or solid) for every 8'0" of span. Ceiling joists may have strong backs in lieu of bridging.
(c) All lumber and sill plates along with wall studs and framing lumber in contact with CMU and/or concrete shall be pressure treated in accordance with AWPA M4.
(d) Collar ties shall be 32" on center.
(e) Firestopping shall be at, but not limited to, kitchen cabinets, walls, mansard roofs, soffits and any concealed space.
(f) All roof rafters shall be fastened with metal tie-downs by Simpson as specified.
(g) All field cut ends, notches, and drill holes in all PT lumber shall be field treated with a wood preservative in accordance with AWPA M4.
(h) All posts which support beams loads shall be continuous through all floor framing. Solid wood packing of equal material and size of supported posts shall be installed within the floor framing cavity at all post locations, including windows and doors.
(i) All FRT lumber may have factory applied coating or may have field applied coating by No-Burn

IMPACT INSULATION CLASS RATINGS (IIC) MIN CODE REQUIRED 45

GREEN GLUE NOISEPROOFING JOIST TAPE PROVIDES AN IIC OF 44 IN ACCORDANCE WITH TEST OL09-0613 BY ORFIELD LABORATORIES INC IN COMPLIANCE WITH ASTM E 90 AND ASTM E 492. THIS TEST WAS PERFORMED WITH 1 LAYER OF GYPSUM BOARD CEILING U.S. GYPSUM FC 5120 1 HR FLOOR.

AN ADDITIONAL INCREASE TO THE IIC RATING OF TWO (2) IS PERMITTED IN WHEN THE CEILING MEMBRAIN IS DOUBLED IN THICKNESS IN ACCORDANCE WITH A REPORT PREPARED BY "CONSTRUCTION TECHNOLOGY" ENTITLED "CONTROLLING THE TRANSMISSION OF IMPACT SOUND THROUGH FLOORS" UPDATE No 35 DATED DECEMBER 1999, PAGE 6, PARAGRAPH 2. THIS INCREASE OF 2 ADDED TO THE TESTED IIC RATING OF 44 EXCEEDS THE CODE REQUIRED MINIMUM OF 45.

CONTRACTOR MUST INSTALL "GREEN GLUE - NOISEPROOFING JOIST TAPE" BETWEEN ALL FLOOR JOISTS AND SUBFLOOR MEMBRANE. "GREEN GLUE MASTIC" MUST BE INSTALLED IN ALL SHEATHING JOINTS.SEE GENERAL NOTES FOR TEST REPORT INFORMATION

STRUCTURAL SECTION

NTS

STRUCTURAL SECTION

NTS

RESILIANT SOUND ISOLATION CLIPS BY PAC INT.

CONTRACTOR MUST INSTALL "GREEN GLUE - NOISEPROOFING JOIST TAPE" BETWEEN ALL FLOOR JOISTS AND SUBFLOOR MEMBRANE. "GREEN GLUE MASTIC" MUST BE INSTALLED IN ALL SHEATHING JOINTS.SEE GENERAL NOTES FOR TEST REPORT INFORMATION

CRAWL STRUCTURAL SECTION

NOTE: FOR AREAS 5'-0" OR CLOSER TO PROP. LINE

STRUCTURAL SECTION

NOTE: FOR AREAS 5'-0" OR CLOSER TO PROP. LINE

CERAMIC TILE TEST FCWT-RAL-IN08-018 = IIC 56
HARDWOOD TEST FEWT-RAL-IN09-012 = IIC 54
SHEET VINYL TEST FEWT-RAL-IN08-016 = IIC 52

C. MECHANICAL FASTENERS:\
1. Type: Self-drilling, self-tapping screws. Steel, ASTM C 1002. Galvanized coating, plated, or oil-phosphate coated. ASTM B 633, as needed for required corrosion resistance.
2. Resilient Sound Isolation Clip Connections:
a. To Wood Framing Members: Screws 2 $\frac{1}{2}$ in. (63mm) min. length, #8 min. shank, Type W (course thread), bugle- or hex-head screws of equal or greater size.
1) Minimum Pullout and Shear: 108 pounds

TYPICAL RESIDENTIAL STAIR SECTION

EXTERIOR LOAD BEARING WALL UL V340

(ALT TO UL U305 W/ DENSGLASS SHEATHING) NTS

NOTE: 2X4 BLOCKING REQUIRED AS SHOWN IN STRUCTURAL SECTION FOR AREAS 5'-0" OR GREATER

EXTERIOR WALL PLUMBING INSULATION DETAIL

NOTE: ALL DRAIN PIPING AND WATER PIPING INSTALLED IN EXTERIOR WALLS, ATTICS, AND OTHER AREAS EXPOSED TO OUTDOOR TEMPERATURES SHALL BE PROTECTED FROM FREEZING. IN HEATED SPACES, THE PIPING SHALL BE INSTALLED ON THE HEATED SIDE OF THE BUILDING INSULATION.
NOTE: INSULATION IS TO PROTECT PIPES FROM FREEZING

PLUMBING RISER DIAGRAM

NTS

GAS RISER DIAGRAM

WATER SUPPLY DIAG.

ALL SHOWER AND TUB VALVES SHALL BE PRESSURE BALANCE

NTS

SOFFIT DETAIL FOR RATED FLOOR/CEILING

HVAC AIR SUPPLY TO FLOOR BELOW

SOFFIT DETAIL FOR RATED FLOOR/CEILING

HVAC AIR SUPPLY TO FLOOR ABOVE

DETAIL FOR RATED FLOOR/CEILING

HVAC AIR SUPPLY TO FLOOR BELOW

GROUNDING DETAIL

NTS

EXTERIOR WALL PLUMBING INSULATION DETAIL

NOTE: ALL DRAIN PIPING AND WATER PIPING INSTALLED IN EXTERIOR WALLS, ATTICS, AND OTHER AREAS EXPOSED TO OUTDOOR TEMPERATURES SHALL BE PROTECTED FROM FREEZING. IN HEATED SPACES, THE PIPING SHALL BE INSTALLED ON THE HEATED SIDE OF THE BUILDING INSULATION.
NOTE: INSULATION IS TO PROTECT PIPES FROM FREEZING

Design No. U305
Bearing Wall Rating — 1 HR.
Finish Rating — See Items 3, 3A, and 3D.
STC Rating - 56 (See Item 8)

DESIGN #U305
HORIZONTAL WALL SECTION
SCALE: 1"=1'-0"

1. Wood Studs — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.
2. Joints and Nail-Heads — Exposed or covered with fiber tape and joint compound, except where required for specific edge configuration. For tapered, rounded-edge gypsum board, joints covered with joint compound or fiber tape and joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Nailheads exposed or covered with joint compound.
3. Gypsum Board* — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
3A. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last srcrew 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally. Finished Rating is 24 minutes.

4. **Batts and Blankets*** — (Required for use with Wall and Partition Facings and Accessories Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

*Bearing the UL Classification Mark

Design No. U326
(Exposed to Fire on Interior Face Only)
Bearing Wall Rating—1 HR.
Finish Rating – 25 Min.

1. **Wood Studs**—Nom 2 by 4 in., spaced 16 in. O.C.
2. **Wallboard, Gypsum***—5/8 in. thick, 4 ft wide, applied vertically. Attached to studs with 1-3/4 in. long steel drywall nails with 0.102 in. diameter shank and 0.29 in. diameter head, spaced 7 in. O.C. Vertical joints located over studs. Joints covered with paper tape and joint compound. Nail heads covered with joint compound. See Wallboard, Gypsum (CKNX) category for names of manufacturers.
3. **Plywood Sheathing**—1/2 in. thick, 4 ft wide, APA Rated Sheathing, interior with exterior glue conforming to PS 1-74. Applied vertically with vertical joints located over studs and staggered 16 in. min from wallboard joints. Horizontal joints are backed with nom 2 by 4 in. wood backing. Attached to the studs with 2 in. long galvanized roofing nails with a 0.122 in. diameter shank and a 3/8 in. diameter head, spaced 6 in. O.C. at the perimeter of the sheet and 12 in. O.C. in the field.
4. **Foamed Plastic***—min 1 in. thick, supplied in 4 by 8 ft sheets. Applied vertically with vertical joints located over studs. Attached to studs with 2 in. long galvanized roofing nails with a 0.122 in. diameter shank and a 3/8 in. diameter head, spaced 12 in. O.C.
   - **Amoco Foam Products Co.**
   - **Celfortec**
   - **Dow Chemical U.S.A.**
   - **Koppers Co., Inc.**
   - **UC Industries**
5. **Insulation**—3½ in. thick kraft paper faced glass fiber insulation. Supplied in rolls 15 in. wide. Density to be nom 0.75 lb/ft³. Placed in stud cavities and secured to studs with steel staples spaced nom 12 in. O.C.

*Bearing the UL Classification Marking

GA FILE NO. WP 3510

1 HOUR FIRE

35 to 39 STC SOUND

GYPSUM WALLBOARD, WOOD STUDS

One layer 5/8" type X gypsum wallboard or veneer base applied parallel with or at right angles to each side of 2 x 4 wood studs spaced 24" o.c. with 6d coated nails 1 7/8" long, 0.0915" shank, 1/4" heads, 7" o.c. Wallboard nailed to top and bottom plates at 7" o.c. Stagger joints 24" o.c. each side. **(LOAD-BEARING)**

Thickness: 4 7/8"
Approx. Weight: 7 psf
Fire Test: UL R3501-47, -48, 9-17-65, Design U309
UL R1319-129, 7-22-70
Design U314
Sound Test: NGC 2404, 10-14-70

WIJ-1.2 One-Hour Fire-Resistive Ceiling Assembly
Floor[a]/Ceiling - 100% Design Load - 1 Hour Rating - ASTM E 119 / NFPA 251

1. Floor Topping (optional, not shown): Gypsum concrete, lightweight or normal concrete topping.
2. Floor Sheathing: Minimum 23/32 inch thick tongue-and-groove wood sheathing (Exposure 1). Installed per code requirements with minimum 8d common nails, and glued to joist top flanges with AFG-01 construction adhesive.
3. Insulation: Minimum 1-1/2 inch thick mineral fiber insulation batts – 2.5 pcf (nominal), supported by resilient channels.
4. Structural Members: Wood I-joists spaced a maximum of 24 inches on center.
Minimum I-joist flange depth: 1-1/2 inches — Minimum I-joist flange area: 5.25 inches^2
Minimum I-joist web thickness: 7/16 inch — Minimum I-joist depth: 9-1/4 inches
5. Resilient Channels: Minimum 0.019 inch thick galvanized steel resilient channels, attached perpendicular to I-joists using 1-5/8 inch long drywall screws. Resilient channels spaced 16 inches on center and doubled at each wallboard end joint extending to the next joist.
6. Gypsum Wallboard: Minimum 5/8 inch thick Type C gypsum wallboard installed with long dimension perpendicular to resilient channels and fastened to each channel with minimum 1 inch long Type S drywall screws. Fasteners spaced 12 inches on center in the field of the wallboard, 8 inches on center at wallboard end joints, and 3/4 inches from panel edges and ends. End joints of wallboard staggered.
7. Finish System (not shown): Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.

Fire Test conducted at Gold Bond Building Products Research Center — June 19, 1984
Third Party Witness: Warnock Hersey International, Inc. — Report No: WHI-694-0159

Without Gypsum Concrete				With Gypsum Concrete			
Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad	
STC	IIC	STC	IIC	STC	IIC	STC	IIC
51 [b]	46 [b]	51 [b]	64 [b]	60 [b]	50 [b]	60 [b]	65 [b]

[a] This assembly may also be used in a fire-rated roof/ceiling application, but only when constructed exactly as described.
[b] STC and IIC values estimated by David L. Adams Associates, Inc

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(2) LAYERS OF 5/8" TYPE "X" GYPSUM BOARD. BASE LAYER TO BE APPLIED AT RIGHT ANGLES TO THE JOISTS WITH 1 1/4" MINIMUM DRYWALL SCREWS OR NAILS AT 24" OC. FACE LAYER IS TO BE APPLIED AT RIGHT ANGLES TO THE JOISTS WITH 1 7/8" MINIMUM DRYWALL SCREWS OR NAILS AT 12" OC. FACE LAYER JOISTS SHALL BE TAPED AND SPACKELED WITH A MINIMUM ONE LAYER. PROVIDED R-30 BATT INSULATION.

FT013 FLOOR/CEILING — FT013

NTS

Elevator Pile Cap Configuration Details

PILE AND GRADE BEAM

DETAILS & NOTES

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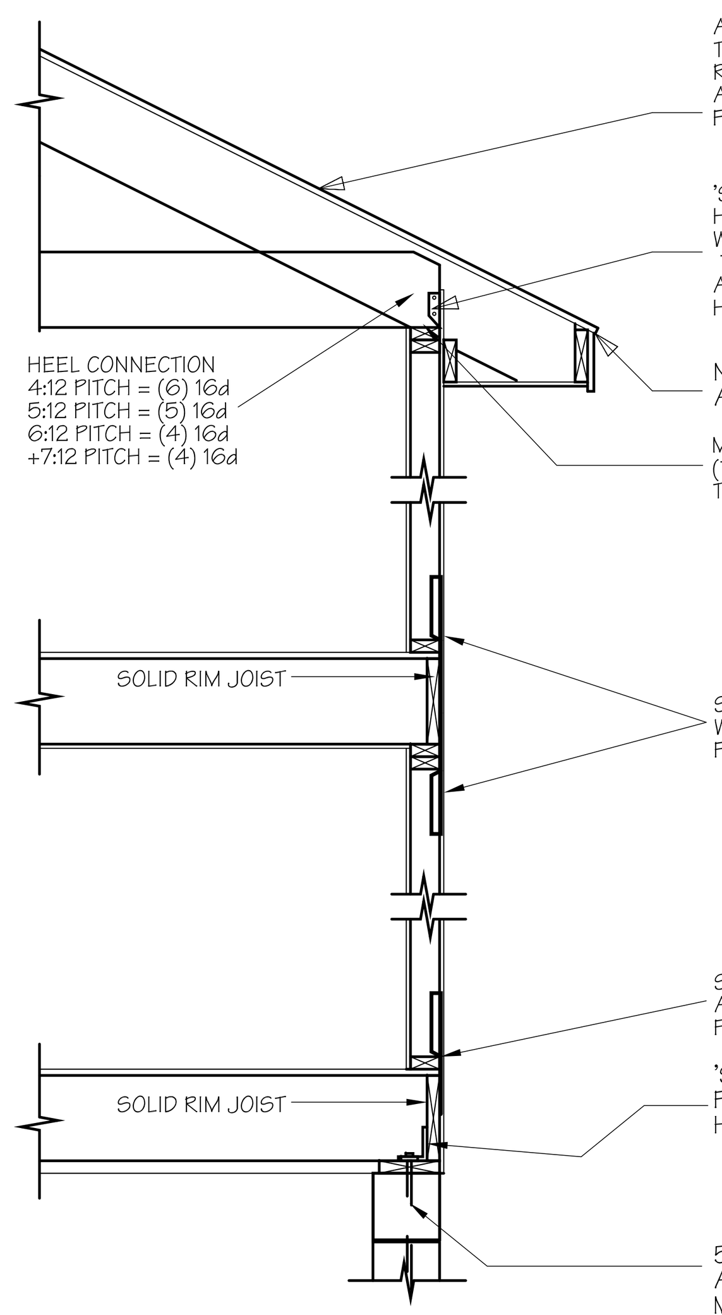
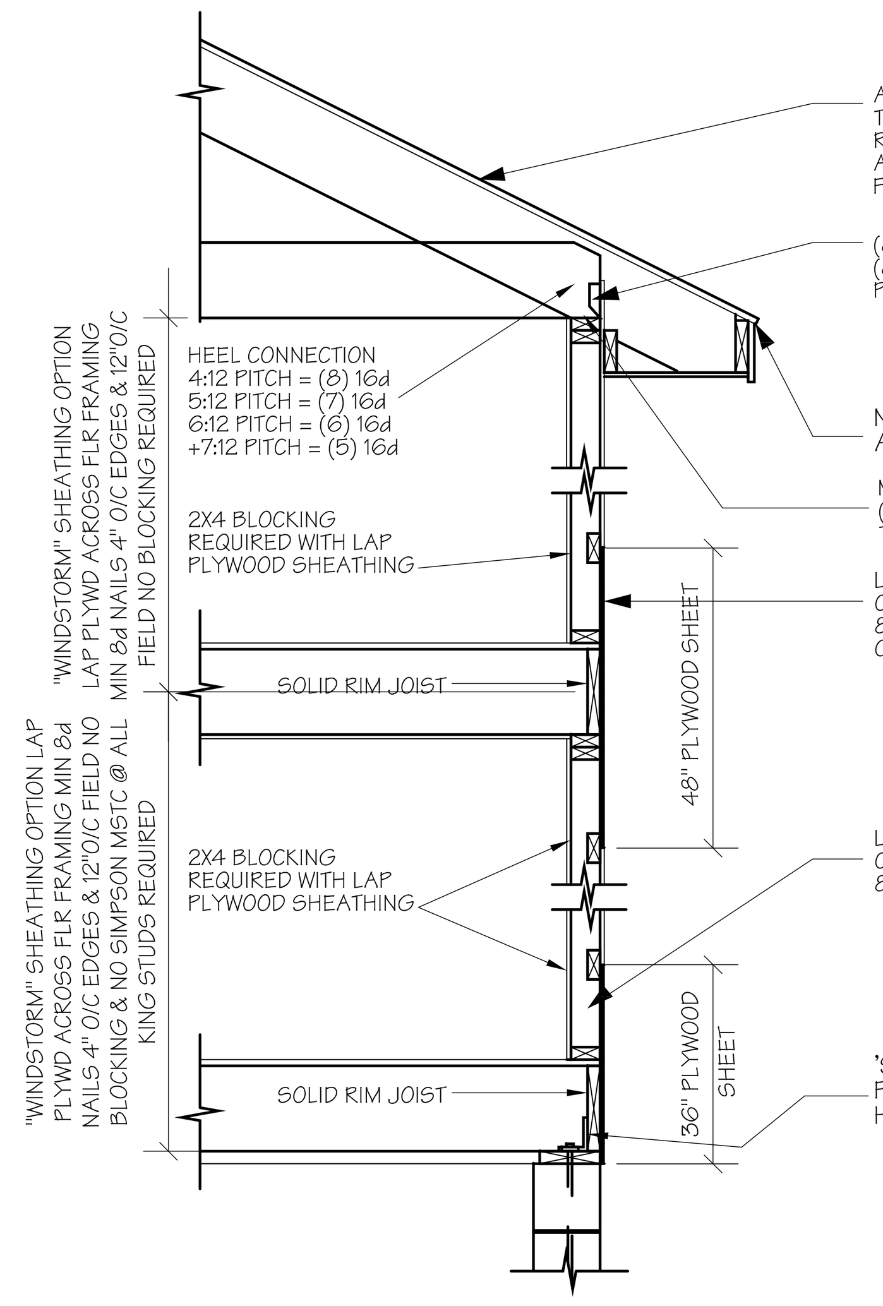
Revisions:

Date: 8-30-22	File No:
Scale: NOTED	
Drawn: RMB	Dwg. No.
Checked: GWT	D209B DENS



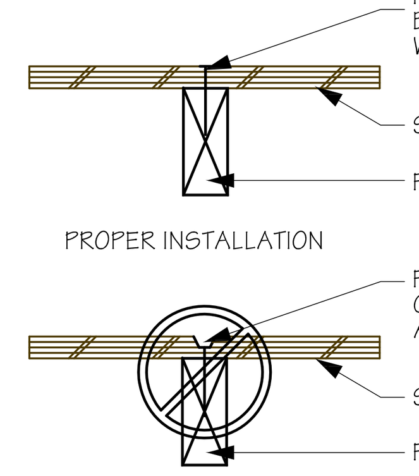
TYP. DENSGLASS SHEATHED WALL SECTION

WALLS 5'-0" OR LESS FROM THE PROPERTY LINE — NOT TO SCALE



TYP. PLYWOOD SHEATHED WALL SECTION

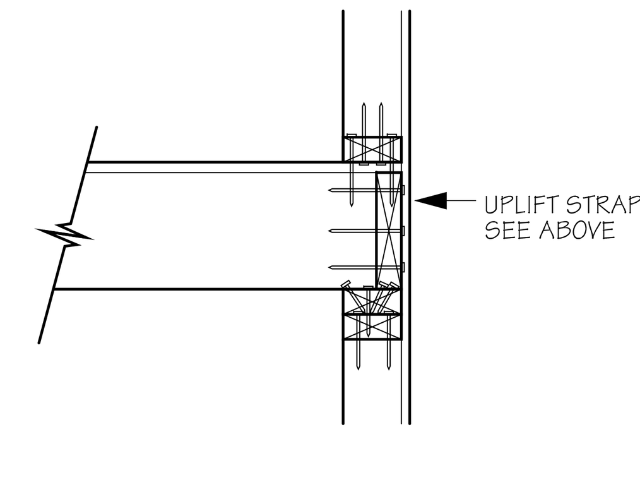
WALLS 5'-1" OR GREATER FROM THE PROPERTY LINE — NOT TO SCALE



NAILING
~~IF PNEUMATIC~~ NAILING GUNS ARE USED, ANY NAIL WHICH CRUSH INTO THE PLYWOOD OR OTHER WOOD ARE NOT ACCEPTED. ADDITIONAL NAILS MUST BE PLACED 1" AWAY FROM ALL REJECTED NAILS.
THE CONTRACTOR MUST USE A REGULATOR ON EACH HOSE SO EACH NAIL GUN DELIVERS THE PROPER FORCE AND NO MORE. A PROPER SIZE AIR STORAGE TANK SHALL BE USED FOR 2 MORE GUNS SO NAILS ARE DRIVEN FLUSH WITH PLYWOOD. TYPICAL FOR ALL ROOF, FLOOR AND WALL SHEATHING.

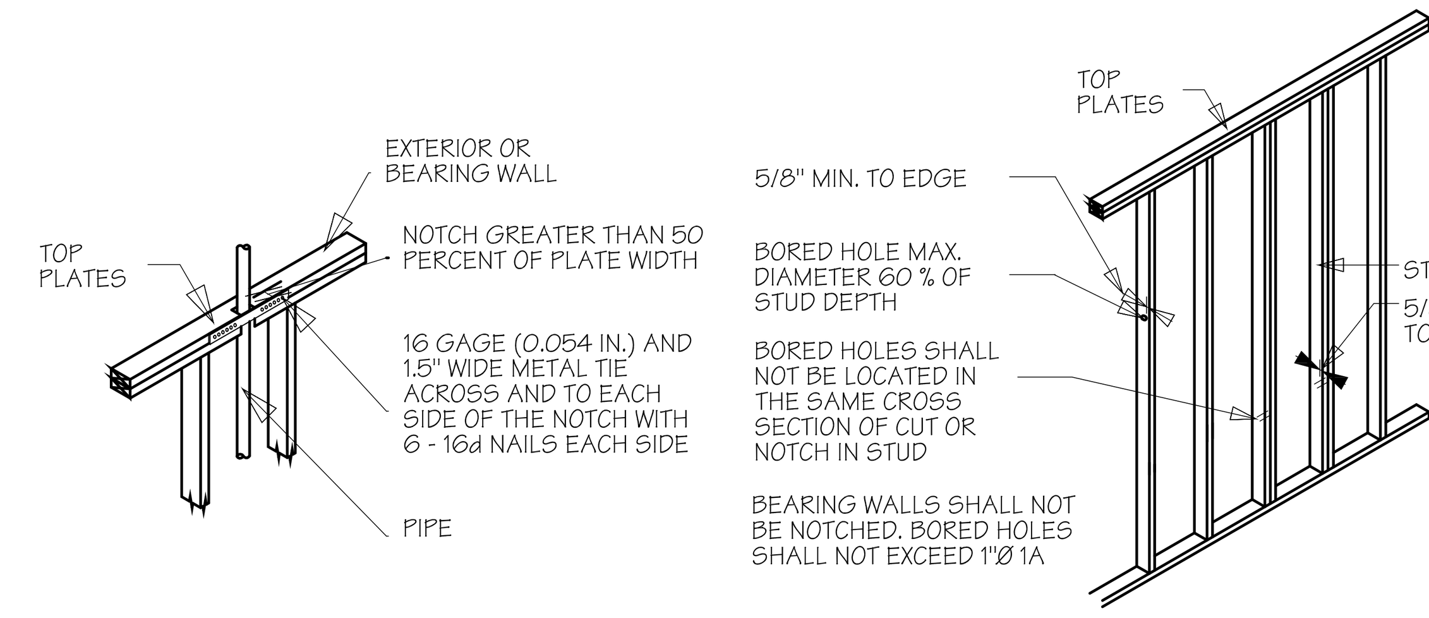
NAILING

NOT TO SCALE



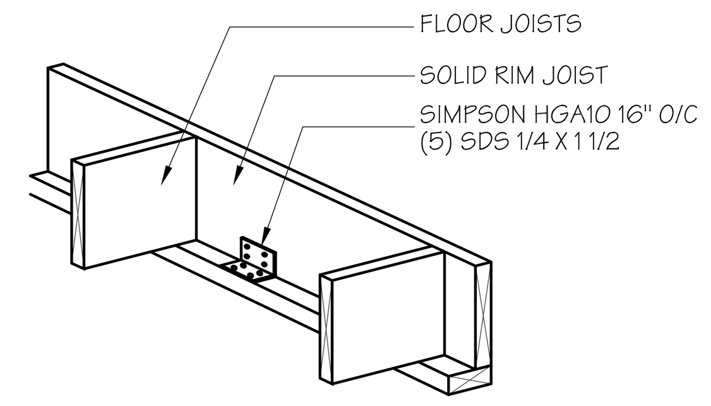
LATERAL NAILING DETAIL

NOT TO SCALE

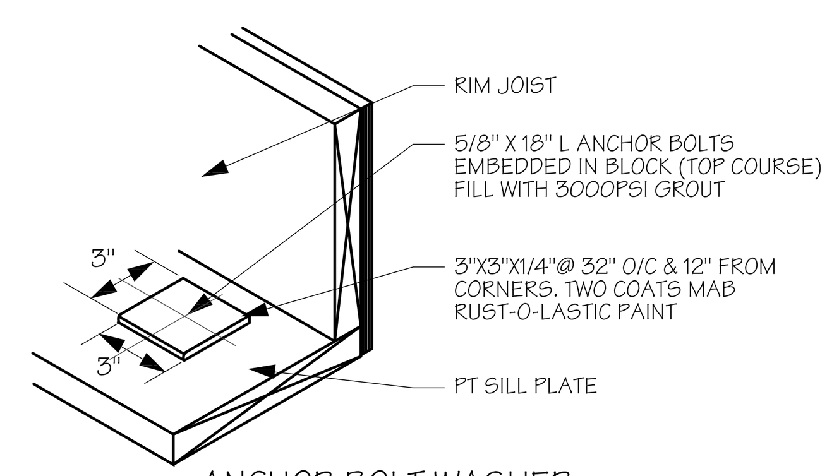


NON BEARING WALL NOTCHING & BORING

NOT TO SCALE



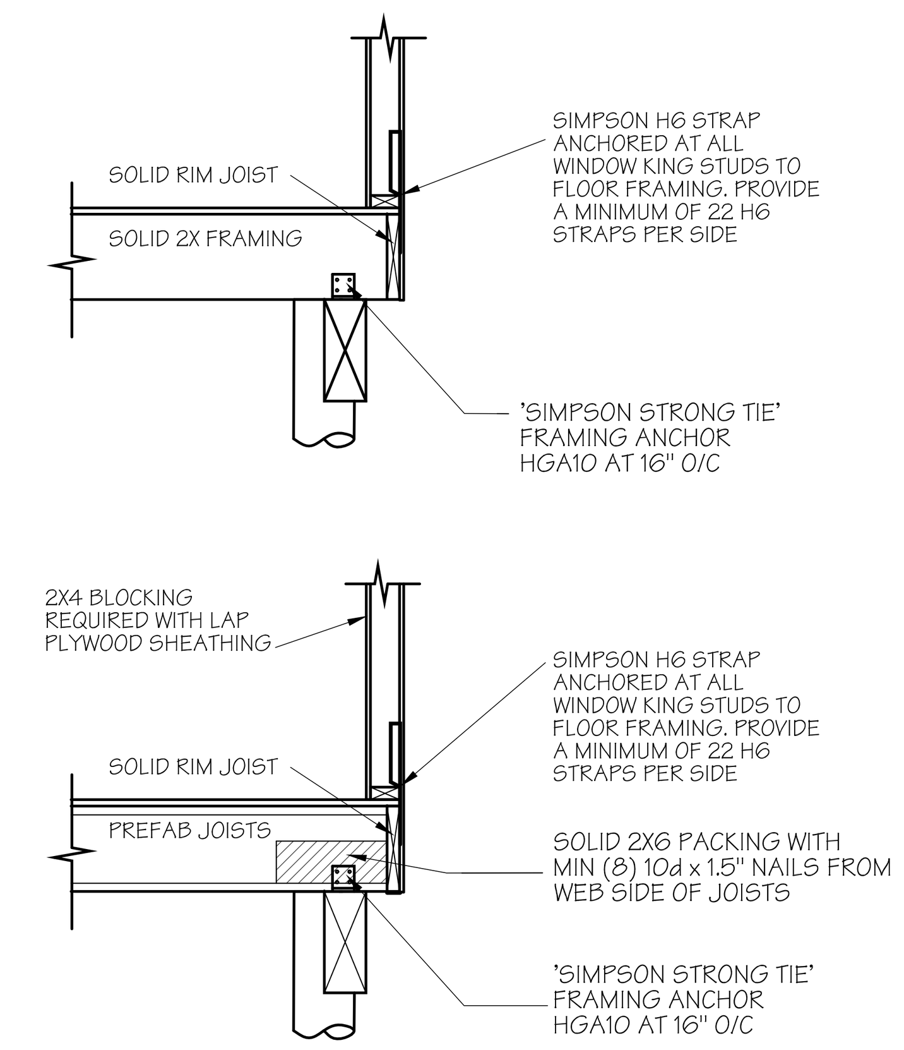
FLOOR FRAMING ANCHOR



ANCHOR BOLT WASHER

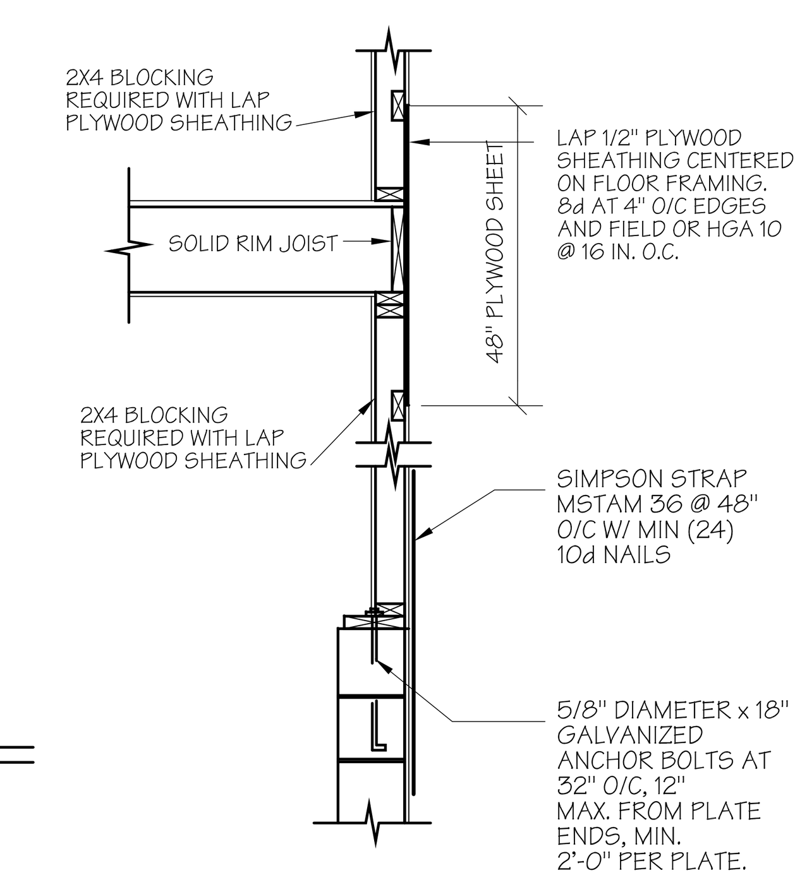
TYPICAL HIGH WIND CONSTRUCTION

NOT TO SCALE



FLOOR FRAMING ANCHOR / PILE STRINGERS

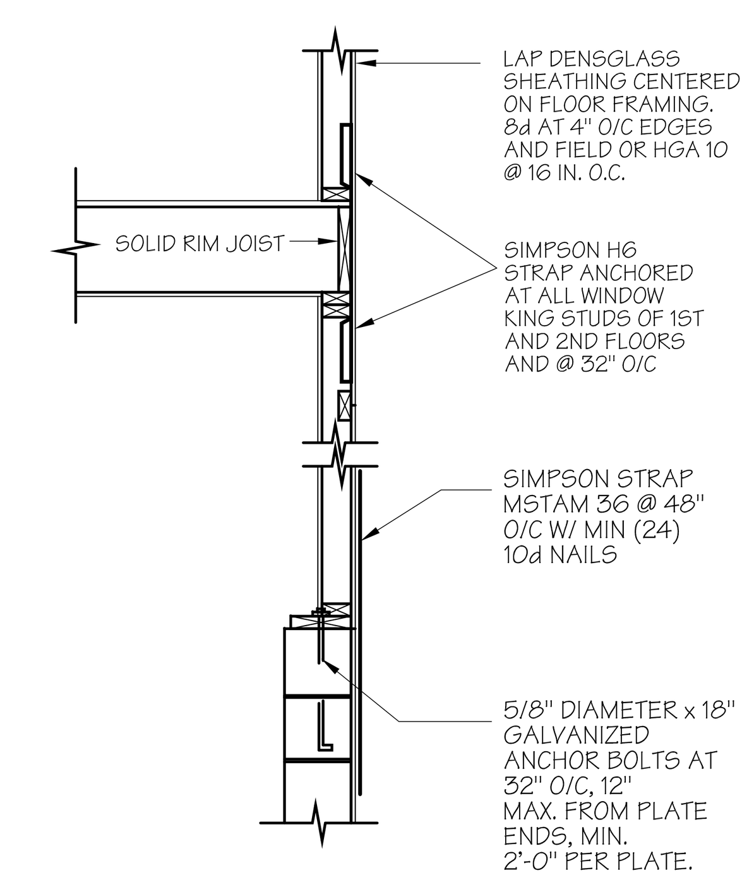
GENERAL NAILING SCHEDULE				
JOINT DESCRIPTION	NUMBER OF COMMON NAILS	NUMBER OF BOX NAILS	NAIL SPACING	
ROOF FRAMING				
BLOCKING TO RAFTER (TOE-NAILED)	2-8d	2-10d	EACH END	
RIM BOARD TO RAFTER (END-NAILED)	2-16d	3-16d	EACH END	
WALL FRAMING				
TOP PLATES AT INTERSECTIONS (FACE-NAILED)	4-16d	5-16d	AT JOINTS	
STUD TO STUD (FACE-NAILED)	2-16d	2-16d	24" O/C	
HEADER TO HEADER (FACE-NAILED)	16d	16d	16" O/C ALONG EDGES	
FLOOR FRAMING				
JOIST TO SILL, TOP PLATE OR GIRDER (TOE-NAILED)	4-8d	4-10d	PER JOIST	
BLOCKING TO JOIST (TOE-NAILED)	2-8d	2-10d	EACH END	
BLOCKING TO SILL OR TOP PLATE (TOE-NAILED)	3-16d	4-16d	EACH BLOCK	
LEDGER STRIP TO BEAM OR GIRDER (FACE-NAILED)	3-16d	4-16d	EACH JOIST	
JOIST ON LEDGER TO BEAM (TOE-NAILED)	3-8d	3-10d	PER JOIST	
BAND JOIST TO JOIST (END-NAILED)	3-16d	4-16d	PER JOIST	
BAND JOIST TO SILL OR TOP PLATE (TOE-NAILED)	2-16d	3-16d	PER FOOT	
ROOF SHEATHING				
WOOD STRUCTURAL PANELS			4' PERIMETER ZONE	INTERIOR ZONE
RAFTERS OR TRUSSES SPACED UP TO 16" O/C	8d	10d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD
RAFTERS OR TRUSSES SPACED OVER 16" O/C	8d	10d	4" EDGE / 4" FIELD	4" EDGE / 8" FIELD
GABLE ENDWALL RAKE OR RAKE TRUSS W/O GABLE OVERHANG	8d	10d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD
GABLE ENDWALL RAKE OR RAKE TRUSS W/ STRUCTURAL OUTLOOKERS	8d	10d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD
GABLE ENDWALL RAKE OR RAKE TRUSS W/ LOOKOUT BLOCKS	8d	10d	4" EDGE / 4" FIELD	4" EDGE / 8" FIELD
CEILING SHEATHING				
GYPSUM WALLBOARD	5d COOLERS	--	4" EDGE / 7" FIELD	7" EDGE / 10" FIELD
WALL SHEATHING				
WOOD STRUCTURAL PANELS				
STUDS SPACED UP TO 24" O/C	8d	10d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD
1/2" AND 25/32" FIBERBOARD PANELS	8d	--	3" EDGE / 6" FIELD	3" EDGE / 6" FIELD
1/2" GYPSUM WALLBOARD	5d COOLERS	--	4" EDGE / 7" FIELD	7" EDGE / 10" FIELD
FLOOR SHEATHING				
WOOD STRUCTURAL PANELS				
1" OR LESS	8d	10d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD
GREATER THAN 1"	10d	16d	6" EDGE / 6" FIELD	6" EDGE / 12" FIELD



STEM WALL STRAPPING

PLYWOOD SHEATHING

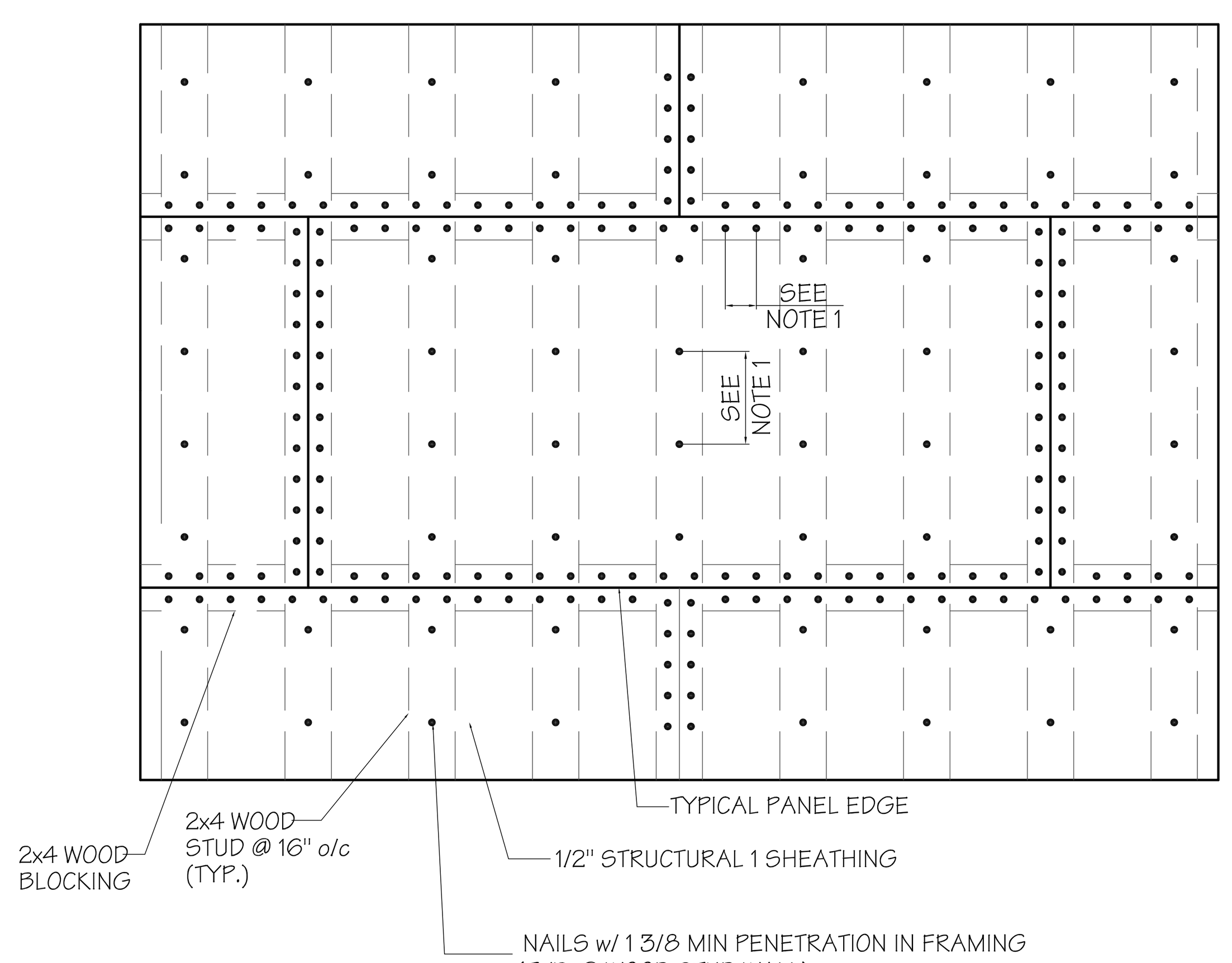
WALLS 5'-1" OR GREATER FROM THE PROPERTY LINE



STEM WALL STRAPPING

DENSGLASS SHEATHING

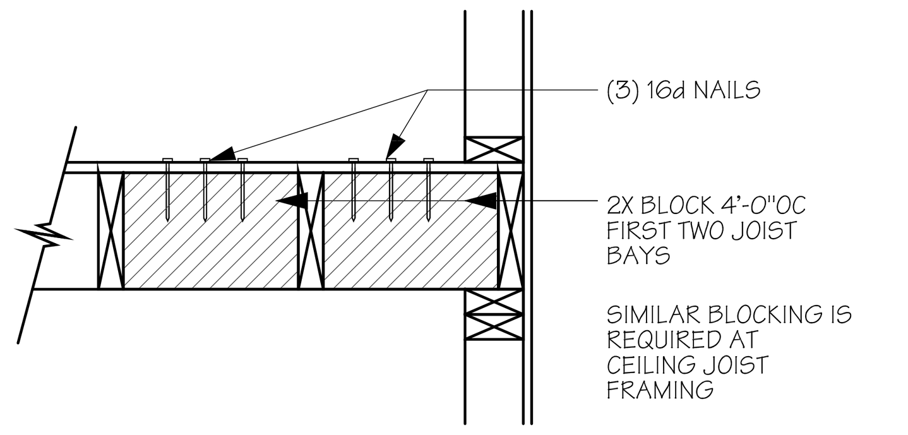
WALLS 5'-0" OR LESS FROM THE PROPERTY LINE



TYPICAL SHEAR WALL PANEL NAILING PATTERN

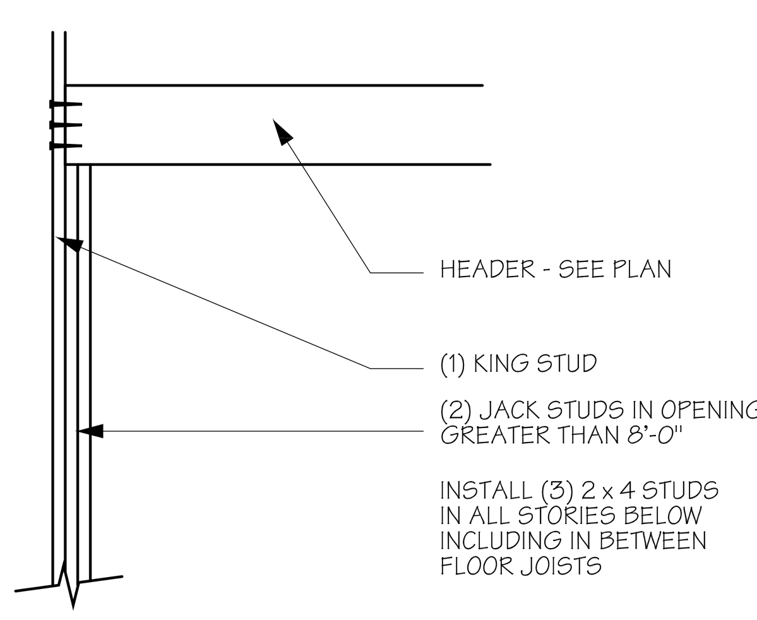
NOTES:

1) FASTENER SPACING @ PANEL EDGES ON ALL SHEAR WALLS AS PER SCHEDULE MINIMUM EMBEDMENT OF NAILS = 1 3/8"
2) SHEATHING SHALL BE NAILED DIRECTLY TO WALL STUDS AND BLOCKING
3) PANEL EDGES INCLUDE EDGES OF SHEATHING AROUND WINDOW AND DOOR OPENINGS



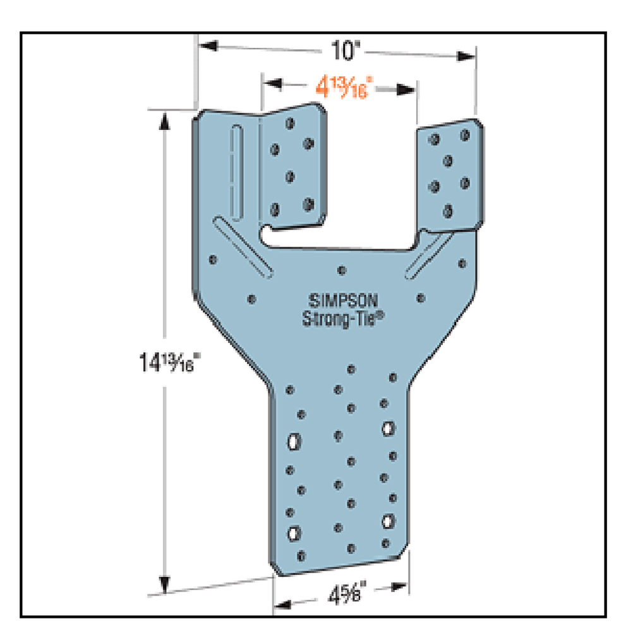
JOIST BLOCKING DETAIL

NOT TO SCALE



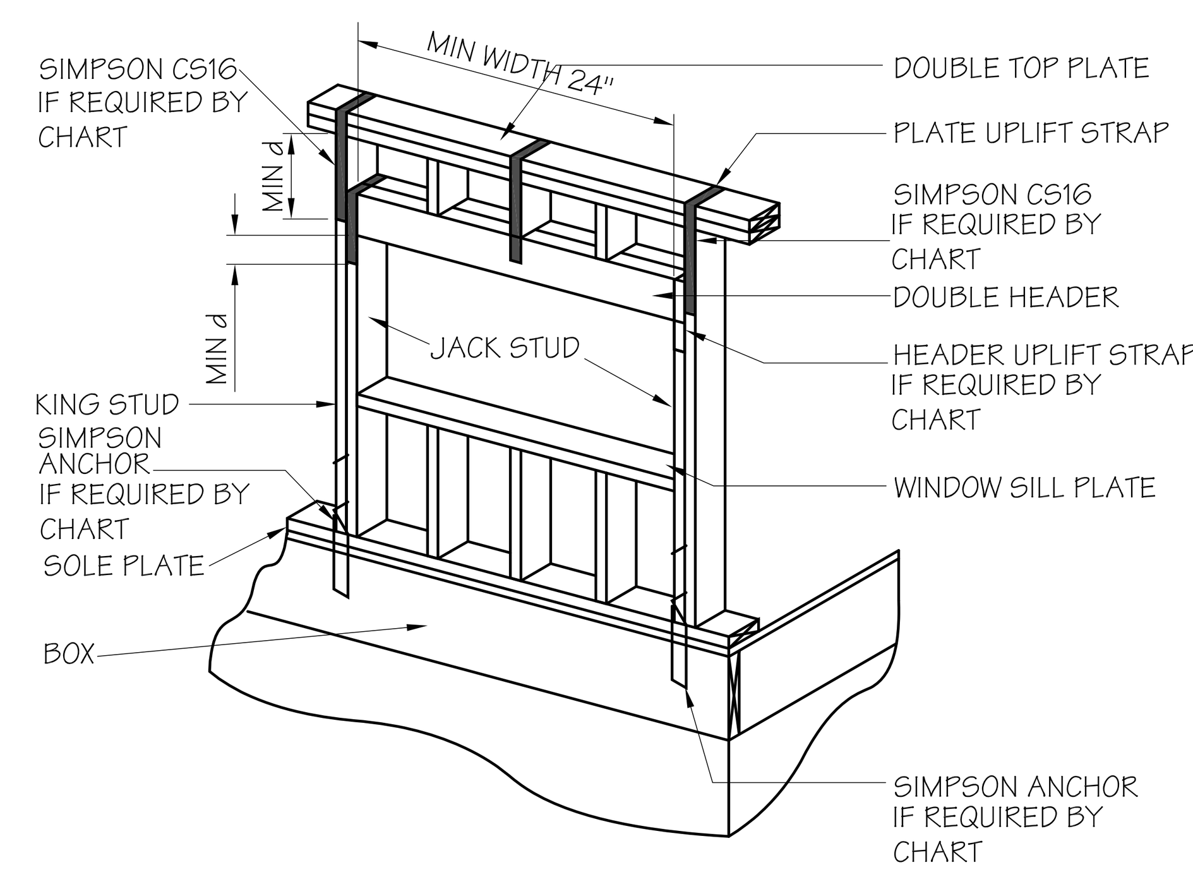
TYPICAL HEADER DETAIL

NOT TO SCALE



Simpson LGT3-SDS2.5

TO BE USED ONLY AT DOOR OPENINGS GREATER THAN 73"



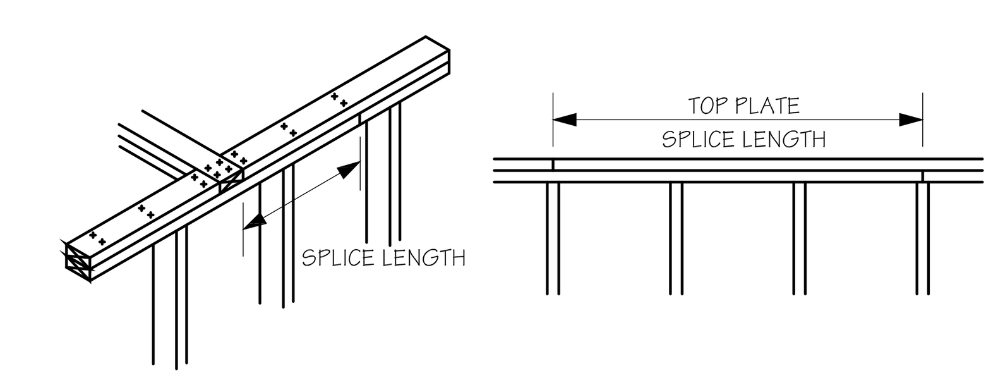
WINDOW STRAPPING DETAIL

NOT TO SCALE

WINDOW AND DOOR HEADER STRAPPING NAILING REQUIREMENTS						
OPENING WIDTH	REQUIRED STRAP	MIN d	TOTAL NAILS REQ'D	KING & JACK STUD ANCHOR TO FLOOR		
				ANCHOR	STUD FASTENERS	RIM JOIST FASTENERS
UP TO 72"	N/A	N/A	N/A	N/A	N/A	N/A
73" TO 96"	SIMPSON CS16	26 "	(40) 8d @ 2" O/C	LGT3-SDS2.5	(12) SDS 1/4 X 2 1/2	(26) 16d NAILS
97" TO 120"	SIMPSON CS16	30"	(50) 8d @ 2" O/C	LGT3-SDS2.5	(12) SDS 1/4 X 2 1/2	(26) 16d NAILS
121" TO 144"	SIMPSON CS16	36"	(60) 8d @ 2" O/C	LGT3-SDS2.5	(12) SDS 1/4 X 2 1/2	(26) 16d NAILS

ALL STRAPS SHALL BE CONTINUOUS AND SHALL WRAP OVER HEADER AND TOP PLATES. STRAPS SHALL BE MOUNTED EQUIDISTANT DOWN EACH SIDE OF EACH STUD. ONE HALF (1/2) OF THE TOTAL NAIL COUNT SHALL BE PROVIDED ON EACH SIDE OF EACH STUD.

TOP PLATE SPLICE												
	BUILDING DIMENSION OF WALL CONTAINING TOP PLATE SPLICE (FT)											
	12	16	20	24	28	32	36	40	50	60	70	80
SPLICE LENGTH (FT)	1'	1'	2'	2'	3'	3'	3'	4'	5'	6'	7'	8'
SPLICE LENGTH (FT)	NUMBER OF 16d COMMON NAILS PER EACH SIDE OF SPLICE											
2	4	6	8	8	NP	NP	NP	NP	NP	NP	NP	NP
4	4	6	7	8	10	12	14	16	NP	NP	NP	NP
6	4	6	7	8	10	12	14	16	20	24	NP	NP
8	4	6	7	8	10	12	14	16	20	24	28	32



2015 FRAMING DETAILS

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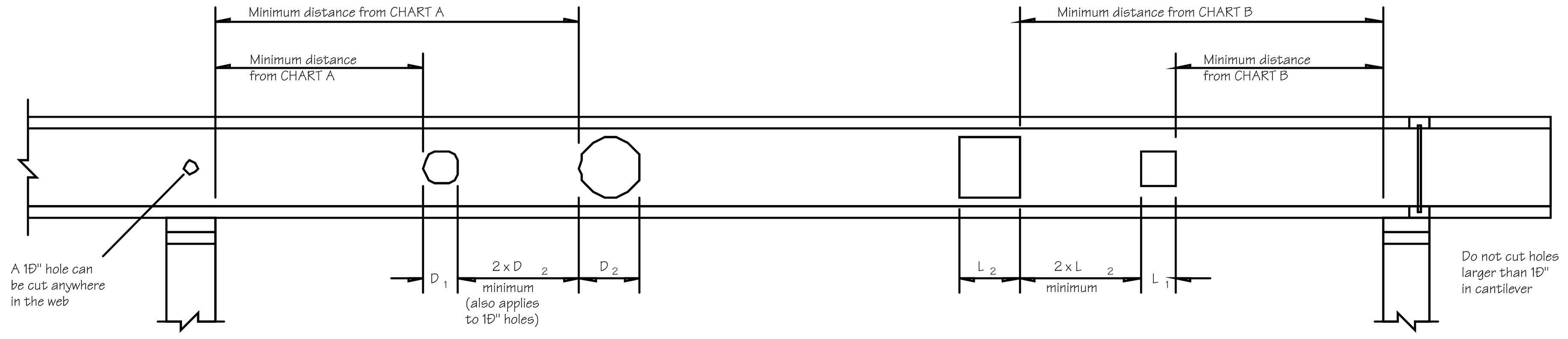
Revisions:

Date: 5-17-18	File No:
Scale: NONE	
Drawn: RMB	Dwg. No.
Checked: DWS	FR15



HOW TO USE THESE CHARTS
1. Determine the hole shape (round, square or rectangular) and select the appropriate chart - A or B.
2. Under HOLE SIZE, locate the column which meets or exceeds the size of hole you require.
3. Use the first two columns to identify the TJI joist series and depth being used in your floor or roof system.
4. Scan right across the row until you intersect the column which contains the hole size you selected.
The value shown is the required minimum distance from edge of the hole to the inside face of the nearest support.

CHART A - ROUND HOLES
MINIMUM DISTANCE FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

Depth	TJI /Pro ™	ROUND HOLE SIZE													
		2"	3"	4"	5"	6"	6Ì"	7"	8"	8Ò"	9"	10"	10Ô"	12"	12Ô"
9Ð"	150	1'-0"	1'-6"	3'-0"	5'-0"	6'-6"	7'-6"								
	250	1'-0"	2'-6"	4'-0"	5'-6"	7'-6"	8'-0"								
11Ö"	150	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	3'-6"	5'-0"	7'-0"	8'-6"					
	250	1'-0"	1'-0"	2'-0"	3'-0"	4'-6"	5'-0"	6'-0"	8'-0"	9'-0"					
	350	1'-0"	2'-0"	3'-0"	4'-6"	5'-6"	6'-0"	7'-0"	9'-0"	10'-0"					
	550	1'-0"	1'-6"	3'-0"	4'-6"	6'-0"	6'-6"	7'-6"	9'-0"	10'-6"					
14"	250	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"	6'-0"	6'-6"	8'-6"	10'-0"		
	350	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	3'-6"	4'-6"	6'-0"	7'-0"	8'-0"	9'-6"	11'-0"		
	550	1'-0"	1'-0"	1'-0"	2'-6"	4'-0"	4'-6"	5'-6"	7'-6"	8'-6"	9'-0"	10'-6"	12'-0"		
16"	250	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-6"	3-0"	5'-0"	6'-6"	9'-0"	11'-0"
	350	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	4'-0'	5'-0"	6'-6"	8'-0"	10'-6"	12'-6"
	550	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-6"	3'-6"	5'-0"	6'-0"	7'-0"	8'-6"	10'-0"	12'-0"	13'-6"

CHART B - SQUARE OR RECTANGULAR HOLES
MINIMUM DISTANCE FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

Depth	TJI /Pro ™	SQUARE OR RECTANGULAR HOLE SIZE													
		2"	3"	4"	5"	6"	6Ì"	7"	8"	8Ò"	9"	10"	10Ô"	12"	12Ô"
9Ð"	150	1'-0"	2'-0"	4'-0"	6'-0"	6'-6"	6'-6"								
	250	1'-0"	2'-6"	4'-6"	6'-6"	7'-0"	7'-0"								
11Ö"	150	1'-0"	1'-0"	2'-0"	4'-0"	6'-6"	7'-6"	8'-0"	8'-6"	9'-0"					
	250	1'-0"	1'-6"	3'-6"	5'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"					
	350	1'-0"	2'-6"	4'-0"	5'-6"	7'-6"	8'-6"	9'-0"	9'-6"	9'-6"					
	550	3'-0"	4'-6"	6'-0"	7'-6"	9'-0"	9'-6"	9'-6"	10'-0"	10'-6"					
14"	250	1'-0"	1'-0"	1'-6"	3'-6"	6'-0"	6'-6"	8'-0"	10'-0"	10'-6"	10'-6"	11'-0"	12'-0"		
	350	1'-0"	1'-0"	2'-6"	4'-6"	6'-6"	7'-0"	9'-0"	10'-6"	10'-6"	11'-0"	11'-6"	12'-0"		
	550	1'-6"	3'-0"	4'-6"	6'-6"	8'-0"	8'-6"	10'-0"	11'-6"	11'-6"	12'-0"	12'-6"	13'-0"		
16"	250	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	4'-0"	6'-6"	8'-6"	8'-6"	9'-6"	10'-0"	11'-0"	11'-6"
	350	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	3'-6"	5'-6"	8'-0"	10'-0"	10'-0"	11'-0"	11'-6"	12'-6"	13'-0"
	550	1'-0"	1'-6"	3'-6"	5'-0"	7'-6"	8'-0"	9'-6"	11'-6"	13'-0"	13'-0"	13'-6"	14'-0"	15'-0"	15'-6"

*Rectangular holes based on measurement of longesst side.

DO NOT
CUT OR NOTCH
FLANGE

FULL WEB DEPTH RECTANGULAR
HOLES ARE ALSO POSSIBLE.
CONTACT YOUR TRUSS JOIST MACMILLAN
REPRESENTATIVE FOR ASSISTANCE.

GENERAL NOTES

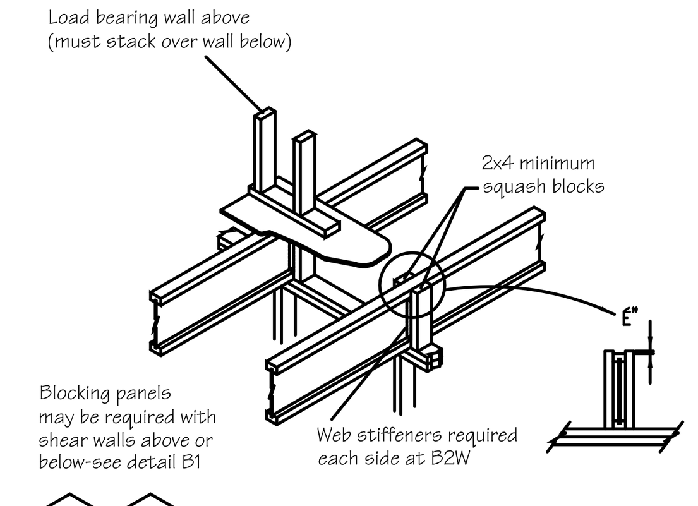
- If more than one hole is cut into the web, the distance between the edges of the holes must be at least 2x the length of the largest hole.

- Holes may be located vertically anywhere within the web. Leave Ê" of web minimum at top and bottom of hole.

- TJI joists are manufactured with 1Ð" perforated knockouts in the web at approximately 12" on-center along the length of the joist.

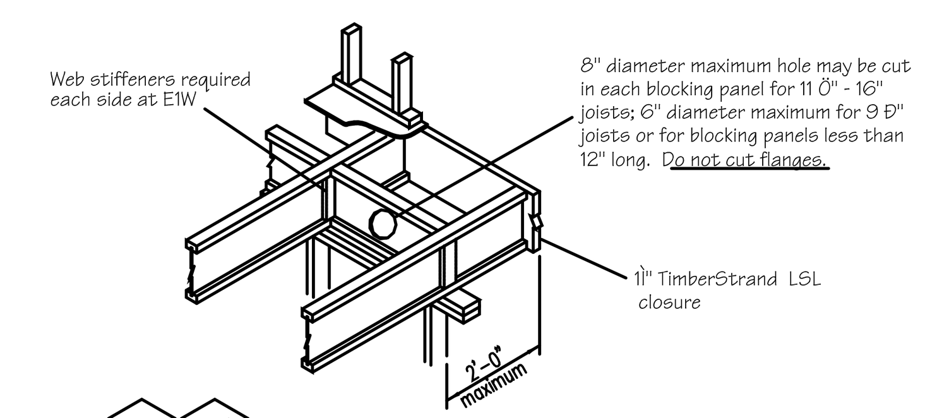
- Distances in the charts shown are based on uniformly loaded joists using the maximum loads shown for any of the tables listed within current Trus Joist MacMillan literature. For other load conditions or hole configurations not included in these charts, refer to our TJ-Beam software or contact your Trus Joist MacMillan representative.

- For simple span (5 foot minimum) uniformly loaded joists meeting the requirements of current Trus Joist MacMillan literature, one maximum size round hole may be located at the center of the joist span provided no other holes occur in the joist. DO NOT cut into joist flanges when cutting out web.



B2 B2W See Floor Span Tables and General Notes in current Trus Joist MacMillan literature for exceptions

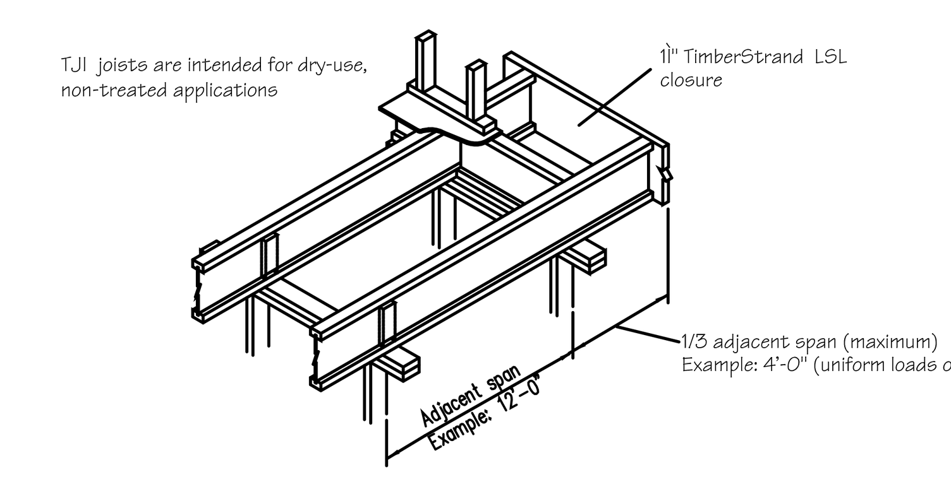
LOAD BEARING CANTILEVER



E1 E1W

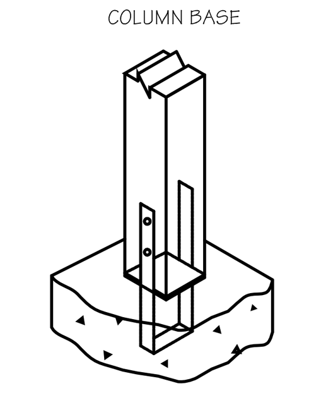
LOAD BEARING CANTILEVER

NON-LOAD BEARING CANTILEVER

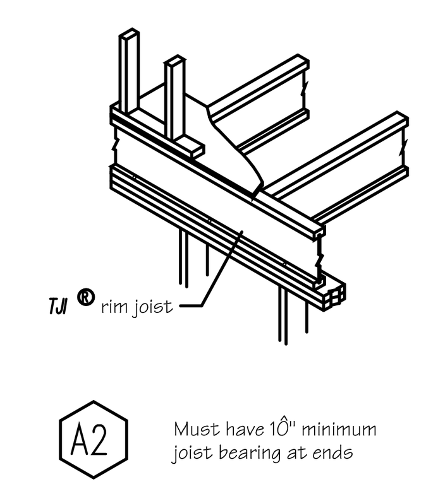


F2 TJI joists may be cantilevered up to 1/3 the adjacent span if not supporting concentrated loads on the cantilever. Cantilevers exceeding 4 feet may require special consideration. Refer to our TJ-Beam or TJ-Xpert software or contact your Trus Joist MacMillan representative for assistance.

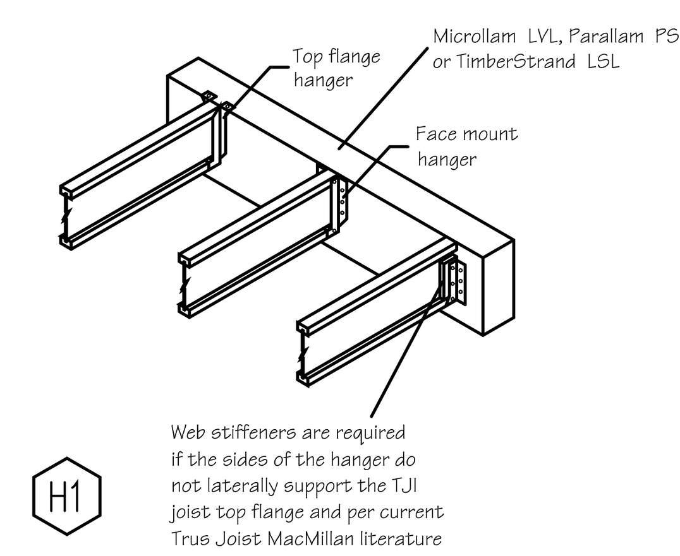
COLUMN BASE



P2

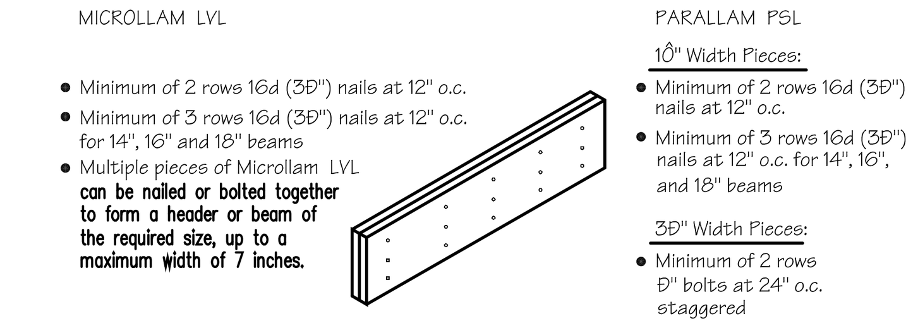


A2



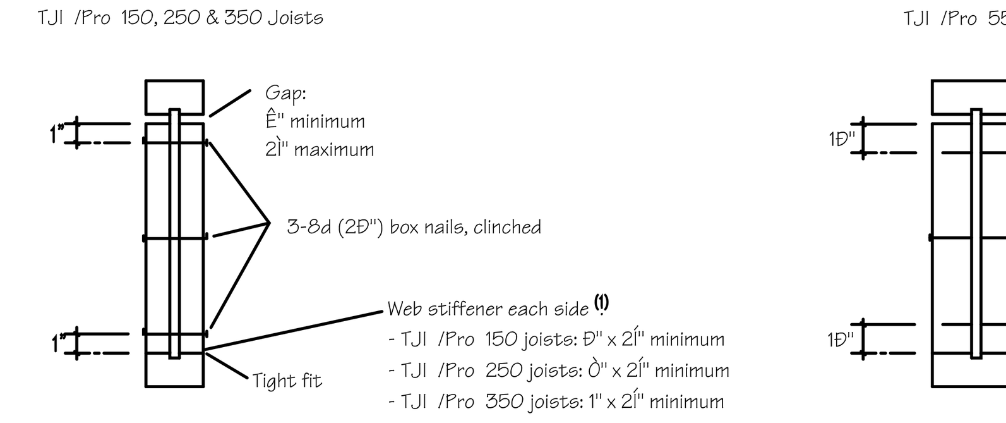
H1

CONNECTION OF MULTIPLE PIECES OF TOP-LOADED BEAMS



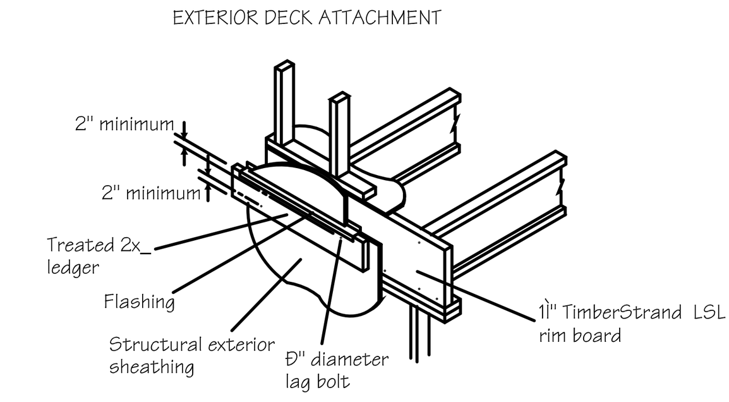
L6 For side-loaded multiple member beams, additional nailing or bolting may be required. See current Trus Joist MacMillan literature.

WEB STIFFENER ATTACHMENT

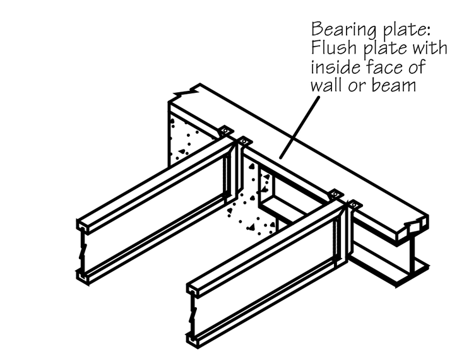


W (1) Web stiffener material shall be sheathing meeting the requirements of PS 1 or PS 2 with face grain vertical.
(2) 2x4 construction grade or better.

EXTERIOR DECK ATTACHMENT



LA Allowable load is 325 lbs. per ½" diameter lag bolt



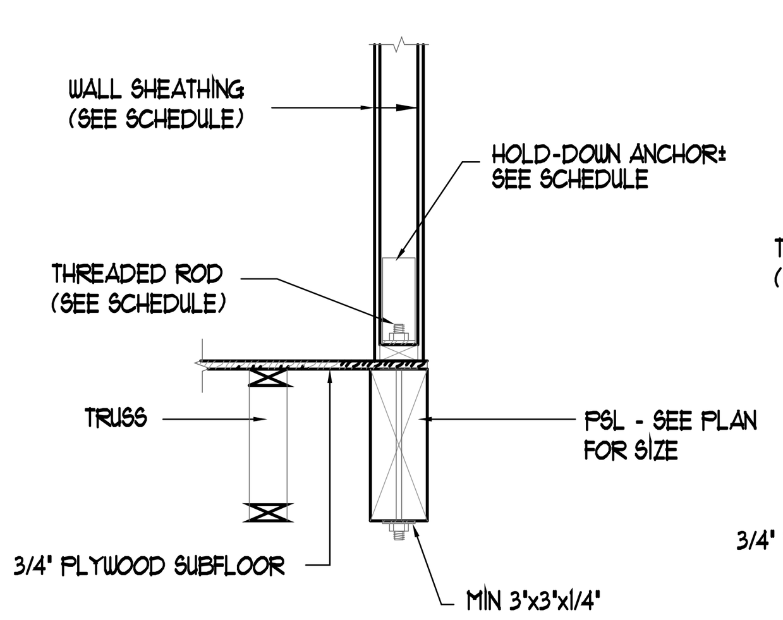
H3

SHEARWALL SCHEDULE								
SHEARWALL #	PLYWOOD	SIDES OF WALL	NAILS	EMBEDMENT	SHEAR WALL ANCHORS			REMARKS
					CMU	FLR TO FLR	PILE / STGR	
1	1/2"	1X	8d @ 4" O/C	1 3/8"	HDU 4	CMSTC16	MSTC48B3 TO RIM JOIST H6 AT ALL FLOOR JSTS TO STGR	CONTRACTOR TO PROVIDE A MIN OF 2 SHEAR WALL ANCHORS / 1 AT EACH END OF EACH WALL SEGMENT LOCATED AT THE BOTTOM OF THE WALL. ALL SHEAR WALL ANCHORS MUST BE ANCHORED TO WALL BELOW WITH THE SAME ANCHOR OR TO THE FOUNDATION WITH BOLTS AS SPECIFIED BY THE MANUFACTURER
2	1/2"	1X	8d @ 3" O/C	1 3/8"	HDU 5	CMSTC16	MSTC48B3 TO RIM JOIST H6 AT ALL FLOOR JSTS TO STGR	
3	1/2"	2X	8d @ 4" O/C	1 3/8"	HDU 8	CMSTC14	MSTC48B3 TO RIM JOIST H6 AT ALL FLOOR JSTS TO STGR	
4	1/2"	2X	8d @ 3" O/C	1 3/8"	HDU 11	CMSTC12	MSTC48B3 TO RIM JOIST H6 AT ALL FLOOR JSTS TO STGR	
5	FULL HEIGHT 8" MASONRY WITH #4 VERTICAL IN CONCRETE FILLED CORES @ 48" O/C							
6	FULL HEIGHT 8" MASONRY WITH #4 VERTICAL IN CONCRETE FILLED CORES @ 8" O/C							

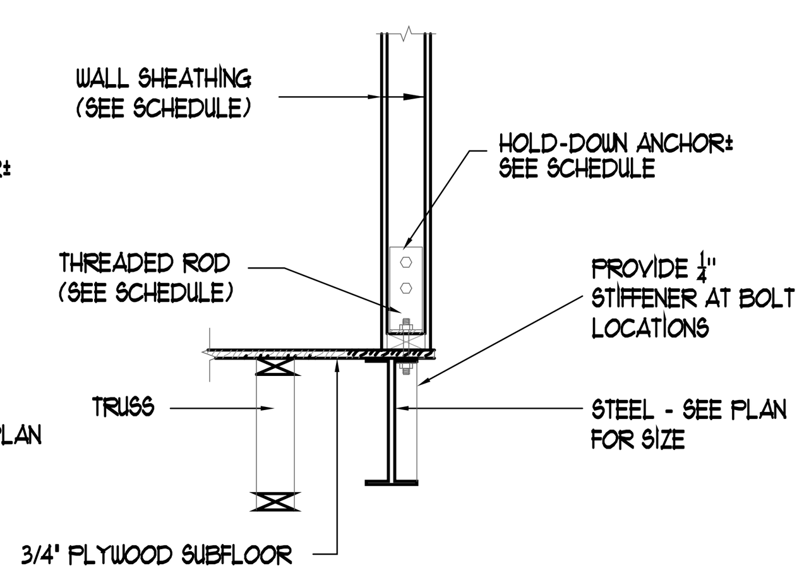
* INDICATES AREAS WHERE SHEATHING IS TO BE PLACED ON THE INTERIOR FACE OF STUD WALL

HOLD DOWN ANCHOR SCHEDULE						
HOLD DOWN MARK	MODEL	MIN WOOD MEMBER THKNSS	SCREWS	BOLT MODEL	ANCHOR BOLT DIA.	MINIMUM EMBEDMENT
HDU4	HDU4-SDS2.5	4.5"	10 SDS ¼ x 2½"	SSTB16	5/8"	12⅝"
HDU5	HDU5-SDS2.5	4.5"	14 SDS ¼ x 2½"	SSTB16	5/8"	12⅝"
HDU8	HDU8-SDS2.5	4.5"	20 SDS ¼ x 2½"	SSTB28	⅞"	247/8"
HDU11	HDU11-SDS2.5	5.5"	30 SDS ¼ x 2½"	SSTB28	⅞"	247/8"

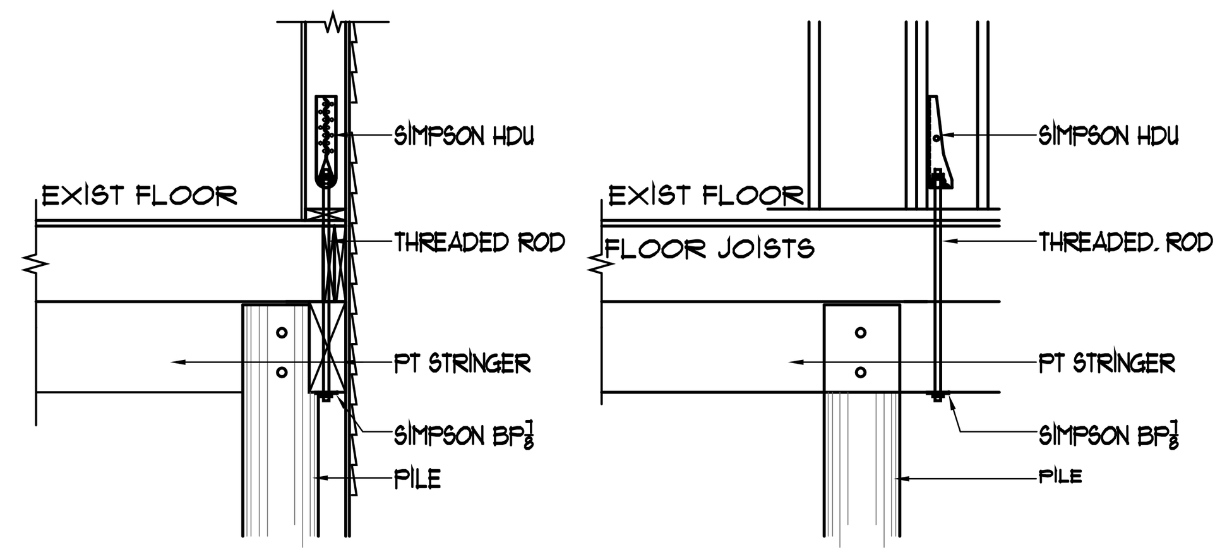
STRAP ANCHOR SCHEDULE				
STRAP MARK	MODEL	MIN WOOD POST MEMBER THKNSS	NAILS	MIN LENGTH OF STRAP ON WOOD POST
ST16	CMSTC16	4.5"	(58) 16d	25"
ST14	CMSTC14	4.5"	(66) 16d	30"
ST12	CMSTC12	4.5"	(84) 16d	38"



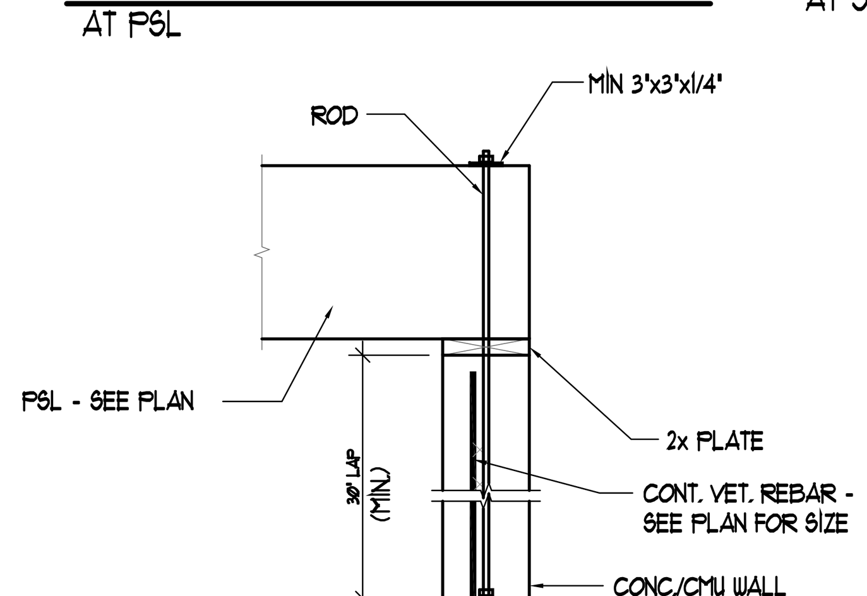
HOLD-DOWN ANCHOR DETAIL
AT PSL



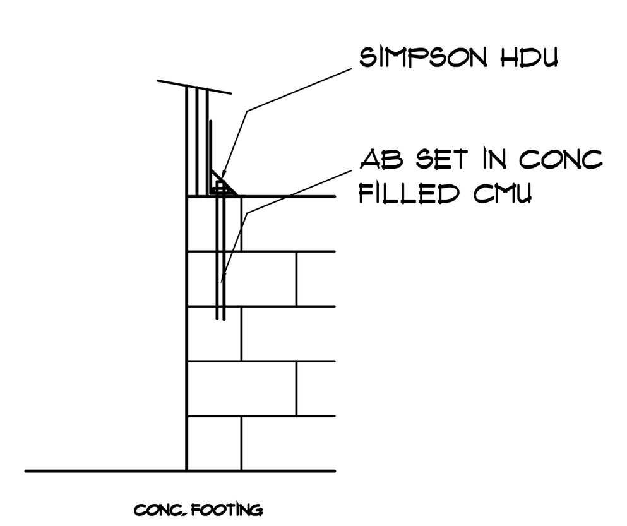
HOLD-DOWN ANCHOR DETAIL
AT STEEL



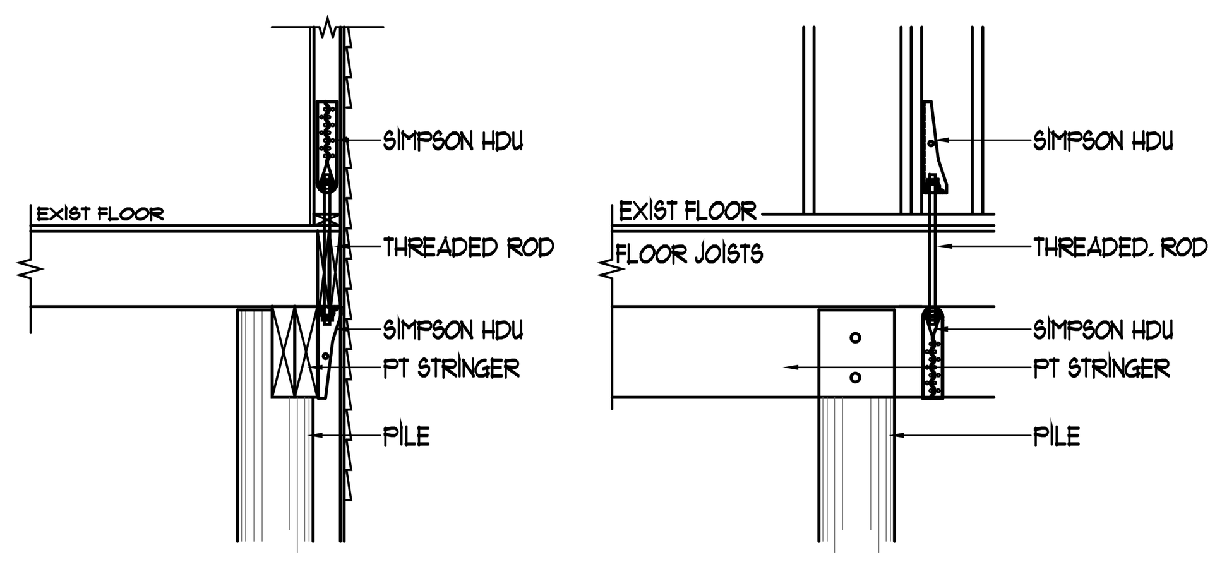
HOLD-DOWN ANCHOR DETAIL / PILE STRINGER
ANCHOR TO THROUGH BEAM



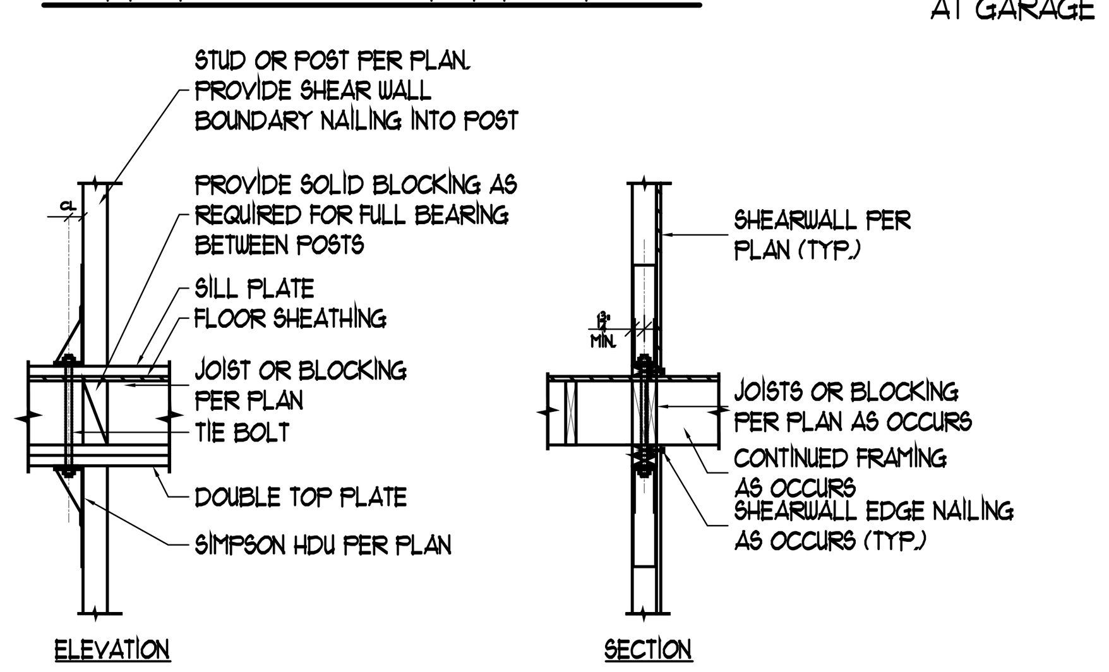
HOLD-DOWN ANCHOR DETAIL



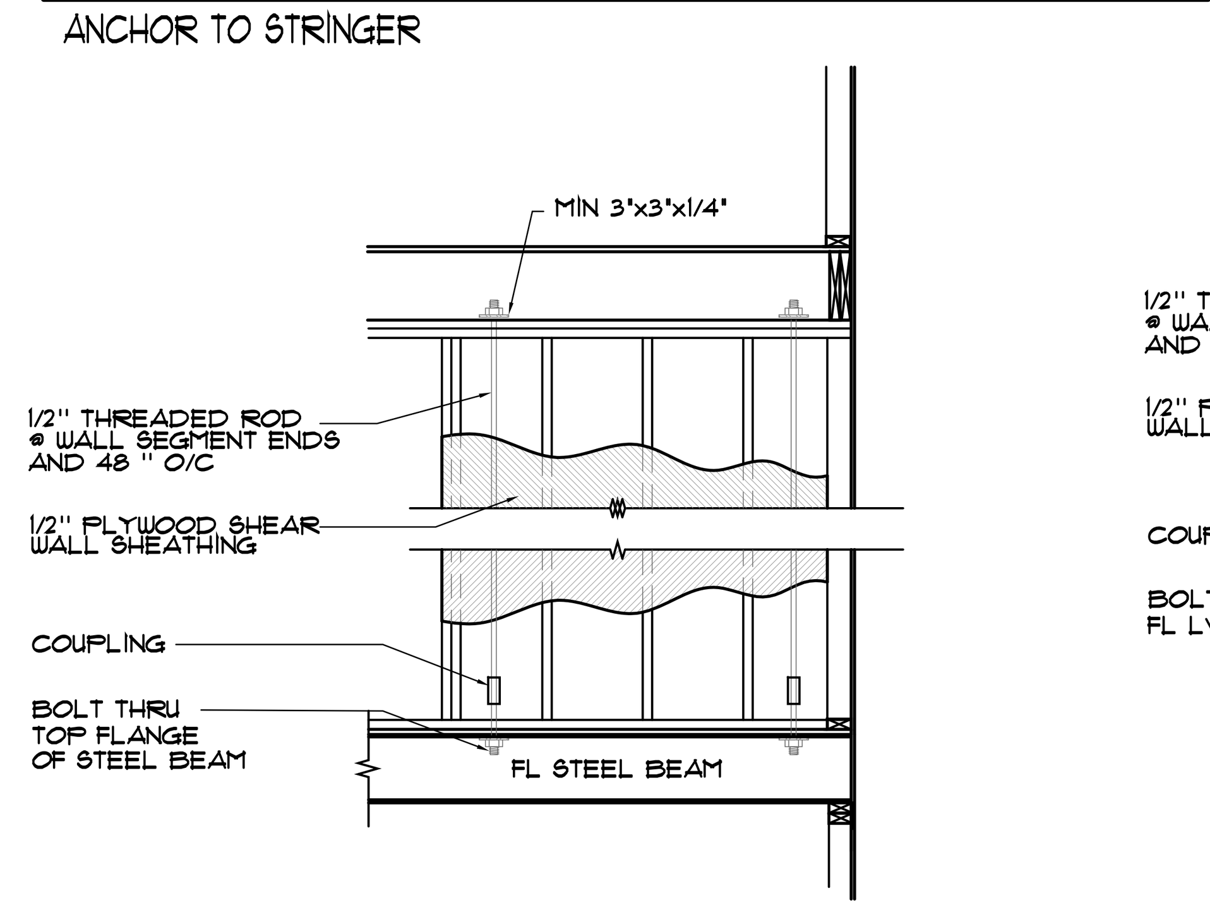
HOLD-DOWN ANCHOR DETAIL
AT GARAGE



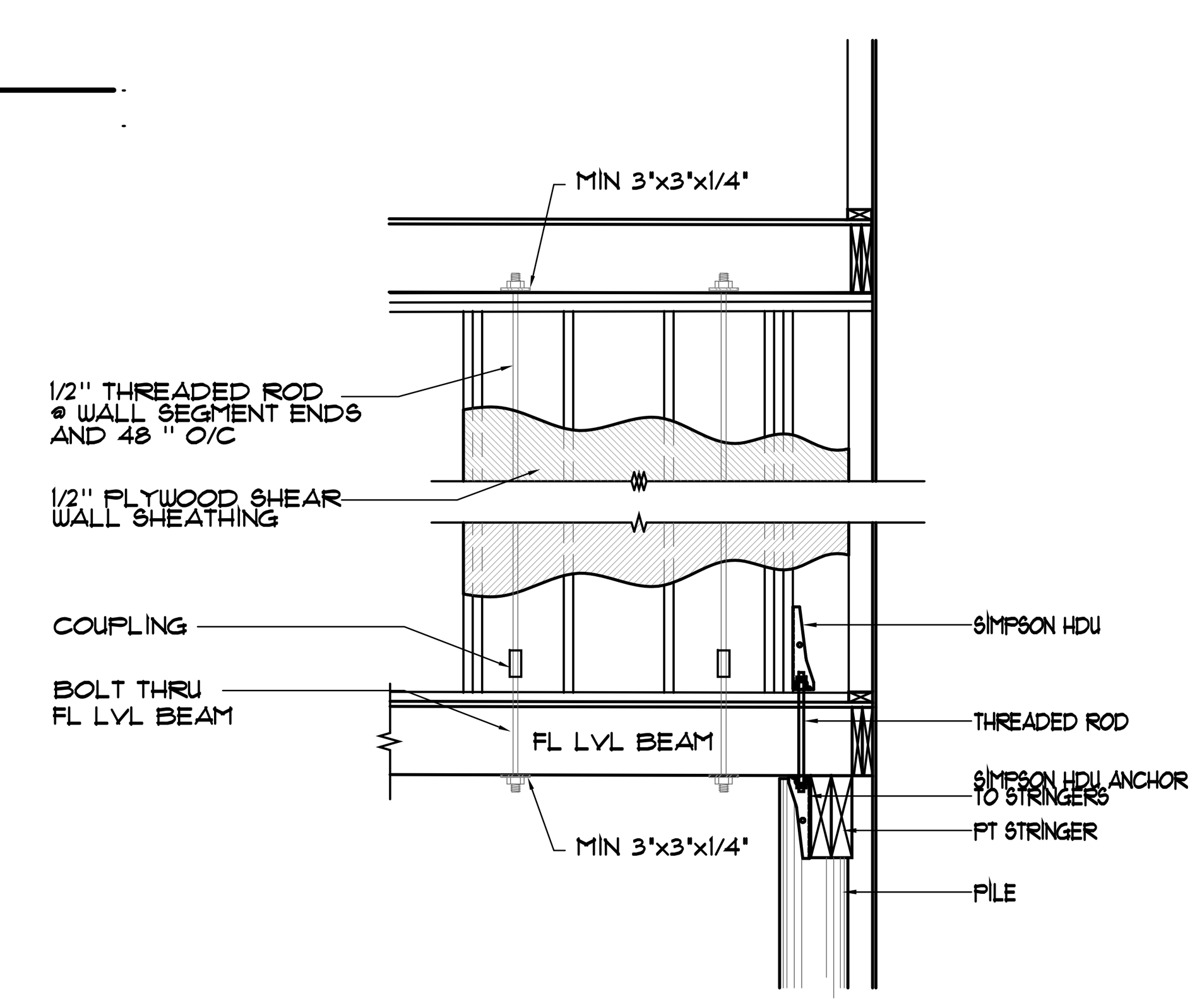
HOLD-DOWN ANCHOR DETAIL / PILE STRINGER
ANCHOR TO STRINGER



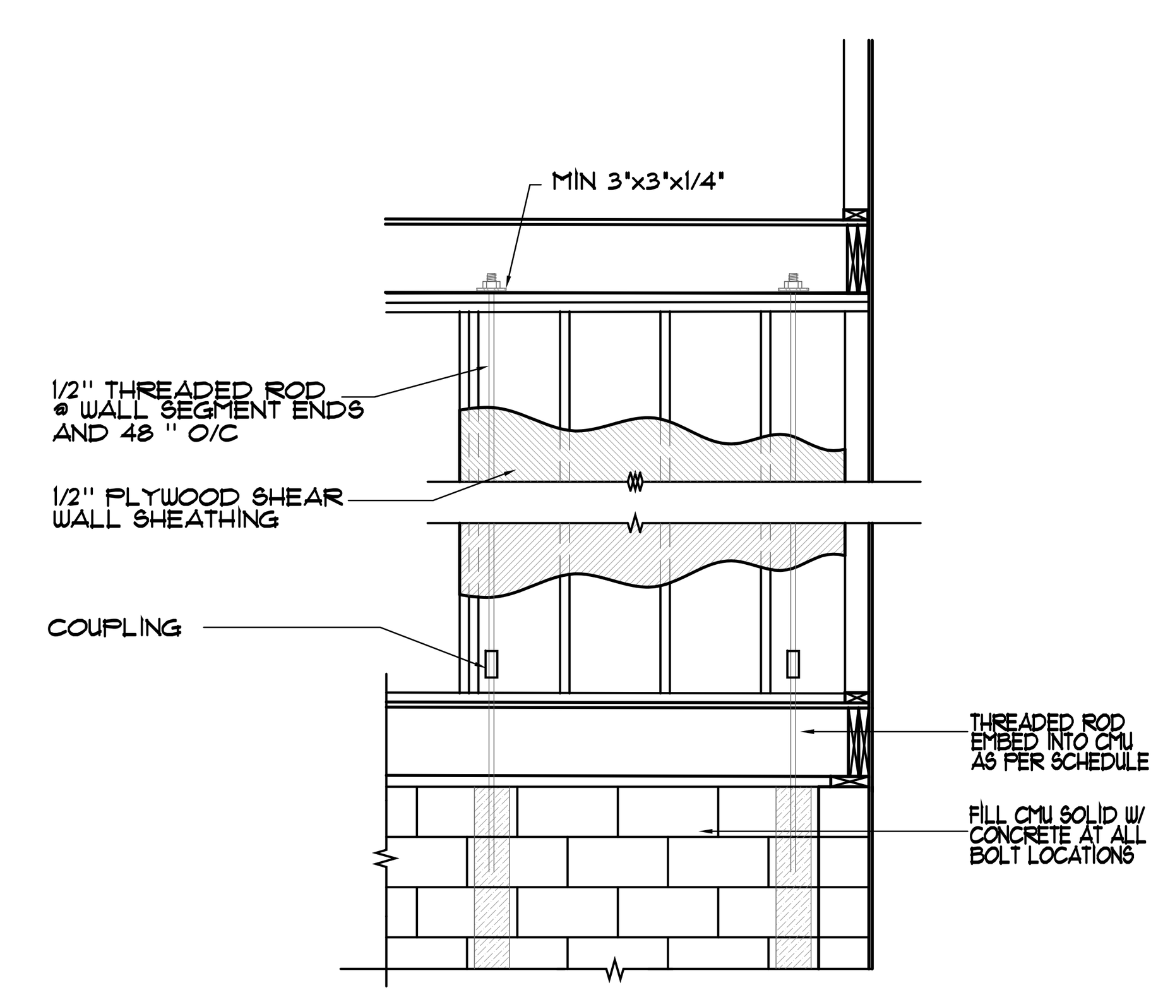
HOLD-DOWN ANCHOR DETAIL
AT FLOOR



HOLD-DOWN ANCHOR DETAIL
AT STEEL (ALL THREAD)



HOLD-DOWN ANCHOR DETAIL / PILE STRINGER
ANCHOR TO STRINGER (ALLTHREAD)



HOLD-DOWN ANCHOR DETAIL / MASONRY
ANCHOR TO MASONRY (ALLTHREAD)

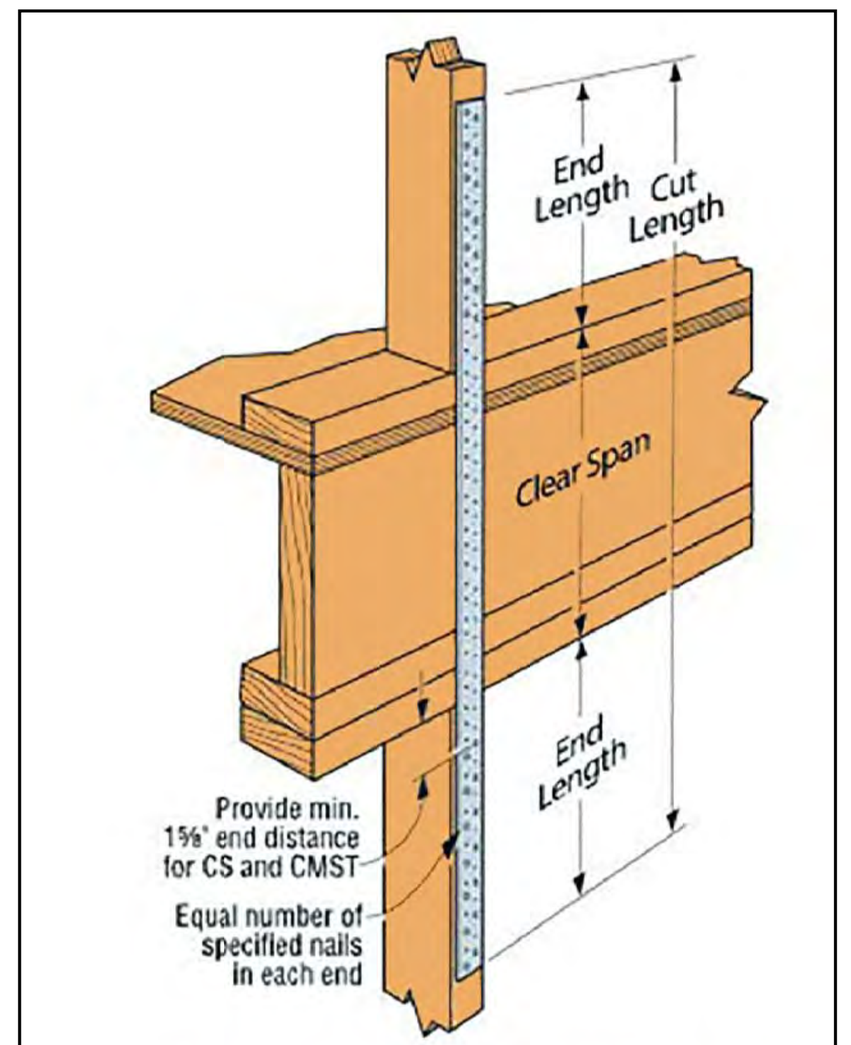


FIGURE 14—TYPICAL INSTALLATION OF CS,CMST,AND CMSTC16 TIE STRAP

PREFABRICATED JOIST
& HOLD DOWN AND STRAPPING
DETAILS

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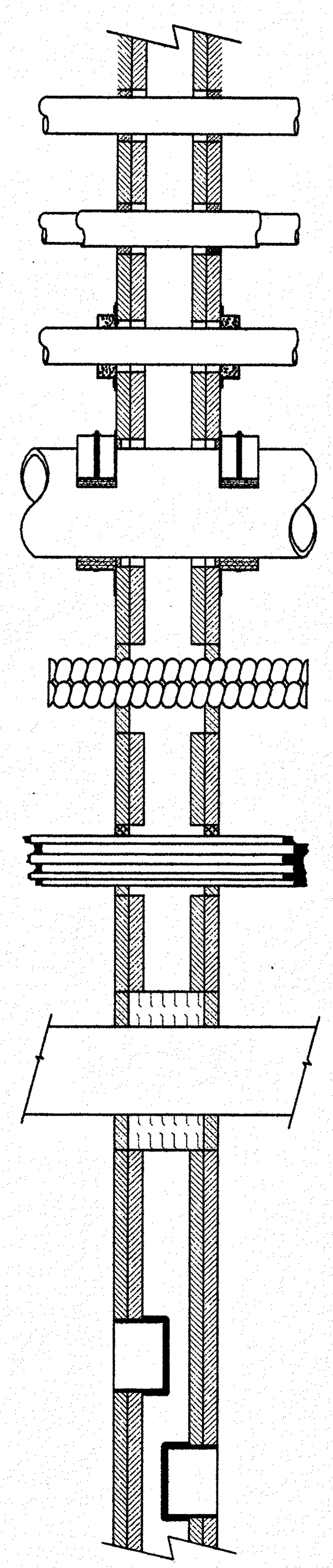
Dwg. No. TJI / HD
Checked: GWT

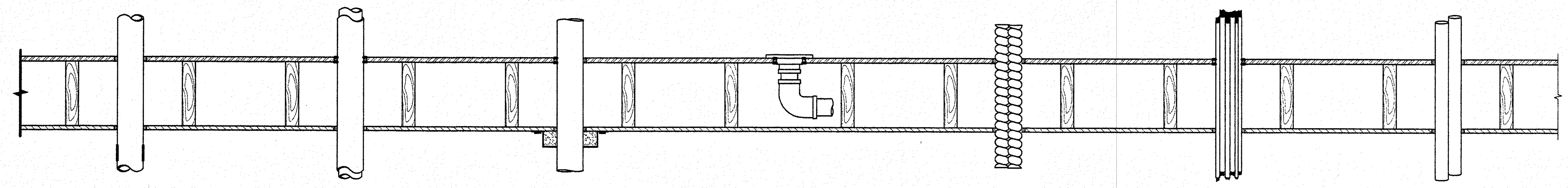
WALL PENETRATIONS

Fig. 1W
Fig. 2W
Fig. 3W
Fig. 4W
Fig. 5W
Fig. 6W
Fig. 7W
Fig. 8W



FLOOR PENETRATIONS (L500 SERIES)

Fig. 1F Fig. 2F Fig. 3F Fig. 4F Fig. 5F Fig. 6F Fig. 6F



[illegible] OR WALL PENETRATIONS

PENETRATING ITEM	NELSON PRODUCT	CONSTRUCTION TYPE					
		FIG NO.	L500 SERIES WOOD FLOOR ASSY	FIG NO.	G500 SERIES CONCRETE & MEMBRANE	FIG NO.	GYPSUM WALL
STEEL, CAST IRON, COPPER	ES1399	1F	F-C-1100/FS-0486	1F	F-E-1007/FS-0409	1W	W-L-1276/FS-0348
PIPE OR STEEL CONDUIT	LBS3		F-C-1116/FS-0548		—		W-L-1334/FS-0590
FIBERGLASS INSULATED	ES1399	2F	F-C-5061/FS-0478	2F	—	2W	—
STEEL, CAST IRON, COPPER	LBS3		F-C-5070/FS-0560		F-E-5007/FS-0566		W-L-5215/FS-0607
AB/PVC INSULATED	LBS3	2F	—	2F	F-E-5007/FS-0566	2W	W-L-5214/FS-0606
STEEL, CAST IRON, COPPER	LBS3/WRS3		F-C-5071/FS-0625		—		—
NON-METALLIC PIPE	LBS3	1F	F-C-2276/FS-0551		—	1W	W-L-2381/FS-0594
OR CONDUIT	LBS3/WRS3	1F	F-C-2293/FS-0623	3F	F-E-2025/FS-0628	4W	W-L-2388/FS-0632
	PCS	3F	F-C-2031/FS-0137		—	3W	W-L-2071/FS-0110
NON-METALLIC PIPE	ES1399	4F	F-C-2278/FS-0553		—		—
CLOSET, FLANGHE	LBS3		F-C-2278/FS-0553		—		—
NON-METALLIC TUBING	ES1399	4F	F-C-2282/FS-0557		—		—
SDR9 (PEX) MULTIPLE	LBS3		F-C-2282/FS-0557		—		W-L-2383/FS-0596
FLEXIBLE METALLIC	ES1399	5F	F-C-1129/FS-0521	5F	—	5W	W-L-1429/FS-0670
CONDUIT (multiple)	LBS3		F-C-1118/FS-0550		F-E-1013/FS-0564		W-L-1429/FS-0670
SERVICE ENTRANCE CABLE	ES1399	6F	F-C-3078/FS-0558	6F	F-E-3007/FS-0410	6W	W-L-3270/FS-0649
ROMEX CABLE	ES1399		F-C-3073/FS-0488		F-E-3007/FS-0410		W-L-3270/FS-0649
COMMUNICATIONS CABLE	ES1399		F-C-3073/FS-0488		F-E-3007/FS-0410		W-L-3270/FS-0649
STEEL DUCT	ES1399	1F	F-C-7020/FS-0408	1F	F-E-7004/FS-0411	7W	W-L-7092/FS-0466
ELECTRICAL OUTLET BOX WALL PROTECTION WHERE NEEDED	FSP PADS		—		—	8W	R10764(CLIV)/FS-0671

UL System No./Nelson Dwg. No.

Notes:
1. This drawing provides a condensed list of firestop systems for a variety of through penetration applications. Additional systems are offered by Nelson Firestop Products. These may be accessed on the "Products/Systems" tab at our website at www.nelsonfirestop.com. See the "Applications/Systems Index".
2. Underwriters Laboratories systems may be accessed at the UL website www.ul.com under "Certifications" or more specifically http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/gothernbr.html
3. All systems shown are rated minimum 2 hour "F" rating.
4. Nelson Firestop Engineering Tech Support – 800-331-7325

FIRESTOP SYSTEM SELECTION
WOOD FRAME CONSTRUCTION
NELSON FIRESTOP PRODUCTS

EGS

PROPRIETARY INFORMATION OF
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FIRE STOPPING DETAILS

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