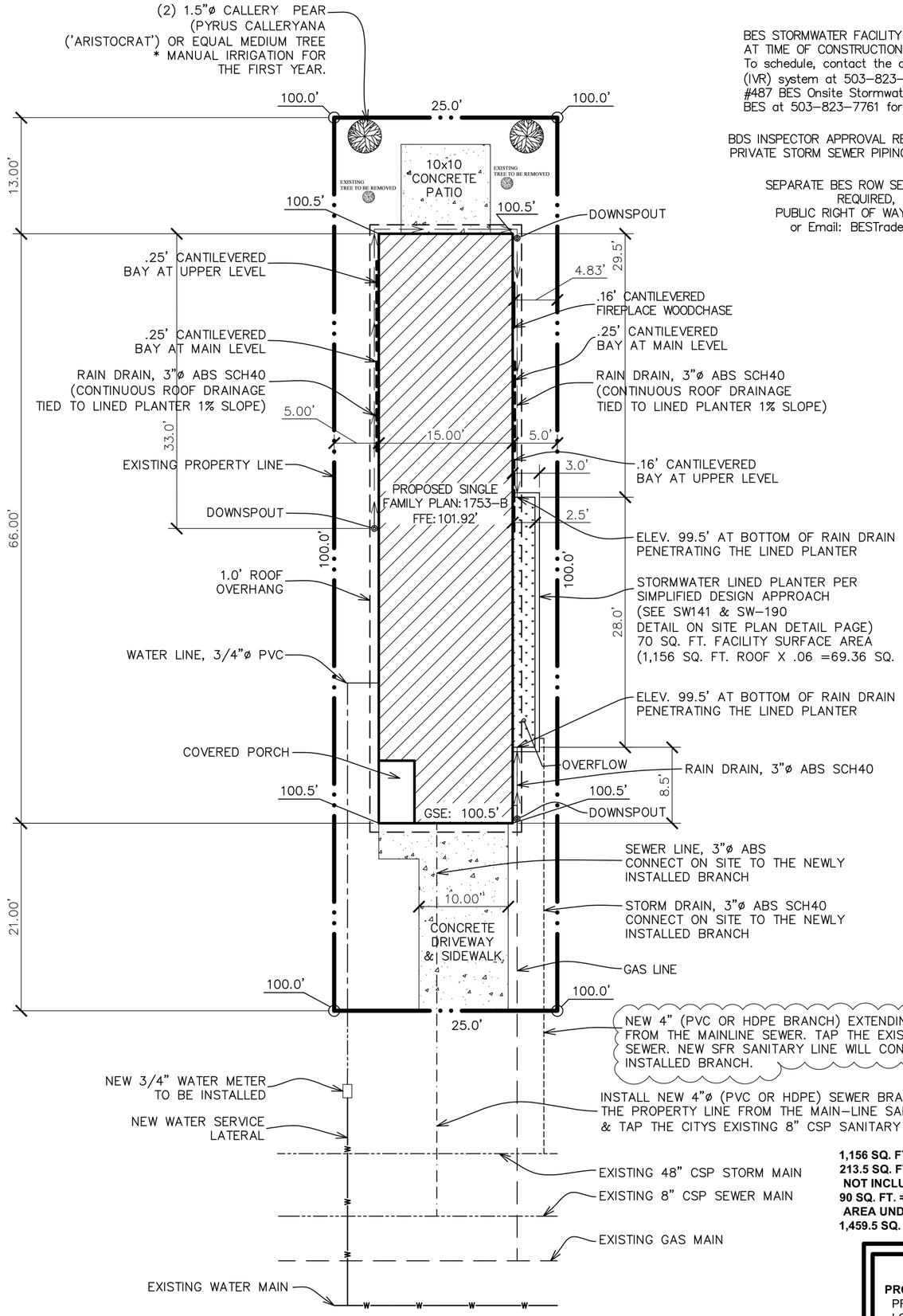


BES STORMWATER FACILITY INSPECTION REQUIRED AT TIME OF CONSTRUCTION. SEE BES INSPECTION CARD. To schedule, contact the automated inspection request (IVR) system at 503-823-7000 and request inspection #487 BES Onsite Stormwater Facility Eval-OR-contact BES at 503-823-7761 for assistance.

BDS INSPECTOR APPROVAL REQUIRED FOR DOWNSPOUTS AND PRIVATE STORM SEWER PIPING OUTSIDE OF STORM FACILITIES.

SEPARATE BES ROW SEWER CONNECTION PERMIT REQUIRED, WORK IN THE PUBLIC RIGHT OF WAY CALL: 503-823-1026 or Email: BESTrades@portlandoregon.gov

NO.	REVISION DATE:	DESCRIPTION:
1	8-19-2021 ZONING	CHANGED THE DEPTH OF THE 4 BAYS & FIREPLACE.
2	9-10-2021 BES	LISTED & SEPERATED THE IMPERVIOUS AREAS
3	9-10-2021 BES	CHANGED TO LINED PLANTER SW-141.
4	9-10-2021 BES	SHOWN & LABELED CORRECT SEWER INFO.
5	9-10-2021 BES	ADDED BES NOTES.
6	9-24-2021 WATER	ADDED GAS LATERALS & MAIN.
7	9-27-2021 BES	UPDATED W/ ELEVATIONS & INFO. FOR LINED PLANTER.
9	10-19-2021 BES, 3RD	NOTED NEW STORM BRANCH IN R.O.W.

1,156 SQ. FT. = ROOF AREA
213.5 SQ. FT. = DRIVEWAY AREA
NOT INCLUDING AREA UNDER ROOF OVERHANGS.
90 SQ. FT. = REAR PATIO AREA NOT INCLUDING AREA UNDER ROOF OVERHANGS.
1,459.5 SQ. FT. IMPERVIOUS AREA TOTAL

NOTES:
1. ALL UTILITIES IN THE RIGHT OF WAY WITHIN THE DEVELOPMENT PROPERTY'S FRONTAGE MUST BE LOCATED THROUGH 811, ONE CALL, AND SHOWN ON THE ASSOCIATED PLAN SET. APPLICANT WILL NEED TO BE ABLE TO PROVIDE THE LOCATE TICKET NUMBER IF REQUESTED FOR VERIFICATION.

2.CONTRACTOR TO SPECIFY EXACT LOCATIONS OF UTILITY STUBS.

3. UNDERGROUND GAS LINE (VERIFY LOCATION).

4.
- SEPERATION BETWEEN SANITARY SEWER & WATER LINE SHOULD BE 5 FT. MINIMUM SKIN TO SKIN.
- SEPERATION BETWEEN UNDERGROUND ELECTRICAL SERVICE LINE & WATER LINE SHOULD BE 4 FT. MINIMUM.
- SEPARATION BETWEEN MULTIPLE WATER SERVICES ON ONE TAX LOT SHOULD BE 3 FT. MINIMUM.
- SEPARATION BETWEEN WATER SERVICE AND PROPERTY LINES SHOULD BE 1.5 FT. MINIMUM.
- ALL OTHER UNDERGROUND UTILITIES NEED TO HAVE 3 FT. MINIMUM SEPERATION FROM WATER LINE.
- NEW WATER METERS SHOULD NOT BE PLACED IN DRIVEWAY WINGS.
- STREET TREES MUST BE A MINIMUM OF 5 FT. FROM THE NEAREST EDGE OF WATER PIPE, VALVE OR METER BOX & A MINIMUM OF 10 FT. FROM A FIRE HYDRANT. REFERENCE STANDARD DRAWING P-845 FOR MORE INFORMATION.

PREMISES IDENTIFICATION: NEW AND EXISTING BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY, INCLUDING MONUMENT SIGNS. THESE NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND. ADDRESS NUMBERS SHALL BE ARABIC NUMERALS OR ALPHABET LETTERS. NUMBERS SHALL BE A MINIMUM OF 4 INCHES HIGH WITH A MINIMUM STROKE WIDTH OF 1/2 INCH. WHERE ACCESS IS BY MEANS OF A PRIVATE ROAD AND THE BUILDING CANNOT BE VIEWED FROM THE PUBLIC WAY, A MONUMENT, POLE OR OTHER SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE(S). (OFC 505.1)

PROJECT LEGAL DESCRIPTION:
PROP. ID#: STATE ID: 1S2E19CC 1802
LOT 18, STANFORD HTS, BLOCK13
SE 1/4 NE 1/4 SEC. 8, T.IS R.2E.
W.M. MULTNOMAH COUNTY, OREGON

PROJECT ADDRESS:
4441 SE UMATILLA ST, (LOT E. OF 4407)
PORTLAND, OREGON 97206

PROPOSED PROJECT FOR:
SENTAUR INC.

ROOF AREA: 1,156.0 SQ. FT.

FLATWORK AREA:
DRIVEWAY & SIDEWALK 238.0 SQ. FT.
COVERED FRONT PORCH 28.0 SQ. FT.
REAR PATIO 100.0 SQ. FT.
TOTAL= 560.0 SQ. FT.

LOT COVERAGE:
LOT AREA 2,500.0 SQ. FT.
BUILDING AREA 997.2 SQ. FT.
(*NOT INCLUDING OVERHANGS*)
39.9 % LOT COVERAGE

ZONING:
ZONE: R5 OVERLAY: N/A

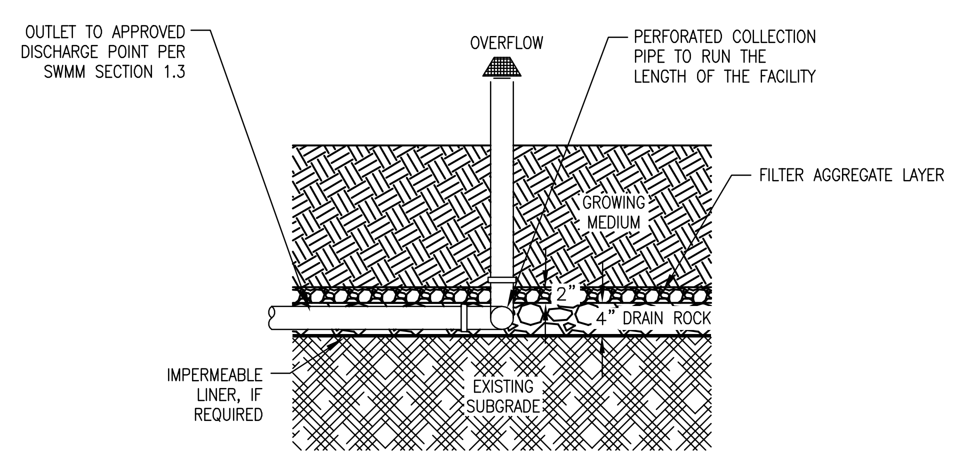
SITE PLAN

SCALE: 1" = 10.0' (ON 18"X24" PAPER SIZE)
DATE: 6-30-21
JOB# 21-53

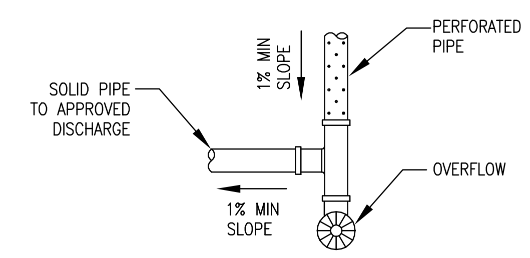
NORTH

MASSIE HOME DESIGN
500 NW 20TH ST STE 203 (o) PHONE: 503-663-1100
GRESHAM, OREGON 97030 EMAIL: brian@massiehd.com

21-064608 RS



SECTION



PLAN

PIPE W/ UNDERDRAIN & DISCHARGE POINT

– DRAWING NOT TO SCALE –

Bureau of Environmental Services

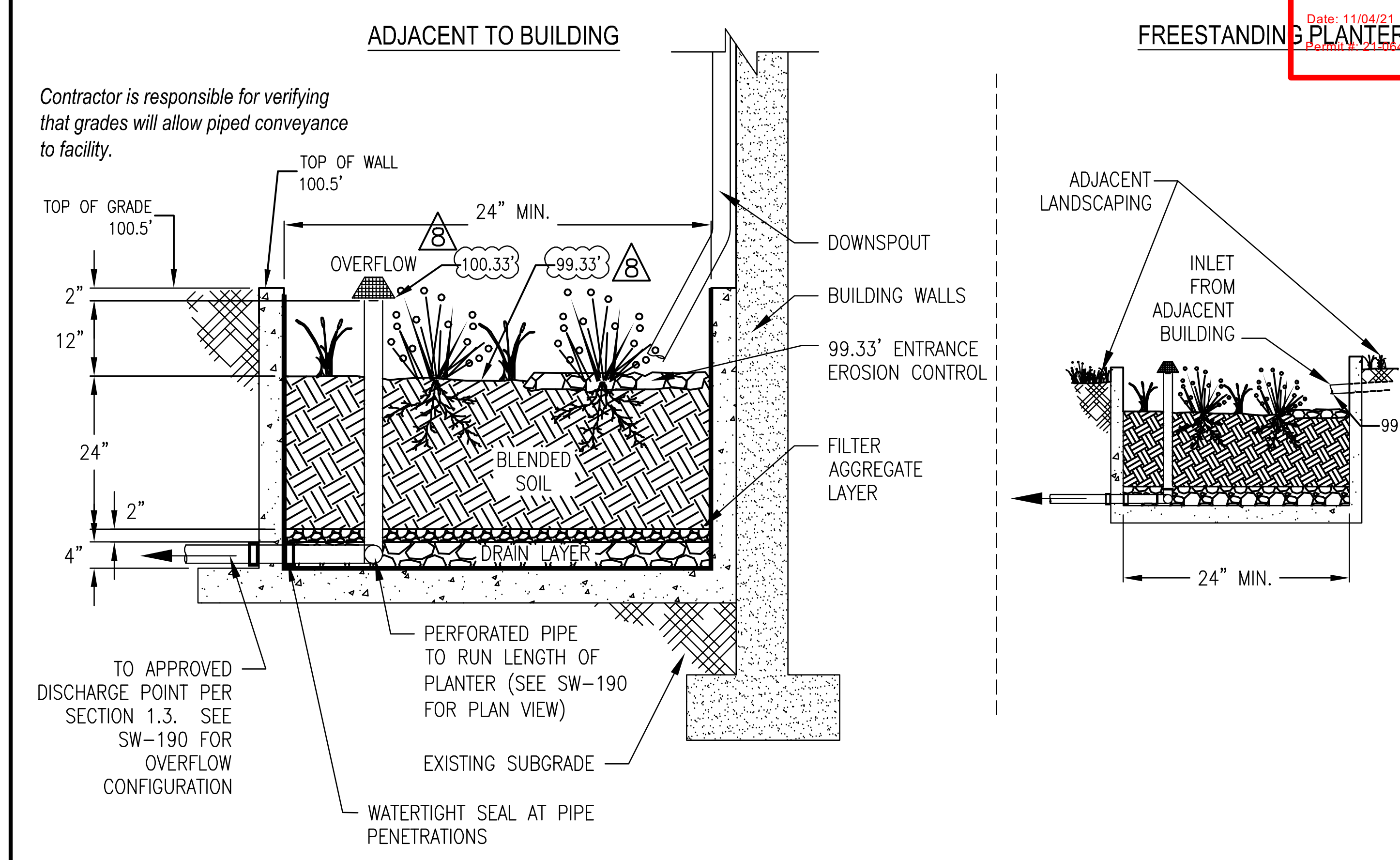
STORMWATER MANAGEMENT TYPICAL DETAILS FOR PRIVATE PROPERTY

UNDERDRAIN AND OVERFLOW CONFIGURATIONS

SW-190

9-2-20

SIMPLIFIED DESIGN APPROACH



1. Setbacks: No setback is required for lined planters. Walls can't exceed 30" height above grade if within 5' of property line including right-of-way.

2. Facility Slope (planted floor): Maximum of 0.5% in all directions.

3. Planter Structure: A single-pour monolithic concrete shell, without cold joints, is required to avoid the requirement for liner. Include walls on foundation plans. Check state structural standards for foundations.

4. Waterproofing: No additional waterproofing is needed if structure is monolithically poured.

5. Piping: Conform with Oregon Plumbing Specialty Code (OPSC) requirements.

6. Drain Layer: 4" of $\frac{3}{4}$"–1 $\frac{1}{2}$" washed drain rock. Filter aggregate layer: 2–3" of $\frac{1}{4}$"–No.10 washed angular aggregate.

7. Overflow: Overflow elevation must allow for 2" of freeboard, minimum. Protect from debris and sediment with strainer or grate.

8. Blended Soil: Use BES' standard soil blend for stormwater facilities (SWMM Section 6.3) unless otherwise approved. Install minimum of 24" of blended soil.

9. Vegetation: Refer to plant list in SWMM Section 3.5. Minimum container size is 1 gal. Number of plantings per 100sf of facility area: 80 herbaceous plants OR 72 herbaceous plants and 4 small shrubs.

10. Entrance Erosion Control: Install river rock, flagstone, or similar to dissipate the energy of incoming water at entrances and ends of downspout extensions.

11. Inspections: Call BDS IVR Inspection Line, (503) 823-7000, request 487. 3 inspections required.

CONSTRUCTION REQUIREMENTS
Do not allow temporary storage of construction waste or materials in the facilities. Do not allow entry of runoff or sediment during construction.

– DRAWINGS NOT TO SCALE –

Bureau of Environmental Services

STORMWATER MANAGEMENT TYPICAL DETAILS FOR PRIVATE PROPERTY

LINED PLANTER

SW-141

9-2-20

SIMPLIFIED DESIGN APPROACH

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 11/04/21

7	9-27-2021 BES	UPDATED W/ ELEVATIONS & INFO. FOR LINED PLANTER.
8	10-19-2021 BES, 3RD	UPDATED ELEVATIONS AT OVERFLOW RISER & AT GROWING MEDIUM

PROJECT LEGAL DESCRIPTION:
PROP. ID#: STATE ID: 1S2E19CC 1802
LOT 18, STANFORD HTS, BLOCK13
SE 1/4 NE 1/4 SEC. 8, T.IS R.2E.
W.M. MULTNOMAH COUNTY, OREGON

PROJECT ADDRESS:
4441 SE UMATILLA ST, (LOT E. OF 4407)
PORTLAND, OREGON 97206

PROPOSED PROJECT FOR:
SENTAUR INC.

SITE PLAN DETAILS

SCALE: 1" = 10.0' (ON 18"X24" PAPER SIZE)
DATE: 9-10-21
JOB# 21-53

NORTH

MASSIE HOME DESIGN
500 NW 20TH ST STE 203 (o) PHONE: 503-663-1100
GRESHAM, OREGON 97030 EMAIL: brian@massiehd.com

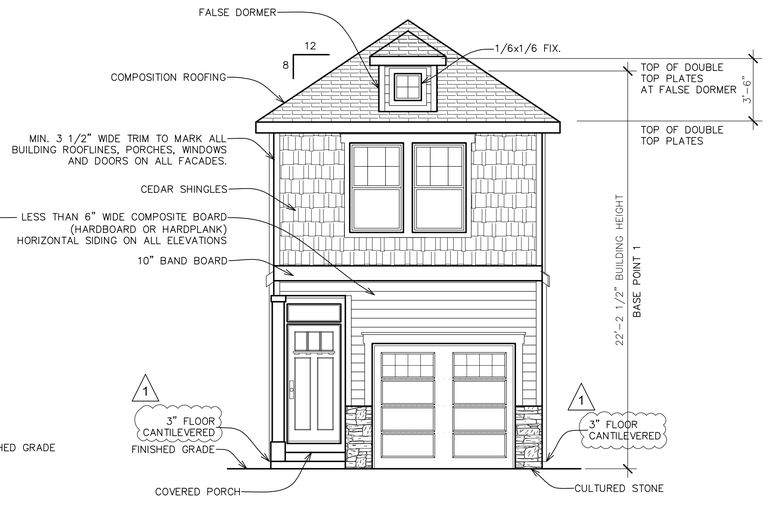
RECEIVED 10-20-21

CITY OF PORTLAND BASE ZONE DESIGN STANDARD

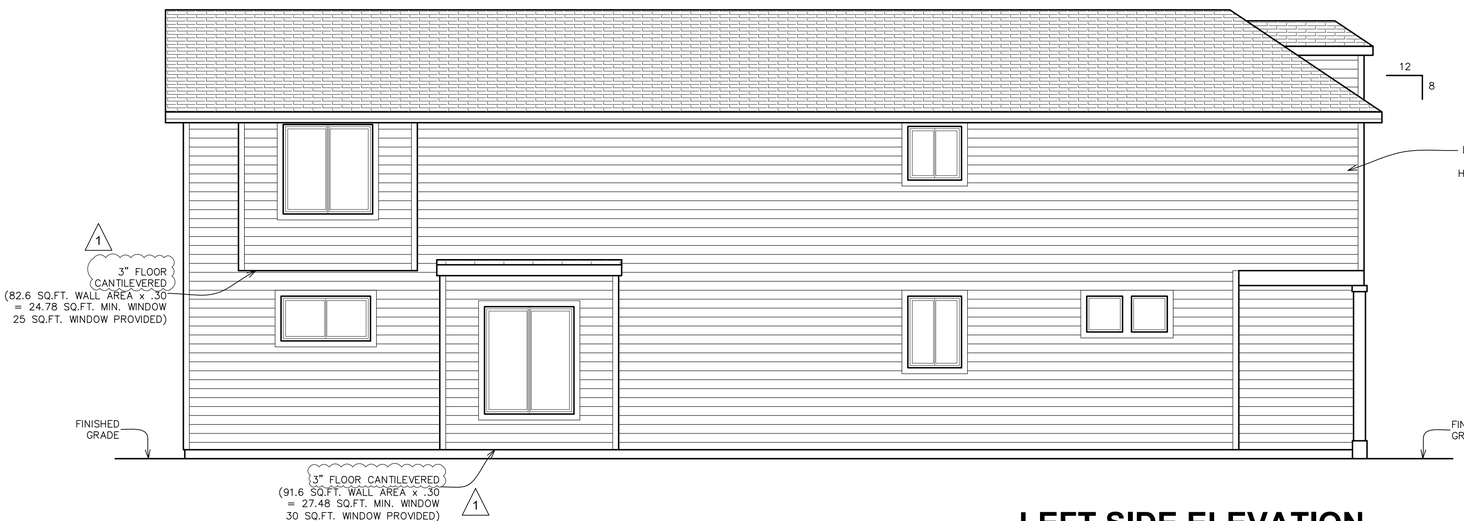
STREET-FACING FACADE:
55.25 SQ. FT. WINDOW & DOOR AREA OF STREET FACING FACADE DIVIDED BY 315.9 SQ. FT. AREA OF STREET FACING FACADE = 17.5% WINDOW AND DOOR AREA OF STREET FACING FACADE (15% MIN.)

CITY OF PORTLAND
REVISED FOR CODE COMPLIANCE
Date: 11/04/2021
Permit #: 21-064608-000-00-RS

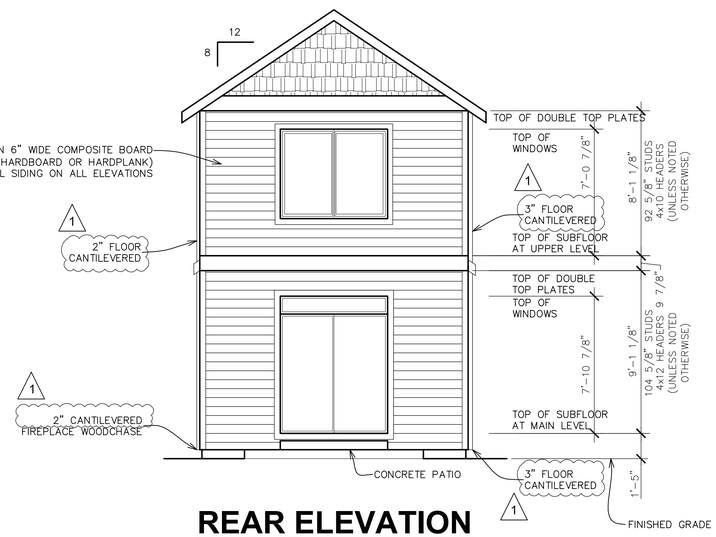
RIGHT SIDE ELEVATION
SCALE: 1/4" = 1'-0"



FRONT ELEVATION
SCALE: 1/4" = 1'-0"



LEFT SIDE ELEVATION
SCALE: 1/4" = 1'-0"



REAR ELEVATION
SCALE: 1/4" = 1'-0"

RECEIVED 8-19-21

SCALE: 1/4" = 1'-0" (ON 24" X 36" PAPER SIZE)

MASSIE HOME DESIGN
500 NW 20TH ST STE 203
GRESHAM OREGON 97030
(O) PHONE: 503-663-1100
EMAIL: brian@massiehd.com

PROJECT ADDRESS:
LOT 18
4441 SE UMATILLA ST.
PORTLAND, OREGON 97206

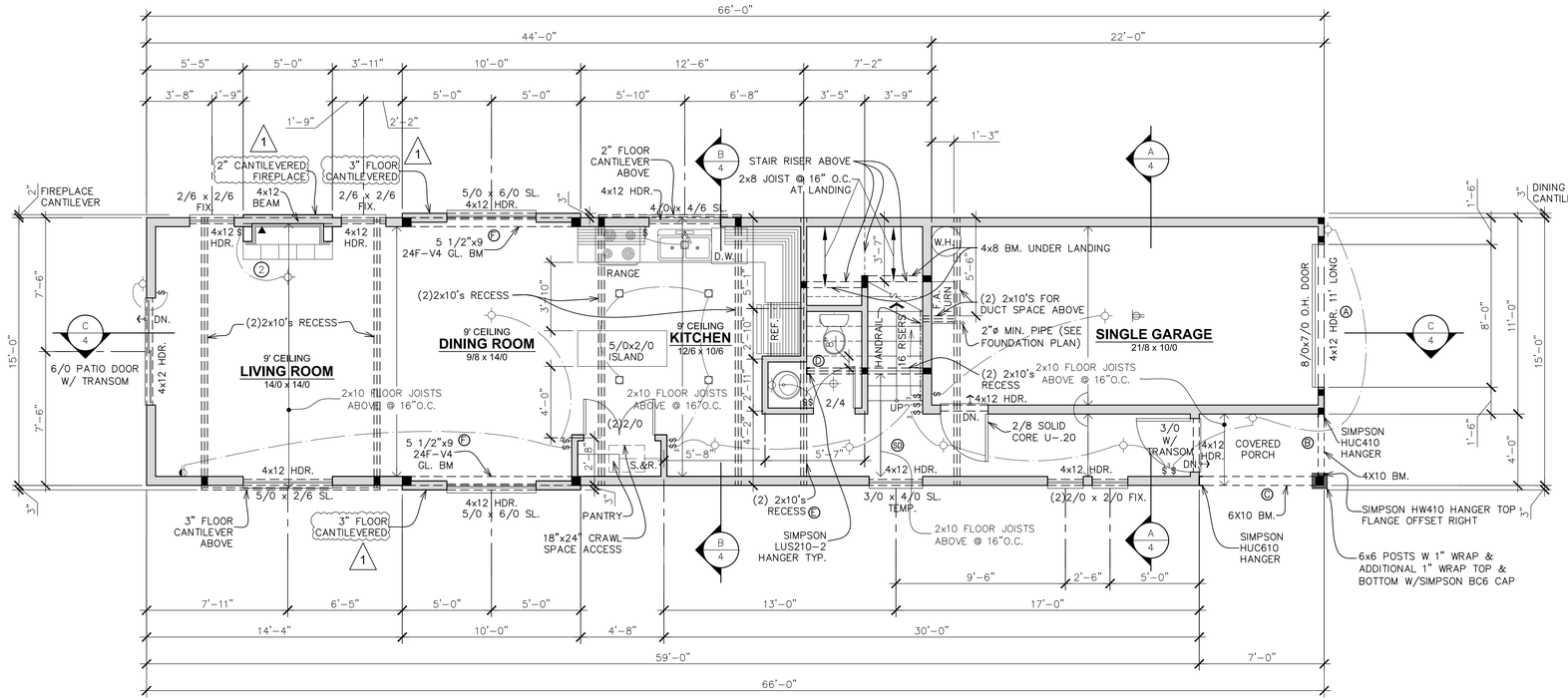
PLAN 1753-B
FOR
SENTAUR INC.

21-064608

NO.	REVISION DATE:	DESCRIPTION:
1	8-19-21	CHANGED THE DEPTH OF THE 4 BAYS & FIREPLACE.

DRAWN BY: E.H.
REVIEWED BY:BLM
DATE. 6-30-21
JOB# 21-53

1 OF 5



MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

746 SQ. FT. MAIN FLOOR
235 SQ. FT. 1 CAR GARAGE

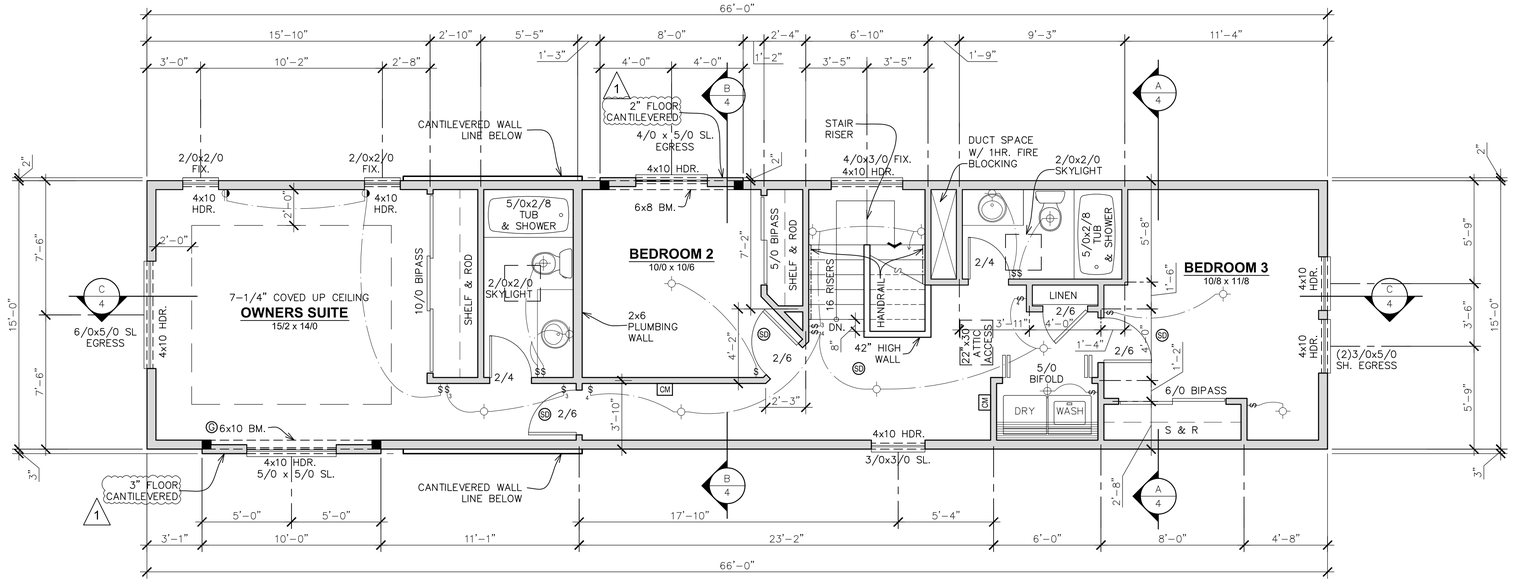
1,753 SQ. FOOTAGE TOTAL LIVING AREA
(PER ANSI Z765-2003)

←FRONT

LEGEND:
- SURFACE MOUNTED INCANDESCENT
- WALL MOUNTED INCANDESCENT
- RECESSED INCANDESCENT
- EXHAUST FAN VENTED TO EXTERIOR
- CEILING MOUNTED DUPLEX OUTLET
- SPLIT-WIRED OUTLET, WIRE TO SWITCH
- $ SINGLE-POLE SWITCH
- $3 THREE-WAY SWITCH
- TELEPHONE OUTLET
- TV TELEVISION OUTLET
- SD 110V SMOKE ALARM / DETECTOR WITH BATTERY BACKUP-INNERCONNECT
- CM 110V CARBON MONOXIDE ALARM / DETECTOR WITH BATTERY BACKUP-IN EACH BEDROOM OR WITHIN 15 FEET OUTSIDE OF EACH BEDROOM DOOR
- (A) STRUCTURAL BEAM, SEE INCLUDED CALCULATIONS FOR BEAM DATA
- INTERIOR BEARING WALL
- BEARING POINT LOCATION, PROVIDE 2 x STUDS. MIN. OF BEAM WIDTH, UNLESS NOTED

NOTES:
1. VENT RANGE HOOD / DOWNDRAFT EXHAUST MIN. 150 CFM INTERMITTENT TO OUTSIDE. VENT DRYER, LAUNDRY & BATH FANS TO OUTSIDE. BATH ROOMS WITH BATHING FACILITIES SHALL HAVE A MECHANCIAL VENTILATION SYSTEM DESIGNED TO EXHAUST A MINIMUM OF 80 CFM INTERMITTENT OR 20 CFM CONTINUOUS CONTROLLED BY A DE-HUMIDISTAT TIMER OR SIMILAR MEANS OF AUTOMATIC CONTROL. IN ADDITION, WHEN NOT PROVIDED WITH NATURAL VENTILATION , TOILET ROOMS WITHOUT BATHING OR SPA FACILITIES SHALL HAVE A MECHANICAL VENTILATION SYSTEM DESIGNED TO EXHAUST A MINIMUM OF 50 CFM.
2. METAL GAS FIREPLACE TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS, PROVIDE OUTSIDE COMBUSTIBLE AIR.
3. PROVIDE 18" PLATFORM FOR WATER HEATER & FURNACE.
4. SEISMIC STRAPPING OF WATER HEATER IS REQUIRED PER SECTION M1307.2

**SHEARWALL/HOLD-DOWN CALLOUT, SEE ENGINEERING "S" PAGES FOR TYPES REQUIRED.



←FRONT

UPPER FLOOR PLAN

SCALE: 1/4" = 1'-0"

994 SQ. FT. UPPER FLOOR

NO.	REVISION DATE:	DESCRIPTION:
1	8-19-21	CHANGED THE DEPTH OF THE 4 BAYS & FIREPLACE.

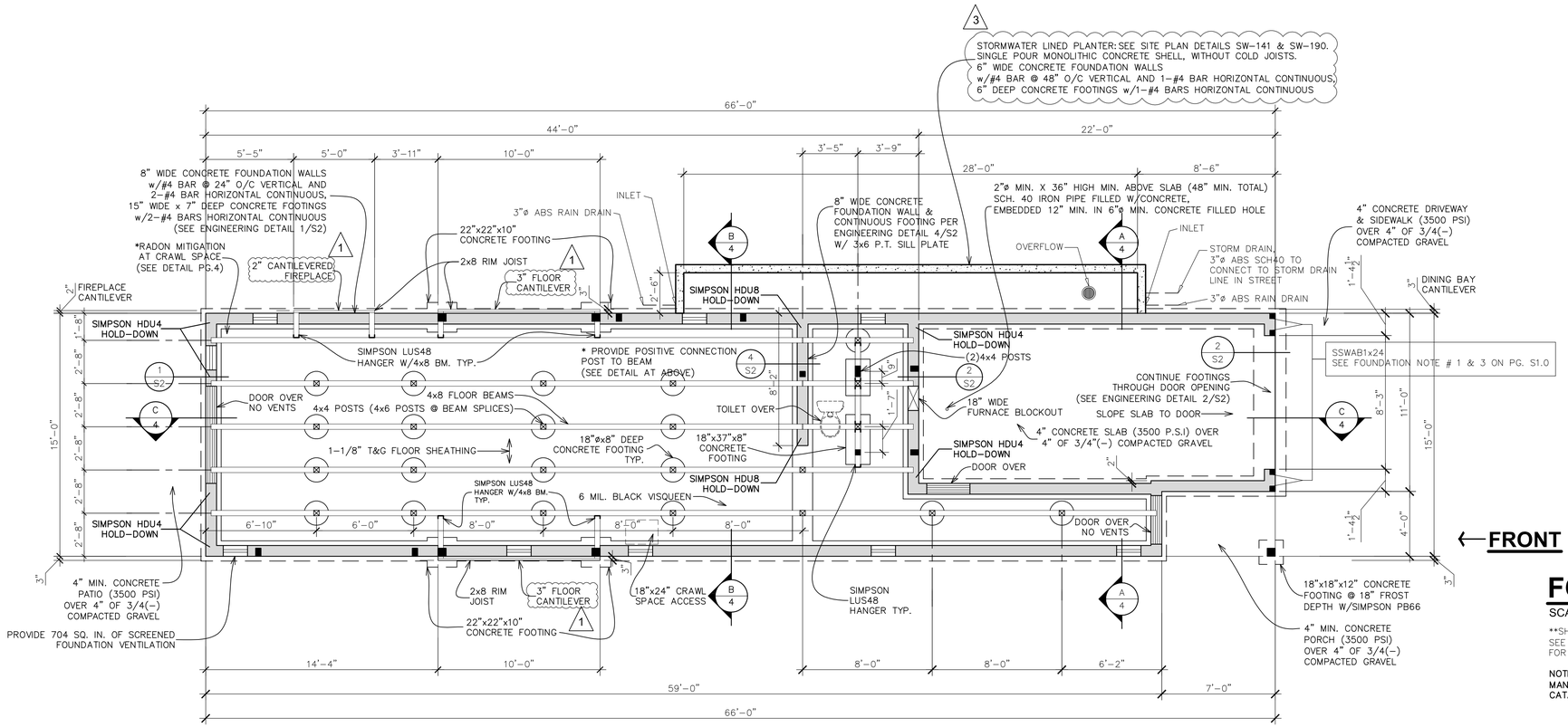
DATE. 6-30-21

PLAN 1753-B

2 OF 5

RECEIVED 8-19-21

SCALE: 1/4" = 1'-0" (ON 24" X 36" PAPER SIZE)

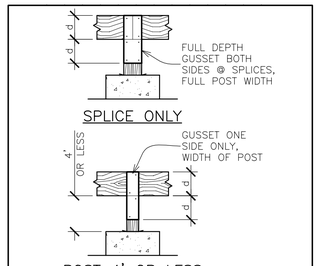


FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

**SHEARWALL/HOLD-DOWN CALLOUT, SEE ENGINEERING "S" PAGES FOR TYPES REQUIRED.

NOTE: "SIMPSON" PRODUCTS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS. SEE CURRENT "SIMPSON" CATALOG FOR MORE INFORMATION.



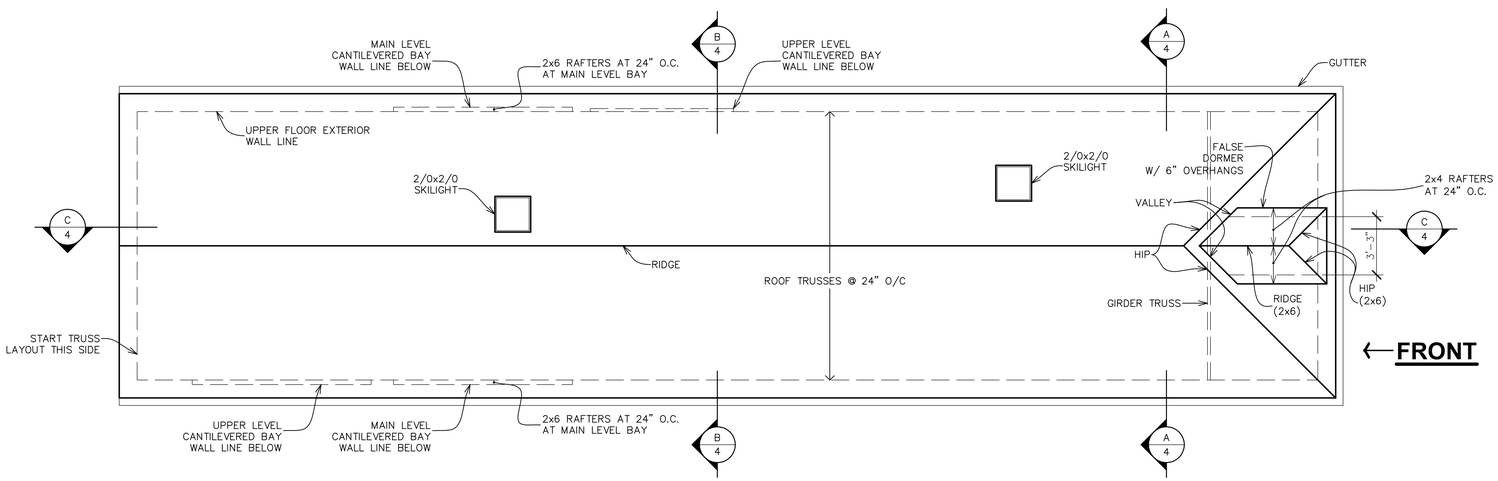
NOTES:
1. DETAILS SHOWN APPLY WHEN THERE IS FULL PERIMETER FOUNDATION WALLS.
2. THIS IS AN ACCEPTABLE PRACTICE PERTAINING TO SECTIONS R407.3 AND R502.9

NAIL AND SCREW PENETRATION	END OR EDGE DISTANCE
8d NAILS, #8 SCREWS = 1 1/2"	3/4"
10d NAILS, #10 SCREWS = 1 5/8"	13/16"

CONNECTORS:
1. QUANTITY AS SHOWN ON DETAILS.
2. GUSSET PLATE: 1/2" STRUCTURAL SHEATHING OR 1x4" NOMINAL WOOD LUMBER MIN. OR 16 GAUGE (0.0598") STEEL PLATE MIN.
3. NAILS: 8d FOR 1/2" STRUCTURAL SHEATHING OR 1x (VARIES) NOMINAL MATERIALS. 10d FOR 2x (VARIES) NOMINAL MATERIALS & LARGER.
4. WOOD SCREWS & STAPLES ARE AN ACCEPTABLE ALTERNATE.

*EXCEPTION: GIRDERS & POSTS SUPPORTING EXTERIOR DECKS NOT EXCEEDING 18" INCHES (457MM) IN HEIGHT ARE NOT REQUIRED TO BE LATERALLY BRACED OR HAVE GUSSETS AT POST AND GIRDER CONNECTIONS. (SEE SECTION R507)

FIGURE R502.9
POST AND BEAM CONNECTIONS (AT CRAWL SPACE)



ROOF STRUCTURE SPECIFICATIONS:
1. COMPOSITION ROOFING
2. 15# FELT
3. 15/32" ROOF SHEATHING
4. ROOF TRUSSES @ 24" O/C
   2x6 RAFTERS AT 24" O.C. AT MAIN LEVEL BAY
5. 2x6 BARGE RAFTERS
6. 1'-0" ROOF OVERHANGS (2" ROOF EAVE OVERHANG AT BAYS)
   6" OVERHANGS AT FALSE DORMER
7. GUTTERS, OWNER TO SPECIFY & LOCATE DOWNSPOUTS
8. 8/12 ROOF PITCH

ROOF VENTILATION SPECIFICATIONS:
1. PROVIDE (5) 50 SQ.IN. SCREENED ROOF RIDGE VENTS AT UPPER LEVEL (238 SQ. IN. TOTAL).
2. PROVIDE (12) 20 SQ. IN. SCREENED ROOF EAVE VENTS AT UPPER LEVEL (238 SQ. IN. TOTAL).

ROOF PLAN

SCALE: 1/4" = 1'-0"

NO.	REVISION DATE:	DESCRIPTION:
1	8-19-21	CHANGED THE DEPTH OF THE 4 BAYS & FIREPLACE.
2	9-10-21	CHANGED TO LINED PLANTER SW-141.

DATE. 6-30-21

PLAN 1753-B

3 OF 5

SCALE: 1/4" = 1'-0" (ON 24" X 36" PAPER SIZE)

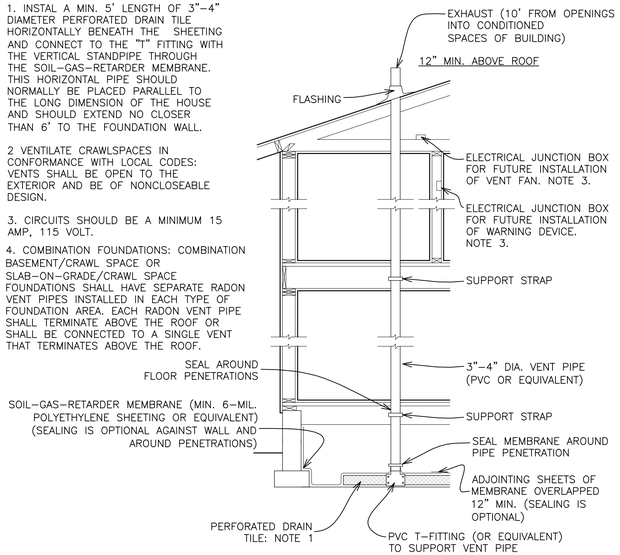
PASSIVE RADON CONTROL SYSTEM IN CRAWL SPACE FOR NEW CONSTRUCTION

NOTES:
1. INSTAL A MIN. 5' LENGTH OF 3"–4" DIAMETER PERFORATED DRAIN TILE HORIZONTALLY BENEATH THE SHEETING AND CONNECT TO THE "T" FITTING WITH THE VERTICAL STANDPIPE THROUGH THE SOIL–GAS–RETARDER MEMBRANE. THIS HORIZONTAL PIPE SHOULD NORMALLY BE PLACED PARALLEL TO THE LONG DIMENSION OF THE HOUSE AND SHOULD EXTEND NO CLOSER THAN 6' TO THE FOUNDATION WALL.

2 VENTILATE CRAWLSPACES IN CONFORMANCE WITH LOCAL CODES: VENTS SHALL BE OPEN TO THE EXTERIOR AND BE OF NONCLOSEABLE DESIGN.

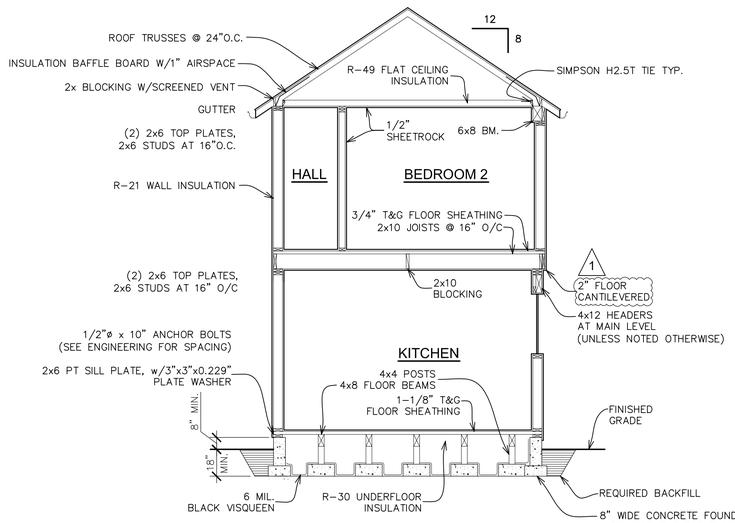
3. CIRCUITS SHOULD BE A MINIMUM 15 AMP, 115 VOLT.

4. COMBINATION FOUNDATIONS: COMBINATION BASEMENT/CRAWL SPACE OR SLAB–ON–GRADE/CRAWL SPACE FOUNDATIONS SHALL HAVE SEPARATE RADON VENT PIPES INSTALLED IN EACH TYPE OF FOUNDATION AREA. EACH RADON VENT PIPE SHALL TERMINATE ABOVE THE ROOF OR SHALL BE CONNECTED TO A SINGLE VENT THAT TERMINATES ABOVE THE ROOF.



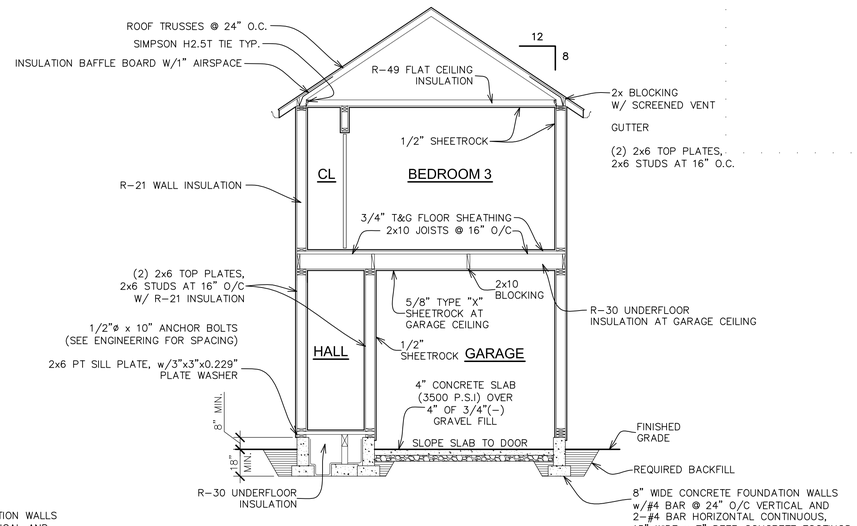
RADON MITIGATION

PASSIVE SUB-MEMBRANE DEPRESSURIZATION SYSTEM
(NOT TO SCALE)



CROSS SECTION B

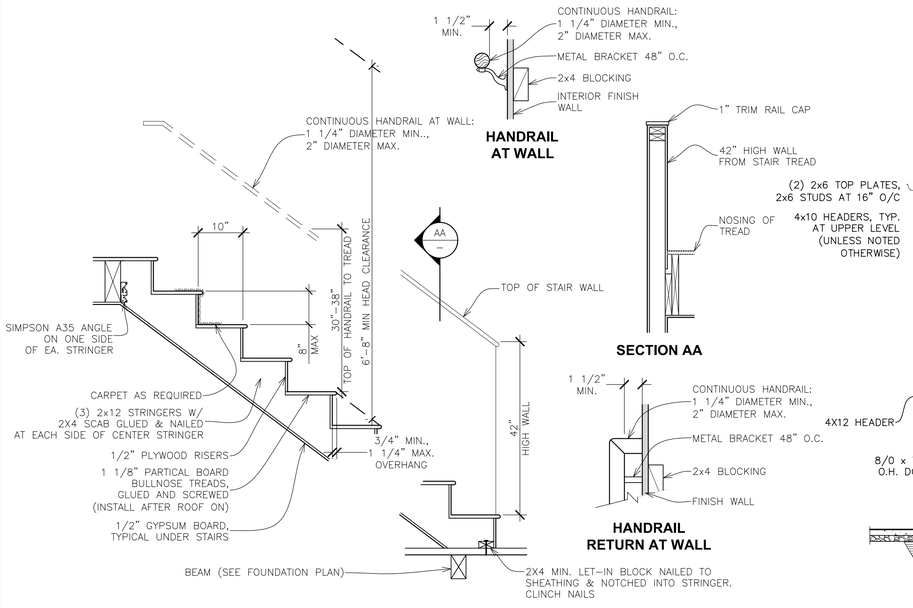
SCALE: 1/4" = 1'-0"



CROSS SECTION A

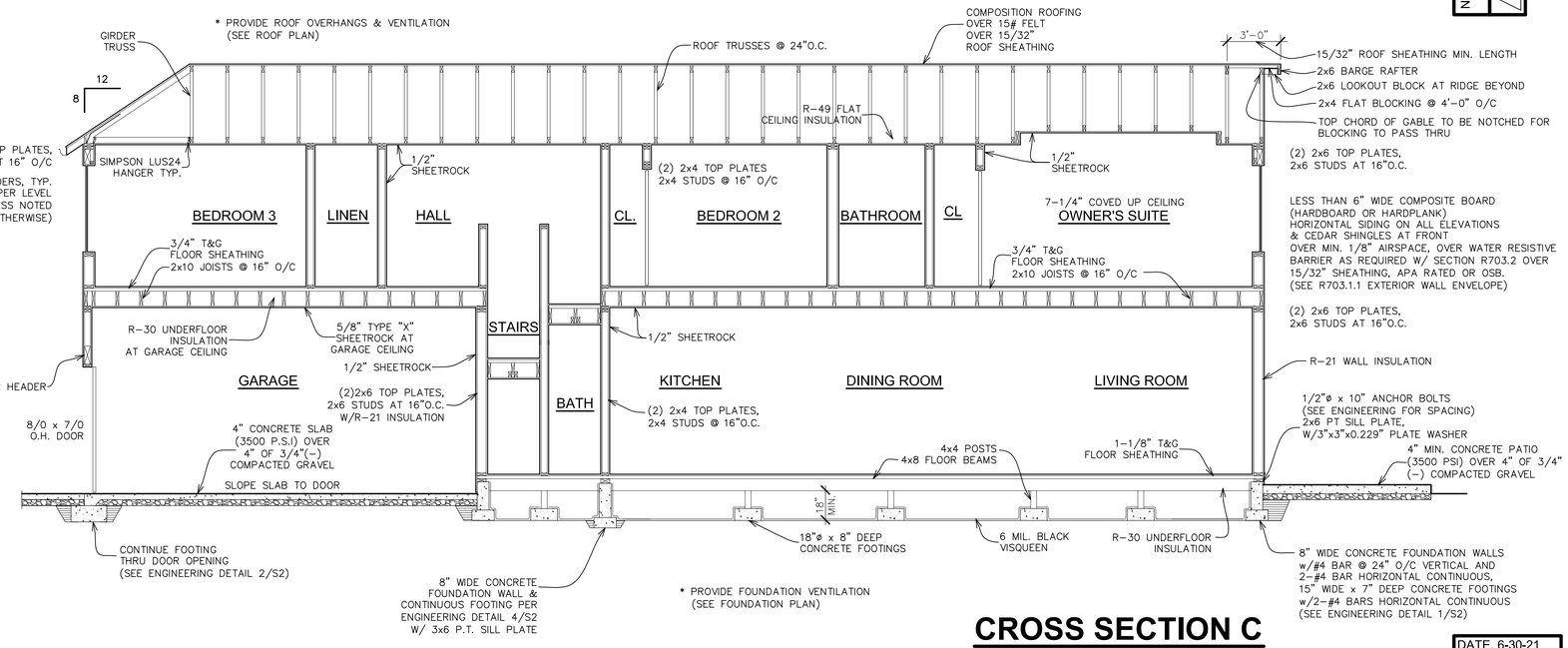
SCALE: 1/4" = 1'-0"

NO.	REVISION DATE:	DESCRIPTION:
1	8-19-21	CHANGED THE DEPTH OF THE 4 BAYS & FIREPLACE.



STAIR DETAIL W/ 42" HIGH WALL

NO SCALE
(FOR INTERIOR STAIRS)



CROSS SECTION C

SCALE: 1/4" = 1'-0"

DATE. 6-30-21

PLAN 1753-B

RECEIVED 8-19-21

SCALE: 1/4" = 1'-0" (ON 24" X 36" PAPER SIZE)

City of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 11/04/21
Permit #: 21-064608-000-00-RS

GENERAL NOTES AND SPECIFICATIONS

GENERAL NOTES

1. THESE PLANS ARE TO COMPLY WITH THE 2017 OREGON RESIDENTIAL SPECIALTY CODE (ORSC) EFFECTIVE OCT. 1ST 2017. BASED ON THE 2015 INTERNATIONAL RESIDENTIAL CODE (IRC) AND ANY APPLICABLE STATE, COUNTY OR LOCAL REGULATIONS. BUILDING CODES AND REQUIREMENTS CAN CHANGE AND MAY VARY FROM JURISDICTION TO JURISDICTION. IT IS THE RESPONSIBILITY OF THE PURCHASER AND/OR CONTRACTOR OF THIS PLAN TO SEE THAT THE STRUCTURE IS BUILT IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE TO CHECK THE PLANS FOR ANY ERRORS OR OMISSIONS AND NOTIFY THE DESIGNER PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS. MASSIE HOME DESIGN SHALL BE NOTIFIED OF ANY DISCREPANCY BETWEEN THE EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS.
4. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS.
5. THESE PLANS ARE FOR THE CONSTRUCTION OF ONE BUILDING ONLY AND ARE NOT TO BE COPIED IN ANY FORM WITHOUT THE EXPRESS WRITTEN PERMISSION OF MASSIE HOME DESIGN.

LUMBER GRADES: (BEAM CALCULATIONS TAKE PRECEDENCE OVER TABLE BELOW)

GRADE	STRUCTURAL MEMBER
DOUGLAS FIR-LARCH #2	STUDS, POSTS, BEAMS AND HEADERS, ROOF RAFTERS, FLOOR & CEILING JOISTS
VISUALLY GRADED WESTERN SPECIES 24F-V4	GLULAM BEAMS
DOUGLAS FIR-LARCH #3	SILLS, PLATES, BLOCKING, BRIDGING, ETC.

DESIGN LOADS: MAY VARY IN YOUR LOCAL AREA. CONSULT WITH A LOCAL STRUCTURAL ENGINEER OR DESIGNER FOR APPROPRIATE REVISIONS.

ROOF:	25 PSF LIVE LOAD, 15 PSF DEAD LOAD	
FLOOR, BALCONIES (EXTERIOR) AND DECKS:	40 PSF LIVE LOAD 10 PSF DEAD LOAD	
PASSENGER VEHICLE GARAGES, ELEVATED GARAGE FLOORS SHALL BE CAPABLE OF SUPPORTING A 2,000# POINT LOAD APPLIED OVER A 6-INCH SQUARE-AREA ANYWHERE WHEN ON THE FLOOR. SEE TABLE R301.5		50 PSF LIVE LOAD 2000# POINT LOAD
CEILINGS	10 PSF LIVE LOAD, 5 PSF DEAD LOAD	
STAIRS	40 PSF LIVE LOAD, SEE TABLE R301.5	

CONCRETE AND FOUNDATIONS

1. SOIL BEARING PRESSURE ASSUMED TO BE 1500 PSF.
2. FOOTINGS TO BEAR ON UNDISTURBED LEVEL SOIL DEVOID OF ORGANIC MATERIAL AND STEPPED AS REQUIRED TO MAINTAIN A MINIMUM OF 18" BELOW FINAL GRADE.
3. ALL SLABS ON GRADE SHALL BEAR ON 4" COMPACTED GRANULAR FILL.
4. CONCRETE: (28 DAY COMPRESSIVE STRENGTH)
   - 2500 PSI – BASEMENT WALLS AND FOUNDATIONS NOT EXPOSED TO THE WEATHER; BASEMENT AND INTERIOR SLABS ON GRADE, EXCEPT GARAGE FLOOR SLABS
   - 3000 PSI – BASEMENT, FOUNDATION AND EXTERIOR WALLS; OTHER VERTICAL CONCRETE WORK EXPOSED TO THE WEATHER
   - 3500 PSI – PORCHES, CARPORT SLABS AND STEPS EXPOSED TO THE WEATHER; GARAGE FLOOR SLAB
5. CONCRETE SLABS TO HAVE CONTROL JOINTS AT 25' MAXIMUM INTERVALS EACH WAY.
6. REINFORCING STEEL TO BE ASTM A706 GRADE 60 MIN., WELDED WIRE MESH TO BE A185.
7. COVER ENTIRE CRAWL SPACE WITH 6 MIL. BLACK PLASTIC SHEETING, OVERLAP SEAMS 12" MIN. AND EXTEND UP FOUNDATION WALLS 12".
8. CRAWL SPACE VENTS: CORROSION-RESISTANT WIRE MESH 1/8" MIN. THICK & 1/4" MAX. OPENING
9. PROVIDE CRAWL SPACE DRAIN & SLOPE TO LOW POINT FOR POSITIVE DRAINAGE.
10. BEAM POCKETS IN CONCRETE TO HAVE 1/2" AIRSPACE AT SIDES AND END WITH A MINIMUM BEARING OF 3".
11. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED OR PROTECTED WITH 55# ROLL ROOFING.

MISCELLANEOUS

1. 1/2" WATER-RESISTANT SHEETROCK AROUND TUB & SHOWER.
2. THE LIGHTING LAYOUT IS SUGGESTED ONLY. CONSULT YOUR ELECTRICAL CONTRACTOR FOR EXACT SPECIFICATIONS & LOCATIONS OF LIGHTS, SWITCHES & OUTLETS.
3. BASEMENTS WITH HABITABLE SPACE AND EVERY SLEEPING ROOM SHALL HAVE AT LEAST ONE OPENING FOR EMERGENCY ESCAPE AND RESCUE WITH THE FOLLOWING REQ'S:
   - A. A SILL HEIGHT OF NOT MORE THAN 44 INCHES ABOVE THE FLOOR.
   - B. THE MINIMUM NET CLEAR OPENING SHALL BE 5.7 SQ. FT.
   - C. GRADE FLOOR OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5 SQ. FT.
   - D. THE MINIMUM NET CLEAR OPENING HEIGHT SHALL BE 24 INCHES.
   - E. THE MINIMUM NET CLEAR OPENING WIDTH SHALL BE 20 INCHES
4. GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WITHIN 36" (914 MM) HORIZONTALLY OF A WALKING SURFACE WHEN THE EXPOSED SURFACE OF THE GLAZING IS LESS THAN 60 INCHES (1524 MM) ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE IS TO BE TEMPERED SAFETY GLAZING.
5. GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES (914MM) ABOVE THE LANDING AND WITHIN A 60" (1524 MM) HORIZONTAL ARC LESS THAN 180 DEGREES (3.14 RAD) FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED A HAZARDOUS LOCATION AND TO BE TEMPERED SAFETY GLAZING.
6. ALL WINDOWS WITHIN 18" OF THE FLOOR AND WITHIN 24" ARC FROM HINGED SIDE OF DOORS TO BE TEMPERED SAFETY GLAZING.
7. ALL SKYLIGHTS TO BE TEMPERED SAFETY GLAZING.
8. ALL TUB & SHOWER GLASS ENCLOSURES / PARTITIONS ARE TO BE TEMPERED SAFETY GLAZING.
9. ALL WINDOWS & PATIO DOORS ARE TO BE DOUBLE GLAZED. EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHERSTRIPPING.
10. BACKFILL FOR POSITIVE SLOPE AWAY FROM THE STRUCTURE WITH SLOPE NO LESS THAN 6" IN THE FIRST 10' AND NO GREATER THAN 6:12. (EXCEPTION: DRAINS OR SWALES, SEE R401.3 DRAINAGE.)
11. DO NOT EXCAVATE GREATER THAN A 1 : 2 (VERTICAL TO HORIZONTAL) SLOPE BELOW FOOTINGS.
12. MAINTAIN 6" MINIMUM SPACE FROM GROUND TO WOOD SIDING.
13. N1107.2 HIGH-EFFICACY LAMPS. ALL PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL CONTAIN HIGH-EFFICACY LAMPS. SCREW-IN COMPACT FLUORESCENT AND LED LAMPS COMPLY WITH THIS REQUIREMENT.
    THE BUILDING OFFICIAL SHALL BE NOTIFIED IN WRITING AT THE FINAL INSPECTION THAT THE PERMANENTLY INSTALLED LIGHTING FIXTURES HAVE MET THIS REQUIREMENT.
    EXCEPTION: TWO PERMANENTLY INSTALLED LIGHTING FIXTURES ARE NOT REQUIRED TO HAVE HIGH-EFFICACY LAMPS.
    N1107.3 HIGH-EFFICACY EXTERIOR LIGHTING. ALL EXTERIOR LIGHTING FIXTURES AFFIXED TO THE EXTERIOR OF THE BUILDING SHALL CONTAIN HIGH-EFFICACY LAMPS.
    EXCEPTION: TWO PERMANENTLY INSTALLED LIGHTING FIXTURES ARE NOT REQUIRED TO HAVE HIGH-EFFICACY LAMPS.
14. MOISTURE CONTENT: PRIOR TO INSTALLATION OF INTERIOR FINISHES, ALL MOISTURE SENSITIVE WOOD FRAMING MEMBERS USED IN CONSTRUCTION HAVE A MOISTURE CONTENT OF NOT MORE THAN 19% OF THE WEIGHT OF DRY WOOD FRAMING MEMBERS.

TABLE N1101.1(1)
PRESCRIPTIVE ENVELOPE REQUIREMENTS[a]

BUILDING COMPONENT	STANDARD BASE CASE	
	REQUIRED PERFORMANCE	EQUIV. VALUE[b]
WALL INSULATION–ABOVE GRADE	U-0.059[c]	R-21 INTERMEDIATE[c]
WALL INSULATION–BELOW GRADE[e]	C-0.063	R-15/R-21
FLAT CEILINGS[f]	U-0.021	R-49
VAULTED CEILINGS[g]	U-0.033	R-30 RAFTER OR R-30A[g,h] SCISSOR TRUSS
UNDERFLOORS	U-0.033	R-30
SLAB EDGE PERIMETER	F-0.520	R-15
HEATED SLAB INTERIOR[i]	N/A	R-10
WINDOWS[j]	U-0.30	U-0.30
WINDOW AREA LIMITATION[j k]	N/A	N/A
SKYLIGHTS[l]	U-0.50	U-0.50
EXTERIOR DOORS[m]	U-0.20	U-0.20
EXTERIOR DOORS W/>2.5FT² GLAZING[n]	U-0.40	U-0.40
FORCED AIR DUCT INSULATION	N/A	R-8

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m , 1 degree = 0.0175 rad, n/a = not applicable.

a. As allowed in section N1104.1, thermal performance2 of a component may be adjusted provided that overall heat loss does not exceed the total resulting from conformance to the required U-factor standards. Calculations to document equivalent heat loss shall be performed using the procedure and approved U-factors contained in Table N1104.1(1).

b. R-values used in this table are nominal for the insulation only in standard wood framed construction and not for the entire assembly.

c. Wall insulation requirements apply to all exterior wood framed, concrete or masonry walls that are above grade. This includes cripple walls & rim joist areas. Nominal compliance with R-21 insulation and Intermediate Framing (N1104.5.2) with insulated headers.

d. The wall component shall be a minimum solid log or timber wall thickness of 3.5 inches (90mm).

e. Below-grade wood, concrete or masonry walls include all walls that are below grade and do not include those portions of such wall that extend more than 24 inches (609.6mm) above grade. R-21 for insulation in framed cavity; R-15 continuous insulation.

f. Insulation levels for ceilings that have limited attic/rafter depth such as dormers, bay windows or similar architectural features totaling not more than 150 square feet (13.9 m²) in area may be reduced to not less than R-21. When reduced, the cavity shall be filled (except for required ventilation spaces). R-49 insulation installed to minimum 6-inches depth at top plate at exterior of structure to achieve U-factor.

g. Vaulted ceiling surface area exceeding 50 percent of the total heated space floor area shall have a U-factor no greater than U-0.026 (equivalent to R-38 rafter or scissor truss with R-38 advanced framing).
ceiling with R-30 insulation is U-0.033 and complies with this requirement, not to exceed 50 percent of the total heated space floor area.

h. A=Advanced frame construction, See Section N1104.6.

i. Heated slab interior applies to concrete slab floors (both on and below grade) that incorporate a radiant heating system within the slab. Insulation shall be installed underneath the entire slab.

j. Sliding glass doors shall comply with window performance requirements. Windows exempt from testing in accordance with section NF1111.2, Item 3 shall comply with window performance requirements if constructed with thermal break aluminum or wood, or vinyl, or fiberglass frames and double-pane glazing with low-emissivity coatings of 0.10 or less. Buildings designed to incorporate passive solar elements may include glazing with a U-factor greater than 0.35 by using Table N1104.1(1) to demonstrate equivalence to building envelope requirements.

k. Reduced window area may not be used as a trade-off criterion for thermal performance of any component.
Exception: Table N1101.1(2), Envelope Measure 6: calculation allows baseline case 15 percent of total wall area as window when design case utilizes window area of less than 15 percent.

l. Skylight area installed at 2% or less of total heated space floor area shall be deemed to satisfy this requirement with vinyl, wood, or thermally broken aluminum frames and double-pane glazing with low-emissivity coatings. Skylight U-factor is tested in the 20 degree (0.35rad) overhead plane in accordance with NFRC standards.

m. A maximum of 28 square feet (2.6m²) of exterior door area per dwelling unit can have a U-factor of 0.54 or less.

n. Glazing that is either double pane with low-e coating on one surface, or triple pane shall be deemed to comply with this U-0.30 requirement.

from Table N1101.1(1): (WALL INSULATION–ABOVE GRADE, R-21 INTERMEDIATE[c])

N.1104.5.2 Intermediate framing for walls. Intermediate framing for walls is an optional construction method. Intermediate framing, when used to achieve improved wall performance under the requirements of Table 1101.1(1) or Table N1104.1(2), shall meet the following requirements:

1. **Walls**. Walls shall be formed with 2x studs at 16 inches (610 mm) on center and shall include the following, as detailed in Items 2 and 3.

2. **Corners and intersections**. Exterior wall and ceiling corners shall be fully insulated through the use of three-stud corners configured to allow full insulation into the corner, or two-stud corners and drywall backup clips or other approved technique. Intersections of interior partition walls with exterior walls shall be fully insulated through the use of single backer boards, mid-height blocking with drywall clips or other approved technique.

3. **Headers**. Voids in headers 1 inch (25.4 mm) or greater in thickness shall be insulated with rigid insulation that has a value of R-4 or greater per 1 inch (25.4mm) thickness. Nonstructural headers (such as in gable end walls) can be eliminated and replaced with insulation to achieve equivalent levels as the surrounding area.

TABLE R602.3 (1)
FASTENING SCHEDULE

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER & TYPE OF FASTENER a,b,c	SPACING & LOCATION
	ROOF		
1	BLOCKING BETWEEN CEILING JOISTS OR RAFTERS TO TOP PLATE	4-8d BOX(2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS	TOE NAIL
2	CEILING JOISTS TO TOP PLATE	4-8d BOX(2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS	PER JOIST, TOE NAIL
3	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS [SEE SECTIONS R802.3.1, R802.3.2 & TABLE R802.5.1(9)]	4-10d BOX(3"x0.128"); OR 3-16d COMMON (3-1/2"x0.162"); OR 4-3"x0.131" NAILS	FACE NAIL
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) [SEE SECTIONS R802.3.1 AND R802.3.2 AND TABLE R802.5.1(9)]	TABLE R802.5.1(9)	FACE NAIL
5	COLLAR TIE TO RAFTER, FACE NAIL OR 1-1/4"x20 GA. RIDGE STRAP TO RAFTER	4-10d BOX (3"x0.128"); OR 3-10d COMMON (3"x0.148"); OR 4-3"x0.131" NAILS	FACE NAIL EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	3-16d BOX NAILS (3-1/2"x0.135"); OR 3-10d COMMON NAILS (3"x0.148"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS	2 TOE NAILS ON ONE SIDE & 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS[i]
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF RAFTER TO MINIMUM 2" RIDGE BEAM	4-16d (3-1/2"x0.135"); OR 3-10d COMMON (3-1/2"x0.148"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS	TOE NAIL
		3-16d BOX NAILS (3-1/2"x0.135"); OR 2-16d COMMON (3-1/2"x0.162"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS	END NAIL
	WALL		
8	STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162")	24" O.C. FACE NAIL
		10d BOX (3"x0.128"); OR 3"x0.131" NAILS	16" O.C. FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d BOX (3-1/2"x0.135"); OR 3"x0.131" NAILS	12" O.C. FACE NAIL
		16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16d COMMON (3-1/2"x0.162")	16" O.C. EACH EDGE FACE NAIL
		16d BOX (3-1/2"x0.135")	16" O.C. EACH EDGE FACE NAIL
11	CONTINUOUS HEADER TO STUD	5-8d BOX (2-1/2"x0.113"); OR 4-8d COMMON (2-1/2"x0.131"); OR 4-10d BOX (3"x0.128")	TOE NAIL
12	TOP PLATE TO TOP PLATE	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
		10d BOX (3"x0.128"); OR 3"x0.131" NAILS	12" O.C. FACE NAIL
13[j]	DOUBLE TOP PLATE SPLICE FOR SDCs A-D2 WITH SEISMIC BRACED WALL LINE SPACING <25'	8-16d COMMON (3-1/2"x0.162"); OR 12-16d BOX (3-1/2"x0.135"); OR 12-10d BOX (3"x0.128"); OR 12-3"x0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
	DOUBLE TOP PLATE SPLICE FOR SDCs D1 OR D2; AND BRACED WALL LINE SPACING > THEN OR = TO 25'	12-16d (3-1/2"x0.135")	
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, SOLID DECK OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
		16d BOX (3-1/2"x0.135"); OR 3"x0.131" NAILS	12" O.C. FACE NAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, SOLID DECK OR BLOCKING (AT BRACED WALL PANEL)	3-16d BOX (3-1/2"x0.135"); OR 2-16d COMMON (3-1/2"x0.162"); OR 4-3"x0.131" NAILS	3 EACH 16" O.C. FACE NAIL 2 EACH 16" O.C. FACE NAIL 4 EACH 16" O.C. FACE NAIL
16	TOP OR BOTTOM PLATE TO STUD	4-8d BOX (2-1/2"x0.113"); OR 3-16d BOX (3-1/2"x0.135"); OR 4-8d COMMON (2-1/2"x0.131"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS	TOE NAIL
		3-16d BOX (3-1/2"x0.135"); OR 2-16d COMMON (3-1/2"x0.162"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS	END NAIL
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10d BOX (3"x0.128"); OR 2-16d COMMON (3-1/2"x0.162"); OR 3-3"x0.131" NAILS	FACE NAIL
18	1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2-1/2"x0.113"); OR 2-8d COMMON (2-1/2"x0.131"); OR 2-10d BOX (3"x0.128"); OR 2 STAPLES 1-3/4"	FACE NAIL
19	1" x 6" SHEATHING TO EACH BEARING	3-8d BOX (2-1/2"x0.113"); OR 2-8d COMMON (2-1/2"x0.131"); OR 2-10d BOX (3"x0.128"); OR 3 STAPLES 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
20	1" x 8" AND WIDER SHEATHING TO EACH BEARING	3-8d BOX (2-1/2"x0.113"); OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-STAPLES 1" CROWN, 16 GA., 1 3/4" LONG	FACE NAIL
		WIDER THAN 1" x 8" 4-8d BOX (2-1/2"x0.113"); OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 4 STAPLES 1" CROWN, 16GA., 1-3/4" LONG	
	FLOOR		
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8d BOX (2-1/2"x0.113"); OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS	TOE NAIL
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2-1/2"x0.113"	4" O.C. TOE NAIL
		8d COMMON (2-1/2"x0.131") 10d BOX (3"x0.128"); OR 3"x0.131" NAILS	6" O.C. TOE NAIL
23	1" x 6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2-1/2"x0.113"); OR 2-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 2 STAPLES, 1" CROWN, 16GA., 1-3/4" LONG	FACE NAIL
24	2" SUBFLOOR TO JOIST OR GIRDER	3-16d BOX (3-1/2"x0.135"); OR 2-16d COMMON (3-1/2"x0.162")	BLIND AND FACE NAIL
25	2" PLANKS (PLANK & BEAM-FLOOR & ROOF)	3-16d BOX (3-1/2"x0.135"); OR 2-16d COMMON (3-1/2"x0.162")	AT EACH BEARING, FACE NAIL
26	BAND OR RIM JOIST TO JOIST	3-16d COMMON (3-1/2"x0.162"); OR 4-10d BOX (3"x0.128"), OR 4-3"x0.131" NAILS; OR 4-3"x14 GA. STAPLES, 7/16" CROWN	END NAIL
27	BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	20d COMMON (4"x0.192"); OR	NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP AND BOTTOM AND STAGGERED
		10d BOX (3"x0.128"); OR 3"x0.131" NAILS	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
		AND: 2-20d COMMON (4"x1.192"); OR 3-10 BOX (3x0.128"); OR 3-3"x0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3-1/2"x0.135"); OR 3-16d COMMON (3-1/2"x0.162"); OR 4-10d BOX (3"x1.128"); OR 4-3"x0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL
29	BRIDGING TO JOIST	2-10d (3"x0.128")	EACH END, TOE NAIL

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER & TYPE OF FASTENER a,b,c	SPACING OF FASTENERS	
			EDGES (inches)[h]	INTERMITTENT SUPPORTS[c,e] (inches)
	Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing [see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing]			
30	3/8" – 1/2"	6d COMMON (2"x0.113")NAIL (SUBFLOOR, WALL)[i] 8d COMMON (2-1/2"x0.131") NAIL (ROOF)	6	12[f]
31	19/32" – 1"	8d COMMON NAIL (2-1/2"x0.131")	6	12[f]
32	1-1/8" – 1-1/4"	10d COMMON (3"x0.148") NAIL; OR 8d (2-1/2"x0.131") DEFORMED NAIL	6	12
	OTHER WALL SHEATHING[g]			
33	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1-1/2" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1" CROWN STAPLE 16 ga., 1-1/4" LONG	3	6
34	25/35" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1-3/4" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1" CROWN STAPLE 16 ga., 1-1/4" LONG	3	6
35	1/2" GYPSUM SHEATHING[d]	1-1/2" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-1/2" LONG; 1-1/4" SCREWS, TYPE W OR S	7	7
36	1/2" GYPSUM SHEATHING[d]	1-3/4" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-5/8" LONG; 1-5/8" SCREWS, TYPE W OR S	7	7
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
37	3/4" AND LESS	6d DEFORMED (2"x0.120") NAIL; OR 8d COMMON (2-1/2"x0.131") NAIL	6	12
38	7/8" – 1"	8d COMMON (2"x0.131") NAIL; OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12
39	1-1/8" – 1-1/4"	10d COMMON (3"x0.148") NAIL; OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12

FOR SI: 1 INCH = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi=6.895 MPa

TABLE R602.3 (1) - CONTINUED FASTENING SCHEDULE

a. NAILS ARE SMOOTH-COMMON, BOX OR DEFORMED SHANKS EXCEPT WHERE OTHERWISE STATED, NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS SHOWN: 80 KSI FOR SHANK DIAMETER OF 0.192 INCH (20d COMMON NAIL), 90 KSI FOR SHANK DIAMETERS LARGER THAN 0.142 INCH BUT NOT LARGER THAN 0.177 INCH, AND 100 KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LESS.
b. STAPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7/16-INCH ON DIAMETER CROWN WIDTH.
c. NAILS SHALL BE SPACED AT NOT MORE THAN 6 INCHES ON CENTER AT ALL SUPPORTS WHERE SPANS ARE 48 INCHES OR GREATER.
d. FOUR-FOOT BY 8-FOOT OR 4-FOOT BY 9-FOOT PANELS SHALL BE APPLIED VERTICALLY.
e. SPACING OF FASTENERS NOT INCLUDED IN THIS TABLE SHALL BE BASED ON TABLE R602.3(2).
f. WHERE THE ULTIMATE DESIGN WIND SPEED IS 130 MPH OR LESS, NAILS FOR ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL FRAMING SHALL BE SPACED 6 INCHES ON CENTER. WHERE THE ULTIMATE DESIGN WIND SPEED IS GREATER THAN 130 MPH, NAILS FOR ATTACHING PANEL ROOF SHEATHING TO INTERMEDIATE SUPPORTS SHALL BE SPACED 6 INCHES ON CENTER FOR MINIMUM 48-INCH DISTANCE FROM RIDGES, EAVES AND GABLE END WALLS; AND 4 INCHES ON CENTER TO GABLE END WALL FRAMING.
g. GYPSUM SHEATHING SHALL CONFORM TO ASTM C1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH GA 253. FIBERBOARD SHEATHING SHALL CONFORM TO ASTM C208.
h. SPACING OF FASTENERS ON FLOOR SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING AND AT ALL FLOOR PERIMETERS ONLY. SPACING OF FASTENERS ON ROOF SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING. BLOCKING OF ROOF OR FLOOR SHEATHING PANEL EDGES PERPENDICULAR TO THE FRAMING MEMBERS NEED NOT BE PROVIDED EXCEPT AS REQUIRED BY OTHER PROVISIONS OF THIS CODE. FLOOR PERIMETER SHALL BE SUPPORTED BY FRAMING MEMBERS OR SOLID BLOCKING.
i. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE, PROVIDE TWO TOE NAILS ON ONE SIDE OF THE RAFTER AND TOE NAILS FROM THE CEILING JOIST TO TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE. THE TOE NAIL ON THE OPPOSITE SIDE OF THE RAFTER SHALL NOT BE REQUIRED.
j. INTERIOR NON-BRACED WALL LINES MAY BE NAILED WITH A MINIMUM 4-10d NAILS.

OSSC - 2304.9.5.1 FASTENERS AND CONNECTORS FOR PRESERVATIVE-TREATED WOOD.

Fasteners, including nuts and washers, in contact with preservative-treated wood shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Fasteners other than nails, timber rivets, wood screws and lag screws shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum. Connectors that are used in exterior applications and in contact with preservative-treated wood shall have coating types and weights in accordance with the treated wood or connector manufacturer's recommendations. In the absence of manufacturer's recommendations, a minimum of ASTM A 653, type G185 zinc-coated galvanized steel, or equivalent, shall be used.

Exception: Plain carbon steel fasteners, including nuts and washers, in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment shall be permited.

TABLE R602.3 (2)
ALTERNATE ATTACHMENTS TO TABLE R602.3(1)

NOMINAL MATERIAL THICKNESS (INCHES)	DESCRIPTION[a,b] OF FASTENER AND LENGTH (INCHES)	SPACING[c] OF FASTENERS	
		EDGES (INCHES)	INTERMEDIATE SUPPORTS (INCHES)
WOOD STRUCTURAL PANELS SUBFLOOR, ROOF[g] AND WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING[f]			
UP TO 1/2	STAPLE 15 GAGE 1 3/4	4	8
	0.097 – 0.099 NAIL 2 1/4	3	6
	STAPLE 16 GAGE 1 3/4	3	6
19/32 AND 5/8	0.113 NAIL 2	3	6
	STAPLE 15 AND 16 GAGE 2	4	8
	0.097 – 0.099 NAIL 2 1/4	4	8
23/32 AND 3/4	STAPLE 14 GAGE 2	4	8
	STAPLE 15 GAGE 1 3/4	3	6
	0.097 – 0.099 NAIL 2 1/4	4	8
	STAPLE 16 GAGE 2	4	8
1	STAPLE 14 GAGE 2 1/4	4	8
	0.113 NAIL 2 1/4,	3	6
	STAPLE 15 GAGE 2 1/4	4	8
	0.097 – 0.099 NAIL 2 1/2	4	8
NOMINAL MATERIAL THICKNESS (INCHES)	**DESCRIPTION[a,b] OF FASTENER AND LENGTH (INCHES)**	**SPACING[c] OF FASTENERS**	
		EDGES (INCHES)	**BODY OF PANEL[d] (INCHES)**
FLOOR UNDERLAYMENT; PLYWOOD-HARDBOARD-PARTICLEBOARD[f] – FIBER- CEMENT[h]			
FIBER- CEMENT			
1/4	3d, CORROSION-RESISTANT, RING SHANK NAILS (FINISHED FLOORING OTHER THAN TILE)	3	6
	STAPLE 18 GAGE., 7/8, LONG, 1/4 CROWN (FINISHED FLOORING OTHER THAN TILE)	3	6
	1-1/4 LONG x.121 SHANK x.375 HEAD DIAMETER CORROSION-RESISTANT (GALVANIZED OR STAILESS STEEL) ROOFING NAILS (FOR TILE FINISH)	8	8
	1-1/4 LONG, No. 8 x .375 HEAD DIAMETER, RIBBED WAFER-HEAD SCREWS (FOR TILE FINISH)	8	8
PLYWOOD			
1/4 AND 5/16	1 1/4 RING OR SCREW SHANK NAIL – MINIMUM 12 1/2 GAGE (0.099") SHANK DIAMETER	3	6
	STAPLE 18 GAGE., 7/8, 3/16 CROWN WIDTH	2	5
11/32, 3/8, 15/32 AND 1/2	1 1/4 RING OR SCREW SHANK NAIL – MINIMUM 12 1/2 GAGE (0.099") SHANK DIAMETER	6	8[e]
19/32, 5/8, 23/32 AND 3/4	1 1/2 RING OR SCREW SHANK NAIL – MINIMUM 12 1/2 GAGE (0.099") SHANK DIAMETER	6	8
	STAPLE 16 GAGE, 1 1/2	6	8
HARDBOARD[f]			
0.200	1 1/2 LONG RING-GROOVED UNDERLAYMENT NAIL	6	6
	4d CEMENT-COATED SINKER NAIL	6	6
	STAPLE 18 GAGE, 7/8 LONG (PLASTIC COATED)	3	6
PARTICLEBOARD			
1/4	4d RING-GROOVED UNDERLAYMENT NAIL	3	6
	STAPLE 18 GAGE, 7/8 LONG, 3/16 CROWN	3	6
3/8	6d RING-GROOVED UNDERLAYMENT NAIL	6	10
	STAPLE 16 GAGE, 1 1/8 LONG, 3/8 CROWN	3	6
1/2, 5/8	6d RING-GROOVED UNDERLAYMENT NAIL	6	10
	STAPLE 16 GAGE, 1 5/8 LONG, 3/8 CROWN	3	6

TABLE R602.3(2)
ALTERNATE ATTACHMENTS TO TABLE R602.3(1) - CONTINUE

FOR **SI**: 1 INCH = 25.4mm
a. NAIL IS A GENERAL DESCRIPTION AND SHALL BE PERMITTED TO BE T-HEAD, MODIFIED ROUND HEAD OR ROUND HEAD.
b. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16-INCH ON DIAMETER EXCEPT AS NOTED.
c. NAILS OR STAPLES SHALL BE SPACED AT NOT MORE THAN 6 INCHES ON CENTER AT ALL SUPPORTS WHERE SPANS ARE 48 INCHES OR GREATER. NAILS OR STAPLES SHALL BE SPACED AT NOT MORE THAN 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR FLOORS.
d. FASTENERS SHALL BE PLACED IN A GRID PATTERN THROUGHOUT THE BODY OF THE PANEL.
e. FOR 5-PLY PANELS, INTERMEDIATE NAILS SHALL BE SPACED NOT MORE THAN 12 INCHES ON CENTER EACH WAY.
f. HARDBOARD UNDERLAYMENT SHALL CONFORM TO CPA/ANSI A135.4.
g. SPECIFIED ALTERNATE ATTACHMENTS FOR ROOF SHEATHING SHALL BE PERMITED WHERE THE ULTIMATE DESIGN WIND SPEED IS LESS THAN 130 MPH. FASTENERS ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL FRAMING SHALL BE INSTALLED USING THE SPACING LISTED FOR PANEL EDGES.
h. FIBER-CEMENT UNDERLAYMENT SHALL CONFORM TO ASTM C1288 OR ISO 8336, CATEGORY C.

TABLE N1101.1(2) ADDITIONAL MEASURES

Envelope Enhancement Measure (Select One)	1	**High efficiency walls:** Exterior walls – U-0.045/R-21 cavity insulation + R-5 continuous
	2	**Upgraded features:** Exterior walls – U-0.057/R-23 intermediate or R-21 advanced, Framed Floors – U-0.026/R-38, and Windows – U-0.28 (average UA)
	3	**Upgraded features:** Exterior wall – U-0.055/R-23 intermediate or R-21 advanced, Flat ceilings[e] – U-0.017/R-60, and Framed floors – U-0.026/R-38
	4	**Super Insulated Windows and Attic OR Framed Floors:** Windows – U-0.22 (Triple pane Low-e), and Flat ceilings[e] – U-0.017/R-60 or Framed floors – U-0.026/R-38
	⑤	**Air sealing home and ducts:** Mandatory air sealing of all wall coverings at top plate and air sealing checklist[f], and Mechanical whole building ventilation system with rates meeting M1503 or ASHRAE 62.2, and ~~All ducts and air handlers contained within building envelope[d] or~~ All ducts sealed with mastic[b]
	6	**High efficiency thermal envelope UA:**[g] Proposed UA is 8% lower than the code UA
Conservation Measure (Select One)	Ⓐ	**High efficiency HVAC system:**[a] Gas-fired furnace or boiler with minimum AFUE of 94%, or Air source heat pump HSPF 9.5/15.0 SEER cooling, or ~~Ground source heat pump COP 3.5 or~~ Energy Star rated
	B	**Ducted HVAC systems within conditioned space:** All ducts and air handlers contained within building envelope[d] Cannot be combined with measure 5
	C	**Ductless heat pump:** Ductless heat pump HSPF 10.0 in primary zone of dwelling
	D	**High efficiency water heater:**[c] Natural gas/propane water heater with UEF 0.85 OR Electric heat pump water heater Tier 1 Northern Climate Specification Product

- For SI: 1 SQUARE foot = 0.093 m3, 1 WATT PER SQUARE FOOT = 10.8w/M2

a. Appliances located within the building thermal envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the outdoors.
b. All duct joints and seams sealed with listed mastic; tape is only allowed at appliance or equipment connections (for service and replacement). Meet sealing criteria of Performance Tested Comfort Systems program administered by the Bonneville Power Administration (BPA).
c. Residential water heaters less than 55 galon storage volume.
d. A total of 5 percent of an HVAC system's ductwork shall be permitted to be located outside of the conditioned space. Ducts located outside the conditioned space shall have insulation installed as required in this code.
e. The maximun vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless vaulted area has a U-factor no greater than U-0.026.
f. Continuous air barrier. Additional requirement for sealing of all interior vertical wall covering to top plate framing. Sealing with foam gasket, caulk or other approved sealant listed for sealing wall covering material to structural material (example: gypsum board to wood stud framing).
g Table N1104.1(1) Standard base case design, Code UA shall be at least 8 percent less than the Proposed UA. Buildings with fenestration less than 15 percent of the total vertical wall area may adjust the Code UA to have 15 percent of the wall area as fenestration.

SCALE: 1/4" = 1'-0" (ON 24" X 36" PAPER SIZE)

DATE. 6-30-21

PLAN 1753-B

5
OF 5

SUMMARY OF WORK:

LOCATION: 4441 SE UMATILLA ST PORTLAND, OREGON
LATERAL ANALYSIS AND DESIGN FOR SINGLE FAMILY RESIDENCE

DESIGN LOADS:

CODE: 2019 OSSC
USE OR OCCUPANCY OF BUILDINGS AND STRUCTURES RISK CATEGORY (ASCE TABLE 1.5-1): II
WIND SPEED Vbasic: 120 MPH EXPOSURE 'B', Vasd = 93 MPH (OSSC EQUATION 16-33)
SEISMIC DESIGN CATEGORY: D
GROUND SNOW LOAD: 25 PSF (ROOF SNOW LOAD: 25 PSF)
ROOF DEAD LOAD: 17 PSF
FLOOR LIVE LOAD: 40 PSF
FLOOR DEAD LOAD: 10 PSF
SOIL BEARING PRESSURE: 1500 PSF
SOIL PASSIVE SOIL PRESSURE: 200 PSF

FRAMING REQUIREMENTS:

1. WALL STUDS TO BE 2X6 DFL-#2 @ 16" O.C., TYPICAL U.N.O.
2. ROOF SHEATHING TO BE 15/32" APA RATED CDX SHEATHING OR OSB. INSTALL PANELS HORIZONTALLY. SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.
3. TYPICAL WALL SHEATHING (TSN) TO BE 15/32" APA RATED CDX SHEATHING OR OSB. ALL PANEL EDGES TO BE BACKED WITH 2-INCH NOMINAL OR WIDER FRAMING. INSTALL PANELS HORIZONTALLY OR VERTICALLY. SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS AND PANEL THICKNESSES, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.
4. FLOOR SHEATHING TO BE 7/8" APA RATED CDX SHEATHING OR OSB. SPACE 8d NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES. FOR OTHER CONDITIONS, SPACE 8d NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.
5. SILL PLATE TO BE 2X P.T. U.N.O. (REFER TO SILL BOLT SPACING IN SCHEDULE BELOW).
6. FOR NAIL SIZES REFER TO BELOW.

SHEAR WALL SCHEDULE: (1) (2) (4)

SDPWS TABLE 4.3A

PANEL NOTATION	SHEATHING THICKNESS (IN.)	NAILS/ SPACING	DBL. STUD CONN. (FACE NAIL)	SILL BOLT (5) SPACING	SHEAR CAPACITY (SEISMIC)	SHEAR CAPACITY (WIND)
D6	MIN. 7/16"	8d @ 6" O/C	16d @ 9" O/C	½" Ø @ 36" O/C	260 PLF	365 PLF
D4 (3)	MIN. 7/16"	8d @ 4" O/C	16d @ 6" O/C	½" Ø @ 24" O/C	380 PLF	532 PLF
D3 (3)	MIN. 7/16"	8d @ 3" O/C	16d @ 4" O/C	½" Ø @ 18" O/C	490 PLF	685 PLF
D2 (3)	MIN. 7/16"	8d @ 2" O/C	16d @ 3" O/C	½" Ø @ 16" O/C	640 PLF	895 PLF
E2 (6)	15/32"	10d @ 2" O/C	N/A	½" Ø @ 14" O/C (8)	770 PLF	1077 PLF
D3X2 (6)(7)	15/32" EACH FACE	8d @ 3" O/C (2) ROWS	N/A	½" Ø @ 12" O/C	980 PLF	1370 PLF
D2X2 (6)(7)	15/32" EACH FACE	8d @ 2" O/C (2) ROWS	N/A	½" Ø @ 9" O/C	1280 PLF	1790 PLF

NOTES:

(1) SHEATHING TO BE APA RATED SHEATHING OR OSB (GRADE C-C OR C-D STRUCTURAL II OR BETTER).
(2) ALL PANEL EDGES TO BE BACKED WITH 2-INCH NOMINAL OR WIDER FRAMING (DFL-#2). INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY. SPACE NAILS MAXIMUM 6" O.C. ALONG PANEL EDGES FOR STUDS SPACED 24" O.C. FOR OTHER CONDITIONS AND PANEL THICKNESSES, SPACE NAILS MAXIMUM 12" O.C. ON INTERMEDIATE SUPPORTS.
(3) FRAMING AT ADJOINING PANEL EDGES SHALL BE A SINGLE 3" NOMINAL MEMBER OR (2) 2-INCH NOMINAL MEMBER FASTENED TOGETHER WITH 16d NAILS (SPACING ABOVE) TYPICAL ENTIRE HEIGHT OF DBL. STUD. NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2" O.C.
(4) AT SHEAR WALL LOCATIONS, REFER RW/S1 AND FF/S1 FOR ROOF TO WALL AND FLOOR TO FLOOR FRAMING.
(5) INSTALL 3" SQUARE X 5/16" STEEL PLATE WASHER.
(6) FRAMING AT ADJOINING PANEL EDGES SHALL BE SINGLE 3X NOMINAL FRAMING MEMBERS AT EACH END OF THE PANEL. NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2" O.C. INSTALL MIN. 3X P.T. SILL PLATE, U.N.O.
(7) PLYWOOD TO BE INSTALLED ON BOTH SIDES OF PANEL.
(8) N/A
(9) GALVANIZED NAILS SHALL BE HOT-DIPPED OR TUMBLED.

NAIL	6d	8d	10d	16d
Ø	.113"	.131"	.148"	.162"
LENGTH	2"	2½"	3"	3½"

(9) COMMON OR GALVANIZED BOX

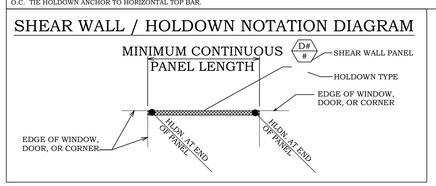
HOLD-DOWN SCHEDULE: (1) (2) (3)

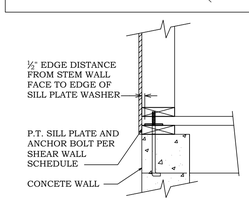
HOLDOWN NOTATION	'SIMPSON' HOLDOWN TYPE	INSTALLATION INSTRUCTIONS
2	HDU2 (3075#)	STD. 'SB ⅝ X 24' MIN. 18" EMBEDMENT (be) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL-#2 WALL STUDS (MIN. 2⅝" EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
4	HDU4 (4565#)	STD. 'SB ⅝ X 24' MIN. 18" EMBEDMENT (be) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL-#2 WALL STUDS (MIN. 2⅝" EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
5	HDU5 (5645#)	STD. 'SB ⅝ X 24' MIN. 18" EMBEDMENT (be) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (2)2X6 DFL-#2 WALL STUDS (MIN. 2⅝" EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
8	HDU8 (6765#,6970#, 7870#)	STD. 'SB ⅝ X 24' MIN. 18" EMBEDMENT (be) CONCRETE. ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF (3)2X6 DFL-#2 WALL STUDS (MIN. 2⅝" EDGE DISTANCE). FASTEN STUDS TOGETHER WITH 16d NAILS @ 6" O/C ENTIRE HEIGHT OF STUD. INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
11	HDU11 (9335#)	STD. 1'⊘ ANCHOR BOLT OR ALTERNATIVE TO BE EMBEDDED INTO CONCRETE FOOTING (MIN. 12'). ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF 4X6 DFL-#2 (MIN. 2⅝" EDGE DISTANCE). INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
14	HDU14 (14445#)	STD. 1'⊘ ANCHOR BOLT OR ALTERNATIVE TO BE EMBEDDED INTO CONCRETE FOOTING (PER 2/S2). ANCHOR TO BE INSTALLED PLUMB AND LOCATED ALONG CENTER LINE OF 6X6 DFL-#2 (MIN. 2⅝" EDGE DISTANCE). INSTALL HOLDOWN PER MANUFACTURER'S SPECIFICATIONS.
28	MSTC28 (1535#)	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (8) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.
40	MSTC40 (3070#)	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (16) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.
52	MSTC52 (4610#)	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (24) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.
66	MSTC66 (5850#)	INSTALL STRAP ACROSS FLOOR LINE, INSTALL MIN. (34) 16d NAILS INTO DOUBLE WALL STUDS ABOVE FLOOR AND INTO DOUBLE WALL STUDS BELOW. CENTER STRAP ON STUDS TO INSTALL NAILS INTO MIDDLE THIRD OF STUD.

NOTES:

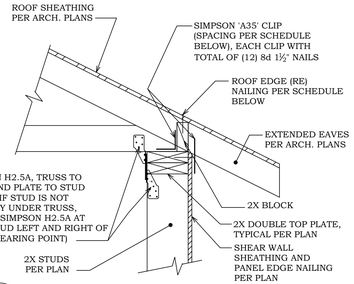
(1) HOLDOWNS TO BE FASTENED TO DOUBLE STUDS (CONTINUOUS FROM SILL PLATE TO DOUBLE TOP PLATE) AT PANEL ENDS. WALL STUDS SHOULD HAVE PANEL EDGE NAILING FROM SHEAR WALL SHEATHING.
(2) IF HOLDOWNS 2, 5, 6, AND 8 ARE INSTALLED FROM FLOOR TO FLOOR, REFER TO DETAIL FF/S1.
(3) U.N.O., INSTALL (1)-#4 CONTINUOUS HORIZONTAL TOP BAR 3" DOWN FROM TOP OF WALL AT ALL HOLDOWN ANCHORS. EXTEND BAR MIN. 5'-0" PAST HOLDOWN IN BOTH DIRECTIONS (BEND BAR AROUND AT CORNER CONDITION). FOR THIS 10'-0" SECTION INSTALL (1)-#4 VERTICAL BAR @ 24" O.C. TIE HOLDOWN ANCHOR TO HORIZONTAL TOP BAR.

SHEAR WALL / HOLDOWN NOTATION DIAGRAM

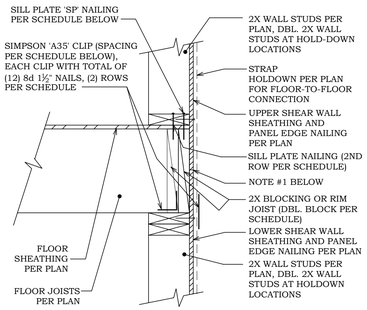




FSP/S1 FDN. SILL PLATE SECTION



RW/S1 ROOF TO SHEAR WALL SECTION



FF/S1 FLOOR TO FLOOR SECTION AT SHEAR WALL

NOTE:
1. IN LIEU OF CLIPS, BREAK SHEAR WALL PANELS AT BLOCKING OR RIM JOIST (INSTALL PANEL EDGE NAILING AT BREAK).

PANEL TYPE	'SP' NAIL SPACING	SIMPSON CLIP SPACING	'RE' NAIL SPACING
D6	16d @ 8" O.C.	1'-8" O.C.	8d @ 8" O.C.
D4	16d @ 4" O.C.	1'-2" O.C.	8d @ 4" O.C.
D3	16d @ 3" O.C.	0'-11" O.C.	8d @ 3" O.C.
D2	16d @ 3" O.C.	8" O.C.	8d @ 2½" O.C.
E2	16d @ 2" O.C.	7" O.C.	8d @ 2" O.C.
D3X2	16d @ 3" O.C. (2) ROWS	1'-0" O.C. (2) ROWS	8d @ 3" O.C. (2) ROWS
D2X2	16d @ 2" O.C. (2) ROWS	10" O.C. (2) ROWS	8d @ 2" O.C. (2) ROWS

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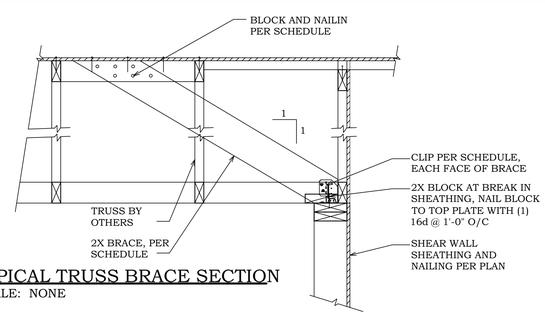
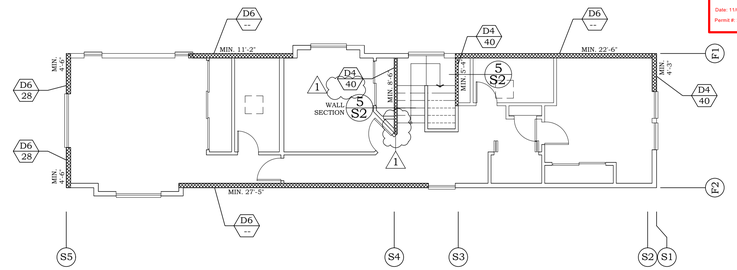
By Alina at 11:40 am, Sep 15, 2021

BRACE LENGTH	BRACE SIZE	SPACING	CLIP AT TOP PLATE	# OF BLOCKS	# OF NAILS	PANEL EDGE NAILS
5 TO 8FT	(2)2X6	3'-0" O/C	SIMPSON 'GBC'	(2)	(6) EACH BLOCK	3" O/C, (2) ROWS
1 TO 5FT	2X6	4'-0" O/C	SIMPSON 'GBC'	(2)	(6) EACH BLOCK	3" O/C, (2) ROWS

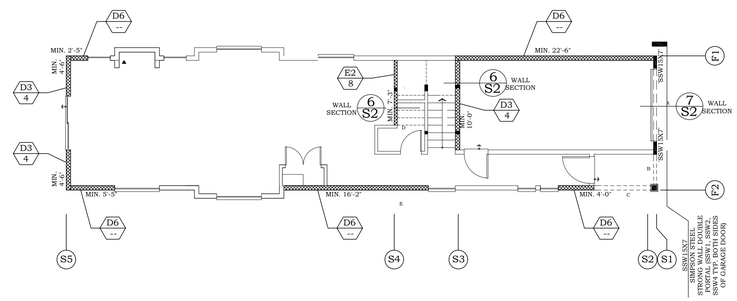


1/S1.0 TYPICAL TRUSS BRACE SECTION
SCALE: NONE



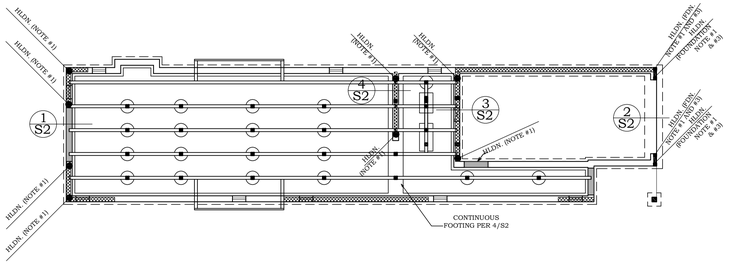
UPPER FLOOR SHEARWALL PLAN

NOTE:
1. REFER TO FRAMING REQUIREMENTS FOR TYPICAL EXTERIOR SHEATHING AND NAILING, ROOF SHEATHING AND NAILING AND FLOOR SHEATHING AND NAILING REQUIREMENTS.



MAIN FLOOR SHEARWALL PLAN

NOTE:
1. REFER TO FRAMING REQUIREMENTS FOR TYPICAL EXTERIOR SHEATHING AND NAILING, ROOF SHEATHING AND NAILING AND FLOOR SHEATHING AND NAILING REQUIREMENTS.



PARTIAL FOUNDATION PLAN (HOLDOWN LOCATIONS)

FOUNDATION NOTES

1. REFER TO MAIN FLOOR SHEAR WALL PLAN FOR HOLDOWN SIZE.
2. THIS DRAWING IS FOR LATERAL INFORMATION ONLY, REFER TO ARCHITECTURAL PLANS FOR ALL OTHER INFORMATION.
3. **ANCHOR BOLT TO BE SIMPSON 'SSWAB1X24' (REFER TO 2/S2 AND SSW1, SSW2, SSW4).**

MATERIALS:
CONCRETE: MIN. 28-DAY CONCRETE STRENGTH = 2500 psi.
GRADE BEAMS, PIERS, AND SPREAD FOOTINGS SHALL BE POURED ONTO UNDISTURBED, NATIVE SOIL WHICH IS FREE FROM ANY MATERIAL THAT WILL ADVERSELY AFFECT THE SOIL DESIGN BEARING PRESSURE REFERENCED ABOVE. ALL NON-STRUCTURAL WEATHER PROOFING AND FINISH MATERIAL TO BE DETERMINED "BY OTHERS".

SLAB CONTROL JOINTS: PER OWNERS REQUIREMENTS OR DIRECTION:

MISC. SITE PREPARATIONS:
OBTAIN AND OBEY ALL APPLICABLE REGULATIONS REGARDING GRADING AND EXCAVATION. IDENTIFY, MARK, AND PROTECT FROM DAMAGE ALL EXISTING UNDERGROUND PIPES, CONDUITS, AND CABLE (WATER SUPPLY, SANITARY SEWER, STORM SEWER, GAS, STEAM, ELECTRICAL AND COMMUNICATION CABLE). REMOVE SOIL WITH ORGANIC MATTER. PERFORM BACKFILL AND COMPACTION IN A SYSTEMATIC PATTERN, TO ASSURE COMPLETE AND CONSISTENT WORK. IF ANY OVER-EXCAVATION ACCIDENTALLY OCCURS, CORRECT IT WITH WELL-COMPACTED BACKFILL. PROVIDE TESTING AND INSPECTION OF BACKFILL AND COMPACTION. LAYER BACKFILL IN 6 IN. TO 12 IN INCREMENTS. COMPACT ALL FILL. USE STABLIZED FILL MATERIAL OF AN APPROVED TYPE AND FROM AN APPROVED SOURCE. TEST AND APPROVE MATERIAL DELIVERED FROM OTHER SITES. DO NOT ALLOW ANY DEBRIS TO BE MIXED WITH FILL. CURE CONCRETE TO FULL REQUIRED STRENGTH BEFORE BACKFILLING. PROVIDE DRAINAGE CATCHERS PER ARCHITECTURAL DRAWINGS.

SPECIAL INSPECTION: NONE

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 11/04/21
Permit #: 21-064609-000-00-RS

No.	DATE	DESCRIPTION
1	08/24/21	

PROJECT NAME
MHD 1753 B
SHEAR WALL AND HOLDOWN SCHEDULE
SHEAR WALL PLANS

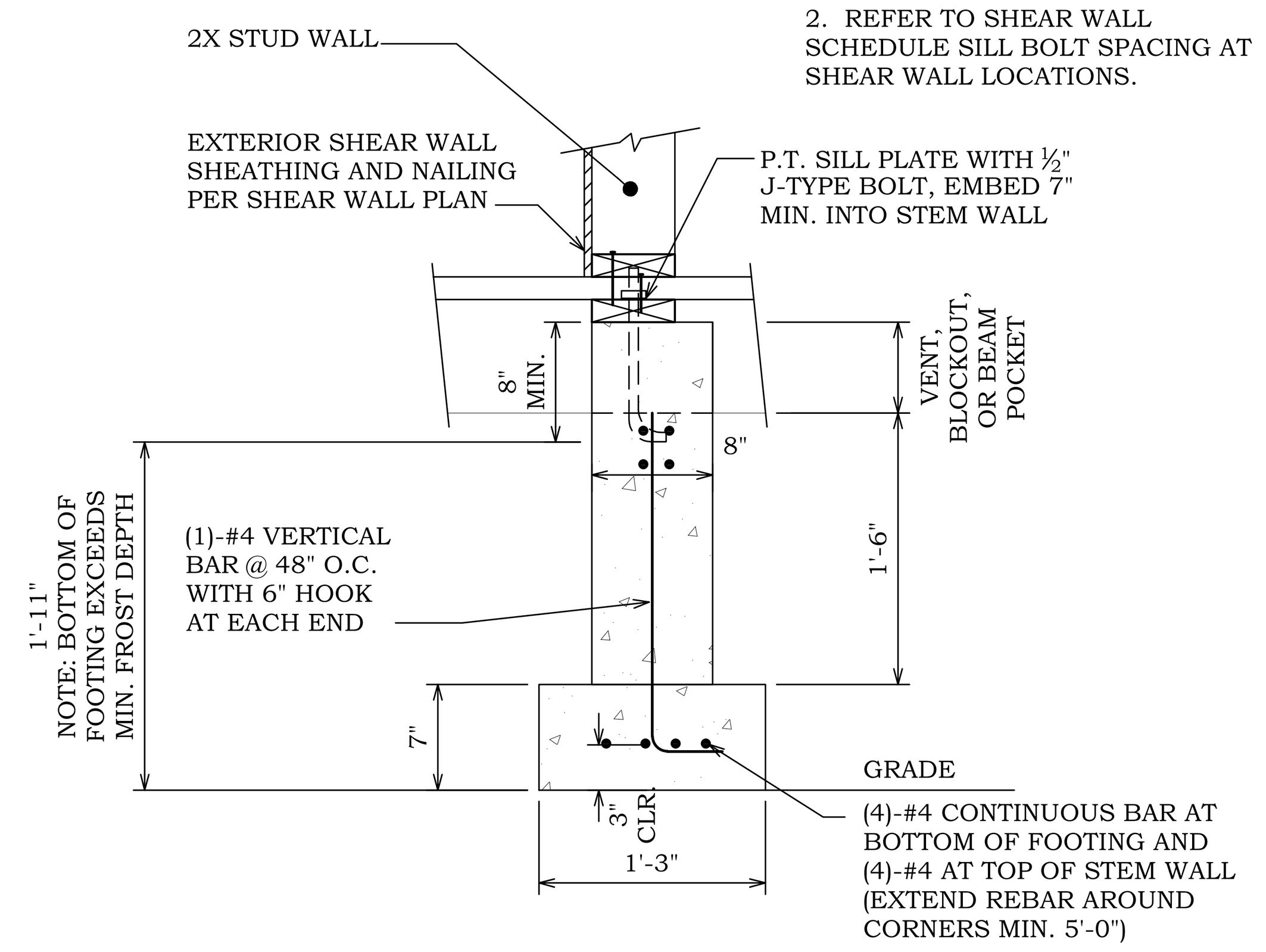
TURNER ENGINEERING & DESIGN
Office/Cell: (503) 970-4807
Email: richardturnerpe@gmail.com
PO BOX 220
EAGLE CREEK, OREGON 97022

ENGINEERS STAMP
REGISTERED PROFESSIONAL ENGINEER
58949PE
OREGON
JULY 15, 2005
RICHARD J. TURNER
EXP. DATE: 06-30-22

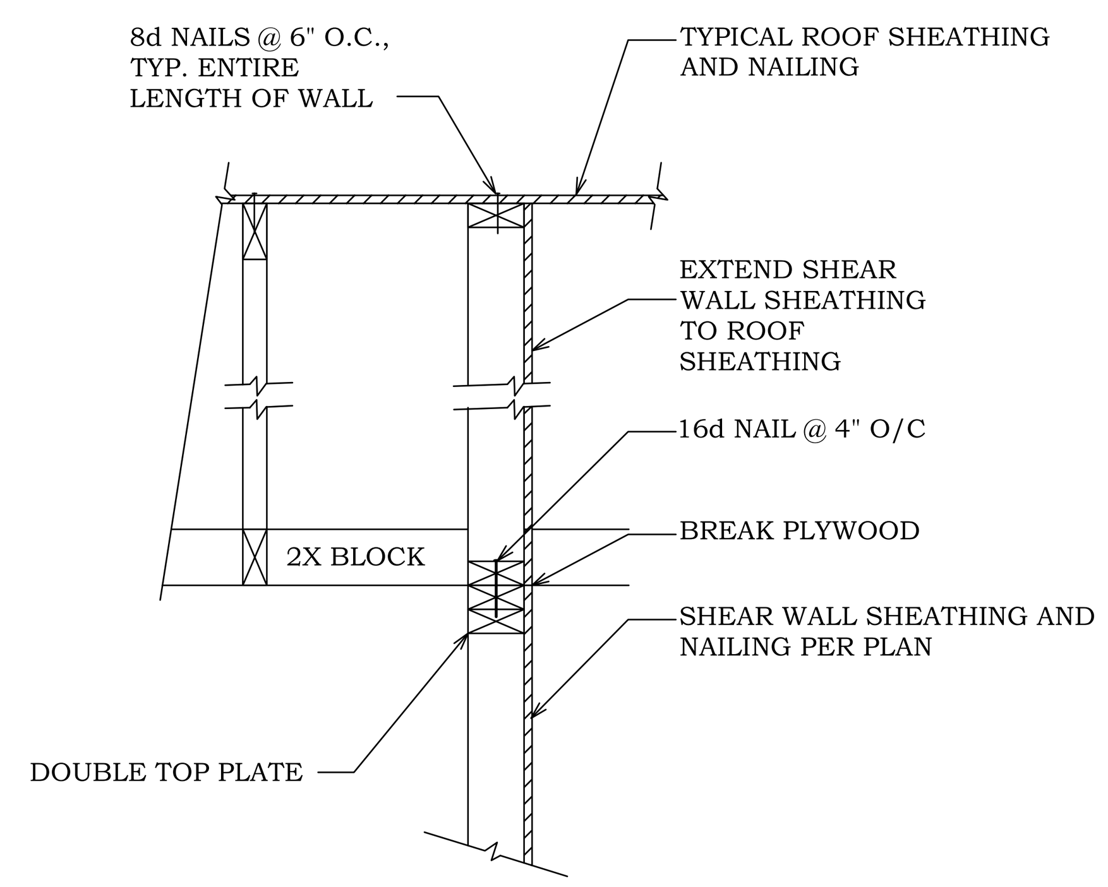
ISSUE	CD
DESIGNED BY	RJT
DRAWN BY	RJT
CHECKED BY	RJT
DATE	06/24/21
PROJECT NO.	R21350
SHEET NO.	S1.0

9/7/2021

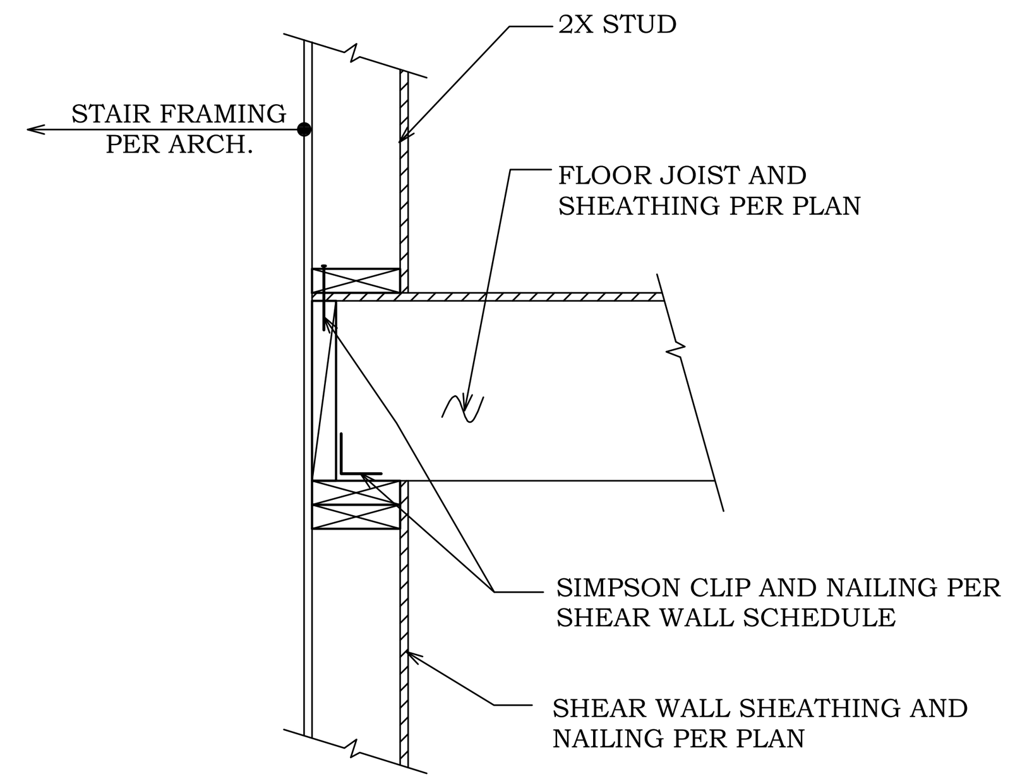
NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. REFER TO SHEAR WALL SCHEDULE SILL BOLT SPACING AT SHEAR WALL LOCATIONS.



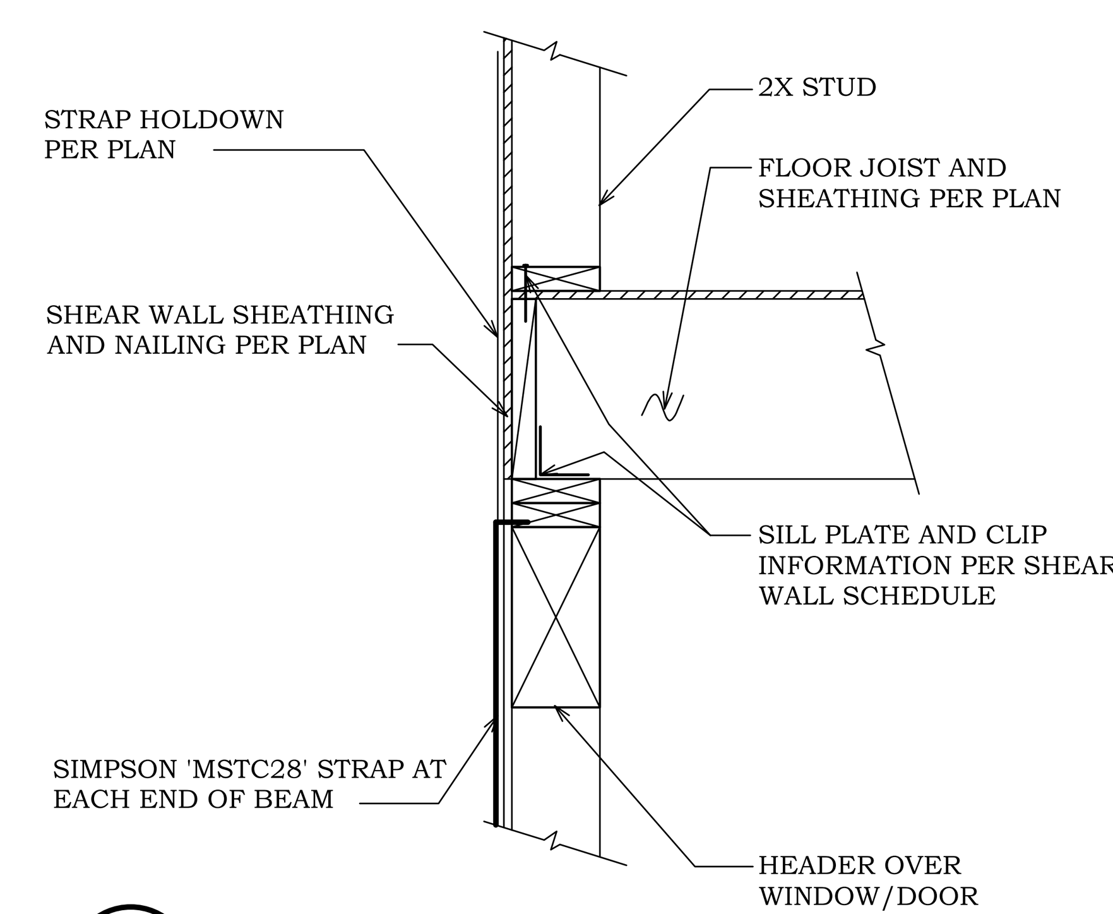
4 / S2.0 **FOOTING SECTION**
SCALE: 1" = 1'-0"



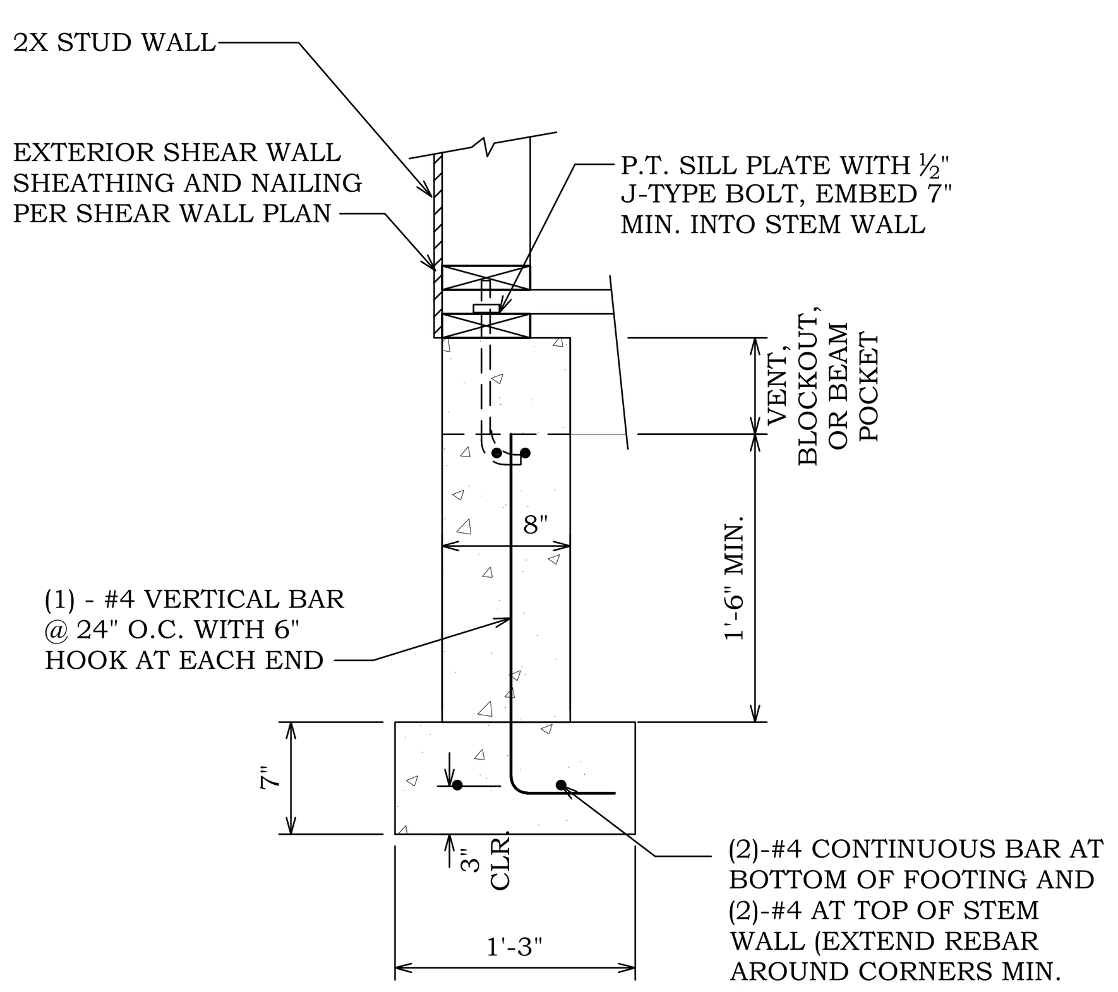
5 / S2 **WALL SECTION**
SCALE: 1" = 1'-0"



6 / S2 **WALL SECTION**
SCALE: 1" = 1'-0"

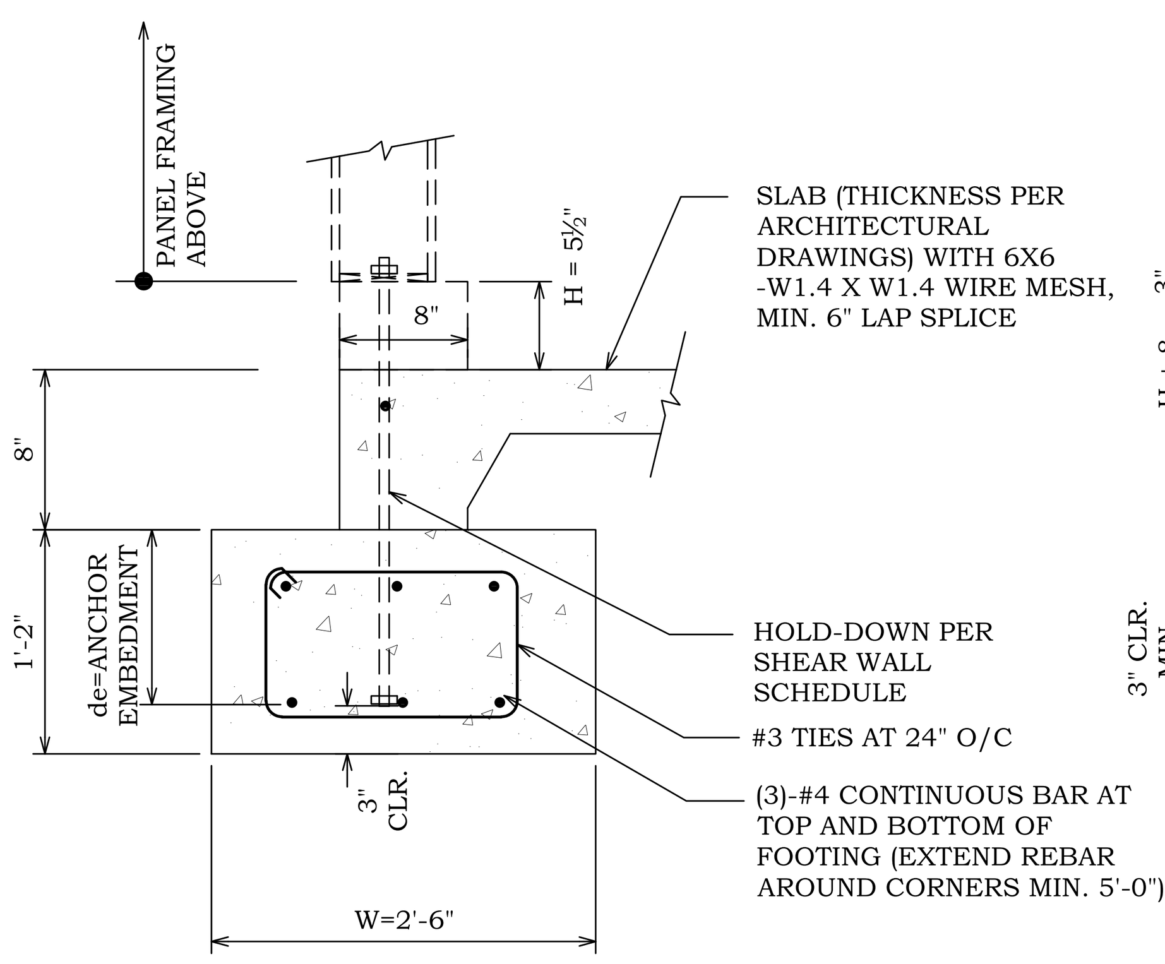


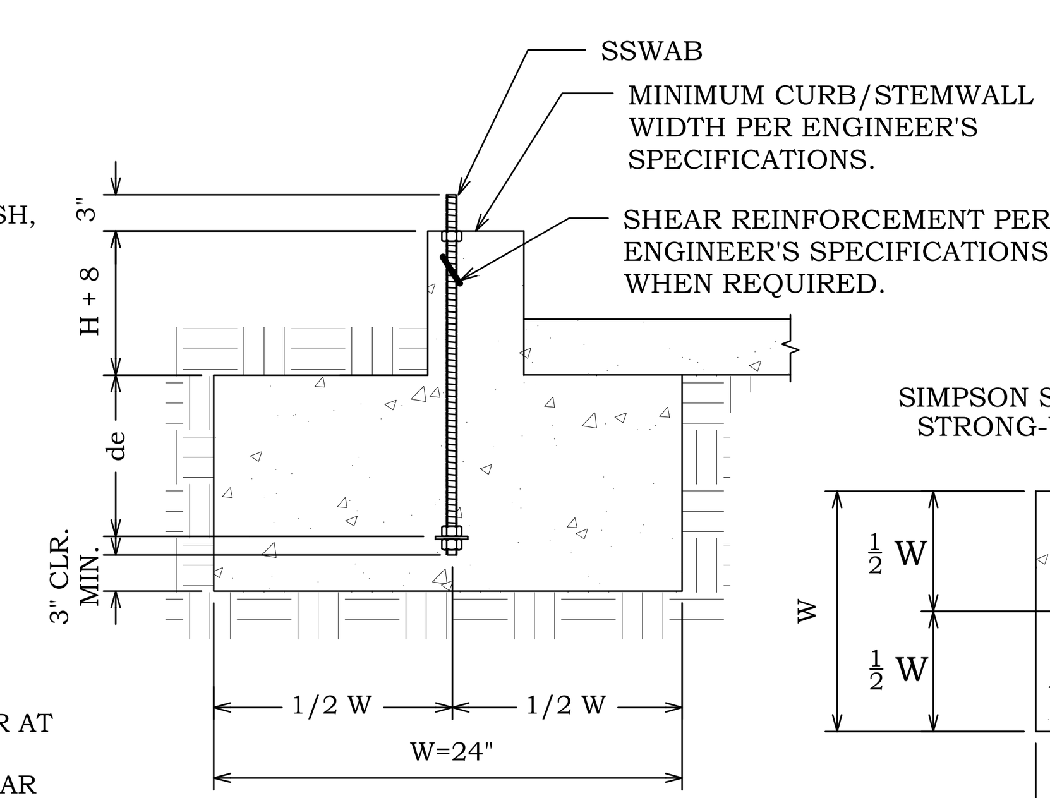
7 / S2 **WALL SECTION**
SCALE: 1" = 1'-0"



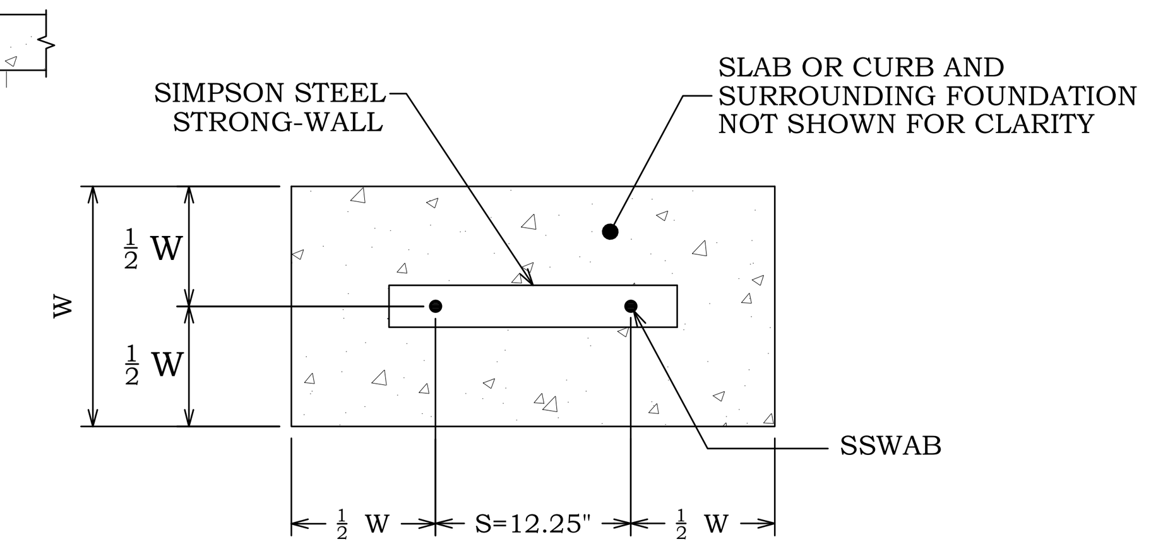
NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. REFER TO SHEAR WALL SCHEDULE SILL BOLT SPACING AT SHEAR WALL LOCATIONS.

1 / S2.0 **FOOTING SECTION**
SCALE: 1" = 1'-0"





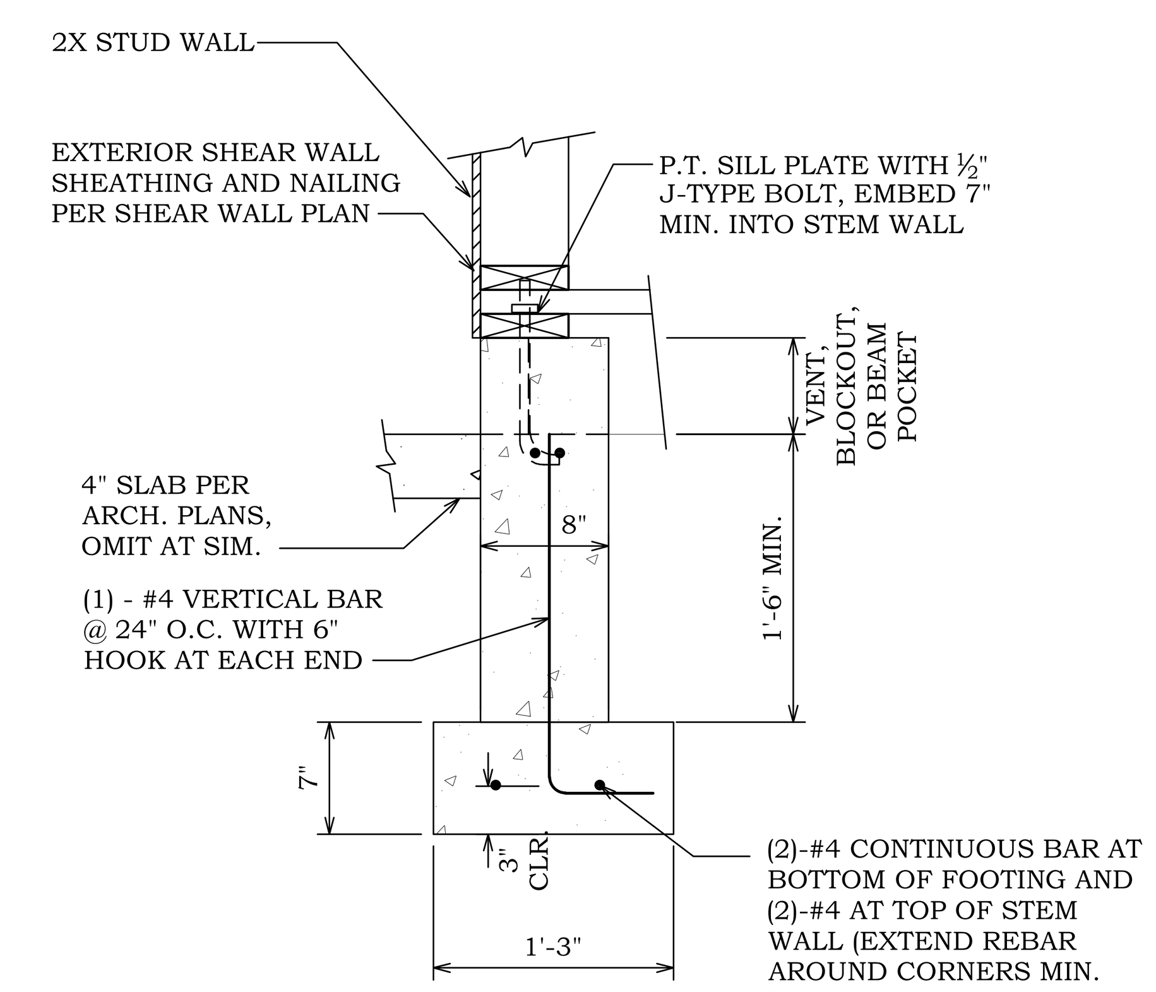
CURB OR STEMWALL FOUNDATION



FOUNDATION PLAN VIEW

NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. DRIVEWAY SURFACE NOT SHOWN.

2 / S2.0 **FOOTING SECTION**
SCALE: 1" = 1'-0"



NOTE:
1. FOOTING TO BE PLACED ON UNDISTURBED NATIVE SOIL.
2. REFER TO SHEAR WALL SCHEDULE SILL BOLT SPACING AT SHEAR WALL LOCATIONS.

3 / S2.0 **FOOTING SECTION**
SCALE: 1" = 1'-0"

No.	DATE	DESCRIPTION

PROJECT NAME
MHD 1753-B
STRUCTURAL DETAILS

TURNER
ENGINEERING & DESIGN
Office/Cell: (503) 970-8807
Email:rturner.teanddinc@gmail.com
PO BOX 220
EAGLE CREEK, OREGON 97022

ENGINEERS STAMP
REGISTERED PROFESSIONAL ENGINEER
58949PE
OREGON
JULY 15, 2003
RICHARD J. TURNER
EXP. DATE: 06-30-22

ISSUE: CD
DESIGNED BY: RJT
DRAWN BY: RJT
CHECKED BY: RJT
DATE: 06/30/21
PROJECT NO.: R21350
SHEET NO.: S2.0

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INTENTIONALLY LEFT BLANK

NO.	DATE	REVISIONS
1	09-21-2009	2006 IBC REVISIONS
2	04-16-2014	2012 IBC REVISIONS
3	08-08-2016	2015 IBC REVISIONS
4	06-18-2020	2018 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
• Pleasanton, CA 94588
• Tel: (800) 999-5099
• Website: www.stronGtie.com

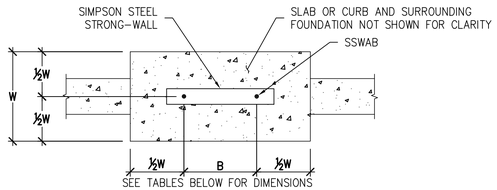
SIMPSON Strong-Tie® THERE IS NO EQUAL

STEEL STRONG-WALL
ANCHORAGE DETAILS
ENGINEERED DESIGNS

NAME	
DATE	6-18-2020
SCALE	N.T.S.
CHECKED	
SHEET	SSW1
OF	SHEETS
JOB NO.	

9/7/2021

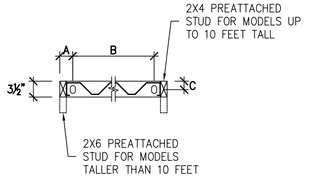
STEEL STRONG-WALL ANCHORAGE – TYPICAL SECTIONS | 1



FOUNDATION PLAN VIEW

STEEL STRONG-WALL ANCHORAGE SOLUTIONS FOR 2500 PSI CONCRETE

DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH				SSWAB 1" ANCHOR BOLT ASD ALLOWABLE UPLIFT (lbs)	W (in)	de (in)
SEISMIC	CRACKED	STANDARD				16,100	33	11
						17,100	35	12
		HIGH STRENGTH				33,000	51	17
						35,300	54	18
	UNCRACKED	STANDARD				15,700	28	10
						17,100	30	10
		HIGH STRENGTH				32,300	44	15
						35,300	47	16
WIND	CRACKED	STANDARD				6,200	16	6
						11,400	24	8
						17,100	32	11
		HIGH STRENGTH				21,100	36	12
						27,300	42	14
						31,800	46	16
						35,300	50	17
	UNCRACKED	STANDARD				6,400	14	6
						12,500	22	8
						17,100	28	10
		HIGH STRENGTH				21,900	32	11
						26,400	36	12
						31,500	40	14
						35,300	43	15



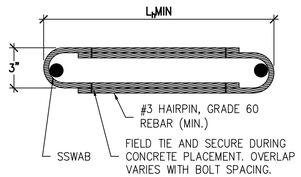
STEEL STRONG-WALL® ANCHOR BOLT LAYOUT

WALL MODEL	DISTANCE FROM END OF WALL TO CENTER OF SSWABs (A) (in.)	DISTANCE FROM CENTER TO CENTER OF SSWABs (B) (in.)	DISTANCE FROM EXTERIOR FACE OF WALL TO CENTER OF ALL SSWABs (C) (in.)
SSW15	2⅞	9¼	1⅞

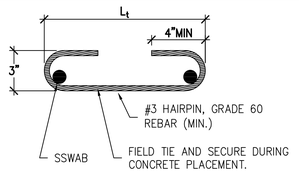
NOTES :
1. ANCHORAGE DESIGNS CONFORM TO ACI 318–14 AND ACI 318–11 APPENDIX D WITH NO SUPPLEMENTARY REINFORCEMENT FOR CRACKED OR UNCRACKED CONCRETE AS NOTED.
2. ANCHOR STRENGTH INDICATES REQUIRED GRADE OF SSWAB ANCHOR BOLT. STANDARD (ASTM F1554 GRADE 36) OR HIGH STRENGTH (HS) (ASTM A449).
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC ANCHORAGE DESIGNS CONFORM TO ACI 318–14 SECTION 17.2.3.4.3 AND ACI 318–11 SECTION D.3.3.4.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. FOUNDATION DIMENSIONS ARE FOR ANCHORAGE ONLY. FOUNDATION DESIGN (SIZE AND REINFORCEMENT) BY OTHERS. THE REGISTERED DESIGN PROFESSIONAL MAY SPECIFY ALTERNATE EMBEDMENT, FOOTING SIZE OR ANCHOR BOLT.
6. REFER TO 1/SSW1 FOR de.

SSWAB TENSION ANCHORAGE SCHEDULE 2500 PSI | 2

3



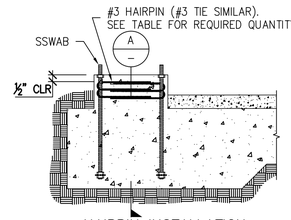
HAIRPIN SHEAR REINFORCEMENT



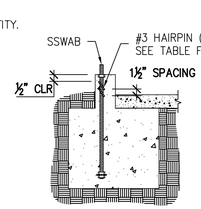
TIE SHEAR REINFORCEMENT

STEEL STRONG-WALL SHEAR ANCHORAGE

MODEL	SEISMIC[3] L_t OR L_h (in.)	SEISMIC[3] SHEAR REINFORCEMENT	SEISMIC[3] MIN. CURB/ STEMWALL WIDTH (in.)	WIND[4] SHEAR REINFORCEMENT	WIND[4] MIN. CURB/ STEMWALL WIDTH (in.)	WIND[4] ASD ALLOWABLE SHEAR LOAD V (lbs.)[6] 6" MIN CURB/STEMWALL UNCRACKED	6" MIN CURB/STEMWALL CRACKED	8" MIN CURB / STEMWALL UNCRACKED	8" MIN CURB / STEMWALL CRACKED
SSW15	12	(2) #3 TIES	6	NONE REQUIRED	–	1590	1135	1810	1295



HAIRPIN INSTALLATION
(GARAGE CURB SHOWN. OTHER FOOTING TYPES SIMILAR.)

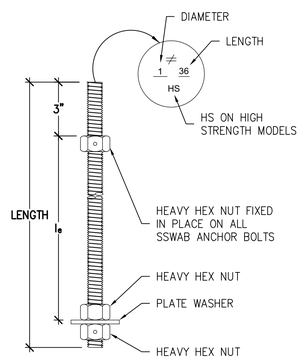


SECTION A

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

NOTES :
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318–14 AND ACI 318–11 AND ASSUME MINIMUM f'c=2,500 PSI CONCRETE. SEE DETAILS 1/SSW1 TO 3/SSW1 FOR TENSION ANCHORAGE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR PANELS INSTALLED ON A WOOD FLOOR, INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B.
5. MINIMUM CURB/STEMWALL WIDTH IS 6" WHEN STANDARD STRENGTH SSWAB IS USED.
6. USE (1) #3 TIE FOR SSW12 AND SSW15 WHEN THE STEEL STRONG-WALL PANEL DESIGN SHEAR FORCE EXCEEDS THE TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
7. CONCRETE EDGE DISTANCE FOR ANCHORS MUST COMPLY WITH ACI 318–14 SECTION 17.7.2 AND ACI 318–11 D.8.2.

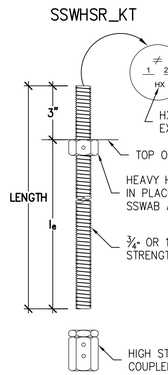
STEEL STRONG-WALL ANCHOR BOLT SHEAR ANCHORAGE | 4



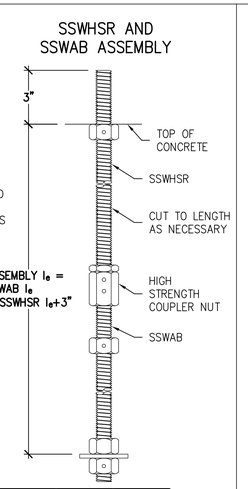
STEEL STRONG-WALL WIDTH	MODEL NO.	DIAMETER	LENGTH	l_e
15", 18", 21" AND 24" MODELS	SSWAB1x24	1"	24"	19"
	SSWAB1x24HS	1"	24"	19"
	SSWAB1x30	1"	30"	25"
	SSWAB1x30HS	1"	30"	25"
	SSWAB1x36HS	1"	36"	31"

SSW ANCHOR BOLTS | 5

SSWHSR_KT



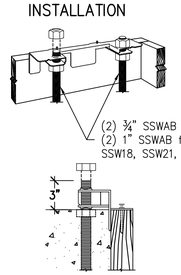
SSWHSR AND SSWAB ASSEMBLY



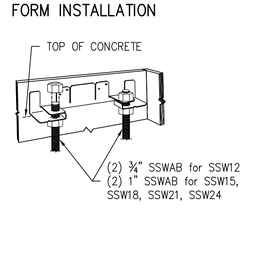
SSW WIDTH	MODEL NO.	DIAMETER	TOTAL LENGTH	l_e
15", 18", 21" AND 24" MODELS	SSWHSR1–2KT	1"	24"	21"
	SSWHSR1–3KT	1"	36"	33"

SSW ANCHOR BOLT EXTENSION | 6

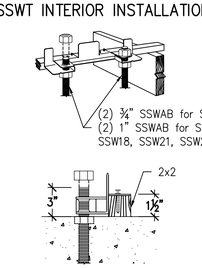
SSWT EXTERIOR INSTALLATION



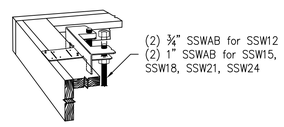
SSWTPF PANEL FORM INSTALLATION



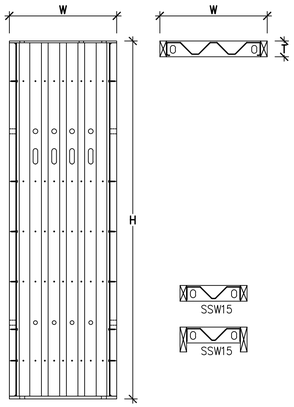
SSWT INTERIOR INSTALLATION



SSWTBL BRICK LEDGE INSTALLATION



SSW ANCHOR BOLT TEMPLATES | 7

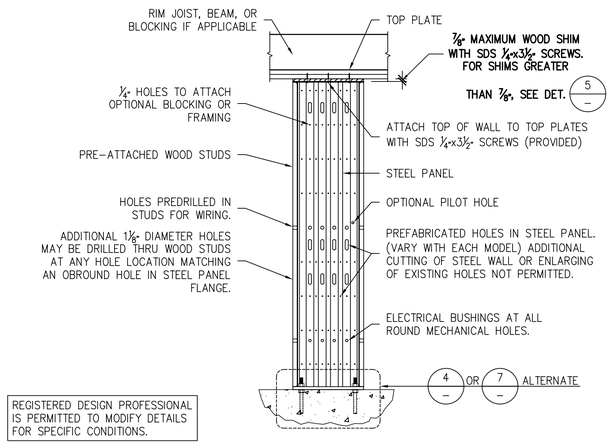


WALL PROFILES

STEEL STRONG-WALL MODELS					
STD. WALL MODEL NO.	-STK WALL MODEL NO.	H(in)	T(in)	HOLDOWN ANCHOR BOLTS[2]	QTY.OF TOP OF WALL SCREWS[1]
SSW15x8	SSW15x8-STK	93/4	3½	2-1"	6

TABLE NOTES :
1. SDS ¼"x3½" SCREWS PROVIDED WITH WALL.
2. SEE SHEET SSW1 FOR ANCHORAGE SOLUTIONS.

STEEL STRONG-WALL MODELS | 1



REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

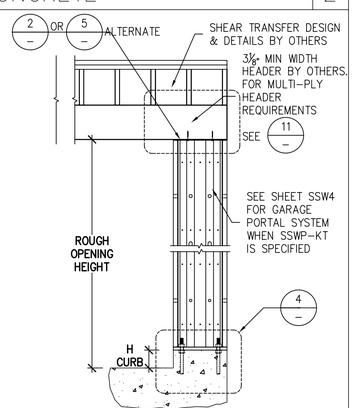
SINGLE-STORY SSW ON CONCRETE | 2

GARAGE HEADER ROUGH OPENING HEIGHT

MODEL NO.	H CURB	ROUND OPENING HEIGHT
SSW12X7 SSW15X7 SSW18X7 SSW21X7 SSW24X7	5½"	7'-1½"
	6"	7'-2"
SSW12X7 SSW15X7 SSW18X7 SSW21X7 SSW24X7	5½"	8'-2¾"
	6"	8'-3¼"

1. THE HEIGHT OF THE GARAGE CURB ABOVE THE GARAGE SLAB IS CRITICAL FOR THE ROUGH HEADER OPENING AT GARAGE RETURN WALLS.
2. SHIMS ARE NOT PROVIDED WITH STEEL STRONG-WALL.
3. FURRING ON UNDERSIDE OF GARAGE HEADER MAY BE NECESSARY FOR LESSER ROUGH OPENING HEIGHTS.

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

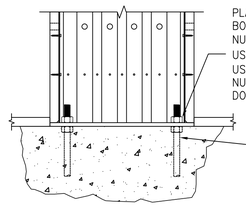


GARAGE WALL OPTION 2
FOR GARAGE WALL OPTION 2

NOTE :
7-FT. HIGH STEEL STRONG-WALL MODELS ARE 80", 2" TALLER THAN 7-FT. HIGH WOOD STRONG-WALL SHEARWALLS

REGISTERED DESIGN PROFESSIONAL SHALL DESIGN FOR :
1. SHEAR TRANSFER
2. OUT OF PLANE LOADING EFFECT
3. INCREASED OVERTURNING AND DRIFT DUE TO ADDITIONAL HEIGHT.

ALTERNATE GARAGE WALL OPTIONS | 3



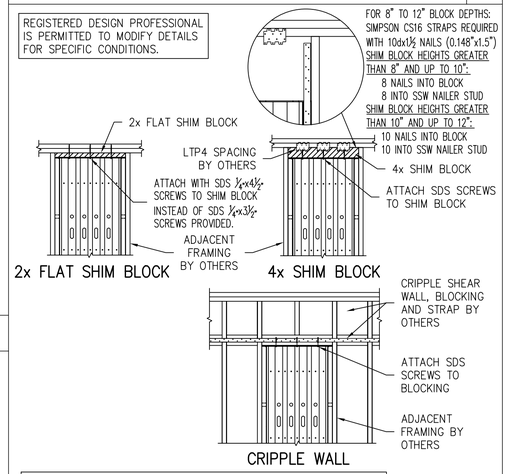
PLACE SSW PANEL OVER THE ANCHOR BOLTS AND SECURE WITH HEAVY HEX NUTS. (PROVIDED)
USE 1¼" WRENCH/ SOCKET FOR ¾" NUT
USE 1⅞" WRENCH/ SOCKET FOR 1" NUT
NUTS SHALL BE SNUG TIGHT.
DO NOT USE AN IMPACT WRENCH.

SEE 1 SSW1 TO 4 SSW1 FOR ANCHORAGE SOLUTIONS

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

STRONG-WALL ON CONCRETE | 4

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



REGISTERED DESIGN PROFESSIONAL SHALL DESIGN FOR :
1. SHEAR TRANSFER
2. OUT OF PLANE LOADING EFFECT
3. INCREASED OVERTURNING AND DRIFT DUE TO ADDITIONAL HEIGHT.

TOP OF WALL HEIGHT ADJUSTMENTS | 5

RECEIVED
By Alina at 11:40 am, Sep 15, 2021

NOTES | 12

1. STEEL STRONG-WALL SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY, INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597. "SIMPSON STRONG-TIE COMPANY, INC." IS AN ISO 9001 REGISTERED COMPANY.
2. USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.
3. THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE SPECIFIER.
4. ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STEEL STRONG-WALL SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE SPECIFIER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
6. INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE SPECIFIER.
7. SIMPSON STRONG-TIE COMPANY, INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.
8. ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.

11

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 11/04/21
Permit #: 21-064600-000-00-RS

NO.	DATE	REVISIONS
1	09-21-2009	2006 IBC REVISIONS
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4	06-16-2020	2018 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
• Pleasanton, CA 94588
• Tel: (800) 999-5099
• Website: www.stronglie.com

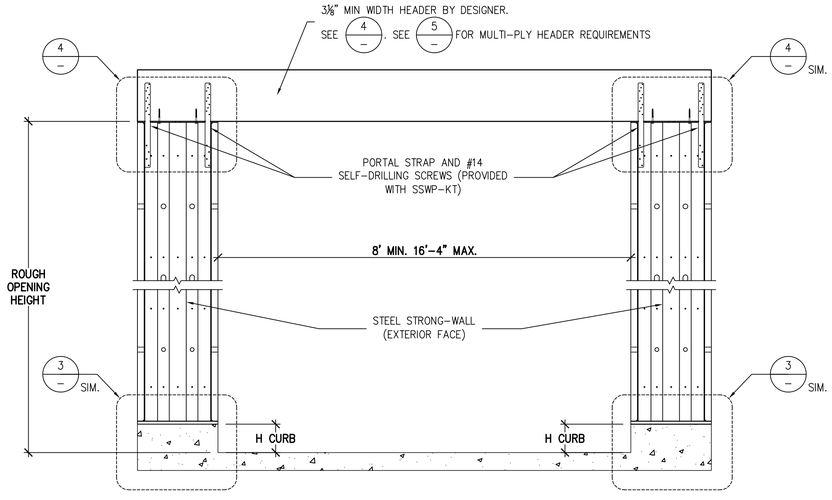
SIMPSON Strong-Tie® THERE IS NO EQUAL

STEEL STRONG-WALL
FRAMING DETAILS
ENGINEERED DESIGNS

SIMPSON Strong-Tie® THERE IS NO EQUAL

NAME	
DATE	6-18-2020
SCALE	N.T.S.
CHECKED	
SHEET	SSW2
OF	SHEETS
JOB NO.	

9/7/2021



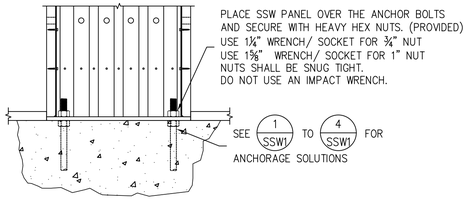
STEEL STRONG-WALL DOUBLE WALL PORTAL

GARAGE HEADER
ROUGH OPENING HEIGHT

MODEL NO.	H CURB	ROUGH OPENING HEIGHT
SSW15X7	5½"	7'-1½"
	6"	7'-2"

1. THE HEIGHT OF THE GARAGE CURB ABOVE THE GARAGE SLAB IS CRITICAL FOR THE ROUGH HEADER OPENING AT GARAGE RETURN WALLS.
2. SHIMS ARE NOT PROVIDED WITH STEEL STRONG-WALL.
3. FURRING DOWN GARAGE HEADER MAY BE NECESSARY FOR CORRECT ROUGH OPENING HEIGHT.

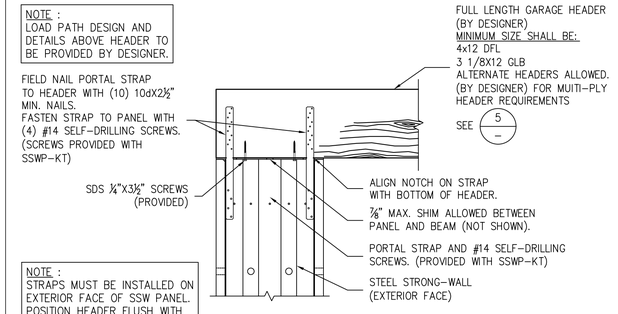
1. STEEL STRONG-WALL SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY, INC.
   "HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597.
   "SIMPSON STRONG-TIE COMPANY, INC." IS AN ISO 9001 REGISTERED COMPANY.
2. USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.
3. THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE SPECIFIER.
4. ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STEEL STRONG-WALL SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE SPECIFIER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
6. INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE SPECIFIER.
7. SIMPSON STRONG-TIE COMPANY, INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.
8. ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.



REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

BASE PLATE CONNECTION

NOTE :
LOAD PATH DESIGN AND DETAILS ABOVE HEADER TO BE PROVIDED BY DESIGNER.



NOTE :
STRAPS MUST BE INSTALLED ON EXTERIOR FACE OF SSW PANEL. POSITION HEADER FLUSH WITH EXTERIOR FACE OF SSW PANEL.

TOP OF WALL CONNECTION

NO.	DATE	REVISIONS
0	09-21-2009	FIRST RELEASE
1	04-16-2014	2012 IBC REVISIONS
2	08-08-2016	2015 IBC REVISIONS
3	06-18-2020	2018 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
• Pleasanton, CA 94588
• Tel: (800) 999-5099
• • Website: www.stronGtie.com

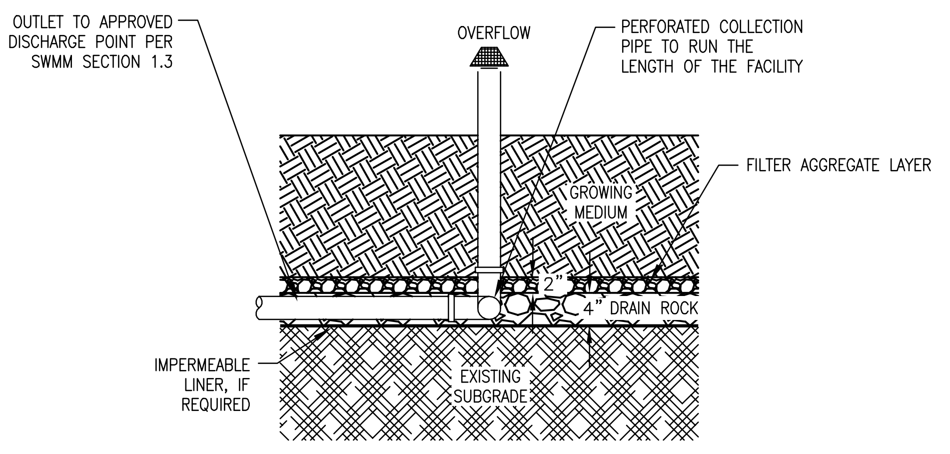
SIMPSON Strong-Tie® THERE IS NO EQUAL

STEEL STRONG-WALL
PORTAL SYSTEM FRAMING DETAILS
ENGINEERED DESIGNS

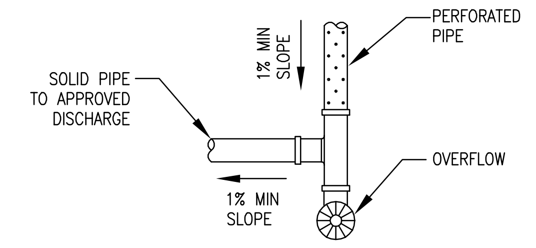
SIMPSON Strong-Tie® THERE IS NO EQUAL

NAME	
DATE	6-18-2020
SCALE	N.T.S.
CHECKED	
SHEET	SSW4
OF	SHEETS
JOB NO.	

SIMPLIFIED DESIGN APPROACH



SECTION



PLAN

PIPE W/ UNDERDRAIN & DISCHARGE POINT

– DRAWING NOT TO SCALE –

Bureau of Environmental Services

STORMWATER MANAGEMENT TYPICAL DETAILS FOR PRIVATE PROPERTY

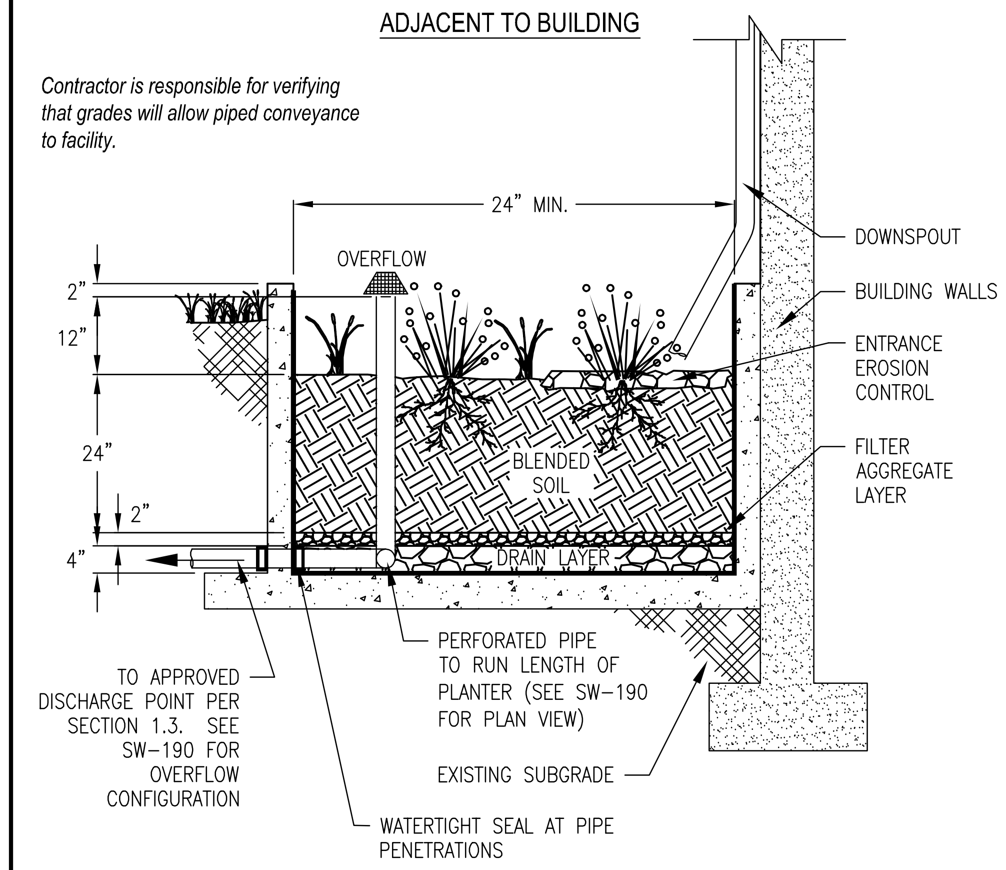
UNDERDRAIN AND OVERFLOW CONFIGURATIONS

9–2–20

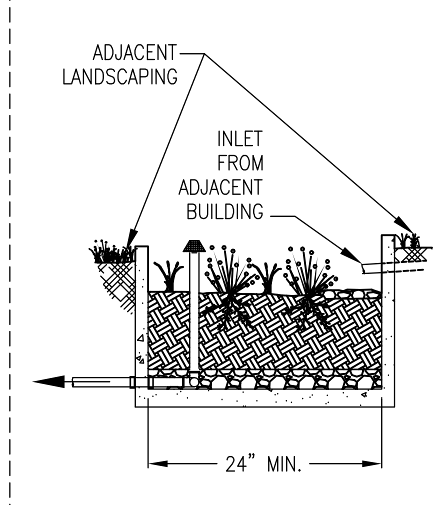
SIMPLIFIED DESIGN APPROACH

ADJACENT TO BUILDING

Contractor is responsible for verifying that grades will allow piped conveyance to facility.



FREESTANDING PLANTER



1. Setbacks: No setback is required for lined planters. Walls can't exceed 30" height above grade if within 5' of property line including right–of–way.
2. Facility Slope (planted floor): Maximum of 0.5% in all directions.
3. Planter Structure: A single–pour monolithic concrete shell, without cold joints, is required to avoid the requirement for liner. Include walls on foundation plans. Check state structural standards for foundations.
4. Waterproofing: No additional waterproofing is needed if structure is monolithically poured.
5. Piping: Conform with Oregon Plumbing Specialty Code (OPSC) requirements.
6. Drain Layer: 4" of $\frac{3}{4}$"–1 $\frac{1}{2}$" washed drain rock. Filter aggregate layer: 2–3" of $\frac{1}{4}$"–No.10 washed angular aggregate.
7. Overflow: Overflow elevation must allow for 2" of freeboard, minimum. Protect from debris and sediment with strainer or grate.
8. Blended Soil: Use BES' standard soil blend for stormwater facilities (SWMM Section 6.3) unless otherwise approved. Install minimum of 24" of blended soil.
9. Vegetation: Refer to plant list in SWMM Section 3.5. Minimum container size is 1 gal. Number of plantings per 100sf of facility area: 80 herbaceous plants OR 72 herbaceous plants and 4 small shrubs.
10. Entrance Erosion Control: Install river rock, flagstone, or similar to dissipate the energy of incoming water at entrances and ends of downspout extensions.
11. Inspections: Call BDS IVR Inspection Line, (503) 823–7000, request 487. 3 inspections required.

CONSTRUCTION REQUIREMENTS
Do not allow temporary storage of construction waste or materials in the facilities. Do not allow entry of runoff or sediment during construction.

– DRAWINGS NOT TO SCALE –

Bureau of Environmental Services

STORMWATER MANAGEMENT TYPICAL DETAILS FOR PRIVATE PROPERTY

LINED PLANTER

9–2–20

2	9-10-2021 BES	CHANGED TO LINED PLANTER SW-141.

PROJECT LEGAL DESCRIPTION:
PROP. ID#: STATE ID: 1S2E19CC 1802
LOT 18, STANFORD HTS, BLOCK13
SE 1/4 NE 1/4 SEC. 8, T.IS R.2E.
W.M. MULTNOMAH COUNTY, OREGON

PROJECT ADDRESS:
4441 SE UMATILLA ST, (LOT E. OF 4407)
PORTLAND, OREGON 97206

PROPOSED PROJECT FOR:
SENTAUR INC.

SITE PLAN DETAILS

SCALE: 1" = 10.0' (ON 18"X24" PAPER SIZE)
DATE: 9-10-21
JOB# 21-53

NORTH

MHD
MASSIE HOME DESIGN
500 NW 20TH ST STE 203 (o) PHONE: 503-663-1100
GRESHAM, OREGON 97030 EMAIL: brian@massiehd.com