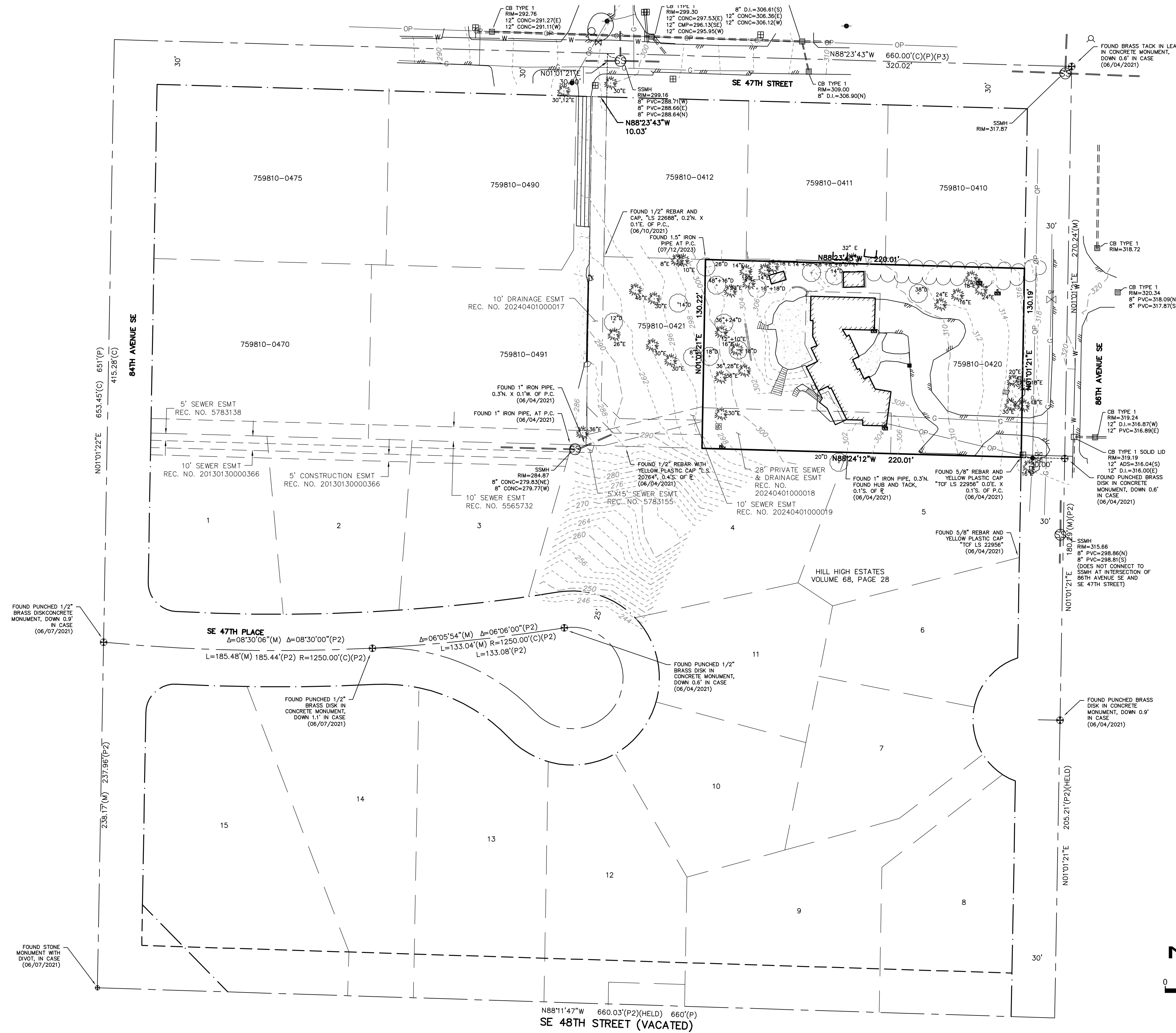


BOUNDARY AND TOPOGRAPHIC SURVEY

A PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER
SECTION 18, TOWNSHIP 24 NORTH, RANGE 05 EAST, W.M.,
CITY OF MERCER ISLAND, KING COUNTY, WASHINGTON

- LEGEND:**
- FOUND SECTION CORNER AS NOTED
 - FOUND MONUMENT AS NOTED



LEGAL DESCRIPTION:

PARCEL A: (TAX PARCEL NO. 759810-0420-03)
THE EAST 220 FEET OF LOTS 1 AND 2, BLOCK 13, VITUS SCHMID'S EAST SEATTLE ACRE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 7 OF PLATS, PAGE 76, RECORDS OF KING COUNTY, WASHINGTON;
EXCEPT THE NORTH 110 FEET OF SAID LOT 1.
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

TITLE RESTRICTIONS:

- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS, IF ANY, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, INCLUDING BUT NOT LIMITED TO THOSE BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON THE PLAT OF VITUS SCHMID'S EAST SEATTLE ACRE TRACTS, AS RECORDED UNDER RECORDING NUMBER 78513.
- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS AND RESTRICTIONS BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, INCLUDING BUT NOT LIMITED TO THOSE BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, SOURCE OF INCOME, GENDER, GENDER IDENTITY, GENDER EXPRESSION, MEDICAL CONDITION, OR GENETIC INFORMATION, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH IN DOCUMENT RECORDED MAY 16, 1972 UNDER RECORDING NUMBER 7205160582.
- THIS SITE IS SUBJECT TO CITY, COUNTY, OR LOCAL IMPROVEMENT DISTRICT ASSESSMENTS, IF ANY.

SURVEYOR'S NOTES

- ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENTS ORDER NO. 0193784-ETU DATED OCTOBER 15, 2020 AND ORDER NO. 0193785-ETU DATED OCTOBER 14, 2020. IN PREPARING THIS MAP, D.R. STRONG CONSULTING ENGINEERS INC. HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS D.R. STRONG CONSULTING ENGINEERS INC. AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY REFERENCED CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENTS. D.R. STRONG CONSULTING ENGINEERS INC. HAS RELIED WHOLLY ON CHICAGO TITLE COMPANY OF WASHINGTON REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND THEREFORE D.R. STRONG CONSULTING ENGINEERS INC. QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
- THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON JUNE 10, 2021. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT ON JUNE 4, 2021.
- PROPERTY AREA = 28,644.14± SQUARE FEET (0.6576± ACRES).
- ALL DISTANCES ARE IN U.S. SURVEY FEET.
- THIS IS A COMBINED FIELD TRAVERSE AND GLOBAL NAVIGATION SATELLITE SYSTEMS SURVEY. A TRIMBLE S7 ONE-SECOND COMBINED ELECTRONIC TOTAL STATION AND A TRIMBLE R12I GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) RECEIVER WERE USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332-130-090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. D.R. STRONG CONSULTING ENGINEERS INC. ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.
- CONTOUR INTERVAL = 2 FOOT. CONTOURS SHOWN ARE PRODUCED FROM A DIGITAL TERRAIN MODEL DERIVED FROM DIRECT FIELD OBSERVATIONS OBTAINED DURING THE COURSE OF THE FIELD TRAVERSE SURVEY. ELEVATIONS REPRESENTED BY CONTOURS WITHIN THE EXTERIOR BOUNDARY OF THE SUBJECT PROPERTY ARE ACCURATE WITHIN 0.5'.

VERTICAL DATUM:

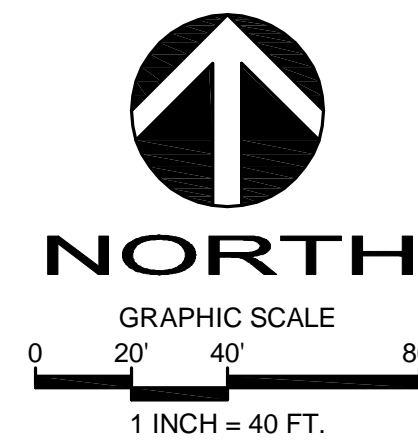
NAVD 88

BENCHMARK:

FOUND COPPER TACK IN LEAD IN 4"x4" CONCRETE MONUMENT, DOWN 0.6" IN CASE, AT THE INTERSECTION OF 86TH AVENUE SE AND SE 47TH STREET. GNSS OBSERVATION OF MONUMENT PRODUCED THE ELEVATION OF 317.158'.

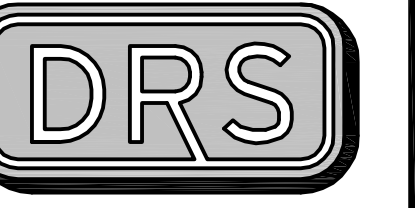
REFERENCES:

- (P) PLAT OF VITUS SCHMID'S EAST SEATTLE ACRE TRACTS, VOLUME 7 OF PLATS, PAGE 76
- (P2) PLAT OF HILL HIGH ESTATES, VOLUME 68 OF PLATS, PAGE 28
- (P3) PLAT OF DANIEL'S ADDITION, VOLUME 72 OF PLATS, PAGE 60
- RECORD OF SURVEY, AFN 202101203900015
- RECORD OF SURVEY, AFN 201802289000009
- RECORD OF SURVEY, AFN 9006149020
- RECORD OF SURVEY, AFN 20050321900011
- RECORD OF SURVEY, AFN 200802089000017



BASIS OF BEARINGS:

NORTH 01°01'21" EAST BETWEEN THE MONUMENTS FND IN PLACE ALONG 86TH AVENUE SE. PER GPS OBSERVATIONS



D.R. STRONG CONSULTING ENGINEERS
ENGINEERS PLANNERS SURVEYORS

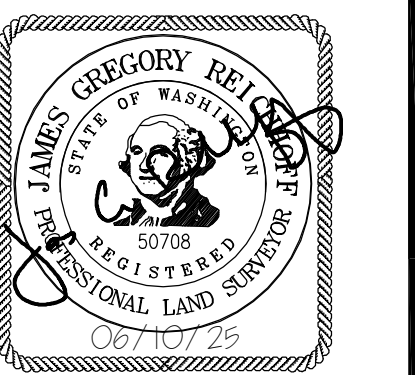
620 - 7th AVENUE KIRKLAND, WA 98033
O 425.827.3065 F 425.827.2423

BOUNDARY AND TOPOGRAPHIC SURVEY

TAX PARCEL NUMBERS
7598100420 AND 7598100421
4719 86TH AVENUE SE
AND 84XX SE 47TH STREET
MERCER ISLAND, WASHINGTON

TODD SHERMAN DESIGN BUILT HOMES

11400 SE 8TH STREET
SUITE 415
BELLEVUE, WASHINGTON 98004
206-909-8187



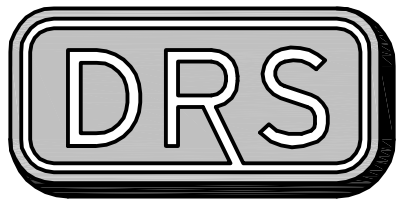
DATE	REVISION	BY
APR 3/22/2022	REMOVED PARCEL B	JMS
06/10/2025	MISC. UPDATES	JGR

PROJECT SURVEYOR: JGR
DRAFTED BY: JMS/JGR
FIELD BOOK: 146-E and 146-I
DATE: 06-10-2025
PROJECT NO.: 21071

SHEET: 1 OF 2

BOUNDARY AND TOPOGRAPHIC SURVEY

A PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER SECTION 18, TOWNSHIP 24 NORTH, RANGE 05 EAST, W.M., CITY OF MERCER ISLAND, KING COUNTY, WASHINGTON



D.R. STRONG CONSULTING ENGINEERS
ENGINEERS PLANNERS SURVEYORS

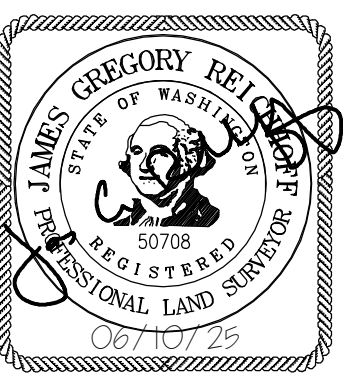
620 - 7th AVENUE KIRKLAND, WA 98033
O 425.827.3063 F 425.827.2423

BOUNDARY AND TOPOGRAPHIC SURVEY

TAX PARCEL NUMBERS
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4719 86TH AVENUE SE
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SUITE 415
BELLEVUE, WASHINGTON 98004
206-909-8187



APR

JMS

JGR

REVISION

ADDED STAIRS AND ROCKERY

REMOVED PARCEL B

DATE

6/16/2021

3/22/2022

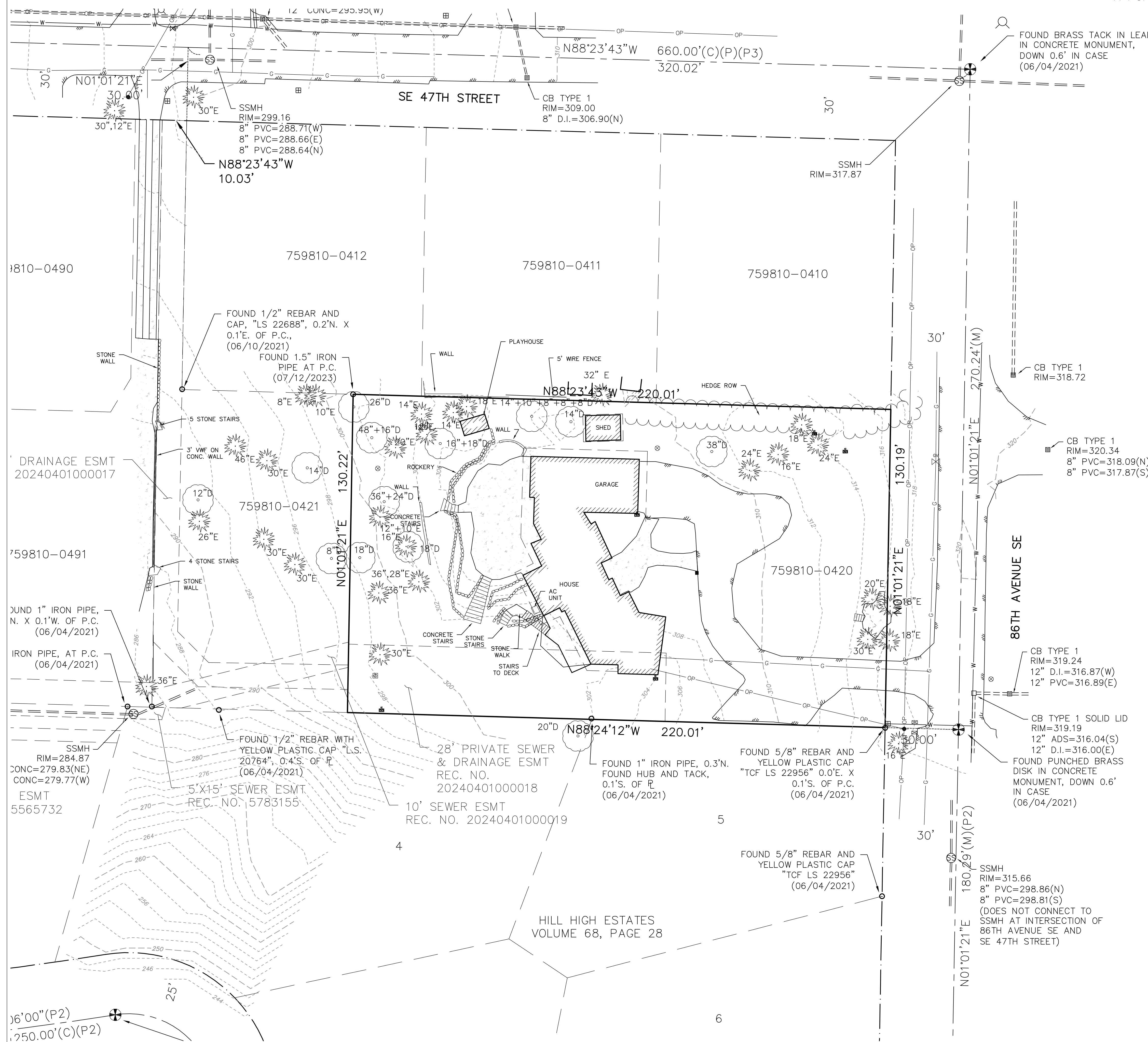
REMOVED MISC. UPDATES

06/10/2025

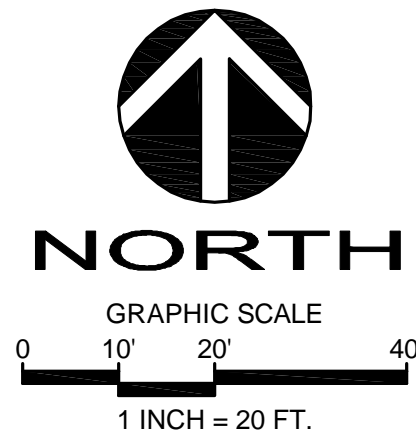
MISC. UPDATES

PROJECT SURVEYOR: JGR
DRAFTED BY: JMS/JGR
FIELD BOOK: 146-E and 146-I
DATE: 06-10-2025
PROJECT NO.: 21071

SHEET: 2 OF 2

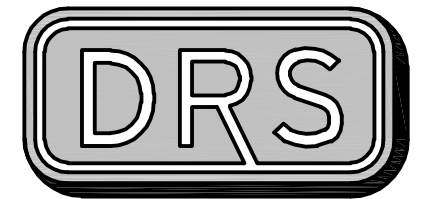


- LEGEND:**
- FOUND SECTION CORNER AS NOTED
 - FOUND MONUMENT AS NOTED
 - FOUND CORNER MONUMENT AS NOTED
 - MAIL BOX
 - POWER METER
 - POWER POLE
 - WATER METER
 - ROCKERY
 - STORM DRAIN CATCH BASIN
 - SANITARY SEWER MANHOLE
 - GAS VALVE
 - GAS METER
 - VERTICAL BOARD FENCE
 - DECIDUOUS TREE
 - EVERGREEN TREE
 - SANITARY SEWER LINE
 - STORM LINE
 - OVERHEAD POWER
 - UNDERGROUND WATER
 - UNDERGROUND GAS
 - EDGE OF PAVEMENT
 - FENCE
 - CONCRETE



BASIS OF BEARINGS:
NORTH 01°01'21" EAST BETWEEN THE MONUMENTS FND IN PLACE ALONG 86TH AVENUE SE. PER GPS OBSERVATIONS

LORENZINI SFR LOT 2



D.R. STRONG
CONSULTING ENGINEERS
ENGINEERS PLANNERS SURVEYORS

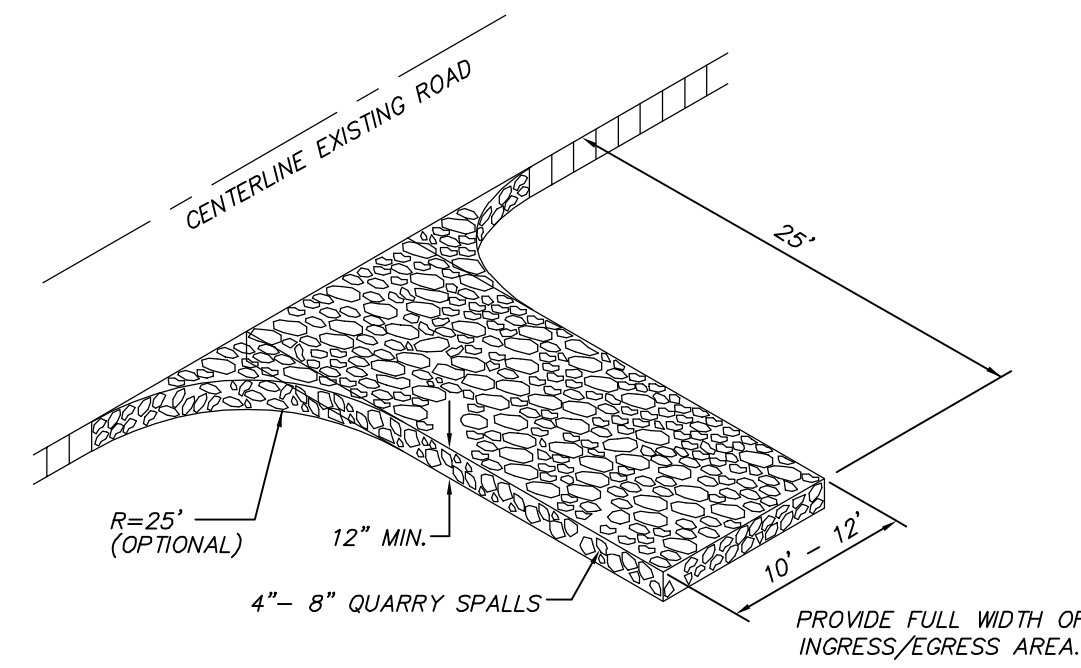
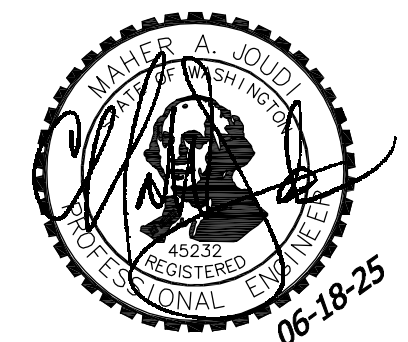
620 - 7th AVENUE KIRKLAND, WA 98033
O 425.827.3063 F 425.827.2423

LORENZINI SFR LOT 2

T.E.S.C. NOTES & DETAILS
4719 86TH AVE SE
MERCER ISLAND
WASHINGTON 98040
PARCEL NO. 759810-0422-01

TODD SHERMAN
DESIGN BUILT HOMES

11400 SE 8TH STREET, SUITE 415
BELLEVUE, WASHINGTON 98004
206-909-8187



DRIVEWAYS SHALL BE PAVED TO THE EDGE OF R-O-W PRIOR TO INSTALLATION OF THE CONSTRUCTION ENTRANCE TO AVOID DAMAGING OF THE ROADWAY. IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

GRAVEL CONSTRUCTION ENTRANCE

NTS

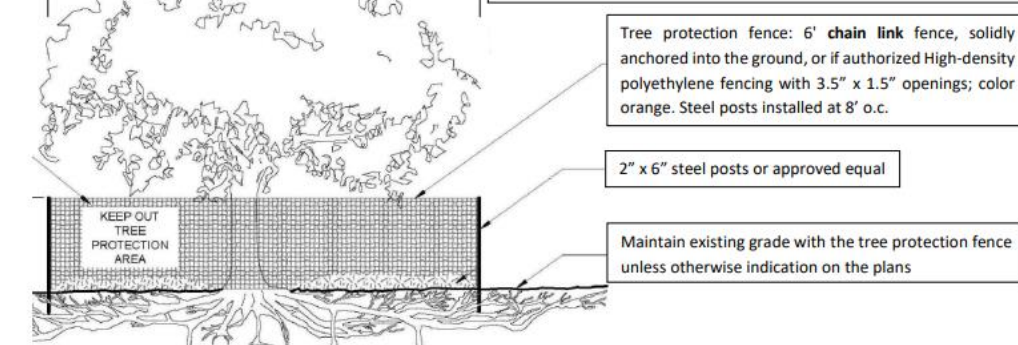
TREE PROTECTION AREA (TPZ)

KEEP OUT!

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved.
 2. RE Inspection Fees/financial penalties.
 3. Arborist reports recommending mitigation.
- Notes:
1. No pruning shall be performed unless under the direction of the Project Arborist. Including limbing trees up.
 2. No grading, excavation, storage (materials, equipment, vehicles, etc.), or other unpermitted activity shall occur inside the protective fencing.
 3. Penalties for damaging by root damage/compaction or removing a saved tree may be a fine up to three times the value of the tree plus restoration (MCC 19.10.130).
 4. Any work in approved TPZ must be with the permission of the City Arborist (206) 275-7713, john.kennedy@mercer.gov.
 5. 5' course woodchips within the tree protection zone, but not against the tree trunk.

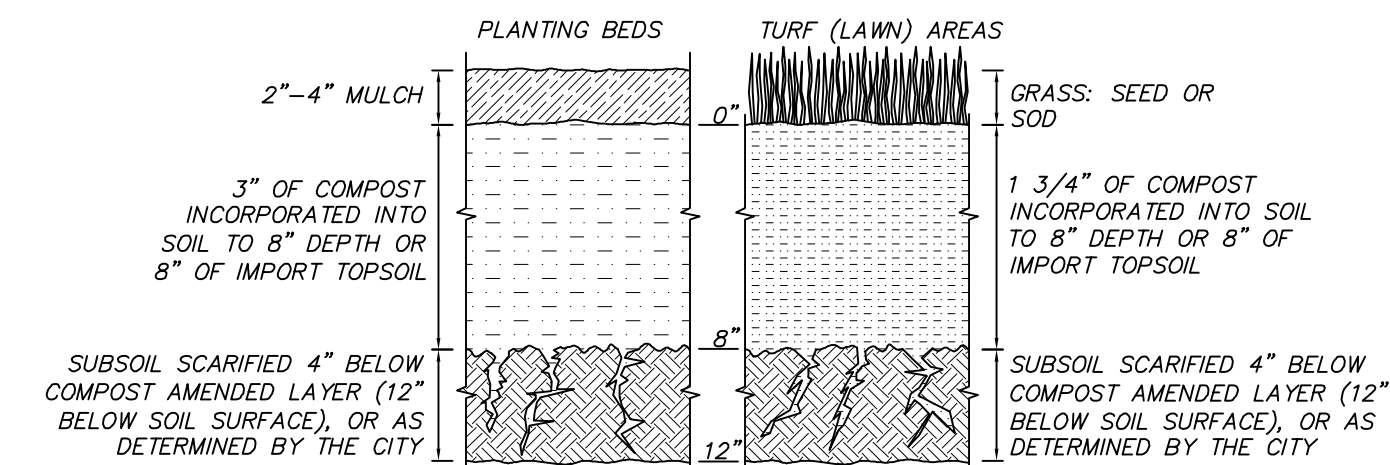


Any Work in the protected area must be with the permission of the City Arborist john.kennedy@mercer.gov

TREE PROTECTION FENCING IN CITY ROW NOT TO EXCEED 3 FEET; ORANGE PLASTIC FENCE ACCEPTABLE

TREE PROTECTION FENCING

NTS



SOIL AMENDMENT

PER BMP 15.13

NTS

SOIL AMENDMENT NOTES

SOIL RETENTION: RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE, IN ANY AREAS REQUIRING GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA, NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS, TO BE REAPPLIED TO OTHER PORTIONS OF THE SITE WHERE FEASIBLE.

SOIL QUALITY: ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL, AT PROJECT COMPLETION, DEMONSTRATE THE FOLLOWING:

1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE.
2. MULCH PLANTING BEDS WITH 2-4 INCHES OF ORGANIC MATERIAL.
3. USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT REQUIREMENTS:
 - A. THE ORGANIC CONTENT FOR "PRE-APPROVED" AMENDMENT RATES CAN BE MET ONLY USING COMPOST MEETING THE COMPOST SPECIFICATION FOR BIORETENTION (BMP 17.30), WITH THE EXCEPTION THAT THE COMPOST MAY HAVE UP TO 35% BIOSOLIDS OR MANURE. THE COMPOST MUST ALSO HAVE AN ORGANIC MATTER CONTENT OF 40% TO 65%, AND A CARBON TO NITROGEN RATIO BELOW 25:1. THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION.
 - B. CALCULATED AMENDMENT RATES MAY BE MET THROUGH USE OF COMPOSTED MATERIAL MEETING (A.) ABOVE, OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS, AND NOT EXCEEDING THE CONTAMINANT LIMITS IDENTIFIED IN TABLE 220-B, TESTING PARAMETERS, IN WAC 173-350-220. THE RESULTING SOIL SHOULD BE CONGRUOUS TO THE TYPE OF VEGETATION TO BE ESTABLISHED.

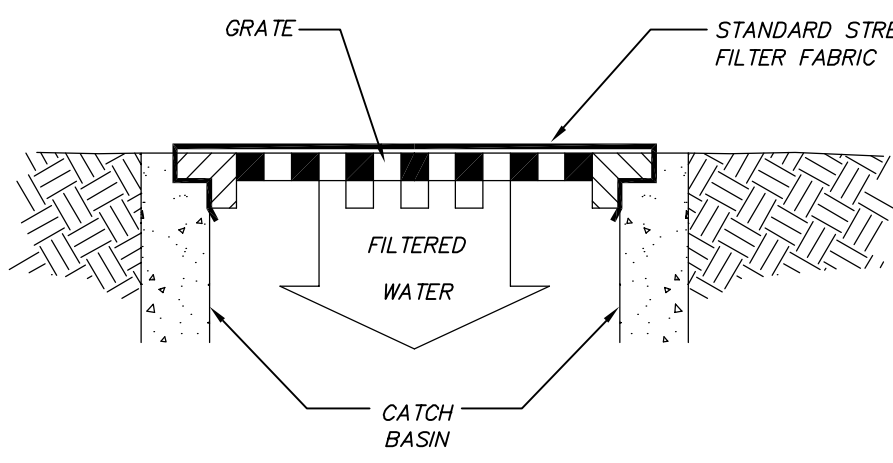
IMPLEMENTATION OPTIONS: THE SOIL QUALITY DESIGN GUIDELINES LISTED ABOVE CAN BE MET BY USING ONE OF THE METHODS LISTED BELOW:

1. LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION.
2. AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT "PRE-APPROVED" RATES, OR AT CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.
3. STOCKPILE EXISTING TOPSOIL DURING GRADING, AND REPLACE IT PRIOR TO PLANTING. STOCKPILED TOPSOIL MUST ALSO BE AMENDED IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS, EITHER AT A DEFAULT "PRE-APPROVED" RATE OR AT A CUSTOM CALCULATED RATE.
4. IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS.

MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND IS NOT COMPACTED, DOES NOT NEED TO BE AMENDED.

MAINTENANCE:
 • ESTABLISH SOIL QUALITY AND DEPTH TOWARD THE END OF CONSTRUCTION AND ONCE ESTABLISHED, PROTECT FROM COMPACTION, SUCH AS FROM LARGE MACHINERY USE, AND FROM EROSION.
 • PLANT VEGETATION AND MULCH THE AMENDED SOIL AREA AFTER INSTALLATION.
 • LEAVE PLANT DEBRIS OR ITS EQUIVALENT ON THE SOIL SURFACE TO REPLENISH ORGANIC MATTER.
 • REDUCE AND ADJUST, WHERE POSSIBLE, THE USE OF IRRIGATION, FERTILIZERS, HERBICIDES AND PESTICIDES, RATHER THAN CONTINUING TO IMPLEMENT FORMERLY ESTABLISHED PRACTICES.

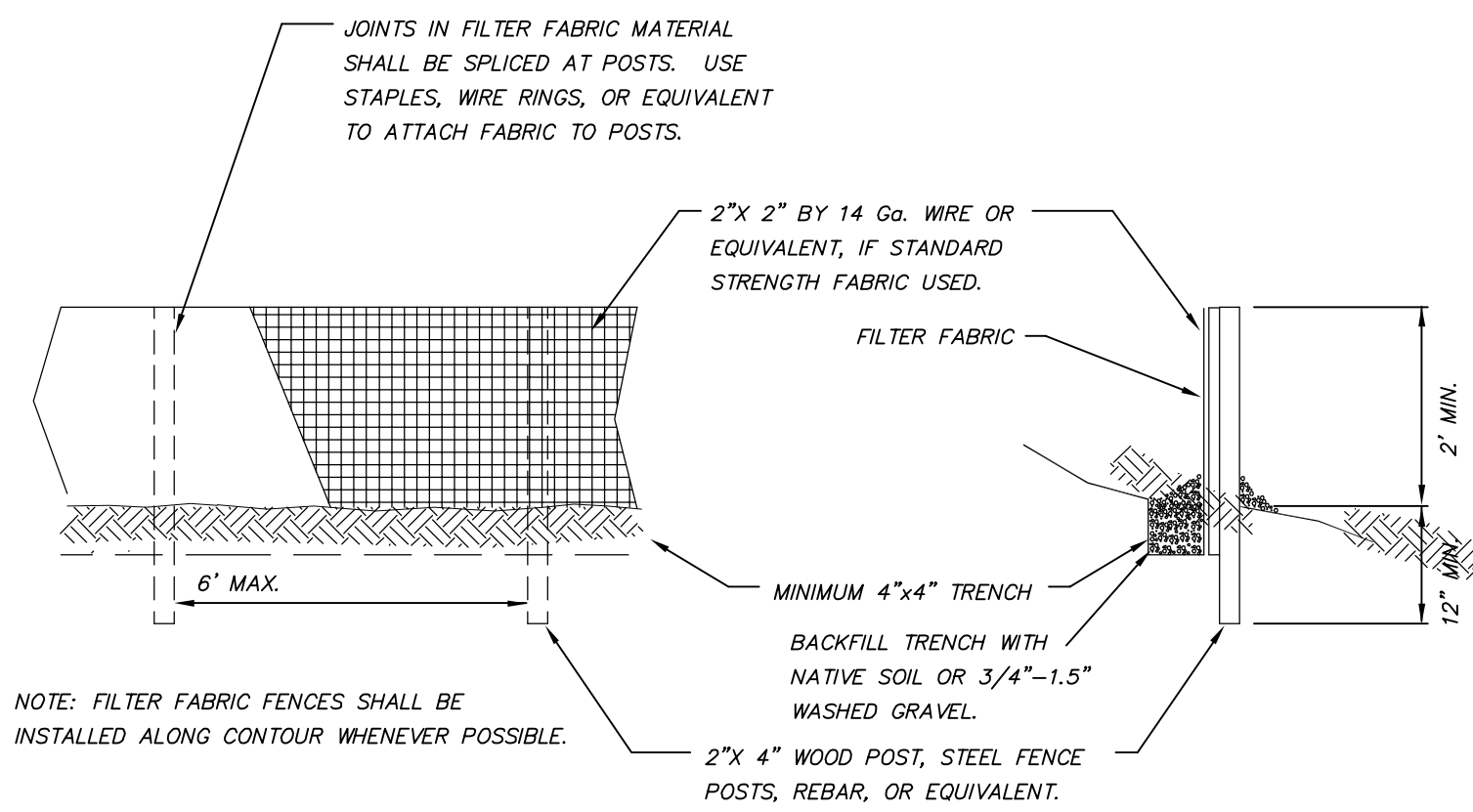
1. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT MUST BE REMOVED WHEN THE SEDIMENT IS 6 INCHES HIGH.
5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.



NOTE: ONLY TO BE USED WHERE PONDING OF WATER ABOVE THE CATCH BASIN WILL NOT CAUSE TRAFFIC PROBLEMS AND WHERE OVERFLOW WILL NOT RESULT IN EROSION OF SLOPES.

CATCH BASIN INLET FILTER

NTS



NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.

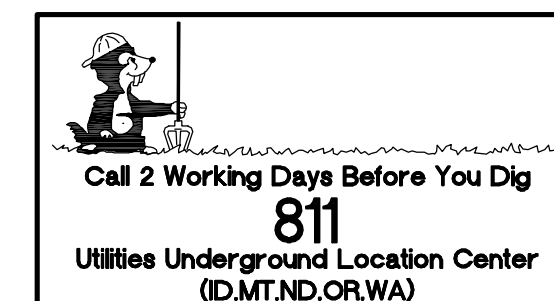
SILT FENCE DETAIL

NTS

EROSION AND SEDIMENT CONTROL NOTES:

1. APPROVAL OF THIS EROSION AND SEDIMENT CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF SURVEY TAPE (OR FENCING, IF REQUIRED) PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE TESC FACILITIES DURING THE WET SEASON (OCT. 1 TO APRIL 30) AND OF MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPT. 30).
7. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G. SEEDING, MULCHING, PLASTIC COVERING, ETC.).
8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSYSTEM SYSTEM. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ALL DISTURBED AREAS SHALL BE STABILIZED USING TYPICAL TESC BMP'S. THE LIMITS OF DISTURBANCE WILL BE DELINEATED WITH HIGH VISIBILITY CONSTRUCTION FENCING. DURING CONSTRUCTION SILT FENCES WILL BE PLACED DOWN SLOPE OF DISTURBED AREAS ALONG WITH STRAW MATTING, NETS, OR PLASTIC COVERING OVER EXPOSED SOIL OR STOCKPILES. TREES TO BE RETAINED WILL BE PROTECTED WITH HIGH VISIBILITY CONSTRUCTION FENCING.
10. ALL SOIL STOCKPILES TO BE COVERED WITH PLASTIC SHEETING UNTIL SUCH TIME THAT THE SOIL IS EITHER USED OR REMOVED. PILES SHOULD BE SITUATED AND LOCATED SUCH THAT SEDIMENT DOES NOT RUN INTO THE STREET OR ONTO ADJOINING PROPERTIES.
11. ALL EXPOSED SOIL AREAS SHALL BE COVERED OR PROTECTED USING AN APPROPRIATE BMP. STABILIZE DENuded AREAS OF THE SITE BY MULCHING, SEEDING, PLANTING, OR SODDING.
12. ALL ADJACENT PROPERTIES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION BY APPROPRIATE USE OF VEGETATION BUFFER STRIPS, SEDIMENT BARRIERS, OR FILTERS, DIKES, MULCHING, OR BY A COMBINATION OF THESE MEASURES AND OTHER APPROPRIATE BMP'S.
13. PROVIDE FOR PERIODIC STREET CLEANING TO REMOVE ANY SEDIMENT THAT MAY HAVE BEEN TRACKED OFF-SITE. SEDIMENT SHOULD BE REMOVED BY SHOVELING OR SWEEPING AND CAREFULLY REMOVED TO A SUITABLE DISPOSAL AREA WHERE IT WILL NOT BE RE-ERODED.
14. ALL INSTALLED EROSION AND SEDIMENT CONTROL BMP'S SHALL BE INSPECTED REGULARLY BY THE GENERAL CONTRACTOR ESPECIALLY AFTER ANY LARGE STORM. MAINTENANCE, INCLUDING REMOVAL AND PROPER DISPOSAL OF SEDIMENT SHOULD BE A NECESSARY TO INSURE THAT SEDIMENT AND EROSION IS CONTROLLED ON SITE.

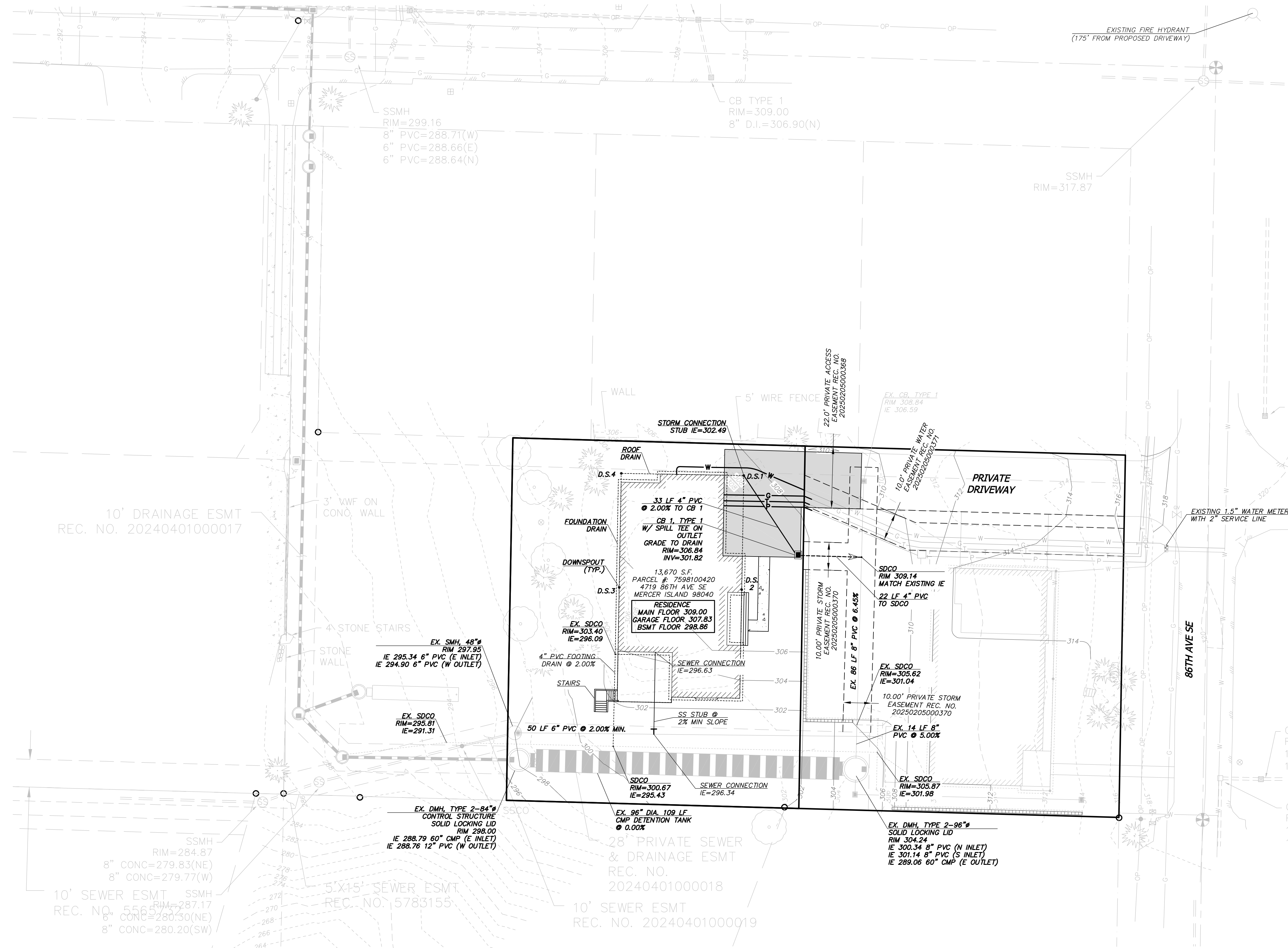
APR	MAJ
REVISION	PER AGENCY COMMENTS
DATE	06.18.25



DRAFTED BY: JSE
 DESIGNED BY: JSE
 PROJECT ENGINEER: MAJ
 DATE: 03.25.25
 PROJECT NO.: 21071

DRAWING: C2
 SHEET: 2 OF 3

LORENZINI SFR LOT 2



GENERAL NOTES:

- SITE PLAN PROVIDED BY CLIENT ON AUGUST 22, 2022.
- WALL/ FOOTING/ LAWN UNDERDRAIN DRAINAGE SYSTEM AND ROOF DOWNSPOUT SYSTEM SHALL NOT BE INTERCONNECTED UNLESS SUCH CONNECTION IS MADE AT LEAST ONE FOOT BELOW THE WALL/FOOTING/ UNDERDRAIN DRAINAGE SYSTEM AND DOWN SLOPE OF THE WALL/BUILDING FOUNDATION AND DOWNSTREAM OF THE DETENTION TANK.
- EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES SHOWN, OR NOT SHOWN, IN THEIR PROPER LOCATION.
- CONTRACTOR SHALL POT-HOLE LOCATION OF EXISTING UTILITIES TO BE RECONNECTED PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER OF ANY CONFLICTS.
- CONTRACTOR TO VERIFY CONDITION AND GOOD WORKING ORDER OF ALL EXISTING UTILITIES TO BE RECONNECTED OR RE-USED PRIOR TO START OF CONSTRUCTION.
- SOILS ON THE SITE CONSISTS OF KITSAP SILT LOAM (KpB) PER THE NRCS WEB SOIL SURVEY.
- ROOF DRAINS SHALL BE 4" OR 6" PVC AS SHOWN AND HAVE A MINIMUM SLOPE OF 2.00%.
- ALWAYS CALL 811 TWO WORKING DAYS BEFORE YOU DIG.

LAWN AND LANDSCAPE AREA NOTE:

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP 15.1.3. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

SOIL AMENDMENT NOTE:

AREA (A) ENCOMPASSES THE ENTIRE SITE OUTSIDE OF HARD SURFACES. SEE LANDSCAPE PLANS FOR TURF AND PLANTING BED AREAS. STOCKPILE SITE DUFF AND TOPSOIL FOR ALL DISTURBED PERVIOUS AREAS AND REAPPLY WITH SOIL AMENDMENT AFTER GRADING AND CONSTRUCTION. MINIMUM SCARIFICATION DEPTH 8-INCHES. PROVIDE A TOTAL OF 224 C.Y. OF AMENDMENT FOR AN AREA OF 9,059 S.F. (AREAS FOR TURF AND PLANTING BEDS TO BE DETERMINED)

AREA BREAKDOWN:

LOT SIZE: 13,670 S.F. (0.314 AC.)

EX. HARD SURFACES ON LOT: 0 S.F.

NEW HARD SURFACES ON LOT:
 MAIN HOUSE ROOF: 3,563 S.F.
 DRIVEWAY: 879 S.F.
 WALKS & PATIOS: 168 S.F.
 TOTAL NEW ON LOT: 4,610 S.F. (33.7%)

NEW HARD SURFACES: 4,610 S.F.
 LOT PERVIOUS: 9,060 S.F.

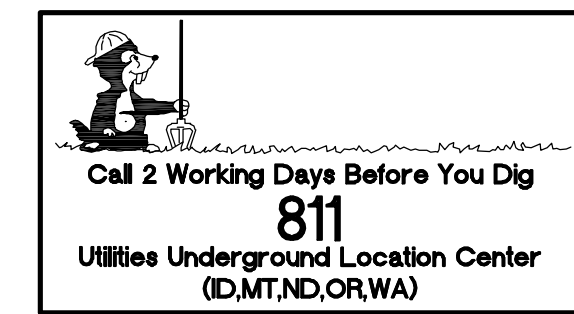
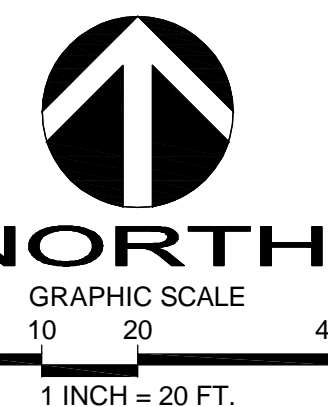
OFFSITE DRIVEWAY: 407 S.F.
 TOTAL PROJECT HARD SURFACES: 5,017 S.F.
 TOTAL P.C.H.S.: 1,288 S.F.

UTILITY LEGEND:

- WATER METER
- TYPE 1 CATCH BASIN
- TYPE 2 CATCH BASIN
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM LINE
- EXISTING WATER LINE
- CONCRETE
- PROPOSED STORM STUB
- PROPOSED SANITARY STUB
- PROPOSED WATER LINE
- PROPOSED CLEANOUT

DOWNSPOUT ELEVATIONS

DOWNSPOUT #	INVERT ELEV.
1	302.49
2	302.90
3	303.34
4	302.93



D.R. STRONG CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98003
 O 425.827.3065 F 425.827.2423

LORENZINI SFR LOT 2

GRADING & UTILITIES PLAN
 4719 86TH AVE SE
 MERCER ISLAND
 WASHINGTON 98040
 PARCEL NO. 759810-0422-01

TODD SHERMAN DESIGN BUILT HOMES

11400 SE 8TH STREET, SUITE 415
 BELLEVUE, WASHINGTON 98004
 206-909-8187



DATE	REVISION	PER AGENCY COMMENTS
06.18.25	APR MAJ	

DRAFTED BY: JSE
 DESIGNED BY: JSE
 PROJECT ENGINEER: MAJ
 DATE: 03.25.25
 PROJECT NO.: 21071

DRAWING: C3
 SHEET: 3 OF 3

4715 - 86th Ave SE

2021 IRC - 2021 WSEC

GENERAL NOTES

- ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO THE 2021 INTERNATIONAL BUILDING CODE, INTERNATIONAL RESIDENTIAL CODE, THE CURRENT WASHINGTON STATE ENERGY CODE, THE WASHINGTON STATE BUILDING CODE, CHAPTER 51-20 AND 51-21 WAC, THE AMERICANS WITH DISABILITIES ACT, AND ALL RULES, REGULATIONS AND ORDINANCES OF THE GOVERNING AUTHORITY.
- ENGINEERED DESIGN IN ACCORDANCE WITH THE IBC IS PERMITTED.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, AND SITE CONDITIONS, AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY IN WRITING OF ANY DISCREPANCIES, ERRORS, OR OMISSIONS PRIOR TO PROCEEDING WITH THE WORK.
- DO NOT SCALE THE DRAWINGS FOR CRITICAL DIMENSIONS. DIMENSIONS ARE SHOWN TO FACE OF STUDS, POSTS AND CONCRETE UNLESS INDICATED OTHERWISE.
- THE PROJECT SHALL BE SCHEDULED AND INSTALLATION OF ELEMENTS COORDINATED AS NECESSARY BY THE CONTRACTOR TO PERMIT WORK BETWEEN DIFFERENT TRADES TO PROCEED WITHOUT UPSETTING PROPER CONSTRUCTION SEQUENCES OR DELAYING THE PROJECT SCHEDULE.
- CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACINGS OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL DOOR AND WINDOW ROUGH-OPENING DIMENSIONS WITH THE DOOR AND WINDOW MANUFACTURERS.
- PLUMBING, ELECTRICAL AND MECHANICAL CONTRACTORS SHALL VERIFY ALL REQUIREMENTS FOR THIS PROJECT AND COMPLY WITH ALL LOCAL CODES, SUBMIT PLANS FOR APPROVAL AND OBTAIN PERMIT BEFORE STARTING WORK.
- TYPICAL DETAILS ARE SHOWN ONLY ONCE AND NOT REFERENCED AT ALL LOCATIONS, THE INTENT IS THAT THEY APPLY THROUGHOUT THE PROJECT UNLESS OTHERWISE NOTED.
- ALL REQUIRED SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
- ALL SHOP DRAWING DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED BY HIMSELF OR OTHER TRADES.
- INSPECTIONS ARE TO BE PER IRC SECTION R108.
- ADDRESS MUST BE POSTED AND VISIBLE AT CONSTRUCTION SITE PER IRC SEC R319- 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.

BUILDING THERMAL ENVELOPE

COMPLIANCE & CERTIFICATE POSTED

THE BUILDING THERMAL ENVELOPE SHALL MEET THE PRESCRIPTIVE REQUIREMENTS OF SECTION R402 OF THE WSEC.

A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN THREE FEET OF THE ELECTRICAL DISTRIBUTION PANEL BY THE BUILDING NOTER PREDEMINANT R-VALUES OF INSULATION INSTALLED IN OR ON CEILING/ROOF, WALLS, FOUNDATION (SLAB, BASMENT WALL, CRAWLSPACE WALL AND/OR FLOOR), AND DUCTS OUTSIDE THE CONDITIONED SPACES; U-FACTORS FOR FENESTRATION; AND THE SOLARHEAT GAIN COEFFICIENT (SHGC) OF FENESTRATION. REFER TO SECTION R401.3 WSEC FOR ADDITIONAL INFORMATION.

INSULATION

REFER TO WSEC TABLE R402.1.1 ON THIS SHEET FOR INSULATION VALUES.

- CEILINGS (ATTIC)
 - OPEN-BLOWN OR POURED LOOSE FILL INSULATION MAY BE USED IN ATTIC SPACES WHERE THE SLOPE OF THE CEILING IS NOT MORE THAN 3 IN 12 AND THERE IS AT LEAST 30 INCHES OF CLEAR DISTANCE FROM THE TOP OF THE BOTTOM CHORD OF THE TRUSS OR CEILING JOIST TO THE UNDERSIDE OF THE SHEATHING AT THE ROOF RIDGE.
 - CEILINGS (UNVENTED VAULT)
 - PROVIDE 3" CLOSED CELL SPRAY FOAM INSULATION OR BOTTOM SIDE OF SHEATHING WITH MIN. R-8 PER INCH COMPLETELY FILL REMAINING JOIST CAVITY WITH BATT INSULATION. TOTAL INSULATION VALUE (SPRAY FOAM + BATT) TO BE R-38 MINIMUM.
 - WOOD FRAMED WALLS
 - ALL EXTERIOR WALL CAVITIES, INCLUDING CAVITIES ISOLATED DURING FRAMING, MUST BE FILLED WITH UNCOMPRESSED INSULATION.
 - RIGID BOARD INSULATION IS TO BE PLACED BEHIND ALL RECESSED FIXTURES IN EXTERIOR WALLS.
 - FACED BATTIS ARE LAPPED AND ARE TO BE STAPLED TO FACE OF STUDS.
 - INSULATE BEHIND TUBI SHOWER PARTITIONS AND CORNERS.
 - FLOORS
 - FLOOR INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING.
 - INSULATION SUPPORTS SHALL BE INSTALLED SO SPACING IS NO MORE THAN 24-INCHES ON CENTER.
 - FOUNDATION VENTS SHALL BE PLACED SO THAT THE TOP OF THE VENT IS BELOW THE LOWER SURFACE OF THE FLOOR INSULATION, OR A PERMANENT INSULATION Baffle IS INSTALLED.
 - SLAB-ON-GRADE
 - RIGID INSULATION UNDER CONCRETE SLAB IN HEATED SPACES. THE INSULATION SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB FOR A MINIMUM DISTANCE AS SHOWN IN THE TABLE OR TO THE TOP OF THE FOOTING, WHICHEVER IS LESS, OR DOWNWARD TO AT LEAST THE BOTTOM OF THE SLAB AND THEN HORIZONTALLY TO THE INTERIOR OR EXTERIOR FOR THE TOTAL DISTANCE SHOWN IN THE TABLE.
 - A TWO-INCH BY TWO-INCH (MAXIMUM) PRESSURE TREATED NAILER MAY BE PLACED AT THE FINISHED FLOOR ELEVATION FOR ATTACHMENT OF INTERIOR FINISH MATERIALS.
- F. 4X HEADERS = R-10
- DUCTS = DUCTS SHALL BE INSULATED TO A MINIMUM OF R-8. EXCEPTION: DUCTS OR PORTIONS THEREOF LOCATED COMPLETELY INSIDE THE BUILDING THERMAL ENVELOPE.
 - PIPING = MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F OR BELOW 55°F SHALL BE INSULATED TO A MINIMUM OF R-6.
 - PIPING INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT CAUSED BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, AND WIND, AND SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.
 - INSULATION FOR HOT WATER PIPE SHALL HAVE A MIN. THERMAL RESISTANCE (R-VALUE) OF R-4.
 - ELECTRIC WATER HEATERS = ALL ELECTRIC WATER HEATERS IN UNHEATED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10.

MOISTURE CONTROL

VAPOR RETARDERS

- SLABS: 10 MIL POLYETHYLENE SHEETS
 - FLOORS: 3/4" CDX PLYWOOD OR 3/4" O.S.B.
 - WALLS: KRAFF FACED FIBERGLASS BATT'S
 - CEILING: PVA PAINT (EXCEPT AT UNVENTED ROOF ASSEMBLIES)
- ATTIC ACCESS AND DOORS ARE TO BE BAFFLED, WEATHER-STRIPPED AND INSULATED.
 - EXTERIOR DOORS AND WINDOWS ARE TO BE CALKED AND WEATHER-STRIPPED.
 - RECESSED LIGHT FIXTURES TO LIMIT AIR LEAKAGE PER WSEC 402.4.4.
 - ALL PLUMBING, ELECTRICAL AND HVAC PENETRATIONS IN FLOORS, WALLS AND CEILING ARE TO BE CALKED AND SEALED.
 - ELECTRICAL OUTLET AND LIGHT SWITCH BOXES ON EXTERIOR WALLS MUST BE SEALED AT THE BACK OF THE RECEPTACLE WITH A FACE PLATE GASKET.
 - SILL PLATE TO BE CALKED OR GLUED TO SUB-FLOOR.
 - CAULK/SEAL RIM JOISTS BETWEEN STORIES.
 - FIRE-STOP ALL PENETRATIONS AS REQUIRED BY THE CODE & BUILDING DEPARTMENT.

FENESTRATION

AN AREA-WEIGHTED AVERAGE OF FENESTRATION PRODUCTS SHALL BE PERMITTED TO SATISFY THE U-FACTOR REQUIREMENTS.

UP TO 15 SQUARE FEET OF GLAZED FENESTRATION PER DWELLING UNIT SHALL BE PERMITTED TO BE EXEMPT FROM U-FACTOR.

ONE SIDE-HINGED OPAQUE DOOR ASSEMBLY UP TO 24 SQUARE FEET IN AREA IS EXEMPTED FROM THE U-FACTOR REQUIREMENT.

AIR LEAKAGE AND TESTING

THE COMPONENTS OF THE BUILDING THERMAL ENVELOPE AS LISTED IN TABLE R402.4.1.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE CRITERIA LISTED IN TABLE R402.4.1.1. AS APPLICABLE TO THE 2012 WASHINGTON STATE ENERGY CODE RE-23 METHOD OF CONSTRUCTION, WHERE REQUIRED BY THE CODE OFFICIAL, AN APPROVED THIRD PARTY SHALL INSPECT ALL COMPONENTS AND VERIFY COMPLIANCE.

THE BUILDING OR DWELLING UNIT SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING 5 AIR CHANGES PER HOUR. TESTING SHALL BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2 INCHES W.G. (50 PASCALS), WHERE REQUIRED BY THE CODE OFFICIAL. TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. TESTING SHALL BE PERFORMED AT ANY TIME AFTER CREATION OF ALL PENETRATIONS OF THE BUILDING THERMAL ENVELOPE.

WINDOWS, SKYLIGHTS AND SLIDING GLASS DOORS SHALL HAVE AN AIR INFILTRATION RATE OF NO MORE THAN 0.3 CFM PER SQUARE FOOT, AND SWINGING DOORS NO MORE THAN 0.5 CFM PER SQUARE FOOT, WHEN TESTED ACCORDING TO NFRC 400 OR AAMA/WDMA/CSA 1011.5.2/A440 BY AN ACCREDITED, INDEPENDENT LABORATORY AND LISTED AND LABELED BY THE MANUFACTURER. EXCEPTIONS:

- FIELD-FABRICATED FENESTRATION PRODUCTS (WINDOWS, SKYLIGHTS AND DOORS).
- CUSTOM EXTERIOR FENESTRATION PRODUCTS MANUFACTURED BY A SMALL BUSINESS PROVIDED THEY MEET THE APPLICABLE PROVISIONS OF CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.
- CUSTOM EXTERIOR WINDOWS AND DOORS MANUFACTURED BY A SMALL BUSINESS PROVIDED THEY MEET THE APPLICABLE PROVISIONS OF CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.
- CUSTOM EXTERIOR WINDOWS AND DOORS MANUFACTURED BY A SMALL BUSINESS PROVIDED THEY MEET THE APPLICABLE PROVISIONS OF CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.
- VISUAL INSPECTION HAS CONFIRMED THE PRESENCE OF A GASKET, OPERABLE WINDOWS AND DOORS MANUFACTURED BY SMALL BUSINESS SHALL BE PERMITTED TO BE SEALED OFF AT THE FRAME PRIOR TO THE TEST.

RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE TYPE IC-RATED AND CERTIFIED UNDER ASTM E283 AS HAVING AN AIR LEAKAGE RATE NOT MORE THAN 2.0 CFM WHEN TESTED AT A 1.57 PSF PRESSURE DIFFERENTIAL AND SHALL HAVE A LABEL ATTACHED SHOWING COMPLIANCE WITH THIS TEST METHOD. ALL RECESSED LUMINAIRES SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND THE INTERIOR WALL OR CEILING COVERING.

ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS

EACH DWELLING UNIT IN ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES SHALL COMPLY WITH SUFFICIENT OPTIONS FROM TABLE R406.2 SO AS TO ACHIEVE THE REQUIRED MINIMUM NUMBER OF CREDITS:

ELECTRIC POWER & LIGHTING

LIGHTING EQUIPMENT

A MINIMUM OF 75 PERCENT OF PERMANENTLY INSTALLED LAMPS IN LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

BUILDING SYSTEMS

CONTROLS

AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM.

WHERE THE PRIMARY HEATING SYSTEM IS A FORCED-AIR FURNACE, AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT TEMPERATURE SET POINTS AT DIFFERENT TIMES OF THE DAY. SEE WSEC R403.1 FOR ADDITIONAL REQUIREMENTS.

DUCTS & AIR DUCT SEALING

DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH EITHER THE INTERNATIONAL MECHANICAL CODE OR INTERNATIONAL RESIDENTIAL CODE, AS APPLICABLE.

DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU R5-33, USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED. DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING:
1. POST-CONSTRUCTION TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. LEAKAGE TO OUTDOORS SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA.
2. ROUGH-IN TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA.

AIR HANDLERS SHALL HAVE A MANUFACTURER'S DESIGNATION FOR AN AIR LEAKAGE OF NO MORE THAN 2 PERCENT OF THE DESIGN AIR FLOW RATE WHEN TESTED IN ACCORDANCE WITH ASHRAE 193.

BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.

MECHANICAL VENTILATION

THE BUILDING SHALL BE PROVIDED WITH VENTILATION THAT MEETS THE REQUIREMENTS OF THE INTERNATIONAL RESIDENTIAL CODE OR INTERNATIONAL MECHANICAL CODE, AS APPLICABLE, OR WITH OTHER APPROVED MEANS OF VENTILATION. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING.

MECHANICAL VENTILATION SYSTEM FANS SHALL MEET THE EFFICACY REQUIREMENTS OF TABLE R403.5.1. EXCEPTION: WHERE MECHANICAL VENTILATION FANS ARE INTEGRAL TO TESTED AND LISTED HVAC EQUIPMENT, THEY SHALL BE POWERED BY AN ELECTRICALLY COMMUTATED MOTOR.

EQUIPMENT SIZING

HEATING AND COOLING EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S BASED ON BUILDING LOADS CALCULATED IN ACCORDANCE WITH ACCA MANUAL J OR OTHER APPROVED HEATING AND COOLING CALCULATION METHODOLOGIES.

MECHANICAL AND PLUMBING

- WATER HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. WATER HEATERS INSTALLED IN ATTICS SHALL COMPLY WITH M1305.1.3. GAS FIRED WATER HEATERS SHALL COMPLY WITH IRC CHAPTER 24. ELECTRIC WATER HEATERS SHALL COMPLY WITH UL 174 AND INSTALLED IN ACCORDANCE WITH IRC CHAPTERS 34 THROUGH 43.
- WATER HEATER STORAGE TANK TO BE LABELED TO MEET THE 1987 NATIONAL APPLIANCE ENERGY CONSERVATION ACT.
- STEEL W.H. TO COMPLY WITH ASHRAE 90A-90.
- EQUIP WATER HEATERS WITH A PRESSURE RELIEF LINE PLUMBED TO OUTSIDE.
- PROVIDE 26 GA METAL SEISMIC STRAPS AROUND WATER HEATER TO WALL TO RESIST LATERAL FORCES.
- H.V.A.C. UNIT TO COMPLY WITH THE W.S.E.C. & LABELED WITH A PERFORMANCE RATING.

WHOLE HOUSE VENTILATION

EACH DWELLING UNIT OR GUESTROOM SHALL BE EQUIPPED WITH A VENTILATION SYSTEM COMPLYING WITH SECTION M1507.3.4, M1507.3.5, M1507.3.6 OR M1507.3.7. COMPLIANCE IS ALSO PERMITTED TO BE DEMONSTRATED THROUGH COMPLIANCE WITH THE INTERNATIONAL MECHANICAL CODE.

WHOLE HOUSE VENTILATION OPTIONS (CHOOSE ONE):

- CONTINUOUSLY OPERATING WHOLE-HOUSE VENTILATION SYSTEM
- INTERMITTENTLY OPERATING WHOLE-HOUSE VENTILATION SYSTEM
 - PER TABLE 1507.3.3(1), VENTILATION RATE = 75 CFM
 - PER TABLE 1507.3.3(2), INTERMITTENT RATE FACTOR = 1.5 FOR 66% RUN TIME.
 - INTERMITTENT FAN AIRFLOW RATE = 75 CFM X 1.5 = 112.5 CFM

CONTROL AND OPERATION

- CONTROLS FOR ALL VENTILATION SYSTEMS SHALL BE READILY ACCESSIBLE BY THE OCCUPANT.
- OPERATING INSTRUCTIONS FOR WHOLE-HOUSE VENTILATION SYSTEMS SHALL BE PROVIDED TO THE OCCUPANT BY THE INSTALLER OF THE SYSTEM.
- LOCAL EXHAUST SYSTEMS SHALL BE CONTROLLED BY MANUAL SWITCHES, DEHUMIDISTATS, TIMERS, OR OTHER APPROVED MEANS.
- CONTINUOUS WHOLE-HOUSE VENTILATION SYSTEMS SHALL OPERATE CONTINUOUSLY. EXHAUST FANS, FORCED-AIR SYSTEM FANS, OR SUPPLY FANS SHALL BE EQUIPPED WITH "FAN ON" AS OVERRIDE CONTROLS. CONTROLS SHALL BE CAPABLE OF OPERATING THE VENTILATION SYSTEM WITHOUT ENERGIZING OTHER ENERGY-CONSUMING APPLIANCES. A LABEL SHALL BE AFFIXED TO THE CONTROL THAT READS "WHOLE-HOUSE VENTILATION (SEE OPERATING INSTRUCTIONS)."
- INTERMITTENT WHOLE-HOUSE VENTILATION SYSTEMS SHALL COMPLY WITH THE FOLLOWING:
 - THEY SHALL BE CAPABLE OF OPERATING INTERMITTENTLY AND CONTINUOUSLY.
 - THEY SHALL HAVE CONTROLS CAPABLE OF OPERATING THE EXHAUST FANS, FORCED-AIR SYSTEM FANS, OR SUPPLY FANS WITHOUT ENERGIZING OTHER ENERGY-CONSUMING APPLIANCES.
 - THE VENTILATION RATE SHALL BE ADJUSTED ACCORDING TO THE EXCEPTION IN SECTION 403.8.5.1.
 - THE SYSTEM SHALL BE DESIGNED SO THAT IT CAN OPERATE AUTOMATICALLY BASED ON THE TYPE OF CONTROL TIMER INSTALLED.
 - THE INTERMITTENT MECHANICAL VENTILATION SYSTEM SHALL OPERATE AT LEAST ONE HOUR OUT OF EVERY FOUR.
 - THE SYSTEM SHALL HAVE A MANUAL CONTROL AND AUTOMATIC CONTROL, SUCH AS A 24-HOUR CLOCK TIMER.
 - AT THE TIME OF FINAL INSPECTION, THE AUTOMATIC CONTROL SHALL BE SET TO OPERATE THE WHOLE-HOUSE FAN ACCORDING TO THE SCHEDULE USED TO CALCULATE THE WHOLE-HOUSE FAN SIZING.
 - A LABEL SHALL BE AFFIXED TO THE CONTROL THAT READS "WHOLE-HOUSE VENTILATION (SEE OPERATING INSTRUCTIONS)."

THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL PROVIDE OUTDOOR AIR TO EACH HABITABLE SPACE AT A CONTINUOUS RATE OF NOT LESS THAN THAT DETERMINED IN ACCORDANCE WITH TABLE M1507.3.3(1). EXCEPTION: THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM IS PERMITTED TO OPERATE INTERMITTENTLY WHERE THE SYSTEM HAS CONTROLS THAT ENABLE OPERATION FOR NOT LESS THAN 25 PERCENT OF EACH 4-HOUR SEGMENT AND THE VENTILATION RATE PRESCRIBED IN TABLE M1507.3.3(1) IS MULTIPLIED BY THE FACTOR DETERMINED IN ACCORDANCE WITH TABLE M1507.3.3(2).

WHOLE HOUSE VENTILATION OPTIONS (CHOOSE ONE):

- WHOLE HOUSE VENTILATION USING EXHAUST FANS
- WHOLE HOUSE VENTILATION INTEGRATED WITH A FORCED-AIR SYSTEM
- WHOLE HOUSE VENTILATION USING A SUPPLY FAN
- WHOLE-HOUSE VENTILATION USING A HEAT RECOVERY VENTILATION SYSTEM.

EXHAUST FANS PROVIDING WHOLE-HOUSE VENTILATION SHALL HAVE A FLOW RATING AT 0.25 INCHES WATER GAUGE AS SPECIFIED IN TABLE M1507.3.3(1). MANUFACTURERS' FAN FLOW RATINGS SHALL BE DETERMINED ACCORDING TO HV1 916 OR AMCA 210.

WHOLE-HOUSE FANS LOCATED 4 FEET OR LESS FROM THE INTERIOR GRILLE SHALL HAVE A SONE RATING OF 1.0 OR LESS MEASURED AT 0.1 INCHES WATER GAUGE. MANUFACTURER'S NOISE RATINGS SHALL BE DETERMINED AS PER HV1 916 (MARCH 2009). REMOTELY MOUNTED FANS SHALL BE ACOUSTICALLY ISOLATED FROM THE STRUCTURAL ELEMENTS OF THE BUILDING AND FROM ATTACHED DUCT WORK USING INSULATED FLEXIBLE CONNECTORS OR OTHER APPROVED MEANS. OUTDOOR AIR SHALL BE DISTRIBUTED TO EACH HABITABLE SPACE BY INDIVIDUAL OUTDOOR AIR INLETS. WHERE OUTDOOR AIR SUPPLIES ARE SEPARATED FROM EXHAUST POINTS BY DOORS, PROVISIONS SHALL BE MADE TO ENSURE AIR FLOW BY INSTALLATION OF DISTRIBUTION DUCTS, UNDERCUTTING DOORS, INSTALLATION OF GRILLES, TRANSOMS, OR SIMILAR MEANS. DOORS SHALL BE UNDERCUT TO A MINIMUM OF 1/2 INCH ABOVE THE SURFACE OF THE FINISH FLOOR COVERING.

INTEGRATED WHOLE-HOUSE VENTILATION SYSTEMS SHALL PROVIDE OUTDOOR AIR AT THE RATE CALCULATED USING SECTION M1507.3.3. INTEGRATED FORCED-AIR VENTILATION SYSTEMS SHALL DISTRIBUTE OUTDOOR AIR TO EACH HABITABLE SPACE THROUGH THE FORCED-AIR SYSTEM DUCTS, INLET DUCTS, INLET BOXES, OR OTHER APPROVED MEANS. AN OUTDOOR AIR INLET DUCT CONNECTING A TERMINAL ELEMENT ON THE OUTSIDE OF THE BUILDING TO THE RETURN AIR PLENUM OF THE FORCED-AIR SYSTEM, AT A POINT WITHIN 4 FEET UPSTREAM OF THE AIR HANDLER, THE OUTDOOR AIR INLET DUCT CONNECTION TO THE RETURN AIR STREAM SHALL BE LOCATED UPSTREAM OF THE FORCED-AIR SYSTEM BLOWER AND SHALL NOT BE CONNECTED DIRECTLY INTO A FURNACE CABINET OR TO PREVENT THERMAL SHOCK TO THE HEAT EXCHANGER, THE SYSTEM WILL BE EQUIPPED WITH A MOTORIZED DAMPER CONNECTED TO THE AUTOMATIC VENTILATION CONTROL, AS SPECIFIED IN SECTION M1507.3.2. THE REQUIRED FLOW RATE SHALL BE VERIFIED BY FIELD TESTING WITH A FLOW HOOD OR A FLOW MEASURING STATION. M1507.3.5.2 VENTILATION DUCT INSULATION.

SUPPLY FAN VENTILATION SYSTEMS SHALL DISTRIBUTE OUTDOOR AIR TO EACH HABITABLE SPACE THROUGH THE FORCED-AIR SYSTEM DUCTS OR THROUGH DEDICATED DUCTS TO EACH HABITABLE SPACE. SUPPLY FANS SHALL HAVE THE CAPACITY TO PROVIDE THE AMOUNT OF OUTDOOR AIR SPECIFIED IN TABLE M1507.3.3(1) AT 0.40 INCHES WATER GAUGE AS PER HV1 916. THE OUTDOOR AIR MUST BE FILTERED BEFORE IT IS DELIVERED TO HABITABLE SPACES. THE FILTER MAY BE LOCATED AT THE INTAKE DEVICE, IN LINE WITH THE FAN, OR, IN THE CASE OF A CONNECTION TO THE RETURN PLENUM OF THE AIR HANDLER, USING THE FURNACE FILTER. AN OUTDOOR AIR INLET SHALL BE CONNECTED TO EITHER THE SUPPLY OR RETURN AIR STREAM.

AN OUTDOOR AIR INLET DUCT CONNECTION TO THE SUPPLY AIR STREAM SHALL BE LOCATED DOWNSTREAM OF THE FORCED-AIR SYSTEM BLOWER. AN OUTDOOR AIR INLET DUCT CONNECTION TO THE RETURN AIR STREAM SHALL BE LOCATED AT LEAST 4 FEET UPSTREAM OF THE FORCED-AIR SYSTEM BLOWER AND ITS FILTER. NEITHER TYPE OF DUCT SHALL BE CONNECTED DIRECTLY INTO A FURNACE CABINET TO PREVENT THERMAL SHOCK TO THE HEAT EXCHANGER. THE OUTDOOR AIR INLET DUCT SHALL BE PRESERVATIVELY SIZED IN ACCORDANCE WITH TABLE M1507.3.3(1). THE TERMINAL ELEMENT ON THE OUTSIDE OF THE BUILDING SHALL BE SIZED 2 INCHES IN DIAMETER LARGER THAN THE OUTDOOR AIR INLET DUCT. THE SYSTEM SHALL BE EQUIPPED WITH A BACK-DRAFT DAMPER AND ONE OF THE FOLLOWING:
1. A CALIBRATED MANUAL VOLUME DAMPER INSTALLED AND SET TO MEET THE MEASURED FLOW RATES SPECIFIED IN TABLE M1507.3.3(1) BY FIELD TESTING WITH A PRESSURE GAUGE AND/OR FOLLOWING MANUFACTURER'S INSTALLATION INSTRUCTIONS; OR
2. A MANUAL VOLUME DAMPER INSTALLED AND SET TO MEET THE MEASURED FLOW RATES SPECIFIED IN TABLE M1507.3.3(1) BY FIELD TESTING WITH A FLOW HOOD OR A FLOW MEASURING STATION; OR
3. AN AUTOMATIC FLOW-REGULATING DEVICE SIZED TO THE SPECIFIED FLOW RATES IN TABLE M1507.3.3(1) WHICH PROVIDES CONSTANT FLOW OVER A PRESSURE RANGE OF 0.20 TO 0.60 INCHES WATER GAUGE.

OUTDOOR AIR INLETS, OUTDOOR AIR SHALL BE DISTRIBUTED TO EACH HABITABLE SPACE BY INDIVIDUAL OUTDOOR AIR INLETS. WHERE OUTDOOR AIR SUPPLIES ARE SEPARATED FROM EXHAUST POINTS BY DOORS, PROVISIONS SHALL BE MADE TO ENSURE AIR FLOW BY INSTALLATION OF DISTRIBUTION DUCTS, UNDERCUTTING DOORS, INSTALLATION OF GRILLES, TRANSOMS, OR SIMILAR MEANS. DOORS SHALL BE UNDERCUT TO A MINIMUM OF 1/2 INCH ABOVE THE SURFACE OF THE FINISH FLOOR COVERING. INDIVIDUAL ROOM OUTDOOR AIR INLETS SHALL:

- HAVE CONTROLLABLE AND SECURE OPENINGS;
- BE SLEEVED OR OTHERWISE DESIGNED SO AS NOT TO COMPROMISE THE THERMAL PROPERTIES OF THE WALL OR WINDOW IN WHICH THEY ARE PLACED;
- PROVIDE NOT LESS THAN 4 SQUARE INCHES OF NET FREE AREA OF OPENING FOR EACH HABITABLE SPACE. ANY INLET OR COMBINATION OF INLETS WHICH PROVIDE 10 CFM AT 10 PASCALS ARE DEEMED EQUIVALENT TO 4 SQUARE INCHES NET FREE AREA.

INLETS SHALL BE SCREENED OR OTHERWISE PROTECTED FROM ENTRY BY LEAVES OR OTHER MATERIAL. OUTDOOR AIR INLETS SHALL BE LOCATED SO AS NOT TO TAKE AIR FROM THE EQUIPMENT INTAKE OR EXHAUST AREAS. THE EQUIPMENT INTAKE OR EXHAUST AREAS SHALL BE CLOSER THAN 10 FEET FROM AN APPLIANCE VENT OUTLET, UNLESS SUCH VENT OUTLET IS 3 FEET ABOVE THE OUTDOOR AIR INLET.

- WHERE IT WILL PICK UP OBJECTIONABLE ODORS, FUMES OR FLAMMABLE VAPORS.
- A HAZARDOUS OR UNSANITARY LOCATION.
- A ROOM OR SPACE HAVING ANY FUEL-BURNING APPLIANCES THEREIN.
- CLOSER THAN 10 FEET FROM A VENT OPENING OF A PLUMBING DRAINAGE SYSTEM UNLESS THE VENT OPENING IS AT LEAST 3 FEET ABOVE THE AIR INLET.
- ATTIC, CRAWL SPACES, OR GARAGES.

AUTOMATIC FIRE SPRINKLER SYSTEMS

IFC 2021

FIRE SPRINKLERS ARE REQUIRED FOR THIS PROJECT PER NFPA 13D.

- NFPA 72 (Chapter 29) - Monitored Household Fire Alarm System in compliance with NFPA 72 and CoM standards shall be installed throughout the residence. A separate fire permit is required.
- NFPA 13R Fire Sprinkler System in compliance with NFPA 13R and CoM standards shall be installed throughout the residence. A separate fire permit is required.

LOCAL EXHAUST

LOCAL EXHAUST SHALL BE PROVIDED IN EACH KITCHEN, BATHROOM, WATER CLOSET, LAUNDRY ROOM, INDOOR SWIMMING POOL, SPA, AND OTHER ROOMS WHERE WATER VAPOR OR COOKING ODOR IS PRODUCED. LOCAL EXHAUST SYSTEMS SHALL BE DESIGNED TO HAVE THE CAPACITY TO EXHAUST THE MINIMUM AIR FLOW RATE DETERMINED IN ACCORDANCE WITH TABLE M1507.4.

EXHAUST FANS PROVIDING LOCAL EXHAUST SHALL HAVE A MINIMUM FAN FLOW RATING NOT LESS THAN 50 CFM AT 0.25 INCHES WATER GAUGE FOR BATHROOMS, LAUNDRIES, OR SIMILAR ROOMS AND 100 CFM AT 0.25 INCHES WATER GAUGE FOR KITCHENS. MANUFACTURERS' FAN FLOW RATINGS SHALL BE DETERMINED AS PER HV1 916 (APRIL 1995) OR AMCA 210. EXCEPTION: WHERE A RANGE HOOD OR DOWN DRAFT EXHAUST FAN IS USED TO SATISFY THE LOCAL EXHAUST REQUIREMENTS FOR KITCHENS, THE RANGE HOOD OR DOWN DRAFT EXHAUST SHALL NOT BE LESS THAN 100 CFM AT 0.10 INCHES WATER GAUGE.

PER IRC M1503.4, KITCHEN EXHAUST FANS EXCEEDING 400 CFM SHALL PROVIDE MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST RATE. SUCH MAKEUP AIR SYSTEMS MUST BE EQUIPPED WITH MEANS OF CLOSURE AND SHALL BE AUTOMATICALLY CONTROLLED TO START AND OPERATE SIMULTANEOUSLY WITH THE EXHAUST SYSTEM.

LOCAL EXHAUST SYSTEMS SHALL BE CONTROLLED BY MANUAL SWITCHES, DEHUMIDISTATS, TIMERS, OR OTHER APPROVED MEANS. LOCAL EXHAUST SYSTEM CONTROLS SHALL BE READILY ACCESSIBLE.

SOURCE SPECIFIC VENTILATION DUCTS SHALL TERMINATE OUTSIDE THE BUILDING. EXHAUST DUCTS SHALL BE EQUIPPED WITH BACK-DRAFT DAMPERS. ALL EXHAUST DUCTS IN UNCONDITIONED SPACES SHALL BE INSULATED TO A MINIMUM OF R-8. TERMINAL ELEMENTS SHALL HAVE AT LEAST THE EQUIVALENT NET FREE AREA OF THE DUCT WORK. TERMINAL ELEMENTS SHALL BE SCREENED OR OTHERWISE PROTECTED FROM ENTRY BY LEAVES OR OTHER MATERIAL. MINIMUM 50% NET FREE AREA SHALL MEET THE REQUIREMENTS OF IRC R303.5.

2021 WSEC TABLE R402.1.1		
CLIMATE ZONE 5 AND MARINE 4		
FENESTRATION	U-FACTOR b	0.30
SKYLIGHT	U-FACTOR	0.50
CEILING	U-FACTOR	0.024
ABOVE GRADE WALL	U-FACTOR	0.056
FLOOR	U-FACTOR	0.029
SLAB ON GRADE	F-FACTOR	0.54
BELOW GRADE 2' DEPTH	WALL U-FACTOR	0.042
	SLAB F-FACTOR	0.59
BELOW GRADE 3.5' DEPTH	WALL U-FACTOR	0.040
	SLAB F-FACTOR	0.56
BELOW GRADE 7' DEPTH	WALL U-FACTOR	0.035
	SLAB F-FACTOR	0.50

ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS PER WSEC R406.3: MEDIUM DWELLING UNIT (1,500-5,000 S.F.): 8.0 CREDITS REQUIRED PROPOSED: 8.0 CREDITS

SYSTEM	ENERGY EQUALIZATION CREDITS:	CREDITS
2	FOR AN INITIAL HEATING SYSTEM USING A HEAT PUMP THAT MEETS FEDERAL STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(2) AND SUPPLEMENTAL HEATING PROVIDED BY ELECTRIC RESISTANCE OR A COMBUSTION FURNACE MEETING MINIMUM STANDARDS LISTED IN TABLE C403.3.2(5)(b)	1.5
OPTION	ENERGY CREDIT OPTION DESCRIPTION:	
3.6	AIR SOURCE, CENTRALLY DUCTED HEAT PUMP W/ MIN. HSPFF 2 OF 9.4 (HSPFF OF 11.0)	1.0
5.4	WATER HEATING SYSTEM SHALL INCLUDE THE FOLLOWING: ENERGY STAR RATED GAS OR PROPANE WATER WITH A MINIMUM UEF OF 9.1 OR SOLAR WATER HEATING SUPPLEMENTING A MINIMUM STANDARD WATER HEATER. OR WATER HEATER HEATED BY GROUND SOURCE HEAT PUMP MEETING THE REQUIREMENTS OF OPTION 3.4.	1.0
6.1	FOR EACH 600 kWh OF ELECTRICAL GENERATION PER HOUSING UNIT PROVIDED ANNUALLY BY ON-SITE WIND OR SOLAR EQUIPMENT A 0.5 CREDIT SHALL BE ALLOWED, UP TO 4.5 CREDITS.	4.5
	TOTAL	8.0

FOR FULL TEXT AND INFORMATION, SEE WASHINGTON STATE ENERGY CODE, SECTION R406

BUILDING AREA SUMMARY

ALL NUMBERS IN SQUARE FEET

HOUSE:		GARAGE:	
BASEMENT FLOOR	698	UNHEATED	655
MAIN FLOOR	2,214		
UPPER FLOOR	1,939	MECH:	
TOTAL	4,851	UNHEATED	109

DRAWING INDEX:

B1	OVERALL BOUNDARY & TOPO SURVEY	S-0.0	STRUCTURAL NOTES
B2	BONDARY & TOPOGRAPHIC SURVEY	SD-1	STRUCTURAL DETAILS
C1	COVER SHEET & TESC	SD-2	STRUCTURAL DETAILS
C2	TESC NOTES & DETAILS	SD-3	STRUCTURAL DETAILS
C3	GRADING & UTILITIES PLAN	SD-4	STRUCTURAL DETAILS
		SD-5	STRUCTURAL DETAILS
		SD-6	STRUCTURAL DETAILS
A1.1	SITE PLAN		
A1.2	BASEMENT AREA CALCULATION		
A2	FOUNDATION PLAN		
A3	LOWER FLOOR		

HARDSCAPE AREA

LOT AREA (NET): 13,670 SF
 CONCRETE WALKWAYS: 120 SF
 ROCKERIES: 30 SF
 TOTAL LOT COVERAGE AREA: 150 SF
 =1.09%
 ALLOWED LOT COVG. AREA: 1,230.30 SF
 ALLOWED % OF LOT AREA: =9.00%

LOT COV'G

LOT AREA (NET): 13,670 SF
 GROSS FLOOR AREA (INCL. ROOF): 3,885 SF
 VEHICULAR USE AREA: 778 SF
 TOTAL LOT COVERAGE AREA: 4,663 SF
 =34.11%
 ALLOWED LOT COVG. AREA: 5,468 SF
 ALLOWED % OF LOT AREA: =40.00%

GROSS FLOOR AREA

LOT AREA (NET): 13,670 SF
 UPPER FLOOR AREA (LESS STAIR): 1,939 SF
 MAIN FLOOR AREA (INCL. GARAGE): 2,896 SF
 GREAT RM 455 SF X 1.5 = 682.5 SF
 BASEMENT FLOOR AREA: 698 SF X 56.31%=393.04 S.F.
 TOTAL GROSS FLOOR AREA: 5,455.54 S.F.
 =39.91%
 ALLOWED LOT AREA: 5,468 SF
 ALLOWED % OF LOT AREA: =40.00%

FIRE AREA SUMMARY

UPPER FLOOR AREA (INCL. STAIR): 2,069 SF
 MAIN FLOOR AREA: 2,214 SF
 BASEMENT AREA: 698 SF
 GARAGE FLOOR AREA: 655 SF
 UNHEATED STORAGE AREA: 109 S.F.
 COVERED AREA: 702 S.F.
 TOTAL FIRE AREA: 6,447 S.F.

LOT SLOPE

HIGHEST ELEV. POINT OF LOT: 309.20
 LOWEST ELEV. POINT OF LOT: 294.50
 ELEVATION DIFFERENCE: 14.70
 HORIZONTAL DISTANCE BTWN HIGH AND LOW POINTS: 166.4'
 LOT SLOPE: 8.83%

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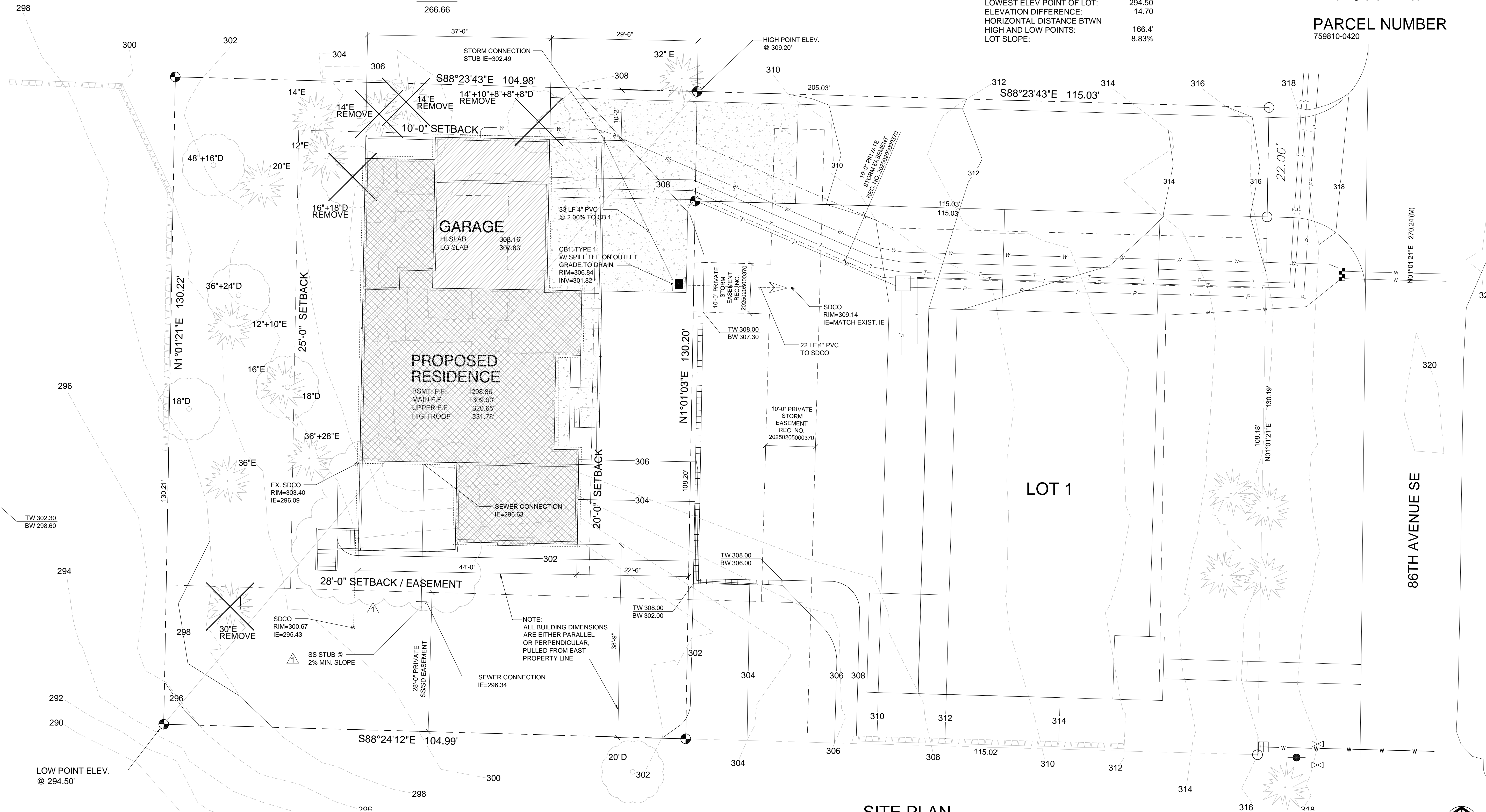
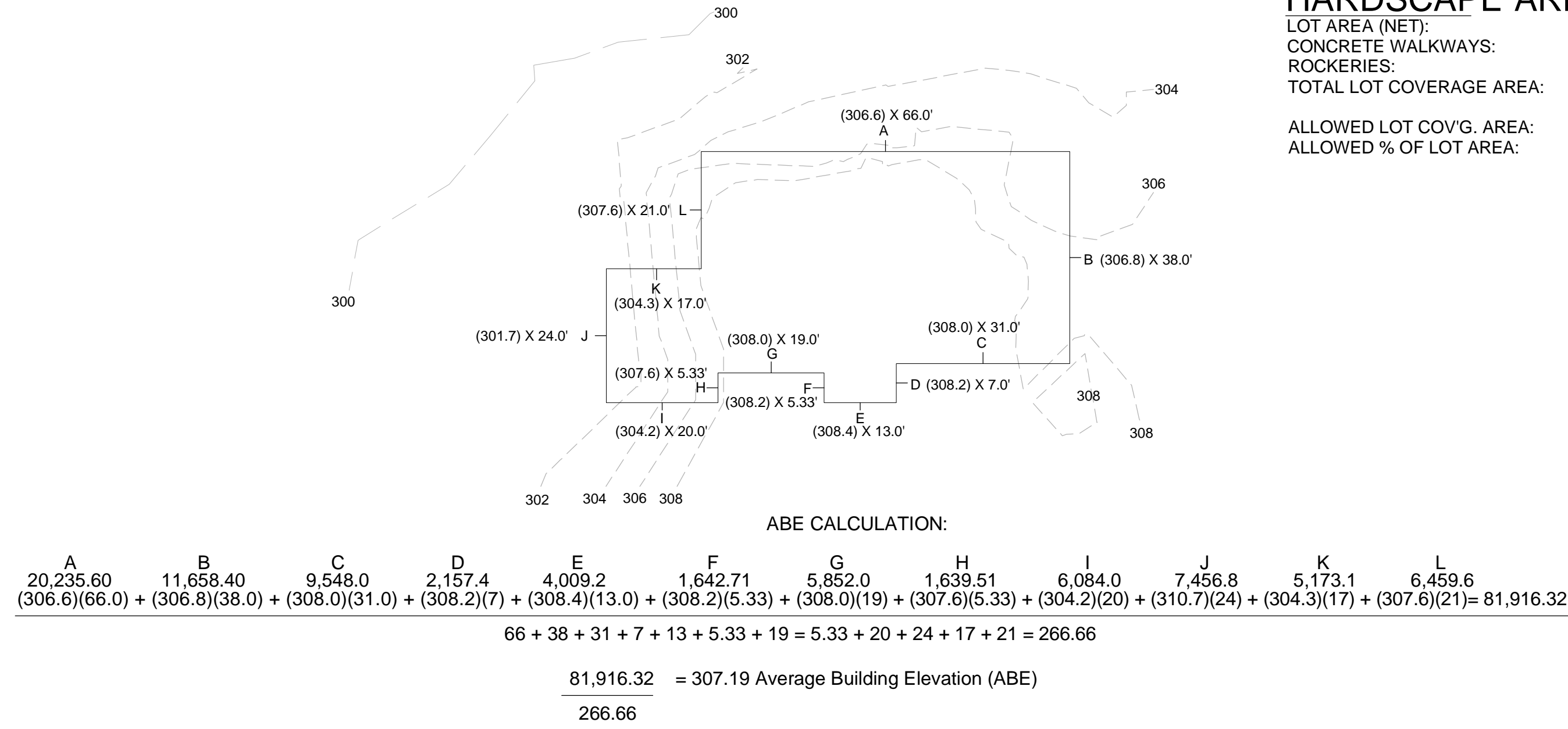
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PARCEL NUMBER

759810-0420



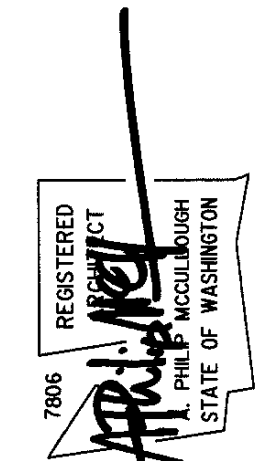
SITE PLAN
 SCALE: 1" = 10'

MCCULLOUGH
 ARCHITECTS

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 UNPUBLISHED WORK
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Revisions
 06.20.2025 1

Date: 04.09.2025
 Job No: xx-xxx
 Project No: 00000
 Drawn: BAK
 Approved: APM



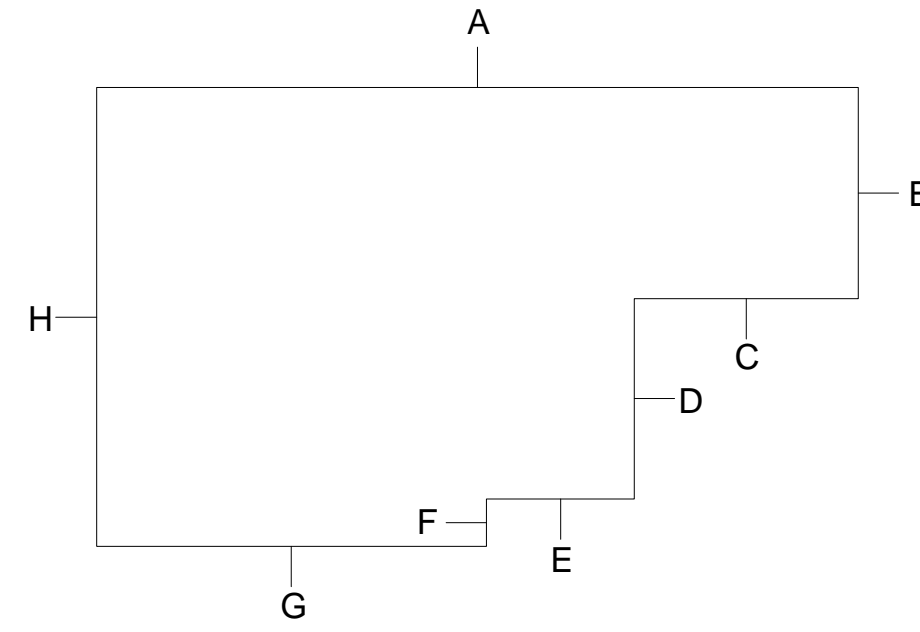
Owner
 Design Built Homes

4715 86th Ave SE

Mercer Island, Washington

Site Plan

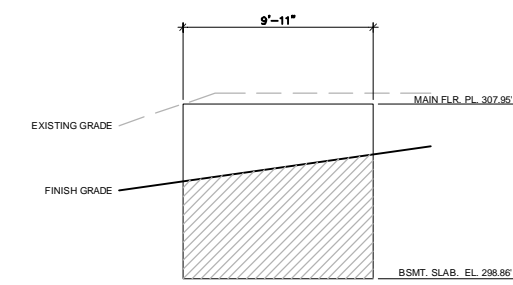
A1.1



WALL SEGMENT	LENGHT	COVERAGE	RESULT
A	39.71'	88.89%	35.29%
B	10.42	79.08%	8.24%
C	11.04	23.23%	2.56%
D	9.92	63.44%	6.29%
E	7.26	3.52%	0.25%
F	2.33	53.79%	1.25%
G	21.25	0%	0%
H	22.67	71.74%	16.26%
TOTALS	124.60	NA	70.14%

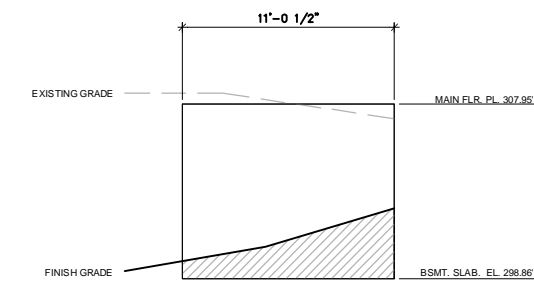
$$\frac{70.14\%}{124.54'} = 56.31\%$$

BASEMENT FLOOR AREA: 698 SF X 56.31%=393.04 S.F.



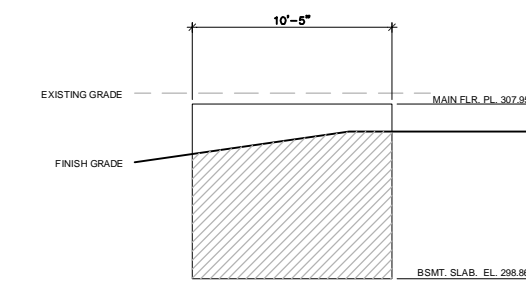
WALL SEGMENT "D"
9.92' X 63.44% = 14.53%

TOTAL WALL AREA = 90.07 S.F.
TOTAL COVERED WALL AREA = 57.14 S.F.
TOTAL PERCENTAGE COVERED = 63.44 %



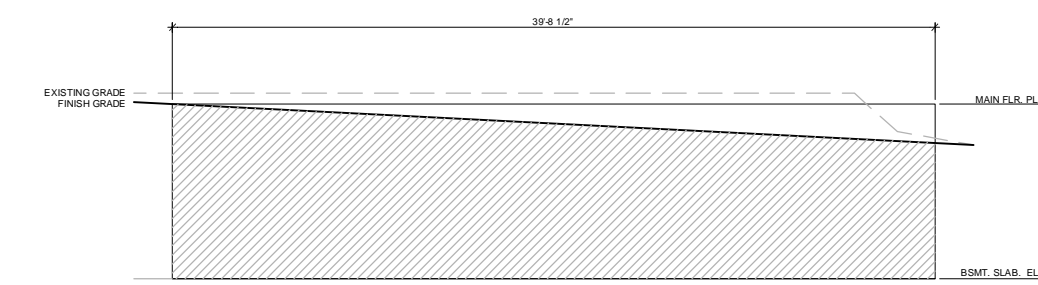
WALL SEGMENT "C"
11.04' X 23.23% = 2.56%

TOTAL WALL AREA = 100.29 S.F.
TOTAL COVERED WALL AREA = 23.30 S.F.
TOTAL PERCENTAGE COVERED = 23.23 %



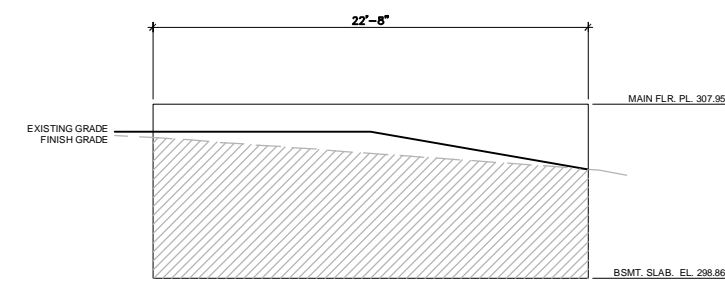
WALL SEGMENT "B"
10.42' X 79.08% = 8.24%

TOTAL WALL AREA = 94.61 S.F.
TOTAL COVERED WALL AREA = 74.82 S.F.
TOTAL PERCENTAGE COVERED = 79.08 %



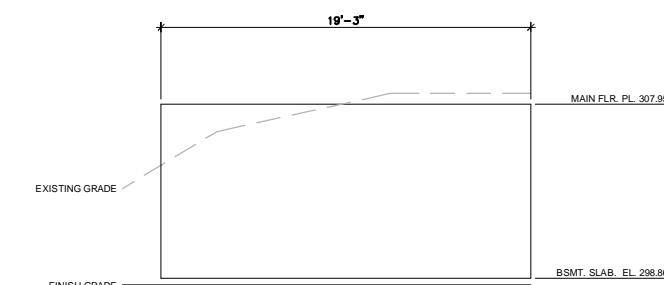
WALL SEGMENT "A"
39.71' X 88.89% = 35.29%

TOTAL WALL AREA = 360.68 S.F.
TOTAL COVERED WALL AREA = 320.61 S.F.
TOTAL PERCENTAGE COVERED = 88.89 %



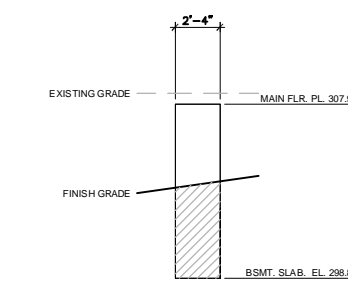
WALL SEGMENT "H"
22.67' X 71.74% = 16.26%

TOTAL WALL AREA = 205.89 S.F.
TOTAL COVERED WALL AREA = 147.71 S.F.
TOTAL PERCENTAGE COVERED = 71.74 %



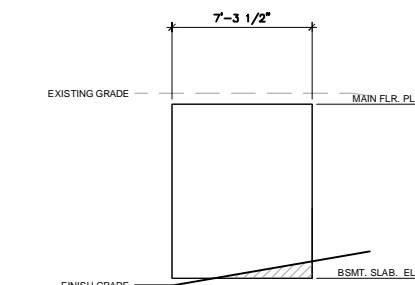
WALL SEGMENT "G"
21.25' X 0% = 0%

TOTAL WALL AREA = 194.91 S.F.
TOTAL COVERED WALL AREA = 0 S.F.
TOTAL PERCENTAGE COVERED = 0 %



WALL SEGMENT "F"
2.33' X 53.79% = 1.25%

TOTAL WALL AREA = 21.19 S.F.
TOTAL COVERED WALL AREA = 11.40 S.F.
TOTAL PERCENTAGE COVERED = 53.79 %



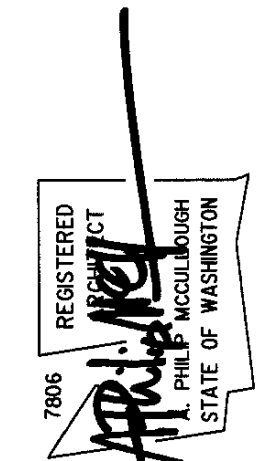
WALL SEGMENT "E"
7.26' X 3.52% = .25%

TOTAL WALL AREA = 66.23 S.F.
TOTAL COVERED WALL AREA = 2.33 S.F.
TOTAL PERCENTAGE COVERED = 3.52 %

Revisions Comment
06.20.2025 1

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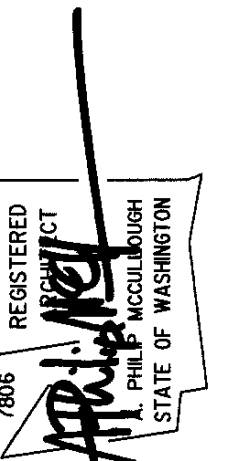
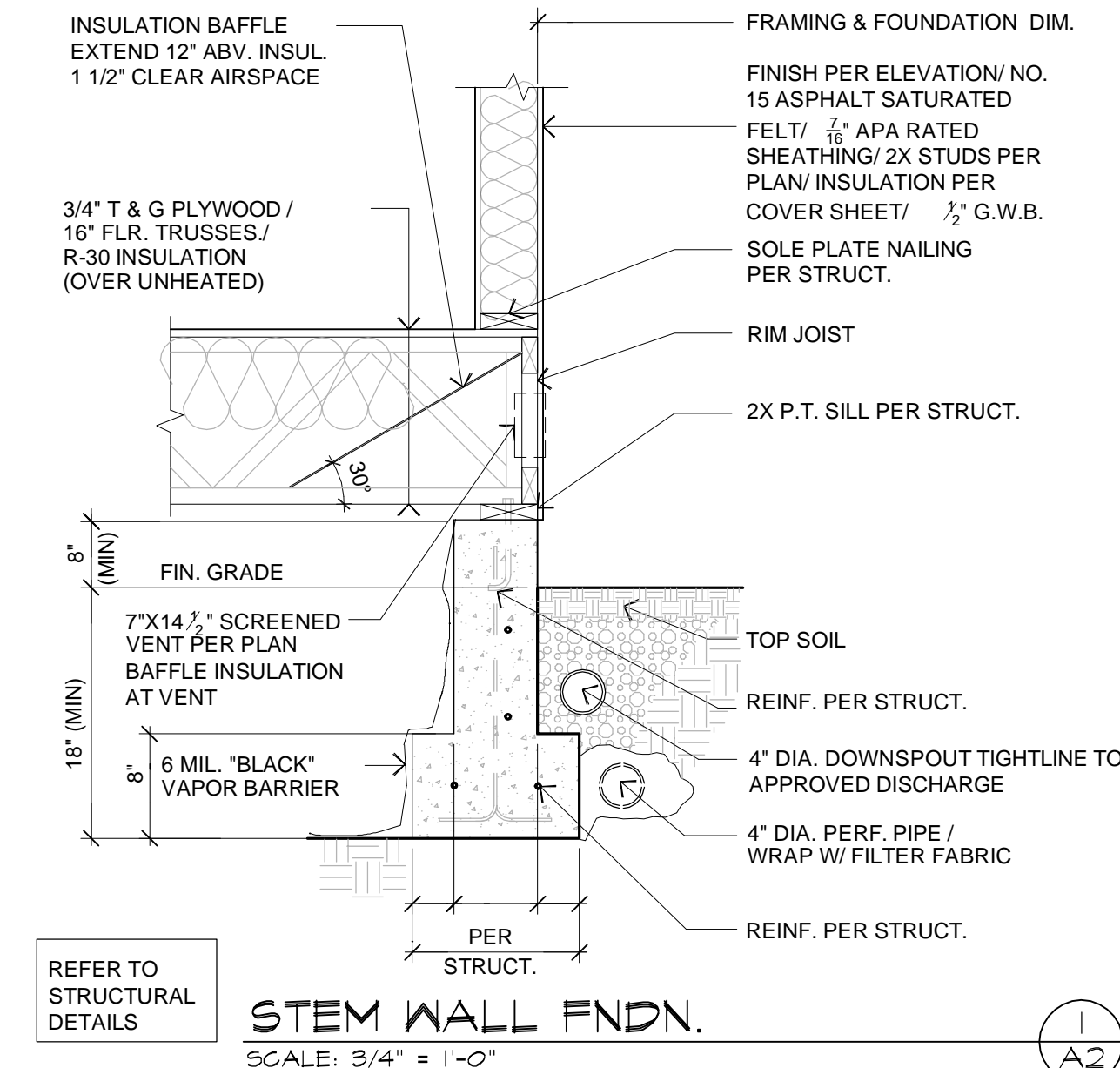
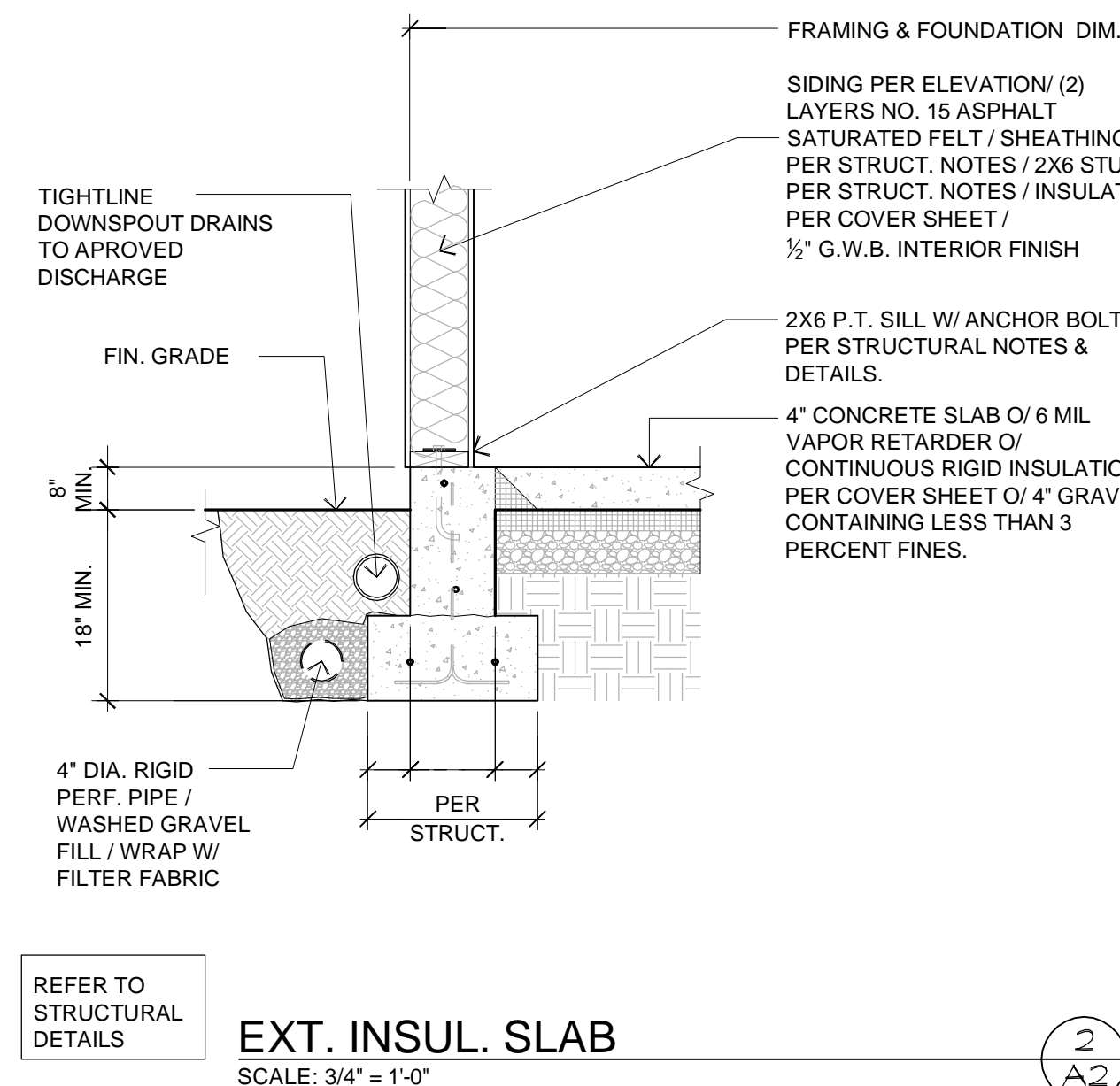
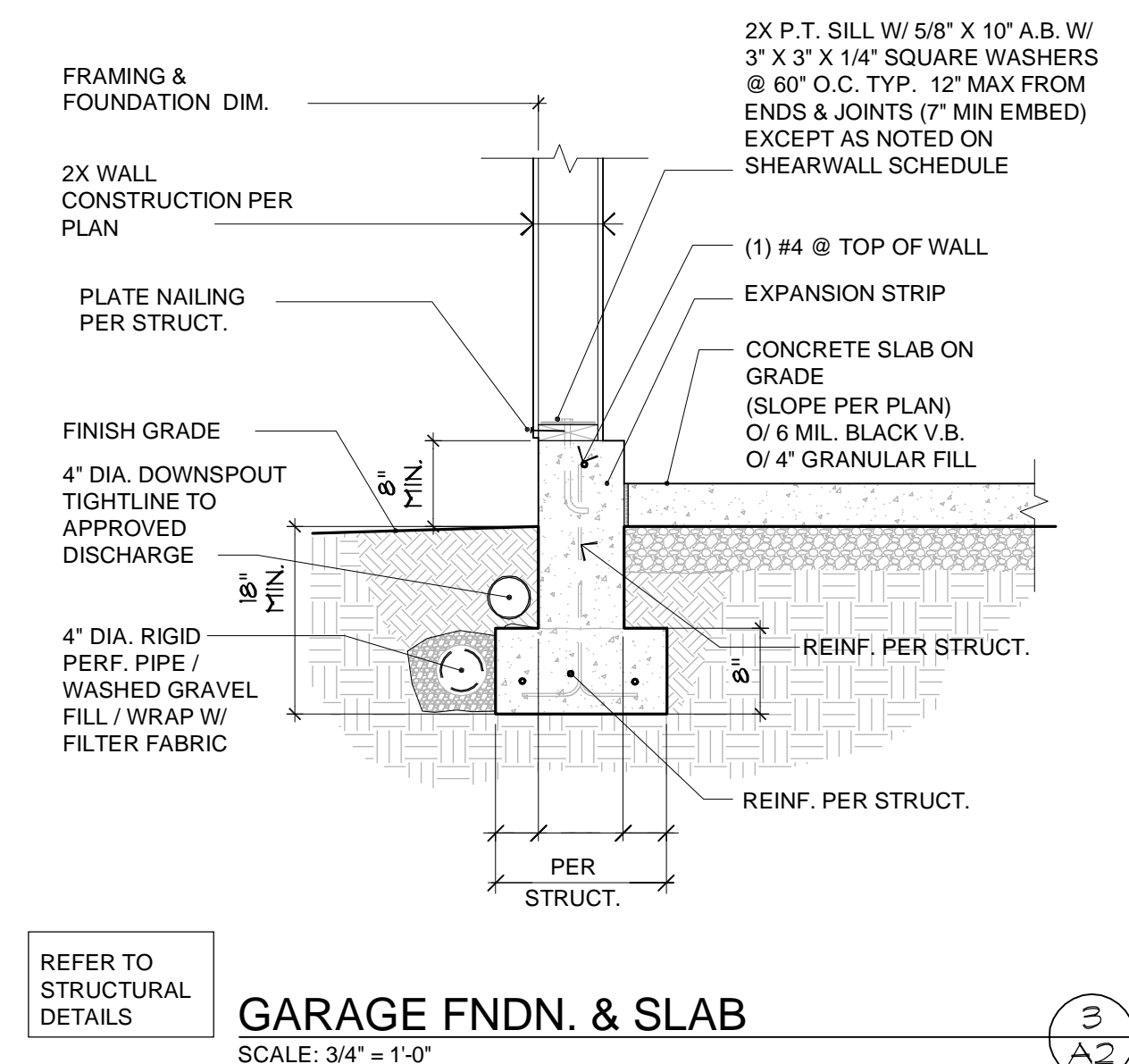
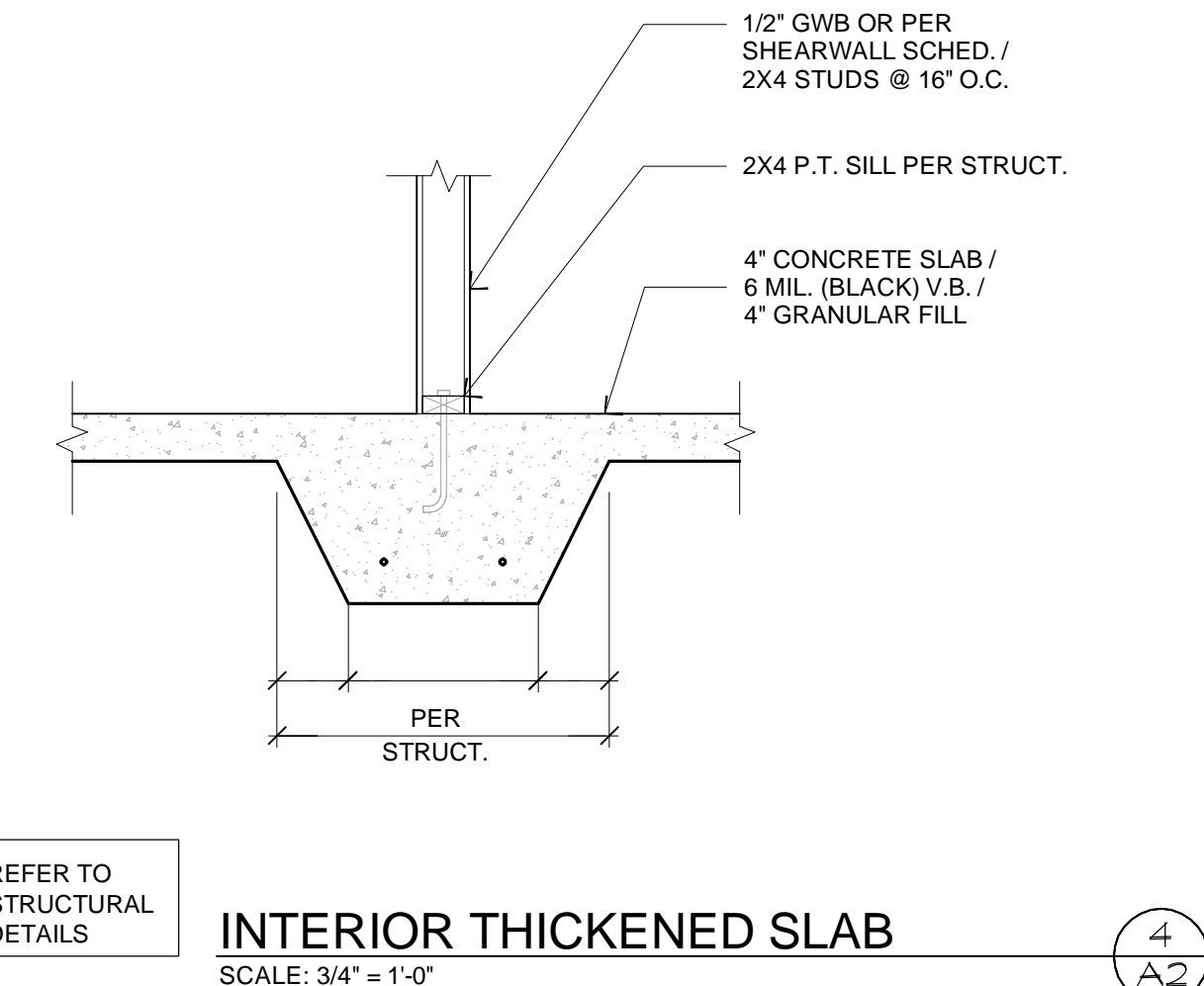
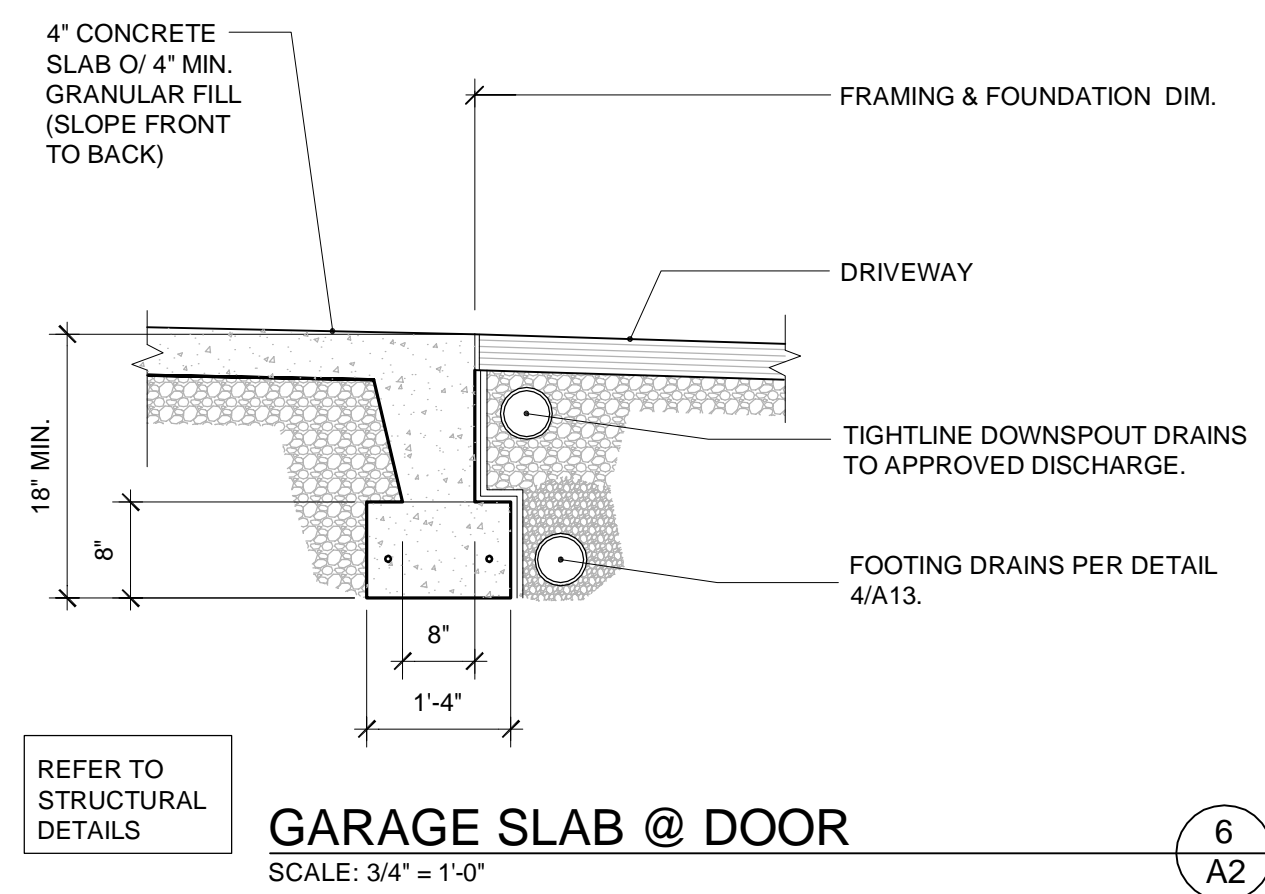
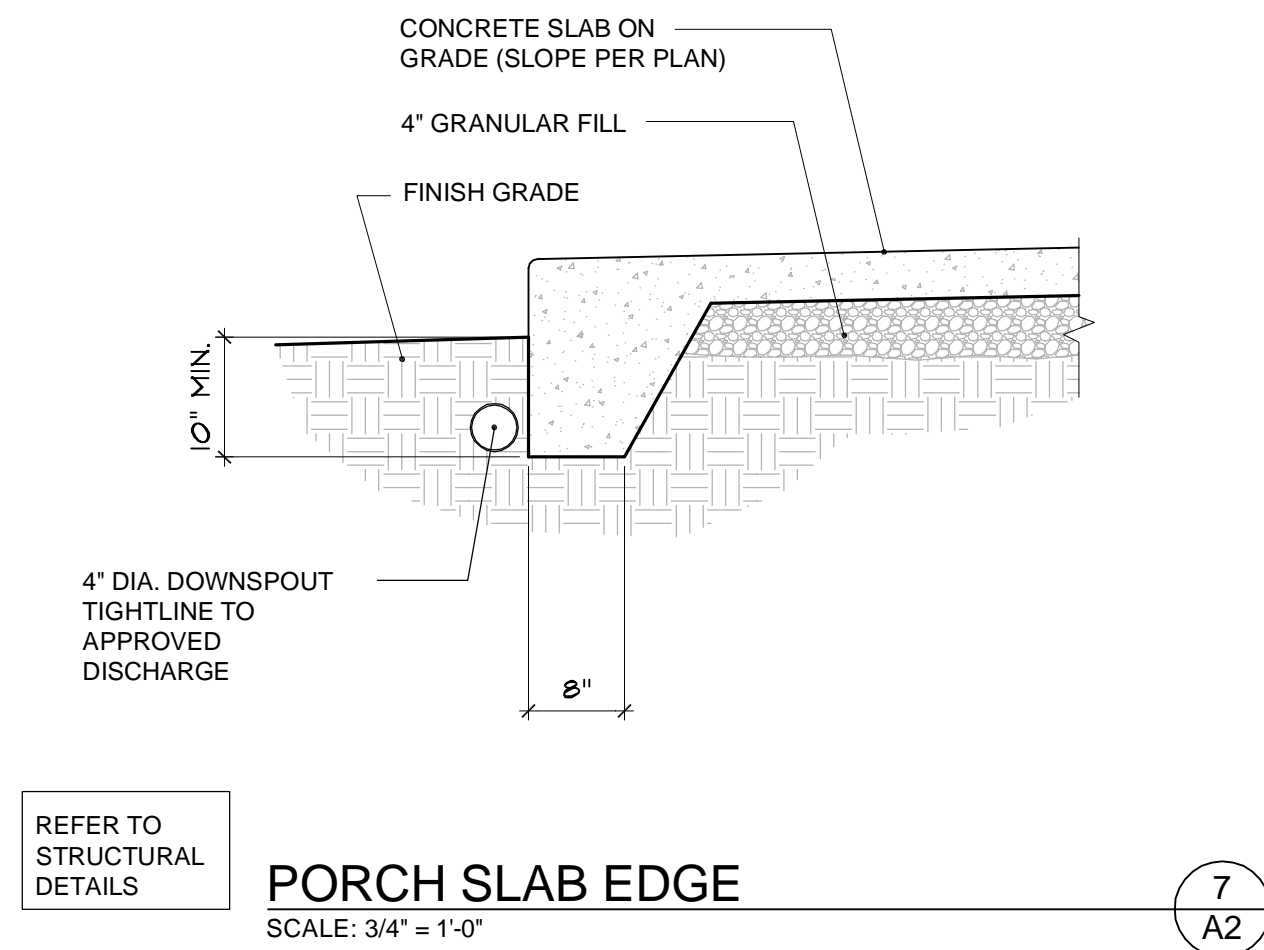
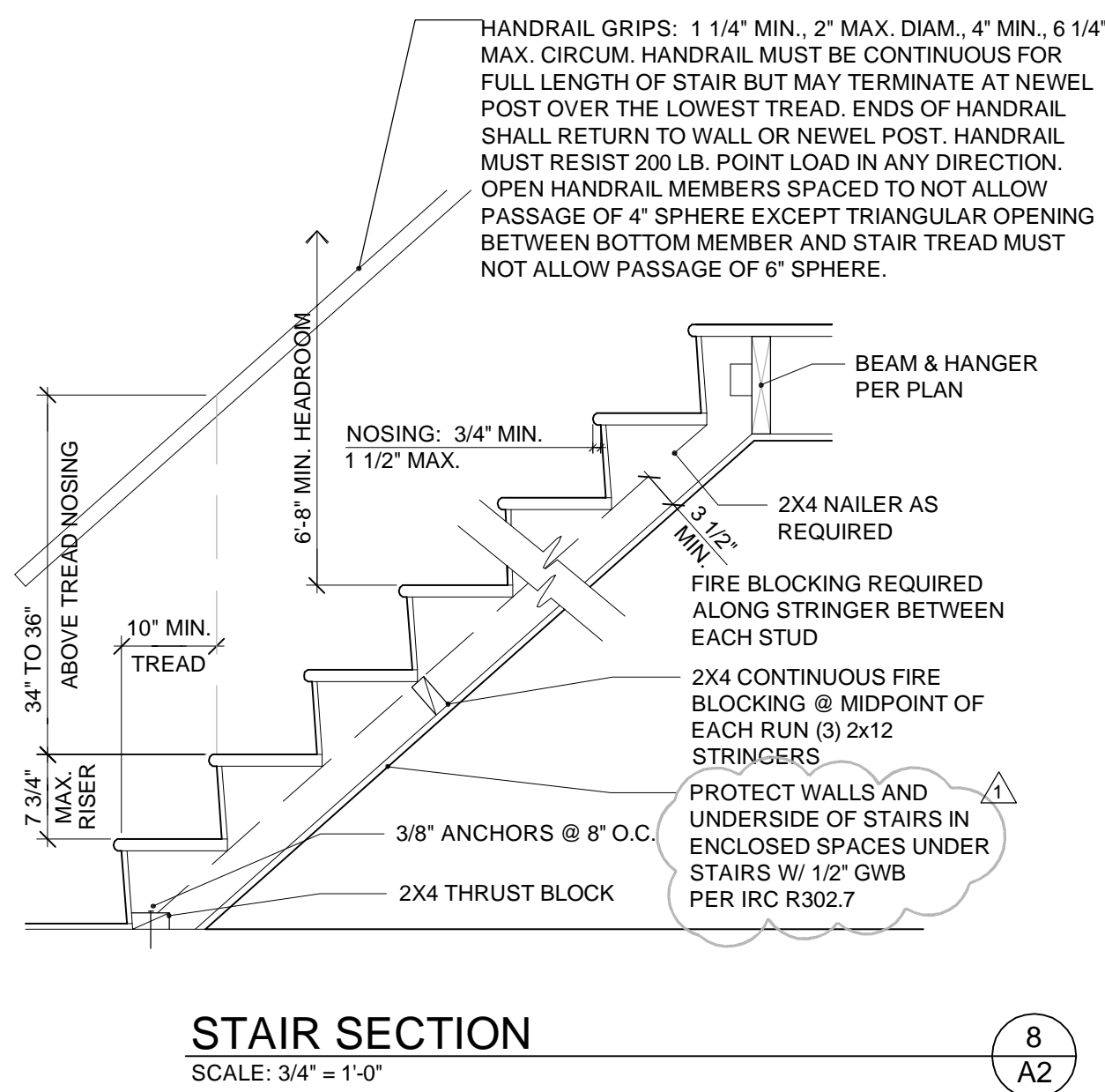
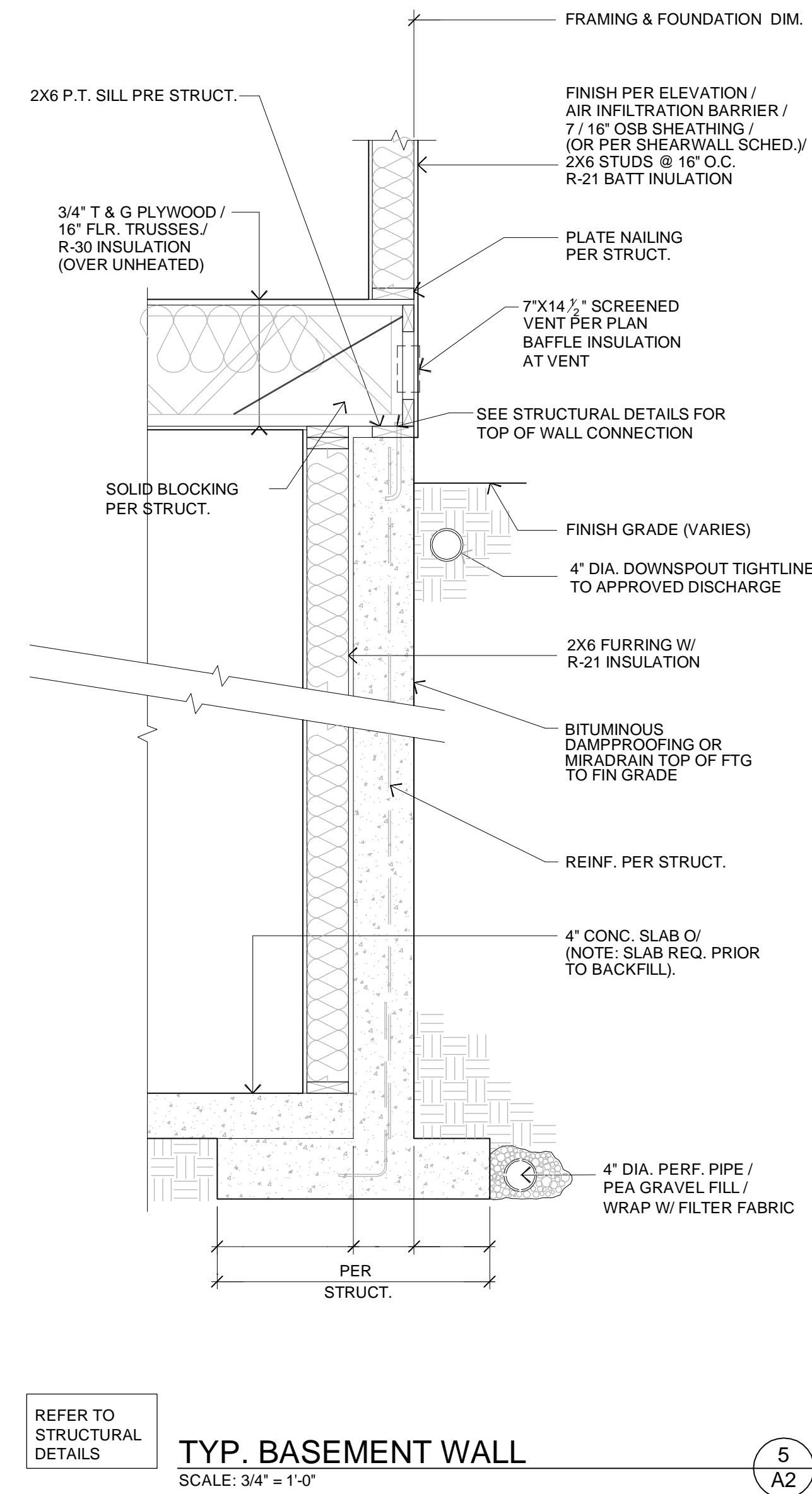
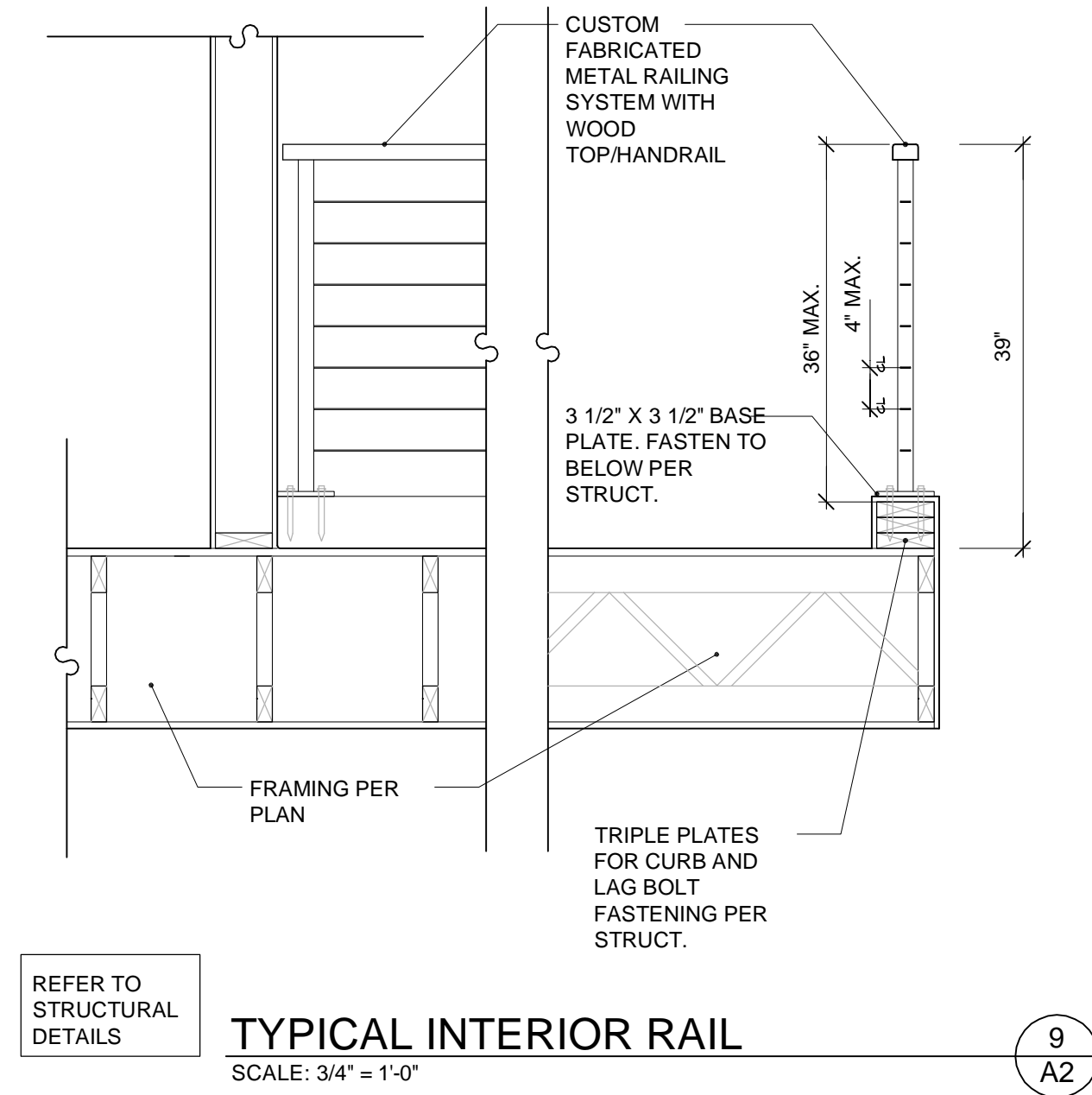
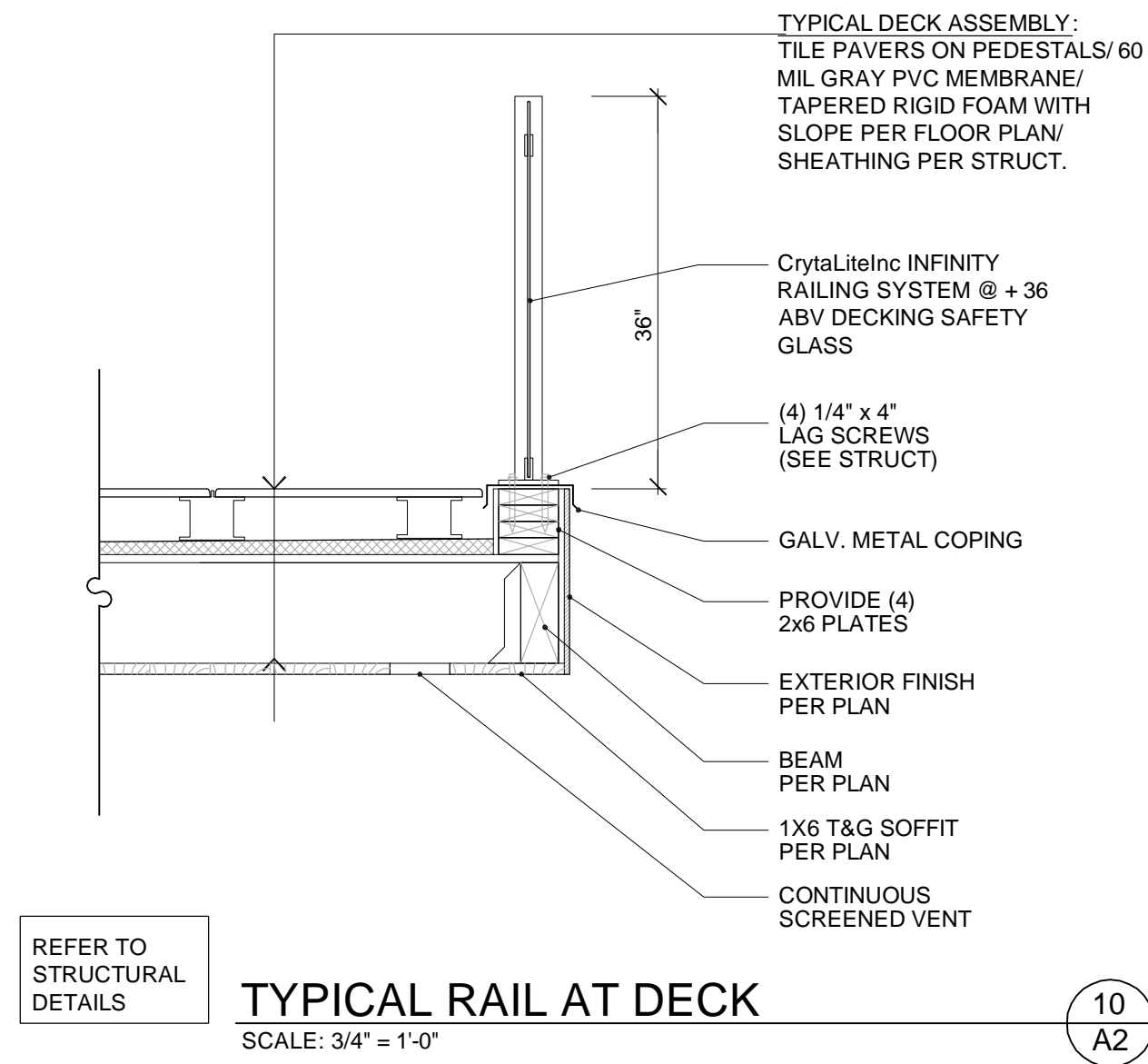
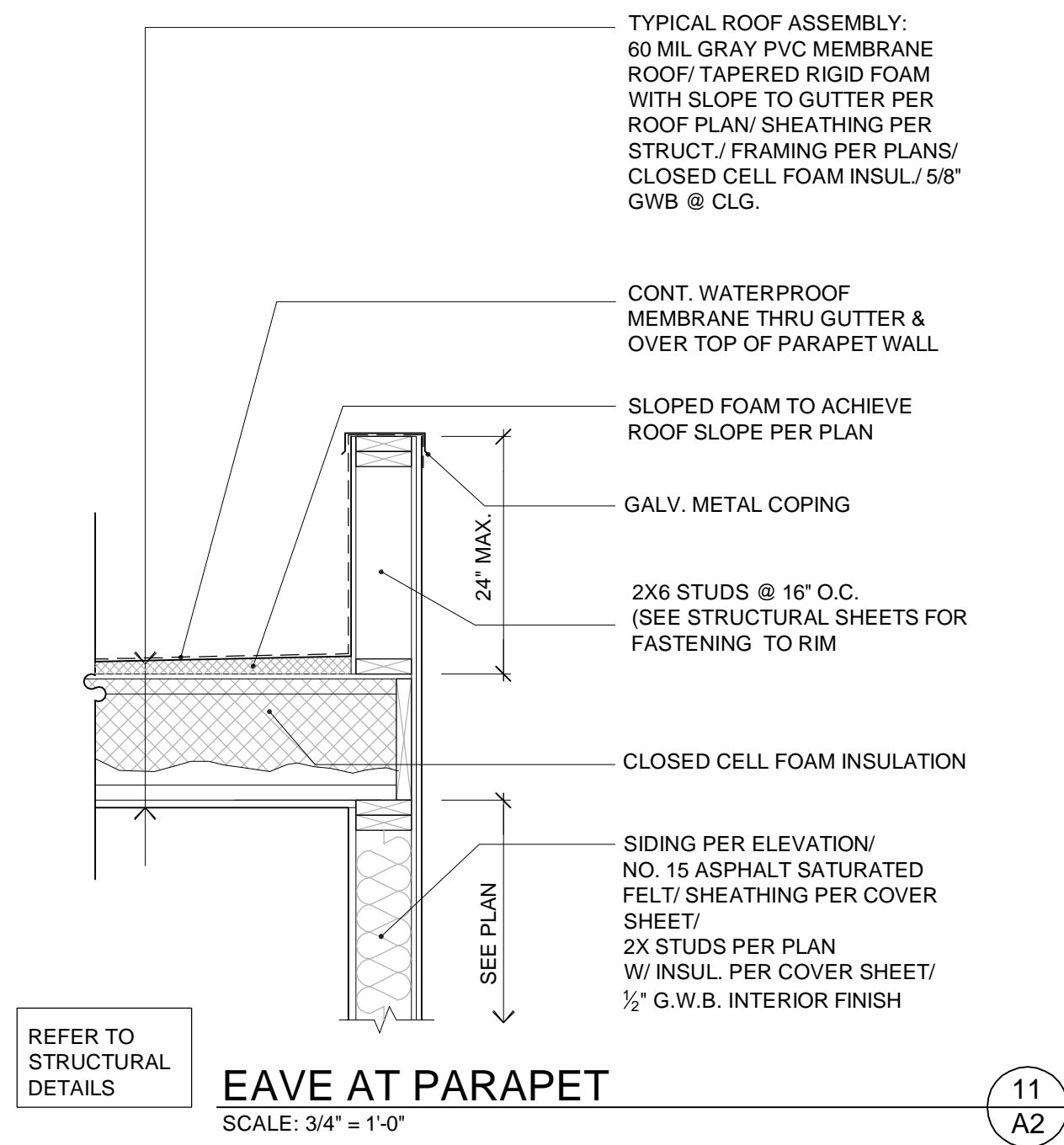


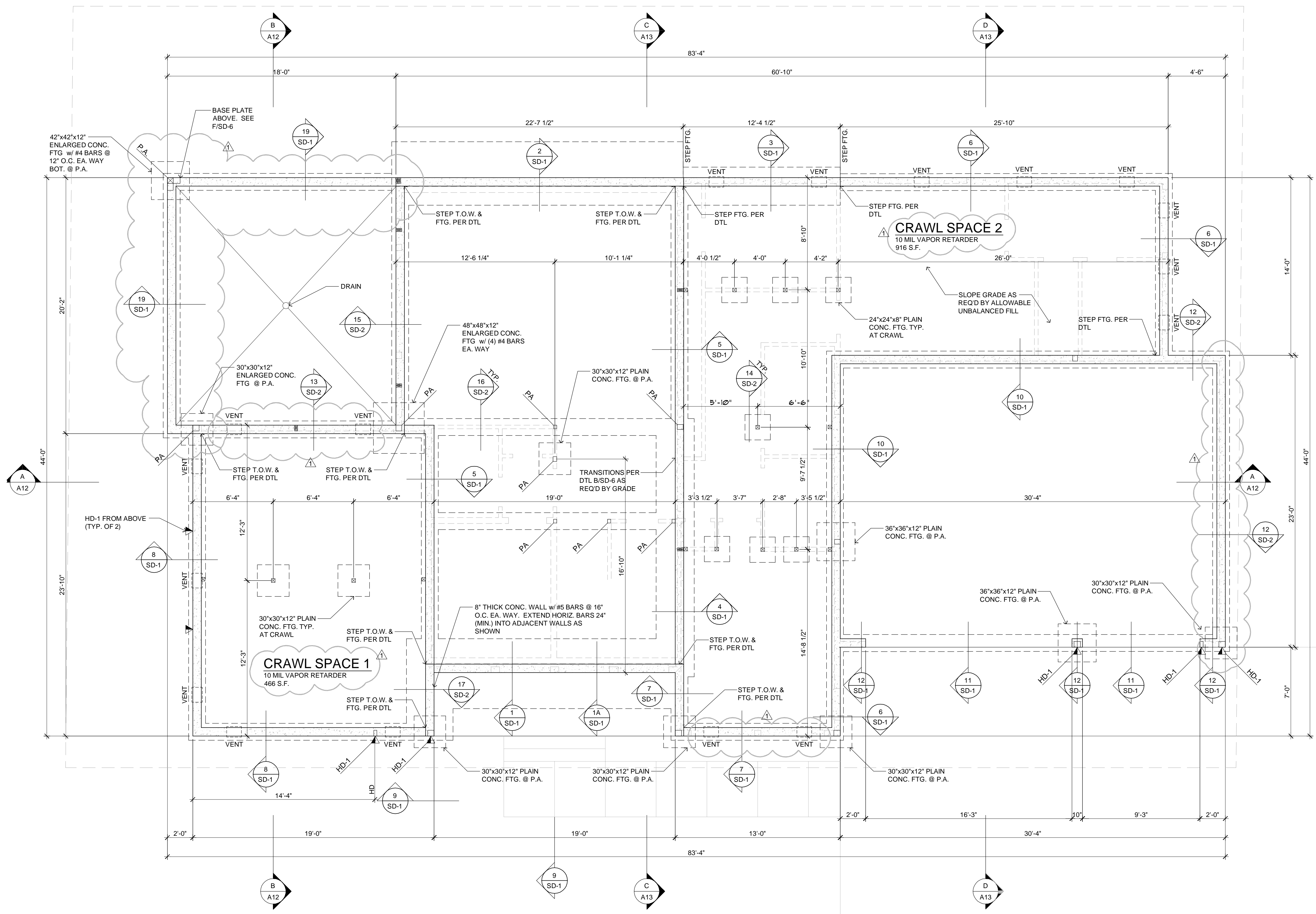
4715 86th Ave SE

Mercer Island, Washington

Basement Area Calculations

A1.2





FOUNDATION PLAN

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

- GENERAL NOTES:
- 8" MIN. CLEARANCE BETWEEN EXTERIOR GRADE & UNPROTECTED WOOD.
 - ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
 - ALL DIMENSION LINES ARE TO FACE OF FRAMING OR CONCRETE, U.N.O.
 - SEE SHEARWALL SCHEDULE FOR LOCATION & SPACING OF ANCHOR BOLTS.
 - INSTALL ALL HOLDDOWNS AND HARDWARE PRIOR TO BACKFILLING.
 - UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON ASSUMED AVERAGE BEARING CAPACITY OF 1500 PSF EXTERIOR FOOTINGS TO BEAR ON FIRM UNDISTURBED SOIL BELOW ORGANIC SURFACE SOIL, A MINIMUM 1'-6" BELOW FINISH GRADE. ANY BACKFILL REQUIRED TO BE THOROUGHLY COMPACTED.
 - PROVIDE 18"x24" MIN. CRAWLSPACE ACCESS WEATHERSTRIP AND INSULATE PER WSEC R402.2.4.

UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING CAPACITY OF 1500 PSF. EXTERIOR FOOTINGS SHALL BEAR 1'-6" BELOW FINISH GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOIL. BACKFILL TO BE THOROUGHLY

PLAN NOTES:

- BOTTOM OF ALL FOOTINGS SHALL BE 18" MINIMUM BELOW LOWEST ADJACENT GRADE, UNO.
- SLAB ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH 6X6 W1.4XW1.4 WWM CENTERED IN SLAB. PROVIDE VAPOR BARRIER BELOW SLAB OVER 4" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL PER SOILS ENGINEER.
- REFER TO SHEET S3.0 FOR TYPICAL FOUNDATION AND CONCRETE DETAILS.
- REFER TO GENERAL STRUCTURAL NOTES SHEET S1.0 FOR ADDITIONAL REQUIREMENTS.
- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.

CRAWLSPACE VENTILATION:

I.B.C. Sec. R408.1
UNDER-FLOOR AREAS SHALL HAVE A NET AREA OF NOT LESS THAN 1 SQ. FT. OF VENTILATION FOR EACH 150 SQ. FT. OF UNDER-FLOOR AREA.

CRAWLSPACE 1:
THE UNDER FLOOR AREA = 466 S.F. / 150 = 3.11 S.F. OF REQUIRED VENTING AREA. USING 7"x14" SCREENED VENTS PROVIDES 0.75 S.F. OF VENTING FOR EACH VENT. 3.11 S.F. / 0.75 S.F. = 4.14. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH OPENINGS OF 1/4" IN DIMENSION. (5) 7" X 14" VENTS REQUIRED.

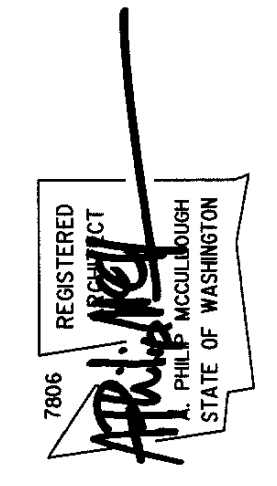
CRAWLSPACE 2:
THE UNDER FLOOR AREA = 916 S.F. / 150 = 6.11 S.F. OF REQUIRED VENTING AREA. USING 7"x14" SCREENED VENTS PROVIDES 0.75 S.F. OF VENTING FOR EACH VENT. 6.11 S.F. / 0.75 S.F. = 8.14. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH OPENINGS OF 1/4" IN DIMENSION. (9) 7" X 14" VENTS REQUIRED.

TYPICAL CRAWLSPACE POSTS:
4x4 P.T. POST w/ 2x4 CLEATS EA. SIDE + (2) A35 CLIPS ON EA. SIDE @ BASE OF POST w/ 3/16" DIA X 1 1/4" LONG TAPCON SCREWS (4"-0" MAX. POST HEIGHT) ON ASPHALT SHINGLE ON 24"x24"x8" CONC. FTG. (TYP. U.N.O.)

Revisions	Comment
02.20.2025 1	

Date:	04.09.2025
Job No:	xx-xxx
Project No:	00000
Drawn:	BAK
Approved:	APM

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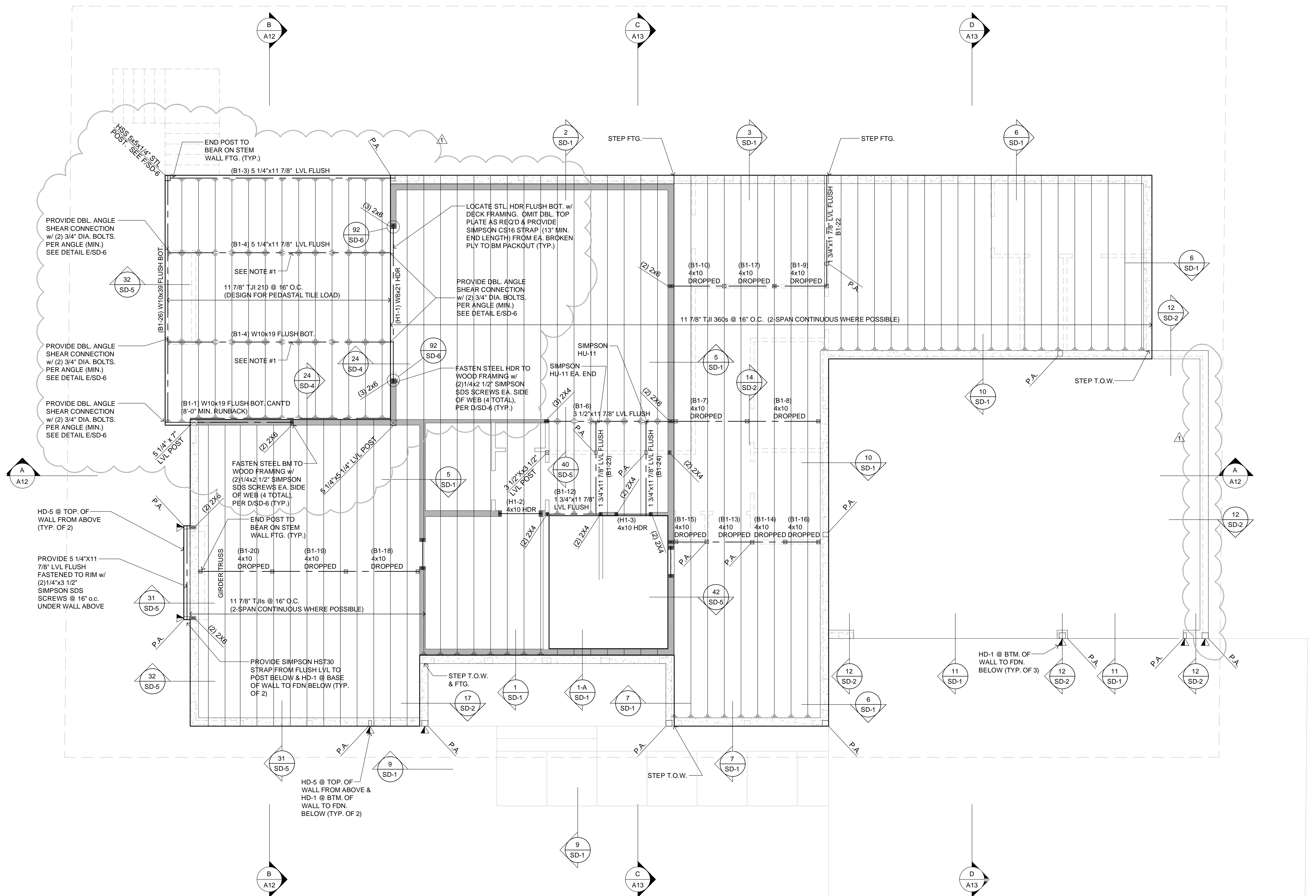


4715 86th Ave SE

Mercer Island, Washington

Foundation Plan

A3



MAIN FLOOR FRAMING PLAN
 SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
1. MAIN FLOOR FRAMING TO BE 11 7/8" TJI FLOOR JOISTS @ 16" O.C. WITH 3/4" OSB SUBFLOOR, GLUED AND NAILED, U.N.O. ADHESIVES SHALL CONFORM TO APA SPEC. AFG 01. PROVIDE T&G EDGES AT LONG PANEL EDGES. STAGGER SUBFLOOR END JOINTS.
 2. BEARING WALLS ARE SHADED.
 3. PROVIDE SOLID BLOCKING IN FLOOR AT ALL WALLS AND POINT LOADS FROM ABOVE.
 4. PROVIDE (3) 2 X POST @ ALL BEAMS, HEADERS & TRUSS GIRDERS, U.N.O.
 5. NAIL PLED BEAMS TOGETHER W/ 10d @ 12" O.C. @ TOP & BOTTOM.
 6. PROVIDE 18" X 24" MIN CRAWLSPACE ACCESS. WEATHERSTIP & INSULATE PER WSEC R402.2.4.
 7. GLB TO BE 24F-V4 U.N.O.
 8. PSL TO BE 2.0E U.N.O.

- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
- INDICATES LOC. OF SOLID SUPPORT
 (2) STUDS LAMD W/ 16d @ 12" O.C., (2) 16d EA. END TYP. UNLESS NOTED OTHERWISE
- ▽ TYPICAL HANGER @ MAIN FLOOR SIMPSON LB

TYPICAL CRAWLSPACE POSTS:
 4x4 P.T. POST W/ 2x4 CLEATS EA. SIDE + (2) A35 CLIPS ON EA. SIDE @ BASE OF POST W/ 3/16" DIA x 1 1/4" LONG TAPCON SCREWS (4'-0" MAX. POST HEIGHT) ON ASPHALT SHINGLE ON 24"x24"x8" CONC. FTG. (TYP. U.N.O.)

STRUCTURAL NOTES:

NOTE 1 @ STEEL BEAMS: PROVIDE SOLID 2x4/LVL WEB PACKOUT FASTENED TO WEB W/ 1/2" DIA THRU BOLTS @ 24" O.C. STAGGERED. PROVIDE 2x TOP PLATE FASTENED TO TOP FLANGE OF STEEL BEAMS W/ P.A.F.S. (HLTI X-U PINS OR EQUAL (0.157" DIA. x 2" LONG MIN.)) @ 16" O.C. STAGGERED OR 1/2" DIA. BOLTS @ 28" O.C. STAGGERED)

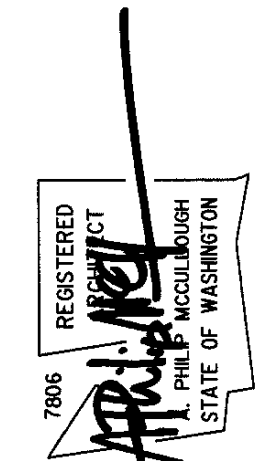
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 Project No: 00000
 Drawn: BAK
 Approved: APM

Owner
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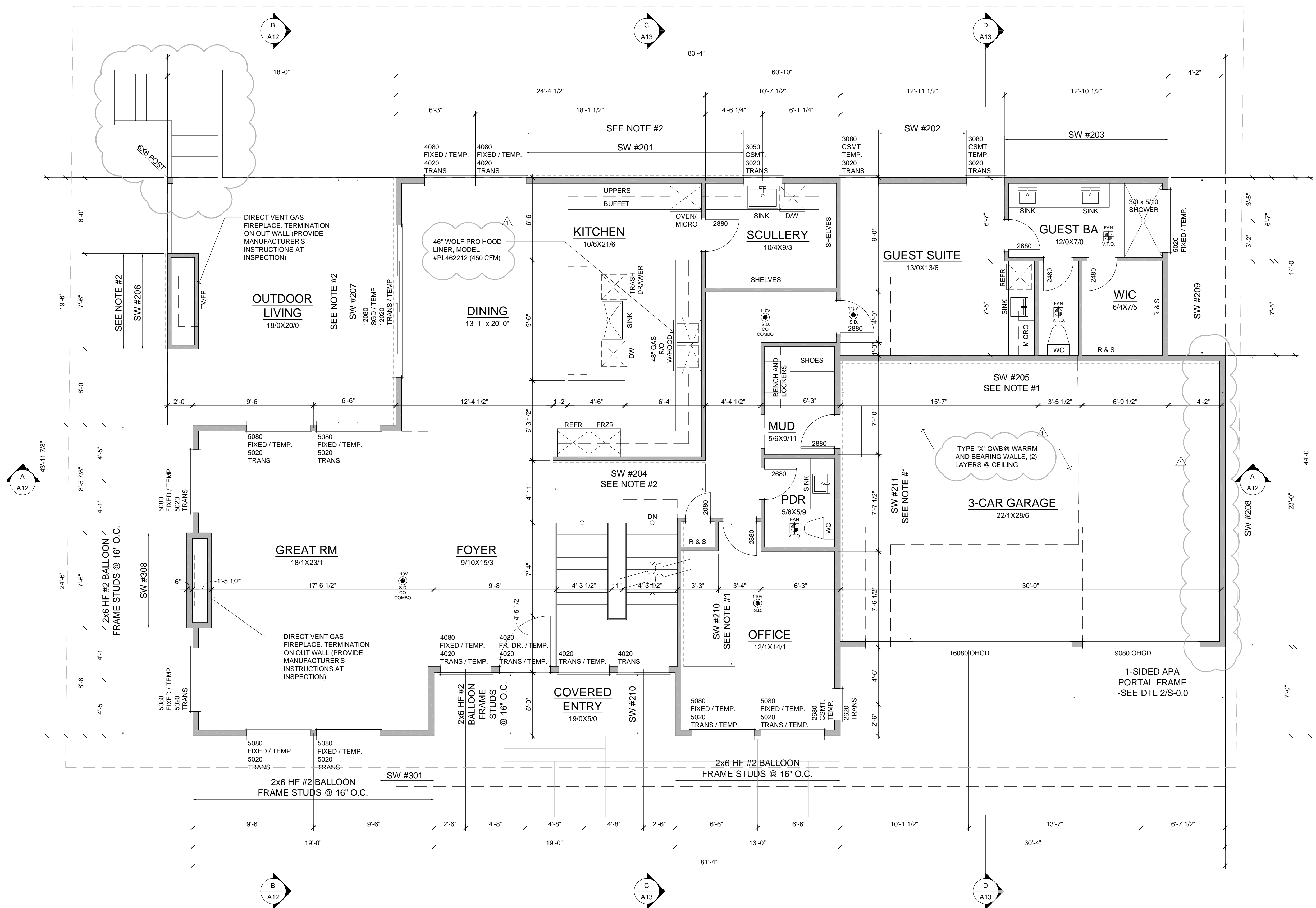


4715 86th Ave SE

Mercer Island, Washington

Main Floor Framing Plan

A5



GENERAL NOTES:

- PLATE HEIGHT @ UPPER FLOOR IS 9'-1"; U.N.O.
PLATE HEIGHT @ MAIN FLOOR IS 10'-1"; U.N.O.
PLATE HEIGHT @ LOWER FLOOR IS 9'-1" U.N.P.
- DIMENSION LINES ARE TO FACE OF STUD U.N.O.
- WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
- WINDOW HEAD HEIGHT AT MAIN FLOOR IS 8'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPEC'S TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
- WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2828= 2'-8" W X 2'-8" H)
- EXTERIOR WALLS TO BE 2X6 STUDS AT 16" O.C., INTERIOR WALLS TO BE 2X4 STUDS AT 16" O.C., U.N.O.
- FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER IRC SEC. R302.11.
- SAFETY GLAZING PER IRC SEC. R308.4.
- ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER IRC SEC. R317.1.
- PROVIDE UNDER-STAIR PROTECTION (1/2" GWB) PER IRC SEC. R302.7.
- PROVIDE (1) LAYER OF 1/2" GWB AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE, ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE X GWB TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
- HOUSE/GARAGE DOOR SHALL BE 1-3/4" THICK WOOD SOLID CORE, OR 1-3/4" THICK SOLID OR HONEYCOMB CORE STEEL DOOR, OR 20-MINUTE RATED FIRE DOOR W/ SELF CLOSING DEVICE.
- DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS AND CEILING SEPARATING THE DWELLING FROM THE GARAGE SHALL BE MIN. 26 GAUGE GALVANIZED STEEL.
- PER IRC SEC R311.7.5, MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD: 9/16" MAX.
- PROVIDE HANDRAILS PER IRC SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.3.
- PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER IRC SEC. R312.
- FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. FACTORY BUILT FIREPLACES SHALL MEET EMISSION STANDARDS PER CH. 51-51 WAC.
- PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER IRC SEC R1006.
- FIRE BLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE PER R302.11.

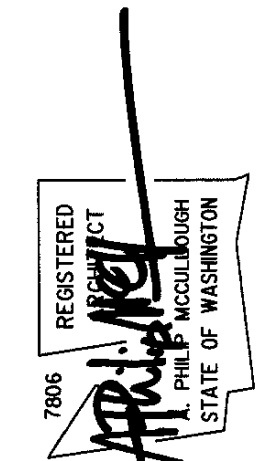
STRUCTURAL NOTES:

- NOTE 1: PROVIDE 7/16" OSB OR 15/32" PLYWOOD FASTENED PER TYP. EXT. WALL SHEATHING SPEC. (SEE NOTES ON S-0.0)
- NOTE 2: 3" O.C. EDGE NAILING (SEE NOTES ON S-0.0)
- NOTE 3 @ STEEL BEAMS: PROVIDE SOLID 2x/LVL WEB PACKOUT FASTENED TO WEB w/ 1/2" DIA THRU BOLTS @ 24" O.C. STAGGERED. PROVIDE 2x TOP PLATE FASTENED TO TOP FLANGE OF STEEL BEAMS w/ P.A.F.S. (HLTI X-U PINS OR EQUAL (0.157" DIA. x 2" LONG MIN.)) @ 16" O.C. STAGGERED OR 1/2" DIA. BOLTS @ 28" O.C. STAGGERED)

Revisions	Comment
02.20.2025 1	

Date: 04.09.2025
Job No: xx-xxx
Project No: 00000
Drawn: BAK
Approved: APM

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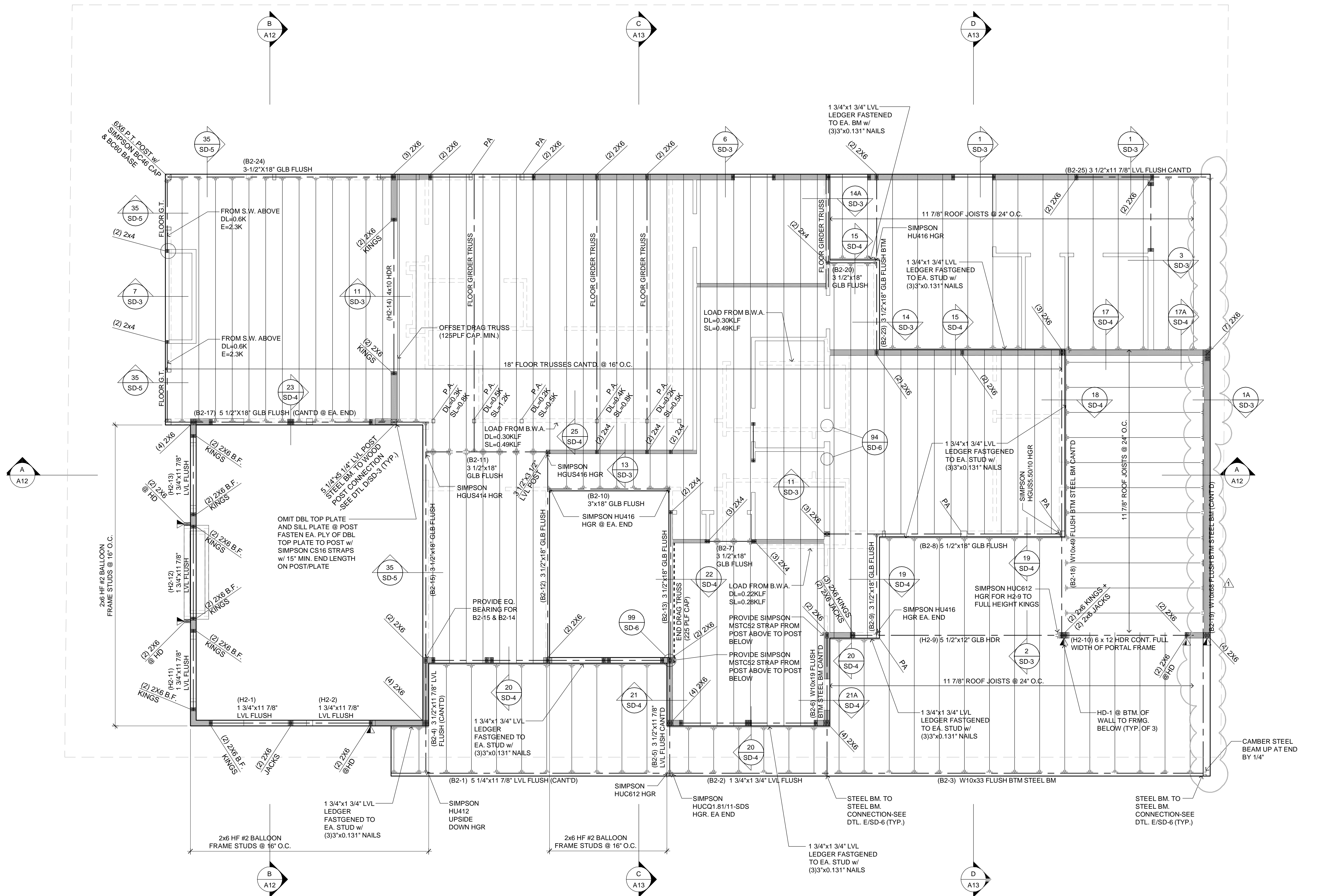
Mercer Island, Washington

MAIN FLOOR PLAN

SCALE 1/4" = 1'-0" 2,183 SF
TOTAL = 4,827 SF

Main Floor Plan

A6



- GENERAL NOTES:
- UPPER FLOOR FRAMING TO BE 18" FLOOR TRUSSES @ 16' O.C. WITH 3/4" OSB SUBFLOOR, GLUED AND NAILED. U.N.O. ADHESIVES SHALL CONFORM TO APA SPEC. AFG 01. PROVIDE T&G EDGES AT LONG PANEL EDGES. STAGGER SUBFLOOR END JOINTS.
 - BEARING WALLS ARE SHADDED.
 - PROVIDE SOLID BLOCKING IN FLOOR AT ALL WALLS AND POINT LOADS FROM ABOVE.
 - PROVIDE (3) 2 X POST @ ALL BEAMS, HEADERS & TRUSS GIRDERS, U.N.O.
 - NAIL FLIED BEAMS TOGETHER W/ 10d @ 12" O.C. @ TOP & BOTTOM.
 - PROVIDE 18" X 24" MIN CRAWLSPACE ACCESS. WEATHERSTIP & INSULATE PER WSEC R402.2.4.
 - GLB TO BE 24F-V4 U.N.O.
 - PSL TO BE 2.0E U.N.O.
 - SEE DETAIL 100SD-3 FOR TYP. FLUSH BEAM CONNECTIONS ABOVE WINDOW OPENINGS WHEN THE DBL TOP PLATE MUST BE SPLICED (TYP. U.N.O.).
 - 3 1/2" x 15" GLB FLUSH HDR @ ALL EXTERIOR OPENINGS W/ TOP CHORD BRG FLOOR TRUSSES (TYP. U.N.O.)
 - (H2-) (DBL TOP PLATE SHALL RUN CONT. ABOVE ALL OPENINGS)
 - ALL HOLD-DOWNS SHALL BE HD-1 FASTENED @ (2) 2x6 MIN. DOWN TO FNDN. BELOW (TYP. U.N.O.)
 - ALL 2x4 INTERIOR BEARING WALLS @ THIS LEVEL SHALL BE HF-1 GRADE OR BETTER @ 12" O.C.

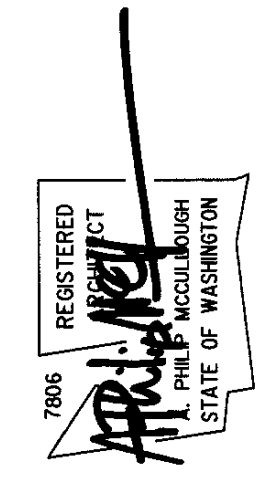
- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
- INDICATES LOC. OF SOLID SUPPORT
- TYPICAL HANGER @ MAIN FLOOR SIMPSON LB

- STRUCTURAL NOTES:
- NOTE 1: PROVIDE 7/16" OSB OR 15/32" PLYWOOD FASTENED PER TYP. EXT. WALL SHEATHING SPEC. (SEE NOTES ON S-0.0)
- NOTE 2: 3" O.C. EDGE NAILING (SEE NOTES ON S-0.0)
- NOTE 3 @ STEEL BEAMS: PROVIDE SOLID 2xLVL WEB PACKOUT FASTENED TO WEB W/ 1/2" DIA THRU BOLTS @ 24" O.C. STAGGERED. PROVIDE 2x TOP PLATE FASTENED TO TOP FLANGE OF STEEL BEAMS W/ P.A.F.S. (HILTI X-U PINS OR EQUAL (0.157" DIA. x 2" LONG MIN.)) @ 16" O.C. STAGGERED OR 1/2" DIA. BOLTS @ 28" O.C. STAGGERED)

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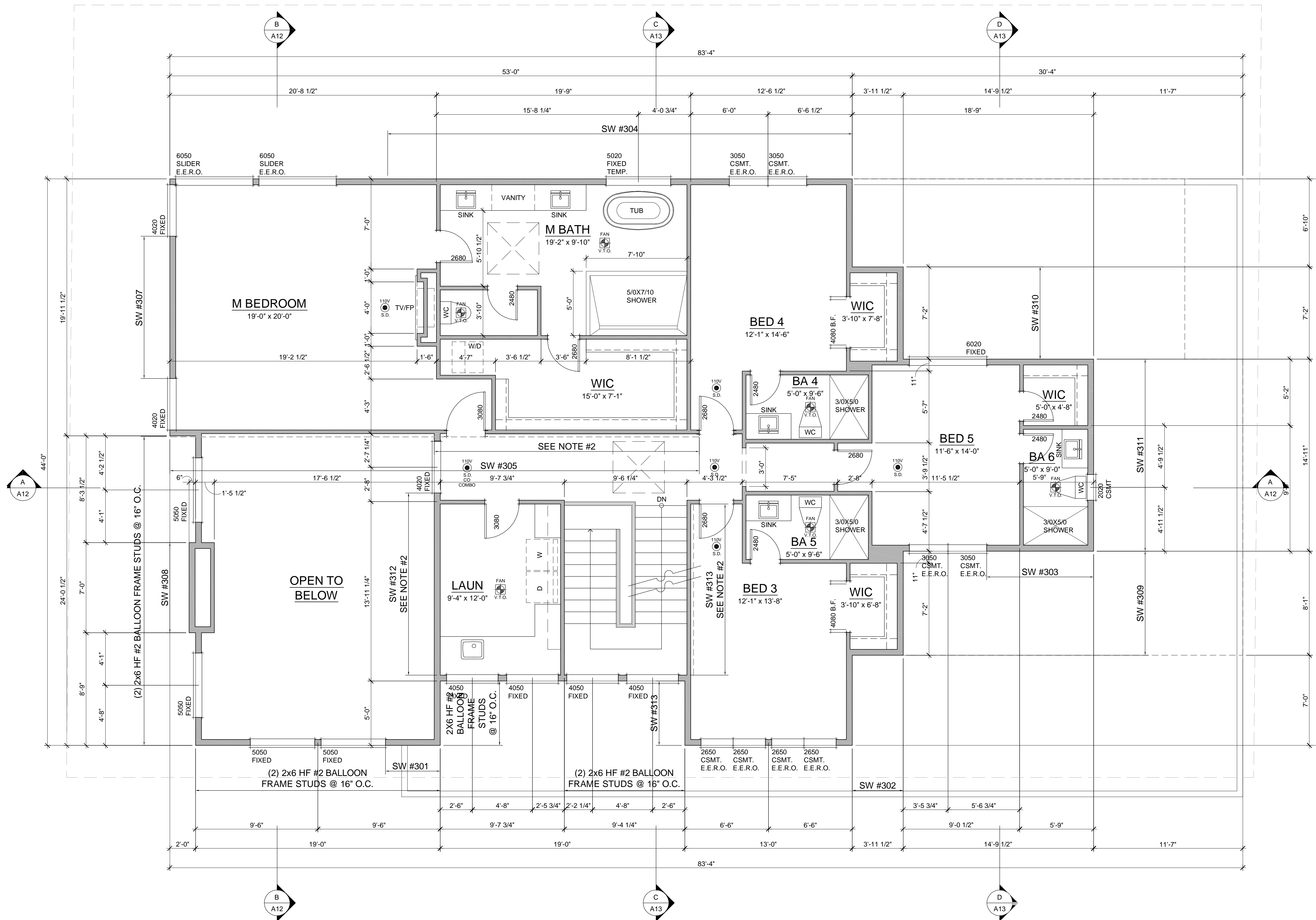
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4715 86th Ave SE
 Mercer Island, Washington

UPPER FLOOR FRAMING PLAN
 SCALE: 1/4" = 1'-0"



UPPER FLOOR PLAN

SCALE 1/4" = 1'-0" 1,933 SF

GENERAL NOTES:

1. PLATE HEIGHT @ UPPER FLOOR IS 9'-1"; U.N.O.
2. PLATE HEIGHT @ MAIN FLOOR IS 10'-1"; U.N.O.
3. PLATE HEIGHT @ LOWER FLOOR IS 9'-1" U.N.P.
4. DIMENSION LINES ARE TO FACE OF STUD U.N.O.
5. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
6. WINDOW HEAD HEIGHT AT MAIN FLOOR IS 8'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPECS TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
7. WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2828= 2'-8" W X 2'-8" H)
8. EXTERIOR WALLS TO BE 2X6 STUDS AT 16" O.C., INTERIOR WALLS TO BE 2X4 STUDS AT 16" O.C., U.N.O.
9. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER IRC SEC. R302.11.
10. SAFETY GLAZING PER IRC SEC. R308.4.
11. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER IRC SEC. R317.1.
12. PROVIDE UNDER-STAIR PROTECTION (1/2" GWB) PER IRC SEC R302.7.
13. PROVIDE (1) LAYER OF 1/2" GWB AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE, ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE X GWB TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
14. HOUSE/GARAGE DOOR SHALL BE 1-3/8" THICK WOOD SOLID CORE, OR 1-3/8" THICK SOLID OR HONEYCOMB CORE STEEL DOOR, OR 20-MINUTE RATED FIRE DOOR W/ SELF CLOSING DEVICE.
15. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS AND CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE MIN. 26 GAUGE GALVANIZED STEEL.
16. PER IRC SEC R311.7.5. MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD; 9/16" MAX.
17. PROVIDE HANDRAILS PER IRC SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.7.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.7.3.
18. PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER IRC SEC. R312.
19. FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. FACTORY BUILT FIREPLACES SHALL MEET EMISSION STANDARDS PER CH. 51-51 WAC.
20. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER IRC SEC R1006.
21. FIRE BLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE PER R302.11.

STRUCTURAL NOTES:

- NOTE 1: PROVIDE SIMPSON HU11 HANGERS @ 1-3/4"x11-7/8" LVL FLUSH BEAMS (TYP. U.N.O.)
- NOTE 2: PROVIDE 7/16" OSB OR 15/32" PLYWOOD FASTENED PER TYP. EXT. WALL SHEATHING SPEC. (SEE NOTES ON S-0.0)

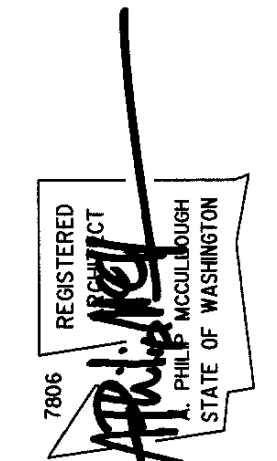
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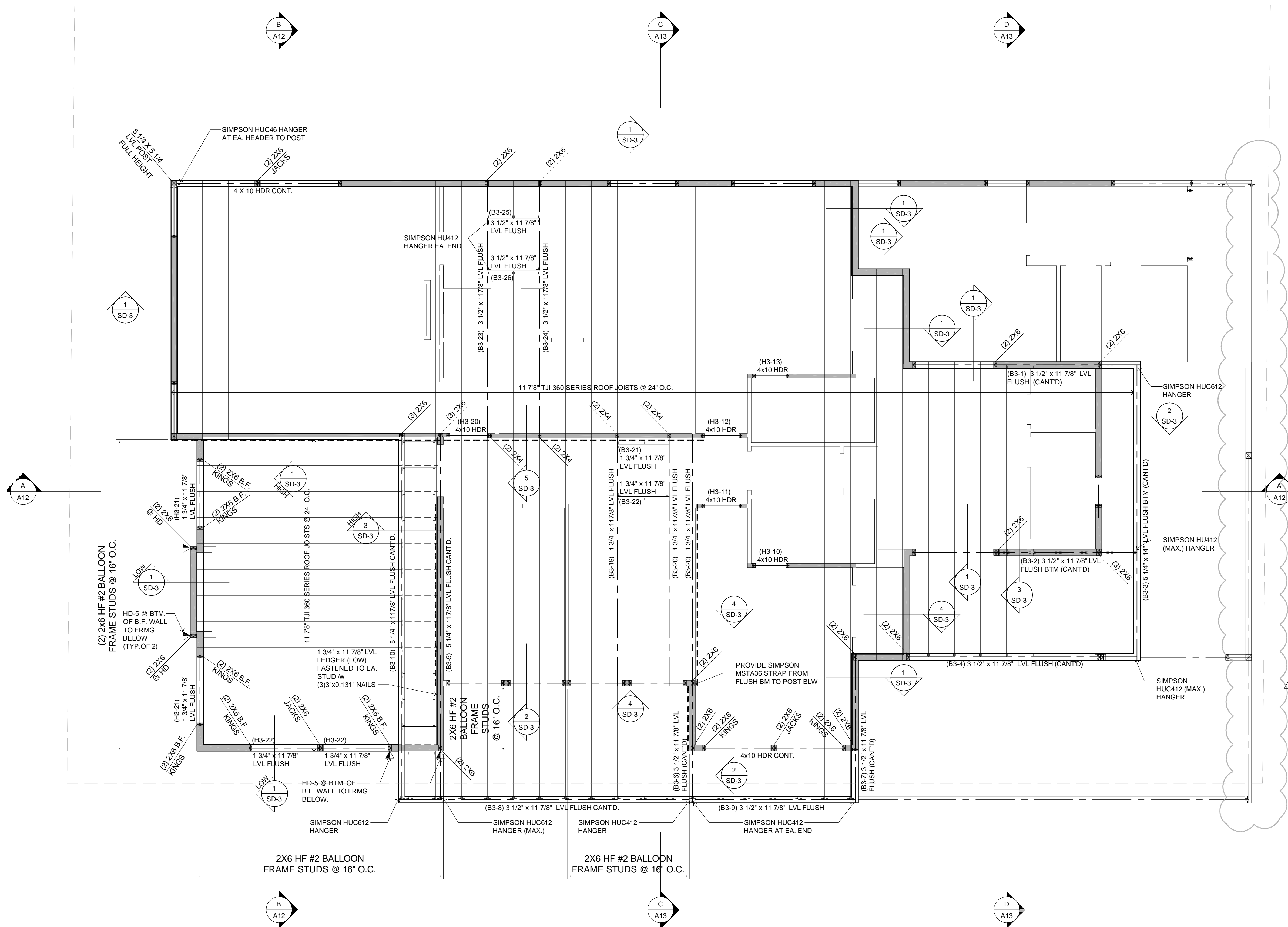


4715 86th Ave SE

Mercer Island, Washington

Upper Floor Plan

A8



ROOF FRAMING PLAN

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

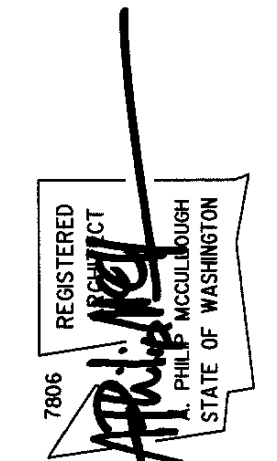
- GENERAL NOTES:
1. VENTED EAVE BLOCKING @ BEARING, U.N.O.
 2. BEARING WALLS ARE SHADED.
 3. OVER FRAME ROOF AREAS ARE SHOWN HATCHED.
 4. ROOF PITCH AS SHOWN.
 5. EAVE OVERHANG TO BE AS SHOWN. GABLE END & RAKE OVERHANG TO BE AS SHOWN.
 6. APPLY ROOFING IN ACCORDANCE WITH I.R.C. SEC. 905.
 7. COMPOSITION ROOF FASTENERS AS PER I.R.C. SEC. 905.2.5.
 8. PROVIDE ATTIC ACCESS WITH MIN. OF 22"x30" CLEAR. WEATHERSTRIP & INSULATE PER WSEC R402.2.4.
 9. WOOD TRUSSES SHALL BE DESIGNED PER IRC SEC. R802.10.
 10. ALL TRUSSES SHALL CARRY MANUFACTURER'S STAMP. SHALL BE INSTALLED AND BRACED TO MANUFACTURER'S SPECIFICATIONS. SHALL HAVE DESIGN DETAILS AND DRAWINGS ON SITE FOR FRAMING INSPECTION, AND WILL NOT BE FIELD ALTERED WITHOUT PRIOR BUILDING DEPARTMENT APPROVAL OF ENGINEER'S CALCULATIONS.
 11. TRUSS MANUFACTURER TO SUPPLY ALL BLOCKING AND HANGERS REQUIRED AT MANUFACTURED TRUSSES.
 12. TRUSS LAYOUT TO BE REVIEWED AND APPROVED BY TRUSS MANUFACTURER PRIOR TO CONSTRUCTION. ALL CHANGES TO BE SUBMITTED AND APPROVED BY ARCHITECT PRIOR TO FABRICATION.
 13. COLUMNS AT HEADERS, BEAMS, AND GIRDERS TO BE (2) 2X STUDS, U.N.O.
 14. MARKERS FOR BLOWN-IN OR SPRAYED INSULATION SHALL BE PLACED EVERY 300 S.F. AND SHALL FACE TOWARD ATTIC ACCESS PER IECC SEC 303.1.1.1
 15. PROVIDE DRAFT STOP IN COMBUSTIBLE CONSTRUCTION WHERE THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR/CEILING ASSEMBLY NOT TO EXCEED 1,000 SQUARE FEET INTO APPROXIMATELY EQUAL AREAS. (R302.12)
 16. ALL TRUSS HEELS TO BE 7" UNO.
 17. (B1) 4 X 10 HEADER @ ALL EXT. OPENINGS (TYP. U.N.O.)

STRUCTURAL PLAN NOTES:

- NOTE 1:
PROVIDE SIMPSON HU11 HANGERS @ 1-3/4"x11-7/8" LVL FLUSH BEAMS (TYP. U.N.O.)
- NOTE 2:
PROVIDE 7/16" OSB OR 15/32" PLYWOOD FASTENED PER TYP. EXT. WALL SHEATHING SPEC. (SEE NOTES ON S-0.0)

Revisions	Comment
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Date: 04.09.2025
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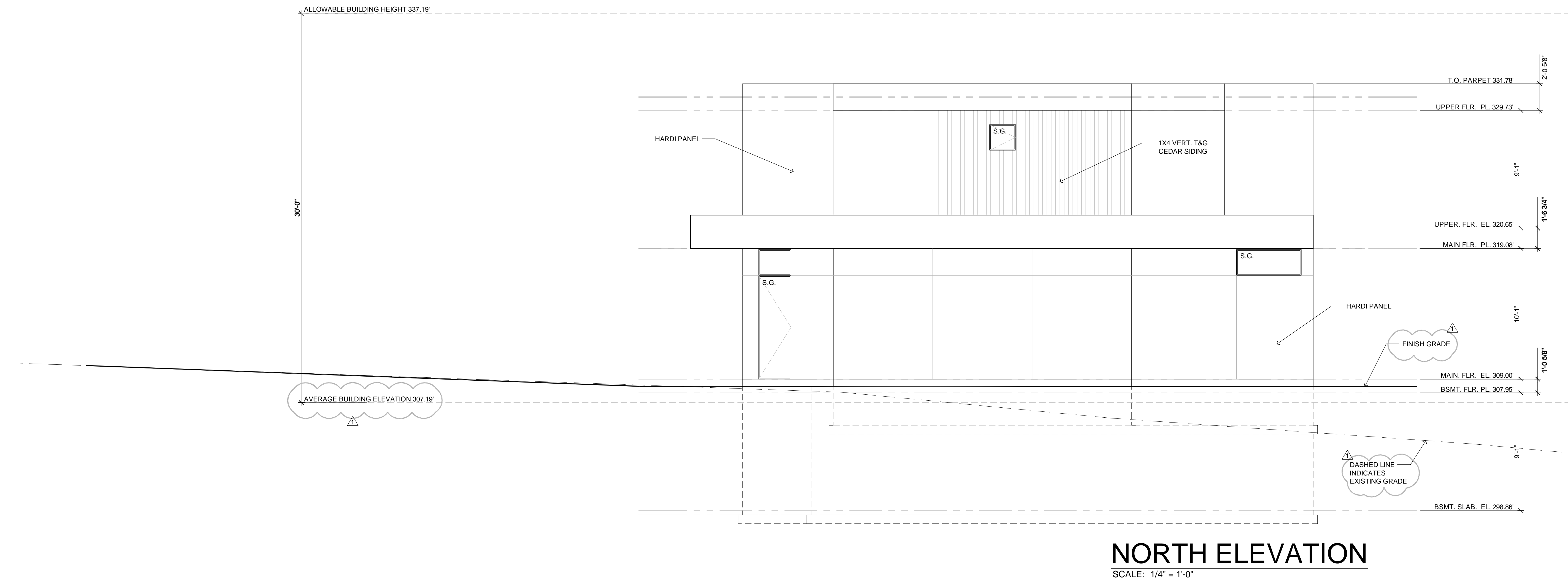
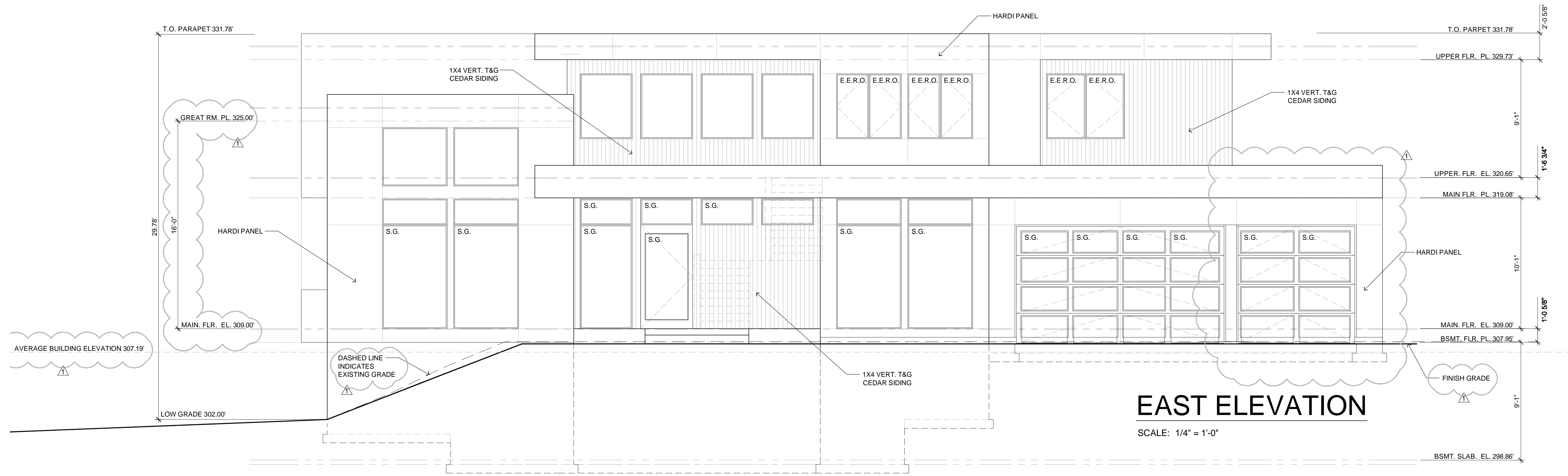
Mercer Island, Washington

Roof Framing Plan

A9

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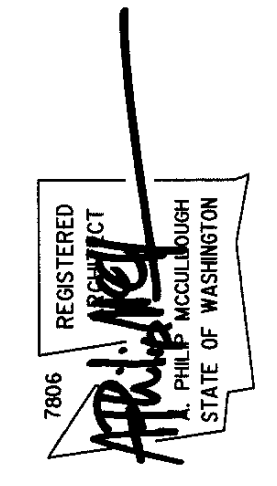
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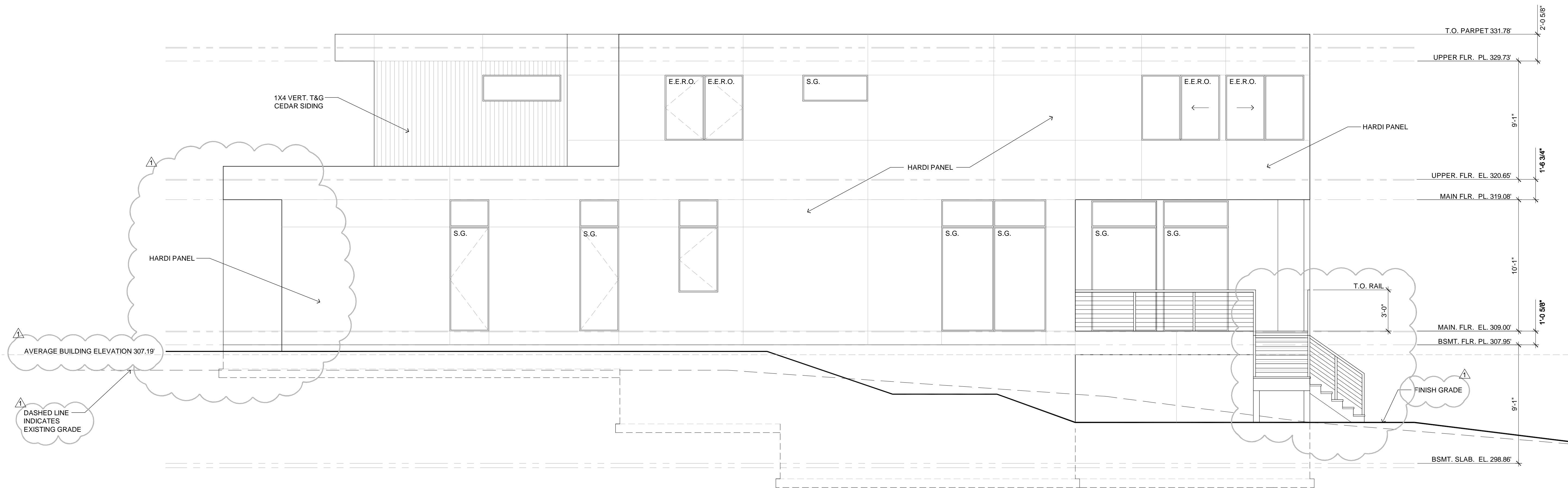


4715 86th Ave SE

Mercer Island, Washington

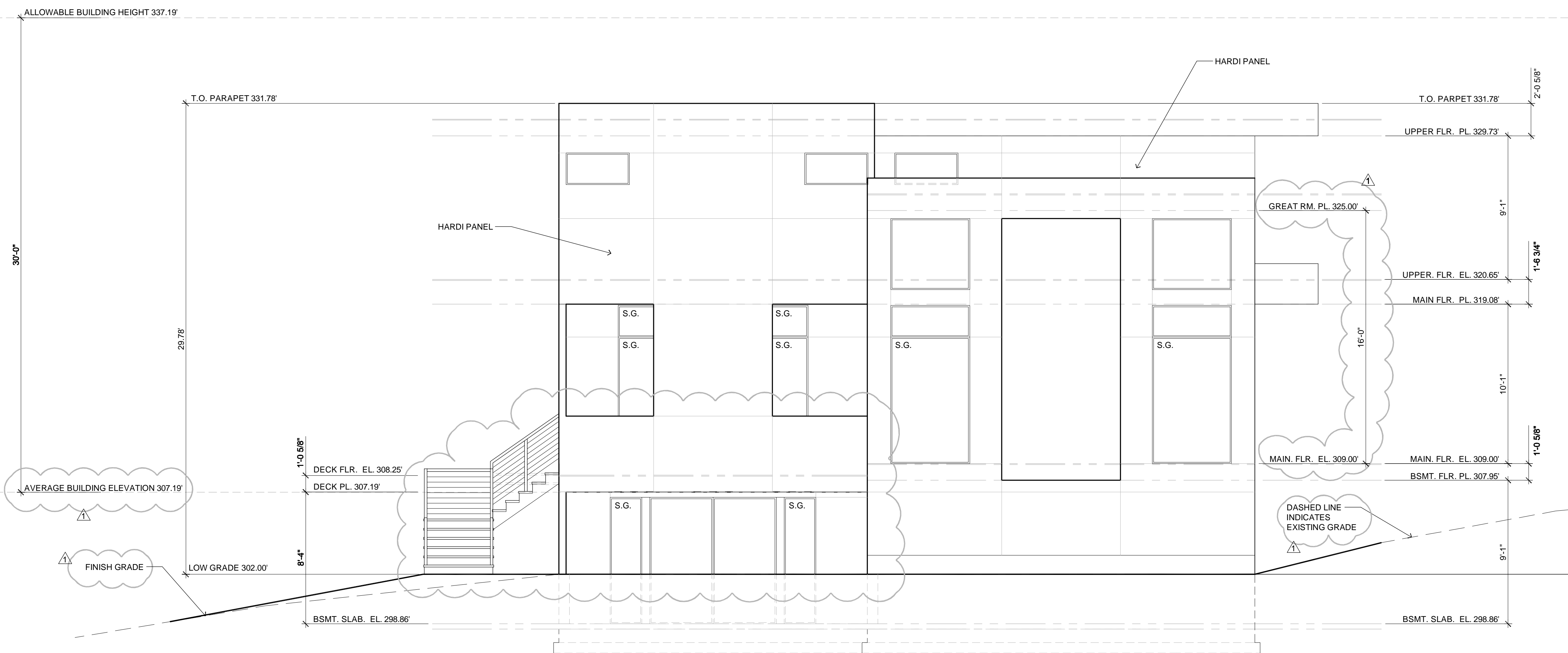
Exterior Elevations

A10



WEST ELEVATION

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



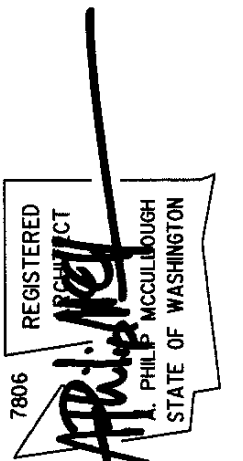
SOUTH ELEVATION

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

Revisions	Comment
06.11.2025	1

Date: 04.09.2025
Job No: xx-xxx
Project No: 0000
Drawn: BAK
Approved: APM

Owner
Design Built Homes

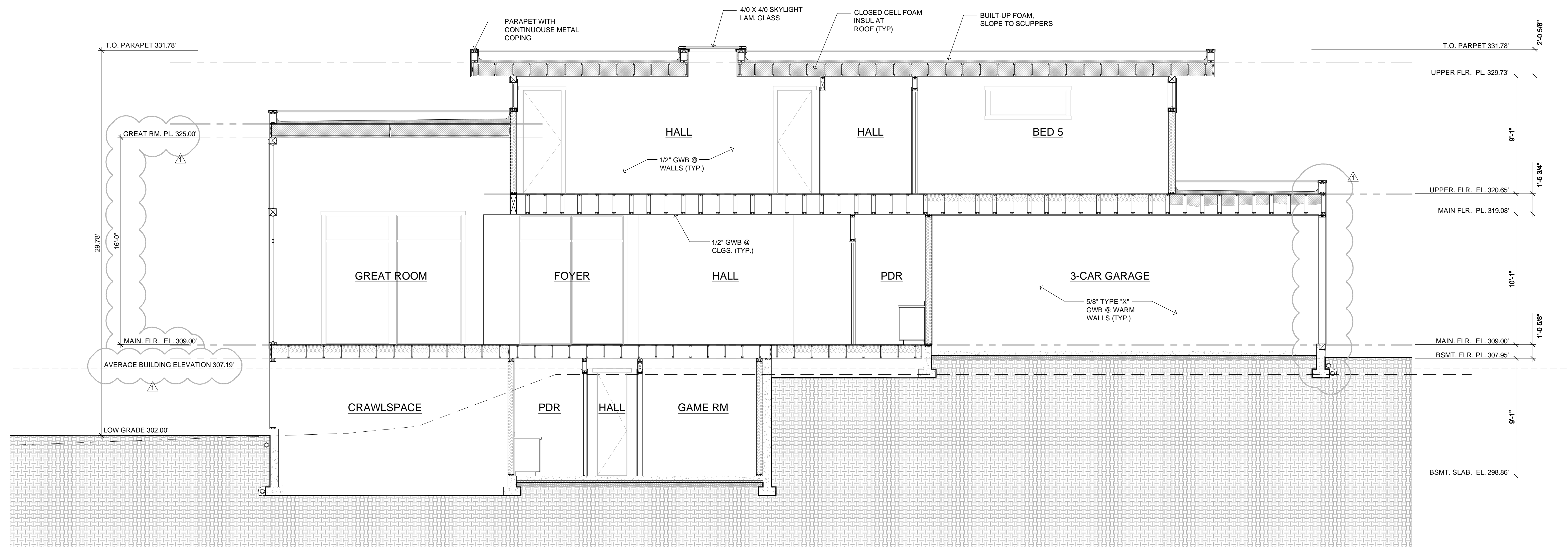


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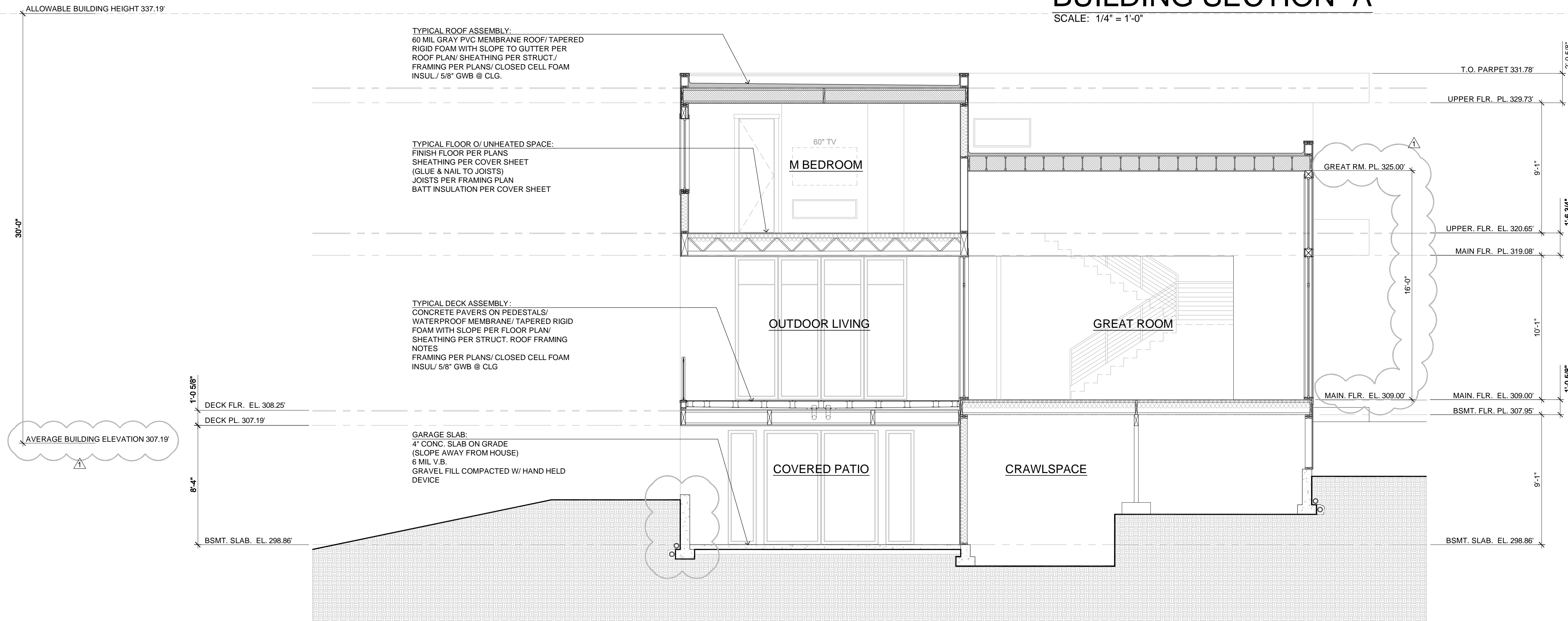
Exterior Elevations

A11



BUILDING SECTION A

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



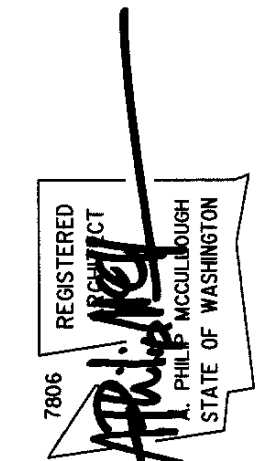
BUILDING SECTION B

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

Revisions	Comment
06.20.2025	1

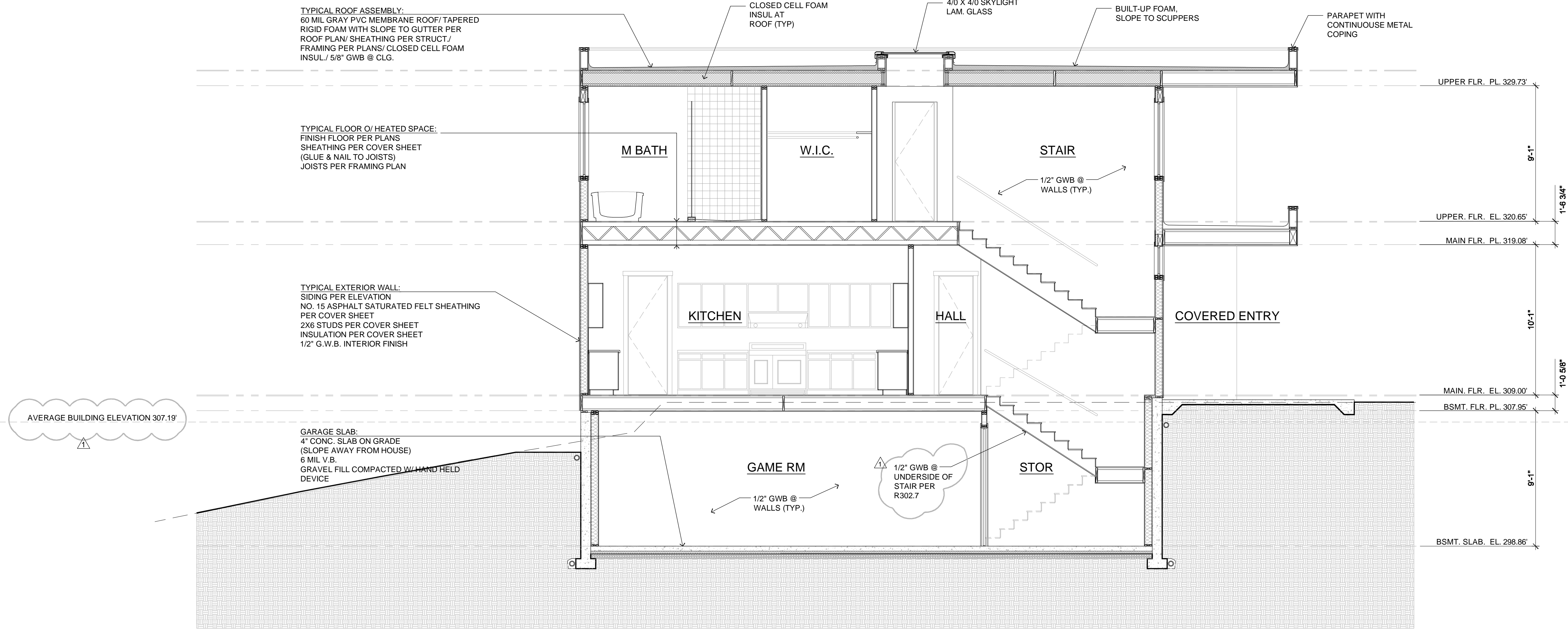
Date: 04.09.2025
Job No: xx-xxx
Project No: 00000
Drawn: BAK
Approved: APM

Owner
Design Built Homes

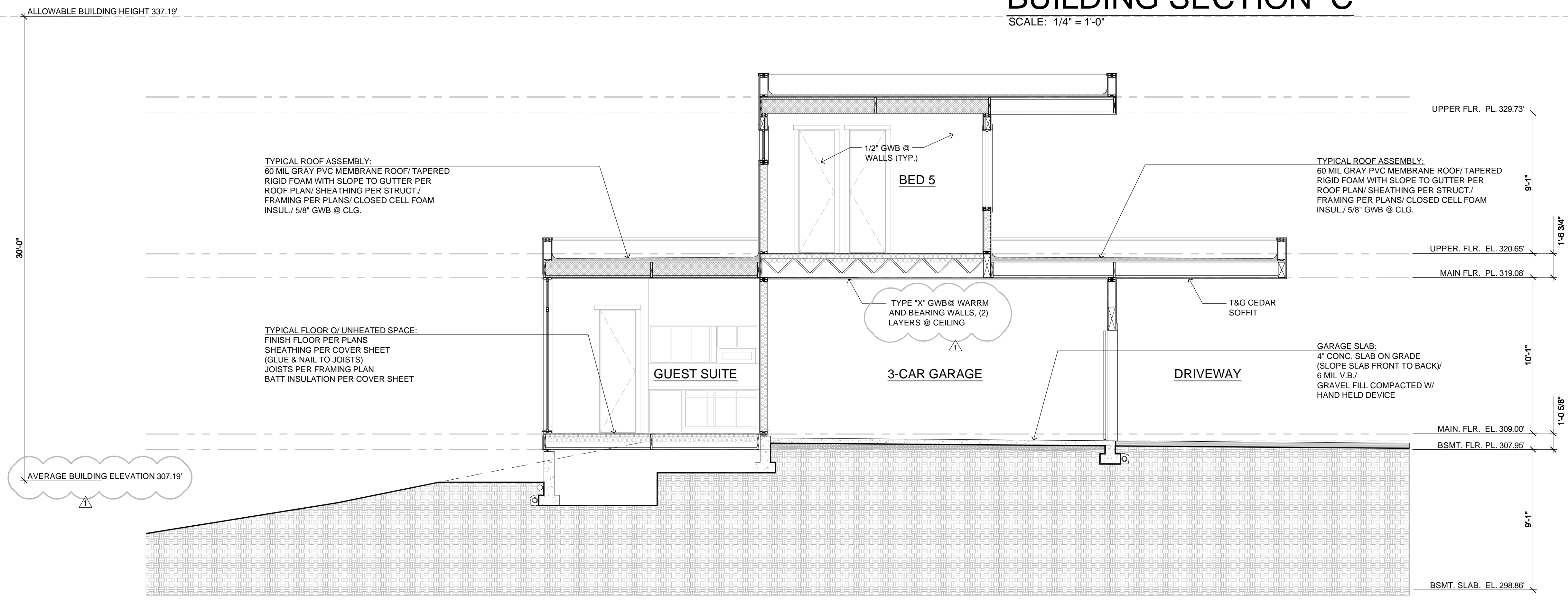


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BUILDING SECTION C
SCALE: 1/4" = 1'-0"

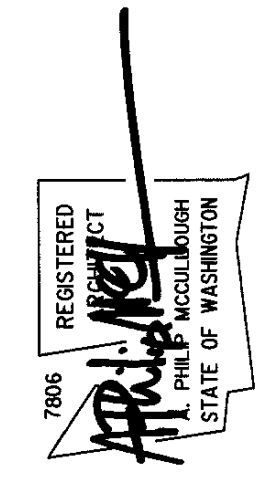


BUILDING SECTION D
SCALE: 1/4" = 1'-0"

Revisions	Comment
06.20.2025	1

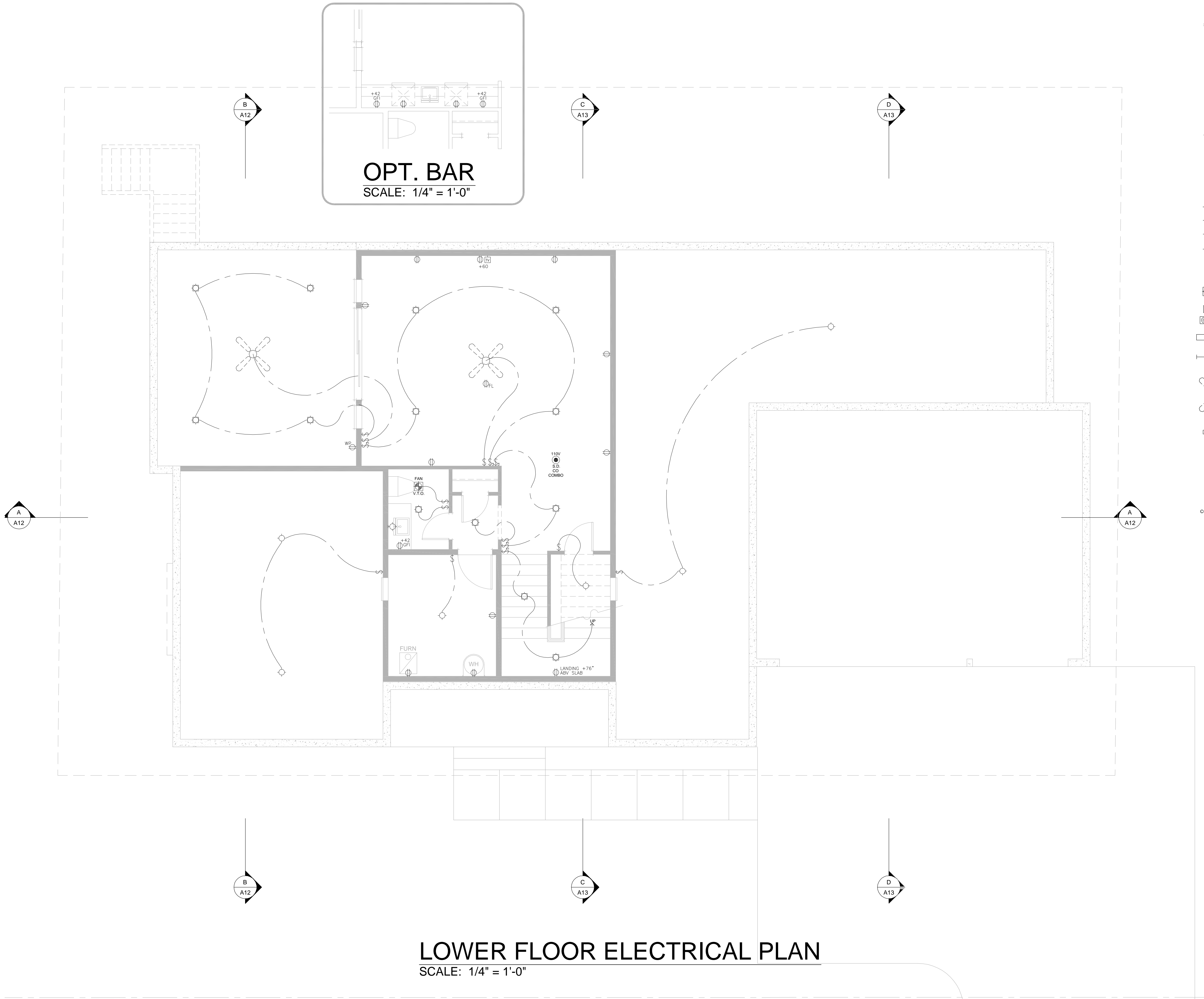
Date: 04.09.2025
Job No: xx-xxx
Project No: 00000
Drawn: BAK
Approved: APM

Owner: Design Built Homes



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OPT. BAR
SCALE: 1/4" = 1'-0"

LOWER FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

- LEGEND:**
- ⊕ DUPLEX OUTLET (110V AT +12" A.F.F. U.N.O.)
 - ⊕ 4 PLEX OUTLET (+12" A.F.F. U.N.O.)
 - ⊕ DUPLEX OUTLET (110V AT +12" A.F.F. U.N.O.) (SWITCHED)
 - ⊕_{WP} WATER PROOF DUPLEX OUTLET (110V AT +12" A.F.F. U.N.O.)
 - ⊕_{GFI} GROUND FAULT INTERRUPTER DUPLEX OUTLET (110V AT +12" A.F.F. U.N.O.)
 - ⊕_{FL} FLOOR OUTLET
 - ⊕_{CL} CEILING OUTLET
 - ⊕ 220V OUTLET
 - ⊕ TV OUTLET
 - ☐ TELEPHONE
 - ⊕ SWITCH
 - ⊕ 3 WAY SWITCH
 - ⊕ 4 WAY SWITCH
 - ⊕ DIMMER SWITCH
 - ⊕_{SC} SPEED CONTROL SWITCH
 - ⊕ WALL MOUNTED LIGHT FIXTURE
 - ⊕ CEILING MOUNT LIGHT FIXTURE
 - ⊕ PENDANT LIGHT FIXTURE
 - ⊕ RECESSED LIGHT FIXTURE
 - RECESSED WALL WASHER
 - RECESSED PIN SPOT
 - ⊕ EXHAUST FAN
 - ⊕ HEAT LAMP
 - ⊕ HEAT LAMP/EXHAUST FAN
 - ⊕ FLUORESCENT LIGHT FIXTURE, 1 X 4 SURFACE MOUNTED
 - ⊕ FLUORESCENT LIGHT FIXTURE, TASK LIGHT UNDER CABINET
 - ⊕ CEILING FAN
 - ⊕ JUNCTION BOX
 - ⊕ CHIMES
 - ⊕ GAS CONNECTION
 - ⊕ ALARM KEY PAD
 - ⊕ SMOKE DETECTOR
 - ⊕ SMOKE DETECTOR C.O. COMBO

McCULLOUGH ARCHITECTS

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Revisions

Revisions	Comment
02.20.2025	1

04.09.2025
xx-xxx
0000
BAK
APM

Date: 04.09.2025
Job No: xx-xxx
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Drawn: BAK
Approved: APM

Owner
Design Built Homes

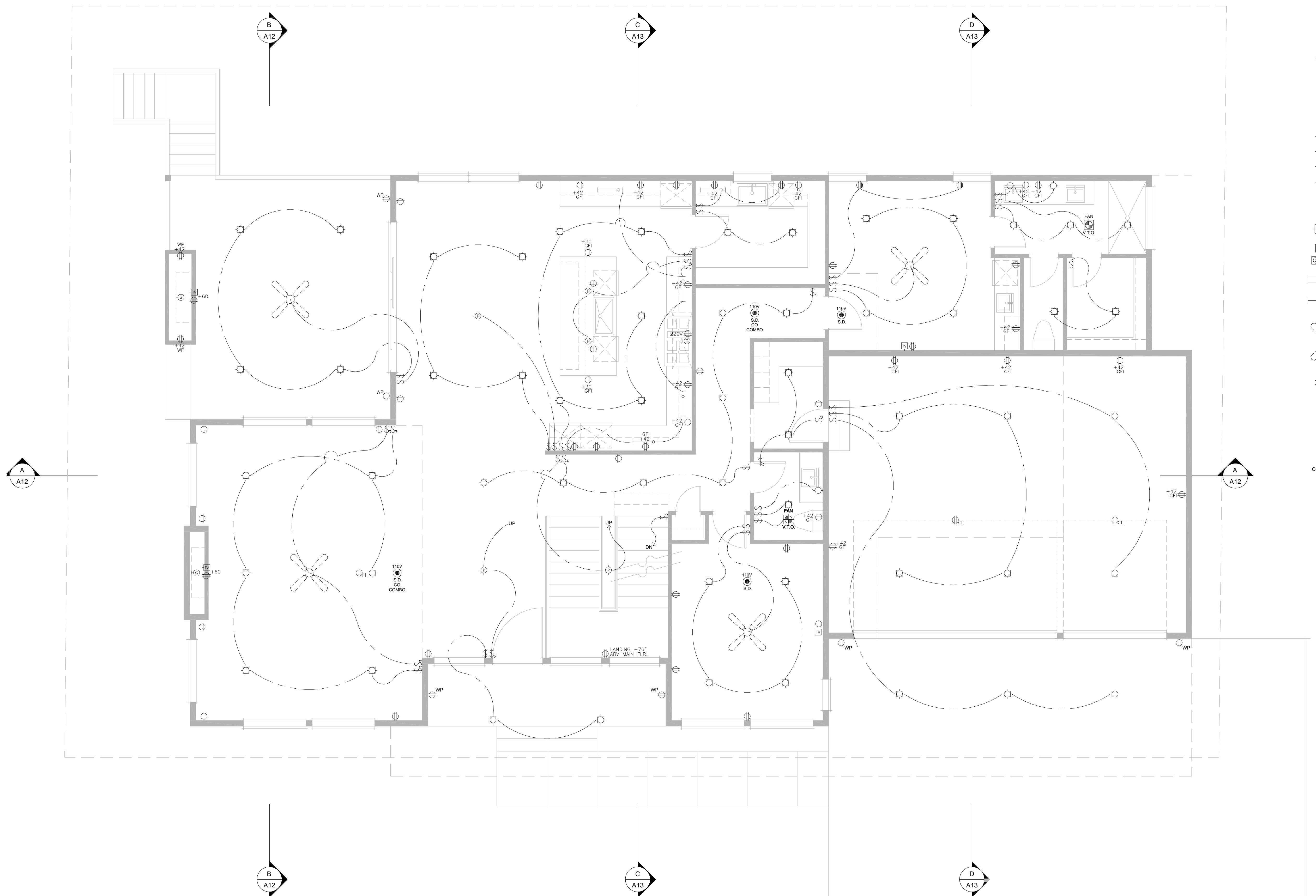
4715 86th Ave SE

Mercer Island, Washington

Lower Electrical Plan

EB

7806 REGISTERED PROFESSIONAL ENGINEER APRIL M. BAK STATE OF WASHINGTON



- LEGEND:**
- ⊕ DUPLICATION (110V AT +12' A.F.F. U.N.O.)
 - ⊕ 4PLEX OUTLET (+12' A.F.F. U.N.O.)
 - ⊕ DUPLICATION (110V AT +12' A.F.F. U.N.O.) (SWITCHED)
 - ⊕ WP WATER PROOF DUPLICATION OUTLET (110V AT +12' A.F.F. U.N.O.)
 - ⊕ GFI GROUND FAULT INTERRUPTER DUPLICATION OUTLET (110V AT +12' A.F.F. U.N.O.)
 - ⊕ FL FLOOR OUTLET
 - ⊕ CL CEILING OUTLET
 - ⊕ 220V OUTLET
 - ⊕ TV OUTLET
 - ⊕ TELEPHONE
 - ⊕ SWITCH
 - ⊕ 3 WAY SWITCH
 - ⊕ 4 WAY SWITCH
 - ⊕ DIMMER SWITCH
 - ⊕ SC SPEED CONTROL SWITCH
 - ⊕ WM WALL MOUNTED LIGHT FIXTURE
 - ⊕ CLM CEILING MOUNT LIGHT FIXTURE
 - ⊕ PL PENDANT LIGHT FIXTURE
 - ⊕ RLF RECESSED LIGHT FIXTURE
 - ⊕ RWL RECESSED WALL WASHER
 - ⊕ RPS RECESSED PIN SPOT
 - ⊕ EF EXHAUST FAN
 - ⊕ HL HEAT LAMP
 - ⊕ HLEF HEAT LAMP/EXHAUST FAN
 - ⊕ FLF FLUORESCENT LIGHT FIXTURE, 1 X 4 SURFACE MOUNTED
 - ⊕ FLFUC FLUORESCENT LIGHT FIXTURE, TASK LIGHT UNDER CABINET
 - ⊕ CF CEILING FAN
 - ⊕ JB JUNCTION BOX
 - ⊕ CH CHIMES
 - ⊕ GC GAS CONNECTION
 - ⊕ AKP ALARM KEY PAD
 - ⊕ SD SMOKE DETECTOR
 - ⊕ SDCO SMOKE DETECTOR C.O. COMBO

MAIN FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

McCULLOUGH
ARCHITECTS

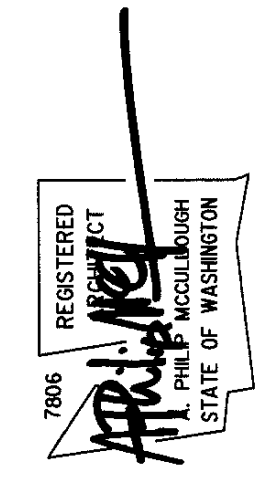
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Revisions	Comment
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Date: 04.09.2025
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Owner
Design Built Homes

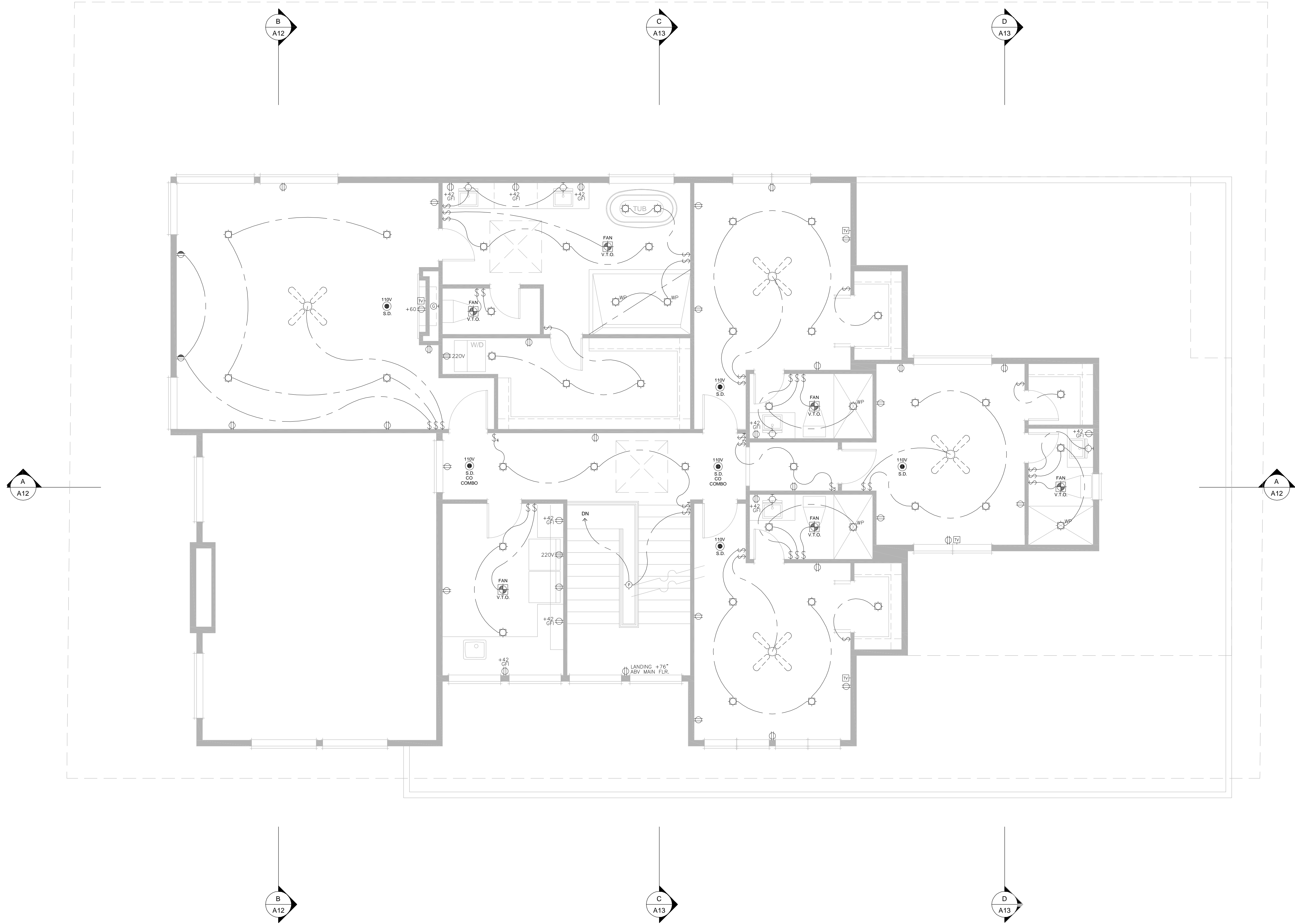


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Mercer Island, Washington

Main Electrical Plan





- LEGEND:**
- ⊕ DUPLEX OUTLET (110V AT +12' A.F.F. U.N.O.)
 - ⊕ 4PLEX OUTLET (+12' A.F.F. U.N.O.)
 - ⊕ DUPLEX OUTLET (110V AT +12' A.F.F. U.N.O.) (SWITCHED)
 - ⊕_{WP} WATER PROOF DUPLEX OUTLET (110V AT +12' A.F.F. U.N.O.)
 - ⊕_{GFI} GROUND FAULT INTERRUPTER DUPLEX OUTLET (110V AT +12' A.F.F. U.N.O.)
 - ⊕_F FLOOR OUTLET
 - ⊕_{CL} CEILING OUTLET
 - ⊕ 220V OUTLET
 - ⊕ TV OUTLET
 - ☎ TELEPHONE
 - ⚡ SWITCH
 - ⚡ 3 WAY SWITCH
 - ⚡ 4 WAY SWITCH
 - ⚡ DIMMER SWITCH
 - ⚡_{SC} SPEED CONTROL SWITCH
 - ⊕ WALL MOUNTED LIGHT FIXTURE
 - ⊕ CEILING MOUNT LIGHT FIXTURE
 - ⊕ PENDANT LIGHT FIXTURE
 - ⊕ RECESSED LIGHT FIXTURE
 - RECESSED WALL WASHER
 - RECESSED PIN SPOT
 - ⊕ EXHAUST FAN
 - ⊕ HEAT LAMP
 - ⊕ HEAT LAMP/EXHAUST FAN
 - ⊕ FLUORESCENT LIGHT FIXTURE, 1 X 4 SURFACE MOUNTED
 - ⊕ FLUORESCENT LIGHT FIXTURE, TASK LIGHT UNDER CABINET
 - ⊕ CEILING FAN
 - ⊕ JUNCTION BOX
 - ⊕ CHIMES
 - ⊕ GAS CONNECTION
 - ⊕ ALARM KEY PAD
 - ⊕ SMOKE DETECTOR
 - ⊕ SMOKE DETECTOR C.O. COMBO

UPPER FLOOR ELECTRICAL PLAN
 SCALE: 1/4" = 1'-0"

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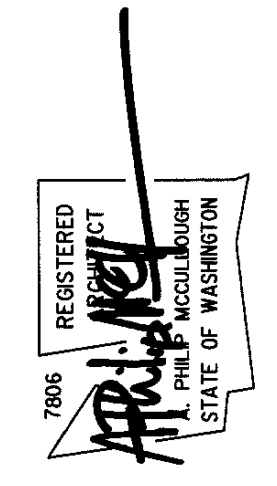
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Owner: Design Built Homes



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Mercer Island, Washington

BASEMENT SLAB
4" CONC. SLAB ON 10 MIL VAPOR BARRIER ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL
GARAGE SLAB
4" CONC. SLAB ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL
PORCH SLAB
4" CONC. SLAB ON GRADE ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

GENERAL STRUCTURAL NOTES	
FOUNDATION	
<ul style="list-style-type: none"> DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE & 2021 INTERNATIONAL BUILDING CODE DESIGN LOADS: <ul style="list-style-type: none"> SOIL: 2500 PSF ALLOWABLE BEARING PRESSURE PER EARTH SOLUTIONS N4 LLC GEOTECH REPORT DATED 02/01/2022 CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS IN 28 DAYS (UNO.) <ul style="list-style-type: none"> $f_c = 5000 \text{ psi}$ - FOUNDATION WALLS 5000 psi - FOOTINGS 2500 psi - INTERIOR SLABS ON GRADE 3500 psi - GARAGE & EXT. SLABS ON GRADE $f_y = 60000 \text{ psi}$ ALL CONCRETE HAS BEEN DESIGNED FOR 2500 PSI, ANYTHING GREATER THAN THIS SPECIFICATION IS FOR WEATHERING ONLY. ALL CONCRETE EXPOSED TO THE WEATHER SHALL NOT HAVE LESS THAN 5% OR MORE THAN 1% AIR ENTRAINMENT. FOUNDATION WALL DESIGN IS BASED ON BACKFILL SOIL PRESSURE OF 55 PCF AT-REST, 35 PCF ACTIVE & BH SEISMIC SURCHARGE. TYPICAL REINFORCEMENT DETAILS: LAP ALL REBAR 24" MIN. END BARS AND LAP AT CORNERS; PROVIDE 6" HOOK INTO SUPPORTING FOOTINGS WHEN FOOTINGS INTERSECT; PROVIDE 3" MINIMUM COVER AT THE BOTTOM BARS AND 1 1/2" COVER AT THE SIDES. FOUNDATION WALLS SHALL BE BRACED, PRIOR TO BACKFILLING, BY EITHER ADEQUATE TEMPORARY BRACING OR INSTALLATION OF FIRST FLOOR DECK. ALL FOOTINGS SHALL BEAR BELOW FROST LINE. CONSULT SOILS REPORT/LOCAL MUNICIPALITY FOR MINIMUM DEPTH BELOW GRADE. FOOTINGS AND SLABS ON GRADE SHALL BEAR ON VIRGIN SOIL OR 95% COMPACTED FILL. PROVIDE CONTROL JOINTS AT ALL INSIDE CORNERS OF SLAB EDGES, AND OTHER LOCATIONS WHERE SLAB CRACKS ARE LIKELY TO DEVELOP (8'-0" O.C.) FASTEN SILL PLATES TO FOUNDATION WALLS WITH 3/8" DIA. ANCHOR BOLTS W/ MIN. 3"x3"x 1/4" PLATE WASHERS (EDGE OF WASHER TO BE LOCATED WITHIN 1/2" OF EXTERIOR EDGE OF SILL PLATE) PROVIDE A MINIMUM OF 2 ANCHORS PER PLATE, 12" MAXIMUM FROM PLATE ENDS (UNO. SEE FND. DETAILS). ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT W/ CONCRETE OR MASONRY FOUNDATION SHALL BE PRESERVATIVE TREATED HEM FIR #2. ARCH/BUILDER TO VERIFY ALL DIMENSIONS 	

HOLD-DOWN SCHEDULE	
SYMBOL	SPECIFICATION
	SIMPSON 5THD14 (RJ) HOLD-DOWN
	SIMPSON C516 STRAP TIE (14" END LENGTH)
	SIMPSON MSTC40 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM UNO.)
	SIMPSON MSTC66 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM UNO.)

MEANS & METHODS NOTES	
<p>THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FINISHED AND ALL PLAN, DETAIL, AND NOTE SPECIFICATIONS HAVE BEEN COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS, AND TIE-DOWNS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING AND BRACING REQUIRED TO STABILIZE AND PROTECT EXISTING AND ADJACENT STRUCTURES AND SYSTEMS DURING COURSE OF DEMOLITION AND CONSTRUCTION OF THE PROJECT.</p> <p>STRUCTURAL DESIGN AND SPECIFICATIONS ASSUME THAT ALL SUPPORTING AND NON-SUPPORTING ELEMENTS IN CONTACT WITH FLOOR FRAMING ARE LEVEL, INCLUDING, BUT NOT LIMITED TO; FOUNDATIONS, SLABS ON GRADE, BEAMS, WALLS, AND NON-BEARING ELEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LEVELNESS AND MAKE ADJUSTMENTS AS NECESSARY, INCLUDING CONSIDERATION OF THOSE AREAS THAT MAY BE WITHIN CONTRACTUAL, INDUSTRY, OR WARRANTY TOLERANCES.</p>	

ADDITIONAL NOTES FOR TRUSS & I-JOIST MANUFACTURER	
<p>ROOF TRUSS, FLOOR TRUSS AND ENGINEERED JOISTS SHALL BE DESIGNED TO MEET THE DIFFERENTIAL DEFLECTION CRITERIA BELOW UNLESS NOTED OTHERWISE ON PLAN. MULHERN & KULP CANNOT BE HELD RESPONSIBLE FOR ANY STRUCTURAL ISSUES RELATED TO ANY BUILDING COMPONENT IF COMPONENT SHOP DRAWINGS ARE NOT SUBMITTED TO MK FOR REVIEW PRIOR TO FABRICATION, DELIVERY, OR INSTALLATION.</p> <p>TRUSSES SHALL BE DESIGNED SO THAT DIFFERENTIAL DEFLECTION BETWEEN ADJACENT PARALLEL TRUSSES OR GIRDER TRUSSES DOES NOT EXCEED THE FOLLOWING:</p> <p>A. ROOF TRUSSES: 1/4" DEAD LOAD B. FLOOR TRUSSES, ATTIC TRUSSES, & I-JOISTS: 1/8" DEAD LOAD C. FLOOR TRUSSES & ATTIC TRUSSES ADJACENT TO FLOOR FRAMING BY OTHERS: LIMIT ABSOLUTE TRUSS DEFLECTION TO 3/16" DEAD LOAD. (NOT DIFFERENTIAL DEFLECTION)</p>	

LOADING AND DESIGN PARAMETERS	
GRAVITY DESIGN LOADS:	
DEAD LOAD (PSF):	
ROOF TRUSSES TOP CHORD:	10
ROOF TRUSSES BOTTOM CHORD:	7
FLOOR TRUSSES:	15
FLOOR (2x):	10
LIVE LOAD (PSF):	
ROOF:	20
RESIDENTIAL LIVING AREAS:	40
RESIDENTIAL SLEEPING AREAS:	30
GARAGE:	50
SNOW LOAD:	
GROUND SNOW LOAD (P _s) (PSF):	25
FLAT ROOF SNOW LOAD (P _f) (PSF):	25
SNOW EXPOSURE FACTOR (C _e):	0.8
SNOW LOAD IMPORTANCE FACTOR (I):	1.0
THERMAL FACTOR (C _t):	1.2
LATERAL DESIGN LOADS:	
WIND LOAD: (IBC 1609)	
SPEED (V _w) (MPH):	100
WIND RISK CATEGORY:	II
IMPORTANCE FACTOR (I _w):	1.0
EXPOSURE CATEGORY:	B
INTERNAL PRESSURE COEFF. (C _{gi}):	0.18
TOPOGRAPHIC FACTOR (K _z):	1.00
SEISMIC LOAD: (IBC 1601)	
SEISMIC RISK CATEGORY:	II
SEISMIC IMPORTANCE FACTOR (I _s):	1.0
MAPPED SPECTRAL RESPONSE:	
S _e : 1.405	S _e : 0.481
SITE CLASS:	D
SPECTRAL RESPONSE COEFF.:	
S _m : 1.124	S _m : 0.540
SEISMIC DESIGN CATEGORY:	D
BASIC SEISMIC-FORCE-RESISTING SYS:	
LIGHT FRAMED WALLS	
WOOD STRUCTURAL PANELS	
ULTIMATE BASE SHEAR:	
TRANS: 21 k	LONG: 27 k
SEISMIC RESPONSE COEFF. (C _w):	
TRANS: 0.175	LONG: 0.175
RESPONSE MODIFICATION FACTOR (R):	
TRANS: 6.5	LONG: 6.5
ANALYSIS PROCEDURE USED:	
EQUIVALENT LATERAL FORCE	

LATERAL BRACING NOTES	
<p>THIS HOME HAS BEEN ENGINEERED TO RESIST LATERAL FORCES RESULTING FROM: 100 MPH WIND SPEED, EXP. B (ASCE 7-16 WIND MAP, PER IRC R301.2.1.1) RISK CAT. 2 & SEISMIC CAT. D2.</p> <p>100 MPH WIND IN 2021 IRC MAP ENGINEERED DESIGN WAS COMPLETED PER 2021 IBC (SECTION 1604 & 1613) & ASCE 7-16, AS PERMITTED BY R301.3 OF THE 2021 IRC. ACCORDINGLY, THIS HOME, AS DOCUMENTED AND DETAILED HEREWITHIN, IS ADEQUATE TO RESIST THE CODE REQUIRED LATERAL FORCES, AND DOES NOT NEED TO CONFORM TO THE PRESCRIPTIVE PROVISIONS OF R602.10.</p>	
STANDARD EXTERIOR WALL SHEATHING SPECIFICATIONS (INTERIOR WALL SPECIFICATION WHERE NOTED ON PLANS)	
<ul style="list-style-type: none"> 3/8" OSB OR 1/2" PLYWOOD: <p>FASTEN SHEATHING W/ 2 1/2"x0.131" NAILS @ 6" O.C. AT ALL SUPPORTED PANEL EDGES AND 12" O.C. IN THE PANEL FIELD. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE. ALL EXTERIOR WALLS SHALL BE CONSTRUCTED PER THIS SPECIFICATION UNO. ON PLANS.</p>	
3" O.C. EDGE NAILING (WHERE NOTED ON PLANS)	
<ul style="list-style-type: none"> 3/8" OSB OR 1/2" PLYWOOD: <p>ONLY AT LOCATIONS INDICATED ON PLANS - SHEATH WALL SHOWN WITH 3/8" OSB. FASTEN SHEATHING W/ 2 1/2"x0.131" NAILS @ 3" O.C. AT EDGES AND 12" O.C. AT CENTER. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE AND 3" O.C. FASTENING.</p>	
NOTES:	
<ol style="list-style-type: none"> LATERAL ANALYSIS ASSUMES STUD SPACING @ 16" O.C. ALL SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES FASTENED TOGETHER W/ 3"x0.131" NAILS @ 8" O.C. USE (12) 3/8"x0.131" NAILS AT EACH LAP SPlice, (6) EACH SIDE OF JOINT (TYP. UNO.) ALL EXTERIOR WALLS ARE CONTINUOUSLY SHEATHED. ALL INTERIOR SHEAR WALLS AND EXTERIOR WALLS ARE SHEATHED ABOVE AND BELOW OPENINGS. 	

LEGEND	
	INTERIOR BEARING WALL
	BEARING WALL ABOVE (B.W.A.), OR SHEARWALL ABOVE (S.W.A.)
	BEAM / HEADER
	INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/ 3" O.C. EDGE NAILING ABOVE (S.W.A.)
	AREA OF OVERFRAMING
	JL METAL HANGER
	* INDICATES POST ABOVE (P.A.). PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE.
	▷ INDICATES HOLDDOWN.

GENERAL STRUCTURAL NOTES	
DESIGN PARAMETERS	
<ul style="list-style-type: none"> DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE & 2021 INTERNATIONAL BUILDING CODE WOOD FRAME ENGINEERING IS BASED ON NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" - LATEST EDITION. 	
GENERAL FRAMING	
<ul style="list-style-type: none"> EXTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (W/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO. INTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (W/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO. ALL NON-BEARING INTERIOR STUD WALLS SHALL BE CONSTRUCTED WITH 2x "STUD" GRADE MEMBERS SPACED @ 24" O.C. (MAX). ALL WALLS TALLER THEN TYP. PLATE HEIGHT SHALL BE CONSIDERED BALLOON FRAMED & SHALL BE CONSTRUCTED FROM FLOOR TO UNDERSIDE OF FRAMING AT NEXT LEVEL. B.F. WALLS SHALL BE 2x6 HEM FIR (HF) #2 GRADE LUMBER, OR BETTER, UNO. ALL SHEATHING AND LEDGERS ARE TO BE DIRECTLY APPLIED AND FASTENED TO FRAMING. DO NOT PROVIDE CONTINUOUS INSULATION BETWEEN FRAMING AND SHEATHING/LEDGERS. ALL HEADERS SHALL BE SUPPORTED BY (1) 2x JACK STUD & (1) 2x KING STUD, MINIMUM. <ul style="list-style-type: none"> THE NUMBER OF STUDS SPECIFIED AT A SUPPORT INDICATES THE NUMBER OF JACK STUDS REQUIRED, UNO. BUILT-UP POSTS SHALL BE 2x4 OR 2x6 HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO. & SOLID WOOD COLUMNS SHALL BE SPRUCE PINE FIR (SPF) #2 GRADE LUMBER, OR BETTER, UNO. ALL 2x6 AND LARGER SOLID SAWN BEAMS/HEADERS SHALL BE HEM FIR #2 (HF #2) OR BETTER. ALL 4x6 AND LARGER SOLID SAWN LUMBER SHALL BE DOUG FIR #2 (DF #2) OR BETTER. ALL FRAMING LUMBER SHALL BE KILN DRIED TO 15% MC (KD-15). ALL TYP. NAIL FASTENER REQUIREMENTS ARE NOTED IN GENERAL NOTES, IN DETAILS, OR ON PLANS. ALL NAILS SPECIFIED ARE MIN DIAMETER AND LENGTH REQUIRED FOR CONNECTION. ALL HANGER NAILS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS FOR MAX CHARTED CAPACITY. NOTE: HANGERS USE COMMON NAIL DIAMETERS NOT TYPICAL FRAMING GUN NAILS. FASTEN ALL BEAMS TO COLUMNS, OR FLUSH BEAMS TO SUPPORTING BEAMS, W/ (4) 3"x0.131" TOENAILS (MN), TYP. UNO. PROVIDE SOLID BLOCKING IN FLOOR SYSTEM UNDER ALL POSTS & HOLD-DOWNS CONTINUOUS TO FOUNDATION/BEARING. BLOCKING TO MATCH POST ABOVE. ENGINEERED LUMBER TO MEET OR EXCEED THE FOLLOWING: <ul style="list-style-type: none"> LSL MEMBERS - Fb=2325 PSI; Fv=910 PSI; E=1.55x10⁶ PSI LVL MEMBERS - Fb=2600 PSI; Fv=285 PSI; E=2.0x10⁶ PSI SLB MEMBERS - Fb=2400 PSI; Fv=1850 PSI; Fv=265 PSI; E=1.8x10⁶ PSI; DF/DF; 24F-V4 (UNO) ENGINEERED LUMBER POSTS TO MEET OR EXCEED THE FOLLOWING: <ul style="list-style-type: none"> LVL MEMBERS - Fb=2400 PSI; Fc=12500 PSI; E=1.8x10⁶ PSI FACE NAIL MULTI-PLY 2x BEAMS & HEADERS W/ 3-RINGS OF 3"x0.131" NAILS (MN) @ 12" O.C. STAGGERED, APPLY NAILING FROM BOTH FACES @ 3-PLY OR MORE CONDITIONS. UTILIZE 2 ROWS OF NAILS FOR 2x6 & 2x8 MEMBERS. TRUSS SHOP DWGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PROPOSED CONSTRUCTION SHALL BE SUBMITTED TO BUILDING DESIGNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY IN ACCORDANCE WITH TPI-1 2.3.2.3 & 2.3.4.3. REFER TO IRC FASTENING SCHEDULE TABLE R602.3(1) FOR ALL CONNECTIONS, TYP. UNO. BUILDER RESPONSIBLE TO DETERMINE CORROSION-RESISTANCE REQUIREMENTS AND COMPATIBILITY OF HARDWARE, FASTENERS AND CONNECTORS FOR ENVIRONMENTAL EXPOSURE AND IN CONTACT W/ PRESERVATIVE-TREATED WOOD OF ACTUAL FINAL CONDITIONS AND SOURCED MATERIALS. CONTACT LUMBER & HARDWARE SUPPLIERS TO COORD. IN THE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, NOT LESS THAN ASTM A653, TYPE G95 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED. 	
ROOF FRAMING	
<ul style="list-style-type: none"> I-JOISTS/TRUSSES SHALL BE DESIGNED BY MANUF. TO MEET OR EXCEED L/480 LIVE LOAD DEFLECTION CRITERIA AND SHALL RUN CONTINUOUS OVER SUPPORTS WHEREVER POSSIBLE. ALL LOADS SHOWN ON PLAN FOR MANUF. DESIGNS ARE ASD LEVEL LOADS, UNO. (EXCLUDES STONE/MARBLE OR NET BED CONSTRUCTED FLOORS - CONTACT MK FOR EXCLUDED DESIGNS). ALL METAL I-JOIST/TRUSS HANGERS SHALL BE SPECIFIED BY I-JOIST/TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED. 2x FLOOR JOISTS HAVE BEEN DESIGNED TO MEET OR EXCEED L/360 LIVE LOAD DEFLECTION CRITERIA. TYPICAL 2x JOIST HANGERS (UNO. ON PLANS): <ul style="list-style-type: none"> SINGLE PLY: SIMPSON LUS210 DOUBLES: SIMPSON LUS210-2 FLOOR SHEATHING SHALL BE 23/32" A.P.A. RATED 5/16" FLOOR 24" O.C. EXPOSURE 1 (OR APPROVED EQUAL) WITH TONGUE AND GROOVE EDGES. FASTEN TO FRAMING MEMBERS W/ GLUE AND 2 1/2" x 0.131" NAILS @ 6" O.C. @ PANEL EDGES & @ 12" O.C. FIELD. ALL FLUSH CONNECTIONS SHALL BE CONNECTED WITH HANGER APPROPRIATE FOR MEMBER SIZE, UNO. FASTEN HANGERS TO SINGLE PLY FLUSH BEAMS W/ 1/2" LONG NAILS. 	
ROOF FRAMING	
<ul style="list-style-type: none"> FASTEN EACH ROOF TRUSS TO TOP PLATE W/ (4) 3"x0.131" TOENAILS (MN) & (1) SIMPSON SDW2500 SCREW @ ALL BEARING POINTS. PROVIDE (2) SIMPSON H25T CLIPS AT 2-PLY GIRDER TRUSSES, (2) SIMPSON H25T CLIPS AT 3-PLY GIRDER TRUSSES AT ALL BEARING POINTS. FASTEN EACH ROOF RAFTER TO TOP PLATE WITH (1) SIMPSON H25T CLIPS. PROVIDE (2) SIMPSON H25T CLIPS AT FLUSH BEAMS IN THE ROOF - AT ALL BEARING POINTS. ROOF SHEATHING SHALL BE 7/16" A.P.A. RATED SHEATHING 24/16 EXPOSURE 1 (OR APPROVED EQUAL). FASTEN TO FRAMING MEMBERS W/ 2 1/2" x 0.131" NAILS @ 6" O.C. AT PANEL EDGES & @ 6" O.C. AT INTERMEDIATE SUPPORTS. ROOF SHEATHING SHALL EXTEND BELOW ALL INSTANCES OF OVERFRAMING. BLOCKING SHALL BE INSTALLED AS REQUIRED TO LIMIT ROOF SHEATHING SPANS TO 24" MAX. ALL METAL HANGERS SHALL BE SPECIFIED BY THE TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED. ROOF TRUSS SHOP DRAWINGS & CALCULATIONS SHALL BE DESIGNED FOR UNBALANCED SNOW LOADING PER ASCE 7-16, SECTION 7.6. ERECT AND INSTALL ROOF TRUSSES PER FIG. 4 & FIGS. BC511-08. GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES. FASTEN OVER-FRAMED TRUSS SETS TO TRUSSES BELOW W/ (2) 3"x0.131" TOENAILS AT EA. TRUSS. FASTEN ALL INTERIOR NON-BEARING PARTITION WALLS TO TRUSS BOTTOM CHORD ABOVE WITH SIMPSON 5TG CLIPS AT 24" O.C. MAX. PROVIDE BLOCKING BETWEEN THE TRUSS BOTTOM CHORDS AS REQUIRED FOR THE PARALLEL CONDITIONS. 	



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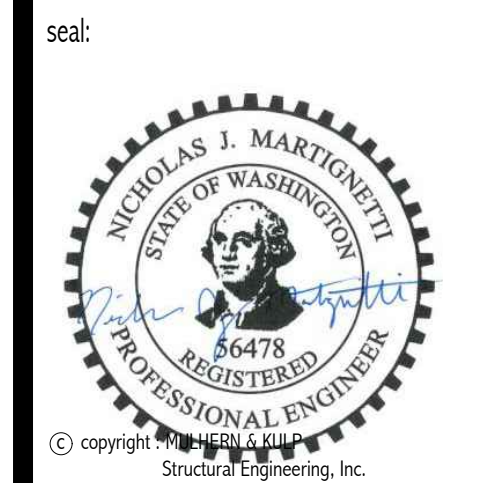
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project mgr:	NJM
drawn by:	RSC
issue date:	11-04-24
REVISIONS:	
date:	initial:
12-31-2024	RJD
ARCH REVISIONS	
04-08-2025	RSC
GEOTECH REPORT	
06-18-2025	RJD
ARCH REVISIONS	

DESIGN BUILT
HOMES

STRUCTURAL NOTES

86TH AVE SE
LOT 2
MERCER ISLAND, WA

sheet: **S-O-O**



M&K project number:
244-24010

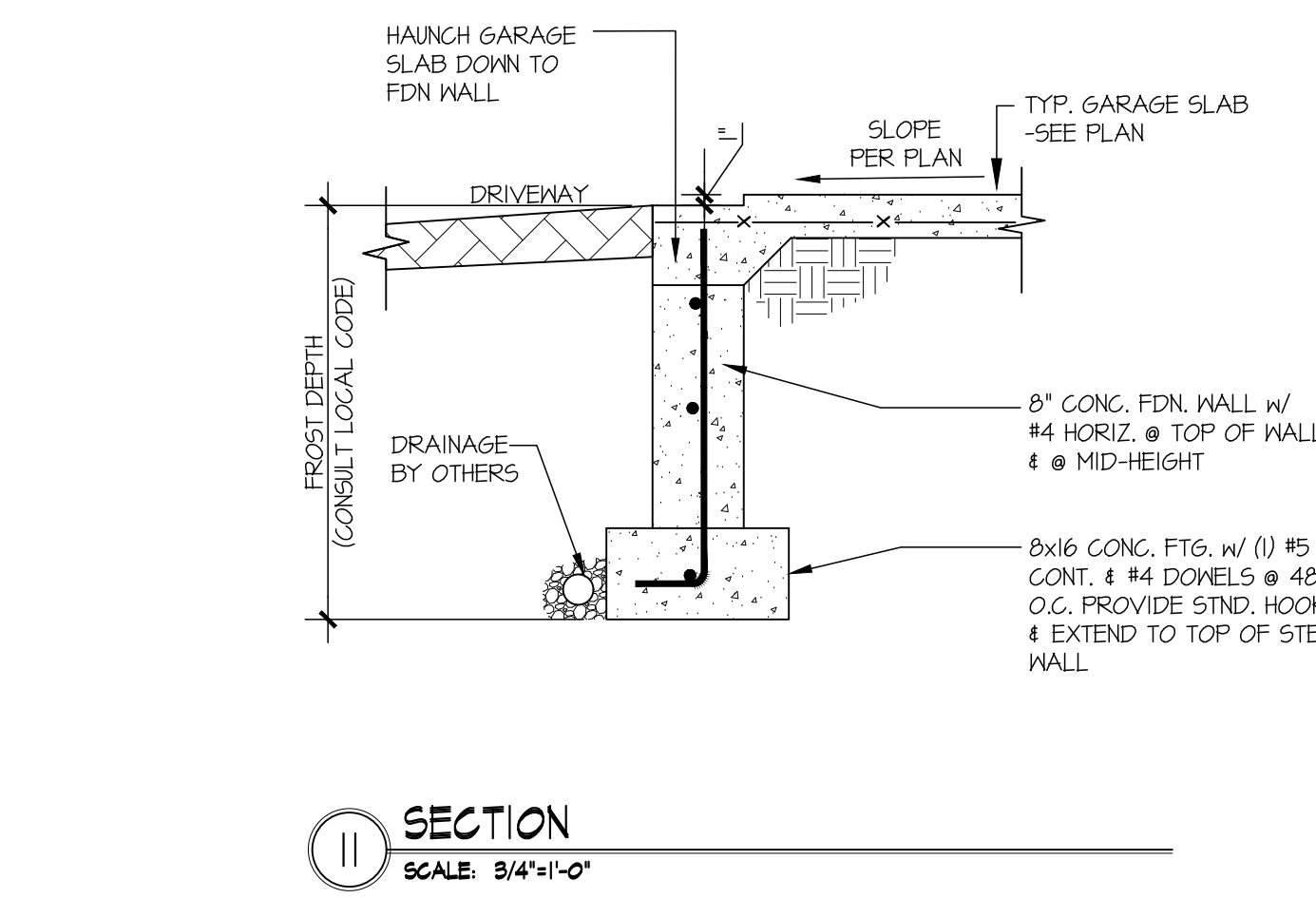
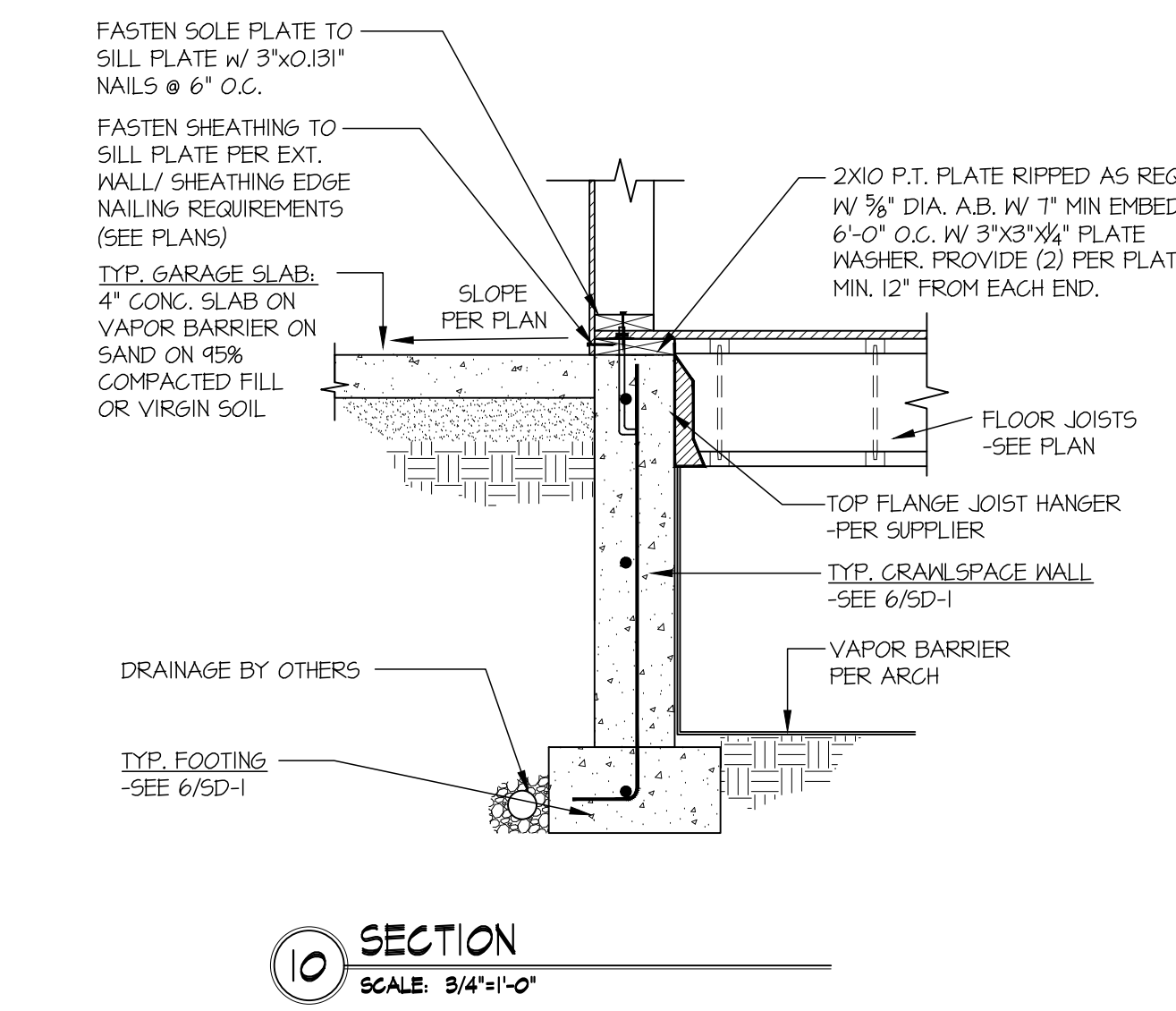
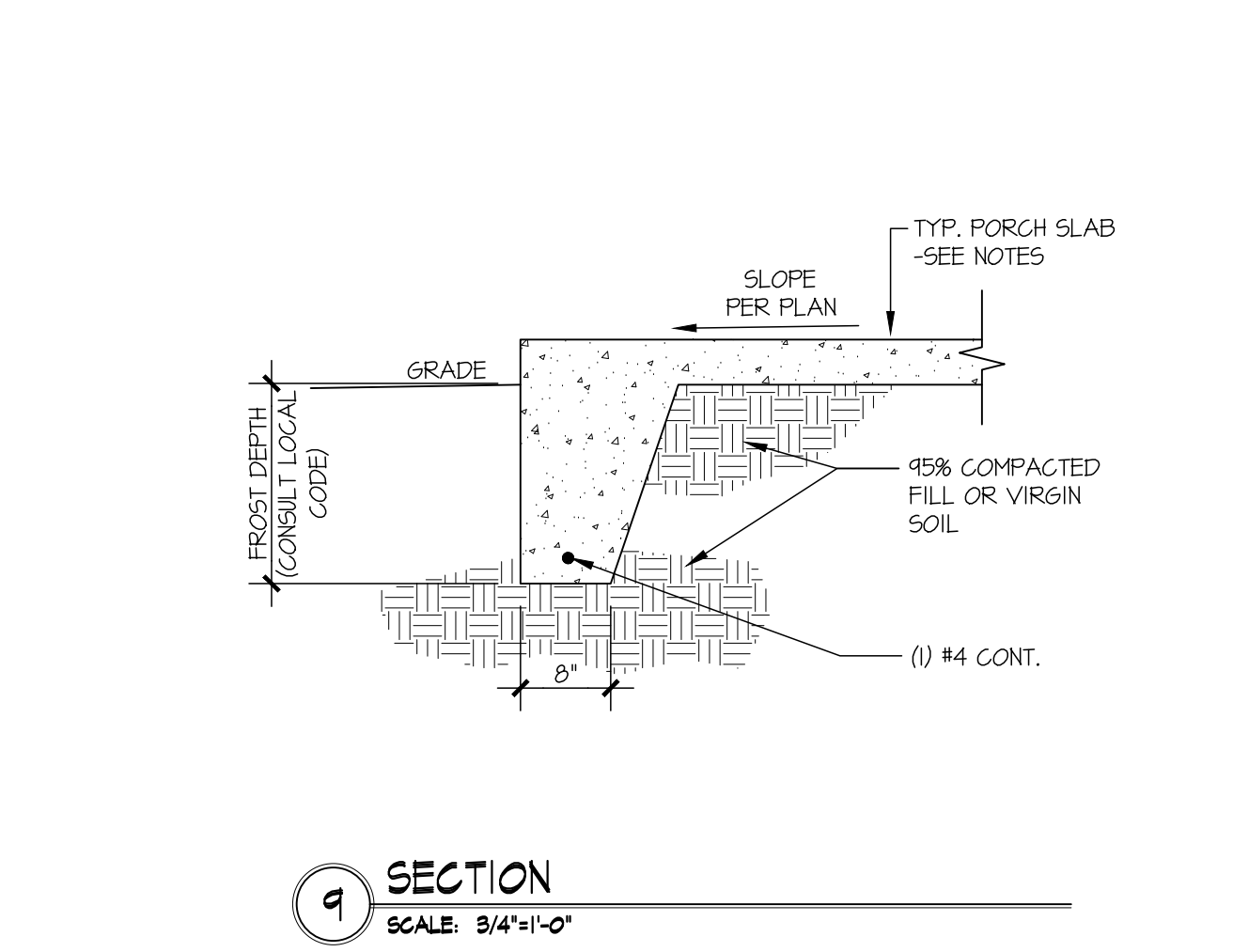
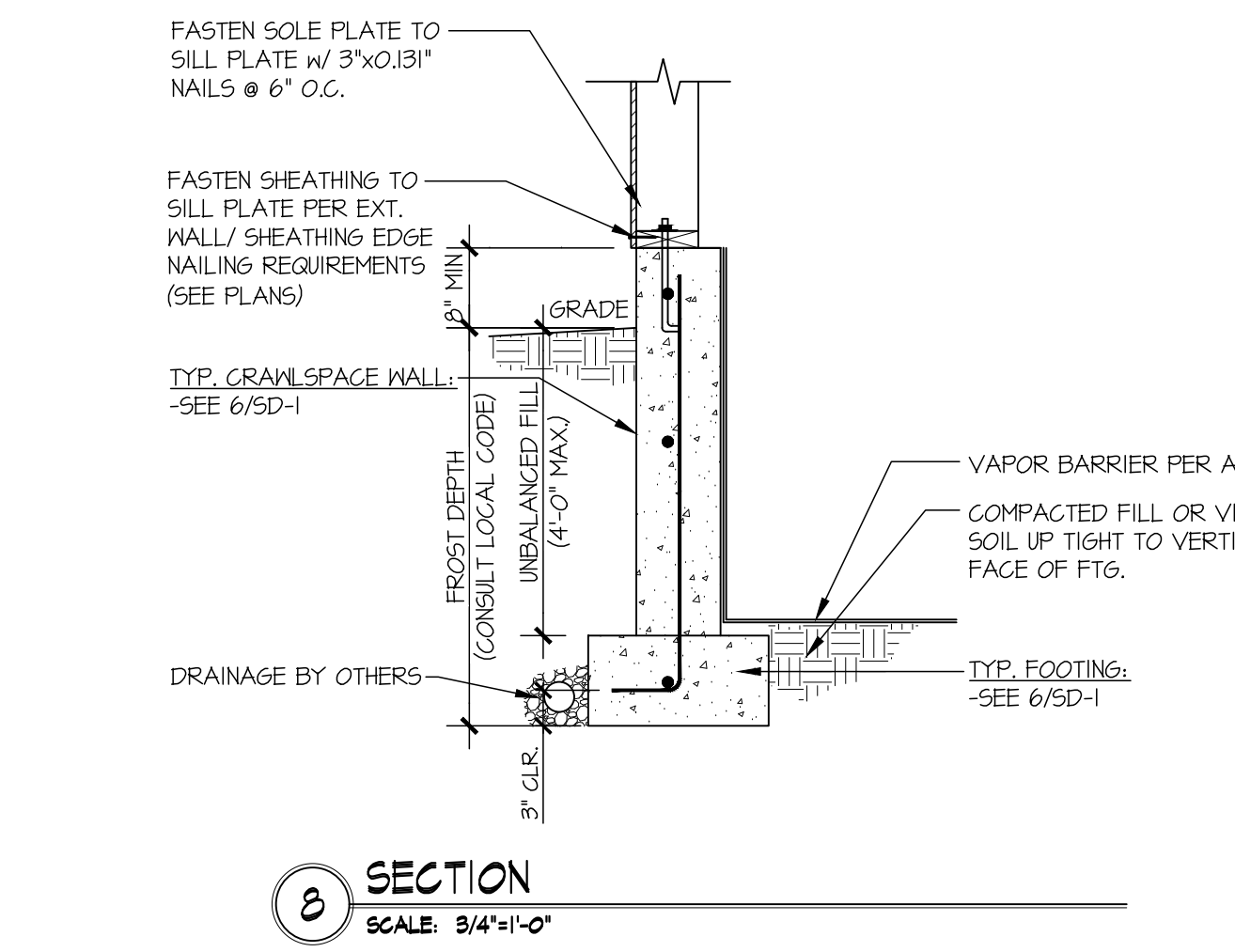
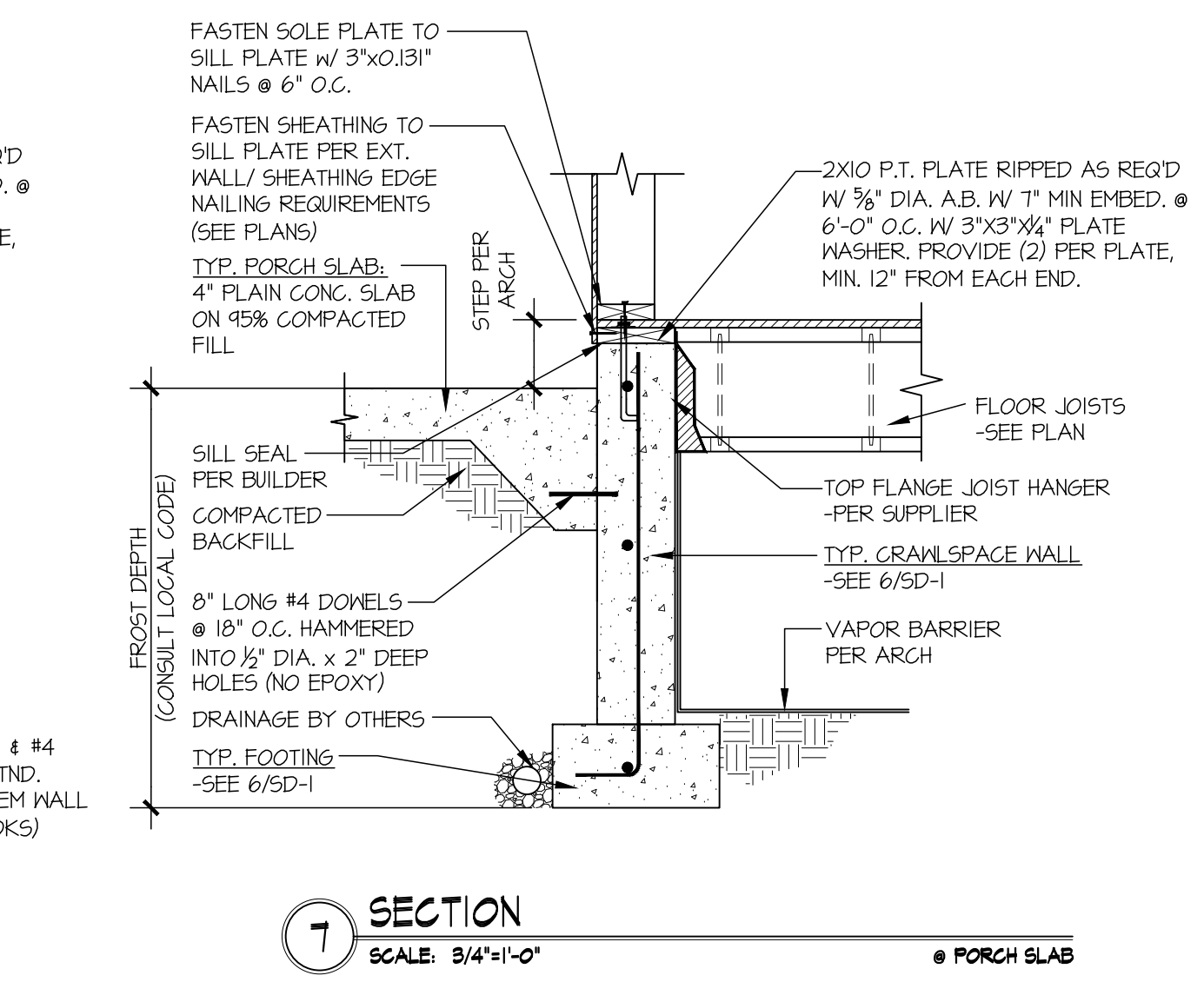
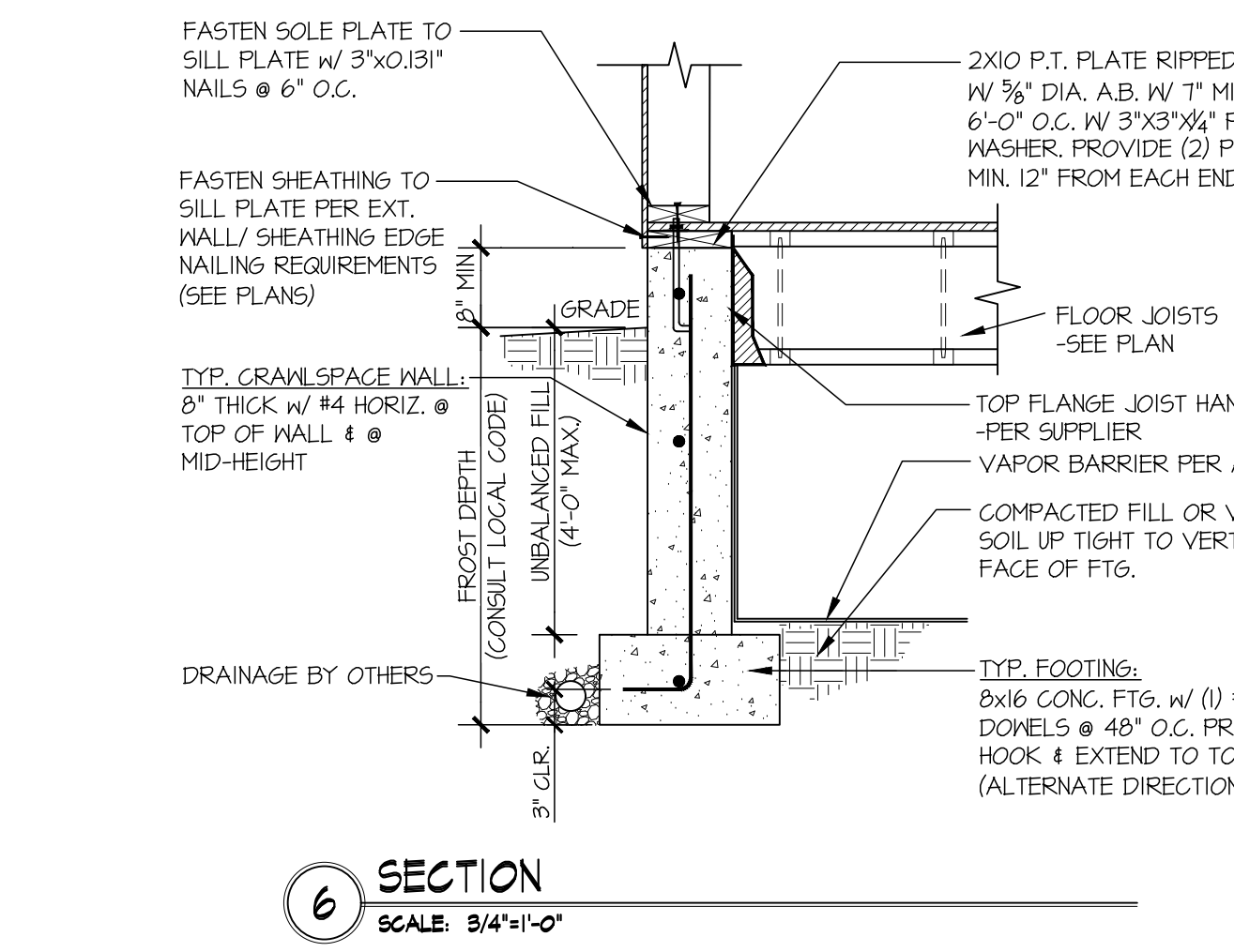
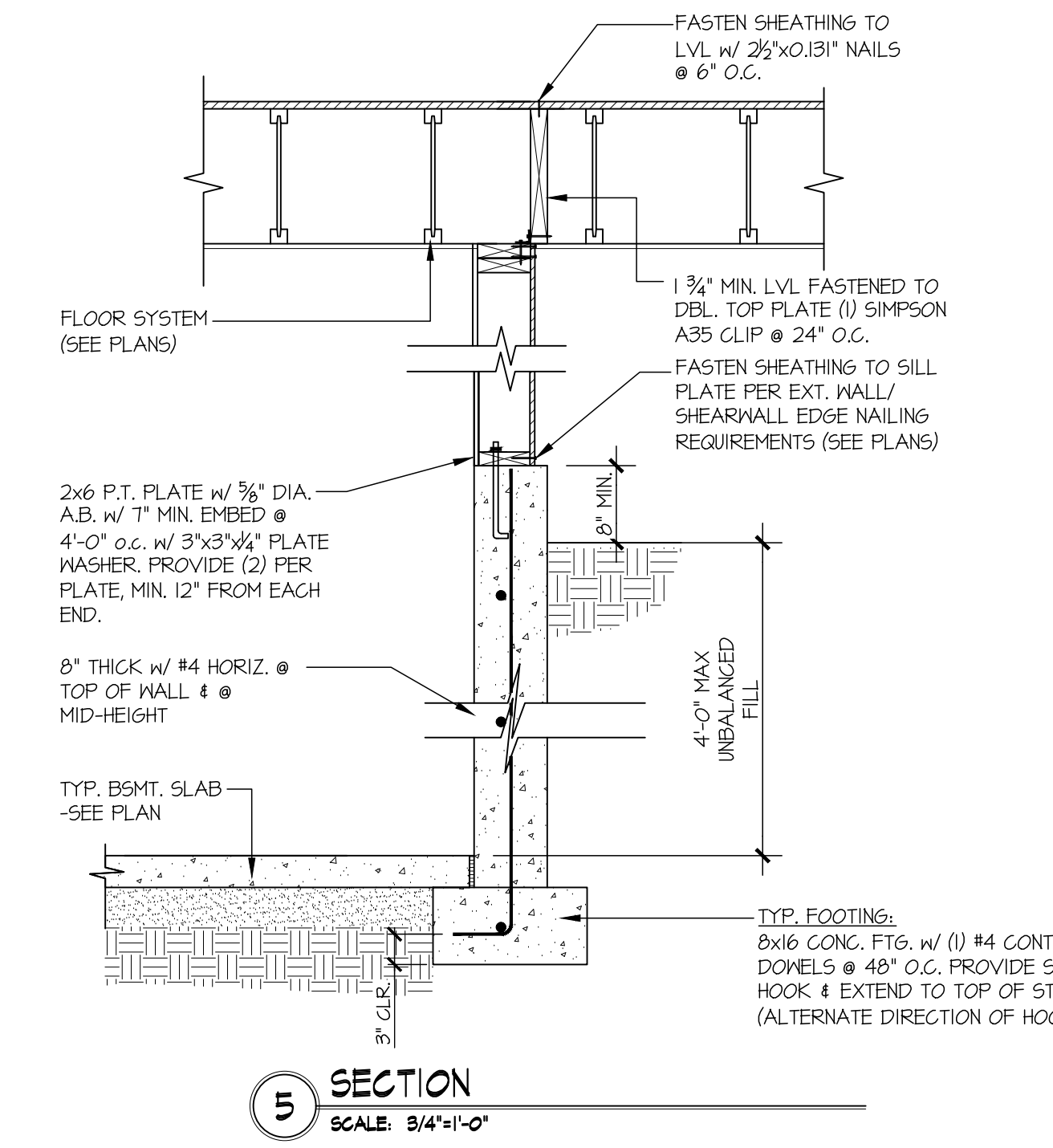
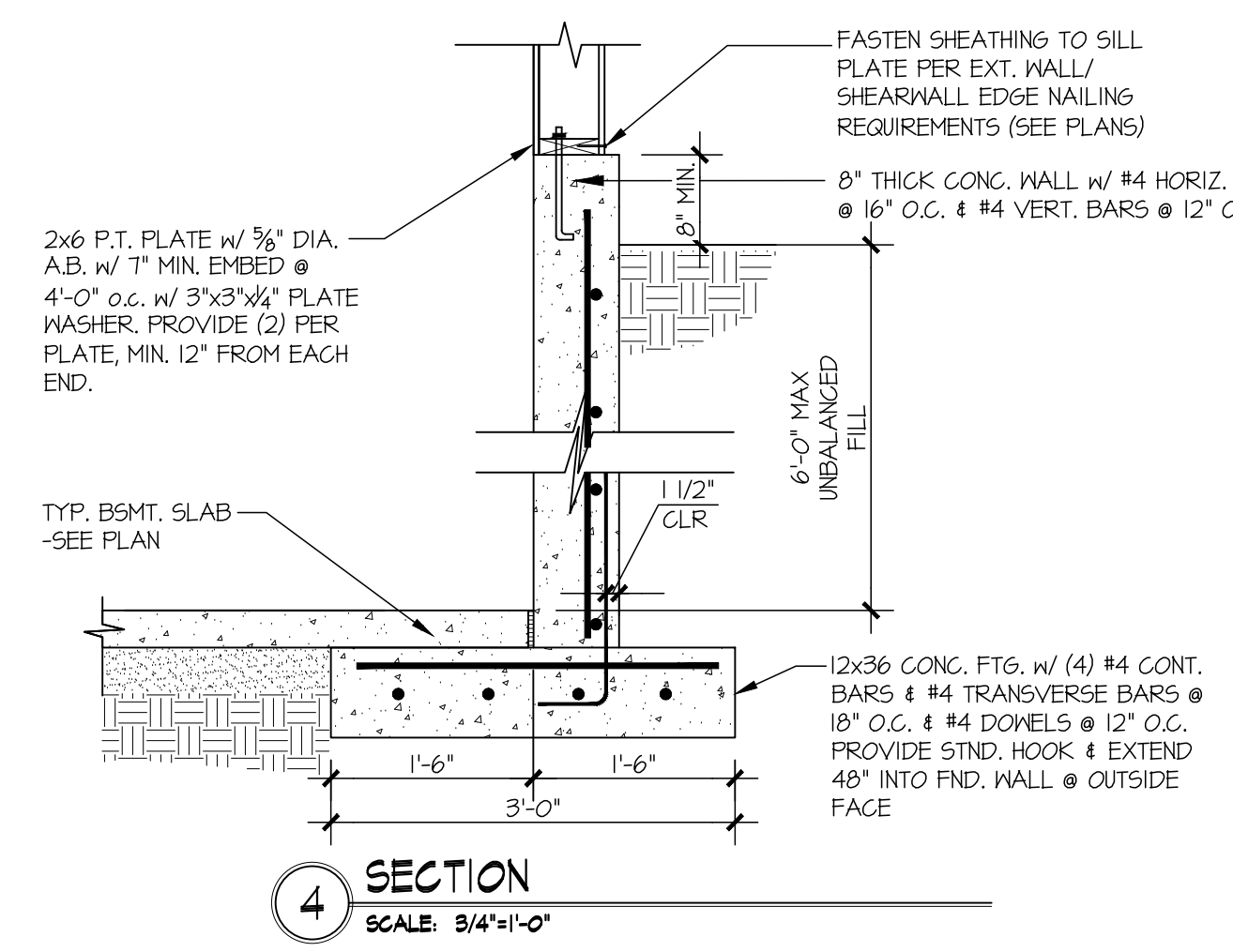
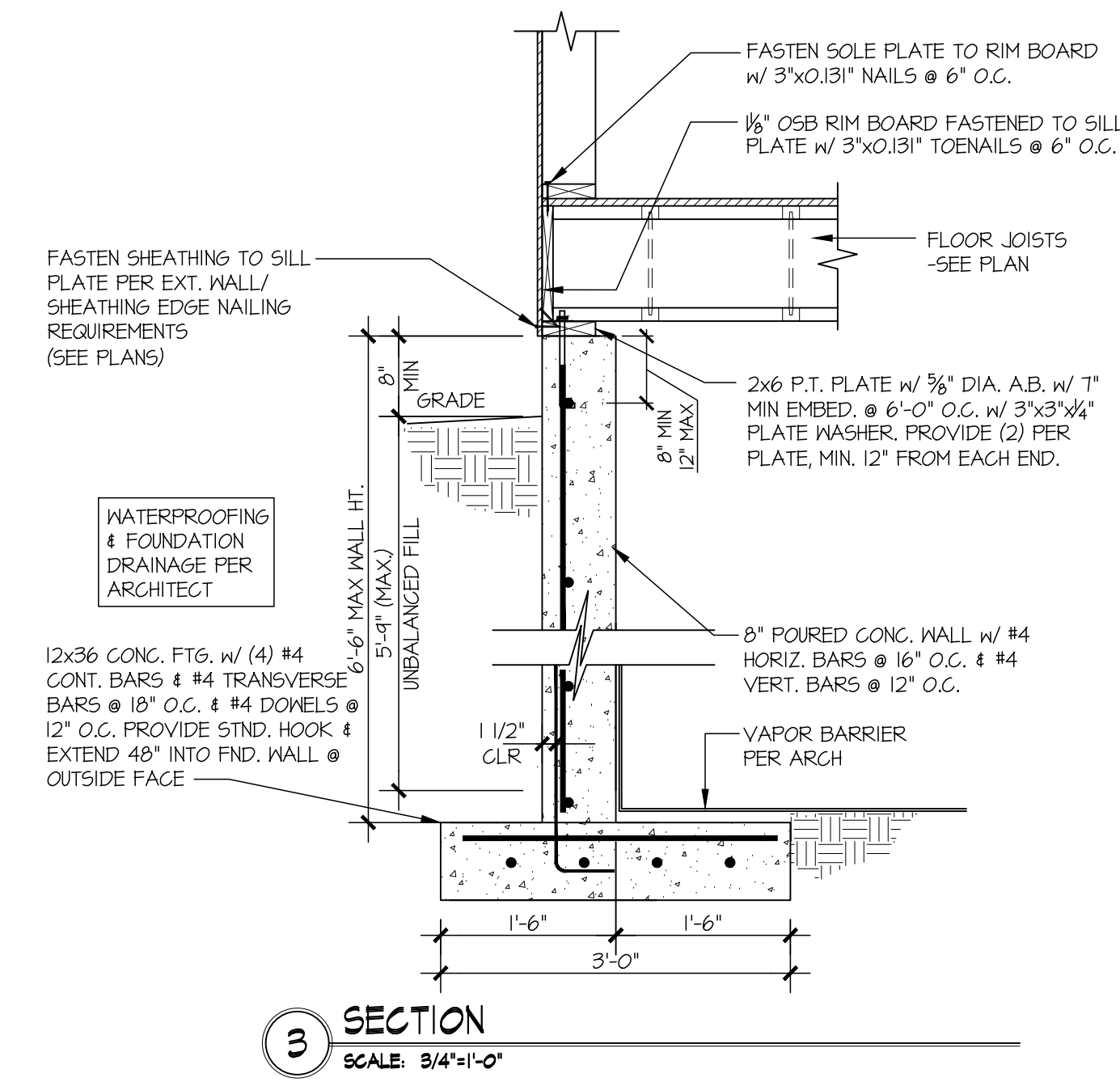
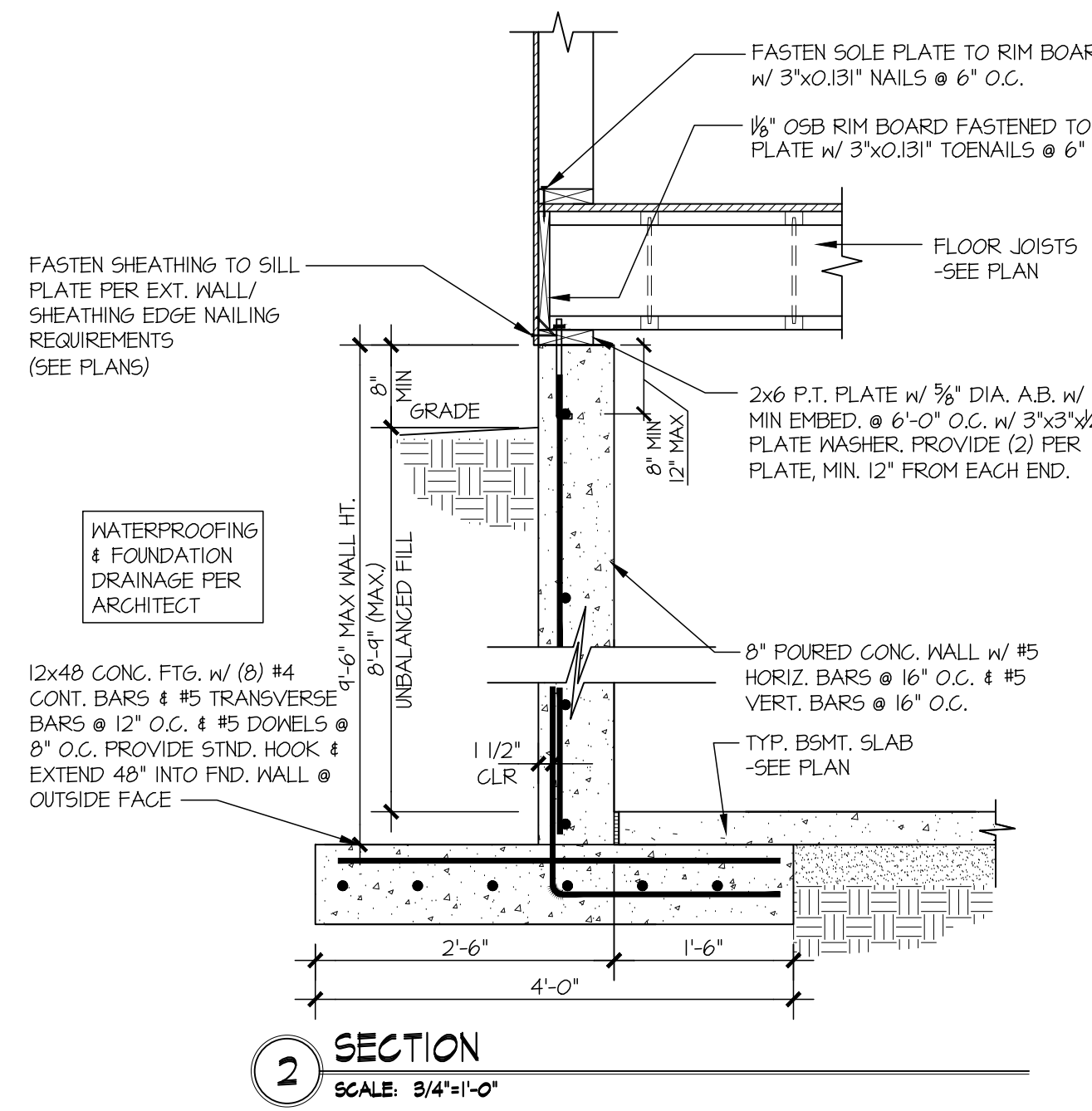
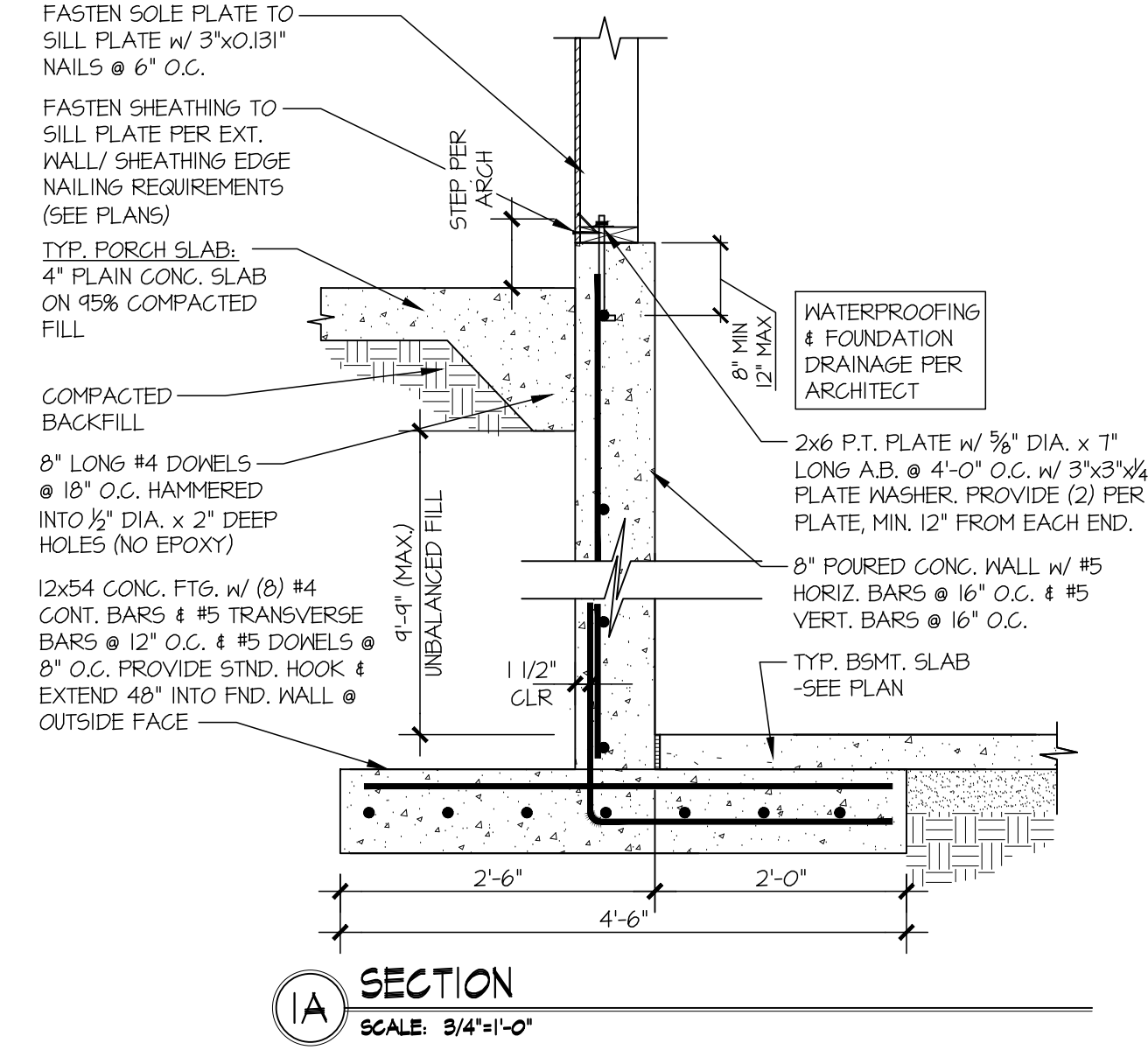
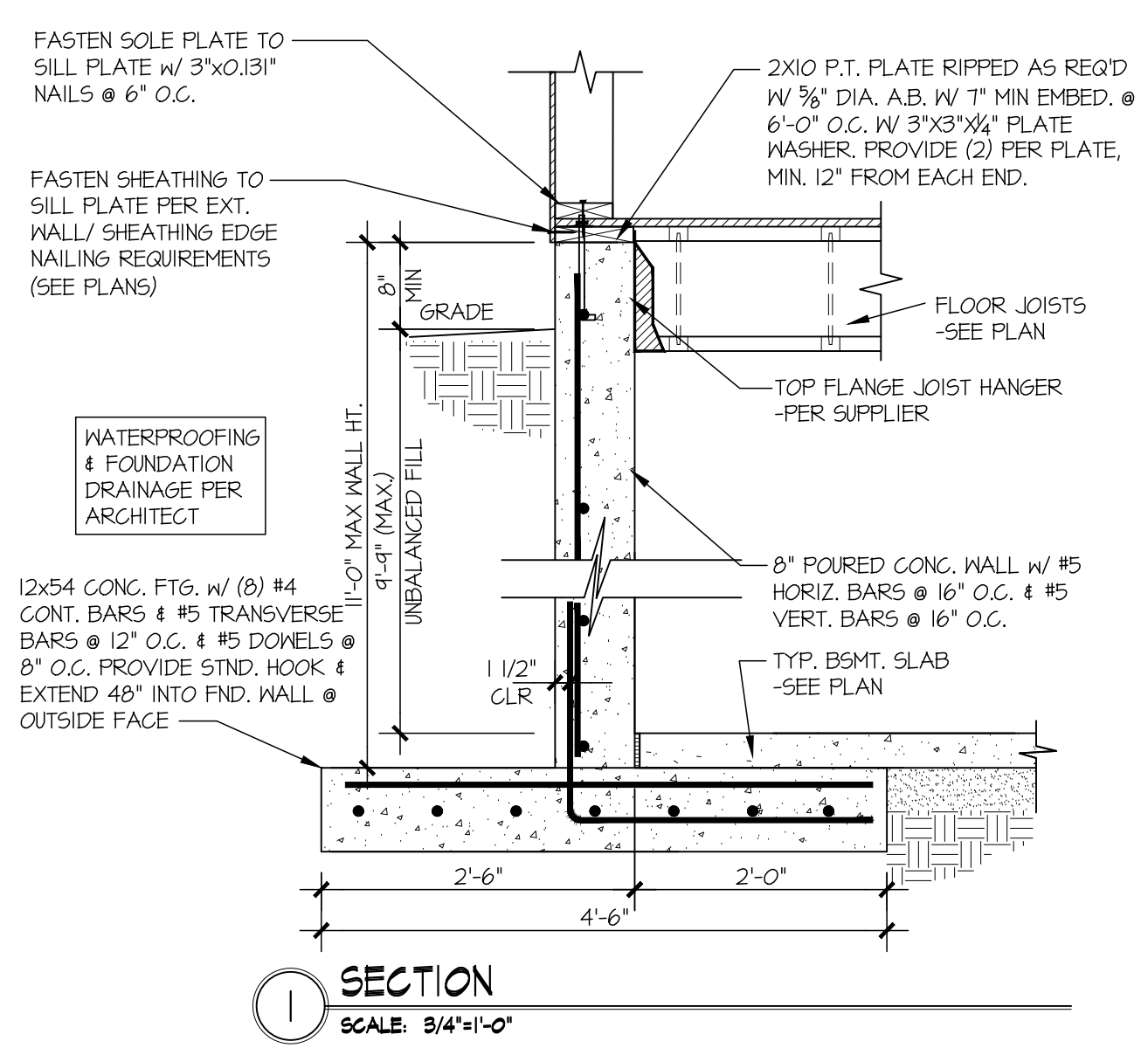
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drawn by: RSC
issue date: 11-04-24

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date:	initial:
12-31-2024	RJD
ARCH REVISIONS:	
04-08-2025	RSC
GEOTECH REPORT:	
06-18-2025	RJD
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DESIGN BUILT
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sheet:
SD-1





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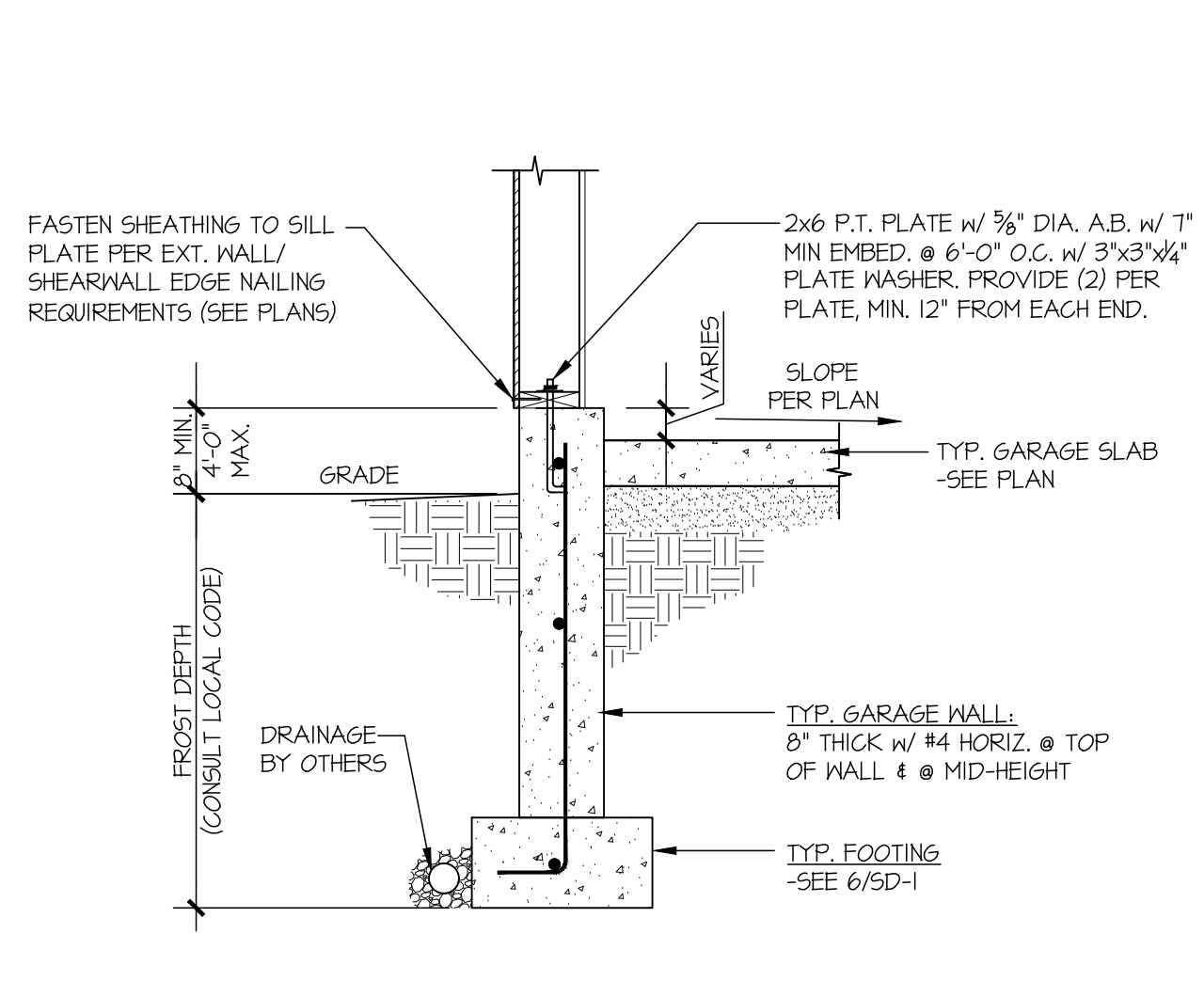
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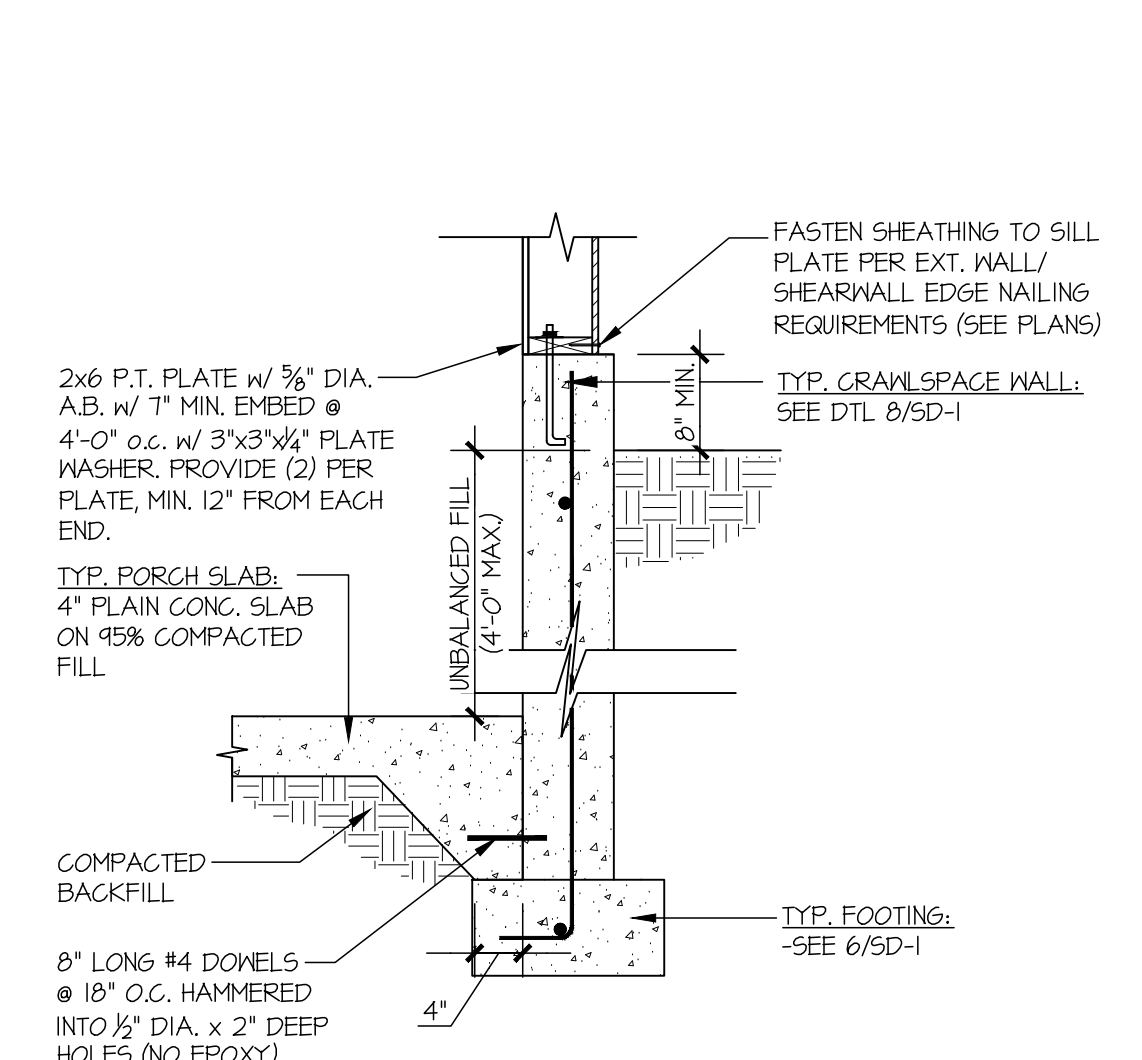
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STRUCTURAL DETAILS
86TH AVE SE
LOT 2
MERCER ISLAND, WA

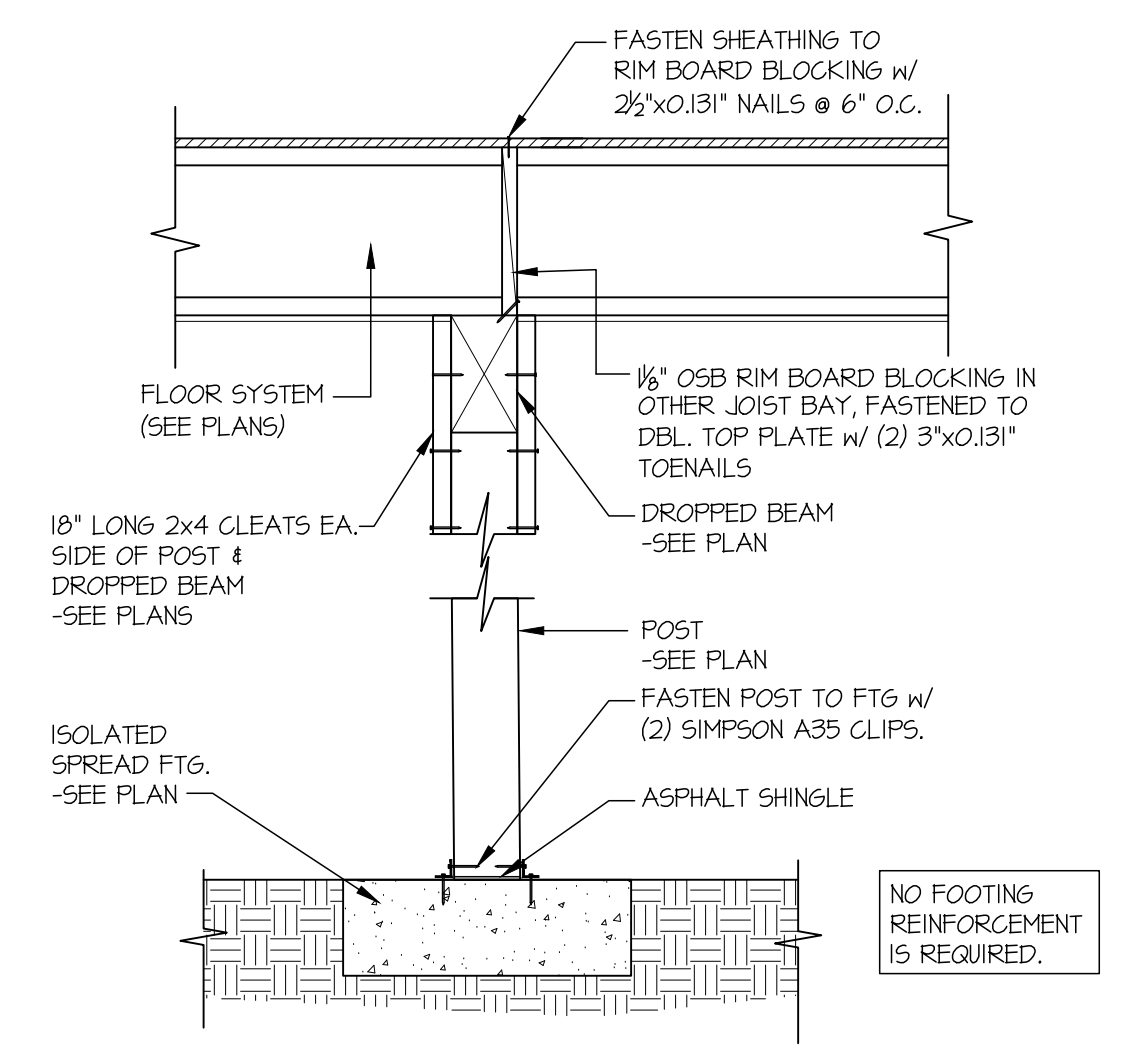
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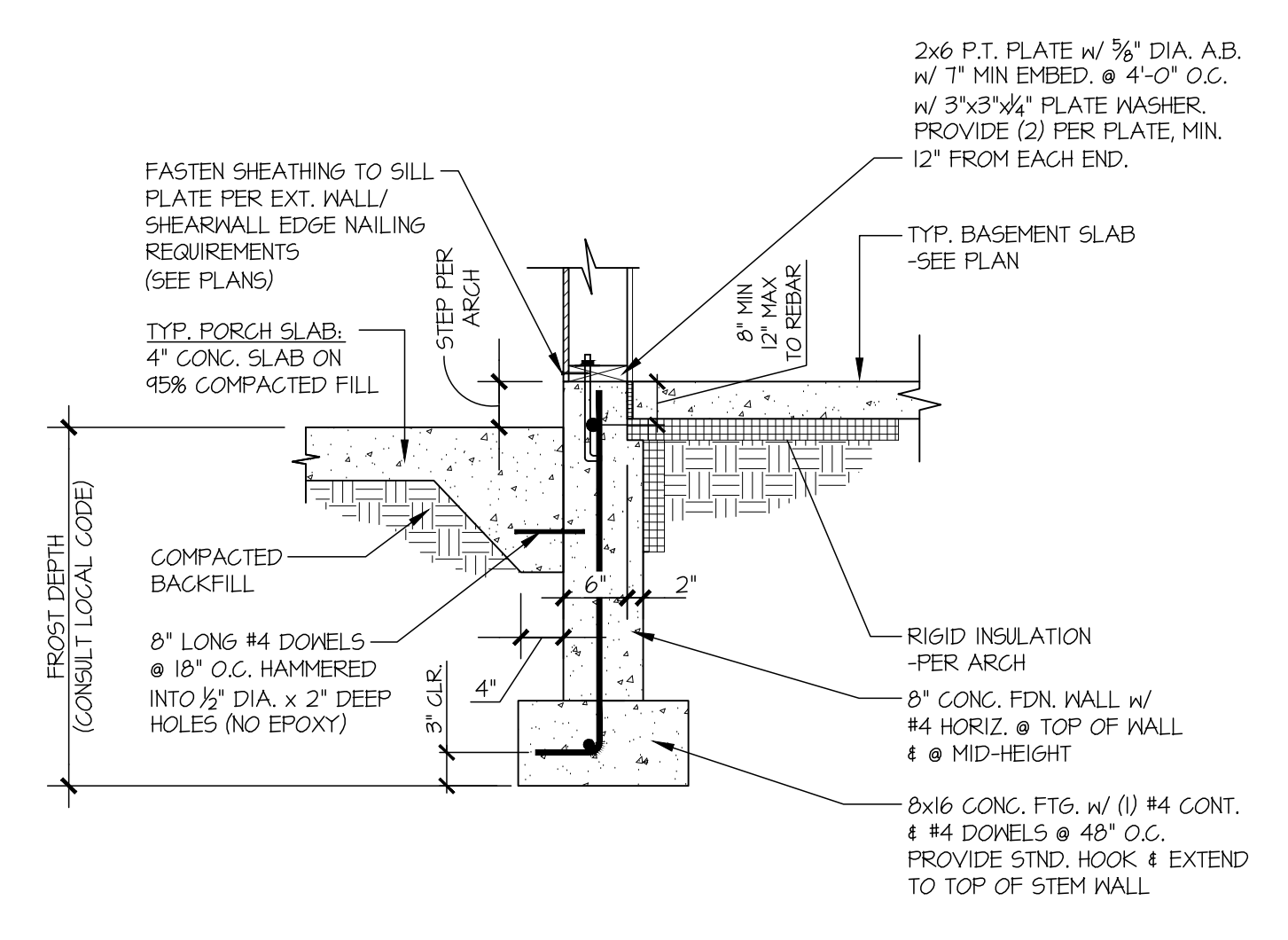
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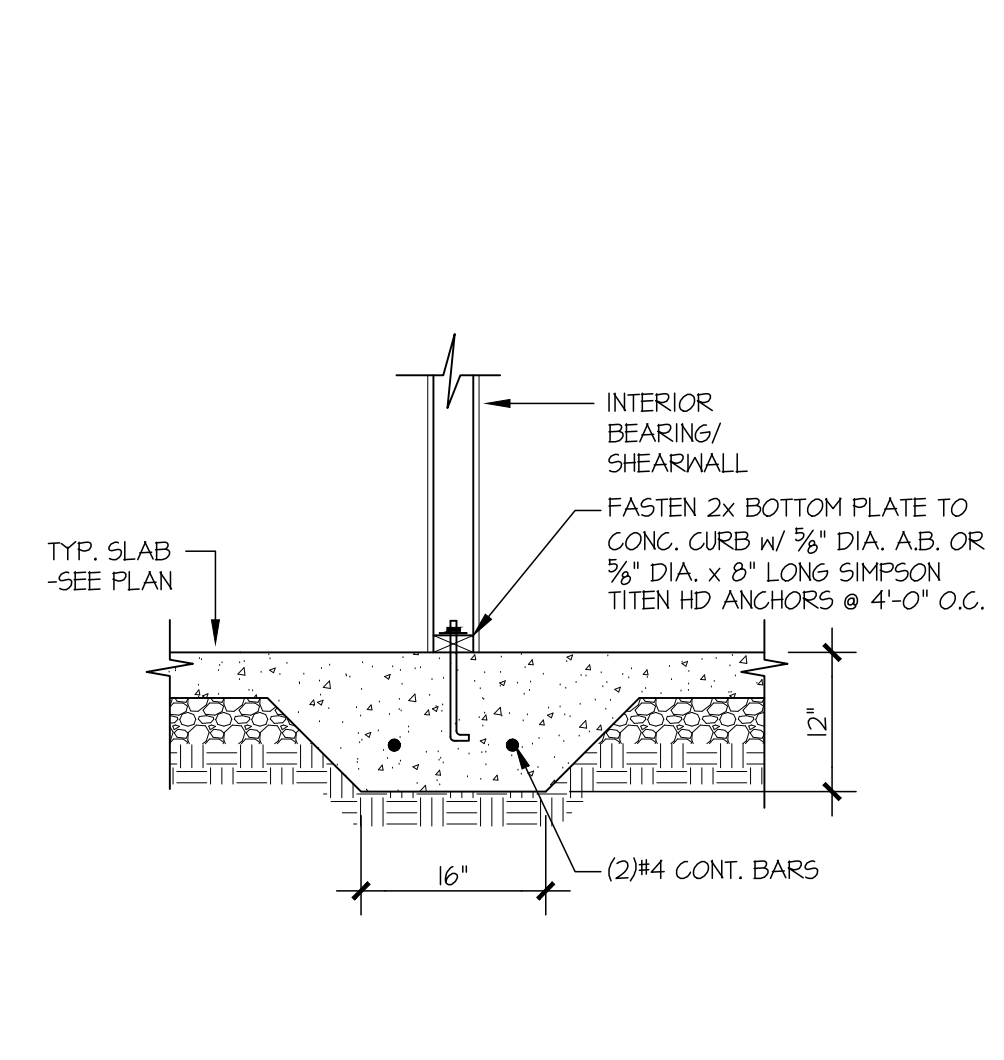
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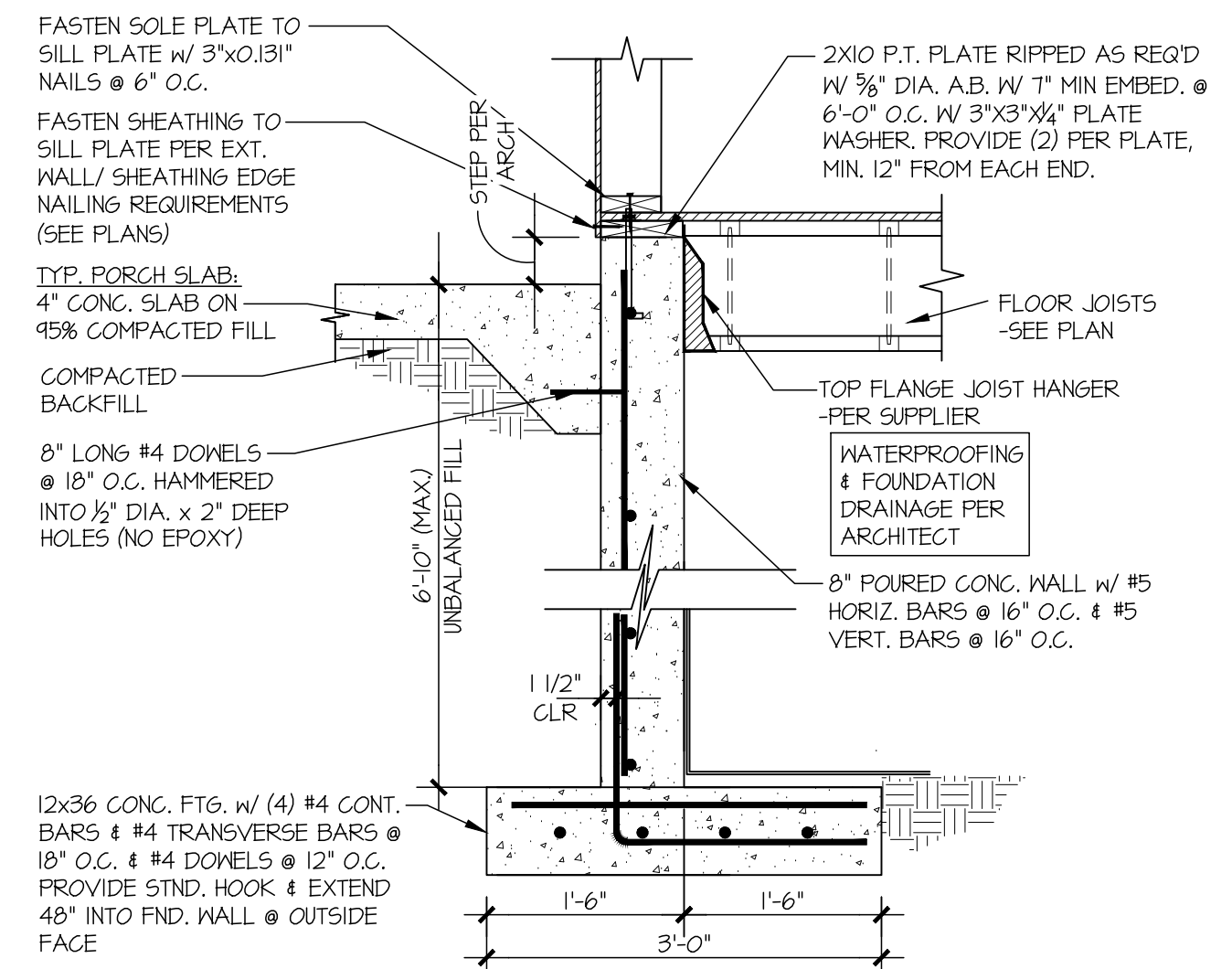
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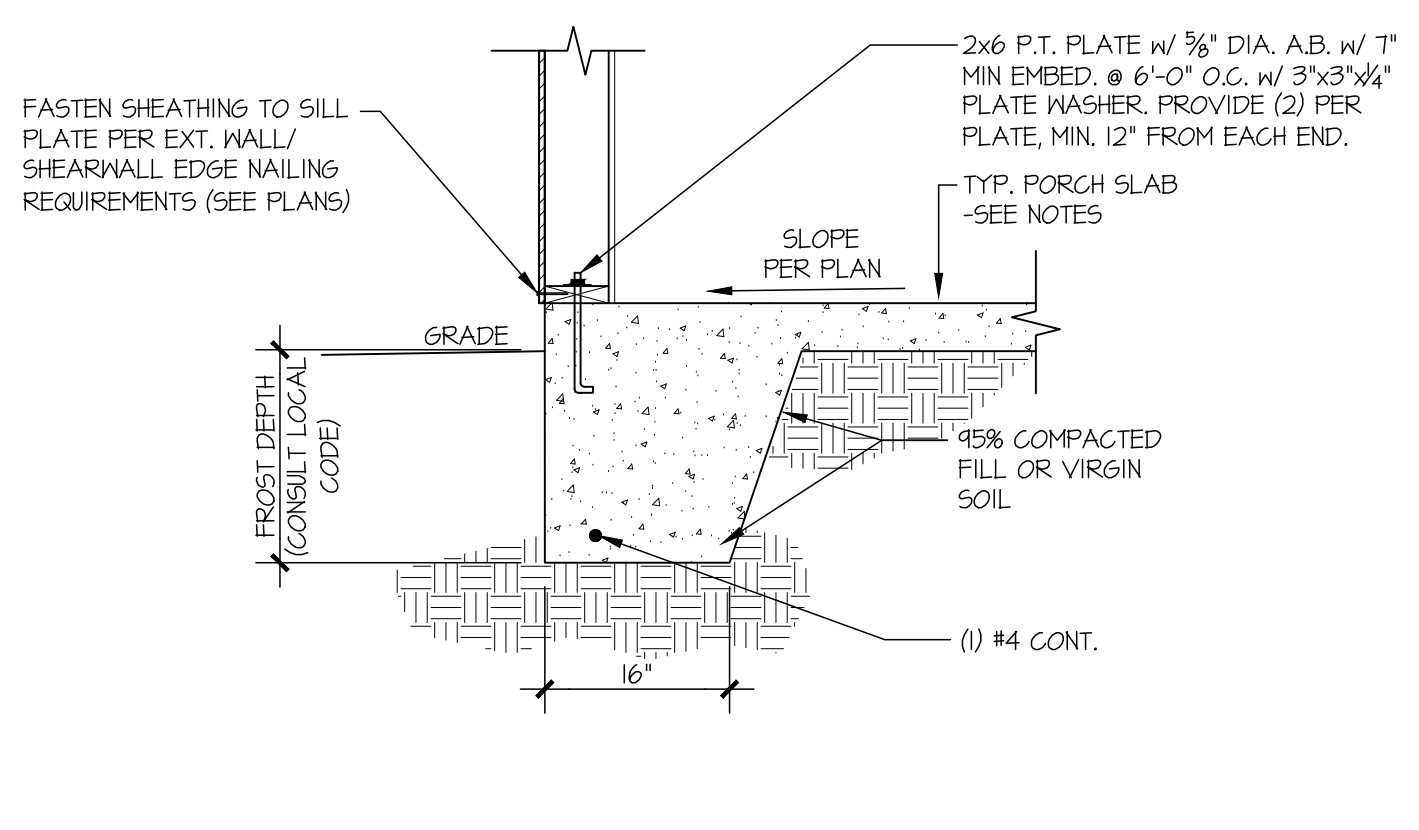
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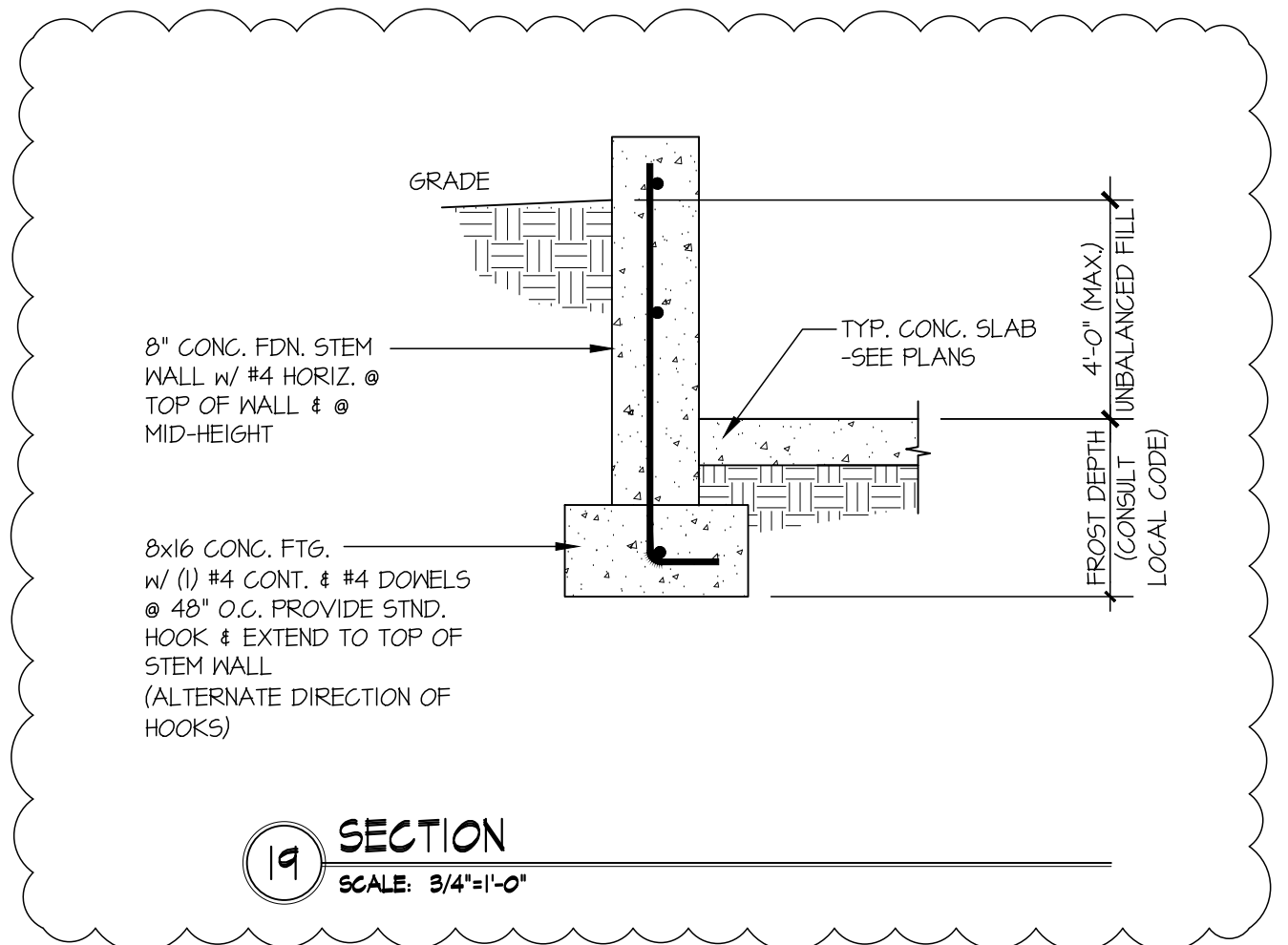
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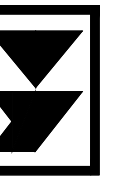
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19 SECTION
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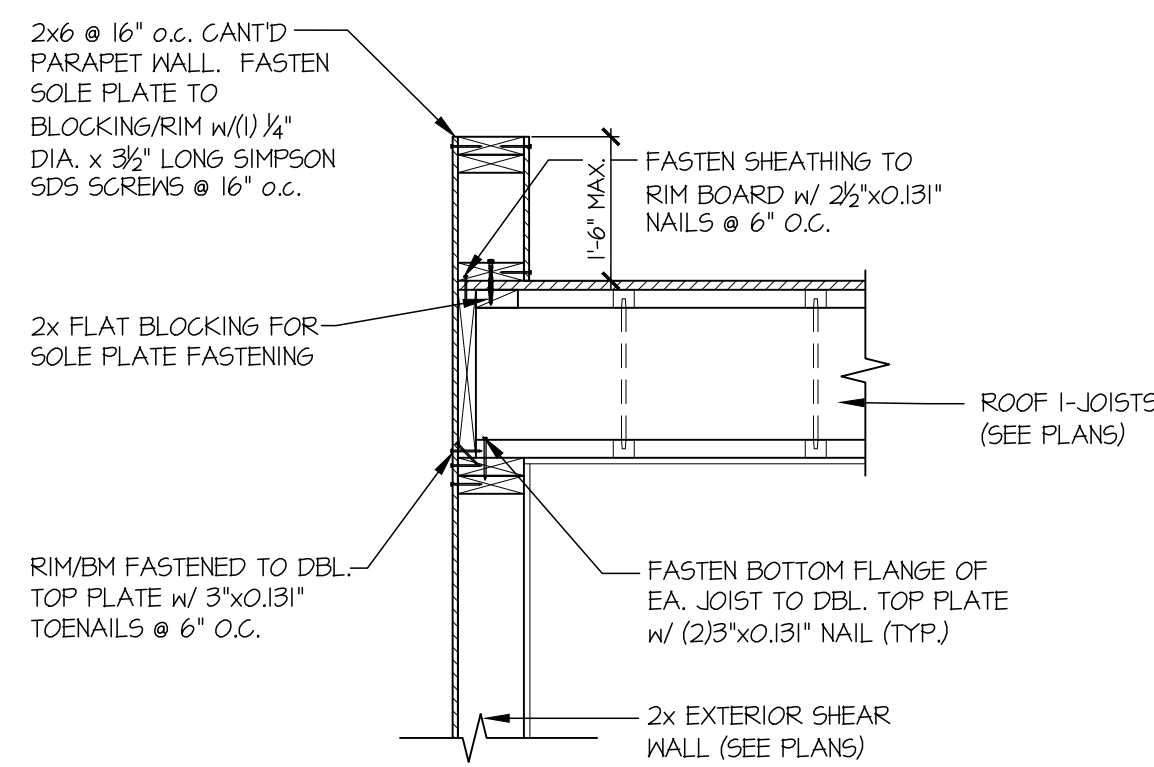
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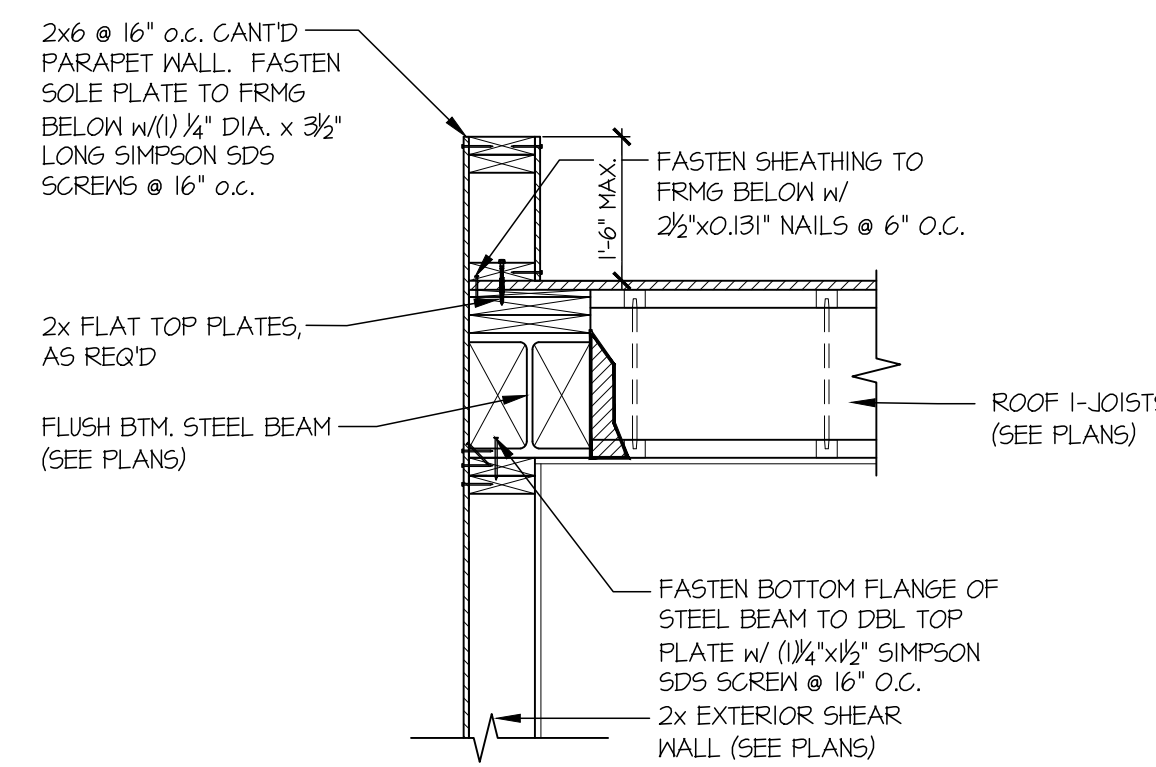
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STRUCTURAL DETAILS
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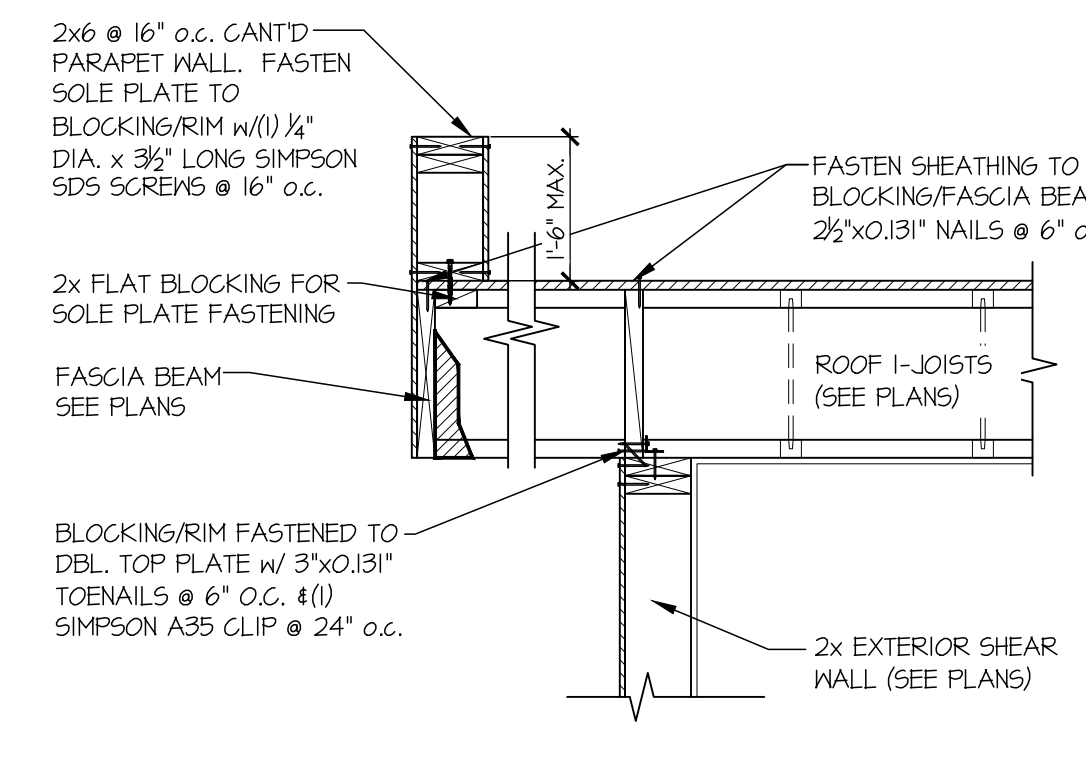
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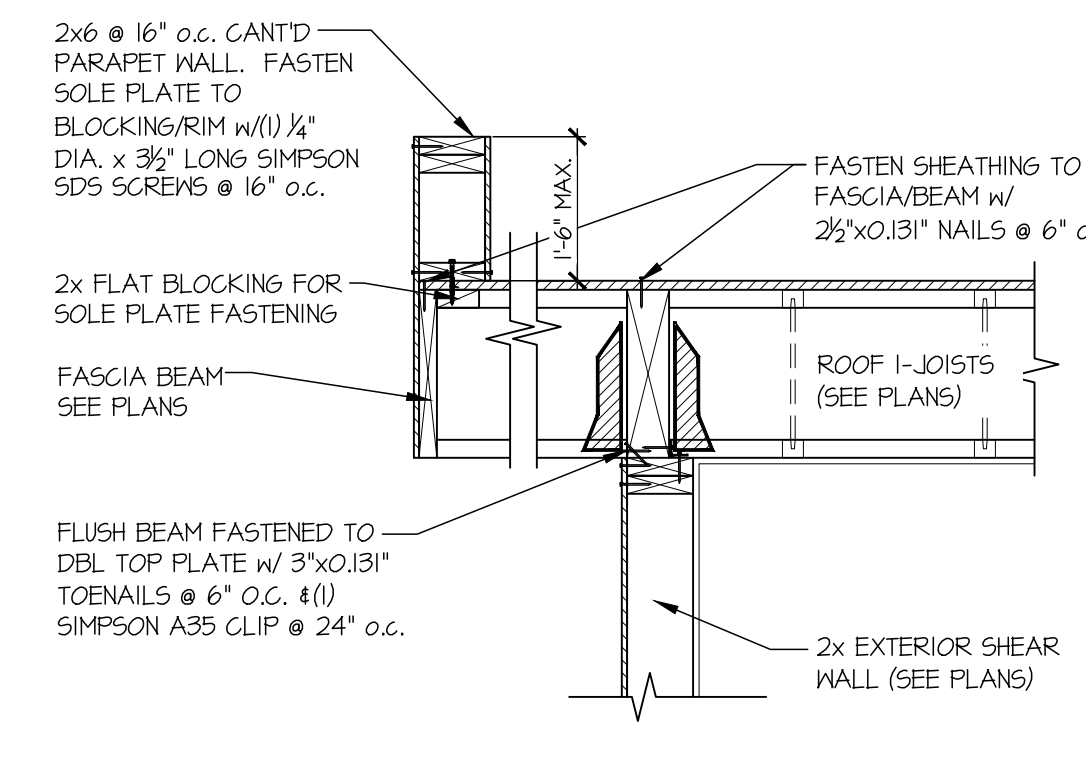
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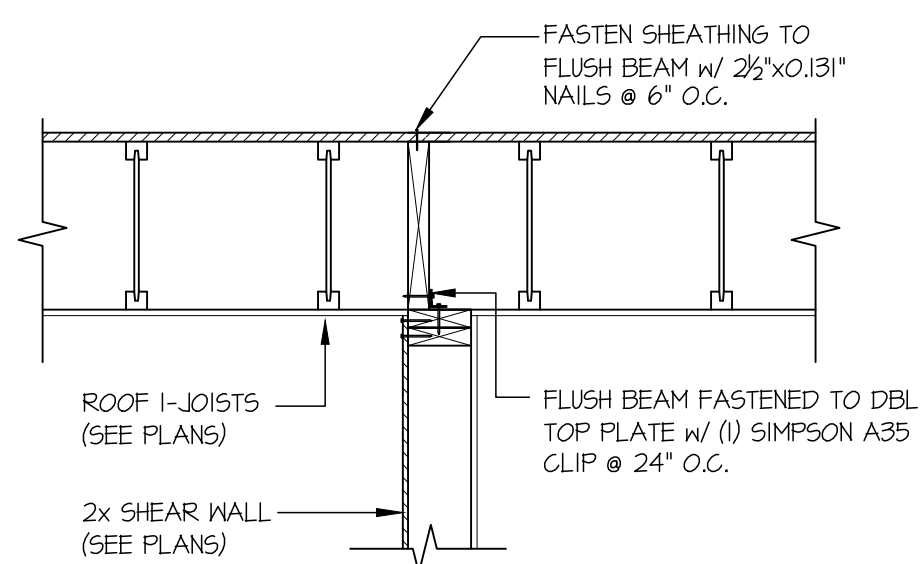
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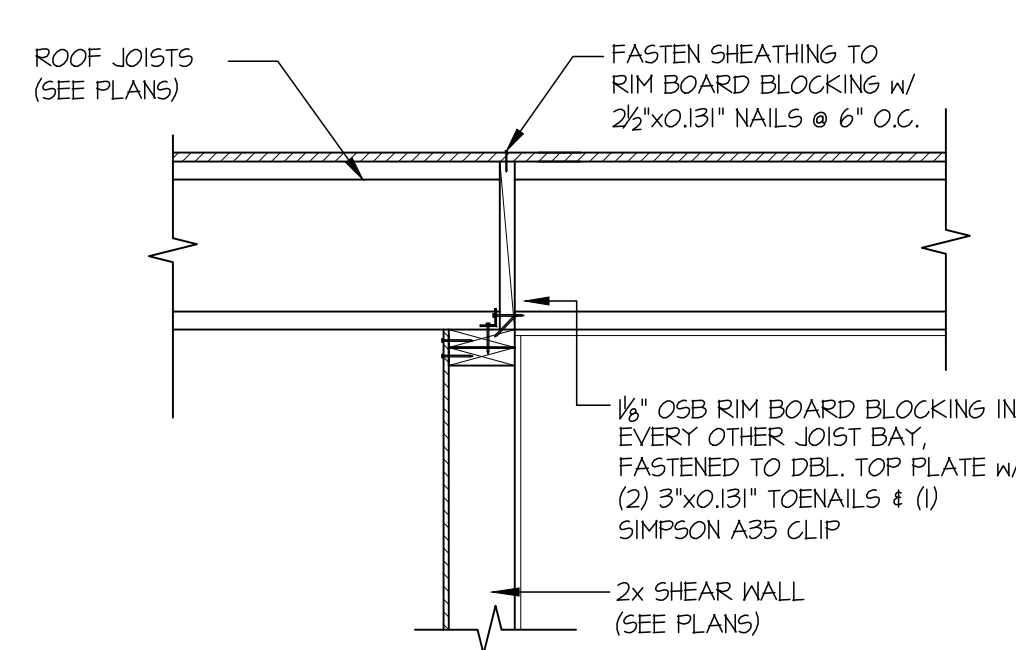
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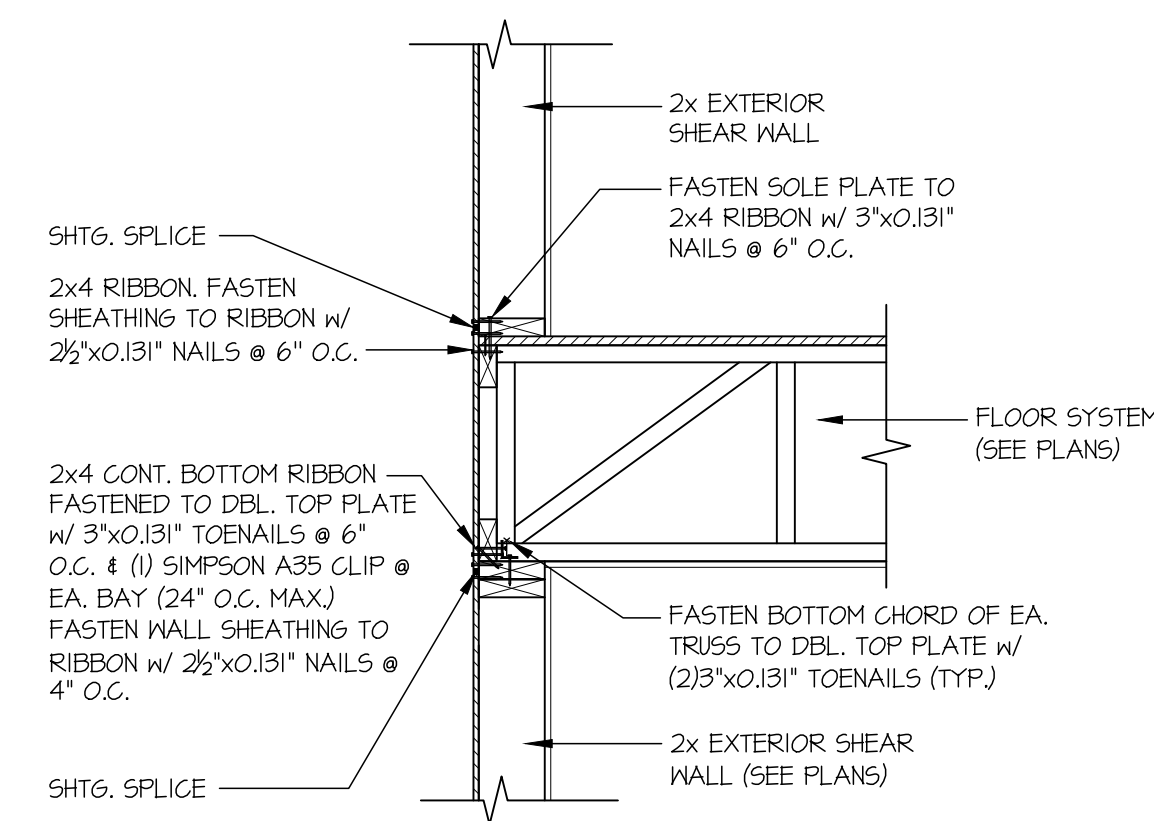
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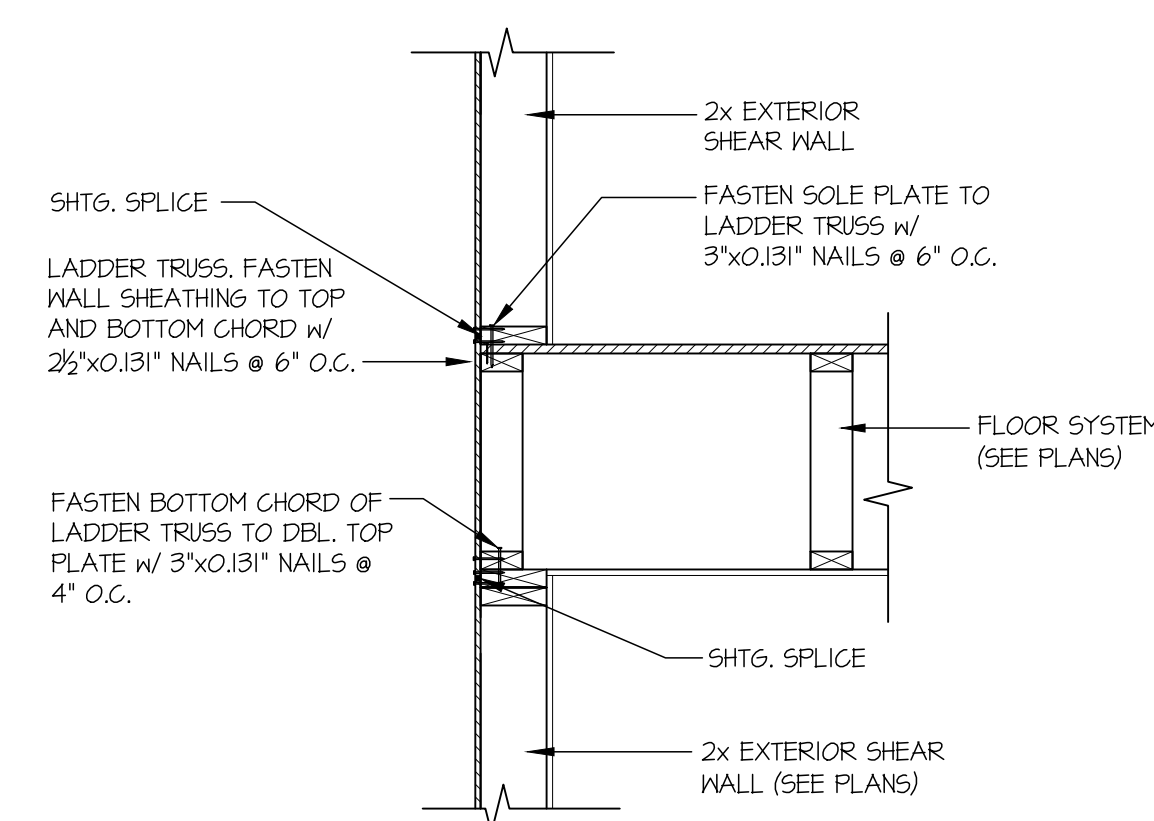
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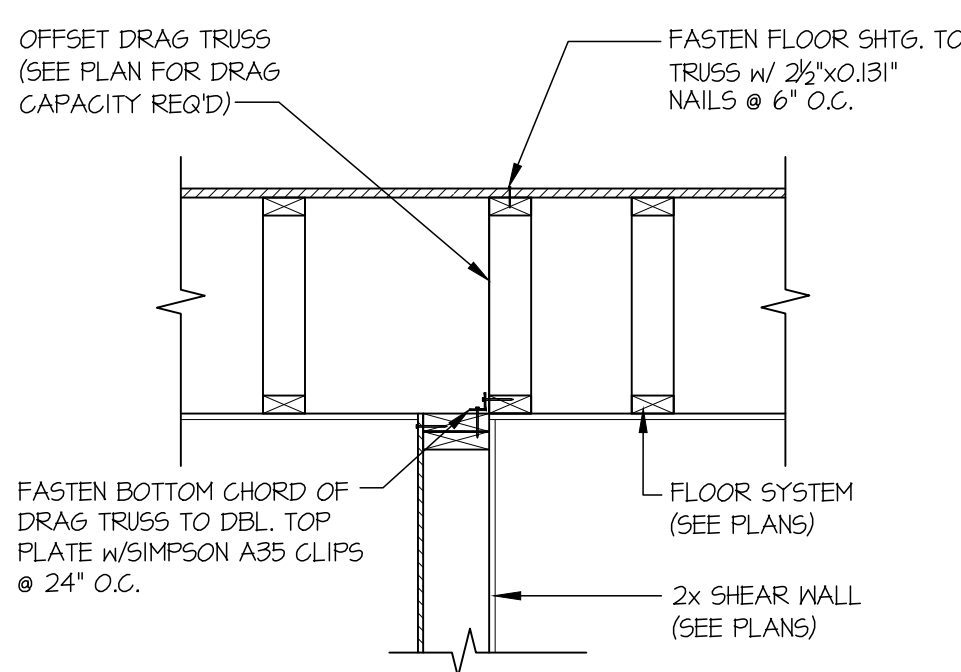
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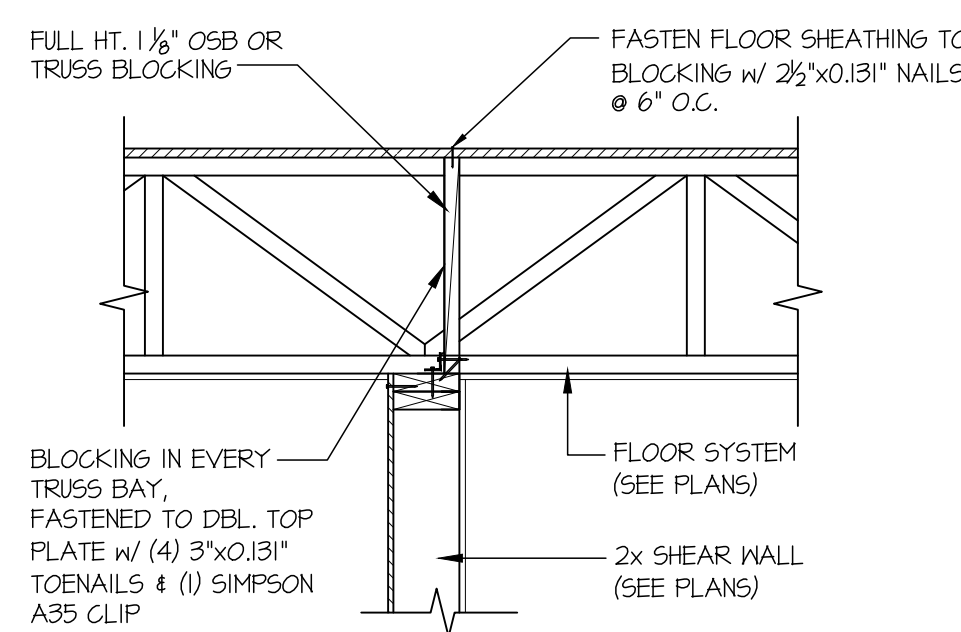
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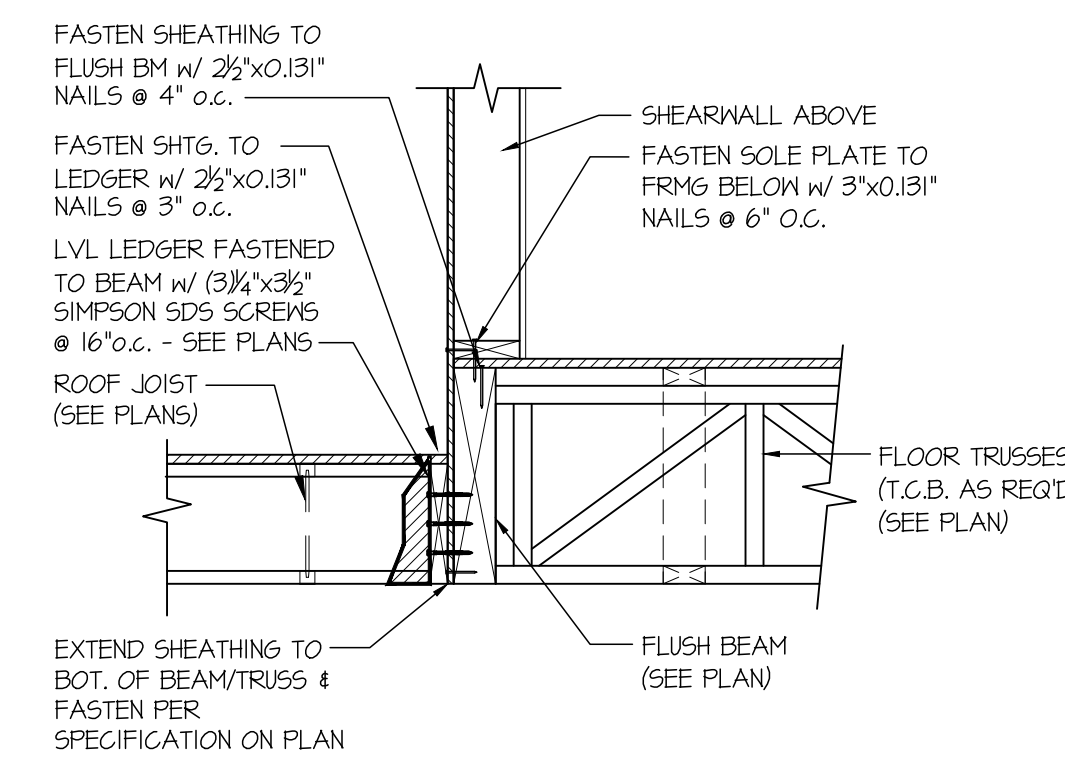
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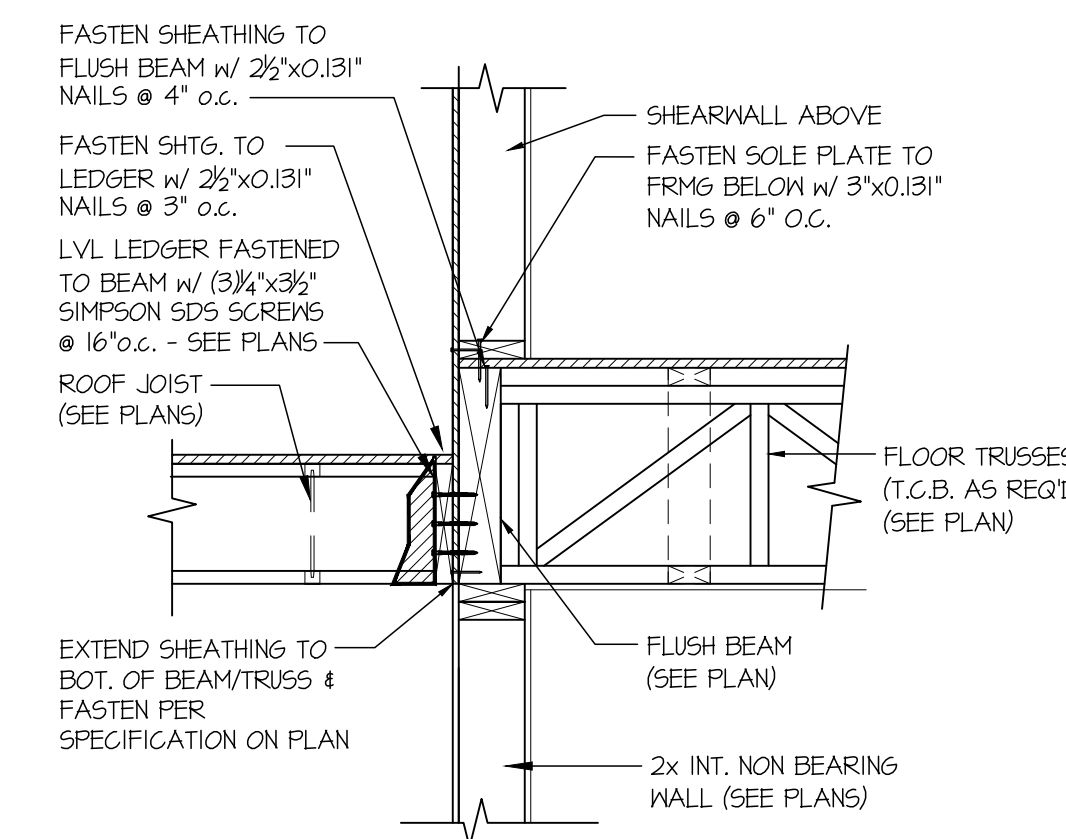
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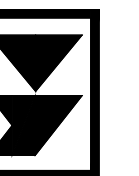
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SECTION 14A
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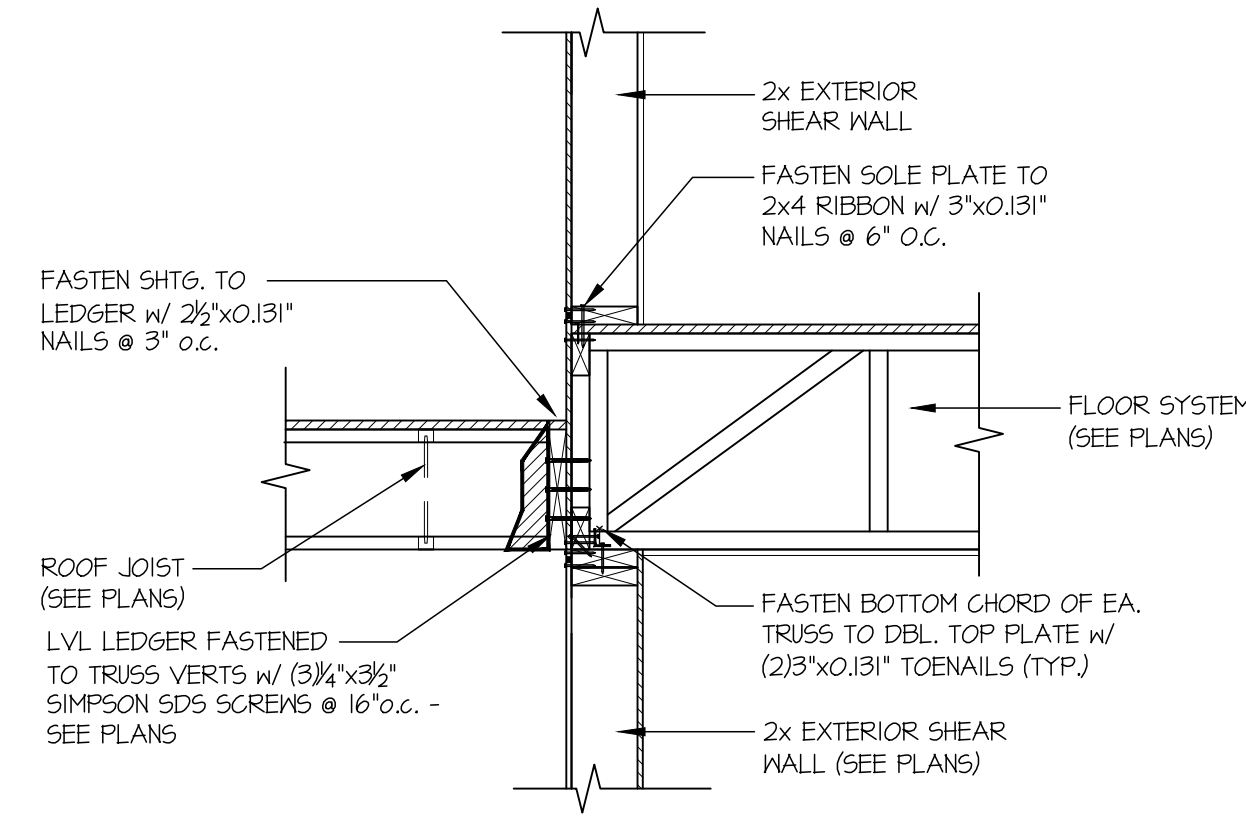
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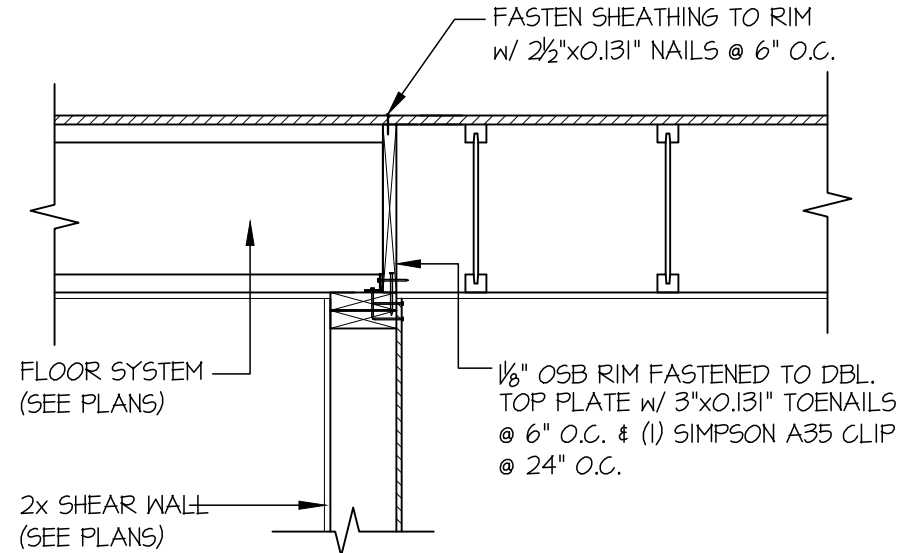
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HOMES

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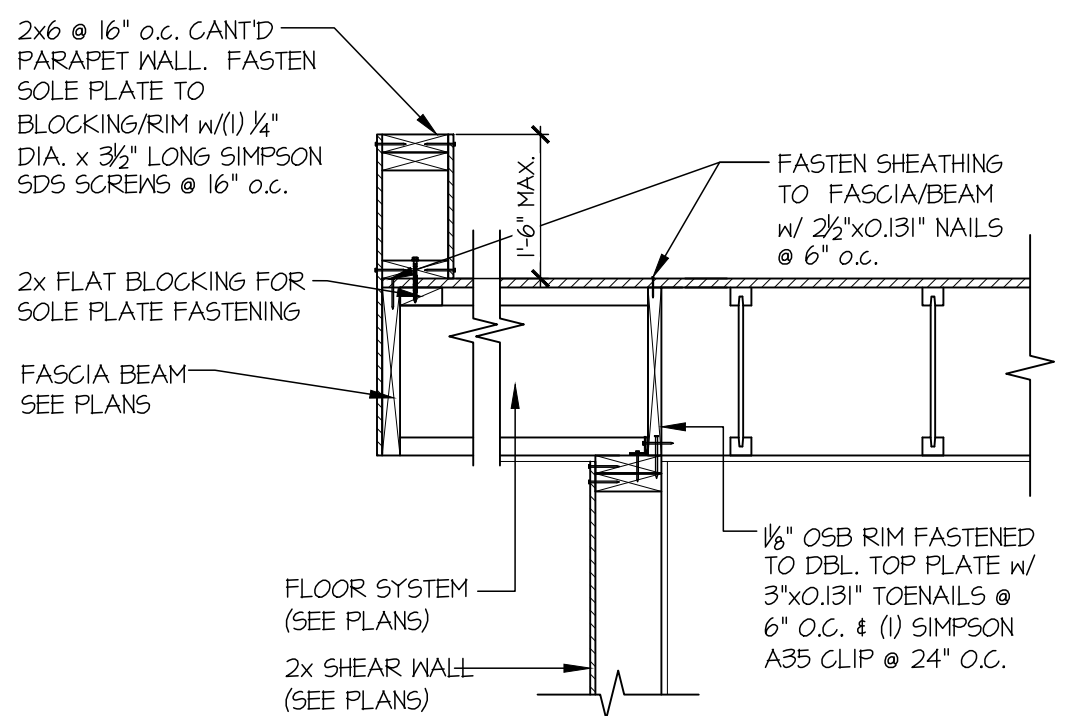
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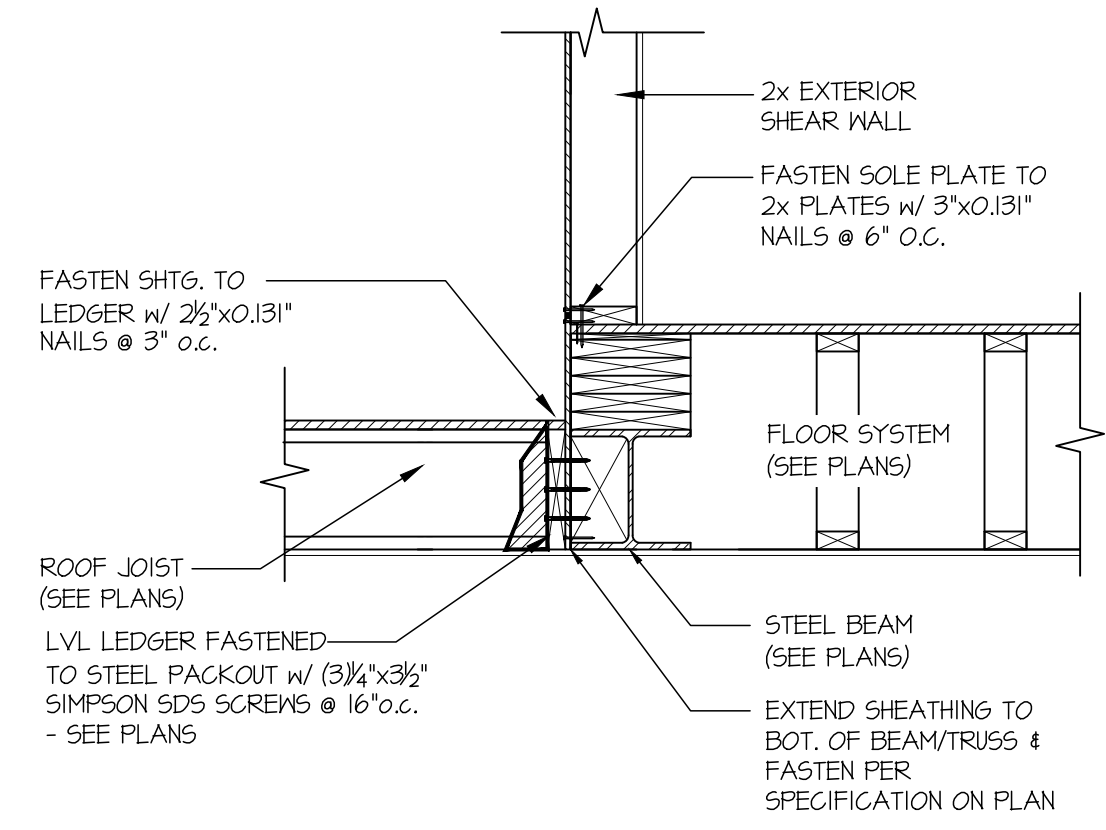
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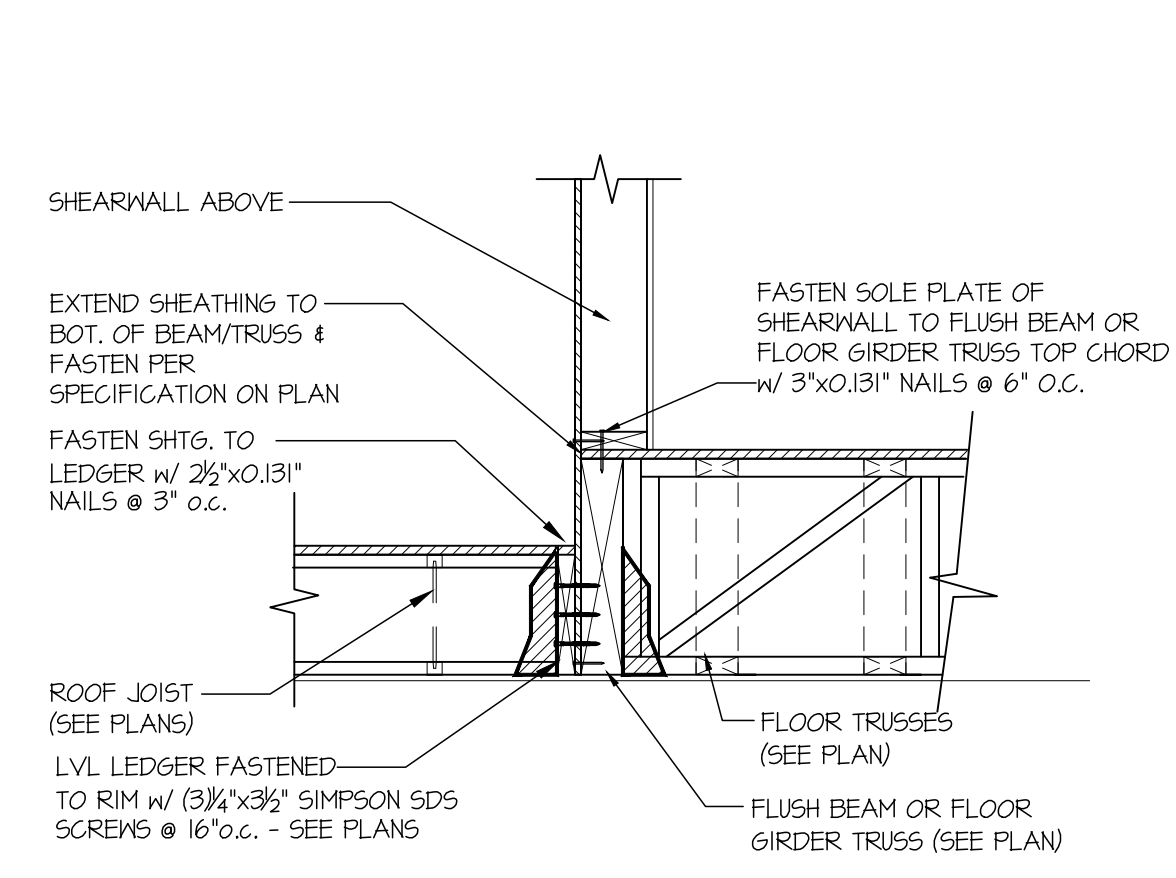
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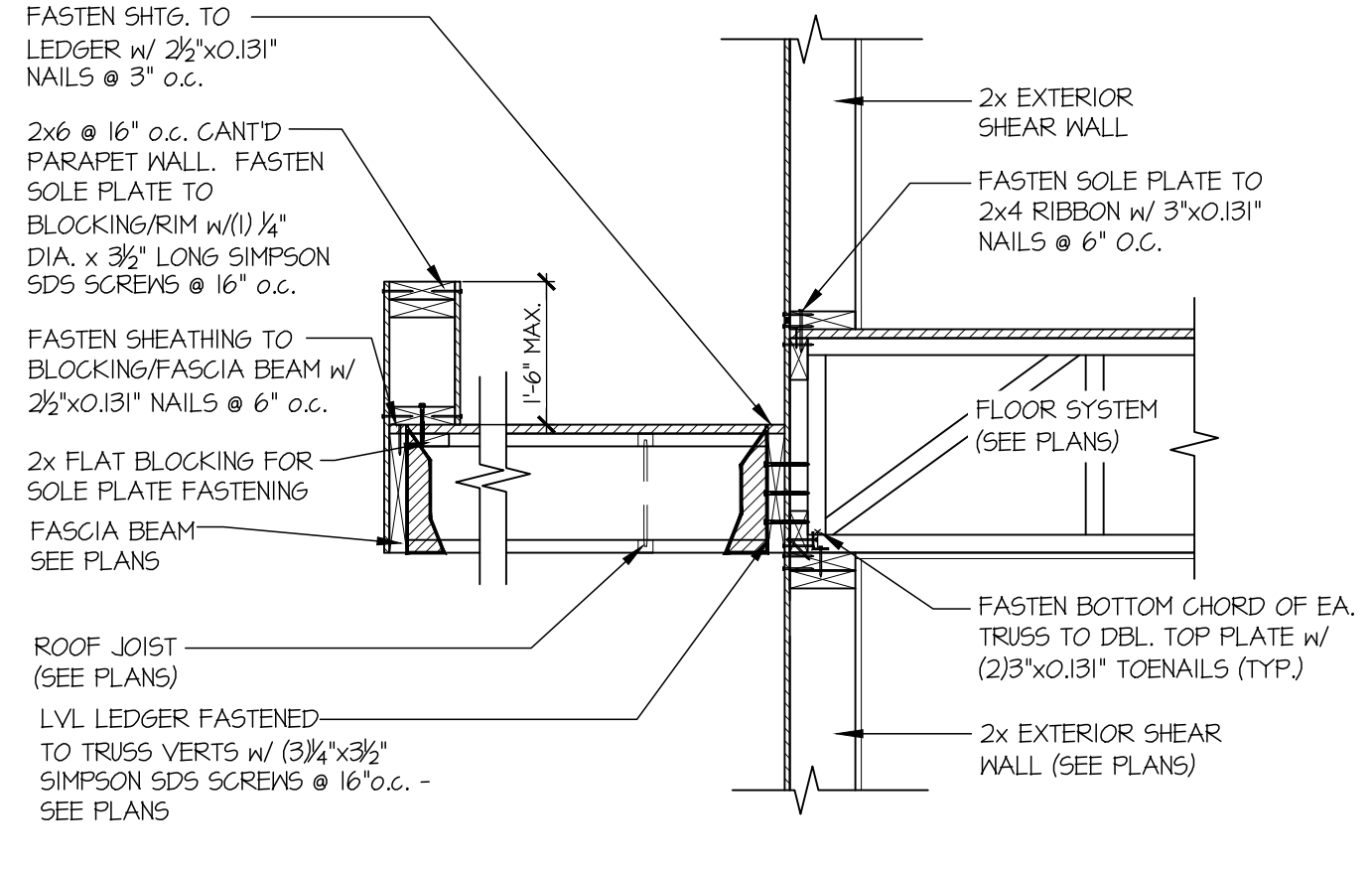
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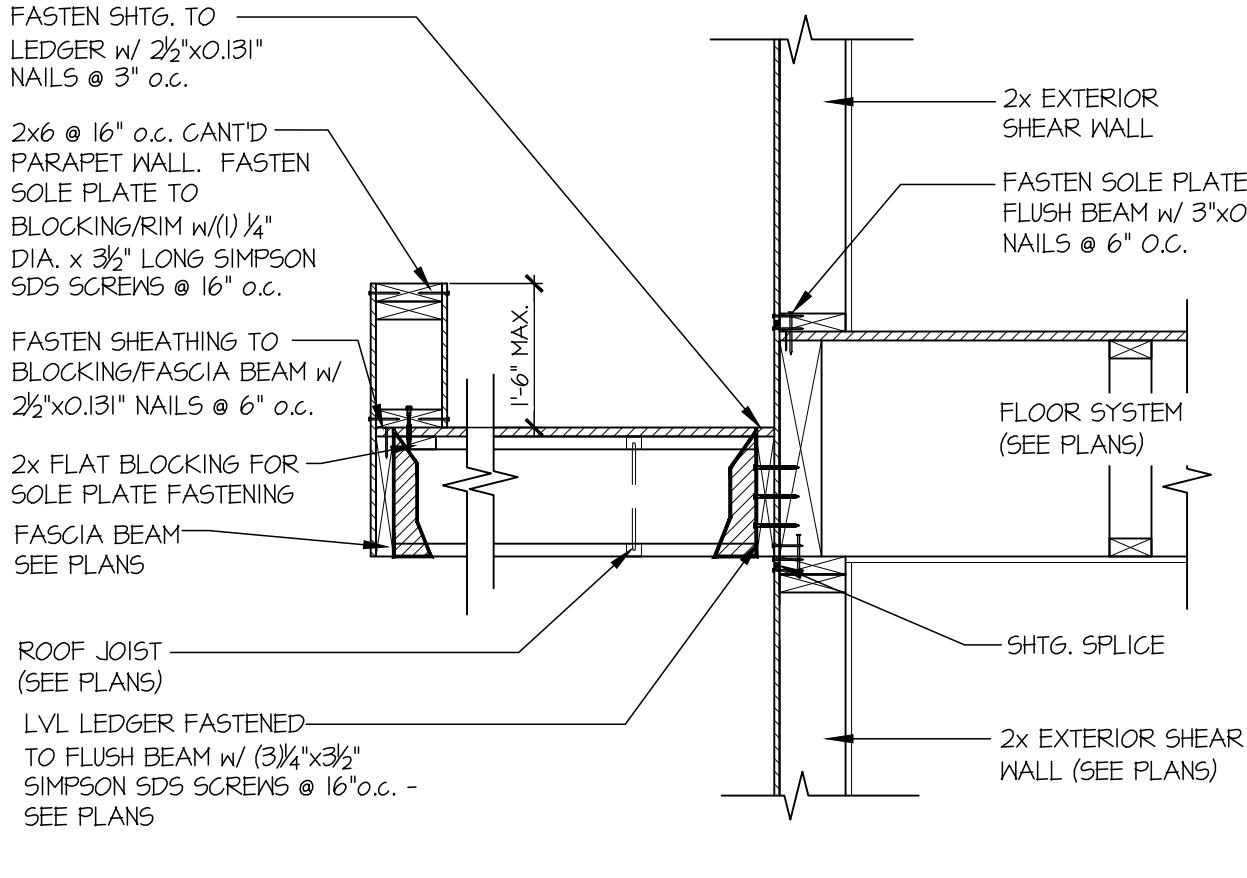
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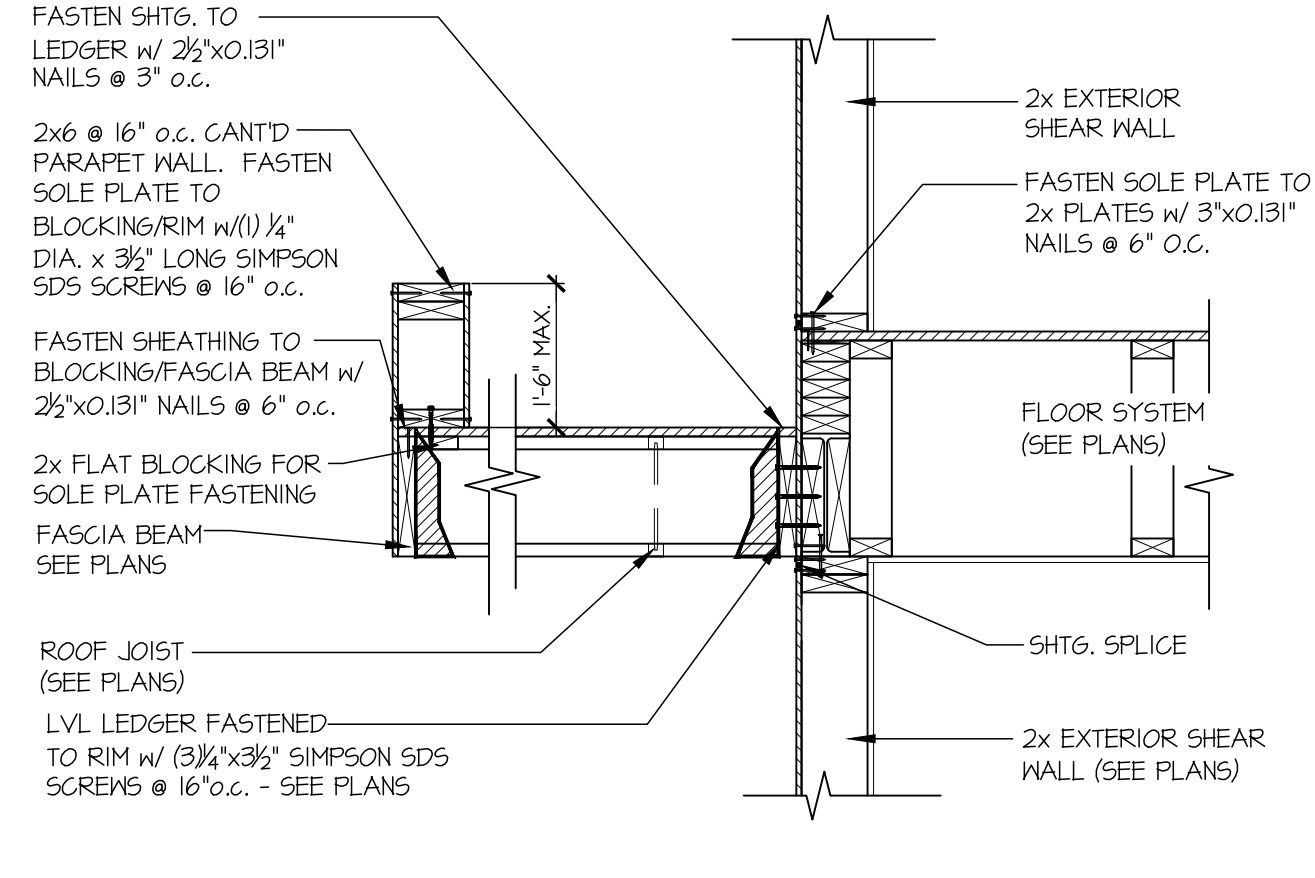
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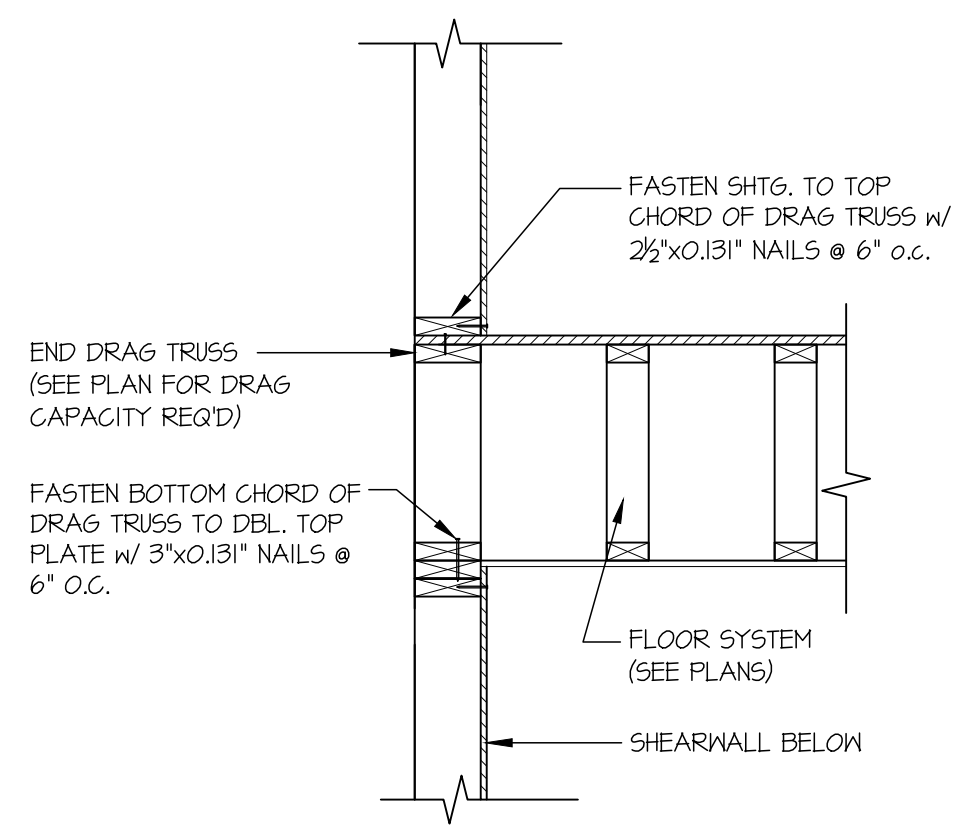
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PERPENDICULAR FRAMING



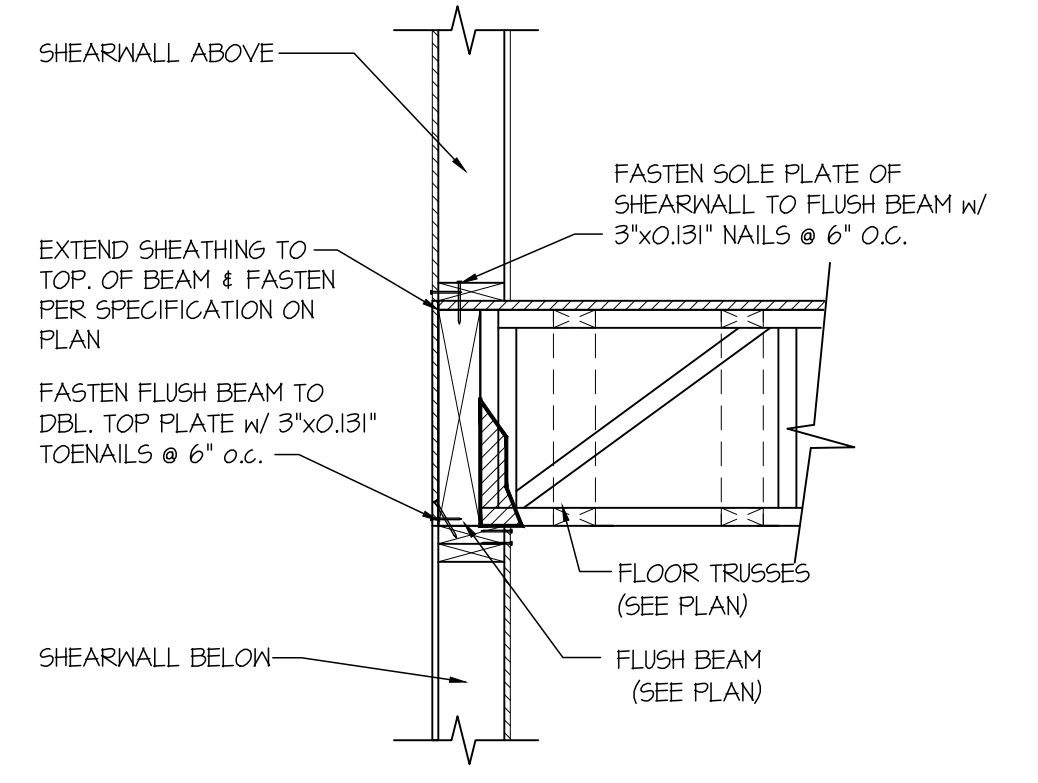
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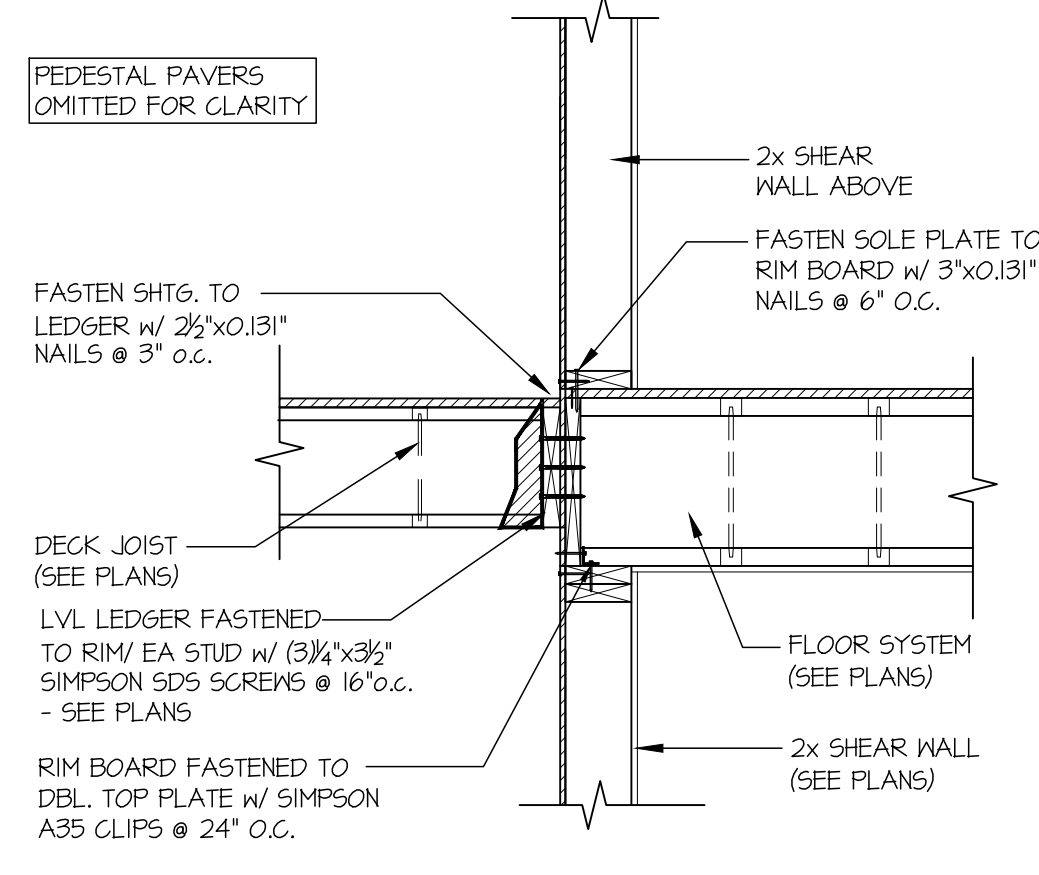
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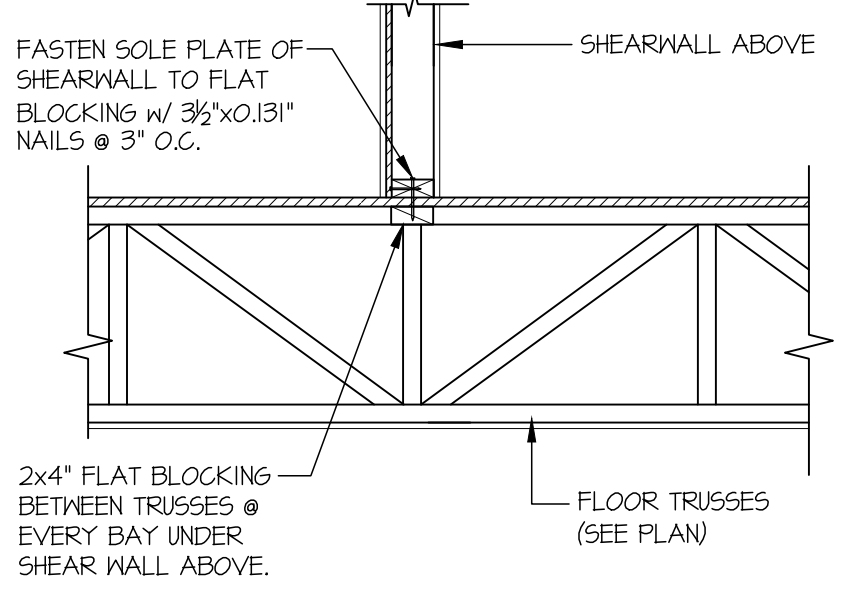
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SCALE: 3/4"=1'-0"



23 SECTION
SCALE: 3/4"=1'-0"



24 SECTION
SCALE: 3/4"=1'-0"



25 SHEAR TRANSFER DETAIL @ INTERIOR SHEAR WALL
SCALE: 3/4"=1'-0"
PERPENDICULAR FRAMING



MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-690-0010 - mkm@mkp.com



M&K project number:
244-24010

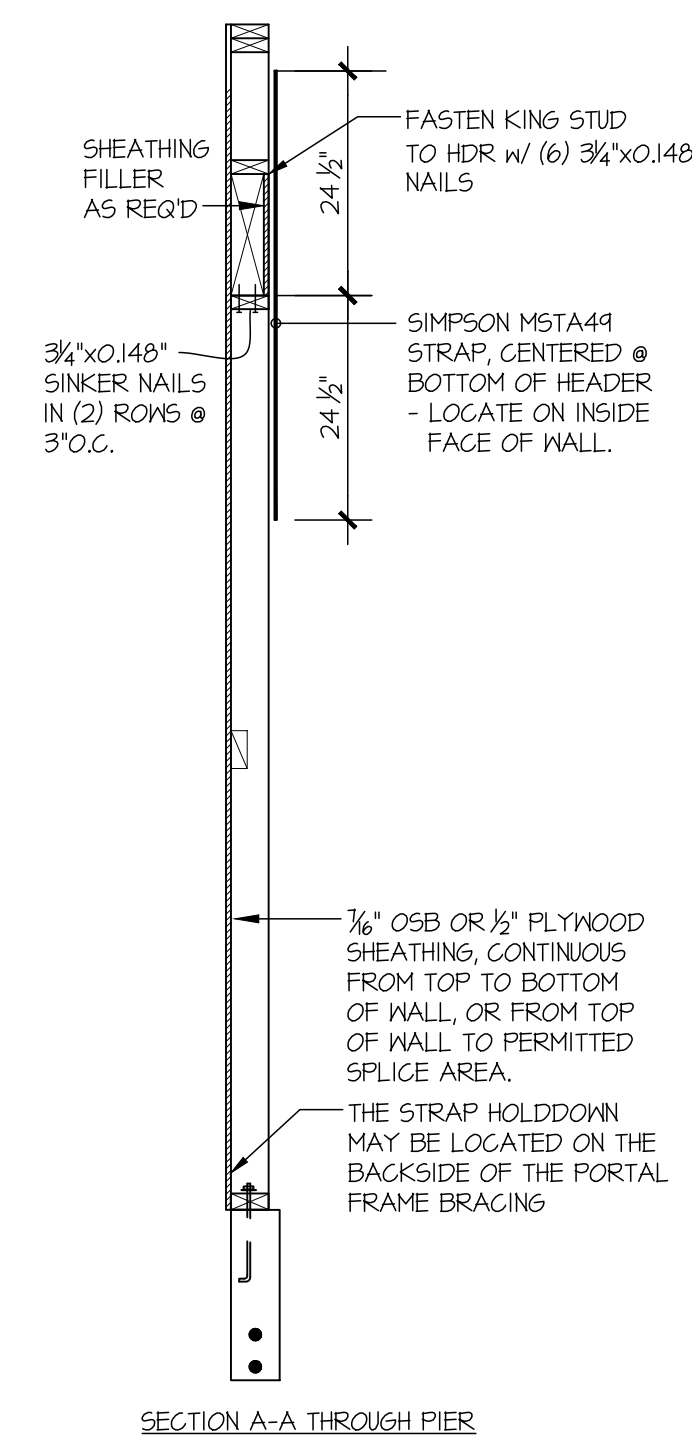
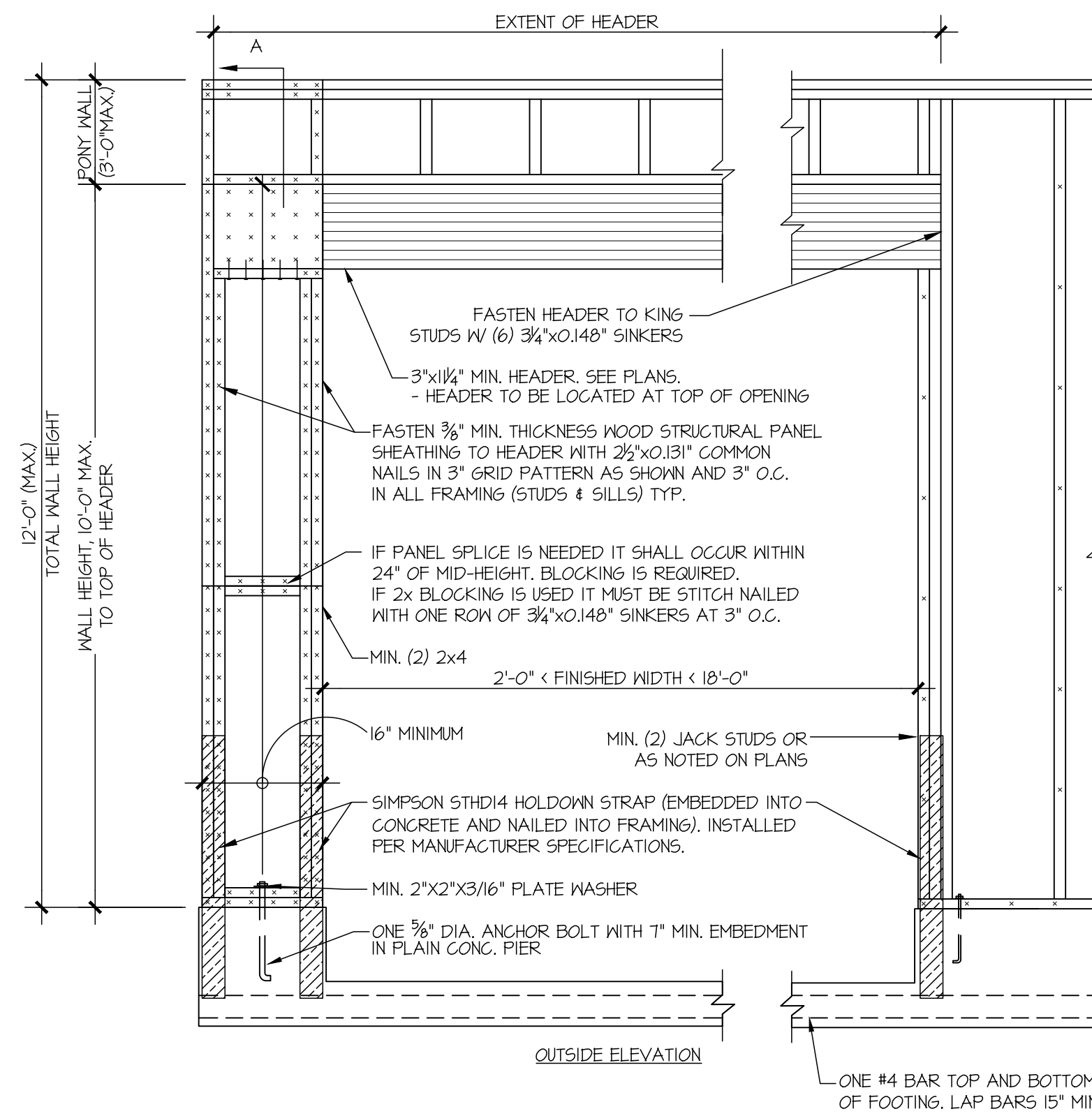
project mgr: **NJM**
drawn by: **RSC**
issue date: **11-04-24**

REVISIONS:	
date:	initial:
12-31-2024	RJD
04-08-2025	RSC
06-18-2025	RJD

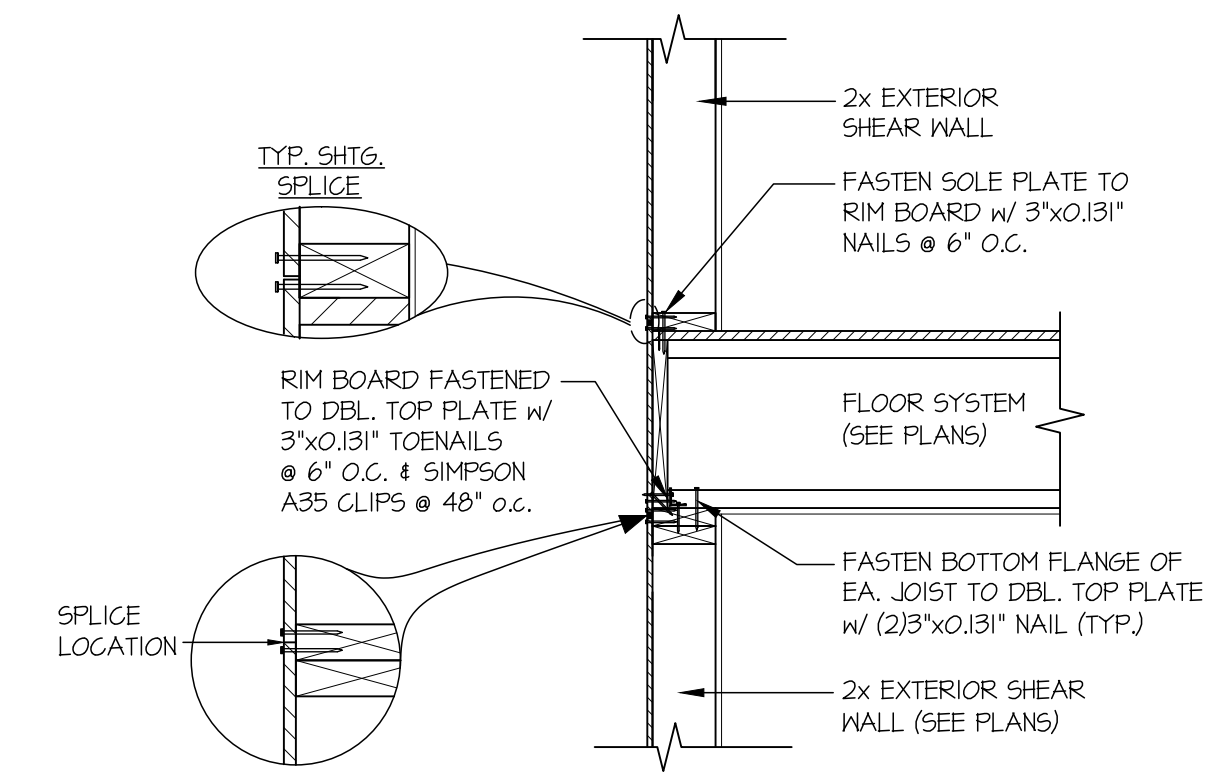
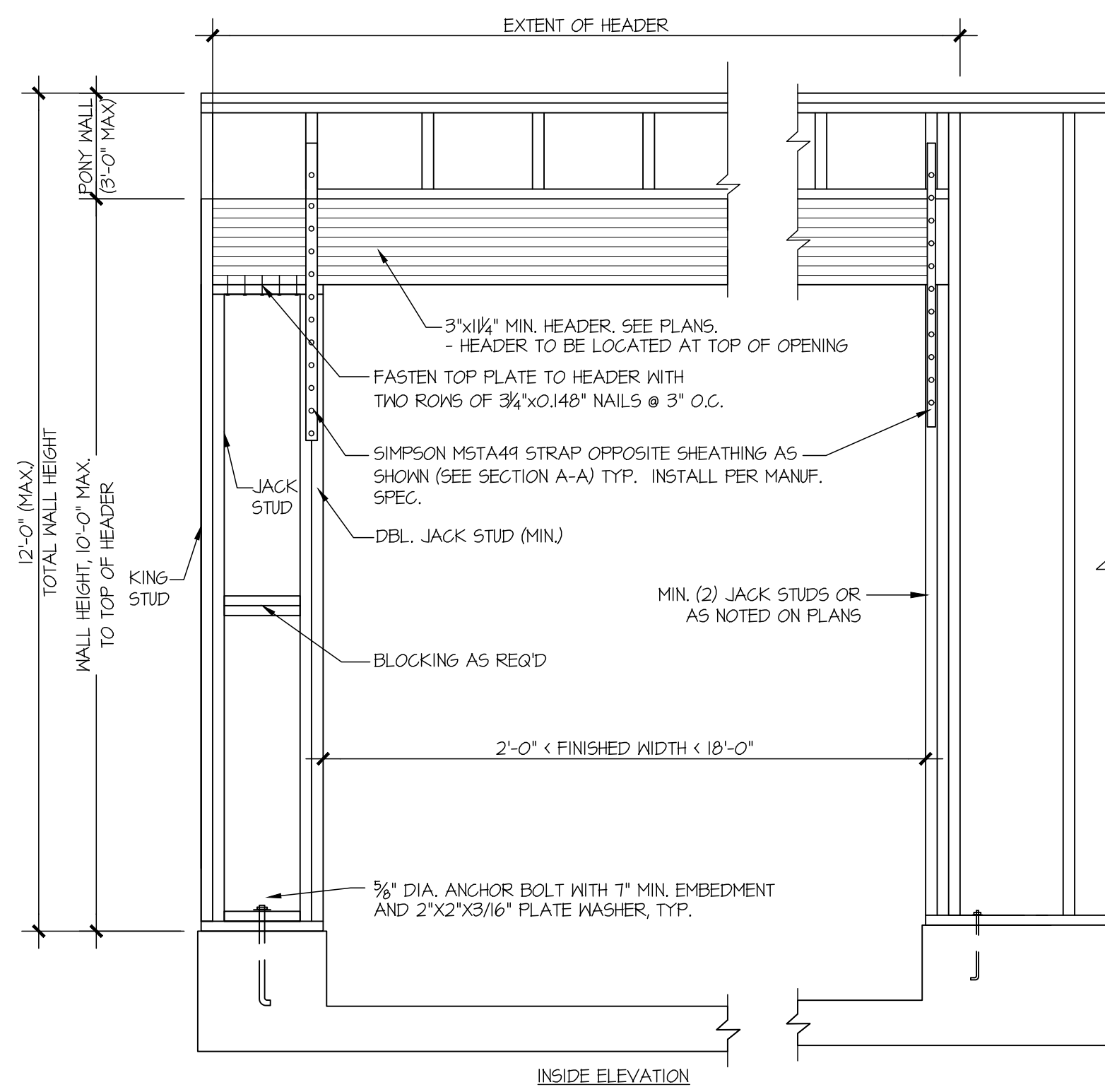
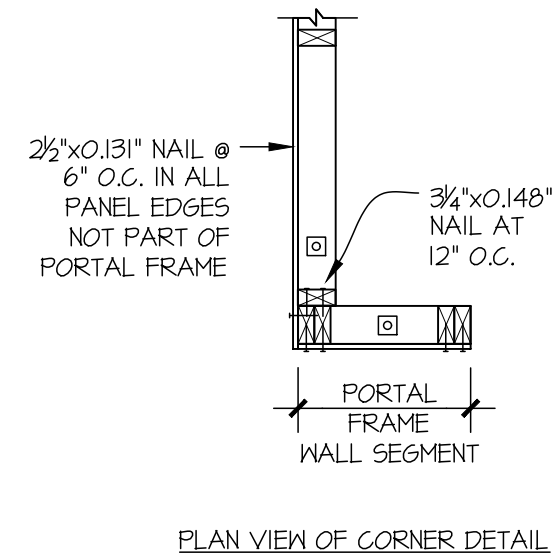
DESIGN BUILT
HOMES

STRUCTURAL DETAILS
86TH AVE SE
LOT 2
MERCER ISLAND, WA

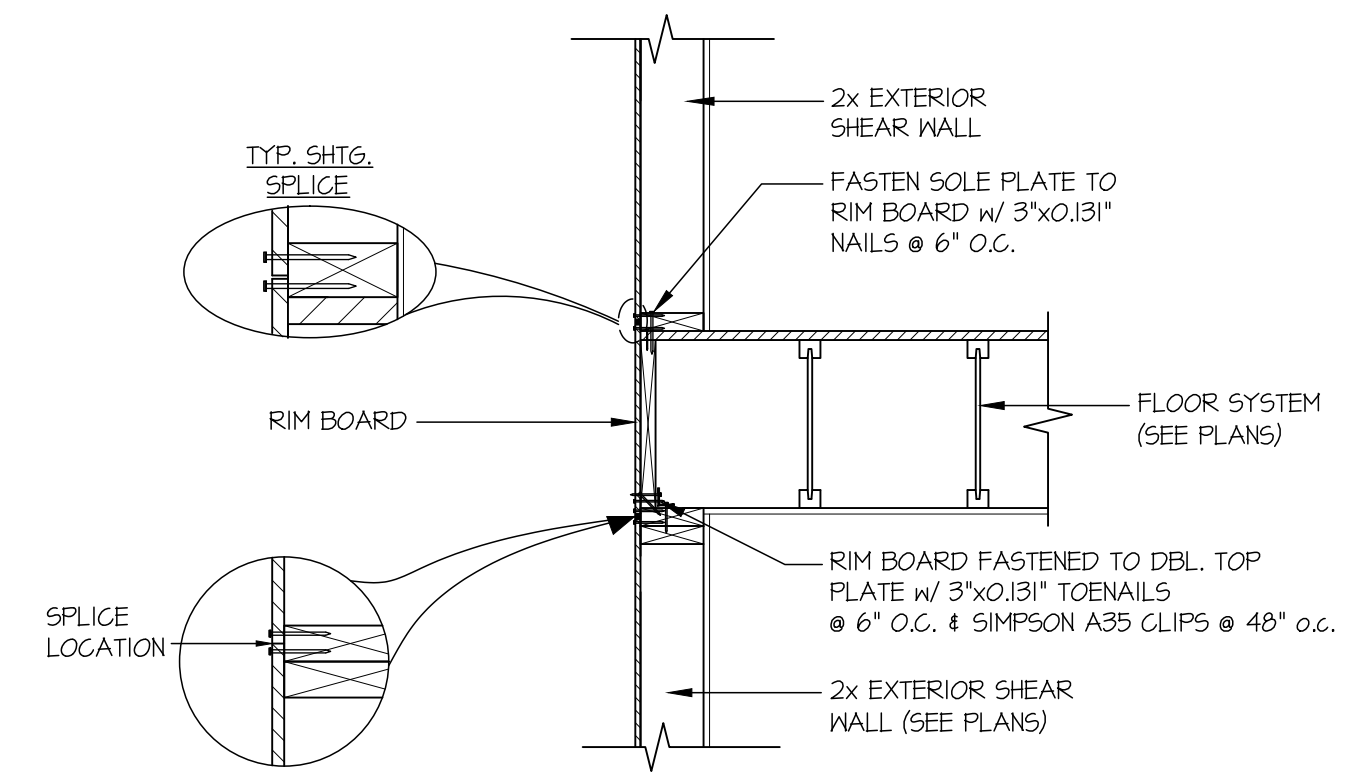
sheet:
SD-5



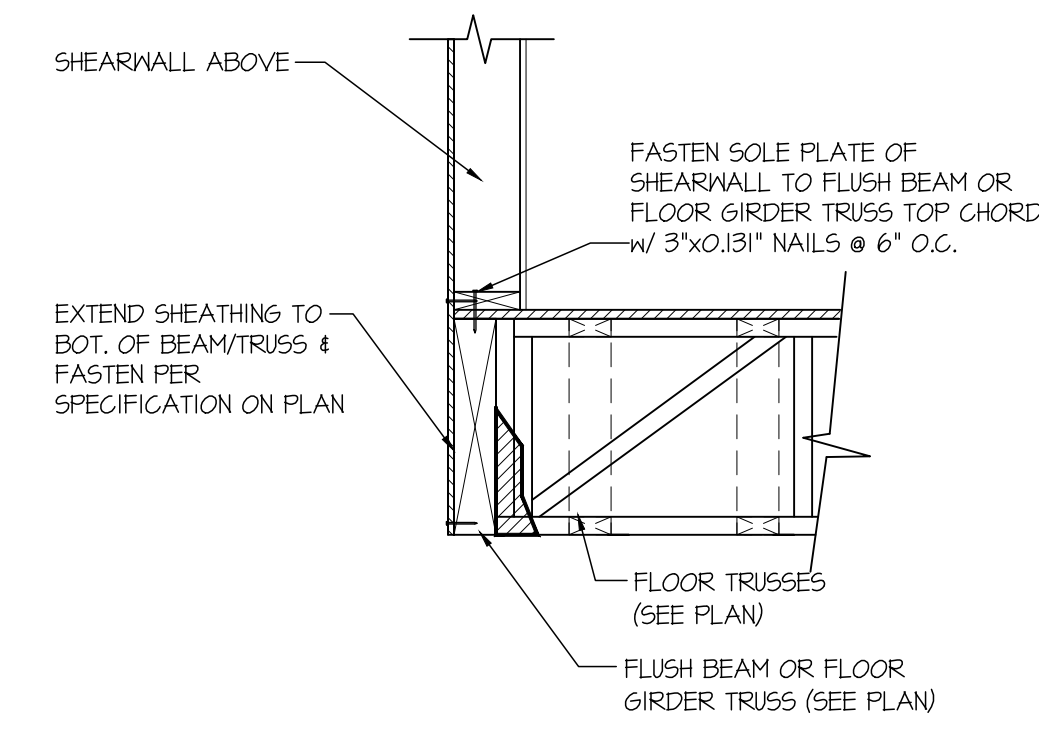
NOTE: ALL SHEATHABLE AREAS OF EXTERIOR WALL SHALL BE FULLY SHEATHED WITH 1/2" PLYWOOD OR 3/4" OSB



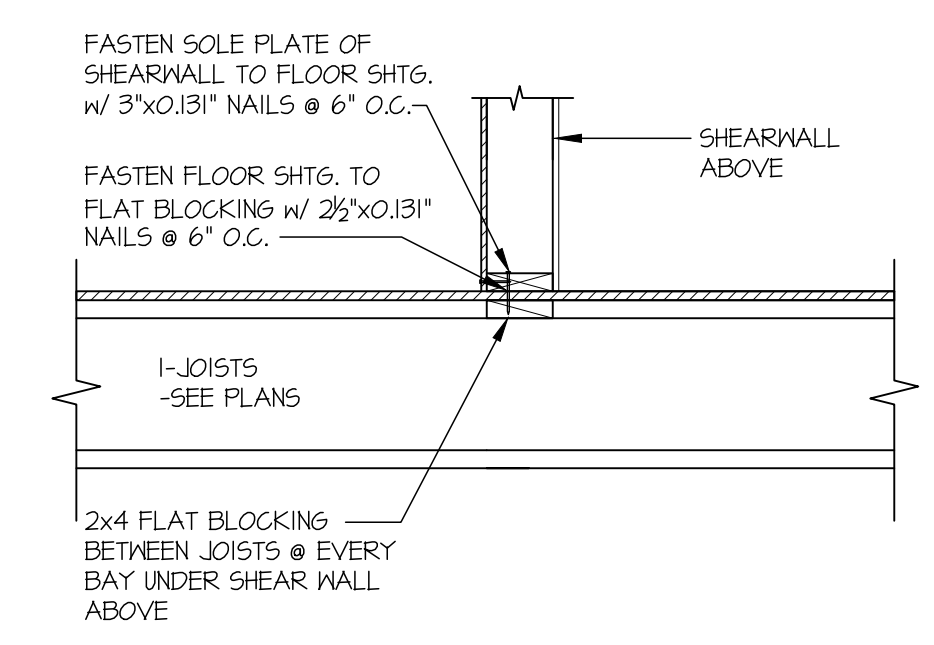
31 SECTION
SCALE: 3/4"=1'-0"



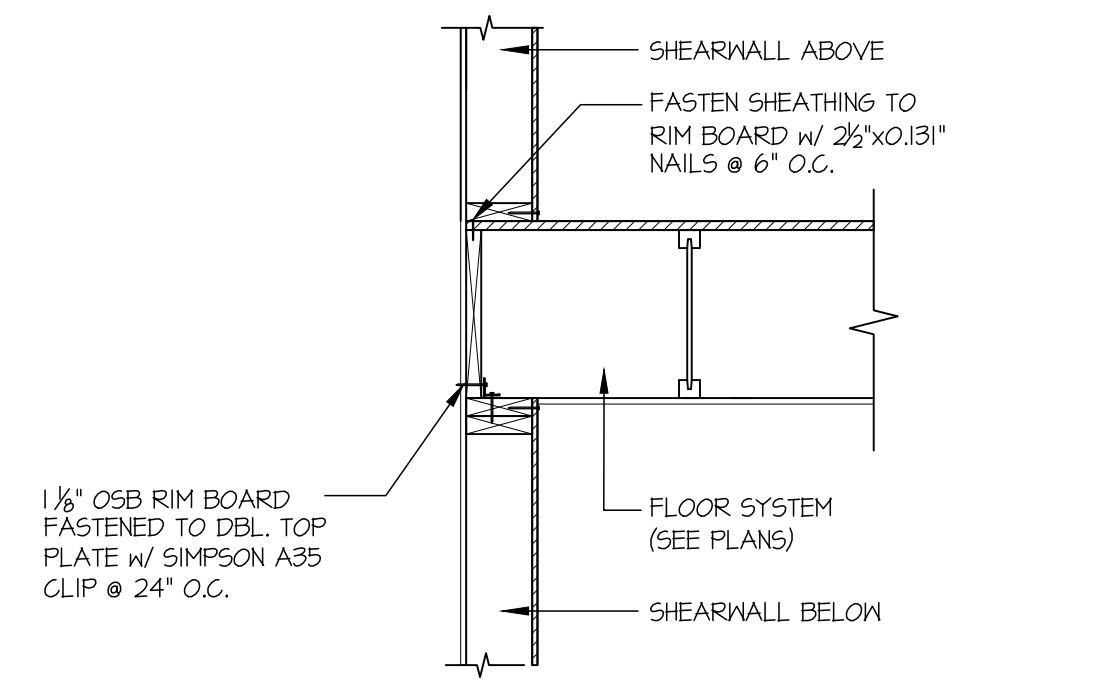
32 SECTION
SCALE: 3/4"=1'-0"



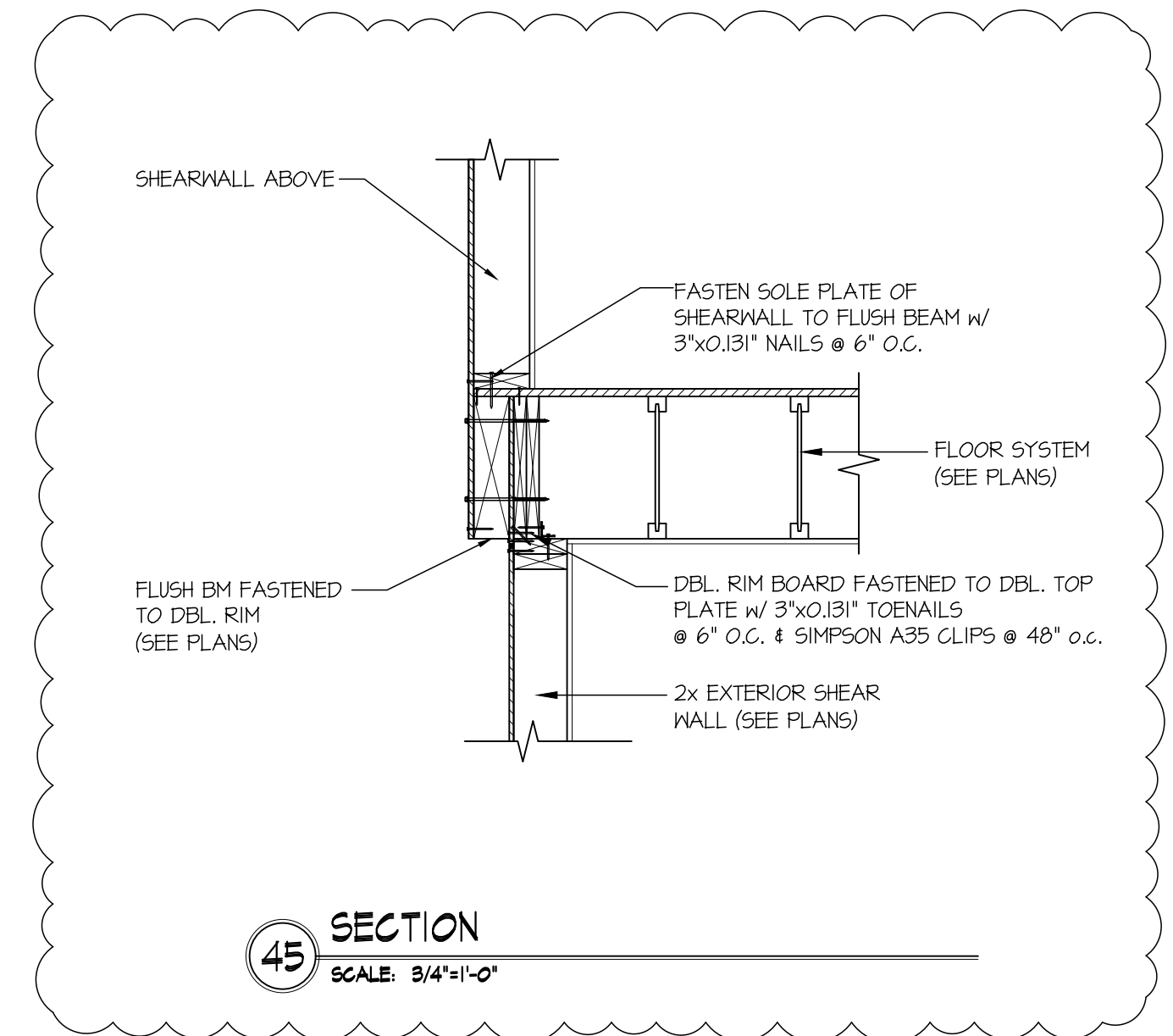
35 SHEAR TRANSFER DETAIL @ EXTERIOR SHEARWALL ABOVE
SCALE: 3/4"=1'-0"



40 SHEAR TRANSFER DETAIL @ INT. SHEARWALL ABOVE
SCALE: 3/4"=1'-0"



42 SHEAR TRANSFER DETAIL @ INTERIOR SHEAR WALL @ EDGE OF FRAMING
SCALE: 3/4"=1'-0"

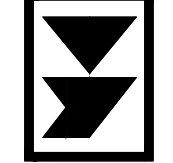


45 SECTION
SCALE: 3/4"=1'-0"

2 APA PORTAL FRAME DETAIL WITH HOLD-DOWNS
SCALE: N.T.S.



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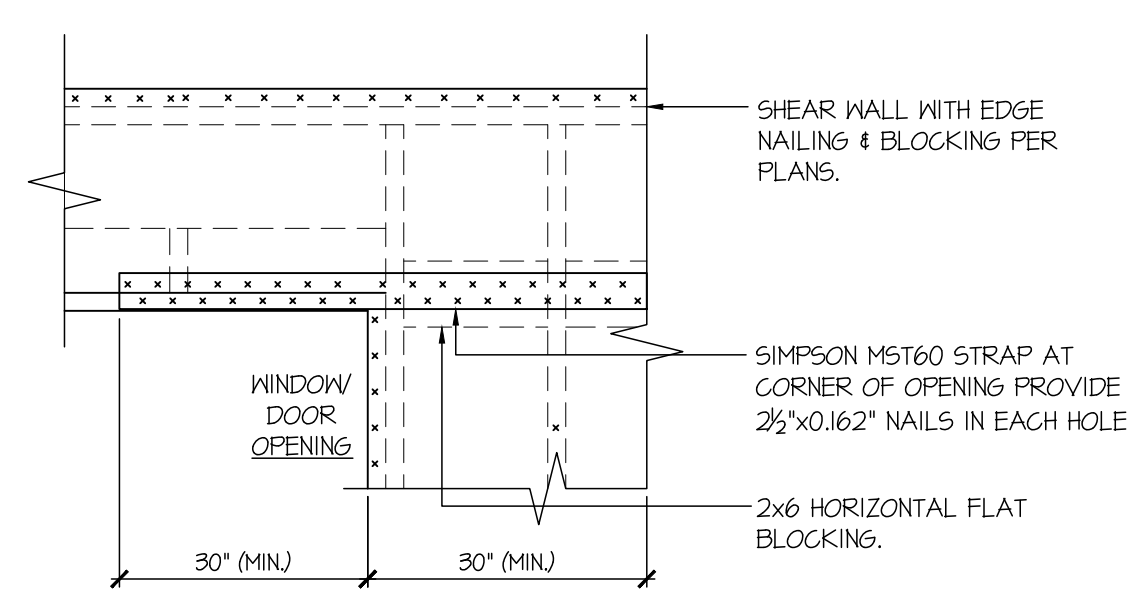
M&K project number:
244-24010
project mgr: **NJM**
drawn by: **RSC**
issue date: **11-04-24**

REVISIONS:	
date:	initial:
12-31-2024	RJD
04-08-2025	RSC
06-18-2025	RJD

DESIGN BUILT
HOMES

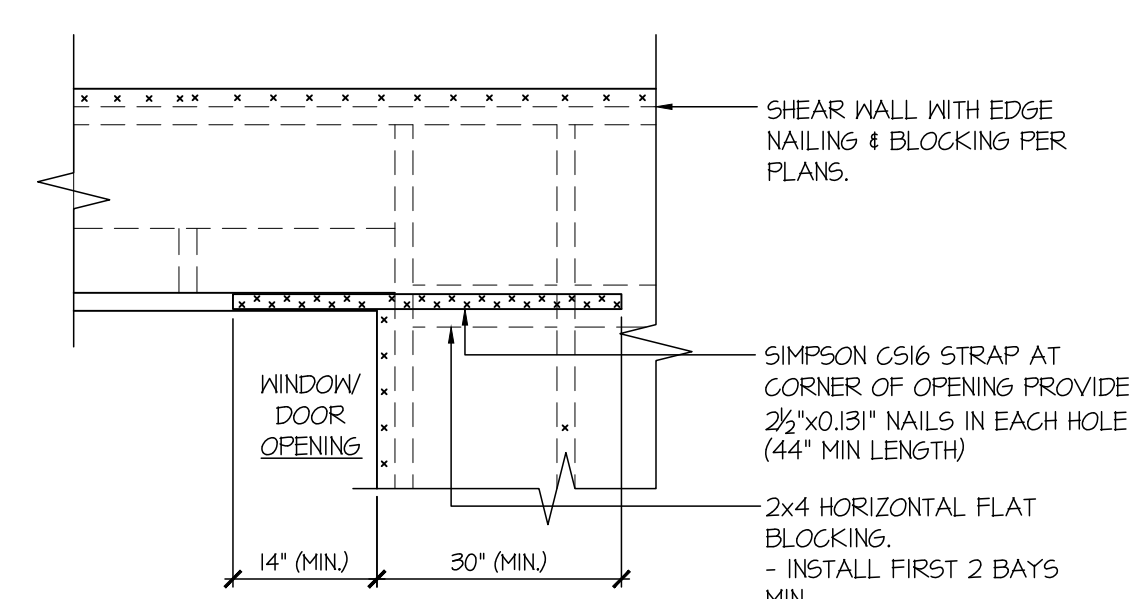
STRUCTURAL DETAILS
86TH AVE SE
LOT 2
MERCER ISLAND, WA

sheet:
SD-6



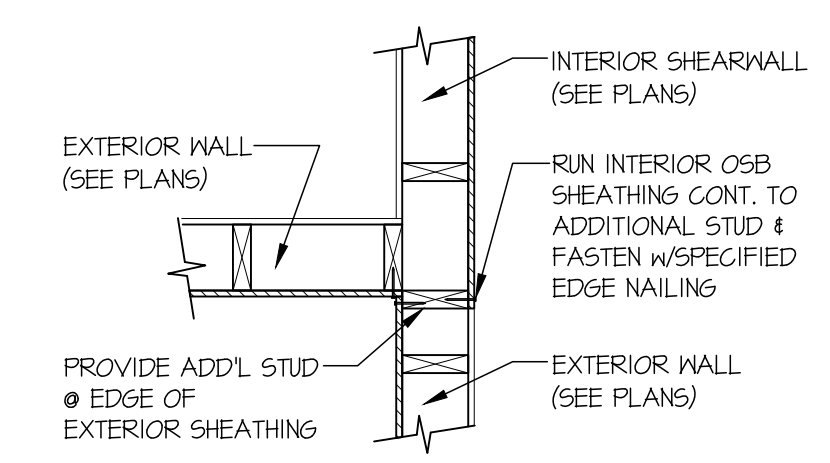
• ONLY REQUIRED WHERE SPECIFIED ON STRUCTURAL PLANS

92 EXT. WALL & INT. SHEARWALL
OPENING ELEVATION
SCALE: NTS

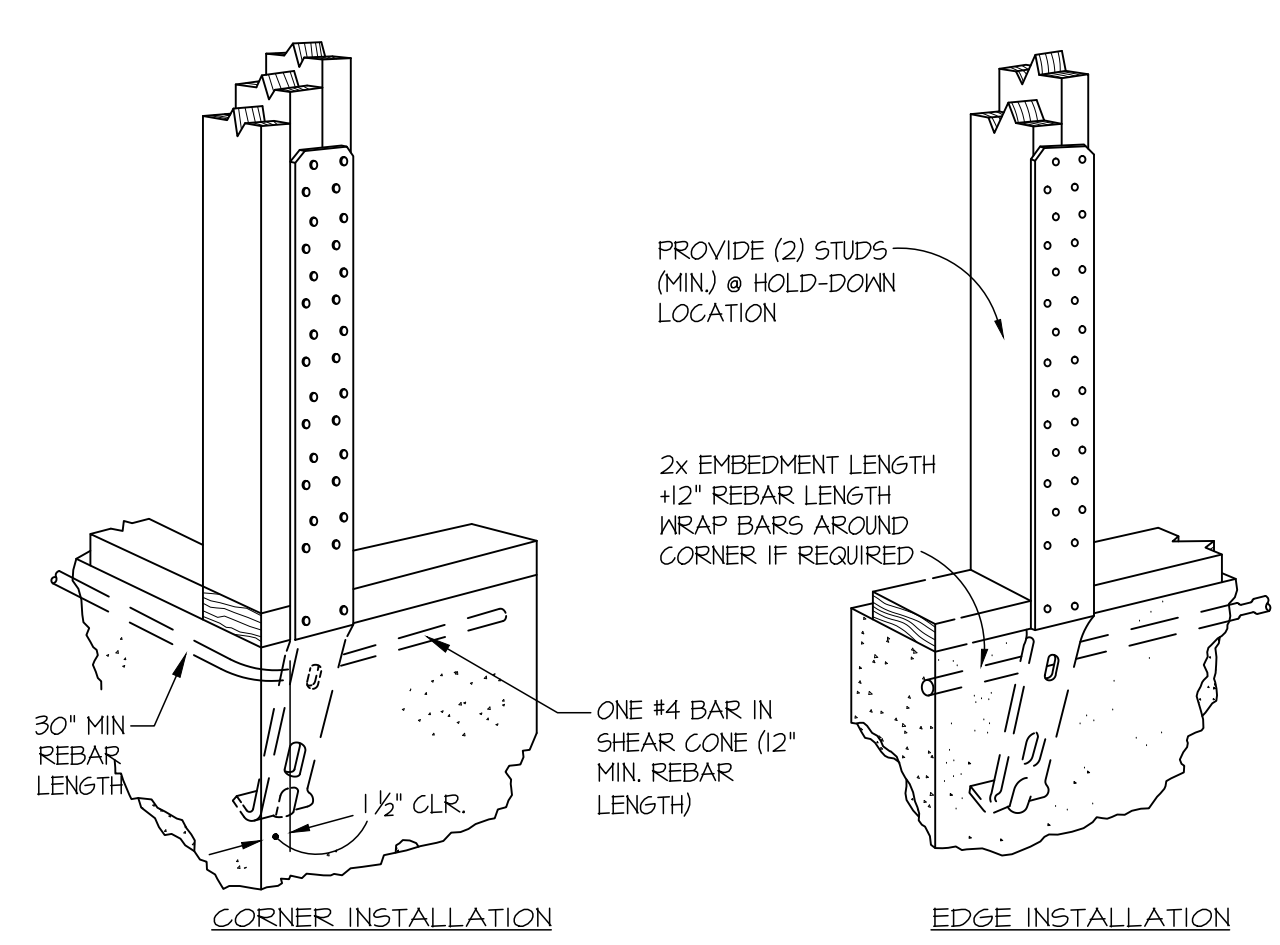


• DETAIL SIMILAR AT BOTTOM CORNERS OF WINDOWS.
• ONLY REQUIRED WHERE SPECIFIED ON STRUCTURAL PLANS
• IF MIN LENGTH IS NOT PROVIDED RUN STRAP TO END OF WALL

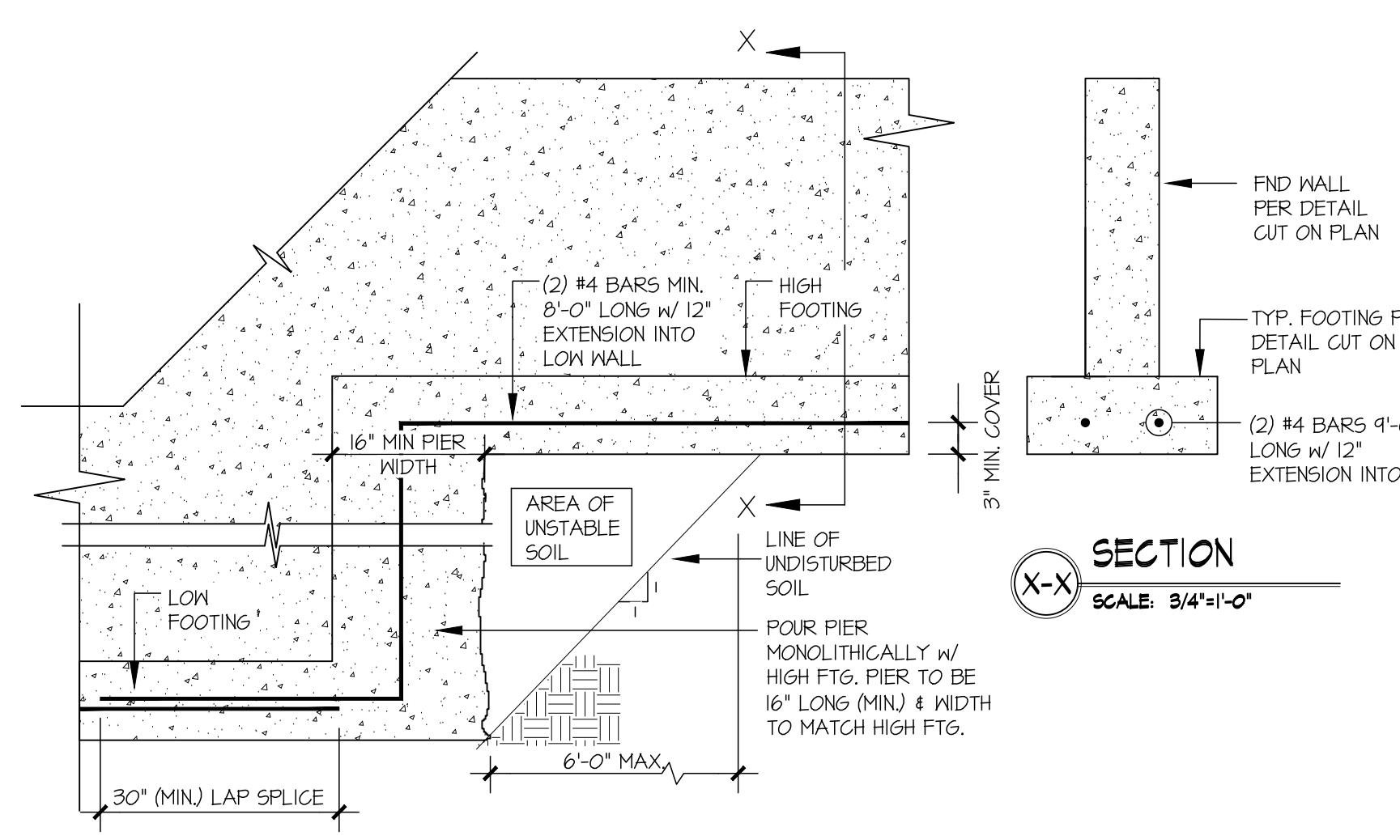
94 EXT. WALL & INT. SHEARWALL
OPENING ELEVATION
SCALE: NTS



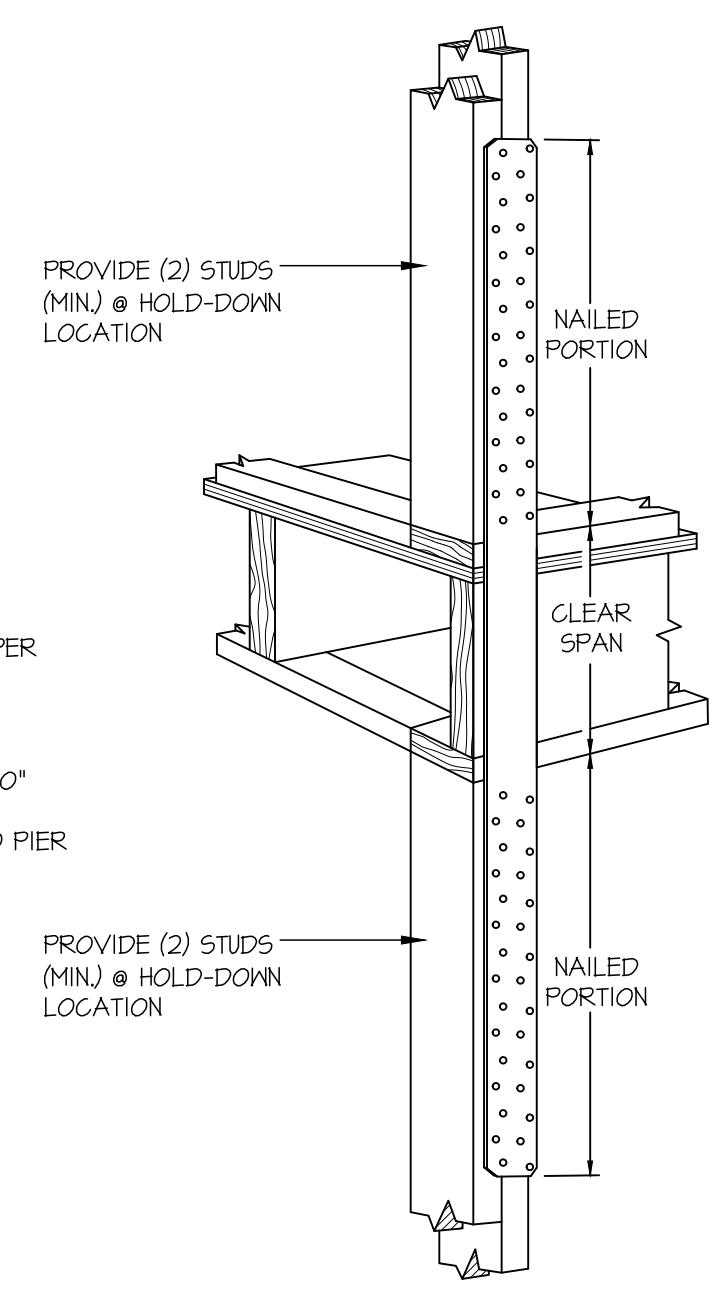
99 SHEAR TRANSFER DETAIL @
INTERSECTING INT. SHEARWALL
SCALE: 3/4"=1'-0" SHTS. OPPOSITE FACES



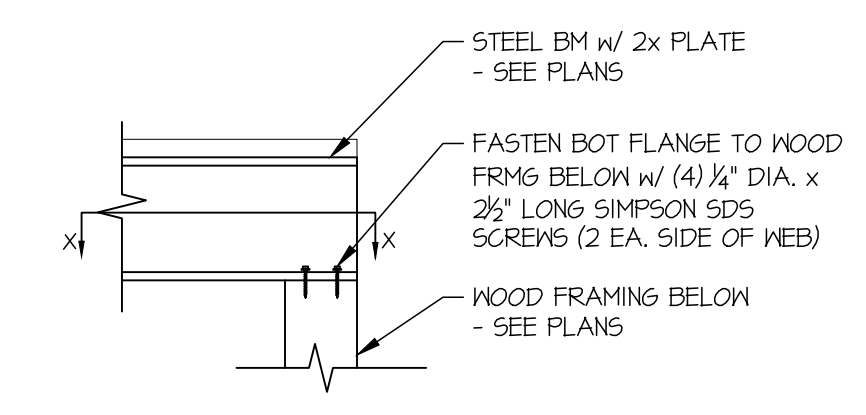
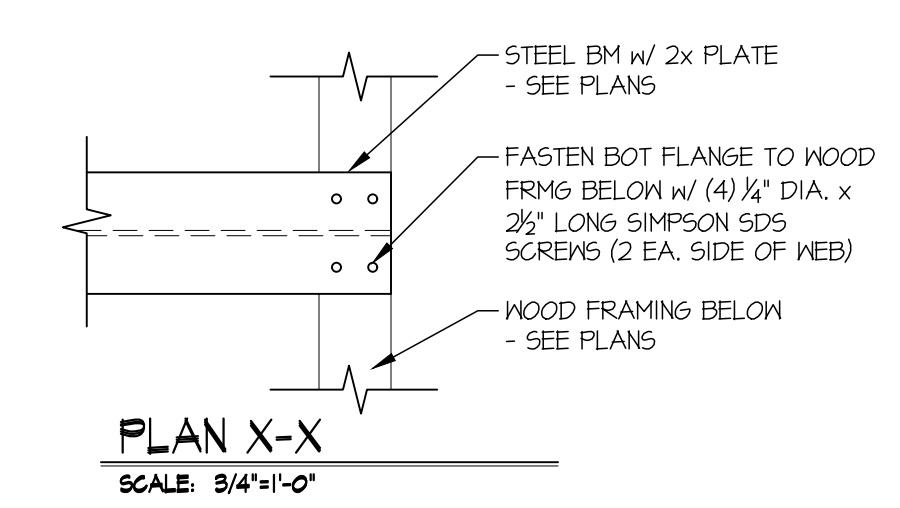
A TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE
SIMPSON STRAP HD @ FOUNDATION



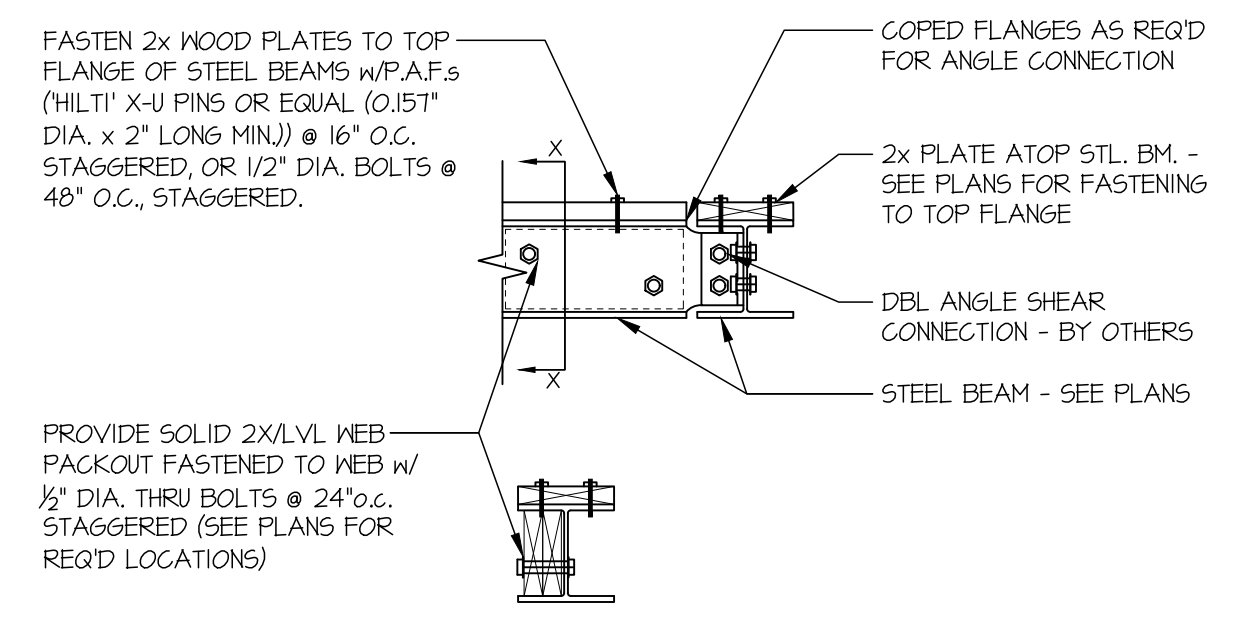
B TYPICAL STEPPED FOOTING
SCALE: 3/4"=1'-0"



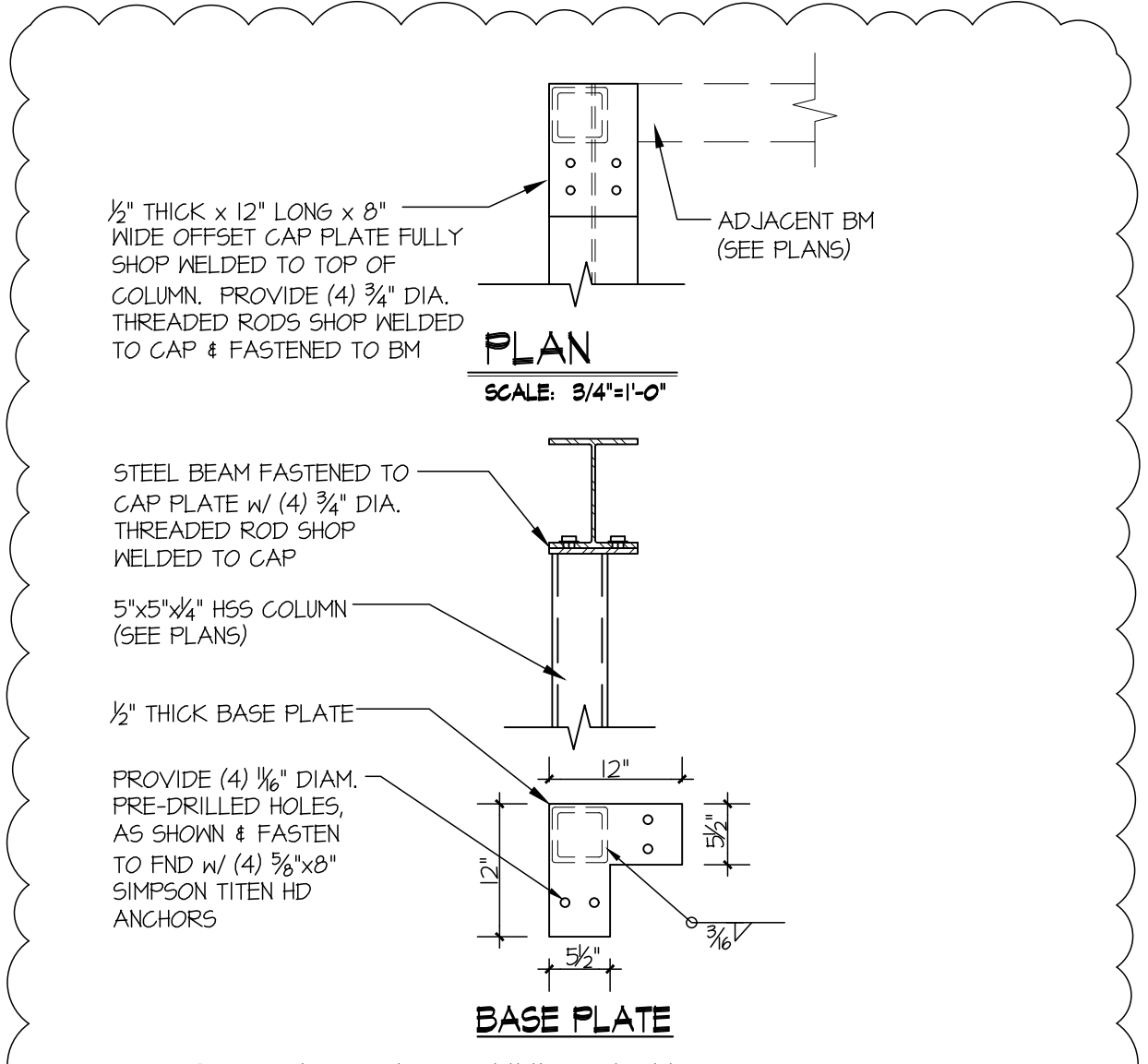
C TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE
SIMPSON STRAP HD @ FLOOR FRAMING



D STL BM TO WOOD FRMG CONNECTION
SCALE: 3/4"=1'-0"



E DOUBLE ANGLE STEEL CONNECTION
SCALE: 3/4"=1'-0"



F STL COL CONNECTION
SCALE: 3/4"=1'-0"