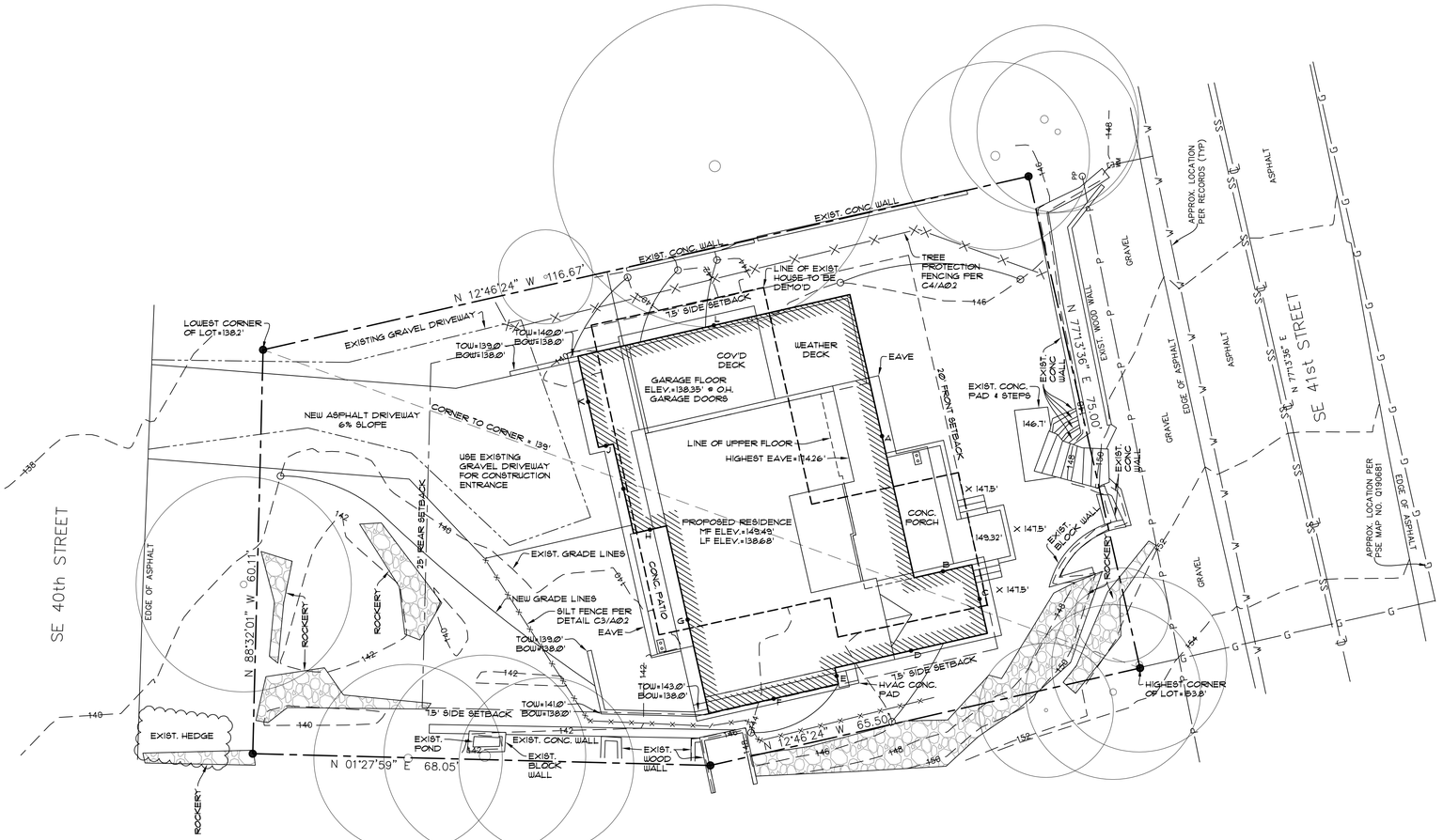

SHEET INDEX

AVERAGE EXISTING GRADE CALCULATIONS

WALL SEGMENT	WALL LENGTH	MIDPOINT ELEVATION	RESULT
A	43.25'	146.6'	6340.4
B	10.83'	147.0'	1592.0
C	10.5'	147.0'	1543.5
D	23.25'	146.5'	3406.1
E	2.5'	146.0'	365.0
F	19.75'	145.5'	2873.6
G	28.58'	143.3'	4095.5
H	5.0'	140.8'	704.0
I	13.67'	140.0'	1913.8
J	2.25'	140.0'	315.0
K	13.92'	140.0'	1948.8
L	41.5'	143.1'	5938.6
TOTALS	215.0'	N/A	31,036.3

31,036.3 / 215.0 = 144.4
AVERAGE EXISTING GRADE = 144.4'
MAXIMUM BUILDING HEIGHT = 30' ABOVE AEG.
144.4' + 30' = 174.4'
MAXIMUM BUILDING HEIGHT = 174.4'
ACTUAL BUILDING HEIGHT = 173.1' (28.22')

SITE INFO

OWNER:	- HWANG-LEE
ENGINEER:	- MDT ENGINEERING
ZONE:	- R-8.4
LOT SIZE:	- 8,877# (0.20 ACRES)
PARCEL NO.:	- 5456000115
SETBACKS:	- FRONT-20', REAR-25', SIDE-5' MIN. TOTAL OF 15'
HEIGHT LIMIT:	- 30' ABOVE A.B.E.
GROSS FLOOR AREA:	- 40% (3,550#)
LOT COVERAGE:	- 40% (BUILDING & VEHICLE DRIVING SURFACE)
REQUIRED LANDSCAPE:	- 60%
LOT SLOPE:	- LESS THAN 15%
HARDSCAPE:	- +9% (798#)

24 HOUR EROSION CONTROL CONTACT INFO:
MASON MAWER - 425.417.7819

LOT SLOPE:
HIGHEST LOT ELEV=153.8'
LOWEST LOT ELEV=138.2'
153.8'-138.2'=15.6'
15.3/139=11.2% LOT SLOPE

NOTE:
ALL TREES ARE EXISTING AND TO REMAIN

ALL ROCKERIES ARE EXISTING AND TO REMAIN

GROSS FLOOR AREA CALCULATIONS

SITE AREA	= 8,877#
ALLOWABLE F.A.R.	= 40% (3,550#)
UPPER FLOOR	= 1,184#
MAIN FLOOR	= 1,423#
LOWER FLOOR W/ GARAGE	= 2,231#
LOWER FLOOR EXCLUSION	= 1,111#
TOTAL FLOOR AREA	= 3,527#
PROPOSED G.F.A.	= 3,527# (39.7%)

PROVIDE STRAW OR PLASTIC COVER TO ANY EXPOSED SOILS THROUGH OUT THE CONSTRUCTION CYCLE.

LOT COVERAGE CALCULATIONS

LOT COVERAGE SURFACE:

MAIN STRUCTURE W/ OVERHANGS	- 2,563#
DRIVING SURFACE	- 962#
TOTAL LOT COVERAGE	- 3,525#
LOT AREA	- 8,877#
PROPOSED LOT COVERAGE	- 3,525/8,877 = 39.7%
MAXIMUM LOT COVERAGE	- 3,550 (40%)
REMAINING LOT COVERAGE	- 25# (0.3%)

HARDSCAPE CALCULATIONS

HARDSCAPE SURFACE:

EXIST. ROCKERIES	- 376#
EXIST. CONC. & BLOCK WALLS	- 166#
EXIST. CONC. PAD & STEPS	- 86#
NEW CONC. RETAINING WALLS	- 21#
NEW CONC. PORCH	- 114#
NEW HVAC CONC. PAD	- 4#
TOTAL HARDSCAPE	- 766#
LOT AREA	- 8,877#
PROPOSED HARDSCAPE	- 766/8,877 = 8.6%
MAXIMUM HARDSCAPE	- 0.3%+9% = 9.3%

NORTH

SITE PLAN
SCALE: 1" = 10'
0 10 20 30

9772 SE 41st STREET
MERCER ISLAND, WA 98040

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NW LH

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9772 SE 41st STREET
MERCER ISLAND, WA 98040

JOB NO: 21-026
DATE: 6/15/22
DRWN. BY: MM
REVISED:

SHEET NO.
A0.1

EROSION/SEDIMENTATION CONTROL - PLAN NOTES

1. THE APPROVED CONSTRUCTION SEQUENCE SHALL BE AS FOLLOWS:
A. CONDUCT PRE-CONSTRUCTION MEETING.
B. FLAG OR FENCE CLEARING LIMITS.
C. POST SIGN WITH NAME AND PHONE NUMBER OF TESC SUPERVISOR.
D. INSTALL CATCH BASIN PROTECTION IF REQUIRED.
E. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
F. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
G. CONSTRUCT SEDIMENT PONDS AND TRAPS.
H. GRADE AND STABILIZE CONSTRUCTION ROADS.
I. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
J. MAINTAIN EROSION CONTROL MEASURE IN ACCORDANCE WITH CITY/COUNTY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
K. RELOCATE EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY/COUNTY TESC MINIMUM REQUIREMENTS.
L. COVER ALL AREAS WITHIN THE SPECIFIED TIME FRAME WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, CRUSHED ROCK OR EQUIVALENT.
M. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN 7 DAYS.
N. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
O. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BEST MANAGEMENT PRACTICES REMOVED IF APPROPRIATE.

2. CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS CLEAN AND FREE OF CONTAMINANTS AT ALL TIMES AND FOR PREVENTING AN ILLICIT DISCHARGE (KCMC 15.52) INTO THE MUNICIPAL STORM DRAIN SYSTEM. IF YOUR CONSTRUCTION PROJECT CAUSES AN ILLICIT DISCHARGE TO THE MUNICIPAL STORM DRAIN SYSTEM, THE CITY/COUNTY STORM MAINTENANCE DIVISION WILL BE CALLED TO CLEAN THE PUBLIC STORM SYSTEM, AND OTHER AFFECTED PUBLIC INFRASTRUCTURE. THE CONTRACTOR(S), PROPERTY OWNER, AND ANY OTHER RESPONSIBLE PARTY MAY BE CHARGED ALL COSTS ASSOCIATED WITH THE CLEAN-UP AND MAY ALSO BE ASSESSED MONETARY PENALTIES. THE MINIMUM PENALTY IS $500. A FINE FOR A REPEAT VIOLATION SHALL BE A MULTIPLIED BY THE NUMBER OF VIOLATIONS. A FINE MAY BE REDUCED OR WAIVED FOR PERSONS WHO IMMEDIATELY SELF-REPORT VIOLATION TO THE CITY/COUNTY. A FINAL INSPECTION OF YOUR PROJECT WILL NOT BE GRANTED UNTIL ALL COSTS ASSOCIATED WITH THE CLEAN-UP, AND PENALTIES, ARE PAID TO THE CITY/COUNTY.

3. CONSTRUCTION DEWATERING DISCHARGES SHALL ALWAYS MEET WATER QUALITY GUIDELINES LISTED IN CGK POLICY E-1 SPECIFICALLY, DISCHARGES TO THE PUBLIC STORMWATER DRAINAGE SYSTEM MUST BE BELOW 25 NTU, AND NOT CONSIDERED AN ILLICIT DISCHARGE. TEMPORARY DISCHARGES TO SANITARY SEWER REQUIRE PRIOR AUTHORIZATION AND PERMIT AND NOTIFICATION TO THE PUBLIC WORKS CONSTRUCTION INSPECTOR.

4. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY/COUNTY STANDARDS AND SPECIFICATIONS.

5. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE SET BY SURVEY AND CLEARLY FLAGGED IN THE FIELD BY A CLEARING CONTROL FENCE PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE OR REMOVAL OF ANY GROUND COVER BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE PERMITTEE/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

6. APPROVAL OF THIS EROSION/SEDIMENTATION 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.).

7. THE IMPLEMENTATION OF THIS ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE PERMITTEE/CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.

8. A COPY OF THE APPROVED ESC PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

9. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS. WHEREVER POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.

10. THE ESC FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON THE APPROVED PLANS. LOCATIONS MAY BE MOVED TO SUIT FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE ENGINEER AND THE CITY/COUNTY INSPECTOR.

11. 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 (E.G., ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS. ADDITIONALLY, MORE ESC FACILITIES MAY BE REQUIRED TO ENSURE COMPLETE SILTATION CONTROL. THEREFORE, DURING THE COURSE OF CONSTRUCTION IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES OVER AND ABOVE THE MINIMUM REQUIREMENTS AS MAY BE NEEDED.

12. THE ESC FACILITIES SHALL BE INSPECTED BY THE PERMITTEE/CONTRACTOR DAILY DURING NON-RAINFALL PERIODS, EVERY HOUR (DAYLIGHT) DURING A RAINFALL EVENT, AND AT THE END OF EVERY RAINFALL, AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING. IN ADDITION, TEMPORARY SILTATION PONDS AND ALL TEMPORARY SILTATION CONTROLS SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED, PERMANENT DRAINAGE FACILITIES ARE OPERATIONAL, AND THE POTENTIAL FOR EROSION HAS PASSED. WRITTEN RECORDS SHALL BE KEPT DOCUMENTING THE REVIEWS OF THE ESC FACILITIES.

13. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 48 HOURS FOLLOWING A STORM EVENT.

14. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

15. ALL DENUDED SOILS MUST BE STABILIZED WITH AN APPROVED TESC METHOD (E.G. SEEDING, MULCHING, PLASTIC COVERING, CRUSHED ROCK) WITHIN THE FOLLOWING TIMELINES:
- MAY 1 TO SEPTEMBER 30 - SOILS MUST BE STABILIZED WITHIN 7 DAYS OF GRADING.
- OCTOBER 1 TO APRIL 30 - SOILS MUST BE STABILIZED WITHIN 2 DAYS OF GRADING.
- STABILIZE SOILS AT THE END OF THE WORKDAY PRIOR TO A WEEKEND, HOLIDAY, OR PREDICTED RAIN EVENT.

16. WHERE SEEDING FOR TEMPORARY EROSION CONTROL IS REQUIRED, FAST GERMINATING GRASSES SHALL BE APPLIED AT AN APPROPRIATE RATE (EXAMPLE: ANNUAL OR PERENNIAL RYE APPLIED AT APPROXIMATELY 80 POUNDS PER ACRE).

17. WHERE STRAW MULCH IS REQUIRED FOR TEMPORARY EROSION CONTROL, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 2".

18. ALL LOTS ADJOINING OR HAVING ANY NATIVE GROWTH PROTECTION EASEMENTS (NGPE) SHALL HAVE A 6' HIGH TEMPORARY CONSTRUCTION FENCE (CHAIN LINK WITH PIER BLOCKS) SEPARATING THE LOT (OR BUILDABLE PORTIONS OF THE LOT) FROM THE AREA RESTRICTED BY THE NGPE AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR CLEARING AND REMAIN IN PLACE UNTIL THE PLANNING DEPARTMENT AUTHORIZES REMOVAL.

19. CLEARING LIMITS SHALL BE DELINEATED WITH A CLEARING CONTROL FENCE. THE CLEARING CONTROL FENCE SHALL CONSIST OF A 6-FT. HIGH CHAIN LINK FENCE ADJACENT THE DRIP LINE OF TREES TO BE SAVED, WETLAND OR STREAM BUFFERS, AND SENSITIVE SLOPES. CLEARING CONTROL FENCES ALONG WETLAND OR STREAM BUFFERS OR UPSLOPE OF SENSITIVE SLOPES SHALL BE ACCOMPANIED BY AN EROSION CONTROL FENCE. IF APPROVED BY THE CITY, A FOUR-FOOT HIGH ORANGE MESH CLEARING CONTROL FENCE MAY BE USED TO DELINEATE CLEARING LIMITS IN ALL OTHER AREAS.

20. OFF-SITE STREETS MUST BE KEPT CLEAN AT ALL TIMES. IF DIRT IS DEPOSITED ON THE PUBLIC STREET SYSTEM, THE STREET SHALL BE IMMEDIATELY CLEANED WITH POWER SWEEPER OR OTHER EQUIPMENT. ALL VEHICLES SHALL LEAVE THE SITE BY WAY OF THE CONSTRUCTION ENTRANCE AND SHALL BE CLEANED OF ALL DIRT THAT WOULD BE DEPOSITED ON THE PUBLIC STREETS.

21. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO A DEPTH OF 1' AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4"-8" ROCK/40%-70% PASSING; 2"-4" ROCK/30%-40% PASSING; AND 1"-2" ROCK/10%-20% PASSING. RECYCLED CONCRETE SHALL NOT BE USED FOR EROSION PROTECTION, INCLUDING CONSTRUCTION ENTRANCE OR TEMPORARY STABILIZATION ELSEWHERE ON THE SITE.

22. IF ANY PART(S) OF THE CLEARING LIMIT BOUNDARY OR TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN IS/ARE DAMAGED, IT SHALL BE REPAIRED IMMEDIATELY.

23. ALL PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND RUNOFF.

24. AT NO TIME SHALL MORE THAN 1' OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED IMMEDIATELY FOLLOWING REMOVAL OF EROSION CONTROL BMPS. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

25. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION OR DISPERSION SYSTEM, THE FACILITY SHALL NOT BE USED AS A TEMPORARY SETTLING BASIN. NO UNDERGROUND DETENTION TANK, DETENTION VAULT, OR SYSTEM WHICH BACKS UNDER OR INTO A POND SHALL BE USED AS A TEMPORARY SETTLING BASIN.

26. ALL EROSION/SEDIMENTATION CONTROL PONDS WITH A DEAD STORAGE DEPTH EXCEEDING 6" MUST HAVE A PERIMETER FENCE WITH A MINIMUM HEIGHT OF 3'.

27. THE WASHED GRAVEL BACKFILL ADJACENT TO THE FILTER FABRIC FENCE SHALL BE REPLACED AND THE FILTER FABRIC CLEANED IF IT IS NONFUNCTIONAL BY EXCESSIVE SILT ACCUMULATION AS DETERMINED BY THE CITY OF KIRKLAND. ALSO, ALL INTERCEPTOR SWALES SHALL BE CLEANED IF SILT ACCUMULATION EXCEEDS ONE-QUARTER DEPTH.

28. PRIOR TO THE OCTOBER 1 OF EACH YEAR (THE BEGINNING OF THE WET SEASON), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. THE IDENTIFIED DISTURBED AREA SHALL BE SEEDED WITHIN ONE WEEK AFTER OCTOBER 1. A SITE PLAN DEPICTING THE AREAS TO BE SEEDED AND THE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE PUBLIC WORKS CONSTRUCTION INSPECTOR. THE INSPECTOR CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES.

29. ANY AREA TO BE USED FOR INFILTRATION OR PERVIOUS PAVEMENT (INCLUDING A 5-FOOT BUFFER) MUST BE SURROUNDED BY SILT FENCE PRIOR TO CONSTRUCTION AND UNTIL FINAL STABILIZATION OF THE SITE TO PREVENT SOIL COMPACTION AND SILTATION BY CONSTRUCTION ACTIVITIES.

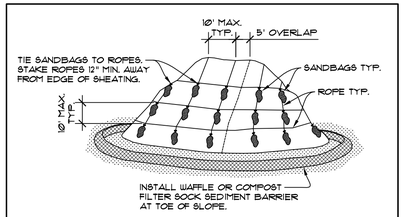
30. IF THE TEMPORARY CONSTRUCTION ENTRANCE OR ANY OTHER AREA WITH HEAVY VEHICLE LOADING IS LOCATED IN THE SAME AREA TO BE USED FOR INFILTRATION OR PERVIOUS PAVEMENT, 6" OF SEDIMENT BELOW THE GRAVEL SHALL BE REMOVED PRIOR TO INSTALLATION OF THE INFILTRATION FACILITY OR PERVIOUS PAVEMENT (TO REMOVE FINES ACCUMULATED DURING CONSTRUCTION).

31. ANY CATCH BASINS COLLECTING RUNOFF FROM THE SITE, WHETHER THEY ARE ON OR OFF THE SITE, SHALL HAVE ADEQUATE PROTECTION FROM SEDIMENT. CATCH BASINS DIRECTLY DOWNSTREAM OF THE CONSTRUCTION ENTRANCE OR ANY OTHER CATCH BASIN AS DETERMINED BY THE CITY INSPECTOR SHALL BE PROTECTED WITH A "STORM DRAIN PROTECTION INSERT" OR EQUIVALENT.

32. IF A SEDIMENT POND IS NOT PROPOSED, A BAKER TANK OR OTHER TEMPORARY GROUND AND/OR SURFACE WATER STORAGE TANK MAY BE REQUIRED DURING CONSTRUCTION, DEPENDING ON WEATHER CONDITIONS.

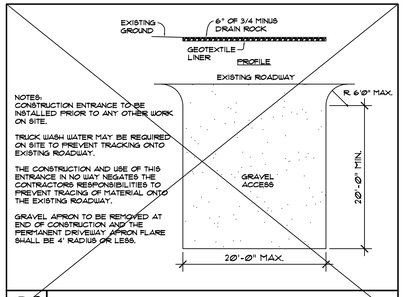
33. DO NOT FLUSH CONCRETE BY-PRODUCTS OR TRUCKS NEAR OR INTO THE STORM DRAINAGE SYSTEM. IF EXPOSED AGGREGATE IS FLUSHED INTO THE STORM SYSTEM, IT COULD MEAN RE-CLEANING THE ENTIRE DOWNSTREAM STORM SYSTEM, OR POSSIBLY RE-LAYING THE STORM LINE.

34. RECYCLED CONCRETE SHALL NOT BE STOCKPILED ON SITE, UNLESS FULLY COVERED WITH NO POTENTIAL FOR RELEASE OF RUNOFF.



NOTES:
1. INSTALL PLASTIC SHEATING VERTICALLY DOWN SLOPE.
2. INSTALL PLASTIC SHEATING SO EDGES OVERLAP AND ARE SHINGLED AWAY FROM PREVAILING WINDS.
3. PLASTIC SHEATING SHALL BE BLACK, MIN. 6 MIL.

C1 TEMPORARY STOCK PILE DETAIL N.T.S.



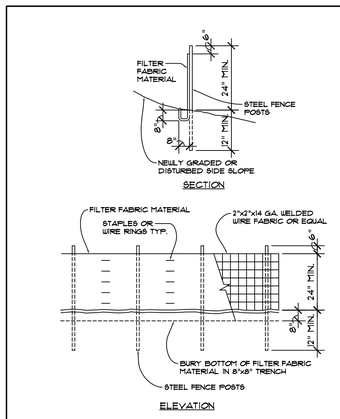
NOTES:
CONSTRUCTION ENTRANCE TO BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE.

TRUCK WASH WATER MAY BE REQUIRED ON SITE TO PREVENT TRACKING ONTO EXISTING ROADWAY.

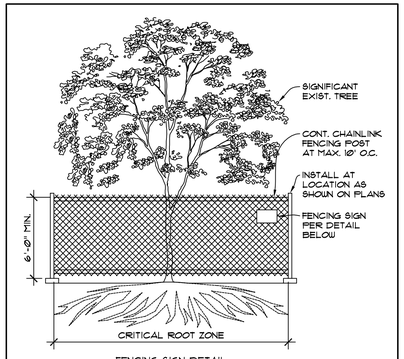
THE CONSTRUCTION AND USE OF THIS ENTRANCE IN NO WAY NEGATES THE CONTRACTORS RESPONSIBILITIES TO PREVENT TRACING OF MATERIAL ONTO THE EXISTING ROADWAY.

GRAVEL APRON TO BE REMOVED AT END OF CONSTRUCTION AND THE PERMANENT DRIVEWAY APRON FLARE SHALL BE 4' RADIUS OR LESS.

C2 GRAVEL CONSTRUCTION ENTRANCE N.T.S.



C3 SILT FENCE DETAIL



FENCING SIGN DETAIL

TREE PROTECTION AREA
ENTRANCE PROHIBITED
TO REPORT VIOLATIONS
CONTACT
CITY CODE ENFORCEMENT

NOTES:

1. MINIMUM SIX (6) FOOT HIGH TEMPORARY CHAIN LINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.

2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.

3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.

4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE. SIGN TO BE MINIMUM 11"x11", AND MADE OF WEATHERPROOF MATERIAL.

C4 TREE PROTECTION DETAIL N.T.S.

SITE PLAN NOTES & DETAILS

SCALE: N.T.S.

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JOB NO: 21-026
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DRWN. BY: MM
REVISED:

SHEET NO.
A0.2

GENERAL NOTES:

1. ALL FLOOR JOISTS PER PLAN. REFER TO MFG. LAYOUT FOR ALL FRAMING DETAILS AND BLOCKING. REVIEW MFG. LAYOUT PRIOR TO FRAMING. DOUBLE UNDER BEARING PARTITIONS. PROVIDE SOLID BLOCKING OVER BEARING MEMBERS.

2. ALL PRE-MANUFACTURED TRUSSES TO BE IDENTIFIED BY MFG'S STAMP.

3. FACTORY BUILT FIREPLACE & CHIMNEY TO BE UL LABELED INSTALL PER MANUFACTURERS SPECS O/SIDE COMBUSTION AIR REQ'D (MIN 6 SQ IN) DUCTED TO F/BOX W/ OPERABLE O/SIDE DAMPER, TIGHTLY FITTING FLUE DAMPER, AND TIGHT FITTING GLASS OR METAL DOORS OR FLUE DRAFT INDUCTION FAN.

4. LIMIT SHOWER FLOW TO 2.5 GALLON/MIN.

5. H.W.T. TO BE LABELED PER ASHRAE STD. NO. 90A-80, AND MEET THE REQUIREMENTS. PER 1981 NATIONAL APPLIANCE ENERGY CONSERVATION ACT.

6. FURNACE AND H.W. TANK, PILOTS, BURNERS, HEATING ELEMENTS, AND SWITCHES TO BE A MIN. OF 18" ABOVE FINISHED FLOOR.

7. ALL SKYLITES TO COMPLY WITH I.R.C. SECTION 2409.1 & 2603.7

8. ALL SIDELITES, SLIDING GLASS DOORS AND TUB/SHOWER ENCLOSURES TO COMPLY WITH I.B.C. SECTION 2406.

9. HEAT REGISTERS TO BE PER LEGEND, LOCATE APPROXIMATELY AS SHOWN, 6" IN FROM EXTERIOR WALLS, 3" IN FROM INTERIOR WALLS.

10. VENT DRYER, OVEN/RANGE & EXHAUST FANS TO O/SIDE. DRYER EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMB HORIZ. AND VERT. LENGTH OF 14'-0". INCL. 2 90ø. ELBOWS. DEDUCT 2'-0" FOR EA. 90ø. ELBOW EXCEEDING 2. SEE DRYER DUCT DTL. FOR ALT. SOLUTIONS. ALL EXHAUST DUCTS INSULATED (MIN. OF R-4)

11. ALL NAILING PER IRC TABLE R602.3(1) AND/OR IBC TABLE 2304.9.1, COLUMN, POST & BEAM CONNECTIONS TO COMPLY WITH I.B.C. SECTION 2316.

12. ---

13. SOLID SHT'G REQ'D ON LOWER STORY OF 2 STORY BUILDING PER I.B.C. DRYWALL NAILED PER SHEAR NAILING SCHEDULES OR IBC 2018 EDITION.

14. TUB/SHOWER SURROUND WALLS TO HAVE WATER RESISTANT GYP BOARD AND A SMOOTH HARD SURFACE TO A MINIMUM HEIGHT OF 72" ABOVE DRAIN INLET

15. PROVIDE SMOKE DETECTOR IN COMPLIANCE WITH I.B.C. AND I.R.C. STD. 907.6. ALL SMOKE DETECTORS W/BAT BACKUP. SMOKE DETECTORS WILL SOUND AN AUDIBLE ALARM IN ALL SLEEPING ROOMS.

16. DWELLING TO COMPLY W/ 2018 IECC.

17. SEAL, CAULK, GASKET, OR WEATHERSTRIP TO LIMIT AIR LEAKAGE: AT EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, OPENINGS BETWEEN WALL AND ROOF AND WALL PANELS, OPENINGS AT UTILITY PENETRATIONS THROUGH WALLS, FLOORS, AND ROOFS, ALL OTHER OPENINGS IN BUILDING ENVELOPE.

18. ALL EXTERIOR DOORS OR ACCESS HATCHES TO ENCLOSED UNHEATED AREAS MUST BE WEATHERSTRIPPED.

19. MINIMUM SOIL BEARING PRESSURE = 2000 PSF.

20. FOOTINGS TO BE PLACED ON FIRM, UNDISTURBED NATIVE SOIL.

21. DWELLING TO COMPLY WITH INTERNATIONAL BUILDING CODE (I.B.C.) 2018

22. FIRE STOPS SHALL BE PROVIDED TO CUT OFF ALL CONCL'D DRAFT OPENINGS FROM VERT. TO HORIZ. SPACES, INCLUDING THE STAIR, TUB, SHOWER, FIREPLACE, ETC.

ALL WINDOWS TO HAVE INDIVIDUAL OUTDOOR AIR INLET PORTS PER IMC 401.2 & 402.1

THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE. THE RESULTS OF THE TEST SHALL BE BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL (R402.4.1.2).

AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE.

DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. A MINIMUM OF 75% OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

R317.1.3 GEOGRAPHICAL AREAS, APPROVED NATURALLY DURABLE OR PRESSURE-PRESERVATIVE-TREATED WOOD SHALL BE USED FOR THOSE PORTIONS OF WOOD MEMBERS THAT FORM THE STRUCTURAL SUPPORTS OF BUILDINGS, BALCONIES, PORCHES OR SIMILAR PERMANENT BUILDING APPURTENANCES WHEN THOSE MEMBERS ARE EXPOSED TO THE WEATHER WITHOUT ADEQUATE PROTECTION FROM A ROOF, EAVE, OVERHANG OR OTHER COVERING THAT WOULD PREVENT MOISTURE OR WATER ACCUMULATION ON THE SURFACE OR AT JOINTS BETWEEN MEMBERS. DEPENDING ON LOCAL EXPERIENCE, SUCH MEMBERS MAY INCLUDE:

1. HORIZONTAL MEMBERS SUCH AS GIRDERS, JOISTS AND DECKING.

2. VERTICAL MEMBERS SUCH AS POSTS, POLES AND COLUMNS.

3. BOTH HORIZONTAL AND VERTICAL MEMBERS.

R303.7 STAIRWAY ILLUMINATION.
ALL INTERIOR AND EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH A MEANS TO ILLUMINATE THE STAIRS, INCLUDING THE LANDINGS AND TREADS. INTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF EACH LANDING OF THE STAIRWAY. FOR INTERIOR STAIRS THE ARTIFICIAL LIGHT SOURCES SHALL BE CAPABLE OF ILLUMINATING TREADS AND LANDINGS TO LEVELS NOT LESS THAN 1 FOOT-CANDLE (11 LUX) MEASURED AT THE CENTER OF TREADS AND LANDINGS. EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE TOP LANDING OF THE STAIRWAY. EXTERIOR STAIRWAYS PROVIDING ACCESS TO A BASEMENT FROM THE OUTSIDE GRADE LEVEL SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE BOTTOM LANDING OF THE STAIRWAY.

SOURCE SPECIFIC VENTILATION REQUIREMENTS:

BATHROOMS, LAUNDRY ROOMS AND POWDER ROOM FANS TO BE 50 CFM.
KITCHEN EXHAUST FANS TO BE 100 CFM U.N.O.
EXHAUST FANS SHALL BE FLOW RATED AT .25 W.G. STATIC PRESSURE

EXHAUST DUCTS SHALL:
BE INSULATED TO R-4 IN UNCONDITIONED SPACE
BE EQUIPPED WITH A BACKDRAFT DAMPER
TERMINATE OUTSIDE THE BUILDING PER SRC M1501.1
COMPLY WITH BELOW:

FAN CFM	MAX. FLEX DIA.	MAX. FT.	MAX. SMOOTH DIA.	MAX. FT.
50	4"	25'	4"	70'
50	5"	90'	5"	100'
50	6"	OVER 100'	6"	OVER 100'
80	4"	N/A	4"	20'
80	5"	15'	5"	100'
80	6"	90'	6"	OVER 100'
100	5"	N/A	5"	50'
100	6"	45'	6"	OVER 100'
125	6"	15'	6"	OVER 100'
125	"1	70'	"1	OVER 100'

WHOLE HOUSE VENTILATION REQUIREMENTS:

A 6" DIAMETER FRESH AIR INLET SHALL BE DUCTED FROM THE EXTERIOR TO THE FRESH AIR RETURN PLENUM.
THE FRESH AIR DUCT SHALL BE PROTECTED FROM THE ENTRY OF INSECTS, LEAVES, OR OTHER DEBRIS AND LOCATED SO AS NOT TO TAKE AIR FROM:
-HAZARDOUS OR UNSANITARY LOCATIONS.
-WHERE IT WILL PICK UP OBJECTIONABLE ODORS, FUMES OR FLMMBL. VPRS.
-A ROOM OR SPACE HAVING FUEL BURNING APPLIANCES THEREIN.
-ATTIC, CRAWL SPACE, OR GARAGE.
-CLOSER THAN 10' FROM AN APPLNC OR PLMBG VENT OUTLET, UNLESS THE DUCT VENT OUTLET IS AT LEAST 3' ABOVE THE FRESH AIR INLET.
-DUCT SHALL BE INSLTD TO R-4 WHEN PASSING THROUGH A COND'D SPACE.

INLET DUCT SHALL BE EQUIPPED WITH A MOTORIZED DMPR THAT WILL OPEN WHEN THE VNTLTN FAN RELAY IS ACTIVATED, AND REMAIN CLOSED AT ALL OTHER TIMES. IN ADDTN TO THE MOTORIZED DMPR, A MANUAL DMPR SET TO .35-.5 AIR CHANGES PER HOUR IS ALSO REQUIRED.

A WHOLE HOUSE EXHAUST FAN SHALL BE LCT'D IN THE CEILING. SIZE PER THE CALCS BELOW. THE AIR INTAKE DUCT DMPR SHALL BE SET W/IN THIS RNG

WHOLE HOUSE VENTILATION:
THIS SECTION ESTABLISHES MINIMUM PRESCRIPTIVE DESIGN REQUIREMENTS FOR WHOLE HOUSE VENTILATION SYSTEMS. EACH DWELLING UNIT OR GUEST ROOM SHALL BE EQUIPPED WITH A VENTILATION SYSTEM COMPLYING WITH OPTION I, II, III OR IV. COMPLIANCE IS ALSO PERMITTED TO BE DEMONSTRATED THROUGH COMPLIANCE WITH THE INTERNATIONAL MECHANICAL CODE.

☐ OPTION I: WHOLE-HOUSE VENTILATION USING EXHAUST FANS. (IRC M1507.3.4)
☐ OPTION II: WHOLE-HOUSE VENTILATION INTEGRATED WITH A FORCED-AIR SYSTEM. (IRC M1507.3.5)
☒ OPTION III: WHOLE-HOUSE VENTILATION USING A SUPPLY FAN. (IRC M1507.3.6)
☐ OPTION IV: WHOLE-HOUSE VENTILATION USING A HEAT RECOVERY VENTILATION SYSTEM. (IRC M1507.3.7)

MECHANICAL VENTILATION RATE:
THE WHOLE HOUSE MECHANICAL VENTILATION SYSTEM SHALL PROVIDE OUTDOOR AIR TO EACH HABITABLE SPACE AT A CONTINUOUS RATE 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 TABLE M1507.3.3(2).

TABLE M1507.3.3(1) CONTINUOUS WHOLE HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (SQUARE FEET)	NUMBER OF BEDROOMS				
	0-1	2-3	4-5	6-7	>7
	AIRFLOW IN CFM				
< 1,500	30	45	60	75	90
1,501-3,000	45	60	75	90	105
3,001-4,500	60	75	90	105	120
4,501-6,000	75	90	105	120	135
6,001-7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

TABLE M1507.3.3(2) INTERMITTENT WHOLE HOUSE MECHANICAL VENTILATION RATE FACTOR[a,b]

RUN TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
FACTOR	4	3	2	1.5	1.3	1

a. FOR VENTILATION SYSTEM RUN TIME VALUES BETWEEN THOSE GIVEN, THE FACTORS ARE PERMITTED TO BE DETERMINED BY INTERPOLATION.
b. EXTRAPOLATION BEYOND THE TABLE IS PROHIBITED.

EXHAUST FANS MUST BE FLOW RATED AT .25 W.G. AND MAX. 1.5 SONE RATING.
READILY ACCSSBLE 24 HR CLCK TMR OR DEHUMIDISTAT & RELAY SHALL BE INSTLL'D AND WIRED TO REGULATE THE FURN FAN, RELAY AND WHOLE HOUSE EXHAUST FAN.
INTERIOR DOORS SHALL BE INSTLL'D SO AS NOT TO IMPEDE THE MVMNT OF FRESH AIR TO ALL HABITABLE ROOMS.
VNTLTN SYSTEM MUST BE PERFORMANCE TESTED JUST PRIOR TO THE FINAL INSPECTION BY THE INSTALLER OR A GLFD THIRD PARTY. THE INLET DUCT SHALL BE LABELED WITH THE ACTUAL CFMS MSR'D & A LETTER OF CMPLNC SHALL BE AVAILABLE ON SITE FOR THE INSPCTR BEFORE A CERT OF OCCUPANCY WILL BE ISSUED.

PRESCRIPTIVE ENERGY CODE COMPLIANCE FOR ALL CLIMATE ZONES IN WASHINGTON PER 2018 WSEC:
MEDIUM DWELLING UNIT: 6 CREDITS
HEATING OPTION 2 - HEAT PUMP (1.0 CREDITS)
ENERGY OPTIONS:
1.3 - EFFICIANT BUILDING ENVELOPE (0.5 CREDITS): VERTICAL FENESTRATION U = 0.28 FLOOR R-38 SLAB ON GRADE R-10 PERIMETER AND UNDER ENTIRE SLAB BELOW GRADE SLAB R-10 PERIMETER AND UNDER ENTIRE SLAB
2.3 - AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION (1.5 CREDITS) REDUCE THE TESTED AIR LEAKAGE TO 1.5 AIR CHANGES PER HOUR MAXIMUM AND ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1507.1.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTRNATIONAL MECHANICAL CODE SHALL BE MET WITH A HIGH RECOVERY VENTILATION SYSTEM WITH MINIMUM SENSIBLE HEAT RECOVERY EFFICIANCY OF 0.75
3.2 - HIGH EFFICIANCY HVAC EQUIPMENT (1.0 CREDITS): AIR-SOURCED CENTRALLY DUCTED HEAT PUMP WITH A MINIMUM HSPF OF 9.5
4.2 - HIGH EFFICIANCY HVAC DISTRIBUTION (1.0 CREDITS): HVAC EQUIPMENT AND ASSOCIATED DUCT SYSTEM(S) INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R403.3.7
5.3 - EFFICIANT WATER HEATING (1.0 CREDITS): ENERGY STAR RATED GAS OR PROPANE WATER HEATER WITH A MINIMUM UEF OF 0.91

EXHAUST VENT CLEARANCES:
PER SRC M1501.1 EXHAUST FAN VENTS SHALL TERMINATE OUTDOORS AND NOT IN ATTICS, SOFFITS, RIDGE VENTS, OR CRAWL SPACES. KITCHEN, BATHROOMS, AND LAUNDRY EXHAUST TERMINATIONS TO EXIT THE STRUCTURE WITH CLEARANCES MEETING SRC M1506.3, NOT LESS THAN 3 FEET FROM PROPERTY LINES, 3 FEET FROM OPERABLE OPENINGS IN THE BUILDING AND 10 FEET FROM MECHANICAL AIR INTAKES.

STAIRWAYS - 2018 IRC SECTION 311.7

R311.7.1 WIDTH - STAIRWAYS SHALL BE NOT LESS THAN 36" IN CLEAR WIDTH AT ALL POINTS ABOVE THE PERMITTED HANDRAIL HEIGHT AND BELOW THE REQUIRED HEADROOM HEIGHT. THE CLEAR WIDTH OF STAIRWAYS AT AND BELOW THE HANDRAIL HEIGHT, INCLUDING TREADS AND LANDINGS, SHALL BE NOT LESS THAN 31-1/2" WHERE A HANDRAIL IS INSTALLED ON ONE SIDE AND 27" WHERE HANDRAILS ARE PROVIDED ON BOTH SIDES.
EXCEPTION: THE WIDTH OF SPIRAL STAIRWAYS SHALL BE IN ACCORDANCE WITH SECTION R311.7.10.1.

R311.7.2 HEADROOM - THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6'-8" MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.
EXCEPTIONS: 1. WHERE THE NOSINGS OF TREADS AT THE SIDE OF A FLIGHT EXTEND UNDER THE EDGE OF A FLOOR OPENING THROUGH WHICH THE STAIR PASSES, THE FLOOR OPENING SHALL BE ALLOWED TO PROJECT HORIZONTALLY INTO THE REQUIRED HEADROOM NOT MORE THAN 4-3/4".
2. THE HEADROOM FOR SPIRAL STAIRWAYS SHALL BE IN ACCORDANCE WITH SECTION R311.7.10.1.

R311.7.3 VERTICAL RISE - A FLIGHT OF STAIRS SHALL NOT HAVE A VERTICAL RISE LARGER THAN 151" BETWEEN FLOOR LEVELS OR LANDINGS.

R311.7.5 STAIR TREADS AND RISERS - STAIR TREADS AND RISERS SHALL MEET THE REQUIREMENTS OF THIS SECTION. FOR THE PURPOSES OF THIS SECTION, DIMENSIONED AND DIMENSIONED SURFACES SHALL BE EXCLUSIVE OF CARPETS, RUGS OR RUNNERS.

R311.7.5.1 RISERS - THE RISER HEIGHT SHALL BE NOT MORE THAN 7-3/4". THE RISER SHALL BE MEASURED VERTICALLY BETWEEN LEADING EDGES OF THE ADJACENT TREADS. THE GREATEST RISER HEIGHT WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8". RISERS SHALL BE VERTICAL OR SLOPED FROM THE UNDERSIDE OF THE NOSING OF THE TREAD ABOVE AT AN ANGLE NOT MORE THAN 30 DEGREES FROM THE VERTICAL. OPEN RISERS ARE PERMITTED PROVIDED THAT THE OPENINGS LOCATED MORE THAN 30", AS MEASURED VERTICALLY, TO THE FLOOR OR GRADE BELOW DO NOT PERMIT THE PASSAGE OF A 4" DIAMETER SPHERE.
EXCEPTIONS: 1. THE OPENING BETWEEN ADJACENT TREADS IS NOT LIMITED ON SPIRAL STAIRWAYS.
2. THE RISER HEIGHT OF SPIRAL STAIRWAYS SHALL BE IN ACCORDANCE WITH SECTION R311.7.10.1.

R311.7.5.2 TREADS - THE TREAD DEPTH SHALL BE NOT LESS THAN 10". THE TREAD DEPTH SHALL BE MEASURED HORIZONTALLY BETWEEN THE VERTICAL PLANES OF THE FOREMOST PROJECTION OF ADJACENT TREADS AND AT A RIGHT ANGLE TO THE TREAD'S LEADING EDGE. THE GREATEST TREAD DEPTH WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8".

R311.7.5.3 NOSINGS - NOSINGS AT TREADS, LANDINGS, AND FLOORS OF STAIRWAYS SHALL HAVE A RADIUS OF CURVATURE AT THE NOSINGS NOT GREATER 9/16" OR A BEVEL NOT GREATER THAN 1/2". A NOSING PROJECTION NOT LESS THAN 3/4" AND NOT MORE THAN 1-1/4" SHALL BE PROVIDED ON STAIRWAYS. THE GREATEST NOSING PROJECTION SHALL NOT EXCEED THE SMALLEST NOSING PROJECTION BY MORE THAN 3/8" WITHIN A STAIRWAY.
EXCEPTION: A NOSING PROJECTION IS NOT REQUIRED WHERE THE TREAD DEPTH IS NOT LESS THAN 11".

R311.7.6 LANDINGS FOR STAIRWAYS - THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY. THE WIDTH PERPENDICULAR TO THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN THE WIDTH OF THE FLIGHT SERVED. LANDINGS OF SHAPES OTHER THAN SQUARE OR RECTANGULAR SHALL BE PERMITTED PROVIDED THAT THE DEPTH AT THE WALK LINE AND THE TOTAL AREA IS NOT LESS THAN THAT OF A QUARTER CIRCLE WITH A RADIUS EQUAL TO THE REQUIRED LANDING WIDTH. WHERE THE STAIRWAY HAS A STRAIGHT RUN, THE DEPTH IN THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN 36".

R311.7.7 STAIRWAY WALKING SURFACE - THE WALKING SURFACE OF TREADS AND LANDINGS OF STAIRWAYS SHALL BE SLOPED NOT STEEPER THAN ONE UNIT VERTICAL IN 48" HORIZONTAL.

R311.7.8 HANDRAILS - HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF EACH FLIGHT OF STAIRS WITH FOUR OR MORE RISERS.

R311.7.8.1 HEIGHT - HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL BE NOT LESS THAN 34" AND NOT MORE THAN 38".

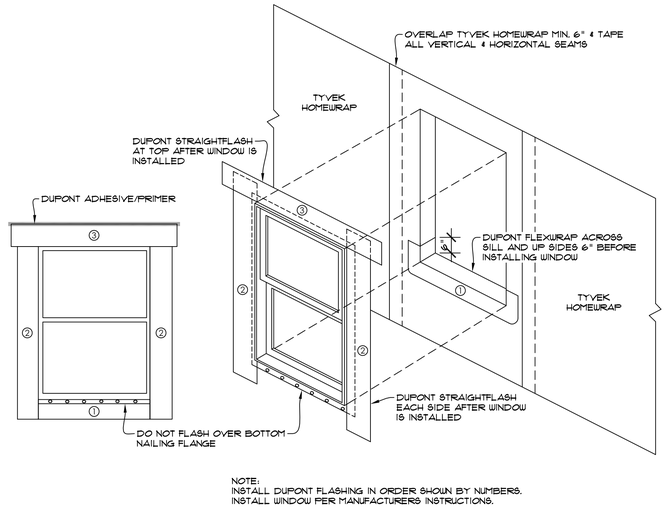
R311.7.8.2 HANDRAIL PROJECTION - HANDRAILS SHALL NOT PROJECT MORE THAN 4-1/2" ON EITHER SIDE OF THE STAIRWAY.
EXCEPTION: WHERE NOSINGS OF LANDINGS, FLOORS OR PASSING FLIGHTS PROJECT INTO THE STAIRWAY REDUCING THE CLEARANCE AT PASSING HANDRAILS, HANDRAILS SHALL PROJECT NOT MORE THAN 6-1/2" INTO THE STAIRWAY, PROVIDED THAT THE STAIR WIDTH AND HANDRAIL CLEARANCE ARE NOT REDUCED TO LESS THAN REQUIRED.

R311.7.8.3 HANDRAIL CLEARANCE - HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1-1/2" BETWEEN THE WALL AND THE HANDRAILS.

R311.7.8.4 CONTINUITY - HANDRAILS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS.
EXCEPTIONS: 1. HANDRAIL CONTINUITY SHALL BE PERMITTED TO BE INTERRUPTED BY A NEWEL POST AT A TURN IN A FLIGHT WITH WINDERS, AT A LANDING, OR OVER THE LOWEST TREAD.
2. A VOLUTE, TURNOUT OR STARTING EASING SHALL BE ALLOWED TO TERMINATE OVER THE LOWEST TREAD

R311.7.8.5 GRIP SIZE - REQUIRED HANDRAILS SHALL BE OF ONE OF THE FOLLOWING TYPES OR PROVIDE EQUIVALENT GRASPABILITY.
1. TYPE I. HANDRAILS WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF NOT LESS THAN 1-1/4" AND NOT GREATER THAN 2". IF THE HANDRAIL IS NOT CIRCULAR, IT SHALL HAVE A PERIMETER DIMENSION OF NOT LESS THAN 4" AND NOT GREATER THAN 6-1/4" WITH A CROSS SECTION OF DIMENSION OF NOT MORE THAN 2-1/4". EDGES SHALL HAVE A RADIUS OF NOT LESS THAN 0.01".
2. TYPE II. HANDRAILS WITH A PERIMETER GREATER THAN 6-1/4" SHALL HAVE A GRASPABLE FINGER RECESS AREA ON BOTH SIDES OF THE PROFILE. THE FINGER RECESS SHALL BEGIN WITHIN A DISTANCE OF 3/4" MEASURED VERTICALLY FROM THE TALLEST PORTION OF THE PROFILE AND ACHIEVE A DEPTH OF NOT LESS THAN 5/16" WITHIN 7/8" BELOW THE WIDEST PORTION OF THE PROFILE. THIS REQUIRED DEPTH SHALL CONTINUE FOR NOT LESS THAN 3/8" TO A LEVEL THAT IS NOT LESS THAN 1-3/4" BELOW THE TALLEST PORTION OF THE PROFILE. THE WIDTH OF THE HANDRAIL ABOVE THE RECESS SHALL BE NOT LESS THAN 1-1/4" AND NOT MORE THAN 2-3/4". EDGES SHALL HAVE A RADIUS OF NOT LESS THAN 0.01".

FLANGED WINDOW FLASHING INSTALLATION AFTER TYVEK HOMEWRAP (OR EQUIVALENT)



NOTE:
INSTALL DUPONT FLASHING IN ORDER SHOWN BY NUMBERS.
INSTALL WINDOW PER MANUFACTURERS INSTRUCTIONS.

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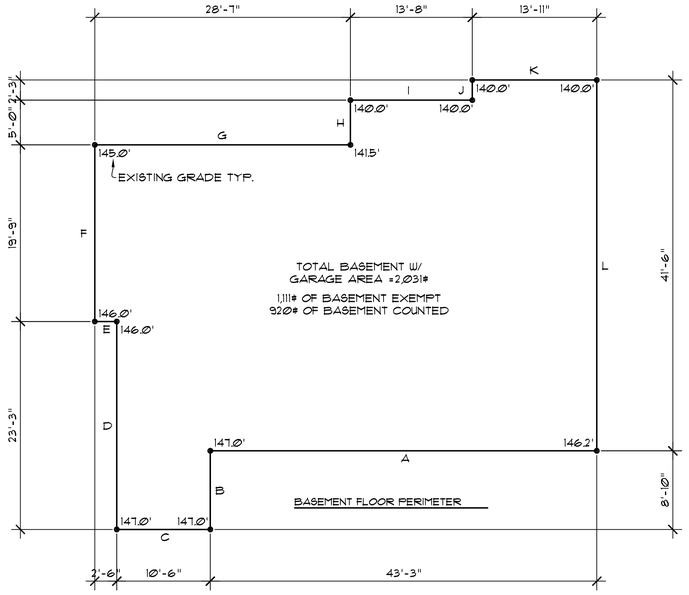
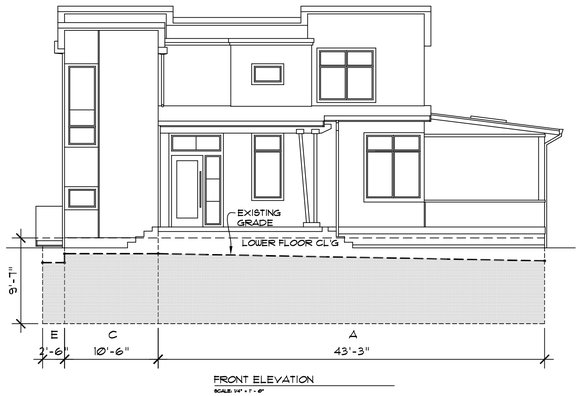
JOB NO: 21-026
DATE: 6/15/22
DRWN. BY: MM
REVISED:

SHEET NO.
A0.3

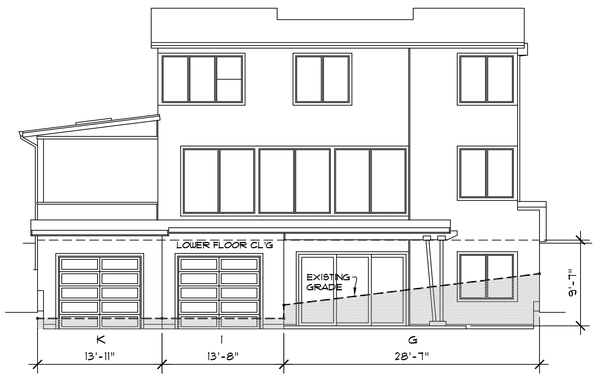
INFORMATION TAKEN FROM TOPOGRAPHIC & BOUNDARY SURVEY DATED 11/02/2021 BY TERRANE (JOB #212073)



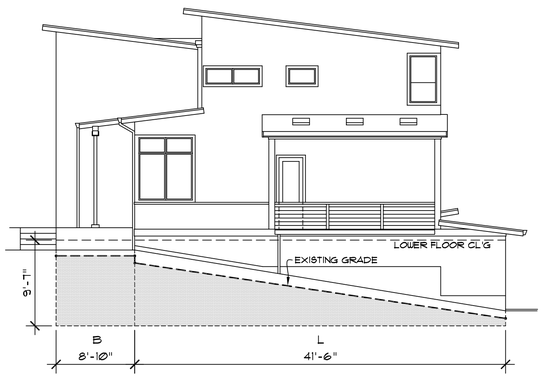


FRONT ELEVATION
SCALE: 1/4" = 1'-0"

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



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



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

TABLE OF WALL LENGTHS & COVERAGE			
WALL SEGMENT	LENGTH	COVERAGE	RESULT
A	43.25'	78%	33.8'
B	10.83'	82%	8.9'
C	10.5'	82%	8.6'
D	23.25'	76%	17.7'
E	2.5'	71%	1.8'
F	19.75'	66%	13.0'
G	28.58'	43%	12.3'
H	5.0'	17%	0.9'
I	13.67'	12%	1.6'
J	2.25'	10%	0.23'
K	13.92'	12%	1.7'
L	41.5'	41%	17.0'
TOTALS	215.0'	N/A	117.53'
117.53 / 215.0 = 54.7%			
2,031 x 54.7% = 1,111# EXEMPT FROM GROSS FLOOR AREA			
2,031 - 1,111 = 920# OF BASEMENT COUNTED			

GROSS FLOOR AREA CALCULATIONS	
SITE AREA	= 8,877#
ALLOWABLE F.A.R.	= 40% (3,550#)
UPPER FLOOR	= 1,184#
MAIN FLOOR	= 1,423#
LOWER FLOOR W/ GARAGE	= 2,031#
LOWER FLOOR EXCLUSION	= 1,111#
TOTAL FLOOR AREA	= 3,527#
PROPOSED G.F.A.	= 3,527# (39.7%)

WALL COVERAGE	
WALL 'A' BELOW GRADE = 321# ABOVE GRADE = 93# TOTAL BASEMENT WALL = 414# TOTAL BELOW GRADE = 78%	WALL 'G' BELOW GRADE = 117# ABOVE GRADE = 157# TOTAL BASEMENT WALL = 274# TOTAL BELOW GRADE = 43%
WALL 'B' BELOW GRADE = 69# ABOVE GRADE = 15# TOTAL BASEMENT WALL = 84# TOTAL BELOW GRADE = 82%	WALL 'H' BELOW GRADE = 8# ABOVE GRADE = 40# TOTAL BASEMENT WALL = 48# TOTAL BELOW GRADE = 17%
WALL 'C' BELOW GRADE = 82# ABOVE GRADE = 18# TOTAL BASEMENT WALL = 100# TOTAL BELOW GRADE = 82%	WALL 'I' BELOW GRADE = 16# ABOVE GRADE = 119# TOTAL BASEMENT WALL = 135# TOTAL BELOW GRADE = 12%
WALL 'D' BELOW GRADE = 170# ABOVE GRADE = 53# TOTAL BASEMENT WALL = 223# TOTAL BELOW GRADE = 76%	WALL 'J' BELOW GRADE = 2# ABOVE GRADE = 20# TOTAL BASEMENT WALL = 22# TOTAL BELOW GRADE = 10%
WALL 'E' BELOW GRADE = 17# ABOVE GRADE = 7# TOTAL BASEMENT WALL = 24# TOTAL BELOW GRADE = 71%	WALL 'K' BELOW GRADE = 16# ABOVE GRADE = 122# TOTAL BASEMENT WALL = 138# TOTAL BELOW GRADE = 12%
WALL 'F' BELOW GRADE = 125# ABOVE GRADE = 64# TOTAL BASEMENT WALL = 189# TOTAL BELOW GRADE = 66%	WALL 'L' BELOW GRADE = 163# ABOVE GRADE = 234# TOTAL BASEMENT WALL = 397# TOTAL BELOW GRADE = 41%

GROSS FLOOR AREA CALCULATIONS

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

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JOB NO: 21-026
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REVISED:

SHEET NO.
A0.4

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 9712311683)

LOT 9, BLOCK I, MERCER WOOD, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 52 OF PLATS, PAGES 32 AND 33, IN KING COUNTY, WASHINGTON.

BASIS OF BEARINGS

N 85°57'25" E BETWEEN FOUND SURVEY MONUMENTS, CALCULATED PER R1.

REFERENCES

R1. MERCER WOOD, RECORDED IN VOL. 52 OF PLATS, PGS. 32–33, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD88 PER GPS OBSERVATIONS

SURVEYOR'S NOTES

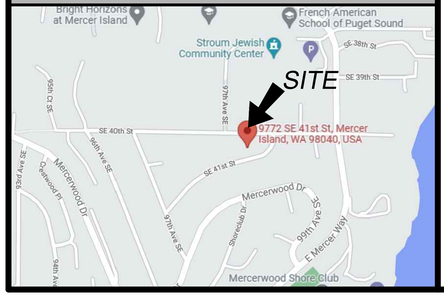
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN OCTOBER OF 2021. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800–424–5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 5456000115.
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 8,877± S.F. (0.20 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5–SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332–130–090.

LEGEND

ASPHALT SURFACE	POWER (OVERHEAD)
BUILDING	POWER POLE
CENTERLINE ROW	RETAINING WALL
CONCRETE SURFACE	REBAR AS NOTED (FOUND)
FENCE LINE (IRON)	REBAR & CAP (SET)
FENCE LINE (WOOD)	ROCKERY
FIRE HYDRANT	SEWER LINE
GAS LINE	SEWER MANHOLE
GAS METER	STORM DRAIN LINE
GRAVEL SURFACE	TREE (AS NOTED)
INLET (TYPE 1)	WATER VALVE
MONUMENT IN CASE (FOUND)	WATER LINE
NAIL AS NOTED	WATER METER
POWER METER	

VICINITY MAP

N.T.S.

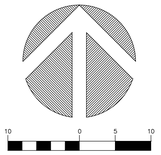


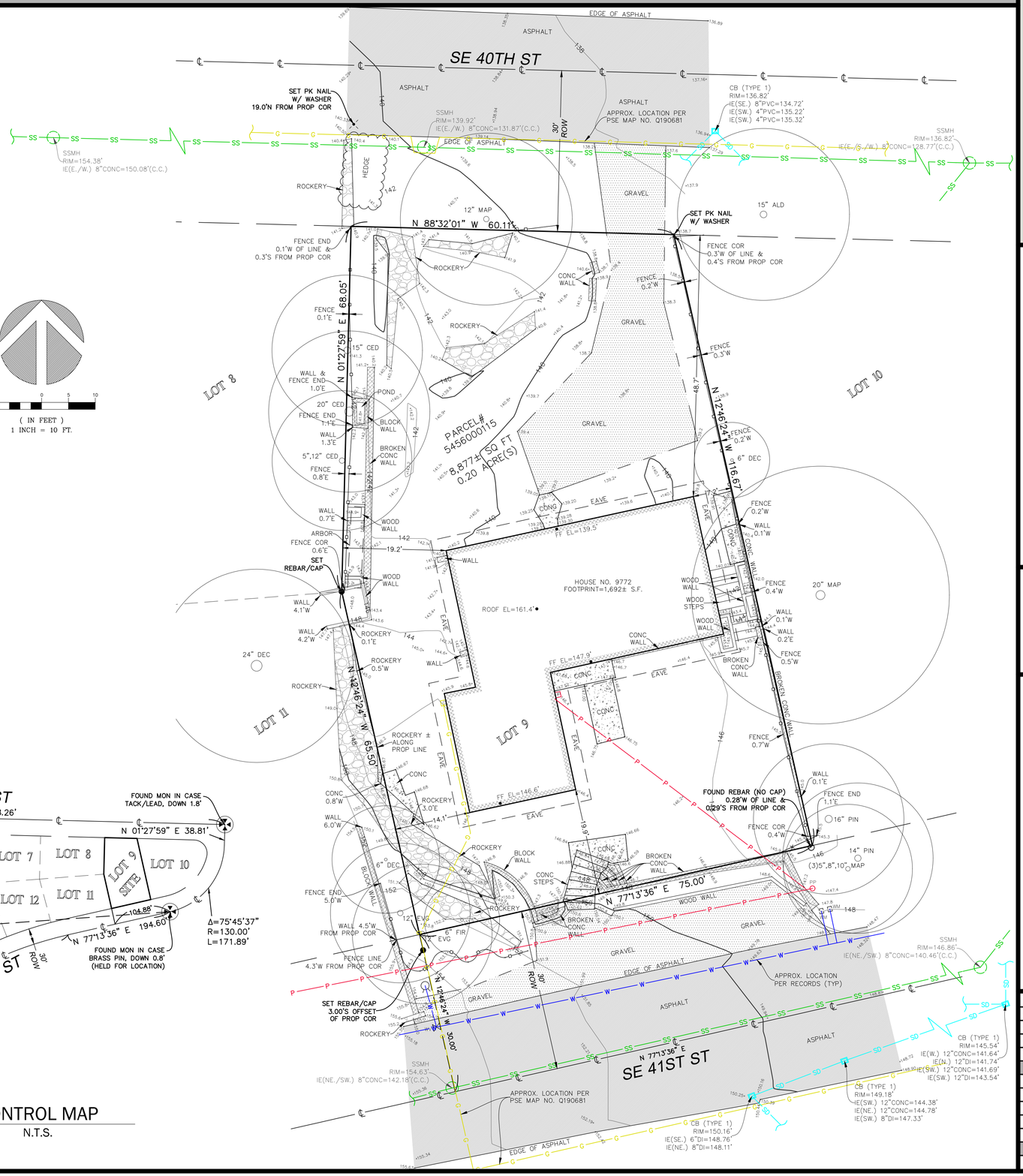
STEEP SLOPE/BUFFER DISCLAIMER:

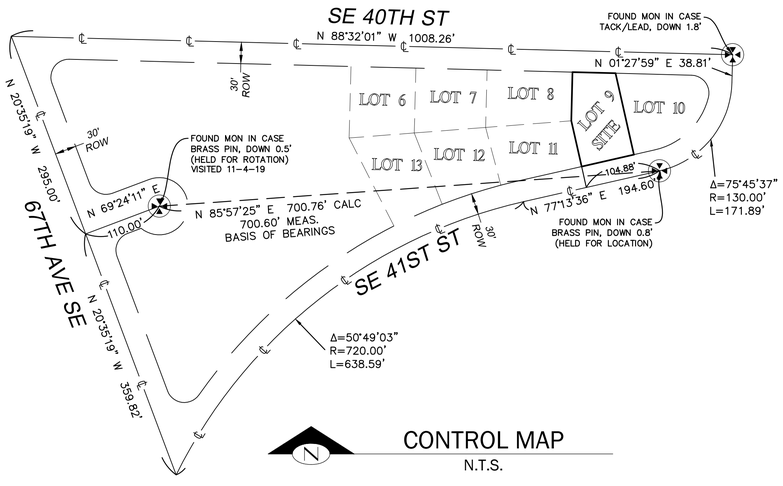
THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS; AS SUCH, TERRANE CANNOT BE LIABLE OR RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY STEEP SLOPE INFORMATION. ULTIMATELY, THE LIMITS AND EXTENT OF ANY STEEP SLOPES ASSOCIATED WITH ANY SETBACKS OR OTHER DESIGN OR CONSTRUCTION PARAMETERS MUST BE DISCUSSED AND APPROVED BY THE REVIEWING AGENCY BEFORE ANY CONSTRUCTION CAN OCCUR.

INDEXING INFORMATION

NE 1/4 NE 1/4
SECTION: 18
TOWNSHIP: 24N
RANGE: 05E, W.M.
COUNTY: KING







CONTROL MAP

N.T.S.

measure success

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 5456000115

LEE - HWANG RESIDENCE

9772 SE 41ST ST
MERCER ISLAND, WA 98040

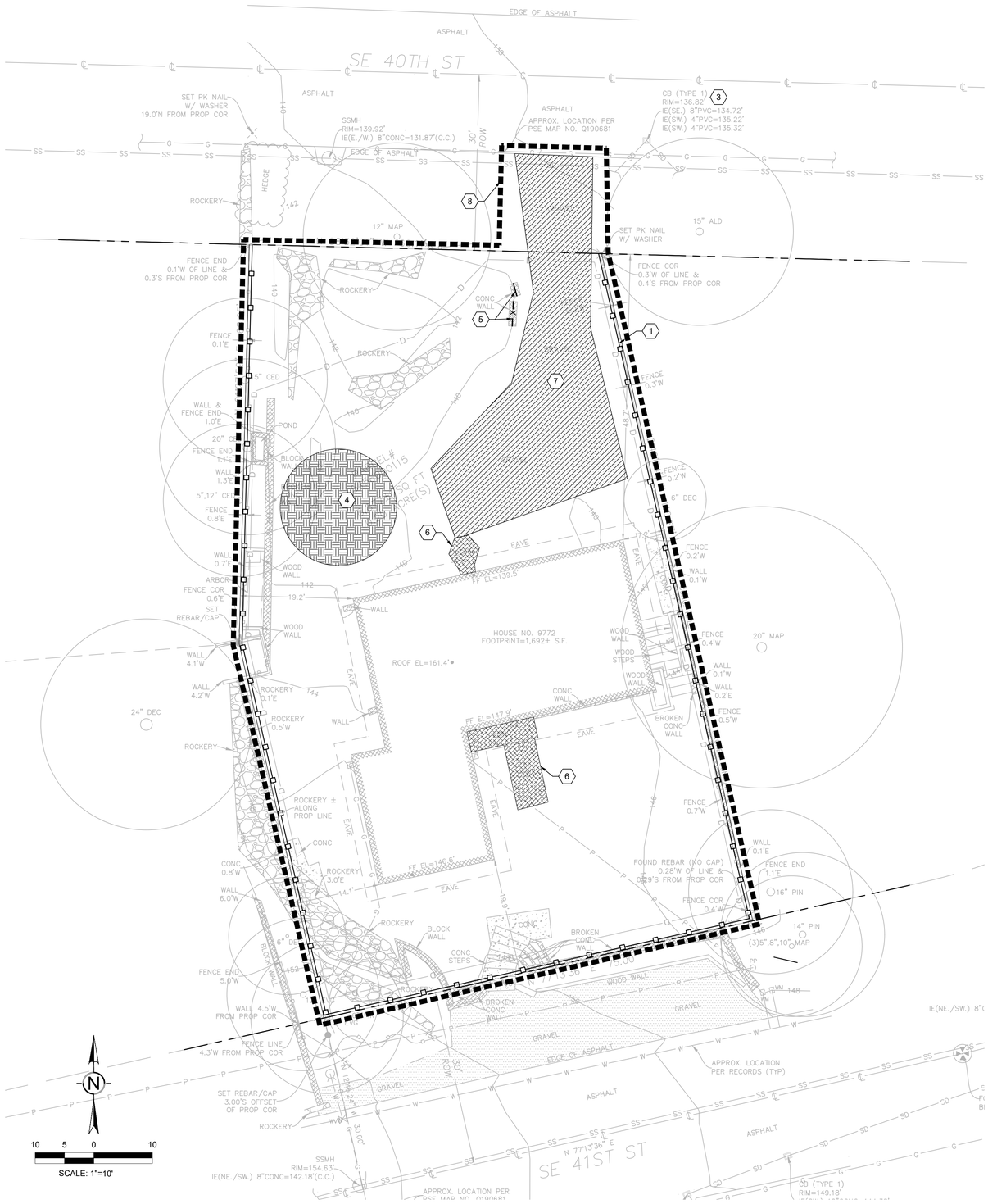
Terrane
10801 Main Street, Suite 102, Bellevue, WA 98004
phone 425.458.4488 support@terrane.net
www.terrane.net

JOB NUMBER:	212073
DATE:	11/02/2021
DRAFTED BY:	JAK
CHECKED BY:	JGM
SCALE:	1" = 10'

REVISION HISTORY

SHEET NUMBER

1 OF 1



10 5 0 10

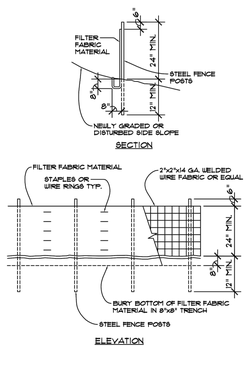
SCALE: 1"=10'

SHEET NOTES

1. SILT FENCE PER DETAIL. LOCATE AT LEAST 1 FT FROM EXISTING FENCES. (1/C-101)
2. RESTORE PAVEMENT TO MATCH EXISTING CONDITION.
3. PROVIDE INLET PROTECTION PER DETAIL. PLACE ON ALL CATCH BASINS WITHIN 50 FT OF SITE. (3/C-101)
4. TEMPORARY STOCK PILE PER DETAIL. (2/C-101)
5. REMOVE EXISTING CONCRETE WALL.
6. REMOVE EXISTING CONCRETE PAVEMENT.
7. REMOVE EXISTING GRAVEL.
8. LIMIT OF DISTURBANCE.

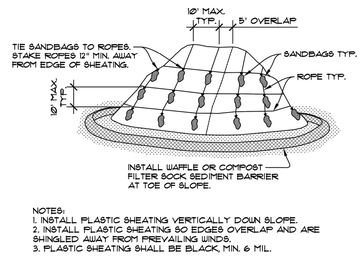
GENERAL NOTES

1. SOILS ON ENTIRE SITE CONSIST OF KITSAP SILT LOAM (HSG C).
2. PROVIDE STRAW OR PLASTIC COVER TO ANY EXPOSED SOILS THROUGHOUT CONSTRUCTION CYCLE.



SILT FENCE

SCALE: NTS (1)



NOTES:
1. INSTALL PLASTIC SHEATING VERTICALLY DOWN SLOPE.
2. INSTALL PLASTIC SHEATING SO EDGES OVERLAP AND ARE SHINGLED AWAY FROM PREVAILING WINDS.
3. PLASTIC SHEATING SHALL BE BLACK, MIN. 6 MIL.

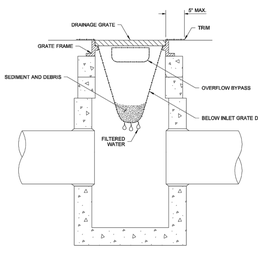
TEMPORARY STOCK PILE

SCALE: NTS (2)

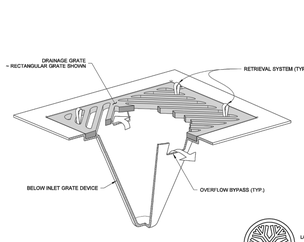
DRAWN BY: LISA CYPORE

NOTES

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



SECTION VIEW
NOT TO SCALE



ISOMETRIC VIEW

STATE OF WASHINGTON MARK W. MAURER LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

STORM DRAIN INLET PROTECTION
STANDARD PLAN I-40.20-00
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER — DATE
Washington State Department of Transportation

STORM DRAIN INLET PROTECTION

SCALE: NTS (3)

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

DATE PLOTTED: 5/2/2022 10:29:13 AM FILENAME: C-101 DEMOLITION AND EROSION CONTROL.DWG BY: —

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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

JUSTIN JAN GONG STATE OF WASHINGTON 43432 REGISTERED PROFESSIONAL ENGINEER

05/03/2022

PROJECT
HWANG LEE RESIDENCE
9772 SE 41ST ST
MERCER ISLAND, WA

REVISIONS

DATE
05.02.2022

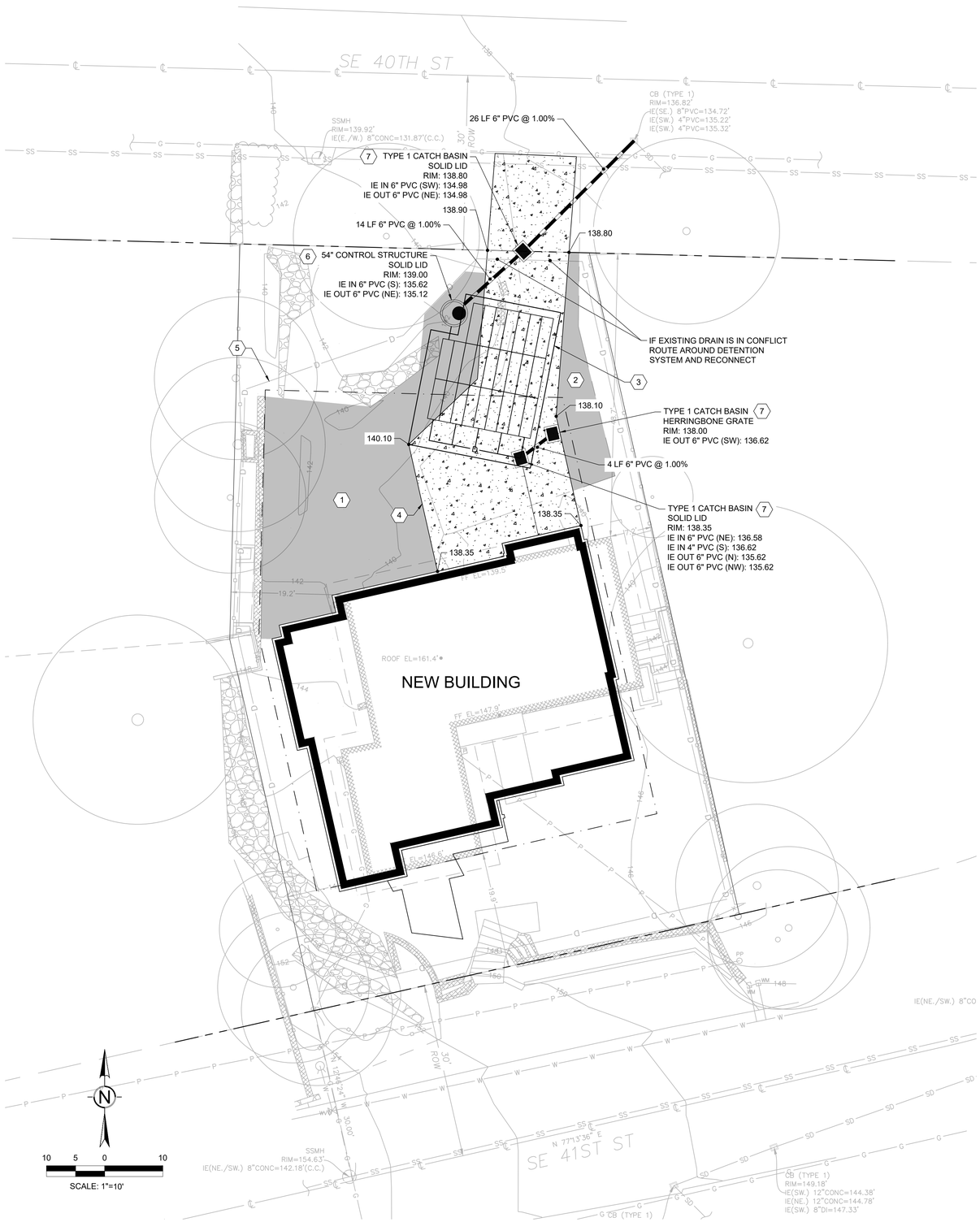
BCRA NO.
22006

DRAWN BY: KSS DESIGNED BY: KSS

REVIEWED BY: JJG

SHEET TITLE
DEMOLITION AND EROSION CONTROL

SHEET
C-101



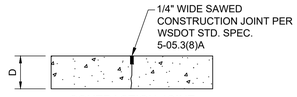
SHEET NOTES

1. 974 SF PROPOSED TURF AREA. IMPLEMENT POST CONSTRUCTION SOIL QUALITY PER GENERAL NOTE 3.
2. 197 SF PROPOSED LANDSCAPE AREA. IMPLEMENT POST CONSTRUCTION SOIL QUALITY PER GENERAL NOTE 2.
3. STORMTECH SC-160LP DETENTION SYSTEM PER DETAIL. (5/C-302)
4. NEW CONCRETE DRIVEWAY PER DETAIL. (1/C-201)
5. EXISTING TRENCH DRAIN. CONNECT TO NEW ON-SITE CATCH BASINS.
6. CONTROL STRUCTURE PER DETAIL. (4/C-301)
7. PROVIDE WSDOT TYPE 1 CATCH BASIN PER WSDOT STANDARD PLAN B-5.20-03.

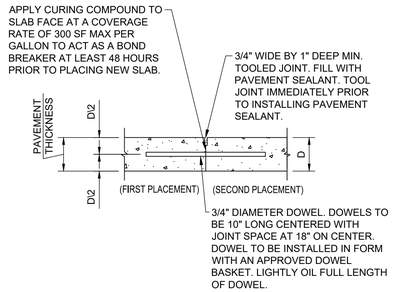
GENERAL NOTES

1. THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP T5.13. 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.
2. PROPOSED PLANTING AREAS SHALL RECEIVE TOPSOIL AMENDED WITH CEDAR GROVE FINE GRADE COMPOST OR OTHER COMPOST THAT MEETS WSDOT STANDARD SPEC 9-14.5(B) AT A RATE OF 0.01 CY PER SQUARE FOOT. SEE DETAIL FOR SOIL POST CONSTRUCTION SOIL QUALITY AND DEPTH SECTION. (2/C-201)
3. PROPOSED LAWN AREAS SHALL RECEIVE TOPSOIL AMENDED WITH CEDAR GROVE FINE GRADE COMPOST OR OTHER COMPOST THAT MEETS WSDOT STANDARD SPEC 9-14.5(B) AT A RATE OF 0.005 CY PER SQUARE FOOT. SEE DETAIL FOR POST CONSTRUCTION SOIL QUALITY AND DEPTH SECTION. (2/C-201)
4. ALL TREES ARE EXISTING AND ARE TO REMAIN.
5. EXISTING CONDITIONS INFORMATION BASED ON SURVEY BY TERRANE DATED 11/02/2021.

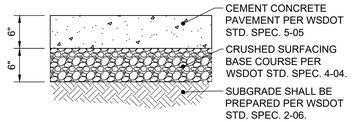
NOTES:
1. DEPTHS ARE COMPACTED THICKNESS.
2. ALL SAWED JOINTS SHALL BE SEALED PER WSDOT STD. SPEC. 5-05.3(8)B.

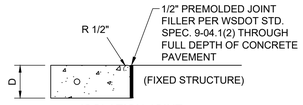


CONTRACTION JOINT



CONSTRUCTION JOINT

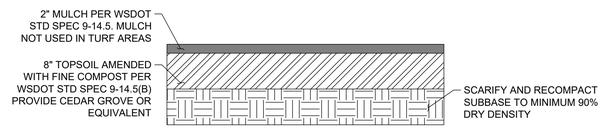




ISOLATION JOINT

CEMENT CONCRETE PAVEMENT

SCALE: NTS — 1



NOTE: CONTRACTOR SHALL AMEND STOCKPILED TOP SOILS WITH COMPOST PER DETAIL AND PLACE IN ALL DISTURBED LANDSCAPE AREAS.

POST CONSTRUCTION SOIL QUALITY AND DEPTH

SCALE: NTS — 2

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SEAL

JUSTIN JAN GONG
STATE OF WASHINGTON
43432
REGISTERED
PROFESSIONAL ENGINEER

05/03/2022

PROJECT
HWANG LEE RESIDENCE
9772 SE 41ST ST
MERCER ISLAND, WA

REVISIONS

DATE
05.02.2022

BCRA NO.
22006

DRAWN BY: KSS DESIGNED BY: KSS

REVIEWED BY: JJG

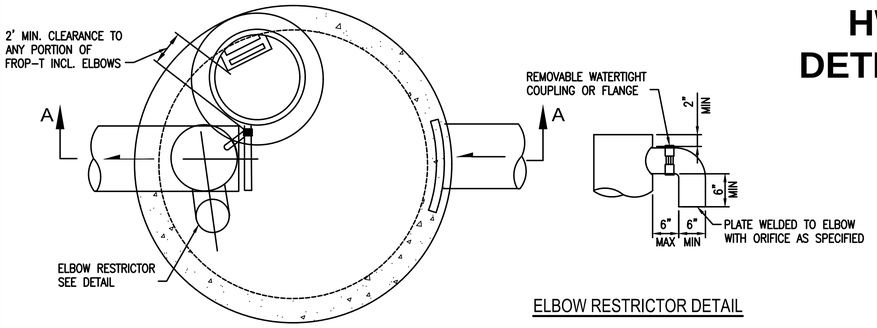
SHEET TITLE
GRADING AND DRAINAGE

SHEET
C-201

DATE PLOTTED: 5/2/2022 10:29:21 AM FILENAME: C-201 GRADING DRAINAGE AND EROSION CONTROL.DWG BY: ---

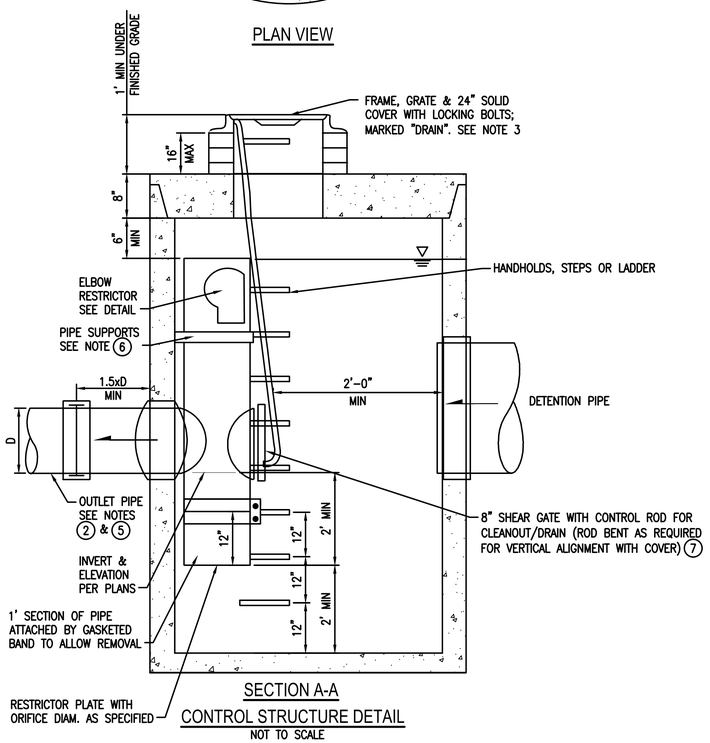
IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

HWANG LEE RESIDENCE
DETENTION SYSTEM SECTION



PLAN VIEW

ELBOW RESTRICTOR DETAIL



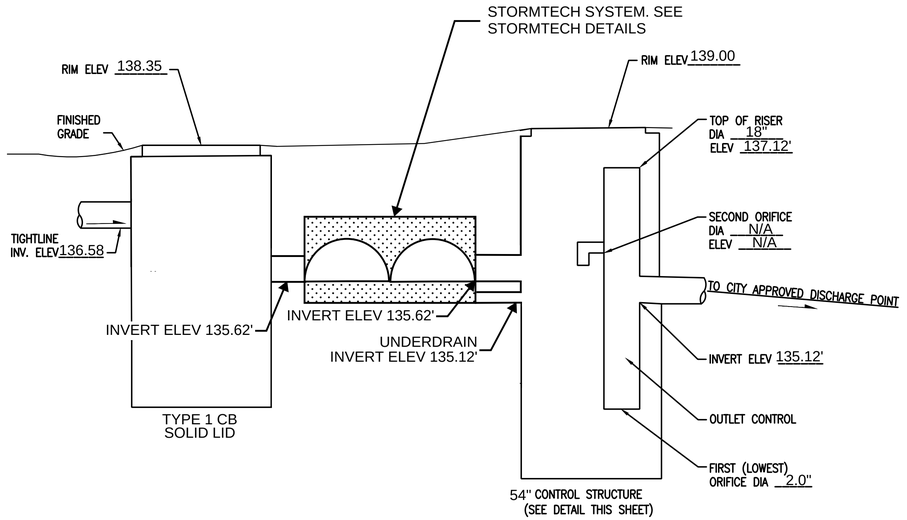
SECTION A-A

CONTROL STRUCTURE DETAIL
NOT TO SCALE

OWNER: HWANG & LEE
PERMIT #: TBD
NEW PLUS REPLACED IMPERVIOUS SURFACE AREA (SF): 2,428
SOIL TYPE: KITSAP SILT LOAM (HSG C)

ADDRESS: 9772 NE 41ST ST
MERCER ISLAND, WA

PREPARED BY: JUSTIN GOROCH, P.E.
PHONE: (253) 208 - 6303
DATE: 02/10/2022
ORIFICE #1 DIA 2 INCH, ELEV 135.12'



ON-SITE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)

CONTROL STRUCTURE NOTES:

1. USE A MINIMUM OF A 54 IN. DIAM. TYPE 2 CATCH BASIN. THE ACTUAL SIZE IS DEPENDENT ON CONNECTING PIPE MATERIAL AND DIAMETER.
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
6. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION ZG32A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B.
   THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION), IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED.
   A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED.
   THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT.
   ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

ON-SITE DETENTION SYSTEM NOTES:

1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. FOOTING DRAINS SHALL NOT BE CONNECTED TO THE DETENTION SYSTEM.

CONTROL STRUCTURE

SCALE: NTS 4

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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

JUSTIN JAN GOROCH
STATE OF WASHINGTON
43432
REGISTERED PROFESSIONAL ENGINEER

05/03/2022

PROJECT
HWANG LEE RESIDENCE
9772 SE 41ST ST
MERCER ISLAND, WA

REVISIONS

DATE
05.02.2022
BCRA NO.
22006
DRAWN BY: KSS DESIGNED BY: KSS
REVIEWED BY: JJG
SHEET TITLE
DETAILS

bcra

SHEET
C-301

DATE PLOTTED: 5/2/2022 10:29:31 AM FILENAME: C-301 DETAILS.DWG BY: ---

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

SiteASSIST® FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

HWANG LEE

MERCER ISLAND, WA

SC-160LP STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-160LP.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-160LP SYSTEM

1. STORMTECH SC-160LP CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-160LP CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
3. FOUNDATION STONE AND EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE; AASHTO M43 #3,357, 4, 467, 5, 56, OR 57.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. THE DEPTH OF FOUNDATION STONE SHALL BE DETERMINED BASED ON THE SUBGRADE BEARING CAPACITY PROVIDED BY THE SITE DESIGN ENGINEER.
6. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES CONCERNING CHAMBER FOUNDATION DESIGN AND SUBGRADE BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
7. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
8. CHAMBERS SHALL BE INSTALLED "TOE TO TOE". NO ADDITIONAL SPACING BETWEEN ROWS IS REQUIRED.
9. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
10. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-160LP CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-106LP CONSTRUCTION GUIDE".
2. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

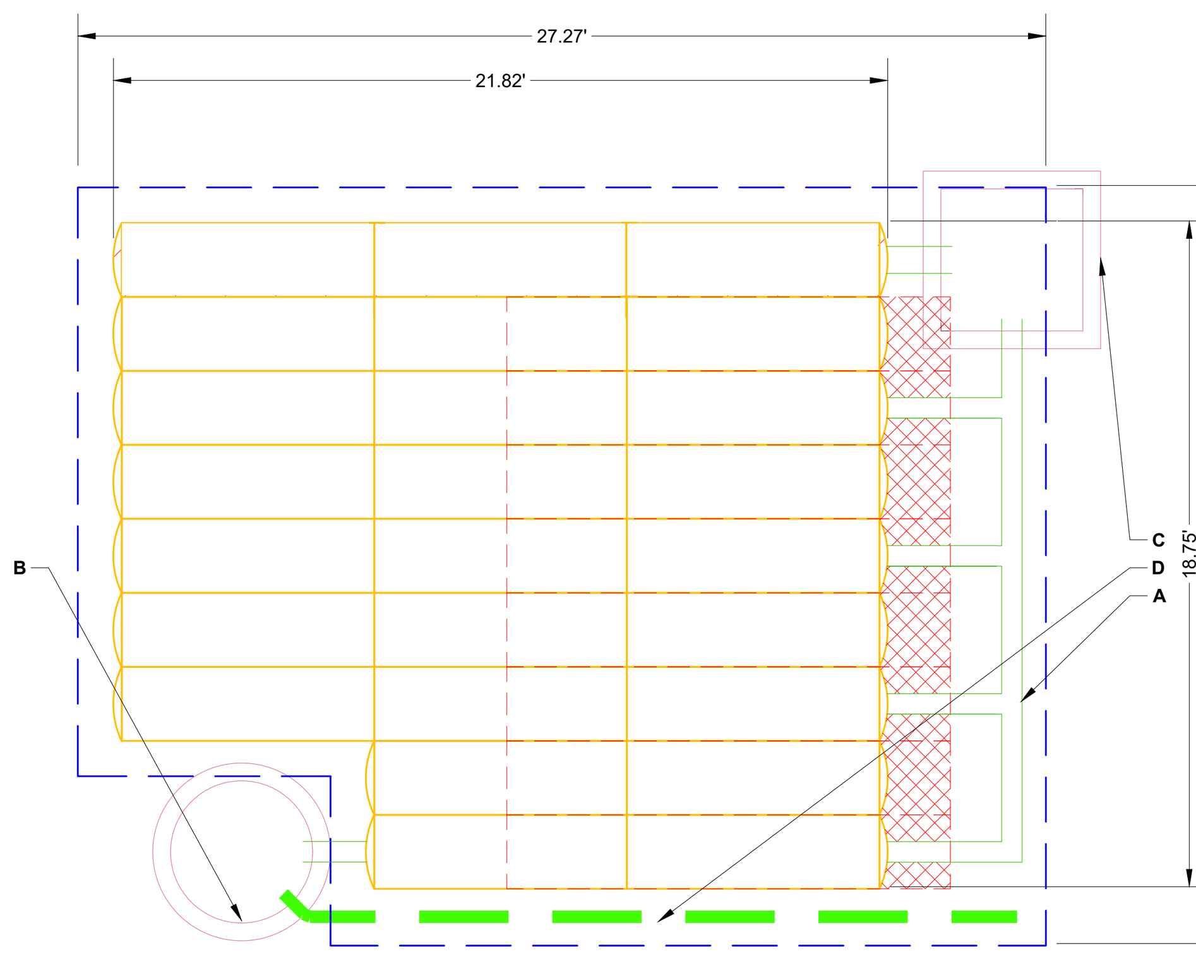
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT	
25	STORMTECH SC-160LP CHAMBERS
18	STORMTECH SC-160LP END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
35	STONE VOID
495	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
548	SYSTEM AREA (SF)
97.2	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	11.50
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	3.17
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	2.67
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	2.67
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	2.67
TOP OF STONE:	2.00
TOP OF SC-160LP CHAMBER:	1.50
8" ISOLATOR ROW PLUS INVERT:	0.58
6" x 6" BOTTOM MANIFOLD INVERT:	0.56
6" BOTTOM CONNECTION INVERT:	0.56
BOTTOM OF SC-160LP CHAMBER:	0.50
UNDERDRAIN INVERT:	0.00
BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
MANIFOLD	A	6" x 6" BOTTOM MANIFOLD, MOLDED FITTINGS	0.66"	
CONCRETE STRUCTURE	B	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		0.4 CFS OUT
CONCRETE STRUCTURE TYPE 1 CB	C	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		1.3 CFS IN
UNDERDRAIN	D	4" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

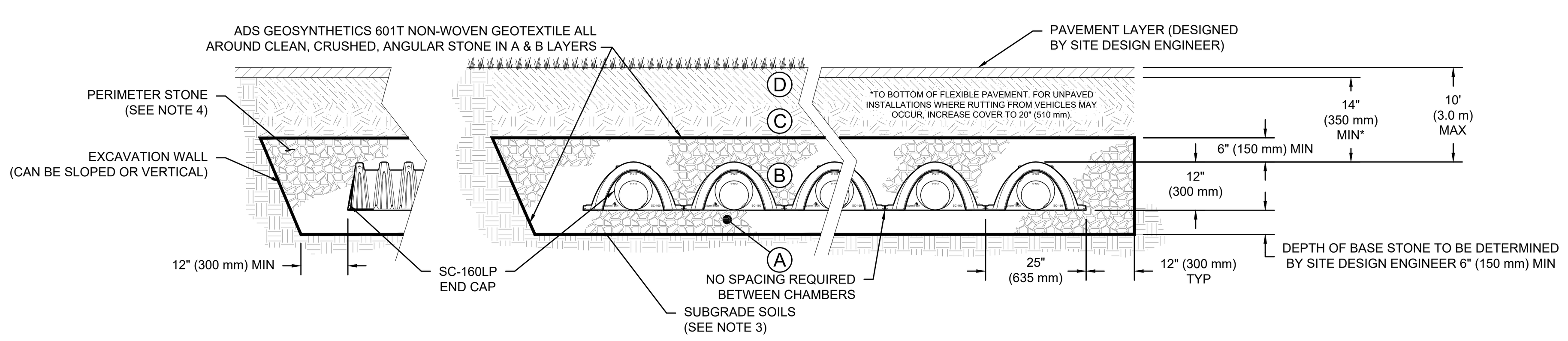
NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

HWANG LEE MERCER ISLAND, WA — DRAWN: KS — CHECKED: N/A — DATE: — PROJECT #: — StormTech® Chamber System — 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473 — 888-892-2694 | WWW.STORMTECH.COM — SHEET 2 OF 4

ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5"
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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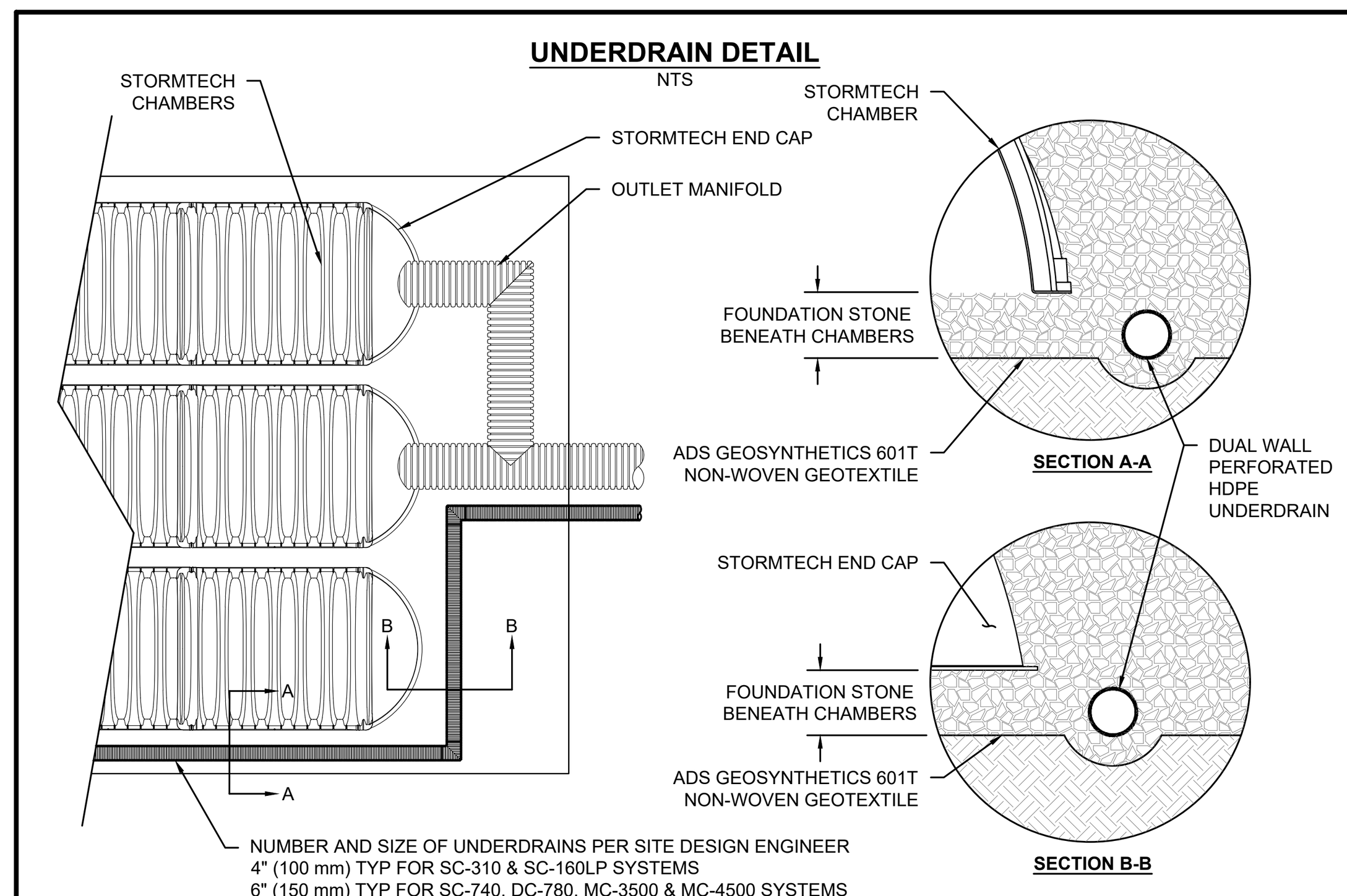
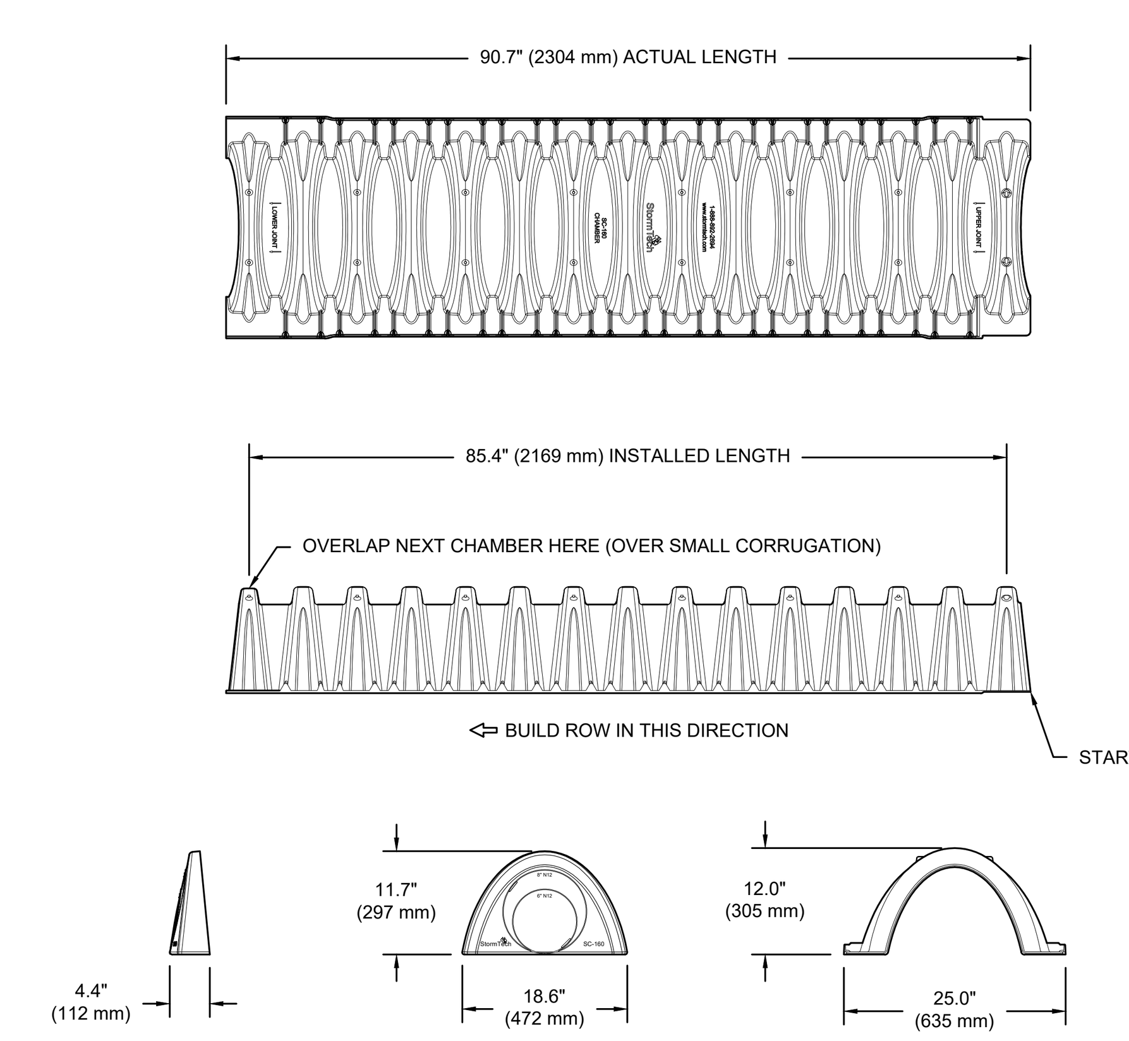
UNDERDRAIN DETAIL

NTS



SC-160LP TECHNICAL SPECIFICATION

NTS

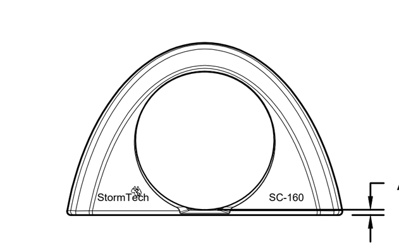


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	25.0" X 12.0" X 85.4"	(635 mm X 305 mm X 2169 mm)
CHAMBER STORAGE	6.85 CUBIC FEET	($0.19\ m^3$)
MINIMUM INSTALLED STORAGE*	16.0 CUBIC FEET	($0.45\ m^3$)
WEIGHT	24.0 lbs.	(10.9 kg)

*ASSUMES 6" (152 mm) ABOVE, 6" (152 mm) BELOW, AND STONE BETWEEN CHAMBERS WITH 40% STONE POROSITY.

PART #	STUB	A
SC160EPP	6" (150 mm)	0.66" (16 mm)
	8" (200 mm)	0.80" (20 mm)
SC160EPP08	8" (200 mm)	0.96" (24 mm)



ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

NOTE: ALL DIMENSIONS ARE NOMINAL

HWANG LEE MERCER ISLAND, WA — DRAWN: KS — CHECKED: N/A — StormTech® Chamber System — 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473 — SHEET 4 OF 4

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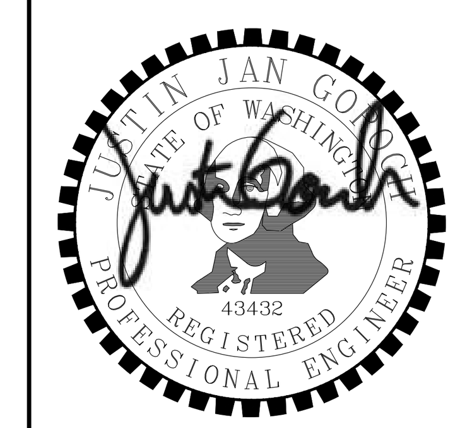
SEAL



05/03/2022

PROJECT

HWANG LEE RESIDENCE
9772 SE 42ST ST
MERCER ISLAND, WA

REVISIONS

DATE 05.02.2022
BCRA NO. 22006
DRAWN BY: KSS DESIGNED BY: KSS
REVIEWED BY: JJG
SHEET TITLE
DETAILS

SHEET

C-302

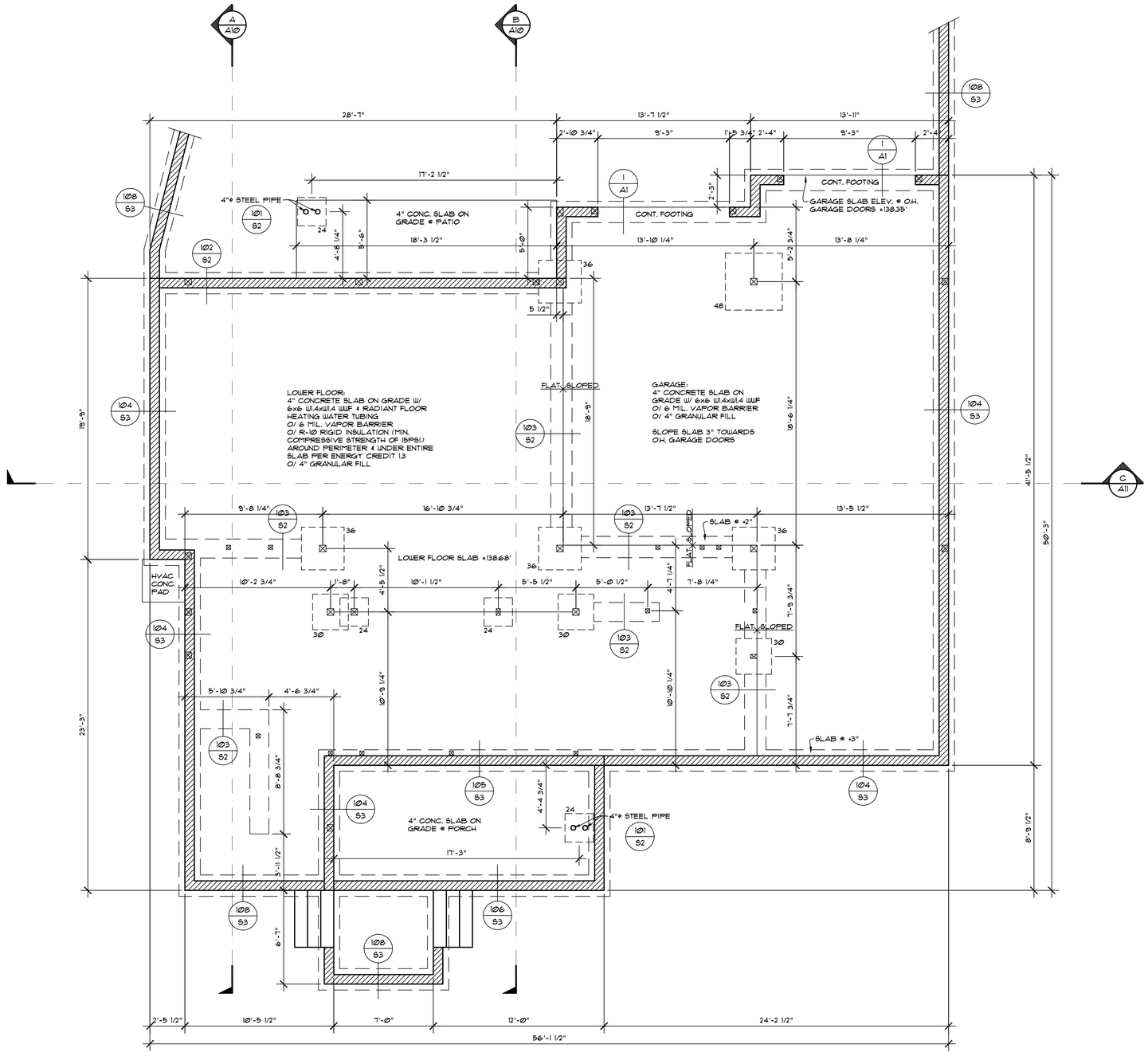
ADS SC-160LP DETENTION SYSTEM

SCALE: NTS

5

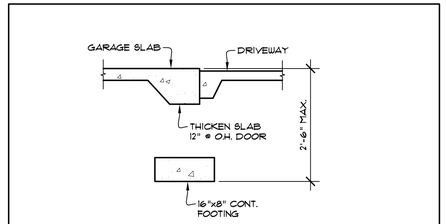
DATE PLOTTED: 5/2/2022 10:29:38 AM FILENAME: C-302 DETAILS.DWG BY: —

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY



FOUNDATION PLAN

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



1 GARAGE ENTRANCE DETAIL

N.T.S.

NOTE:
SEE SHEET S1 FOR FOOTING SCHEDULE

NOTE:
ALL UNDERGROUND PLUMBING LOCATIONS TO BE FIELD VERIFIED PRIOR TO FOUNDATION INSTALLATION.

NOTE:
CONTRACTOR SHALL VERIFY TO INSPECTOR ALL GUARDS AND RAILINGS SHALL BE CAPABLE OF RESISTING 200 LB LOAD ON TOP RAIL ACTING IN ANY DIRECTION AS REQUIRED BY IRC TABLE R301.5.

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NWLH

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DRWN. BY: MM
REVISED:

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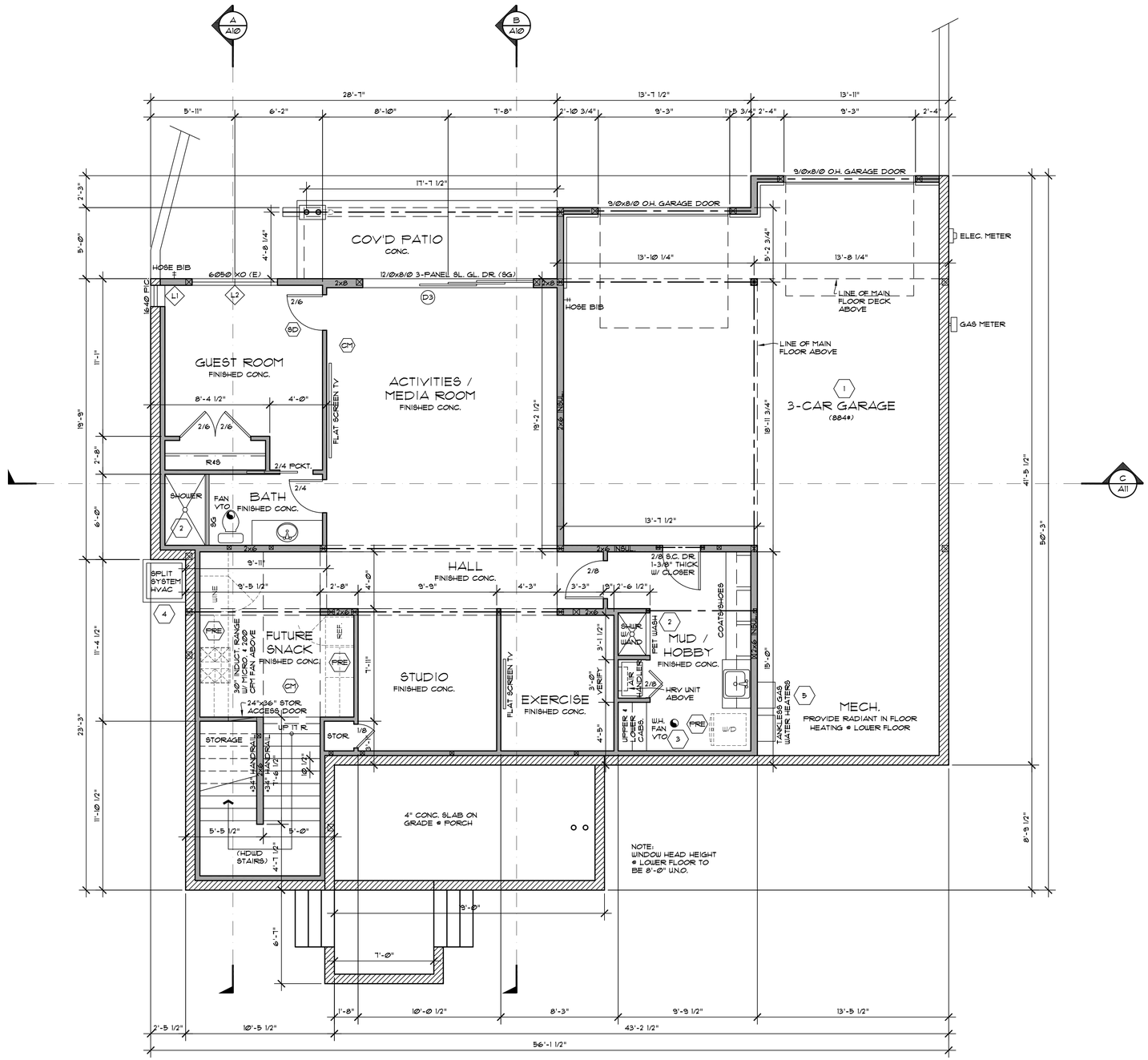
A1



LOWER FLOOR PLAN

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

PRE	PRE-WIRE/PLUMB ONLY
1	5/8" TYPE "X" GWB OVER ALL WARM WALLS AND SECOND FLOOR FRAMING & SUPPORT MEMBERS. GARAGE CEILING PROTECTION TO BE CONTINUOUS ABOVE GARAGE.
2	CONC. FIBERBOARD @ TUB & SHOWER SURROUND TO 6' ABOVE DRAIN
3	WHOLE HOUSE VENTILATION SYSTEM PER M1507.3.3 OF THE I.R.C. SHALL BE MET WITH A HIGH EFFICIENCY FAN (MAX. 0.35 WATTS/CFM), NOT INTERLOCKED WITH THE FURNACE FAN VENTILATION SYSTEMS USING A FURNACE INCLUDING AN ECM MOTOR ARE ALLOWED. WHOLE HOUSE VENTILATION RATE PER TABLE M1507.3.3(2) AND SET TO RUN @ (2) 4 HOUR SEGEMENTS
4	PER ENERGY CREDIT 3.2: AIR-SOURCED CENTRALLY DUCTED HEAT PUMP WITH A MINIMUM HSPF OF 9.5
5	PER ENERGY CREDIT 5.3: ENERGY STAR RATED GAS OR PROPANE WATER HEATER WITH A MINIMUM UEF OF 0.91
XX	EXTERIOR DOOR TAG. SEE DOOR SCHEDULE ON SHEET A11
XX	EXTERIOR WINDOW TAG. SEE WINDOW SCHEDULE ON SHEET A11
SD	INDICATES 110V HARD WIRED SMOKE DETECTOR WITH BATTERY BACKUP
CM	INDICATES 110V HARD WIRED SMOKE & CARBON MONOXIDE DETECTOR WITH BATTERY BACKUP

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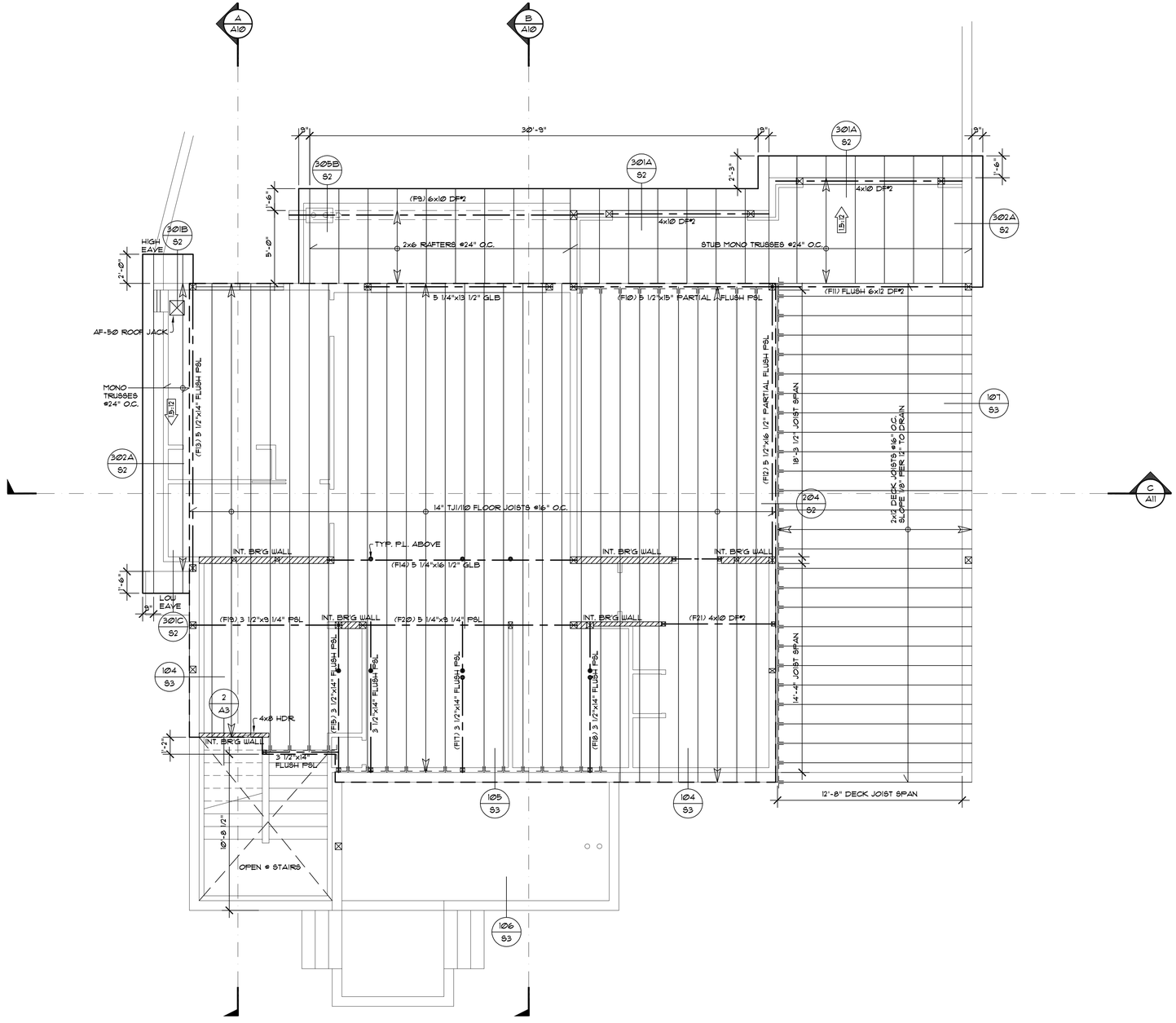
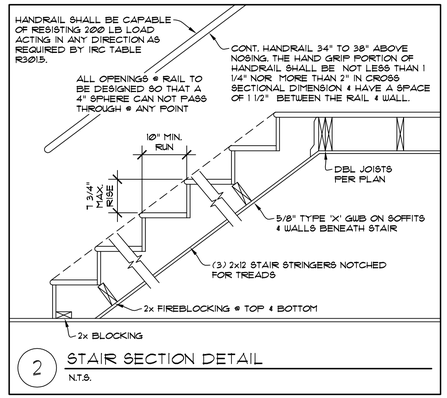


MAIN FLOOR & LOWER ROOF FRAMING PLAN

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



2 STAIR SECTION DETAIL
N.T.S.

ROOF VENTILATION CALCULATIONS

TOTAL VENTILATION REQUIRED: 471 SF. / 300 = 0.16 SF. NET FREE

HIGH EAVE VENTILATION = 2.5 L.F. x 3.3 SQ. IN./L.F. = 0.05 SF.
(PROVIDE EAVE VENT BLOCKING @ EVERY BAY.)
MIN. 50% BY VENTILATION ABOVE EAVE = 0.16 x 0.5 = 0.08 SF.
LOW EAVE VENTILATION = 2.5 L.F. x 3.3 SQ. IN./L.F. = 0.05 SF.
(1) AF-50 ROOF JACK YIELD 0.35 SF. (.35 SF. NET FREE EACH)
TOTAL VENTILATION PROVIDED:
HIGH EAVE VENTILATION = 0.05 SF.
LOW EAVE VENTILATION = 0.05 SF.
ROOF JACK VENTILATION = 0.35 SF.
TOTAL VENTILATION REQUIRED = 0.16 SF.
TOTAL VENTILATION PROVIDED = 0.45 SF.

R807.1 ATTIC ACCESS:
BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT HAVE A VERTICAL HEIGHT OF 30 INCHES OR GREATER OVER AN AREA OF NOT LESS THAN 30 SQUARE FEET. THE VERTICAL HEIGHT SHALL BE MEASURED FROM THE TOP OF THE CEILING FRAMING MEMBERS OR ANY PERMANENT OBSTRUCTION TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS OR ANY PERMANENT OBSTRUCTION.

ALL TRUSSES:
-SHALL CARRY MANUFACTURERS STAMP
-SHALL BE INSTALLED & BRACED TO MANUFACTURERS SPECIFICATIONS
-WILL NOT BE FIELD ALTERED WITHOUT PRIOR BUILDING DEPARTMENT APPROVAL OF ENGINEERING CALCULATIONS
-SHALL HAVE DESIGN DETAILS & DRAWINGS ON SITE FOR FRAMING INSPECTION

NOTE:
ROOF SHEATHING IS CONTINUOUS ON ROOF TRUSSES/RAFTERS EXTENDING UNDER OVERFRAMED AREAS THAT ARE SHADED U.N.O. CUT 12"X12" HOLES IN SHEATHING @ EVERY OTHER BAY TO ALLOW FOR CROSS VENTILATION INTO OVERFRAMED AREAS.

ALL HEADERS TO BE 4x10 DF#2 U.N.O.

ALL ROOF PITCHES AS NOTED. X:12 INDICATES DOWN SLOPE

A.M.F. = ABOVE MAIN FLOOR

A.U.F. = ABOVE UPPER FLOOR

T.O.B. = TOP OF BEAM

B.O.B. = BOTTOM OF BEAM

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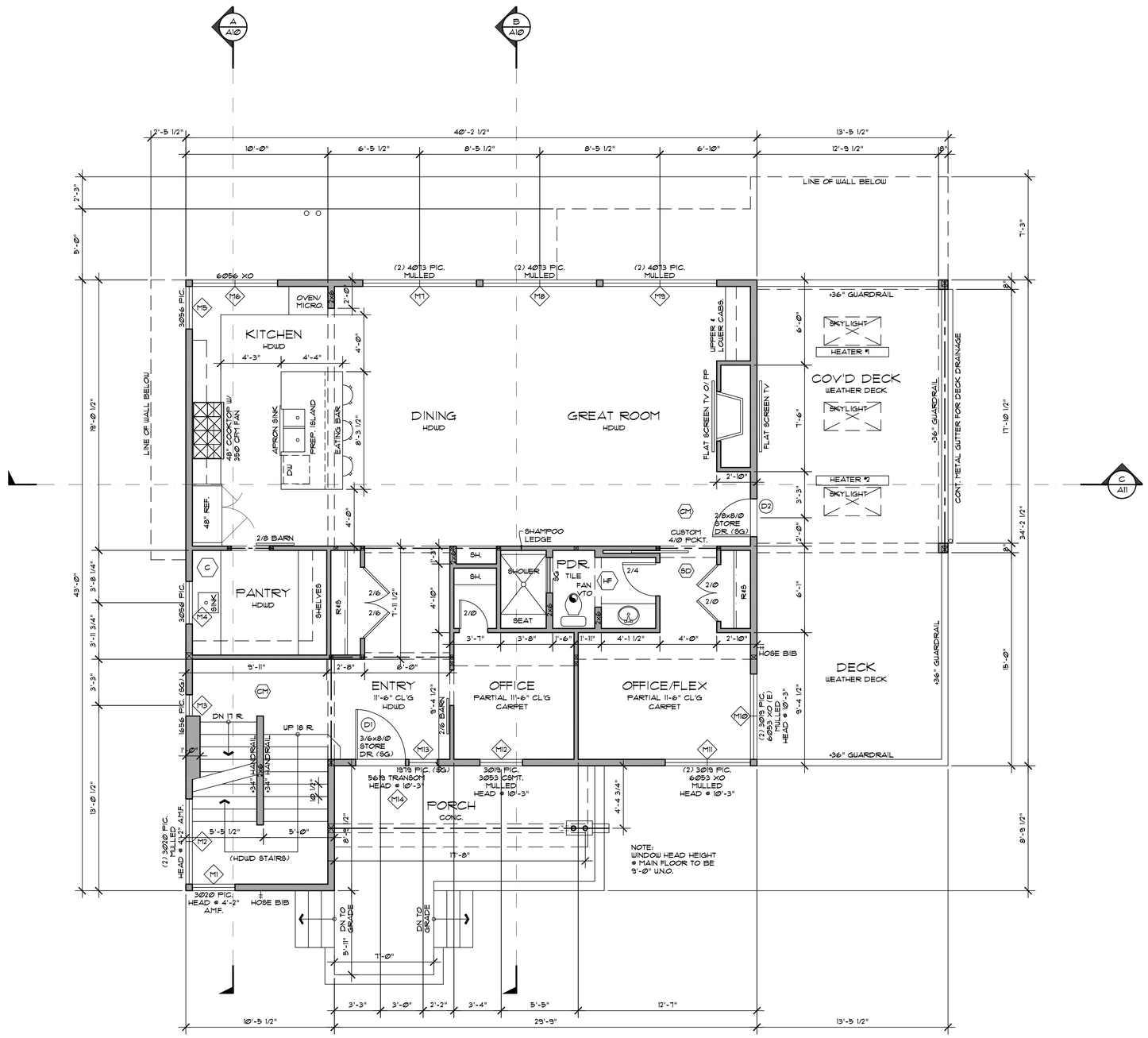

MAIN FLOOR PLAN

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

SQUARE FOOTAGE SUMMARY	
LOWER FLOOR	- 1,147#
MAIN FLOOR	- 1,423#
UPPER FLOOR	- 1,184#
TOTAL HEATED	- 3,754#
GARAGE	- 884#

PER PERSCRIPTIVE REQUIREMENTS 2018 W.S.E.C.
-(MODIFIED FOR ENERGY CREDIT 1.3)

CLIMATE ZONE 5B
MAX. GLAZING U-FACTOR: VERT. U=.28, OVERHEAD U=.50
MAX. DOOR U-FACTOR: U=.28
INSULATION @ CONDITIONED ARES:
TRUSSED CEILING: R-49
VAULTED & SINGLE RAFTER CEILING: R-38 (R49 2.2.2)
ABOVE GRADE WALLS: R-21
BELOW GRADE WALLS: R-21
FLOOR OVER VENTED CRAWL SPACE: R-38*
SLAB ON GRADE: R-10 @ PERIMETER & UNDER ENTIRE SLAB*

PERCENT GLAZING CALCULATIONS: XXX (S.F. GLAZING AREA) / 4638 (S.F. FLOOR AREA) = XXX%

C	PLUMB FOR COUNTERTOP COFFEE MACHINE
HF	HEATED FLOOR
1	CONC. FIBERBOARD @ TUB & SHOWER SURROUND TO 6' ABOVE DRAIN
2	DIRECT VENT FIREPLACE. INSTALL PER MANUFACTURERS SPECIFICATIONS
XX	EXTERIOR DOOR TAG. SEE DOOR SCHEDULE ON SHEET A11
XX	EXTERIOR WINDOW TAG. SEE WINDOW SCHEDULE ON SHEET A11
SD	INDICATES 110V HARD WIRED SMOKE DETECTOR WITH BATTERY BACKUP
CM	INDICATES 110V HARD WIRED SMOKE & CARBON MONOXIDE DETECTOR WITH BATTERY BACKUP

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HWANG-LEE RESIDENCE
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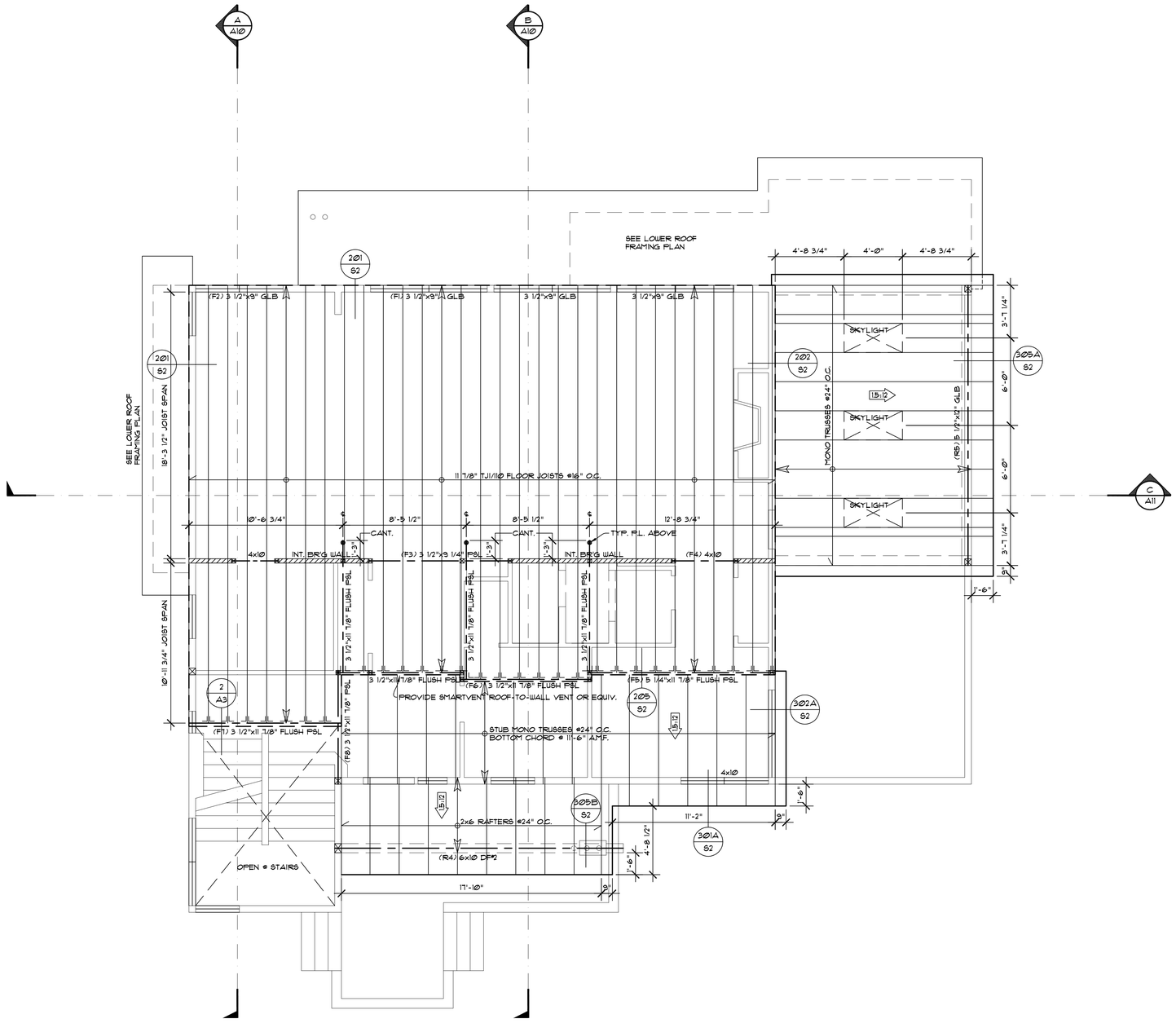

UPPER FLOOR & MAIN ROOF FRAMING PLAN

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

ROOF VENTILATION CALCULATIONS

TOTAL VENTILATION REQUIRED: 219 S.F. / 300 = 0.73 S.F. NET FREE

EAVE VENTILATION = 29.5 L.F. x 3.3 SQ. IN./L.F. = 0.68 S.F.
(PROVIDE EAVE VENT BLOCKING @ EVERY BAY.)
MIN. 50% BY VENTILATION ABOVE EAVE = 0.73 x 0.5 = 0.37 S.F.
ROOF-TO-WALL VENTILATION PROVIDED = 29.5 L.F. x 9.0 SQ. IN/L.F. = 1.8 S.F.

TOTAL VENTILATION PROVIDED:
EAVE VENTILATION = 0.68 S.F.
ROOF-TO-WALL ABOVE EAVE VENTILATION = 1.8 S.F.
TOTAL VENTILATION REQUIRED = 0.73 S.F.
TOTAL VENTILATION PROVIDED = 2.48 S.F.

NOTE:
USE SMARTVENT ROOF-TO-WALL VENT OR EQUIV.

R807.1 ATTIC ACCESS:
BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT HAVE A VERTICAL HEIGHT OF 30 INCHES OR GREATER OVER AN AREA OF NOT LESS THAN 30 SQUARE FEET. THE VERTICAL HEIGHT SHALL BE MEASURED FROM THE TOP OF THE CEILING FRAMING MEMBERS OR ANY PERMANENT OBSTRUCTION TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS OR ANY PERMANENT OBSTRUCTION.

ALL TRUSSES:
-SHALL CARRY MANUFACTURERS STAMP
-SHALL BE INSTALLED & BRACED TO MANUFACTURERS SPECIFICATIONS
-WILL NOT BE FIELD ALTERED WITHOUT PRIOR BUILDING DEPARTMENT APPROVAL OF ENGINEERING CALCULATIONS
-SHALL HAVE DESIGN DETAILS & DRAWINGS ON SITE FOR FRAMING INSPECTION

NOTE:
ROOF SHEATHING IS CONTINUOUS ON ROOF TRUSSES/RAFTERS EXTENDING UNDER OVERFRAMED AREAS THAT ARE SHADED U.N.O. CUT 12"x12" HOLES IN SHEATHING @ EVERY OTHER BAY TO ALLOW FOR CROSS VENTILATION INTO OVERFRAMED AREAS.

ALL HEADERS TO BE 4x10 DF#2 U.N.O.

ALL ROOF PITCHES AS NOTED. X:12 INDICATES DOWN SLOPE

A.M.F. = ABOVE MAIN FLOOR

A.U.F. = ABOVE UPPER FLOOR

T.O.B. = TOP OF BEAM

B.O.B. = BOTTOM OF BEAM

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MERCER ISLAND, WA 98040

JOB NO: 21-026
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DRWN. BY: MM
REVISED:

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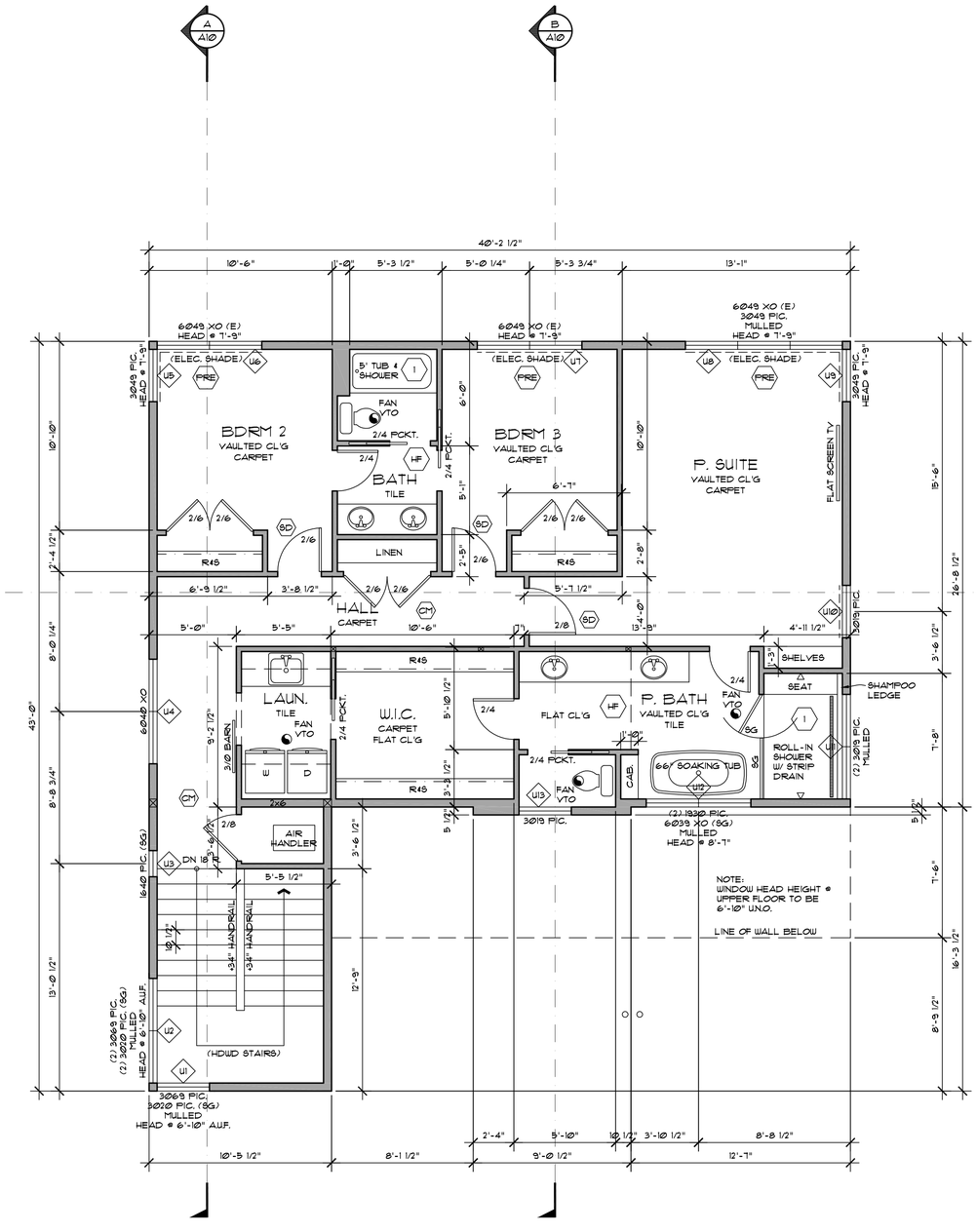
A5



UPPER FLOOR PLAN

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

HF	HEATED FLOOR
FRE	FIRE-WIRE/PLUMB ONLY
1	CONC. FIBERBOARD @ TUB & SHOWER SURROUND TO 6' ABOVE DRAIN
XX	EXTERIOR DOOR TAG. SEE DOOR SCHEDULE ON SHEET A11
XXX	EXTERIOR WINDOW TAG. SEE WINDOW SCHEDULE ON SHEET A11
SD	INDICATES 110V HARD WIRED SMOKE DETECTOR WITH BATTERY BACKUP
CM	INDICATES 110V HARD WIRED SMOKE & CARBON MONOXIDE DETECTOR WITH BATTERY BACKUP

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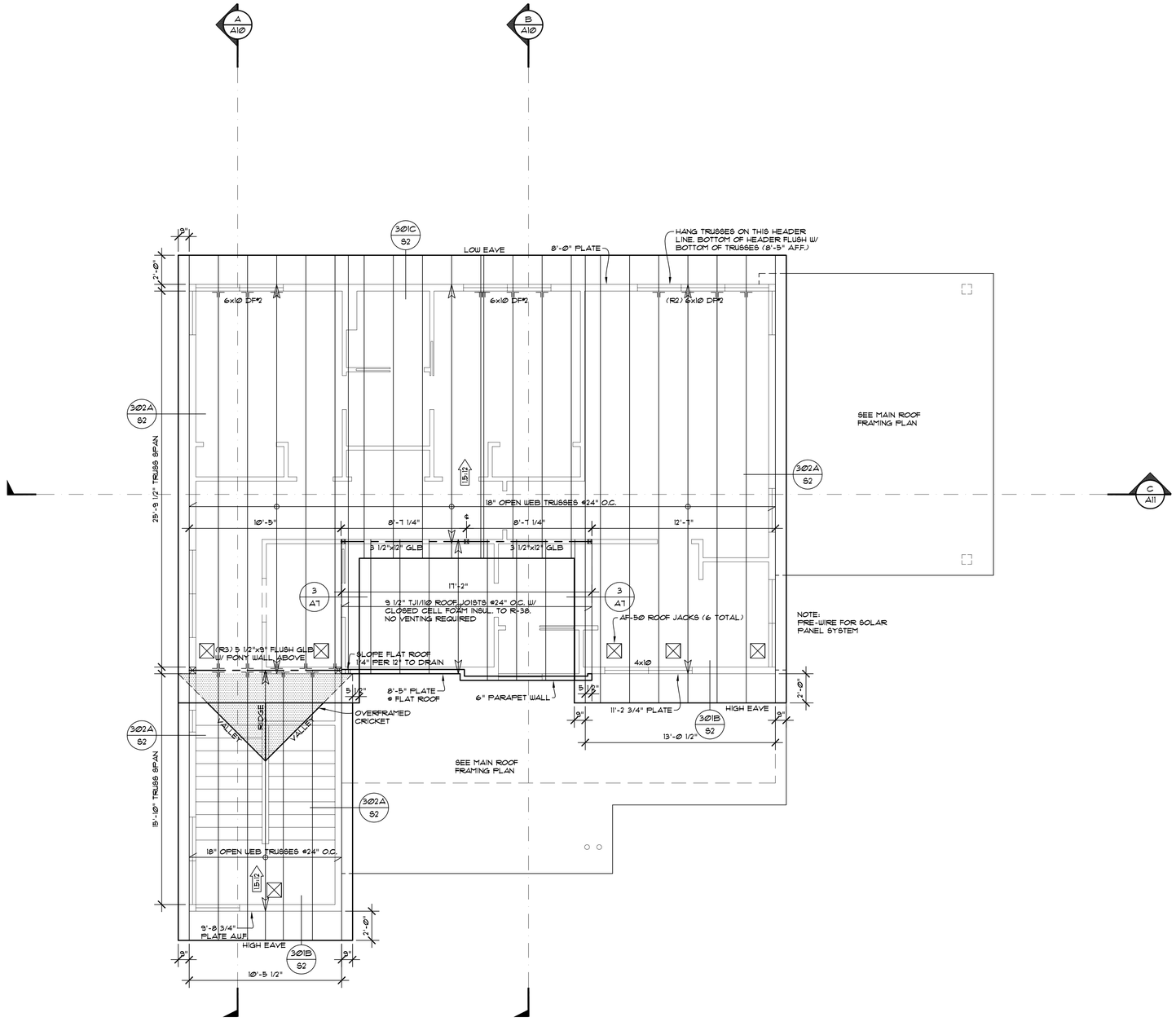
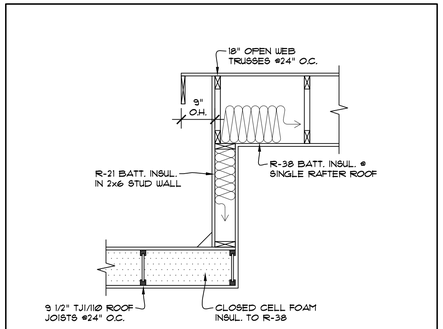


UPPER ROOF FRAMING PLAN

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



3 FLAT TO PITCHED ROOF DETAIL

N.T.S.

HATCHING DENOTES 2x OVERFRAMING

ROOF VENTILATION CALCULATIONS

TOTAL VENTILATION REQUIRED: 1,093 S.F. / 300 = 3.64 S.F. NET FREE

HIGH EAVE VENTILATION = 400 L.F. x 3.3 SQ. IN/L.F. = 092 S.F.
(PROVIDE EAVE VENT BLOCKING @ EVERY BAY.)
MIN. 50% BY VENTILATION ABOVE EAVE = 3.64 x 05 = 1.82 S.F.
LOW EAVE VENTILATION = 400 L.F. x 3.3 SQ. IN/L.F. = 092 S.F.
(6) AF-50 ROOF JACK YIELD 21 S.F. (35 S.F. NET FREE EACH)
TOTAL VENTILATION PROVIDED:
HIGH EAVE VENTILATION = 092 S.F.
LOW EAVE VENTILATION = 092 S.F.
ROOF JACK VENTILATION = 21 S.F.
TOTAL VENTILATION REQUIRED = 3.64 S.F.
TOTAL VENTILATION PROVIDED = 3.34 S.F.

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NOTE:
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ALL HEADERS TO BE 4x10 DF#2 U.N.O.

ALL ROOF PITCHES AS NOTED. X:12 INDICATES DOWN SLOPE

A.M.F. = ABOVE MAIN FLOOR

A.U.F. = ABOVE UPPER FLOOR

T.O.B. = TOP OF BEAM

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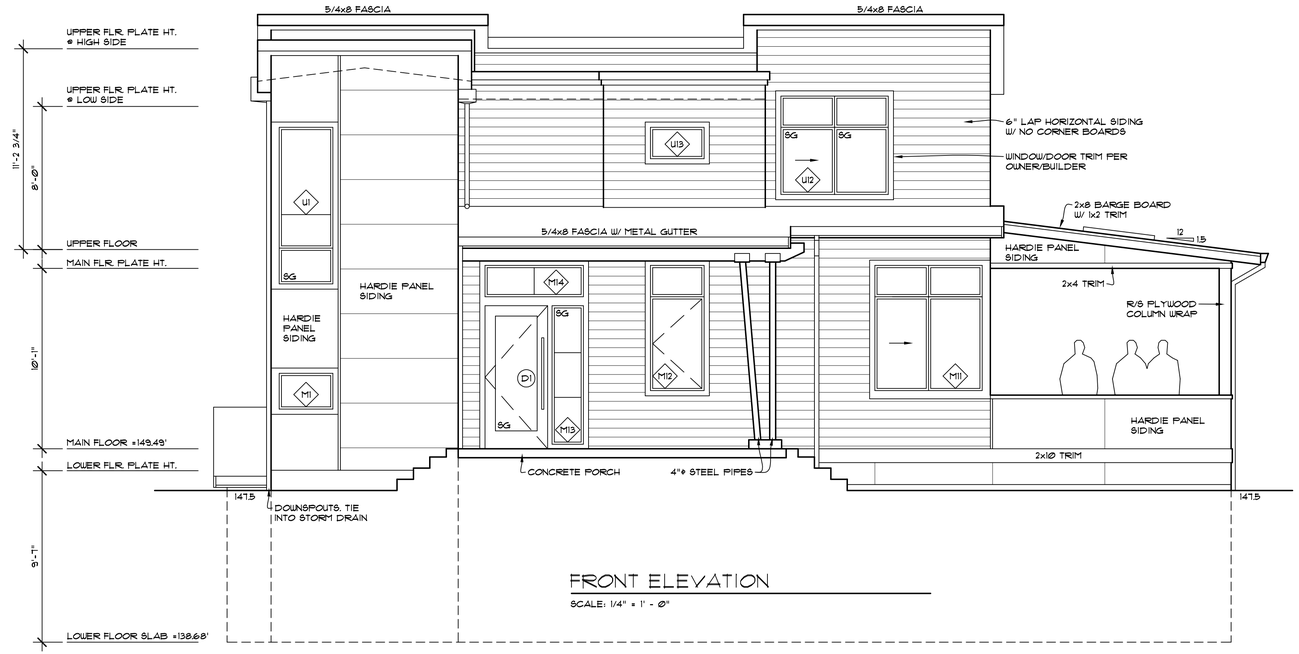
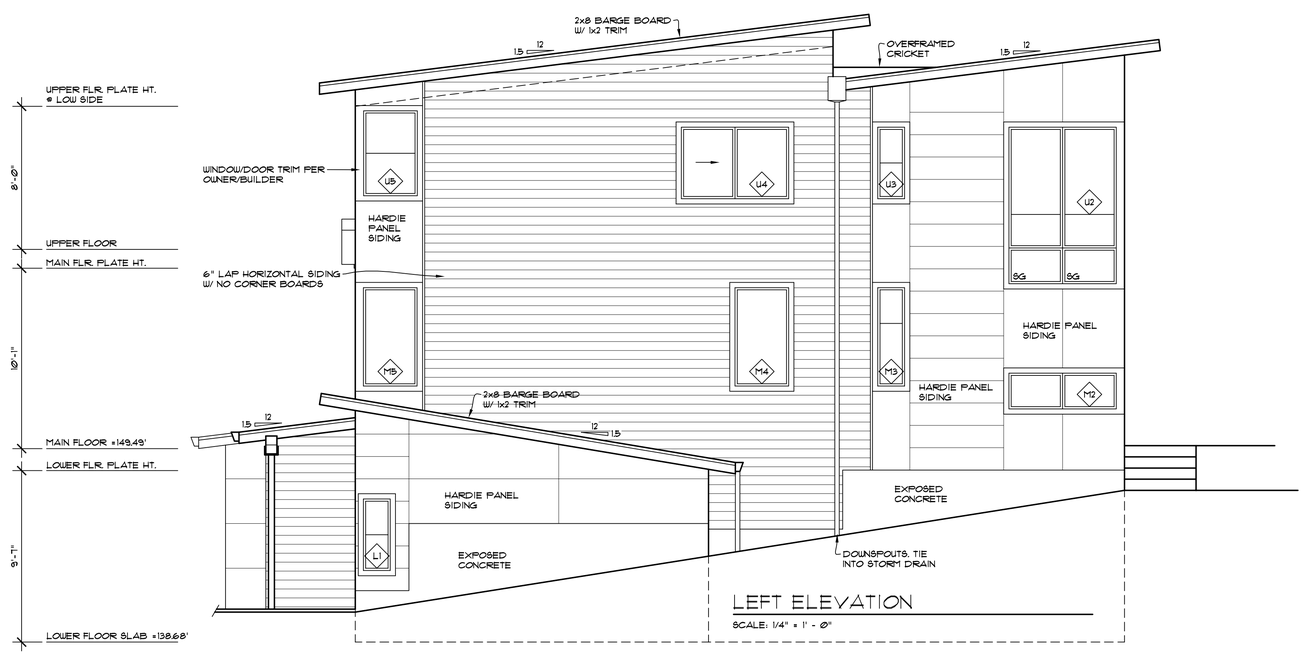


FRONT ELEVATION

SCALE: 1/4" = 1' - Ø"



LEFT ELEVATION

SCALE: 1/4" = 1' - Ø"

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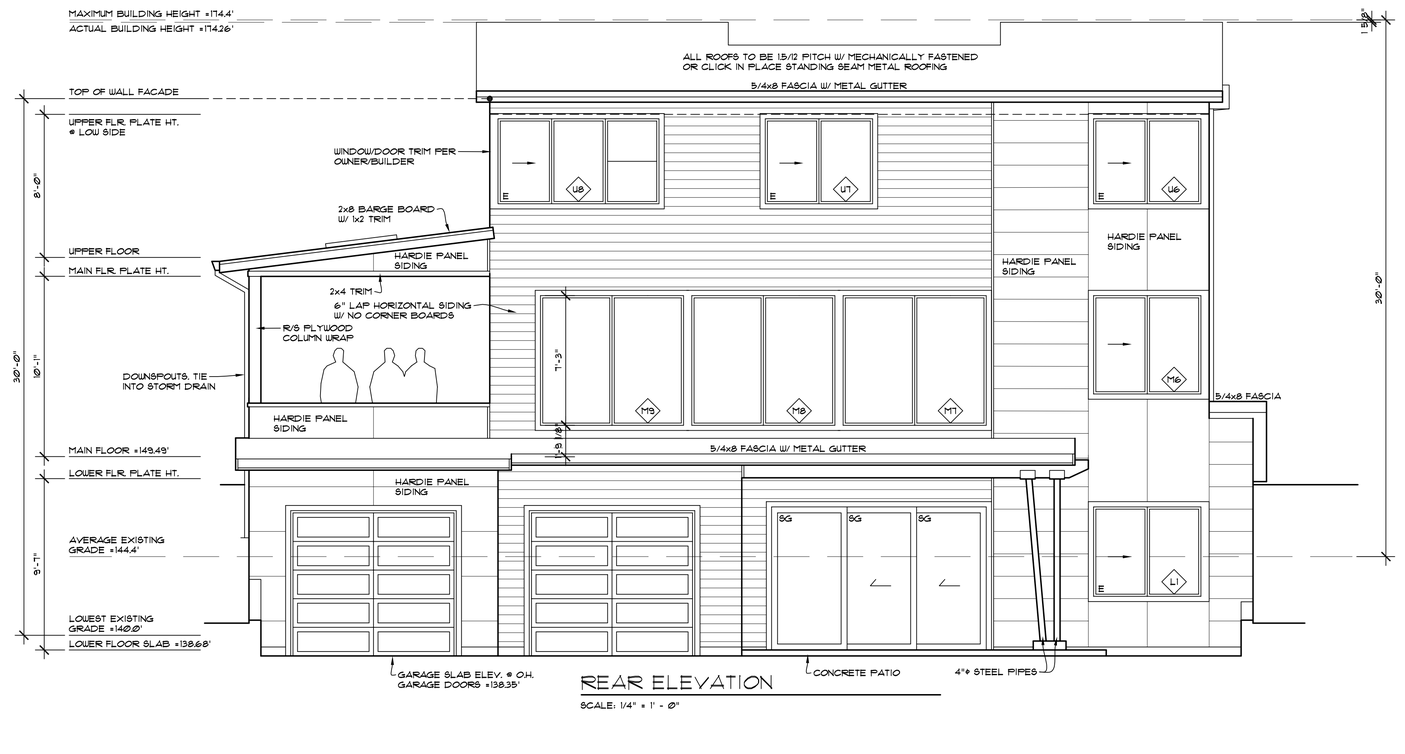
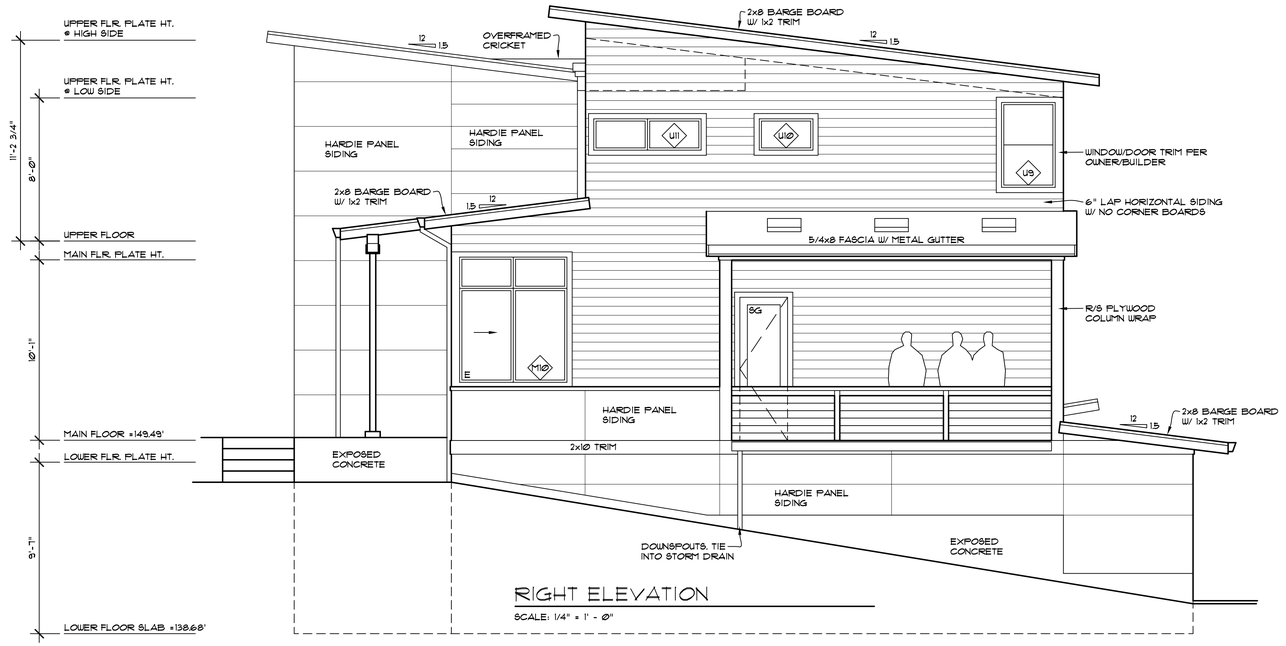


REAR ELEVATION

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



RIGHT ELEVATION

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

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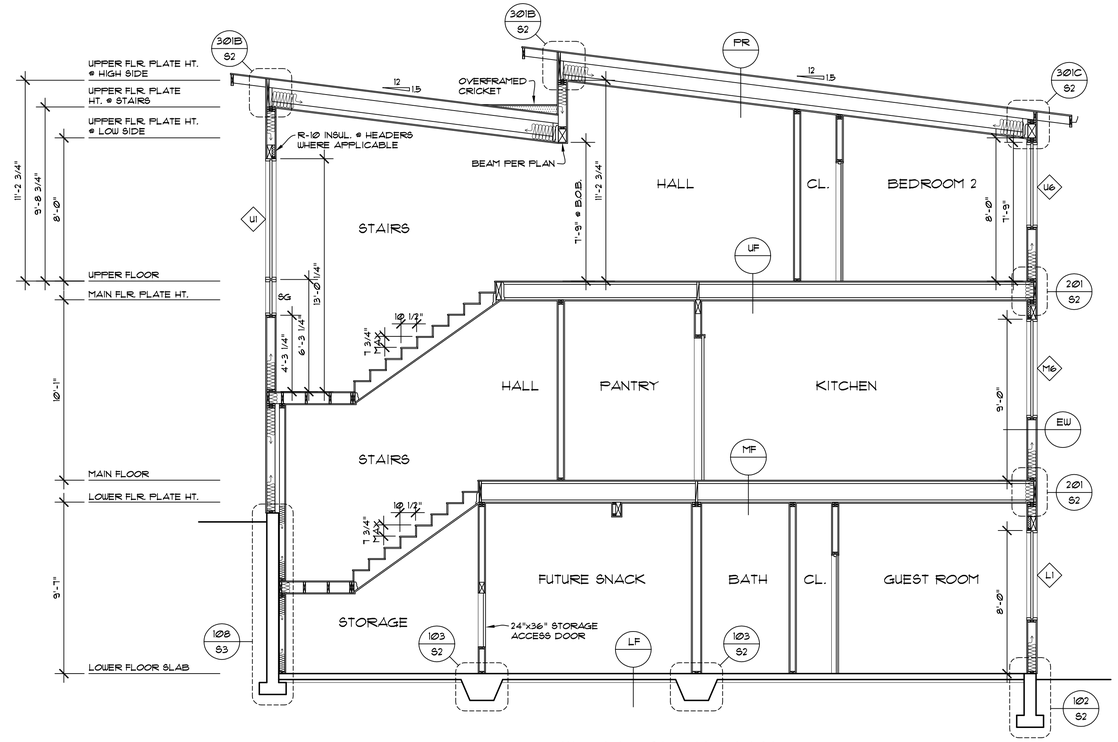
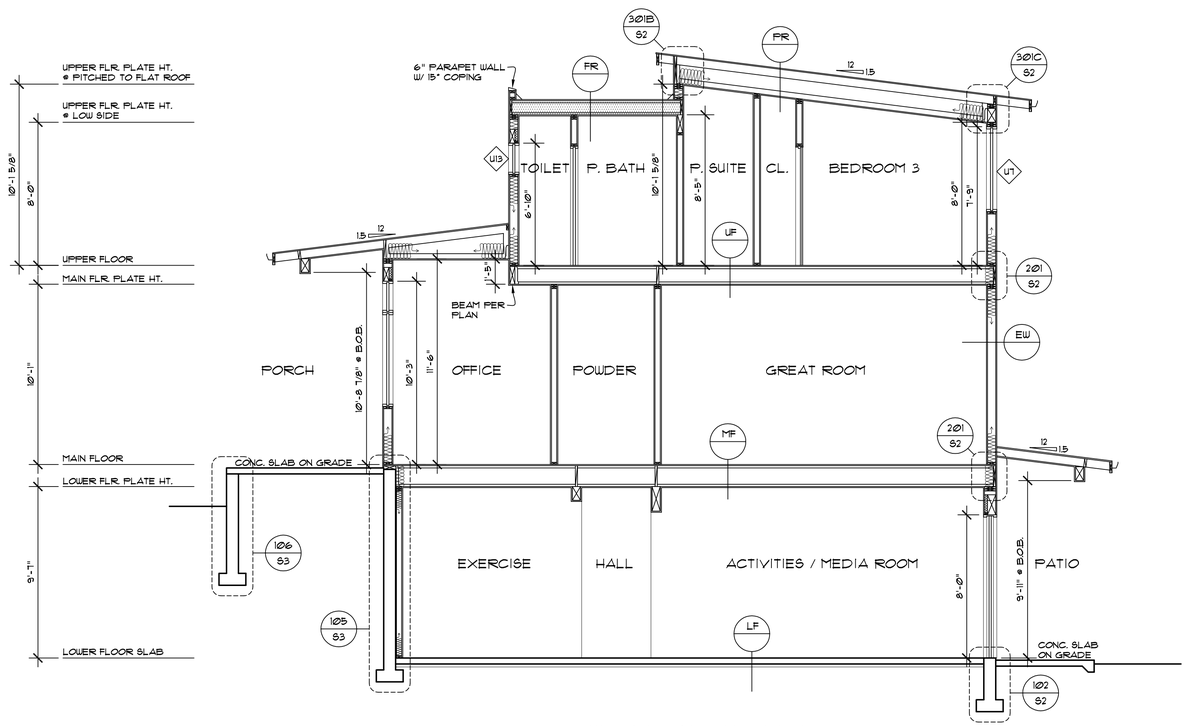


BUILDING SECTION 'A'

SCALE: 1/4" = 1' - Ø"



BUILDING SECTION 'B'

SCALE: 1/4" = 1' - Ø"

FR	FLAT ROOF TPO ROOFING (2) LAYERS 3Ø# BUILDING PAPER. SHEATHING PER STUCTURAL ENGINEER OVERFRAMING TO SLOPE TO DRAIN TJI ROOF JOISTS PER PLAN CLOSED CELL FOAM INSULATION TO R-38 @ SINGLE RAFTER ROOF 4 MIL. U.V. POLY. 5/8" GWB
FR	PITCHED ROOF ROOFING PER ELEVATIONS (2) LAYERS 3Ø# BUILDING PAPER. SHEATHING PER STUCTURAL ENGINEER TRUSSES OR 2x RAFTERS PER PLAN R-49 INSULATION @ TRUSSED ROOF R-38 INSULATION @ SINGLE RAFTER ROOF W/ VENT BAFFLE AS NEEDED 4 MIL. U.V. POLY. 5/8" GWB
EW	EXTERIOR CONDITIONED WALL 1/2" GWB. R-21 BATT INSULATION 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. SHEATHING PER SHEAR WALL SCHED. BUILDING PAPER SIDING PER ELEVATIONS
GW	EXTERIOR GARAGE WALL 1/2" GWB. 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. SHEATHING PER SHEAR WALL SCHED. BUILDING PAPER SIDING PER ELEVATIONS
DG	DWELLING TO GARAGE WALL 1/2" GWB 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. R-21 BATT INSULATION 1/2" GWB
UF	UPPER FLOOR FINISH FLOOR 1/2" LL. FLY @ VINYL 5/8" LL. FLY @ VINYL TO HARDWOOD 3/4" T&G PLYWOOD SUB-FLOOR (GLUE & NAIL) 18" FLOOR TRUSSES PER PLAN R-38 BATT. INSULATION @ AREAS OVER UNHEATED SPACE PER ENERGY CREDIT 1.3 5/8" GWB
MF	MAIN FLOOR FINISH FLOOR 1/2" LL. FLY @ VINYL 5/8" LL. FLY @ VINYL TO HARDWOOD 3/4" T&G PLYWOOD SUB-FLOOR (GLUE & NAIL) TJI FLOOR JOISTS PER PLAN R-38 BATT. INSULATION @ AREAS OVER UNHEATED SPACE PER ENERGY CREDIT 1.3 5/8" GWB
LF	LOWER FLOOR 4" CONCRETE SLAB ON GRADE W/ 6x6 W.4xW.4 WIF & RADIANT FLOOR HEATING WATER TUBING O/ 6 MIL. VAPOR BARRIER O/ R-10 RIGID INSULATION (MIN. COMPRESSIVE STRENGTH OF 15PSI) AROUND PERIMETER & UNDER ENTIRE SLAB PER ENERGY CREDIT 1.3 O/ 4" GRANULAR FILL
GF	GARAGE FLOOR 4" CONCRETE SLAB ON GRADE W/ 6x6 W.4xW.4 WIF 6 MIL. VAPOR BARRIER 4" GRANULAR FILL
WD	WEATHER DECK WEATHERPROOF MEMBRANE 3/4" T&G PLYWOOD SUB-FLOOR 2x10 DECK JOISTS @16" O.C. SLOPED 1/4" PER 12" TO DRAIN

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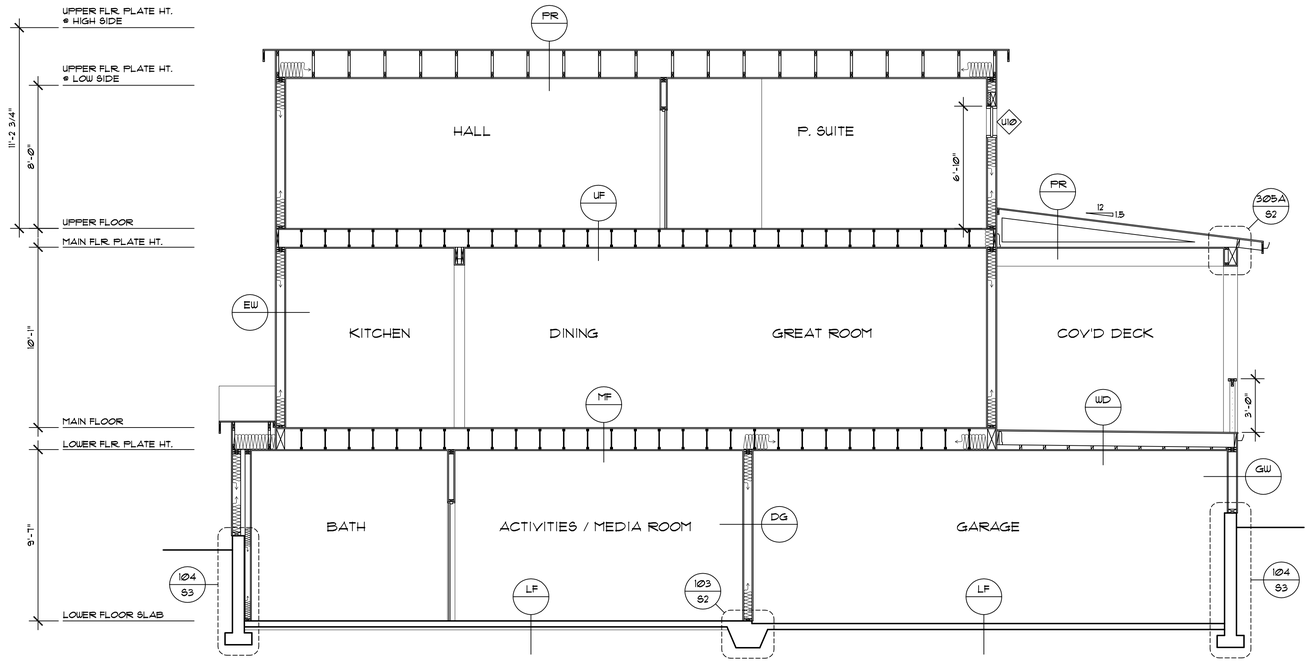

BUILDING SECTION 'C'

SCALE: 1/4" = 1' - Ø"

FR	**FLAT ROOF** TPO ROOFING (2) LAYERS 30# BUILDING PAPER SHEATHING PER STUCTURAL ENGINEER OVERFRAMING TO SLOPE TO DRAIN TJI ROOF JOISTS PER PLAN CLOSED CELL FOAM INSULATION TO R-38 @ SINGLE RAFTER ROOF 4 MIL. U.V. POLY. 5/8" GWB
FR	**PITCHED ROOF** ROOFING PER ELEVATIONS (2) LAYERS 30# BUILDING PAPER SHEATHING PER STUCTURAL ENGINEER TRUSSES OR 2x RAFTERS PER PLAN R-49 INSULATION @ TRUSSED ROOF R-38 INSULATION @ SINGLE RAFTER ROOF W/ VENT BAFFLE AS NEEDED 4 MIL. U.V. POLY. 5/8" GWB
EW	**EXTERIOR CONDITIONED WALL** 1/2" GWB. R-21 BATT INSULATION 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. SHEATHING PER SHEAR WALL SCHED. BUILDING PAPER SIDING PER ELEVATIONS
GW	**EXTERIOR GARAGE WALL** 1/2" GWB. 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. SHEATHING PER SHEAR WALL SCHED. BUILDING PAPER SIDING PER ELEVATIONS
DG	**DWELLING TO GARAGE WALL** 1/2" GWB 4 MIL UV RES. POLY 2x6 STUDS @ 16" O.C. R-21 BATT INSULATION 1/2" GWB
UF	**UPPER FLOOR** FINISH FLOOR 1/2" U.L. FLY @ VINYL 5/8" U.L. FLY @ VINYL TO HARDWOOD 3/4" T&G PLYWOOD SUB-FLOOR (GLUE & NAIL) 18" FLOOR TRUSSES PER PLAN R-38 BATT. INSULATION @ AREAS OVER UNHEATED SPACE PER ENERGY CREDIT 1.3 5/8" GWB
MF	**MAIN FLOOR** FINISH FLOOR 1/2" U.L. FLY @ VINYL 5/8" U.L. FLY @ VINYL TO HARDWOOD 3/4" T&G PLYWOOD SUB-FLOOR (GLUE & NAIL) TJI FLOOR JOISTS PER PLAN R-38 BATT. INSULATION @ AREAS OVER UNHEATED SPACE PER ENERGY CREDIT 1.3 5/8" GWB
LF	**LOWER FLOOR** 4" CONCRETE SLAB ON GRADE W/ 6x6 W1.4xW1.4 WWF & RADIANT FLOOR HEATING WATER TUBING O/ 6 MIL. VAPOR BARRIER O/ R-10 RIGID INSULATION (MIN. COMPRESSIVE STRENGTH OF 15PSI.) AROUND PERIMETER & UNDER ENTIRE SLAB PER ENERGY CREDIT 1.3 O/ 4" GRANULAR FILL
GF	**GARAGE FLOOR** 4" CONCRETE SLAB ON GRADE W/ 6x6 W1.4xW1.4 WWF 6 MIL. VAPOR BARRIER 4" GRANULAR FILL
WD	**WEATHER DECK** WEATHERPROOF MEMBRANE 3/4" T&G PLYWOOD SUB-FLOOR 2x10 DECK JOISTS @16" O.C. SLOPED 1/4" PER 12" TO DRAIN

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STRUCTURAL NOTES

CODES AND SPECIFICATIONS

1. INTERNATIONAL BUILDING CODE, 2018 EDITION, ASCE 7-16
2. INTERNATIONAL RESIDENTIAL CODE, 2015 EDITION
3. SIMPSON STRONG TIE WOOD CONSTRUCTION CONNECTORS 2021-2023
4. FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD MUST BE STAINLESS STEEL, ZMAX(G185HDG PER ASTM A653). BATCH/POST HOT-DIP GALVANIZED (PER ASTM B695, CLASS 55 OR GREATER). UNCOATED AND PAINTED PRODUCTS SHOULD NOT BE USED WITH TREATED WOOD. WHEN USING STAINLESS STEEL HOT-DIP GALVANIZED CONNECTORS, THE CONNECTORS AND FASTENERS SHOULD BE MADE OF THE SAME MATERIAL.

DESIGN CRITERIA

1. WIND LOAD: INTERNATIONAL BUILDING CODE, 2018, ASCE 7-16, ALTERNATE ALL-HEIGHTS METHOD, ULTIMATE DESIGN WIND SPEED = 110 MPH, NOMINAL DESIGN WIND SPEED = 85 MPH, EXPOSURE C, Kzt = 1.3

2. SEISMIC: INTERNATIONAL BUILDING CODE, 2018, ASCE 7-16
   RISK CATEGORY II, SEISMIC IMPORTANCE CATEGORY, Ie=1.0
   MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS, Ss=1.5, S1=0.5
   SITE CLASS D
   DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS, Sds=1.0g, Sd=0.5g
   SEISMIC DESIGN CATEGORY, D2
   BASIC SEISMIC FORCE-RESISTING SYSTEM: LIGHT FRAME WALLS WITH WOOD SHEAR WALLS
   DESIGN BASE SHEAR, V + F(Sds)(W)/R = 0.1846W
   RESPONSE MODIFICATION COEFFICIENT, R=6.5
   ANALYSIS PROCEDURE USED: SIMPLIFIED ALTERNATIVE STRUCTURAL DESIGN FOR SIMPLE BEARING WALL SYSTEMS

3. ROOF LOAD: DL = 15 PSF LL = 25 PSF (ROOF SNOW LOAD)

4. FLOOR LOAD: DL = 10 PSF LL = 40 PSF

5. DECK LOAD: DL = 10 PSF LL = 60 PSF

6. SOILS: ASSUMED 1500 PSF ALLOWABLE SOIL BEARING
7. ASSUMED 35 PCF ACTIVE SOIL PRESSURE, 350 PCF PASSIVE PRESSURE
   0.35 COEFFICIENT OF FRICTION
   ALL FOOTINGS AND SLABS SHALL BEAR ON UNDISTURBED SOIL OR FILL COMPACTED TO 95% MODIFIED PROCTOR.

8. CONCRETE: 3000 PSI @ 28 DAYS (2500 PSI USED FOR DESIGN)
   GRADE 40 REINFORCEMENT
   MINIMUM 3" COVER FOR ALL REINFORCEMENT EXCEPT AS NOTED AT RETAINING WALL OR OTHER DETAILS.

TIMBER CONSTRUCTION DETAILS

1. LUMBER GRADES AND ALLOWABLE STRESSES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON PLANS:
   ALL SAWN LUMBER HF#2 OR BETTER, Fb = 875 PSI, Fv = 75 PSI, E = 1,300,000
   GLULAM BEAMS 24F-V4, Fb = 2400 PSI, Fv = 165 PSI, E = 1,800,000
   MICROLAM, LVL Fb = 2600 PSI, Fv = 285 PSI, E = 1,900,000
   PARALLAMS, PSL Fb = 2600 PSI, Fv = 290 PSI, E = 2,900,000
2. WHEN TOP PLATE IS INTERRUPTED BY HEADER, HEADER SHALL HAVE STRAP CONNECTORS TO THE TOP PLATE EACH END. USE 2-SIMPSON MSTA24 CONNECTORS, UNLESS NOTED OTHERWISE.
3. ALL SHEAR WALL SHEATHING, NAILS AND ANCHORS SHALL BE AS DETAILED ON THE DRAWINGS AND AS NOTED IN THE SHEAR WALL SCHEDULE.
4. FLOOR SHEATHING SHALL BE $\frac{3}{4}$" MINIMUM APA RATED FLOOR SHEATHING WITH 10d COMMON @ 6"OC AT ALL SUPPORTED PANEL EDGES AND 10d @ 12"OC AT INTERMEDIATE SUPPORTS.
5. ROOF SHEATHING SHALL BE $\frac{7}{16}$" MINIMUM APA RATED ROOF SHEATHING WITH 8d COMMON @ 6"OC AT ALL SUPPORTED PANEL EDGES AND 8d @ 12"OC AT INTERMEDIATE SUPPORTS.

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. ANY VARIATIONS FROM THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER OR THE ENGINEER OF RECORD.
2. ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION SHALL BE PROVIDED.
3. ANY PROPOSED FIELD CHANGES MUST HAVE THE APPROVAL OF THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

SHEAR WALL SCHEDULE

SHEAR WALL TYPE	SHEATHING (NOTE 5)	FASTENER SPACING (COMMON OR GALVANIZED BOX NAILS)	BOTTOM PLATE NAILING OR ANCHOR BOLTS	FRAMING ANCHORS (NOTES 7 & 8)	ALLOWABLE SHEAR	NOTES
1A	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	8d @ 6" OC	16d @ 8" OC OR $\frac{1}{2}$" A.B. @ 5'-6" OC	RBC @ 32" OC LTP4 @ 48" OC A35 @ 48" OC	130 PLF	1, 2, 3, 11
1	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	8d @ 6" OC	16d @ 6" OC OR $\frac{1}{2}$" A.B. @ 3'-2" OC OR $\frac{5}{8}$" A.B. @ 5'-0" OC	RBC @ 18" OC LTP4 @ 30" OC A35 @ 30" OC	242 PLF	1, 2, 3, 11
2	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	8d @ 4" OC	16d @ 4" OC OR $\frac{1}{2}$" A.B. @ 2'-2" OC OR $\frac{5}{8}$" A.B. @ 3'-4" OC	RBC @ 12" OC LTP4 @ 18" OC A35 @ 18" OC	353 PLF	1, 2, 3, 11
3	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	8d @ 3" OC	$\frac{1}{2}$" X 5" LAG SCREW @ 8"OC OR $\frac{1}{2}$" A.B. @ 3'-2" OC OR $\frac{5}{8}$" A.B. @ 5'-0" OC	RBC @ 10" OC LTP4 @ 15" OC A35 @ 15" OC	456 PLF	1, 2, 3, 4, 9, 10, 11
4	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	10d @ 3" OC	$\frac{1}{2}$" X 5" LAG SCREW @ 6"OC OR $\frac{1}{2}$" A.B. @ 1'-4" OC OR $\frac{5}{8}$" A.B. @ 2'-0" OC	RBC @ 8" OC LTP4 @ 12" OC A35 @ 12" OC	558 PLF	1, 2, 3, 4, 9, 10, 11
5	7/16" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 ONE SIDE	10d @ 2" OC	$\frac{1}{2}$" X 5" LAG SCREW @ 5"OC OR $\frac{1}{2}$" A.B. @ 1'-0" OC OR $\frac{5}{8}$" A.B. @ 1'-8" OC	RBC @ 6" OC LTP4 @ 10" OC A35 @ 10" OC	716 PLF	1, 2, 3, 4, 9, 10, 11
6	19/32" MIN. APA RATED SHEATHING OR APA RATED SIDING 303 BOTH SIDES	10d @ 2" OC	$\frac{1}{2}$" X 5" LAG SCREW @ 2"OC OR $\frac{1}{2}$" A.B. @ 1'-0" OC	LTP4 @ 6" OC A35 @ 6" OC	1618 PLF	1, 2, 3, 4, 6, 9, 10, 11

1. ALL FASTENERS SHALL MEET THE FOLLOWING CRITERIA: 8d COMMON = 0.131" DIAMETER X 2 $\frac{1}{2}$", 8d GALVANIZED BOX = 0.113 DIAMETER X 2 $\frac{1}{2}$", 10d COMMON = 0.148 DIAMETER X 3", 10d GALVANIZED BOX = 0.128" X 3", 16d COMMON = 0.162" X 3 $\frac{1}{2}$".
2. PANEL EDGES SHALL BE BACKED WITH 2" NOMINAL OR WIDER FRAMING. SPACE FASTENERS @ 12" OC ON INTERMEDIATE SUPPORTS.
3. PROVIDE ALL ANCHOR BOLTS WITH 3" X 3" X $\frac{1}{4}$" PLATE WASHERS. LOCATE WITHIN $\frac{1}{2}$" OF SHEATHING.
4. AT GARAGE JAMBS, REFER TO LATERAL RESTRAINT PANEL DETAIL 401/S1.
5. PROVIDE $\frac{7}{16}$" APA RATED SHEATHING (PLYWOOD OR OSB) OR APA RATED SIDING 303 OR INNER SEAL OSB RATED PANEL SIDING ON ALL EXTERIOR WALLS DESIGNATED AS SHEAR WALLS.
6. WHERE PANELS ARE APPLIED ON BOTH SIDES OF A WALL AND NAIL SPACING IS LESS THAN 6" OC ON EITHER SIDE, PANLE JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3" NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.
7. REFER TO TYPICAL SHEAR WALL DETAILS ON STRUCTURAL DETAIL SHEET FOR LOCATION OF FRAMING ANCHORS.
8. AT UPPER FLOOR INTERIOR SHEAR WALLS, REFER TO DETAIL 303/S2 OR 304/S2.
9. AT SHEAR WALL TYPES 3, 4, 5 AND 6, ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 3X MEMBER OR (2) 2X MEMBERS. FOR EXAMPLE, PROVIDE A 3X STUD AT VERTICAL JOINTS IN THE SHEATHING.
10. AT SHEAR WALL TYPES 3, 4, 5 AND 6, FOUNDATION SILL PLATES AND BOTTOM PLATES OF SHEAR WALLS SHALL NOT BE LESS THAN A SINGLE 3X MEMBER OR (2) 2X MEMBERS. ALSO, PROVIDE A 3X MINIMUM WIDTH MEMBER BELOW SHEAR WALL TO RECEIVE LAG SCREWS SUCH AS A 3X RIM JOIST, 3X JOIST OR BEAM OR BLOCKING BELOW SHEAR WALL.
11. FASTENERS AT PRESSURE PRESERVATIVE AND FIRE RETARDANT TREATED WOOD SHALL BE STAINLESS STEEL, G185 HDG, BATCH/POST HOT-DIP GALVANIZED OR MECHANICALLY GALVANIZED.

FOOTING SCHEDULE

MARK	SIZE	DEPTH	REINFORCING	ALLOWABLE LOAD
18	18"x18"	8"	(2) #4 EACH WAY	3375#
24	24"x24"	10"	(3) #4 EACH WAY	6000#
30	30"x30"	10"	(3) #5 EACH WAY	9375#
36	36"x36"	10"	(3) #5 EACH WAY	13500#
42	42"x42"	10"	(3) #5 EACH WAY	18375#
48	48"x48"	12"	(4) #5 EACH WAY	24000#
54	54"x54"	12"	(5) #5 EACH WAY	30375#
60	60"x60"	12"	(5) #5 EACH WAY	37500#
66	66"x66"	12"	(6) #5 EACH WAY	45375#
72	72"x72"	12"	(7) #5 EACH WAY	54000#

NOTE:
FOOTING DESIGN IS BASED ON 2500 PSI CONCRETE AND AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF

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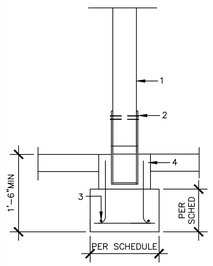
REVISION DATES:

PROJECT: MAWER/HWANG-LEE

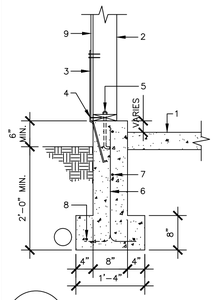
SHEET TITLE: STRUCTURAL NOTES & SCHEDULES

SCALE:	DATE:
NO SCALE	4-26-22
DRAWN BY: MDT	SHEET NO. S1
PROJECT NO. MAWER/ HWANG-LEE	



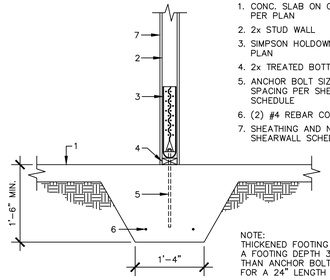
1. PT POST PER PLAN
2. SIMPSON COLUMN BASE PER PLAN
3. REBAR PER FOOTING SCHEDULE
4. 12" CONC. PLINTH W/4#4 HOOKED INTO FOOTING

101 3/4"=1'-0"



1. CONC. SLAB ON GRADE PER PLAN
2. 2x STUD WALL
3. SIMPSON HOLDOWN PER PLAN. FILL ALL NAIL HOLES W/ 16d NAILS
4. EDGE NAILING @ SILL PLATE
5. ANCHOR BOLTS. SIZE AND SPACING PER SHEARWALL SCHEDULE
6. #4 REBAR @16" O.C. (VERTICAL) ALT. HOOKS INTO FOOTING
7. #4 REBAR @10" O.C. (HORIZONTAL)
8. (2) #4 REBAR CONTINUOUS
9. SHEATHING AND NAILING PER SHEARWALL SCHEDULE

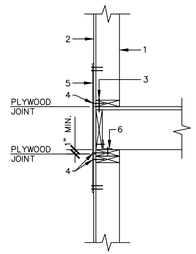
102 3/4"=1'-0"



1. CONC. SLAB ON GRADE PER PLAN
2. 2x STUD WALL
3. SIMPSON HOLDOWN PER PLAN
4. 2x TREATED BOTTOM PLATE
5. ANCHOR BOLT SIZE AND SPACING PER SHEARWALL SCHEDULE
6. (2) #4 REBAR CONTINUOUS
7. SHEATHING AND NAILING PER SHEARWALL SCHEDULE

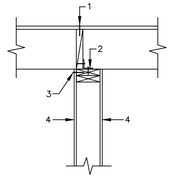
NOTE:
THICKENED FOOTING TO PROVIDE A FOOTING DEPTH 3" GREATER THAN ANCHOR BOLT EMBEDMENT FOR A 24" LENGTH AT HOLDOWN

103 3/4"=1'-0"



1. 2x STUD WALL
2. SHEATHING AND NAILING PER SHEARWALL SCHEDULE
3. BOTTOM PLATE NAILING PER SHEARWALL SCHEDULE
4. EDGE NAILING PER SHEARWALL SCHEDULE
5. SIMPSON STRAP PER PLAN. CENTER STRAP ON RIM JOISTS (@ INT. WALL SLOT PLYWOOD)
6. SIMPSON FRAMING ANCHOR PER SHEARWALL SCHEDULE (NOT REQUIRED IF PLYWOOD JOINTS ARE LOCATED AS SHOWN IN THIS DETAIL)

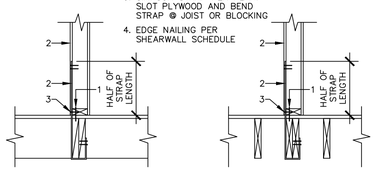
201 3/4"=1'-0"



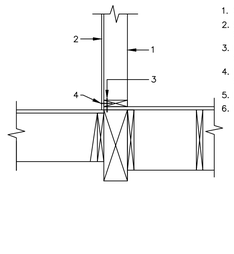
1. USE BOTTOM PLATE NAILING PER SHEARWALL SCHEDULE
2. SIMPSON FRAMING ANCHOR PER SHEARWALL SCHEDULE
3. EDGE NAILING PER SHEARWALL SCHEDULE
4. SHEATHING AND NAILING PER SHEARWALL SCHEDULE AND PER PLAN

202 3/4"=1'-0"

1. BOTTOM PLATE NAILING PER SHEARWALL SCHEDULE
2. SHEATHING AND NAILING PER SHEARWALL SCHEDULE AND PER PLAN
3. SIMPSON STRAP PER PLAN. SLOT PLYWOOD AND BEND STRAP @ JOIST OR BLOCKING
4. EDGE NAILING PER SHEARWALL SCHEDULE

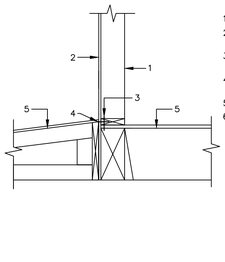


203 3/4"=1'-0"



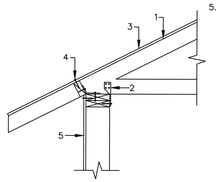
1. 2x STUD WALL
2. SHEATHING AND NAILING PER SHEARWALL SCHEDULE
3. BOTTOM PLATE NAILING PER SHEARWALL SCHEDULE
4. EDGE NAILING PER SHEARWALL SCHEDULE
5. FLOOR JOISTS PER PLAN
6. DECK JOISTS PER PLAN

204 3/4"=1'-0"



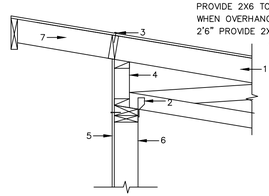
1. 2x STUD WALL
2. SHEATHING AND NAILING PER SHEARWALL SCHEDULE
3. BOTTOM PLATE NAILING PER SHEARWALL SCHEDULE
4. EDGE NAILING PER SHEARWALL SCHEDULE
5. FLOOR JOISTS PER PLAN
6. ROOF TRUSSES PER PLAN

205 3/4"=1'-0"



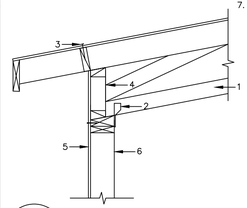
1. ROOF TRUSSES PER PLAN
2. SIMPSON H2.5 @ EACH TRUSS
3. ROOF SHEATHING
4. 2x BLOCKING W/ 8d @6" O.C.
5. SHEATHING AND NAILING PER SHEARWALL SCHEDULE

301A 3/4"=1'-0"



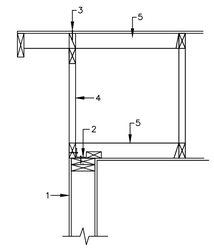
1. OPEN WEB TRUSSES PER PLAN
2. SIMPSON H2.5 @ EACH JOIST
3. 8d @6" O.C.
4. BLOCKING PANEL PER MFR.
5. WALL SHEATHING PER SW SCHED.
6. 2x6 @16" O.C.
7. WHEN OVERHANG IS 2'6" OR LESS PROVIDE 2X6 TOP CHORD AT O.H. WHEN OVERHANG IS MORE THAN 2'6" PROVIDE 2X12 TOP CHORD AT O.H.

301B 3/4"=1'-0"



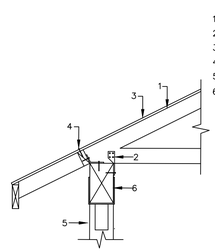
1. OPEN WEB TRUSSES PER PLAN
2. SIMPSON H2.5 @ EACH JOIST
3. 8d @6" O.C.
4. BLOCKING PANEL PER MFR.
5. WALL SHEATHING PER SW SCHED.
6. 2x6 @16" O.C.
7. WHEN OVERHANG IS 2'6" OR LESS PROVIDE 2X6 TOP CHORD AT O.H. WHEN OVERHANG IS MORE THAN 2'6" PROVIDE 2X12 TOP CHORD AT O.H.

301C 3/4"=1'-0"



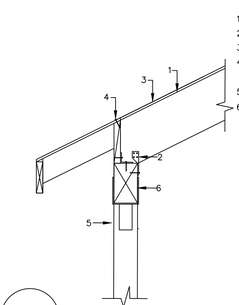
1. SHEATHING AND NAILING PER SHEARWALL SCHEDULE AND PER PLAN
2. SIMPSON A35 FRAMING ANCHORS PER SHEARWALL SCHEDULE
3. 2X BLOCKING W/8d NAILS @6" O.C.
4. GABLE END TRUSS
5. 2X4 @ 24"OC

302A GABLE END TRUSS DETAIL 3/4"=1'-0"



1. ROOF TRUSSES PER PLAN
2. SIMPSON H2.5 @ EACH TRUSS
3. ROOF SHEATHING
4. 2x BLOCKING W/ 8d @6" O.C.
5. POST AND POST CAP PER PLAN
6. BEAM PER PLAN

305A 3/4"=1'-0"



1. ROOF RAFTERS PER PLAN
2. SIMPSON H2.5 @ EACH TRUSS
3. ROOF SHEATHING
4. 2x BLOCKING W/ 8d @6" O.C. IN EVERY OTHER RAFTER SPACE
5. POST AND POST CAP PER PLAN
6. BEAM PER PLAN

305B 3/4"=1'-0"

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REVISION DATES:

PROJECT: MAWER/HWANG-LEE	SHEET TITLE: STRUCTURAL DETAILS
SCALE: NO SCALE	DATE: 4-26-22
DRAWN BY: MDT	SHEET NO. S2
PROJECT NO. MAWER/ HWANG-LEE	

CANTILEVERED RETAINING WALL SCHEDULE

H	T	L	I	D	VERTICAL REINFORCING	HORIZONTAL REINFORCING	DOWELS	FOOTING REINFORCING
4'-0"	8"	2'-0"	8"	8"	#4 @12" O.C.	#4 @12" O.C.	#4 @12" O.C.	#4 @18" O.C.
6'-0"	8"	2'-8"	1'-0"	9"	#4 @12" O.C.	#4 @12" O.C.	#4 @12" O.C.	#4 @18" O.C.
8'-0"	8"	3'-8"	1'-6"	10"	#5 @12" O.C.	#4 @12" O.C.	#5 @12" O.C.	#4 @10" O.C.
10'-0"	8"	5'-8"	2'-6"	10"	#5 @8" O.C.	#4 @12" O.C.	#5 @8" O.C.	#5 @8" O.C.
12'-0"	10"	6'-6"	2'-10"	11"	#6 @8" O.C.	#4 @8" O.C.	#6 @8" O.C.	#5 @10" O.C.

NOTES:

CONCRETE STRENGTH SHALL BE AT 2500 PSI @28 DAYS

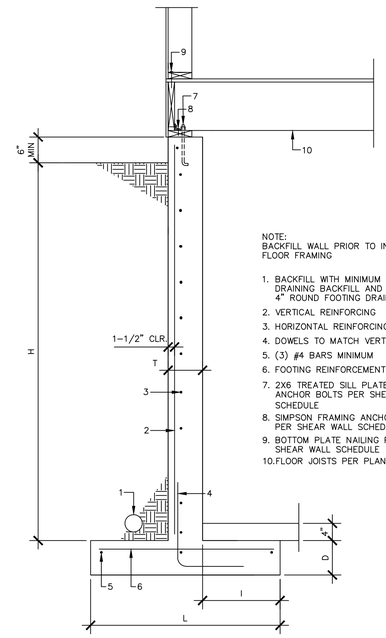
REINFORCING BARS SHALL BE GRADE 40

LATERAL EARTH PRESSURE = 35 PCF WITH LEVEL BACKFILL

PASSIVE RESISTANCE = 350 PCF AND COEFFICIENT OF FRICTION = 0.35

PROVIDE FREE DRAINING GRANULAR BACKFILL FOR A MINIMUM OF 18" BEHIND RETAINING WALL

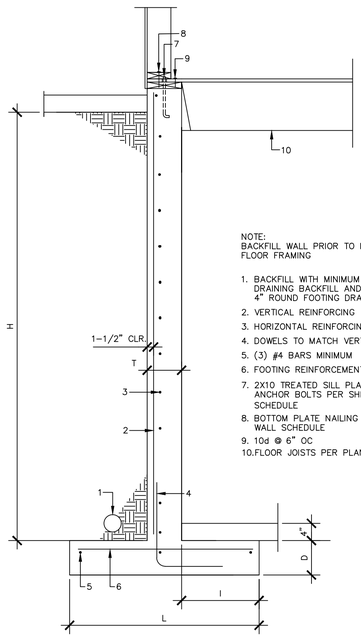
PROVIDE A MINIMUM 4" DIA. PERFORATED PIPE SURROUNDED IN PEA GRAVEL OR WASHED CLEAN GRAVEL (MINIMUM 9" COVER) AND SLOPED TO A STORM DRAIN SYSTEM OR OTHER APPROPRIATE OUTLET. PERIMETER DRAINS SHOULD BE PROVIDED WITH CLEANOUTS AS NECESSARY TO ALLOW PERIODIC INSPECTION AND MAINTENANCE OF DRAINS



NOTE:
BACKFILL WALL PRIOR TO INSTALLING FLOOR FRAMING

1. BACKFILL WITH MINIMUM 18" FREE DRAINING BACKFILL AND PROVIDE 4" ROUND FOOTING DRAIN
2. VERTICAL REINFORCING
3. HORIZONTAL REINFORCING
4. DOWELS TO MATCH VERTICALS
5. (3) #4 BARS MINIMUM
6. FOOTING REINFORCEMENT
7. 2X6 TREATED SILL PLATE W/ ANCHOR BOLTS PER SHEAR WALL SCHEDULE
8. SIMPSON FRAMING ANCHORS PER SHEAR WALL SCHEDULE
9. BOTTOM PLATE NAILING PER SHEAR WALL SCHEDULE
10. FLOOR JOISTS PER PLAN

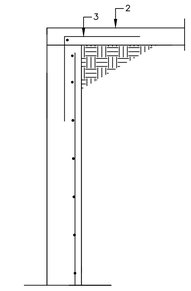
104 CANTILEVERED RETAINING WALL
3/4"=1'-0"



NOTE:
BACKFILL WALL PRIOR TO INSTALLING FLOOR FRAMING

1. BACKFILL WITH MINIMUM 18" FREE DRAINING BACKFILL AND PROVIDE 4" ROUND FOOTING DRAIN
2. VERTICAL REINFORCING
3. HORIZONTAL REINFORCING
4. DOWELS TO MATCH VERTICALS
5. (3) #4 BARS MINIMUM
6. FOOTING REINFORCEMENT
7. 2X10 TREATED SILL PLATE W/ ANCHOR BOLTS PER SHEAR WALL SCHEDULE
8. BOTTOM PLATE NAILING PER SHEAR WALL SCHEDULE
9. 10d @ 6" OC
10. FLOOR JOISTS PER PLAN W/ TOP FLANGE HANGER

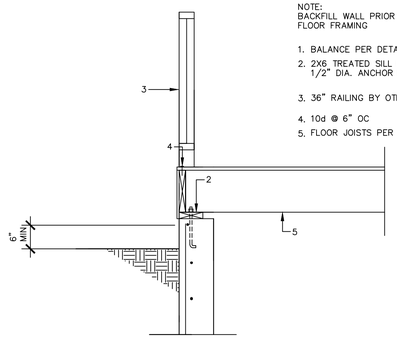
105 CANTILEVERED RETAINING WALL
3/4"=1'-0"



NOTE:
BACKFILL WALL PRIOR TO INSTALLING FLOOR FRAMING

1. BALANCE PER DETAIL 105/S1
2. 4" CONCRETE SLAB ON GRADE
3. #4 DOWELS @ 16" OC

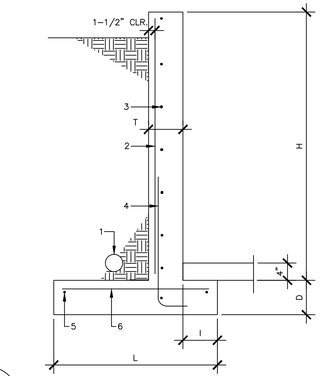
106 CANTILEVERED RETAINING WALL
3/4"=1'-0"



NOTE:
BACKFILL WALL PRIOR TO INSTALLING FLOOR FRAMING

1. BALANCE PER DETAIL 104/S1
2. 2X6 TREATED SILL PLATE W/ 1/2" DIA. ANCHOR BOLTS @ 16"OC
3. 36" RAILING BY OTHERS
4. 10d @ 6" OC
5. FLOOR JOISTS PER PLAN

107 CANTILEVERED RETAINING WALL
3/4"=1'-0"



NOTE:
BACKFILL WALL PRIOR TO INSTALLING FLOOR FRAMING, IF IT OCCURS

1. BACKFILL WITH MINIMUM 18" FREE DRAINING BACKFILL AND PROVIDE 4" ROUND FOOTING DRAIN
2. VERTICAL REINFORCING
3. HORIZONTAL REINFORCING
4. DOWELS TO MATCH VERTICALS
5. (3) #4 BARS MINIMUM
6. FOOTING REINFORCEMENT

108 CANTILEVERED RETAINING WALL
3/4"=1'-0"

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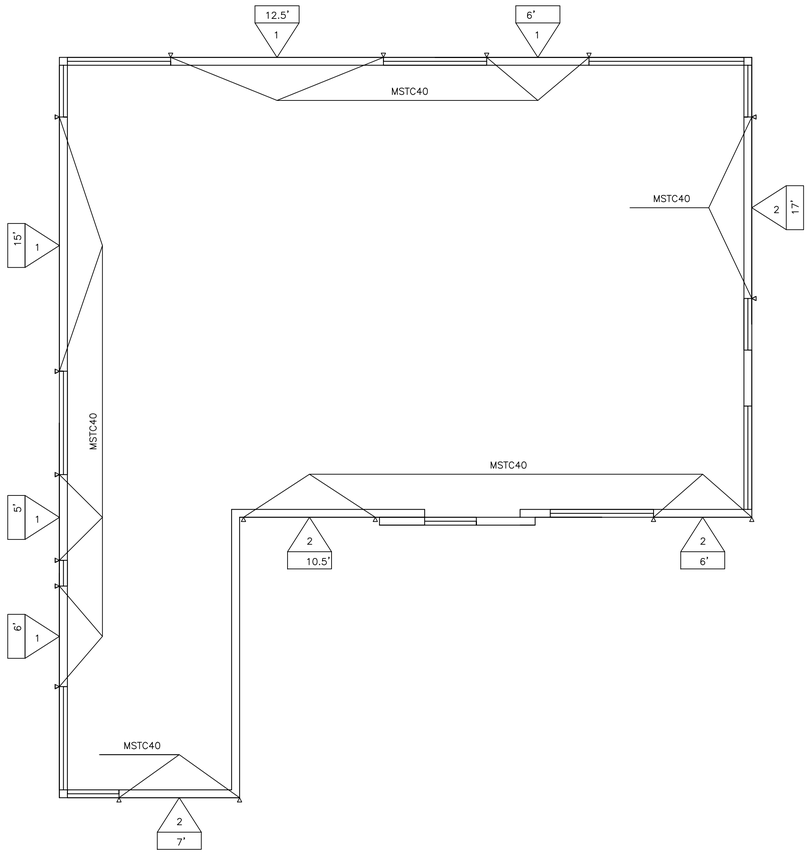
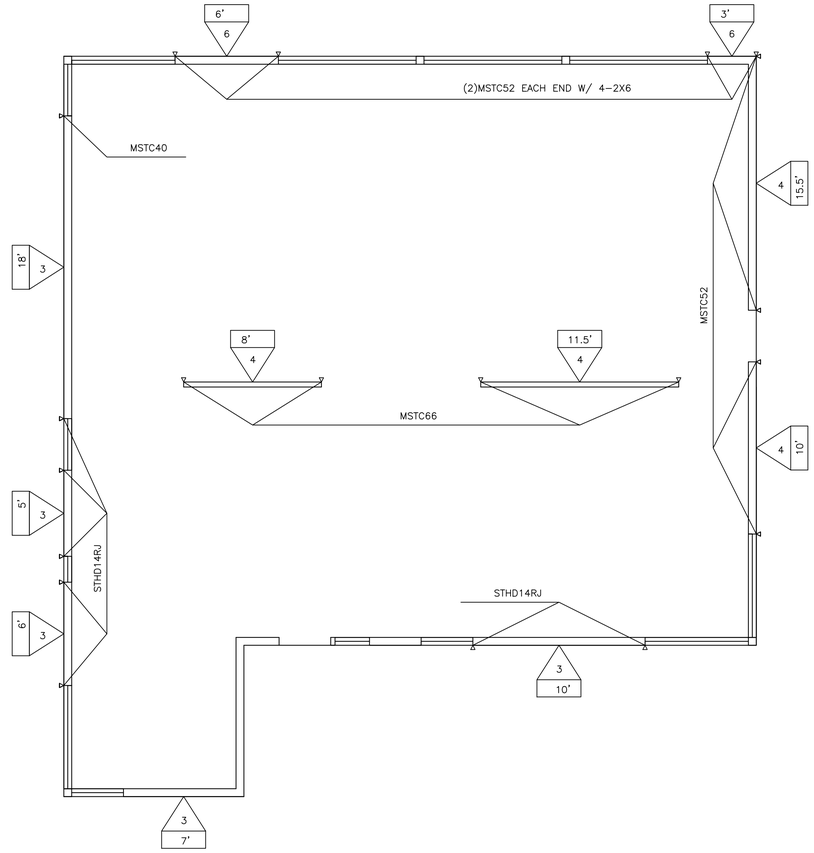
REVISION DATES:

PROJECT: MAWER/HWANG-LEE	SHEET TITLE: STRUCTURAL DETAILS
SCALE: NO SCALE	DATE: 4-26-22
DRAWN BY: MDT	SHEET NO. S3
PROJECT NO. MAWER/ HWANG-LEE	



UPPER FLOOR SHEAR WALL PLAN
$\frac{1}{4}$"=1'



MAIN FLOOR SHEAR WALL PLAN
$\frac{1}{4}$"=1'

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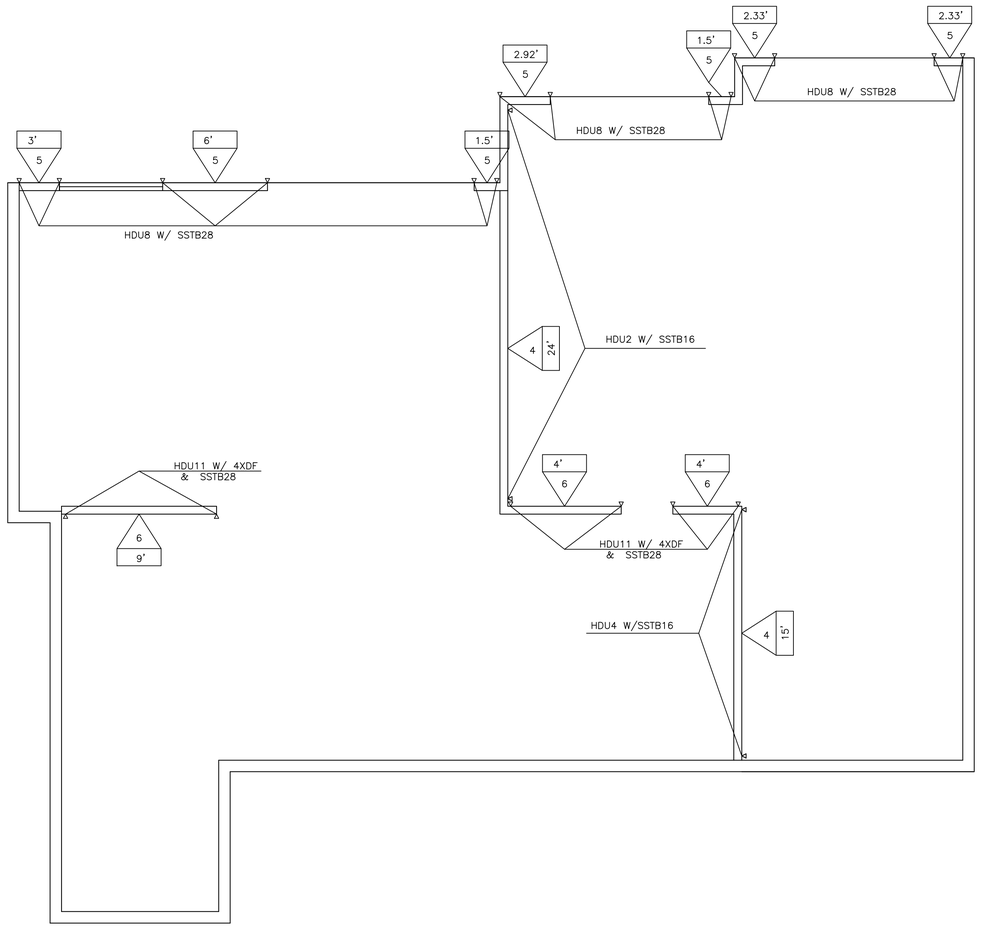
REVISION DATES:

PROJECT: MAWER/HWANG-LEE	SHEET TITLE: SHEAR WALL PLANS
SCALE: NO SCALE	DATE: 4-26-22
DRAWN BY: MDT	SHEET NO.
PROJECT NO. MAWER/ HWANG-LEE	S4



LOWER FLOOR SHEAR WALL PLAN

$\frac{1}{4}" = 1'$

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REVISION DATES:

PROJECT: MAWER/HWANG-LEE	SHEET TITLE: SHEAR WALL PLANS
SCALE: NO SCALE	DATE: 4-26-22
DRAWN BY: MDT	SHEET NO. S5
PROJECT NO. MAWER/ HWANG-LEE	