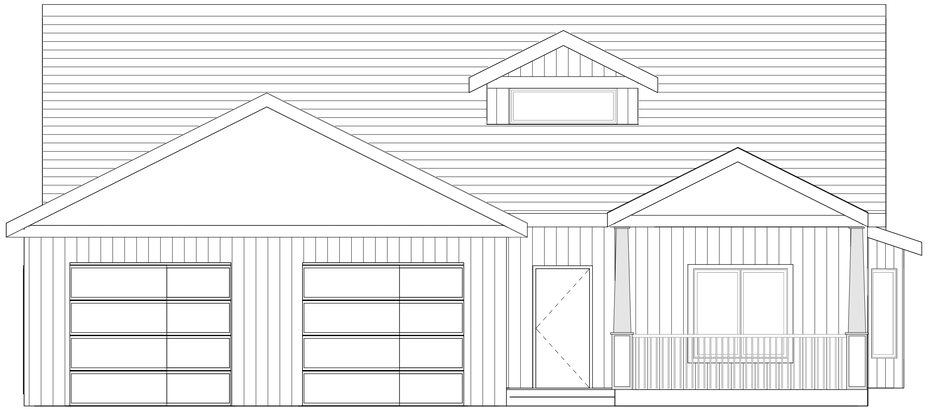
TW 1578
TRAILS WEST
SUBDIVISION

BILLINGS, MT 59106



ARCHITECT:

STUDIO4 ARCHITECTS
27 SHILOH ROAD, SUITE 8
BILLINGS, MT 59106
406.656.1714

GENERAL CONTRACTOR:

STOCK DEVELOPMENT
1135 BLUEGRASS DR. EAST
BILLINGS, MT 59106
406.591.4540

DRAWING INDEX:

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GENERAL NOTES:

A. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.

B. THESE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. ADDITIONAL DATA SHALL BE FROM THE ARCHITECT THROUGH WRITTEN CLARIFICATION ONLY. VERIFY ALL EXISTING CONDITIONS, ELEVATIONS, AND DIMENSIONS BEFORE PROCEEDING WITH ANY PORTION OF ANY WORK.

C. NO CHANGES, MODIFICATIONS OR DEVIATIONS SHALL BE MADE FROM THE DRAWINGS OR SPECIFICATIONS WITHOUT FIRST SECURING WRITTEN PERMISSION FROM THE ARCHITECT.

D. WHERE LACK OF INFORMATION, OR ANY DISCREPANCY SHOULD APPEAR IN THE DRAWINGS OR SPECIFICATIONS, REQUEST WRITTEN INTERPRETATION FROM THE ARCHITECT BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.

E. ALL WORK AS OUTLINED IN THESE DOCUMENTS, SHALL STRICTLY CONFORM TO ALL APPLICABLE CODES AND ORDINANCES, IN THE EVENT OF A CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL GOVERN AND BE MET.

F. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, LICENSES, ETC. NECESSARY FOR A PROPER COMPLETION OF THE WORK. THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR AS OTHERWISE REQUIRED IN THE SPECIFICATIONS.

G. WHEN A SYSTEM OR ASSEMBLY IS CALLED OUT FOR, ALL NECESSARY PARTS AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION / SYSTEM SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS.

H. UNLESS OTHERWISE NOTED, ELECTRICAL CONDUITS, PLUMBING LINES, ETC. SHALL BE RUN CONCEALED AND FRAMING SHALL BE ADEQUATE SIZE TO ACCOMPLISH THE RESULT WITHOUT CAUSING ANY CHANGES IN THE WALL PLANE.

I. DIMENSIONS ARE SHOWN FROM FACE OF STUD TO FACE OF STUD AND EDGE OF ROUGH OPENING UNLESS OTHERWISE NOTED.

J. IF THE CONTRACTOR OR SUBCONTRACTOR SHOULD FIND ANY DISCREPANCY IN AND / OR OMISSIONS FROM THESE DRAWINGS OR IF THE CONTRACTOR SHOULD BE IN QUESTION AS TO THEIR MEANING OR INTENT, THE CONTRACTOR SHOULD CONTACT THE ARCHITECT AT ONCE FOR INTERPRETATION OR CLARIFICATION.

K. EACH BEDROOM SHALL HAVE ONE EXTERIOR WINDOW OR DOOR THAT IS OPENABLE FROM INTERIOR WITHOUT THE USE OF A KEY OR SPECIAL TOOLS, KNOWLEDGE, OR EFFORT.

L. SMOKE ALARMS REQUIRED IN EACH SLEEPING ROOM

M. SOLID BEARING REQUIRED FOR ALL GIRDER TRUSSES AND BEAMS.

N. GIRDER TRUSSES TO BE ATTACHED TO THE TOP PLATE WITH SIMPSON HURRICANE STRAPS THAT ARE EQUAL TO OR EXCEED UPLIFT CALCULATIONS PER TRUSS MANUFACTURERS ENGINEERING DRAWINGS (SEE TRUSS PLANS BY OTHERS).

O. GARAGE BENEATH HABITABLE ROOMS:
SHALL NOT HAVE LESS THAN 5/8" TYPE 'X' GYP WALL BOARD ON CEILING AND THE SUPPORTING STRUCTURE SHALL BE PROCTED BY NOT LESS THAN 1/2" GYP. BOARD.

P. EVERY SLEEPING ROOM MUST HAVE A MEANS FOR EMERGENCY ESCAPE AND RESCUE. WINDOWS SHALL NOT BE MORE THAN 44: ABOVE THE FLOOR TO THE FINISHED SILL AND SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SF; MIN. CLEAR HEIGHT 24"; MIN. CLEAR WIDTH 20".

Q. TEMPERED SAFETY GLAZING (IRC 308.4) IS REQUIRED IN THE FOLLOWING LOCATIONS:
- IN SWINGING, HINGED, OR BIFOLD DOORS
- ENCLOSURES FOR SHOWERS, HOT TUBS, SAUNAS, AND BATH TUBS..
- GLASS IN RAILING SYSTEMS
- WINDOWS WITHIN 24" OF A DOOR AND WITHIN 60" OF THE FLOOR
- OR - ALL OF THE FOLLOWING:
  - -WINDOWS WITH AN INDIVIDUAL PANE SIZE GREATER THAN 9 SF
  - GLASS WITHIN 18" OF THE FLOOR
  - EXPOSED TOP EDGE GREATER THAN 36" ABOVE THE FLOOR.
  - ONE OR MORE WALKING SURFACES WITHIN 36" HORIZONTALLY

R. CONTRACTOR AND WINDOW MANUFACTURER ARE EXPRESSLY RESPONSIBLE FOR WINDOWS MEETING ALL CODES, INCLUDING EGRESS REQUIREMENTS. ALL OPERABLE WINDOWS SHALL INCLUDE INSECT SCREENS.

STUDIO 4 ARCHITECTS

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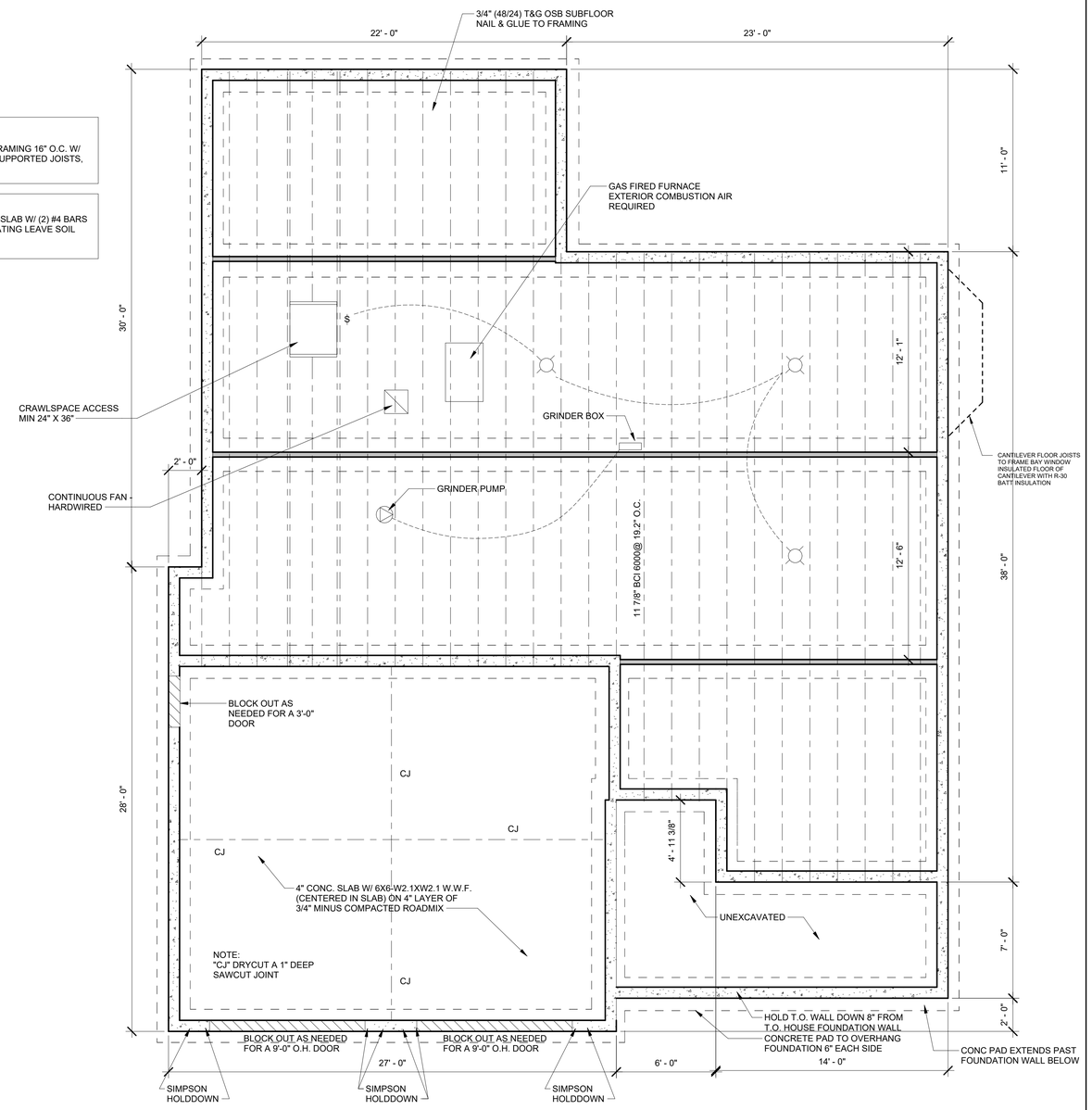
FLOOR SHALL BE BLOCKED PERPENDICULAR TO THE FLOOR JOISTS. BLOCKING SHALL BE FULL DEPTH WITHIN TWO JOIST SPACES OF THE FOUNDATION WALL AND BE FLAT-BLOCKED W/ MIN. 2"X4" BLOCKING ELSEWHERE

NOTE:
ALL INTERIOR BEARING WALLS TO BE 2X4 FRAMING 16" O.C. W/ DOUBLE TOP PLATE. LINE UP STUDS WITH SUPPORTED JOISTS, BLOCK AT MID HEIGHT.

NOTE:
ALL INTERIOR FOOTINGS TO BE THICKENED SLAB W/ (2) #4 BARS UNLESS OTHERWISE NOTED. WHEN EXCAVATING LEAVE SOIL AREA BETWEEN FOOTINGS 4" HIGH.



1 **FOUNDATION PLAN**
1/4" = 1'-0"

FOUNDATION VENTILATION: IRC

FOR CLOTHES DRYER VENTING - MAX LENGTH SHALL NOT EXCEED 25 FEET FROM DRYER LOCATION TO OUTLET. LENGTH REDUCED BY 2'-6" FOR EACH 45 DEGREE BEND AND 5'-0" FOR EACH 90 DEGREE BEND.
MAY USE MANUFACTURERS SPECS IF PROVIDED TO CODE OFFICIAL

FOUNDATION WATERPROOFING: IRC

IN AREAS WHERE HIGH WATER TABLE OR OTHER SEVERE SOIL-WATER CONDITIONS EXIST, EXTERIOR FOUNDATION WALLS THAT RETAIN EARTH AND ENCLOSE HABITABLE OR USABLE SPACES LOCATED BELOW GRADE SHALL BE WATERPROOFED WITH A MEMBRANE EXTENDING FROM THE THE TOP OF THE FOOTING TO THE FINISHED GRADE. THE MEMBRANE SHALL CONSIST OF 2-PLY HOT-MOPPED FELTS, 55 POUND ROLL ROOFING, 6-MIL POLYVINYL CHLORIDE, 6-MIL POLYETHYLENE OR 40-MIL POLYMER-MODIFIED ASPHALT. THE JOINTS IN THE MEMBRANE SHALL BE LAPPED AND SEALED WITH AN ADHESIVE COMPATIBLE WITH THE WATERPROOFING MEMBRANE.

FOUNDATION DRAINAGE: IRC

DRAIN TILE TO BE USED AROUND ENTIRE PERIMETER OF FOOTING IN GRAVEL BED. DRAIN SYSTEM W/ 6" PIPE TO DAYLIGHT OUT BACK. (FOUNDATION CHANNEL DRAIN METHOD) THE DRAINAGE SYSTEM SHALL DISCHARGE TO DAYLIGHT OR APPROVED LOCATION, NOT INTO A SANITARY SEWER.

NOTE:
VERIFY FOUNDATION PREP WITH SOILS REPORT BY GEOTECHNICAL ENGINEER

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FOUNDATION

EGRESS NOTE:
SILL HEIGHT OF NOT MORE THAN 44"
MINIMUM NET CLEAR OPENING HEIGHT SHALL BE 24"
MINIMUM NET CLEAR OPENING WIDTH SHALL BE 20"

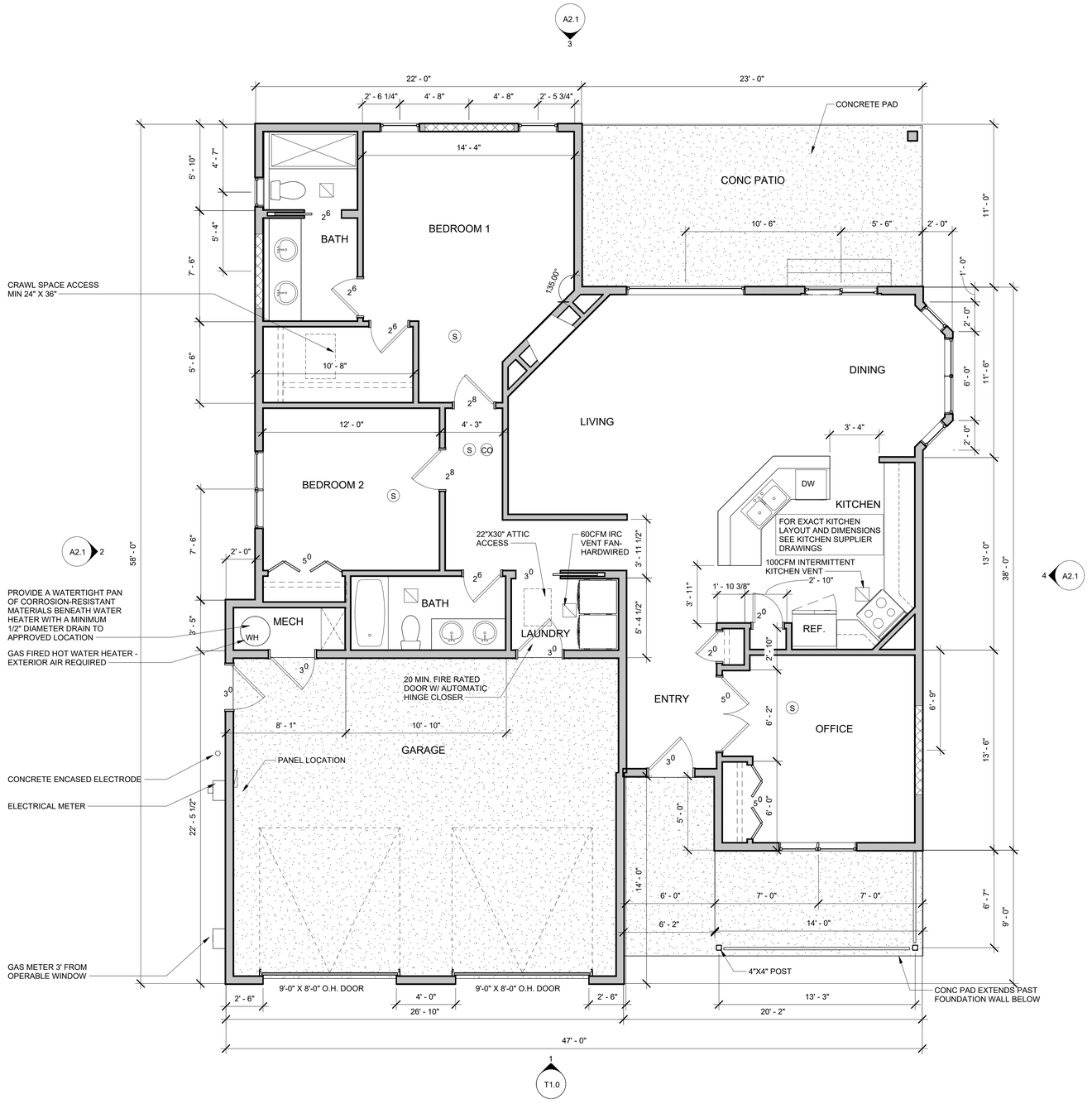
GARAGE NOTES:
FIRE WALL BETWEEN HOME AND GARAGE SHALL BE 5/8" GYP. ON WALLS AND 5/8" GYP ON CEILING

R309.2 - PENETRATIONS IN GARAGE/HOUSE SEPARATION WALLS SHALL HAVE THEIR ANNULAR SPACE PROTECTED WITH APPORVED MATERIALS (FIRE BLOCKING)

HEATED GARAGES SHALL COMPLY WITH INSULATION AND ENERGY CODE REQUIREMENTS, INCLUDING SLAB EDGE OR FOUNDATION PERIMETER INSULATION.

WHOLE HOUSE VENTILATION SYSTEM NOTE:
PER IRCM1507.3.3, IRC EXHAUST FAN TO RUN CONTINUOUSLY AT 60CFM FOR A 1,475 SF HOME WITH 2 BEDROOMS. MAKE UP AIR ACHIEVED THROUGH NATURAL AIR INFILTRATION

ATTIC ACCESS NOTE:
BUILDINGS WITH A COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING IN ATTIC AREAS THAT EXCEED 30 SQUARE FEET AND HAVE A VERTICAL HEIGHT OF 30 INCHES OR MORE. OPENINGS SHALL NOT BE LESS THAN 22 INCHES BY 30 INCHES AND A 30 INCH MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE PROVIDED AT SOME POINT ABOVE THE ACCESS OPENING.



1 **MAIN FLOOR PLAN - 1,578 SF**
1/4" = 1'-0"

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FLOOR PLAN

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GENERAL ROOF NOTES:

TRUSSES:
ALL ROOF TRUSSES SHALL BE SHOP FABRICATED PRE-ENGINEERED UNITS, 30 PSF SNOW LOAD, 10 PSF TOP AND BOTTOM CHORD FEAD LOADS. TOP CHORD SHALL BE 2X6
ALL TRUSSES SHALL BE ANCHORED TO THE BEARING WALLS WITH SIMPSON H1 HURRICANE CLIPS EACH END.

FRAMING:
ALL VALLEY AND OVERFRAMING RAFTERS MIN. 2X6 #2 DOUG. FIR OR BETTER, MAX 2'-0" O.C. - UNLESS SPECIFIED BY STRUCTURAL
ALL 9 1/2" VERSALAM HEADERS SHALL BE SUPPORTED BY (1) TRIMMER AND (3) STUDS UNELSS OTHERWISE INDICATED.
ALL (2) 2X8 HEADERS SHALL BE SUPPORTED BY (1) TRIMMER AND (2) STUDS UNLESS OTHERWISE INDICATED.
ALL BLOCKED DIAPHRAGM ZONES: 16 GA. X 1 5/8" STAPLES AT 3 1/2" O.C. ALONG ALL 48" PANEL EDGES, 5 1/2" O.C. ALONG ALL 96" PANEL EDGES AND 12" O.C. INTERMEDIATE. SOLID BLOCK ALL PANEL EDGES.
ALL UNBLOCKED ZONES: 16 GA X 1 5/8" STAPLES AT 6" O.C. ALONG ALL PANEL EDGES AND 12" O.C. INTERMEDIATE

RAIN GUTTERS, FLASHING & RUN-OFF CONTROL:
5" METAL FLASHING AT ALL SIDE WALLS & HOPS. CLOSED VALLEY PROTECTION SHALL BE ONE PLY OF SMOOTH ROLL ROOFING LINING COMPLYING W/ ASTMD22.4 TYPE II OR TYPE III AT LEAST 36" WIDE.
USE ICE AND WATER SHIELD FROM EAVE ENDS TO 24" INSIDE OF EXTERIOR WALL LINE GUTTERS & DOWNSPOUTS PER INDUSTRY STANDARDS - VERIFY COLOR W/ ARCH.
PROVIDE CONTINUOUS RAIN GUTTERS WITH DOWNSPOUTS ON CORNERS.
PROVIDE MIN 6'-0" DOWNSPOUT EXTENSIONS.

ATTIC VENTILATION:

ROOF NOTES: IRC
ROOF RUNOFF CONTROL:

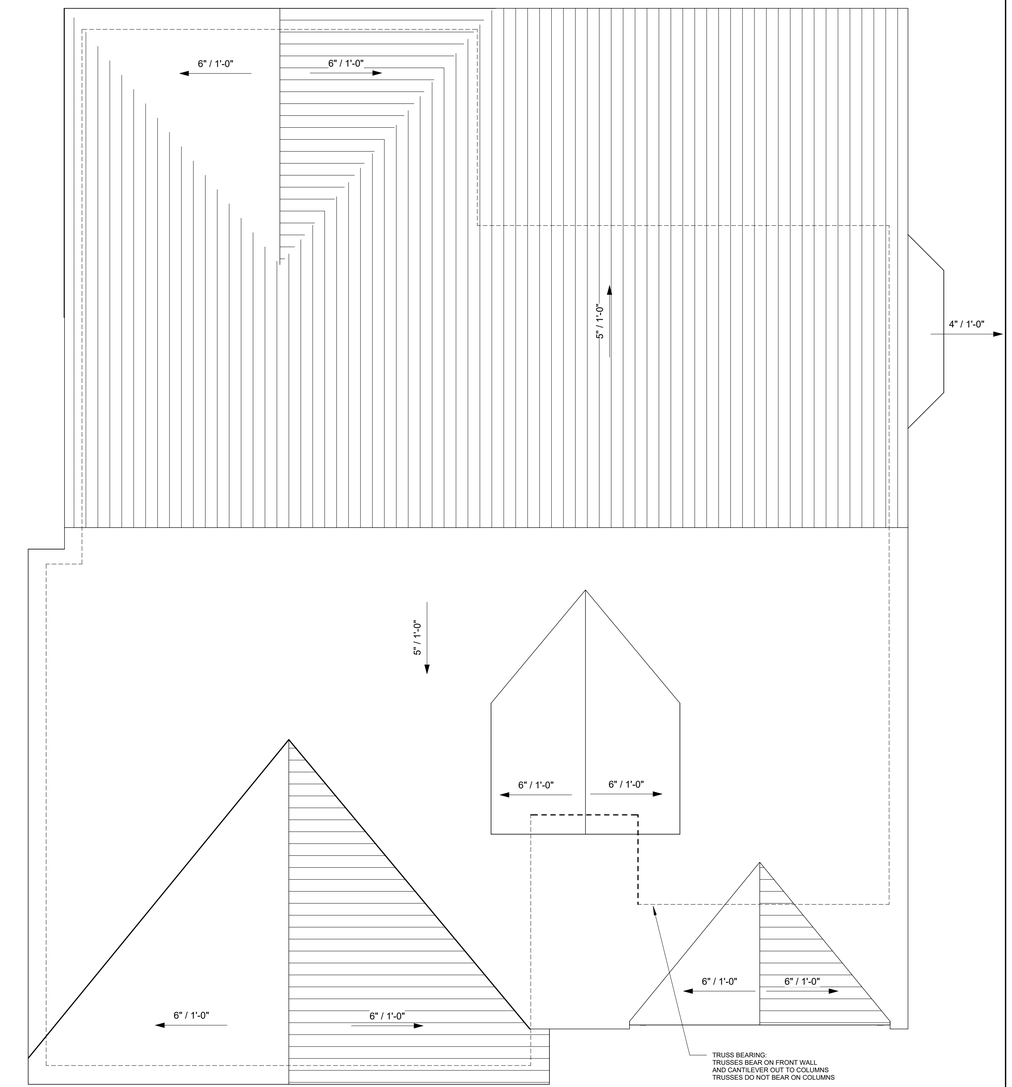
PROVIDE CONTINUOUS RAIN GUTTERS WITH DOWNSPOUTS ON CORNERS.
PROVIDE MIN. 6'-0" DOWNSPOUT EXTENSIONS.

ROOF CONSTRUCTION:
MIN. 50 YR ASPHALT SHINGLES
ROOFING FELT
5/8" (40/20) CDX PLYWOOD SHEATHING OVER PRE-ENGINEERED TRUSSES

USE ICE AND WATER SHIELD FROM FACE OF EAVE TO 24" BEYOND INSIDE FACE OF WALL LINE
9" DIAMETER ATTIC VENTS @ 6'-0" O.C. TYP.

POWER ATTIC FAN 1200 CFM ON THERMOSTAT

PROVIDE DRAFTSTOPS EVERY 1000 SQFT.



1 **Roof Plan**
1/4" = 1'-0"

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ROOF PLAN

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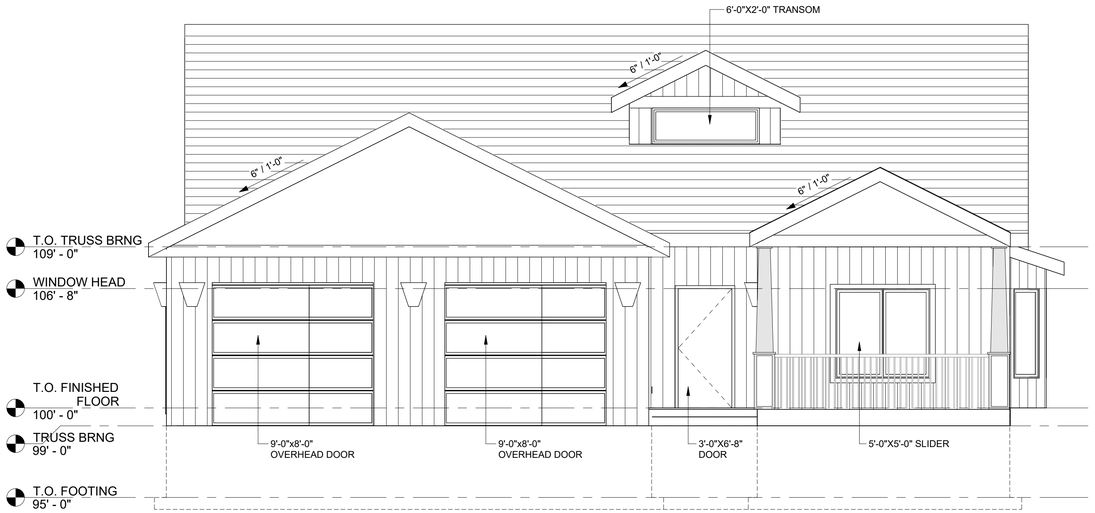
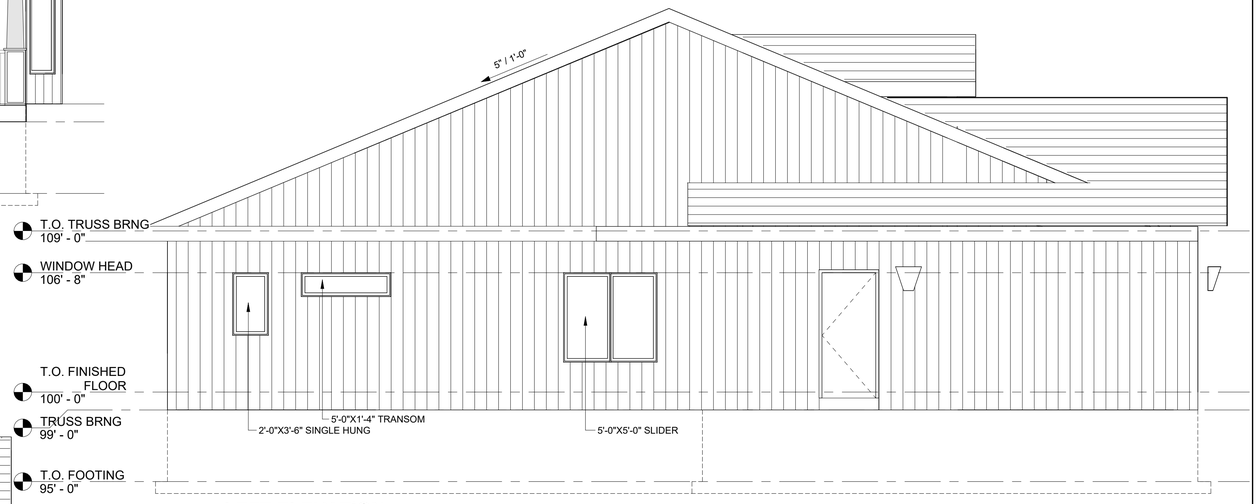
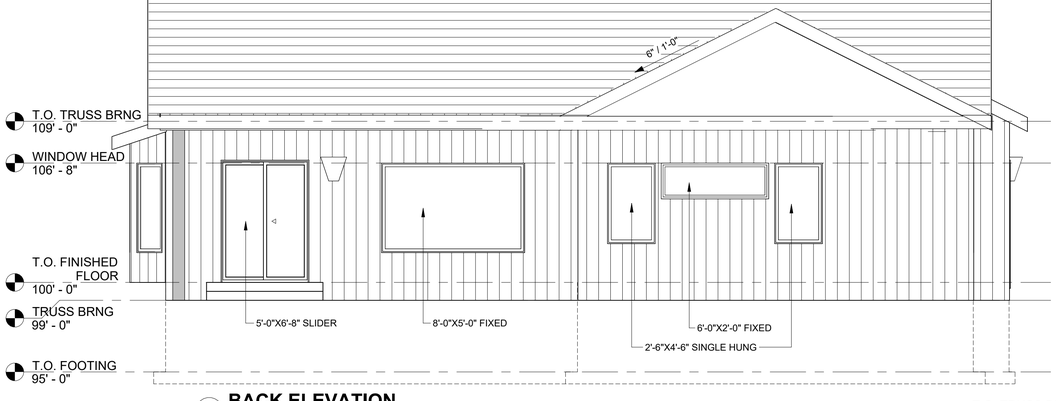


1 FRONT ELEVATION
1/4" = 1'-0"

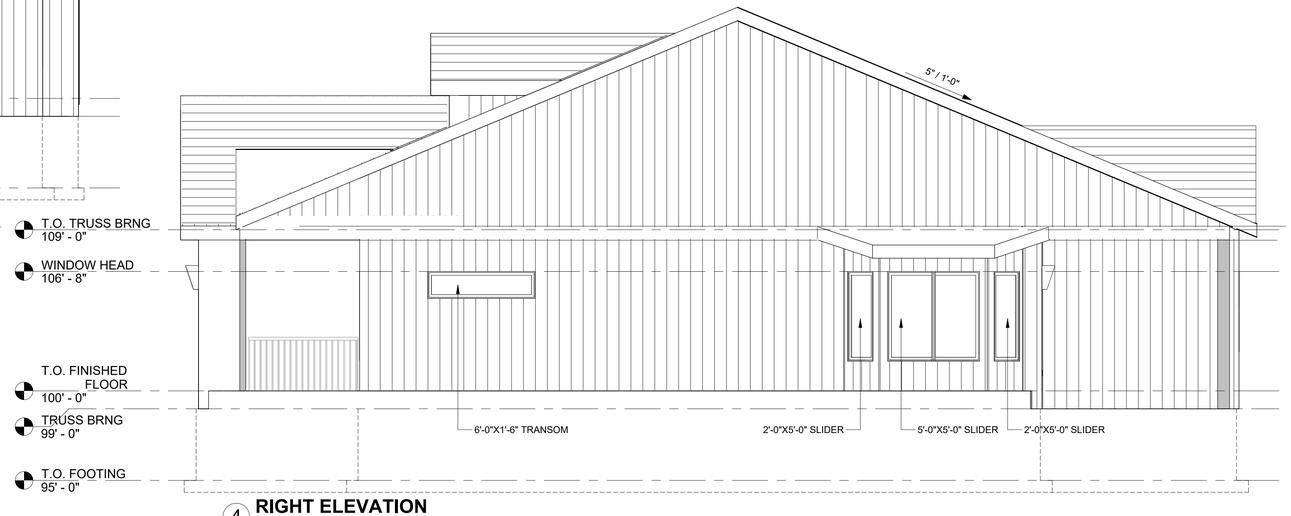


2 LEFT ELEVATION
1/4" = 1'-0"



3 BACK ELEVATION
1/4" = 1'-0"

EGRESS NOTE:
SILL HEIGHT OF NOT MORE THAN 44"
MINIMUM NET CLEAR OPENING HEIGHT SHALL BE 24"
MINIMUM NET CLEAR OPENING WIDTH SHALL BE 20"



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

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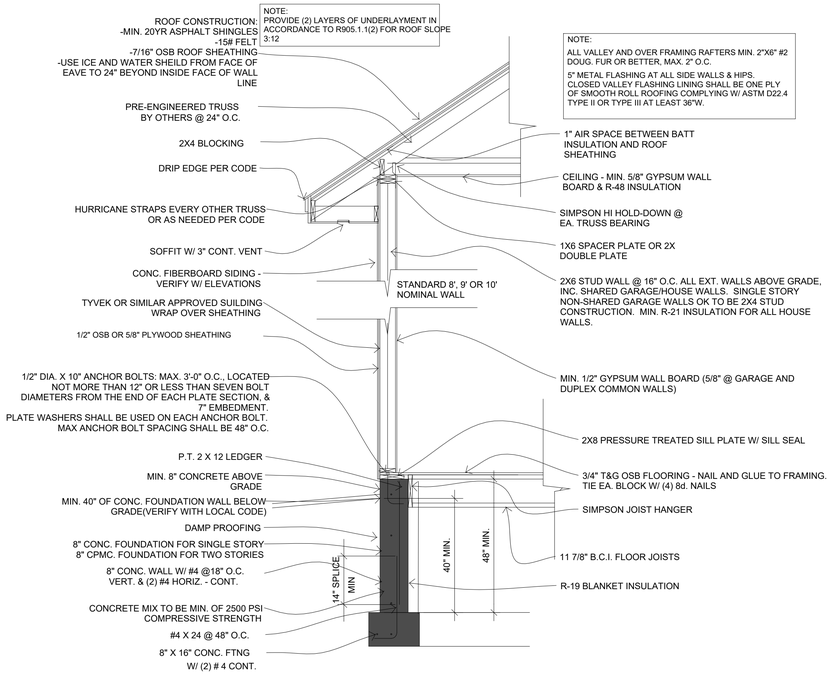
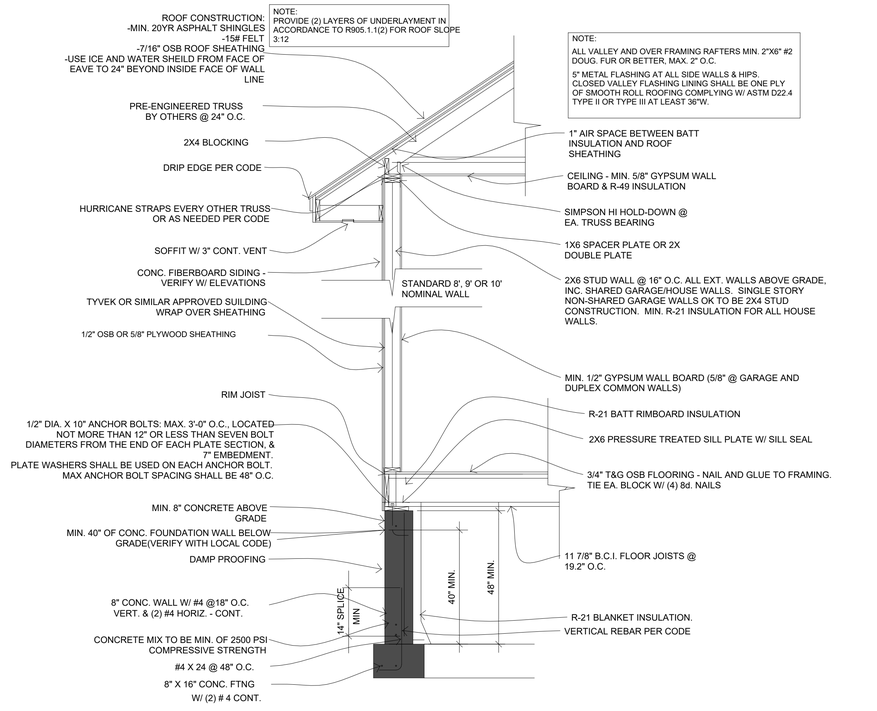


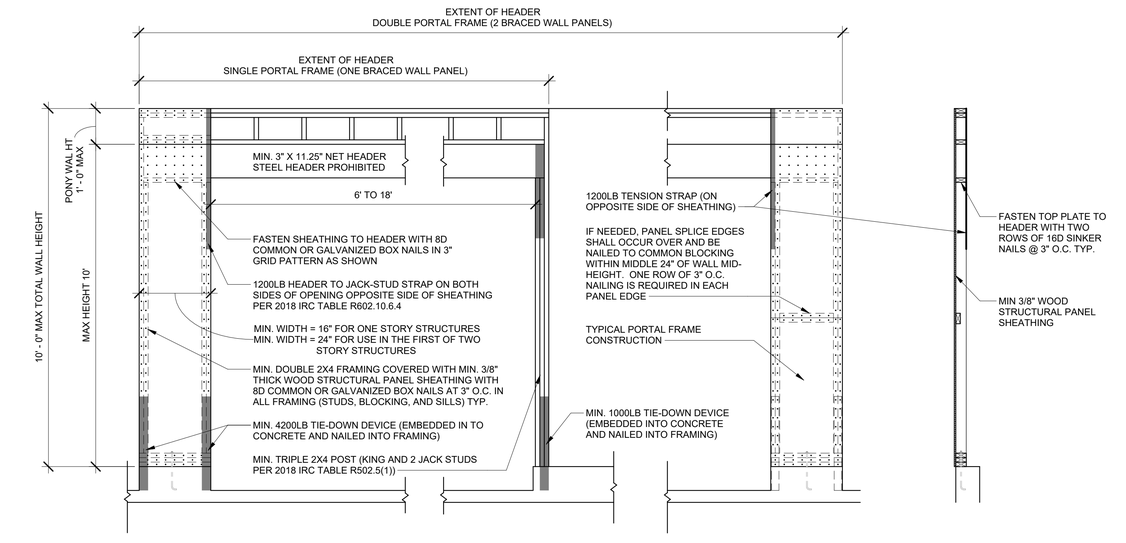
3 A3.1 **OPTIONAL ZERO ENTRY WALL SECTION**

SCALE: 1/2" = 1'-0"



1 A3.1 **TYPICAL WALL SECTION**

SCALE: 1/2" = 1'-0"



2 **BRACED WALL PANEL**

1/2" = 1'-0"

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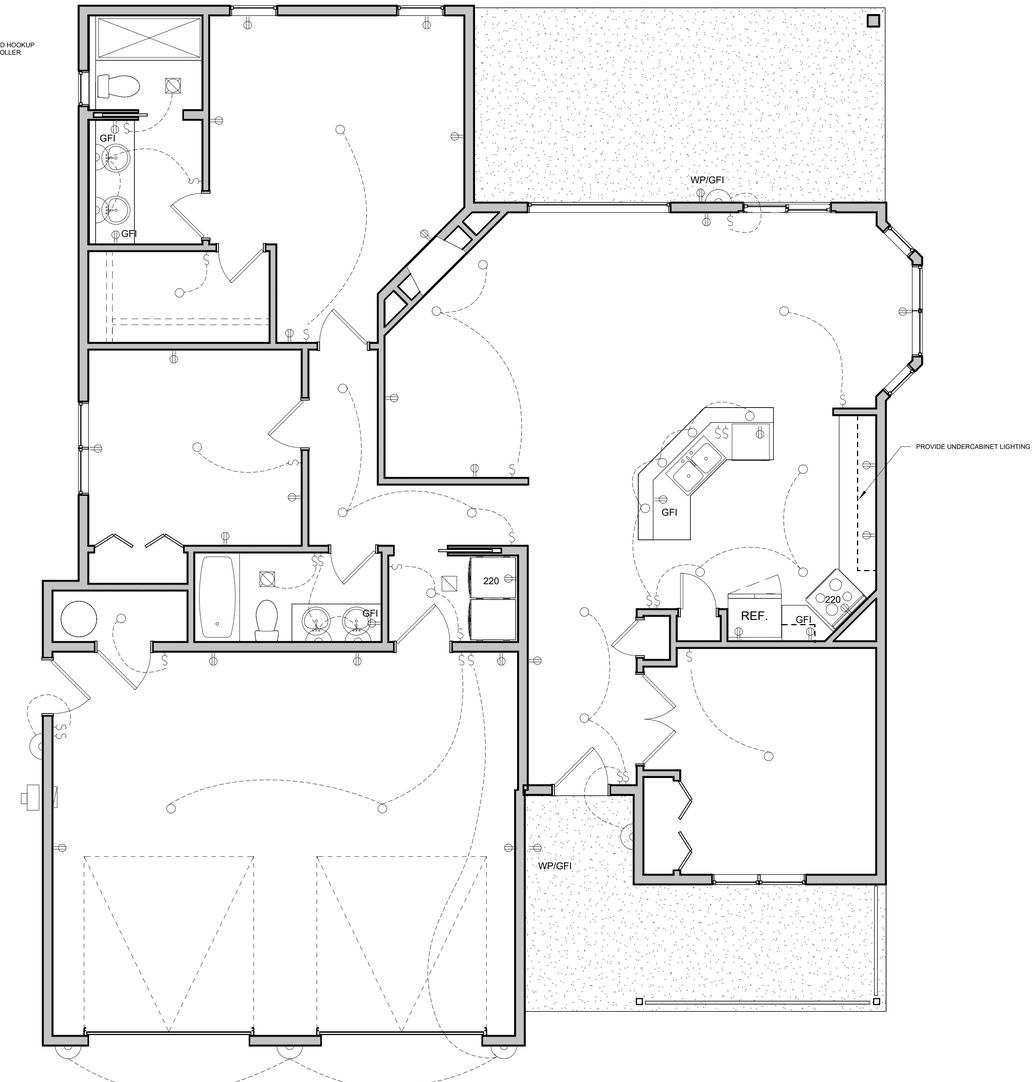
CRAWL SPACES: INCLUDE 2 BARE BULB FIXTURES ON 1 SWITCH,
ONE GFCI OUTLET , 1 EXHAUST FAN ON SWITCH, FURNACE CIRCUIT AND HOOKUP
- (1) 30A 220V CIRCUIT AND HOOK UP FOR GRINDER PUMP AND CONTROLLER



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

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