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Company Title	TRUOBA
Company Name	Truoba UAB
Project Title	Truoba Mini 419
Drawing Name	Plot Plan
Drawing Scale	
Sheet Size	ARCH-D
Layout ID	02
Date	3/7/2023
Revision	

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3. Any use of the Plans, or modifications of the Plans, by purchasers, builders or others is done at their own risk. Licensee must have the Plans reviewed by a local professional architect or engineer before the start of construction. The information contained within the plans is to indicate design intent and basic construction detailing. It is the builder's responsibility to provide standard construction details and practices which will result in a structurally sound and weatherproof finished product.

CONTENT OF THE PLANS

1. These Plans include only schematic electrical, plumbing, heating or air conditioning drawings. Due to the wide variety of local codes and climatic conditions, the Licensee should have a local electrical engineer, mechanical engineer or builder provide detailed electrical, plumbing, heating or air conditioning drawings as may be required for permits and construction. The foundation plan and associated details are provided as a basic guide for a typical spread footing/poured concrete foundation system. Licensee should have a local architect or licensed engineer review these Plans and provide a site-specific foundation design if found necessary.
2. Limited architectural and engineering service has been provided for this house design. Additional construction details, information, and specifications are needed by the Builder. The Builder shall be responsible and liable for all specified house structures that the specified structure is as required to construct the house for the location of where this house will be built. The Builder must get approval of the house required structure from local structural engineer.
3. These Plans provide ideas and concepts and are not intended to be complete in all respects and details. Variations in standard sizes of window and door brands and types and use of different materials and thicknesses can change details. Varying local codes, ordinances, regulations, foundation requirements, and the layout of electrical, mechanical, and plumbing systems can also change details.
4. No cutting or damage to building structural components will be allowed without written authorization from a local structural engineer.
5. All utilities shall be connected to provide gas, electric, and water to all equipment whether said equipment is in Contract or not. Equipment shall be guaranteed to function properly upon completion.
6. Manufacturer's standard specifications and materials approved for project use are hereby made part of these Notes with same force and effect as if written out in full herein. All appliances, fixtures, equipment, hardware, etc. shall be installed in accordance with Manufacturer's specifications and procedures.
7. Written words take precedence over drawn lines. Large-scale details and plans take precedence over smaller details and plans. Should a conflict arise between the Specifications and Drawings, the requirements deemed most stringent shall be used.
8. Minor details not usually shown or specified but necessary for proper and acceptable construction, installation, or operation of any part of the Work shall be included in the Work as if it were specified or indicated on the Drawings.
9. All architectural drawings and construction notes are complimentary. What is indicated and called for by one shall be binding as though called for by all.
10. No deviation from the Drawings or Specifications or intent of same shall be made without the Owner's written authorization.

GENERAL CONTRACTOR - BUILDER'S RESPONSIBILITY

1. It is the responsibility of the builder to assure that all work is in accordance with the latest edition of all applicable National, State, and Local Building Codes. It is the builder's responsibility to assure that all work is in accordance with the latest edition of all applicable Construction Standards, fire department standards, utility company standards and best practices. The builder shall be responsible for satisfying all applicable building codes regarding building, building structure, zoning, electrical, mechanical, plumbing and fire and obtaining all permits and required approvals. The drawings and specifications shall not permit work that does not conform to these codes.
2. It is the responsibility of the builder to assure that all manufactured articles, material, and equipment are applied, installed, connected, erected, used, cleaned, adjusted, operated and conditioned as directed by the manufacturers. Builder shall follow all instructions to sustain and preserve all expressed or implied warranties and guarantees.
3. It is the responsibility of the builder to assure that all materials, equipment and components are new and of good quality.
4. It is the responsibility of the builder to check all dimensions and details for overall accuracy appropriate to the local conditions and the final selection of materials such as masonry, floor joists, lumber, structural members, construction panels, roofing, etc., all of which can create variations in dimensions and details. For example, if standard lumber joists are used in place of engineered floor joists the floor-to-floor dimension would vary from the Plans and require revised stair dimensions and framing.
5. It is the responsibility of the builder to arrange for all tests and inspections as specified or otherwise required by the local building department and shall pay all costs and fees for same. The builder shall secure all building permits and upon completion of the project (prior to final payment) deliver to the Owner a Certificate of Occupancy, Use (or equivalent as local conditions require) from the building department.
6. It is the responsibility of the builder to use State licensed contractors/subcontractors for all plumbing and electrical work. Contractors/subcontractors shall submit all required permits, certificates and sign-offs to the Owner for their records prior to final payment.
7. The General Contractor shall verify all dimensions, be familiar with the existing conditions, and bring any discrepancies to the attention of the Architect prior to submission of construction proposal and before beginning work. Drawings may be scaled for estimating purposes and for general reference only. For all other dimensions or locations consult the Architect or refer to dimensions on Drawings. Verify all dimensions in the field.
8. The General Contractor shall lay out all work and be responsible for all dimensions and conditions for trades such as electrical, plumbing, etc.
9. All Work shall be guaranteed for a minimum one year after final approval, unless local laws require a longer warranty period. The General Contractor shall sign the written guarantee as provided by the Owner. The guarantee shall cover all general and subcontractor work. All defects discovered during this period shall be repaired to the Owner's satisfaction at the Contractor's expense.

DISCLAIMER

1. Names of materials and manufacturers shown on these Plans do not represent an endorsement or recommendation by Truoba UAB company. Final selections of materials are the responsibility of the homeowner and/or builder, including, but not limited to proper installation of materials, nailing, gluing, caulking, insulating, flashing, roofing, weatherproofing and many other small items and details not necessarily indicated on the Plans, and over which Truoba UAB company has no control or responsibility. Truoba UAB company shall not be held liable for any errors, omissions, or deficiencies in any form by any party whatsoever.

General Notes

These drawings do not include the necessary components for construction safety. The general contractor shall provide for the safety, care of utilities and adjacent properties during construction, and shall comply with the state and federal safety regulations.

Electrical installation shall conform to the latest requirements of the national electrical code and the local building authority.

Mechanical work shall be executed and inspected in accordance with public utility regulations and local applicable codes.

Do not proceed in areas of the discrepancy until all such discrepancies have been fully resolved with written direction from the architect. The architect is not responsible for construction procedures, techniques or the failure of the sub-contractors to carry out the work in accordance with the construction documents, manufacturer's specifications and recommendations, industry standards, or required codes.

Written dimensions always take precedence over scaled dimensions. Do not scale drawings. Verify all dimensions shown prior to beginning any work and notify the architect of any conflicts or discrepancies for interpretation or clarification prior to beginning any associated work. Plan dimensions are taken from the center and face of framing members unless otherwise noted. Section or elevation dimensions are to the top of concrete, top of plywood, or beams unless otherwise noted.

It is the responsibility of the contractor or owner to verify the accuracy and completeness of the documents as presented and to verify all conditions and dimensions at the job site sufficiently in advance of the work to be performed to assure the orderly progress of the work. Any discrepancies between these construction documents and actual job site conditions shall be brought to the attention of the architect prior to beginning any construction.

The general contractor shall check and verify all grades including paved area slopes prior to placing any foundations. Survey work should be verified in detail. Verify all dimensions, conditions, and utility locations on the job prior to beginning any work or ordering any materials. Notify the architect of any conflicts or discrepancies in the drawings immediately. Stake all building corners and driveway locations for owner, builder, and design firm.

It is the responsibility of the contractor to protect the existing trees to remain and adjacent properties from damage during construction. Provide protective fencing throughout construction.

It is the intent and meaning of these drawings that the contractor and each subcontractor provide all labor, materials, transportation, supplies, equipment, etc., to obtain a complete job within the recognized standards of the industry.

The contractor & his subcontractors shall maintain the premises clean and free of all trash, debris and shall protect all adjacent work from damage, soiling, paint overspray, etc. All fixtures, equipment, glazing, floors, etc. Shall be left clean and ready for occupancy upon completion of the project.

Field measurements to be verified for proper fit and attachment for all doors, windows, cabinetry, appliances, hardware, fixtures, and specialized equipment. Items shall be installed in strict accordance with the manufacturer's specifications. All windows and doors dimensions are shown of actual unit size. The contractor must leave extra space for windows and doors installation.

Floor joist supplier to verify dimensions and coordinate joist layout plan and appropriate details.

Roof rafter and beam supplier to verify dimensions and coordinate rafter and beam layout plan and appropriate details.

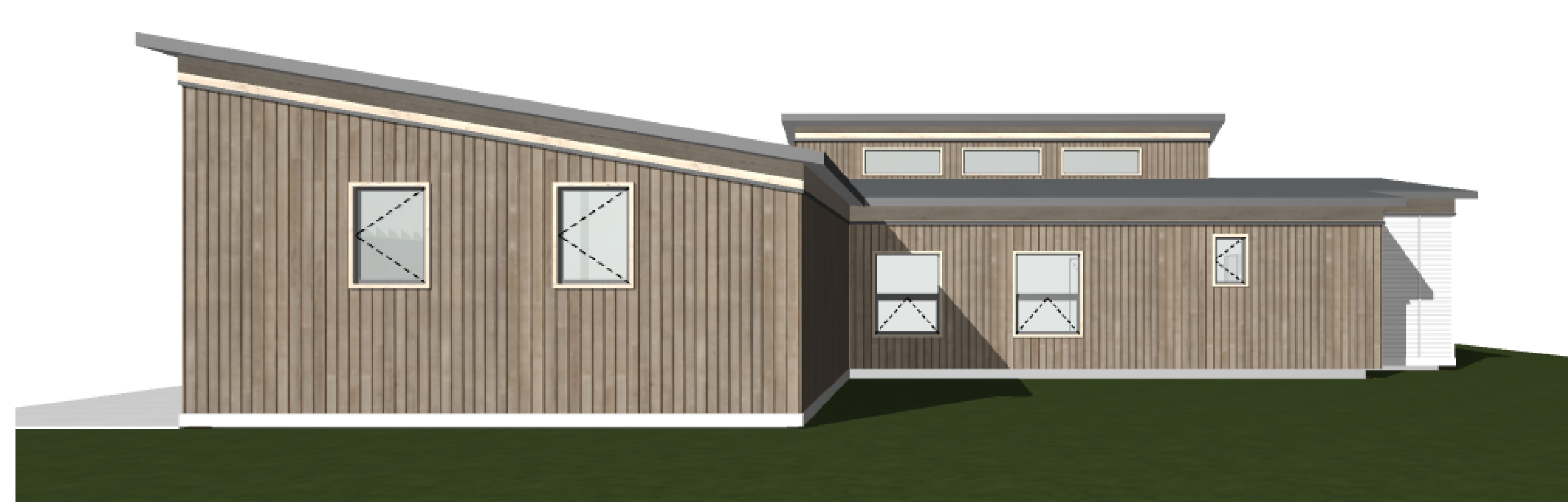
Provide fire & smoke detectors as required by the local jurisdiction.

Provide insulation around all plumbing and heating lines exposed to temperature differentials.

Substitution of "Equal" products will be acceptable.

In the locations of harsh winter conditions, roof and deck surfaces must be maintained reasonably free of ice and snow to ensure minimal problems with these surfaces.

Codes having jurisdiction shall be observed strictly in the construction of the project. All applicable state, county, and city requirements regarding building, building structure, zoning, electrical, mechanical, plumbing, and fire codes shall be verified by the general contractor & subcontractors before the commencement of construction. Any discrepancies between code requirements and these plans shall be brought to the attention of the architect.



TRUOBA

TRUOBA MINI 419

House Area: 1342 sq. ft.
Garage Area: 534 sq. ft.

DRAWING LIST

- 1 - COVER SHEET
- 2 - PLOT PLAN
- 3 - SLAB FOUNDATION PLAN
- 4 - CRAWL FOUNDATION PLAN
- 5 - PLUMBING PLAN
- 6 - FLOOR PLAN
- 7 - ROOF CONSTRUCTION PLAN
- 8 - ROOF PLAN
- 9 - SECTIONS 01,02,03
- 10 - ELEVATIONS - 01, 02
- 11 - ELEVATIONS - 03, 04
- 12 - ELECTRICAL PLAN
- 13 - HVAC PLAN
- 14 - FURNITURE PLAN
- 15 - DOOR & WINDOW SCHEDULE
- 16 - CONSTRUCTION DETAILS
- 17 - DOOR & WINDOW DETAILS
- 18 - STRUCTURAL DETAILS
- 19 - STRUCTURAL NOTES
- 20 - PLUMBING SPECIFICATIONS
- 21 - ELECTRICAL SPECIFICATIONS
- 22 - MECHANICAL SPECIFICATIONS

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Company Title

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Project Title

Truoba Mini 419

Drawing Name

Cover Sheet

Drawing Scale

Sheet Size
ARCH-D

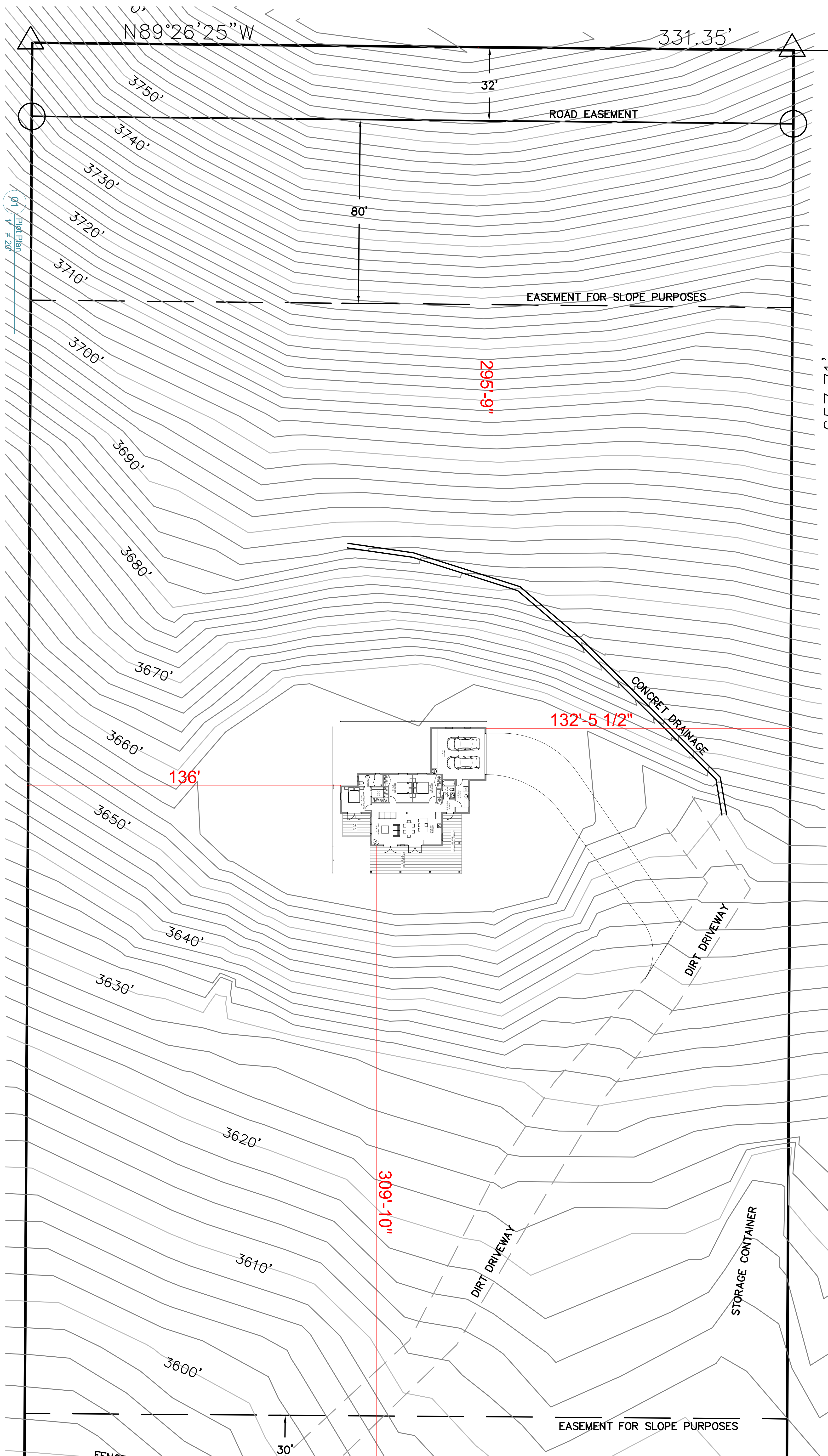
Layout ID

01

Date

2/21/2022

Revision



ELISA RD

657.71'

N0°16'34"E

N89°26'25"W
 331.35'
 32'
 ROAD EASEMENT
 80'
 EASEMENT FOR SLOPE PURPOSES
 295'-9"
 132'-5 1/2"
 136'
 309'-10"
 30'
 EASEMENT FOR SLOPE PURPOSES
 ROAD EASEMENT
 FENCELINE

01 Plot Plan
 1" = 20'

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Company Title
TRUOBA

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 Project Title
Truoba Mill 419

Drawing Name
Plot Plan

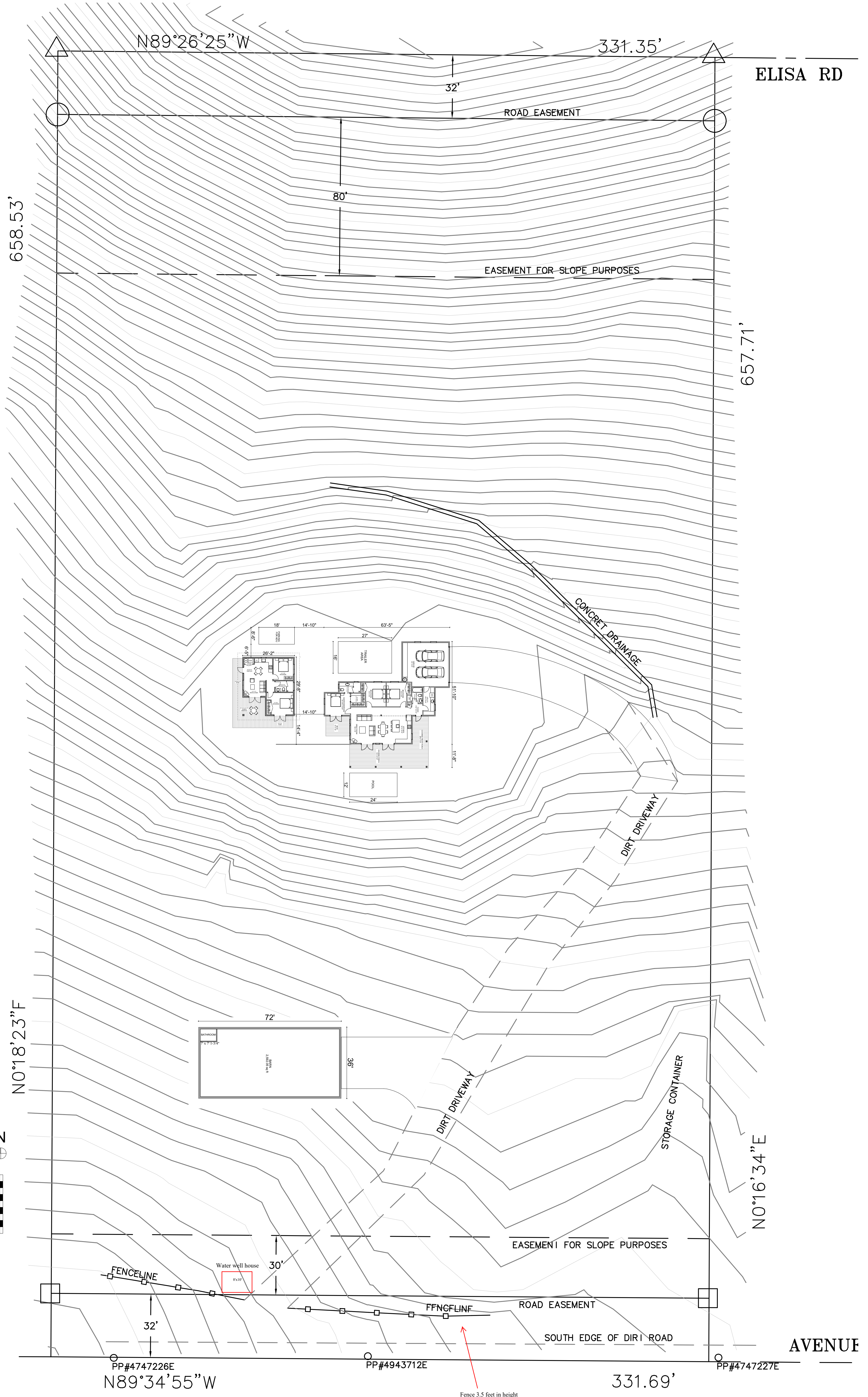
Drawing Scale
1" = 20'

Sheet Size
ARCH-D

Layout ID
02

Date
2/21/2022

Revision



PP#4747226E
N89°34'55"W

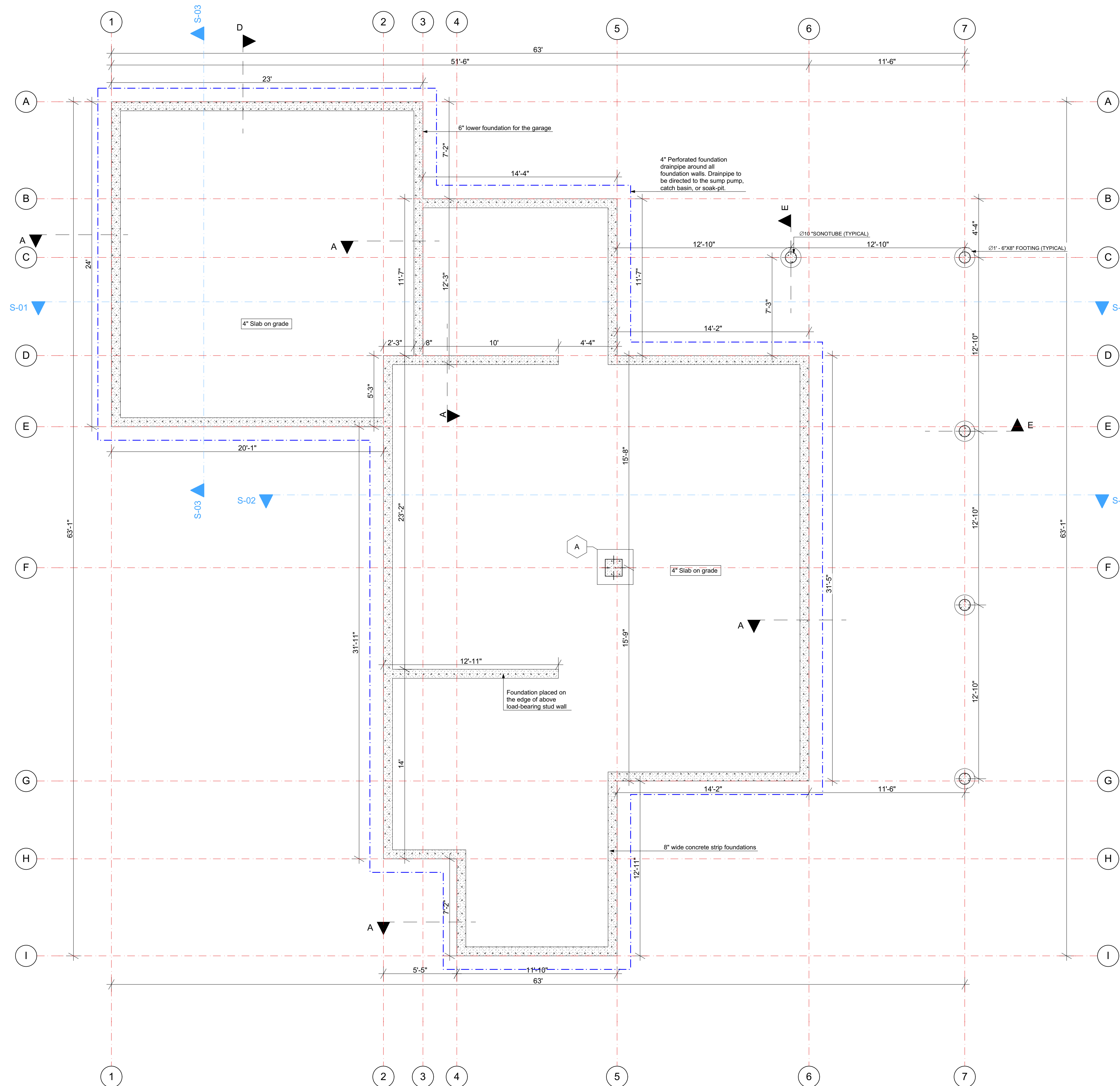
PP#4943712E

331.69'

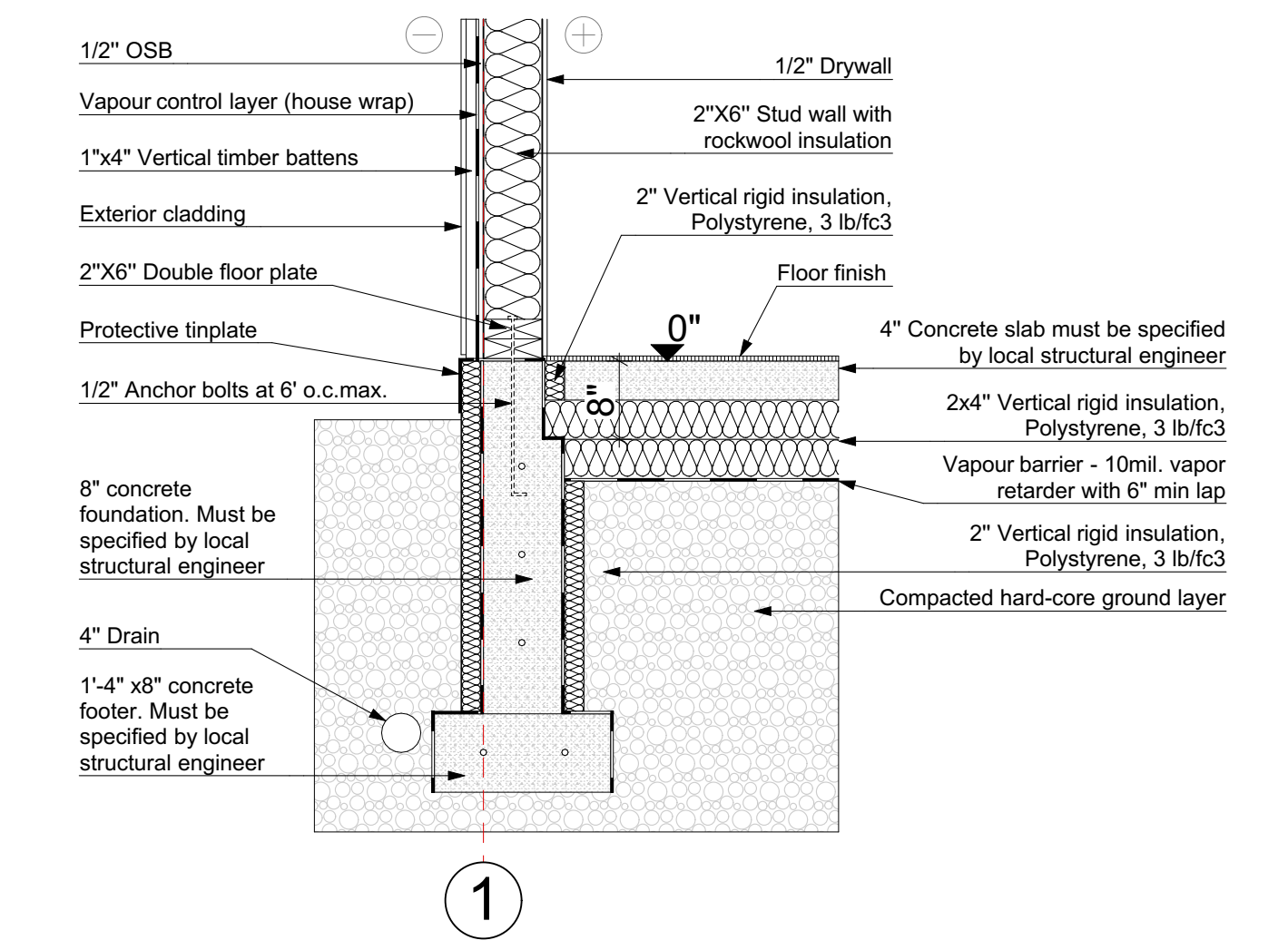
PP#4747227E

Fence 3.5 feet in height

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<p>TRUOBA</p>	
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STEM-WALL SLAB FOUNDATION DETAIL



02 Slab foundation construction detail

SLAB ON GRADE SCHEDULE			
THICKNESS	REINFORCEMENT	±LOAD [psf]	NOTES
2"	N/A	N/A	Sub-slabs under other slabs
4"	(1) WWF 6X6 - W 1.4 x W 1.4	<100	Domestic or light commercial
5"	(1) WWF 6X6 - W 2.1 x W 2.1	100-200	Commercial/Institutional/Barns
6"	(1) WWF 6X6 - W 2.9 x W 2.9	<500	Industrial/Gas stations/Barns
7"	(2) WWF 6X6 - W 2.9 x W 2.9	600-800	Industrial
8"	# 4@12"o.c. ea. way (t&b)	<1500	Industrial
9"	# 5@12"o.c. ea. way (t&b)	<2500	Industrial
10"	# 5@8"o.c. ea. way (t&b)	<3500	Industrial

t&b - top and bottom

SLAB FOUNDATION SCHEDULE			
DESIGNATION	SIZE	REINFORCEMENT	NOTES
CONTINUOUS FOOTINGS			
FC.1 (DEEP)	16"(W)X8"(D) (DEEP)	BOTTOM: # 4 @ 12" O.C. ALT. LEG + (2) # 4 CONT (DEEP)	A/S-200.0
FC.1 (SHALLOW)	SEE DETAIL	SEE DETAIL	B&C/S-200.0
∅10" SONOTUBE	∅1'-6"(W)X0'-8"(H)	BOTTOM: (2) # 4 + # 4 LOOP TOP: (2) # 4 + # 4 LOOP	E/S-200.0

NOTES:
1. BOTTOM OF FOOTING (B.O.F) AS PER LOCAL REQUIREMENTS. SEE DETAILS SHEET FOR POSSIBLE SOLUTIONS.

COLUMN FOOTING SCHEDULE			
MARK	SIZE	THICKNESS	BAR (1/2 E.W.)
A	3'-0"X3'-0"	12"	(4)#4@12"o.c.EA WAY BOTTOM ONLY

FOUNDATION NOTES

Dimensions are to the outside edge of the concrete stem wall.
Slope all exterior finished grades away from the building 6" in fall in first 10'.
The contractor is responsible for all shoring, cribbing, sheet piling, etc. As required to safely retain excavations during construction.
Foundation plates shall be redwood construction common or pressure-treated doug-fir and anchored to foundation w/ 1/2" dia. Anchor bolts w/ 7" min. Embedment max. Spacing 6" O.C. Unless noted otherwise. Minimum 2 anchor bolts per plate section. Max 12" and min 7" bolt diameter from end of sill, middle 1/3 of width.
All cast-in-place concrete shall conform to requirements of the ACI 318 "specifications for structural concrete."
Concrete shall be ready mixed concrete in accordance with astm c 94. Use type 'a' cement. Air entrainment shall be 4-6% U.N.O. All concrete to attain a minimum compressive strength of 3,000 psi @ 28 days. Cement shall conform to astm c 150, type a.
Aggregate to be 3/4 nominal course. Maximum 4' slump for slabs on grade, and a maximum 7' for walls and footers.
Do not tamp slabs. For all concrete use roller bud, vibrating screed or bull float as necessary to prevent honeycombing but not to the point of segregation. The concrete shall be chloride-free.
Provide and install sleeves for utility openings prior to placing concrete. Concrete footings may be poured against neat excavations provided the required concrete coverage is maintained.
Cure exposed concrete for 7 days (min.) in accordance with ACI 301 procedures in order to prevent cracking. Cure by watering daily or with curing and sealing compound (scofield 'cureseal' or eq), or combinations thereof. If curing compound is used, apply at a rate specified by the manufacturer.
Reinforcing steel shall conform to the ASTM A615, grade 40 (fy= 40 ksi) deformed bars for all bars.
Contracting joints in slabs shall be not less than 1/4 of the slab thickness. Construction joint grid to be as square as possible and not exceed 100 square feet in area.
All reinforcing steel shall be detailed and placed in conformance with the latest editions of the ACI 318 and the crsi "manual of standard practice for reinforced concrete construction", and as modified by the drawings. All reinforcing bar bends shall be made cold.
All reinforcing steel in slab on grade shall be accurately placed and supported by galvanized metal or plastic chairs, spacers or hangers 1 1/2" - 2" below top of slab. Provide the following minimum coverage:
Cast against earth and permanently exposed to earth- 3"
Exposed to earth or weather:
#6 and larger--2"
#5 and smaller--1 1/2"
All others per the latest edition of the ACI 318
Unless noted otherwise, reinforcing steel lap splices in concrete shall be class 'b' tension lap splices (2'- 0" min.) per the latest edition of the ACI 318. Stagger alternate splices a min. Of one lap length.
Spliced bars shall be placed at the same effective depth unless noted otherwise. Minimum bar splices shall be 30 bar diameters. No splicing of vertical bars is allowed.

NOTES

Foundation structure must be specified and approved by local structural engineer of a location where this house is built.
Structural engineer together with client and contractor must decide what variance of the foundation will be chosen.
A. Soil tests. In areas likely to have expansive, compressible, shifting or other unknown soil characteristics, KHC may require a soil test to determine the soil's characteristics at a particular location. This test shall be made by an approved agency using an approved method. (Table R401.4.1 IRC)
B. Compressible or shifting soil. When top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering or presturation. (Section R401.4.2 IRC)
C. Site should be excavated and the foundation designed to allow a minimum of 18" crawlspace headroom and a minimum of 6" clearance between the bottom of the exterior vinyl siding and the finished exterior grade. All below grade block foundation is to be coated with foundation coating/damp proofing. (Section R406.1 IRC)
D. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as to not create a hazard. Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6" within the first 10'.

01 Slab Foundation Plan
1/4" = 1'-0"

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Project Title

Truoba Mini 419

Drawing Name

Slab Foundation Plan

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-D

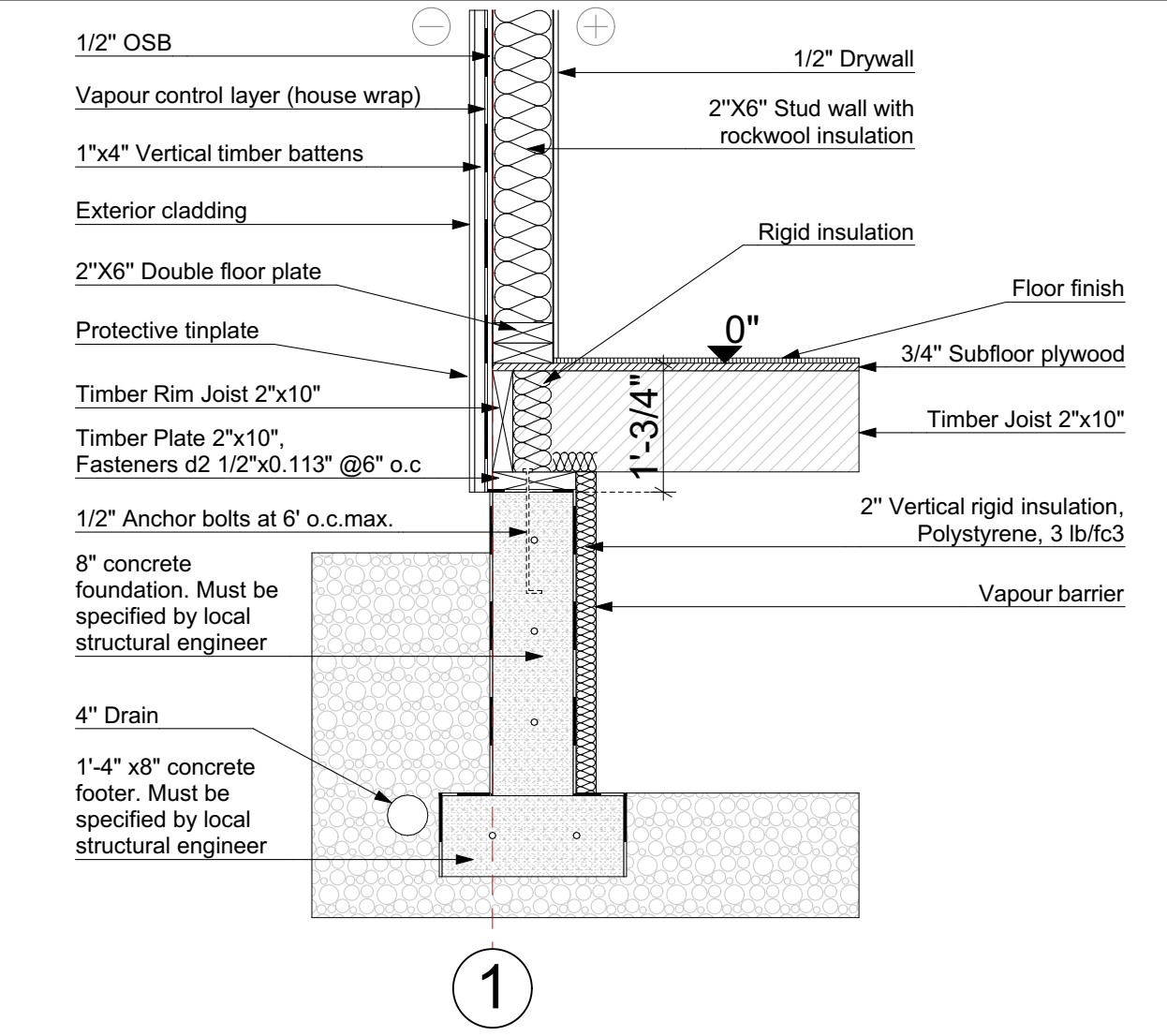
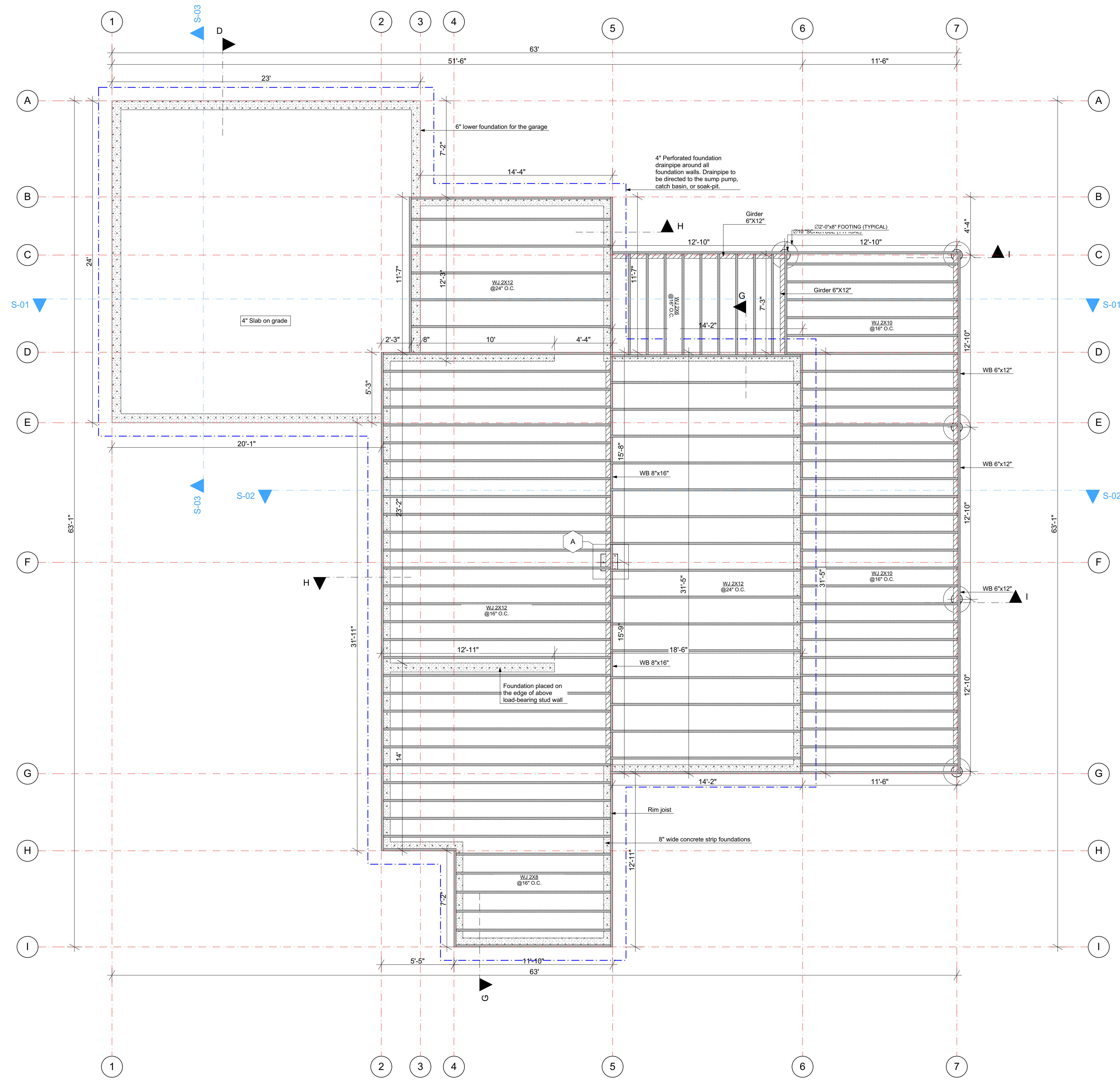
Layout ID

03

Date

2/21/2022

Revision



CRAWL FOUNDATION SCHEDULE			
DESIGNATION	SIZE	REINFORCEMENT	NOTES
CONTINUOUS FOOTINGS			
FC.1	16"(W)X8"(D)	BOTTOM: # 4 @ 12" O.C. ALT. LEG + (2) # 4 CONT	G/S-200.0
FC.2	20"(W)X8"(D)	BOTTOM: # 4 @ 12" O.C. ALT. LEG + (2) # 4 CONT	H/S-200.0
Ø10" SONOTUBE	Ø2' - 0" (W) X 0'-8" (H)	BOTTOM: (3) # 4 + (2) #4 LOOP TOP: (3) # 4 + (2) # 4 LOOP	I/S-200.0

NOTES:
1. BOTTOM OF FOOTING (B.O.F) AS PER LOCAL REQUIREMENTS. SEE DETAILS SHEET FOR POSSIBLE SOLUTIONS.

FOUNDATION NOTES

Dimensions are to the outside edge of the concrete stem wall.
Slope all exterior finished grades away from the building 6" in fall in first 10'.
The contractor is responsible for all shoring, cribbing, sheet piling, etc. As required to safely retain excavations during construction.
Foundation plates shall be redwood construction common or pressure-treated doug-fir and anchored to foundation w/ 1/2" dia. Anchor bolts w/ 7" min. Embedment max. Spacing 6" O.C. Unless noted otherwise. Minimum 2 anchor bolts per plate section. Max. 12" and min 7 bolt diameter from end of sill, middle 1/3 of width.
All cast-in-place concrete shall conform to requirements of the ACI 3101 "specifications for structural concrete."
Concrete shall be ready mixed concrete in accordance with astmc 94. Use type 'a' cement. Air entrainment shall be 4-6% U.N.O. All concrete to attain a minimum compressive strength of 3,000 psi @ 28 days. Cement shall conform to astmc 150, type a.
Aggregate to be 3/4 nominal course. Maximum 4" slump for slabs on grade, and a maximum 7" for walls and footers.
Do not tamp slabs. For all concrete use roller bud, vibrating screed or bull float as necessary to prevent honeycombing but not to the point of segregation. The concrete shall be chloride-free.
Provide and install sleeves for utility openings prior to placing concrete. Concrete footings may be poured against steel excavations provided the required concrete coverage is maintained.
Cure exposed concrete for 7 days (min.) in accordance with ACI 301 procedures in order to prevent cracking. Cure by watering daily or with curing and sealing compound (scaffold 'cureseal' or eq.) or combinations thereof. If curing compound is used, apply at a rate specified by the manufacturer.
Reinforcing steel shall conform to the ASTM A615, grade 40 (fy= 40 ksi) deformed bars for all bars.
Contracting joints in slabs shall be not less than 1/4" of the slab thickness. Construction joint grid to be as square as possible and not exceed 100 square feet in area.
All reinforcing steel in slab on grade shall be accurately placed and supported by galvanized metal or plastic chairs, spacers or hangers 1 1/2" - 2" below top of slab. Provide the following minimum coverage:
Exposed to earth or weather:
#8 and larger - 2"
#5 and smaller - 1 1/2"
All others per the latest edition of the ACI 318
Unless noted otherwise, reinforcing steel lap splices in concrete shall be class 'b' tension lap splices (2'- 0" min.) per the latest edition of the ACI 318. Stagger alternate splices a min. Of one lap length.
Spliced bars shall be placed at the same effective depth unless noted otherwise. Minimum bar splices shall be 30 bar diameters. No splicing of vertical bars is allowed.

COLUMN FOOTING SCHEDULE			
MARK	SIZE	THICKNESS	BAR S (1/2 E.W.)
A	3'-6"X3'-6"	12"	(4)#4@12"o.c.EA.WAY BOTTOM ONLY

NOTES

Foundation structure must be specified and approved by local structural engineer of a location where this house is built. Structural engineer together with client and contractor must decide what variance of the foundation will be chosen.
Crawl Space Ventilation. The under-floor space needs to have ventilation openings through foundation walls or exterior walls. 1 sq.ft. of screened vent space penetrating the perimeter foundation for every 150 sq.ft. of space in the crawl space, unless the ground surface is covered by Class 1 vapor retarder material. Where a Class 1 vapor retarder material is used, ventilation openings should not be less than 1 sq.ft. for each 1,500 sq.ft. of crawl space area. 1 vent opening required within 3' of each corner. (Section R408.1 IRC)
A. Soil tests. In areas likely to have expansive, compressible, shifting or other unknown soil characteristics, KHC may require a soil test to determine the soil's characteristics at a particular location. This test shall be made by an approved agency using an approved method. (Table R401.4.1 IRC)
B. Compressible or shifting soil. When top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering or presaturation. (Section R401.4.2 IRC)
C. Site should be excavated and the foundation designed to allow a minimum of 18" crawlspace headroom and a minimum of 6" clearance between the bottom of the exterior vinyl siding and the finished exterior grade. All below grade block foundation is to be coated with foundation coating/damp proofing. (Section R406.1 IRC)
D. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as to not create a hazard. Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6" within the first 10'.

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Project Title
Truoba Mini 419

Drawing Name
Crawl Foundation Plan

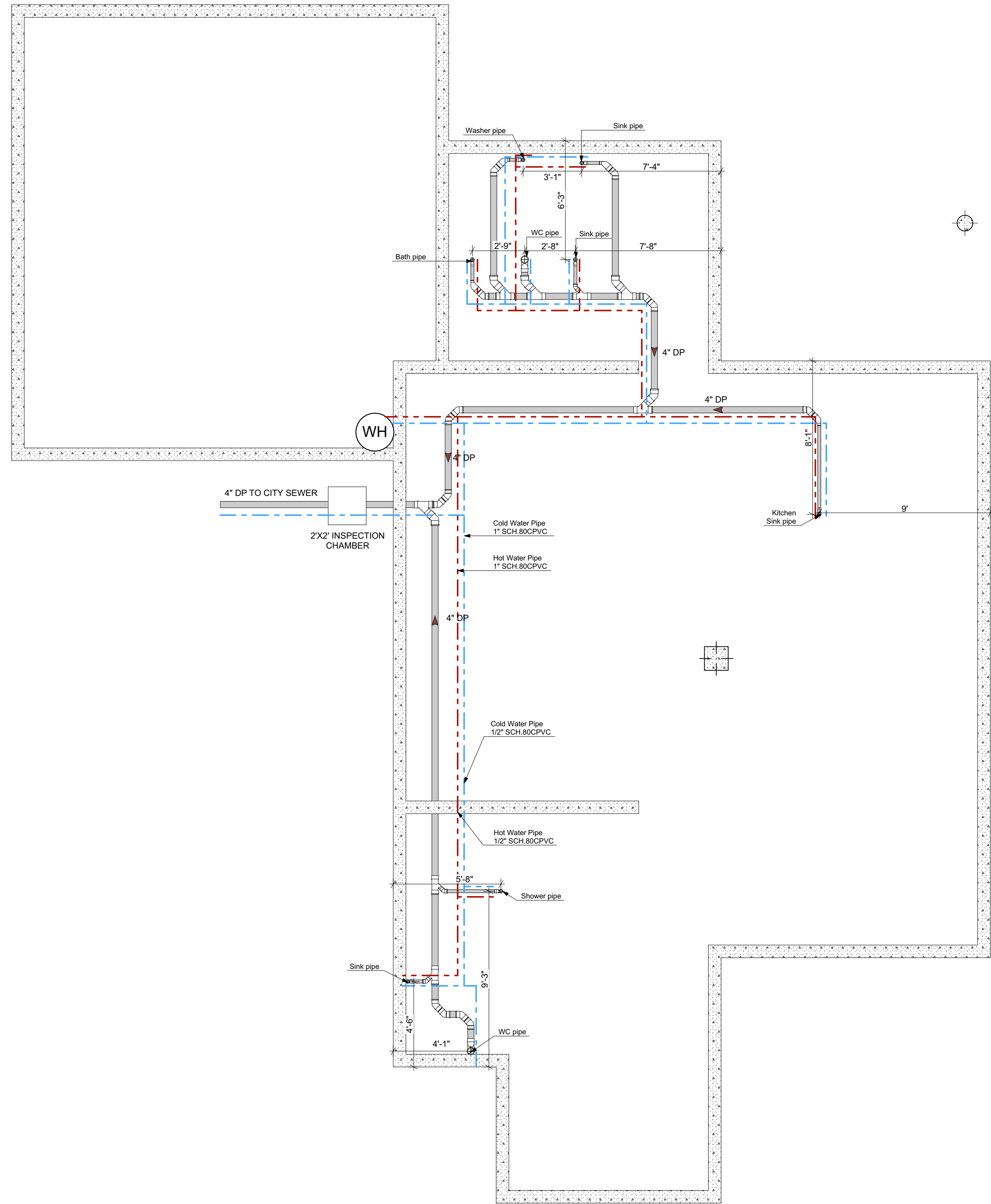
Drawing Scale
1/4" = 1'-0"

Sheet Size
ARCH-D

Layout ID
04

Date
2/21/2022

Revision



WATER HEATER SCHEDULE						
MARK	MANUFACTURER/MODEL	QUANTITY	AREA SERVED	ELECTRICAL	GALLONS	RECOVERY RATE
EWH-1&2	RHEEM: 82SV50-2	1	KITCHEN/RESTROOM	40AMP 240V, 1P	30 GAL	21 GPH

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Project Title
Truoba Mini 419

Drawing Name
Plumbing Plan

Drawing Scale
1/4" = 1'-0"

Sheet Size
ARCH-D

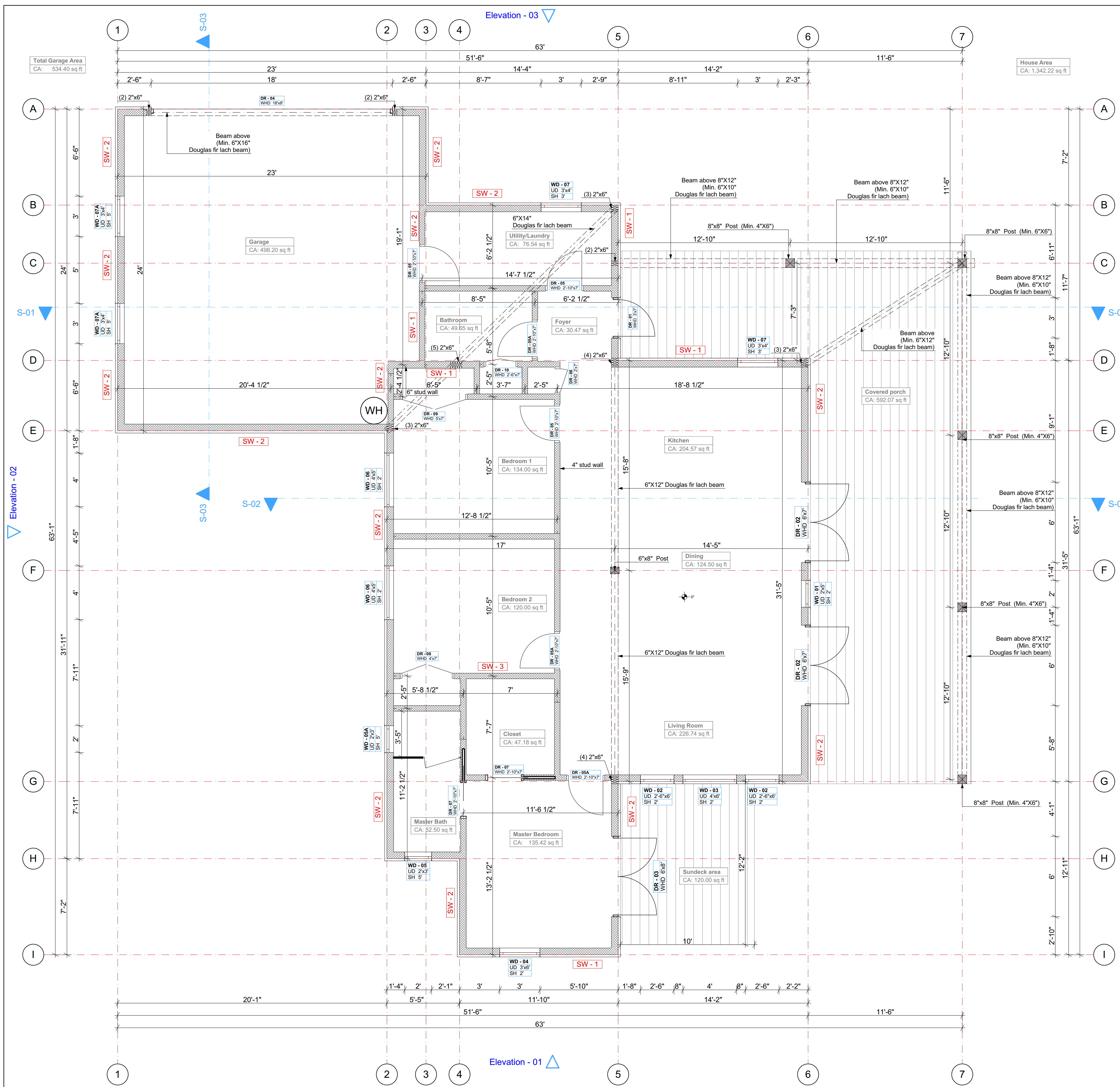
Layout ID
05

Date
2/21/2022

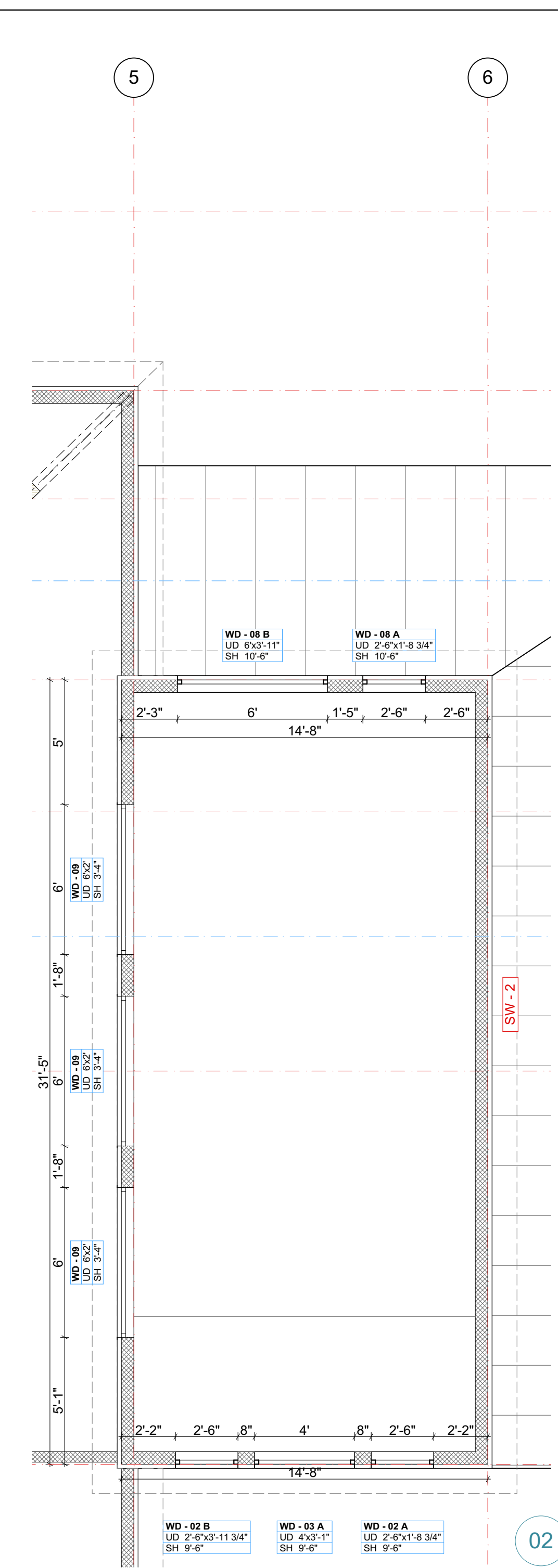
Revision

NOTES

- All plumbing drain fixtures are located in the center of 2"x4" stud walls.
- 2" sink/shower/bathtub drain pipe.
- 3" toilet drain pipe.
- 4" main house drain line pipe.



01 First Floor Plan
1/4" = 1'-0"

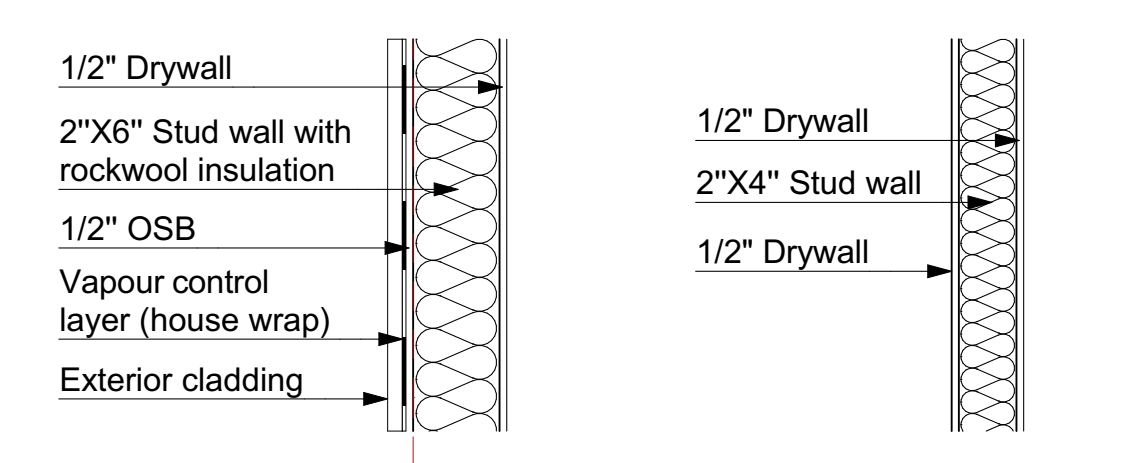


02 Second Floor Plan
1/4" = 1'-0"

FRAMING NOTES

- All lumber, sheathing, and engineered wood components shall conform to guidelines from the AWC, NDS.
- All main level & upper-level exterior walls are 2x6 wood studs at 24" on center. All exterior walls to be platform framed to bottom of joist, rafter or truss with double top plate and single bottom plate. Load-bearing walls over 10' shall be 2x6 at 16" on center. All interior bearing walls are 2x4 wood studs at 16" on center. U.N.O. Interior bearing walls to be framed with double top plate and single bottom plate. Non-load bearing walls over 14' unsupported height shall be 2x6 at 16" on center. All other interior non-bearing walls shall be 2x4 wood studs at 24" on center. Provide treated wood sills where required by code.
- All 2-story frame walls (up to 19' plate height) shall be balloon framed with 2x6 studs @ 12" O.C. Unless noted otherwise on plans.
- Studs and plates shall be "Studs" or #2 structural light framing, hem-fir or better. Finger jointed studs allowed provided they meet stud grade quality.
- Provide "Solid studs," 2 minimum ganged studs in walls and at beam bearings as shown, continuous through solid blocking in floors.
- All single braced lvs called out shall be framed with single-dimensional lumber of closest size.
- All multiple beams shall be blocked, nailed, and/or bolted as per the manufacturer's recommendations.
- Framing work shall be installed plumb, level, true, and firmly secured, relative to elevations and dimensions as shown in the floor plans, building sections, and exterior elevations.
- All dimensional lumber shall be s4s unless otherwise noted. Use graded lumber and wood products as noted and where appropriate.
- All posts to be shown and provided with bearing support to the foundation.
- All exterior wall load-bearing headers of 4' or less to be continuous (2) 2x10 spf #2 separated with 1/2" cdx plywood unless noted otherwise. Nail as required.
- All framing cavities (i.e. Partition nailers, corners, etc.) shall be insulated as required by code. Engineered joists and beams shall be installed in compliance with the manufacturer's instructions to meet code and warranty requirements.
- All lumber in contact with concrete or exposed to weather shall be pressure treated.
- Doubled rafters @ ridge and hip locations, typical unless noted or detailed otherwise.
- Doubled joists and rafters @ all openings, typical unless otherwise detailed.
- Wood I-joists to be installed according to the manufactures instructions.
- Doubled trimmers shall be installed where the span exceeds 4' unless otherwise noted.
- Layout plumbing walls, mechanical chases, and floor joists as necessary for plumbing requirements. Provide blocking between joists and rafters @ all bearing points and as required per code and/or manufacturer's specifications.
- Provide 2x solid blocking, furring, nailers, etc. Required for installation of sheetrock, cabinets, closet rods, bath accessories, shelves, drapes, etc.
- Provide fire blocking as required @ 6' to 10' A.F.F. or as required. Provide fire blocking @ floor/wall balloon framing interface, min. Typ.
- Provide appropriate Simpson or eq. Steel framing connectors as shown or as required for structural code compliance.
- U.N.O. Sheath entire building with 1/2" zip sheathing, taped and sealed.
- Insulate piping accordingly as needed to prevent freezing.

EXTERIOR WALL INTERIOR WALL



SHEAR WALLS & HOLDDOWNS

DESIGNATION	SHEATHING		HOLDDOWN
	EXTERIOR	INTERIOR	
[SW-1]	7/16" APA RATED STRUCTURAL I - 2x6@16"o.c.		HHDQ14-SDS 2.5
[SW-2]	7/16" APA RATED STRUCTURAL I	ARCHITECTURAL	HDU5-SDS 2.5
[SW-3]	7/16" APA RATED STRUCTURAL I	ARCHITECTURAL	HDU5-SDS 2.5

HEADER BEAMS	
LENGTH	SIZE
<4' - 0"	(2) 2 X 6
<6' - 0"	(2) 2 X 10
<8' - 0"	(2) 1 1/2" X 7 1/2" LVL
<10' - 0"	(2) 1 1/2" X 14" LVL
<12' - 0"	(2) 1 1/2" X 18 1/2" LVL

NOTES

- All house structural elements must be specified and approved by local structural engineer of a location where this house is built.
- Dimensions of the exterior wall taken from the external stud wall side (2"x6"). Partition wall (2"x4") dimensions taken from wall center.
- Doors and windows are shown of an unit sizes. Leave extra space for the doors and windows installation.
- Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey window finish. UD - Unit Dimension SH - Sill Height
- Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.
- Interior doors. Timber frame interior doors with the finish of owner's choice. Recommended white or light timber texture door finish.
- Exterior cladding -Western Red Cedar or other type of exterior wood cladding chosen by owner. Exterior finish should be clad with treated and impregnated natural softwood.

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NAILING SCHEDULE

CONNECTION	NAILING
1. Joist to sill or girder, toenail	3-8d
2. Bridging to joist, toenail each side	2-8d
3. 1" x 6" (25 mm x 152 mm) subfloor or less to each joist, face nail	2-8d
4. Wider than 1" x 6" (25 mm x 152 mm) subfloor to each joist, face nail	3-8d
5. 2" (51 mm) subfloor to joist or girder, blind and face nail	2-16d
6. Sole plate to joist or blocking, typical face nail	16d at 16" (406 mm) o.c.
Sole plate to joist or blocking, at braced wall panels	3-16d per 16" (406 mm)
7. Top plate to stud, end nail	2-16d
8. Stud to sole plate	4-8d, toenail or 2-16d, end nail
9. Double studs, face nail	16d at 24" (610 mm) o.c.
10. Double top plates, typical face nail	16d at 16" (406 mm) o.c.
Double top plates, lap splice	8-16d
11. Blocking between joist or rafter to top plate, toenail	3-8d
12. Rim joist to top plate, toenail	8d at 6" (152 mm) o.c.
13. Top plates, laps and intersections, face nail	2-16d
14. Continuous header, two pieces	16d at 16" (406 mm) o.c. along each edge
15. Ceiling joists to plate, toenail	3-8d
16. Continuous header to stud, toenail	4-8d
17. Ceiling joists, laps over partitions, face nail	3-16d
18. Ceiling joist to parallel rafters, face nail	3-16d
19. Rafter to plate, toenail	3-8d
20. 1" (25 mm) brace to each stud and plate, face nail	2-8d
21. 1" x 8" (25 mm x 203 mm) sheathing or less to each bearing, face nail	2-8d
22. Wider than 1" x 8" (25 mm x 203 mm) sheathing or less to each bearing, face nail	3-8d
23. Built-up corner studs	16d at 24" (610 mm) o.c.
24. Built-up girder and beams	20d at 32" (813 mm) o.c. at top and bottom and staggered 2-20d at ends and at each splice
25. 2" (51 mm) planks	2-16d at each bearing
26. Wood structural panels and particleboard: Subfloor, roof and wall sheathing (to framing): (1 inch = 25.4 mm) 1/2" and less 15/32" - 3/4" 7/8" - 1" 1 1/8" - 1 1/2" Combination subfloor-underlayment (to framing): (1" = 25.4 mm) 3/4" and less 7/8" - 1" 1 1/8" - 1 1/2"	8d 6" 8d 8d 10d 8" 8d 8d 8d 10d 8" 8d
27. Panel siding (to framing): 1/2" (13 mm) or less 5/8" (16 mm)	8d 8d
28. Fiberboard sheathing: No. 11 ga. No. 16 ga. 25/32" (20 mm)	6d 8d No. 11 ga. No. 16 ga.
29. Interior paneling 1/2" (6.4 mm) 3/8" (9.5 mm)	4-d 6-d

- Common or box nails may be used except where otherwise stated.
- Nail spaced at 6 inches (152 mm) on center at edges, 12 inches (305 mm) at intermediate supports except 6 inches (152 mm) at all supports where spans are 48 inches (1219 mm) or more. Nails for wall sheathing may be common, box or casing.
- Common or deformed shank.
- Common.
- Deformed shank.
- Corrosion-resistant siding or casing nails
- Fasteners spaced 3 inches (76 mm) on center at exterior edges and 6 inches (152 mm) on centers at intermediate supports.
- Corrosion-resistant roofing nails with 7/16-inch-diameter (11 mm) head and 1 1/2-inch (38 mm) length for 1/2-inch (13 mm) sheathing and 1 3/4-inch (44 mm) length for 25/32-inch (20 mm) sheathing.
- Corrosion-resistant staples with nominal 7/16-inch (11 mm) crown and 1 1/8-inch (29 mm) length for 1/2-inch (13 mm) sheathing and 1 1/2-inch (38 mm) length for 25/32-inch (20 mm) sheathing.
- Panel supports at 16 inches (406 mm) [20 inches (508 mm) if strength axis in the long direction of the panel, unless otherwise marked.] Casing or finish nails spaced 6 inches (152 mm) on panel edges, 12 inches (305 mm) at intermediate supports.
- Panel supports at 24 inches (610 mm). Casing or finish nails spaced 6 inches (152 mm) on panel edges, 12 inches (305 mm) at intermediate supports.

NAIL SIZES			
Penny Wt.	Length, in	Box Nail Diameter, in.	Common Nail Diameter, in.
8d	2 1/2"	0.113	0.131
10d	3"	0.128	0.148
16d	3 1/2"	0.135	0.162

DECORATIVE BEAMS	
LENGTH	SIZE
<8' - 0"	WB 4X4
<12' - 0"	WB 4X5
<16' - 0"	WB 4X6

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1/4" = 1'-0"

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07

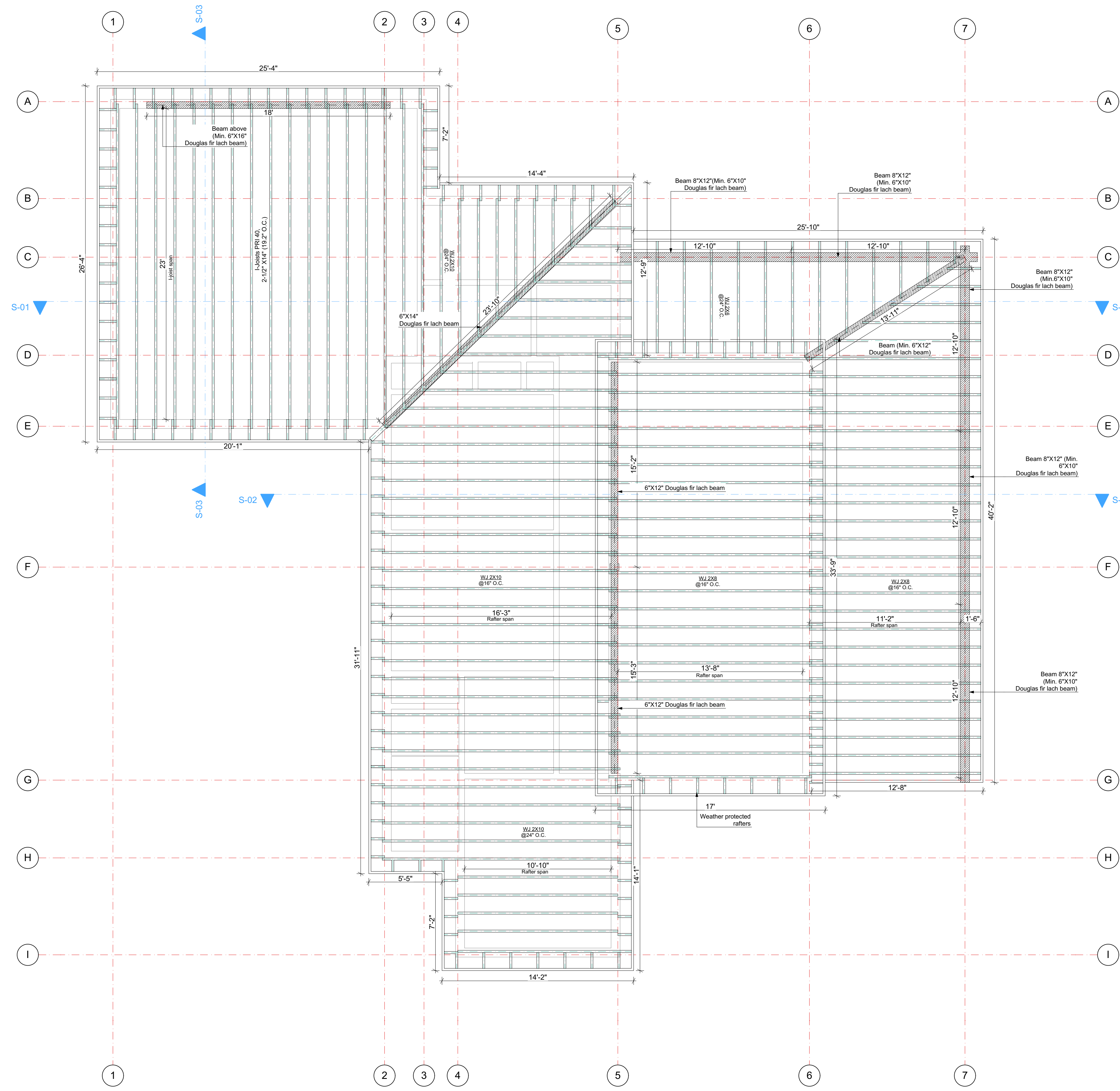
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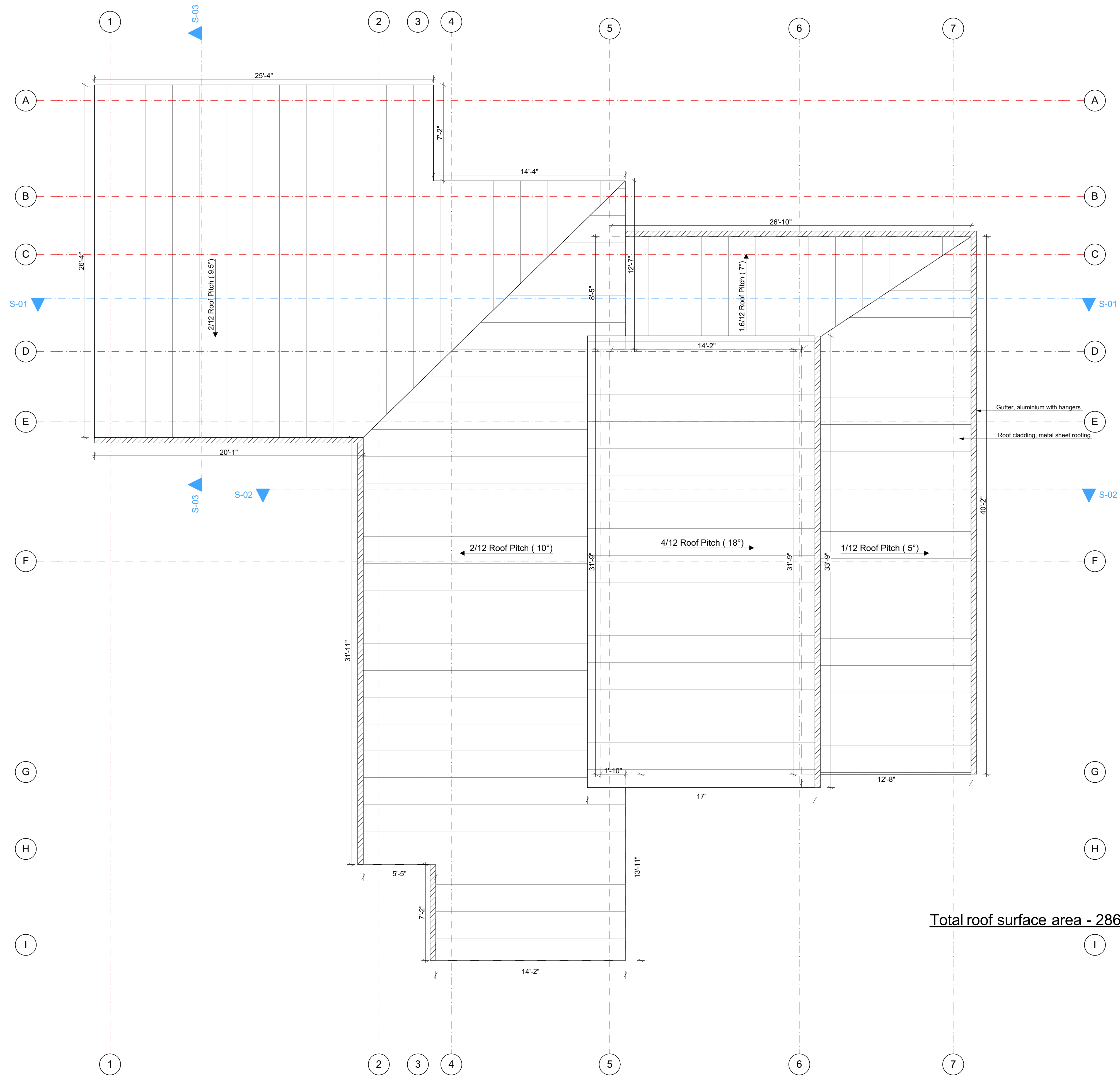
2/21/2022

Revision

NOTES

Roof structural element sizes will vary by the location and requirements of local building codes. Entire roof structure including Rafters and Beams must be specified by local structural engineer of a location where this house is built.





Total roof surface area - 2869 sq. ft.

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

NOTES
All roof materials shall be installed per the manufacturer's specifications.

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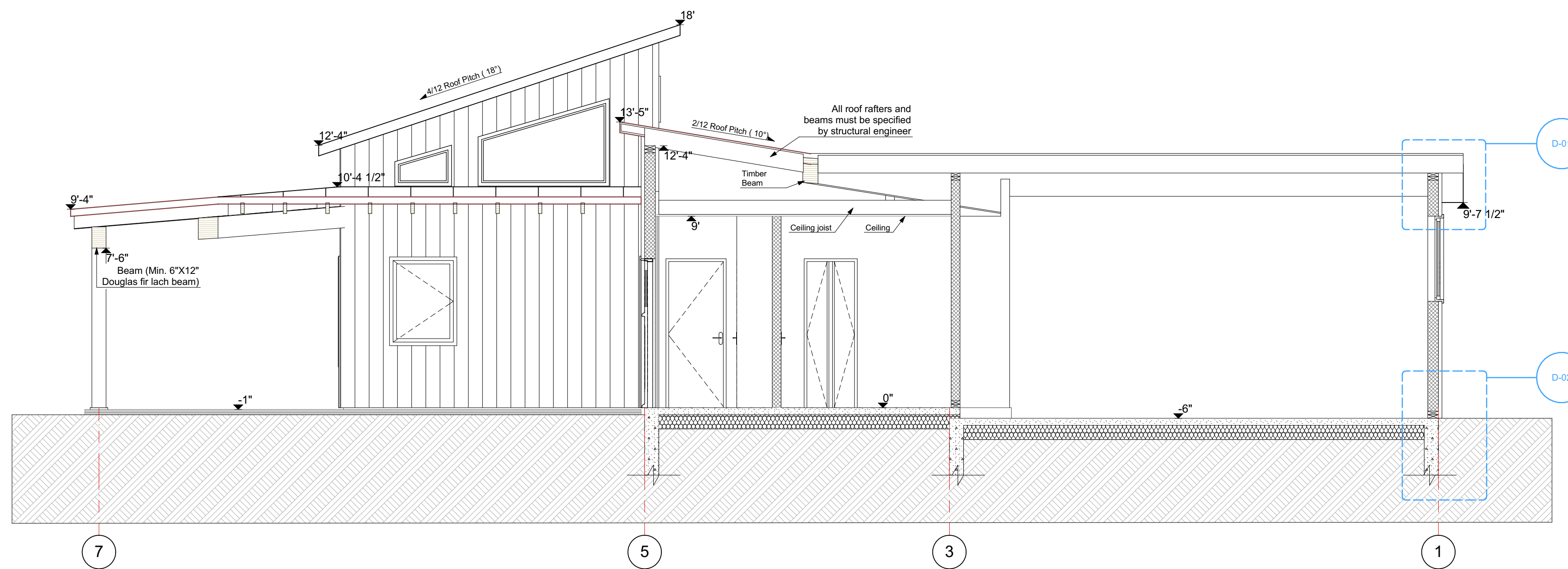
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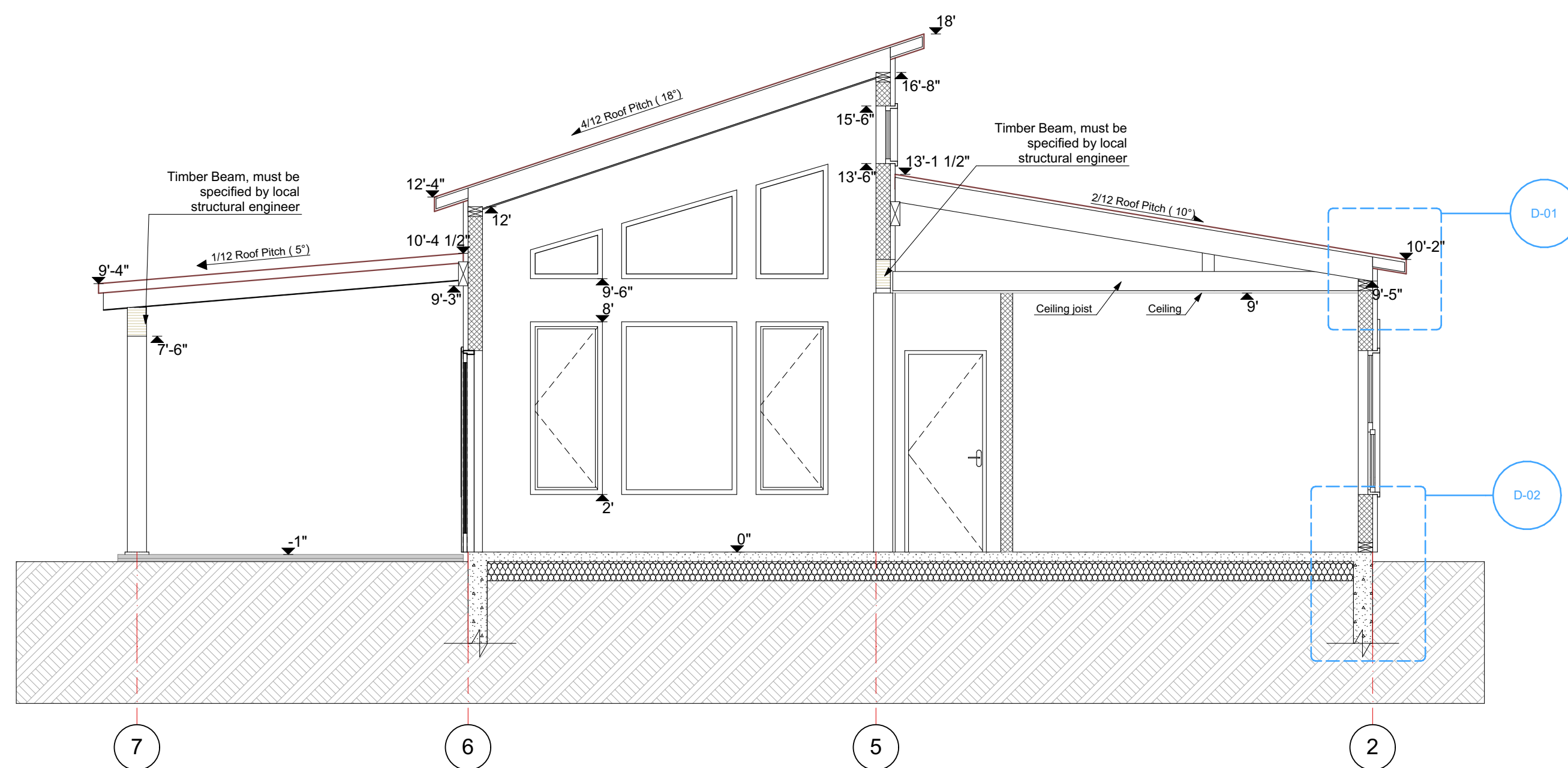
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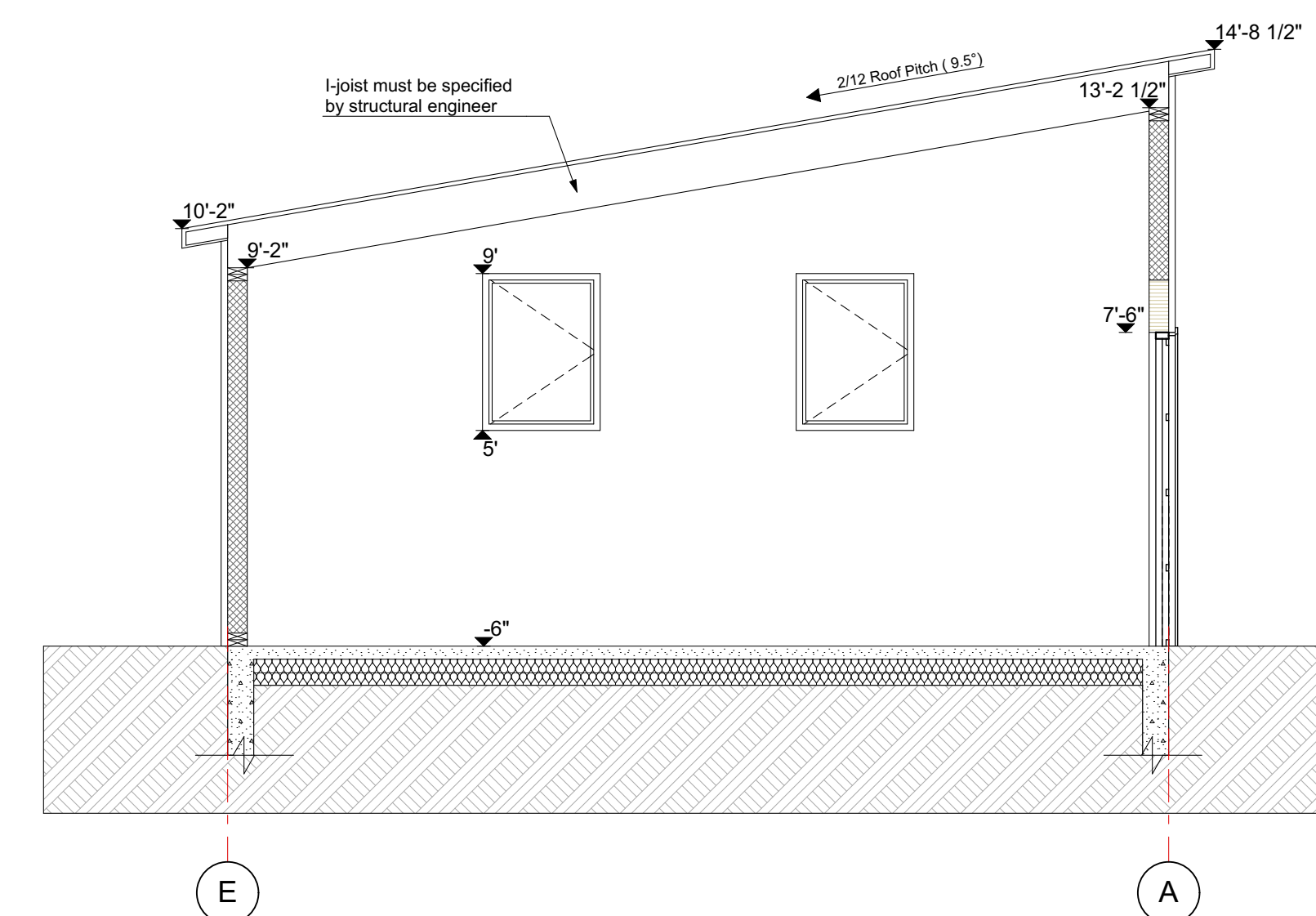
Revision



01 House Section - 01
1/4" = 1'-0"



02 House Section - 02
1/4" = 1'-0"



03 House Section 03
1/4" = 1'-0"

CONNECTIONS

- ALL HANGER CALL OUTS CORRESPOND TO PRODUCTS MANUFACTURED BY SIMPSON STRONG-TIE CORPORATION. OTHER MANUFACTURER PRODUCTS ARE ALLOWED AS LONG AS THEY ARE AN APPROVED EQUAL.
- HANGERS FOR "I" JOISTS TO BE SIZED PER JOIST MANUFACTURER RECOMMENDATIONS.
- PROVIDE MIN. OF H2.5T TRUSS CLIPS AT ALL TRUSS BEARING POINTS, PROVIDE DOUBLE CLIPS AT MULTIPLE PLY TRUSSES. OTHER ATTACHMENT MAY BE REQUIRED BY THE TRUSS DESIGNER.
- SILL PLATES SHALL BE ATTACHED W/ 3/8" ANCHOR BOLTS AT FOUR FEET MAXIMUM ON CENTER, 12" FROM ALL CORNERS, MINIMUM 2 BOLTS PER PLATE.
- TO PROVIDE LATERAL SUPPORT, TIE ALL WOOD PLATES, WHICH REST ON STEEL BEAMS, TO THE STEEL BEAM WITH X-ZF 47 P8S23 POWDER ACTUATED PINS AT 32" O.C., OR 3/8" THRU BOLTS @ 48" O.C. INTO THE TOP FLANGE OF THE BEAMS.

MINIMUM MEMBER SIZES

- ALL LOAD BEARING HEADERS ARE TO BE (2) 2x10'S UNLESS NOTED OTHERWISE.
- FOR 2x4 WALLS ALL HEADERS ARE TO BE SUPPORTED BY A MINIMUM OF (1) 2x4 TRIMMER AND (1) 2x4 KING STUD AT EACH JAMB, U.N.O. PROVIDE MINIMUM (2) 2x4 TRIMMERS AND (2) 2x4 KING STUDS AT EACH JAMB FOR OPENINGS 6'-0" TO 10'-0".
- FOR 2x6 WALLS ALL HEADERS ARE TO BE SUPPORTED BY A MINIMUM OF (1) 2x6 TRIMMER AND (1) 2x6 KING STUD AT EACH JAMB, U.N.O. PROVIDE MINIMUM (2) 2x6 TRIMMERS AND (2) 2x6 KING STUDS AT EACH JAMB FOR OPENINGS 6'-0" TO 10'-0".
- ALL WALLS SHALL BE FRAMED IN ACCORDANCE WITH TABLE R602.3.1.
- ALL RAKE WALLS SHALL BE FRAMED FULL HEIGHT TO THE BOTTOM OF EITHER LOOKOUT RAFTERS OR VAULTED GABLE END TRUSSES WITH 1 PIECE STUDS. BLOCKING MAY BE REQUIRED ON WALLS TALLER THAN 10'-0".
- ALL POINT LOADS SHALL BE CARRIED DOWN AND BEAR DIRECTLY ON THE FOUNDATION WALL OR BEAM. EACH POST MUST INCREASE BY ONE PLY FOR EACH LEVEL CARRYING THE POINT LOAD. SQUASH BLOCKS ARE REQUIRED BETWEEN FLOORS.
- ALL BEARING LENGTHS FOR WOOD BEAMS SHALL NEVER BE LESS THAN 1 1/2' AT THE ENDS OF BEAMS. BEARING ACROSS THE FULL WIDTH OF THE BEAM IS REQUIRED.
- TYPICAL ROOF OVER FRAMING SHALL BE 2x6 AT 24" ON CENTER AND BE POSTED DIRECTLY TO TRUSSES OR RAFTERS BELOW. MAX. SPAN FOR THE 2x6 MEMBERS IS 6'.
- ALL MULTIPLE MEMBER LVL'S SHALL BE ASSEMBLED ACCORDING TO THE SUPPLIER'S RECOMMENDATIONS.
- 2-PLY STUDS SHALL BE NAILED TOGETHER W/ TWO ROWS OF 16d NAILS @ 16" O.C. ADJACENT NAILS SHALL BE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
- 3-PLY STUDS SHALL BE NAILED THE SAME AS THE 2-PLY W/ THE THIRD PLY NAILED TO THE 2-PLY W/ (2) 16d NAILS @ 16" O.C.
- 4 & 5-PLY STUDS SHALL BE NAILED THE SAME AS THE 3-PLY W/ CS16 STRAPS TOP & BOTTOM.
- 6 & 7-PLY STUDS SHALL BE NAILED THE SAME AS THE 3-PLY W/ CS16 STRAPS TOP, CENTER, & BOTTOM.
- EXTERIOR WALL SHEATHING SHALL BE 3/8" OSB NAILED WITH 8d NAILS AT 12" O.C. IN FIELD AND 6" O.C. AT EDGE OR 15ga. x 1 1/2" LONG x 3/16" WIDE STAPLES AT 8" O.C. IN FIELD AND 4" O.C. AT EDGE, OR 16ga. x 1 1/2" LONG x 3/16" WIDE AT 6" O.C. IN FIELD AND 3" O.C. AT EDGE.
- ROOF SHEATHING SHALL BE 3/8" OSB W/ 8d NAILS AT 6" O.C. EDGE AND 10" O.C. FIELD NAILING.
- FLOOR SHEATHING SHALL BE MINIMUM 3/4" OSB W/ 8d NAILS AT 6" O.C. EDGE AND 12" O.C. FIELD NAILING.
- INTERIOR WALL SHEATHING SHALL BE 1/2" DRYWALL W/ 1 1/4" x #6 DRYWALL SCREWS AT 8" O.C.
- ALL NAILING SHALL BE IN CONFORMANCE WITH IRC TABLE R602.3.

WALL BRACING

- ALL EXTERIOR WALL BRACING SHALL COMPLY WITH IRC R602.10.4 (CONTINUOUS SHEATHING), METHOD CS-WSP.
- STRUCTURAL PANEL SHEATHING (3/8" OSB) MUST BE USED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF BRACED WALL LINE, INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS.
- 30" MINIMUM LENGTH, MAXIMUM 76" TALL OPENING HEIGHT ADJACENT TO FULL HEIGHT PANEL.
- FULL HEIGHT PANELS SHALL BE LOCATED AT THE END OF A BRACED WALL LINE AND AT LEAST 25" ON CENTER.
- PROVIDE MINIMUM 24" WIDE PANEL CORNER RETURN AT ENDS OF A BRACED WALL LINE.
- SHEATHING APPLIED TO ONE SIDE ONLY, WITH 8d COMMON (2"x0.113") NAILS AT 6" EDGE SPACING AND 12" ON CENTER IN FIELD (ALTERNATE: 16ga x 1 1/4" STAPLES, 3" EDGE AND 6" FIELD SPACING).
- SOLE PLATES OF BRACED WALL LINE SHALL BE NAILED TO CONTINUOUS RIM BELOW WITH (3) 16d NAILS AT 16" O.C.

GENERAL

- FRAMING CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION OF PLUMBING IN REFERENCE TO FLOOR FRAMING.
- AT FIRST FLOOR AND STRUCTURAL FLOOR, WHERE JOISTS RUN PARALLEL TO THE FOUNDATION WALLS, PROVIDE PERPENDICULAR SOLID BLOCKING AT 4'-0" ON CENTER FOR THE FIRST 3 BAYS.
- PROVIDE SOLID BLOCKING AT SUPPORTS BETWEEN TRUSSES TO PREVENT ROTATION.
- PROVIDE SOLID BLOCKING AT ALL TRUSS RIDGES, HIPS AND VALLEYS.
- PROVIDE SOLID BLOCKING AT INTERMEDIATE BEARING FOR FLOOR JOISTS WHERE WALL ABOVE IS A BEARING WALL. SOLID BLOCKING IS ALSO REQUIRED WHEN JOIST SPLICES OCCUR OVER A BEAM. SOLID BLOCKING IS NOT REQUIRED WHEN THERE IS NO SPLICE OR BEARING WALL ABOVE.

NOTES

All house structure must be specified and approved by local structural engineer at a location where this house is built.

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Drawing Name

Sections 01, 02, 03

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1/4" = 1'-0"

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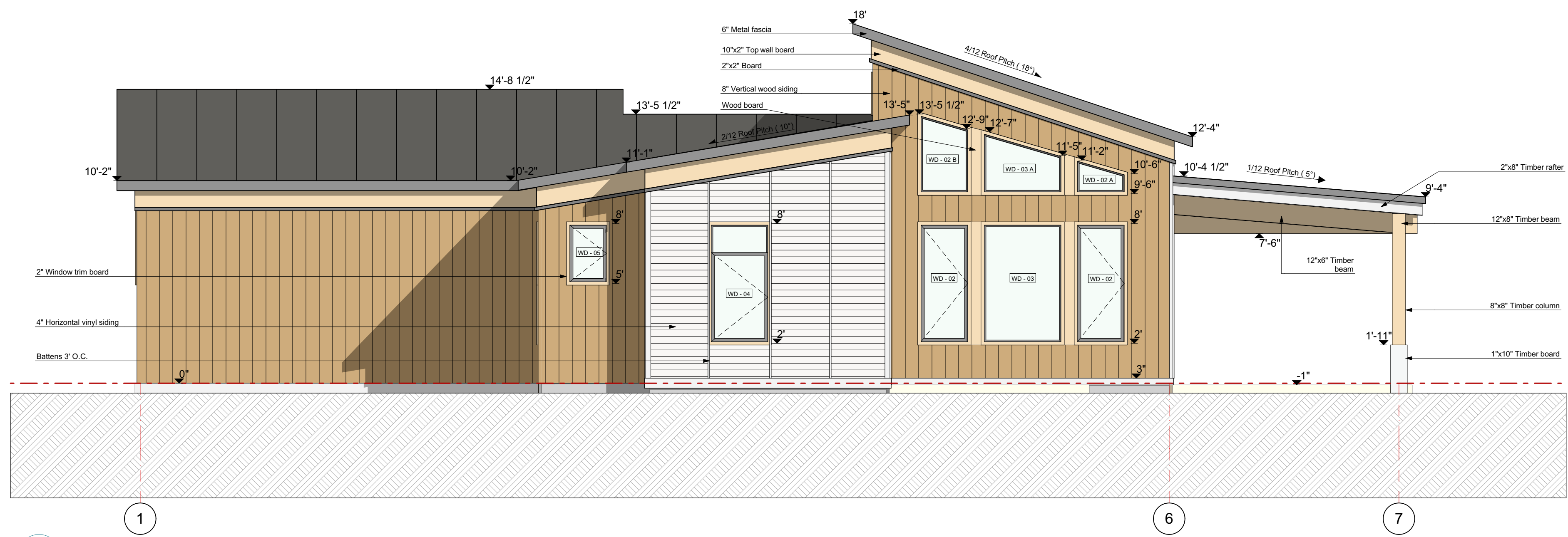
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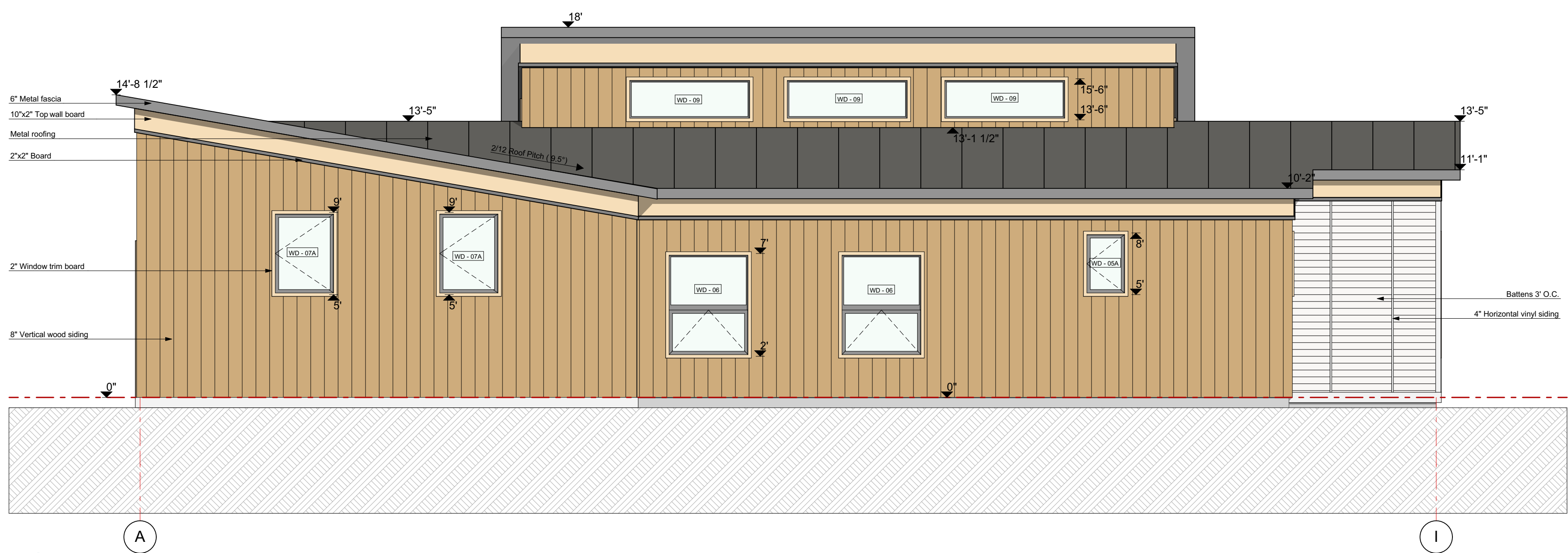
Date

2/21/2022

Revision



01 House Elevation - 01
1/4" = 1'-0"



02 House Elevation - 02
1/4" = 1'-0"

NOTES

All house structural elements must be specified and approved by local structural engineer of a location where this house is built.

Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey window finish.

Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.

Exterior cladding -Western Red Cedar and vinyl siding. Exterior finish should be clad using treated and impregnated natural wood.

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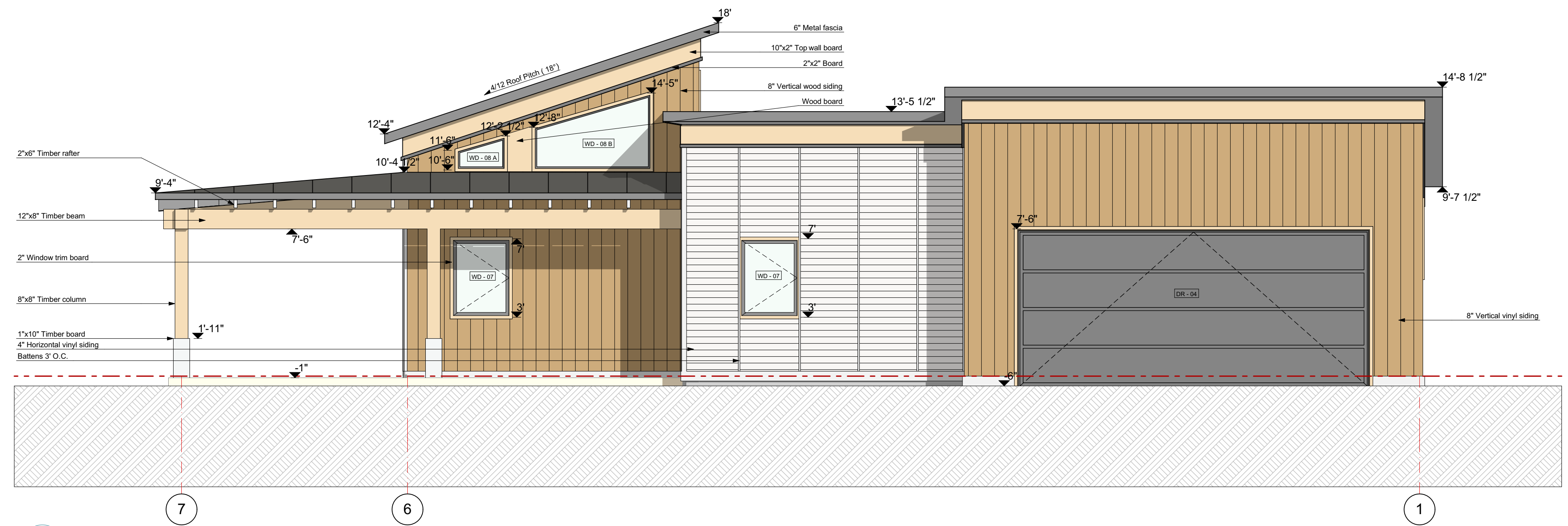
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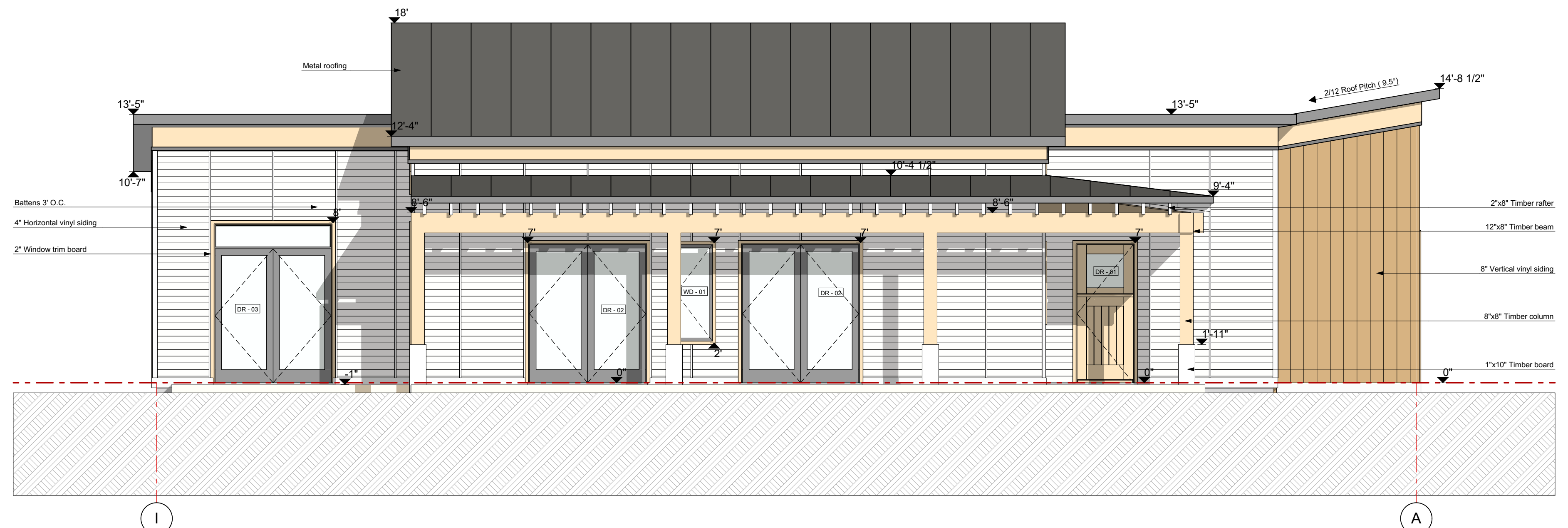
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Revision



03 House Elevation - 03
1/4" = 1'-0"



04 House Elevation - 04
1/4" = 1'-0"

NOTES

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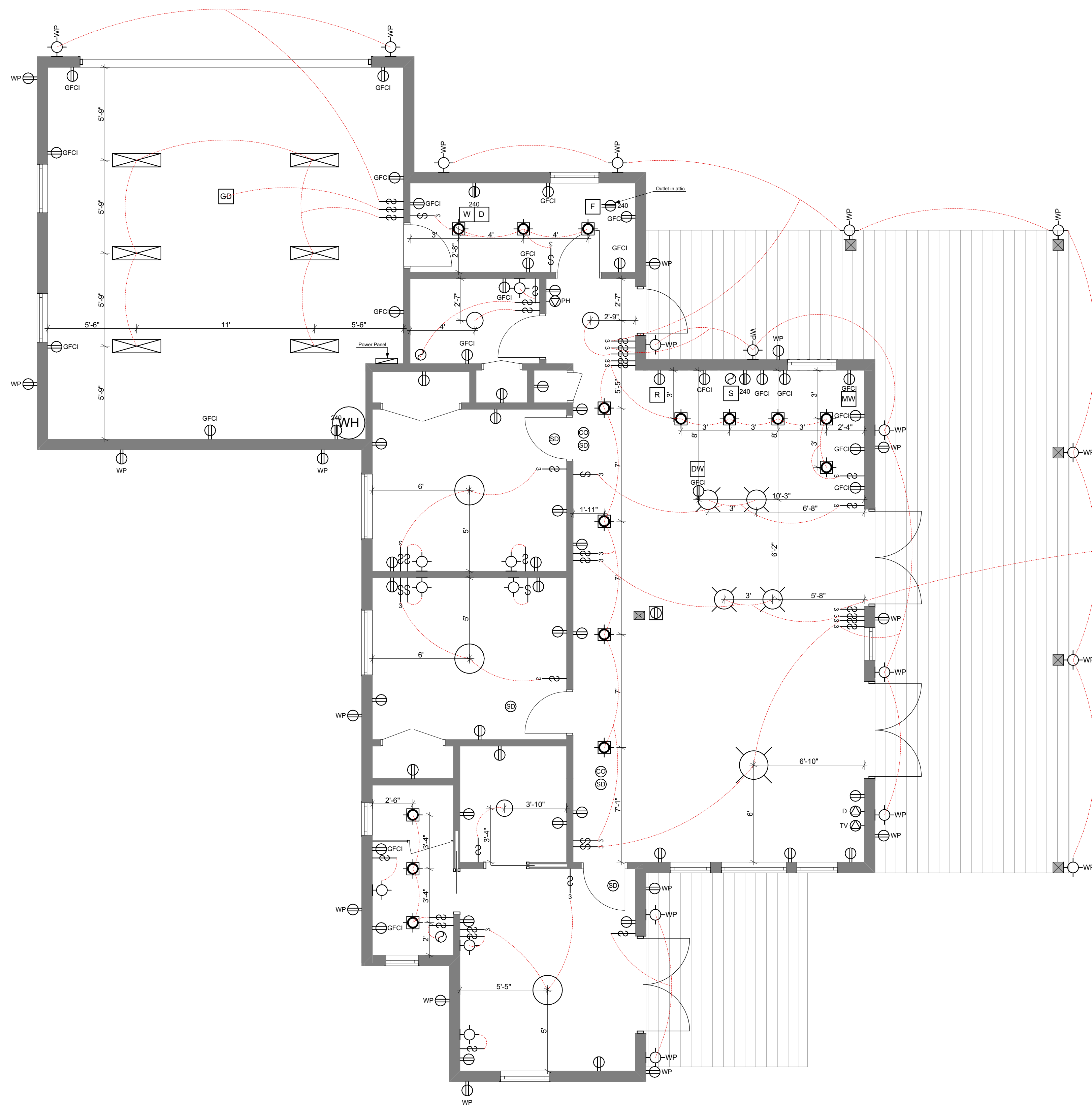
Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey window finish.

Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.

Exterior cladding -Western Red Cedar and vinyl siding. Exterior finish should be clad using treated and impregnated natural wood.

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Project Title	
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Elevations 03,04	
Drawing Scale	
1/4" = 1'-0"	
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Date	
2/21/2022	
Revision	



ELECTRICAL LEGEND	
SYMBOL	FIXTURE
	CEILING MOUNTED LIGHT
	PENDANT LIGHT
	RECESSED CAN LIGHT
	RECESSED CAN LIGHT WEATHER PROOF
	WALL MOUNTED LIGHT
	WALL MOUNTED LIGHT WEATHER PROOF
	WALL SCONCE LIGHT
	2-TUBE INCANDESCENT (COLD START BALLAST IN GARAGE)
	ARCH FAULT CIRCUIT INTERRUPT DUPLEX OUTLET
	GROUND FAULT CIRCUIT INTERRUPT DUPLEX OUTLET
	240V OUTLET
	WEATHER PROOF OUTLET
	FLOOR MOUNTED OUTLET
	TV OUTLET
	PHONE OUTLET
	DATA OUTLET
	SMOKE DETECTOR
	CARBON MONOXIDE ALARM
	WALL SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	DIMMER SWITCH
	CLG. MOUNT VENT FAN
	CLG. MOUNT VENT FAN WITH LIGHT
	EXHAUST FAN
	CEILING FAN
	CEILING FAN WITH LIGHT
	WEATHER PROOF CEILING FAN
	POWER PANEL

ELECTRICAL LINE	
APPLIANCE SCHEDULE	
SYMBOL	FIXTURE
	CLOTHES WASHER
	CLOTHES DRYER
	DISHWASHER
	REFRIGERATOR
	STOVE
	OVEN
	MICROWAVE
	DISPOSAL
	FURNACE
	GARAGE DOOR OPENER
	GAS FIREPLACE INSERT
	HOT WATER HEATER

NOTES

It is the intent that all receptacles, switches and devices be centered on all finished surfaces, horizontally and vertically unless noted otherwise. Contractor shall coordinate all roof framing to allow the centering shown on this plan for all recessed lighting. If additional framing is required to accommodate this layout, the Contractor shall include such framing as part of the cost of the work. Any coordination shall take place during rough framing, prior to rough-in.

All conduits, connection boxes, switch boards must be specified by electrical engineer.

Receptacles (GFCI) - outlets installed in bathrooms, kitchen (receptacles that serve countertop surface and dishwasher), laundry, garage, unfinished accessory buildings, unfinished basement and crawl space to have Ground-Fault Circuit Interrupter.

Receptacles (AFCI) - outlets installed in kitchen, family room, dining room, living room, parlor, library, den, bedrooms, sunroom, recreation room, closets, hallways and similar rooms to have Arch-Fault Circuit Interrupter.

Outdoor Receptacles to have Ground-Fault Circuit Interrupter and to be WP.

Receptacles to be Max. 12" O.C. (NEC 210-52)

Smoke detectors shall receive their primary power from the building wiring.

All bathroom to have Min. 50 CFM fan or a window.

Per CEC article 210.11(C)3 all bathroom circuiting shall be either:

A) A 20 ampere circuit dedicated to each bathroom or

B) At least one 20 ampere circuit supplying only bathroom receptacle outlets.

Install all receptacles, phone & TV jacks horizontally, 6" a.f.f. (above finished level), U.N.O. (Unless Noted Otherwise).

Install all switches vertically with centerline at approximately 42" a.f.f.

Install all above counter outlets horizontally with a centerline of 40" a.f.f., U.N.O.

Mount centerline of thermostats + keypads at 60" a.f.f. Center on switches below if applicable.

Installation shall conform to current adopted NEC. If this requires the addition of receptacles, wiring, devices, special circuiting, breakers, interrupters, or other items not indicated on the plans, the electrician shall make the Contractor and Architect aware of any omissions and shall include them as part of the cost of the work.

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Company Title

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Project Title

Truoba Mini 419

Drawing Name

Electrical Plan

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-D

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12

Date

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Revision



GARAGE VENTILATION						
SPACE	NUMB OF VEHICLES	VENT RATE (CFM PER VEHICLE)	MIN. O/A RATE (CFM)	VENT TYPE (MECH/NAT)	MECH EXH FAN CFM	MIN NUMB OF VENT BLOCKS
3 CAR GARAGE	2	100	200	MECH	200	-

EXHAUST FAN SCHEDULE											
TAG NUMBER	AREA SERVED	MANUFACTURER/ MODEL#	ACTUAL CFM	SP INCH-WG	FAN RPM	ELECTRICAL V/PHz	POWER (WATTS)	CURRENT (AMPS)	SONE	L x W x H	WEIGHT (LBS)
EF-1	SEE PLANS	PANASONIC/ FV-05-11VKS1	50	0.25	1107	120/1/60	7.8	0.08	0.3	10-14\" x 10-14\" x 7-3/8\"	11.9

REMARKS:
 1. DISCONNECT SWITCH/STARTER
 2. PROVIDE MANUFACTURER VIBRATION ISOLATION KIT
 3. BACKDRAFT DAMPER
 4. INTERLOCK W/ LIGHTS
 5. EQUIVALENT MODEL OR EQUAL

FORCED AIR INDOOR UNIT SCHEDULE												
UNIT TAG	MANUFACTURER / MODEL #	CAPACITY (CFM)	COOLING CAP. (BTU/HR)	HEATING CAP. (BTU/HR)	S.P. \"W.C.	MOTOR			ELECTRICAL		W x D x H	WT. (LBS)
						W (HP)	VOLTS	PH.	MCA	MOCP		
FURNACE 1	GMVCS7065DN	2000	57,000	60,000	0.5	(1)	240	1	10	30	56.9 x 23.5 x 21.8	133

REMARKS:
 1. CONTRACTOR TO VERIFY ALL PART NUMBERS WITH MANUFACTURER AND PROVIDE SUBMITTALS TO DESIGN TEAM.
 2. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
 3. EQUIVALENT MODEL OR EQUAL.

FORCED AIR OUTDOOR UNIT SCHEDULE													
UNIT TAG	MANUFACTURER / MODEL NO.	NOM TONS	REFRIGERANT	SEER	REF. TYPE	COOLING/HEATING CAP. (BTUH)	UNIT SERVING	ELECTRICAL DATA				W x D x H	WT. (LBS)
								VOLT-PH.-HZ.	MCA	MOCP			
CU-1	Goodman GSXC160601	5	12 LBS.-09 OZ.	16	R-410A	57,000/60,000	FURNACE 1	240-1-60	37	60	57.4 X 35.1 X 38.7	295	

REMARKS:
 1. PROVIDE TIMED LOCK-OUT, SERVICE VALVES AND DRYER.
 2. ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHER PROOF DISCONNECT SWITCH.
 3. PROVIDE EX LIQUID AND SUCTION REFRIGERANT PIPING SIZED FOR ACTUAL FIELD CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS.
 4. PROVIDE REFRIGERANT SAFETY RELIEF VALVE IN ACCORDANCE WITH LOCAL CODES.
 5. PROVIDE LOW AMBIENT CONTROL.
 6. PROVIDE CORROSION RESISTANT ELEMENTS.
 7. EQUIVALENT MODEL OR EQUAL. CONTRACTOR TO VERIFY ALL PART NUMBERS WITH MANUFACTURER AND PROVIDE SUBMITTALS TO THE DESIGN TEAM.

AIR DEVICE SCHEDULE										
MARK	NECK SIZE	FRAME SIZE	FRAME TYPE	VOL. DMPR.	SUP.	RET.	EXH.	TITUS NUMBER	FLEX SIZE	CFM RANGE
A	12\" x 12\"	12\" x 12\" or 24\" x 24\"	NOTE 1	■	-			NOTE 2	6\"Ø	0 - 130
B	12\" x 12\"	12\" x 12\" or 24\" x 24\"	NOTE 1	■	-			NOTE 2	8\"Ø	125 - 220
R	12\" x 12\"	12\" x 12\" or 24\" x 24\"	NOTE 3		-	-		NOTE 3	8\"Ø	0 - 340

- NOTE 1 6\" TITUS R-OMNI (AS INDICATED ON PLAN) ROUND CEILING DIFFUSER WITH OFF-WHITE EXTERIOR. AIR QUANTITY AS INDICATED ON PLAN. COORDINATE FRAME TYPE WITH CEILING TYPE.
- NOTE 2 TITUS MODEL TMSA, LOUVER FACE ADJUSTABLE SUPPLY DIFFUSER
- NOTE 3 TITUS MODEL OMNI-RS 12\" TYPE RETURN AIR OR EXHAUST (AS INDICATED ON PLAN) ROUND CEILING GRILLE WITH OFF-WHITE EXTERIOR. COORDINATE FRAME TYPE WITH CEILING TYPE. AIR FILTERS SHALL BE FARR 30/30 1\" PLEATED 30% THROWAWAY, PROVIDE 3 SETS.

01 HVAC Plan
 1/4\" = 1'-0\"

NOTES
 Power, switchboards and conduits must be specified by electrical and mechanical engineers

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Truoba Mini 419

Drawing Name

HVAC Plan

Drawing Scale

1/4\" = 1'-0\"

Sheet Size

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Layout ID

13

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Revision



01 Furniture Plan
1/4" = 1'-0"

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Project Title

Truoba Mini 419

Drawing Name

Furniture Plan

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-D

Layout ID

14

Date

2/21/2022

Revision

Window List

Window Name	WD - 01	WD - 02	WD - 02 A	WD - 02 B	WD - 03	WD - 03 A	WD - 04	WD - 05	WD - 05A	WD - 06	WD - 07	WD - 07A	WD - 08 A	WD - 08 B	WD - 09
W x H Size	2'x5'	2'-6"x6'	2'-6"x1'-8 3/4"	2'-6"x3'-11 3/4"	4'x6'	4'x3'-1"	3'x6'	2'x3'	2'x3'	4'x5'	3'x4'	3'x4'	2'-6"x1'-8 3/4"	6'x3'-11"	6'x2'
Quantity	1	2	1	1	1	1	1	1	1	2	2	2	1	1	3
2D Symbol															
View from Opening Side															
Orientation - outswing windows	L	R					R	R	L		R	L			

Door List

Door Name	DR - 01	DR - 02	DR - 03	DR - 04	DR - 05	DR - 05A	DR - 06	DR - 07	DR - 08	DR - 09	DR - 10
W x H Size	3'x7'	6'x7'	6'x8'	18'x8'	2'-10"x7'	2'-10"x7'	2'x7'	2'-10"x7'	4'x7'	5'x7'	2'-6"x7'
Quantity	1	2	1	1	3	3	1	2	1	1	1
Position	Exterior	Exterior	Exterior	Exterior	Interior	Interior	Interior	Interior	Interior	Interior	Interior
Orientation (L-left swing, R-right swing)	R	R	R		R	L	R	L			
2D Symbol											
View from Opening Side											

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Project Title

Truoba Mini 419

Drawing Name

Door & Window Schedule

Drawing Scale

Sheet Size

ARCH-D

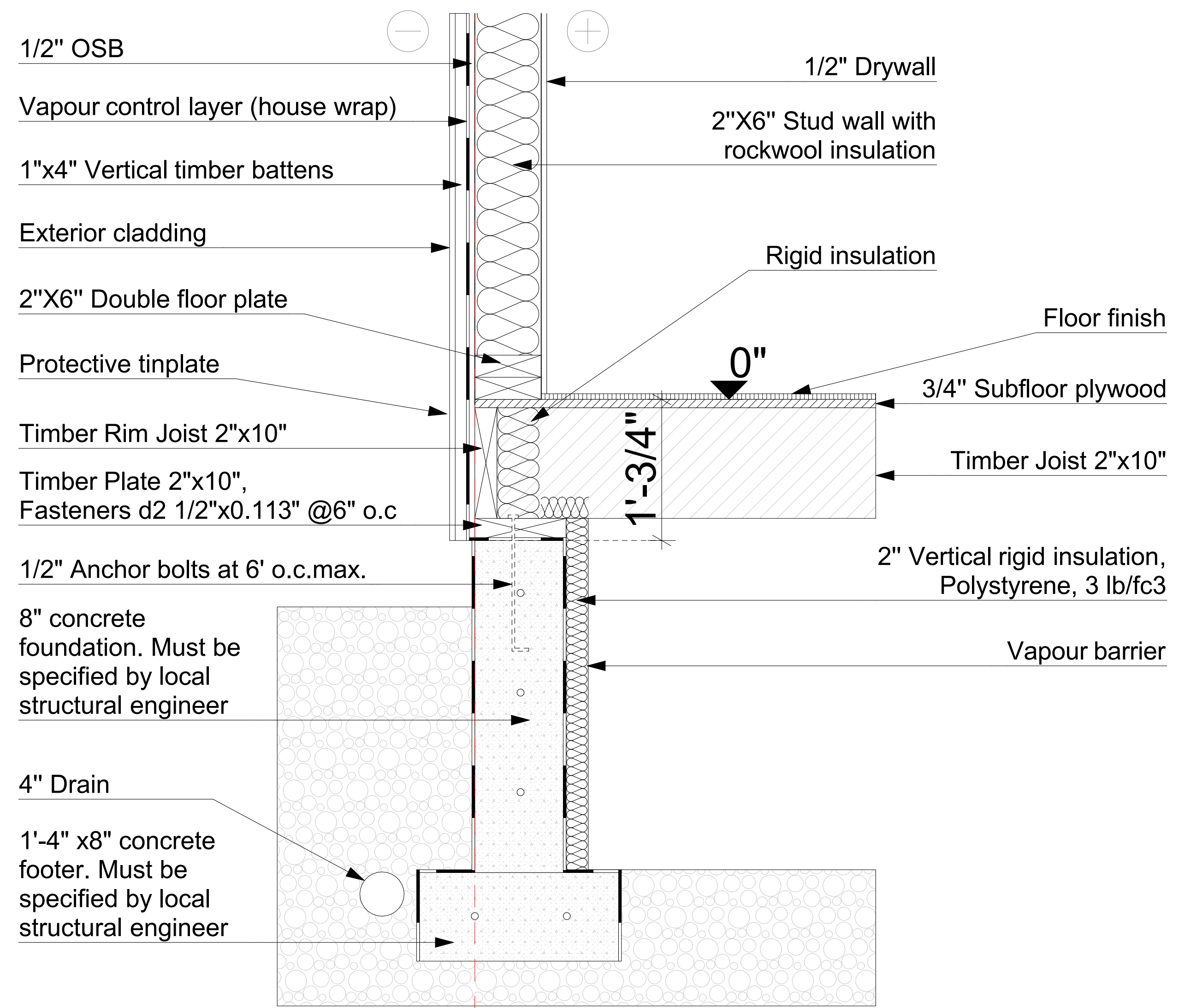
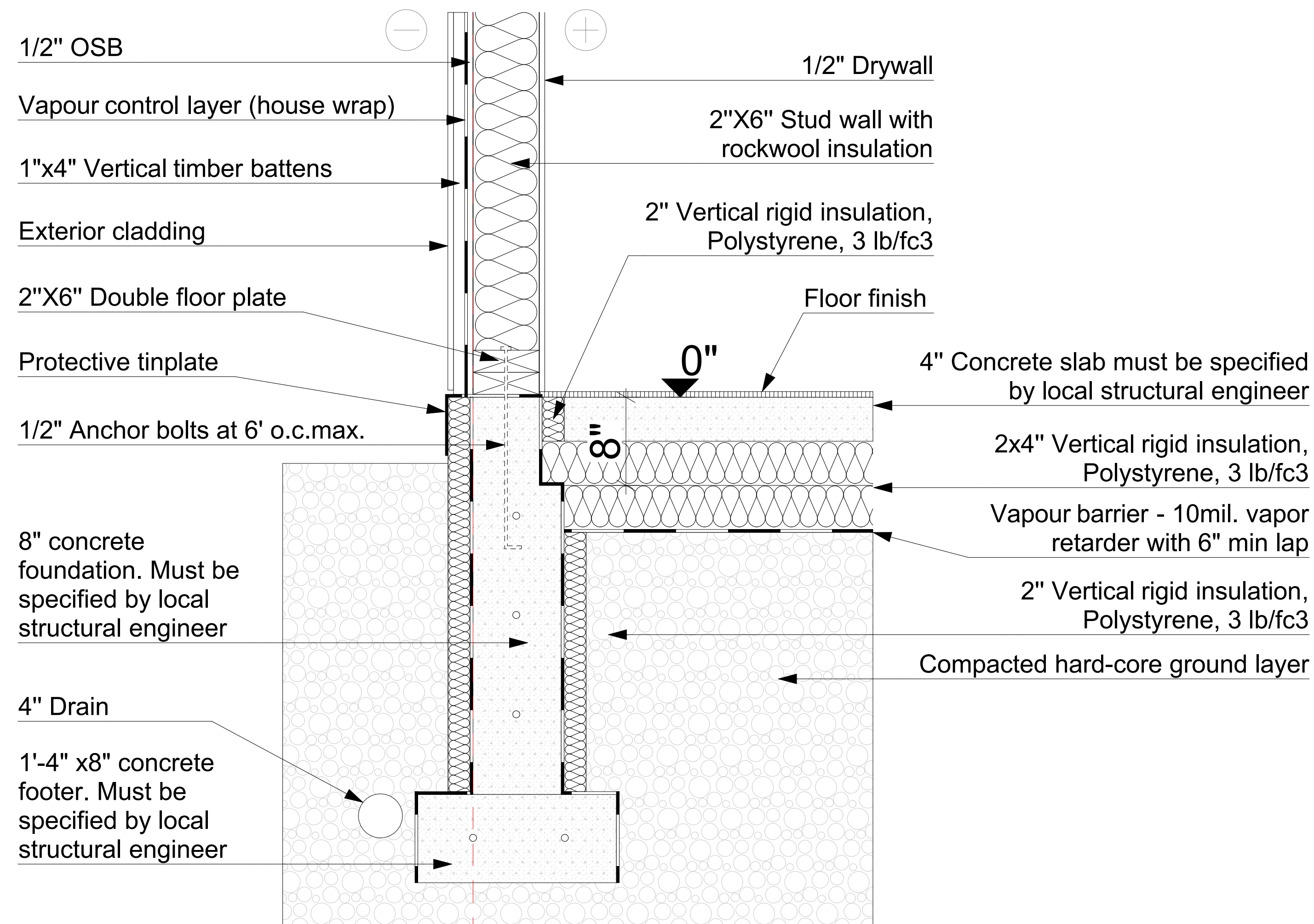
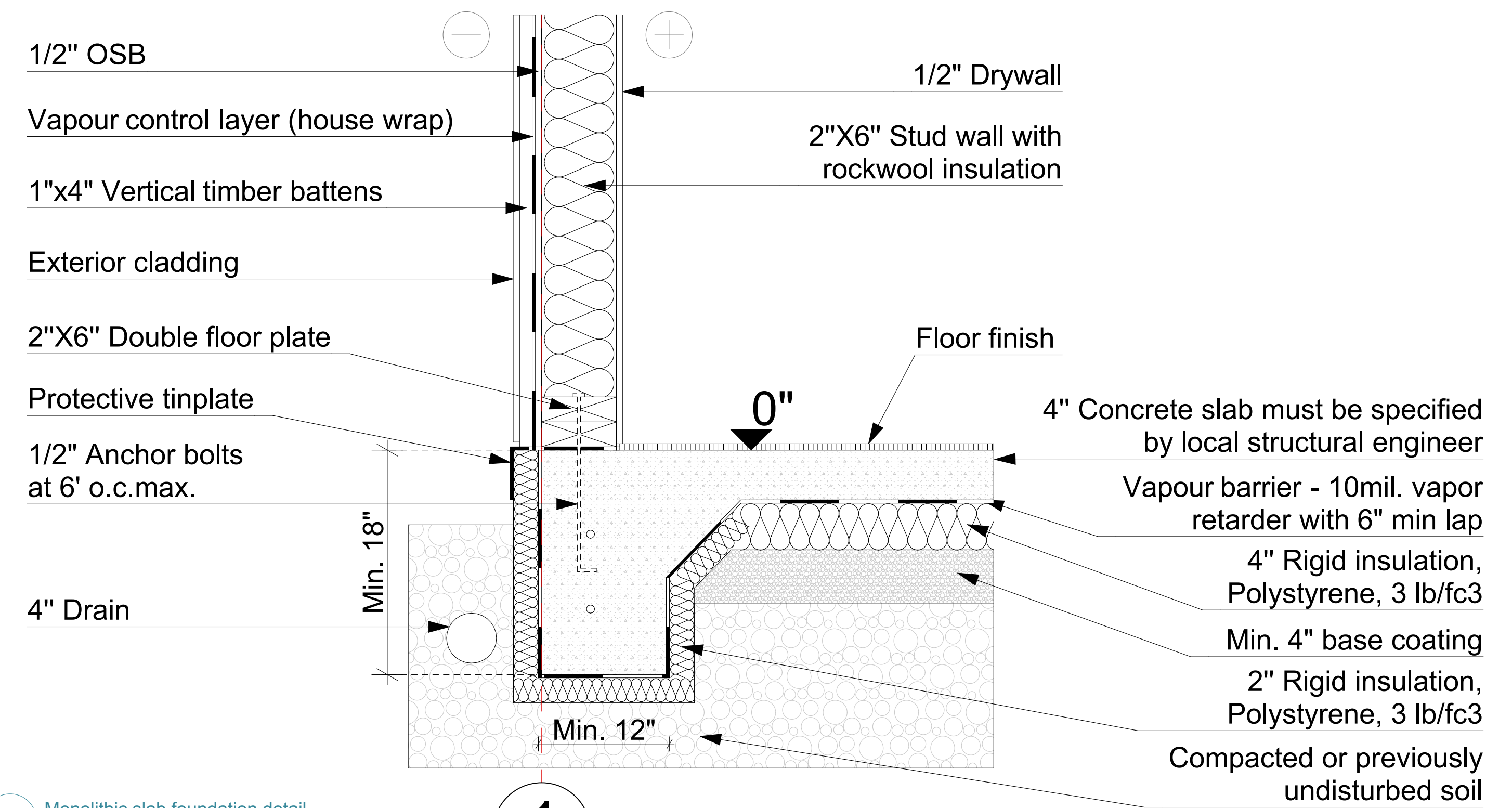
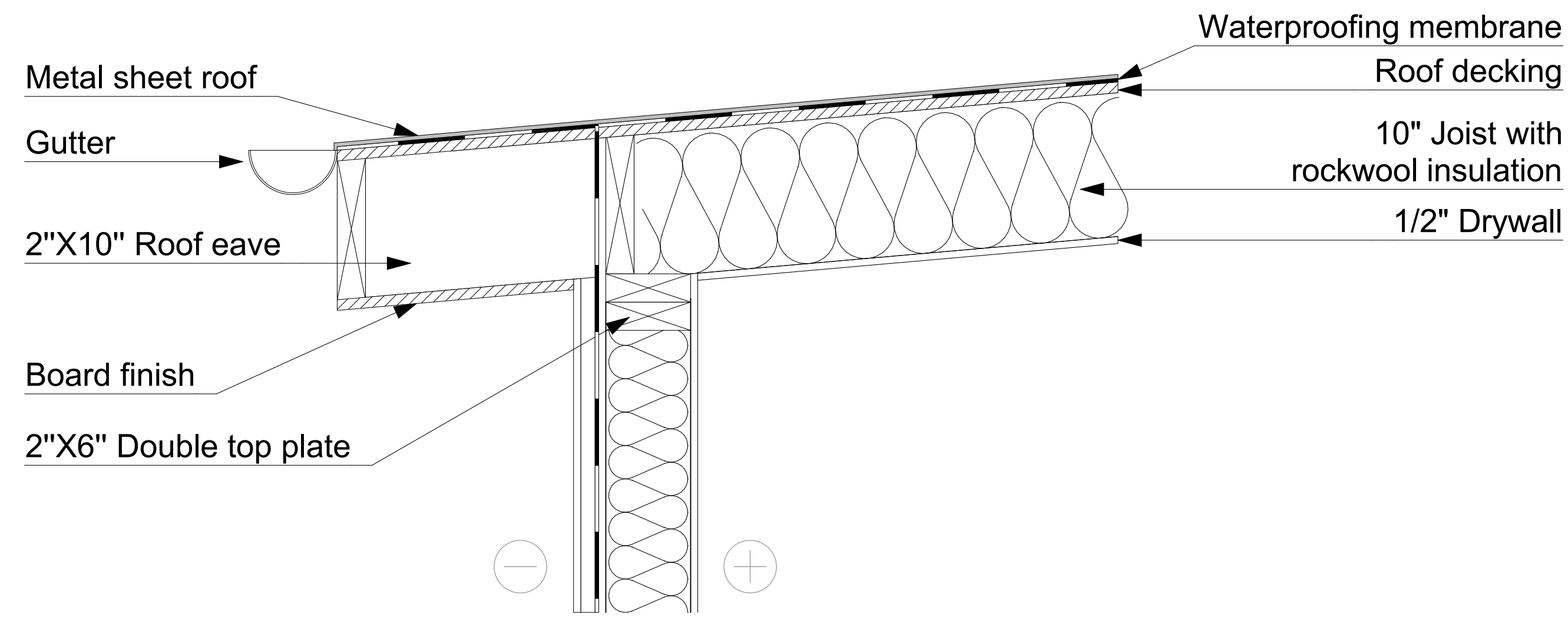
Layout ID

15

Date

2/21/2022

Revision



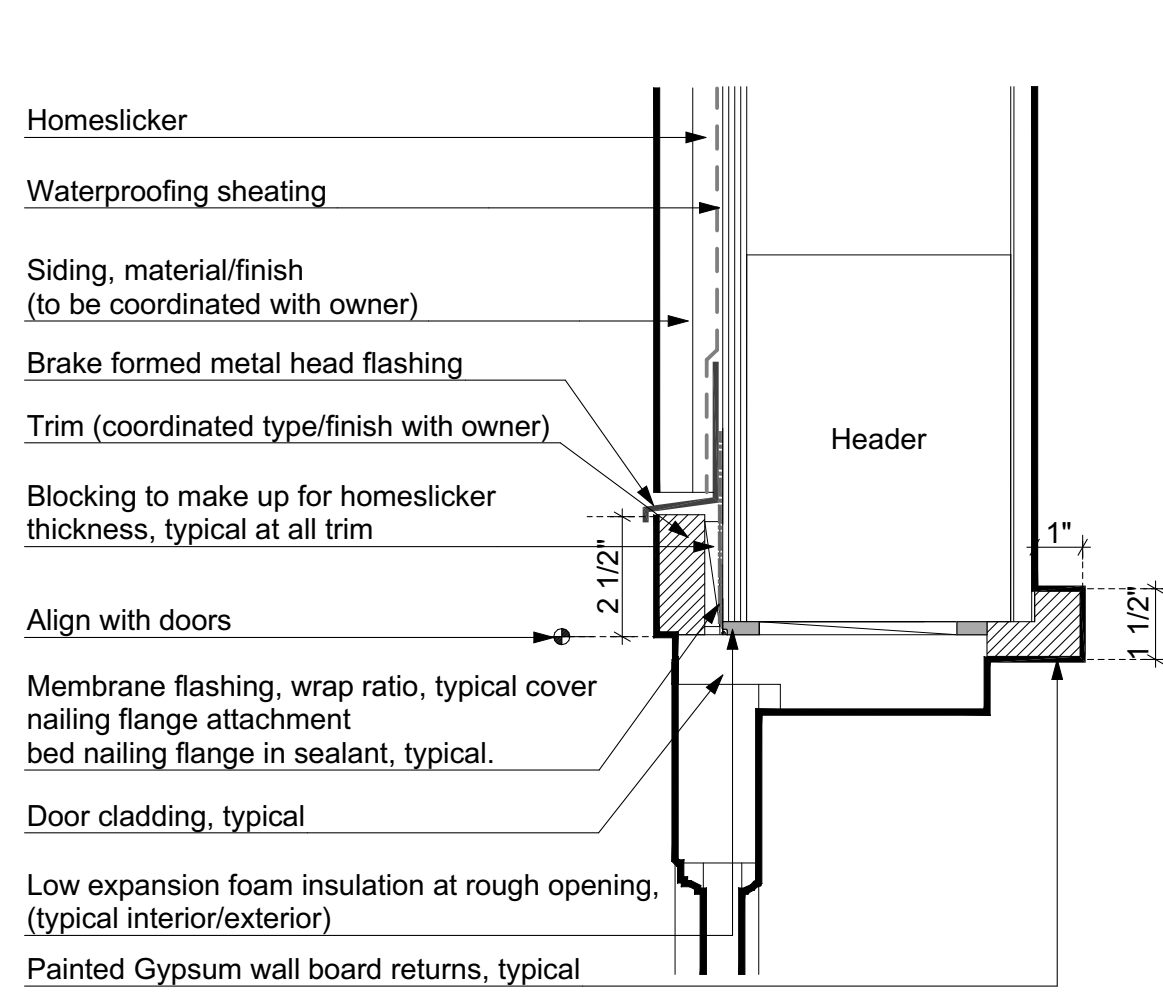
NOTES

All house structural elements must be specified and approved by local structural engineer of a location where this house is built.

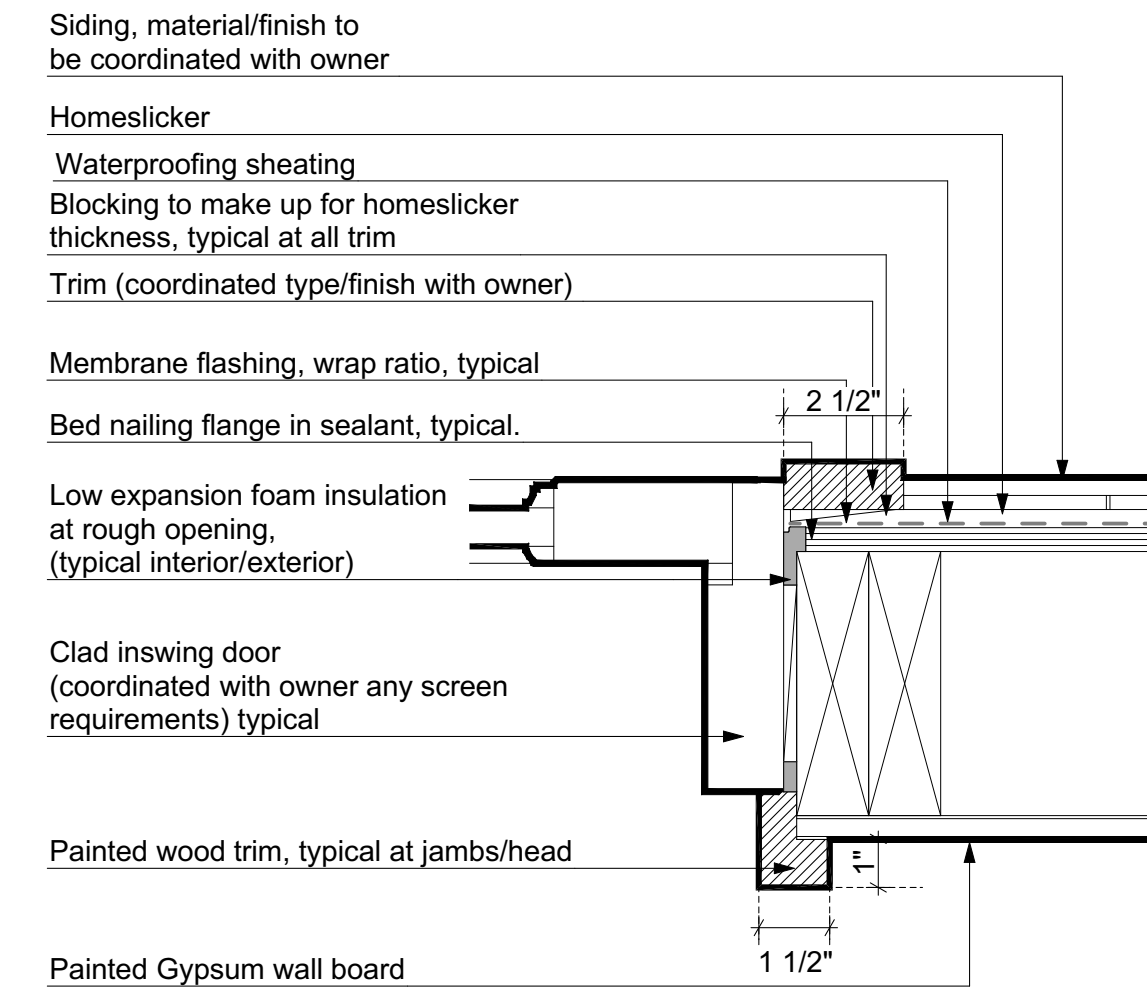
Reinforcement ratio:
Footings: (6'20"12")0.668(0.00045+13.08'2"0.668(0.00045)(1.67'20"12)0.037=(0.003+0.008)0.103=0.11 ton/cu by
Stem Wall: (1'20"12")0.668(0.00045+3.48'2"0.668(0.00045)(2.28'20"12)0.037=(0.004+0.002)0.141=0.04 ton/cu by

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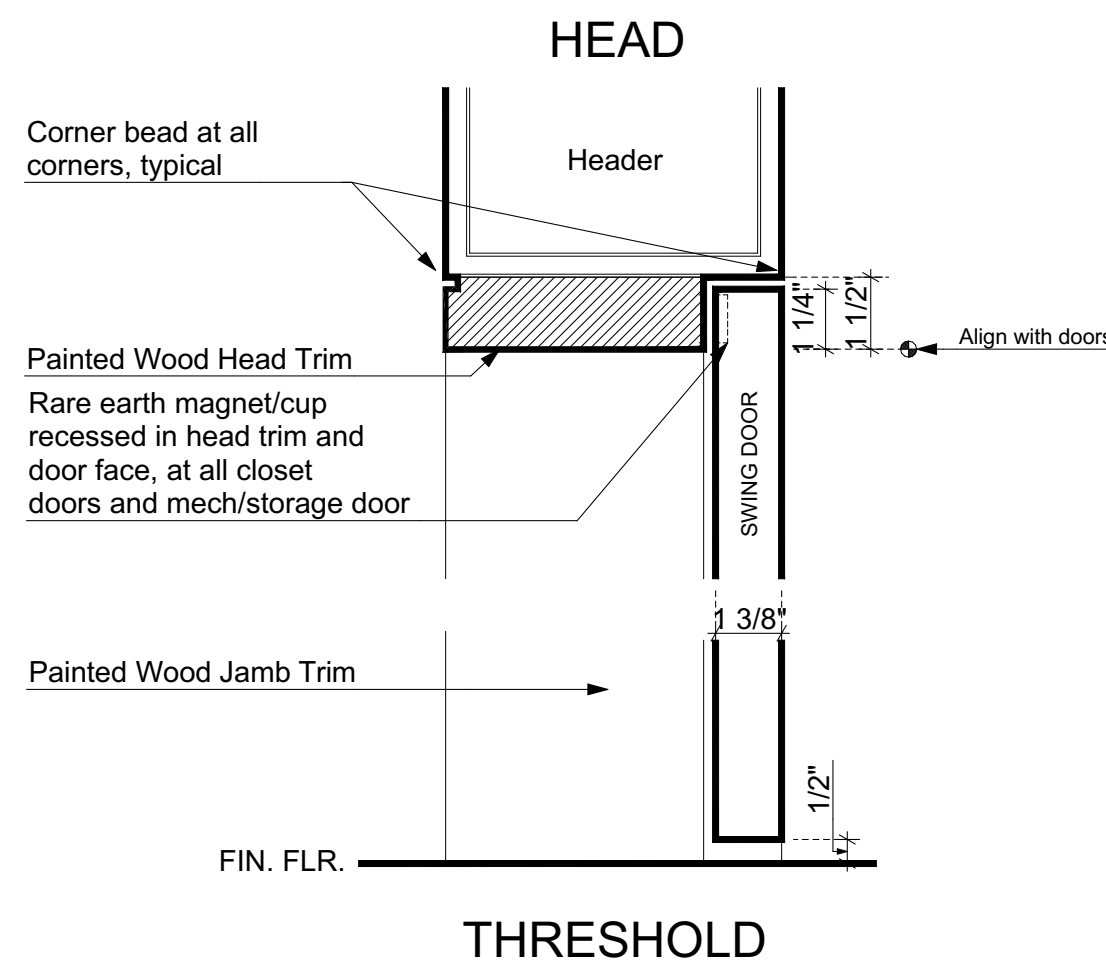
Company Title	TRUOBA
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Project Title	Truoba Mini 419
Drawing Name	Construction Details
Drawing Scale	1 1/2" = 1'-0"
Sheet Size	ARCH-D
Layout ID	16
Date	2/21/2022
Revision	



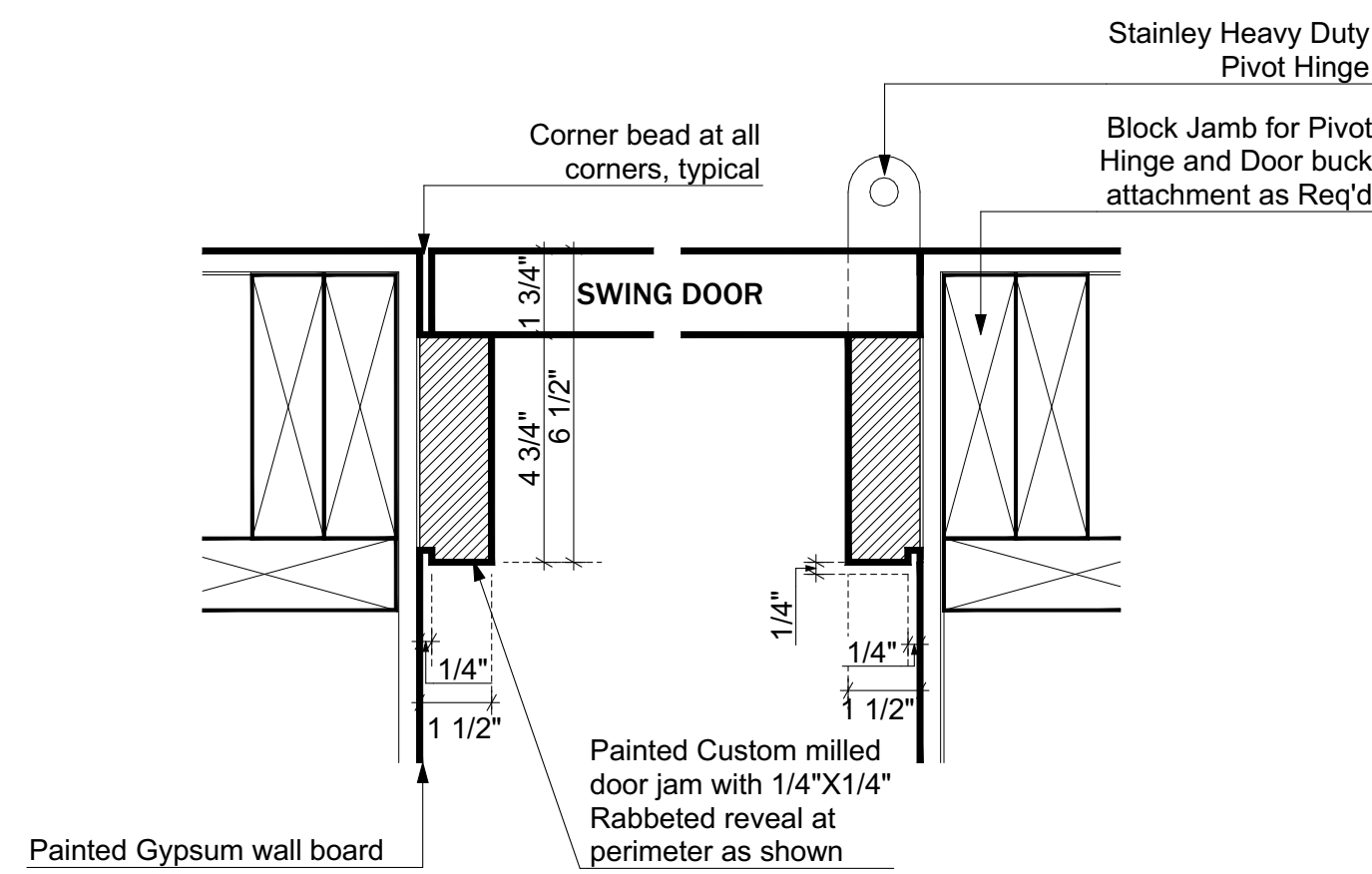
01 Typical exterior swing door header detail



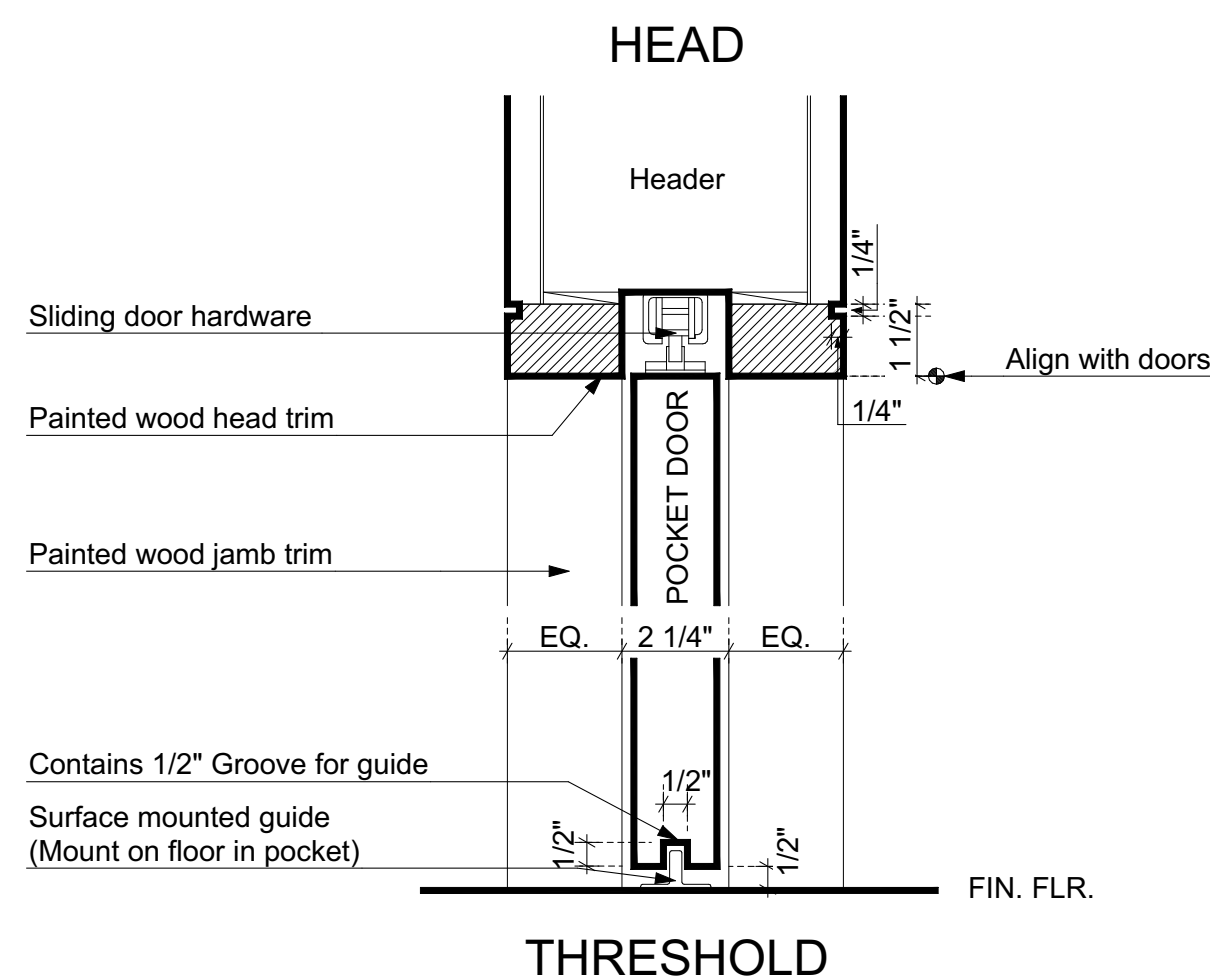
02 Typical exterior swing door jamb detail



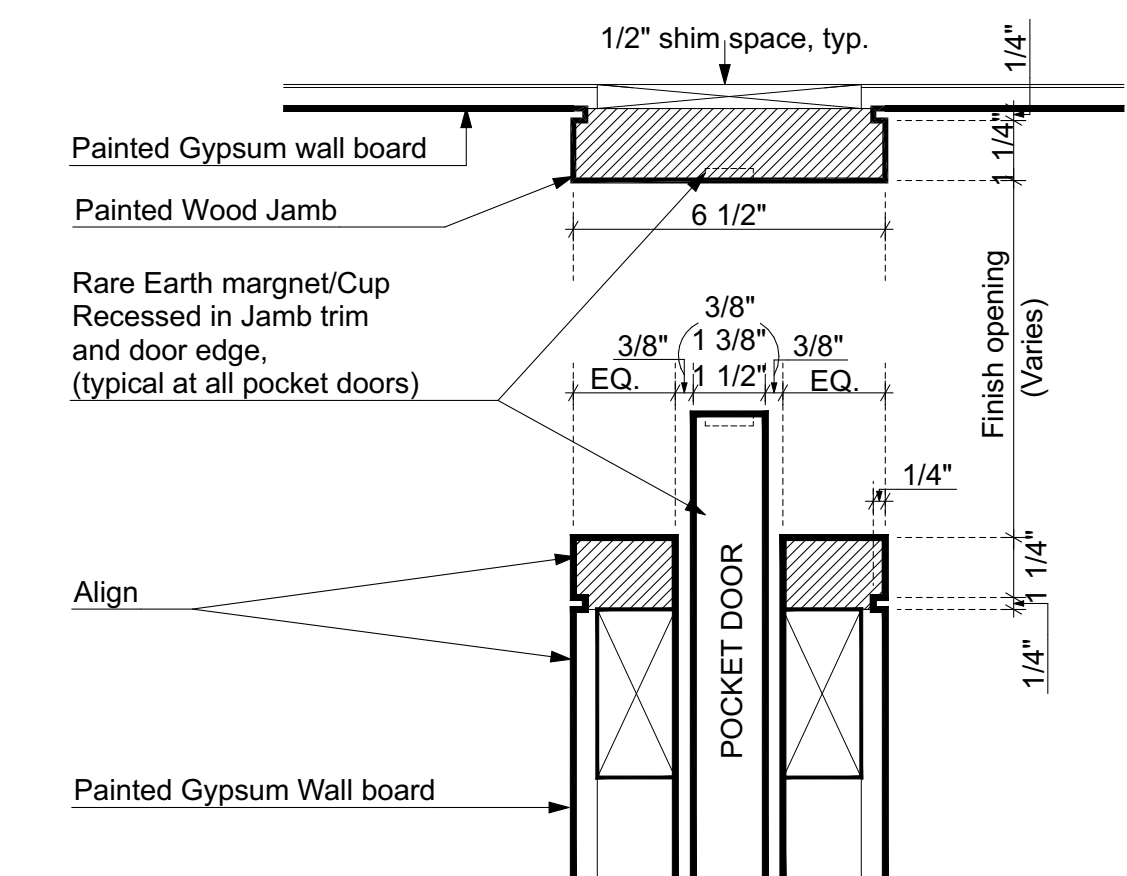
03 Typical interior swing door detail



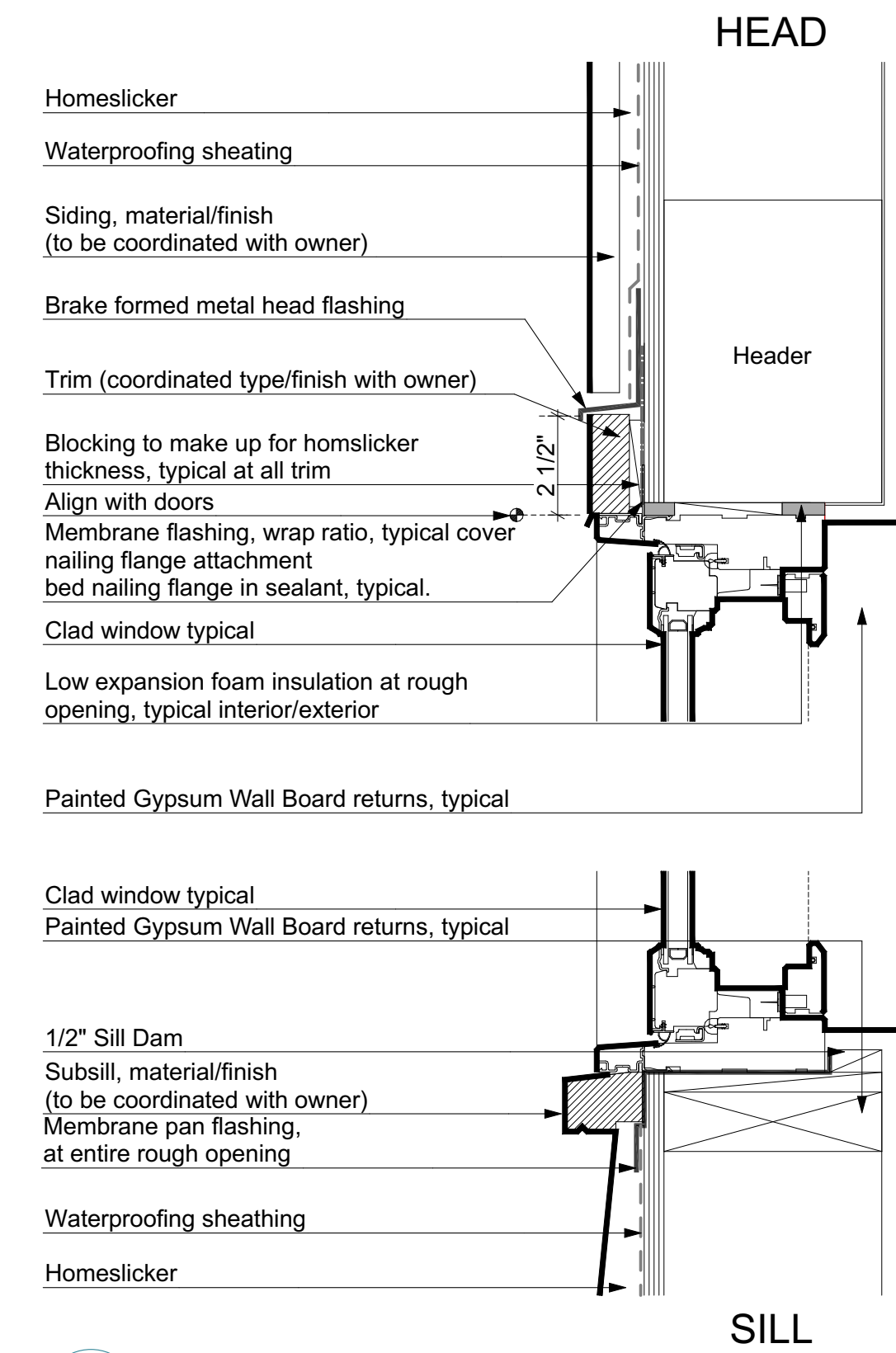
04 Typical interior swing door jamb detail



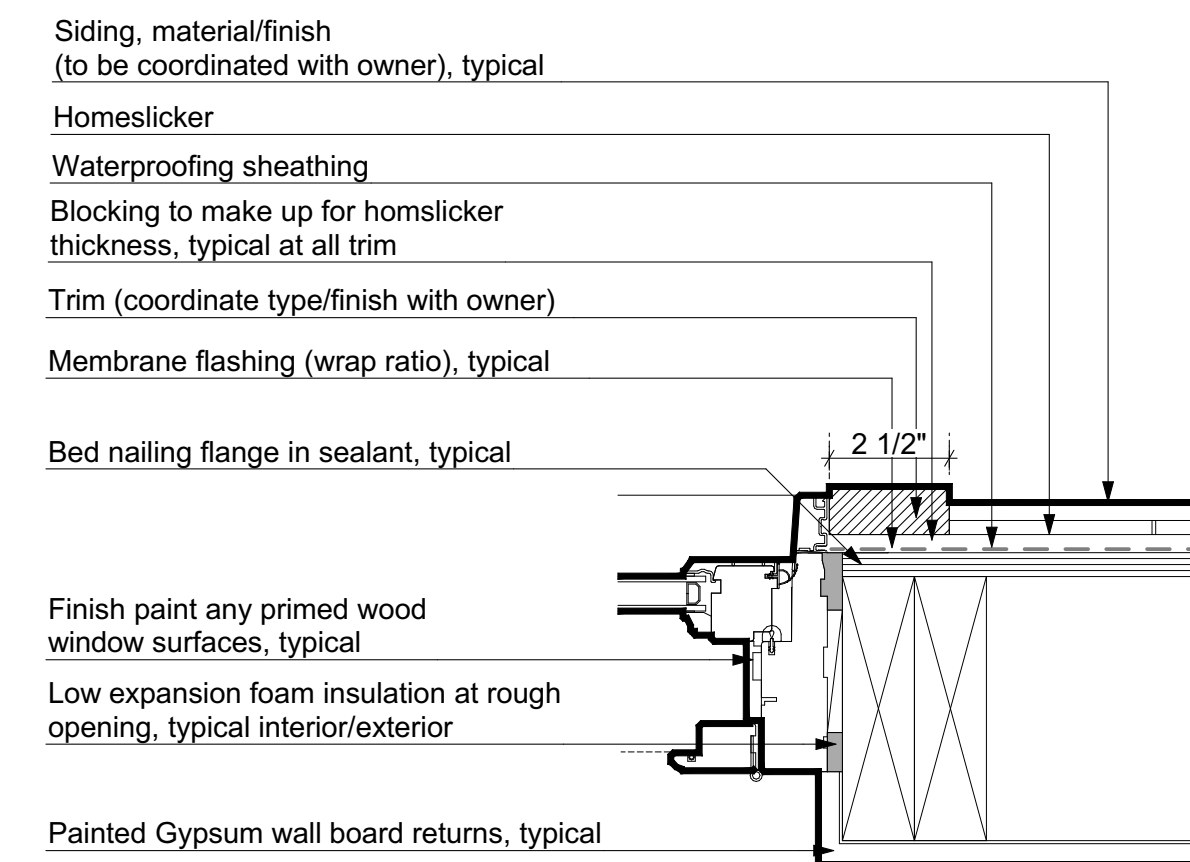
05 Typical interior pocket door detail



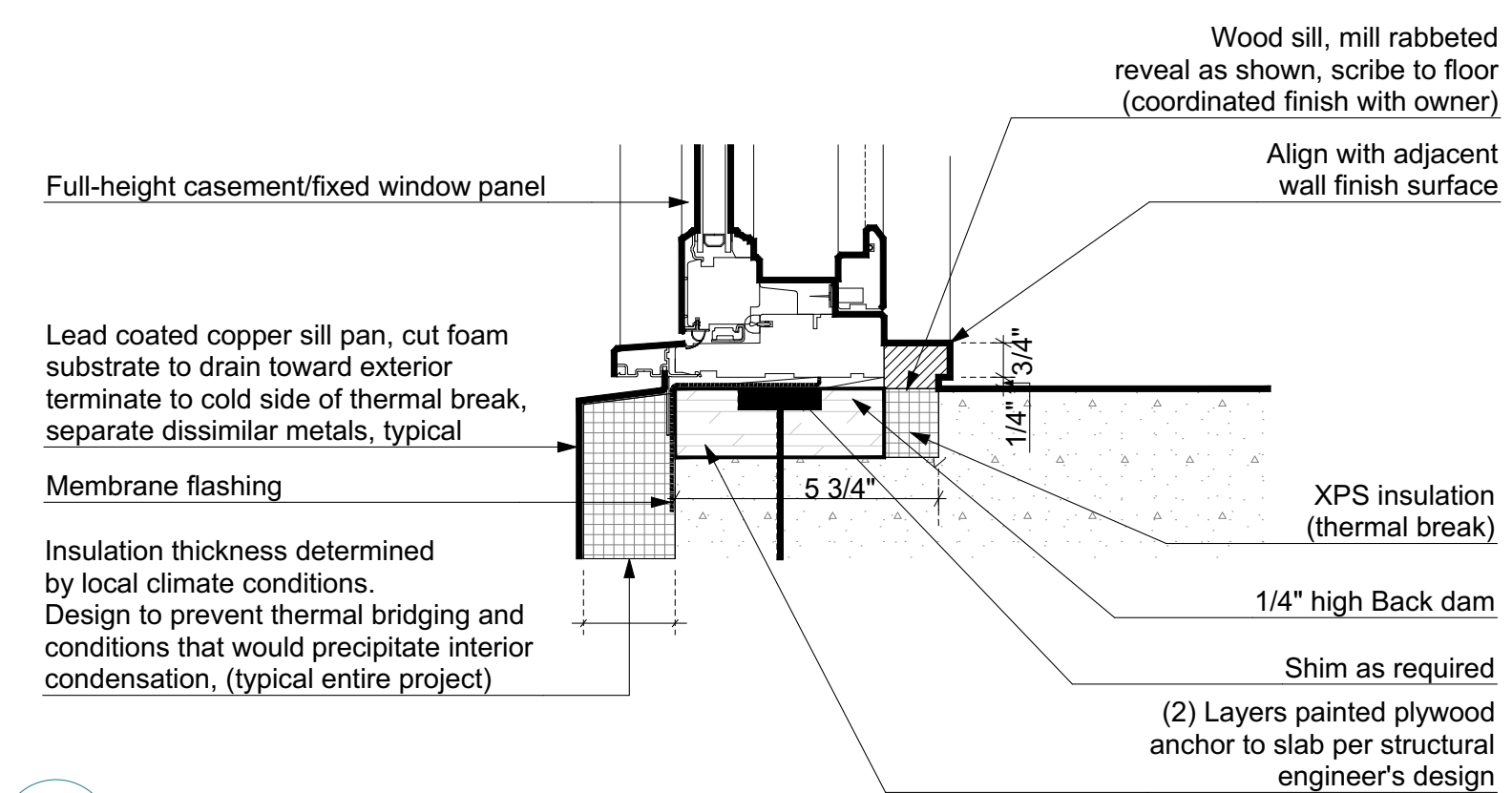
06 Typical interior pocket door jamb detail



07 Typical window detail



08 Typical window jamb detail



09 Floor window sill detail

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Project Title

Truoba Mini 419

Drawing Name

Door & Window Details

Drawing Scale

1 1/2"= 1'-0"

Sheet Size

ARCH-D

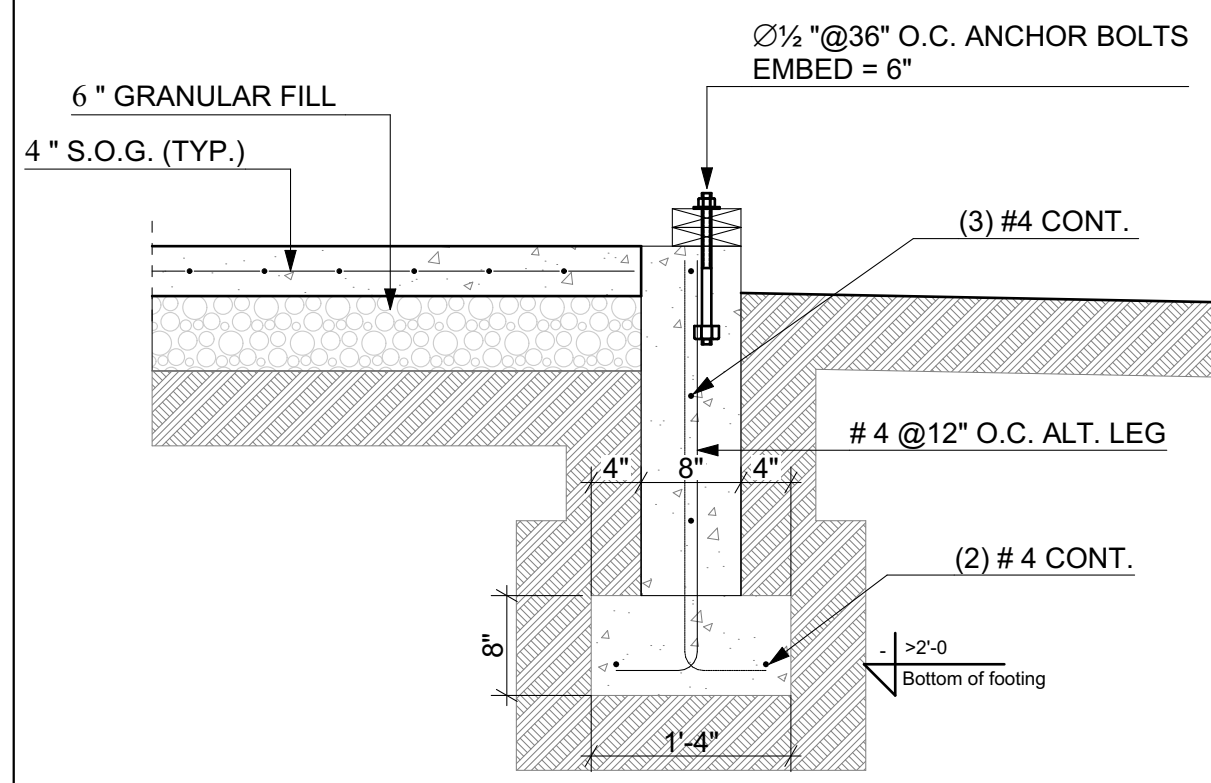
Layout ID

17

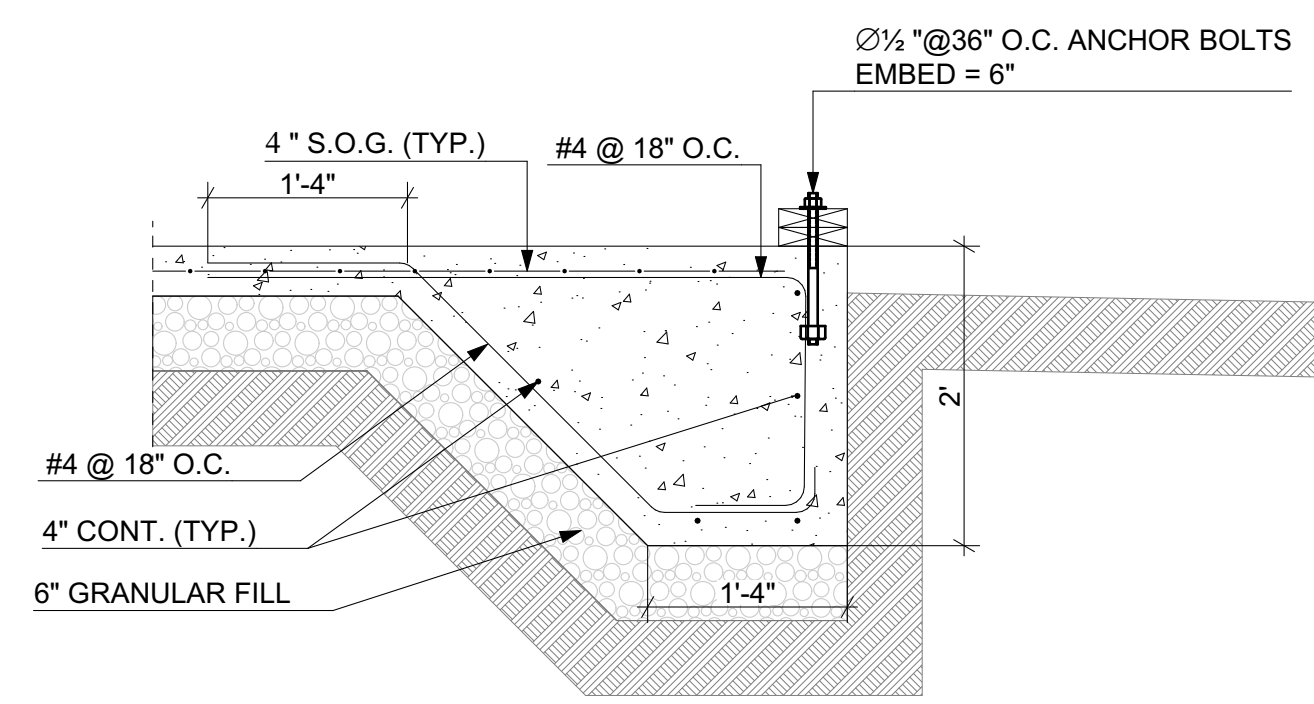
Date

2/21/2022

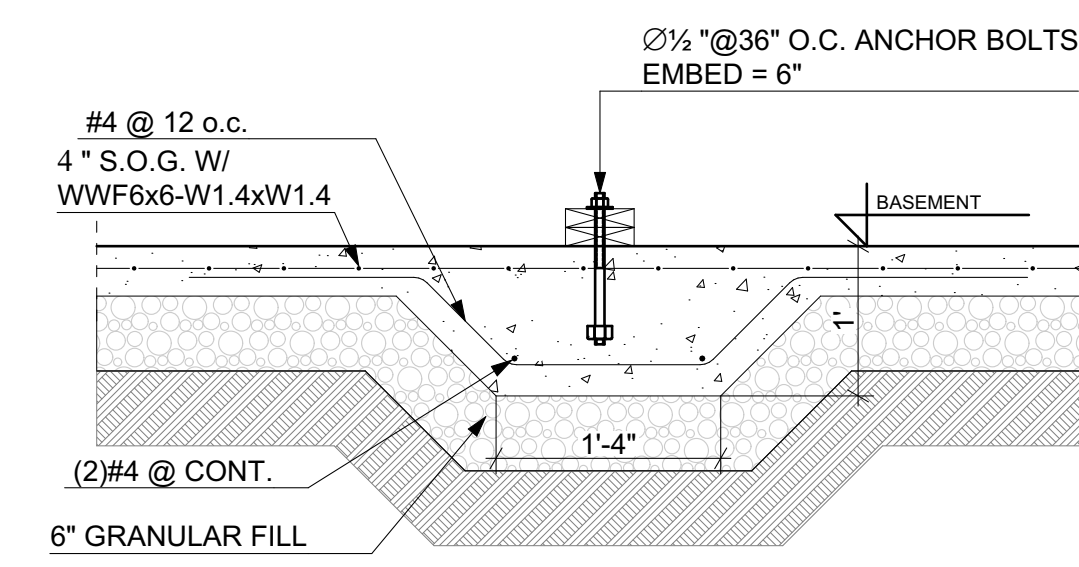
Revision



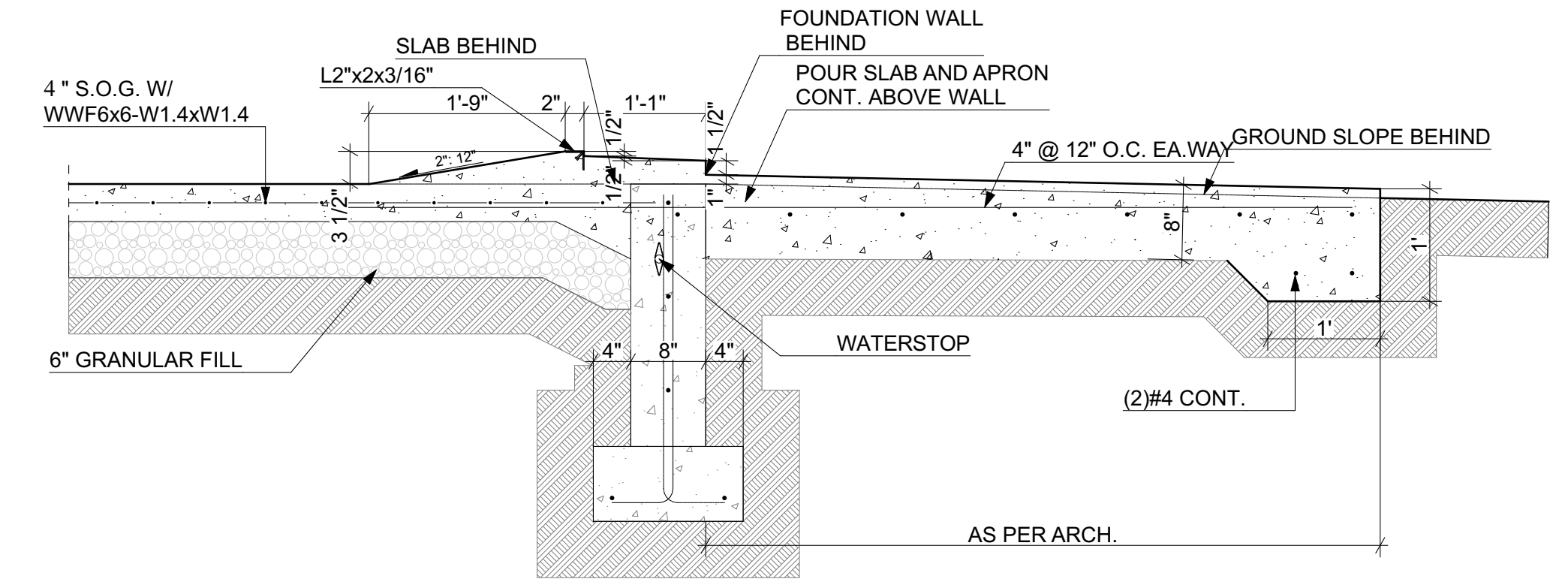
A FC.1 (DEEP) (TYPICAL)



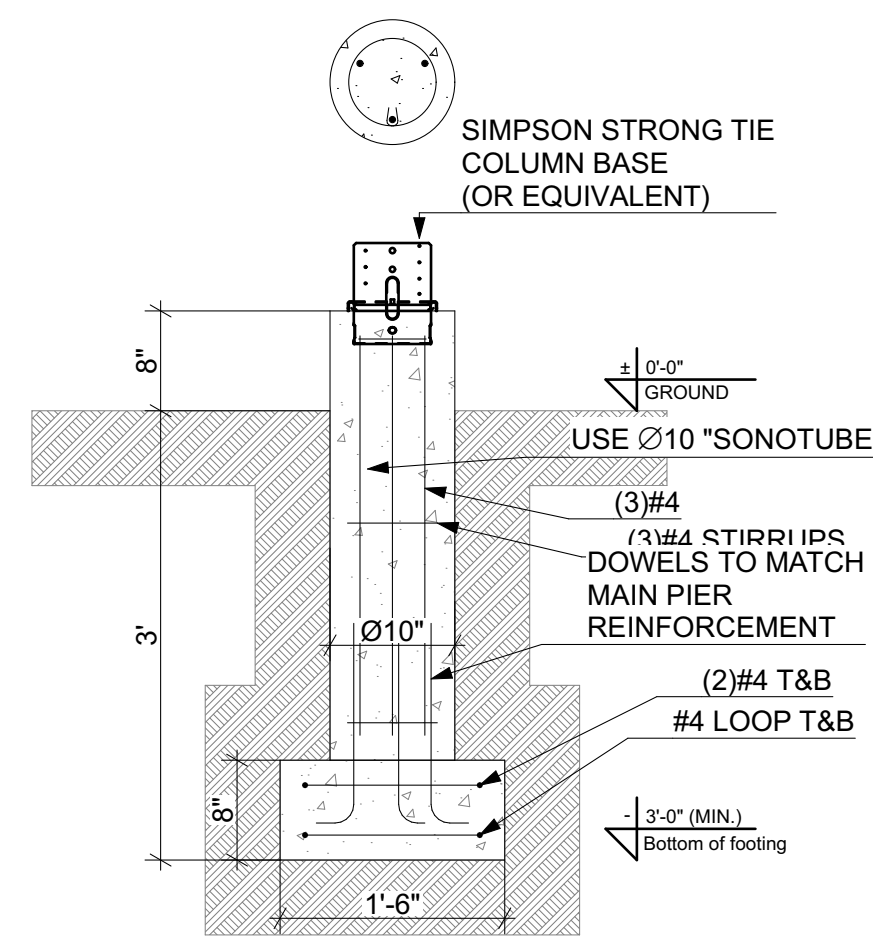
B FC.1 EXTERIOR (SHALLOW)



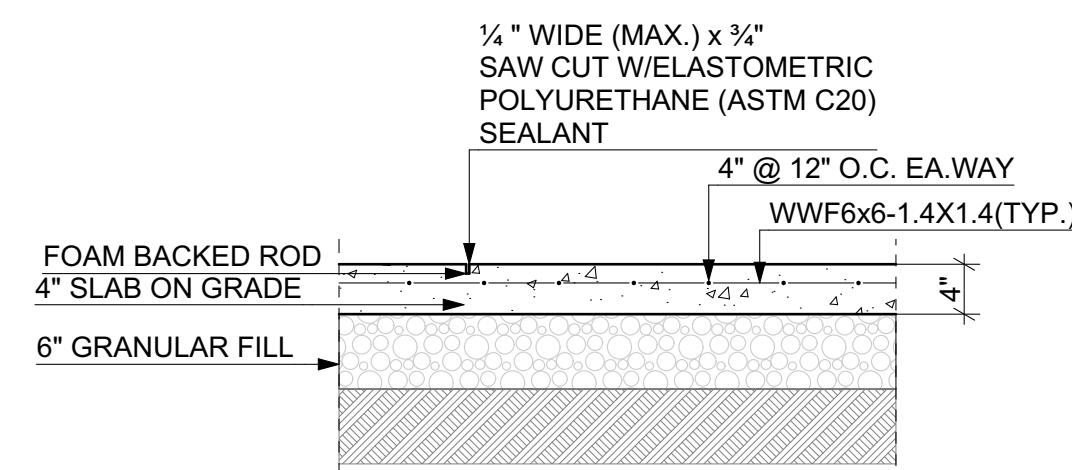
C FC.1 INTERIOR (SHALLOW) (TYPICAL)



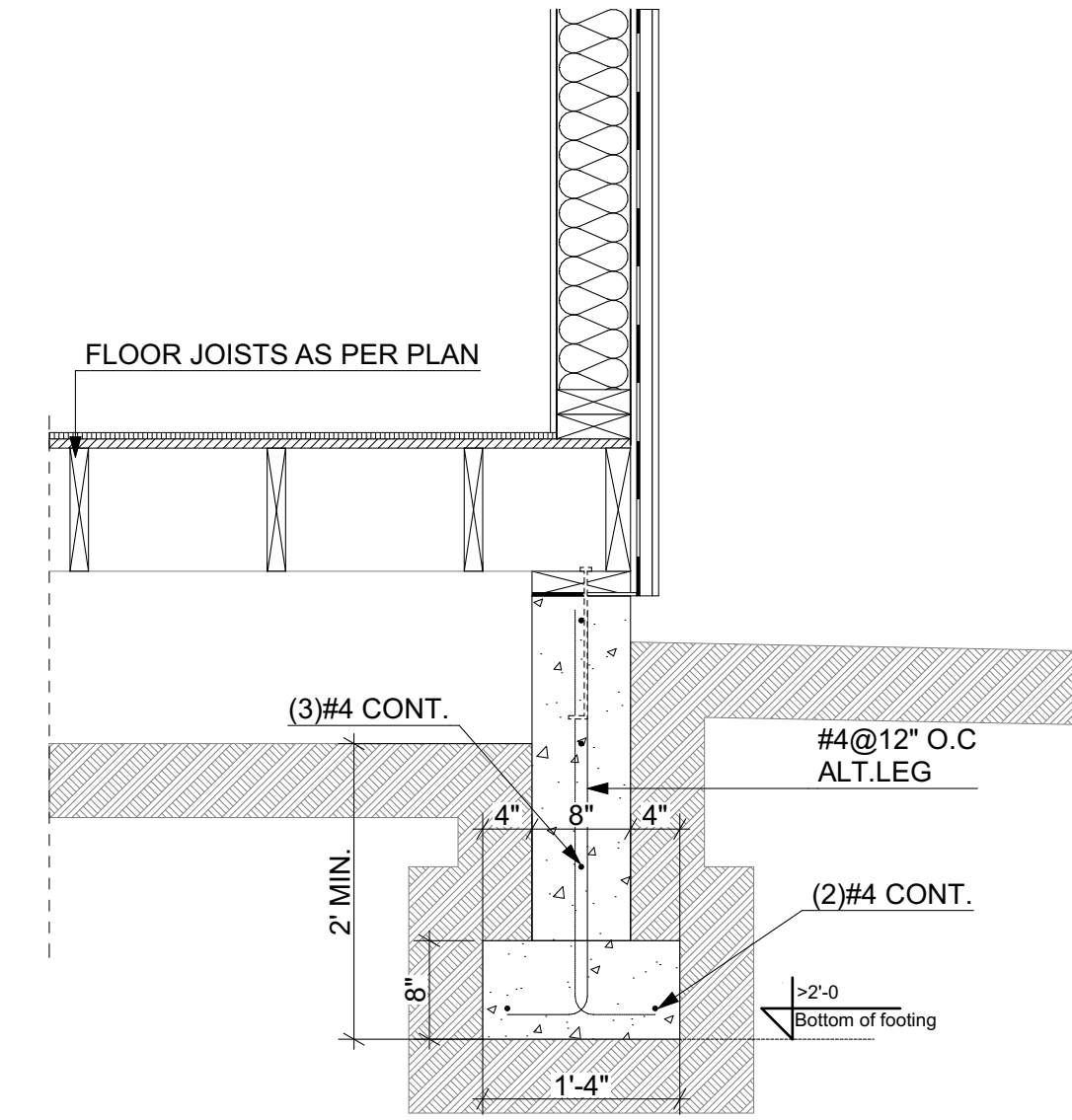
D OVERHEAD DOOR APPROACH (TYPICAL)



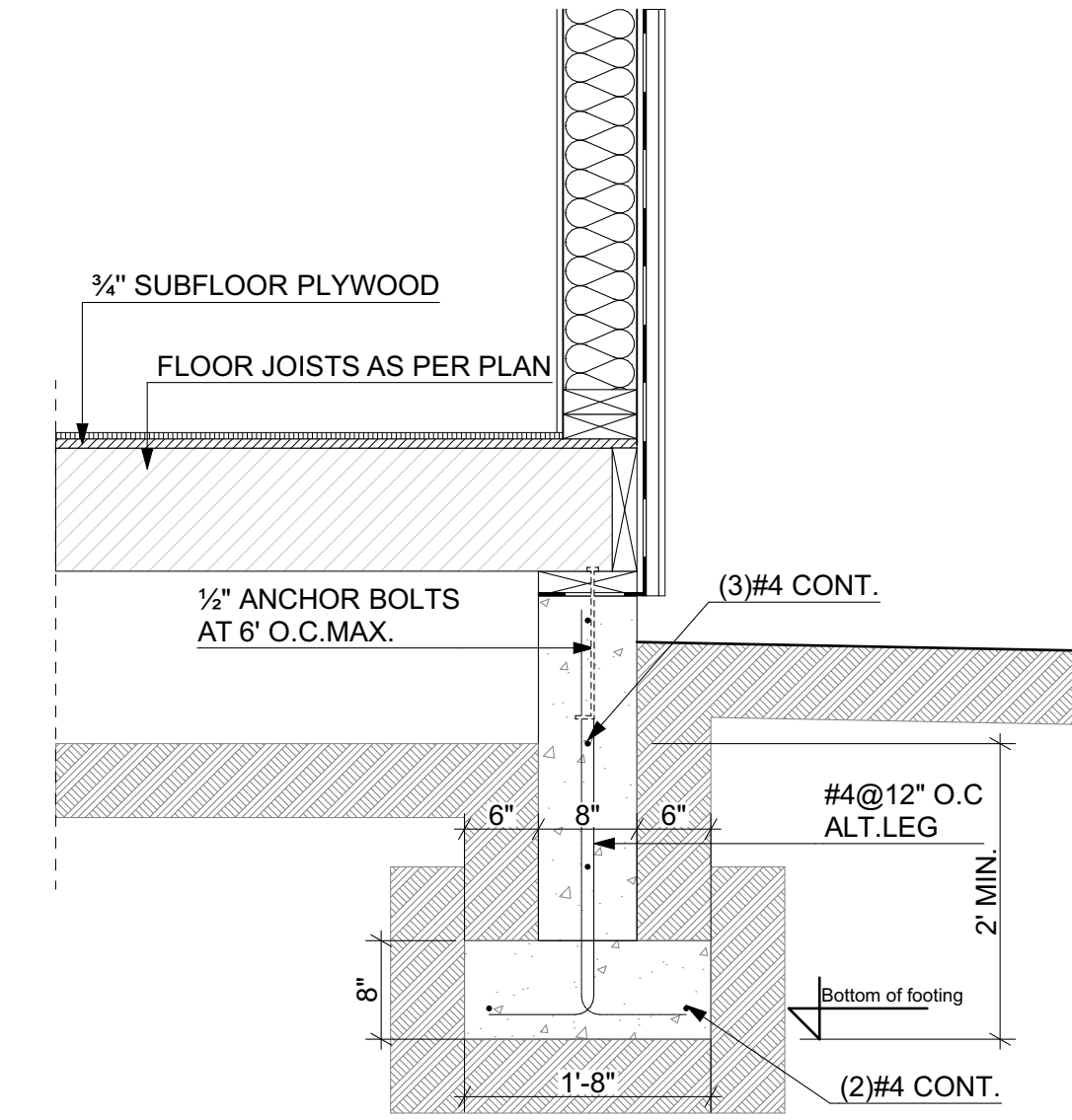
E PATIO FOUNDATION PIER (TYPICAL)



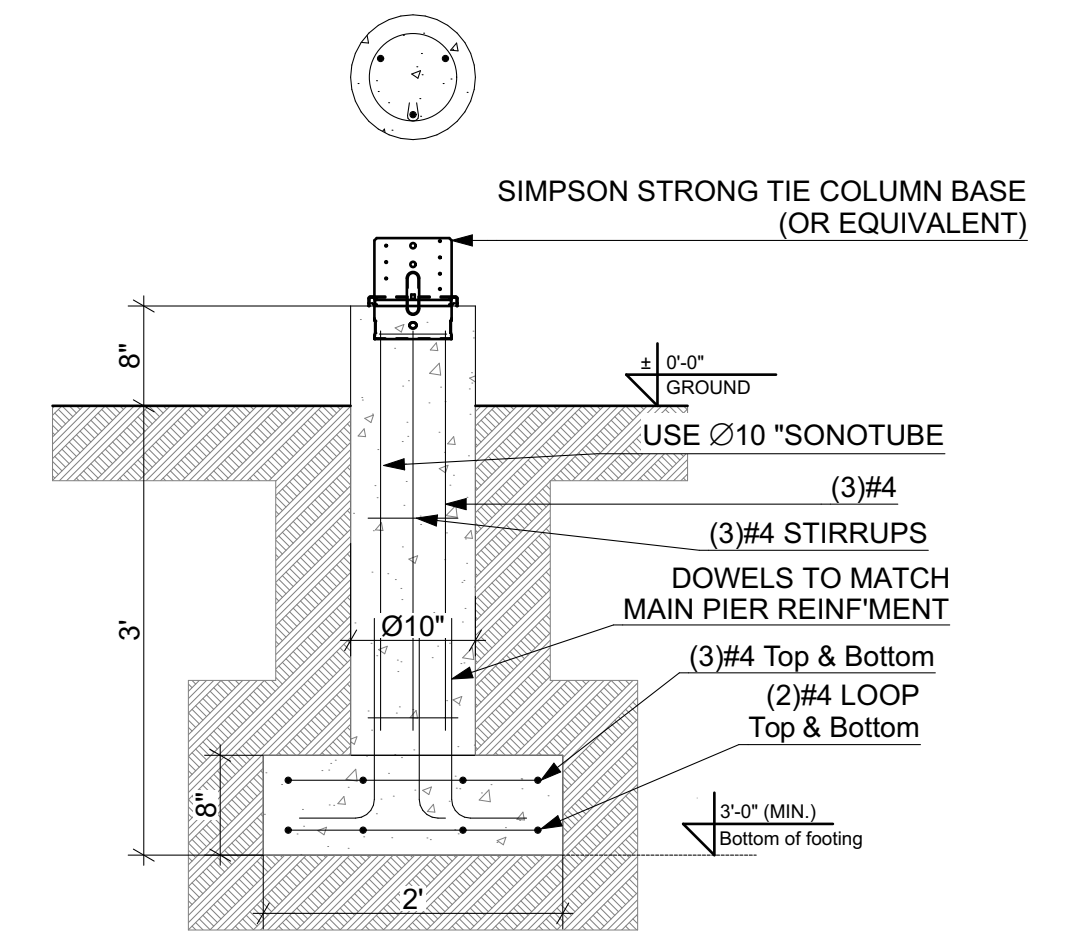
F S.O.G. SAW CUT (TYPICAL)



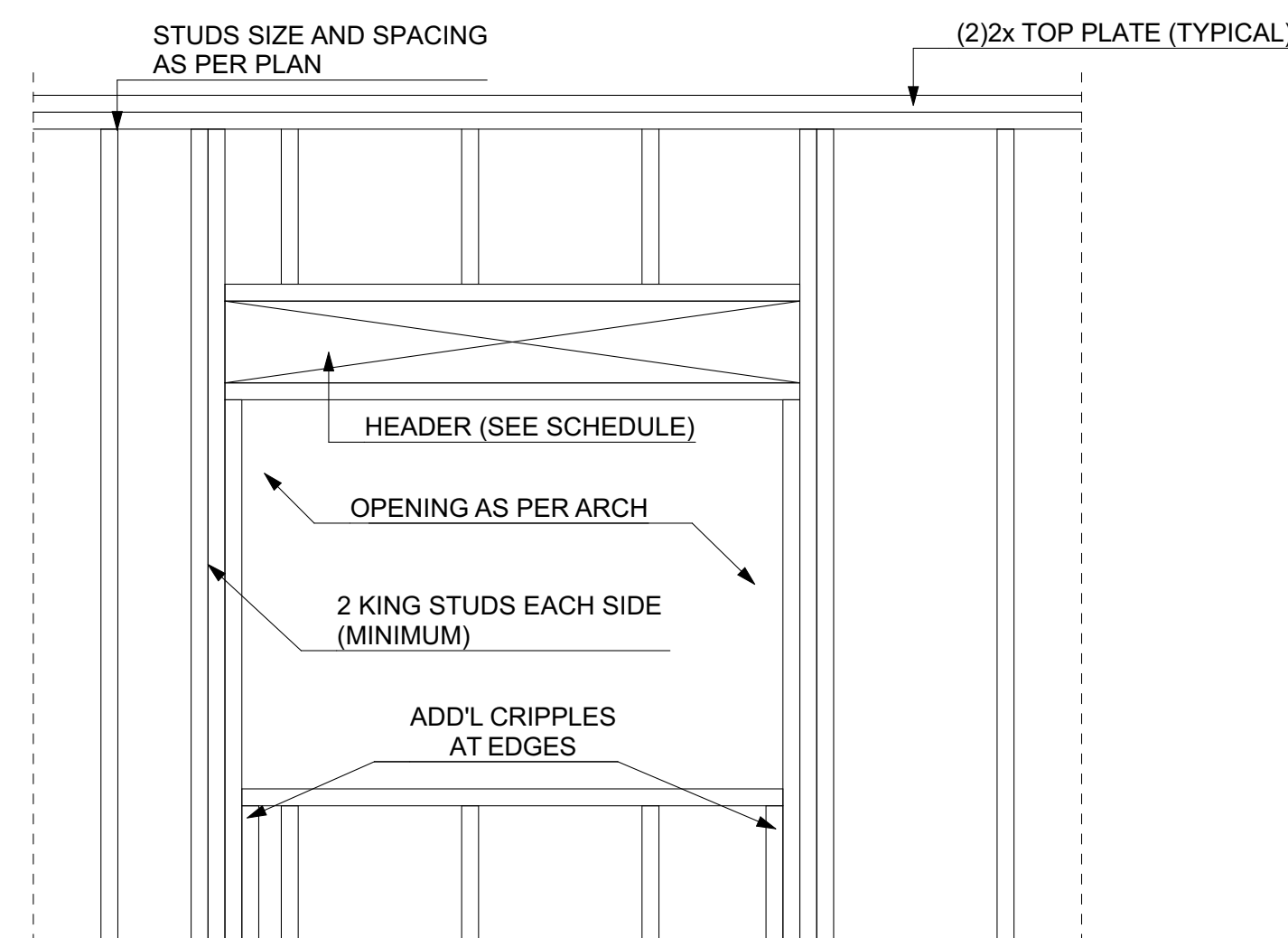
G FC.1 - CRAWLSPACE



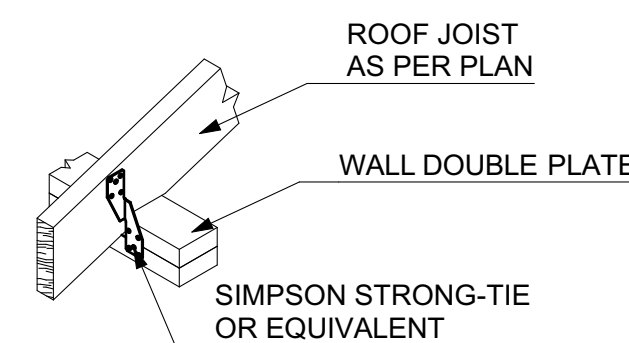
H FC.2 - CRAWLSPACE (TYPICAL)



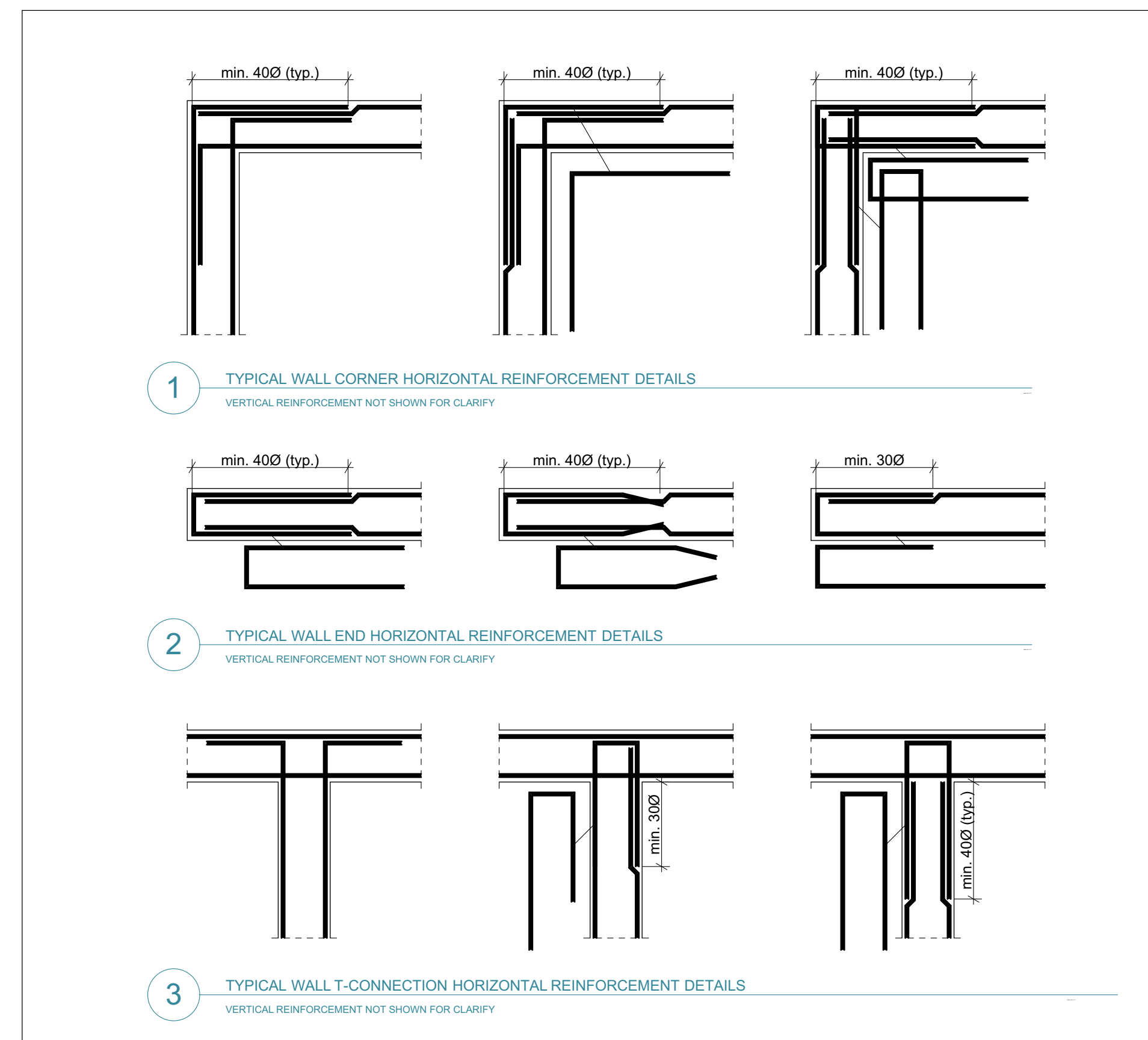
I PATIO FOUNDATION PIER - CRAWLSPACE (TYPICAL)



J WALL OPENING (TYPICAL)



K ROOF JOIST AT WALL (TYPICAL)



1 TYPICAL WALL CORNER HORIZONTAL REINFORCEMENT DETAILS
VERTICAL REINFORCEMENT NOT SHOWN FOR CLARITY

2 TYPICAL WALL END HORIZONTAL REINFORCEMENT DETAILS
VERTICAL REINFORCEMENT NOT SHOWN FOR CLARITY

3 TYPICAL WALL T-CONNECTION HORIZONTAL REINFORCEMENT DETAILS
VERTICAL REINFORCEMENT NOT SHOWN FOR CLARITY

NOTES
All house structural elements must be specified and approved by local structural engineer of a location where this house is built.
Reinforcement ratio:
Footings: (6'20"12"0.668"0.00045+13.08"2"0.668"0.00045)/(1.67"20"12)0.037=(0.003+0.008)0.103=0.111 ton/cuby
Stem Wall: (7'20"12"0.668"0.00045+3.48"2"0.668"0.00045)/(2.28"20"12)0.037=(0.004+0.002)0.141=0.04 ton/cuby

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Project Title

Truoba Mini 419

Drawing Name

Structural Details

Drawing Scale

1 1/2"= 1'-0"

Sheet Size

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18

Date

2/21/2022

Revision

GENERAL NOTES

- ALL WORK TO CONFORM TO THE REGULATIONS AND REQUIREMENTS OF THE STATE/LOCAL BUILDING CODE, CODES CALLED HEREIN, FIRE DEPARTMENT REGULATIONS, UTILITY COMPANY REGULATIONS, AND BEST TRADE PRACTICE.
- THE CONTRACTOR SHALL MAINTAIN SUITABLE WORKMAN'S COMPENSATION INSURANCE FOR HIS EMPLOYEES EMPLOYED AT THE SITE OF THE PROJECT AND SHALL REQUIRE ALL SUBCONTRACTORS TO PROVIDE SIMILAR INSURANCE.
- BEFORE COMMENCING THE WORK, THE CONTRACTOR SHALL FILE ALL THE REQUIRED INSURANCE CERTIFICATES WITH THE DEPARTMENT OF BUILDINGS, OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED BY THE APPROPRIATE CITY AGENCIES.
- THE CONTRACTOR SHALL VERIFY, BEFORE ORDERING MATERIAL AND COMMENCING WORK, ALL EXISTING DIMENSIONS AND CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER.
- SUBMIT SHOP DRAWINGS FOR ALL STEEL, METAL, AND CONCRETE WORK FOR APPROVAL BY THIS ENGINEER. SHOP DRAWINGS SHALL REFLECT FIELD CONDITIONS.
- THE CONTRACTOR AGREES, BY ASSUMING THE RESPONSIBILITY FOR PERFORMING THE SPECIFIED CONSTRUCTION SHOWN IN THIS DRAWING, TO INDEMNIFY AND SAVE HARMLESS THE OWNER AND THE ENGINEER AGAINST ANY AND ALL CLAIMS AND DEMANDS FOR DAMAGE TO THE PROPERTY OF ANY PERSON OR INDIVIDUAL OR FOR PERSONAL INJURIES (INCLUDING DEATH) ARISING OUT OF, OR SUFFERED WHILE ENGAGED IN, OR CAUSED IN WHOLE OR IN PART, BY THE EXECUTION OF THE WORK; HE SHALL WELL AND TRULY DEFEND THE OWNER AND THE ENGINEER AND PAY ALL MONEYS AWARDED FOR SUCH ENGINEER AND PAY ALL MONEYS AWARDED FOR SUCH DAMAGES OF INJURIES (INCLUDING DEATH) AS MAY BE SUSTAINED, ALL COSTS INCLUDING ATTORNEY'S FEES AND SHALL OBTAIN A FULL QUITTANCE AND RELEASE IN FAVOR OF THE OWNER AND THE ENGINEER, UNLESS SUCH LIABILITY RESULTS SOLELY FROM THE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
- ADEQUATE TEMPORARY BRACING, SUPPORTS, SHORING AND SCAFFOLDING SHALL BE PROVIDED DURING CONSTRUCTION AND UNTIL ALL NEW CONSTRUCTION ELEMENTS ACHIEVE THEIR REQUIRED STRENGTH.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A QUALIFIED INSPECTOR TO INSPECT ALL STEEL WORK AND ATTEST TO IT'S COMPLIANCE WITH CODE AND DESIGN REQUIREMENTS. SUBMIT ALL REQUIRED INSPECTION FORMS.

STRUCTURAL NOTES

- ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE/LOCAL BUILDING CODE, CODES CALLED HEREIN, AND ALL RELATED CODES.
- COORDINATE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL AND M/E/P DRAWINGS.
- EXISTING CONDITIONS, ELEVATORS, DIMENSIONS AND SYSTEMS SHOWN ON PLANS ARE BASED ON LIMITED FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD-VERIFY ALL DETAILS, DIMENSIONS AND ASSUMPTIONS PRIOR TO ANY WORK. WHERE EXISTING CONDITIONS DIFFER FROM OR PRECLUDE THE EXECUTION OF THE OUTLINED DETAILS, THE ENGINEER SHALL BE NOTIFIED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FINAL FIELD-VERIFIED DIMENSIONS AND SHALL SUBMIT FIELD-VERIFIED DIMENSIONED SHOP DRAWINGS.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING AND BRACING REQUIRED FOR PLUMBNESS, STABILITY AND SAFETY WHENEVER REQUIRED TO SUPPORT LOADS AS MAY BE IMPOSED UPON THE STRUCTURE DURING CONSTRUCTION. BRACING AND SHORING SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND HIS/HER PROFESSIONAL ENGINEER. STAGING AND SEQUENCE OF SHORING, BRACING OR OTHER CONSTRUCTION REQUIRED FOR SUCH WORK SHALL BE PREPARED IN THE FORM OF SHOP OR DETAIL DRAWINGS AND CALCULATIONS.
- DO NOT FABRICATE ANY WORK WITHOUT APPROVED STRUCTURAL SHOP DRAWINGS FOR ALL STRUCTURAL WORK, AND MECHANICAL/ARCHITECTURAL SHOP DRAWINGS RELATED TO THE STRUCTURAL WORK.
- CONTRACTOR TO PROTECT AT ALL TIMES EQUIPMENT, PIPES AND OTHER EXPOSED OR EMBEDDED ITEMS ON THE SITE AGAINST DAMAGE. REROUTE AS REQUIRED PER M/E/P DRAWINGS.

EXCAVATION AND FOUNDATION NOTES

- ALL MATERIAL, FABRICATION, INSTALLATION AND INSPECTION REQUIREMENTS RELATING TO THE FOUNDATIONS SHALL CONFORM TO APPROPRIATE CODES.
- ALL STRUCTURAL WORK SHALL BE COORDINATED AND VERIFIED WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.
- THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING ELEMENTS AS INDICATED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REMOVE, TRANSPORT AND DISPOSE OF ALL DEBRIS PROMPTLY.
- DEMOLITION SHALL BE DONE CAREFULLY. TAKE SPECIAL CARE NOT TO DAMAGE ANY EXISTING UNDERSLAB UTILITIES OR OTHER ELEMENTS NOT DESIGNATED FOR REMOVAL.
- THE CONTRACTOR SHALL PROTECT ALL EXCAVATIONS FROM FLOODING AND EXISTING WATER TABLE AND PROVIDE CONTINUOUS PUMPING AS REQUIRED FOR PERFORMANCE OF WORK. THE DEPTH OF EXCAVATION SHALL NOT BE CARRIED DEEPER THAN SPECIFIED IN THE CONTRACT DOCUMENTS WITHOUT THE ENGINEER OF RECORD'S CONSENT.
- THE SUBGRADE FOR FOOTINGS AND SLABS SHALL BE INSPECTED AND APPROVED BY THE SOIL INSPECTION AGENCY IMMEDIATELY PRIOR TO PLACING FOUNDATION CONCRETE.
- THE CONCRETE FOR EACH PILE CAP SHALL BE PLACED IN ONE (1) CONTINUOUS PLACEMENT AS REQUIRED.
- ALL UNDERPINNING, SHEETING, SHORING OR OTHER SIMILAR CONSTRUCTION REQUIRED SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE SUBJECT TO CONTROLLED INSPECTIONS AS REQUIRED BY IBC 2015. THE CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO PROVIDE ALL NECESSARY DESIGNS AND REQUIRED INSPECTIONS.
- DO NOT PLACE CONCRETE WITHOUT APPROVED STRUCTURAL SHOP DRAWINGS AND MECHANICAL/ARCHITECTURAL SHOP DRAWINGS RELATED TO THE CONCRETE WORK.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND SETTLEMENT (HORIZONTAL AND VERTICAL) OF EXISTING OR NEW CONSTRUCTION, INSIDE OR OUTSIDE THE PROJECT LIMITS.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO CONTROL ICE, FROST, SURFACE AND SUBSURFACE WATER SO THAT THE FOUNDATION WORK IS PERFORMED ON DRY SUBGRADE.
- NEW EXCAVATION SHALL NOT UNDERMINE NOR DISTURB ANY EXISTING ADJACENT FOOTINGS. NEW FOOTINGS SHALL BE SUPPORTED IN A MANNER TO MAINTAIN AN EXCAVATION SLOPE BETWEEN THE BOTTOM OF FOOTINGS AND EXCAVATION OF ONE VERTICAL TO TWO HORIZONTAL.
- REROUTE ANY UNDERGROUND UTILITIES IF REQUIRED.
- ALL FILL REQUIRED BELOW ANY PORTION OF THE STRUCTURE SHALL BE COMPACTED IN 8" LIFTS TO AT LEAST 95 % OF THE MAXIMUM DRY DENSITY PER ASTM D-1557. REMOVE UNSUITABLE FILL AND REPLACE WITH CONTROLLED FILL AS REQUIRED FOR SOUND PLACEMENT OF FOUNDATIONS.
- PROVIDE CONTINUOUS WATER STOPS IN ALL WALL AND CURB CONSTRUCTION JOINTS.
- SEE ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING AND DAMPROOFING DETAILS.
- THE PERIMETER OF THE GENERAL EXCAVATION SHALL BE RETAINED BY A TEMPORARY SOIL/ROCK RETENTION SYSTEM. THE DESIGN, INSTALLATION, MAINTENANCE AND REMOVAL (WHERE REQUIRED) SHALL BE THE COMPLETE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE THE PROJECT LIMITS, CAUSED BY CONSTRUCTION TECHNIQUES OR MOVEMENTS OF THE SOIL/ROCK RETENTION SYSTEM, IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE ALL ELEMENTS OF THE SOIL/ROCK RETENTION SYSTEM WITH ALL ELEMENTS OF THE PERMANENT BUILDING.
- ALL EXCAVATION SHALL BE BASED ON ENGINEERING DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT AND RETAINED BY THE CONTRACTOR. THE DRAWINGS SHALL INCLUDE PLANS AND SECTIONS OF EXCAVATION SEQUENCES. THE EXCAVATION SEQUENCES SHALL BE CONTROLLED TO MATCH THE REQUIREMENT OF THE DESIGN OF THE SOIL RETENTION SYSTEM.
- THE GENERAL EXCAVATION SHALL CONSIST OF EXCAVATING AND REMOVING THE EXISTING SURFICIAL FILL MATERIALS TO REACH THE DESIRED SUBGRADE LEVEL. THE EXPOSED SUBGRADE SHOULD BE PROOFROLLED AND COMPACTED TO A FIRM AND UNYIELDING CONSISTENCY. THE EXCAVATION FOR FOOTINGS, PITS, ETC. SHALL BE EXCAVATED ON AN INDIVIDUAL, LOCALIZED BASIS DOWN FROM THE SLAB-ON-GRADE SUBGRADE LEVEL. EACH EXCAVATION SHALL BE TRIM, LEVEL SURFACE.
- ALL EXCAVATION BELOW THE SLAB LEVEL REQUIRED FOR PITS SHALL BE RETAINED BY LOCALIZED SOIL RETENTION SYSTEMS AS MAY BE NECESSARY BASED ON A DESIGN USING APPROPRIATE EARTH AND HYDRAULIC PRESSURES AND OTHER CONSTRUCTION LOADINGS.
- THE CONTRACTOR SHALL PROVIDE POSITIVE PROTECTION (MAT/SHEET COVERINGS) FOR ALL EXCAVATION SLOPES TO PROTECT SLOPES FROM INSTABILITY AND DETERIORATION DUE TO RAIN, WIND OR SNOW/ICE.

STRUCTURAL CONCRETE NOTES

- ALL FOUNDATION, WALLS AND SLAB ON GRADE CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WEIGHTING 145PCF, HAVING A COMPRESSIVE STRENGTH OF 4,000PSI AT 28 DAYS AND A MAXIMUM WATER CEMENT RATIO OF 0.4.
- METAL DECK CONCRETE SHALL BE LIGHTWEIGHT WITH A 28 DAYS COMPRESSIVE STRENGTH OF 3,500 PSI.
- STRUCTURAL CONCRETE SHALL CONTAIN A WATER-REDUCING PLASTICIZING ADMIXTURE. ALL CONCRETE EXPOSED TO WEATHER SHALL CONTAIN AN AIR-ENTRAINING ADMIXTURE.
- ALL CONCRETE WORK: MIXES, INSPECTIONS AND FORMWORK SHALL CONFORM TO THE REQUIREMENTS OF THE RELEVANT CODES.
- CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DESIGN OF CONCRETE MIXES AND FOR MAINTAINING STRENGTH AND PROPER SLUMP DURING CONSTRUCTION. CONCRETE MIXES SHALL BE DESIGNED IN ACCORDANCE WITH ACI 314-14 CHAPTER 19, CHAPTER 26 POINT 4 AND ALL CODES AND STANDARDS CALLED THERE, AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE MIXES HAVE BEEN APPROVED BY ENGINEER.
- REINFORCING BARS SHALL BE DEFORMED STEEL BARS COMPLYING WITH ASTM A615, GRADE 60, U.O.N.
- WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A185 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 70,000 PSI, U.O.N.
- CONCRETE SLABS SHALL HAVE A MONOLITHIC FINISH AND SHALL BE SCREENED, COMPACTED BY ROLLING OR TAMPING, FLOATED OFF AND GRADED AS REQUIRED. AFTER SUFFICIENT HARDENING IT SHALL BE PROTECTED AND CURED. START CURING AS SOON AS POSSIBLE WITHOUT MARKING FINISH. COVER SLABS WITH REINFORCED PAPER AS REQUIRED. KEEP SURFACE CONTINUOUSLY MOIST FOR SEVEN DAYS OR USE A CURING COMPOUND.
- ALL REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE, UNLESS OTHERWISE NOTED.
- CHECKED SHOP DRAWING SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT, SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
- SUBMIT DETAILED DRAWINGS SHOWING THE LOCATIONS OF ALL CONSTRUCTION JOINTS, CURBS, SLAB DEPRESSION, SLEEVES, OPENINGS, ETC.
- REINFORCING SPLICES SHALL COMPLY WITH ACI 318, BUT SHALL IN NO CASE BE LESS THAN 40 DIAMETERS, UNLESS OTHERWISE NOTED.
- WELDED WIRE FABRIC SHALL BE LAPPED TWO (2) FULL MESH PANELS AND TIED SECURELY.
- WHERE REQUIRED, DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS OTHERWISE NOTED.
- PROVIDE POCKETS AND DOWELS FOR ALL BEAMS FRAMING INTO FOUNDATION WALLS, PIERS AND BUTTRESSES.
- DO NOT PLACE CONCRETE WITHOUT APPROVED SHOP DRAWINGS.
- CONFORM TO ACI HOT AND COLD WEATHER CONCRETING.
- PROVIDE ADDITIONAL BARS AROUND ALL FLOORS AND WALL OPENINGS, AS PER TYPICAL OPENING DETAIL.
- CONSTRUCTION JOINTS IN ALL MAT SLABS SHALL NOT BE FURTHER APART THAN 20 FEET IN ANY DIRECTION. CONSTRUCTION JOINTS IN WALLS SHALL NOT BE FURTHER APART THAN 40 FEET.
- ALL CONSTRUCTION JOINTS SHALL BE CLEANED AND MOISTENED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE.
- BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC TIPPED.
- NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
- SEE ARCHITECTURAL, HVAC, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL WALL/SLAB OPENINGS.
- SUBMIT TO THE ARCHITECT, PROPOSALS FOR ALL PROCEDURES AND SEQUENCES FOR FORM WORK STRIPPING AND RESHORING SYSTEMS.
- SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS.

STRUCTURAL LUMBER

- ALL STRUCTURAL LUMBER SHALL CONFORM TO THE MOST CURRENT APPLICABLE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION.
- ALL STRUCTURAL LUMBER SHALL BE AS A MINIMUM NO. 2 GRADED DOUGLAS FIR-LARCH, OR SOUTHERN PINE UNLESS NOTED OTHERWISE AND SHALL HAVE AT LEAST THE FOLLOWING MINIMUM ALLOWABLE DESIGN STRESSES AND MODULUS OF ELASTICITY AT A MAXIMUM MOISTURE CONTENT OF 19%:

2.1. Fb (BENDING)	1,200 PSI
2.2. Fv (SHEAR)	90 PSI
2.3. Fc (COMPRESSION)	1,000 PSI
2.4. Ft (TENSION)	625 PSI
2.5. E	1,600,000 PSI
- ALL LUMBER SHALL COMPLY WITH PS 20 "AMERICAN SOFTWOOD LUMBER STANDARD" AND WITH THE APPLICABLE RULE OF INSPECTION AGENCIES CERTIFIED BY AMERICAN LUMBER STANDARD. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF INSPECTION AGENCY EVIDENCING COMPLIANCE WITH GRADING RULE.
- STRUCTURAL STEEL PLATES, ANGLES, ETC. SHALL BE ASTM A36. CONTRACTOR TO SUBMIT SHOP DRAWINGS ON ALL MISCELLANEOUS METALS FOR REVIEW BY STRUCTURAL ENGINEER.
- ALL BOLTS SHALL BE 3/8" DIA. ASTM A307 U.O.N. WITH 2 WASHERS PER BOLT U.O.N.
- EXTERIOR STUD WALLS SHALL BE CONTINUOUSLY BRIDGED AT MID-HEIGHT WITH WOOD BLOCKING. PROVIDE CONT. DOUBLE TOP PLATE TYP. ALL WALLS. BRACE ALL EXTERIOR BUILDING CORNERS WITH MIN. 1/2" PLYWOOD SHEATHING FASTENED TO STUD WALLS, FULL HEIGHT FOR A MIN. WIDTH OF 4'-0".
- NO CUTS, HOLES OR COPES REQUIRED FOR OTHER TRADES IN STRUCTURAL WOOD FRAMING WILL BE PERMITTED WITHOUT PRIOR REVIEW AND APPROVAL OF ENGINEER.
- ONE ROW OF BRIDGING SHALL BE PROVIDED AT EVERY 10'-0" OF JOIST SPAN OR AS INDICATED ON THE DRAWINGS.
- PRESSURE TREAT WITH WATER-BORNE PRESERVATIVES ALL LUMBER FOR SILL PLATES AND OTHER WOOD WHICH MAY BE EXPOSED TO WEATHER OR EARTH.
- ALL "MICRO-LAM" LUMBER SHALL BE MANUFACTURED WITH THE AT LEAST THE FOLLOWING MINIMUM DESIGN STRESSES:

10.1. Fb (BENDING)	2,600 PSI
10.2. Fv (SHEAR)	285 PSI
10.3. Fc (COMPRESSION PARALLEL TO GRAIN)	2,510 PSI
10.4. Fc (COMPRESSION PERPENDICULAR TO GRAIN)	750 PSI
- PROVIDE MINIMUM 4" BEARING FOR ALL "MICRO-LAM" MEMBERS.
- PROVIDE DOUBLE JOISTS OR SOLID BLOCKING AT 24"O.C. UNDER ALL PARTITIONS.
- PROVIDE DOUBLE LAYER PLYWOOD UNDER ALL CERAMIC TILE FLOORS.
- ALL WOOD JOISTS BEARING ENDS SHALL BE ANCHORED TO SUPPORT IN WOOD FRAMING WITH A TYPE A34 FRMAING ANCHOR, AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY OR EQUIVALENT.
- ALL WOOD JOISTS OR HEADER ENDS WHICH FRAME INTO STEEL BEAMS OR LEDGERS SHALL BE HUNG WITH THE FOLLOWNG JOISTS HANGERS, AS MANUFACTURED BY SIMPSON STRONG-TIE OR WITH EQUIVALENT AND APPROVED SUBSTITUTES WITH THE FOLLOWING WORKING LOAD CAPACITIES.

JOIST	SIZE	HANGER	LOAD CAPACITY
2X6	U26		495 LBS
2X8	U28		653 LBS
2X10	U210		833 LBS
2X12	U212		1,013 LBS
2-2X6	HU26-2		990 LBS
2-2X8	HU28-2		1,303 LBS
2-2X10	HU210-2		1,666 LBS
2-2X12	HU212-2		2,016 LBS
- ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TOP THE ENGINEER FOR REVIEW AND APPROVAL. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH HE PROPOSES.
- ALL PLYWOOD SHALL CONFORM TO THE MOST CURRENT APPLICABLE SPECIFICATION AND SUPPLEMENTS OF THE ENGINEERED WOOD ASSOCIATION (APA).
- EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE TRADEMARK OF THE APA AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE APA PERFORMANCE STANDARDS.
- THE WOOD TRUSS MANUFACTURER SHALL SPECIFY AND PROVIDE ALL BRACING AT TOP AND BOTTOM CHORDS REQUIRED TO STABILIZE THE FLOOR OR ROOF STRUCTURE DURING AND AFTER CONSTRUCTION, IN ADDITION TO THE BRACING INDICATED ON THE STRUCTURAL DRAWINGS.
- THE WOOD TRUSS MANUFACTURER SHALL SUBMIT STRUCTURAL CALCULATIONS STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF PROJECT FOR ALL TRUSS TYPES, WHICH INDICATE TRUSS CAPACITIES AND DEFLECTIONS.
- NO SPLICES IN WEBS, CHORDS, OR OTHER LOAD CARRYING MEMBERS MAY BE MADE WITHOUT REVIEW AND APPROVAL ON THE FINAL TRUSS SHOP DRAWINGS WHICH INCLUDE SPECIFIC LOCATIONS AND DETAILS FOR ANY SUCH SPLICE(S).
- FRAME BOTH SIDES OF THE EXPANSION JOINTS WITH SEPARATE TRUSS AND BRACING SYSTEM. DO NOT BRIDGE EXPANSION JOINTS WITH TRUSS OR/AND BRACING.
- THE WOOD TRUSS MANUFACTURER SHALL DESIGN/SPECIFY ALL CONNECTIONS AND CONNECTION COMPONENTS BETWEEN WOOD TRUSSES AND BEARING/SUPPORTING STRUCTURE. ALL CONNECTIONS AND CONNECTION COMPONENTS SHALL BE INDICATED ON THE FINAL SHOP DRAWINGS.

LOADS	
Dead Load	
Exterior Walls	9 PSF
Roof	12 PSF
Floor (built with crawlspace)	14 PSF
Live Load	
Roof	20 PSF
Floor	40 PSF
Balconies & Terraces	60 PSF
Garage	50 PSF
Snow Load	30 PSF
Wind Load	
Wind Speed	120 MPH
Walls	25.8 PSF
Roof	-27.4 PSF
Seismic Load	
Site Class	D-Stiff Soil
Seismic Design Category	B

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Revision

Plumbing Specifications

PLUMBING SPECIFICATIONS

THE WORK INCLUDES MODIFICATION TO THE EXISTING PLUMBING SYSTEM AND PROVIDING NEW MATERIALS, FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM. THE WORK ALSO INCLUDES ROUGH-IN AND FINAL CONNECTIONS TO FOOD SERVICE EQUIPMENT AND BEVERAGE DISPENSING EQUIPMENT PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND/OR ORDINANCES AND IS SUBJECT TO INSPECTION. HOOK-UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONING PLUMBING SYSTEM ARE INCLUDED AS A PART OF THIS SECTION.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION.

THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, FIXTURES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURERS STANDARD ROUGH-IN DRAWINGS FOR PLUMBING FIXTURE INSTALLATION REQUIREMENTS. COMPLY WITH ALL APPLICABLE ADA INSTALLATION REQUIREMENTS. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

PIPING SYSTEMS - GENERAL: ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK SUCH AS DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING, PROVIDE AN ISOLATING DIALECTIC UNION. ALL HANGERS SHALL BE COMPATIBLE WITH PIPING MATERIAL TO PREVENT CORROSION.

PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

FIXTURES/EQUIPMENT FURNISHED BY OTHERS: PLUMBING CONTRACTOR SHALL PROVIDE UTILITY CONNECTIONS REQUIRED SUCH AS WATER, GAS, AIR, SUPPLIES, WASTE OUTLET, TRAPS, ETC. AT ALL PLUMBING TYPE FIXTURES OR EQUIPMENT FURNISHED BY OWNER, GENERAL CONTRACTOR, FOOD SERVICE CONTRACTOR, EQUIPMENT SUPPLIER, ETC. INCLUDED ARE STOP VALVES, ESCUTCHEONS, AND CHROME PLATED BRASS TUBING WITH COMPRESSION FITTINGS.

SEWER AND WASTE PIPING: PROVIDE ALL DRAINS AND SEWERS WITHIN THE SPACE WITH CONNECTION TO THE EXISTING DRAINAGE SYSTEMS ON-SITE. SANITARY DRAINAGE PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE. FITTINGS AND CONNECTIONS: SANITARY DRAINAGE PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS MAY BE USED (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES). ALL DRAINAGE PIPING SHALL BE UNIFORMLY PITCHED, 1/4" PER FOOT UNLESS OTHERWISE REQUIRED BY EXISTING CONDITIONS, OR INDICATED ON THE DRAWINGS.

VENTS: PROVIDE A COMPLETE SYSTEM OF STANDARD WEIGHT CAST IRON N-HUB VENT RISERS WHERE THE CEILING SPACE IS USED AS A RETURN AIR PLenum OR USE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES) WHERE THERE IS A DUCTED RETURN AIR SYSTEM. DO NOT USE PVC PIPE IN RETURN AIR PLenum SPACES. THE VENT SYSTEM SHALL BE CARRIED THROUGH THE ROOF WITH APPROPRIATE FLASHING.

CONDENSATE AND INDIRECT DRAIN PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE, FITTINGS AND CONNECTIONS. PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS.

CLEANOUTS: PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE, CONFORMING TO CODE REQUIREMENTS. PROVIDE SUITABLE WALL OR FLOOR CLEANOUTS WITH ACCESSORIES TO OBSOLETE FROM VIEW.

WATER DISTRIBUTION PIPING: LAYOUT WATER PIPING SO THAT THE ENTIRE SYSTEM CAN BE DRAINED. HOT AND COLD WATER PIPING SHALL BE 1/2" MIN. CPVC PIPE WITH SOLVENT FITTING. PROVIDE WATER HAMMER ARRESTERS AT EACH FIXTURE OR GROUP OF FIXTURES AS REQUIRED. INSTALL CHROME PLATED BRASS ESCUTCHEON PLATES AT ALL PENETRATIONS THROUGH FINISHED SURFACES (INCLUDING CABINET INTERIORS).

PIPE INSULATION: INSULATE (AS ALLOWED BY CODE) ALL LISTED SERVICE PIPING AS FOLLOWS. DOMESTIC COLD/HOT WATER, RETURN WATER, STORM WATER PIPING: PROVIDE 1" PRE-FORMED FIBERGLASS, AS/JIS-11, FLAME SPREAD 25, SMOKE DEVELOPED 50, ASTM C-547. FOR CONDENSATE PIPING PROVIDE 1/2" THICK INSULATION OF SAME CHARACTERISTICS AS LISTED FOR 1" ABOVE. WHERE PERMITTED BY LOCAL CODES, PROVIDE 1/2" SELF-ADHESIVE UNICELLULAR FOAM PIPE INSULATION WITH PRE-FORMED PVC FITTING COVERS - EQUAL TO SELF-ADHESIVE ARMSTRONG 2000 WITH K FACTOR OF 0.27 AT 75 DEGREES MEAN TEMPERATURE. INSULATE ANY EXPOSED CONDENSATE PIPING WITH WASTE TEMPERATURE BELOW 60 DEGREES F. SHUTOFF VALVES: WITH UNIONS SHALL BE PROVIDED FOR SERVICE TO EACH PLUMBING FIXTURE, FOOD SERVICE EQUIPMENT ITEM OR OTHER EQUIPMENT ITEM, TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT. VALVES SHALL BE EQUAL TO JENKINS #902-T BALL VALVE, CHROME-FINISHED BRONZE, TEFLON SEATS AND PACKING, 400 LB. W.O.G., SOLDER END.

ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETC. ARE CONCEALED WITHIN WALLS, WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAV-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.

PIPING SYSTEM- PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPE WITH SOLVENT FITTINGS SHALL BE USED WHERE PERMITTED BY CODE/LOCAL AUTHORITIES.

INSTALLATION: THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION. CAP PIPE OPENINGS TO EXCLUDE DIRT UNTIL FIXTURES ARE INSTALLED AND FINAL CONNECTIONS HAVE BEEN MADE. PROCEED AS RAPIDLY AS CONSTRUCTION WILL PERMIT. SET FIXTURES LEVEL AND IN PROPER ALIGNMENT. INSTALL SUPPLIES IN PROPER ALIGNMENT WITH FIXTURES. INSTALL SILICONE SEALANT BETWEEN FIXTURES AND ADJACENT MATERIAL, FOR SANITARY JOINT, AND OMIT ESCUTCHEONS.

REPAIR EXISTING PLUMBING SYSTEM COMPONENTS DAMAGED BY CONSTRUCTION OPERATIONS AND RESTORE TO ORIGINAL CONDITIONS.

TEST WATER SYSTEM UNDER 150 PSIG HYDROSTATIC PRESSURE, FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED.

ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.

GENERAL NOTES

- THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND SERVICES NECESSARY TO FURNISH, INSTALL, TEST, AND ADJUST A COMPLETE WORKABLE PLUMBING INSTALLATION AS SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT THEREOF.
- THE ENTIRE INSTALLATION SHALL CONFORM TO THE APPLICABLE CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, CODES, AND REGULATIONS, THE MORE RESTRICTIVE SHALL APPLY.
- COORDINATE ENTIRE INSTALLATION OF THE PLUMBING SYSTEM WITH THE WORK OF OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS. REPORT ANY DISCREPANCIES, IN WRITING, TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROVIDE ONE YEAR WARRANTY ON ALL PARTS AND LABOR.
- THE DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW SCOPE. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF ALL DUCT, PIPE, CONDUIT, ETC.
- ALL CUTTING AND PATCHING OF THE EXISTING STRUCTURE SHALL BE PROVIDED UNDER OTHER SECTIONS OF THE WORK. PROVIDE NECESSARY REQUIREMENTS TO THE PROJECT SUPERINTENDENT.
- ALL HOT WATER PIPING AND RECIRCULATION PIPING (EXCEPT RUNOUTS 12 FT. OR SHORTER TO INDIVIDUAL FIXTURES) SHALL BE INSULATED TO MEET THE REQUIREMENTS OF THE APPLICABLE CODE.
- CONDENSATE DRAINS SHALL BE PROVIDED FOR EACH AIR CONDITIONING UNIT. HORIZONTAL CONDENSATE DRAINS ABOVE ANY CEILING SHALL BE INSULATED WITH MIN. 3/8" THICK CLOSED CELL INSULATION.
- PIPING:
 - WASTE, VENT, AND STORM DRAIN PIPING SHALL BE CO-EXTRUDED PVC SCHEDULE 40) PIPE
 - WATER PIPE SHALL BE CPVC PIPE
 - CONDENSATE PIPING SHALL BE CO-EXTRUDED PVC (SCHEDULE 40) PIPE
 - INSIDE GAS PIPING SHALL BE BLACK IRON SCHEDULE 40 WITH MALLEABLE IRON FITTINGS. OUTSIDE SHALL BE GALVANIZED IRON SCHEDULE 40 WITH GALVANIZED FITTINGS. GAS LINE TO BE PAINTED GRAY IN COLOR. A 24 HOUR METEERED GAS TEST SHALL BE REQUIRED.
 - ALL PIPING NOT ENCLOSED IN CONDITION SPACE OR AT EXTERIOR WALLS SHALL BE INSULATED.
 - PIPING: PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPING WITH SOLVENT WELD FITTINGS SHALL BE USED WHERE PERMITTED BY CODE/LOCAL AUTHORITIES

11. ALL VENTS OR EXHAUSTS SHALL BE AT LEAST 10 FT. AWAY OR 3 FT. ABOVE ANY WINDOW, DOOR, OPENING, OR AIR INTAKE.

12. CLEANOUTS SHALL BE INSTALLED PER THE APPLICABLE CODE.

13. PROVIDE WATER TIGHT FLASHINGS WHEREVER PIPES PASS THROUGH EXTERIOR WALLS, ROOFS, OR FLOORS.

14. PROVIDE ISOLATION FOR ALL PIPES THAT COME IN CONTACT WITH THE STRUCTURE.

15. LOCATION OF EXISTING UTILITIES AND POINTS OF CONNECTION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICES PRIOR TO STARTING WORK OF THIS SECTION. IF INDICATED POINTS OF CONNECTION CANNOT BE MADE TO EXISTING UTILITIES AS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLING ANY WORK WHICH MAY BE AFFECTED.

16. VALVES SHALL BE NIBCO, JENKINS, HAMMOND, RED & WHITE OR APPROVED EQUAL. SERVICE PRESSURE SHALL BE SUITABLE FOR SERVICE INTENDED. THE MAIN WATER SHUT OFF VALVE SHALL BE A FULL PORT BALL TYPE AND APPROVED FOR SERVICE INTENDED.

17. CONTRACTOR SHALL PROVIDE ALL SHUT OFF VALVES AS NECESSARY TO ISOLATE ANY EQUIPMENT, PLUMBING ITEMS, OR FIXTURES, THAT MAY NEED SERVICING OR ARE SUBJECT TO FAILURE WHETHER OR NOT SUCH VALVES ARE SHOWN ON THE DRAWINGS.

18. PROVIDE HANGERS AND SUPPORTS AS REQUIRED. PLUMBERS TAPE AND WIRE ARE NOT ACCEPTABLE.

19. CONTRACTOR IS RESPONSIBLE FOR HIS OWN TRENCHING, BACKFILL, AND COMPACTION OF TRENCHES NECESSARY TO COMPLETE HIS SCOPE OF WORK. BACKFILLED TRENCHES SHALL BE RETURNED TO THEIR ORIGINAL GRADE UNLESS NOTED OTHERWISE.

20. CONTRACTOR SHALL AFFIX A MAINTENANCE LABEL TO ALL EQUIPMENT REQUIRING ROUTINE MAINTENANCE AND SHALL PROVIDE MAINTENANCE AND OPERATIONAL MANUALS IN ACCORDANCE WITH THE SPECIFICATIONS.

21. ALL EQUIPMENT THAT REQUIRES KEYS OR SPECIAL TOOLS TO OPERATE SHALL SUPPLY THE OWNER WITH TWO OF ANY SUCH KEYS OR TOOLS FOR EACH PIECE OF EQUIPMENT THAT REQUIRE THE SAME.

25. ANY CHANGE OR DEVIATION FROM THESE PLANS OR SPECIFICATIONS SHALL REQUIRE THE APPROVAL, IN WRITING, OF THE ENGINEER PRIOR TO COMMENCEMENT OF SUCH WORK.

26. ALL PLUMBING, ELECTRICAL, AND GAS LINES SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE TO AS GREAT EXTENT AS POSSIBLE. ALL LINES NOT CONCEALED SHALL BE SECURED 6" OFF THE FLOOR AND 3/4" FROM THE WALLS USING STANDOFF BRACKETS.

27. AN APPROVED BACKFLOW PREVENTOR SHALL BE PROPERLY INSTALLED UPSTREAM OF ANY POTENTIAL HAZARD BETWEEN THE PORTABLE WATER SUPPLY AND SOURCE OF CONTAMINATION.

28. WATER SUPPLY CARBONATORS SHALL BE PROTECTED BY AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR. THE RELIEF VALVE SHALL DRAIN INDIRECTLY TO A FLOOR SINK WITH A 1" MIN. AIR GAP.

PIPE MATERIAL SCHEDULE

SERVICE		COPPER	COPPER	COPPER	CAST	BLACK	GALV.	VTRI.	ABS	SCH.40 PVC	SCH.80 CPVC
		TYPE "M"	TYPE "L"	TYPE "K"	IRON	STEEL	STEEL	CLAY			
WATER PIPING	INSIDE										X
	OUTSIDE										X
SANITARY DRAIN	INSIDE									X	
	OUTSIDE									X	
SANITARY VENT	INSIDE									X	
	OUTSIDE									X	
GAS PIPING	INSIDE				X						
	OUTSIDE						X				
STORM DRAIN	INSIDE									X	
	OUTSIDE									X	
INDIRECT DRAINAGE	INSIDE									X	
	OUTSIDE									X	
CONDENSATE	INSIDE									X	
	OUTSIDE									X	
COMPRESSED AIR	INSIDE				X						
	OUTSIDE					X					

NOTES:

WATER HEATER SCHEDULE

MARK	MANUFACTURER/MODEL	QUANTITY	AREA SERVED	ELECTRICAL	GALLONS	RECOVERY RATE
EWH-1&2	RHEEM: 62SV50-2	1	KITCHEN/RESTROOM	40AMP 240V, 1P	30 GAL	21 GPH

RESPONSIBILITY NOTES

- ROOF OPENINGS FOR PLUMBING AND RELATED WORK SHALL BE THE RESPONSIBILITY OF THE PLUMBING SUBCONTRACTOR. HE SHALL EMPLOY THE OWNER'S ROOFER FOR THIS WORK TO MAINTAIN THE ROOF BOND.
- EXISTING SANITARY SEWER AND EXISTING DOMESTIC WATER CONNECTIONS REFER TO SHEET P3.0 FOR LOCATIONS. CONTRACTOR TO FIELD VERIFY LOCATIONS AND TIE-INS.
- UNDER FLOOR PLUMBING ROUGH-IN FOR REST ROOMS SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR AND SLAB DEPRESSIONS.
- THE SPRINKLER CONTRACTOR SHALL SURVEY THE EXISTING SPRINKLER SYSTEM, ANY REQUIRED MODIFICATIONS SHALL BE BROUGHT UP TO CODE.
- IF DRAWINGS CALL FOR THE REUSE OF EXISTING EQUIPMENT, THE OWNER'S GENERAL CONTRACTOR SHALL VERIFY THAT ALL SUCH EQUIPMENT IS IN PROPER WORKING ORDER, OR TAKE THE NECESSARY STEPS TO ACCOMPLISH SUCH. IF REPLACEMENT IS REQUIRED, USE THE EQUIPMENT AND HARDWARE AS SPECIFIED ON THESE SCHEDULES OR AS CALLED OUT IN THE SPECIFICATIONS ON THIS SHEET. ALL SUCH ITEMS MUST MEET ALL GOVERNING CODES AND STANDARDS OF PRACTICE.

CODES AND STANDARDS

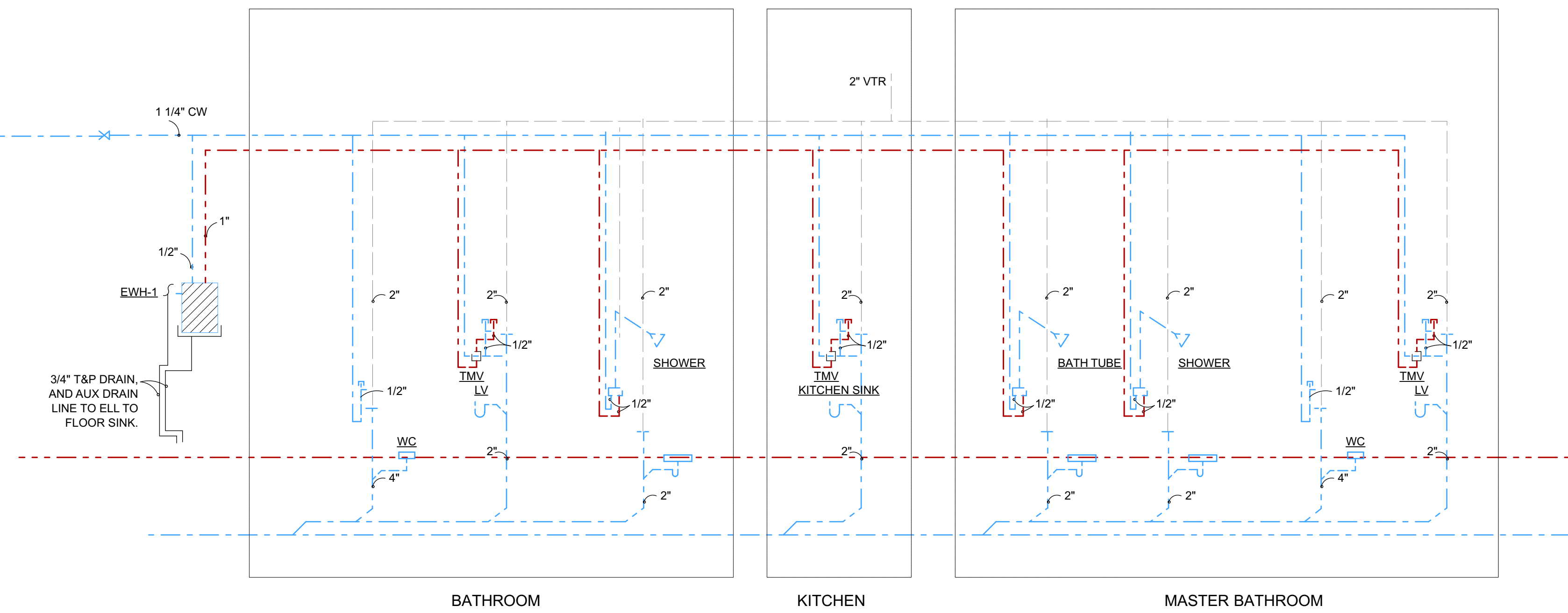
INTERNATIONAL BUILDING CODE	2018 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE	2018 EDITION
INTERNATIONAL EXISTING BUILDING CODE	2018 EDITION
INTERNATIONAL FIRE CODE	2018 EDITION
INTERNATIONAL FUEL AND GAS CODE	2018 EDITION
INTERNATIONAL MECHANICAL CODE	2018 EDITION
INTERNATIONAL PLUMBING CODE	2018 EDITION
INTERNATIONAL PROPERTY MAINTENANCE CODE	2018 EDITION
INTERNATIONAL RESIDENTIAL CODE	2018 EDITION
INTERNATIONAL SWIMMING POOL & SPA CODE	2018 EDITION
NFPA 101 LIFE SAFETY CODE	2018 EDITION
NATIONAL ELECTRICAL CODE	2017 EDITION

SPECIAL NOTICE TO CONTRACTORS

- ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.
- CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.
- ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

PLUMBING LEGEND

SYMBOL	ABBREV	DESCRIPTION
	SS or W	NEW SEWER OR WASTE
	W (E)	EXIST. SEWER OR WASTE
	V	NEW VENT
	V (E)	EXIST. VENT
	CW	NEW COLD WATER
	CW (E)	EXISTING COLD WATER
	HW	NEW HOT WATER
	HW (E)	EXIST. HOT WATER
	G	NEW GAS
	G (E)	EXISTING GAS
	CD	NEW CONDENSATE DRAIN
	CD (E)	EXIST. CONDENSATE DRAIN
	CA	COMPRESSED AIR
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	TP	TRAP PRIMER & TRAP PRIMER PIPING
	SOV	SHUT-OFF VALVE
	CV	CHECK VALVE
	PRV	BACKFLOW PREVENTER W SOVS
	T & P	
	DN	PIPE DOWN
	UP	PIPE UP
	POC	POINT OF CONNECTION
	-	PLUMBING NOTE CALL-OUT
	ABV	ABOVE
	AFF	ABOVE FINISH FLOOR
	AP	ACCESS PANEL
	BEL	BELOW
	BLDG	BUILDING
	CLG	CEILING
	CONT	CONTINUATION
	EL	ELEVATION
	FIN	FINISH
	FL	FLOOR
	GR	GRADE
	NTS	NOT TO SCALE
	OC	ON CENTER
	S+%	SLOPE AT A PERCENTAGE
	SHT	SHEET
	TYP	TYPICAL
	VTR	VENT THRU ROOF



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Company Title

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Project Title

Truoba Mini 419

Drawing Name

Plumbing Specifications

Drawing Scale

Sheet Size

ARCH-D

Layout ID

20

Date

2/21/2022

Revision

Electrical Specifications

ENTIRE INSTALLATION TO COMPLY WITH THE NEC 2017 (NFPA 70), NFPA STANDARDS AS APPLICABLE, IN ADDITION TO SPECIFICATIONS AS OUTLINED BELOW

GENERAL:
1. ALL ELECTRICAL WORK FOR THE ENTIRE PROJECT SHALL BE PERFORMED IN A NEAT AND CRAFTSMANLIKE MANNER BY PERSONS SKILLED IN THE TRADE, AND SHALL BE DONE UNDER THE SUPERVISION OF A MASTER ELECTRICIAN LICENSED TO DO WORK IN THE AREA WHERE THE PROJECT IS TO BE CONSTRUCTED. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST COPY OF THE NATIONAL ELECTRIC CODE PRESENTLY ENFORCED.

SCOPE:
1. THE PROJECT INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION INCLUDING, BUT NOT LIMITED TO, POWER SERVICES, TEMPORARY, NORMAL, AND STAND-BY OR EMERGENCY, SWITCHBOARDS, AUTOMATIC TRANSFER SWITCHES, SERVICE ENTRANCES, DISCONNECTS, DISTRIBUTION PANELS, CONDUIT, WIRING, JUNCTION AND OUTLET BOXES, WIRING DEVICES AND COVER PLATES, LIGHTING FIXTURES, CONNECTION CHORDS, SPECIAL CONNECTIONS AND OUTLETS, ALL AS ILLUSTRATED ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES, UTILITY COMPANIES, AND GOVERNING AUTHORITIES.
2. THE ELECTRICAL CONTRACTOR TO FURNISH A MINIMUM 100 AMP SINGLE PHASE TEMPORARY SERVICE, POWER COMPANY FEES AND MONTHLY ELECTRIC BILL TO BE PAID BY THIS CONTRACTOR.

CODES:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ANS, NFPA70, CITY LAWS, AND ALL LOCAL RULES AND REGULATIONS, INCLUDING THE 2017 NATIONAL ELECTRIC CODE AND THE CITY ENERGY CODE 2015.

PERMITS:
1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND FEES ASSOCIATED THEREWITH. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PAYING ALL FEES ASSOCIATED WITH RE-INSPECTIONS.

DRAWINGS:
1. THE DRAWINGS ARE DIAGRAMMATIC, AND DO NOT SHOW ALL CHANGES IN HEIGHT, STRUCTURAL MEMBERS, DUCTWORK, PIPING, BRACKETS AND ANY OTHER NUMBER OF ITEMS WHICH MIGHT CAUSE A CONFLICT. THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES AS TO THE LOCATION OF HIS DEVICES AND NECESSARY AREAS FOR PANELS AND CONDUIT/WIRING RUNS. VERIFY AND COORDINATE ALL ELECTRICAL WORK WITH ALL TRADES TO PROVIDE A TIMELY INSTALLATION. ADDITIONAL CHARGES DUE TO LACK OF COORDINATION WILL NOT BE APPROVED.

MATERIAL:
1. ALL MATERIALS SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE LISTED BY AND BEAR THE U.L. LABEL WHERE SUBJECT TO APPROVAL. MATERIALS SHALL BE OF THE SAME MANUFACTURER OR BRAND FOR EACH TYPE OF MATERIAL, UNLESS DESIGNATED OTHERWISE.

FIXTURES:
1. ALL FIXTURES SHALL BE AS LISTED IN THE LIGHTING FIXTURE SCHEDULE'S RECOMMENDATIONS.
2. LIGHTING FIXTURES ARE TO BE FURNISHED, INSTALLED, AND LAMPED UNDER THIS CONTRACT.

PANELS:
1. ALL PANELS TO BE FURNISHED AS PER PANEL SCHEDULE. SQUARE D, CUTLER HAMMER AND ITE ARE ACCEPTABLE MANUFACTURERS.
2. ALL SWITCHBOARD AND OVERCURRENT DEVICES SHALL BE SERVED TO WITHSTAND THE AVAILABLE FAULT CURRENT. VERIFY WITH LOCAL UTILITY COMPANY. SEE PANEL SCHEDULE.

DEVICES:
1. EXTERIOR DISCONNECT SWITCHES SHALL BE NEMA 3R ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURER'S SPECIFICATIONS. (SEE MECHANICAL).
2. INTERIOR DISCONNECT SWITCHES SHALL BE NEMA 1 ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURER'S SPECIFICATIONS. (SEE MECHANICAL).
3. SWITCHES SHALL BE 20 AMP, SPECIFICATION GRADE TOGGLE SWITCHES, SIDE WIRED WITH GROUNDING TERMINAL, COLOR SHALL BE WHITE (UNLESS NOTED OTHERWISE) WITH MATCHING COVERPLATE. MOUNTING HEIGHT SHALL BE 48" AFF TO BOTTOM.
4. RECEPTACLES SHALL BE 15 AMP (MINIMUM), SPECIFICATION GRADE, SIDE WIRED WITH GROUNDING TERMINAL, COLOR SHALL BE WHITE (UNLESS NOTED OTHERWISE) WITH MATCHING COVERPLATE. MOUNTING HEIGHT NOTED IN SYMBOL LEGEND OR ON DRAWING.
5. ALL RECEPTACLES INSTALLED IN KITCHENS, OR WITHIN 6 FEET (6') OF A WATER SUPPLY (i.e.: SINK), SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (G.F.C.I.) DEVICES WITH DOWNSTREAM DEVICES IDENTIFIED.
6. ALL 120-VOLT, SINGLE PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN BATHROOMS SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.

BRANCH CIRCUIT WIRING:
1. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE SPECIFIED ON PLANS.
2. MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG THIN COPPER.

TYPICAL NOTES:
1. EQUIPMENT FURNISHED AND PHYSICALLY INSTALLED BY "OTHERS" ALL ELECTRICAL CONNECTIONS EXTERNAL TO THE EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. WIRE, CONDUIT, LUGS, RECEPTACLES, PIGTAILS, DISCONNECTS, ETC. AS MAY BE REQUIRED SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
NOTE: INCLUDE WORSE CONDITION IN PRICING. VERIFY ROUGH-IN LOCATIONS, TYPE OF CONNECTION AND AMPACITY REQUIRED FROM APPLICABLE EQUIPMENT DRAWINGS PRIOR TO INSTALLING ANY CONDUIT, CONDUCTORS OR BOXES.
2. WALL TELEPHONE DATA/OUTLET. INSTALL 2-GANG BOX WITH MODULAR TELEPHONE DEVICE IN COVER PLATE. INSTALL (2) 3/4" EMT CONDUITS TO ACCESSIBLE CEILING SPACE OR HOMERUN TO TELEPHONE/COMPUTER TERMINAL EQUIPMENT. HEIGHT, UNLESS NOTED, IS 18" ABOVE FINISH FLOOR.
3. RESIDENTIAL TYPE, 120 VOLT ACDC, SINGLE STATION SMOKE DETECTOR, PHOTOCELL TYPE. LOCATE PER N.F.P.A. #74. MULTIPLE DETECTORS IN SAME UNIT TO HAVE SIGNAL DEVICES INTERCONNECTED.
4. PROVIDE LIGHT FIXTURE AND RECEPTACLE AT LOCATIONS INDICATED FOR HVAC MAINTENANCE LIGHTING. USE COMBINATION SWITCH AND RECEPTACLE FOR LIGHT CONTROL. FIELD DETERMINES EXACT LOCATION AND HEIGHT.
5. SWITCHED JUNCTION BOX IN CEILING FOR CEILING FAN OR LIGHT. NOTE: BOX MUST BE IDENTIFIED FOR FAN SUPPORT USE. ANCHOR TO STRUCTURE TO SUPPORT 75 LBS. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL FAN AND/OR LIGHT, AND ALL WIRING, INCLUDING SWITCH AND POWER LUGS. VERIFY AND COORDINATE FAN TYPE WITH OWNER.
6. IF THE CEILING SPACE OR HVAC CLOSETS IN THIS PROJECT WILL BE USED AS A RETURN AIR PLENUM THEN ALL MATERIALS AND COMPONENTS LOCATED ABOVE CEILING SPACE OR CLOSET (WITHIN RETURN AIR PLENUM) SHALL BE APPROVED FOR PLENUM USE (OR) SHALL BE WRAPPED WITH A LISTED AND APPROVED PLENUM WRAP AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS. MATERIALS AND WRAPS SHALL MEET THE FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 263. THIS NOTE SHALL APPLY TO ALL ITEMS LOCATED WITHIN THE RETURN AIR PLENUM SPACE WHETHER THEY ARE NEW OR EXISTING. ENTIRE PLENUM SPACE SHALL COMPLY WITH THE CITY BUILDING CODE, 6TH EDITION (2017) THE CITY MECHANICAL CODE (SECTION 602 IN ITS ENTIRETY), THE CITY PLUMBING CODE, AND THE NATIONAL ELECTRIC CODE 2014 IN ADDITION TO ANY APPLICABLE NFPA STANDARDS OR LOCALLY ADOPTED CODES, AMENDMENTS OR ORDINANCES. THIS NOTE SHALL SUPERSEDE ALL OTHER NOTES LOCATED ON THESE DRAWINGS OR OTHER DRAWINGS INCLUDED FOR THIS PERMIT.

INSTALLATION GENERAL:
1. ROUGH-IN LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, AS WELL AS EQUIPMENT SIZE, TO AVOID CONFLICT WITH OTHER TRADES.
2. PRIOR TO ROUGH-IN, THE ELECTRICAL CONTRACTOR SHALL RELOCATE, AS DIRECTED BY THE OWNER/ARCHITECT, ANY PIECE OF EQUIPMENT IN THE VERTICAL AND/OR HORIZONTAL DIRECTION UP TO 15" FROM THE LOCATION SHOWN ON THE DRAWINGS AT NO ADDITIONAL COSTS TO THE OWNER.

WIRING METHODS:
1. **BELOW GRADE:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED NONMETALLIC CONDUIT. CONDUIT MAY BE RUN IN OR BELOW CONCRETE, AND CONCEALED IN WALLS TO FIRST BOXES. ALL PIPING COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.
2. **EXTERIOR ABOVE GRADE:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC OR NONMETALLIC CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

EXTERIOR EQUIPMENT: SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

INTERIOR: SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER. CONDUITS SHALL BE CONCEALED IN OR BEHIND CEILINGS, WALLS, OR FLOORS, EXCEPT WHERE EXPOSED RACEWAYS ARE SPECIFICALLY PERMITTED.

EMT SHALL NOT BE INSTALLED IN LOCATIONS (1) SUBJECT TO SEVERE DAMAGE, (2) IN CONTACT WITH EARTH, (3) IN CONCRETE SLABS ON GRADE, (4) OTHER LOCATIONS AS LISTED IN N.E.C. 2014, ARTICLE 358.12.

EXCEPTION: NONMETALLIC SHEATHED CABLE (NM, NMC, NMS) MAY BE USED WITHIN DWELLING UNITS, IN COMPLIANCE WITH N.E.C. 2014, ARTICLE 334.

EXCEPTION NO. 1: PANELBOARDS INSTALLED ON A WALL SURFACE, WHERE AT LEAST THREE (3) SIDES, NOT INCLUDING THE FRONT, REMAIN ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY SHALL NOT BE REQUIRED TO MEET #1830.5.
EXCEPTION NO. 2: DWELLING UNITS SHALL NOT BE REQUIRED TO MEET #1830.5.

ELECTRICAL BOXES: ALL OUTLET, DEVICE, AND JUNCTION BOXES SHALL BE STANDARD 4" SQUARE GALVANIZED STEEL OR APPROVED PLASTIC, 1/4" DEEP, WITH DEVICE RINGS OF THE SAME MATERIAL, UNLESS OTHERWISE NOTED. GALVANIZED BOXES SHALL BE MANUFACTURED BY APPLON, NATIONAL STEEL CITY, RACO OR APPROVED EQUAL. PLASTIC BOXES SHALL BE ALIED, NELCO, CARLON, OR EQUAL. ALL ELECTRICAL BOXES MUST BE ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY.

THRU-FEEDS: MAINTAIN THRU-FEEDS ON ALL ELECTRICAL DEVICES AT 0.
EQUIPMENT:
1. WIRE TO AND MAKE CONNECTIONS TO, ALL PIECES OF EQUIPMENT FURNISHED BY OTHERS FOR COMPLETE AND SATISFACTORY OPERATION BY OTHERS.
2. THIS CONTRACT TO INCLUDE CONNECTION OF LINE VOLTAGE ONLY. CONTROL WIRING TO BE BY THE HVAC CONTRACTOR.

GROUNDING:
1. THE ENTIRE ELECTRICAL GROUNDING SYSTEM SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 250.66 AND 250.122 OF THE NATIONAL ELECTRIC CODE, INCLUDING BUT NOT LIMITED TO, THE ELECTRICAL SERVICE, ITS EQUIPMENT AND ENCLOSURE, CONDUITS AND OTHER CONNECTING ENCLOSURES, NEUTRAL OR IDENTIFIED CONDUCTOR OF INTERIOR WIRING SYSTEM, MAIN PANELBOARD, POWER AND LIGHTING PANELBOARDS, NON-CURRENT-CARRYING METAL PARTS OF FIXED EQUIPMENT SUCH AS MOTORS, STARTERS AND CONTROLLER CABINETS, INSTRUMENT CASES AND LIGHTING FIXTURES.
2. PROVIDE A SERVICE GROUND ACCORDING TO N.E.C. ARTICLE 250. THE MINIMUM INSTALLATION TO INCLUDE: BUILDING FOOTING FOUNDATION REINFORCING STEEL, TURNED UP OR OTHERWISE EXPOSED AT THE SERVICE LOCATION WITH APPROVED CONNECTOR TO BOND A GROUNDING CONDUCTOR SIZED PER TABLE 250 TO THE STEEL AND A DRIVEN ROD GROUND (MINIMUM 5/8" BY DEEP) WITH #6 COPPER GROUNDING CONDUCTOR. IF AVAILABLE ON THE PREMISES, ALSO BOND METAL COLD WATER PIPING, METAL BUILDING FRAME AND GROUND RING WITH JUMPERS SIZED FROM 250-94.
3. ALL TELEPHONE, DATA, TELEVISION, AND OTHER TERMINAL EQUIPMENT SHALL BE BONDED TO THE GROUNDING ELECTRODE WITH MINIMUM #6 AWG-CU.

WARRANTY NOTE:
1. ELECTRICAL CONTRACTOR TO PROVIDE FULL WARRANTY (PARTS AND LABOR) ON ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE SCOPE OF WORK FOR A PERIOD OF ONE YEAR FROM THE CERTIFICATE OF OCCUPANCY.
2. E.C. SHALL PROVIDE OWNER AND ENGINEER WITH REPRODUCIBLE "AS-BUILT" DRAWINGS SHOWING ALL REQUIRED MODIFICATIONS THAT HAVE OCCURRED IN THE FIELD.

ELEVATOR ROOMS (AS APPLICABLE):
ALL ELEVATOR MACHINE ROOMS SHALL BE PROVIDED WITH A FUSED DISCONNECT FOR ALL EQUIPMENT INCLUDING EQUIPMENT ROOM AIR CONDITIONING SYSTEMS, LIGHTING, RECEPTACLES, ETC. (REGARDLESS OF PLAN SYMBOL) IN ACCORDANCE WITH ASME A17.1.
PROVIDE A GFCI RATED RECEPTACLE IN THE PIT OF THE ELEVATOR NEAR ENTRANCE TO PIT. MOUNT DEVICES IN BELOW FIRST FLOOR LEVEL OR AS DIRECTED BY ELEVATOR INSTALLER. PROVIDE METAL END USE COVER. EXTEND CIRCUIT TO LUMINAIRE IN PIT.

SITE VERIFICATION NOTES:
ALL ITEMS ON THESE DRAWINGS MARKED AS "EXISTING" OR "EXIST" SHALL BE VERIFIED IN FIELD ANY DIFFERENCES BETWEEN ITEMS OR EQUIPMENT INDICATED AS EXISTING SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OR ARCHITECT.
PRIOR TO CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE PHASE TO PHASE VOLTAGE AVAILABLE IS EQUAL TO EACH OTHER, AND EQUAL TO VOLTAGE SHOWN ON THESE DRAWINGS. A DIFFERENCE IN PHASE TO PHASE VOLTAGE MAY INDICATE THE PRESENCE OF A "HIGH LEG" DELTASYSTEM. ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR REQUIRED REVISIONS.
SPLIT PHASE CIRCUIT BREAKERS ARE NOT PERMITTED TO BE INSTALLED ON HIGH LEG DELTASYSTEMS. HIGH LEG DELTA SYSTEMS SHALL BE LABELED PER 408.3 AND THE HIGH LEG CONDUCTOR TO BE MARKED PER 110.15.

GENERAL NOTES-ELECTRICAL:
THE ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL ELECTRICAL SERVICE ROUGH-IN AND INSTALLATION DETAILS, FEES, WITH THE LOCAL POWER COMPANY/UTILITY FIELD ENGINEER PRIOR TO AND INCLUDING IN BID!
THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH ALL STATE/LOCAL BUILDING CODES/ORDINANCES/REGULATIONS PRESENTLY IN EFFECT. IN ADDITION, COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (N.E.C.) 2017.

THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE IN ORDER TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS, FAILURE TO DO SO WILL NOT WARRANT ANY ADDITIONAL CHARGES TO THE OWNER.

THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID, ANY CUTTING OR PATCHING OF CONCRETE/ASPHALT PAVEMENTS, ETC. TO RUN ELECTRICAL.
ALL EQUIPMENT, FIXTURES, ETC. SHALL BE STORED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION. THIS CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP, MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY (C.O.) AND SHALL REPAIR ANY SUCH DEFECTS WITHOUT COST TO THE OWNER. ALL EQUIPMENT SHALL BE COVERED FOR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY. THIS CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEE AND WARRANTIES.

HVAC AIR HANDLER AND CONDENSING UNIT CIRCUIT BREAKERS MUST BE UL LISTED AS "HACR" RATED. IN ORDER TO USE NON-AUTO DISCONNECTS AT HVAC EQUIPMENT, IF NOT LISTED, THEN A FUSED DISCONNECT IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S NAMEPLATE REQUIREMENTS MUST BE INSTALLED AT THE EQUIPMENT.

THE ELECTRICAL, GENERAL, HVAC, AND PLUMBING CONTRACTOR(S) SHALL STRICTLY ADHERE TO THE FOLLOWING ITEMS WHEN DEALING WITH ELECTRICAL EQUIPMENT CLEARANCES:

- NO PIPING OR DUCTWORK OF ANY KIND SHALL BE INSTALLED ABOVE ANY SWITCHBOARD OR PANELBOARD. THIS AREA TO REMAIN CLEAN FROM THE EQUIPMENT TO 25 ABOVE OR TO THE BOTTOM OF THE STRUCTURAL SLAB.
- A CLEARANCE OF 36" MINIMUM SHALL BE MAINTAINED IN FRONT OF ELECTRICAL EQUIPMENT FOR THE ENTIRE WIDTH OF THE EQUIPMENT, PLUS A MINIMUM OF 30" TOTAL LEFT/RIGHT CLEARANCE.

GENERAL NOTES-ELECTRICAL (CONTINUED):
ALL "WEATHERPROOF" ("WP") DEVICES ARE TO BE INSTALLED WITH A WEATHER- SHIELDING COVER.
ALL ELECTRICAL CONDUITS NOT CONTAINING SPECIFIED CONDUCTORS SHALL HAVE A PULL WIRE INSTALLED.
DO NOT SCALE THE ELECTRICAL DRAWINGS; REFER TO THE ARCHITECTURAL PLANS FOR EQUIPMENT LOCATIONS, CABINETS, CEILING GRID, CROSS WIRING, ETC.
THE INTENT OF THESE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL ELECTRICAL INSTALLATION.
IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL DETAILS OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS SUCH AS HARDWARE, J-BOXES, CONDUIT FITTINGS, ETC., AS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM INSTALLATION.
TECHNICIANS SKILLED IN THEIR TRADE SHALL PERFORM ALL ELECTRICAL INSTALLATIONS IN A PROFESSIONAL MANNER.
WIRE TO, AND MAKE CONNECTIONS AS NECESSARY, TO ALL PIECES OF EQUIPMENT FURNISHED BY OTHERS, FOR COMPLETE AND SATISFACTORY OPERATION BY THE OWNER.
ALL ELECTRICAL PANELS SHALL BE LABELED WITH THEIR RESPECTIVE SOURCES PER NEC 408.4(B).
ALL SERVICE AND FEEDER CONDUITS SHALL HAVE EXPANSION FITTINGS WHEN PENETRATING SLABS, ETC. TO ALLOW FOR STRUCTURAL SETTLEMENT.
PROVIDE "PVC" CONDUITS STUBBED OUT, BELOW GRADE FOR ADDITIONAL SERVICES, IN ORDER TO PROVIDE CONCEALED TELEPHONE AND/OR DATA SERVICE ENTRANCE.
PROVIDE TIME CLOCKS WITH BATTERY BACK-UP TO CONTROL ALL SIGNAGE AND EXTERIOR LIGHTING CIRCUITS. SEE POWER RISER DIAGRAM FOR ADDITIONAL DETAILS.
ALL CONDUCTORS SHALL BE TYPE THINWALL, COPPER (CU) UNLESS OTHERWISE CALLED FOR ON THESE DOCUMENTS. SEE PANEL SCHEDULE.
ALL LIGHTING FIXTURES (INCLUDING THOSE PROVIDED BY OTHERS) ARE TO BE INSTALLED UNDER THIS CONTRACT. SEE SCHEDULE FOR FIXTURE RECOMMENDATIONS, LAMPS, ETC.
NOTICE TO CONTRACTOR: REVISIONS TO THESE DRAWINGS AND CERTIFICATION THEREOF WHICH MAY BE REQUIRED BECAUSE OF CONTRACTOR OMISSIONS, SHALL BE COMPENSATED BY THE ENGINEER(S) BY THE REQUESTING CONTRACTOR. PAYMENT SHALL BE REQUIRED AT THE TIME OF CERTIFICATION DELIVERY.

ELECTRICAL LEGEND NOTES:
VERIFY ALL RECEPTACLE MOUNTING HEIGHTS WITH OWNER.
LOW VOLTAGE INDICATED ON THESE DRAWINGS IS FOR ROUGH-IN BOX LOCATIONS ONLY AND DOES NOT INCLUDE ANY WIRING OR CABLING REQUIRED. ALL LOW VOLTAGE WILL BE PERMITTED SEPARATELY BY THE CONTRACTOR, THIS INCLUDES BUT IS NOT LIMITED TO DATA WIRING, SPEAKER WIRING, TV COAX WIRING ETC.

ELECTRICAL LEGEND NOTES

VERIFY ALL RECEPTACLE MOUNTING HEIGHTS WITH OWNER.
LOW VOLTAGE INDICATED ON THESE DRAWINGS IS FOR ROUGH-IN BOX LOCATIONS ONLY AND DOES NOT INCLUDE ANY WIRING OR CABLING REQUIRED. ALL LOW VOLTAGE WILL BE PERMITTED SEPARATELY BY THE CONTRACTOR, THIS INCLUDES BUT IS NOT LIMITED TO DATA WIRING, SPEAKER WIRING, TV COAX WIRING ETC.

ELECTRICAL PLAN NOTES

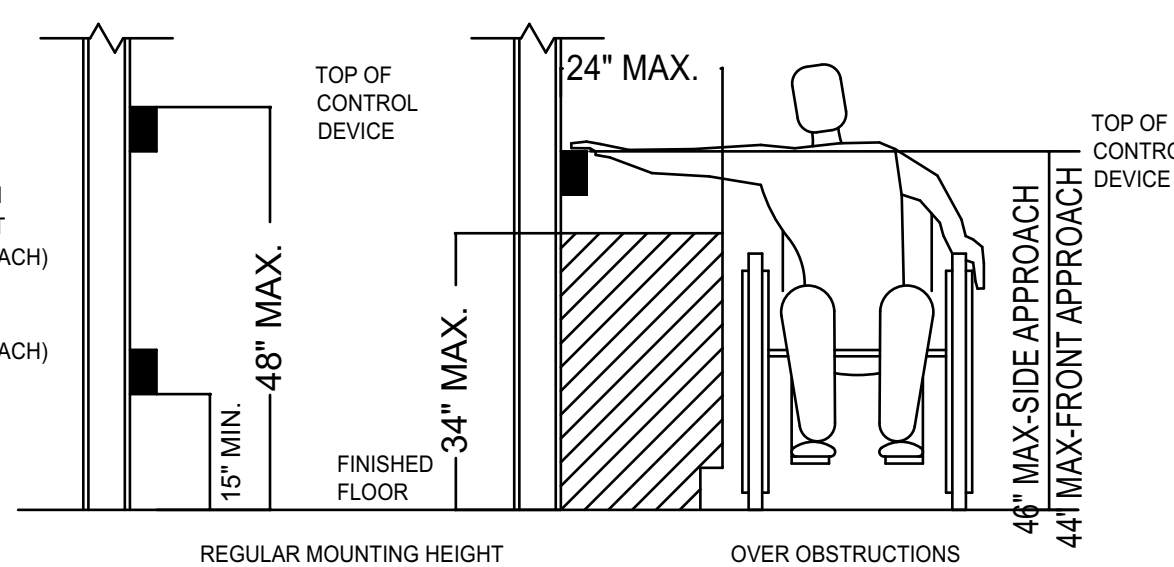
120V RECEPTACLES LOCATED IN AREAS SIMILAR TO KITCHEN OR PREP AREAS SHALL BE GFCI PROTECTED. GFCI PROTECTION NOT INDICATED ON PLANS. (NEC 210.8)

EMERGENCY & EXIT LIGHTING SHALL BE FED FROM THE NEAREST LIGHTING CIRCUIT. PROVIDE ADDITIONAL CONDUCTOR TO FEED EMERGENCY LIGHTING IN AREAS, INDEPENDENT OF ANY LIGHTING CONTROL.

SOME DATA LOCATIONS HAVE BEEN INDICATED ON THESE DRAWINGS HOWEVER NOT ALL LOW VOLTAGE INFORMATION HAS BEEN PROVIDED. CONTRACTOR TO COORDINATE WITH OWNER FOR INFORMATION TO ENSURE ALL LOCATIONS AND QUANTITY OF WIRES IS PROVIDED TO PROVIDE A COMPLETE OPERATIONAL LOW VOLTAGE SYSTEM SUITABLE FOR OWNER. CONTRACTOR TO PROVIDE SEPARATE LOW VOLTAGE PERMIT. COORDINATE WITH OWNER & GC PRIOR TO CONSTRUCTION.

MOUNTING HEIGHT OVER OBSTRUCTIONS DETAIL

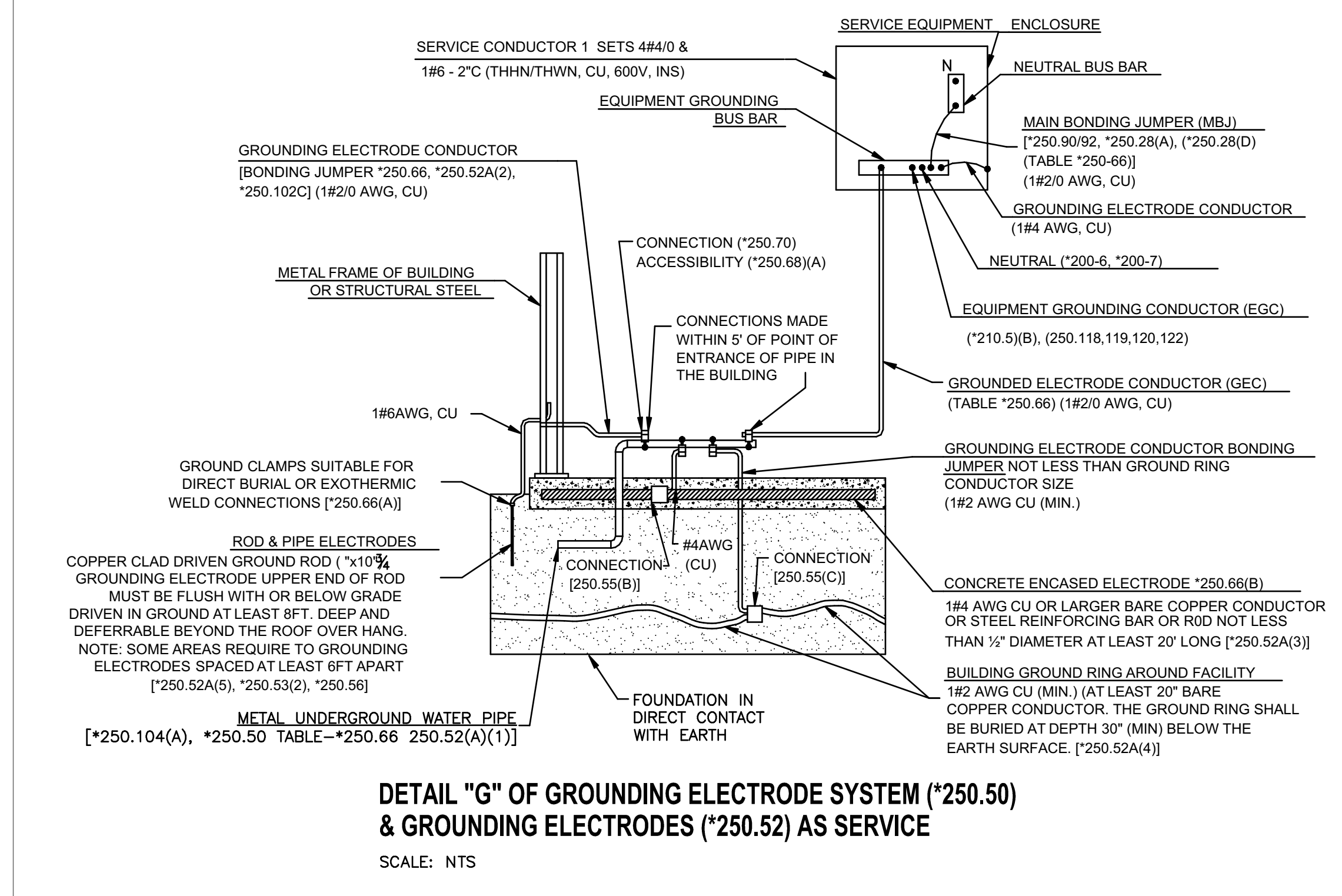
NO SCALE



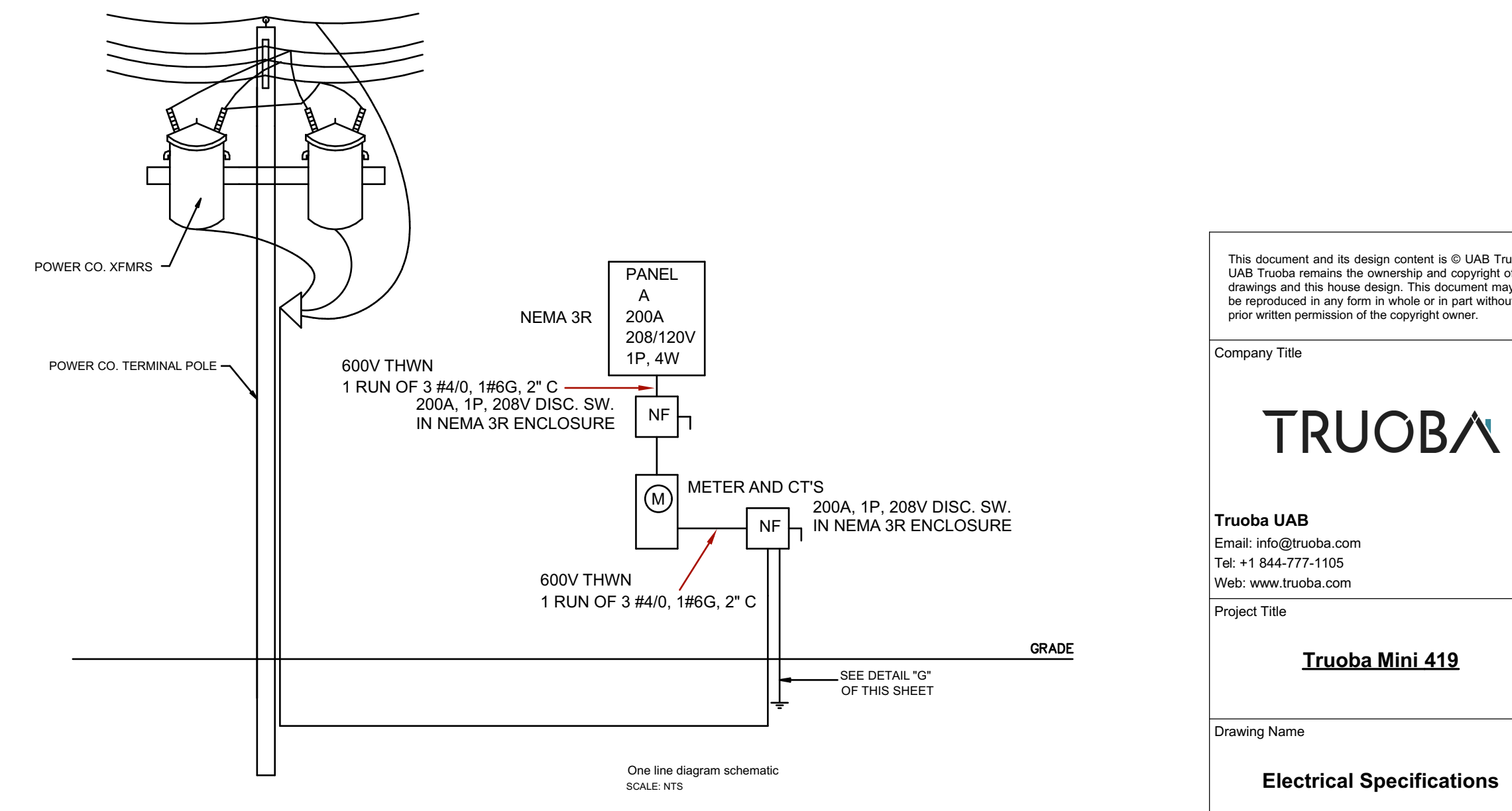
NOTE: WHERE LIGHT SWITCHES, RECEPTACLES, TELEPHONE/DATA OUTLETS, DIMMING CONTROL STATIONS, FIRE ALARM PULL STATIONS OR OTHER OPERABLE OUTLET DEVICES OCCUR OVER FIXED OBSTRUCTIONS (SUCH AS CASEWORK, ETC) RESPECTIVE DEVICE MOUNTING HEIGHT LIMITS SHALL BE AS TYPICALLY DEPICTED ABOVE.

- | | |
|---|--------------|
| INTERNATIONAL BUILDING CODE | 2018 EDITION |
| INTERNATIONAL ENERGY CONSERVATION CODE | 2018 EDITION |
| INTERNATIONAL EXISTING BUILDING CODE | 2018 EDITION |
| INTERNATIONAL FIRE CODE | 2018 EDITION |
| INTERNATIONAL FUEL AND GAS CODE | 2018 EDITION |
| INTERNATIONAL MECHANICAL CODE | 2018 EDITION |
| INTERNATIONAL PLUMBING CODE | 2018 EDITION |
| INTERNATIONAL PROPERTY MAINTENANCE CODE | 2018 EDITION |
| INTERNATIONAL RESIDENTIAL CODE | 2018 EDITION |
| INTERNATIONAL SWIMMING POOL & SPA CODE | 2018 EDITION |
| NFPA 101 LIFE SAFETY CODE | 2018 EDITION |
| NATIONAL ELECTRICAL CODE | 2017 EDITION |

CODES AND STANDARDS



USER GROUND NOTE:
ALL STEEL REBARS MEASURING 1/2" OR MORE IN DIAMETER AND 20' OR LONGER IN LENGTH THAT IS ENCASED IN NOT LESS THAN 2 INCHES OF CONCRETE SHALL BE BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 250 (ELECTRICAL SUB CODE) SECTION 250.52(A)(3). THE "USER" GROUND CAN BE 20 L.F. OF #2 OR #4 COPPER WIRING LAID INSIDE THE FOOTING AND THE SAME WIRE IS LONG ENOUGH TO REACH TO THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE. USER GROUND CAN BE (1) L-SHAPED PIECE OF #4 STEEL REBAR CONNECTED TO THE OTHER STEEL REBAR IN THE FOOTING AND STICKING OUT IN SUFFICIENT LENGTH FOR CONNECTION AT THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE



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TRUOBA

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Project Title
Truoba Mini 419

Drawing Name
Electrical Specifications

Drawing Scale

Sheet Size
ARCH-D

Layout ID
21

Date
2/21/2022

Revision

Mechanical Specifications

MECHANICAL SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING:
 - LATEST EDITION AND AMENDMENTS OF THE APPLICABLE STATE AND LOCAL CODES.
 - LATEST (OR APPLICABLE) EDITION OF INTERNATIONAL MECHANICAL CODE.
 - LATEST (OR APPLICABLE) EDITION OF NFPA CODE 90A.

- FURNISH AND INSTALL ALL LABOR, MATERIAL, AND EQUIPMENT AND SERVICES NECESSARY FOR COMPLETE AND SAFE INSTALLATION OF THE MECHANICAL SYSTEM INDICATED ON THE DRAWINGS AND NOTED IN THE SPECIFICATIONS HEREINAFTER. MECHANICAL DRAWINGS ARE CONSIDERED DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND SYSTEMS. REFER TO ARCHITECTURAL DRAWINGS TO VERIFY LOCATION OF DEVICES, EQUIPMENT, ETC. CHECK DRAWINGS OF OTHER TRADES TO VERIFY EXACT SPACE CONDITIONS OF DUCTWORK AND EQUIPMENT. MATERIALS SHALL BE NEW, FREE FROM DEFECTS AND LISTED BY ARI OR UL WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH EXISTING CONDITIONS. CONTRACTOR SHALL VISIT SITE AND EXAMINE EXISTING CONDITIONS PRIOR TO BID.
- SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO OWNER OR ARCHITECT FOR EACH PIECE OF EQUIPMENT TO INCLUDE RTU'S, ASSOCIATED PIPING, HEATERS, EQUIPMENT, DIFFUSERS, INSULATION, FANS, CONTROLS AND DUCTWORK. OBTAIN APPROVAL BEFORE EQUIPMENT IS ORDERED, BUILT, OR INSTALLED.

INSULATION:

- INSULATE ALL CONCEALED SUPPLY DUCTWORK WITH 2" THICK FIBERGLASS DUCT WRAP WITH VAPOR BARRIER FACING. ALL INSULATION, FASTENERS AND ADHESIVES SHALL MEET NFPA 90A REQUIREMENTS AND UL FLAME SPREAD AND SMOKE DEVELOPED CRITERIA AND SHALL BEAR UL STAMP.

GAS FIRED HEATING AND A/C UNIT:

- INSTALL WHERE INDICATED AND AS SCHEDULED A PACKAGED AIR COOLED SELF CONTAINED ROOF TOP GAS FIRED HEATING AND DIRECT EXPANSION AIR CONDITIONING UNIT MANUFACTURED BY TRANE. UNIT SHALL BE PROVIDED AND INSTALLED BY LANDLORD.
- UNIT CABINET: CONSTRUCT OF GALVANIZED STEEL, BONDERIZED AND COATED WITH A BAKED ENAMEL FINISH. CABINET INTERIOR SHALL BE INSULATED WITH ONE-INCH THICK NOEPRENE COATED FIBERGLASS. A CONDENSATE DRAIN FOR THE INDOOR COIL SHALL BE PROVIDED. PROVIDE 2" THICK FIBERGLASS THROW AWAY FILTERS WITH MAXIMUM FACE VELOCITY OF 300 FPM.
- UNIT COMPRESSORS: SHALL BE SERVICEABLE, HERMETICALLY SEALED SUCTION PROVIDE MINIMUM ONE YEAR MANUFACTURERS WARRANTY ON COMPRESSOR(S). INDOOR AND OUTDOOR COILS SHALL BE CONSTRUCTED OF ALUMINUM PLATE FINS MECHANICALLY BONDED TO SEAMLESS COPPER TUBES WITH ALL JOINTS BRAZED. INDOOR FANS SHALL BE BELT DRIVEN AND PROVIDED WITH ADJUSTABLE PITCH MOTOR PULLY. OUTDOOR FANS SHALL BE DIRECT DRIVEN PROPELLOR TYPE WITH PERMANENTLY LUBRICATED MOTOR.
- UNIT CONTROLS: PROVIDE PROGRAMMABLE THERMOSTAT WITH REMOTE SPACE SENSOR TO MAINTAIN HEATING AND COOLING SET POINTS. CONTROL UNIT FAN TO RUN CONTINUOUSLY OR ON AUTO-CYCLE. CYCLE BURNER AND COMPRESSORS IN SEQUENCE MAINTAIN SETPOINT. PROVIDE ECONOMIZER CONTROL TO INCLUDE RETURN AIR AND OUTSIDE AIR DAMPERS AND FULLY MODULATING ELECTRIC CONTROL SYSTEM WITH ENTHALPY CHANGE OVER CONTROL AND ADJUSTABLE MIXED AIR THERMOSTAT. ECONOMIZER CONTROL SHALL BE CAPABLE OF INTRODUCING UP TO 100% OUTSIDE AIR. HEATING CONTROLS SHALL CONSIST OF A REDUNDANT GAS VALVE, ELECTRONIC INTERMITTENT PILOT IGNITION, REMOTE PILOT FLAME SENSOR, TIME-DELAY RELAY, LIMIT SWITCHES AND CENTRIFUGAL SWITCH. LOCATE REMOTE SPACE SENSOR WHERE INDICATED ON DRAWING.
- HEAT EXCHANGER: SHALL BE TUBULAR IN DESIGN AND CONSTRUCTED OF CORROSION RESISTANT ALUMINIZED STEEL. HEAT EXCHANGER SHALL CARRY A 5 YEAR WARRANTY. BURNERS SHALL BE CONSTRUCTED OF ALUMINUM PAINTED COLD ROLLED STEEL AND BE OF THE IN-SHOT TYPE.
- ELECTRICAL CONNECTION: PROVIDE A DISCONNECT SWITCH READY FOR A SINGLE POINT POWER CONNECTION.

EXHAUST FANS:

- ROOF EXHAUST FANS SHALL BE CAPABLE OF HANDLING AIR QUANTITY ON DRAWINGS. FAN TO BE PROVIDED WITH BIRDSCREEN, SHOCK MOUNTS, NEMA 1 DISCONNECT TYPE ELECTRICAL CONNECTION, MANUFACTURER'S ROOF CURB AND SHALL BE CONTROLLED BY INTERLOCK TO HVAC UNIT. TOILET EF SHALL BE GREENHECK MODEL G-70-D OR APPROVED EQUAL. FANS TO BE PROVIDED BY LANDLORD.

DUCTWORK:

- LOW PRESSURE DUCTWORK: ALL DUCTWORK UNLESS OTHERWISE NOTED SHALL BE FABRICATED OF GALVANIZED SHEET STEEL IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA DUCT CONSTRUCTION STANDARDS FOR 2" PRESSURE CLASS. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE DUCT CONNECTORS SHALL BE PREINSULATED WHERE INSULATION IS REQUIRED AND SHALL BE CLASSIFIED AS CLASS I OR CLASS O FLEXIBLE CONNECTORS IN ACCORDANCE WITH UL 181. FLEXIBLE CONNECTORS SHALL NOT EXTEND MORE THAN 10 FEET IN LENGTH.

- PROVIDE 1" THICK ACOUSTICAL DUCT LINING WITH AN AVERAGE DENSITY OF 1 1/2 LBS./CF. IN FIRST TEN FEET OF RETURN DUCT AND WHERE INDICATED. DUCT LINER SHALL HAVE FIRE RESISTANT INNER COATING TO PREVENT DELAMINATION OF FIBERS AND SHALL MEET NFPA AND UL REQUIREMENTS.

ACCESSORIES:

- PROVIDE DUCTWORK ACCESSORIES IN ACCORDANCE WITH SMACNA STANDARDS. PROVIDE TURNING VANES IN ALL RECTANGULAR ELBOWS. WHERE SPACE PERMITS CONTRACTOR MAY PROVIDE RADIUS ELBOWS WITH A STANDARD CENTERLINE RADIUS EQUAL TO 1 1/2 TIMES THEIR WIDTH IN LIEU OF RECTANGULAR ELBOWS SHOWN ON PLANS. ALL RECTANGULAR DUCT TAPS SHALL BE MADE WITH 45 DEGREE ENTRY. ALL ROUND TAPS OVER 6" SHALL BE MADE WITH CONICAL TEES.
- PROVIDE MANUAL VOLUME DAMPERS WHERE INDICATED AND AT ALL TAPS TO INDIVIDUAL DIFFUSERS.

AIR OUTLETS AND INLETS:

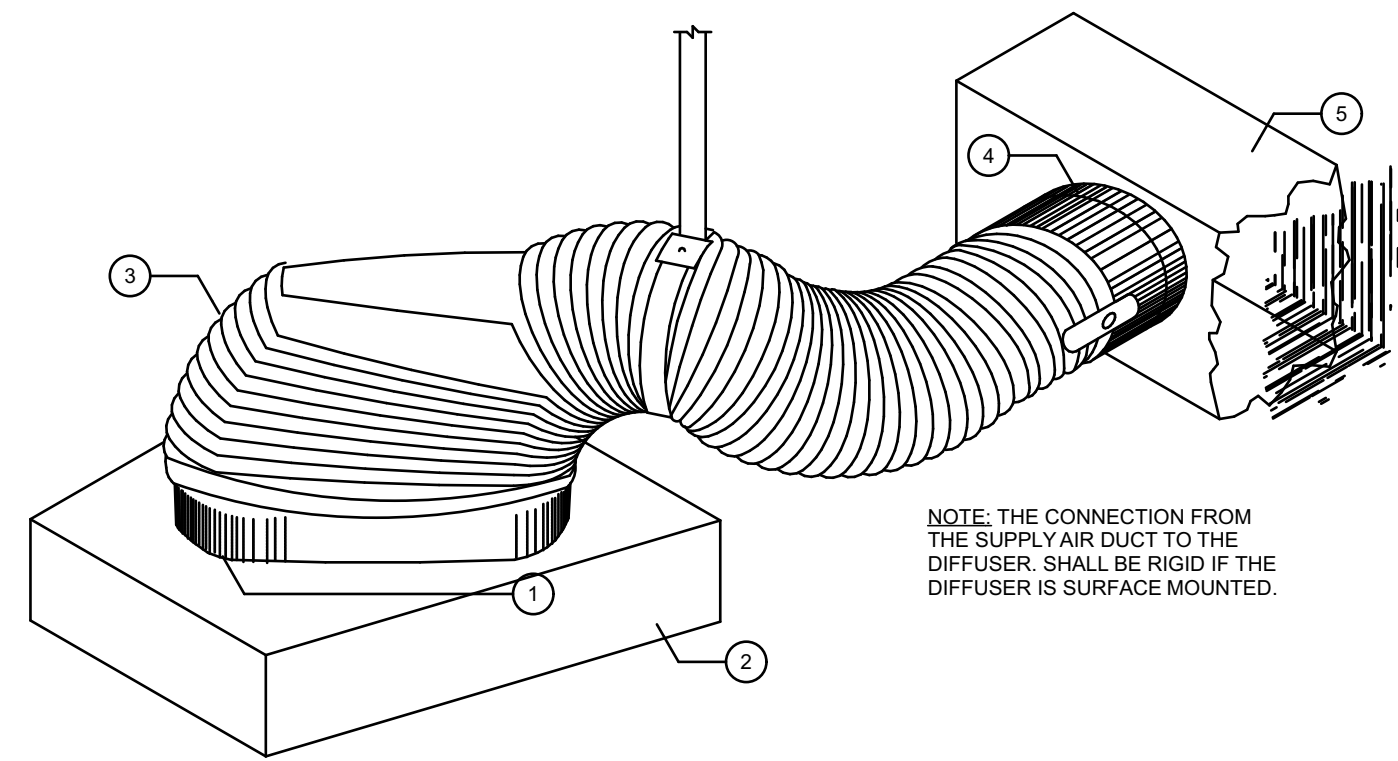
- DIFFUSERS SHALL HAVE AN NC RATING OF NOT MORE THAN 35 FOR ANY OCCUPIED SPACE. THROW AND DROP SHALL MEET MANUFACTURERS PUBLISHED RECOMMENDATIONS. PRIME DIFFUSERS FOR FIELD PAINTING AS INDICATED ON ARCHITECTURAL DRAWINGS.
- LOUVERED FACE SUPPLY DIFFUSERS SHALL BE TITUS MODEL TDC OR APPROVED EQUAL. PROVIDE SQUARE OR ROUND NECK AS INDICATED AND FRAME TYPE TO MATCH CEILING CONSTRUCTION.
- EXHAUST AND RETURN AIR GRILLES SHALL BE TITUS MODEL 350RL STEEL LOUVERED GRILLES WITH 3/4 INCH SPACING.

CONTROLS

- PROVIDE PROGRAMMABLE WALL MOUNTED SPACE THERMOSTAT WITH SPACE MOUNTED REMOTE SENSOR TO CONTROL ALL STAGES OF ROOFTOP UNIT HEATING AND COOLING.
- CONTROL ROOF MOUNTED TOILET EXHAUST FANS TO START AND STOP FROM INTERLOCK TO RTU'S OCCUPIED CYCLE.
- PROVIDE DUCT MOUNTED IONIZATION TYPE SMOKE DETECTOR IN RETURN AIR DUCT OF EACH RTU 2000 CFM AND ABOVE. DETECTOR SHALL SHUT DOWN UNIT UPON DETECTION OF PRODUCTS OF COMBUSTION AND ACTIVATE VISIBLE AND AUDIBLE ALARM AND TROUBLE SIGNAL IN AN APPROVED LOCATION.

TESTING ADJUSTING AND BALANCING:

- AFTER COMPLETION OF THE INSTALLATION OF THE AIR CONDITIONING AND HEATING SYSTEMS AND PRIOR TO ACCEPTANCE BY THE OWNER, AIR HANDLING SYSTEM AND APPURTENANCES APPLICABLE TO THE ABOVE SYSTEM SHALL BE ADJUSTED AND BALANCED TO DELIVER THE AIR QUANTITIES AS SPECIFIED, INDICATED ON THE DRAWINGS, OR AS DIRECTED. BALANCING WORK SHALL BE DONE IN ACCORDANCE WITH AABC OR NEBB PUBLISHED METHODS AND PRACTICES. THE CONTRACTOR SHALL SUBMIT TO THE OWNER OR ENGINEER FOR THEIR EVALUATION AND APPROVAL, SIX (6) COPIES OF THE COMPLETE AIR BALANCE REPORT.



SUPPLY AIR DIFFUSER CONNECTION

SYMBOLS LIST

- ADAPTER FITTING AS REQUIRED ; SCREWED TO GRILLE
- SUPPLY AIR DIFFUSER TYPE & SIZE AS SCHEDULED ; DIFFUSER TO HAVE OPPOSED BLADE DAMPER WHERE MOUNTED ON PLASTER CEILING .
- PRE-INSULATED FLEX DUCT - SECURED AT BOTH ENDS WITH 1 inch WIDE DRAW BANDS, SUPPORTED FROM STRUCTURE, MAXIMUM LENGTH 5FT
- SPIN-IN FITTING W/DAMPER . VAPOR SEAL PRE-INSULATED FLEX DUCT TO SUPPLY AIR DUCT . OMIT DAMPER WHERE DIFFUSER IS MOUNTED ON PLASTER CEILING .
- SUPPLY AIR DUCT-SIZE AS INDICATED ON PLANS .

FIELD DUCT SIZING CHART

Duct Size	Design Airflow
5"	50
6"	75
7"	110
8"	160
9"	225
10"	300
12"	480
14"	700
16"	1000
18"	1300
20"	1700

ROUND DUCT SIZE ESTIMATE

Duct Size	Design Airflow
5"	50
6"	85
7"	125
8"	180
9"	240
10"	325
12"	525
14"	750
16"	1200
18"	1500
20"	2000

MECHANICAL LEGEND

	NEW DUCTWORK
	EXISTING DUCTWORK
	SOUNDLINED DUCTWORK
	DUCT RISING
	DUCT DROPPING
	DUCT SIZE, FIRST FIGURE IS VISIBLE SIDE
	CHANGE IN DUCT ELEVATION: RISE (R) OR DROP (D)
	DUCT WITH FLEXIBLE CONNECTION
	RECTANGULAR TO ROUND DUCT CONNECTION
	DUCT WITH CAPPED END
	TRANSITION
	DUCT SECTION, POSITIVE PRESSURE
	DUCT SECTION, NEGATIVE PRESSURE
	TURNING VANES (SQUARE ELBOW SHOWN)
	CONNECT NEW TAP TO EXISTING DUCTWORK
	MANUAL VOLUME DAMPER
	FLEXIBLE DUCT
	POINT OF CONNECTION - NEW TO EXISTING
	RETURN
	SUPPLY DIFFUSER
	THERMOSTAT
	REMOTE SPACE SENSOR
	GAS METER
	ABOVE FINISHED FLOOR
	CUBIC FEET PER MINUTE
	CEILING
	CEILING DIFFUSER
	CEILING REGISTER
	DOWN
	EXISTING, RELOCATE AS REQUIRED
	EXHAUST FAN
	FLEXIBLE CONNECTION
	FLOOR
	NEW
	TRANSFER AIR DUCT
	UNLESS OTHERWISE NOTED
	VOLUME DAMPER
	NATURAL GAS
	WATER HEATER

RECTANGULAR DUCT SIZE ESTIMATE											
Design	4"		6"		8"		10"		12"		
CFM	4"	CFM	6"	CFM	8"	CFM	10"	CFM	12"	CFM	
60	6x4	60	4x6	90	4x8	120	4x10	150	4x12		
90	8x4	110	6x6	160	6x8	215	6x10	270	6x12		
120	10x4	160	8x6	230	8x8	310	8x10	400	8x12		
150	12x4	215	10x6	310	10x8	430	10x10	550	10x12		
180	14x4	270	12x6	400	12x8	550	12x10	680	12x12		
210	16x4	320	14x6	490	14x8	670	14x10	800	14x12		
240	18x4	375	16x6	580	16x8	800	16x10	950	16x12		
270	20x4	430	18x6	670	18x8	930	18x10	1100	18x12		
300	22x4	490	20x6	750	20x8	1060	20x10	1250	20x12		
330	24x4	540	22x6	840	22x8	1200	22x10	1400	22x12		
		600	24x6	930	24x8	1320	24x10	1600	24x12		
		650	26x6	1020	26x8	1430	26x10	1750	26x12		
		710	28x6	1100	28x8	1550	28x10	1950	28x12		
		775	30x6	1200	30x8	1670	30x10	2150	30x12		
40	2 1/2 x10		1300	32x8	1800	32x10	2300	32x12			
70	2 1/2 x14		1400	34x8	1930	34x10	2450	34x12			
150	2 1/2 x30		1500	36x8	2060	36x10	2600	36x12			
		100	3 1/2 x14		2200	38x10	2750	38x12			
		220	3 1/2 x30		2350	40x10	2900	40x12			
Rectangular sheet metal duct = .07" on most metal duct calculators											
					3050	42x10					

INSTRUCTIONS FOR USE

- Identify the volume of air that will be passing through the duct
- Select the duct size from the table that can carry that volume of air
- If desired airflow exceeds the CFM rating, increase to the next duct size
- Listed CFM is based on typical field results and may vary, install dampers
- If duct run exceeds 25', or has excessive transitions, increase to the next size
- Design alone is inadequate, always prove design by test and balance.

MECHANICAL CODES AND STANDARD

INTERNATIONAL BUILDING CODE	2018 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE	2018 EDITION
INTERNATIONAL EXISTING BUILDING CODE	2018 EDITION
INTERNATIONAL FIRE CODE	2018 EDITION
INTERNATIONAL FUEL AND GAS CODE	2018 EDITION
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INTERNATIONAL PLUMBING CODE	2018 EDITION
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INTERNATIONAL RESIDENTIAL CODE	2018 EDITION
INTERNATIONAL SWIMMING POOL & SPA CODE	2018 EDITION
NFPA 101 LIFE SAFETY CODE	2018 EDITION
NATIONAL ELECTRICAL CODE	2017 EDITION

CODES AND STANDARDS

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Company Title

TRUOBA

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Project Title

Truoba Mini 419

Drawing Name

Mechanical Specifications

Drawing Scale

Sheet Size

ARCH-D

Layout ID

22

Date

2/21/2022

Revision

License Agreement

USE OF THE PLANS

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- Purchase and downloading of any PDF or CAD plan package grants the purchaser as "Licensee" the right to use such documents to construct a single home. A single purchase of the plans allows duplication of prints solely for that purpose. Purchaser acknowledges that all rights of ownership, title, and interest in the copyrights, plans and derivatives remain with Truoba UAB company. Modified plans are considered derivatives of the original and receive the same copyright protection even if completely redrawn. License for use of the Plans ends with the completion of the house (occupancy). Plans are not transferable to a third party. This means if the house is not built the Plans may not be sold to somebody else.
- Any use of the Plans, or modifications of the Plans, by purchasers, builders or others is done at their own risk. Licensee must have the Plans reviewed by a local professional architect or engineer before the start of construction. The information contained within the plans is to indicate design intent and basic construction detailing. It is the builder's responsibility to provide standard construction details and practices which will result in a structurally sound and weatherproof finished product.

CONTENT OF THE PLANS

- These Plans include only schematic electrical, plumbing, heating or air conditioning drawings. Due to the wide variety of local codes and climatic conditions, the Licensee should have a local electrical engineer, mechanical engineer or builder provide detailed electrical, plumbing, heating or air conditioning drawings as may be required for permits and construction. The foundation plan and associated details are provided as a basic guide for a typical spread footing/poured concrete foundation system. Licensee should have a local architect or licensed engineer review these Plans and provide a site-specific foundation design if found necessary.
- Limited architectural and engineering service has been provided for this house design. Additional construction details, information, and specifications are needed by the Builder. The Builder shall be responsible and liable for all specified house structures that the specified structure is as required to construct the house for the location of where this house will be built. The Builder must get approval of the house required structure from local structural engineer.
- These Plans provide ideas and concepts and are not intended to be complete in all respects and details. Variations in standard sizes of window and door brands and types and use of different materials and thicknesses can change details. Varying local codes, ordinances, regulations, requirements, and the layout of electrical, mechanical, and plumbing systems can also change details.
- No cutting or damage to building structural components will be allowed without written authorization from a local structural engineer.
- All utilities shall be connected to provide gas, electric, and water to all equipment whether said equipment is in Contract or not. Equipment shall be guaranteed to function properly upon completion.
- Manufacturer's standard specifications and materials approved for project use are hereby made part of these Notes with same force and effect as if written out in full herein. All appliances, fixtures, equipment, hardware, etc. shall be installed in accordance with Manufacturer's specifications and procedures.
- Written words take precedence over drawn lines. Large-scale details and plans take precedence over smaller details and plans. Should a conflict arrive between the Specifications and Drawings, the requirements deemed most stringent shall be used.
- Minor details not usually shown or specified but necessary for proper and acceptable construction, installation, or operation of any part of the Work shall be included in the Work as if it were specified or indicated on the Drawings.
- All architectural drawings and construction notes are complimentary. What is indicated and called for by one shall be binding as though called for by all.
- No deviation from the Drawings or Specifications or intent of same shall be made without the Owner's written authorization.

GENERAL CONTRACTOR - BUILDER'S RESPONSIBILITY

- It is the responsibility of the builder to assure that all work is in accordance with the latest edition of all applicable National, State, and Local Building Codes. It is the builder's responsibility to assure that all work is in accordance with the latest edition of all applicable Construction Standards, fire department standards, utility company standards and best practices. The builder shall be responsible for satisfying all applicable building codes regarding building, building structure, zoning, electrical, mechanical, plumbing and fire and obtaining all permits and required approvals. The drawings and specifications shall not permit work that does not conform to these codes.
- It is the responsibility of the builder to assure that all manufactured articles, material, and equipment are applied, installed, connected, erected, used, cleaned, adjusted, operated and conditioned as directed by the manufacturers. Builder shall follow all instructions to sustain and preserve all expressed or implied warranties and guarantees.
- It is the responsibility of the builder to assure that all materials, equipment and components are new and of good quality.
- It is the responsibility of the builder to check all dimensions and details for overall accuracy appropriate to the local conditions and the final selection of materials such as masonry, floor joists, lumber, structural members, construction panels, roofing, etc., all of which can create variations in dimensions and details. For example, if standard lumber joists are used in place of engineered floor joists the floor-to-floor dimension would vary from the Plans and require revised stair dimensions and framing.
- It is the responsibility of the builder to arrange for all tests and inspections as specified or otherwise required by the local building department and shall pay all costs and fees for same. The builder shall secure all building permits and upon completion of the project (prior to final payment) deliver to the Owner a Certificate of Occupancy, Use (or equivalent as local conditions require) from the building department.
- It is the responsibility of the builder to use State licensed contractors/subcontractors for all plumbing and electrical work. Contractors/subcontractors shall submit all required permits, certificates and sign-offs to the Owner for their records prior to final payment.
- The General Contractor shall verify all dimensions, be familiar with the existing conditions, and bring any discrepancies to the attention of the Architect prior to submission of construction proposal and before beginning work. Drawings may be scaled for estimating purposes and for general reference only. For all other dimensions or locations consult the Architect or refer to dimensions on Drawings. Verify all dimensions in the field.
- The General Contractor shall lay out all work and be responsible for all dimensions and conditions for trades such as electrical, plumbing, etc.
- All Work shall be guaranteed for a minimum one year after final approval, unless local laws require a longer warranty period. The General Contractor shall sign the written guarantee as provided by the Owner. The guarantee shall cover all general and subcontractor work. All defects discovered during this period shall be repaired to the Owner's satisfaction at the Contractor's expense.

DISCLAIMER

- Names of materials and manufacturers shown on these Plans do not represent an endorsement or recommendation by Truoba UAB company. Final selections of materials are the responsibility of the homeowner and/or builder, including, but not limited to proper installation of materials, nailing, gluing, caulking, insulating, flashing, roofing, weatherproofing and many other small items and details not necessarily indicated on the Plans, and over which Truoba UAB company has no control or responsibility. Truoba UAB company shall not be held liable for any errors, omissions, or deficiencies in any form by any party whatsoever.



General Notes

These drawings do not include the necessary components for construction safety. The general contractor shall provide for the safety, care of utilities and adjacent properties during construction, and shall comply with the state and federal safety regulations.

Electrical installation shall conform to the latest requirements of the national electrical code and the local building authority.

Mechanical work shall be executed and inspected in accordance with public utility regulations and local applicable codes.

Do not proceed in areas of the discrepancy until all such discrepancies have been fully resolved with written direction from the architect. The architect is not responsible for construction procedures, techniques or the failure of the sub-contractors to carry out the work in accordance with the construction documents, manufacturer's specifications and recommendations, industry standards, or required codes.

Written dimensions always take precedence over scaled dimensions. Do not scale drawings. Verify all dimensions shown prior to beginning any work and notify the architect of any conflicts or discrepancies for interpretation or clarification prior to beginning any associated work. Plan dimensions are taken from the center and face of framing members unless otherwise noted. Section or elevation dimensions are to the top of concrete, top of plywood, or beams unless otherwise noted.

It is the responsibility of the contractor or owner to verify the accuracy and completeness of the documents as presented and to verify all conditions and dimensions at the job site sufficiently in advance of the work to be performed to assure the orderly progress of the work. Any discrepancies between these construction documents and actual job site conditions shall be brought to the attention of the architect prior to beginning any construction.

The general contractor shall check and verify all grades including paved area slopes prior to placing any foundations. Survey work should be verified in detail. Verify all dimensions, conditions, and utility locations on the job prior to beginning any work or ordering any materials. Notify the architect of any conflicts or discrepancies in the drawings immediately. Stake all building corners and driveway locations for owner, builder, and design firm.

It is the responsibility of the contractor to protect the existing trees to remain and adjacent properties from damage during construction. Provide protective fencing throughout construction.

It is the intent and meaning of these drawings that the contractor and each subcontractor provide all labor, materials, transportation, supplies, equipment, etc., to obtain a complete job within the recognized standards of the industry.

The contractor & his subcontractors shall maintain the premises clean and free of all trash, debris and shall protect all adjacent work from damage, soiling, paint overspray, etc. All fixtures, equipment, glazing, floors, etc. Shall be left clean and ready for occupancy upon completion of the project.

Field measurements to be verified for proper fit and attachment for all doors, windows, cabinetry, appliances, hardware, fixtures, and specialized equipment. Items shall be installed in strict accordance with the manufacturer's specifications. All windows and doors dimensions are shown of actual unit size. The contractor must leave extra space for windows and doors installation.

Floor joist supplier to verify dimensions and coordinate joist layout plan and appropriate details.

Roof rafter and beam supplier to verify dimensions and coordinate rafter and beam layout plan and appropriate details.

Provide fire & smoke detectors as required by the local jurisdiction.

Provide insulation around all plumbing and heating lines exposed to temperature differentials.

Substitution of "Equal" products will be acceptable.

In the locations of harsh winter conditions, roof and deck surfaces must be maintained reasonably free of ice and snow to ensure minimal problems with these surfaces.

Codes having jurisdiction shall be observed strictly in the construction of the project. All applicable state, county, and city requirements regarding building, building structure, zoning, electrical, mechanical, plumbing, and fire codes shall be verified by the general contractor & subcontractors before the commencement of construction. Any discrepancies between code requirements and these plans shall be brought to the attention of the architect.

TRUOBA

TRUOBA MINI 221

House Area: 651 sq. ft.

DRAWING LIST

- COVER SHEET
- SLAB FOUNDATION PLAN
- CRAWL FOUNDATION PLAN
- PLUMBING PLAN
- FLOOR PLAN
- ROOF CONSTRUCTION PLAN
- ROOF PLAN
- SECTIONS
- ELEVATIONS - 01,02
- ELEVATIONS - 03,04
- ELECTRICAL PLAN
- HVAC PLAN
- FURNITURE PLAN
- DOOR & WINDOW SCHEDULE
- CONSTRUCTION DETAILS
- DOOR & WINDOW DETAILS
- PLUMBING SPECIFICATIONS
- ELECTRICAL SPECIFICATIONS
- MECHANICAL SPECIFICATIONS

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Project Title

Truoba Mini 221

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Cover Sheet

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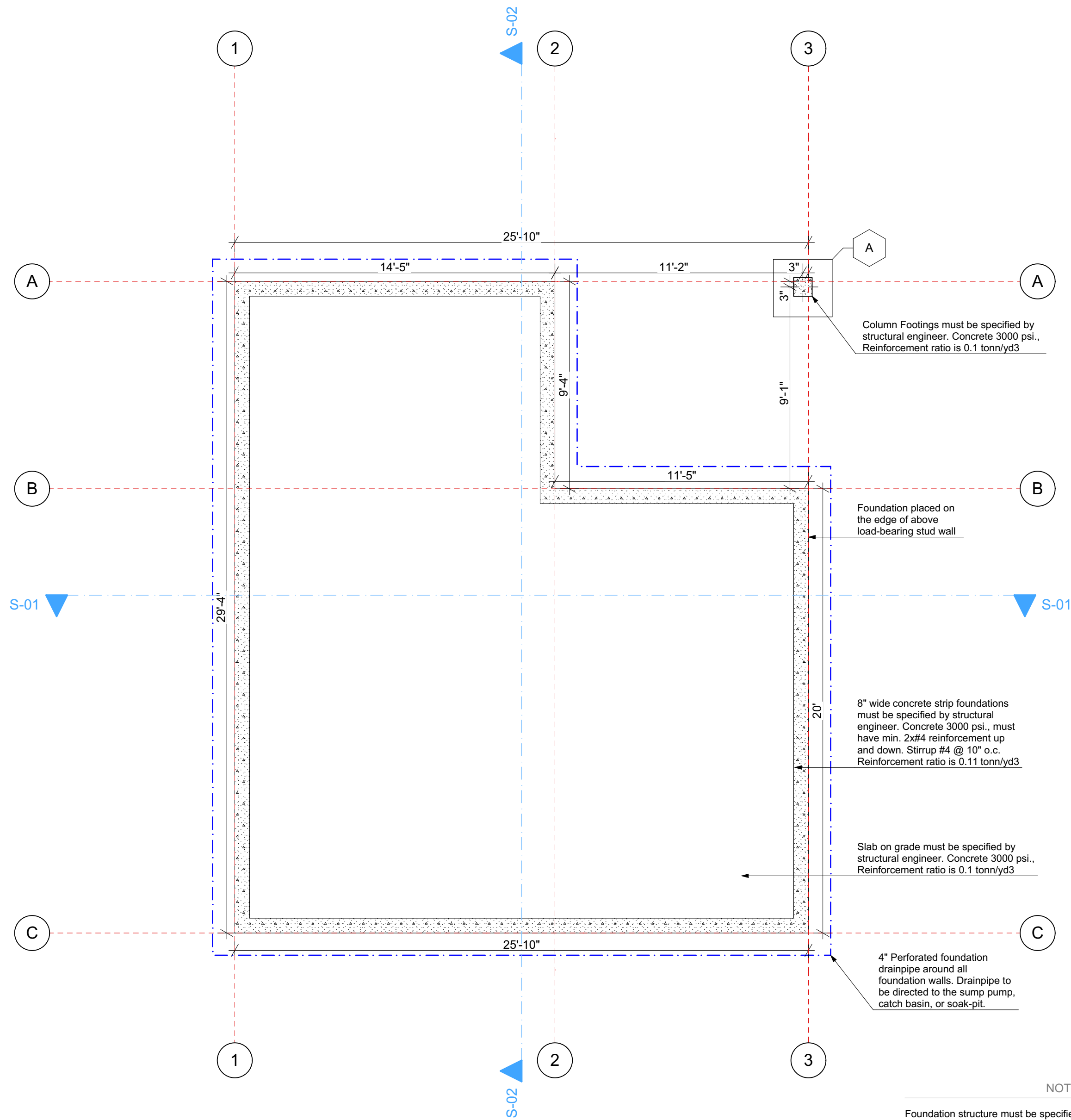
Layout ID

01

Date

4/20/2021

Revision



01 Slab Foundation Plan
1/4" = 1'-0"

COLUMN FOOTING SCHEDULE			
MARK	SIZE	THICKNESS	BARs (1/2 E.W.)
A	2'-0" x 2'-0"	12"	4 - #4 x 1'-6"
B	3'-0" x 3'-0"	12"	6 - #4 x 2'-6"

NOTES

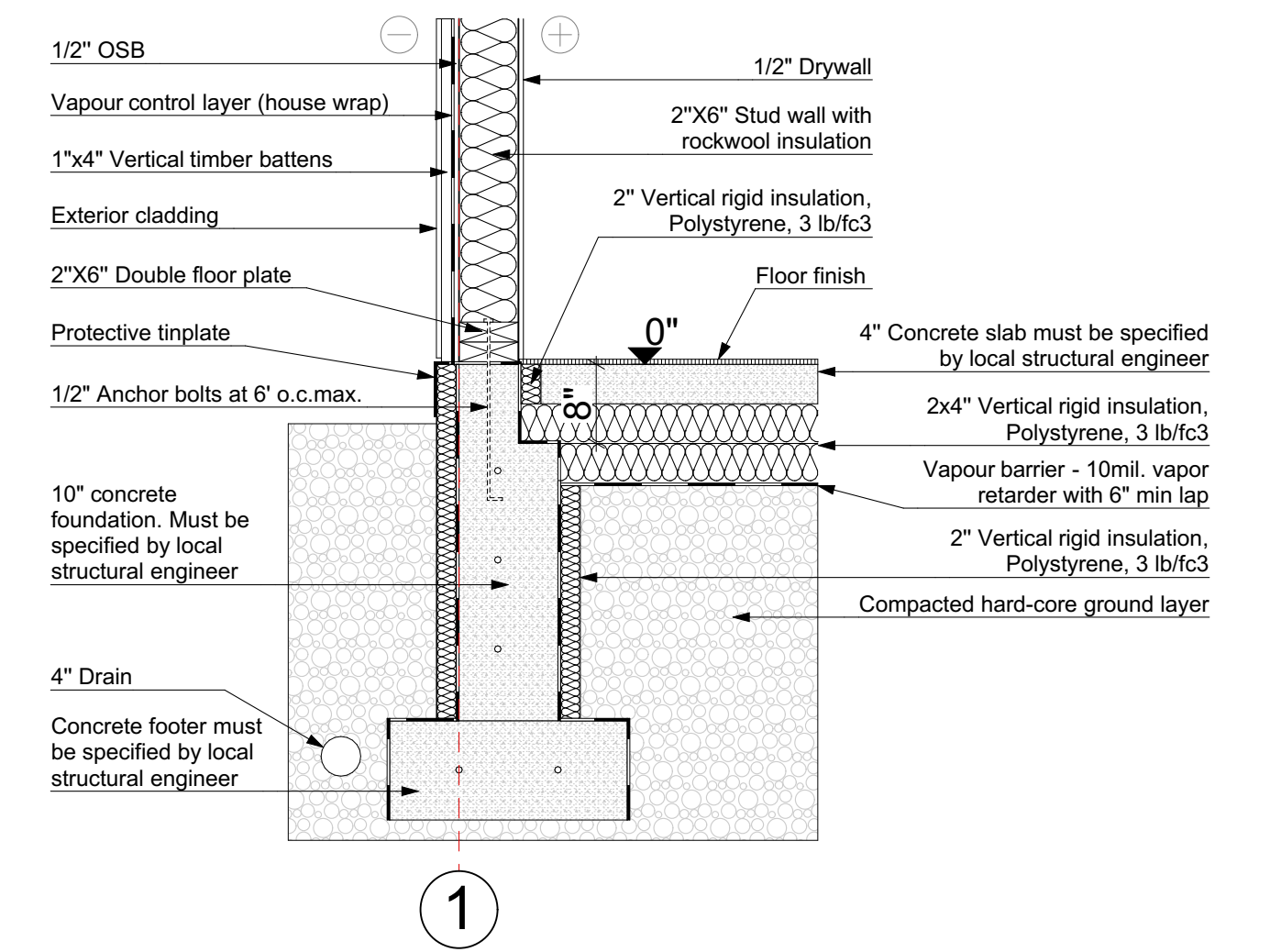
Foundation structure must be specified and approved by local structural engineer of a location where this house is built. Structural engineer together with client and contractor must decide what variance of the foundation will be chosen.

A. Soil tests. In areas likely to have expansive, compressible, shifting or other unknown soil characteristics, KHC may require a soil test to determine the soil's characteristics at a particular location. This test shall be made by an approved agency using an approved method. (Table R401.4.1 IRC)

B. Compressible or shifting soil. When top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering or presaturation. (Section R401.4.2 IRC)

C. Site should be excavated and the foundation designed to allow a minimum of 18" crawlspace headroom and a minimum of 6" clearance between the bottom of the exterior vinyl siding and the finished exterior grade. All below grade block foundation is to be coated with foundation coating/damp proofing. (Section R406.1 IRC)

D. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as to not create a hazard. Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6" within the first 10'.



02 Slab foundation construction detail

FOUNDATION NOTES

Dimensions are to the outside edge of the concrete stem wall.

Slope all exterior finished grades away from the building 6" in fall in first 10'.

The contractor is responsible for all shoring, cribbing, sheet piling, etc. As required to safely retain excavations during construction.

Foundation plates shall be redwood construction common or pressure-treated doug-fir and anchored to foundation w/ 1/2" dia. Anchor bolts w/ 7" min. Embedment max. Spacing 6' O.C. Unless noted otherwise. Minimum 2 anchor bolts per plate section. Max. 12" and min 7 bolt diameter from end of sill, middle 1/3 of width.

All cast-in-place concrete shall conform to requirements of the AC 1301 "specifications for structural concrete."

Concrete shall be ready mixed concrete in accordance with astmc 94. Use type 'a' cement. Air entrainment shall be 4-6% U.N.O. All concrete to attain a minimum compressive strength of 3,000 psi @ 28 days. Cement shall conform to astmc 150, type a.

Aggregate to be 3/4 nominal course. Maximum 4" slump for slabs on grade, and a maximum 7" for walls and footers.

Do not tamp slabs. For all concrete use roller bud, vibrating screed or bull float as necessary to prevent honeycombing but not to the point of segregation. The concrete shall be chloride-free.

Provide and install sleeves for utility openings prior to placing concrete. Concrete footings may be poured against neat excavations provided the required concrete coverage is maintained.

Cure exposed concrete for 7 days (min.) in accordance with ACI 301 procedures in order to prevent cracking. Cure by watering daily or with curing and sealing compound (scofield 'cureseal' or eq), or combinations thereof. If curing compound is used, apply at a rate specified by the manufacturer.

Reinforcing steel shall conform to the ASTM A615, grade 40 (fy= 40 ksi) deformed bars for all bars.

Contracting joints in slabs shall be not less than 1/4 of the slab thickness. Construction joint grid to be as square as possible and not exceed 100 square feet in area.

All reinforcing steel shall be detailed and placed in conformance with the latest editions of the ACI 318 and the crsi "manual of standard practice for reinforced concrete construction", and as modified by the drawings. All reinforcing bar bends shall be made cold.

All reinforcing steel in slab on grade shall be accurately placed and supported by galvanized metal or plastic chairs, spacers or hangers 1 1/2" - 2" below top of slab. Provide the following minimum coverage:
Cast against earth and permanently exposed to earth- 3"
Exposed to earth or weather:
#6 and larger- --2"
#5 and smaller--1 1/2"
All others per the latest edition of the ACI 318

Unless noted otherwise, reinforcing steel lap splices in concrete shall be class 'b' tension lap splices (2'- 0" min.) per the latest edition of the ACI 318. Stagger alternate splices a min. Of one lap length.

Spliced bars shall be placed at the same effective depth unless noted otherwise. Minimum bar splices shall be 30 bar diameters. No splicing of vertical bars is allowed.

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Slab Foundation Plan

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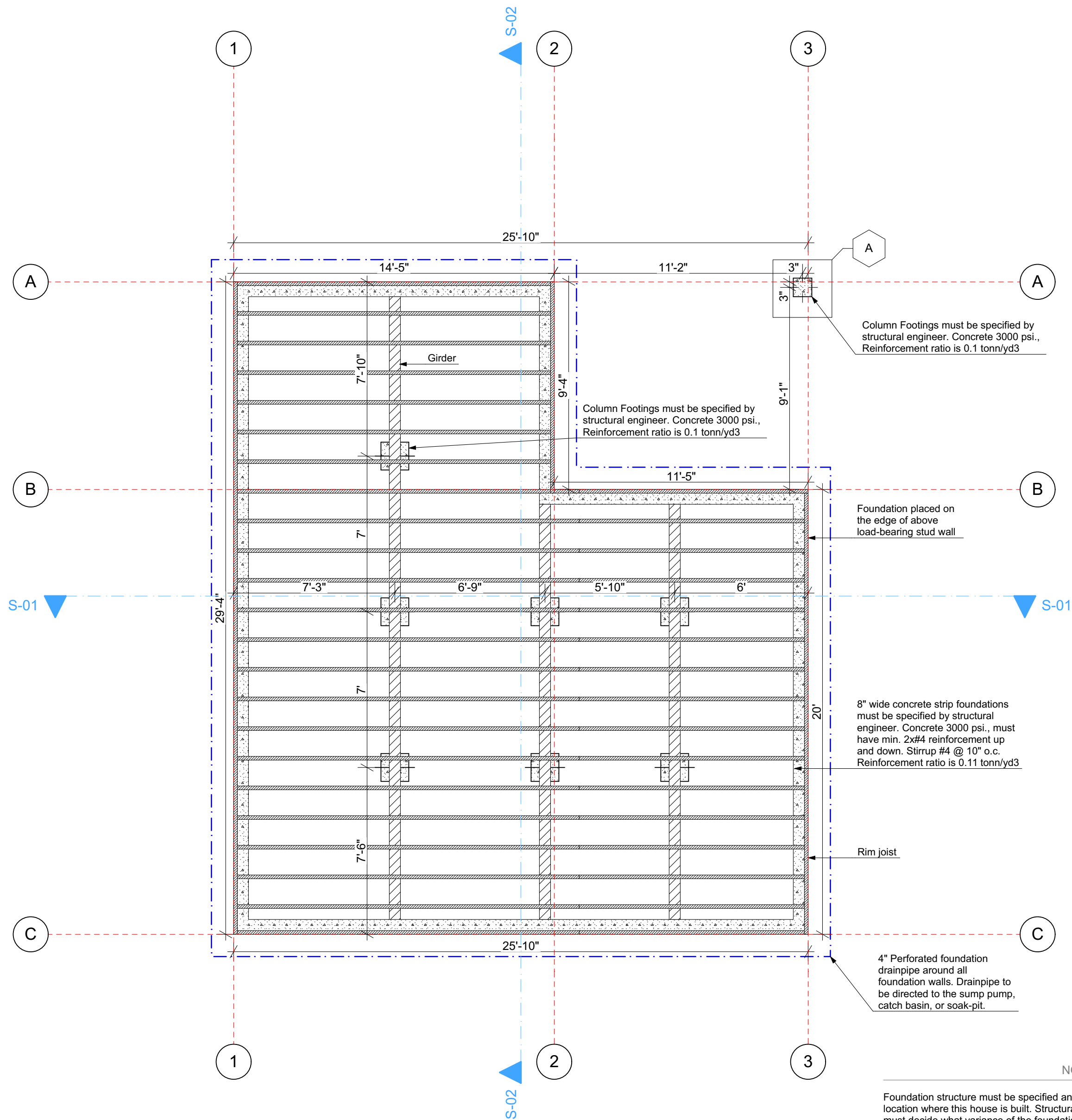
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02

Date

4/20/2021

Revision



01 Crawl Foundation Plan
1/4" = 1'-0"

COLUMN FOOTING SCHEDULE			
MARK	SIZE	THICKNESS	BARS (1/2 E.W.)
A	2'-0" x 2'-0"	12"	4 - #4 x 1'-6"
B	3'-0" x 3'-0"	12"	6 - #4 x 2'-6"

Column Footings must be specified by structural engineer. Concrete 3000 psi., Reinforcement ratio is 0.1 ton/yd³

Column Footings must be specified by structural engineer. Concrete 3000 psi., Reinforcement ratio is 0.1 ton/yd³

Foundation placed on the edge of above load-bearing stud wall

8" wide concrete strip foundations must be specified by structural engineer. Concrete 3000 psi., must have min. 2x#4 reinforcement up and down. Stirrup #4 @ 10" o.c. Reinforcement ratio is 0.11 ton/yd³

Rim joist

4" Perforated foundation drainpipe around all foundation walls. Drainpipe to be directed to the sump pump, catch basin, or soak-pit.

NOTES

Foundation structure must be specified and approved by local structural engineer of a location where this house is built. Structural engineer together with client and contractor must decide what variance of the foundation will be chosen.

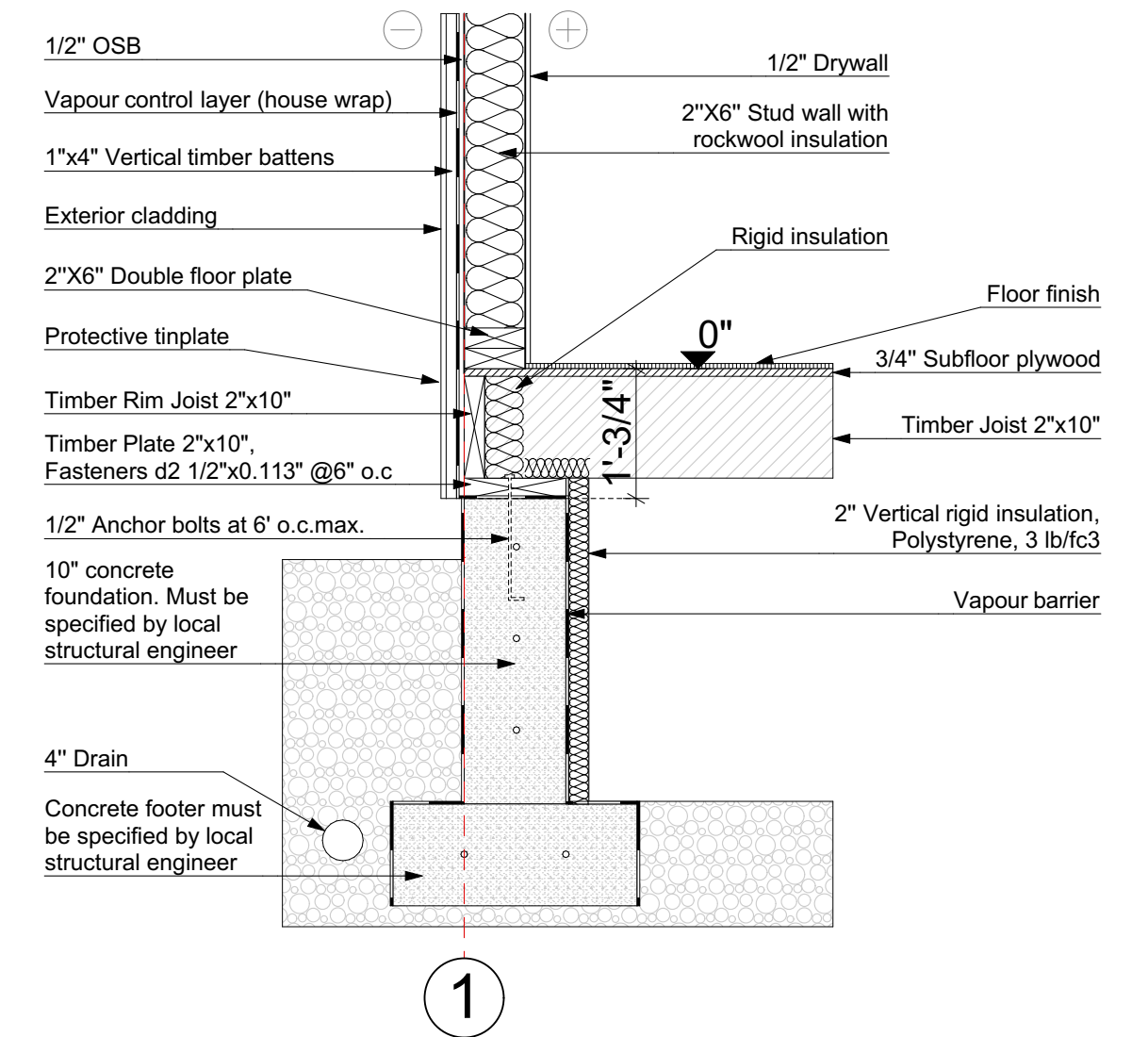
Crawl Space Ventilation. The under-floor space needs to have ventilation openings through foundation walls or exterior walls. 1 sq. ft. of screened vent space penetrating the perimeter foundation for every 150 sq. ft. of space in the crawl space, unless the ground surface is covered by Class 1 vapor retarder material. Where a Class 1 vapor retarder material is used, ventilation openings should not be less than 1 sq. ft. for each 1,500 sq. ft. of crawl space area. 1 vent opening required within 3' of each corner. (Section R408.1 IRC)

A. Soil tests. In areas likely to have expansive, compressible, shifting or other unknown soil characteristics, KHC may require a soil test to determine the soil's characteristics at a particular location. This test shall be made by an approved agency using an approved method. (Table R401.4.1 IRC)

B. Compressible or shifting soil. When top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering or presaturation. (Section R401.4.2 IRC)

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02 Crawl foundation construction detail

FOUNDATION NOTES

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All cast-in-place concrete shall conform to requirements of the AC 1301 "specifications for structural concrete."

Concrete shall be ready mixed concrete in accordance with astmc 94. Use type 'a' cement. Air entrainment shall be 4-6% U.N.O. All concrete to attain a minimum compressive strength of 3,000 psi @ 28 days. Cement shall conform to astmc 150, type a.

Aggregate to be 3/4 nominal course. Maximum 4" slump for slabs on grade, and a maximum 7" for walls and footers.

Do not tamp slabs. For all concrete use roller bud, vibrating screed or bull float as necessary to prevent honeycombing but not to the point of segregation. The concrete shall be chloride-free.

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Reinforcing steel shall conform to the ASTM A615, grade 40 (fy= 40 ksi) deformed bars for all bars.

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Project Title

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Drawing Name

Crawl Foundation Plan

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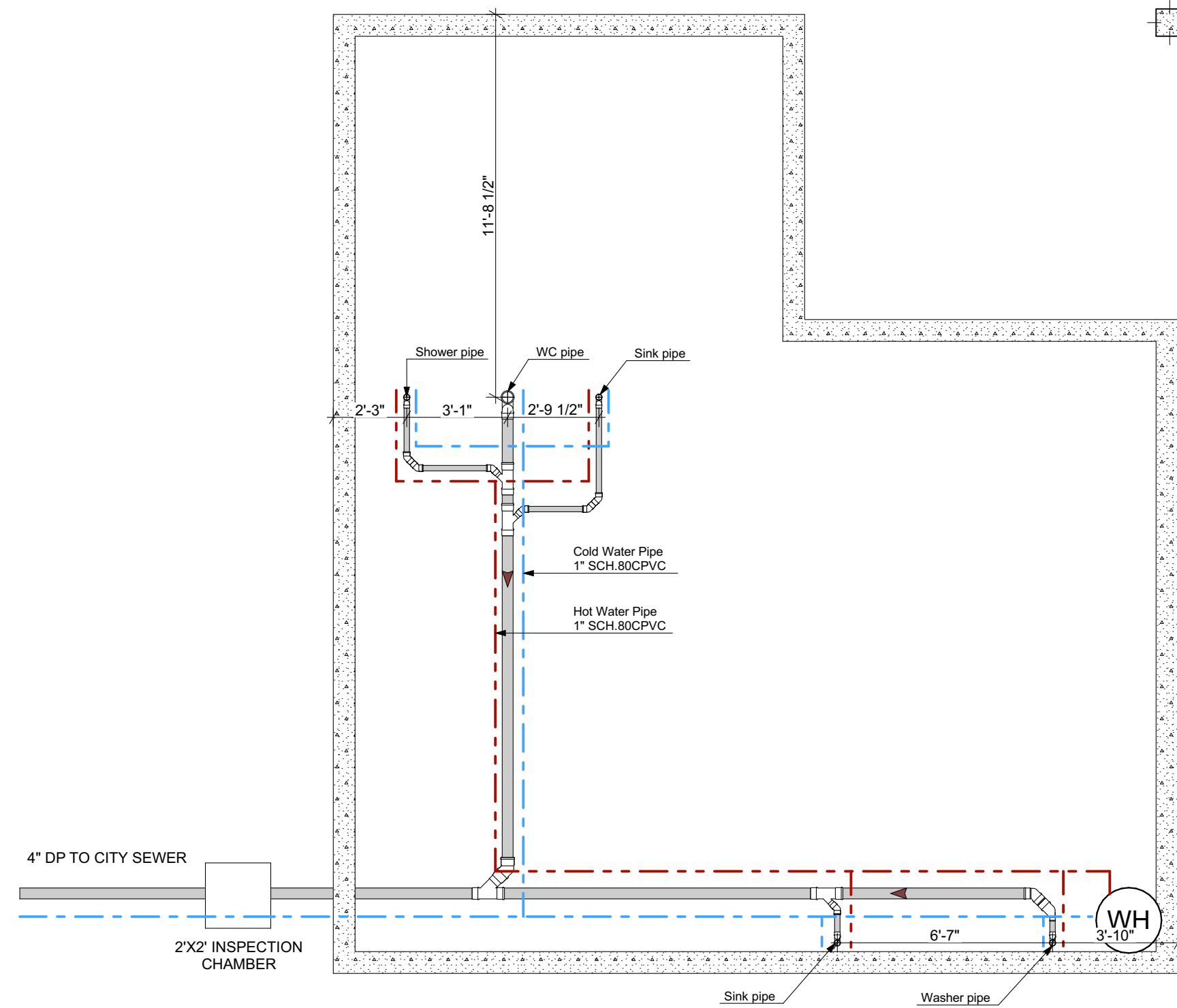
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03

Date

4/20/2021

Revision



01 Plumbing Plan
1/4" = 1'-0"

WATER HEATER SCHEDULE

MARK	MANUFACTURER/MODEL	QUANTITY	AREA SERVED	ELECTRICAL	GALLONS	RECOVERY RATE
EWH-1&2	RHEEM: 82SV50-2	1	KITCHEN/RESTROOM	40AMP 240V, 1P	30 GAL	21 GPH

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Drawing Name

Plumbing Plan

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1/4" = 1'-0"

Sheet Size

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04

Date

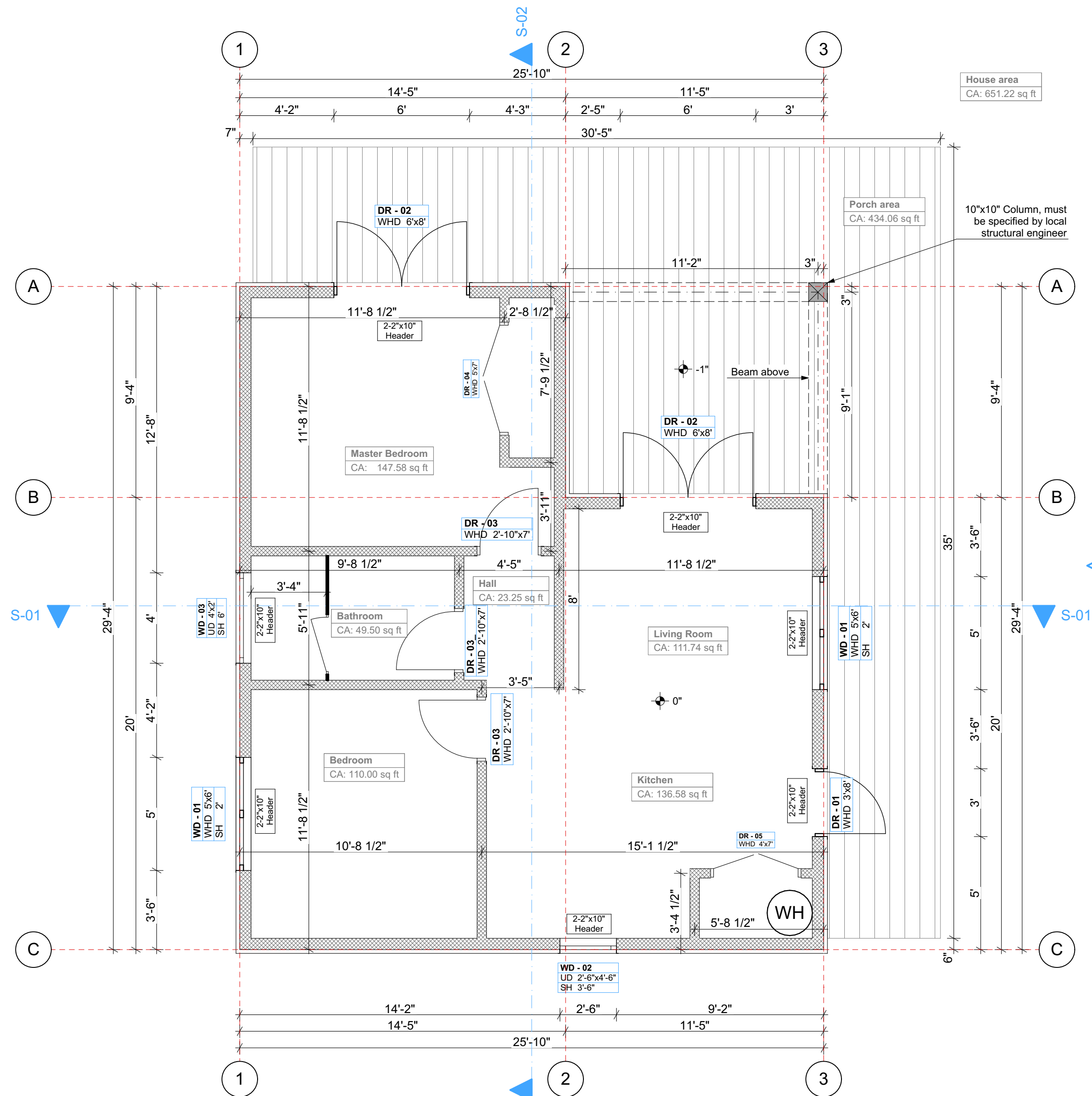
4/20/2021

Revision

NOTES

- All plumbing drain fixtures are located in the center of 2"x4" stud walls.
- 2" sink/shower/bathtub drain pipe.
- 3" toilet drain pipe.
- 4" main house drain line pipe.

Elevation - 01



House area
CA: 651.22 sq ft

Porch area
CA: 434.06 sq ft

DR - 02
WHD 6'x8'

Master Bedroom
CA: 147.58 sq ft

Bathroom
CA: 49.50 sq ft

Bedroom
CA: 110.00 sq ft

Hall
CA: 23.25 sq ft

Living Room
CA: 111.74 sq ft

Kitchen
CA: 136.58 sq ft

WH

01 First Floor Plan
1/4" = 1'-0"

Elevation - 03

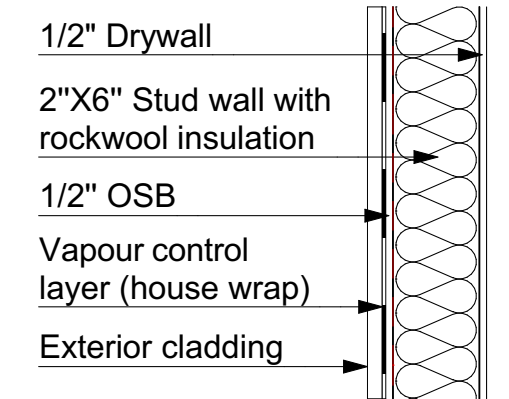
NOTES

- All house structural elements must be specified and approved by local structural engineer of a location where this house is built.
- Dimensions of the exterior wall taken from the external stud wall side (2"x6"). Partition wall (2"x4") dimensions taken from wall center.
- Doors and windows are shown of an unit sizes. Leave extra space for the doors and windows installation.
- Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follow: black or dark grey window finish.
UD - Unit Dimension
SH - Sill Height
- Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.
- Interior doors. Timber frame interior doors with the finish of owner's choice. Recommended white or light timber texture door finish.
- Exterior cladding - Board and batten siding.

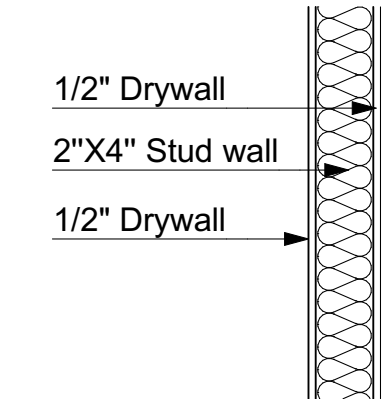
FRAMING NOTES

- All lumber, sheathing, and engineered wood components shall conform to guidelines from the AWC, NDS.
- All main level & upper-level exterior walls are 2x6 wood studs at 24" on center. All exterior walls to be platform framed to bottom of joist, rafter or truss with double top plate and single bottom plate. Load-bearing walls over 10' shall be 2x6 at 16" on center. All interior bearing walls are 2x4 wood studs at 16" on center, U.N.O. Interior bearing walls to be framed with double top plate and single bottom plate. Non-load bearing walls over 14' unsupported height shall be 2x6 at 16" on center. All other interior non-bearing walls shall be 2x4 wood studs at 24" on center. Provide treated wood sills where required by code.
- All 2-story frame walls (up to 19' plate height) shall be balloon framed with 2x6 studs @ 12" O.C. Unless noted otherwise on plans.
- Studs and plates shall be "Studs" or #2 structural light framing, hem-fir or better. Finger jointed studs allowed provided they meet stud grade quality.
- Provide "Solid studs," 2 minimum ganged studs in walls and at beam bearings as shown, continuous through solid blocking in floors.
- All single braced lvl's called out shall be framed with single-dimensional lumber of closest size.
- All multiple beams shall be glued, nailed, and/or bolted as per the manufacturer's recommendations.
- Framing work shall be installed plumb, level, true, and firmly secured, relative to elevations and dimensions as shown in the floor plans, building sections, and exterior elevations.
- All dimensional lumber shall be s4s unless otherwise noted. Use graded lumber and wood products as noted and where appropriate.
- All posts to be shown and provided with bearing support to the foundation.
- All exterior wall load-bearing headers of 4' or less to be continuous (2) 2x10 spf #2 separated with 1/2" cdx plywood unless noted otherwise. Nail as required.
- All framing cavities (I.E. Partition nailers, corners, etc.) shall be insulated as required by code. Engineered joists and beams shall be installed in compliance with the manufacturer's instructions to meet code and warranty requirements.
- All lumber in contact with concrete or exposed to weather shall be pressure treated.
- Doubled rafters @ ridge and hip locations, typical unless noted or detailed otherwise.
- Doubled joists and rafters @ all openings, typical unless otherwise detailed.
- Wood I-joists to be installed according to the manufactures instructions.
- Doubled trimmers shall be installed where the span exceeds 4' unless otherwise noted.
- Layout plumbing walls, mechanical chases, and floor joists as necessary for plumbing requirements. Provide blocking between joists and rafters @ all bearing points and as required per code and/or manufacturer's specifications.
- Provide 2x solid blocking, furring, nailers, etc. Required for installation of sheetrock, cabinets, closet rods, bath accessories, shelves, drapes, etc.
- Provide fire blocking as required @ 8' to 10' A.F.F. or as required. Provide fire blocking @ floor/wall balloon framing interface, min. Typ.
- Provide appropriate Simpson or eq. Steel framing connectors as shown or as required for structural code compliance.
- U.N.O. Sheath entire building with 1/2" zip sheathing, taped and sealed.
- Insulate piping accordingly as needed to prevent freezing.

EXTERIOR WALL



INTERIOR WALL



1

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Project Title	Truoba Mini 221
Drawing Name	Floor Plan
Drawing Scale	1/4" = 1'-0"
Sheet Size	ARCH-C
Layout ID	05
Date	4/20/2021
Revision	

SNOW LOAD ANALYSIS

Nort East & North West USA

Pg = 25psf - ground snow load for East USA
Pg = 11 psf - ground snow load for west USA

Min snow load: **16psf - governs**
In accordance with the ANSI/AF&PA NDS-2015 using the LRFD method

Rafter Design 16" O.C. - 2"x10"

Dead load: 8.8 pound/ft2
Load combinations: 1.2Dead + 1.6Snow

Member details
Length of span = 18.5 ft

Roof Beam Design - 6"x12"

Dead load: 11.3 pound/ft2
Load combinations: 1.2Dead + 1.6Snow
Tributary area width: 10ft

Member details
Length of span Ls1 = 16 ft

Wood Column Design - 8"x8"

Dead load: 11.3 pound/ft2
Load combinations: 1.2Dead + 1.6Snow

Roof beam self-weight: **17.325 pound**
Total point load acting on column: 2487.87 pounds

Member details
Unbraced length in x-axis Lx = 7.5 ft
Unbraced length in y-axis Ly = 8 ft

Roof Joist Design

Total load 36.16pound/ft2
Dead load=10.56psf
Live load=25.6psf

Midwest USA

Pg = 35 psf - ground snow load for central USA

Min snow load: **19.6psf - governs**
In accordance with the ANSI/AF&PA NDS-2015 using the LRFD method

Rafter Design 16" O.C. - 2"x10"

Dead load: 8.8 pound/ft2
Load combinations: 1.2Dead + 1.6Snow

Member details
Length of span = 18.5 ft

Roof Beam Design - 6"x12"

Dead load: 11.3 pound/ft2
Load combinations: 1.2Dead + 1.6Snow
Tributary area width: 10ft

Member details
Length of span Ls1 = 16 ft

Wood Column Design - 8"x8"

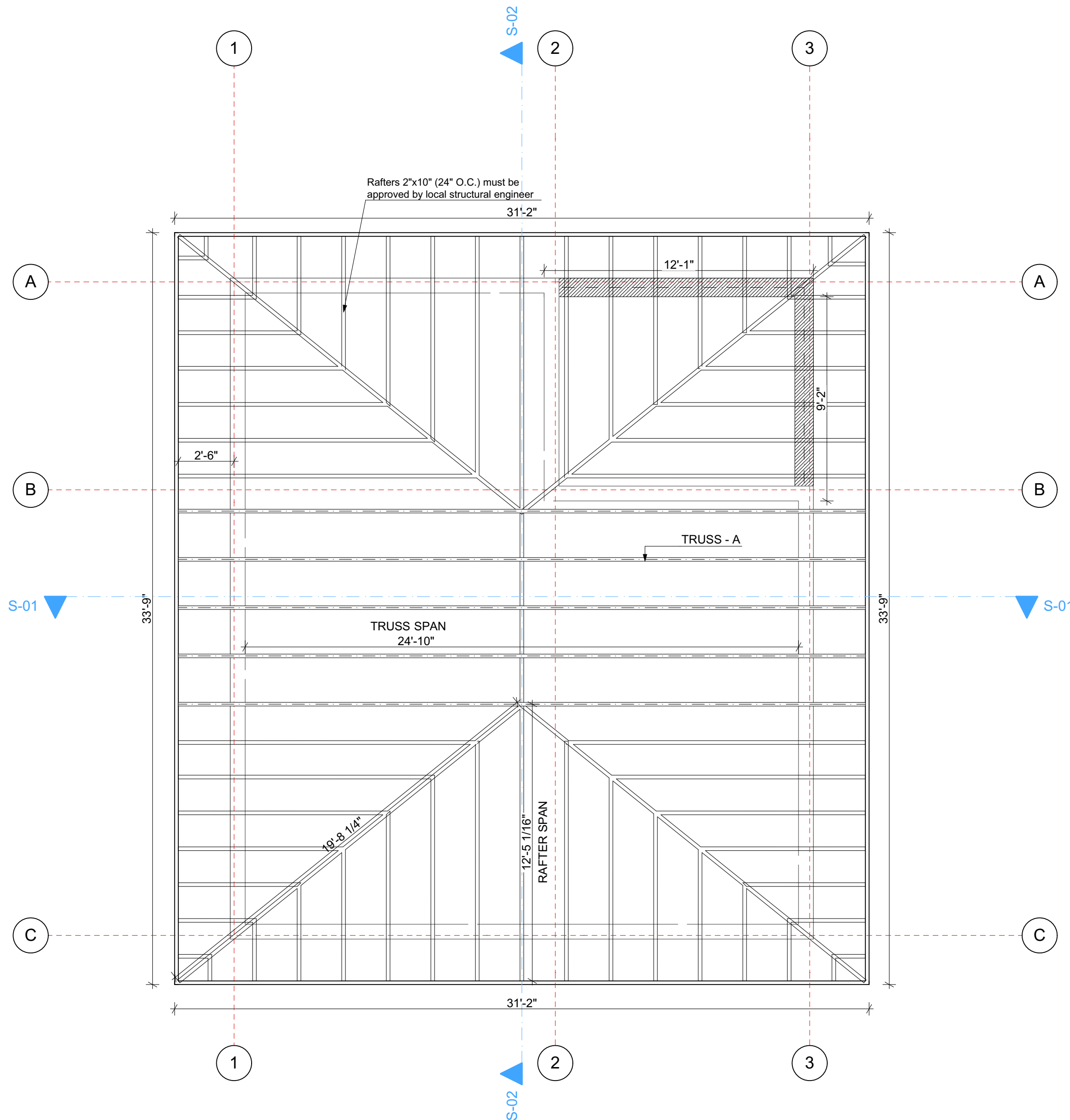
Dead load: 11.3 pound/ft2
Load combinations: 1.2Dead + 1.6Snow

Roof beam self-weight: **17.325 pound**
Total point load acting on column: 2850.75 pounds

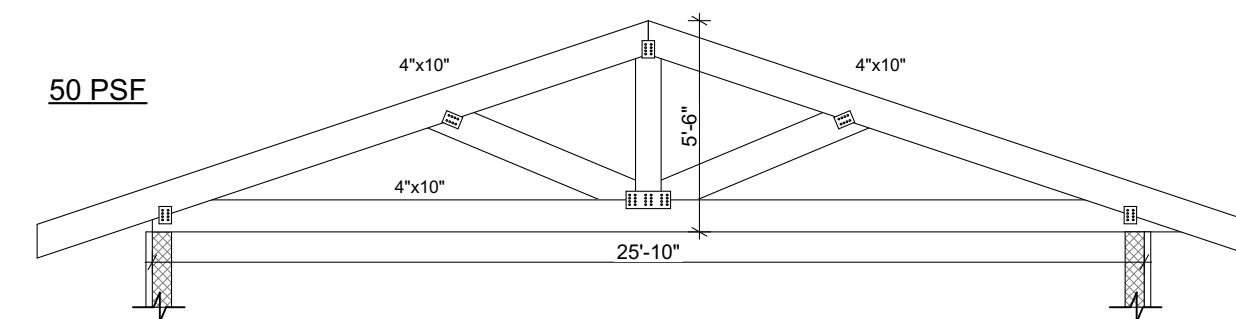
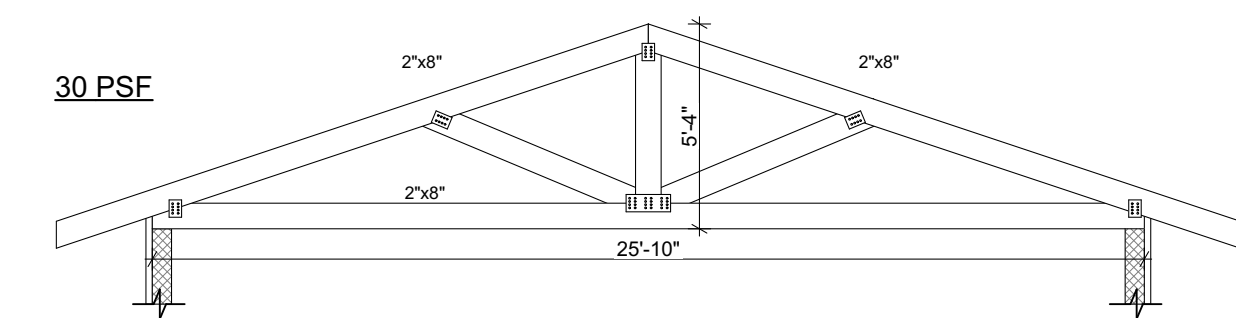
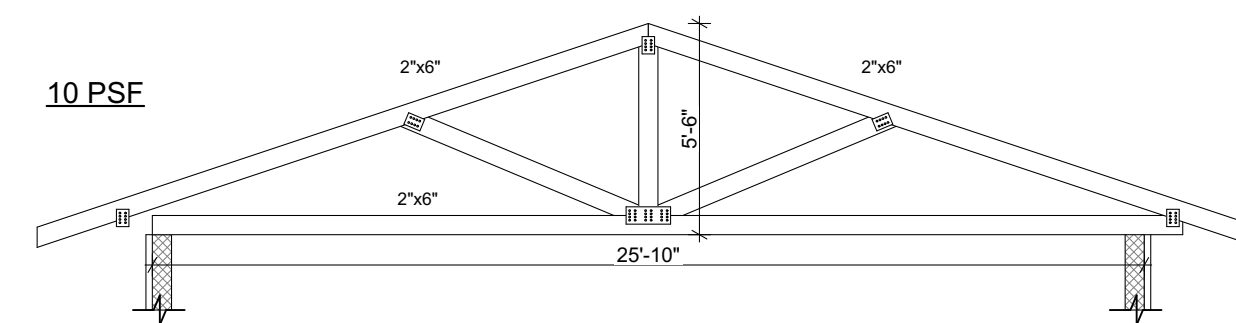
Member details
Unbraced length in x-axis Lx = 7.5 ft
Unbraced length in y-axis Ly = 8 ft

Roof Joist Design

Total load 41.92pound/ft2
Dead load=10.56psf
Live load=31.36psf



01 Roof Construction Plan
1/4" = 1'-0"



NOTES

Roof structural element sizes will vary by the location and requirements of local building codes. Entire roof structure including Rafters and Beams must be specified by local structural engineer of a location where this house is built.

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Drawing Name

Roof Construction Plan

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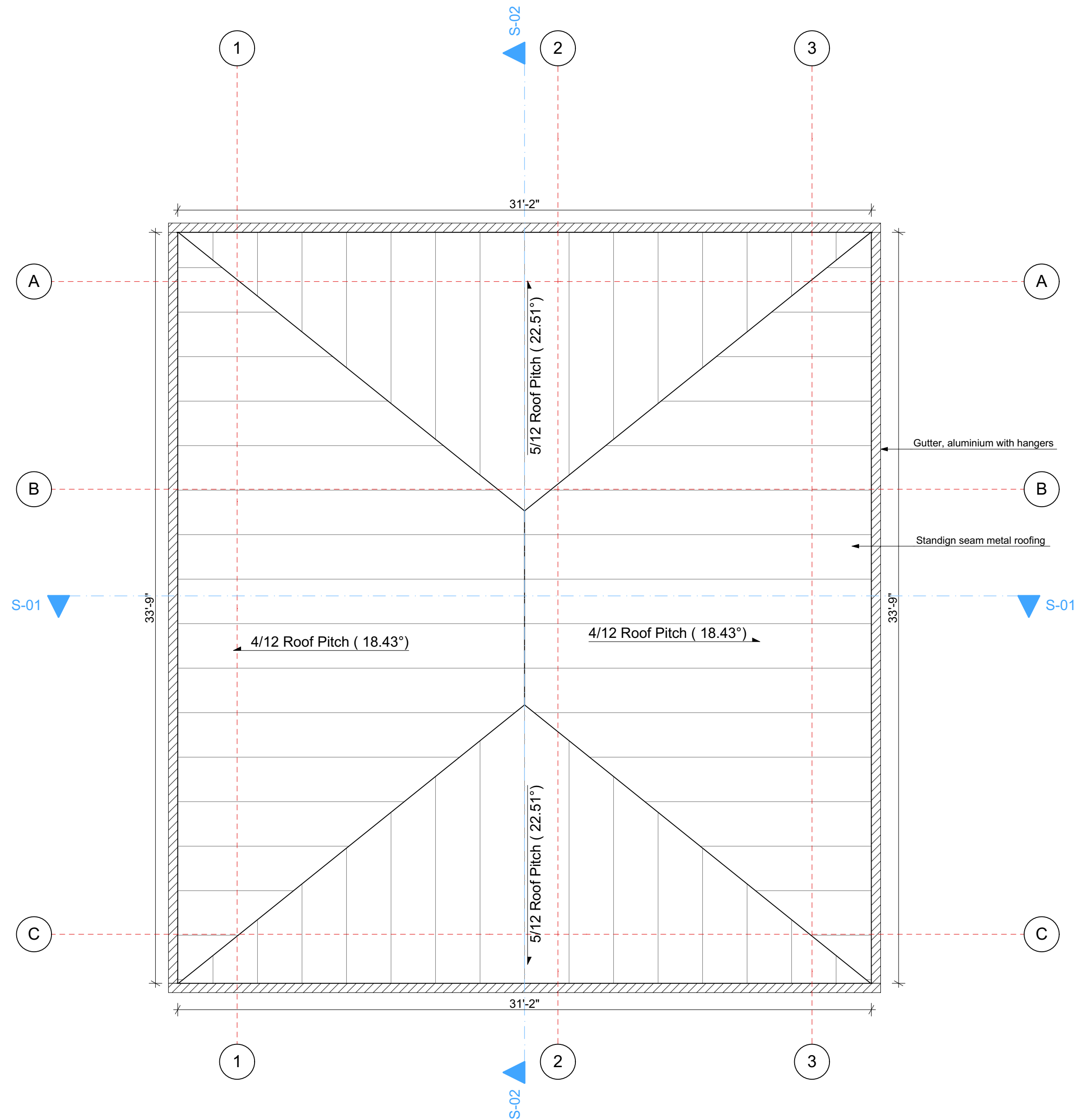
Layout ID

06

Date

4/20/2021

Revision



Total roof surface area - 1120 sq. ft.

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

NOTES

All roof materials shall be installed per the manufacturer's specifications.

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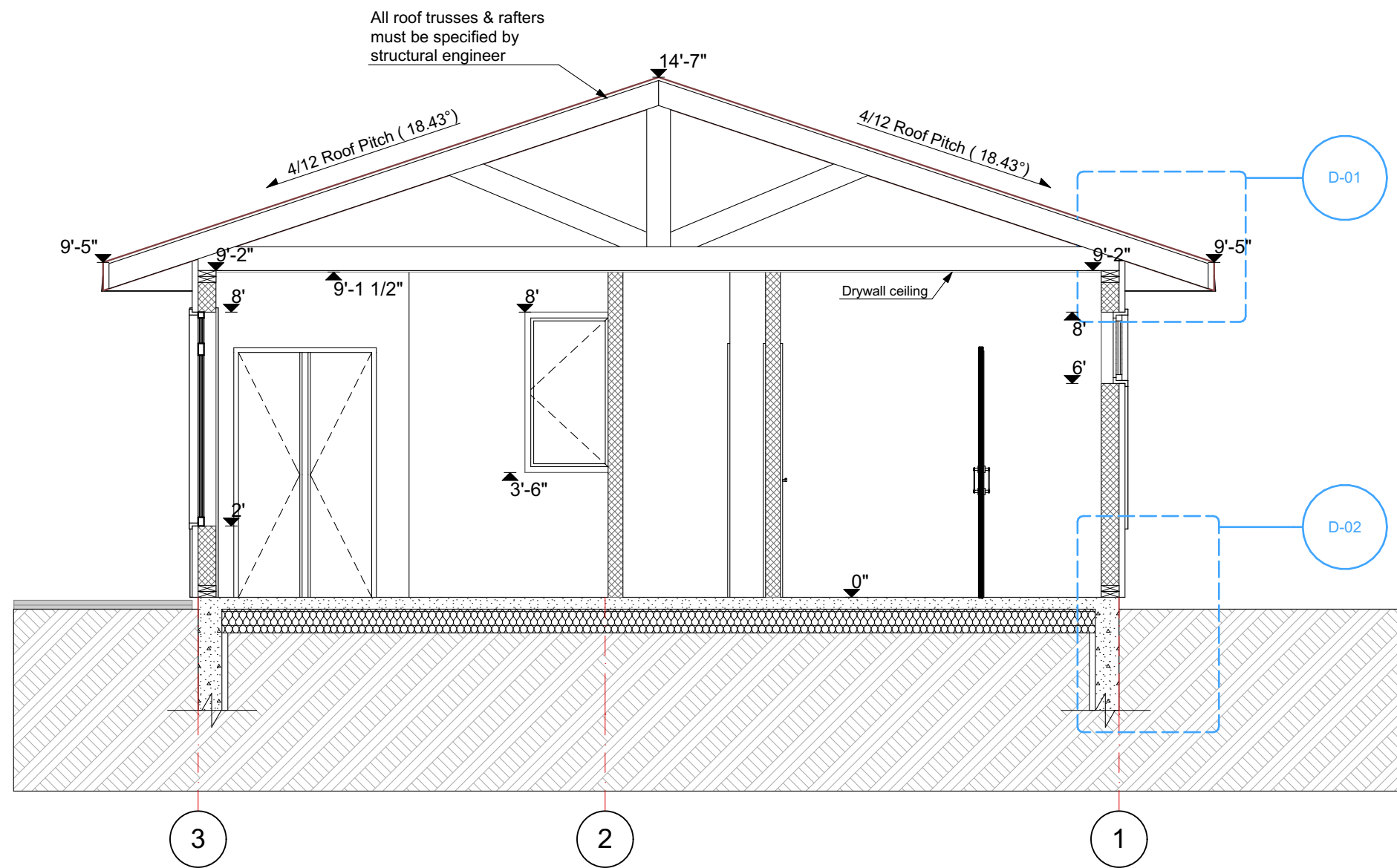
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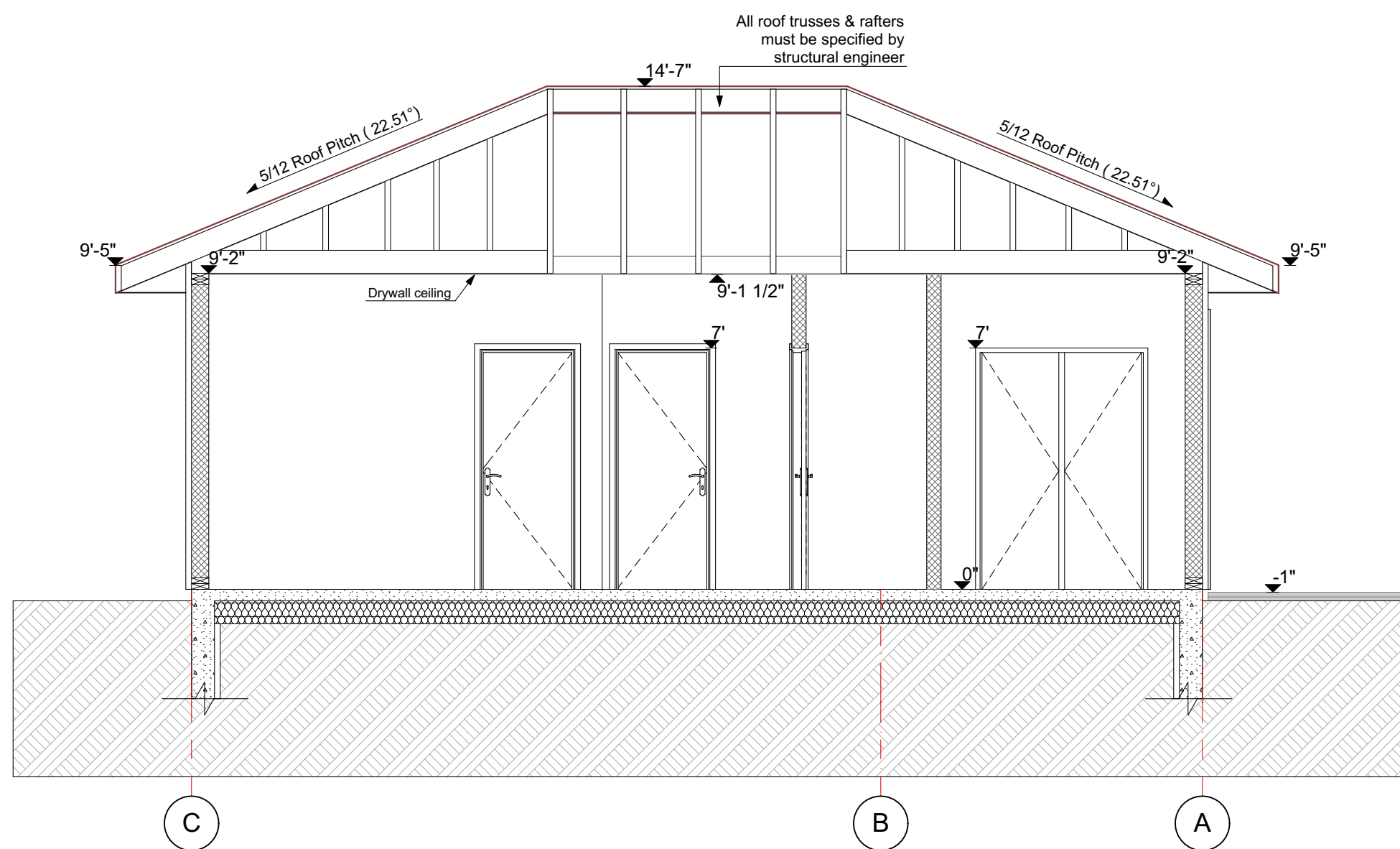
Date

4/20/2021

Revision



01 House Section - 01
1/4" = 1'-0"



02 House Section - 02
1/4" = 1'-0"

MINIMUM MEMBER SIZES

- a. ALL LOAD BEARING HEADERS ARE TO BE (2) 2x10'S UNLESS NOTED OTHERWISE.
- b. FOR 2X4 WALLS ALL HEADERS ARE TO BE SUPPORTED BY A MINIMUM OF (1) 2x4 TRIMMER AND (1) 2x4 KING STUD AT EACH JAMB, U.N.O. PROVIDE MINIMUM (2) 2x4 TRIMMERS AND (2) 2x4 KING STUDS AT EACH JAMB FOR OPENINGS 6'-0" TO 10'-0".
- c. FOR 2X6 WALLS ALL HEADERS ARE TO BE SUPPORTED BY A MINIMUM OF (1) 2x6 TRIMMER AND (1) 2x6 KING STUD AT EACH JAMB, U.N.O. PROVIDE MINIMUM (2) 2x6 TRIMMERS AND (2) 2x6 KING STUDS AT EACH JAMB FOR OPENINGS 6'-0" TO 10'-0".
- d. ALL WALLS SHALL BE FRAMED IN ACCORDANCE WITH TABLE R602.3.1.
- e. ALL RAKE WALLS SHALL BE FRAMED FULL HEIGHT TO THE BOTTOM OF EITHER LOOKOUT RAFTERS OR VAULTED GABLE END TRUSS WITH 1 PIECE STUDS. BLOCKING MAY BE REQUIRED ON WALLS TALLER THAN 10'-0".
- f. ALL POINT LOADS SHALL BE CARRIED DOWN AND BEAR DIRECTLY ON THE FOUNDATION WALL OR BEAM. EACH POST MUST INCREASE BY ONE PLY FOR EACH LEVEL CARRYING THE POINT LOAD. SQUASH BLOCKS ARE REQUIRED BETWEEN FLOORS.
- g. ALL BEARING LENGTHS FOR WOOD BEAMS SHALL NEVER BE LESS THAN 1 1/2" AT THE ENDS OF BEAMS. BEARING ACROSS THE FULL WIDTH OF THE BEAM IS REQUIRED.
- h. TYPICAL ROOF OVER FRAMING SHALL BE 2x6 AT 24" ON CENTER AND BE POSTED DIRECTLY TO TRUSSES OR RAFTERS BELOW. MAX. SPAN FOR THE 2x6 MEMBERS IS 6'.
- i. ALL MULTIPLE MEMBER LVL'S SHALL BE ASSEMBLED ACCORDING TO THE SUPPLIERS RECOMMENDATIONS.
- j. 2-PLY STUDS SHALL BE NAILED TOGETHER W/ TWO ROWS OF 16d NAILS @ 16" O.C. ADJACENT NAILS SHALL BE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
- k. 3-PLY STUDS SHALL BE NAILED THE SAME AS THE 2-PLY W/ THE THIRD PLY NAILED TO THE 2-PLY W/ (2) 16d NAILS @ 16" O.C.
- l. 4 & 5-PLY STUDS SHALL BE NAILED THE SAME AS THE 3-PLY W/ CS16 STRAPS TOP & BOTTOM.
- m. 6 & 7-PLY STUDS SHALL BE NAILED THE SAME AS THE 3-PLY W/ CS16 STRAPS TOP, CENTER, & BOTTOM.
- n. EXTERIOR WALL SHEATHING SHALL BE 7/16" OSB NAILED WITH 8d NAILS AT 12" O.C. IN FIELD AND 6" O.C. AT EDGE OR 15ga. x 1 3/4" LONG x 7/16" WIDE STAPLES AT 8" O.C. IN FIELD AND 4" O.C. AT EDGE, OR 16ga. x 1 3/4" LONG x 7/16" WIDE AT 6" O.C. IN FIELD AND 3" O.C. AT EDGE.
- o. ROOF SHEATHING SHALL BE 1 5/8" OSB W/ 8d NAILS AT 6" O.C. EDGE AND 10" O.C. FIELD NAILING.
- p. FLOOR SHEATHING SHALL BE MINIMUM 3/4" OSB W/ 8d NAILS AT 6" O.C. EDGE AND 12" O.C. FIELD NAILING.
- q. INTERIOR WALL SHEATHING SHALL BE 1/2" DRYWALL W/ 1 1/4"x#6 DRYWALL SCREWS AT 8" O.C.
- r. ALL NAILING SHALL BE IN CONFORMANCE WITH IRC TABLE R602.3

CONNECTIONS

- a. ALL HANGER CALL OUTS CORRESPOND TO PRODUCTS MANUFACTURED BY SIMPSON STRONG-TIE CORPORATION. OTHER MANUFACTURER PRODUCTS ARE ALLOWED AS LONG AS THEY ARE AN APPROVED EQUAL.
- b. HANGERS FOR "I" JOISTS TO BE SIZED PER JOIST MANUFACTURER RECOMMENDATIONS.
- c. PROVIDE MIN. OF H2.5T TRUSS CLIPS AT ALL TRUSS BEARING POINTS, PROVIDE DOUBLE CLIPS AT MULTIPLE PLY TRUSSES. OTHER ATTACHMENT MAY BE REQUIRED BY THE TRUSS DESIGNER.
- d. SILL PLATES SHALL BE ATTACHED W/ 1/2" Ø ANCHOR BOLTS AT FOUR FEET MAXIMUM ON CENTER, 12" FROM ALL CORNERS, MINIMUM 2 BOLTS PER PLATE.
- e. TO PROVIDE LATERAL SUPPORT, TIE ALL WOOD PLATES, WHICH REST ON STEEL BEAMS, TO THE STEEL BEAM WITH X-ZF 47 PBS23 POWDER ACTUATED PINS AT 32" O.C., OR 3/8" THRU BOLTS @ 48" O.C. INTO THE TOP FLANGE OF THE BEAMS.

WALL BRACING

- a. ALL EXTERIOR WALL BRACING SHALL COMPLY WITH IRC R602.10.4 (CONTINUOUS SHEATHING). METHOD CS-WSP.
- b. STRUCTURAL PANEL SHEATHING (7/16" OSB) MUST BE USED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF BRACED WALL LINE, INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS.
- c. 30" MINIMUM LENGTH, MAXIMUM 76" TALL OPENING HEIGHT ADJACENT TO FULL HEIGHT PANEL.
- d. FULL HEIGHT PANELS SHALL BE LOCATED AT THE END OF A BRACED WALL LINE AND AT LEAST 25' ON CENTER.
- e. PROVIDE MINIMUM 24" WIDE PANEL CORNER RETURN AT ENDS OF A BRACED WALL LINE.
- f. SHEATHING APPLIED TO ONE SIDE ONLY, WITH 8d COMMON (2"x0.113") NAILS AT 6" EDGE SPACING AND 12" ON CENTER IN FIELD (ALTERNATE: 16ga x 1 3/4" STAPLES, 3" EDGE AND 6" FIELD SPACING)
- g. SOLE PLATES OF BRACED WALL LINE SHALL BE NAILED TO CONTINUOUS RIM BELOW WITH (3) 16d NAILS AT 16" O.C.

GENERAL

- a. FRAMING CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION OF PLUMBING IN REFERENCE TO FLOOR FRAMING.
- b. AT FIRST FLOOR AND STRUCTURAL FLOOR, WHERE JOISTS RUN PARALLEL TO THE FOUNDATION WALLS, PROVIDE PERPENDICULAR SOLID BLOCKING AT 4'-0" ON CENTER FOR THE FIRST 3 BAYS.
- c. PROVIDE SOLID BLOCKING AT SUPPORTS BETWEEN TRUSSES TO PREVENT ROTATION.
- d. PROVIDE SOLID BLOCKING AT ALL TRUSS RIDGES, HIPS AND VALLEYS.
- e. PROVIDE SOLID BLOCKING AT INTERMEDIATE BEARING FOR FLOOR JOISTS WHERE WALL ABOVE IS A BEARING WALL. SOLID BLOCKING IS ALSO REQUIRED WHEN JOIST SPLICES OCCUR OVER A BEAM. SOLID BLOCKING IS NOT REQUIRED WHEN THERE IS NO SPLICE OR BEARING WALL ABOVE.

NOTES

All house structure must be specified and approved by local structural engineer of a location where this house is built.

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Project Title

Truoba Mini 221

Drawing Name

Sections

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-C

Layout ID

08

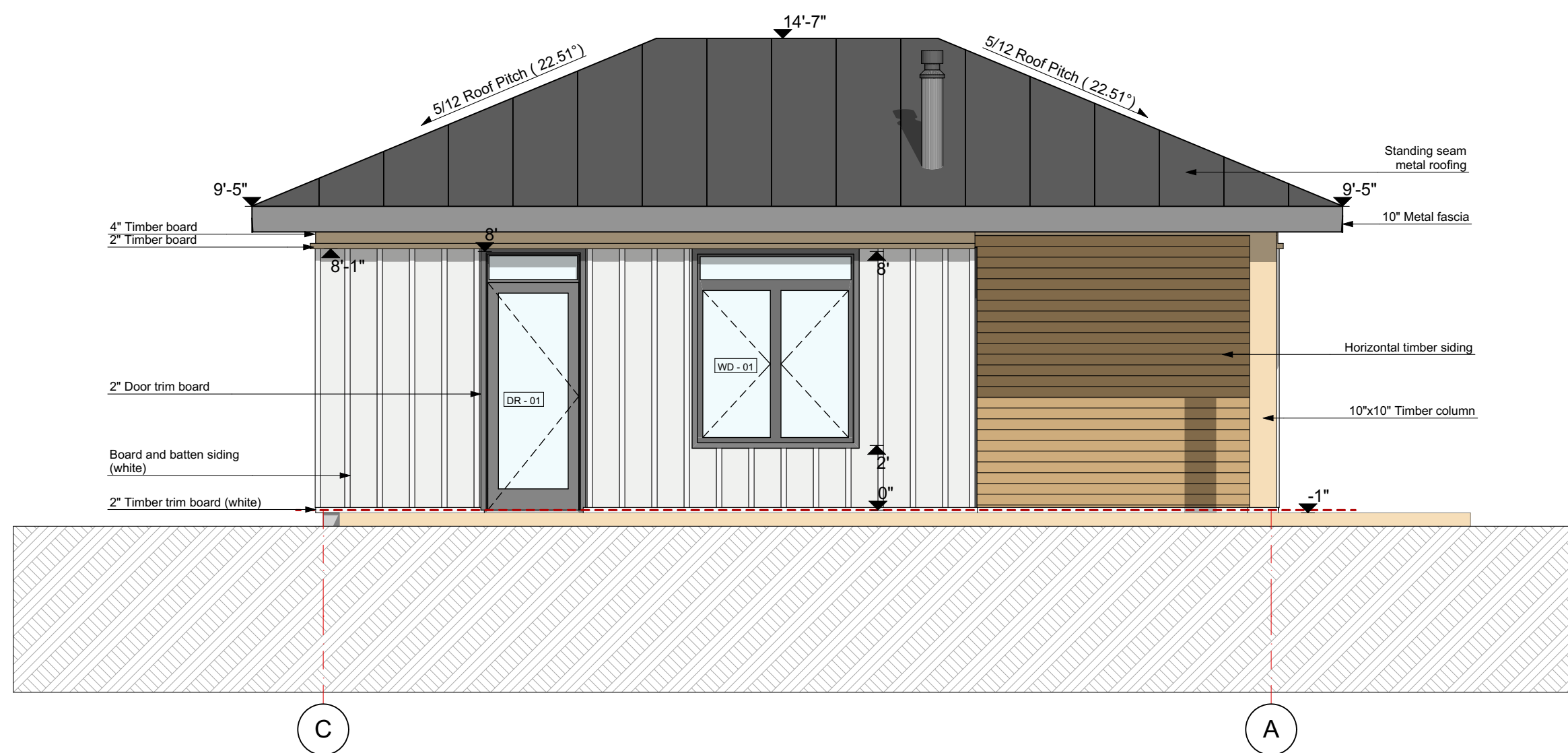
Date

4/20/2021

Revision



01 House Elevation - 01
1/4" = 1'-0"



02 House Elevation - 02
1/4" = 1'-0"

NOTES

All house structural elements must be specified and approved by local structural engineer of a location where this house is built.

Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey window finish.

Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.

Exterior cladding - Board and batten siding.

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Project Title

Truoba Mini 221

Drawing Name

Elevations 01,02

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-C

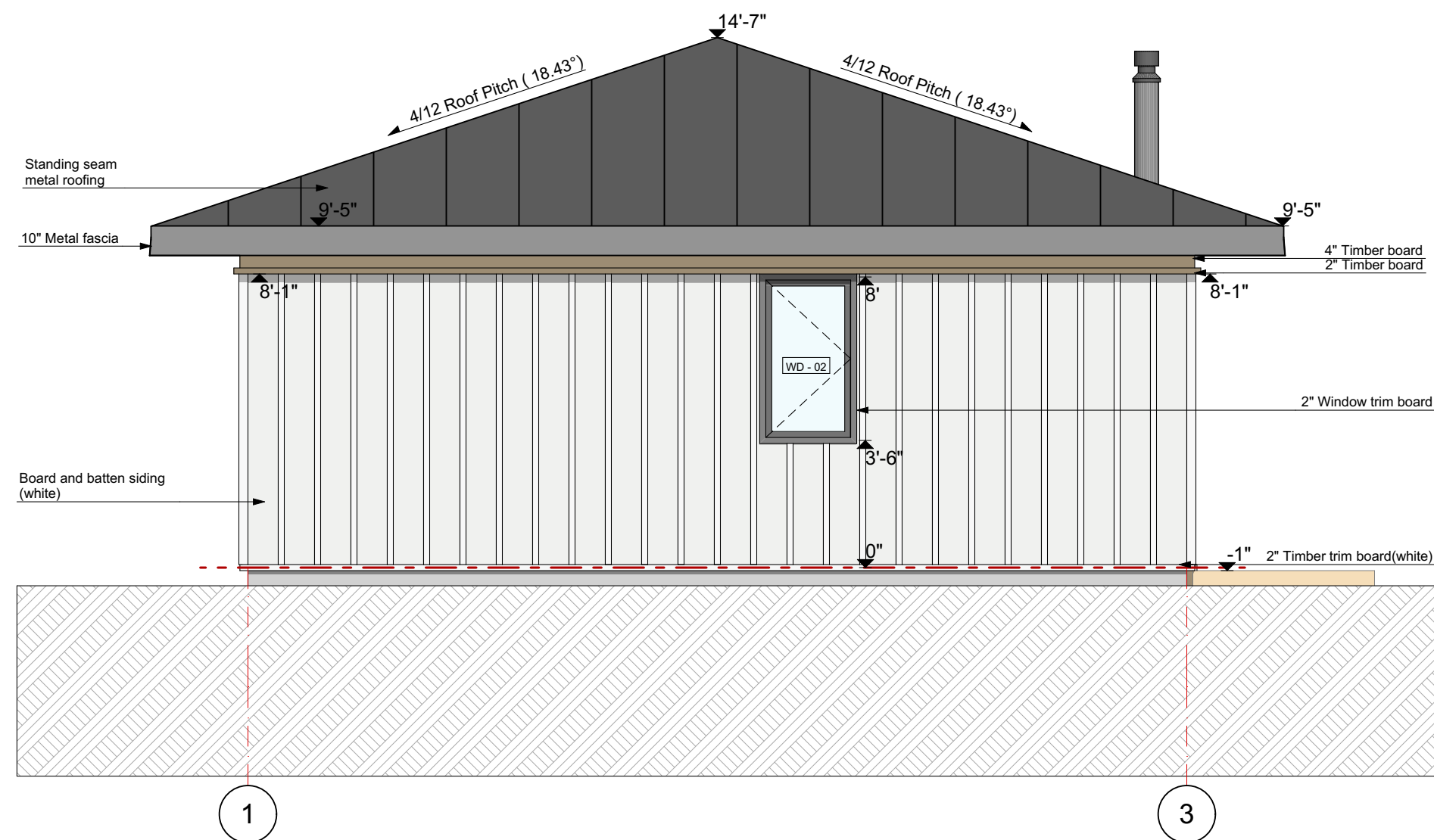
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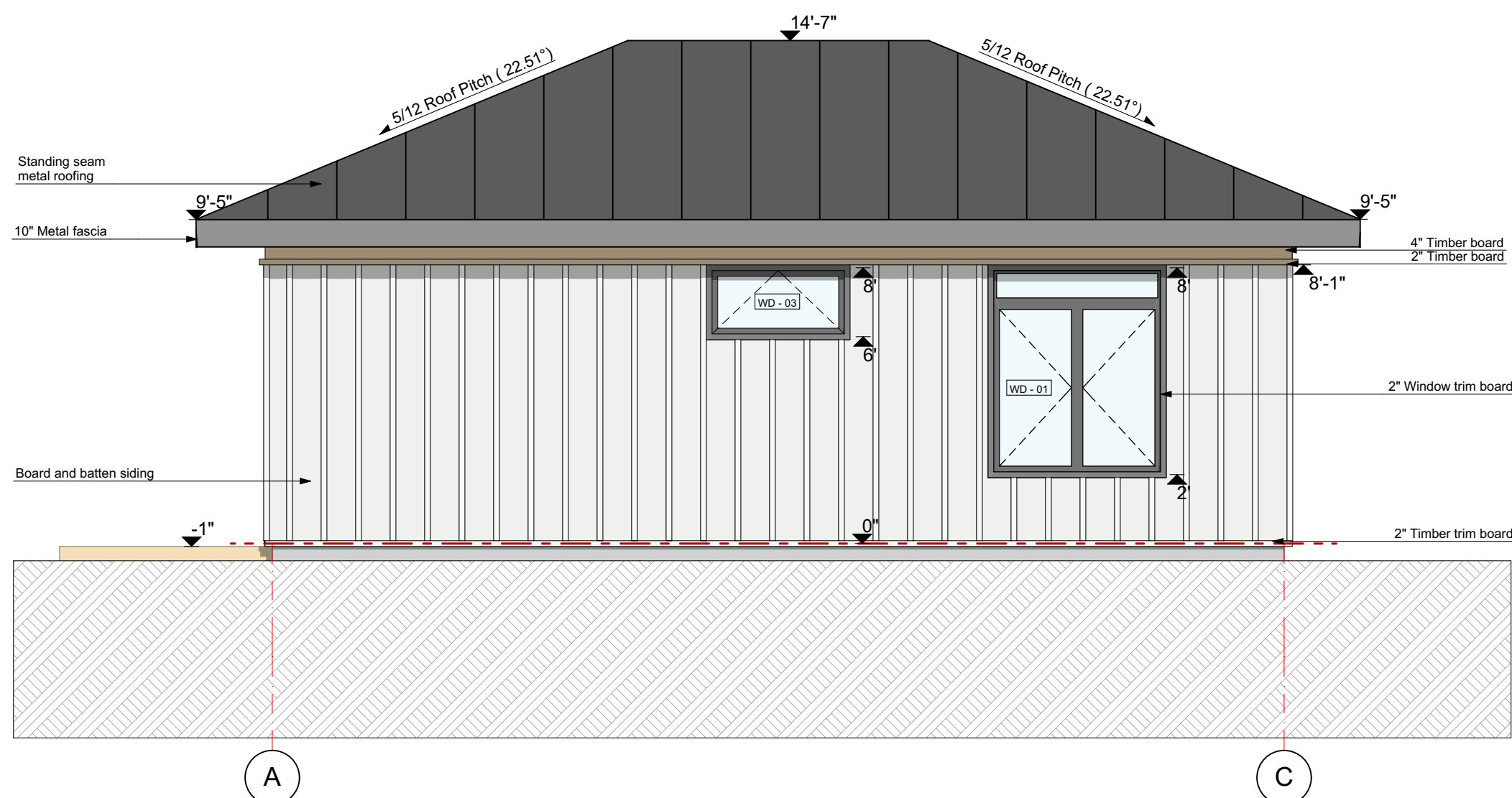
Date

4/20/2021

Revision



03 House Elevation - 03
1/4" = 1'-0"



04 House Elevation - 04
1/4" = 1'-0"

NOTES

All house structural elements must be specified and approved by local structural engineer of a location where this house is built.

Windows. Double glazed aluminium frame windows with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey window finish.

Exterior doors. Double glazed aluminium frame doors with argon or krypton filled gas. Finish in color selected from manufacturer's standard selection as follows: black or dark grey doors finish.

Exterior cladding - Board and batten siding.

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Project Title

Truoba Mini 221

Drawing Name

Elevations 03, 04

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-C

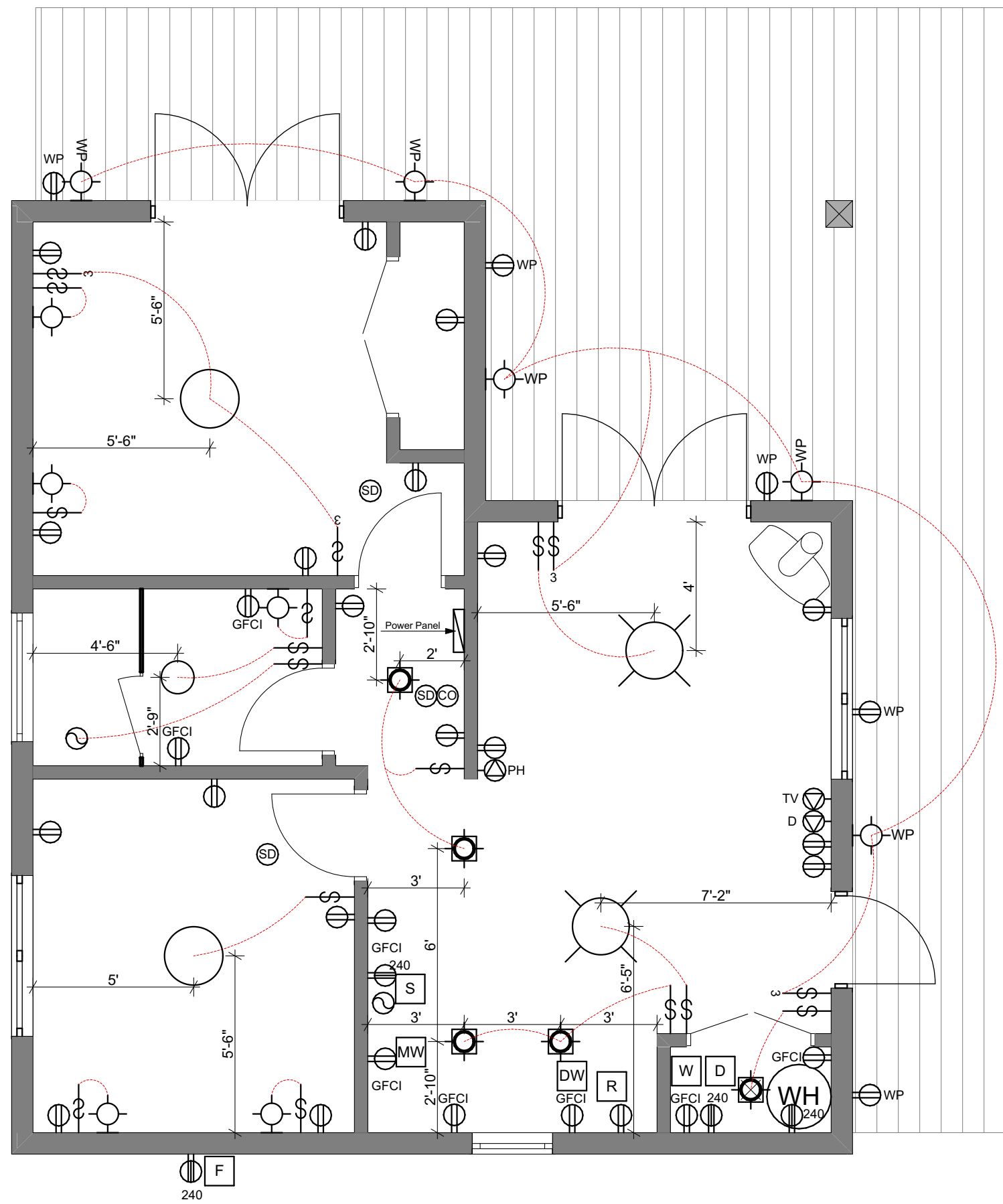
Layout ID

10

Date

4/20/2021

Revision



01 Electrical Plan
1/4" = 1'-0"

ELECTRICAL LEGEND	
SYMBOL	FIXTURE
	CEILING MOUNTED LIGHT
	PENDANT LIGHT
	RECESSED CAN LIGHT
	RECESSED CAN LIGHT WEATHER PROOF
	WALL MOUNTED LIGHT
	WALL MOUNTED LIGHT WEATHER PROOF
	WALL SCONCE LIGHT
	2-TUBE INCANDESCENT (COLD START BALLAST IN GARAGE)
	ARCH FAULT CIRCUIT INTERRUPT DUPLX OUTLET
	GROUND FAULT CIRCUIT INTERRUPT DUPLX OUTLET
	240V OUTLET
	WEATHER PROOF OUTLET
	FLOOR MOUNTED OUTLET
	TV OUTLET
	PHONE OUTLET
	DATA OUTLET
	SMOKE DETECTOR
	CARBON MONOXIDE ALARM
	WALL SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	DIMMER SWITCH
	CLG. MOUNT VENT FAN
	CLG. MOUNT VENT FAN WITH LIGHT
	EXHAUST FAN
	CEILING FAN
	CEILING FAN WITH LIGHT
	WEATHER PROOF CEILING FAN
	POWER PANEL

ELECTRICAL LINE	
APPLIANCE SCHEDULE	
SYMBOL	FIXTURE
	CLOTHES WASHER
	CLOTHES DRYER
	DISHWASHER
	REFRIGERATOR
	STOVE
	OVEN
	MICROWAVE
	DISPOSAL
	FURNACE
	GARAGE DOOR OPENER
	GAS FIREPLACE INSERT
	HOT WATER HEATER

NOTES

It is the intent that all receptacles, switches and devices be centered on all finished surfaces, horizontally and vertically unless noted otherwise. Contractor shall coordinate all roof framing to allow the centering shown on this plan for all recessed lighting. If additional framing is required to accommodate this layout, the Contractor shall include such framing as part of the cost of the work. Any coordination shall take place during rough framing, prior to rough-in.

All conduits, connection boxes, switch boards must be specified by electrical engineer.

Receptacles (GFCI) - outlets installed in bathrooms, kitchen (receptacles that serve countertop surface and dishwasher), laundry, garage, unfinished accessory buildings, unfinished basement and crawl space to have Ground-Fault Circuit Interrupter.

Receptacles (AFCI) - outlets installed in kitchen, family room, dining room, living room, parlor, library, den, bedrooms, sunroom, recreation room, closets, hallways and similar rooms to have Arch-Fault Circuit Interrupter.

Outdoor Receptacles to have Ground-Fault Circuit Interrupter and to be WP.

Receptacles to be Max. 12' O.C. (NEC 210-52)

Smoke detectors shall receive their primary power from the building wiring.

All bathroom to have Min. 50 CFM fan or a window.

Per CEC article 210.11(C)3 all bathroom circuiting shall be either:
 A) A 20 ampere circuit dedicated to each bathroom or
 B) At least one 20 ampere circuit supplying only bathroom receptacle outlets.

Install all receptacles, phone & TV jacks horizontally, 6" a.f.f. (above finished level), U.N.O. (Unless Noted Otherwise).

Install all switches vertically with centerline at approximately 42" a.f.f.

Install all above counter outlets horizontally with a centerline of 40" a.f.f., U.N.O.

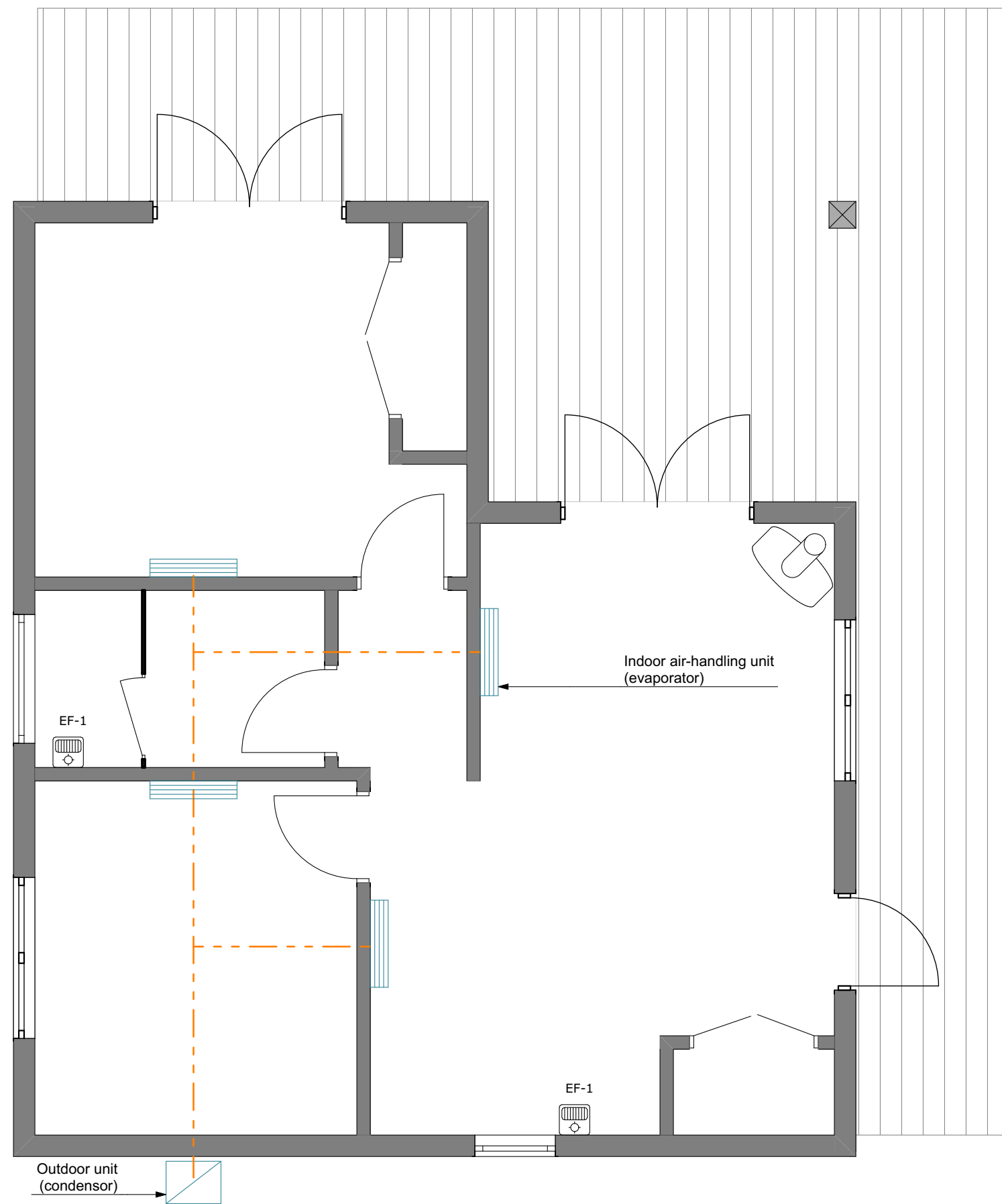
Mount centerline of thermostats + keypads at 60" a.f.f. Center on switches below if applicable.

Installation shall conform to current adopted NEC. If this requires the addition of receptacles, wiring, devices, special circuiting, breakers, interupters, or other items not indicated on the plans, the electrician shall make the Contractor and Architect aware of any omissions and shall include them as part of the cost of the work.

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Company Title	TRUOBA
Project Title	Truoba Mini 221
Drawing Name	Electrical Plan
Drawing Scale	1/4" = 1'-0"
Sheet Size	ARCH-C
Layout ID	11
Date	4/20/2021
Revision	

Mini-split heating and cooling system



01 HVAC Plan
1/4" = 1'-0"

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Project Title

Truoba Mini 221

Drawing Name

HVAC Plan

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-C

Layout ID

12

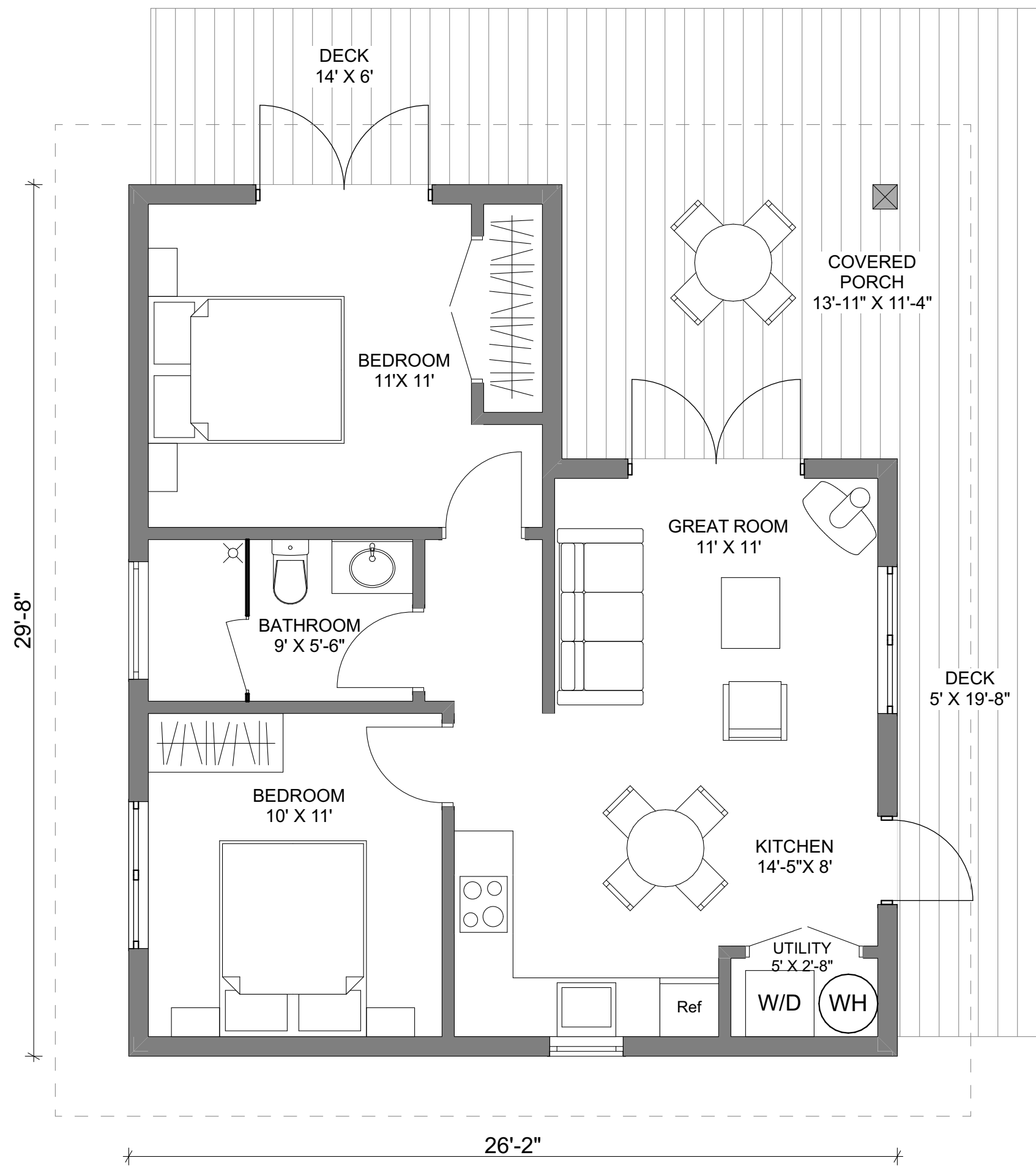
Date

4/20/2021

Revision

NOTES

Power, switchboards and conduits must be specified by electrical and mechanical engineers



01 Furniture Plan
1/4" = 1'-0"

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Project Title

Truoba Mini 221

Drawing Name

Furniture Plan

Drawing Scale

1/4" = 1'-0"

Sheet Size

ARCH-C

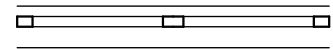
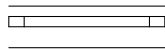
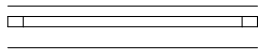
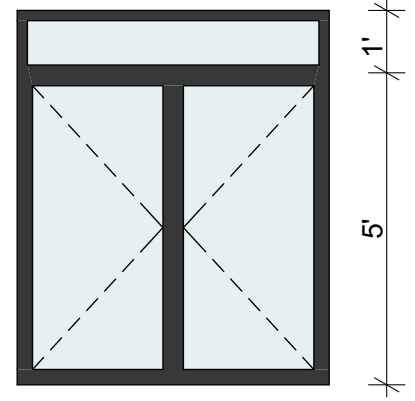
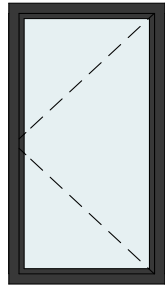
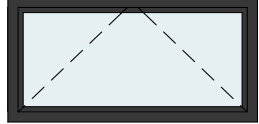
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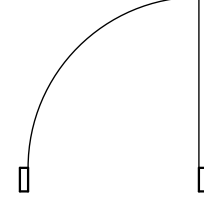
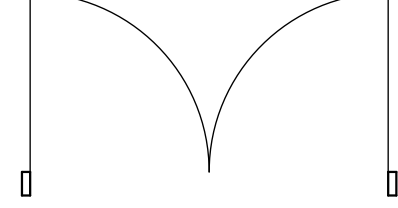
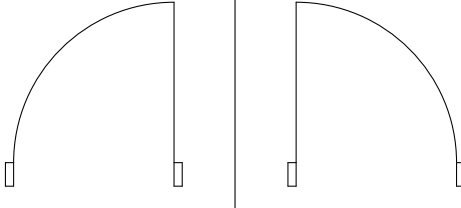
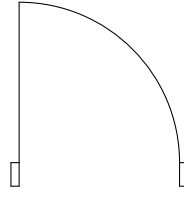

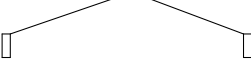
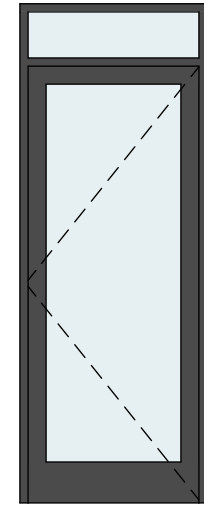
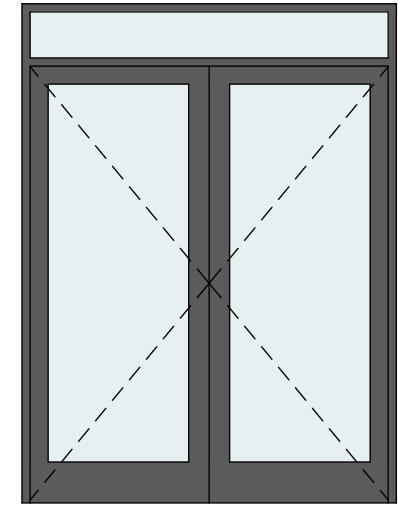
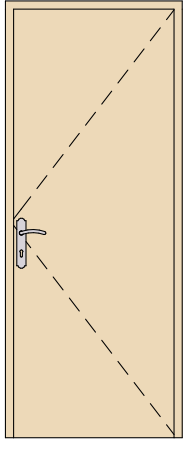
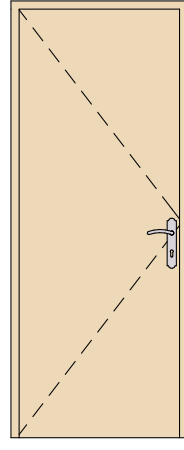
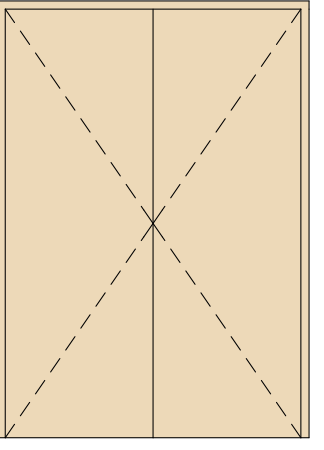
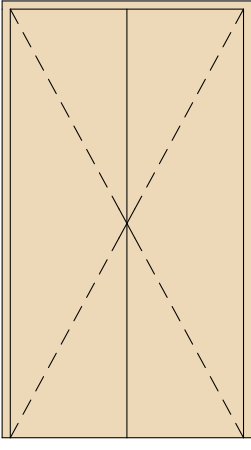
13

Date

4/20/2021

Revision

Window List			
Window name	WD - 01	WD - 02	WD - 03
W x H Size	5'x6'	2'-6"x4'-6"	4'x2'
Quantity	2	1	1
2D Symbol			
View from Side Opposite to Opening Side			

Door List						
Door name	DR - 01	DR - 02	DR - 03	DR - 03_	DR - 04	DR - 05
W x H Size	3'x8'	6'x8'	2'-10"x7'	2'-10"x7'	5'x7'	4'x7'
Quantity	1	2	2	1	1	1
Position	Exterior	Exterior	Interior	Interior	Interior	Interior
Orientation (L-left swing, R-right swing)	R	L	R	L		
2D Symbol						
View from Side Opposite to Opening Side						

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Project Title
Truoba Mini 221

Drawing Name
Door & Window Schedule

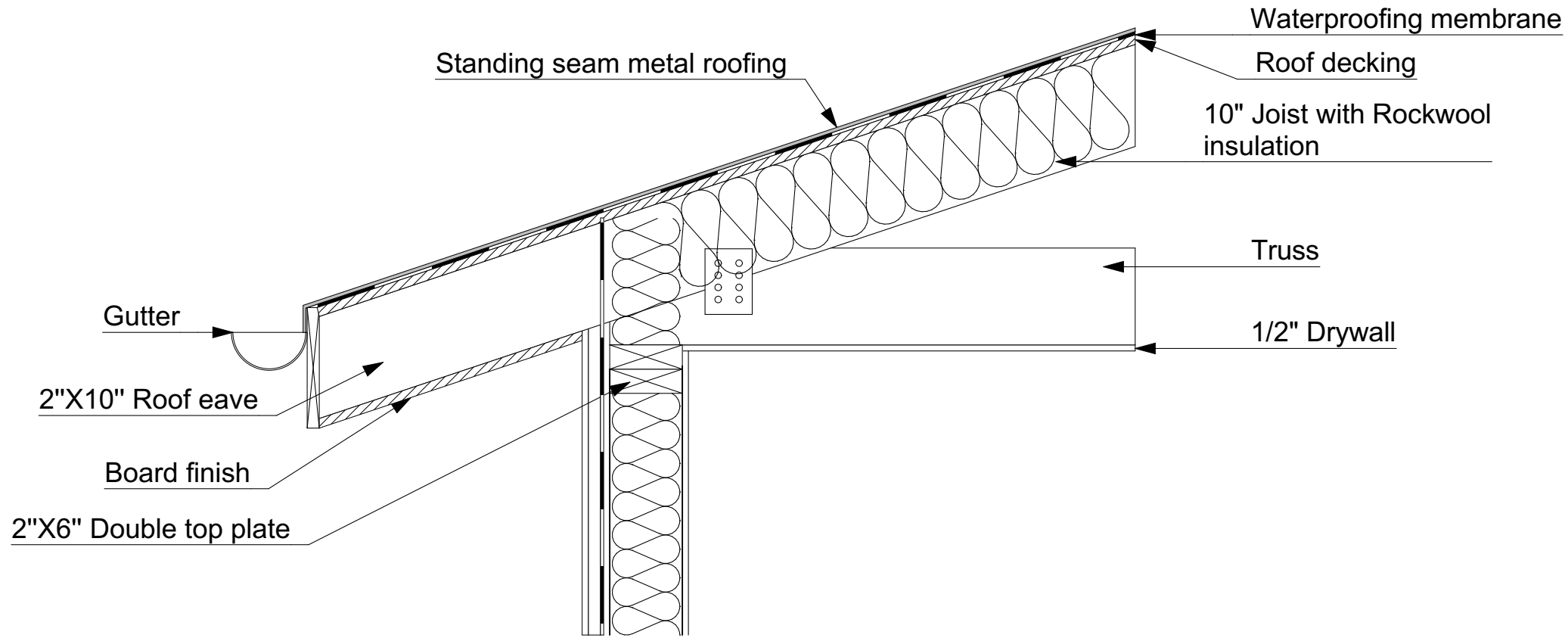
Drawing Scale

Sheet Size
ARCH-C

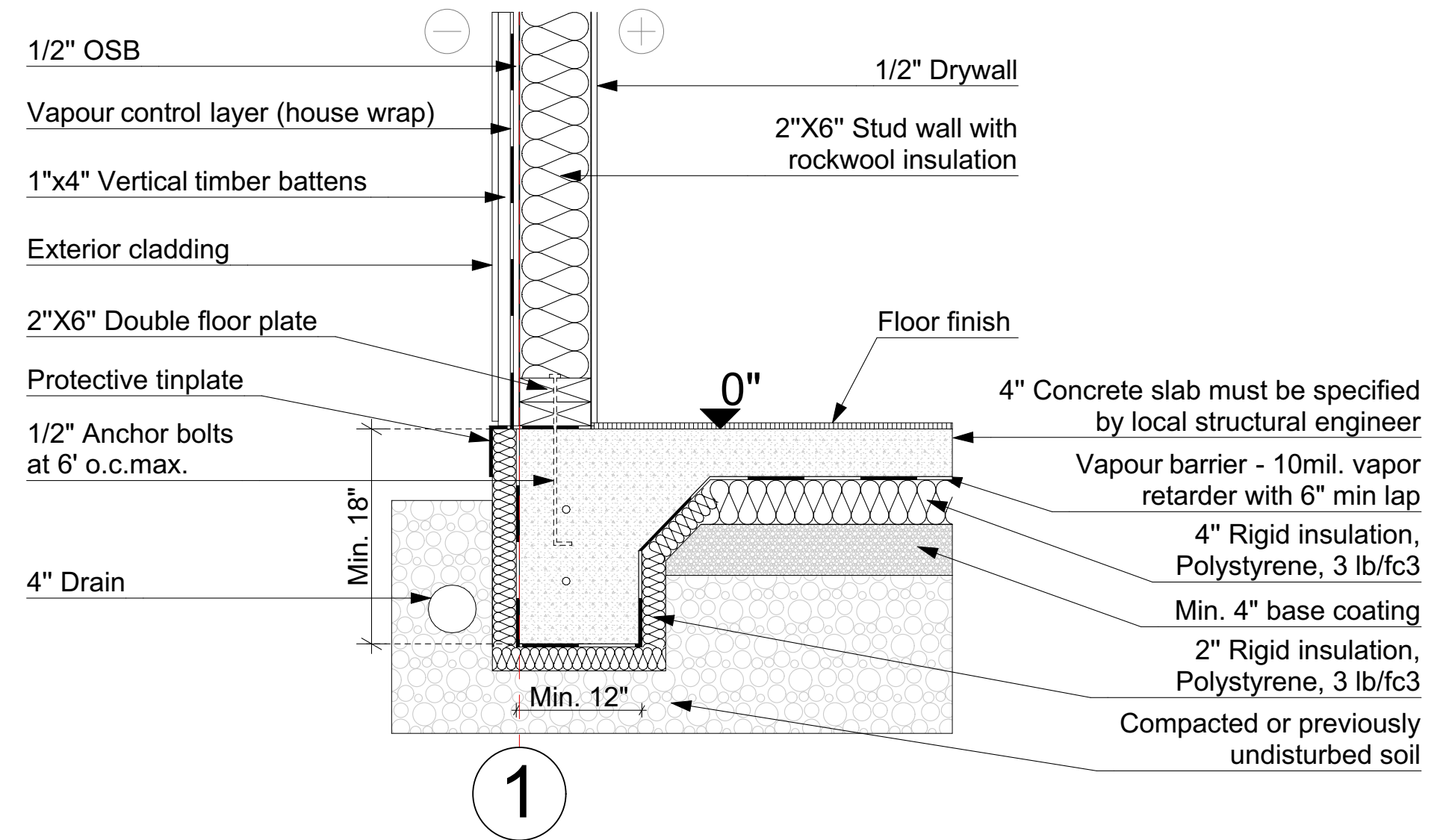
Layout ID
14

Date
4/20/2021

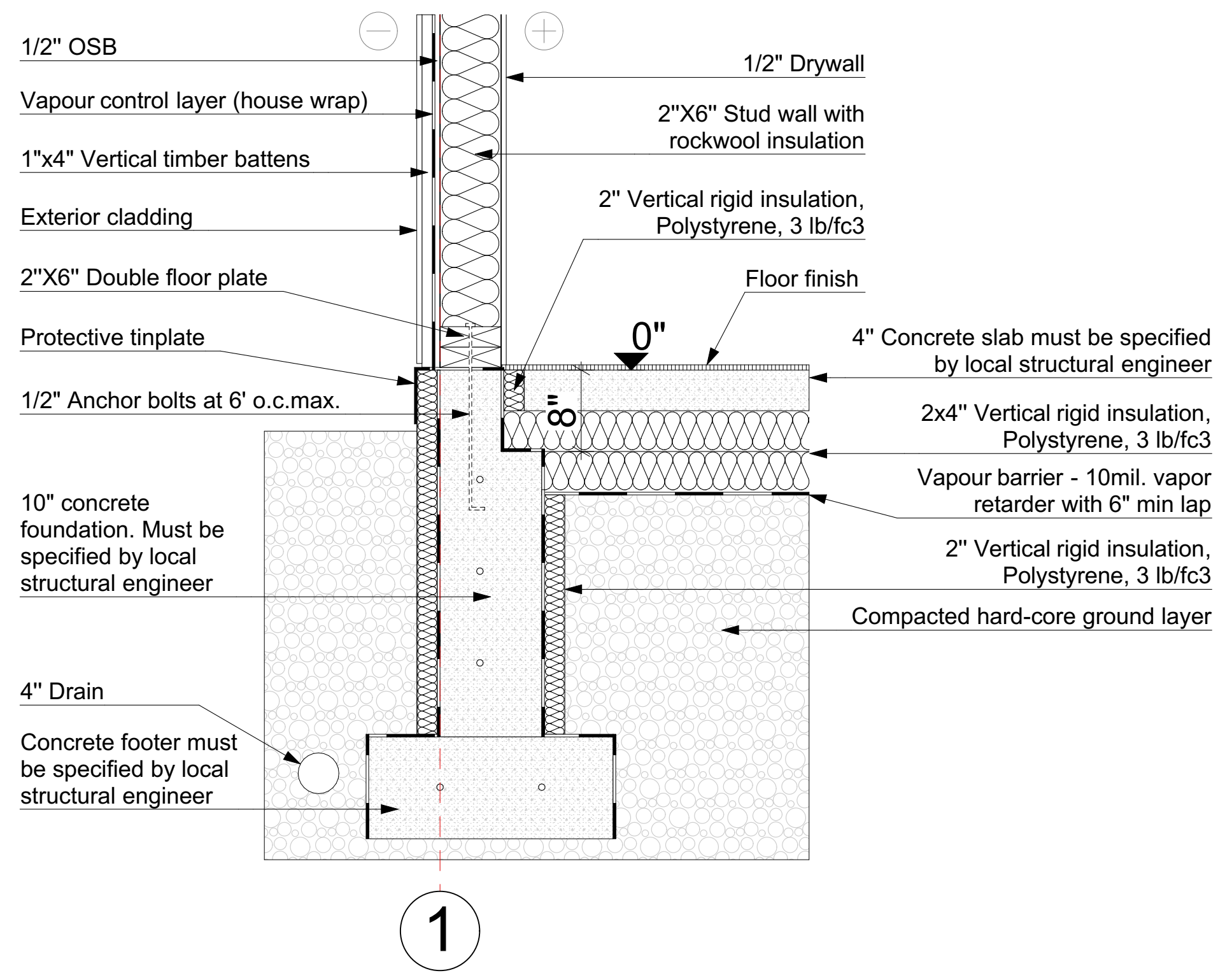
Revision



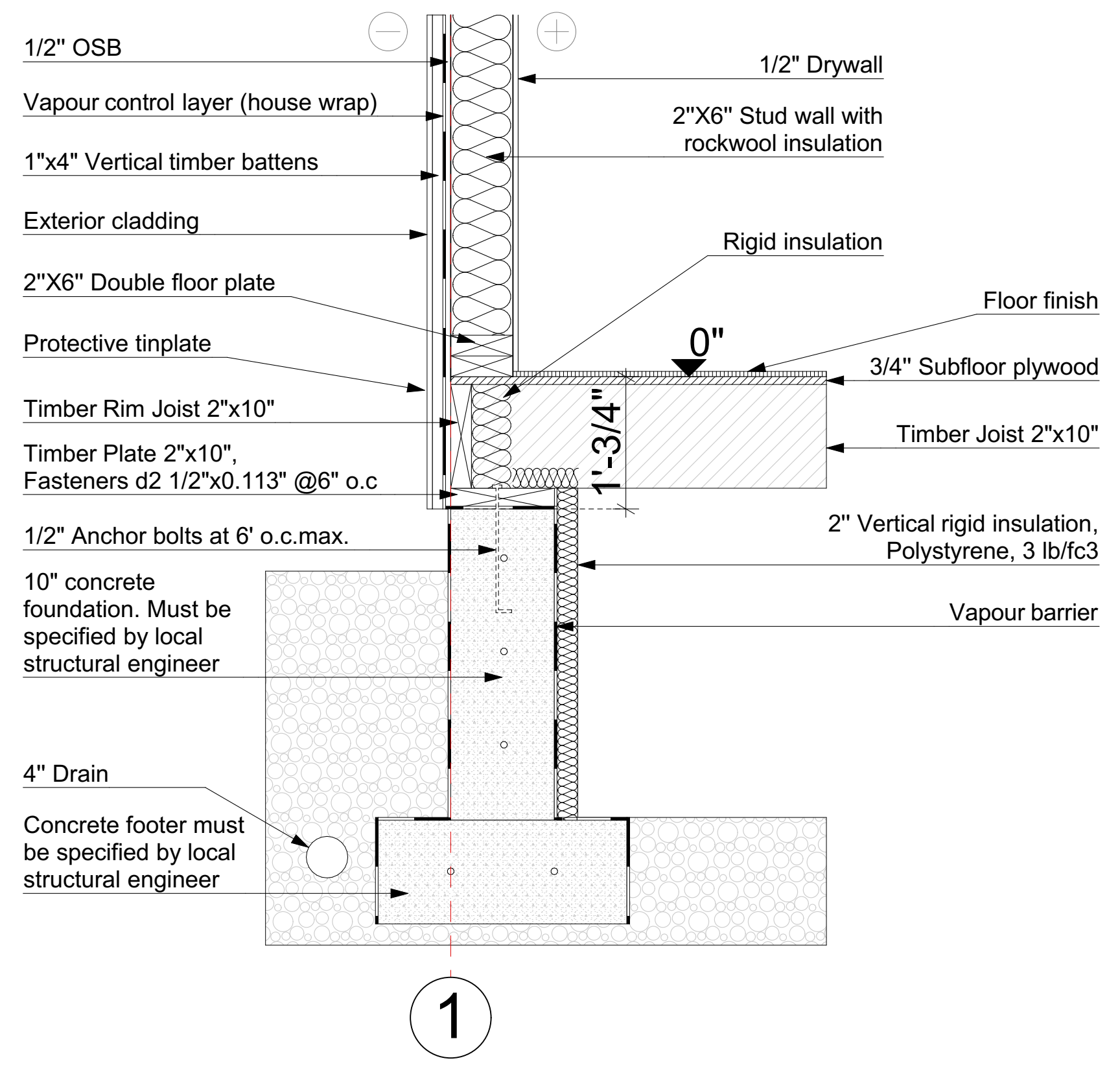
01 Wall - roof detail
1" = 1'-0"



03 Monolithic slab foundation detail
1" = 1'-0"



02 Stem-wall slab foundation detail
1" = 1'-0"



04 Crawl foundation detail
1" = 1'-0"

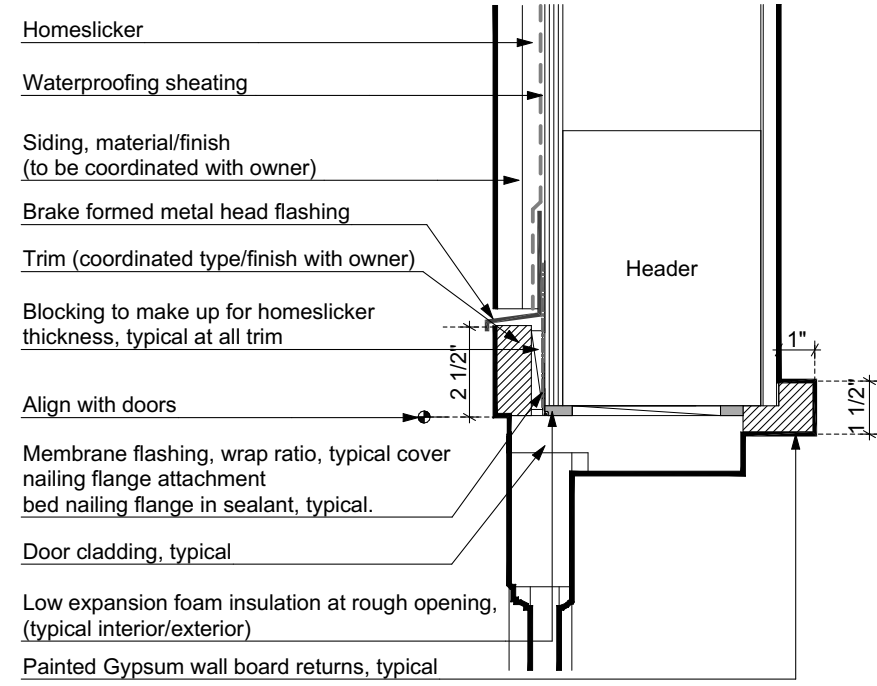
NOTES

All house structural elements must be specified and approved by local structural engineer of a location where this house is built.

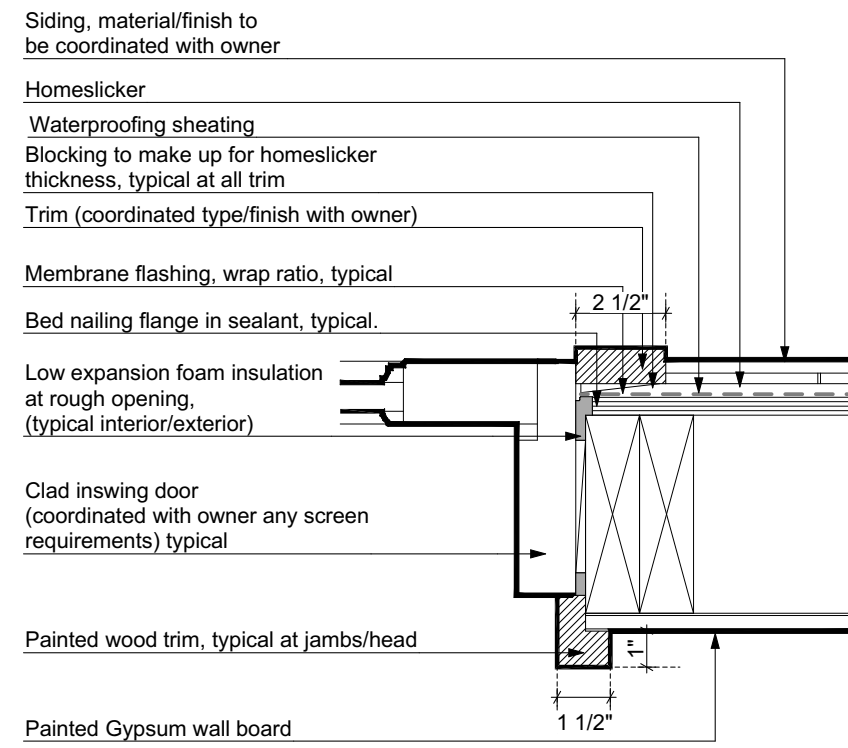
Reinforcement ratio:
Footings: $(6 \times 20 / 12 \times 0.668 \times 0.00045 + 13.08 \times 2 \times 0.668 \times 0.00045) / (1.67 \times 20 / 12) \times 0.037 = (0.003 + 0.008) / 0.103 = 0.11$ tonn/cuby
Stem Wall: $(7 \times 20 / 12 \times 0.668 \times 0.00045 + 3.48 \times 2 \times 0.668 \times 0.00045) / (2.28 \times 20 / 12) \times 0.037 = (0.004 + 0.002) / 0.141 = 0.04$ tonn/cuby

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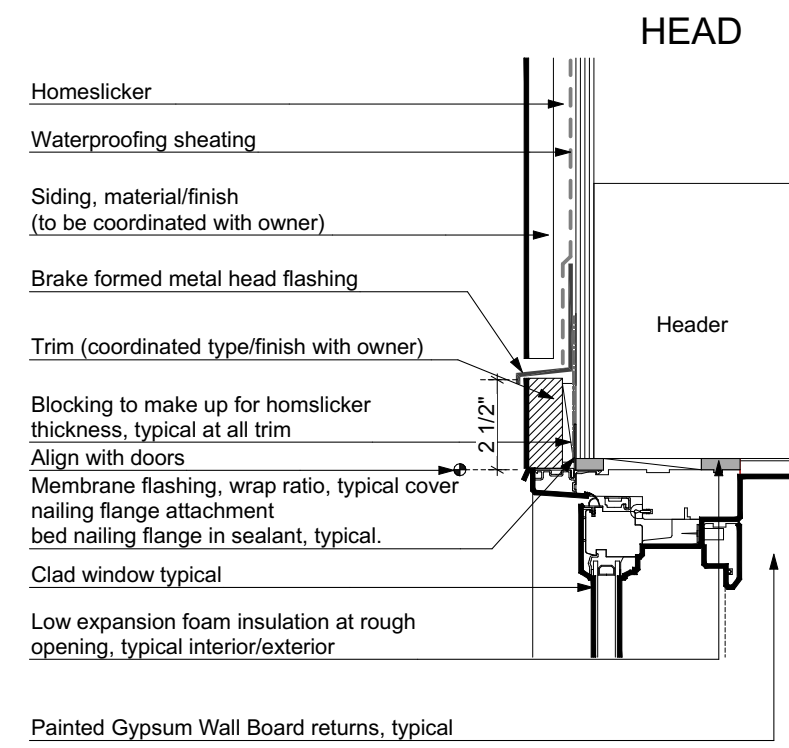
Company Title	TRUOBA
Project Title	Truoba Mini 221
Drawing Name	Construction Details
Drawing Scale	1" = 1'-0"
Sheet Size	ARCH-C
Layout ID	15
Date	4/20/2021
Revision	



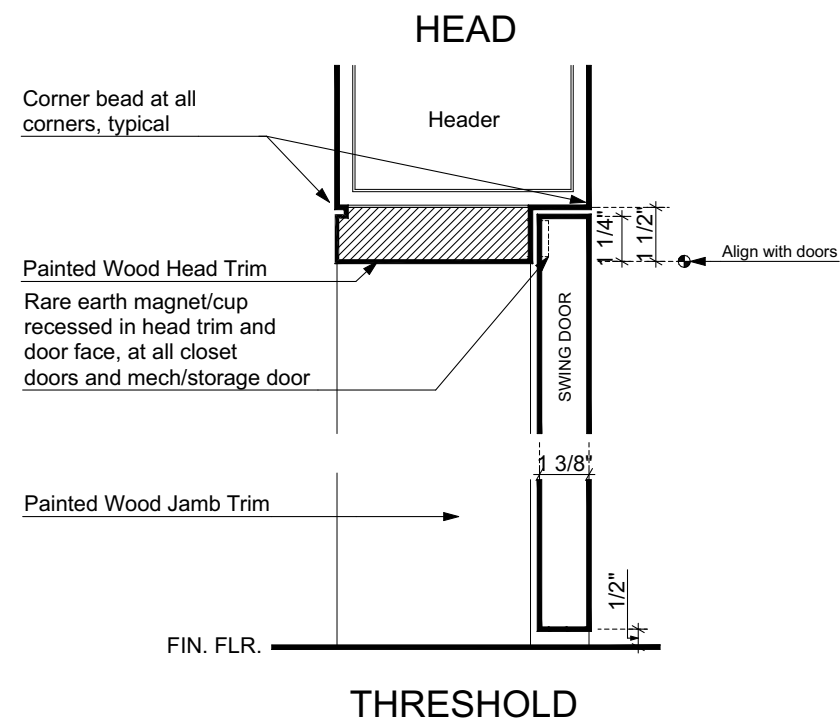
01 Typical exterior swing door header detail



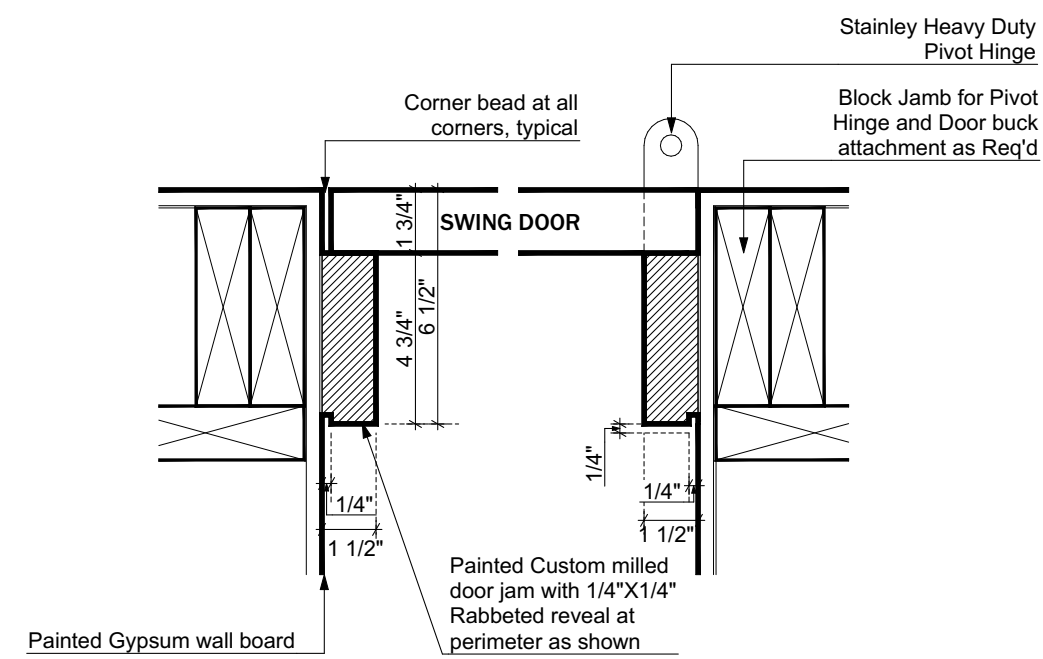
02 Typical exterior swing door jamb detail



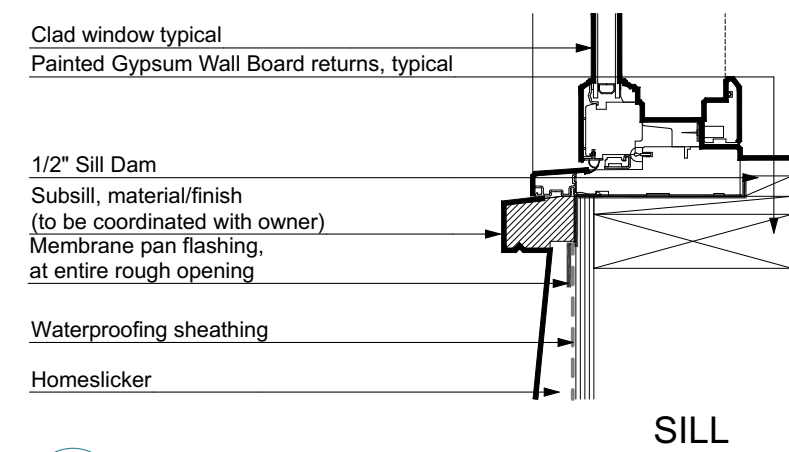
07 Typical window detail



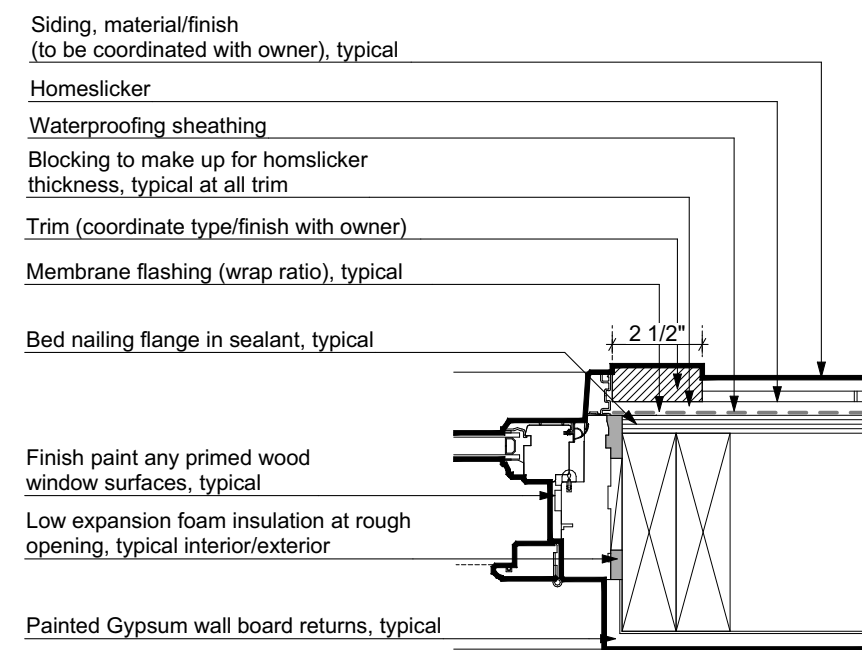
03 Typical interior swing door detail



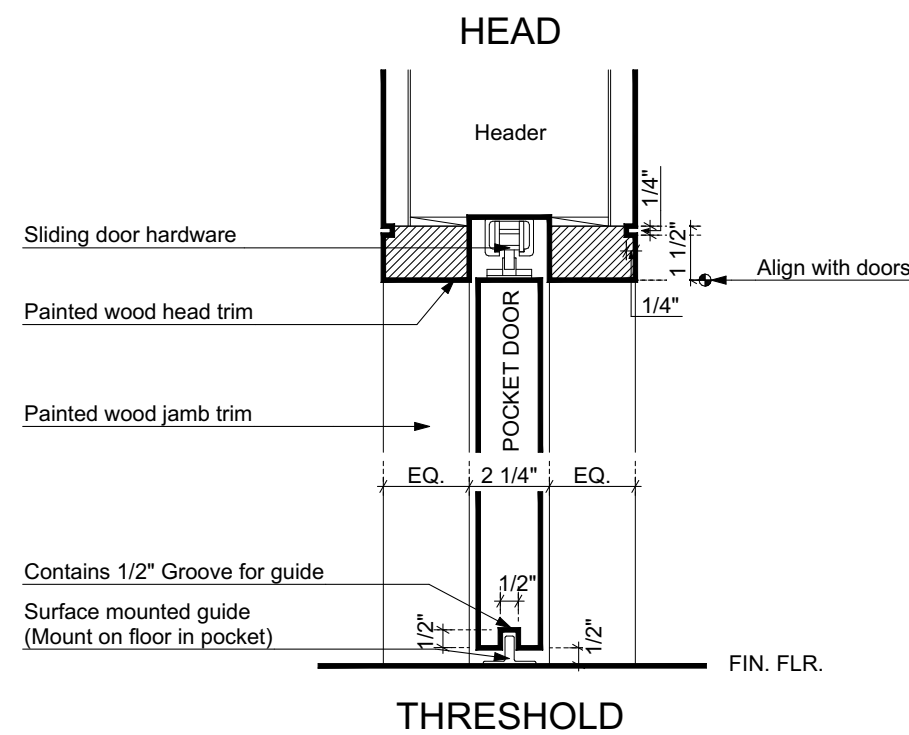
04 Typical interior swing door jamb detail



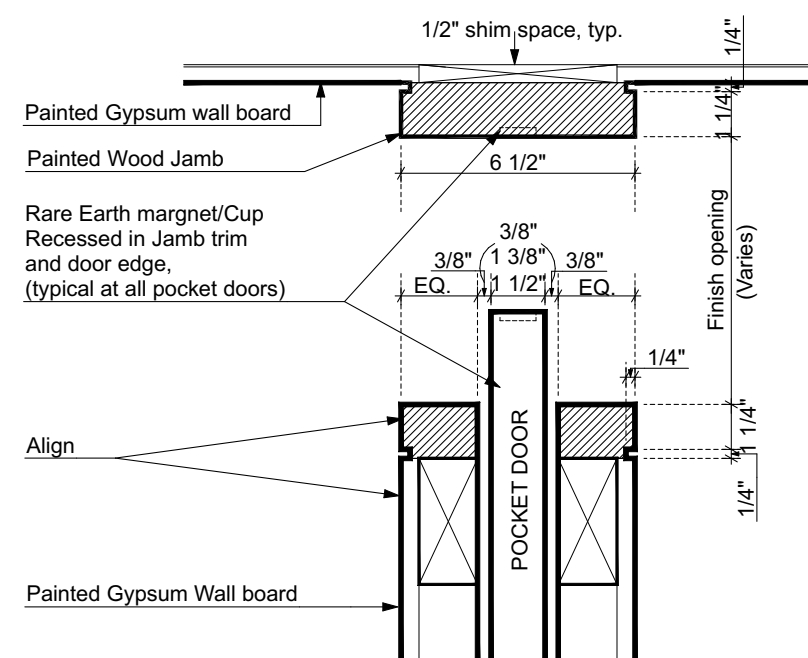
08 Typical window jamb detail



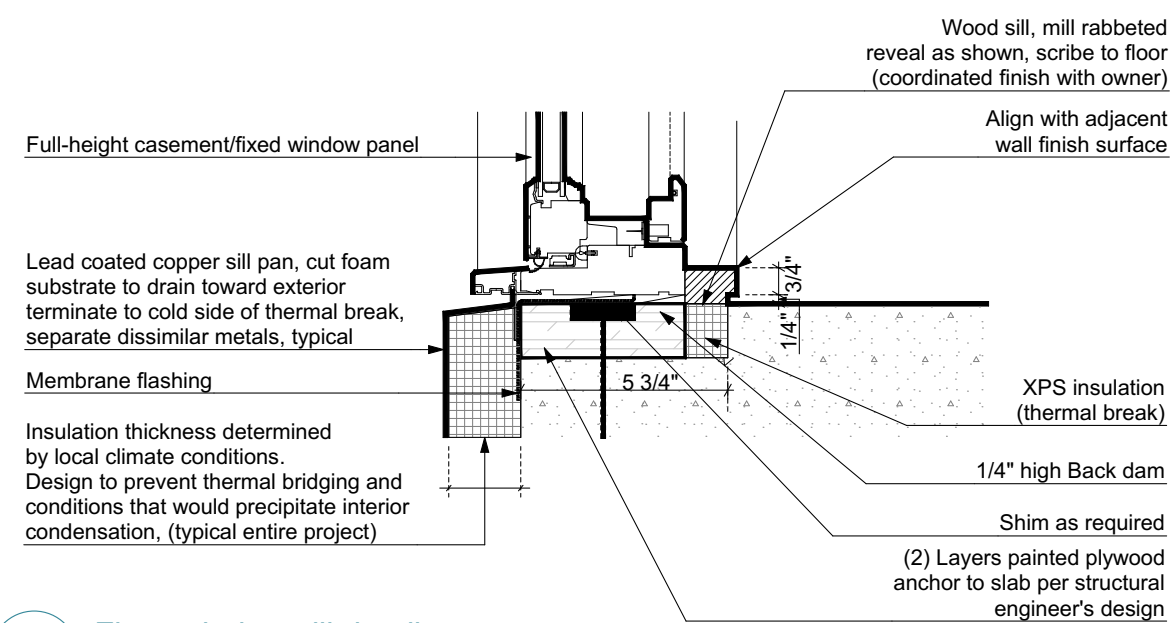
09 Floor window sill detail



05 Typical interior pocket door detail



06 Typical interior pocket door jamb detail



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Project Title

Truoba Mini 221

Drawing Name

Door & Window Details

Drawing Scale

Sheet Size

ARCH-C

Layout ID

16

Date

4/20/2021

Revision

Electrical Specifications

ENTIRE INSTALLATION TO COMPLY WITH THE NEC 2017 (NFPA 70), NFPA STANDARDS AS APPLICABLE, IN ADDITION TO SPECIFICATIONS AS OUTLINED BELOW

GENERAL:

- ALL ELECTRICAL WORK FOR THE ENTIRE PROJECT SHALL BE PERFORMED IN A NEAT AND CRAFTSMANLIKE MANNER BY PERSONS SKILLED IN THE TRADE, AND SHALL BE DONE UNDER THE SUPERVISION OF A MASTER ELECTRICIAN LICENSED TO DO WORK IN THE AREA WHERE THE PROJECT IS TO BE CONSTRUCTED. ALL WORK SHALL BE STRICT ACCORDANCE WITH THE LATEST COPY OF THE NATIONAL ELECTRIC CODE (PRESENTLY ENFORCED).

SCOPE:

- THE PROJECT INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION INCLUDING, BUT NOT LIMITED TO: POWER SERVICES (TEMPORARY, NORMAL, AND STAND-BY OR EMERGENCY), SWITCHBOARDS, AUTOMATIC TRANSFER SWITCHES, SERVICE ENTRANCES, DISCONNECTS, DISTRIBUTION PANELS, CONDUIT, WIRING, JUNCTION AND OUTLET BOXES, WIRING DEVICES AND COVER PLATES, LIGHTING FIXTURES, CONNECTION CHORDS, SPECIAL CONNECTIONS AND OUTLETS, ALL AS ILLUSTRATED ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES, UTILITY COMPANIES, AND GOVERNING AUTHORITIES.
- THE ELECTRICAL CONTRACTOR TO FURNISH A MINIMUM 100 AMP SINGLE PHASE TEMPORARY SERVICE, POWER COMPANY FEES AND MONTHLY ELECTRIC BILL TO BE PAID BY THIS CONTRACTOR.

CODES:

- ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH AND, NFPA 70, CITY LAWS, AND ALL LOCAL RULES AND REGULATIONS, INCLUDING THE 2017 NATIONAL ELECTRIC CODE AND THE CITY ENERGY CODE 2015.

PERMITS:

- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAYING ALL FEES ASSOCIATED THEREWITH. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INSPECTIONS, INCLUDING ALL FEES ASSOCIATED WITH RE-INSPECTIONS.

DRAWINGS:

- THE DRAWINGS ARE DIAGNOSTIC, AND DO NOT SHOW ALL CHANGES IN HEIGHT, STRUCTURAL MEMBERS, DUCTWORK, PIPING, BRACKETS AND ANY OTHER ITEMS WHICH MIGHT CAUSE A CONFLICT. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES AS TO THE LOCATION OF HIS SERVICES AND NECESSARY AREAS FOR PANELS AND CONDUIT WIRING. VERIFY AND COORDINATE ALL ELECTRICAL WORK WITH ALL TRADES TO PROVIDE A TIMELY INSTALLATION. ADDITIONAL CHANGES DUE TO LACK OF COORDINATION WILL NOT BE APPROVED.

MATERIALS:

- ALL MATERIALS SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE LISTED BY AND BEAR THE U.L. LABEL, WHERE SUBJECT TO APPROVAL. MATERIALS SHALL BE OF THE SAME MANUFACTURER OR BRAND FOR EACH TYPE OF MATERIAL, UNLESS DESIGNATED OTHERWISE.

FIXTURES:

- ALL FIXTURES SHALL BE AS LISTED IN THE LIGHTING FIXTURE SCHEDULES RECOMMENDATIONS.
- LIGHTING FIXTURES ARE TO BE FURNISHED, INSTALLED, AND LAMPED UNDER THIS CONTRACT.

PANELS:

- ALL PANELS TO BE FURNISHED AS PER PANEL SCHEDULE, SQUARE D, CUTLER HAMMER AND ITS ACCEPTABLE MANUFACTURERS.
- ALL SWITCHBOARD AND OVERCURRENT DEVICES SHALL BE SERIES RATED TO WITHSTAND THE AVAILABLE FAULT CURRENT, VERIFY WITH LOCAL UTILITY COMPANY. SEE PANEL SCHEDULE.

DEVICES:

- EXTERIOR DISCONNECT SWITCHES SHALL BE NEMA 3R ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURERS SPECIFICATIONS. (SEE MECHANICAL).
- INTERIOR DISCONNECT SWITCHES SHALL BE NEMA 1 ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURERS SPECIFICATIONS. (SEE MECHANICAL).
- SWITCHES SHALL BE 20 AMP, SPECIFICATION GRADE TOGGLE SWITCHES, SIDE WIRED WITH GROUNDING TERMINAL. COLOR SHALL BE WHITE, UNLESS NOTED OTHERWISE; WITH MATCHING COVER PLATE. MOUNTING HEIGHT SHALL BE 48" TO BOTTOM.
- RECEPTACLES SHALL BE 15 AMP MINIMUM, SPECIFICATION GRADE, SIDE WIRED WITH GROUNDING TERMINAL. COLOR SHALL BE WHITE (UNLESS NOTED OTHERWISE); WITH MATCHING COVER PLATE. MOUNTING HEIGHT NOTED IN SYMBOL, LEGEND OR ON DRAWING.
- ALL RECEPTACLES INSTALLED IN KITCHENS, OR WITHIN 6 FEET (6') OF A WATER SUPPLY (i.e., sink), SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (GFCI). DEVICES WITH NON-STREAM DEVICES IDENTIFIED.
- ALL 120V, SINGLE PHASE, 15 AMP AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN BATHROOMS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL.

BRANCH CIRCUIT WIRING:

- ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE SPECIFIED ON PLANS.
- MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG THIN COPPER.

TYPICAL NOTES:

- EQUIPMENT FURNISHED AND PHYSICALLY INSTALLED BY "OTHERS" ALL ELECTRICAL CONNECTIONS EXTERNAL TO THE EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. WIRE, CONDUIT, LUGS, RECEPTACLES, POTENTIALS, DISCONNECTS, ETC. AS MAY BE REQUIRED SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
- NOTE: INCLUDE WIRING CONDITION IN PROGRESS, VERIFY PROPOSED LOCATIONS, TYPE OF CONNECTION AND AMPACITY REQUIRED FROM APPLICABLE EQUIPMENT DRAWINGS PRIOR TO INSTALLING ANY CONDUIT, CONDUCTORS OR BOXES.
- WALL TELEPHONE DATA OUTLET: INSTALL 2 GANG BOX WITH MODULAR TELEPHONE DEVICE IN COVER PLATE. INSTALL (2) 3/4" EMT CONDUITS TO ACCESSIBLE CEILING SPACE OR HORIZONTAL TO TELEPHONE/COMPUTER TERMINAL EQUIPMENT. HEIGHT, UNLESS NOTED, IS 1' ABOVE FINISH FLOOR.
- RESIDENTIAL TYPE, 120 VOLT AC, SINGLE STATION/MODE DETECTOR, PHOTOEYE TYPE. LOCATE PER N.F.P.A. #74. MULTIPLE DETECTORS IN SAME UNIT TO HAVE SIGNAL DEVICES INTERCONNECTED.
- PROVIDE LIGHT FIXTURE AND RECEPTACLE LOCATIONS INDICATED FOR HVAC MAINTENANCE LIGHTING. USE COMBINATION SWITCH AND RECEPTACLE FOR LIGHT CONTROL. FIELD DETERMINES EXACT LOCATION AND HEIGHT.
- SWITCHED JUNCTION BOX IN CEILING FOR CEILING FAN OR LIGHT. NOTE: BOX MUST BE IDENTIFIED FOR FAN SUPPORT USE. ANCHOR TO STRUCTURE TO SUPPORT 15 LBS. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL FAN HANGOR LIGHT, AND ALL WIRING, INCLUDING SWITCH AND POWER LUGS. VERIFY AND COORDINATE FAN TYPE WITH OWNER.
- IF THE CEILING SPACE OR HVAC CLOSETS IN THIS PROJECT WILL BE USED AS A RETURN AIR PLENUM THEN ALL MATERIALS AND COMPONENTS LOCATED ABOVE CEILING SPACE OR CLOSET (WITHIN RETURN AIR PLENUM) SHALL BE APPROVED FOR PLENUM USE (OR SHALL BE APPROVED BY U.L. LISTED AND APPROVED IN DRAWING) AND INSTALLED PER MANUFACTURERS INSTRUCTIONS. MATERIALS AND WRAPS SHALL MEET THE FLAME SPREAD INDEX OF NOT MORE THAN 2.5 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 100 (WHEN TESTED IN ACCORDANCE WITH ASTM E 813 UL 723). THIS NOTE SHALL APPLY TO ALL ITEMS LOCATED WITHIN THE RETURN AIR PLENUM SPACE WHETHER THEY ARE NEW OR EXISTING. ENTIRE PLENUM SPACE SHALL COMPLY WITH THE CITY BUILDING CODE, 17TH EDITION (2017) THE CITY MECHANICAL CODE (SECTION 10.01.01) AND THE CITY PLUMBING CODE, AND THE NATIONAL ELECTRIC CODE 2017 IN ADDITION TO ANY APPLICABLE NFPA STANDARDS OR LOCALLY ADOPTED CODES, AMENDMENTS OR ORDINANCES. THIS NOTE SHALL SUPERSEDE ALL OTHER NOTES LOCATED ON THESE DRAWINGS OR OTHER DRAWINGS INCLUDING FOR THIS PROJECT.

INSTALLATION:

GENERAL:

- ROUGH-IN LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, AS WELL AS EQUIPMENT SIZE, TO AVOID CONFLICT WITH OTHER TRADES.
- PRIOR TO ROUGH-IN, THE ELECTRICAL CONTRACTOR SHALL RELOCATE, AS DIRECTED BY THE OWNER/ARCHITECT, ANY PIECE OF EQUIPMENT IN THE VERTICAL AND/OR HORIZONTAL DIRECTION UP TO 16" FROM THE LOCATION SHOWN ON THE DRAWINGS AT NO ADDITIONAL COSTS TO THE OWNER.

WIRING METHODS:

- BELOW GRADE:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED NONMETALLIC CONDUIT. CONDUIT MAY BE RUN IN OR BELOW CONCRETE AND CONCEALED IN WALLS TO FIRST BOXES. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.
- EXTERIOR ABOVE GRADE:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC OR NONMETALLIC CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

NOTE: MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL BE SIX FEET (6').

- EXTERIOR EQUIPMENT:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED LIGHTDUTY FLEXIBLE METALLIC OR NONMETALLIC CONDUIT (MINIMUM 3/4"), ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

NOTE: MAXIMUM LENGTH OF FLEXIBLE CONDUIT BETWEEN MEANS OF DISCONNECT (OR JUNCTION BOX) AND EQUIPMENT SHALL BE THREE FEET (3').

- INTERIOR:** SINGLE- OR MULTI-CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC (EMT) CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER. CONDUITS SHALL BE CONCEALED IN OR BEHIND CEILINGS, WALLS, OR FLOORS, EXCEPT WHERE EXPOSED WORK IS SPECIFICALLY PERMITTED.

NOTE: EMT SHALL NOT BE INSTALLED IN LOCATIONS (1) SUBJECT TO SEVERE DAMAGE, (2) IN CONTACT WITH EARTH, (3) IN CONCRETE SLAB OR GRADE, OR (4) OTHER LOCATIONS AS LISTED IN N.E.C. 2014, ARTICLE 388.12.

EXCEPTION: NON-METALLIC SHEATHED CABLE (NM, NMC, NMS) MAY BE USED WITHIN DWELLING UNITS, IN COMPLIANCE WITH N.E.C. 2014, ARTICLE 324.

- ELECTRICAL SYSTEM EXPANSION:** ANY PANELBOARD MOUNTED SO THAT ITS FRONT FACE IS FLUSH WITH THE FINISHED WALL SHALL HAVE ONE (1) 1/2" EMT CONDUIT INSTALLED FROM PANELBOARD TO ACCESSIBLE CEILING SPACE FOR EVERY (100) AMP OR MAJOR FRACTION THEREOF. POLES INDICATED AS "SPACE" OR "SHARE" IN THE PANELBOARD SCHEDULE PER THESE DOCUMENTS.

EXCEPTION NO. 1: PANELBOARDS INSTALLED ON A WALL SURFACE, WHERE AT LEAST THREE (3) SIDES NOT INCLUDING THE FRONT, REMAIN ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY SHALL NOT BE REQUIRED TO MEET #1030.5.

EXCEPTION NO. 2: DWELLING UNITS SHALL NOT BE REQUIRED TO MEET #1030.5.

- ELECTRICAL BOXES:** ALL OUTLET, DEVICE, AND JUNCTION BOXES SHALL BE STANDARD #1 SQUARE GALVANIZED STEEL OR APPROVED PLASTIC, 1 1/2" DEEP, WITH DEVICE RINGS OF THE SAME MATERIAL, UNLESS OTHERWISE NOTED. GALVANIZED BOXES SHALL BE MANUFACTURED BY APPLICABLE NATIONAL, STATE, CITY, TRACO OR APPROVED EQUAL. PLASTIC BOXES SHALL BE ALLEN, N.E.C.O. CAROL, OR EQUAL. ALL ELECTRICAL BOXES MUST BE ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY.
- THRU-ROOF: MANTAIN THRU-ROOF SHALL BE ELECTRICAL DEVICES AT C O . .

EQUIPMENT:

- WIRE TO AND MAKE CONNECTIONS TO, ALL PIECES OF EQUIPMENT FURNISHED BY OTHERS FOR COMPLETE AND SATISFACTORY OPERATION BY OTHERS.
- THIS CONTRACT TO INCLUDE CONNECTION OF LINE VOLTAGE ONLY. CONTROL WIRING TO BE BY THE HVAC CONTRACTOR.

GROUNDING:

- THE ENTIRE ELECTRICAL GROUNDING SYSTEM SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 250.46 AND 250.122 OF THE NATIONAL ELECTRIC CODE, INCLUDING BUT NOT LIMITED TO: THE ELECTRICAL SERVICE, ITS EQUIPMENT AND ENCLOSURE, CONDUITS AND OTHER CONDUCTIVE ENCLOSURES, NEUTRAL OR IDENTIFIED CONDUCTOR OF TRENCH WIRING SYSTEM, MAIN PANELBOARDS, POWER AND LIGHTING PANELBOARDS, NON-CURRENT CARRYING METAL PARTS OF FIXED EQUIPMENT SUCH AS MOTORS, STARTER AND CONTROLLER CABINETS, INSTRUMENT CASES AND LIGHTING FIXTURES.
- PROVIDE A SERVICE GROUND ACCORDING TO N.E.C. ARTICLE 250. THE MINIMUM INSTALLATION TO INCLUDE: BUILDING FOOTING/FOUNDATION (REINFORCING STEEL), TURNED UP OR OTHERWISE APPROPRIATE AT THE SERVICE LOCATION WITH APPROVED CONNECTOR TO BOND A GROUNDING CONDUCTOR SIZED PER TABLE 250 TO THE STEEL AND A DRIVEN ROD (MINIMUM #6 BY 8" DEEP) WITH A COPPER GROUNDING CONDUCTOR, IF AVAILABLE ON THE PREMISES, ALSO BOND METAL COLD WATER PIPING, METAL BUILDING FRAME, AND GROUNDING WIRE THRU PERMITS SIZED FROM 250.46.
- ALL TELEPHONE, DATA, TELEVISION, AND OTHER TERMINAL EQUIPMENT SHALL BE BOND TO THE GROUNDING ELECTRODE WITH MINIMUM #8 AWG CU.

WARRANTY NOTE:

- ELECTRICAL CONTRACTOR TO PROVIDE FULL WARRANTY (PARTS AND LABOR) ON ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE SCOPE OF WORK FOR A PERIOD OF ONE YEAR FROM THE CERTIFICATE OF OCCUPANCY.
- E.C. SHALL PROVIDE OWNER AND ENGINEER WITH REPRODUCIBLE "AS-BUILT" DRAWINGS SHOWING ALL REQUIRED MODIFICATIONS THAT HAVE OCCURRED IN THE FIELD.

ELEVATOR ROOMS (AS APPLICABLE):

ALL ELEVATOR MACHINE ROOMS SHALL BE PROVIDED WITH A FUSED DISCONNECT FOR ALL EQUIPMENT INCLUDING EQUIPMENT ROOM AIR CONDITIONING SYSTEMS, LIGHTING, RECEPTACLES, ETC. (REGARDLESS OF PLIN SYMBOL) IN ACCORDANCE WITH ASME #111.

PROVIDE GFCI RATED RECEPTACLE IN THE PIT OF THE ELEVATOR MAIN ENTRANCE TO PIT. MOUNT DEVICES 6" BELOW FIRST FLOOR LEVEL, OR AS DIRECTED BY ELEVATOR INSTALLER. PROVIDE A METAL END USE COVER, EXTEND CONDUIT TO LUMINAIRE IN PIT.

SEE VERIFICATION NOTES:

ALL ITEMS ON THESE DRAWINGS MARKED AS "EXISTING" OR "EXIST" SHALL BE VERIFIED IN FIELD ANY DIFFERENCES BETWEEN ITEMS OR EQUIPMENT INDICATED AS EXISTING SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OR ARCHITECT.

PRIOR TO CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE PHASE TO PHASE VOLTAGE AVAILABLE IS EQUAL TO EACH OTHER, AND EQUAL TO VOLTAGE SHOWN ON THESE DRAWINGS. A DIFFERENCE IN PHASE TO PHASE VOLTAGE MAY INDICATE THE PRESENCE OF A "HIGH LEG" DELTA SYSTEM. ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR REQUIRED REVISIONS.

SPLIT PHASE CIRCUIT BREAKERS ARE NOT PERMITTED TO BE INSTALLED ON HIGH LEG DELTA SYSTEMS. HIGH LEG DELTA SYSTEMS SHALL BE LABELED PER 408.3 AND THE HIGH LEG CONDUCTOR TO BE MARKED PER 110.15.

GENERAL NOTES/ELECTRICAL:

THE ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL ELECTRICAL SERVICE ROUGH-IN AND INSTALLATION DETAILS, FEES, WITH THE LOCAL POWER COMPANY/UTILITY FIELD ENGINEER. PRIOR TO AND INCLUDING C.O.C.

THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH ALL STATE/LOCAL BUILDING CODES/ORDINANCES/REGULATIONS PRESENTLY IN EFFECT. IN ADDITION, COMPLIANCE WITH THE NATIONAL ELECTRIC CODE (N.E.C.) 2017.

THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID, ANY CUTTING OR PATCHING OF CONCRETE/ASPHALT PAVEMENTS, ETC. TO RUN ELECTRICAL.

ALL EQUIPMENT, FIXTURES, ETC. SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION. THIS CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP, MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY (C.O.) AND SHALL REPAIR ANY SUCH DEFECTS WITHOUT COST TO THE OWNER. ALL EQUIPMENT SHALL BE COVERED FOR THE DURATION OF THE MANUFACTURERS GUARANTEE OR WARRANTY. THIS CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURERS GUARANTEE AND WARRANTIES.

HVAC AIR HANDLER AND CONDENSING UNIT CIRCUIT BREAKERS MUST BE U.L. LISTED AS "BACK RATED" IN ORDER TO USE NON-AUTO DISCONNECTS IN HVAC EQUIPMENT. IF NOT LISTED, THEN A FUSED DISCONNECT IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS IMMEDIATE REQUIREMENTS MUST BE INSTALLED AT THE EQUIPMENT.

THE ELECTRICAL, GENERAL, HVAC, AND PLUMBING CONTRACTORS SHALL STRICTLY ADHERE TO THE FOLLOWING ITEMS WHEN DEALING WITH ELECTRICAL EQUIPMENT CLEARANCES:

- NO PIPING OR DUCTWORK OF ANY KIND SHALL BE INSTALLED ABOVE ANY SWITCHBOARD OR PANELBOARD. THIS AREA TO REMAIN CLEAN FROM THE EQUIPMENT TO 25" ABOVE OR TO THE BOTTOM OF THE STRUCTURAL SLAB.
- A CLEARANCE OF 36" MINIMUM SHALL BE MAINTAINED IN FRONT OF ELECTRICAL EQUIPMENT FOR THE ENTIRE WIDTH OF THE EQUIPMENT, PLUS A MINIMUM OF 30" TOTAL LEFT/RIGHT CLEARANCE.

GENERAL NOTES, ELECTRICAL (CONTINUED)

ALL "WEATHERPROOF" (WP1) DEVICES ARE TO BE INSTALLED WITH A WEATHER- SHIELDING COVER.

ALL ELECTRICAL CONDUITS NOT CONTAINING SPECIFIED CONDUCTORS SHALL HAVE A PULL WIRE INSTALLED.

DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL PLANS FOR EQUIPMENT LOCATIONS, CABINETS, CEILING GRID, DOOR SWINGS, ETC.

THE INTENT OF THESE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL ELECTRICAL INSTALLATION.

IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL DETAILS OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS SUCH AS HARDWARE, J-BOXES, CONDUIT FITTINGS, ETC., AS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM INSTALLATION.

TECHNICIANS SKILLED IN THEIR TRADE SHALL PERFORM ALL ELECTRICAL INSTALLATIONS IN A PROFESSIONAL MANNER.

WIRE TO, AND MAKE CONNECTIONS AS NECESSARY, TO ALL PIECES OF EQUIPMENT (FURNISHED BY OTHERS), FOR COMPLETE AND SATISFACTORY OPERATION BY THE OWNER.

ALL ELECTRICAL PANELS SHALL BE LABELED WITH THEIR RESPECTIVE SOURCES PER NEC 408.4(B).

ALL SERVICE AND FEEDER CONDUITS SHALL HAVE EXPANSION FITTINGS WHEN PENETRATING SLABS, ETC. TO ALLOW FOR STRUCTURAL SETTLEMENT.

PROVIDE 1/2" CONDUITS STUBBED OUT, BELOW GRADE FOR ADDITIONAL SERVICES, IN ORDER TO PROVIDE CONCEALED TELEPHONE AND/OR DATA SERVICE ENTRANCE.

PROVIDE TIME CLOCKS WITH BATTERY BACKUP TO CONTROL ALL SIGNAGE AND EXTERIOR LIGHTING CIRCUITS. SEE POWER Riser DIAGRAM FOR ADDITIONAL DETAILS.

ALL CONDUCTORS SHALL BE TYPE THHN/THWN COPPER (CU) UNLESS OTHERWISE CALLED FOR ON THESE DOCUMENTS. SEE PANEL SCHEDULE.

ALL LIGHTING FIXTURES (INCLUDING THOSE PROVIDED BY OTHERS) ARE TO BE INSTALLED UNDER THIS CONTRACT. SEE SCHEDULE FOR FUTURE RECOMMENDATIONS, LAMPS, ETC.

NOTICE TO CONTRACTOR: REVIEW THESE DRAWINGS AND CERTIFICATION THEREOF WHICH MAY BE REQUIRED BEFORE BECAUSE OF CONTRACTOR OBTAINING PERMITS, SHALL BE OBTAINED BY THE ENGINEER(S) BY THE REQUESTING CONTRACTOR. PAYMENT SHALL BE REQUIRED AT THE TIME OF CERTIFICATION DELIVERY.

ELECTRICAL LEGEND NOTES

VERIFY ALL RECEPTACLE MOUNTING HEIGHTS WITH OWNER.

LOW VOLTAGE INDICATED ON THESE DRAWINGS IS FOR ROUGH-IN BOX LOCATIONS ONLY AND DOES NOT INCLUDE ANY WIRING OR CABLING REQUIRED. ALL LOW VOLTAGE WILL BE PERMITTED SEPARATELY BY THE CONTRACTOR. THIS INCLUDES BUT IS NOT LIMITED TO DATA/WIRING, SPEAKER WIRING, TV COAX WIRING, ETC.

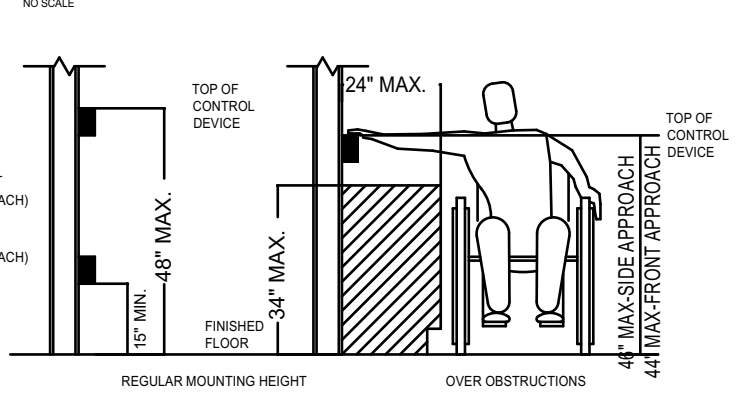
ELECTRICAL PLAN NOTES

120V RECEPTACLES LOCATED IN AREAS SIMILAR TO WITNESS OR PREP AREAS SHALL BE GFCI PROTECTED. GFCI PROTECTION NOT INDICATED ON PLANS (NEC 210.8).

EMERGENCY EXIT LIGHTING SHALL BE FED FROM THE NEAREST LIGHTING CIRCUIT. PROVIDE ADDITIONAL CONDUCTOR TO FEED EMERGENCY LIGHTING IN AREAS, INDEPENDENT OF ANY LIGHTING CONTROL.

SOME DATA LOCATIONS HAVE BEEN INDICATED ON THESE DRAWINGS HOWEVER NOT ALL LOW VOLTAGE INFORMATION HAS BEEN PROVIDED. CONTRACTOR TO COORDINATE WITH OWNER FOR INFORMATION TO ENSURE ALL LOCATIONS AND QUANTITY OF WIRES IS PROVIDED TO PROVIDE A COMPLETE OPERATIONAL LOW VOLTAGE SYSTEM SUITABLE FOR OWNER. CONTRACTOR TO PROVIDE SEPARATE LOW VOLTAGE PERMIT. COORDINATE WITH OWNER & GC PRIOR TO CONSTRUCTION.

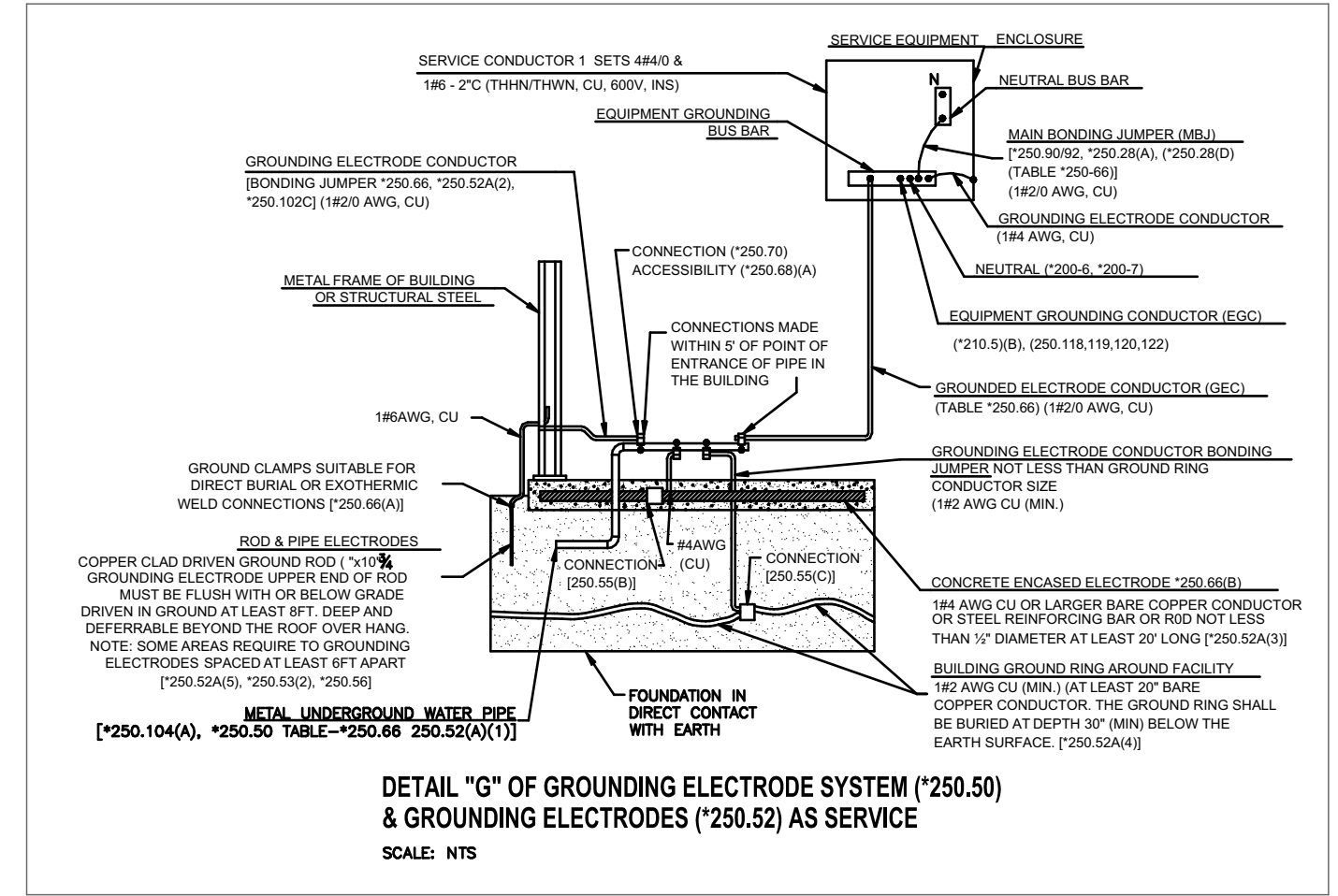
MOUNTING HEIGHT OVER OBSTRUCTIONS DETAIL



NOTE

WHERE LIGHT SWITCHES, RECEPTACLES, TELEPHONE/DATA OUTLETS, DIMMING CONTROL STATIONS, FIRE ALARM PULL STATIONS OR OTHER OPERABLE OUTLET DEVICES OCCUR OVER FIXED OBSTRUCTIONS (SUCH AS CASEWORK, ETC) RESPECTIVE DEVICE MOUNTING HEIGHT LIMITS SHOWN SHALL BE AS TYPICALLY DEPICTED ABOVE.

- CODES AND STANDARDS**
- INTERNATIONAL BUILDING CODE 2018 EDITION
 - INTERNATIONAL ENERGY CONSERVATION CODE 2018 EDITION
 - INTERNATIONAL EXISTING BUILDING CODE 2018 EDITION
 - INTERNATIONAL FIRE CODE 2018 EDITION
 - INTERNATIONAL FUEL AND GAS CODE 2018 EDITION
 - INTERNATIONAL MECHANICAL CODE 2018 EDITION
 - INTERNATIONAL PLUMBING CODE 2018 EDITION
 - INTERNATIONAL PROPERTY MAINTENANCE CODE 2018 EDITION
 - INTERNATIONAL RESIDENTIAL CODE 2018 EDITION
 - INTERNATIONAL SWIMMING POOL & SPA CODE 2018 EDITION
 - NFPA 101 LIFE SAFETY CODE 2018 EDITION
 - NATIONAL ELECTRICAL CODE 2017 EDITION

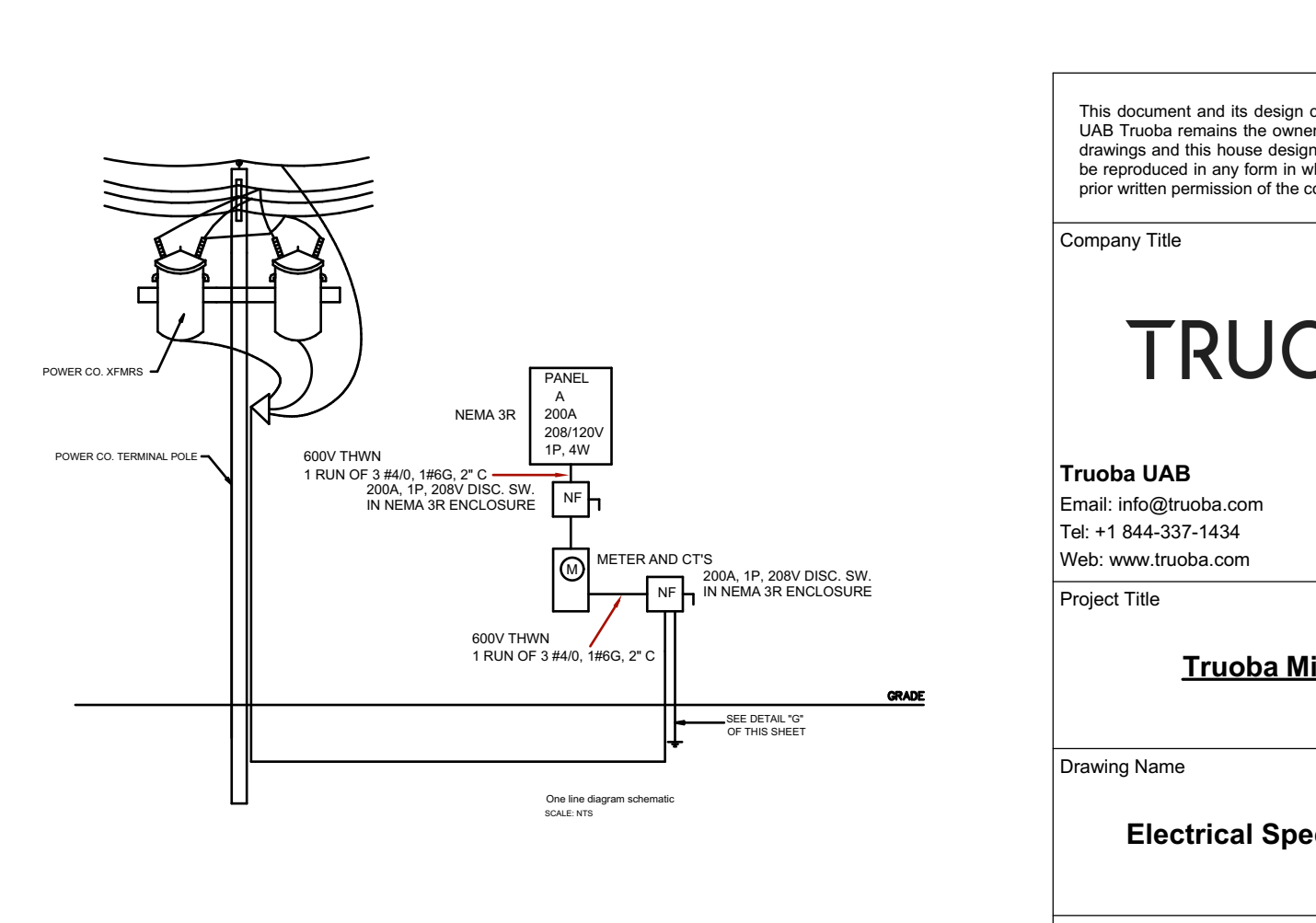


DETAIL "G" OF GROUNDING ELECTRODE SYSTEM (*250.50) & GROUNDING ELECTRODES (*250.52) AS SERVICE

SCALE: NTS

UFR GROUND NOTE:

ALL STEEL REBARS MEASURING 1/2" OR MORE IN DIAMETER AND 20' OR LONGER IN LENGTH THAT IS ENCASED IN NOT LESS THAN 2 INCHES OF CONCRETE SHALL BE BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 250 (ELECTRICAL SUB CODE) SECTION 250.52(A)(3). THE "UFR" GROUND CAN BE 20 L.F. OF #2 OR #4 COPPER WIRING LAID INSIDE THE FOOTING AND THE SAME WIRE IS LONG ENOUGH TO REACH TO THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE. UFR GROUND CAN BE (1) L-SHAPED PIECE OF #4 STEEL REBAR CONNECTED TO THE OTHER STEEL REBAR IN THE FOOTING AND STICKING OUT IN SUFFICIENT LENGTH FOR CONNECTION AT THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE



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Project Title

Truoba Mini 221

Drawing Name

Electrical Specifications

Drawing Scale

Sheet Size

ARCH-C

Layout ID

18

Date

4/20/2021

Revision

Mechanical Specifications

MECHANICAL SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING:
 - LATEST EDITION AND AMENDMENTS OF THE APPLICABLE STATE AND LOCAL CODES.
 - LATEST (OR APPLICABLE) EDITION OF INTERNATIONAL MECHANICAL CODE.
 - LATEST (OR APPLICABLE) EDITION OF NFPA CODE 90A.
- FURNISH AND INSTALL ALL LABOR, MATERIAL, AND EQUIPMENT AND SERVICES NECESSARY FOR COMPLETE AND SAFE INSTALLATION OF THE MECHANICAL SYSTEM INDICATED ON THE DRAWINGS AND NOTED IN THE SPECIFICATIONS HEREINAFTER. MECHANICAL DRAWINGS ARE CONSIDERED DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND SYSTEMS. REFER TO ARCHITECTURAL DRAWINGS TO VERIFY LOCATION OF DEVICES, EQUIPMENT, ETC. CHECK DRAWINGS OF OTHER TRADES TO VERIFY EXACT SPACE CONDITIONS OF DUCTWORK AND EQUIPMENT. MATERIALS SHALL BE NEW, FREE FROM DEFECTS AND LISTED BY ARI OR UL WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH EXISTING CONDITIONS. CONTRACTOR SHALL VISIT SITE AND EXAMINE EXISTING CONDITIONS PRIOR TO BID.
- SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO OWNER OR ARCHITECT FOR EACH PIECE OF EQUIPMENT TO INCLUDE RTU'S, ASSOCIATED PIPING, HEATERS, EQUIPMENT, DIFFUSERS, INSULATION, FANS, CONTROLS AND DUCTWORK. OBTAIN APPROVAL BEFORE EQUIPMENT IS ORDERED, BUILT, OR INSTALLED.

INSULATION:

- INSULATE ALL CONCEALED SUPPLY DUCTWORK WITH 2" THICK FIBREGLASS DUCT WRAP WITH VAPOR BARRIER FACING. ALL INSULATION, FASTENERS AND ADHESIVES SHALL MEET NFPA 90A REQUIREMENTS AND UL FLAME SPREAD AND SMOKE DEVELOPED CRITERIA AND SHALL BEAR UL STAMP.

GAS FIRED HEATING AND A/C UNIT:

- INSTALL WHERE INDICATED AND AS SCHEDULED A PACKAGED AIR COOLED SELF CONTAINED ROOF TOP GAS FIRED HEATING AND DIRECT EXPANSION AIR CONDITIONING UNIT MANUFACTURED BY TRANE. UNIT SHALL BE PROVIDED AND INSTALLED BY LANDLORD.
- UNIT CABINET: CONSTRUCT OF OF GALVANIZED STEEL, BONDERIZED AND COATED WITH A BAKED ENAMEL FINISH. CABINET INTERIOR SHALL BE INSULATED WITH ONE-INCH THICK NOEPRENE COATED FIBERGLASS. A CONDENSATE DRAIN FOR THE INDOOR COIL SHALL BE PROVIDED. PROVIDE 2" THICK FIBERGLASS THROW AWAY FILTERS WITH MAXIMUM FACE VELOCITY OF 300 FPM.
- UNIT COMPRESSORS: SHALL BE SERVICEABLE, HERMETICALLY SEALED SUCTION PROVIDE MINIMUM ONE YEAR MANUFACTURERS WARRANTY ON COMPRESSOR(S). INDOOR AND OUTDOOR COILS SHALL BE CONSTRUCTED OF ALUMINUM PLATE FINS MECHANICALLY BONDED TO SEAMLESS COPPER TUBES WITH ALL JOINTS BRAZED. INDOOR FANS SHALL BE BELT DRIVEN AND PROVIDED WITH ADJUSTABLE PITCH MOTOR PULLY. OUTDOOR FANS SHALL BE DIRECT DRIVEN PROPELLOR TYPE WITH PERMANENTLY LUBRICATED MOTOR.
- UNIT CONTROLS: PROVIDE PROGRAMMABLE THERMOSTAT WITH REMOTE SPACE SENSOR TO MAINTAIN HEATING AND COOLING SET POINTS. CONTROL UNIT FAN TO RUN CONTINUOUSLY OR ON AUTO-CYCLE. CYCLE BURNER AND COMPRESSORS IN SEQUENCE MAINTAIN SETPOINT. PROVIDE ECONOMIZER CONTROL TO INCLUDE RETURN AIR AND OUTSIDE AIR DAMPERS AND FULLY MODULATING ELECTRIC CONTROL SYSTEM WITH ENTHALPY CHANGE OVER CONTROL AND ADJUSTABLE MIXED AIR THERMOSTAT. ECONOMIZER CONTROL SHALL BE CAPABLE OF INTRODUCING UP TO 100% OUTSIDE AIR. HEATING CONTROLS SHALL CONSIST OF A REDUNDANT GAS VALVE, ELECTRONIC INTERMITTENT PILOT IGNITION, REMOTE PILOT FLAME SENSOR, TIME-DELAY RELAY, LIMIT SWITCHES AND CENTRIFUGAL SWITCH. LOCATE REMOTE SPACE SENSOR WHERE INDICATED ON DRAWING.
- HEAT EXCHANGER: SHALL BE TUBULAR IN DESIGN AND CONSTRUCTED OF CORROSION RESISTANT ALUMINIZED STEEL. HEAT EXCHANGER SHALL CARRY A 5 YEAR WARRANTY. BURNERS SHALL BE CONSTRUCTED OF ALUMINUM PAINTED COLD ROLLED STEEL AND BE OF THE IN-SHOT TYPE.
- ELECTRICAL CONNECTION: PROVIDE A DISCONNECT SWITCH READY FOR A SINGLE POINT POWER CONNECTION.

EXHAUST FANS:

- ROOF EXHAUST FANS SHALL BE CAPABLE OF HANDLING AIR QUANTITY ON DRAWINGS. FAN TO BE PROVIDED WITH BIRDSCREEN, SHOCK MOUNTS, NEMA 1 DISCONNECT TYPE ELECTRICAL CONNECTION, MANUFACTURER'S ROOF CURB AND SHALL BE CONTROLLED BY INTERLOCK TO HVAC UNIT. TOILET EF SHALL BE GREENHECK MODEL G-70-D OR APPROVED EQUAL. FANS TO BE PROVIDED BY LANDLORD.

DUCTWORK:

- LOW PRESSURE DUCTWORK: ALL DUCTWORK UNLESS OTHERWISE NOTED SHALL BE FABRICATED OF GALVANIZED SHEET STEEL IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA DUCT CONSTRUCTION STANDARDS FOR 2" PRESSURE CLASS. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE DUCT CONNECTORS SHALL BE PREINSULATED WHERE INSULATION IS REQUIRED AND SHALL BE CLASSIFIED AS CLASS 1 OR CLASS 0 FLEXIBLE CONNECTORS IN ACCORDANCE WITH UL 181. FLEXIBLE CONNECTORS SHALL NOT EXTEND MORE THAN 10 FEET IN LENGTH.
- PROVIDE 1" THICK ACOUSTICAL DUCT LINING WITH AN AVERAGE DENSITY OF 1 1/2 LBS./CF. IN FIRST TEN FEET OF RETURN DUCT AND WHERE INDICATED. DUCT LINER SHALL HAVE FIRE RESISTANT INNER COATING TO PREVENT DELAMINATION OF FIBERS AND SHALL MEET NFPA AND UL REQUIREMENTS.

ACCESSORIES:

- PROVIDE DUCTWORK ACCESSORIES IN ACCORDANCE WITH SMACNA STANDARDS. PROVIDE TURNING VANES IN ALL RECTANGULAR ELBOWS. WHERE SPACE PERMITS CONTRACTOR MAY PROVIDE RADIUS ELBOWS WITH A STANDARD CENTERLINE RADIUS EQUAL TO 1 1/2 TIMES THEIR WIDTH IN LIEU OF RECTANGULAR ELBOWS SHOWN ON PLANS. ALL RECTANGULAR DUCT TAPS SHALL BE MADE WITH 45 DEGREE ENTRY. ALL ROUND TAPS OVER 6" SHALL BE MADE WITH CONICAL TEES.
- PROVIDE MANUAL VOLUME DAMPERS WHERE INDICATED AND AT ALL TAPS TO INDIVIDUAL DIFFUSERS.

AIR OUTLETS AND INLETS:

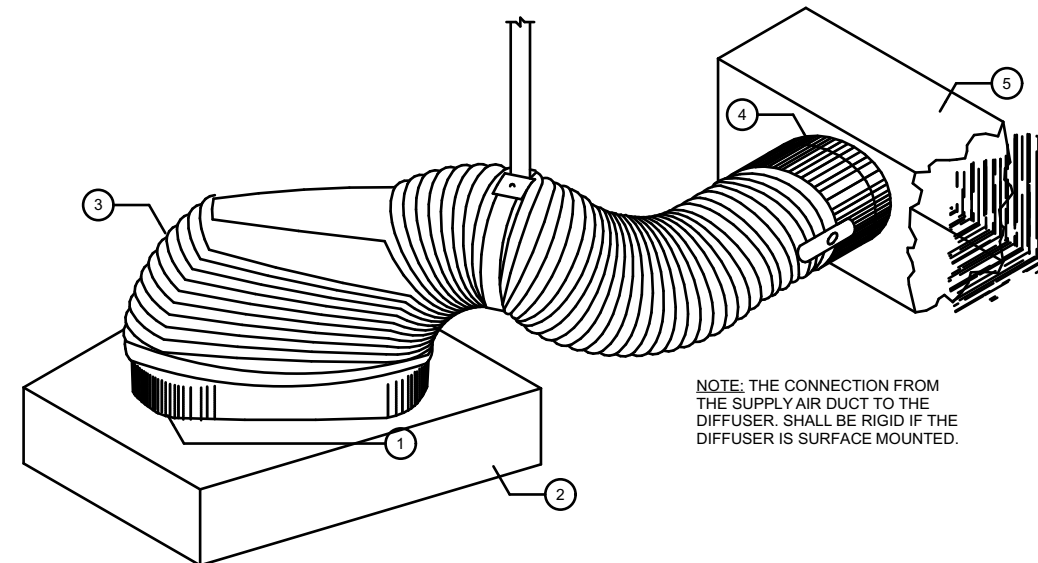
- DIFFUSERS SHALL HAVE AN NC RATING OF NOT MORE THAN 35 FOR ANY OCCUPIED SPACE. THROW AND DROP SHALL MEET MANUFACTURERS PUBLISHED RECOMMENDATIONS. PRIME DIFFUSERS FOR FIELD PAINTING AS INDICATED ON ARCHITECTURAL DRAWINGS.
- LOUVERED FACE SUPPLY DIFFUSERS SHALL BE TITUS MODEL TDC OR APPROVED EQUAL. PROVIDE SQUARE OR ROUND NECK AS INDICATED AND FRAME TYPE TO MATCH CEILING CONSTRUCTION.
- EXHAUST AND RETURN AIR GRILLES SHALL BE TITUS MODEL 350RL STEEL LOUVERED GRILLES WITH 3/4 INCH SPACING.

CONTROLS:

- PROVIDE PROGRAMMABLE WALL MOUNTED SPACE THERMOSTAT WITH SPACE MOUNTED REMOTE SENSOR TO CONTROL ALL STAGES OF ROOFTOP UNIT HEATING AND COOLING.
- CONTROL ROOF MOUNTED TOILET EXHAUST FANS TO START AND STOP FROM INTERLOCK TO RTU'S OCCUPIED CYCLE.
- PROVIDE DUCT MOUNTED IONIZATION TYPE SMOKE DETECTOR IN RETURN AIR DUCT OF EACH RTU 2000 CFM AND ABOVE. DETECTOR SHALL SHUT DOWN UNIT UPON DETECTION OF PRODUCTS OF COMBUSTION AND ACTIVATE VISIBLE AND AUDIBLE ALARM AND TROUBLE SIGNAL IN AN APPROVED LOCATION.

TESTING ADJUSTING AND BALANCING:

- AFTER COMPLETION OF THE INSTALLATION OF THE AIR CONDITIONING AND HEATING SYSTEMS AND PRIOR TO ACCEPTANCE BY THE OWNER, AIR HANDLING SYSTEM AND APPURTENANCES APPLICABLE TO THE ABOVE SYSTEM SHALL BE ADJUSTED AND BALANCED TO DELIVER THE AIR QUANTITIES AS SPECIFIED, INDICATED ON THE DRAWINGS, OR AS DIRECTED. BALANCING WORK SHALL BE DONE IN ACCORDANCE WITH AABC OR NEBB PUBLISHED METHODS AND PRACTICES. THE CONTRACTOR SHALL SUBMIT TO THE OWNER OR ENGINEER FOR THEIR EVALUATION AND APPROVAL, SIX (6) COPIES OF THE COMPLETE AIR BALANCE REPORT.



SUPPLY AIR DIFFUSER CONNECTION

SYMBOLS LIST

- ADAPTER FITTING AS REQUIRED; SCREWED TO GRILLE
- SUPPLY AIR DIFFUSER TYPE & SIZE AS SCHEDULED; DIFFUSER TO HAVE OPPOSED BLADE DAMPER WHERE MOUNTED ON PLASTER CEILING.
- PRE-INSULATED FLEX DUCT - SECURED AT BOTH ENDS WITH 1 inch WIDE DRAW BANDS, SUPPORTED FROM STRUCTURE, MAXIMUM LENGTH 5FT
- SPIN-IN FITTING W/DAMPER. VAPOR SEAL PRE-INSULATED FLEX DUCT TO SUPPLY AIR DUCT. OMIT DAMPER WHERE DIFFUSER IS MOUNTED ON PLASTER CEILING.
- SUPPLY AIR DUCT-SIZE AS INDICATED ON PLANS.

FIELD DUCT SIZING CHART

Duct Size	Design Airflow
5"	50
6"	75
7"	110
8"	160
9"	225
10"	300
12"	480
14"	700
16"	1000
18"	1300
20"	1700

ROUND DUCT SIZE ESTIMATE

Duct Size	Design Airflow
5"	50
6"	85
7"	125
8"	180
9"	240
10"	325
12"	525
14"	750
16"	1200
18"	1500
20"	2000

MECHANICAL LEGEND

	NEW DUCTWORK
	EXISTING DUCTWORK
	SOUNDLINED DUCTWORK
	DUCT RISING
	DUCT DROPPING
	DUCT SIZE, FIRST FIGURE IS VISIBLE SIDE
	CHANGE IN DUCT ELEVATION: RISE (R) OR DROP (D)
	DUCT WITH FLEXIBLE CONNECTION
	RECTANGULAR TO ROUND DUCT CONNECTION
	DUCT WITH CAPPED END
	TRANSITION
	DUCT SECTION, POSITIVE PRESSURE
	DUCT SECTION, NEGATIVE PRESSURE
	TURNING VANES (SQUARE ELBOW SHOWN)
	CONNECT NEW TAP TO EXISTING DUCTWORK
	MANUAL VOLUME DAMPER
	FLEXIBLE DUCT
	POINT OF CONNECTION - NEW TO EXISTING
	RETURN
	SUPPLY DIFFUSER
	THERMOSTAT
	REMOTE SPACE SENSOR
	GAS METER
	ABOVE FINISHED FLOOR
	CUBIC FEET PER MINUTE
	CEILING
	CEILING DIFFUSER
	CEILING REGISTER
	DOWN
	EXISTING, RELOCATE AS REQUIRED
	EXHAUST FAN
	FLEXIBLE CONNECTION
	FLOOR
	NEW
	TRANSFER AIR DUCT
	UNLESS OTHERWISE NOTED
	VOLUME DAMPER
	NATURAL GAS
	WATER HEATER

Design	RECTANGULAR DUCT SIZE ESTIMATE								
	4"		6"		8"		10"		12"
CFM	4x4	6x4	6x6	8x6	8x8	10x8	10x10	12x10	12x12
60	6x4	60	4x6	90	4x8	120	4x10	150	4x12
90	8x4	110	6x6	160	6x8	215	6x10	270	6x12
120	10x4	160	8x6	230	8x8	310	8x10	400	8x12
150	12x4	215	10x6	310	10x8	430	10x10	550	10x12
180	14x4	270	12x6	400	12x8	550	12x10	680	12x12
210	16x4	320	14x6	490	14x8	670	14x10	800	14x12
240	18x4	375	16x6	580	16x8	800	16x10	950	16x12
270	20x4	430	18x6	670	18x8	930	18x10	1100	18x12
300	22x4	490	20x6	750	20x8	1060	20x10	1250	20x12
330	24x4	540	22x6	840	22x8	1200	22x10	1400	22x12
		600	24x6	930	24x8	1320	24x10	1600	24x12
		650	26x6	1020	26x8	1430	26x10	1750	26x12
		710	28x6	1100	28x8	1550	28x10	1950	28x12
		775	30x6	1200	30x8	1670	30x10	2150	30x12
40	2 1/2 x10			1300	32x8	1800	32x10	2300	32x12
70	2 1/2 x14			1400	34x8	1930	34x10	2450	34x12
150	2 1/2 x30			1500	36x8	2060	36x10	2600	36x12
		100	3 1/2 x14			2200	38x10	2750	38x12
		220	3 1/2 x30			2350	40x10	2900	40x12
								3050	42x12

INSTRUCTIONS FOR USE

- Identify the volume of air that will be passing through the duct
- Select the duct size from the table that can carry that volume of air
- If desired airflow exceeds the CFM rating, increase to the next duct size
- Listed CFM is based on typical field results and may vary, install dampers
- If duct run exceeds 25', or has excessive transitions, increase to the next size
- Design alone is inadequate, always prove design by test and balance.

MECHANICAL CODES AND STANDARD

INTERNATIONAL BUILDING CODE	2018 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE	2018 EDITION
INTERNATIONAL EXISTING BUILDING CODE	2018 EDITION
INTERNATIONAL FIRE CODE	2018 EDITION
INTERNATIONAL FUEL AND GAS CODE	2018 EDITION
INTERNATIONAL MECHANICAL CODE	2018 EDITION
INTERNATIONAL PLUMBING CODE	2018 EDITION
INTERNATIONAL PROPERTY MAINTENANCE CODE	2018 EDITION
INTERNATIONAL RESIDENTIAL CODE	2018 EDITION
INTERNATIONAL SWIMMING POOL & SPA CODE	2018 EDITION
NFPA 101 LIFE SAFETY CODE	2018 EDITION
NATIONAL ELECTRICAL CODE	2017 EDITION

CODES AND STANDARDS

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Company Title

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Project Title

Truoba Mini 221

Drawing Name

Mechanical Specifications

Drawing Scale

Sheet Size

ARCH-C

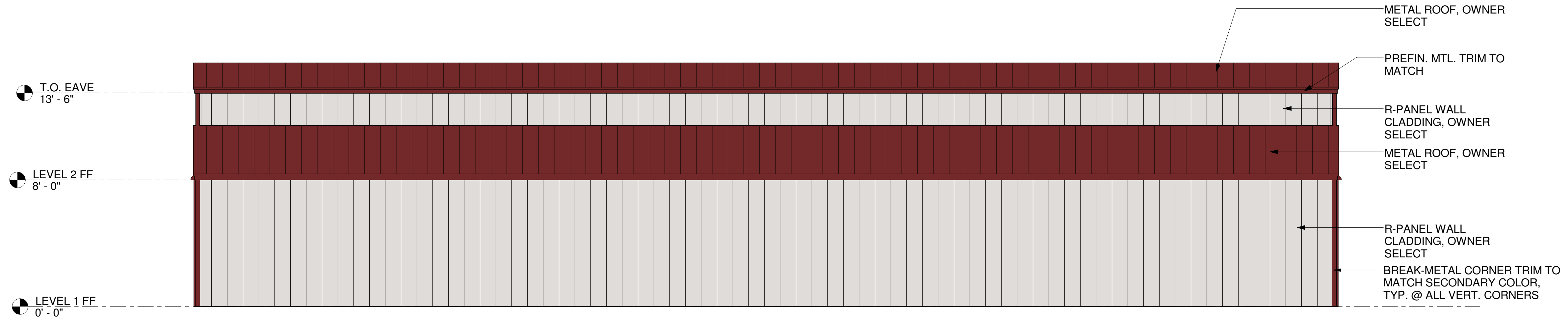
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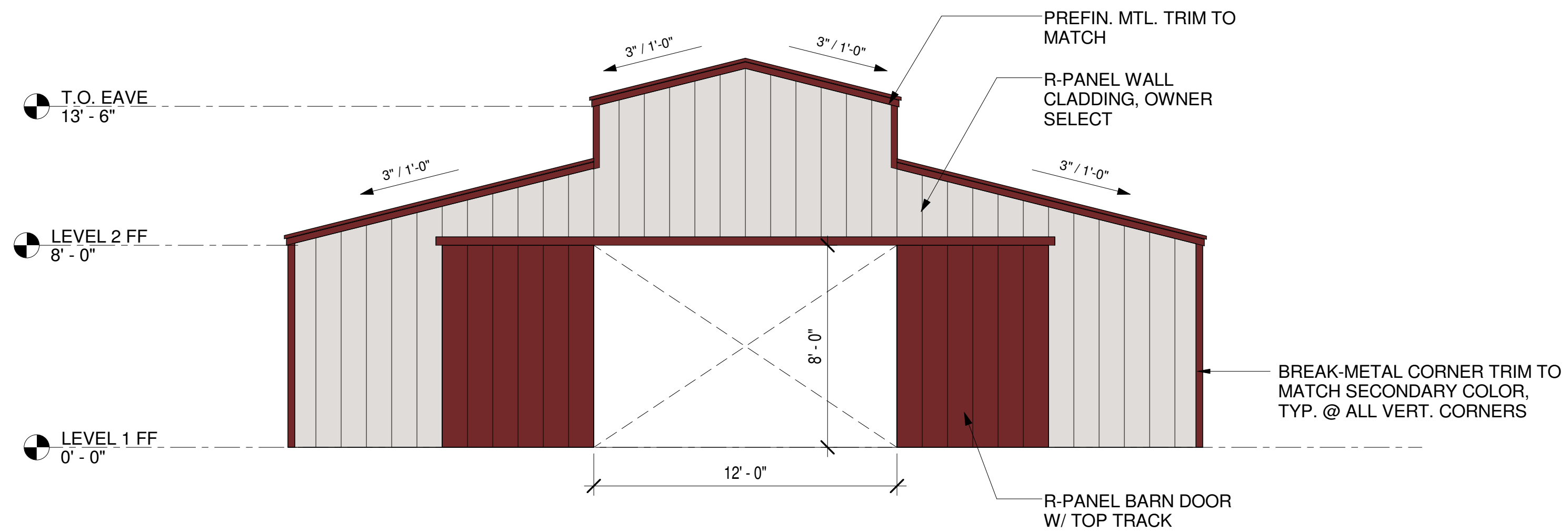
Date

4/20/2021

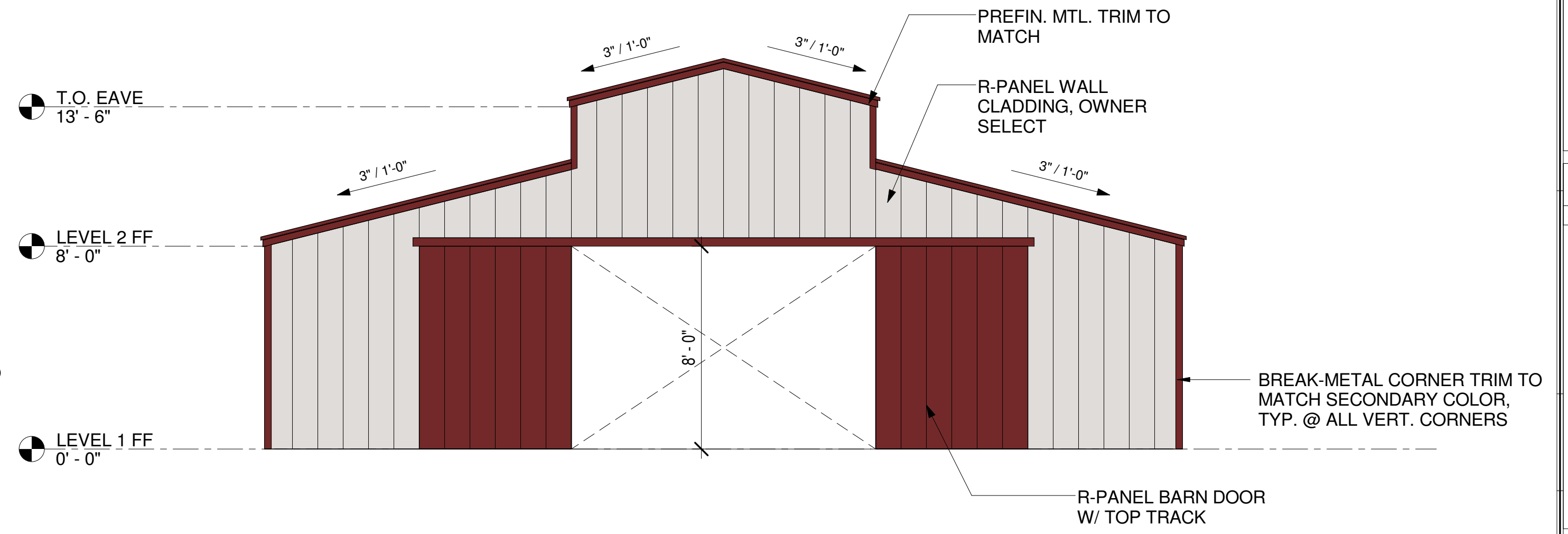
Revision



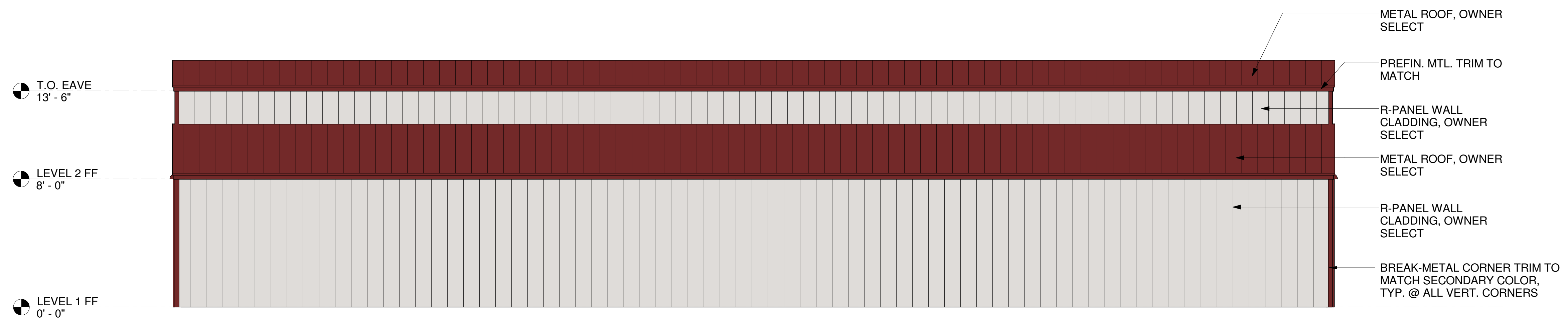
④ EXTERIOR ELEVATION - SOUTH
1/4" = 1'-0"



② EXTERIOR ELEVATION - EAST
1/4" = 1'-0"



③ EXTERIOR ELEVATION - WEST
1/4" = 1'-0"



① EXTERIOR ELEVATION - NORTH
1/4" = 1'-0"

Revision Schedule

Rev	Description
1	11/11/23

ALL INFORMATION IS APPROVED AS SHOWN AND SHALL BE THE PROPERTY OF ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF EXISTING AND PROPOSED WORK. ARCHITECT'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE WORK SHOWN ON THESE PLANS.

BAUTISTA BARN

APN # 3216-005-046

PERMIT SUBMISSION

EXTERIOR ELEVATIONS

FOR REVIEW

DATE	NO.	BY
2023.01	1	CB
03/20/23		

A3.1