

STRUCTURAL GENERAL NOTES

DESIGN LOADS & GOVERNING BUILDING CODE

Code: International Residential Code (IRC) - 2024 Edition w/ City of Alpine Amendments

Roof:	Roof Snow Load, (Pf or Ps).....	100 psf
	Ground Snow Snow Load, (Pg, ASCE 7).....	143 psf
	Roof Dead Load.....	20 psf
Floor:	Residential Live Load.....	40 psf
	Floor Dead Load.....	15 psf
Wind:		
	Ultimate (Basic) Design Wind Speed, V _{ULT}	115 MPH (3-Second Gust)
	Nominal Design Wind Speed, V _{ASD}	90 MPH (3-Second Gust)
	Importance Factor, I.....	1.0
	Exposure.....	C

Seismic:	Seismic Design Category.....	D
----------	------------------------------	---

Deflection:	Roof:	
	Live Load.....	L/360
	Total Load.....	L/240
	Maximum Total Load Vertical Deflection.....	1 1/4"

GENERAL CONSTRUCTION NOTES

- The Structural Contract Documents are intended to be used in conjunction w/ the plans of all other disciplines working on the project. The contractor is responsible for the coordination of all required information indicated on the Structural Contract Documents & incorporating these requirements into the shop drawings of all other disciplines prior to submittal to CLA Architecture.
- Information provided within the Structural Contract Documents is subject to all requirements specified within the governing building code. The contractor shall be familiar w/ all portions of the governing building code that impact the type of construction being performed. For conditions where the Structural Contract Documents conflict w/ the governing building code, the more stringent requirements shall apply. The contractor shall keep a copy of the governing building code on site at all times during the construction phase of the project for reference. CLA Architecture shall be notified of any modifications resulting from a more stringent code requirement prior to construction for verification & coordination.
- Modifications to the Structural Contract Documents due to conditions at the site that are unknown or concealed at the time of design do not fall within the original scope of work of the project. Required modifications shall be performed as additional services as outlined in the project contract. The Engineer shall be notified in writing by a Request for Information (RFI) to provide recommendations for resolution of the modification requested.
- Dimensions & elevations indicated on the Structural Contract Documents shall be coordinated by the contractor w/ all other disciplines prior to the beginning of construction. Discrepancies shall be brought to the attention of the Architect. Scaling the Structural Contract Documents is not permitted.
- The contractor shall verify field conditions including existing utilities, sub-grade & above grade conditions which may interfere w/ construction & notify the applicable disciplines for modifications as required.
- In the event of discrepancies between, project specifications, general notes, plans & details, the most stringent requirements shall apply unless approved in writing.
- Coordinate all openings through roof, floors, & walls w/ the appropriate disciplines. The penetration of structural members, unless specifically indicated on the Structural Contract Documents is not permitted without the review & consent of CLA Architecture including post-tensioned slab on grade & all elevated slab construction. Openings & penetrations brought to the attention of the Engineer after the Structural Contract Documents are submitted to the city for review shall be subject to the requirements outlined in the Shop Drawings & Submittals section of the general notes.
- All items embedded into concrete or masonry shall be positively secured against the hydraulic forces from concrete placement or incidental contact from tools or equipment during concrete placement. The special inspector shall verify all embedded items are secured prior to placement of concrete.
- Unless specifically detailed &/or specified on the Structural Contract Documents, stairs, balusters, half-walls & railings for decks, balconies, awnings, sunshades & walkways as well as site retaining walls & improvements have not been designed by CLA Architecture. Design & construction of these elements, when not expressly shown on the Structural Contract Documents, are the responsibility of the general contractor. These elements are considered design-build & the general contractor shall submit plans & calculations, sealed & signed by a professional engineer licensed in the state where the work is being performed.

STRUCTURAL ERECTION & BRACING REQUIREMENTS

- The structural drawings illustrate the completed structure w/ elements in their final positions, properly supported & braced. These construction documents contain typical & representative details to assist the contractor. Details shown apply at all similar conditions unless noted otherwise.
- Although due diligence has been applied to make the drawings as complete as possible, not every detail is illustrated, nor is every exceptional condition addressed. All proprietary connections shall be installed in accordance w/ the manufacturers' recommendations. All work shall be accomplished in a workmanlike manner & in accordance w/ the governing building code, local amendments, & local ordinances.
- The general contractor is responsible for coordination of all work, including layout & dimension verification, materials coordination, shop drawing review, & the work of subcontractors. Any discrepancies or omissions discovered in the course of the work shall be immediately reported to the architect for resolution. Continuation of work without notification of discrepancies relieves the architect & engineer of all liability.
- Unless otherwise specifically indicated, the Structural Contract Documents do not describe means, methods, techniques or sequences of construction. The Contractor, in the proper sequence, shall provide proper shoring & bracing as may be required during construction & is responsible for the procurement of all engineering services required to achieve the final completed structure. The contractor, in the proper sequence, shall perform or supervise all work necessary to achieve the final completed structure, & to protect the structure, workmen, & others during construction. Such work shall include, but not be limited to, bracing, shoring for construction equipment, shoring for excavation, formwork, scaffolding, safety devices & programs of all kinds, support & bracing for cranes & other erection equipment, & the dynamic effects of thermal variations on structural elements & connections during construction.
- Do not backfill against basement or retaining walls until supporting slabs & floor framing are in place & securely anchored unless adequate bracing is provided. Structural steel frames are "non-self-supporting" per AISC Code of Standard Practice. Temporary bracing shall remain in place until all floors, walls, roofs & any other supporting elements are in place. The architect & engineer bear no responsibility for the above items & observation visits to the site do not in any way include inspection of them.
- Where periodic or continuous inspection is required by these documents, governing building code, local amendments, or local ordinance, the owner shall employ an independent inspector certified in the particular area of concern. The inspector shall be responsible to, & report to, the architect & building department.

FOUNDATION DESIGN (Footings, Presumptive Load Bearing Values)

- The foundation design is based on presumptive load bearing values of foundation materials per table R401.4.1(1) of the IRC.
- Conventional Spread Footings:
 - Maximum Allowable Bearing Pressure..... 1,500 psf
 - Minimum Frost Depth..... 36"
- The site shall be prepared in accordance w/ the project geotechnical report prior to foundation construction.
- All footings shall be placed on adequate bearing stratum or to a min. depth as shown on the drawings, whichever is deeper.
- A qualified geotechnical engineer shall observe excavations prior to concreting operations to verify the bearing stratum is properly prepared. A copy of a field report shall be transmitted to the engineer of record.
- The contractor is to provide adequate de-watering measures for the site during earthwork & construction of foundations.

REINFORCED CONCRETE

- Design is based on "Building Code Requirements for Reinforced Concrete" (ACI 318 - Latest Edition). Concrete work shall conform to "Specifications for Structural Concrete for Buildings" (ACI 301 - Latest Edition). Hot & cold weather shall be in accordance w/ ACI 305 & ACI 306 respectively.
- Structural concrete shall have min. 28-day compressive strengths as follows:
 - Grade Beams & Foundation Walls..... 4,000 psi
 - Footings / Piers..... 4,000 psi
 - Interior Slabs-On-Grade..... 4,000 psi
 - Exterior Slabs-On-Grade..... 4,500 psi
 - Other..... 4,000 psi
- Cement shall be Type I/II Portland Cement, conforming to ASTM C150 or Type II, conforming to ASTM C595. Maximum permissible Water/Cement ratio shall not exceed 0.50.
- Aggregate size shall not exceed 3/4" unless noted otherwise.
- Chloride admixture shall not be used.
- Concrete exposed to weather shall have a min. air entrainment of 6 ± 1 1/2 percent.
- Air entrainment may be used for interior concrete not exposed to weather but may result in finishing complications.
- Fly ash shall conform to ASTM specification C618, Class C or Class F. Fly ash shall not exceed 20% of the total weight of cementitious material unless noted otherwise.
- The concrete information provided is a performance specification indicating the final in-place concrete requirements only. The actual concrete mix design is provided by the concrete supplier and shall be sealed and signed by a Professional Engineer licensed in the state where the work is being performed. CLA Architecture is not responsible for the performance of the mix during construction, or the means & methods required to attain the specified in-place concrete requirements. The contractor & concrete supplier should consider the required means & methods for each mix design to ensure performance.
- Slabs & grade beams shall not have cold joints in a horizontal plane. Where stop in concrete placement is necessary at a point other than shown on these drawings, contact the Structural Engineer for direction. Vertical construction joints within grade beams shall be made within the center third of the span between supports. Horizontal shear keys or a roughened surface shall be provided. All reinforcing shall be continuous through construction joints.
- Reinforcing Bars shall conform to ASTM A615 or ASTM A706. All bars shall be Grade 60. Bars to be welded shall conform to ASTM A706. Detailing, fabrication, & placement of reinforcing steel shall be in accordance w/ the "Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315 - latest ed.)." No splices of reinforcement shall be made & no welding to reinforcing shall be permitted except as shown or as approved by the Structural Engineer. Any welding of reinforcing thus approved shall be done by certified welders in strict conformance to the "AWS Structural Welding Code - Reinforcing Steel" of the American Welding Society (AWS D1.4 latest ed.). "Tack" welding off/to reinforcing will not be permitted under any circumstances. min. length of lapped splices shall be Class B tension splices as indicated in the reinforcing bar splice schedule on this sheet, unless noted otherwise. Make all bars continuous at corners/intersections or provide corner bars of equal size. Welded wire mesh shall be lapped one full mesh at sides & one full mesh plus 2" at the ends but not less than 6" & shall be wire tied.
- Reinforcing bar extending from surface of cured concrete shall not be twisted in order to achieve correct alignment. Contact CLA Architecture for repair at all locations where reinforcing bar hooks or extensions are not placed w/ correct orientation or where bars are twisted inadvertently.
- Where cont. bars in beams/grade beams, & walls must be spliced, slice top bars at mid-span & splice bot. bars over supports.
- Unless noted otherwise on plan or in details, concrete protection for reinforcement in cast-in-place conc. shall be as follows:
 - Conc. cast against & permanently exposed to earth..... 3"
 - Formed surfaces exposed to earth or weather:
 - #6 through #11 bars..... 2"
 - #5 bar, W31 or D31 wire, & smaller..... 1 1/2"
 - Conc. not exposed to weather or in contact w/ ground:
 - Slabs, walls, joists: #11 bar & smaller..... 3/4"
 - Beams, columns:
 - Primary Reinforcement..... 1 1/2"
 - Stirrups, Ties, Spirals..... 1 1/2"
- Provide (2) #5 bars, one each face, w/ 2'-0" projection on all sides of openings in concrete, unless noted otherwise. Re: plan for slab-on-grade reinforcing.
- Provide a 10-mil min. thickness polyethylene vapor retarder between the subgrade and concrete slab-on-grade with joints lapped not less than 6". Contractor to verify with Architect if an increased thickness is required.

DIMENSION LUMBER, TIMBERS, & STRUCTURAL SHEATHING

- All dimension lumber and timbers used for structural framing shall be Hem-Fir #2, or better, visually graded as follows:
 - 2" thick, 4" wide..... No. 2 or better Fb = 850 psi
 - 2"-4" thick, 5" & wider..... No. 2 or better Fb = 850 psi
 - 5" & thicker, 5" & wider..... No. 1 or better Fb = 975 psi
- Refer to Wall Stud Schedule for required stud framing.
- All wood in contact with concrete and exposed to weather shall be preservative treated and referred to as "P.T." herein. If a material other than CCA treated is selected, all fasteners in contact with the treated lumber (including nails, anchor bolts, etc.) shall be "hot-dipped" galvanized or of stainless steel.
- Provide 1 x 4 cross bridging not over 8'-0" on center for all wood joists where depth is equal to or more than 6 times thickness, and 2x blocking between joists at supports. Standard grade lumber may be used for bridging and blocking.
- All wood connectors called for on the drawings are as manufactured by the Simpson Strong Tie Company. Connectors by other manufacturers may be used if the load capacity is equal to or greater than the connector specified. Using the manufacturer's furnished nails and bolts for the connection indicated.
- Structural sheathing:
 - Structural sheathing for roof, wall and floor sheathing shall be APA Rated Exposure 1 unless noted otherwise on the general shear wall schedule with exterior glue and shall conform to American Plywood Association Standard PS 2, latest edition.
 - Diaphragm sheathing shall be of the thickness and index number shown on plans, placed with the face grain perpendicular to supports and with end joints staggered.
 - Nails shall be of the size and spacing shown on the plans. Shear walls shall be sheathed and nailed as indicated in the Shear Wall Schedule. Screws shall be an acceptable substitution for cooler nails where applicable by table 2306.4.5.
 - Provide suitable edge support by use of ply clips, tongue and groove panels or solid wood blocking between supports.
 - Wood structural panels or wood structural sheathing indicated on plan may be Plywood or Oriented Strand Board (O.S.B.) at the contractor's option provided all specified requirements for Grade, glue, span rating, direction of application, etc. are met.
- Fasten all wood members with common nails according to the International Building Code schedule (2304.9.1) unless shown otherwise. Minimum end and edge distances for bolts, nails, or patterns of fasteners shall comply with the IBC Chapter 23 and the National Design Standard, N.D.S., Chapter 11, latest edition.
- Fireblocking in all walls shall be provided as required by the IBC or the Local Building Code, whichever is more stringent, or as specifically indicated in the Architectural Drawings.

PLANT FABRICATED / ENGINEERED WOOD FRAMING

- Pre-Engineered "plated" roof & floor trusses shall be designed to support the full dead loads & the superimposed design loads noted above, in the Wall Stud Schedule or on the drawings. Web arrangement & member forces shall be determined by the fabricator.
- "I-joist" members shall be as manufactured by Boise Cascade or approved equal & shall carry ICC approval for the composite section. Bridging & blocking shall be installed & erection requirements shall be as recommended by the manufacturer.
- Typical framing rim board shall be 1 1/4" wide by full depth continuous LSL. As an alternate, the LSL rim may be replaced by an end wall fiber truss board of the same full wall floor truss design across for the appropriate stacked loading of all levels above. Contractor shall coordinate w/ the truss manufacturer if alternate is desired.
- Laminated Veneer Lumber (LVL): Beam Members noted as "LVL" on these plans shall be supplied in the net sizes as called out & shall be manufactured by Boise Cascade or approved equal. The min. allowable design values shall be:
 - Modulus of elasticity (E)..... 2,000,000 psi
 - Flexural stress (Fb)..... 2,600 psi
 - Compression Perp. to Grain (Fc,perp)..... 750 psi
 - Compression Para. to Grain (Fc,para)..... 2,510 psi
 - Horizontal Shear (Fv)..... 285 psi
- Laminated Strand Lumber (LSL): Beam Members noted as "LSL" on these plans shall be supplied in the net sizes as called out & shall be manufactured by Boise Cascade or approved equal. The min. allowable design values shall be:
 - Modulus of elasticity (E)..... 1,550,000 psi
 - Flexural stress (Fb)..... 2,325 psi
 - Compression Perp. to Grain (Fc,perp)..... 900 psi
 - Compression Para. to Grain (Fc,para)..... 2,170 psi
 - Horizontal Shear (Fv)..... 310 psi
- Parallel Strand Lumber (PSL): Members noted as "PSL" on these plans shall be supplied in the net sizes as called out & shall be manufactured by Trus Joist or approved equal. The min. allowable design values shall be:
 - Modulus of elasticity (E)..... 2,000,000 psi
 - Flexural stress (Fb)..... 2,900 psi
 - Compression Perp. to Grain (Fc,perp)..... 750 psi
 - Compression Para. to Grain (Fc,para)..... 2,900 psi
 - Horizontal Shear (Fv)..... 290 psi
- Prefabricated wall components may be used given shop drawings are provided by the manufacturer for review by the Structural Engineer of Record. Shop drawings & calculations bearing the seal of a professional engineer (employed by the manufacturer) registered in the state where the project is being built shall be submitted to the Structural Engineer for review.
- Shop drawings & calculations bearing the seal of a professional engineer (employed by the manufacturer) registered in the state where the project is being built shall be submitted to the Structural Engineer for review.

STRUCTURAL STEEL

- Structural steel shall be detailed, fabricated, & erected in conformance w/ the AISC Specification & the Code of Standard Practice, latest editions.
- Rolled structural steel shapes shall conform to the following specifications:
 - W Shapes..... ASTM A992, 50 ksi
 - Channels, Angles, & Plates..... ASTM A36, 36 ksi (U.N.O. in plans)
 - Pipe Shapes..... ASTM A53, Grade B, 35 ksi
 - Structural Tubing (TS/HSS)..... ASTM A500, Grade B, 46 ksi
- Connections made under shop conditions shall be welded or bolted w/ ASTM F3125 Grade A325 high strength bolts, type X or N. Welds shall be made w/ AWS A5.1 or A5.5 class E70XX electrodes or equivalent submerged arc & follow all requirements of AWS D1.1.
- Design of all steel connections shall be the responsibility of the steel fabricator in accordance w/ AISC 303 Code of Standard Practice for Steel Buildings & Bridges, latest edition, Section 3.1.1 Option 3 & all associated requirements. Field bolted connections shall be bearing type w/ 3/4" diameter A325-H bolts, unless noted otherwise. All connections where reactions are not indicated on plan shall support 60% of the total uniform load capacity in bending for each beam & span as shown in the AISC uniform load constant tables. Connections shall generally follow those as found in AISC "Steel Construction Manual" latest edition. The steel fabricator shall submit plans, details, & calculations, sealed & signed by a professional engineer licensed in the state where the work is being performed for review by CLA Architecture.
- All welds shall be performed by an AWS certified welder.
- Minimum fillet weld sizes shall conform to AISC requirements.
- Anchor bolts shall conform to ASTM F1554, 36 ksi unless noted otherwise.
- Headed anchor studs (H.A.S.) shall conform to ASTM A108 w/ a min. tensile strength of 60,000 psi. Deformed anchor studs (D.A.S.) shall be ASTM A706 w/ a min. tensile strength of 60,000 psi.
- Structural steel members shall as a min. be coated w/ SSPC 15-68, Type 1 (Red Oxide) paint. Structural steel exposed to weather shall be Hot-Dipped Galvanized in accordance w/ ASTM A153. Coatings damaged due to shipping, erection, welding or bolting shall be repaired in a manner that will provide a corrosion resistance equivalent or better than that provided in shop.
- Steel in contact w/ earth shall be coated w/ (2) layers of a bituminous paint unless noted otherwise.

SHOP DRAWINGS & SUBMITTALS

- Review of shop drawings by the Structural Engineer is to establish general conformance of the shop drawings w/ the Structural Contract Documents. No responsibility is assumed by the Structural Engineer for correctness, dimensions or details. All min. conditions & requirements specified on the Structural Contract Documents or in the governing building code & referenced standards shall be met regardless of the information indicated on the shop drawings. The contractor bears sole responsibility for errors, omissions & code requirements associated w/ the shop drawings & the application of the information therein.
- Shop drawings will be reviewed one (1) time by CLA Architecture (CLAA) for conformance w/ the Structural Contract Documents. If shop drawings are indicated by CLAA as Revise & Resubmit, CLAA will review the resubmittal for incorporation of the redlined items only. Further review of Structural submittals beyond these indicated will result in additional fees charged on an hourly basis at CLAA's standard rates per the project Agreement.
- Construction Documents are copyrighted & shall not be reproduced for use as erection plans or shop details.
- All shop & erection drawings shall be checked & stamped by the General Contractor prior to submission for Engineer's review. Unchecked submittals will be returned without review. Furnish one (1) electronic or two (2) hard copy sets of shop & erection drawings for Structural Steel, & Wood Roof Trusses, to Structural Engineer for review prior to fabrication.
- Submit in a timely manner to permit ten (10) working days for review by Structural Engineer.
- Requests for the modification of plans or specifications shall be submitted in writing. Shop drawings, submitted for review do not constitute "in writing" unless specific suggested changes are clearly marked. In any event, such changes by means of the shop drawing submittal or request for information process become the responsibility of the one initiating such change & shall compensate CLA Architecture for time & expense incurred for making the desired modifications.
- The contractor shall allow for adequate time for the review, design & detailing of requested modifications or repairs in the construction schedule.
- Review of shop drawings by the Engineer of Record is a courtesy & does not relieve the supplier of requirements indicated in the Structural Contract Documents unless specifically noted otherwise in writing by the reviewing engineer. bearing capacity is exceeded shall be considered a failure in the truss design.

STRUCTURAL OBSERVATIONS

- Structural Engineer shall make periodic observations of the construction during placement of foundation & erection of structural framing. The purpose of the observations shall be to become generally familiar w/ the quality of work of the contractor in order to determine general conformance w/ the contract documents. Such observations shall not replace required inspections by the governing authorities or serve as "special inspections" as may be required by Chapter 17 of the governing building code.
- The contractor shall notify the Structural Engineer at the following stages of construction so that these observations may be made:
 - Prior to placing foundation concrete (after reinforcement placement).
 - Prior to grouting structural masonry walls (after block & reinforcement placement).
 - During erection of each level of structural framing.
 - After completion of all structural framing erection (including permanent bracing).
 - After roof deck has been placed & connected (before roofing operations).
- Notification for observation shall be given to the Structural Engineer at least 24 hours prior to the time the observation is needed. The Structural Engineer may not make observations at each notification & lack of observation shall not stop progress of construction nor shall the observation indicate owner's acceptance of all work related to the observation.

SPECIAL INSPECTION REQUIREMENTS

- A special inspector shall be engaged to make Special Inspections of the construction work as required by the Authority Having Jurisdiction and in conformance w/ the provisions of chapter 17 of the Governing Building Code.
- Special Inspections shall be performed by an independent, established & recognized agency approved by the building official as demonstrating competence in performing the required Special Inspections.
- It is the responsibility of the special inspection agency to work with the General Contractor and Ownership to ensure that all Special Inspections and tests required by IBC Section 1705 and associated referenced standards are performed.
- All Special Inspection reports shall be in accordance with IBC Section 1704.2.4, including the specific statement that Special Inspections were performed. Observations shall not take the place of Special Inspections and as reports indicating Observation(s) rather than Special Inspection(s) do not meet the requirements outlined in the Governing Building Code, they shall be rejected.
- The special inspector shall have experience in the Special Inspection of the particular type of construction or operation for which the Special Inspection is being performed.
- The special inspection agency shall keep records of all Special Inspections performed. A copy of all Special Inspection reports shall be provided to the building official as well as to CLAA.
- Special Inspection reports shall specify that work undergoing Special Inspection was or was not completed in conformance to the most recent approved Structural Contract Documents. Any discrepancies w/ the Structural Contract Documents shall be brought to the immediate attention of the contractor for correction. All required structural corrections/modifications shall be submitted to CLAA & adequate time shall be allotted for by the contractor for review & response. Costs incurred due to required corrections, modifications & time delays shall be the sole responsibility of the contractor.
- A final report documenting the required Special Inspections shall be issued by the special inspection agency to the A.H.J., department and CLAA stipulating that all items are in conformance w/ the Structural Contract Documents, or with additional documentation provided by the A.H.J., or CLAA. All Structural Contract Documents used in the special inspection process shall be identified & itemized, including dates of issue.
- Special Inspection reports shall include the names of personnel on site during inspection.

TYPICAL FOUNDATION NOTES

- Re: Civil Plans for top of first floor slab elevation (Elevations indicated on structural sheets are reference elevations only).
- Provide 5/8"Ø anchor bolts @ 32" o.c. U.N.O. In all cases provide (1) anchor bolt within 12" of all corners & sill plate ends (ea. side) & provide a min. of (2) anchor bolts per sill plate. All anchor bolts shall be embedded a min. of 7" into concrete w/ at 1 1/2" min. leg.
- Refer to shear wall schedule for anchor bolt requirements at shear walls.
- All slab-on-grade conditions shall be separated from all bearing walls, columns, & foundation walls w/ slip joints that will allow unrestrained vertical movement & the slip joints maintained over time.
- Interior partition infill framing or masonry walls resting on non-structural slab-on-grade shall be constructed w/ a slip joint that will allow unrestrained vertical movement. The slip joint shall have sufficient depth to account for the anticipated differential vertical movement of the slab-on-grade indicated in the project geotechnical report.
- Re: Soils report for sub grade preparation.
- Broom finish all concrete in entryways & patios U.N.O.

UNLESS SPECIFICALLY DETAILED &/OR SPECIFIED ON THE STRUCTURAL CONTRACT DOCUMENTS, STAIRS, BALUSTERS, HALF-WALLS & RAILINGS FOR DECKS, BALCONIES, AWNINGS, & WALKWAYS HAVE NOT BEEN DESIGNED BY CLA ARCHITECTURE. DESIGN & CONSTRUCTION OF THESE ELEMENTS, WHEN NOT EXPRESSLY SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THESE ELEMENTS ARE CONSIDERED DESIGN-BUILD & THE GENERAL CONTRACTOR SHALL SUBMIT PLANS & CALCULATIONS, SEALED, & SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE WORK IS BEING PERFORMED.

STRUCTURAL SHEET INDEX	
SHEET #	DESCRIPTION
S0.1	STRUCTURAL GENERAL NOTES
S1.1	FOUNDATION PLAN
S1.2	FLOOR FRAMING PLAN
S1.3	ROOF FRAMING PLAN
S2.1	FOUNDATION SECTIONS
S2.2	ROOF FRAMING SECTIONS

TYPICAL FLOOR FRAMING NOTES

- Floor deck to be 23/32" T & G APA Rated (Exposure 1) wood structural panels, APA Span Rating 48/24. Glue & nail w/ 10d nails @ 6" o.c. at edges & 12" o.c. at intermediate supports, U.N.O. Stagger structural sheathing end joints, typical.
- Provide all temporary & permanent bracing & blocking for floor framing members as required by manufacturer.
- All dashed interior walls shown on plan are located below floor framing.
- Provide clips between bottom of floor framing & top | of non-bearing walls to accommodate floor framing deflection, typical.
- Full depth blocking shall be provided at all bearing conditions, shear walls, & cantilever conditions as well as any locations recommended by a material or product manufacturer.

TYPICAL WALL FRAMING NOTES

- Refer to Wall Stud Schedule for stud species, grade & spacing unless noted otherwise.
- Sheath all exterior walls w/ 7/16" wood structural panel sheathing, APA Span Rating 24/16, w/ 8d nails @ 6" o.c. at panel/boundary edges & 12" o.c. at intermediate supports unless noted otherwise in the shear wall schedule & framing plans. Block all panel edges typical U.N.O.
- Sheath all interior shear walls per Shear Wall Schedule & framing plans.
- All gang studs to be continuous to foundation. Provide solid blocking between floors, typical.
- Top plate splices shall have a min. lap length of 48" w/ (8) 16d or (12) 3"x0.131" nails, typical U.N.O.
- In the event where wall top plates are interrupted or notched greater than 50% of the plate width, provide a Simpson CS16 strap with sufficient length to allow (10) 8d or (8) 10d nails on each side of interruption or notch. Location of the first nail shall be a minimum of 1 1/2" from the interruption or notch, typical.
- Holdown stud packs shall stack from floor to floor to provide holdown hardware a continuous load path down to foundation. Transfer of holdown forces from stud pack to stud pack through sheathing is not permitted.

TYPICAL ROOF FRAMING NOTES

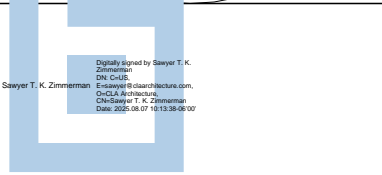
- Sheath roof w/ 5/8" APA Rated (Exposure 1) wood structural panels, APA Span Rating 40/20 with the following attachment.
- Within 48" of roof edge, nail w/ 10d nails @ 6" o.c. at panel edges & at 6" o.c. at intermediate supports U.N.O.
- For all wind speeds, beyond 48" from roof edge, nail w/ 10d nails @ 6" o.c. at panel edges & at 6" o.c. at intermediate supports U.N.O.
- All panel edges shall be staggered.
- All panel edges shall be blocked.
- Provide all temporary & permanent bracing & blocking for roof trusses as required by truss manufacturer.
- Dot hatched areas on roof plans indicate overframing w/ pre-manufactured roof trusses.
- Provide clips between bottom chord of roof truss & top plate of non-bearing walls to accommodate roof truss deflection, typ.
- General Contractor shall refer to the Roof Truss Schedule and plan notes for additional coordination requirements for roof truss uplift loads, typ.
- Truss manuf. to design & supply all truss-to-truss, truss-to-beam, truss to ledger, & truss-to-girder connections, typ.
- Truss manufacturer shall account for bearing requirements on the top plate material specified in the structural general notes. Any conditions where the plate bearing capacity is exceeded shall be considered a failure in the truss design.

• CHET LOCKARD •
ASSOCIATES



• ARCHITECTURE •
1938 Harney St.
Laramie, WY 82072
307.760.7948
chet.lockard@claarchitecture.com

Copyright
ALL DRAWN AND WRITTEN
INFORMATION APPEARING HEREIN
SHALL NOT BE DUPLICATED,
DISCLOSED OR OTHERWISE USED
WITHOUT THE WRITTEN CONSENT
OF CLA ARCHITECTURE



57 ASTER LOOP RESIDENCE

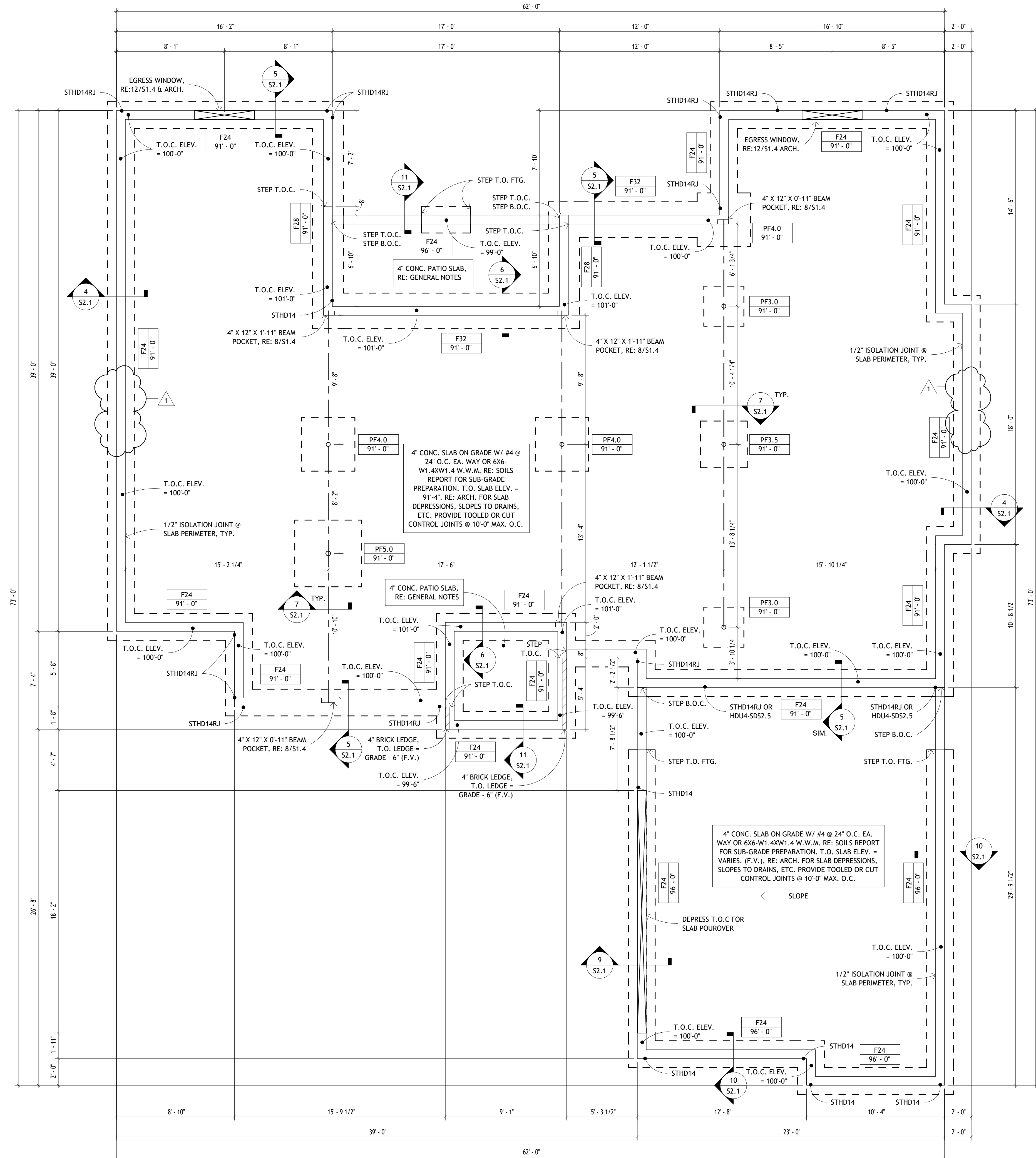
57 ASTER LOOP, ALPINE, WY 83128

KATE HLADKY & JEYDON COX

ISSUED FOR:	PERMIT
REVISION DATE:	8/6/25
PROJECT NUMBER	25028
DATE	8/6/25
DRAWN BY	CWS
CHECKED BY	STZ
SHEET NAME	

STRUCTURAL GENERAL NOTES

S0.1



1
S1.1 FOUNDATION PLAN
1/4" = 1'-0"

FOUNDATION PLAN NOTES

- RE: S1.0 FOR GENERAL FOUNDATION NOTES
- PROVIDE 5/8" DIA X 10" ANCHOR BOLTS W/ 1" LEG @ 32" O.C., TYP.
- CONTRACTOR TO VERIFY ALL DIMENSIONS W/ ARCH. DRAWINGS. NOTIFY ENGINEER OF RECORD IF THERE IS A DEVIANCE FOR FURTHER RECOMMENDATIONS.
-
- F.V. ALL T.O.C. ELEVATIONS BASED ON (E) SITE. T.O.C. ELEV. ARE FOR REFERENCE ONLY
- PROVIDE 1/2" ISOLATION JOINTS BETWEEN ALL SLAB-ON-GRADE CONDITIONS & STRUCTURAL CONC. ELEMENTS (FOUNDATION WALLS, CONC. WALLS, PEDESTALS, PIERS, ETC.)
- INSTALL HOLDDOWNS PER MANUF. RECOMMENDATIONS. PROVIDE A MINIMUM OF (2) 2X4 OR (2) 2X6 STUDS @ EA. HOLDDOWN.
- CONFIRM LOCATIONS OF HOLDDOWNS W/ THE ARCH. PLANS & FRAMER.
- @ CONTRACTORS OPTION, HOLDDOWNS CAN BE POST-INSTALLED.
- CONTACT E.O.R. FOR POST-INSTALLED HOLDDOWNS OPTIONS.

SPREAD FOOTING SCHEDULE

Type Mark	WIDTH	THICKNESS	LENGTH	REINFORCING
F24	2' - 0"	0' - 10"	CONT.	(3) #4 CONT. @ BOT.
F28	2' - 4"	0' - 10"	CONT.	(4) #4 CONT. @ BOT.
F32	2' - 8"	0' - 10"	CONT.	(4) #4 CONT. @ BOT.
PF3.0	3' - 0"	0' - 10"	3' - 0"	(4) #4 BOT. EA. WAY
PF3.5	3' - 6"	0' - 10"	3' - 6"	(4) #4 BOT. EA. WAY
PF4.0	4' - 0"	0' - 10"	4' - 0"	(5) #4 BOT. EA. WAY
PF5.0	5' - 0"	0' - 10"	5' - 0"	(6) #4 BOT. EA. WAY

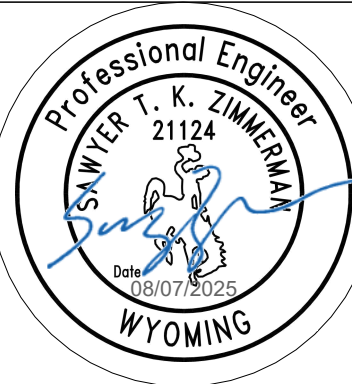
F16 — FOOTING TYPE
100'-0" — TOP OF FOOTING ELEVATION

- NOTES:
- ALL REINFORCING TO BE PLACED IN BOTTOM OF FOOTING W. PROPER CLEAR COVER (SEE GENERAL NOTES), TYP. U.N.O.
 - REINFORCING SHALL BE CONTINUOUS IN ALL CONTINUOUS SPREAD FOOTINGS. RE: REBAR SPLICE SCHEDULE FOR SPLICE LENGTHS.
 - PADS TO BE FORMED W/ 2X WOOD FORMS. IF CONTRACTOR OPTS TO USE EARTH FORMING, THE PLAN DIMENSIONS MUST BE INCREASED 4 INCHES.
 - ALL FOOTINGS TO BE CENTERED ABOUT STEM WALL, TYP. U.N.O.

REBAR SPLICE LENGTHS

BAR SIZE	BOTTOM BARS & VERTS (IN)	Top Bars (in)
#3	22	28
#4	28	37
#5	36	46
#6	43	56
#7	62	81
#8	71	93

- NOTES:
- CLASS B TENSION SPLICES.
 - SPLICE LENGTHS ARE BASED ON $f_c = 3000$ psi.
 - SPLICE LENGTHS ARE 1.3 X BASIC DEVELOPMENT LENGTH.
 - USE TOP BAR REINFORCING LENGTHS WHEN MORE THAN 12" OF FRESH CONC. WILL BE PLACED BELOW HORIZ. REINFORCING.



57 ASTER LOOP RESIDENCE

57 ASTER LOOP, ALPINE, WY 83128

KATE HLADKY & JEYDON COX

FLOOR JOIST SCHEDULE			
J1	11-7/8" BCI 6000's @ 16" O.C.	IUS2.37/11.88	ITS2.37/11.88
J2	(2) 11-7/8" BCI 6000's @ 19.2" O.C.	MIU4.75/11	MIT3511.88-2

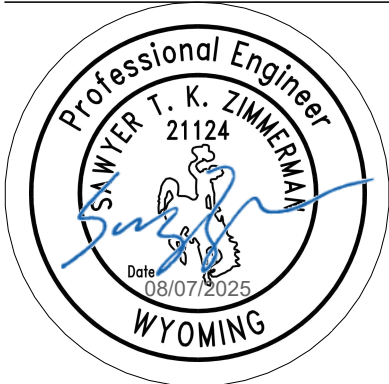
• CHET LOCKARD •
ASSOCIATES



• ARCHITECTURE •

1938 Harney St.
Laramie, WY 82072
307.760.7948
chet.lockard@claarchitecture.com

Copyright
ALL DRAWN AND WRITTEN
INFORMATION APPEARING HEREIN
SHALL NOT BE DUPLICATED,
DISCLOSED OR OTHERWISE USED
WITHOUT THE WRITTEN CONSENT
OF CLA ARCHITECTURE



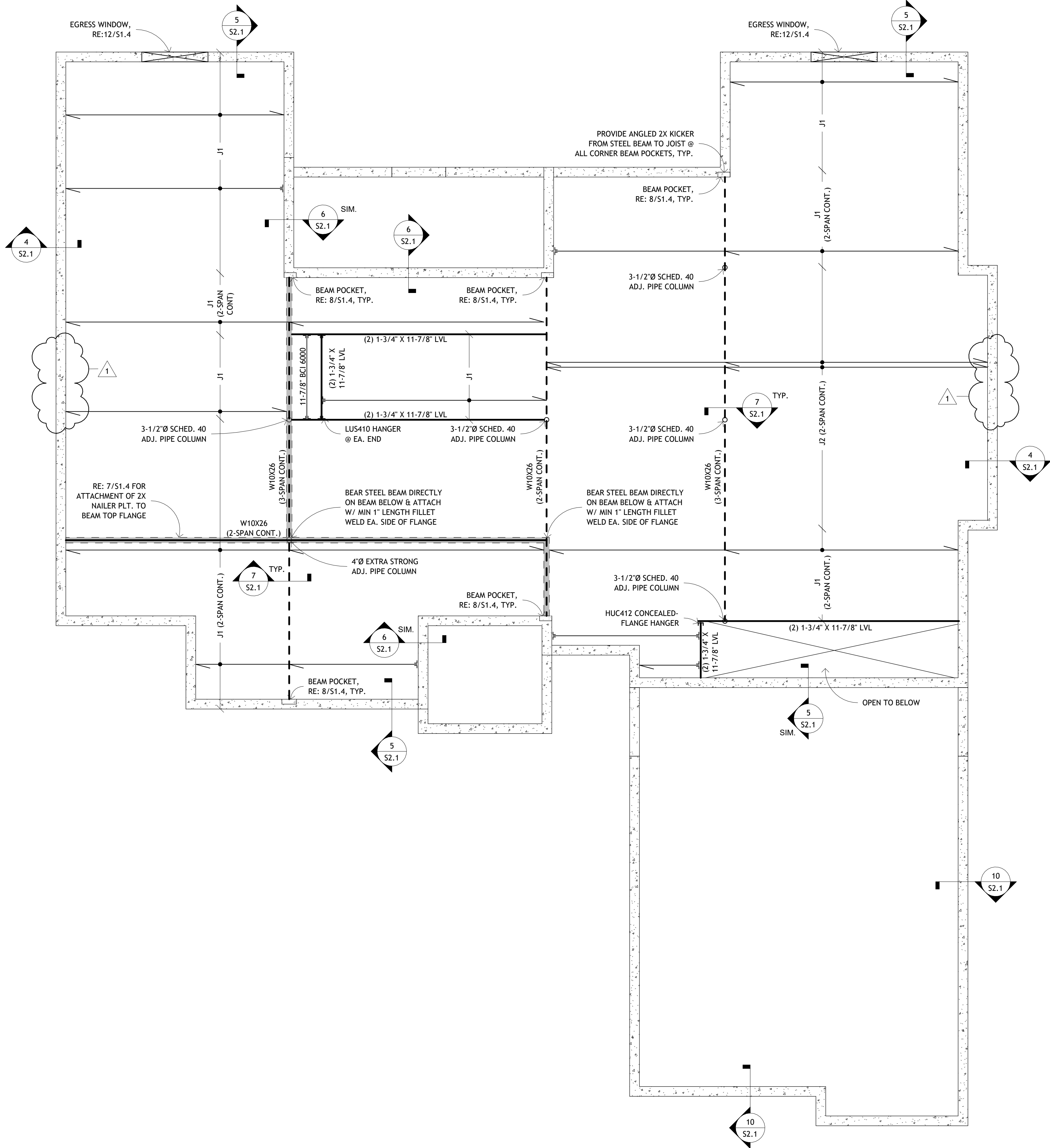
57 ASTER LOOP RESIDENCE

57 ASTER LOOP, ALPINE, WY 83128
KATE HLADKY & JEYDON COX

ISSUED FOR:	PERMIT
REVISION DATE:	8/6/25
PROJECT NUMBER:	25028
DATE:	8/6/25
DRAWN BY:	CWS
CHECKED BY:	STZ

SHEET NAME
FLOOR
FRAMING PLAN

S1.2



1
S1.2
MAIN FLOOR FRAMING PLAN
1/4" = 1'-0"

GENERAL SHEAR WALL NOTES:

- ALL PANELS BACKED W/ 2" INCH NOMINAL OR WIDER FRAMING.
- WHERE WOOD STRUCTURAL PANEL SHEAR WALL PANELS ARE APPLIED ON EA. SIDE OF WALL 1/4" NAIL SPACING OF LESS THAN 6" ON ONE OR BOTH SIDES, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR 3" NOMINAL OR GREATER FRAMING MEMBERS MUST BE USED @ PANEL EDGES & ALL NAILS SHALL BE STAGGERED.
- BLOCKED PANEL EDGES & PROVIDE EDGE NAILING @ ALL SUPPORTS & ALL PANEL EDGES U.N.O.
- PANELS MAY BE INSTALLED EITHER VERTICALLY OR HORIZONTALLY.
- SPACE ALL NAILS AS INDICATED IN THIS SCHEDULE.
- SHEATHING & NAILING INDICATED FOR SHEAR WALLS SHALL CONTINUE ABOVE & BELOW OPENINGS IN SHEAR WALLS.
- SHEAR WALLS INDICATED IN THIS SCHEDULE ARE TO BE CONSTRUCTED BELOW ROOF OR FLOOR WHERE SHEAR WALL IS SHOWN ON FRAMING PLAN.
- MINIMUM NAIL SIZES ARE AS FOLLOWS:
 8d..... (0.131"Ø, 2 1/2" long, 0.281" head)
 16d..... (0.162"Ø, 3 1/2" long, 0.344" head)
 ALL SHEAR WALL ANCHOR BOLTS SHALL HAVE A 1/3 40" PLATE WEAVER.
 PROVIDE 24" X 2" STUDS (FASTENED W/ 16d NAILS @ 24" o.c.) @ ALL SHEAR WALL ENDS U.N.O. IN PLAN. RE: FOUNDATION PLAN FOR ADD'L. POST REQUIREMENTS @ HOLDUPNS.
- ALL SHEAR WALLS SHALL HAVE DBL. 2" TOP PLATES. LAP SPICES IN TOP PLATES SHALL BE 4'-0" MIN. CONNECT DBL. PLATES W/ 16d NAILS @ 16" o.c., w/ (8) 16d NAILS EA. SIDE OF SPLICE @ LAP SPICES (16 TOTAL).
- RE: APPLICABLE SECTIONS & DETAILS FOR ADD'L. INFORMATION REGARDING HOLDUPNS & ANCHOR BOLTS.
- FOR SHEAR WALLS SHEATHED BOTH SIDES W/ WOOD STRUCTURAL PANELS & FASTENING @ 3" o.c., OR LESS, TOP & BOT. WALL PLATES SHALL HAVE NO PENETRATIONS GREATER THAN 1"Ø.
- NOTE: ATTACHMENT SHALL BE ALONG THE FULL LENGTH OF SHEAR WALLS.
- BLOCKING NOTED HEREIN REPRESENTS SOLID BLOCKING, BLOCKING PANELS, END WALL FLOOR TRUSSES, ETC. RE: PLANS & SECTIONS.
- SILL PLATE: HORIZ. WOOD 1" ATTACHED TO CONC. FOUNDATION OR SLAB.
- SOLE PLATE: HORIZ. WOOD 1" @ BOT. OF FRAMED WALL & EA. LEVEL.
- AT ANCHOR BOLTS, PROVIDE (1) BTWN. 4 1/2" & 12" OF ALL WALL CORNERS & SILL PLATE ENDS AS WELL AS A MIN. OF (2) PER SECTION OF SILL PLATE.

EXTERIOR WALLS (ALL LEVELS):

SHEATH EXTERIOR w/ 7/16" WOOD STRUCTURAL PANELS w/ 8d NAILS @ 6" o.c. @
PANEL & BOUNDARY EDGES & 12" o.c. @ INTERMEDIATE SUPPORTS. SHEATH THE
INTERIOR w/ 1/2" GYPSUM WALL BOARD w/ #6x1 1/4" DRYWALL SCREWS @ 8" o.c.
PANEL & BOUNDARY EDGES & 12" o.c. @ INTERMEDIATE SUPPORTS.

SILL PLATE CONN.: PROVIDE 1/2" x 7" MIN EMBED ANCHOR BOLTS @ 32" o.c.

SOLE PLATE CONN. TO BLOCKING: 16d NAILS @ 3' o.c. OR SIMPSON A34 ANGLES @
8" o.c.

BLOCKING CONN. TO DBL. TOP PLATE: USE NAILING OF SOLE PLATE CONN. TO
BLOCKING INDICATED FOR SHEAR WALL BELOW.

SW1
7/16" WOOD STRUCTURAL PANELS w/ 8d NAILS @ 4" o.c. @ PANEL & INTERMEDIATE EDGES & 12" o.c. @ INTERMEDIATE SUPPORTS.
SILL PLATE CONN.: PROVIDE 5/8" x 7" MIN EMBED ANCHOR BOLTS @ 32" o.c.
SOLE PLATE CONN. TO BLOCKING: 16d NAILS @ 3" o.c. OR SIMPSON A34 @ 8" o.c. BLOCKING CONN. TO DBL. TOP PLATE: USE NAILING OF SOLE PLATE CONN. TO BLOCKING INDICATED FOR SHEAR WALL BELOW.

NOTES:
1. DBL. ROWS OF NAILING @ SOLE PLATE CONN. SHALL HAVE 3/4" EDGE DISTANCE, STAGGERED w/ 2" SPACING BTWN. ROWS.



1. RE: S1.0 FOR TPY. ROOF FRAMING NOTES
2. ALL ROOF TRUSSES TO HAVE H2.5T TRUSS CLIP @ ALL BEARING LOCATIONS U.N.O.
3. BEAMS & HEADERS SHOWN ON PLAN & NOT DESIGNATED W/ A MARK AND BE @ (2) 2X6. INCREASE TO THREE (3) PL Y BEAMS & HEADERS INSIDE 2X6 W/ FRAMING. TPY @ CONTRACTOR'S OPTION. A FULL DEPTH HEADER MAY BE INSTALLED DIRECTLY BENEATH THE DBL. TOP PLATE. HEADER SIZE NOT TO BE LESS THAN THAT INDICATED ON PLAN.
4. DASHED BEAM TYPES ARE DROPPED & SOLID BEAMS TYPES ARE FLUSH, TPY.
5. COLUMNS SHOWN ON PLAN & NOT CALLED OUT ARE TO BE DBL. 2X4 IF POSTS IF LOCATED IN 2X4 WALL FRAMING OR DBL. 2X6 IF LOCATED IN 2X6 WALL FRAMING.
6. PROVIDE 4-PLY 2X POST MIN. UNDER GIRDER TRUSSES, U.N.O.
7. SUPPORT ALL EXTERIOR WINDOW & DOOR HEADERS W/ MIN. (2) TRIMMERS & (2) KING STUDS U.N.O., ONLY (1) TRIMMER IS REQ'D @ OPENINGS < 4'-0". TPY. U.N.O.

ROOF TRUSS SCHEDULE		
TYPE	DESCRIPTION/SPACING	HANGER
T1	ROOF TRUSSES @ 24" O.C.	PER MANUF.
T2	JACK TRUSSES @ 24" O.C.	PER MANUF.
GT	GIRDER TRUSS	PER MANUF.
HJ	HIP JACK	PER MANUF.

1. TRUSSES SHALL BE DESIGNED & SHOP DRAWINGS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WYOMING.
2. TRUSS MANUF. TO DESIGN & SUPPLY ALL TRUSS-TO-TRUSS, TRUSS-TO-BEAM, & TRUSS-TO-GIRDER CONNECTIONS, TYP.
3. TRUSS MANUF. TO DESIGN TRUSSES FOR DEAD LOAD = 20 psf & SNOW LOAD = 30 psf, TYP.
4. RE: ARCH. FOR PROFILE OF TRUSS BOTTOM CHORD.

WALL STUD SCHEDULE	
LEVEL OF FRAMING	WALL STUD DESCRIPTION
<u>EXTERIOR WALLS</u>	
FOUNDATION TO ROOF (11'-0" MAX.)	2x6 HEM-FIR #2 @ 16" o.c.
<u>INTERIOR WALLS</u>	
FOUNDATION TO ROOF (10'-0" MAX.)	2x4 HEM-FIR #2 @ 12" o.c. 2x6 HEM-FIR #2 @ 16" o.c.



57 ASTER LOOP RESIDENCE

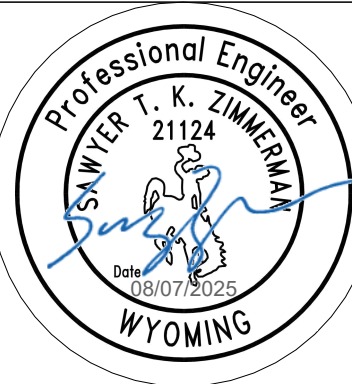
57 ASTER LOOP, ALPINE, WY 83128

KATE HLADKY & JEYDON COX

ISSUED FOR:	PERMIT
REVISION DATE:	8/6/25
PROJECT NUMBER	25028
DATE	8/6/25
DRAWN BY	CWS
CHECKED BY	STZ
SHEET NAME	

ROOF FRAMING PLAN

S1.3



57 ASTER LOOP RESIDENCE

57 ASTER LOOP, ALPINE, WY 83128

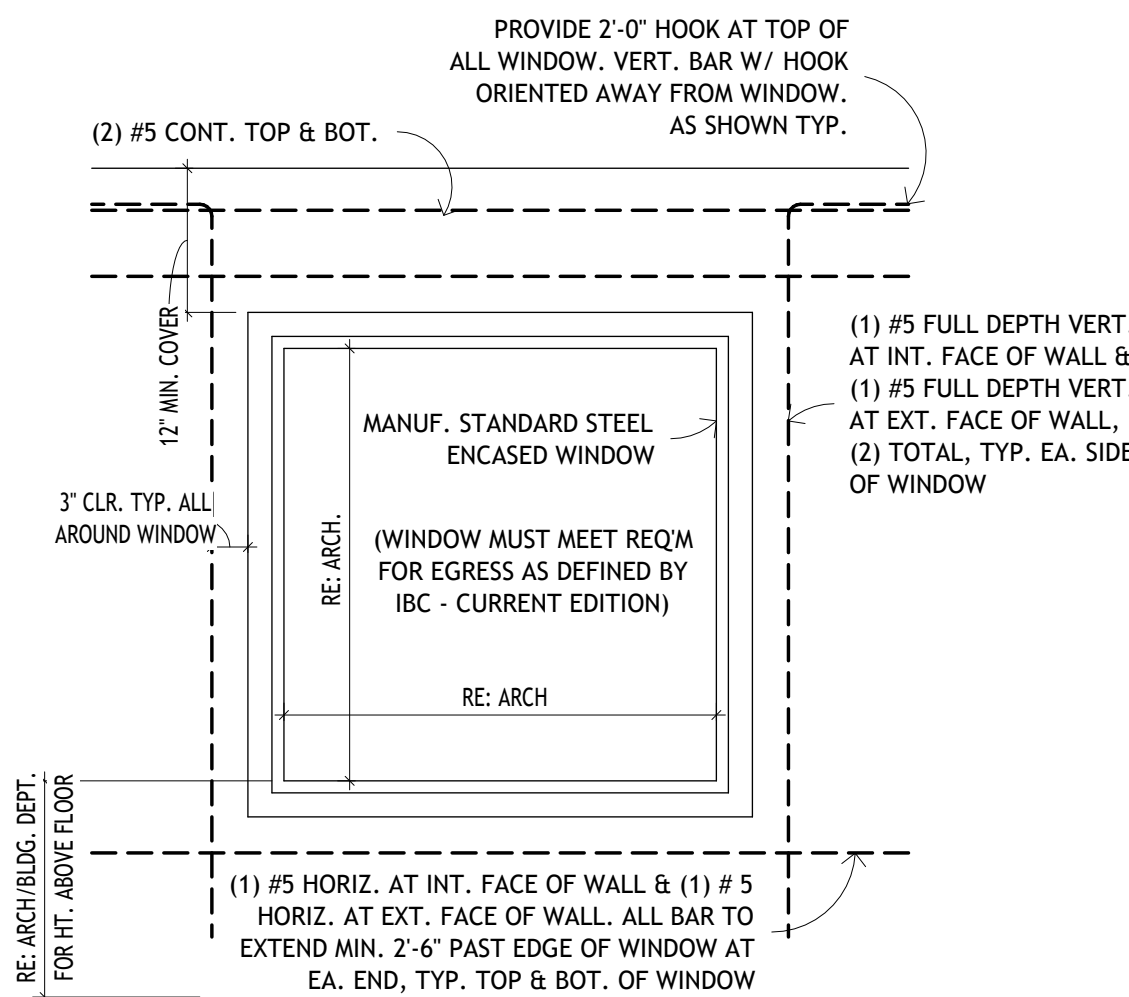
KATE HLADKY & JEYDON COX

ISSUED FOR: PERMIT
REVISION DATE: 8/6/25
PROJECT NUMBER: 25028
DATE: 8/6/25
DRAWN BY: CWS
CHECKED BY: STZ

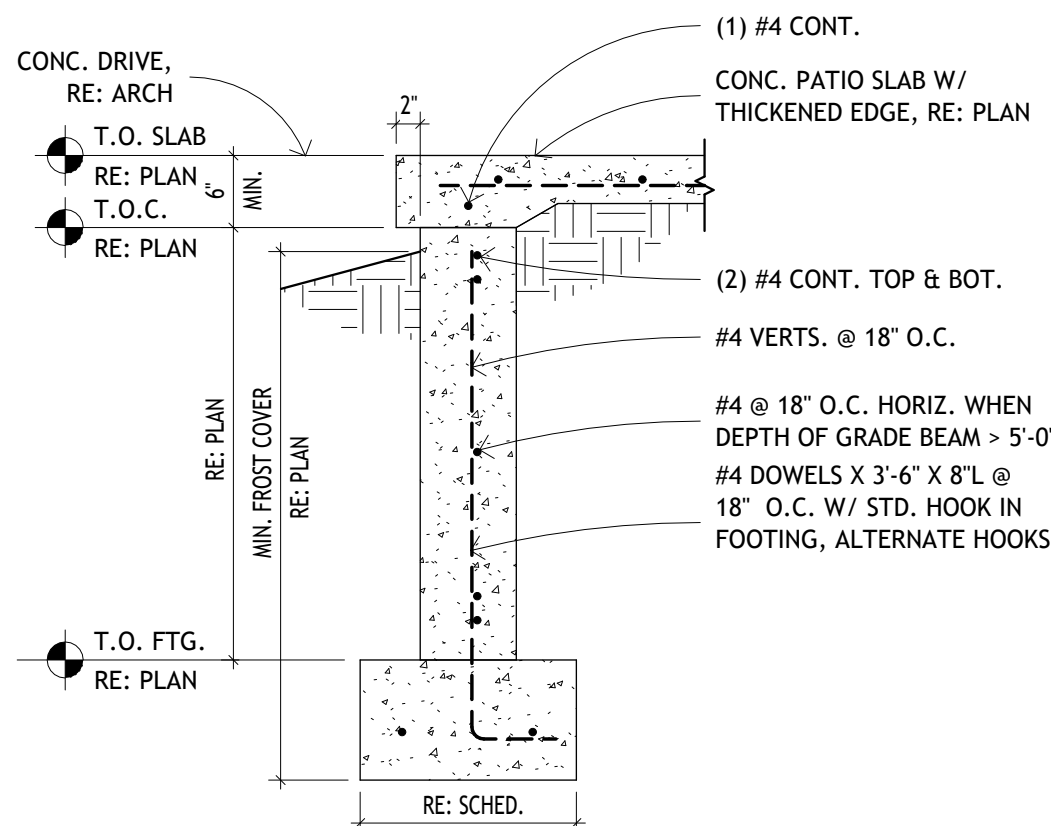
SHEET NAME

FOUNDATION
SECTIONS

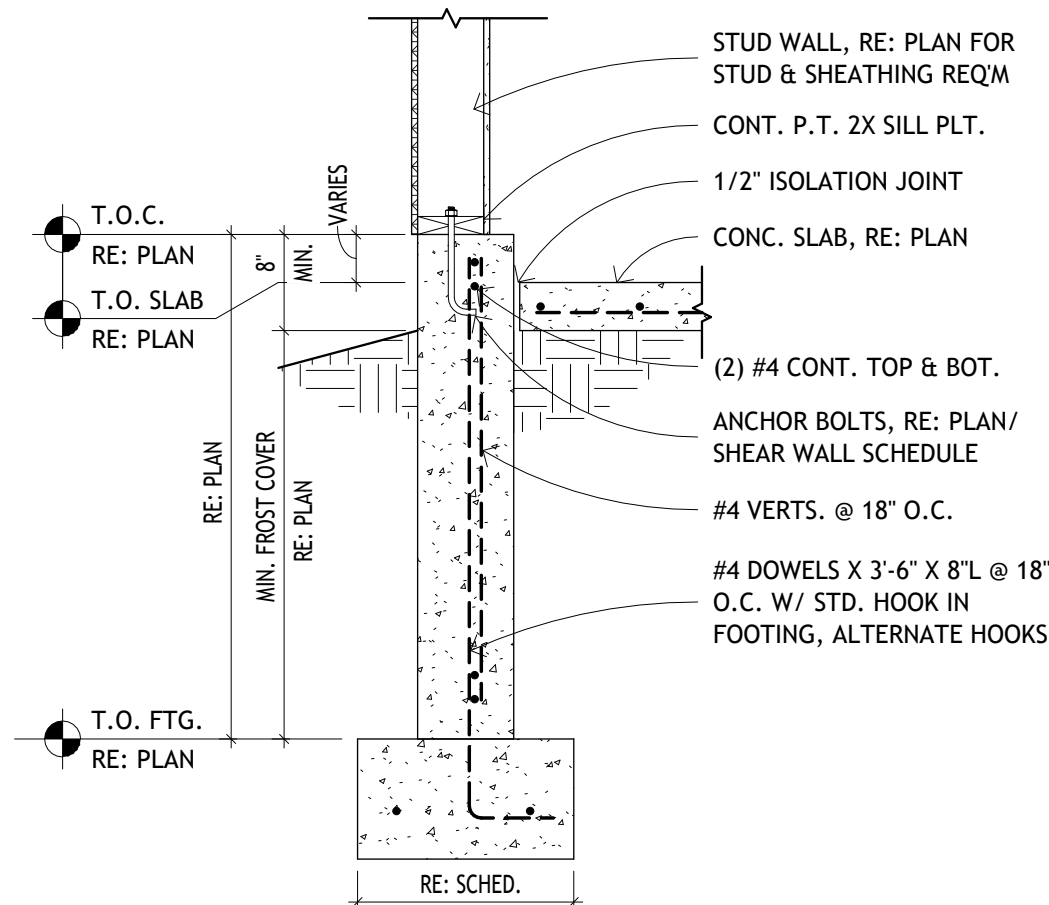
S2.1



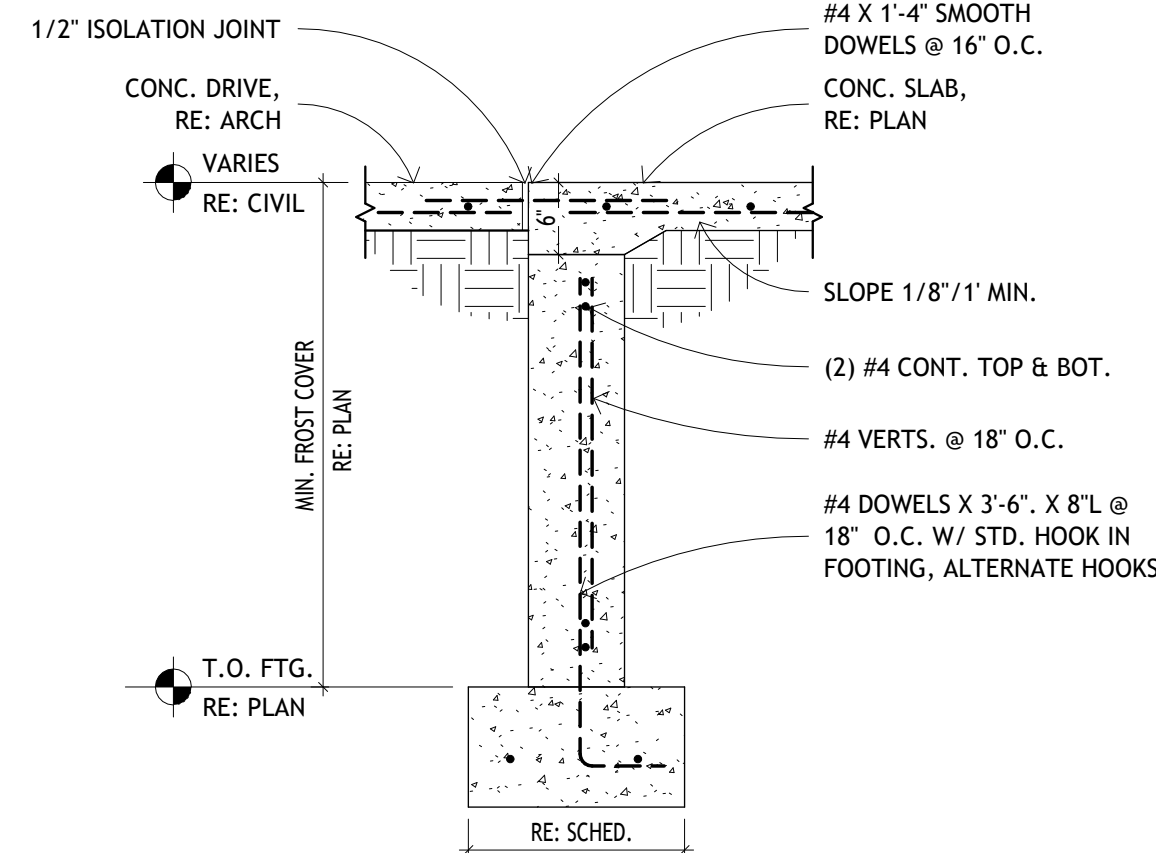
12
S2.1 TYP. BASEMENT EGRESS WINDOW
3/4" = 1'-0"



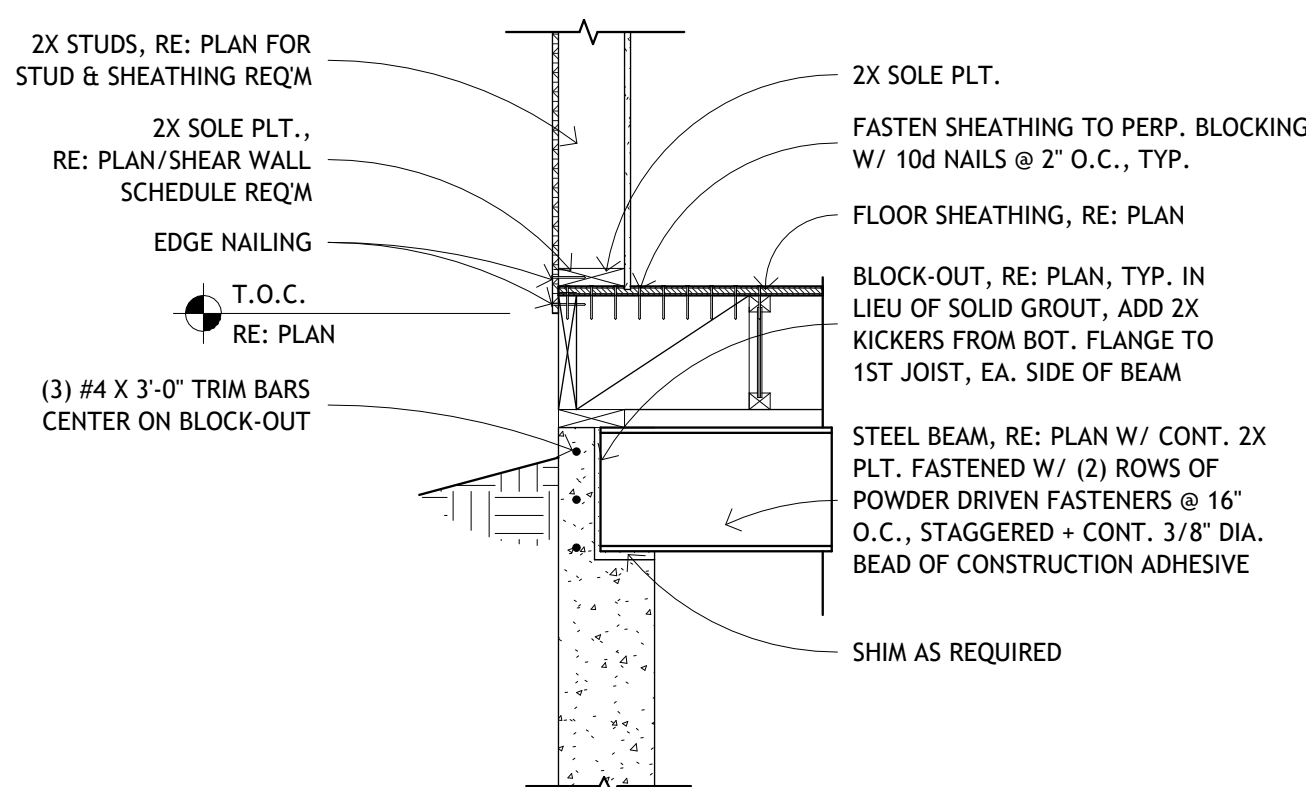
11
S2.1 TYP. STEM WALL @ PATIO
3/4" = 1'-0"



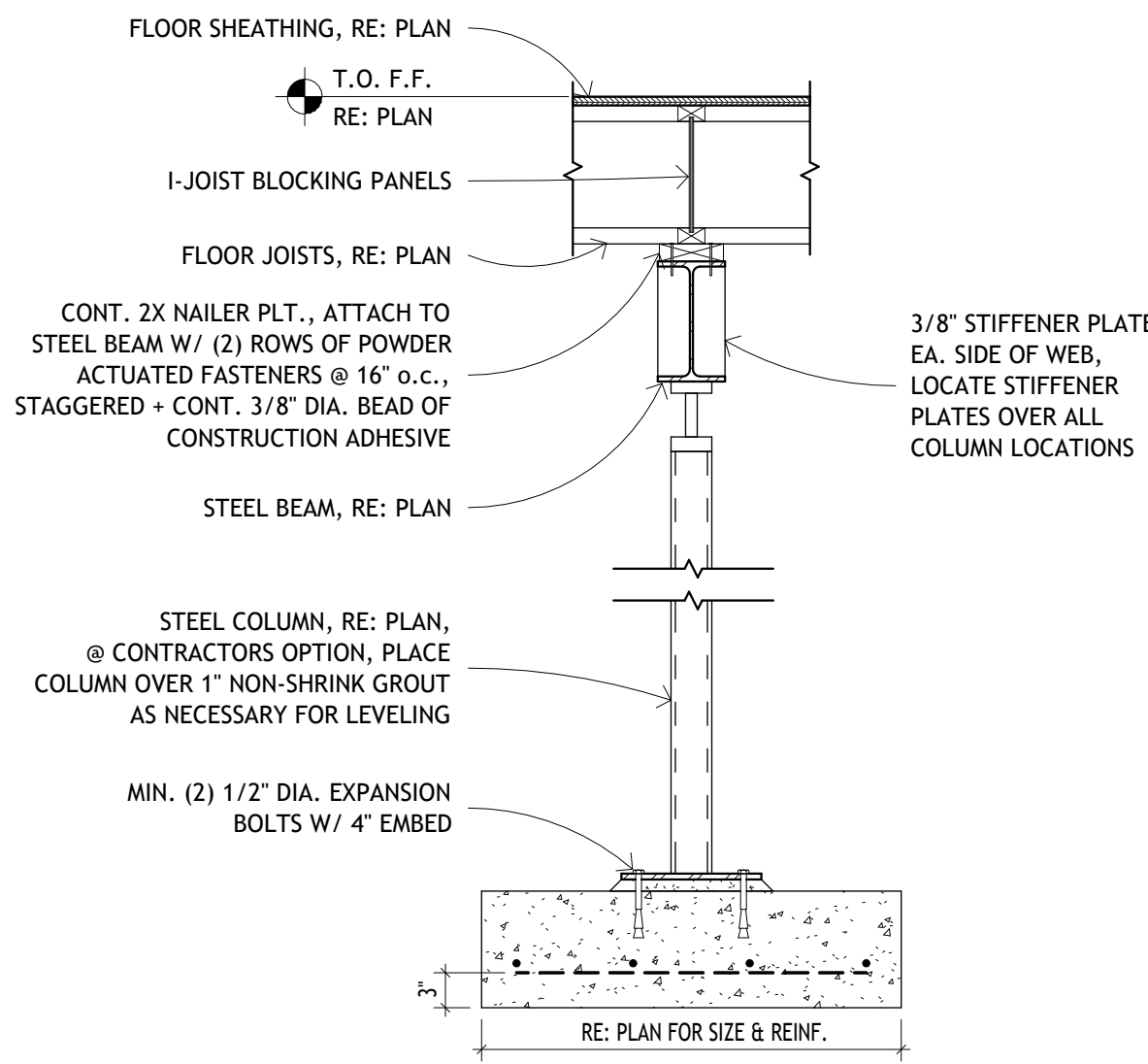
10
S2.1 TYP. STEM WALL
3/4" = 1'-0"



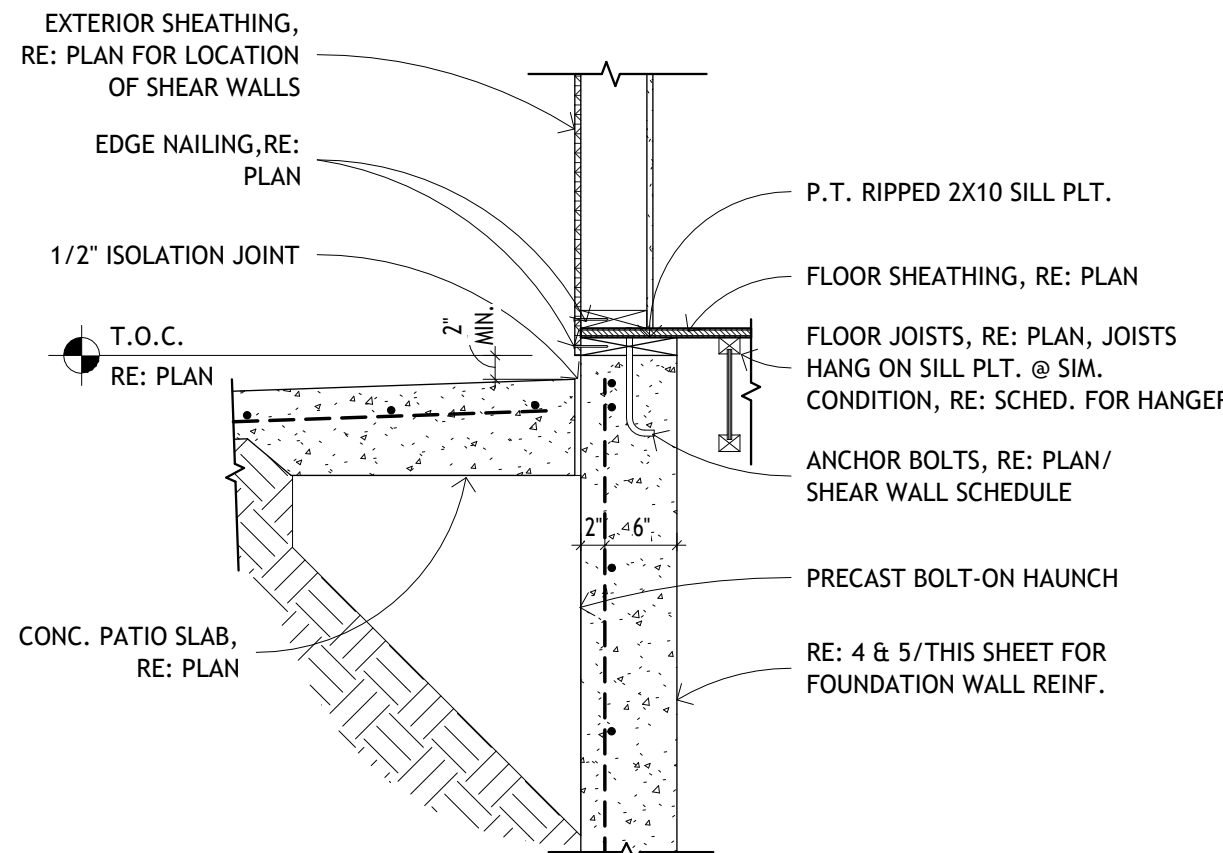
9
S2.1 SLAB POUROVER @ GARAGE DOOR
3/4" = 1'-0"



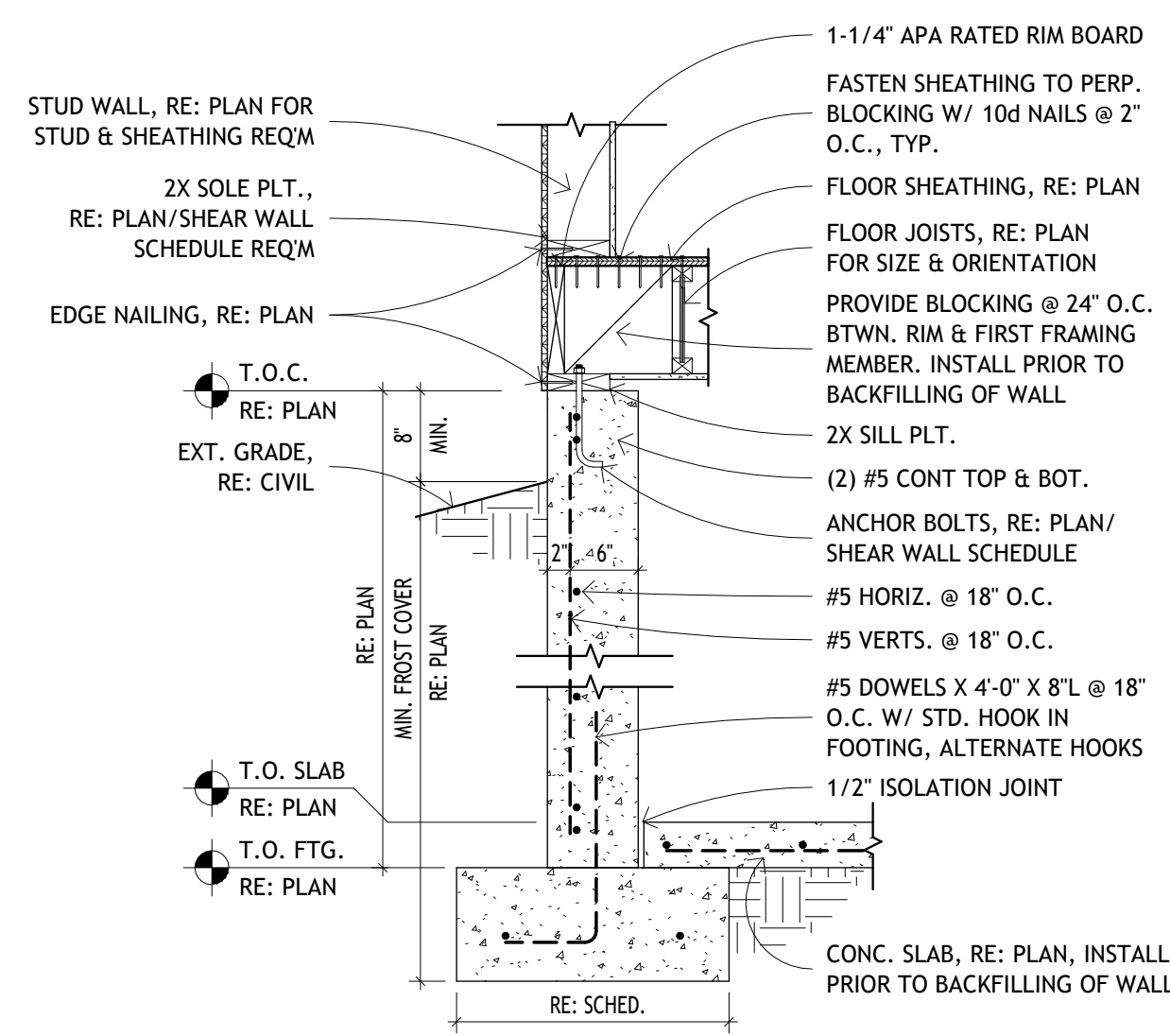
8
S2.1 TYP. BEAM POCKET
3/4" = 1'-0"



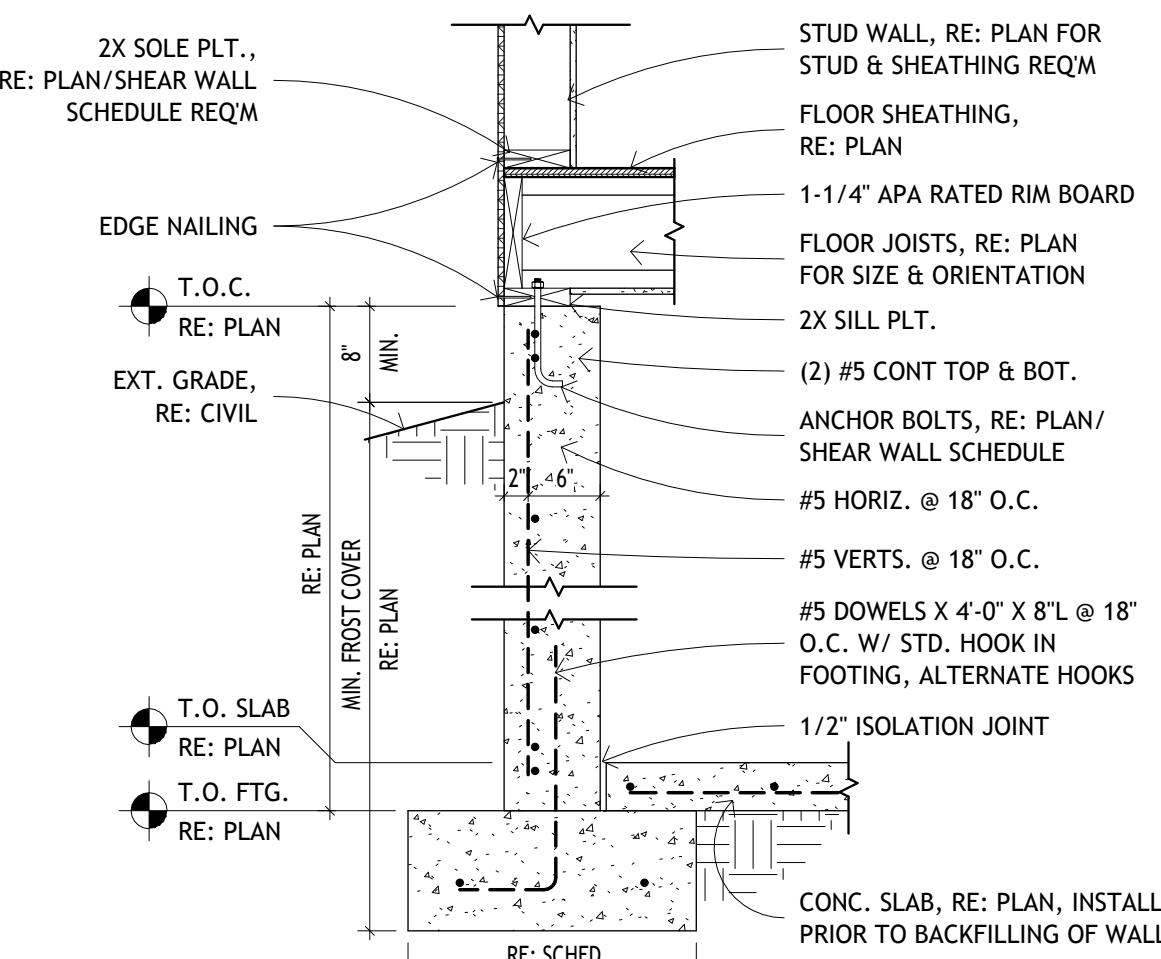
7
S2.1 TYP. STEEL COLUMN @ PAD FOOTING
3/4" = 1'-0"



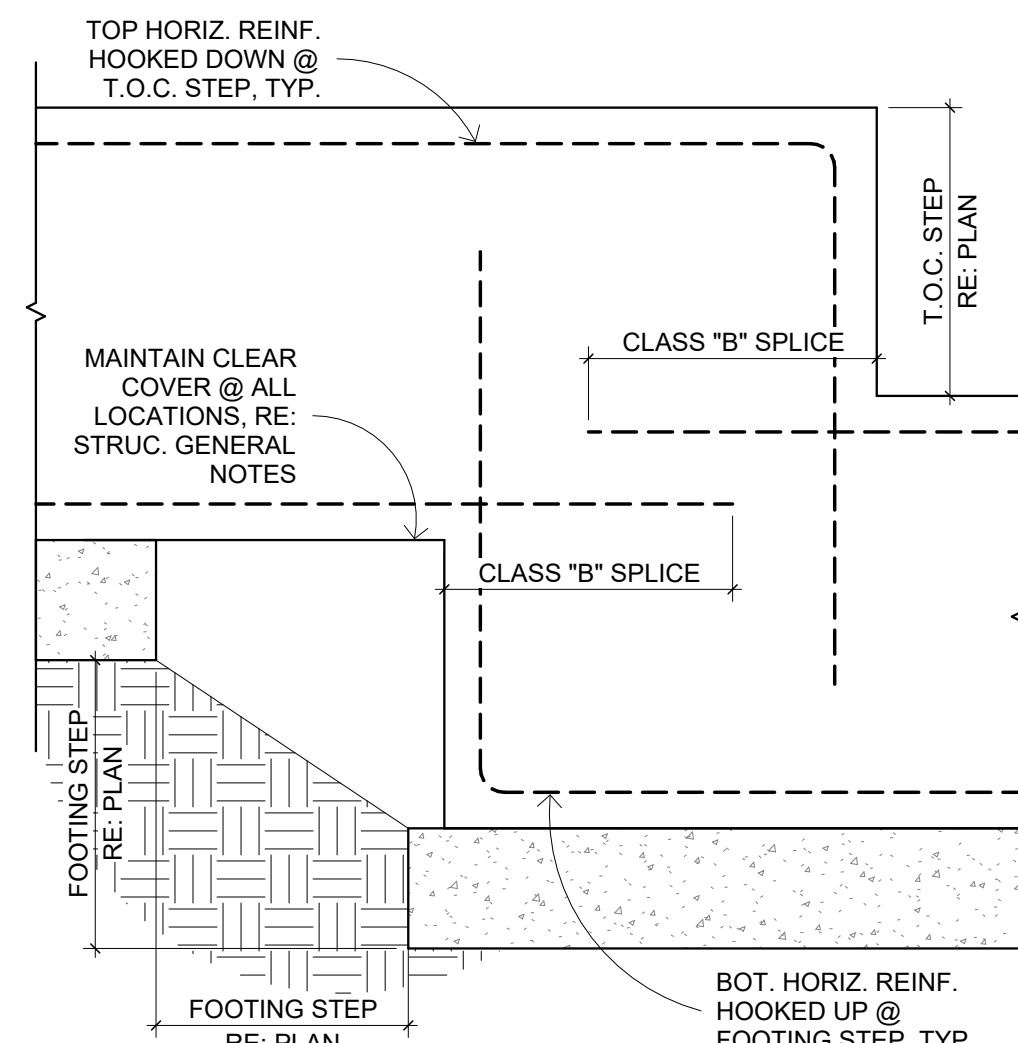
6
S2.1 CONCRETE PATIO @ BASEMENT WALL
3/4" = 1'-0"



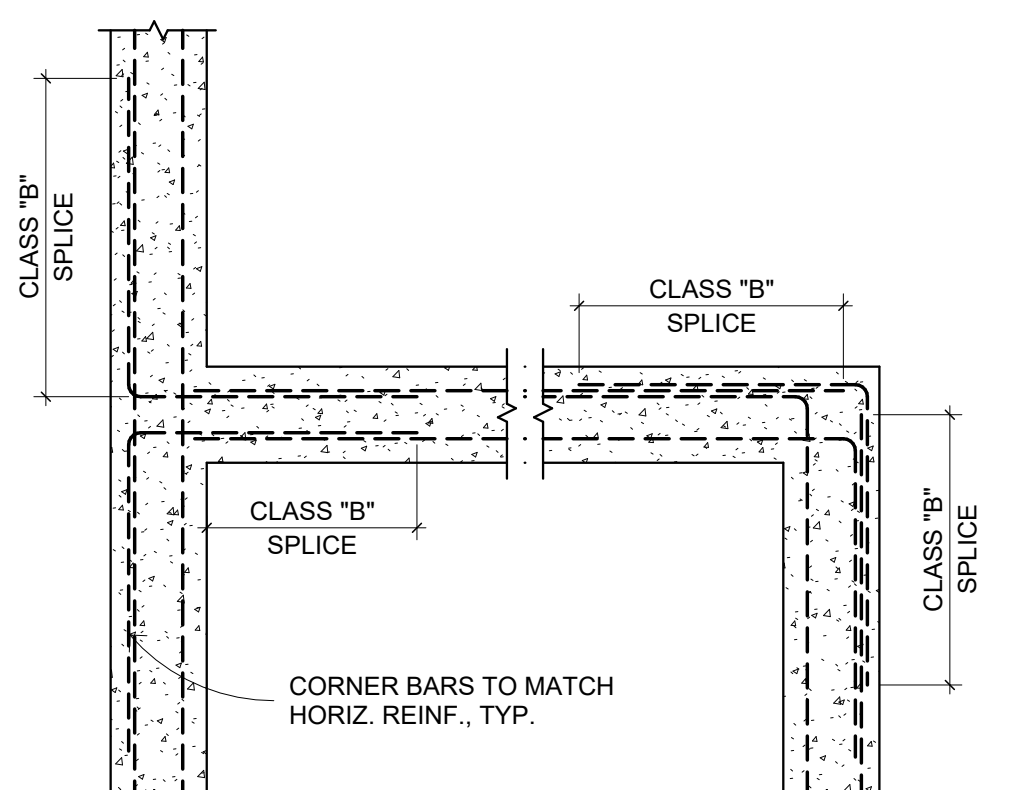
5
S2.1 JOISTS PARALLEL TO BASEMENT WALL
3/4" = 1'-0"



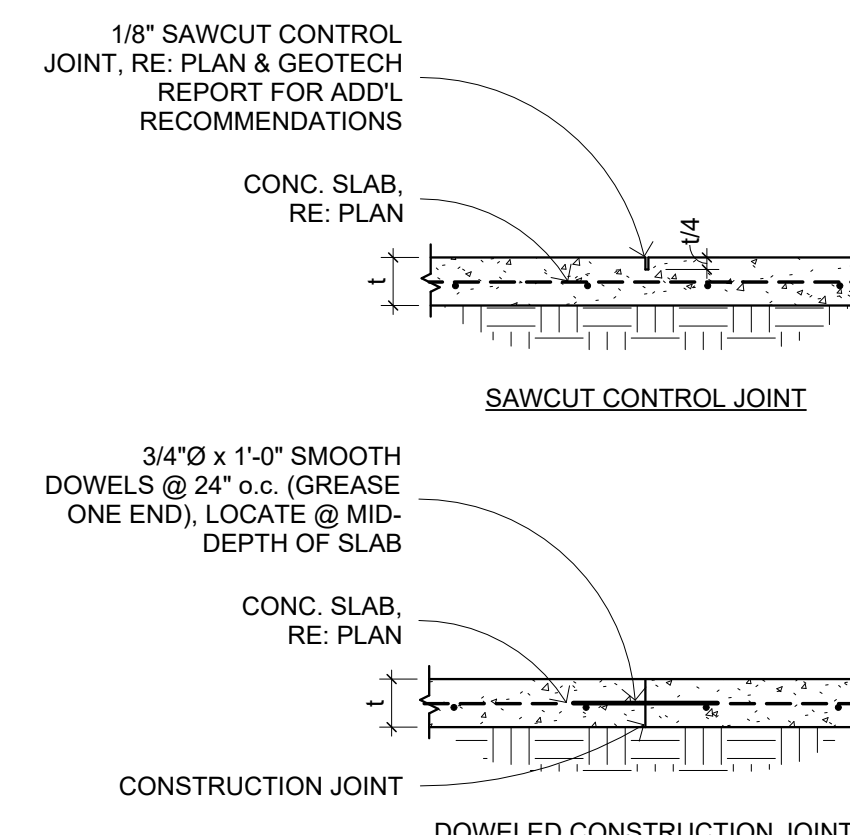
4
S2.1 JOISTS PERPENDICULAR TO BASEMENT WALL
3/4" = 1'-0"



3
S2.1 TYP. FND. WALL STEP
3/4" = 1'-0"



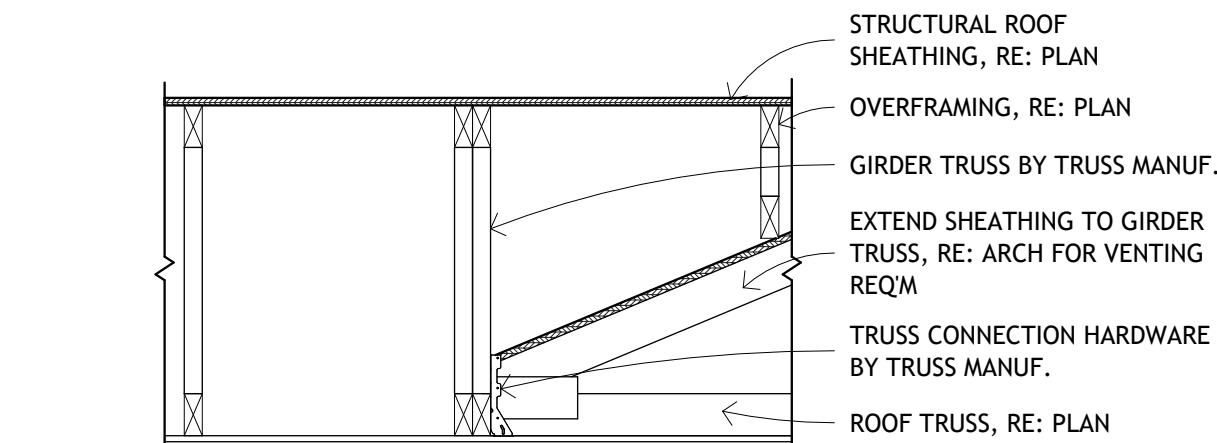
2
S2.1 TYP. FND. WALL @ CORNER & INTERSECTION
3/4" = 1'-0"



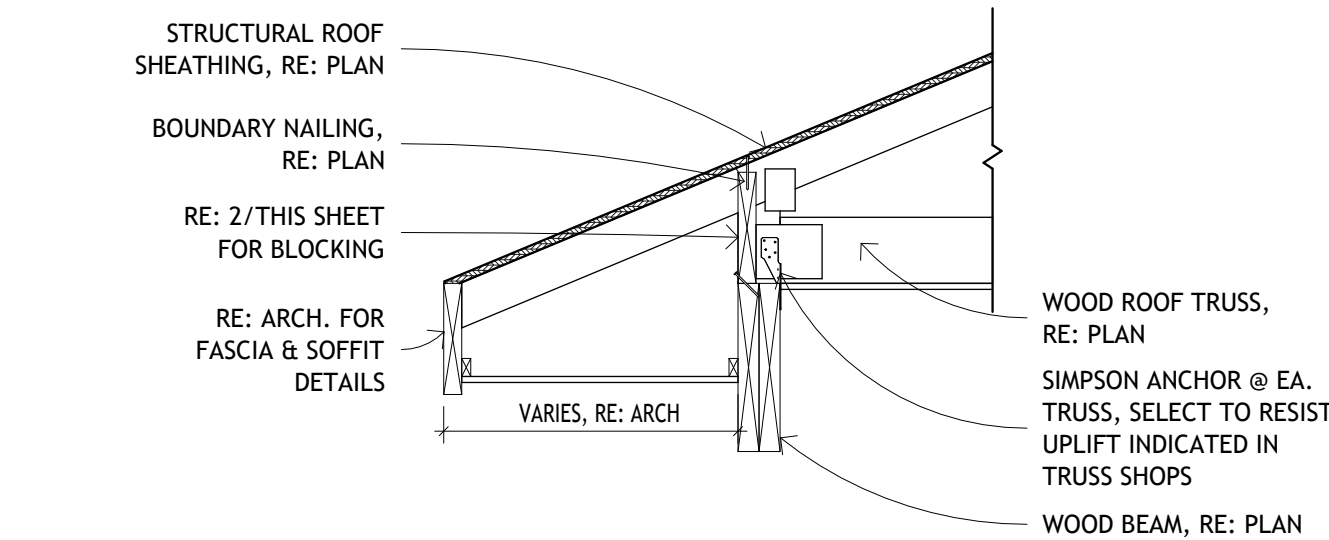
1
S2.1 TYP. S.O.G. JOINTS
3/4" = 1'-0"

- NOTES:**
1. RE: GEOTECH REPORT FOR SUBGRADE PREPARATION REQUIREMENTS & ADD'L REQUIREMENTS. PROVIDE SLAB CONTROL JOINTS EA. WAY @ COLUMN LINES & 10'-0" o.c. EA. WAY U.N.O.
 2. RE: GEOTECH REPORT FOR SUBGRADE PREPARATION REQUIREMENTS & ADD'L REQUIREMENTS. PROVIDE SLAB CONTROL JOINTS EA. WAY @ COLUMN LINES & 10'-0" o.c. EA. WAY U.N.O.

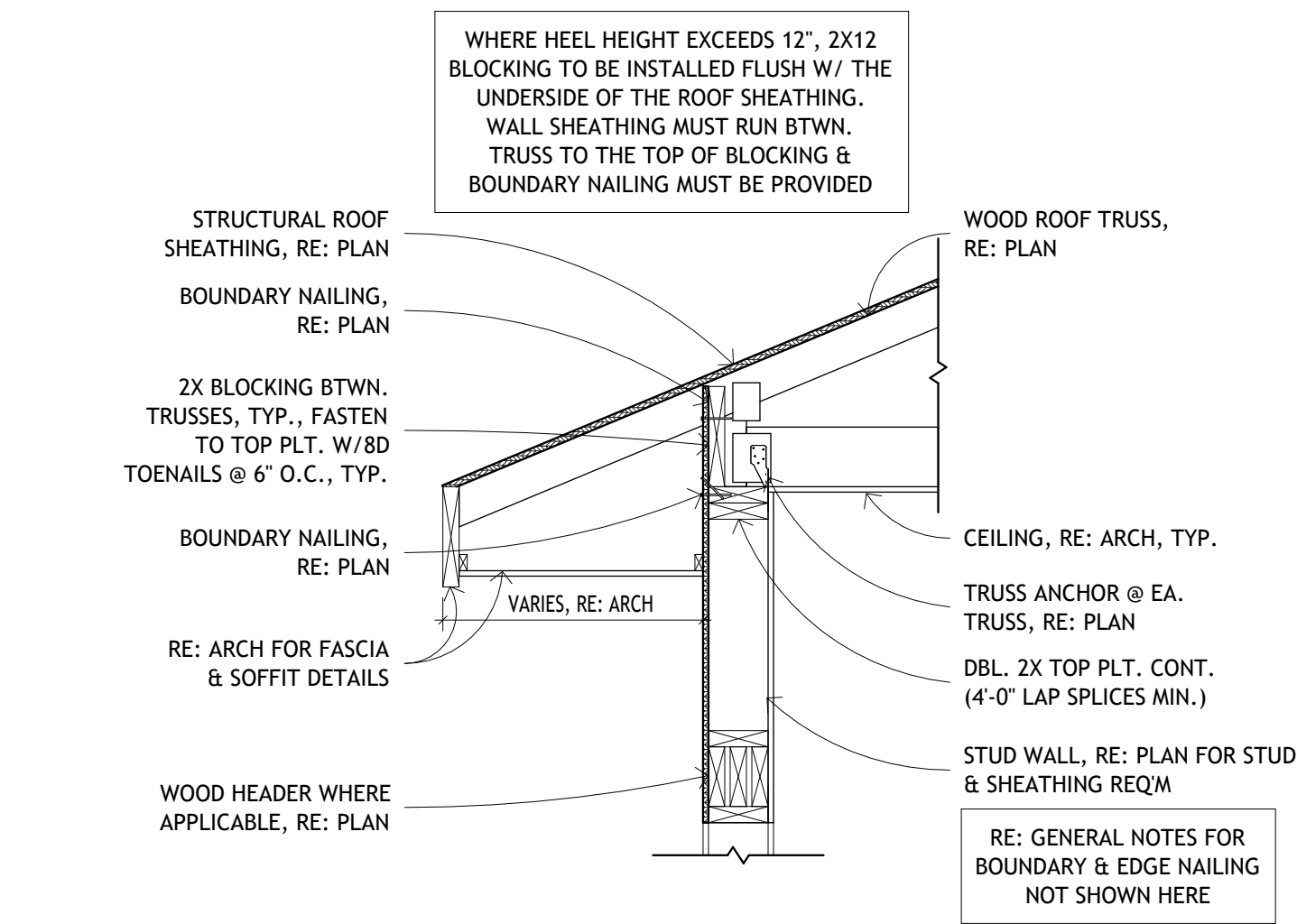
8/6/2025 8:25:16 AM



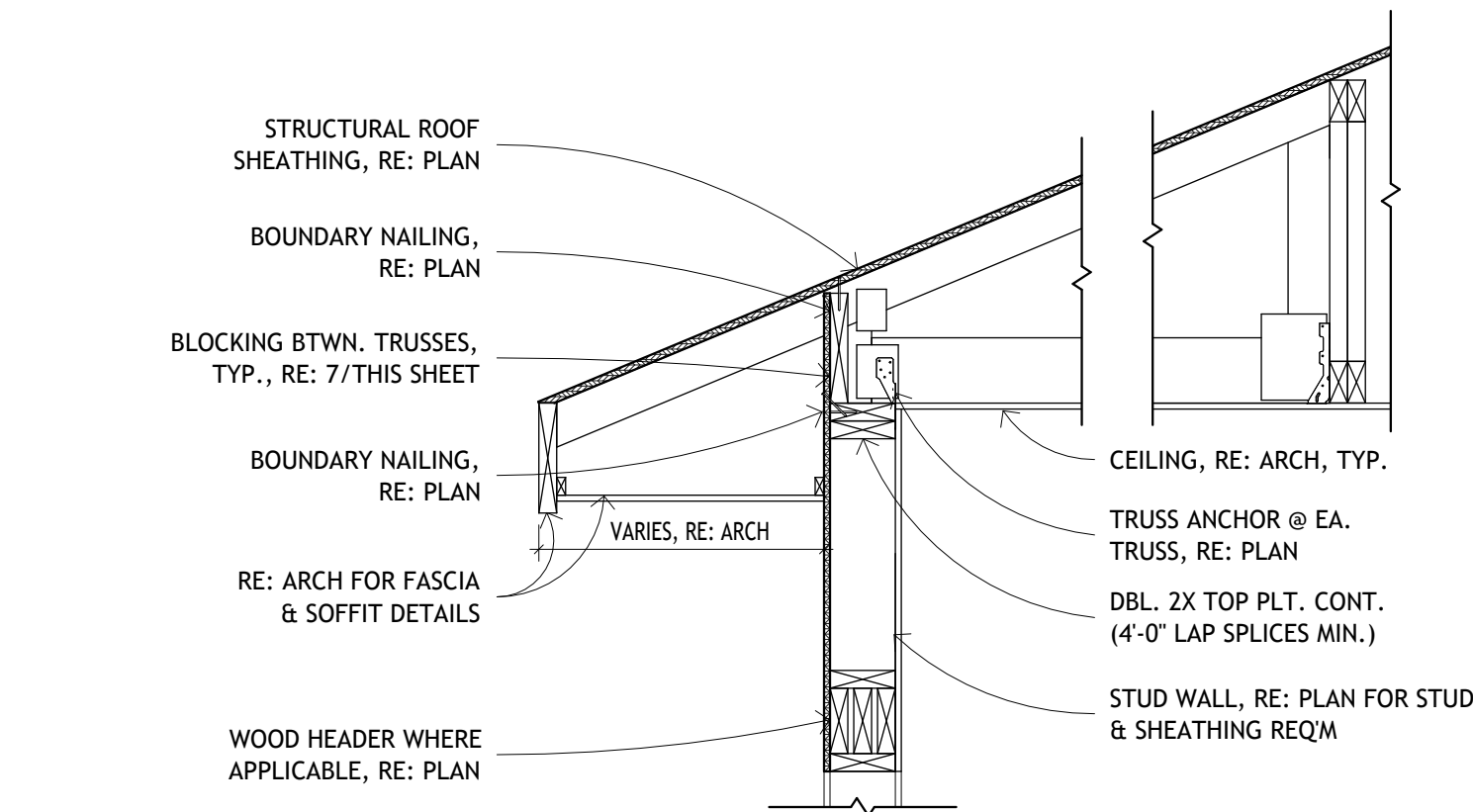
4
S2.2
TRUSS TO GIRDER-TRUSS CONNECTION
3/4" = 1'-0"



3
S2.2
ROOF TRUSS ON DROPPED BEAM
3/4" = 1'-0"



2
S2.2
ROOF TRUSS ON PERPENDICULAR WALL
3/4" = 1'-0"



1
S2.2
JACK TRUSSES @ HIPPED ROOF
3/4" = 1'-0"

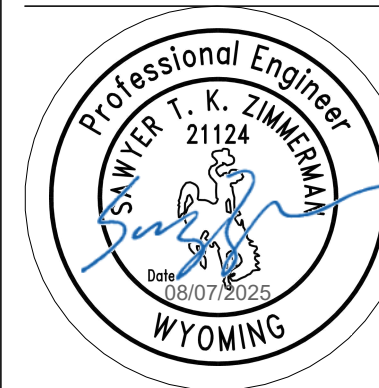
• CHET LOCKARD •
ASSOCIATES



• ARCHITECTURE •

1938 Harney St.
Laramie, WY 82072
307.760.7948
chet.lockard@claarchitecture.com

Copyright
ALL DRAWN AND WRITTEN
INFORMATION APPEARING HEREIN
SHALL NOT BE DUPLICATED,
DISCLOSED OR OTHERWISE USED
WITHOUT THE WRITTEN CONSENT
OF CLA ARCHITECTURE



57 ASTER LOOP RESIDENCE

57 ASTER LOOP, ALPINE, WY 83128

KATE HLADKY & JEYDON COX

ISSUED FOR: _____ PERMIT
REVISION DATE: 8/6/25
PROJECT NUMBER 25028
DATE 8/6/25
DRAWN BY CWS
CHECKED BY STZ

SHEET NAME

ROOF FRAMING
SECTIONS

S2.2