ADDENDUM NO. 02, MARCH 18, 2026

RE: 26-99314 Chester Bowl Chalet

LHB Project No. 150582

To: All Planholders

From: LHB, Inc.

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated February 12, 2026 and Addendum No. 01, dated March 4, 2026. Please acknowledge receipt of this Addendum by checking the acknowledgment box within the solicitation at **www.bidexpress.com**.

This Addendum consists of 5 pages and the following attachments:

General
Kommerling Anchoring and Final Installation Guide

Specifications
Div 02 – 14: 09 5100, 14 2100

Drawings
Civil: C200
Structural: S102, S515, S601
Architectural: A103, A121, A123, A510
Plumbing: P111, P501, P911
Mechanical: M501
Electrical: ES101, EP101, EP102, EP103, EL121, EL123, E601, E701

Changes to Prior Addenda

None

Questions and Answers

Q1. Owner supplied Contractor installed- Exterior windows. Are these new or reused? Do you have a brand or what they are?

A1. The windows are new. Supplied by Heritage windows. Brand is Kommerling. The installation information is included in this Addendum.

Q2. Owner supplied Contractor installed- Exterior decking. Is this new or reused? Type (WD treated, trex, other?) What are the guardrails made of and is that supplied by owner as well?

A2. The provide decking is new. It is Arborwood Thermally Modified decking. Railing is by Contractor

Q3. I noticed that in Division 28, the only specific callout is for Fire. Typically, Division 28 also provides the approved manufacturers. Will there be an addendum to clarify the Access Control and Video Systems? I ask because card readers are listed in the hardware groups of Division 8, and the site plans indicate both cameras and card readers.

A3. Refer to specification section 27 0500 – Communications Systems, paragraphs 2.07 and 2.08.

Q4. RE: Acoustical Ceilings (09 5100):
- 2.02.C.11.b specifies that USG Mars Clean Room is needed for ACT2.
  - "Clean Room" is a specific requirement, usually seen in surgical or laboratory settings. The Material Schedule specifies ACT2 as USG Mars Healthcare.
  - Seeing that ACT2 is used in the toilet rooms, standard Mars Healthcare would be the appropriate tile choice.
    - Can you confirm that standard Healthcare tiles are the item needed for ACT2 (*not Clean Room)*?

A4. Please use USG Mars Healthcare Panels 86169 for ACT2.

Q5. Can any more information be given on what the owner is looking for on the wireless audio visual enabling WI-FI presentation system?

A5. LHB does not have additional information. For bidding purposes, provide a complete, functional wireless presentation system based on industry standards suitable for screensharing to the display from common device platforms and clarify in your bid what you are proposing.

Q6. Can any more information of what model of WAP the Owner is looking for us to provide?

A6. This information has not been provided to LHB. Provide a device that is based on industry standards that can support two data connections and clarify in your bid what you are proposing.

Q7. Can you provide us with information on what kind of speaker and PA system was existing for this project?

A7. LHB does not have information regarding the existing building PA system to be demolished.

Q8. Can you provide us with information on what manufacturer the Owner's existing access control system is at their other locations so that we can make sure the new one is compatible?

A8. The City of Duluth utilizes Axis Communications systems. Assume this brand for bidding purposes.

Q9. Can any more information be provided on any specifics the Owner would like for the video surveillance system?

A9. This information has not been provided to LHB. For bidding purposes, provide a system and camera models that are appropriate for the application and clarify in your bid what you are proposing.

Q10. The Drain tile is shown for the addition only, is the intent to replace the drain tile at the existing portion of the building?

A10. The drain tile should go around the whole building. Drawings to be updated.

Q11. Are the overhead utility lines (note 3 and 5) by MN Power?

A11. Keyed notes 3 & 4 on sheet ES101 have been removed and keyed note 5 has been revised for clarification. MN Power to bring overhead lines to metering/CT cabinet located at building.

Q12. Plans show TBE at grid 6 being 120'0" and at grid 7 it being 118'0".

A12. Correct. Trusses over the office span from grid 3 to grid 6 with a TBE of 120'0" at both locations. Trusses over the stair are sloping from TBE 120'0" at grid 5 down to TBE 118'0" at grid 7.

Q13. If you look below the TBE at grid 7 should be 1'5-1/2" lower than that at grid 6 for the 3/12 ceiling plane to hit the wall. At this TBE there would be basically no heel on the truss using a 12" heel along grid 6 per plan so a taller heel is needed.

A13. The bottom chord of the trusses over the stair are sloping 3/12 from TBE 120'0" at grid 5 down to TBE 118'0" at grid 7. The span between grids 5 and 7 is about 8'4".

Q14. The TBE can't be the same at grids 5 and 6 as is shown on the plans due to the ceiling being sloped. Grid 5 TBE would need to be 6-1/8" taller than grid 6. The same would hold true for grid 4.

A14. Only the scissor trusses in the open chalet side between grids B and E will have a sloped ceiling finish. The scissor trusses over the office between grids A and B will have a dropped ACT ceiling system below and won't follow the slope of the bottom chord. The intent is for the stud wall TWE to be 120'0" with a full height wall to separate the two ceilings along grid B.

Q15. The heel at grid 1 would need to be 11-13/16" to keep the ridge centered between grids 3 and 6 using at 12" heel at Grid 6 per plan and a grid 1 TBE of 113'10".

A15. The intent is for the ridge to be centered between grids 3 and 6 as mentioned, truss heel revised.

Q16. Structural column table labels don't match the foundation plan - for the deck posts the labels are CC18R and CC30R - table shows CC1.5R etc.

A16. The concrete column schedule on S601 will be updated to match the labels on S101.

Q17. Is new waterproofing required around all new and existing foundations?

A17. Yes, waterproofing is required around the new and existing foundation.

Q18. Radon rock - is it required in the new and existing slab areas?

A18. Per Specification Section 31 2113 3.01D, 6" of radon aggregate is required underneath all new slab areas.

General

None

Changes to Specifications

1. Replace Section 09 5100 Acoustical Ceilings in its entirety.
2. Replace Section 14 2100 Electric Traction Elevators in its entirety.

Product Approvals

No materials or equipment will be allowed to be used unless it either 1) meets specified criteria and/or manufacturer or 2) has received prior approval as documented in an addendum. This includes all equipment furnished by subcontractors.

SECTION / PARAGRAPH NO.	SPECIFIED PRODUCT	PROPOSED SUBSTITUTION / MODEL
08 3313 / 2/02	Coiling Counter Door	Cornell Rolling Counter Door / ESC10
08 1473 / 1.01	Sliding Door Systems	SpecSlide by Special-Lite, Inc. / SpecSlide
09 3000 Tiling	Daltile Arid Gray 6x6 Quarry Tile Abrasive	American Olean Fawn Gray 6x6 Quarry Tile Abrasive
10 1100 Visual Display Units	Claridge	W.E. Neal Slate Company LLC
26 5100 Interior Lighting	Multiple	JTH Lighting Alliance
26 5600 Exterior Lighting	Lithonia WDGE2	JTH Lighting Alliance, Energy Lite TWPM
26 0923 Lighting Control Devices	nLight, Wattstopper, Leviton, Lutron	JTH Lighting Alliance, NX Lighting Controls
26 5100 Interior Lighting	Multiple	Mlazgar Associates
26 5600 Exterior Lighting	Lithonia WDGE2	Mlazgar Associates, NewStar Gateway
26 5100 Interior Lighting	Multiple	Pulse Products
26 5600 Exterior Lighting	Lithonia WDGE2	Pulse Products, Gardco GeoForm
26 0923 Lighting Control Devices	nLight, Wattstopper, Leviton, Lutron	Pulse Products, Steinel Lighting Controls

Changes to Drawings

1. Replace Sheet C200 Site Utility and Grading Plan in its entirety.
   a. Revised the foundation drainage to circumvent the entire building.
2. Replace Sheet S102 Main Level Framing Plan in its entirety.
   a. Modified grid 4, 5, and 7 shear wall tags to SW3 on the main level to match the SW3 tags from upper level.
3. Replace Sheet S515 Typical Roof Framing Details in its entirety.
   a. Modified detail B1/S515 truss heel to be 11 13/16" for ridge alignment.
4. Replace Sheet S601 Schedules in its entirety.
   a. Modified the marks of the round concrete columns within the S601 schedule to match the marks on S101.
5. Replace Sheet A103 Upper Level Floor Plan in its entirety
   a. Modify wall types and plan as noted
6. Replace Sheet A121 Lower Level Reflected Ceiling Plan in its entirety.
   a. Modifies the light fixture sizes on this level
7. Replace Sheet A123 Upper Level Reflected Ceiling Plan in its entirety.
   a. Modify the ceiling at the Elev/stair location.
8. Replace Sheet A510 Interior Partition Types, Floor Assemblies and Details in its entirety.
   a. Adds wall type S6 and modifies Floor-Ceiling Assembly
9. Replace Sheet P111 Lower Level Plumbing Plan in its entirety.
   a. Revise water heater designation to ‘owner-furnished, contractor-installed’.
10. Replace Sheet P501 Plumbing Details & Schedules in its entirety.
    a. Revise water heater selection and water heater detail.
11. Replace Sheet P911 Plumbing Riser Diagrams in its entirety.
    a. Revise water heater designation.
12. Replace Sheet M501 Mechanical Details, Schedules, & Controls in its entirety.
    a. Revise Grilles, Registers, and Diffusers schedule.
13. Replace Sheet ES101 Electrical Site Plan in its entirety.
    a. Remove keyed notes 3 & 4.
    b. Revise Keyed note 5.
14. Replace Sheet EP101 Lower Level Power & Technology Plan in its entirety.
    a. Add Keyed note 16.
    b. Revise general note G.
15. Replace Sheet EP102 Main Level Power & Technology Plan in its entirety.
    a. Revise general note G.
16. Replace Sheet EP103 Upper Level Power & Technology Plan in its entirety.
    a. Revise general note G.
17. Replace Sheet EL121 Lower Level Lighting Plan in its entirety.
    a. Replace recessed linear light fixtures with flat panel type fixtures.

18. Replace Sheet EL123 Upper Level Lighting Plan in its entirety.
    a. Replace recessed linear light fixtures with flat panel type fixtures.
19. Replace Sheet E601 Electrical Schedules in its entirety.
    a. Revise Lighting Fixture Schedule.
        i. Revise minimum CRI rating & dimming level for all type S1 and S2 fixtures.
        ii. Revise W1-E & W2 light fixture descriptions.
        iii. Revise flat panel light fixture descriptions, CRI rating & note.
        iv. Remove recess linear fixture types.
        v. Add 1X4 flat panel fixture types.
        vi. Add schedule note 2.
20. Replace Sheet E701 Electrical Diagrams & Schedules in its entirety.
    a. Revise WH-1 MCA on Electrical Equipment Schedule.

END OF ADDENDUM NO. 02

Anchoring and Final Installation Guide

Anchoring with only Anchoring Straps
Anchoring Using Nail Fin and Anchoring Straps

76 AD and MD Systems

Version 1.0

Contents

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Product details and specifications are subject to change without notice.

1 Before you start

WARNING!

Please read these instructions completely before installing Kommerling widows and doors. These instructions describe the proper way to anchor the frames to the rough openings.

Kommerling windows and doors are a European style product and may be different than products that you have installed in the past. Using industry standards installation practices may not be appropriate and lead to operating problems. Failure to follow these instructions will void the warranty.

Frames MUST be installed square, level and plumb or the windows and doors may not perform to specifications or fail prematurely.

2 Tools and Materials Required

2.1 Tools required

- Spirit levels - 24", 48" and 72" levels. Long levels are more accurate and allow you to also check the straightness of walls and window/door products. 72" level needed for tall windows and doors.
- Framing hammer
- Flat pry bar
- Screw gun
- Screw drivers
- Tape measure
- Caulking gun
- Wrench - Small adjustable crescent OR 11 mm box/crescent wrench (may be needed for certain hardware adjustments)
- Vacuum cups - Minimum two vacuum cups are recommended for handling large heavy windows and doors. See heading 3.3.5 Use vacuum cups to carry frames with glass on page 15.
- 3, 4, 5 and 8 mm Hex key or combination Hex-socket tool (4 mm Hex key, 11 mm socket wrench) - Required for hardware adjustments such as clearance and locking tightness adjustments.

2.2 Materials required

WARNING!

Treated wood products can be corrosive to many commonly used fasteners. Installer or authority having jurisdiction is responsible for selecting fasteners that are compatible with the substrates into which they are fastened.

- Fasteners for Kommerling Strap Anchors (one per anchor)
  - Wood substrates: #10-13 x 1-1/2" Pan head screws.
  - Steel studs: #10-13 x 3/4" pan head screws.
  - Concrete: 1/4" x 1-1/4" Kwik Con II or equal.
  - All fasteners to be corrosion resistant and selected for compatibility with the substrate.
- Sealants and membranes - Sealants and barrier membranes for air and water seal at perimeter joints shall be compatible with rigid PVC, with building substrates, and with one another.
- Sill support shims - Plastic or other non-deteriorating and non-swelling window support shims, min. 1-1/4" x 1-1/2". Suitable shims may be purchased from Kommerling in various thicknesses.
- Shim blocks - Synthetic, plastic, or treated plywood shim blocks to be used at window and door jambs where indicated.
- Caulking and backer rod - Compatible sealant for second plane of protection at interior perimeter of each window and door. See heading 1.6 Second Plane of Protection on page 6.

2.3 Materials supplied by Kommerling

- Strap anchors - Strap anchors are shipped loose with every order. The anchors are in one or more cardboard boxes and are identified on the packing slip. Make sure you have all the anchors you need before you start installing windows/doors.
- Drain caps - Drain caps are shipped loose with every order.
- Hex keys
    - Tilt + Turn windows and doors: 4 mm
    - Outswing doors: 3, 4, and 5 mm
- Assembly key
    - The assembly key is used to remove the pin from the top hinge of Tilt + Turn Windows and Tilt + Turn Doors.
    - It can also be used as a temporary handle to open and close Tilt + Turn Windows and Tilt + Turn Doors.
- Handles and keys - Handles and screws are in pre-packaged plastic bags. Keys supplied for doors that have key lock cylinders.

3 Installing windows and side hinged doors

3.1 Inspect rough openings

1. Building interface details

Before installing windows/doors make sure flashings and barrier membranes are installed according to the requirements of the authority having jurisdiction.

2. Clearances

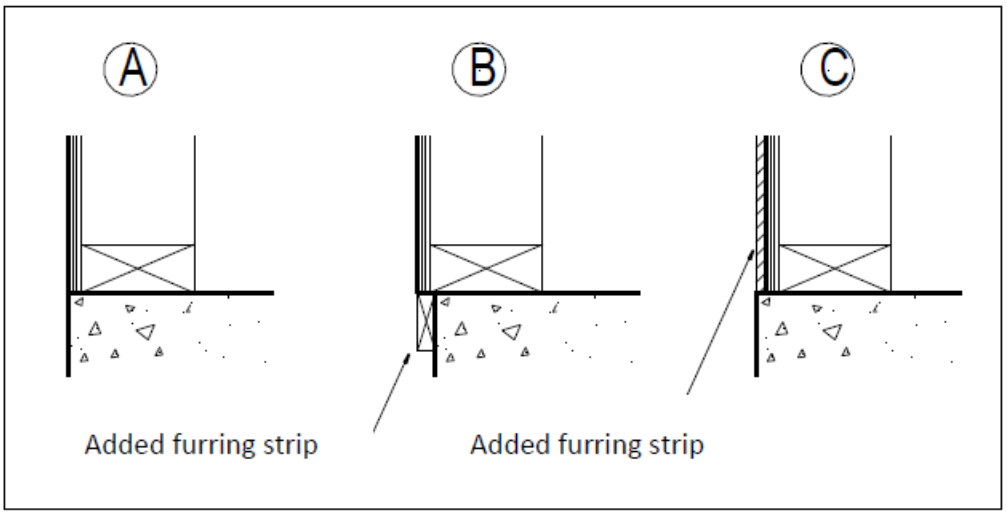
Caution

- *Do not install window/door products if you cannot provide a minimum 1/2" (13 mm) clearance at the top of the window/door frame.*
- *Ensure the rough opening is enlarged to allow a minimum clearance of 1/2" (13 mm) at the head.*

Measure the frame and the rough opening to see if the window/door can be installed with the required clearances: minimum 1/2" (13 mm), maximum 5/8" (16 mm).

3. Doors on concrete floors

When doors with mounting flanges are installed on concrete floors, check to make sure that the exterior face of the concrete is in line with the exterior face of the sheathing (see Detail A in Figure below). If the concrete does not extend as far as the sheathing, have the builder add a treated furring strip to make the edge of the floor line up with the face of the sheathing (see Detail B in Figure below). If the concrete extends past the face of the sheathing (Detail C in Figure below) and the door has a flange at the bottom, the flange will have to be removed before the door is installed. See next step for leaning or uneven wall.



4. Leaning or uneven walls

When the face of the wall is not plumb, straight, or even on all four sides of an opening, it may need to be corrected before windows/doors are installed.

Sometimes a wall is leaning in or out, is bowed, or is misaligned with the edge of the floor. Sometimes thick waterproofing membranes at door sills project 1/4" or more from the face of the wall. In these cases the face of the wall at all four sides of the opening are not in the same plane.

Because operable windows and doors must be installed plumb and straight to operate properly they cannot follow a misaligned wall.

Kommerling strap anchors allow the window/door to be installed plumb regardless of the wall condition. When the gap between the flange and the wall is significant, it is often helpful to ask the builder to fur out the exterior wall surface at the window/door to provide a flat and plumb surface for the flange and for barrier membranes as shown in Figure on page 24.

5. Floor finish clearance—inswing doors

Check floor finish thickness and make sure door sash will clear finished floor with a minimum 3/8" (10 mm) clearance gap at the head. Notify builder if the rough opening is too small.

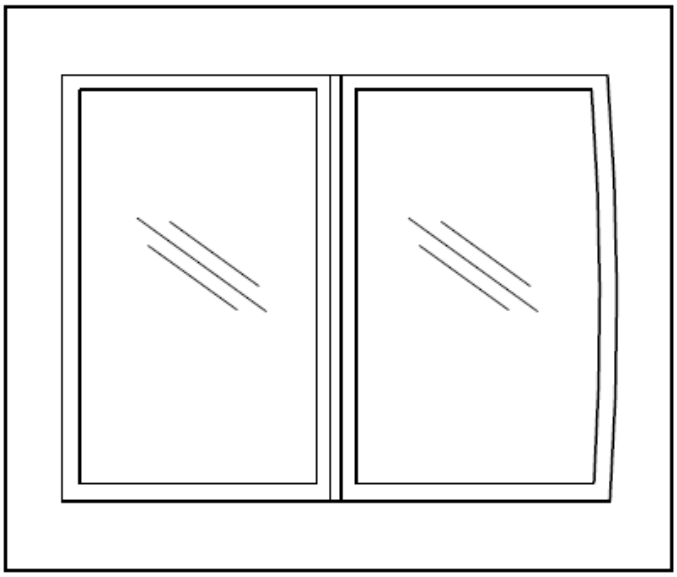
3.2 Prepare frames for installation

1. Remove wooden shipping blocks

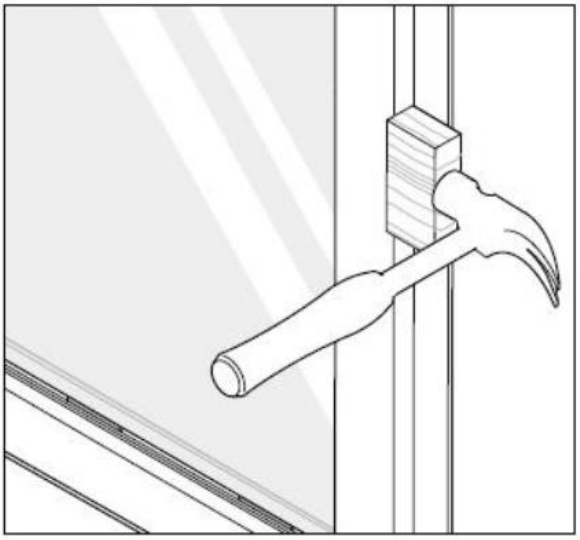
Remove the wooden shipping blocks that are attached to the flange (flanged windows/doors only).

2. Straighten bowed frames

Sometimes a frame member may become bowed by actions such as dragging it by the edge of the frame. See Bowed frame for an example.



The frame may be straightened by tapping it back into place with a wooden block and a hammer..



3. Locate and mark anchor positions around frames

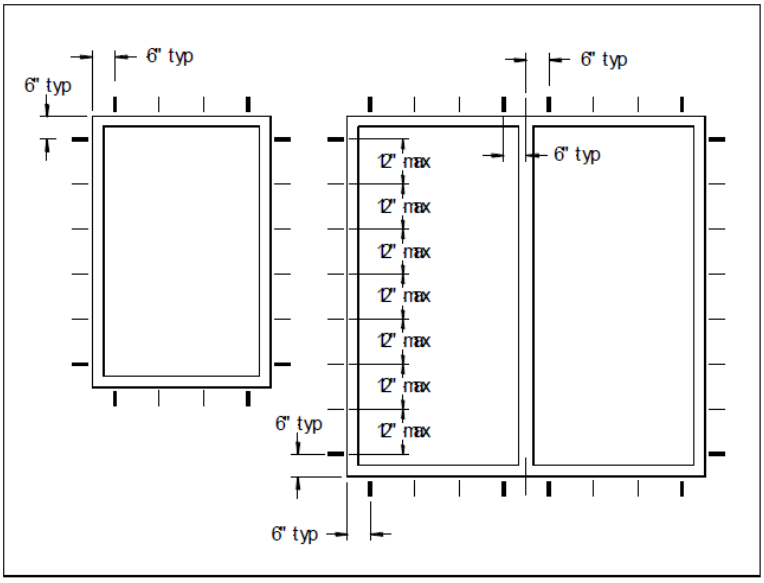
First locate anchors with reference to frame corners and mullions:

- Corner anchors. Locate anchors on both sides of each frame corner at 6" from the corner.
- Mullion anchors. Locate anchors on both sides of each vertical and horizontal mullion at 6" from the mullion centerline.
- Intermediate anchors. Locate anchors at a maximum spacing of 12" on center in between the corner and mullion anchors unless you have shop drawings that show a different spacing.

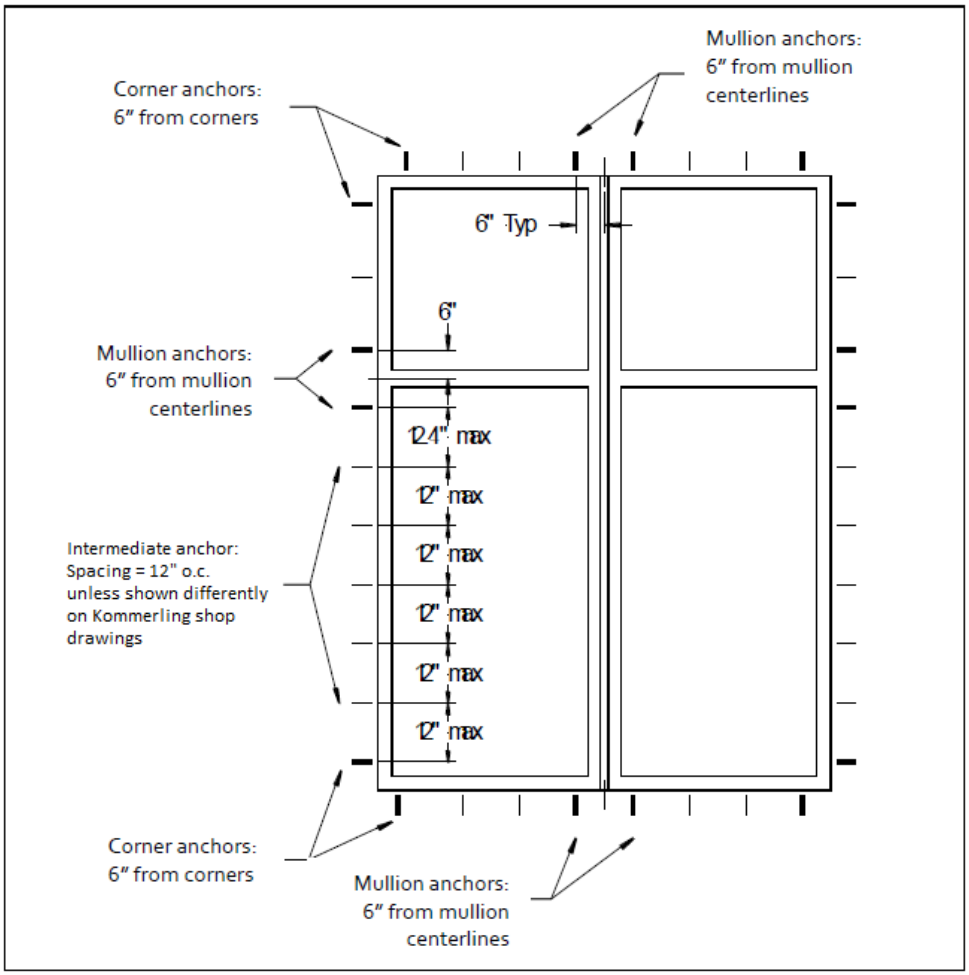
Note:

When Kommerling determines that intermediate anchor spacing can be greater than 12" on center that will be indicated on the Kommerling shop drawings.

Typical anchor spacing – composite (one piece) frames



Typical anchor spacing – combination (coupled) frames

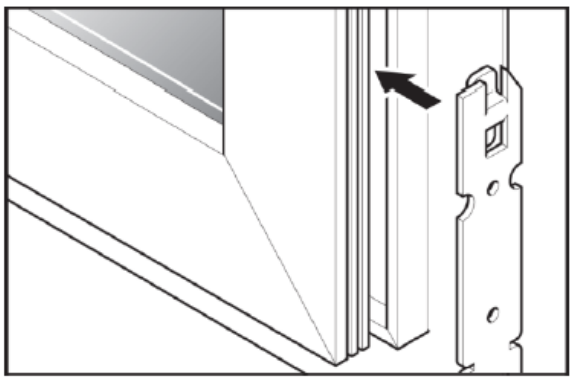


4. Install anchors

Install anchors at spacing shown in Figure 5 and Figure 6 or as indicated on Kommerling shop drawings. If no shop drawings are provided, follow anchor spacing shown.

- Place the anchor into the groove.

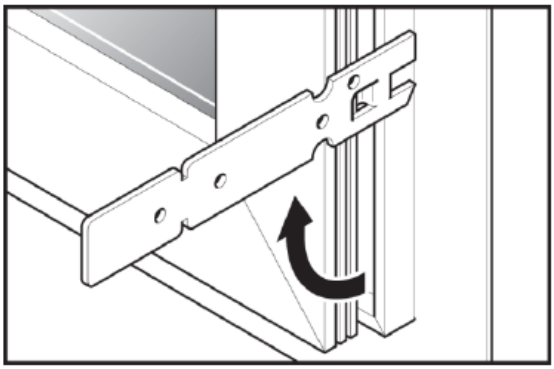
With the indoor side of the window/door facing you, place the prongs of the anchor into the wide groove on the edge of the frame. The picture shows the anchor placed on the right side of the window/door.



TwistAnchor_02

- Turn the anchor clockwise 90°

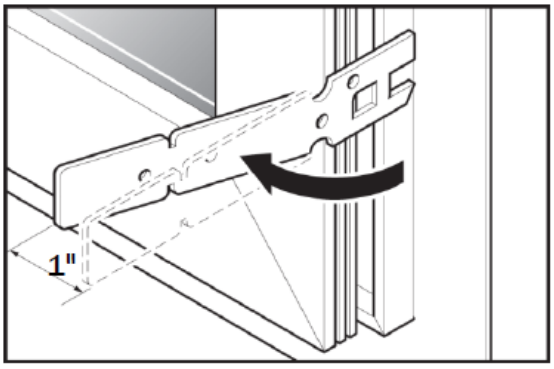
Place the anchor in the groove so it can be turned clockwise. You cannot turn the anchors counter-clockwise.



- Bend the anchor 1" towards the center of the window/door.

DO NOT over-bend the anchors. If you bend them more than 1” now, you may have problems with the installation later.

Now continue to install the other anchors. Do not continue to the next step until you have placed the window/door in the rough opening.



3.3 Put frames in openings

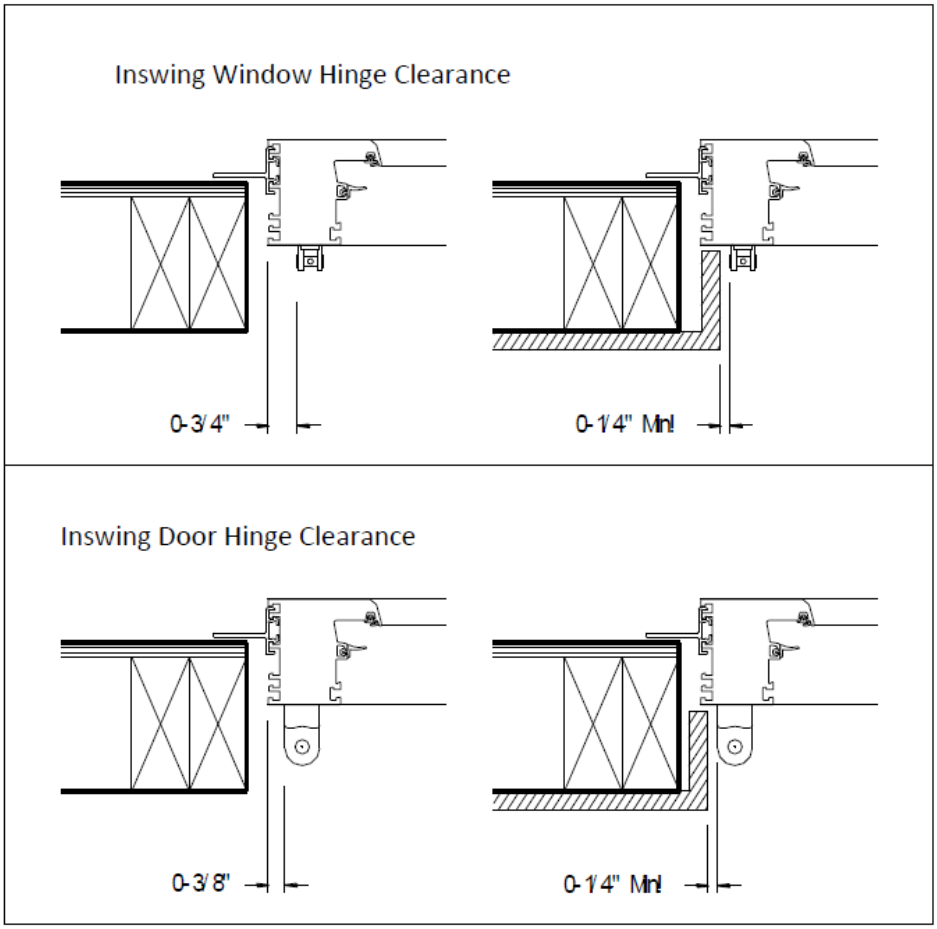
Follow the handling instructions in this document and on the Kommerling sticker that appears on each frame.

1. Fixed windows

Center the frame in the opening. Ensure frame is right side up.

2. Frames with hinges

For frames with hinges, make sure to position the frame in a way that will allow finish materials to clear the edge of hinge by at least 1/4". When jamb finish materials are thicker than 1/2" you may need to move the hinge side of the frame farther from the rough opening to allow finish materials to clear the edge of hinge by at least 1/4".



3.4 Position sill and jamb support shims

1. Place shims under the frame

WARNING!

- *Failure to shim the products according to these instructions will cause operating problems and may permanently damage the products.*
- ***NEVER** place shims under strap anchors.*

Place sill support shims under each frame where shown in the following diagrams. Adjust thickness of sill shims to ensure sill is LEVEL and STRAIGHT. Do not bend frames by forcing shims into place.

Adjust the height of the shims to obtain a level sill, ensuring you have a minimum 1/2" (13 mm) gap at the head.

Minimum shim size: 2" x 1-1/2". Kommerling recommends using stackable plastic shims of different thicknesses to achieve the correct placement of the window/door in the rough opening.

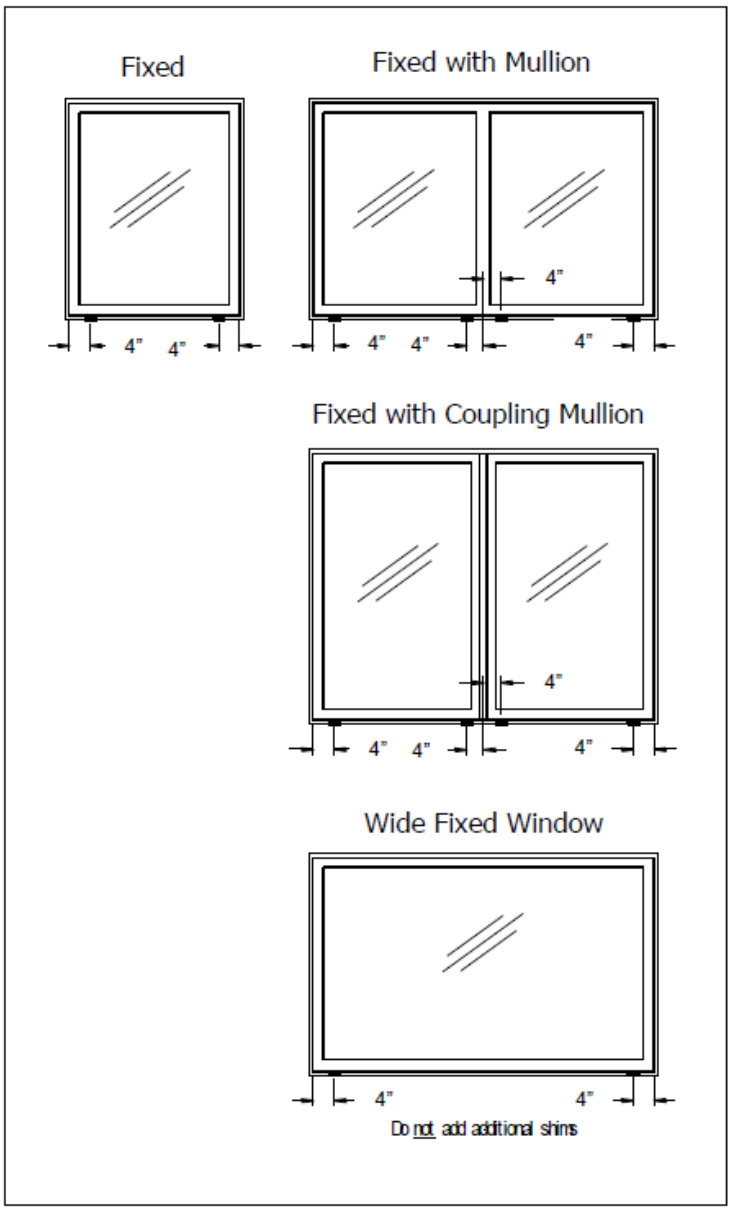
2. Place shims at jambs of operable windows and doors

Place lateral support shims at jambs where shown in the following diagrams. Jamb shims are required near the tops of jambs opposite to the hinge side to prevent the frames from moving sideways from the weight of window and door sashes.

Jamb shims are also required at the midpoints of door jambs for greater security against break-in and to prevent operational problems due to building settlement.

3. Shim placement at Fixed windows

At Fixed (non-operable) windows place shims 4 inches in from each corner and 4 inches from the center of each mullion to support the weight of the glass. These positions align the shims with the glass supports inside the frame. To prevent bending of the sill you must place the shims within 1" of the positions

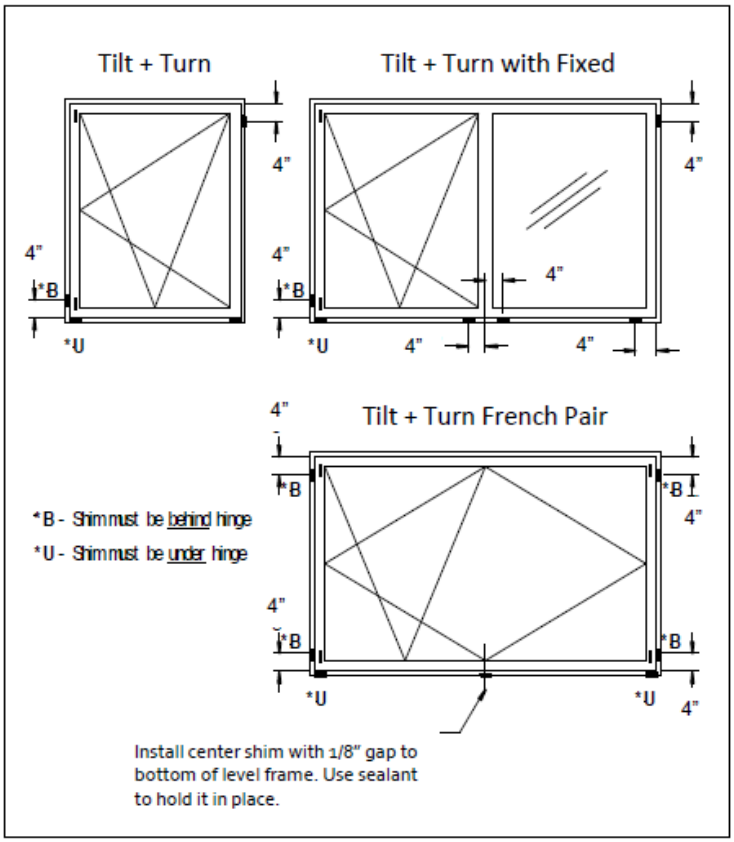


TIP

- *You will not be able to place the jamb shims until you are ready to anchor the frames as described under heading 4 Fasten anchors to rough opening on page 35.*
- *use a dab of sealant to glue the jamb shims in place so they don't fall down later.*

4. Shim placement at Tilt + Turn operable windows

For operable windows place shims under the vertical jambs to support the weight of the glass as transferred to the frame through the hinges. Then place shims where shown at the jambs to keep the frame from bending sideways. To prevent bending of the sill and jambs you must place the shims within 1" of the positions shown

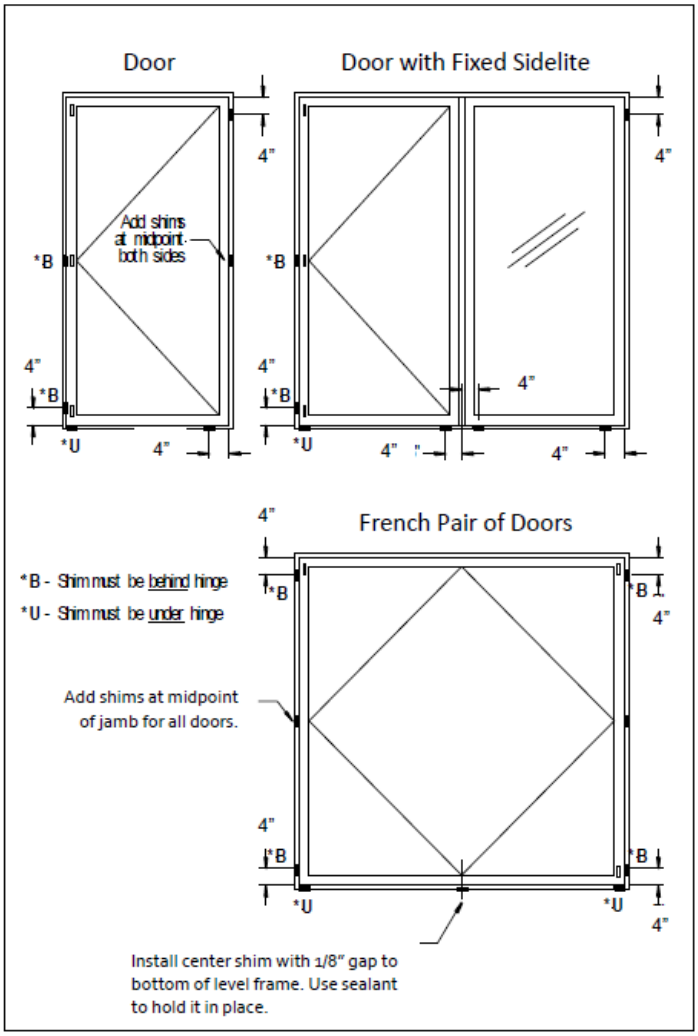


5. Shim placement at doors

TIP

- *For French door installations some installers find it easier to square the frame by hanging the door sashes before all the anchors are fastened.*
- *If you wish to follow this method, first read through all the steps in Section 4 so you understand the whole installation process.*
- *After you have loosely fastened the corner anchors to hold the frame plumb, and after you have shimmed the frame level, hang the sashes and close them. Use shims and anchors to make the frame square. The frame will be square when the meeting rails of the sashes are in line with one another at the head or sill.*
- *Next fasten the corner anchors securely, and then continue with the intermediate anchors. Finally glue the jamb shims in place.*

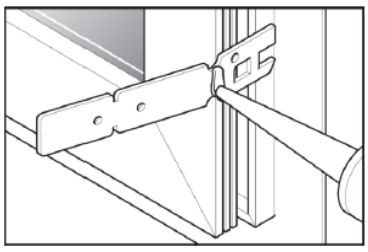
For doors place shims under the vertical jambs to support the weight of the glass as transferred to the frame through the hinges. Then place shims where shown at the jambs to keep the frame from bending sideways. To prevent bending of the sill and jambs you must place the shims within 1" of the positions shown.



3.5 Seal and fasten anchors

1. Apply sealant to anchors

Apply sealant to the side of the anchor that will lie flat against the rough opening.



Apply sealant generously on the side of the anchor facing you, near to the edge where it bends. Ensure the sealant reaches the entire width of the anchor to maintain the continuity of the air barrier when the installation is finished. Use the same sealant that will be used for the second plane of protection as described in see heading 4.8 Apply sealant

for Second Plane of Protection on page 38. If you use a different sealant it must be compatible with the sealant used for the second plane of protection.

Note.

This step is required to create an air and water barrier between the interior edge of the window/door frame and the rough opening to create a second plane of protection. For more information see heading 1.6 Second Plane of Protection on page 6.

2. Bend anchors towards window/door, then back to lie flat against the rough opening

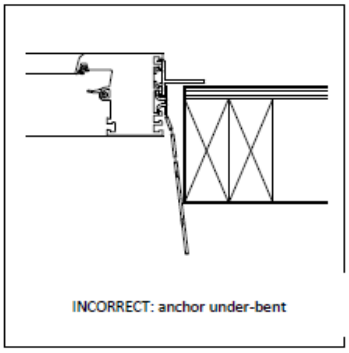
WARNING!

Under-bending or over-bending the anchors can result in deformed or twisted frames. Frames damaged in this way are not covered under warranty.

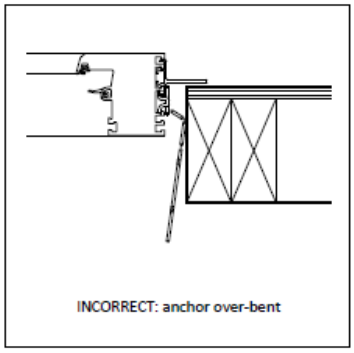
The anchors are designed to allow you to anchor the window/door securely for different gap widths. Adjusting the anchor to suit the gap is a two-step process: first you pre-bend the anchor towards the window/door, and then back against the side of the rough opening. Your objective is to have the anchor lie flat against the side of the rough opening before you screw it in place.

For narrower gaps you need to pre-bend the anchor less. For wider gaps you need to pre-bend the anchor more.

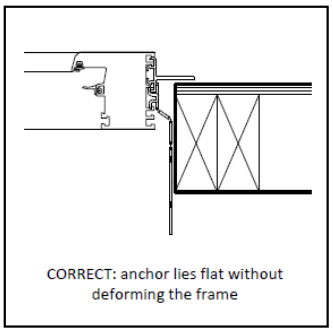
Start by pre-bending the anchor about 30 degrees from the face of the rough opening, then bend it back. If it does not lie flat, pre-bend it again, more than before. You will soon get a feel for how much you need to pre-bend the anchors for different sizes of gaps. Take a few minutes to practice how much or how little you need to bend the anchor towards the window/door in order to have it flat against the rough opening when you bend it back.



INCORRECT: anchor under-bent

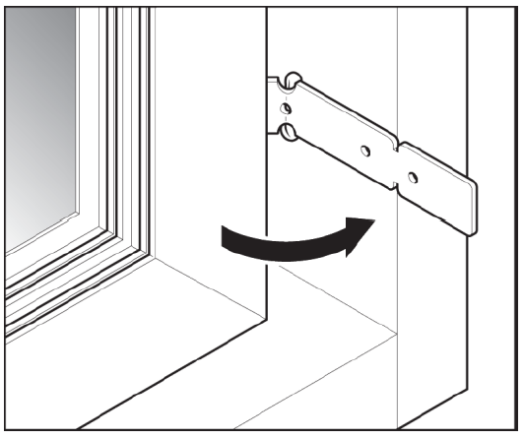


INCORRECT: anchor over-bent



CORRECT: anchor lies flat without deforming the frame

To prevent wall finishing and window operation problems later, all the anchors must lie flat against the sides of the opening before they are screwed to the wall. If you don't bend the anchors to lie flat against the opening you will cause the frame to twist when you screw them in place



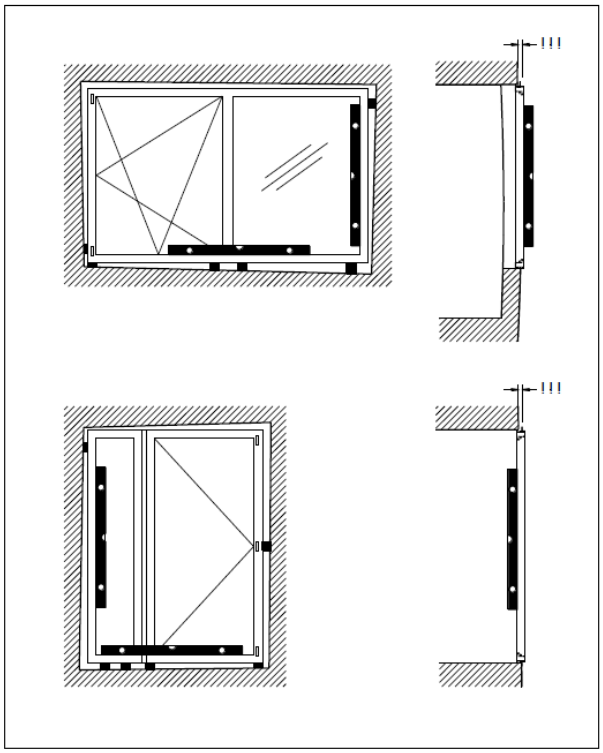
.

3. Make sure frame is PLUMB, LEVEL AND SQUARE

TIP

- *Do not fasten the anchors in sequence. Start with the corners fastened loosely.*
- *Next fasten anchors at midpoints of the frame and at mullions.*
- *Finally, fasten intermediate anchors. If you alternate from side to side, top to bottom,you are less likely to deform or shift the position of the frame.*
- *You can make minor adjustments to the frame position as you work using a pry bar between the frame and the rough opening.*

Before fastening anchors to rough opening make sure frame is plumb, level and square, even if wall is not plumb or straight.



Caution

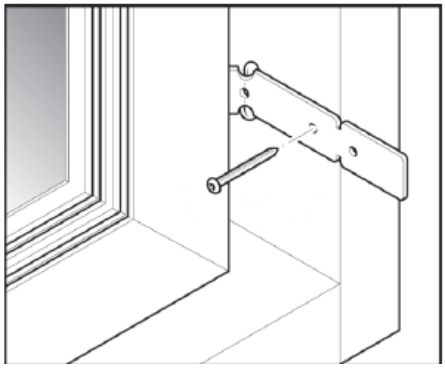
DO NOT FASTEN *anchors to rough opening until you are sure frames are* ***LEVEL, PLUMB*** *and* ***SQUARE****.*

4. Fasten anchors to rough opening

TIP

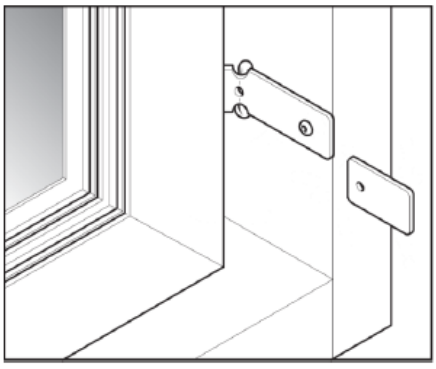
- *Start by fastening the corner anchors, then the mullion anchors (or anchors at midpoints of the frame if there are no mullions). Take care not to twist or deform the frame with the midpoint anchors.*
- *Install jamb support shims as you go.*
- *Then fasten the intermediate anchors*.

Place the specified fasteners into the hole NEAREST TO THE WINDOW/DOOR FRAME to fasten the anchor to the rough opening.



5. Remove anchor tabs

In a 2 x4 wall you will need to bend then break off the tabs where they extend past the inside face of the studs.



3.6 Hang sashes on frames

1. Tilt + Turn window and door sashes

- Remove the upper hinge cover and push the hinge pin down as described under heading 3.5.3, How to remove Tilt + Turn sashes from frames on page 19.
- Tilt the lower hinge pin towards you approximately 30 degrees.
- Prepare the sash for installation:
  - Make sure there is no dirt in the lower hinge of the sash.
  - Make sure the handle is in the Turn position (as when sash is swung open to one side).

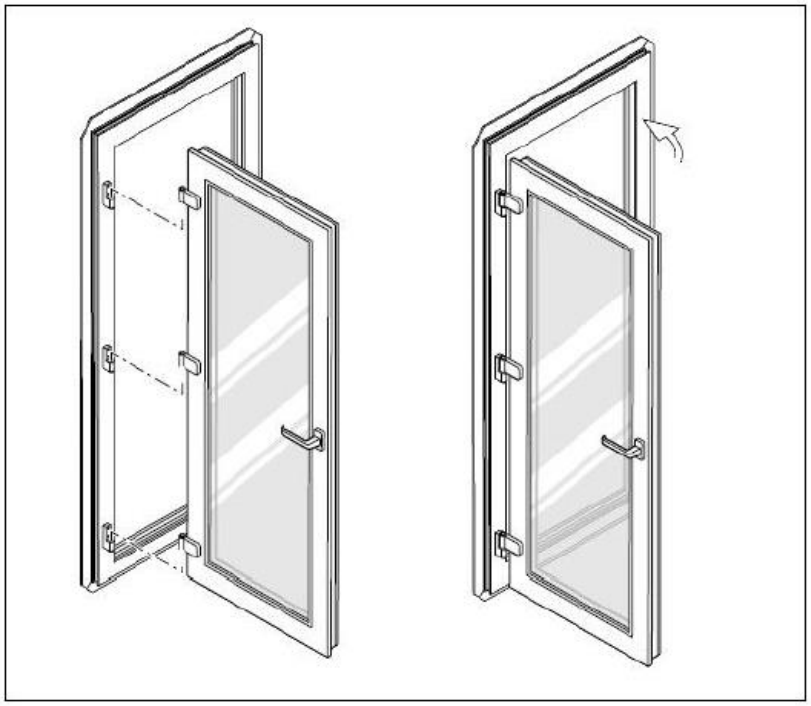
- With the help of an assistant lift the sash, then set it down onto the lower hinge pin of the frame. Tilt the sash towards the frame carefully and align the top of the sash hinge with the slot in the hinge body on the frame as shown in the illustration.
- As you tilt the sash into place, the shear arm at the top of the sash may disengage. If this occurs, gently lift the arm upwards and move it parallel to the sash, then press it downwards until it "clicks" into place.
- Push the upper hinge pin upwards until it "clicks" into place. The pin should easily click into place. Tip: align the sash to the frame so the sash hinge is flush with the frame hinge. Make sure that the hinge pin is all the way up until the bottom is in line with the frame hinge.
- Replace the plastic upper hinge cover.
- Close the sash.

2. Side hinged door sashes

Caution

Inswing side hinged doors with no transom. Hang these doors before interior finishes are installed. Once the interior finishing is in place at the head there will not be enough clearance to lift the door on or off its hinges.

- Inspect the hinge pins on the door frame to make sure they are clean and free of construction debris.
- Inspect the hinges on the sash to make sure there is no dirt or construction debris in the holes at the bottom.
- Lift the sash vertically. Align the hinges of the sash with the hinge pins of the frame then lower the sash onto the hinges as shown in Figure on page 37.
- Close the sash.



3.7 Check sash operation

Kommerling squares the sashes and aligns them with the hardware at the factory. Operating problems occur when the frame is not installed level, plumb and square, or when the frame or sash members are not straight because of handling or incorrect installation.

1. **Operate the sashes and locking hardware**

   Open and close the sash several times. If sashes operate freely without binding at any point; and if all hardware functions operate smoothly, continue to heading 4.8 Apply sealant for Second Plane of Protection on page 38.

   If sashes do not operate properly or the hardware does not engage properly, the frames are not installed plumb, square and level, or the frames have become twisted during anchor installation. For help in diagnosing the cause of operating problems see heading 5, Troubleshooting sash operation problems on page 40.

   If the sash binds or strikes the frame at some point, or if the handle cannot be fully rotated to lock the sash, there is a problem with the installation. Do not proceed with applying interior sealants until you have corrected the sash operating problems.

2. **Correct installation defects**

- Correcting twisted frames

  If the frame is twisted towards the side of the rough opening, loosen anchor screws and use a flat pry bar to straighten frame. Insert shims between frame and rough opening and re-tighten the anchor screws.

  If the frame is twisted away from the rough opening try to twist it into position. If that is not possible you may need to replace and rebend the anchor so it does not deform the frame.

- Correcting bowed frames

  If the interior face of the frames is bowed, unscrew anchors in the affected area, straighten the frame, and re-fasten anchors.

  If the outside edges of the frames are bowed, follow the same steps as for correcting twisted frames above.

3. **Correcting out of square sashes**

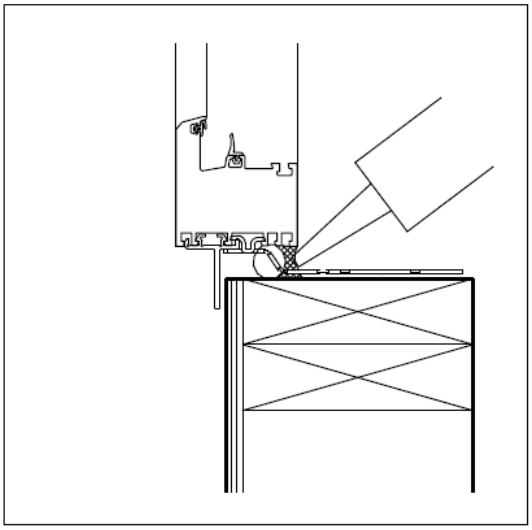
If a sash has become out of square or has become bowed and cannot be straightened as shown on page 25, the sash will have to be re-glazed and re-shimmed.

3.8 Apply sealant for Second Plane of Protection

WARNING!

Make sure sash operating problems are corrected before you apply sealant. Frame adjustment may not be possible after sealant has been applied.

The Second Plane of Protection (see heading 1.6 Second Plane of Protection on page 6) is a continuous air and water seal on all four sides of each window and door. It is the best possible protection against unwanted air and water leakage.



Use only sealant that is compatible with both window/door framing AND with rough opening materials. For a list of sealants that are compatible with Kommerling finishes, see heading 6.1 Compatible sealants on page 43.

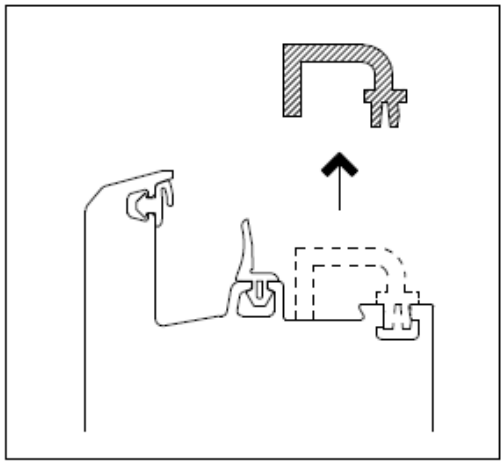
- Place backer rod between frame edge and rough opening.
- Apply continuous bead of sealant between window and door frame edge and rough opening. Tool sealant joint to obtain maximum adhesion between sealant and contact surfaces.
- Make sure sealant is continuous around strap anchors and with sealant previously applied under strap anchors.

WARNING!

Use of incompatible sealants can result in failure of the second plane of protection and damage to adjacent surfaces.

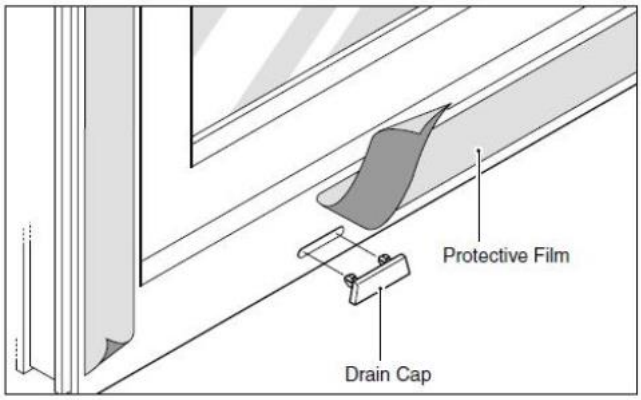
3.9 Remove sash spacer shims

Open each window and door sash and remove the red spacer shims from all sides of the opening.



3.10 Remove protective tapes, install wind caps

Remove protective tape from frames and install wind caps to drain slots on the exterior of all windows and doors.



4 Troubleshooting sash operation problems

Operating problems include sashes binding in one or more places, sashes that cannot be closed or locked, and excessive air leakage.

Operating problems may have a number of causes, from faulty installation to building settlement to deformations arising from abuse or unusual environmental conditions. In most cases operating problems are due to deformations of the frame or sash that exceed hardware tolerances.

4.1 Diagnosing the cause of operating problems

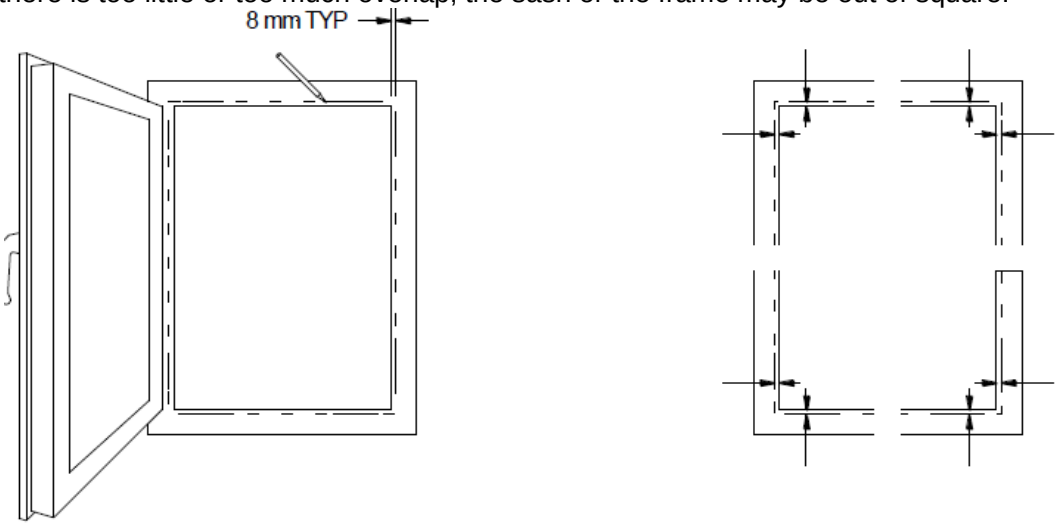
Do not make any assumptions about the cause of the problem. A common mistake is to start adjusting hardware before you have diagnosed the problem. This can add to existing problems and make them harder to correct.

Follow all the troubleshooting steps before making any hardware adjustments. Use the checklist to determine whether the operating problem can be corrected by adjusting the hardware, the frame members, or the sash.

1. **Sash overlap**

   Kommerling windows and doors are designed for a 6.5–8 mm (1/4"–5/16") overlap of sash to frame. Trace outline of sash corners onto frame with a pencil.

   If there is too little or too much overlap, the sash or the frame may be out of square.

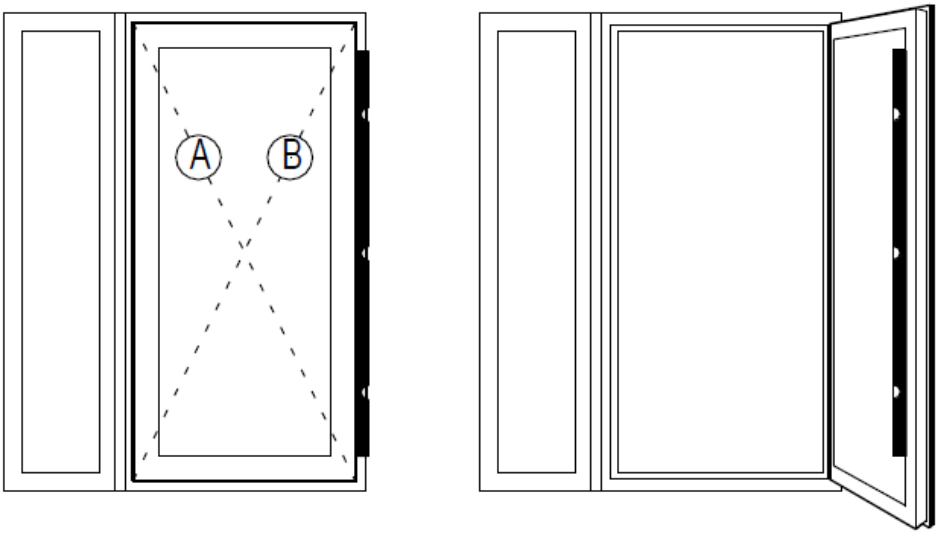


2. **Sash square, straightness or bow**

   Determine if sash is square by measuring diagonals. An out of square sash can cause operating problems.

   Use a 6 foot straight edge to determine if the vertical edges of the sash are straight when you are facing it. If edges are bowed, hardware may not engage. If sashes are bowed towards the center of the glass, the glazing shims may have slipped.

   Use a 6 foot straight edge on the face of the sash to determine if the top, middle and bottom are in line or bowed towards or away from the frame.

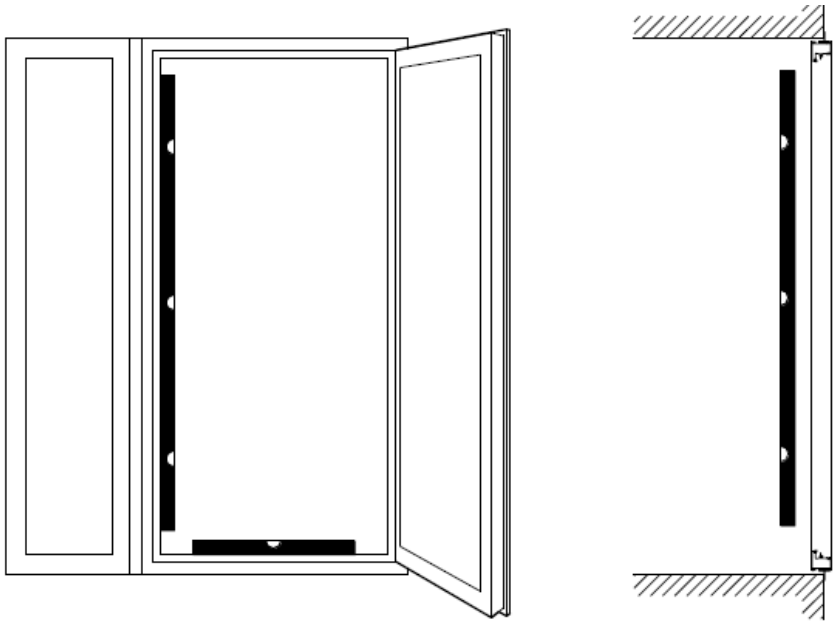


AB

3. Frame plumb, level, square and bow

Use a 6 foot level to determine if frame and mullions are vertical when facing the window or door, and a shorter level to determine if the sill is level.

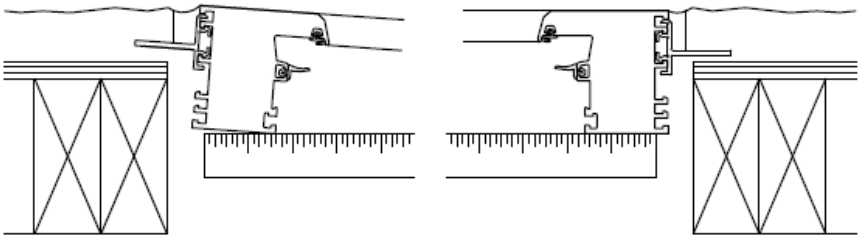
Use a 6 foot level on the face of the frame and mullions to determine if the frame members are leaning inwards or outwards at the top. Use a 6 foot straight edge on the face of the frame to determine if the top, middle and bottom are in line or bowed towards or away from the sash.



4. Twisted frames

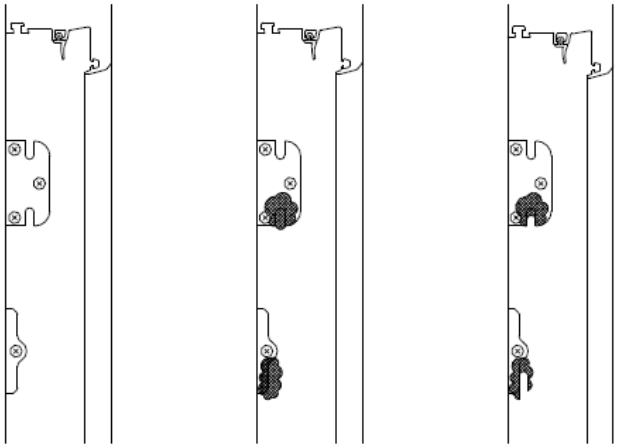
Incorrect bending of strap anchors can twist the frame, resulting in locking points that bind or don't engage. This is an installation problem that cannot be easily corrected after finishes are installed.

Use a straight edge to span between both jambs of an open sash to see if the jambs are twisted inwards (shown) or outwards.



5. Locking points that don't engage

It can be difficult to know whether locking points are engaged properly, especially on the hinge side of a sash. Apply putty to the slots where locking points are supposed to engage, close the sash, and then operate handle. Open the sash to see how far the keepers have traveled.



4.2 Correcting frame and sash problems

If frames are not plumb, level, square and straight, the frame installation must be corrected as described under heading 4.7 Correct installation defects on page 37.

If sashes are out of square or bowed, they must be deglazed, re-shimmed, and re-glazed.

If hardware binds or does not close properly, the frame installation must be corrected. In some cases such problems can be corrected with minor hardware adjustments.

Contact your Kommerling representative for information about hardware adjustment and re-glazing.

5 Reference

5.1 Compatible sealants

WARNING!

The Kommerling warranty does not cover damage to Kommerling products or surrounding materials arising from the use of incompatible or unsuitable products.

Kommerling has determined the sealants in the table below are chemically compatible with the listed Kommerling surface finishes. The table indicates the adhesion of the sealants can be used safely with Kommerling products.

Note.

If you are not sure what the finishes are on the Kommerling products you are installing, contact your Kommerling representative.

Installers or authorities having jurisdiction that wish to use other sealant products must arrange for their own compatibility and adhesion testing. The Kommerling warranty does not cover damage to Kommerling products or surrounding materials arising from the use of incompatible or unsuitable products.

Kommerling makes no recommendations about the compatibility or suitability of the named sealants with other substrates. Installers or authorities having jurisdiction are responsible to determine whether the named products are suitable for use with adjoining materials.

Adhesive properties of compatible sealants

	White uPVC and Laminated (Foil) surfaces	Painted surfaces
Dow 795 Silicone	Very good	Very good
Tremco Spectrem 2 Silicone	Very good	Very good
Tremco Dymonic FC	Very good	Very good
Henry 925	Very good	Untested
Sikaflex AT	Very good	Untested
Sikaflex 552	Very good	Untested

5.2 Definitions (Glossary)

The following terms are used in Kommerling window and door publications. Many are common to all windows and doors. Definitions particular to Kommerling are underlined.

Anchor. A device used to attach a window or door to the building structure.

Anchoring method. A method for structurally attaching a window or door to a building's structure. Kommerling products may be installed using several anchoring methods. The most common are Strap Anchors and Sill Angles.

Brick molding. A style of molding commonly used between the edges of a window or door frame and the exterior finish.

Drain cap. A cap that shields the drainage holes at the sill of a window or door frame from wind and flowing rainwater. Also called a wind cap.

Drywall return. A type of molding applied to the interior edges of a window or door frame to receive gypsum board.

Coupling or Coupling Mullion. A type of mullion that connects (couples) two separate frames.

Flange or Mounting Flange. A fin extending from the edge of a window or door to help the installer position it in the wall. The flange is not to be used for anchoring an Kommerling window or door to the building structure.

Frame. The structural member that surrounds the window or door and retains glass. A frame has a head (top member), sill (horizontal bottom member) and jambs (vertical members on the left and right edges). A frame may also have mullions, vertical members that span from the head to the sill; and transoms, horizontal members that span between mullions or jambs.

Grid. A decorative bar that simulates the appearance of a muntin bar (narrow bar that separates panes of glass in single pane wooden windows). Kommerling has three types of grids:

- n-glass grids. Aluminum bars in between the panes of glass in a sealed insulating glass unit.
- On-glass grids. PVC bars applied to both sides of the surface of the glass.
- Combined In-glass/On-glass grids. To simulate the appearance of true divided lites separated by muntins.

Head. The horizontal frame member at the top of the window or door.

Insulated panel. An opaque panel composed of rigid foam insulation bonded to thin sheets of aluminum or plastic. Panels are installed in window or door sashes in the same way as insulating glass.

Insulating glass, Insulating Glass Unit (IGU). A glass panel composed of two or more panes of glass assembled with spacers and sealants.

Jamb. Vertical members on the left and right edges of a window or door.

Lite or Light. An individual panel of glass in a window or door sash. A sash may have a single lite, or be subdivided into multiple lites.

Mullion. A vertical member that spans from the head to the sill.

Muntin. A vertical or horizontal bar that divides panes of glass in a wooden window sash. Kommerling windows and doors use grids to simulate the appearance of muntins. Muntins are used to create divided lites, the effect produced when the lite in a sash is divided with decorative bars.

Rail. One of the two horizontal members that bound a sash: the top rail and the bottom rail.

Sill. The horizontal frame member at the top of the window or door.

Sash. The operable element of a window or door that is opened and closed. A sash is composed of top and bottom rails (horizontal members), as well as stiles (vertical members). The hinge stile is the stile with hinges and the lock stile has the handle.

Sash bar. A vertical or horizontal framing member that divides the glass in a sash into separate pieces of glass. Like a muntin, a sash bar divides lites of glass. A sash bar is wider than a muntin because it protects the edges of the insulating glass units. A sash bar is like a mullion or a transom in a sash.

Sill Angle. A 1-1/2" x 1-1/2" 18 GA galvanized steel angle used to attach the sill of a window or door to the building structure.

Stile. One of the two vertical members that support glass in a sash: the hinge stile and the lock stile.

Strap Anchor. Flat galvanized steel attachment clips designed to engage the edge of Kommerling window and door frames. Strap Anchors are clipped to the window or door frame before it is placed in the rough opening and are attached to the building structure with screws.

Transom. A horizontal member that spans between mullions or jambs.

5.3 Additional resources

To help ensure a long service life, additional product installation, alarm contact installation, hardware adjustments, cleaning and maintenance instructions are available for your windows and doors. Visit www.kommerling.us to download these documents or contact our service department at 1-256-859-4099.

For more information on these quality products please contact:

Kommerling USA Inc.

3415-A Stanwood Blvd
Huntsville, AL 35811

United States
1 256-851-4099 Tel

1 256-859-7562 Fax

www.kommerling.us

SECTION 09 5100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.

D. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019 (Reapproved 2025).

E. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2024a.

F. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

G. CHPS (HPPD) - High Performance Products Database; Current Edition.

H. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Samples: Submit two samples 6 by 6 inch in size illustrating material and finish of acoustical units. Samples of suspension materials are not necessary.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Acoustical Units: Quantity equal to 5 percent of total installed. One full carton minimum.

1.04 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.06 SUSTAINABILITY REQUIREMENTS

A. See Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions

B. See Section 01 8113 - Sustainable Design Requirements

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.
   2. USG Corporation: www.usg.com/ceilings/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Suspension Systems:
   1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.
   1. VOC Content: Certified as Low Emission by one of the following:
      a. Product listing in UL (GGG).
      b. Product listing in CHPS (HPPD).
   2. Recycled Content: Minimum 50% recycled content.

B. Acoustical Panels, Type ACT1: Mineral fiber with membrane-faced overlay, washable and soil-resistant finish; impact and scratch resistant, with the following characteristics:
   1. Application(s): Standard acoustical ceiling panel, unless indicated otherwise.
   2. Classification: ASTM E1264 Type IV.
      a. Form: 2, water felted.
      b. Pattern: "E" - lightly textured.
   3. Size: 24 by 24 inches.
   4. Thickness: 3/4 inch.
   5. Light Reflectance: 90 percent, determined in accordance with ASTM E1264.
   6. Noise Reductin Coefficient (NRC): 0.75, determined in accordance with ASTM E1264.
   7. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
   8. Panel Edge: Beveled.
   9. Color: White.
   10. Suspension System: Exposed grid.
   11. Products:
      a. Armstrong World Industries, Inc; Ultima: www.armstrongceilings.com/#sle.
      b. USG Corporation; Mars Acoustical Panels: www.usg.com/ceilings/#sle.
      c. Substitutions: See Section 01 6000 - Product Requirements.

C. Acoustical Panels, Type ACT2: Mineral fiber with water-repellent membrane-faced overlay, washable and soil-resistant finish; impact and scratch resistant, with the following characteristics:
   1. Application(s): Higher humidity areas.
   2. Classification: ASTM E1264 Type IV.
      a. Form: 1, nodular.
      b. Pattern: "E" - lightly textured.
   3. Size: 24 by 24 inches.
   4. Thickness: 3/4 inch.
   5. Light Reflectance: 90 percent, determined in accordance with ASTM E1264.
   6. Noise Reductin Coefficient (NRC): 0.75, determined in accordance with ASTM E1264.
   7. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
   8. Panel Edge: Square.
   9. Color: White.
   10. Suspension System: Exposed grid.
   11. Products:
      a. Armstrong World Industries, Inc; Ultima Health Zone: www.armstrongceilings.com/#sle.
      b. USG Corporation; Mars Healthcare Panels 86169: www.usg.com/ceilings/#sle.

c. Substitutions: See Section 01 6000 - Product Requirements.

D. Acoustical Panels, Type ACT3: Mineral fiber with membrane-faced overlay, washable and soil-resistant finish; impact and scratch resistant, with the following characteristics:
1. Application(s): Public areas.
2. Classification: ASTM E1264 Type IV.
   a. Form: 2, water felted.
   b. Pattern: "E" - lightly textured.
3. Size: 24 by 24 inches.
4. Thickness: 1 inch.
5. Light Reflectance: 90 percent, determined in accordance with ASTM E1264.
6. Noise Reductin Coefficient (NRC): 90, determined in accordance with ASTM E1264.
7. Ceiling Attenuation Class (CAC): 30, determined in accordance with ASTM E1264.
8. Panel Edge: Beveled.
9. Color: White.
10. Suspension System: Exposed grid.
11. Products:
    a. Armstrong World Industries, Inc; Optima Acoustic Panels: www.armstrongceilings.com/#sle.
    b. USG Corporation; Mars High-NRC Acoustical Panels: www.usg.com/ceilings/#sle.
    c. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
1. Materials:
   a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
   b. Aluminum Grid: Aluminum sheet, ASTM B209/B209M.

B. Exposed Suspension System: Hot-dipped galvanized steel grid with steel cap.
1. Application(s): With ACT1 and ACT3 acoustic panels; refer to drawings.
2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
3. Profile: Tee; 15/16 inch face width.
4. Finish: Baked enamel.
5. Color: White.
6. Products:
   a. Armstrong World Industries, Inc; Prelude XL 15/16" Exposed Tee: www.armstrongceilings.com/#sle.
   b. USG Corporation; Donn Brand DX/DXL 15/16" Acoustical suspension system: www.usg.com/ceilings/#sle.
   c. Substitutions: See Section 01 6000 - Product Requirements.

C. Exposed Suspension System: Hot-dipped galvanized steel grid with aluminum cap.
1. Application(s): With ACT2 acoustic panels in high humidity areas; refer to drawings.
2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
3. Profile: Tee; 15/16 inch face width.
4. Finish: Baked enamel.
5. Color: White.
6. Products:
   a. Armstrong World Industries, Inc; Prelude XL 15/16" Exposed Tee: www.armstrongceilings.com/#sle.
   b. USG CorporationDonn DXLA/DXACE Acoustical Suspension System: www.usg.com/ceilings/#sle.

c. Substitutions: See Section 01 6000 - Product Requirements.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Perimeter Moldings: Same metal and finish as grid.

E. Acoustical Insulation: ASTM C665 friction fit type, unfaced batts.
   1. Thickness: 2 inch.
   2. Extend insulation 24 inches over top of ceiling system on both sides of each wall in the following rooms, where walls do not go to the deck above.
      a. 204 Toilet.
      b. 205 Office.
      c. 206 Office.
      d. 206 Office.

F. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Locate system on room axis according to reflected plan.

D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Overlap and rivet corners.

E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

G. Install hold-down clips on panels within 20 ft of an exterior door and in sloped ceilings.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. Clean surfaces.

B. Replace damaged or abraded components.

END OF SECTION

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SECTION 14 2100
ELECTRIC TRACTION ELEVATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electric traction elevator systems.

B. Maintenance contract.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. AISC 360 - Specification for Structural Steel Buildings; 2022, with Errata (2025).

D. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

E. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices; 2022.

F. ASME A17.2 - Guide for Inspection of Elevators, Escalators, and Moving Walks Includes Inspection Procedures for Electric Traction and Winding Drum Elevators, Hydraulic Elevators, Inclined Elevators, Limited-Use/Limited-Application Elevators, Private Residence Elevators, Escalators, Moving Walks, Dumbwaiters, and Material Lifts; 2023.

G. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2025.

H. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

I. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2025.

J. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025.

K. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

M. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.

N. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate work with other installers to provide necessary conduits for proper installation of wiring, including but not limited to the following:
      a. Elevator pit for lighting and sump pump.

B. Preinstallation Meeting: Convene meeting at least one week prior to start of this work.
   1. Review schedule of installation, proper procedures and conditions, and coordination with related work.

C. Construction Use of Elevator: Not permitted.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit data on following items:
   1. Signal and operating fixtures, operating panels, and indicators.
   2. Car design, dimensions, layout, and components.

3. Car and hoistway door and frame details.
4. Electrical characteristics and connection requirements.

C. Shop Drawings: Include appropriate plans, elevations, sections, diagrams, and details on following items:
1. Hoistway Components: Size and location of car machine beams, guide rails, buffers, ropes, and other components.
2. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
3. Clearances and over-travel of car and counterweight.
4. Locations in hoistway of traveling cables and connections for car lighting and telephone.
5. Location and sizes of hoistway and car doors and frames.
6. Electrical characteristics and connection requirements.
7. Indicate arrangement of elevator equipment and allow for clear passage of equipment through access openings.

D. Designer's qualification statement.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Operation and Maintenance Data:
1. Parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
2. Operation and maintenance manual.
3. Schematic drawings of equipment and wiring diagrams of installed electrical equipment with list of corresponding symbols to identify markings on hoistway apparatus.

H. Specimen warranty.

I. Executed warranty.

1.05 QUALITY ASSURANCE

A. Designer Qualifications: Design guide rails under direct supervision of a licensed Professional Structural Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.

C. Installer Qualifications: Supervisor along with trained elevator installation personnel on staff of elevator equipment manufacturer.

D. Products Requiring Electrical Connection: Listed and classified by UL (DIR) or testing agency acceptable to authorities having jurisdiction as suitable for the purpose indicated in construction documents.

E. Documents at Project Site: Maintain at project site one copy of manufacturer's instructions, erection drawings, and shop drawings.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 1-year manufacturer warranty for elevator operating equipment and devices. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Electric Traction Elevators:
1. KONE; KONE MonoSpace 300 DX: www.kone.us/#sle.
2. Otis Elevator Company; Gen3 Core: www.otis.com/#sle.

3. Schindler Elevator Corporation; Schindler 3300 Low-Rise MRL: www.us.schindler.com/#sle.
4. TK Elevator; Evolution 200: www.tkelevator.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

C. Source Limitations: Provide elevator and associated equipment and components produced by the same manufacturer as the other elevator equipment used for this project and obtained from a single supplier.

D. Provide a Machine Room–Less (MRL) elevator system that complies with all requirements of this Section, including open-source, non-proprietary software access and maintenance provisions.

2.02 ELECTRIC TRACTION ELEVATORS

A. Electric Traction Passenger Elevator:
1. Electric Traction Elevator Equipment:
   a. Gearless Traction Machine: Single wrapped traction driving sheave, with dual brake.
2. Drive System:
3. Operation Control Type:
   a. Selective Collective Automatic Operation Control.
4. Service Control Type:
   a. Standard service control only.
5. Interior Car Height: 93 inch.
6. Electrical Power: 208 volts; alternating current (AC); three phase; 60 Hz.
7. Rated Net Capacity: 2100 pounds.
8. Rated Speed: 100 feet per minute.
9. Hoistway Size: As indicated on drawings.
10. Interior Car Platform Size: As indicated on drawings.
11. Elevator Pit Depth: 60 inch.
12. Overhead Clearance at Top Floor: 151 inch.
13. Travel Distance: As indicated on drawings.
14. Number of Stops: As indicated on drawings.
15. Number of Openings: 1 Front.
16. Traction Machine Location: Top of hoistway shaft.

2.03 COMPONENTS

A. Elevator Equipment:
1. Motors, Controllers, Controls, Buttons, Wiring, Devices, and Indicators: Comply with NFPA 70 requirements.
2. Guide Rails, Cables, Counterweights, Sheaves, Buffers, Attachment Brackets, and Anchors: Design criteria for components includes safety factors in accordance with applicable requirements of Elevator Code, ASME A17.1.
3. Buffers:
4. Lubrication Equipment:
   a. Provide grease fittings for periodic lubrication of bearings.
   b. Grease Cups: Automatic feed type.
   c. Lubrication Points: Visible and easily accessible.

2.04 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).

B. Accessibility Requirements: Comply with ADA Standards.

C. Perform structural steel design, fabrication, and installation in accordance with AISC 360.

D. Perform welding of steel in accordance with AWS D1.1/D1.1M.

E. Fabricate and install door and frame assemblies in accordance with NFPA 80 and complying with requirements of authorities having jurisdiction (AHJ).

F. Perform electrical work in accordance with NFPA 70.

G. Comply with fire protection sprinkler system of hoistway design in accordance with NFPA 13 requirements and authorities having jurisdiction (AHJ).

2.05 OPERATION CONTROLS

A. Elevator Controls: Provide landing operating panels and landing indicator panels.
   1. Landing Operating Panels: Metallic type, one for originating "Up" and one for originating "Down" calls, one button only at terminating landings; with illuminating indicators.
   2. Landing Indicator Panels: Illuminating.
   3. Comply with ADA Standards for elevator controls.

B. Interconnect elevator control system with building fire alarm systems.

C. Door Operation Controls:
   1. Program door control to open doors automatically when car arrives at floor landing.
   2. Render "Door Close" button inoperative when car is standing at dispatch landing with doors open.
   3. Door Safety Devices: Moveable, retractable safety edges, quiet in operation; equipped with photo-electric light rays.

2.06 OPERATION CONTROL TYPE

A. Selective Collective Automatic Operation Control: Applies to car in single elevator shaft.
   1. Refer to description provided in ASME A17.1.
   2. Automatic operation by means of one button in the car for each landing served and by "UP" and "DOWN" buttons at the landings.
   3. Stops are registered by momentary actuation of landing car buttons without consideration of the number of buttons actuated or the sequence buttons actuated, but the stops are made in the order that landings are reached in each direction of travel.
   4. All "UP" landing calls are made when car is traveling in the up direction.
   5. All "DOWN" landing calls are made when car is traveling in the down direction.
   6. Uppermost and lowermost calls are answered as soon as they are reached without consideration of the car travel direction.

2.07 MATERIALS

A. Stainless Steel Sheet: ASTM A666/A666M, Type 304; No. 4 Brushed finish unless otherwise indicated.

B. Stainless Steel Bars, Shapes and Moldings: ASTM A276/A276M, Type 304.

C. Tempered Glass: 3/8 inch minimum thickness, fully tempered in compliance with ASME A17.1, 16 CFR 1201, ANSI Z97.1, and ASTM C1048 tempered glass requirements.

D. Resilient Flooring: Sheet flooring, see Section 09 6500.

2.08 CAR AND HOISTWAY ENTRANCES

A. Elevator, No. 1:
   1. Car and Hoistway Entrances:
      a. Hoistway Fire Rating: 1 Hour.
      b. Framed Opening Finish and Material: Brushed stainless steel.
      c. Car Door Material: Stainless steel, with rigid sandwich panel construction.
      d. Hoistway Door Material: Stainless steel, with rigid sandwich panel construction.
      e. Door Type: Double leaf.
      f. Door Operation: Side opening, two speed.

2.09 CAR EQUIPMENT AND MATERIALS

A. Elevator Car:

1. Car Operating Panel: Provide main and auxiliary; flush-mounted applied face plate, with illuminated call buttons corresponding to floors served with "Door Open/Door Close" buttons, "Door Open" button, "Door Close" button, and alarm button.
    a. Panel Material: Integral with front return; one per car.
    b. Car Floor Position Indicator: Above door with illuminating position indicators.
    c. Locate alarm button where it is unlikely to be accidentally actuated; not more than 54 inch above car finished floor.
2. Flooring: Porcelain tile, 3/8 inch thick (nominal). By others.
3. Wall Base: Recessed stainless steel, 4 inch high.
4. Front Return Panel: Stainless steel.
5. Door Wall: Stainless steel.
6. Side Walls: Stainless steel.
7. Rear Wall: Stainless steel.
8. Hand Rail: Stainless steel, at three side walls. Provide open clearance space 1-1/2 inch (38 mm) wide to face of wall.
    a. Stainless Steel Finish: No. 4 Brushed.
9. Ceiling:
    a. Canopy Ceiling: Stainless steel.
    b. Lighting: Recessed LED..

B. Car Accessories:
1. Certificate Frame: Stainless steel frame glazed with clear tempered glass, and attached with tamper-proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting this work.

B. Verify that hoistway and pit are ready for work of this section.

C. Verify hoistway shaft and openings are of correct size and within tolerance.

D. Verify location and size of machine foundation and position of machine foundation bolts.

E. Verify that electrical power is available and of correct characteristics.

3.02 PREPARATION

A. Arrange for temporary electrical power for installation work and testing of elevator components. See Section 01 5000 - Temporary Facilities and Controls for additional requirements.

B. Maintain elevator pit excavation free of water.

3.03 INSTALLATION

A. Coordinate this work with installation of hoistway wall construction.

B. Install system components, and connect equipment to building utilities.

C. Provide conduit, electrical boxes, wiring, and accessories; see Sections 26 0533.13 and 26 0583.

D. Mount machines and motors on vibration and acoustic isolators.
1. Place on structural supports and bearing plates.
2. Securely fasten to building supports.
3. Prevent lateral displacement.

E. Install hoistway, elevator equipment, and components in accordance with approved shop drawings.

F. Install guide rails to allow for expansion and contraction movement of guide rails.

G. Accurately machine and align guide rails, forming smooth joints with machined splice plates.

H. Install hoistway door sills, frames, and headers in hoistway walls; grout sills in place, set hoistway floor entrances in alignment with car openings, and align plumb with hoistway.

I. Structural Metal Surfaces: Clean surfaces of rust, oil, or grease; wipe clean with solvent; prime with two coats.

J. Wood Surfaces not Exposed to Public View: Finish with one coat primer; one coat enamel.

K. Adjust equipment for smooth and quiet operation.

3.04 TOLERANCES

A. Guide Rail Alignment: Plumb and parallel to each other in accordance with ASME A17.1 and ASME A17.2.

B. Car Movement on Aligned Guide Rails: Smooth movement, without any objectionable lateral or oscillating movement or vibration.

3.05 ADJUSTING

A. Adjust for smooth acceleration and deceleration of car to minimize passenger discomfort.

B. Adjust with automatic floor leveling feature at each floor landing to reach 1/4 inch maximum from flush with sill.

3.06 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Remove protective coverings from finished surfaces.

C. Clean surfaces and components in accordance with manufacturers written instructions.

3.07 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals for closeout submittals.

B. Demonstrate proper operation of equipment to Owner's designated representative.

C. Training: Train Owner's personnel on cleaning and operation and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of two hours of training.

3.08 PROTECTION

A. Do not permit construction traffic within car after cleaning.

B. Protect installed products until Date of Substantial Completion.

C. Touch up, repair, or replace damaged products and materials before Date of Substantial Completion.

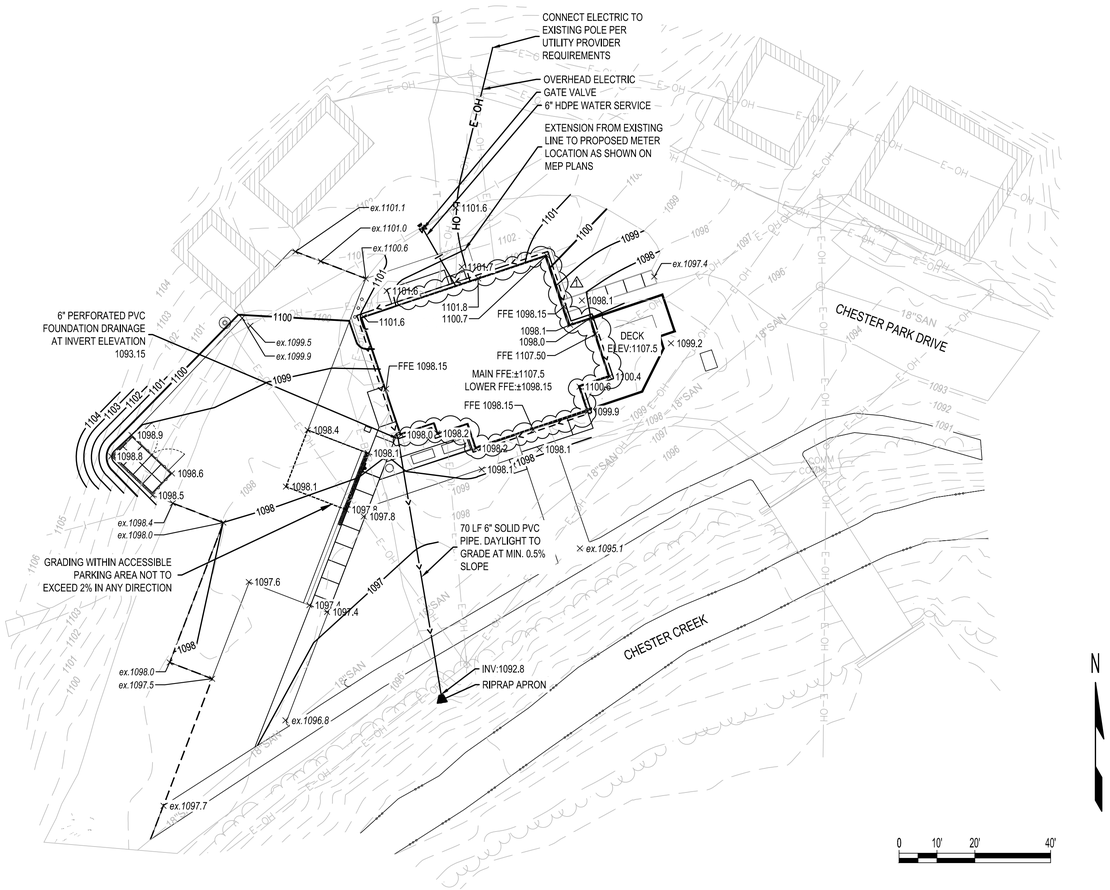
3.09 MAINTENANCE

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements relating to initial maintenance service.

B. Include systematic examination, adjustment, and lubrication of elevator equipment.

C. Perform work without removing cars from use during peak traffic periods.

END OF SECTION



UTILITY NOTES

1. COORDINATE INSPECTION AND TESTING FOR ALL UNDERGROUND UTILITIES WITH THE APPROPRIATE AUTHORITIES PRIOR TO COVERING TRENCHES. COMPLY WITH ALL LOCAL REQUIREMENTS AND CONDUCT ALL TESTS TO THE SATISFACTION OF THE LOCAL AUTHORITIES.
2. ALL UTILITIES AND CONDUITS SHALL TERMINATE 5' OUTSIDE THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
3. ALL EXISTING UTILITIES AND SERVICE LINES TO REMAIN SHALL BE KEPT IN SERVICE AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT, UNLESS OTHERWISE AUTHORIZED BY THE OWNER.
4. REPORT ANY DISCREPANCIES TO THE ENGINEER. RECONNECT ALL SERVICES NOT MARKED FOR REMOVAL OR AS DIRECTED BY THE OWNER.
5. CONTRACTOR SHALL IDENTIFY, FIELD VERIFY AND COORDINATE ALL EXISTING AND PROPOSED UTILITY CROSSINGS AND UTILITY TIE-IN POINTS IN THE FIELD. REPORT CONFLICTS REQUIRING REDESIGN TO THE OWNER.
6. DIMENSIONS TO PROPOSED UTILITIES ARE FROM THE CENTER OF STRUCTURE OR PIPE TO OUTSIDE FACE OF THE EXISTING BUILDING.
7. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING PLANS FOR CONTINUATION OF UTILITIES INTO THE BUILDING.
8. THE CONTRACTOR SHALL ADJUST TO FINISH GRADE ALL WATER AND GAS VALVE BOXES, MANHOLES, AND OTHER APPURTENANCES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR SHALL KEEP ALL SAID WATER, GAS AND EXISTING SEWERS AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
9. 10-FOOT HORIZONTAL SEPARATION AND/OR 18" VERTICAL SEPARATION IS REQUIRED BETWEEN SANITARY SEWER AND POTABLE WATER LINES.

WATER

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP FOR THE WATER SYSTEM SHALL BE IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE NATIONAL FIRE PREVENTION ASSOCIATION (NFPA).
2. PROVIDE ADDITIONAL BENDS WITH THRUST BLOCKS AND OTHER APPURTENANCES REQUIRED TO ASSURE PROPER INSTALLATION OF WATER MAINS AND LATERALS. PROVIDE A VERTICAL TIE-DOWN BLOCK FOR ANY VERTICAL BEND DOWN AND PROVIDE A CRADLE FOR ANY VERTICAL BEND UP.
3. IN THE EVENT OF A CONFLICT BETWEEN WATER LINES AND STORM DRAIN PIPING, ADJUST THE WATER LINE DOWNWARDS IN SUCH A MANNER SO THAT THE PIPE MANUFACTURER'S RECOMMENDATION ON PIPE DEFLECTION AND JOINT STRESS ARE NOT EXCEEDED.
4. MAINTAIN A MINIMUM 6" VERTICAL SEPARATION AT ALL UTILITY CROSSINGS. POTABLE WATER LINES CROSSING BENEATH SANITARY SEWER SHALL HAVE A MINIMUM OF 18" SEPARATION.
5. CONDUCT A PRESSURE TEST ON ALL WATER MAIN AND FIRE PROTECTION LINES TO THE SATISFACTION OF THE LOCAL APPROVAL AUTHORITY AND THE OWNER'S INSURANCE CARRIER.
6. PROVIDE CONCRETE THRUST BLOCKING ON ALL WATER MAIN TEES AND BENDS.
7. CONDUIT AND TAMPER SWITCH INSTALLATION FOR POST INDICATOR VALVES SHALL BE COORDINATED WITH THE ELECTRICAL SITE PLAN AND FIRE PROTECTION PLAN.

GAS

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP FOR THE GAS SYSTEM SHALL BE IN ACCORDANCE WITH THE FACILITY PROVIDER'S SPECIFICATIONS.
2. GAS PIPING SHALL BE LOCATED 4.33' MINIMUM BEHIND CURBING AND 5' MINIMUM FROM ALL OTHER UTILITIES.
3. CONNECTION TO EXISTING MAIN AND THE VALVE SETTING SHALL BE COORDINATED BY CONTRACTOR. PROVIDE ADAPTERS AS REQUIRED.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF DULUTH 48 HOURS, MINIMUM, PRIOR TO GAS LINE INSTALLATION.

GRADING NOTES

1. GRADES SHOWN ARE FINISH SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE APPROPRIATE DEDUCTIONS FOR VARYING SURFACES TO DETERMINE SUBGRADE ELEVATIONS.
2. ALL EXISTING AND PROPOSED STRUCTURE ACCESS COVERS SHALL BE ADJUSTED TO FINISHED GRADE BY THE CONTRACTOR.
3. CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AFFECTED AREA AND NOTIFY THE OWNER IF CONTAMINANTS ARE FOUND IN THE EXISTING SOILS.
4. ON-SITE SIDEWALKS SHALL NOT EXCEED 2% CROSS SLOPE OR 5% RUNNING SLOPE. PROPOSED SIDEWALKS WITHIN THE RIGHT OF WAY SHALL NOT EXCEED 2% CROSS SLOPE OR THE RUNNING SLOPE OF THE ADJACENT ROADWAY.
5. ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION.
6. IN AREAS WHERE NEW FILL IS TO BE PLACED ON SLOPING GROUND, BENCHING THE SURFACE SHALL BE COMPLETED PRIOR TO PLACING THE FILL. BENCHING SHALL BE COMPLETED WHERE SLOPES ARE STEEPER THAN 4:1 (HORIZONTAL:VERTICAL).
7. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERNS.
8. UNLESS OTHERWISE NOTED, FINISH GRADE SHALL SLOPE AWAY FROM BUILDING WALL AT THREE PERCENT FOR A MINIMUM DISTANCE OF TEN FEET IN UNPAVED AREAS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL OSHA REGULATIONS IN THE EXECUTION OF WORK UNDER THIS CONTRACT.
10. REFER TO LANDSCAPE PLANS FOR AREAS TO RECEIVE PERMANENT SEED, SOD, TREES, AND SHRUBS, ETC.
11. THE CONTRACTOR SHALL ADJUST TO GRADE ALL MANHOLE STRUCTURES AND APPURTENANCES, BOTH EXISTING AND PROPOSED, THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR SHALL KEEP ALL SAID EXISTING UTILITIES AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
12. ALL GRADES WITHIN THE LANDSCAPED AREA SHALL NOT EXCEED 2 HORIZONTAL TO 1 VERTICAL .

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY MN STATUTE 216D

LHB
21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

411 WEST 1ST STREET
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

SIGNATURE: Kaitlyn Stublic

TYPED OR PRINTED NAME: KAITLYN M. STUBLIC

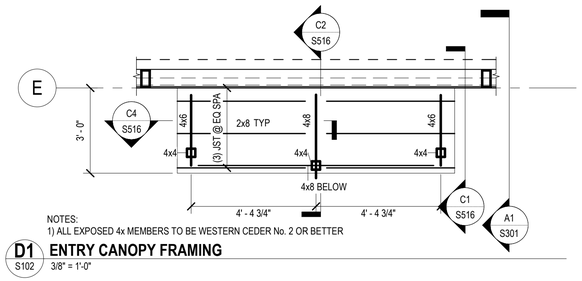
DATE: 02/12/2026 REG. NO.: 58578

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY
DULUTH, MN

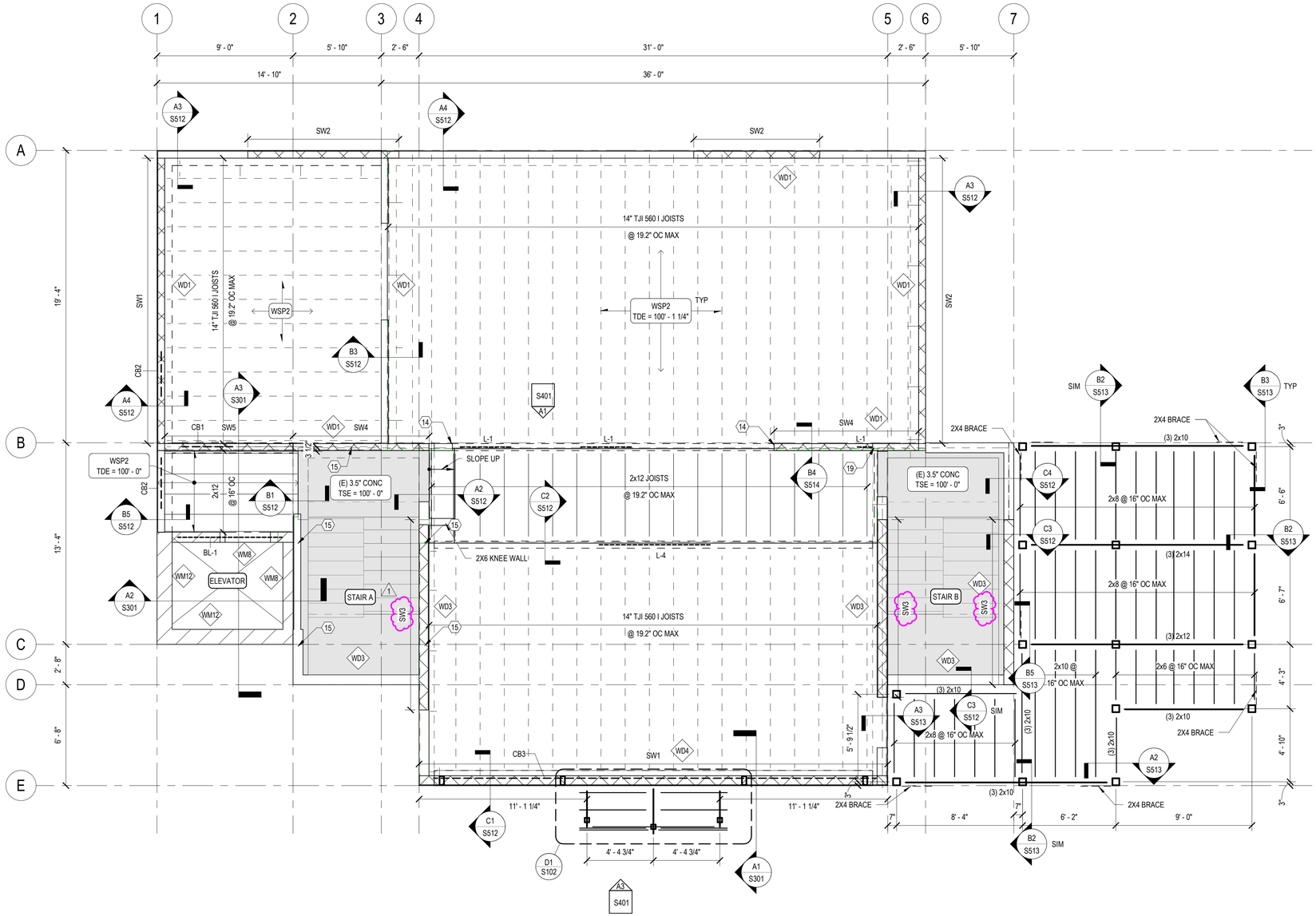
DRAWING TITLE:
SITE UTILITY AND GRADING PLAN

DRAWN BY: ART
CHECKED BY: KMS
PROJ. NO: 150582
DRAWING NO: C200

File Path: I:\150582\800 Drawing\C\150582 C200 Site Utility and Grading Plan.dwg
Plot Date: 3/25/2026 1:29 PM



D1 S102 **ENTRY CANOPY FRAMING**
3/8" = 1'-0"

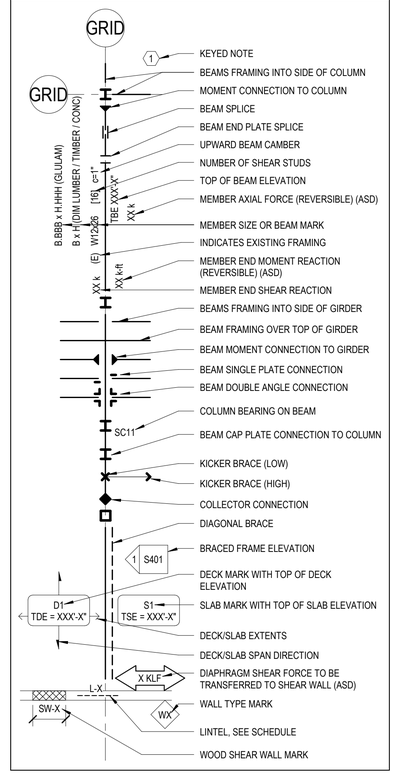


A1 S102 **MAIN LEVEL FRAMING PLAN**
1/4" = 1'-0"

FRAMING PLAN NOTES

1. SEE SHEET S001 FOR:
   A. GENERAL STRUCTURAL NOTES
   B. STEEL CONNECTION REQUIREMENTS
2. SEE SHEET S601 FOR:
   A. COLUMN SCHEDULE
   B. SLAB SCHEDULE
   C. LINTEL SCHEDULE.
3. SEE S511 FOR TYPICAL FRAMING DETAILS FOR FRAMING CONSTRUCTION.
4. FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, ETC.
5. VERIFY SIZE, LOCATION AND ELEVATIONS FOR ALL EQUIPMENT WITH MECHANICAL/PLUMBING, ELECTRICAL, AND ARCHITECTURAL DRAWINGS.
6. COORDINATE ALL OPENINGS THROUGH WALLS AND FLOORS WITH ARCHITECTURAL, MECHANICAL/PLUMBING AND ELECTRICAL DRAWINGS AND SUPPLIERS.
7. SEE FOUNDATION PLAN FOR VERTICAL WALL REINFORCEMENT AND MASONRY PILASTERS NOT SHOWN.
8. ALL ROOF TRUSSES SHALL ALIGN W/ WALL STUDS BELOW U.N.O.

FRAMING PLAN LEGEND



KEYED SHEET NOTES - THIS SHEET

#	KEYED NOTE
14	MIN (3) BUILT-UP STUDS AT STEEL BEAM BEARING LOCATION. STUDS MUST CONTINUE TO FND.
15	MIN (2) BUILT-UP STUDS AT WOOD ROOF BEAM BEARING LOCATION. STUDS MUST CONTINUE TO FND.
19	PROVIDE SIMPSON HU210-3 JOIST HANGER AT CONCRETE WALL w/ (14) 1/4"x1 3/4" TITEN TURBO HEX ANCHORS INTO CONCRETE.

LHB
21 W. SUPERIOR ST., STE 500 | DULUTH, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

411 WEST 1ST STREET
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	03/18/2026	ADD 02

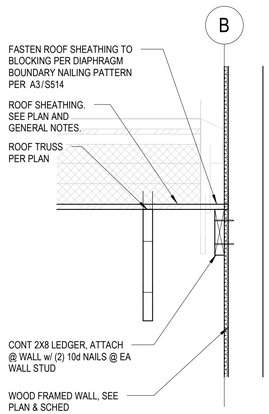
I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

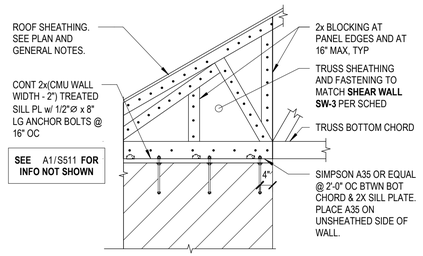
Signature: Gregg M Curtis
Typed or Printed Name: GREGG M CURTIS
Date: 02/12/2026 License Number: 40883

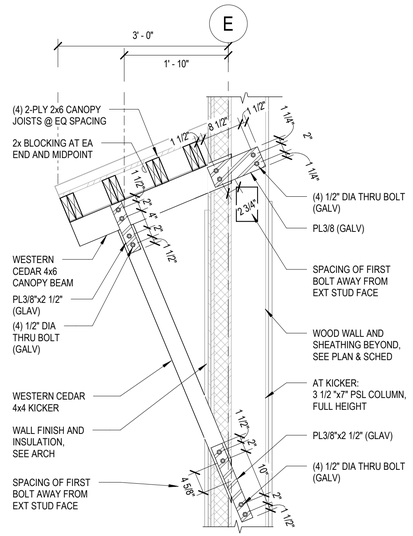
PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY
DULUTH, MN

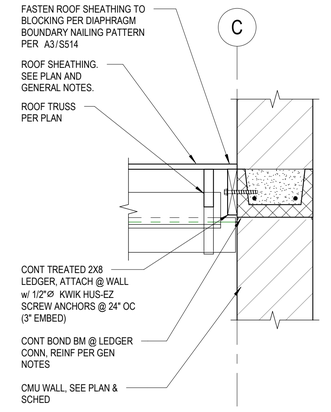
DRAWING TITLE:
MAIN LEVEL FRAMING PLAN

DRAWN BY: WJD
CHECKED BY: GMC
PROJ. NO: 150582
DRAWING NO: **S102**

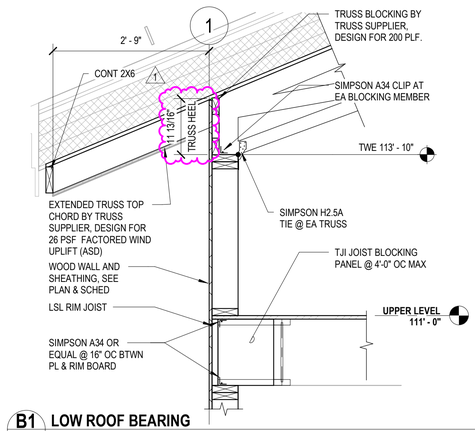




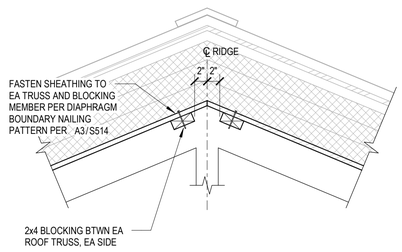




C1 LOW ROOF CONN @ EXT WOOD WALL
S515 — 1" = 1'-0"

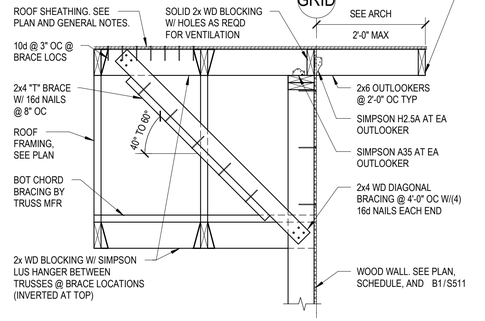


C2 CMU SHEARWALL ALIGNED WITH ROOF TRUSS
S515 — NTS



C3 EYEBROW CANOPY CONNECTION
S515 — 3/4" = 1'-0"

C4 LOW ROOF CONN @ EXT CMU WALL
S515 — 1" = 1'-0"

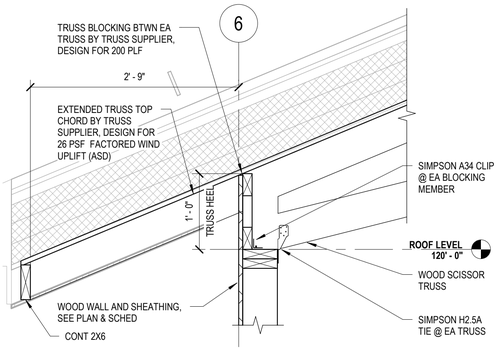


B1 LOW ROOF BEARING
S515 — 3/4" = 1'-0"

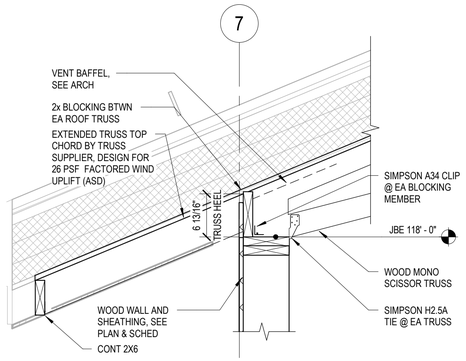
B2 ROOF RIDGE VENT
S515 — 1" = 1'-0"

B3 ROOF TRUSS BEARING AT INT
S515 — 1" = 1'-0"

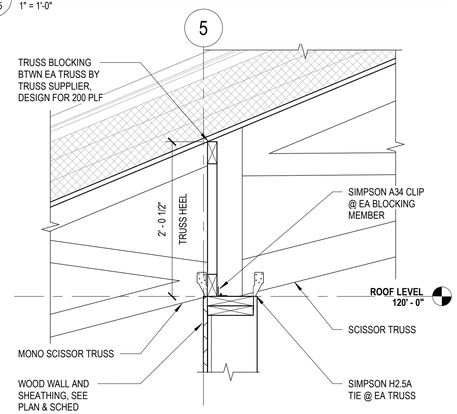
B4 TYPICAL BRACING DETAIL @ T.O. WALL
S515 — NTS



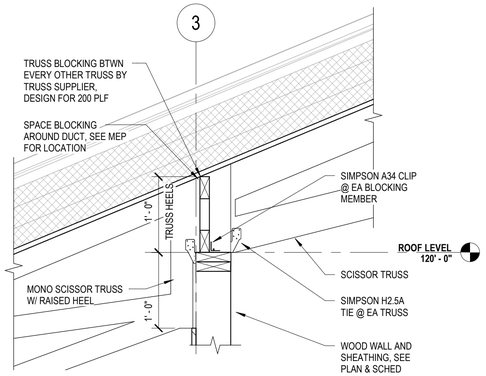
A1 ROOF SCISSOR TRUSS BEARING AT EXT
S515 — 1" = 1'-0"



A2 ROOF MONO SCISSOR TRUSS BEARING AT EXT
S515 — 1" = 1'-0"



A3 ROOF TRUSSES BEARING AT INT
S515 — 1" = 1'-0"



A4 ROOF TRUSSES WITH DROP HEEL BEARING AT INT
S515 — 1" = 1'-0"

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NO	DATE	REVISION
1	03/18/2026	ADD 02

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Signature: Gregg M Curtis
Typed or Printed Name: GREGG M CURTIS
Date: 02/12/2026 License Number: 40883

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY
DULUTH, MN

DRAWING TITLE:
TYPICAL ROOF FRAMING DETAILS

DRAWN BY: WJD
CHECKED BY: GMC
PROJ. NO: 150582
DRAWING NO: S515

MINIMUM LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE MASONRY REINFORCING BARS IN TENSION (INCHES)

REBAR SIZE	MASONRY STRENGTH f'm = 2000 PSI									
	6" CMU	8" CMU		10" CMU		12" CMU		14" CMU	16" CMU	
	CTR	CTR	OTHER	CTR	OTHER	CTR	OTHER	CTR	CTR	OTHER
#3	12	12	17	12	16	12	15	12	12	15
#4	18	13	30	12	27	12	25	12	12	25
#5	28	20	45	16	42	13	39	13	13	39
#6	53	38	54	29	54	24	54	20	19	54
#7	63	52	63	40	63	33	63	28	25	63
#8	72	72	72	61	72	50	72	42	38	72

NOTES:
1. LAP LENGTHS PER TMS 402 SECTION 6.1.6 AND IBC SECTION 2107.
2. YIELD STRENGTH OF REINFORCEMENT, Fy = 60 KSI.
3. "CTR" REFERS TO BARS PLACED IN THE CENTER OF A VERTICAL MASONRY CELL. "OTHER" REFERS TO ALL OTHER LOCATIONS, INCLUDING BOND BEAMS.
4. MULTIPLY LAP SPLICE AND DEVELOPMENT LENGTHS OF EPOXY-COATED REBAR BY 1.5.
5. REDUCE LAP SPLICE AND DEVELOPMENT LENGTHS OF HOOKED REBAR BY 13 TIMES THE BAR DIAMETER.

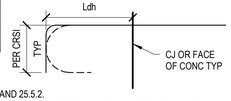
D1 MASONRY REBAR LAP SPLICE SCHEDULE
S601 NTS

STANDARD HOOK DEVELOPMENT CONCRETE REINFORCING BARS IN TENSION, L_{dh} (INCHES)

REBAR SIZE	CONCRETE STRENGTH f'c (PSI)					
	3000	3500	4000	4500	5000	6000
#3	6	6	6	6	6	6
#4	8	7	7	7	7	7
#5	10	10	10	10	9	9
#6	13	13	13	12	12	12
#7	17	16	16	15	15	15
#8	20	20	19	19	18	18
#9	24	24	23	22	22	22
#10	29	28	27	27	26	26
#11	34	33	32	31	31	30

MODIFICATION FACTOR TABLE

FACTOR	CONDITION
0.8	• HOOK SIDE COVER GREATER THAN 6 x BAR DIAMETER
1.2	• EPOXY-COATED REINFORCEMENT
1.33	• LIGHTWEIGHT CONCRETE • GRADE 80 REINFORCEMENT
1.6	• HOOK C/C SPACING LESS THAN 6 x BAR DIAMETER
1.67	• GRADE 100 REINFORCEMENT



NOTES:
1. LAP LENGTHS PER ACI 318, SECTION 25.4.2 AND 25.5.2.
2. YIELD STRENGTH OF REINFORCEMENT, Fy = 60 KSI. CONCRETE IS NORMAL WEIGHT (145 PCF).
3. MULTIPLY HOOK DEVELOPMENT LENGTHS BY APPROPRIATE MODIFICATION FACTORS.

D2 CONCRETE REBAR STANDARD HOOK DEVELOPMENT SCHEDULE
S601 NTS

MINIMUM LAP SPLICE SCHEDULE CONCRETE REINFORCING BARS TENSION CLASS B LAP L_d (INCHES)

REBAR SIZE	CONCRETE STRENGTH f'c (PSI)					
	3000	3500	4000	4500	5000	6000
#3	22	20	19	18	17	16
#4	29	27	25	24	23	21
#5	36	33	31	30	28	26
#6	43	40	37	35	34	31
#7	63	58	54	51	49	45
#8	72	66	62	59	56	51
#9	81	75	70	66	63	57
#10	91	84	79	74	71	64
#11	101	93	87	82	78	71

MODIFICATION FACTOR TABLE

FACTOR	CONDITION
0.77	• DEVELOPMENT LENGTH (L_d)
1.2	• THREE-BAR BUNDLE
1.3	• TOP BARS (>12" FRESH CONC PLACED BELOW REBAR)
1.33	• LIGHTWEIGHT CONCRETE • FOUR-BAR BUNDLE
1.5	• EPOXY-COATED REINFORCEMENT • CLEAR COVER < BAR DIAMETER • BAR SPACING < 3 x BAR DIAMETER
1.53	• GRADE 80 REINFORCEMENT
2.17	• GRADE 100 REINFORCEMENT

NOTES:
1. LAP LENGTHS PER ACI 318, SECTION 25.4.2 AND 25.5.2.
2. YIELD STRENGTH OF REINFORCEMENT, Fy = 60 KSI. CONCRETE IS NORMAL WEIGHT (145 PCF).
3. ALL REBAR SPLICES TO BE CLASS B LAP SPLICES, UNLESS NOTED OTHERWISE.
4. MULTIPLY LAP LENGTHS BY APPROPRIATE MODIFICATION FACTORS.
   A. TOTAL FACTOR FOR EPOXY-COATED TOP REINFORCEMENT IS 1.7 IN LIEU OF 1.5 AND 1.3 FACTORS.

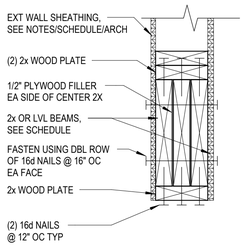
D3 CONCRETE REBAR LAP SPLICE SCHEDULE
S601 NTS

NON-LOAD BEARING WOOD WALL OPENING SCHEDULE

SPAN	LINTEL SIZE	JACK STUDS	FULL HEIGHT STUDS		SILL STUDS
			INTERIOR	EXTERIOR	
≤ 6' - 0"	(2) 2x6	1	1	1	1
6' - 0" TO 8' - 0"	(2) 2x6	2	2	2	2
8' - 0" TO 10' - 0"	(2) 2x8	2	2	2	2
10' - 0" TO 12' -0"	(2) 2x10	2	2	3	2

NOTES:
1. SCHEDULE APPLIES TO UNSCHEDULED NON-LOAD BEARING WOOD WALLS SHOWN ON ARCHITECTURAL OR STRUCTURAL DRAWINGS, UNO.
2. SEE GENERAL STRUCTURAL NOTES FOR TYPICAL WOOD CONSTRUCTION NOTES.
3. SEE TYPICAL WOOD WALL DETAILS FOR ADDITIONAL INFORMATION.
4. PROVIDE FULL BEARING ON JACK STUDS AT EACH END OF WOOD LINTELS.
5. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF INTERIOR NON-LOAD BEARING WOOD WALLS.

D4 NON-LOAD BEARING WOOD WALL OPENING SCHEDULE
S601 NTS



WOOD LINTEL SCHEDULE

MARK	SIZE	JAMB STUDS		SILL	NOTES
		FULL HEIGHT	JACK		
L-1	(3 PLY) 2x8 TYP	(1) 2x	(2) 2x	(1) 2x	
L-2	(3 PLY) 2x8	(3) 2x	(2) 2x	(2) 2x	
L-3	(3 PLY) 1 3/4x7 1/4" LVL	(2) 2x	(3) 2x	(1) 2x	INTERIOR CONDITIONS OF L-3 MAY USE (1) 2x FULL HEIGHT JAMBS
L-4	(3 PLY) 1 3/4x9 1/4"	(1) 2x	(3) 2x		
L-5	(3 PLY) 1 3/4x11 1/4" LVL	(2) 2x	(3) 2x		

NOTES:
1. SEE TYPICAL WOOD WALL AND SHEAR WALL FRAMING ELEVATIONS FOR LINTEL CONSTRUCTION.
2. LINTELS SHALL BEAR ON FULL WIDTH OF JACK STUDS.
3. PROVIDE 2x VERTICAL BLOCKING WITHIN FLOOR SPACE TO TRANSFER JAMB ASSEMBLY TO LOWER LEVELS.
4. PROVIDE 2x POSTS WITHIN WALL TO TRANSFER JAMB ASSEMBLY FROM UPPER LEVELS TO FOUNDATION.

C1 TYPICAL WOOD LINTEL
S601 NTS

SLAB-ON-GROUND SCHEDULE

MARK	THICKNESS	REINFORCEMENT	NOTES
SOG-4	4"	6x6 - W2.9xW2.9 WWR	
SOG-4 (E)	4"	6x6 - W10xW10 WWR (FV)	
SOG-STOOP	6"	#5 @ 12" OC EW (EPOXY)	

WALL FOOTING SCHEDULE

MARK	DIMENSIONS		REINFORCEMENT				NOTES
			BOTTOM		TOP		
	WIDTH	THICKNESS	LONGITUDINAL	TRANSVERSE	LONGITUDINAL	TRANSVERSE	
WF1.5	1' - 6"	1' - 0"	(4) #4	#4 @ 12" OC	-	-	
WF1.33 (E)	1' - 6"	8"	-	-	-	-	STOOP FOUNDATION
WF2	2' - 0"	1' - 0"	(4) #4	#4 @ 12" OC	-	-	
WF2 (E)	2' - 0"	1' - 0"	-	DOWELS FROM WALL VERTS	-	-	
WF3	3' - 0"	1' - 0"	(4) #4	#4 @ 12" OC	-	-	

SPREAD FOOTING SCHEDULE

MARK	DIMENSIONS			REINFORCEMENT				NOTES
				BOTTOM		TOP		
	LENGTH	WIDTH	THICKNESS	LONGITUDINAL	TRANSVERSE	LONGITUDINAL	TRANSVERSE	
F2	2' - 0"	2' - 0"	1' - 6"	(3) #5	(3) #5	(3) #5	(3) #5	

RECTANGULAR CONCRETE COLUMN SCHEDULE

MARK	DIMENSIONS		REINFORCEMENT			NOTES
	WIDTH	DEPTH	VERTICALS	TIES	TYPE	
CC1	1' - 2"	1' - 2"	(4) #6	#4 @ 12" OC	4S	

ROUND CONCRETE COLUMN SCHEDULE

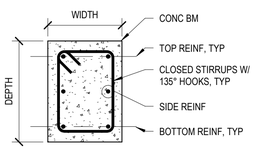
MARK	DIAMETER	REINFORCEMENT			NOTES
		VERTICALS	TIES	TYPE	
CC18R	1' - 6"	(6) #6	#4 @ 12" OC	6R	
CC24R	2' - 0"	(8) #7	#4 @ 12" OC	6R	
CC30R	2' - 6"	(12) #7	#4 @ 12" OC	6R	

WOOD WALL SCHEDULE

MARK	STUDS	SILL CONNECTION	NOTES
WD1	2x6 @ 12" OC	1/2"Ø SCREW ANCHORS @ 48" OC (2 1/2" EMBED)	
WD2	2x6 @ 8" OC	1/2"Ø SCREW ANCHORS @ 48" OC (2 1/2" EMBED)	CONTRACTOR OPTION TO SPACE 2 PLY STUDS @ 16" OC
WD3	2x8 @ 12" OC	1/2"Ø SCREW ANCHORS @ 48" OC (2 1/2" EMBED)	PROVIDE BLOCKING AT HALF HEIGHT
WD4	2x8 @ 8" OC	1/2"Ø SCREW ANCHORS @ 48" OC (2 1/2" EMBED)	PROVIDE BLOCKING AT HALF HEIGHT

WALL SCHEDULE

MARK	MATERIAL	THICKNESS	REINFORCEMENT						NOTES
			CENTERED		INSIDE FACE (IF)		OUTSIDE FACE (OF)		
			VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	
WC3.5 (E)	CONCRETE	3 1/2"	-	-	-	-	-	-	
WC8	CONCRETE	8"	#5 @ 12" OC	#5 @ 12" OC	-	-	-	-	
WC8 (E)	CONCRETE	8"	-	-	-	-	-	-	
WC8S	CONCRETE	8"	#4 @ 12" OC	#5 @ 12" OC	-	-	-	-	TYPICAL STOOP WALL
WC12	CONCRETE	1' - 0"	-	-	#5 @ 12" OC	#5 @ 12" OC	#5 @ 12" OC	#5 @ 12" OC	
WC12 (E)	CONCRETE	1' - 0"	-	-	#4 @ 16" OC	#4 @ 12" OC	#4 @ 16" OC	#4 @ 12" OC	
WM8	CMU	8"	#5 @ 32" OC	-	-	-	-	-	
WM12	CMU	1' - 0"	-	-	#5 @ 32" OC	-	#5 @ 32" OC	-	

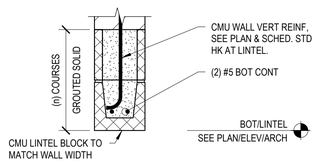


CONCRETE BEAM SCHEDULE

MARK	SIZE		REINFORCEMENT					NOTES
			LONGITUDINAL					
	WIDTH	DEPTH	TOP	BOTTOM	SIDE	STIRRUPS	STIRRUP TYPE	
CB1	8"	10"		(2) #5				
CB2	12"	14"		(2) #5				
CB3	12"	10"	(2) #5	(2) #5		#3 AT 12" OC	CLOSED	

NOTES:
1. SEE GENERAL NOTES FOR CLEAR COVER AT REINFORCEMENT.
2. SEE CONCRETE BEAM SCHEDULE FOR SIZE, NUMBER, AND SPACING OF REINFORCEMENT.

B1 TYPICAL CONCRETE BEAM
S601 1" = 1'-0"



CMU LINTEL SCHEDULE

MARK	LINTEL SIZE	NOTES
BL-1	8"x8"	
BL-2	8"x16"	

NOTES:
1. SEE PLAN AND LINTEL SCHEDULE FOR LINTEL LOCATIONS AND SIZES.
2. SEE TYPICAL CMU ELEVATION DETAIL FOR CMU INFORMATION NOT SHOWN.
3. SEE TYPICAL END BEARING DETAILS FOR BEARING INFORMATION NOT SHOWN.
4. SEE ARCHITECTURAL DRAWINGS FOR WALL INFORMATION NOT SHOWN.
5. STOP CONTINUOUS BOTTOM PLATES SHORT OF JAMBS BY 1/2" TYPICAL UNLESS NOTED OTHERWISE.
6. ALL SHORING REQUIRED TO INSTALL RETROFIT LINTELS SHALL BE BY CONTRACTOR.

A1 TYPICAL LINTEL TYPES
S601 NTS

LHB
21 W. SUPERIOR ST., STE 500 | DULUTH, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

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Date: 02/12/2026 License Number: 40883

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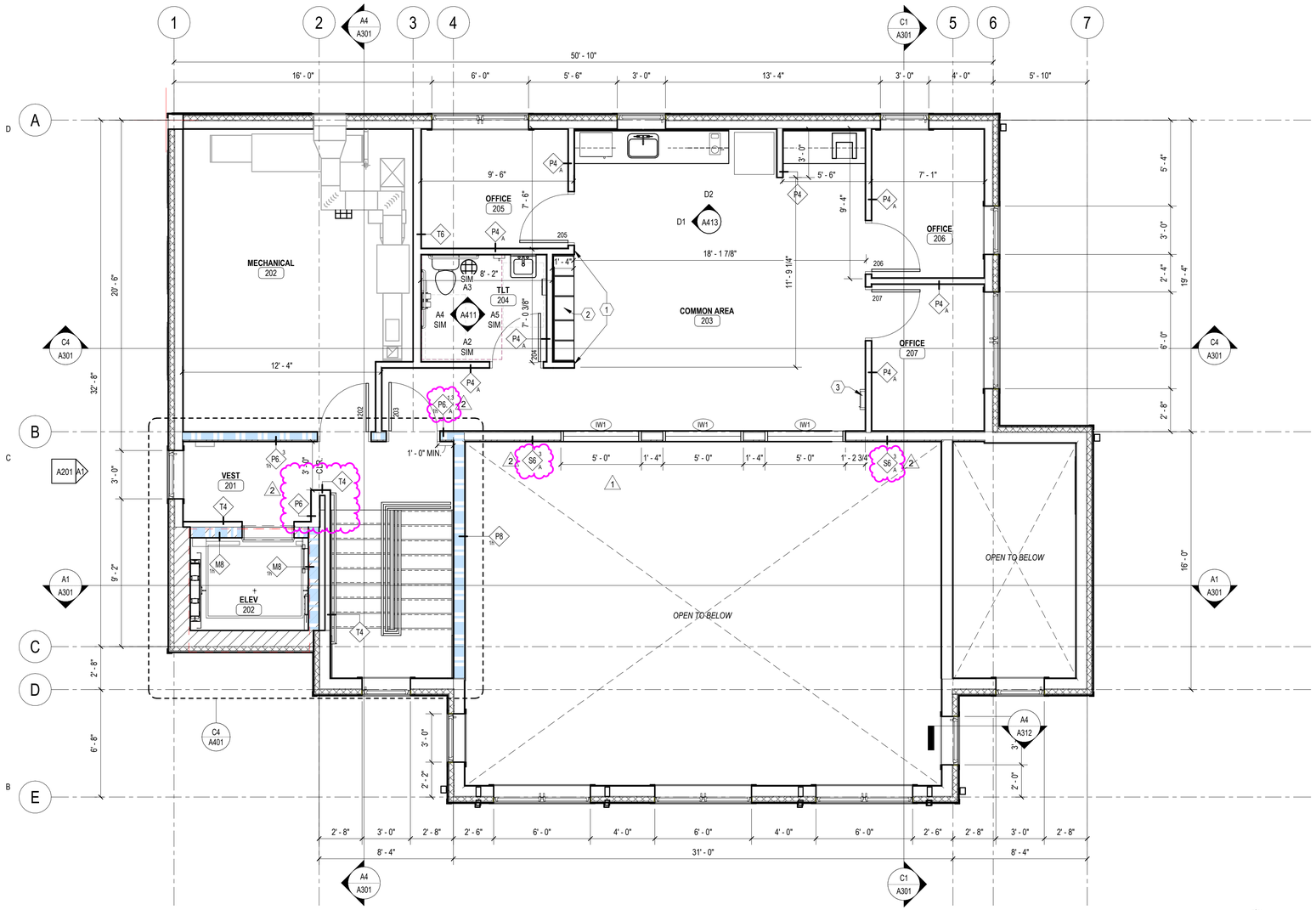
1801 E. SKYLINE PARKWAY
DULUTH, MN

DRAWING TITLE:
SCHEDULES

DRAWN BY: WJD
CHECKED BY: GMC
PROJ. NO: 150582
DRAWING NO: S601



A1 A103 UPPER LEVEL FLOOR PLAN

1/4" = 1'-0"

0'-0" 2'-0" 4'-0" 8'-0"

GENERAL SHEET NOTES

A. GENERAL NOTES APPLY TO ALL DRAWING SHEETS.

B. COORDINATE THIS ARCHITECTURAL PLAN WITH PLANS BY ALL OTHER DISCIPLINES IN THE DOCUMENTS, SUCH AS CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION PLANS, AND OTHERS AS NECESSARY. NOTE: SYMBOLS USED IN PLANS BY OTHER DISCIPLINES MAY DIFFER FROM ARCHITECTURAL SYMBOLS.

C. REFER TO THE CODE ANALYSIS ON SHEET ***G003*** FOR REQUIRED FIRE RATINGS, TYPES AND LOCATIONS OF RATED ASSEMBLIES.

D. ALL OPENINGS CUT, PENETRATIONS MADE, OR EQUIPMENT INSTALLED IN FIRE RATED ASSEMBLIES SUCH AS WALLS, PARTITIONS, FLOORS, CEILINGS, ETC. SHALL BE RESTORED, SEALED, FIRESTOPPED, OR OTHERWISE CONSTRUCTED TO MAINTAIN THE INTEGRITY AND FIRE RATING OF THE ASSEMBLY TO THE FULL SATISFACTION OF THE ARCHITECT, ENGINEER, BUILDING OFFICIAL AND OWNER. THE GENERAL CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR THIS WORK.

E. TYPICAL INTERIOR PARTITION IS P4 WALL TYPE UNLESS NOTED OTHERWISE. REFER TO WALL TYPES ON SHEET ***A506***

F. TYPICAL INTERIOR FURRING PARTITION IS T4 UNLESS NOTED OTHERWISE. REFER TO WALL TYPES ON SHEET ***A506***

G. DIMENSIONS OF INTERIOR WALLS ARE TO FACE OF STUD, FACE OF CMU, FACE OF CONCRETE, OR FACE OF EXISTING WALL UNLESS NOTED OTHERWISE.

H. DIMENSIONS OF EXTERIOR WALLS ARE TO EXTERIOR FACE OF SHEATHING, OR EXTERIOR FACE OF CMU OR CONCRETE UNLESS NOTED OTHERWISE.

I. AT "ALIGN" NOTE, FINISH FACE OF WALLS TO ALIGN

J. INSTALL ACOUSTIC BATT INSULATION IN ALL RESTROOM WALLS AND WALLS CONTAINING PLUMBING PIPES.

K. REFER TO ENLARGED PLANS, WHEN PROVIDED, FOR ADDITIONAL INFORMATION TO SUPPLEMENT THE FLOOR PLANS.

L. SEE SHEET ***G005*** FOR STANDARD AND ACCESSIBLE MOUNTING HEIGHTS OF FIXTURES AND ACCESSORIES.

M. REFER TO PLUMBING PLANS FOR FLOOR DRAINS AND CLEANOUTS.

N. SEE ROOM FINISH SCHEDULE FOR ROOMS WHERE WINDOW TREATMENTS ARE TO BE INSTALLED

O. PROVIDE METAL AND/OR FIRE-RESISTANT WOOD BLOCKING AT ALL WALL MOUNTED FIXTURES, FURNITURE, EQUIPMENT, ACCESSORIES, AND OTHER SPECIALTIES.

P. OWNER SUPPLIED FURNITURE AND EQUIPMENT SHOWN AS DASHED. NOT IN CONTRACT UNLESS NOTED OTHERWISE.

Q. ALL EXPOSED PIPES, VENTS, AND CONDUIT PENETRATING WALLS, FLOORS, OR CEILINGS SHALL HAVE FINISHED TRIM RINGS (ESCUTCHEONS).

R. FIRESTOP AROUND MECHANICAL AND ELECTRICAL EQUIPMENT, ETC. WITH UL APPROVED FIRESTOPPING MATERIAL PER CODE AT ALL PENETRATIONS IN NEW AND EXISTING FIRE RATED WALLS OR FLOORS.

S. ALL NEW AND EXISTING GYPSUM BOARD SURFACES WITHIN THE CONSTRUCTION LIMITS TO RECEIVE PAINT UNLESS NOTED OTHERWISE.

T. EXTERIOR LANDINGS, STOOPS, BALCONIES, AND PORCHES SHALL BE LEVEL ACROSS DOORWAYS AND SHALL SLOPE AWAY FROM THE BUILDING AT 1/4" PER FOOT.

U. EXISTING STRUCTURE LOCATIONS ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY THE OWNER. FIELD VERIFY AS REQUIRED.

V. INSTALL ACCESS PANELS IN GYPSUM BOARD CEILINGS AS REQUIRED TO PERFORM WORK. PAINT ACCESS PANELS TO MATCH ADJACENT SURFACE. COORDINATE ACCESS PANEL LOCATIONS WITH MECHANICAL.

KEYED SHEET NOTES

1 ALIGN
2 STORAGE CUBBIES, SEE ELEVATIONS
3 FIRE EXTINGUISHER CABINET
4 ELEVATOR SUMP PIT. COORD. W/ MECH. & STRUCT.
5 MARKERBOARD
6 OUTDOOR WATER COOLER, SEE MECH
7 WALL MOUNTED TV BY OWNER, PROVIDE BLOCKING
8 AUTO DOOR OPENER, COORD WITH ELECTRICAL
9 WALL ACCESS PANEL, COORD WITH MECHANICAL
10 AUTOMATIC EXTERNAL DEFIBULATOR
11 ELECTRICAL FLOOR BOX

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CLIENT:
CITY OF DULUTH

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DULUTH, MN 55802

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
2	3/18/2026	ADDENDUM 02
1	03/04/2026	ADDENDUM 01

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Minnesota.

Signature:

Typed or Printed Name: BRANDEE NESS LIAN

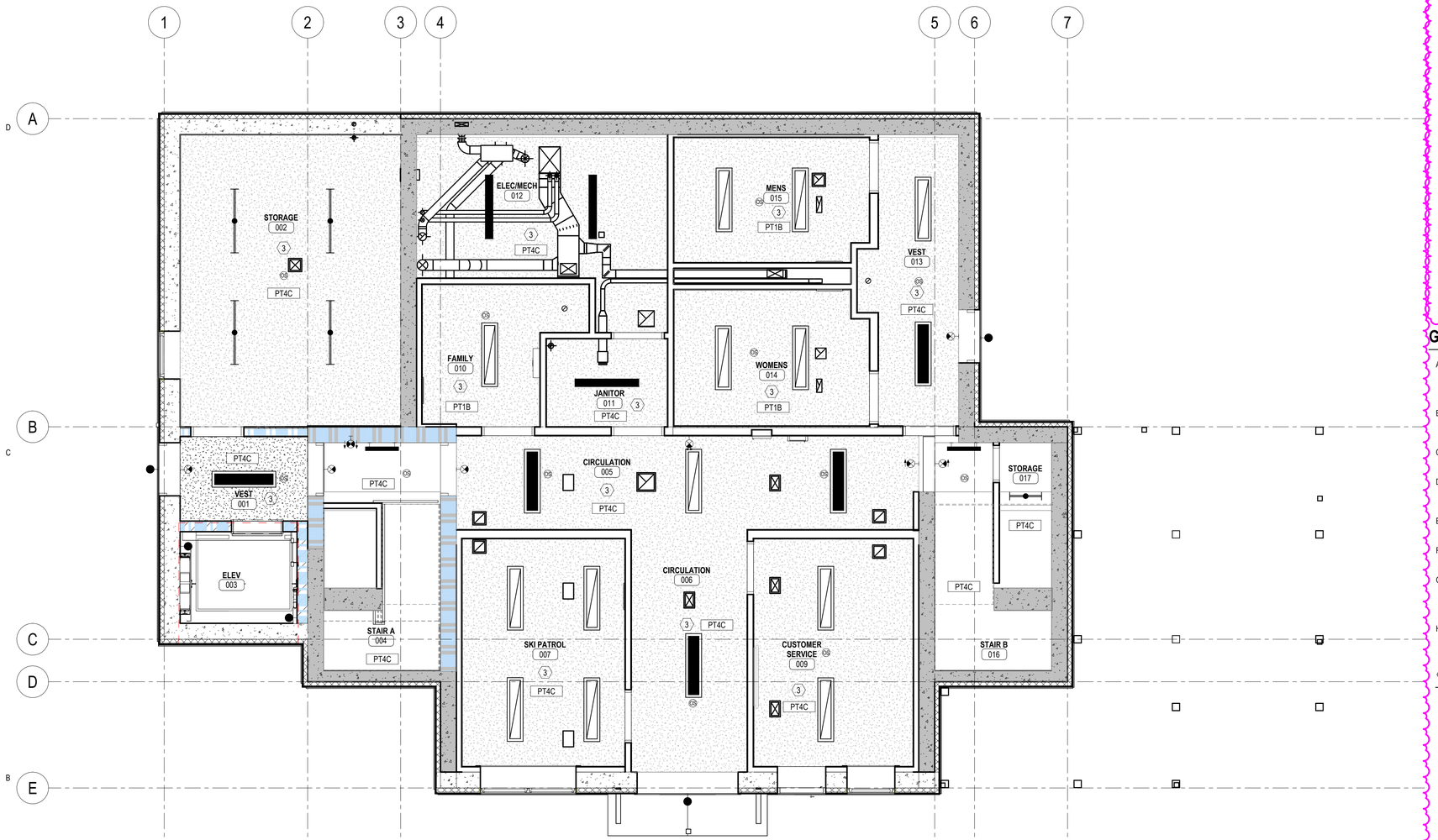
Date: 02/12/2026 License Number: 42859

PROJECT NAME:
CHESTER BOWL CHALET

1801 E. SKYLINE PARKWAY
DULUTH, MN

DRAWING TITLE:
UPPER LEVEL FLOOR PLAN

DRAWN BY: XXX
CHECKED BY: BNL
PROJ. NO: 150582
DRAWING NO: **A103**



REFLECTED CEILING PLAN LEGEND ⚠1

NOTE: NOT ALL SYMBOLS MAY BE USED ON EACH PLAN / DRAWING;
REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL SYMBOLS.

- NEW ACOUSTICAL CEILING TILE SYSTEM;
- GYPSUM BOARD SOFFIT / CEILING SYSTEM
- ACCESS PANEL
- MECHANICAL SUPPLY DIFFUSER
- MECHANICAL RETURN GRILLE
- MECHANICAL EXHAUST GRILLE
- 0' - 00" AFF GYP — CEILING HEIGHT /CEILING FINISH
- 1X4 LIGHT FIXTURE
- 2X4 LIGHT FIXTURE
- 2X2 LIGHT FIXTURE
- HANGING LIGHT FIXTURE
- CEILING MOUNTED FAN

GENERAL SHEET NOTES

A. MECHANICAL AND ELECTRICAL INFORMATION SHOWN IS INTENDED ONLY TO COMMUNICATE DESIGN INTENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR DETAILED INFORMATION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES NOTED PRIOR TO COMMENCEMENT OF WORK.

B. COORDINATE ALL CEILING MOUNTED EQUIPMENT SUPPORTS, DEVICE LOCATIONS, CLEARANCES, ETC. WITH EQUIPMENT INSTALLERS AND SUPPLIERS PRIOR TO INSTALLATION.

C. ACOUSTICAL PANEL CEILING GRIDS OR PANELS SHALL BE CENTERED IN ROOMS UNLESS OTHERWISE NOTED OR DIMENSIONED.

D. ALL CEILING MOUNTED ITEMS (LIGHT FIXTURES, SPRINKLER HEADS, SPEAKERS, ETC.) SHALL BE CENTERED IN ACOUSTICAL CEILING PANELS OR GYPSUM BOARD SOFFITS UNLESS OTHERWISE NOTED OR DIMENSIONED.

E. SPACE LIGHT FIXTURES EVENLY IN ROOMS, BAYS, SPACES, ETC. AND CENTER BETWEEN EXPOSED STRUCTURAL ELEMENTS WHERE APPROPRIATE.

F. DIMENSIONS TO CEILING-INSTALLED ITEMS ARE TO CENTERLINE OF FIXTURE OR EQUIPMENT UNLESS NOTED OTHERWISE.

G. LOCATE CONTROL JOINTS IN GYPSUM BOARD CEILINGS, SOFFITS, BULKHEADS, AND FASCIAS AS INDICATED ON DRAWINGS OR AS SPECIFIED AND TO ALIGN WITH THOSE IN WALLS BELOW. VERIFY PROPOSED LAYOUT WITH ARCHITECT PRIOR TO INSTALLATION.

H. PAINT ALL CONDUITS, DUCTWORK, SUPPORTS, HANGERS, ETC. THAT WILL REMAIN EXPOSED TO VIEW. MATCH COLOR INDICATED FOR STRUCTURE UNLESS NOTED OTHERWISE.

(#) KEYED SHEET NOTES

1 HANGING LIGHT FIXTURE, PAINT FIXTURE JUCTION BOX TO MATCH CEILING - REFER TO ELECTRICAL

2 CEILING MOUNTED FAN - REFER TO MECHANICAL

3 GYPSUM CEILING ATTACHED TO UNDERSIDE OF STRUCTURE

4 HVAC DIFFUSER COLOR SELECTION TO COORDINATE WITH WOOD CEILING. REFER TO MECHANICAL

⚠1 A1 / A121 **LOWER LEVEL REFLECTED CEILING PLAN**
1/4" = 1'-0"

0'-0" 2'-0" 4'-0" 8'-0"

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CITY OF DULUTH

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DULUTH, MN 55802

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	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	3/18/2026	ADDENDUM 02

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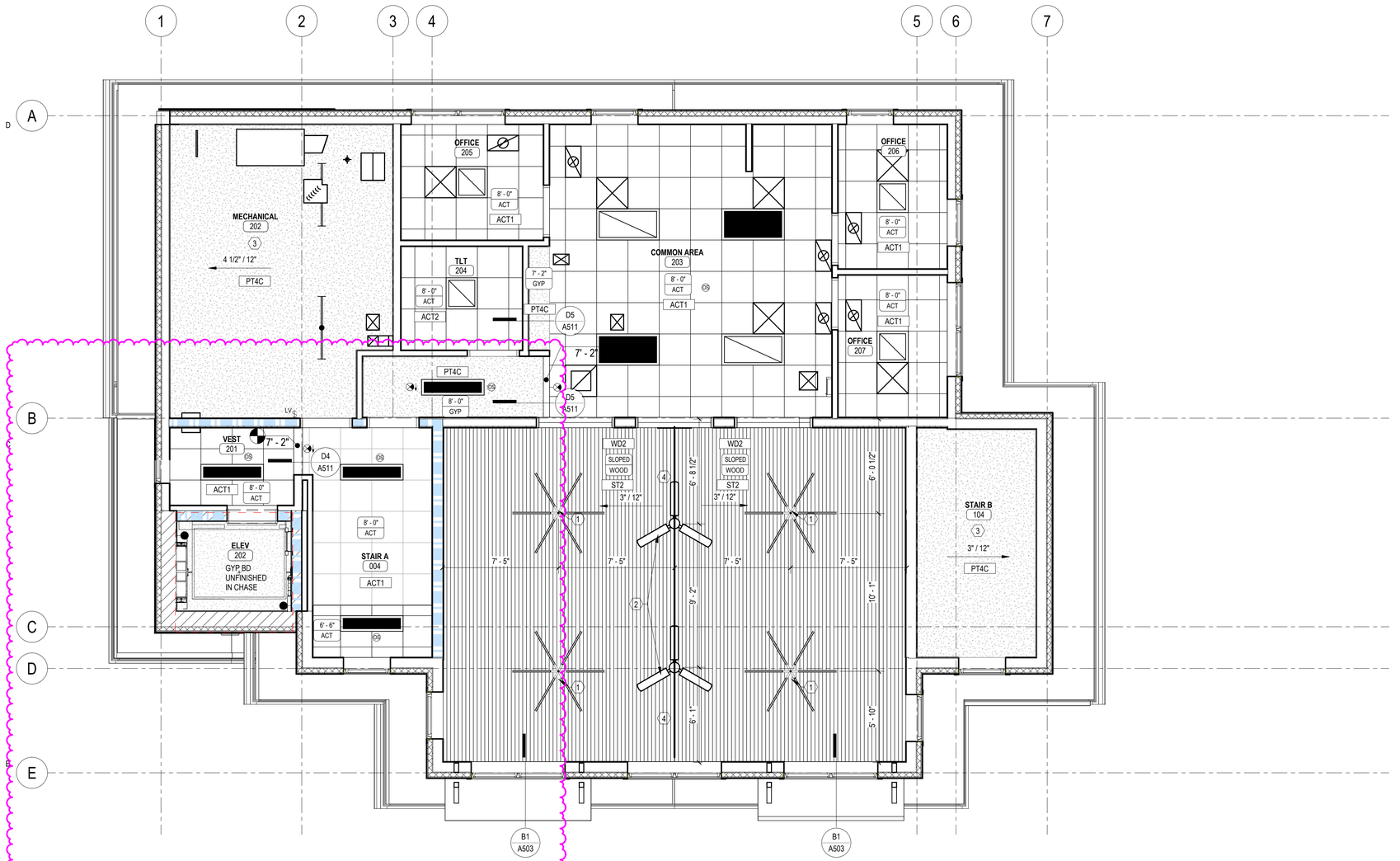
Signature:
Typed or Printed Name: BRANDEE NESS LIAN
Date: 02/12/2026 License Number: 42859

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY
DULUTH, MN

DRAWING TITLE:
LOWER LEVEL REFLECTED CEILIING PLAN

DRAWN BY: XXX
CHECKED BY: BNL
PROJ. NO: 150582
DRAWING NO: **A121**



A1 UPPER LEVEL REFLECTED CEILING PLAN
A123 1/4" = 1'-0"

0'-0" 2'-0" 4'-0" 8'-0"

REFLECTED CEILING PLAN LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED ON EACH PLAN / DRAWING; REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL SYMBOLS.

- NEW ACOUSTICAL CEILING TILE SYSTEM;
- GYPSUM BOARD SOFFIT / CEILING SYSTEM
- ACCESS PANEL
- MECHANICAL SUPPLY DIFFUSER
- MECHANICAL RETURN GRILLE
- MECHANICAL EXHAUST GRILLE
- 0' - 00" AFF GYP — CEILING HEIGHT /CEILING FINISH
- 1X4 LIGHT FIXTURE
- 2X4 LIGHT FIXTURE
- 2X2 LIGHT FIXTURE
- HANGING LIGHT FIXTURE
- CEILING MOUNTED FAN

GENERAL SHEET NOTES

A. MECHANICAL AND ELECTRICAL INFORMATION SHOWN IS INTENDED ONLY TO COMMUNICATE DESIGN INTENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR DETAILED INFORMATION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES NOTED PRIOR TO COMMENCEMENT OF WORK.

B. COORDINATE ALL CEILING MOUNTED EQUIPMENT SUPPORTS, DEVICE LOCATIONS, CLEARANCES, ETC. WITH EQUIPMENT INSTALLERS AND SUPPLIERS PRIOR TO INSTALLATION.

C. ACOUSTICAL PANEL CEILING GRIDS OR PANELS SHALL BE CENTERED IN ROOMS UNLESS OTHERWISE NOTED OR DIMENSIONED.

D. ALL CEILING MOUNTED ITEMS (LIGHT FIXTURES, SPRINKLER HEADS, SPEAKERS, ETC.) SHALL BE CENTERED IN ACOUSTICAL CEILING PANELS OR GYPSUM BOARD SOFFITS UNLESS OTHERWISE NOTED OR DIMENSIONED.

E. SPACE LIGHT FIXTURES EVENLY IN ROOMS, BAYS, SPACES, ETC. AND CENTER BETWEEN EXPOSED STRUCTURAL ELEMENTS WHERE APPROPRIATE.

F. DIMENSIONS TO CEILING-INSTALLED ITEMS ARE TO CENTERLINE OF FIXTURE OR EQUIPMENT UNLESS NOTED OTHERWISE.

G. LOCATE CONTROL JOINTS IN GYPSUM BOARD CEILINGS, SOFFITS, BULKHEADS, AND FASCIAS AS INDICATED ON DRAWINGS OR AS SPECIFIED AND TO ALIGN WITH THOSE IN WALLS BELOW. VERIFY PROPOSED LAYOUT WITH ARCHITECT PRIOR TO INSTALLATION.

H. PAINT ALL CONDUITS, DUCTWORK, SUPPORTS, HANGERS, ETC. THAT WILL REMAIN EXPOSED TO VIEW. MATCH COLOR INDICATED FOR STRUCTURE UNLESS NOTED OTHERWISE.

KEYED SHEET NOTES

1 HANGING LIGHT FIXTURE. PAINT FIXTURE JUCTION BOX TO MATCH CEILING - REFER TO ELECTRICAL

2 CEILING MOUNTED FAN - REFER TO MECHANICAL

3 GYPSUM CEILING ATTACHED TO UNDERSIDE OF STRUCTURE

4 HVAC DIFFUSER COLOR SELECTION TO COORDINATE WITH WOOD CEILING. REFER TO MECHANICAL

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1801 E. SKYLINE PARKWAY
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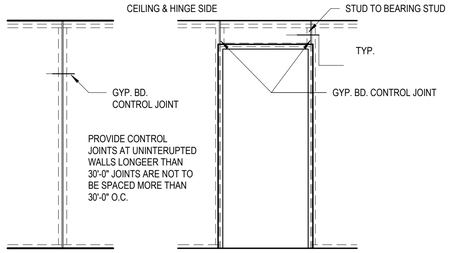
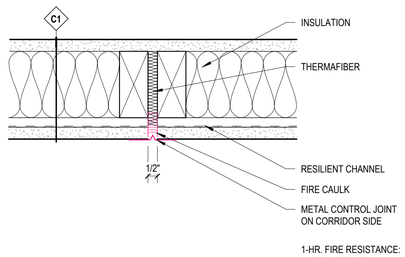
DRAWING TITLE:
UPPER LEVEL REFLECTED CEILING PLAN

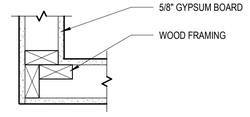
DRAWN BY: XXX
CHECKED BY: BNL
PROJ. NO: 150582
DRAWING NO: A123



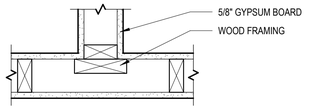
D1 CONTROL JOINT @ WALL/DOOR
A510 3/8" = 1'-0"



1-HR. FIRE RESISTANCE: WH-651-0318.1 SIM.

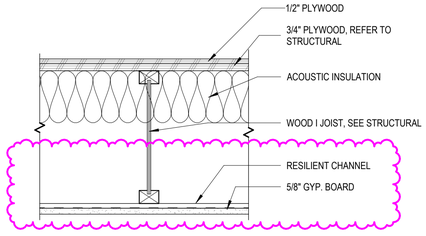


FRAMING @ CORNER



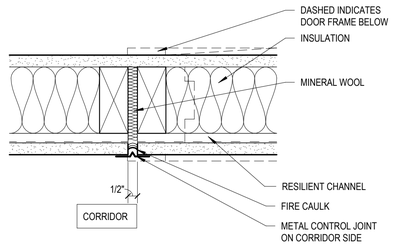
FRAMING @ INTERSECTION

D2 FRAMING DETAILS - WOOD
A510 1 1/2" = 1'-0"

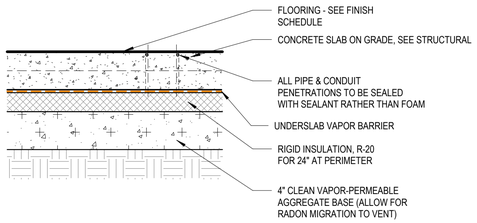


RATING	REFERENCE ASSEMBLIES	STC:	IIC:
		54	50

C1 CONTROL JOINT IN WOOD STUD WALL
A510 3" = 1'-0"

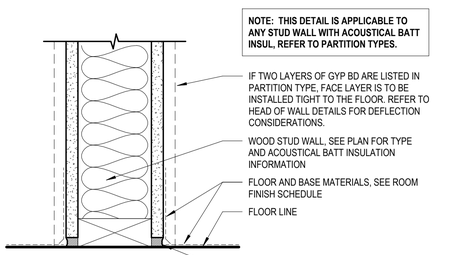


C2 FLOOR-CEILING ASSEMBLY
A510 1 1/2" = 1'-0"

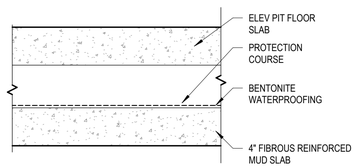


RATING	REFERENCE ASSEMBLIES	STC:	IIC:
NOT RATED	N/A		-

B1 CONTROL JNT IN WOOD STUD WALL @ DOOR
A510 3" = 1'-0"



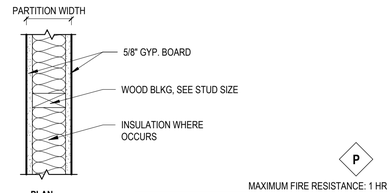
B2 SLAB ON GRADE - TYPICAL
A510 1 1/2" = 1'-0"



RATING	REFERENCE ASSEMBLIES	STC:	IIC:
NOT RATED	N/A		-

A1 BASE OF ACOSTIC STUD WALL
A510 3" = 1'-0"

A2 ELEVATOR PIT FLOOR
A510 1 1/2" = 1'-0"

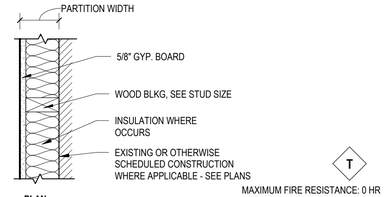


PLAN

MAXIMUM FIRE RESISTANCE: 1 HR

WOOD STUD - 1 LAYER GYP. BOARD EACH SIDE

PARTITION TYPE	STUD SIZE	PARTITION WIDTH	STC RATING INSUL	STC RATING NO INSUL	SOUND TEST W/ INSUL	FIRE TEST	COMMENTS
P4	2X4	4 3/4"	40	34	BBN-700725	U305	
P6	2X6	6 3/4"	46	40	BBN-700725	U305	
P8	2X6	8 3/4"	46	40	BBN-700725	U305	

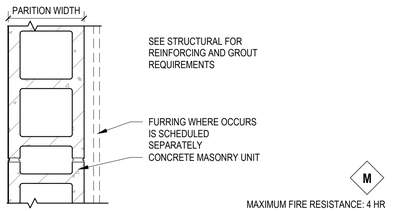


PLAN

MAXIMUM FIRE RESISTANCE: 0 HR

WOOD STUD - 1 LAYER GYP. BOARD ONE SIDE

PARTITION TYPE	STUD SIZE	PARTITION WIDTH	STC RATING INSUL	STC RATING NO INSUL	SOUND TEST W/ INSUL	FIRE TEST	COMMENTS
T2	2X2	2 1/8"				--	
T4	2X4	4 1/8"				--	
T6	2X6	6 1/8"				--	



PLAN

MAXIMUM FIRE RESISTANCE: 4 HR

CONCRETE MASONRY UNIT

PARTITION TYPE	STUD SIZE	PARTITION WIDTH	STC RATING INSUL	STC RATING NO INSUL	SOUND TEST W/ INSUL	FIRE TEST	COMMENTS
M4	5 5/8"	4"				U901	UP TO 4HR
M8	7 5/8"	8"				U901	UP TO 4HR

PLAN

MAXIMUM FIRE RESISTANCE: 2 HR

WOOD STUD - 1 LAYER GYP. BOARD EACH SIDE

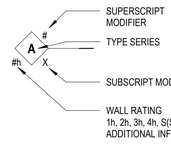
PARTITION TYPE	STUD SIZE	PARTITION WIDTH	STC RATING INSUL	STC RATING NO INSUL	SOUND TEST W/ INSUL	FIRE TEST	COMMENTS
S6	2X6	8"	62		USG-810219	U301	

PARTITION TYPE NOTES

THE FOLLOWING NOTES APPLY TO ALL WALL TYPES.

1. ALL WOOD STUDS TO BE PLACED 16 " O.C., U.N.O. REFER TO THE STRUCTURAL DRAWINGS FOR LOCATIONS AND SPECIAL REQUIREMENTS FOR STUD SPACING ON ALL BEARING WALL ASSEMBLIES.
2. PARTITION STANDARDS SHOWN ARE CONSIDERED MINIMUM STANDARDS. WHERE CONDITIONS OF THE WORK EXCEED THE MANUFACTURER 'S RECOMMENDED LIMITS, REINFORCE THE WALL OR PARTITION AS REQUIRED.
3. FOLLOW STRUCTURAL DETAILS, NOTES AND DRAWINGS FOR REINFORCING AND GROUTING IF THEY DIFFER FROM WHAT IS SHOWN IN THE WALL TYPE DETAILS.
4. WHERE A CLEAR DIMENSION IS NOTED OR REQUIRED, DIMENSION SHALL BE FROM FACE OF WALL FINISH. REFER TO GENERAL SHEET NOTES FOR TYPICAL DIMENSION INFORMATION.
5. WHERE PARTITIONS AND/ OR WALLS ALIGN WITH FURRING, POSITION FURRING TO MAINTAIN A FLUSH FINISH ALONG THE COPLANAR EDGES.
6. PROVIDE BLOCKING OR BACKER MATERIAL WITHIN WALL FOR ALL WALL MOUNTED EQUIPMENT SHOWN OR NOTED IN THE CONSTRUCTION DOCUMENTS.
7. PROVIDE WATER RESISTANT GYPSUM BOARD IN AREAS THAT SURROUND JANITORIAL SINKS AND AS REQUIRED BY CODE.
8. PROVIDE TILE BACKER BOARD IN AREAS SCHEDULED TO RECEIVE TILE FINISH.
9. SEE LIFE SAFETY PLANS FOR SMOKE AND FIRE RESISTANCE RATING REQUIREMENTS. RATINGS NOTED ON WALL TYPES ARE MAXIMUMS FOR THE ASSEMBLY AND MAY EXCEED THE ACTUAL FIRE RATINGS REQUIRED FOR THE PROJECT.
10. AT ACOUSTICALLY RATED WALLS PROVIDE ACOUSTIC SEALANT AT ALL PENETRATIONS AND SOUND BATT INSULATION IN THE CAVITY.
11. AT FIRE RATED WALLS/ PARTITIONS PROVIDE CAVITY INSULATION AS REQUIRED BY THE SCHEDULED FIRE TEST ASSEMBLY DESIGNATION.
12. AT FIRE RATED ASSEMBLIES PROVIDE TYPE 'X' GYPSUM BOARD.
13. ALL OPENINGS CUT, PENETRATIONS MADE, OR EQUIPMENT INSTALLED IN FIRE RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS, SHALL BE RESTORED, SEALED, FIRE-STOPPED OR OTHERWISE CONSTRUCTED OR REPAIRED TO MAINTAIN THE INTEGRITY OF THE FIRE RATING TO THE FULL SATISFACTION OF THE ARCHITECT, ENGINEER, AND BUILDING OFFICIAL. THE GENERAL CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR THIS WORK.
14. INSTALLED WALL ASSEMBLIES MUST COMPLY WITH THE TESTED ASSEMBLY NOTED FOR THAT WALL TYPE. ONLY PRODUCTS NOTED IN THE TESTED ASSEMBLY ARE ACCEPTABLE FOR USE. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO SHOW COMPLIANCE WITH THE ASSEMBLY NOTED, OR PROPOSE AN EQUIVALENT TESTED ASSEMBLY USING THE DESIRED MATERIALS, FOR THE ARCHITECT, ENGINEER, AND BUILDING OFFICIAL TO REVIEW AND APPROVE.
15. DO NOT INSTALL ELECTRICAL BOXES, OR OTHER COMMUNICATION / DATA BOXES BACK-TO-BACK IN THE SAME STUD SPACE.
16. PROVIDE MANUFACTURER APPROVED TERMINATIONS, FLASHING'S, AND ACCESSORIES FOR WATERPROOFING SYSTEMS. SEE APPROPRIATE SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION.

PARTITION TAG:



PARTITION SUBSCRIPT KEY:

A - ACOUSTICALLY RATED - FILL WITH ACOUSTIC INSULATION

G - GROUT FILL

42" - NUMBER INDICATES TOP OF WALL ABOVE FINISHED FLOOR

NO SUBSCRIPT - EXTEND ENTIRE PARTITION TO STRUCTURE ABOVE - NO ACOUSTICAL INSULATION

PARTITION SUPERSCRIPT NOTES:

1. ADD LAYER(S) OF GYP TO ALIGN WALL FINISH WITH ADJACENT WALL
2. ADHERE ONE LAYER 5/8" GYP BOARD TO TAG SIDE
3. PLYWOOD FOR SHEAR ON TAG SIDE, REFER TO STRUCTURAL

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	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	3/18/2026	ADDENDUM 02

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Date: 02/12/2026 License Number: 42859

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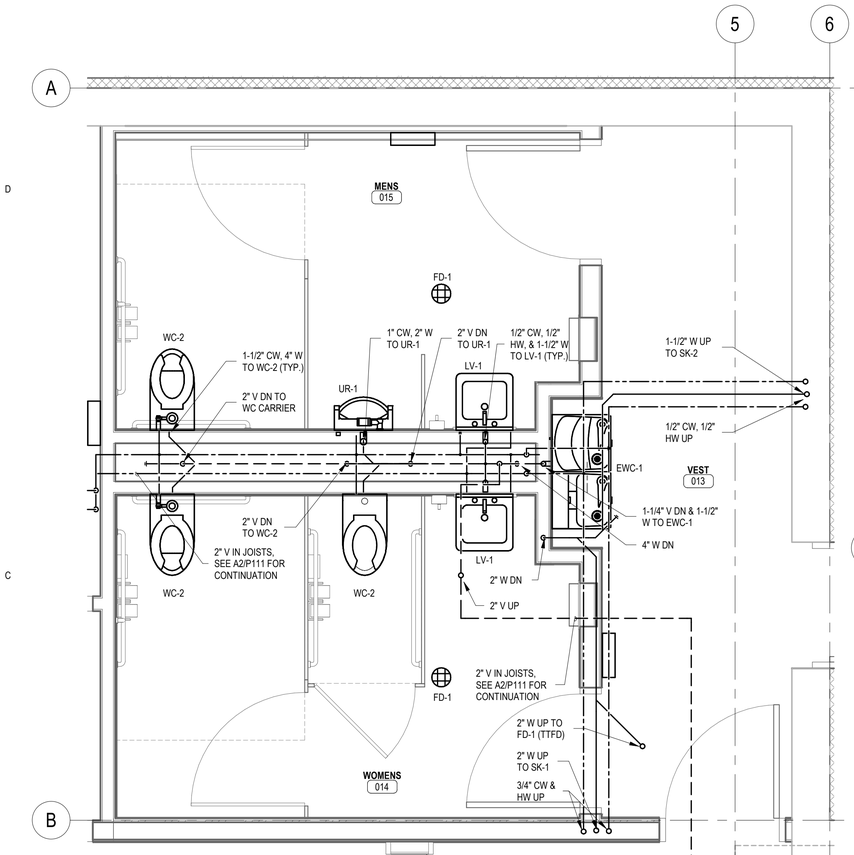
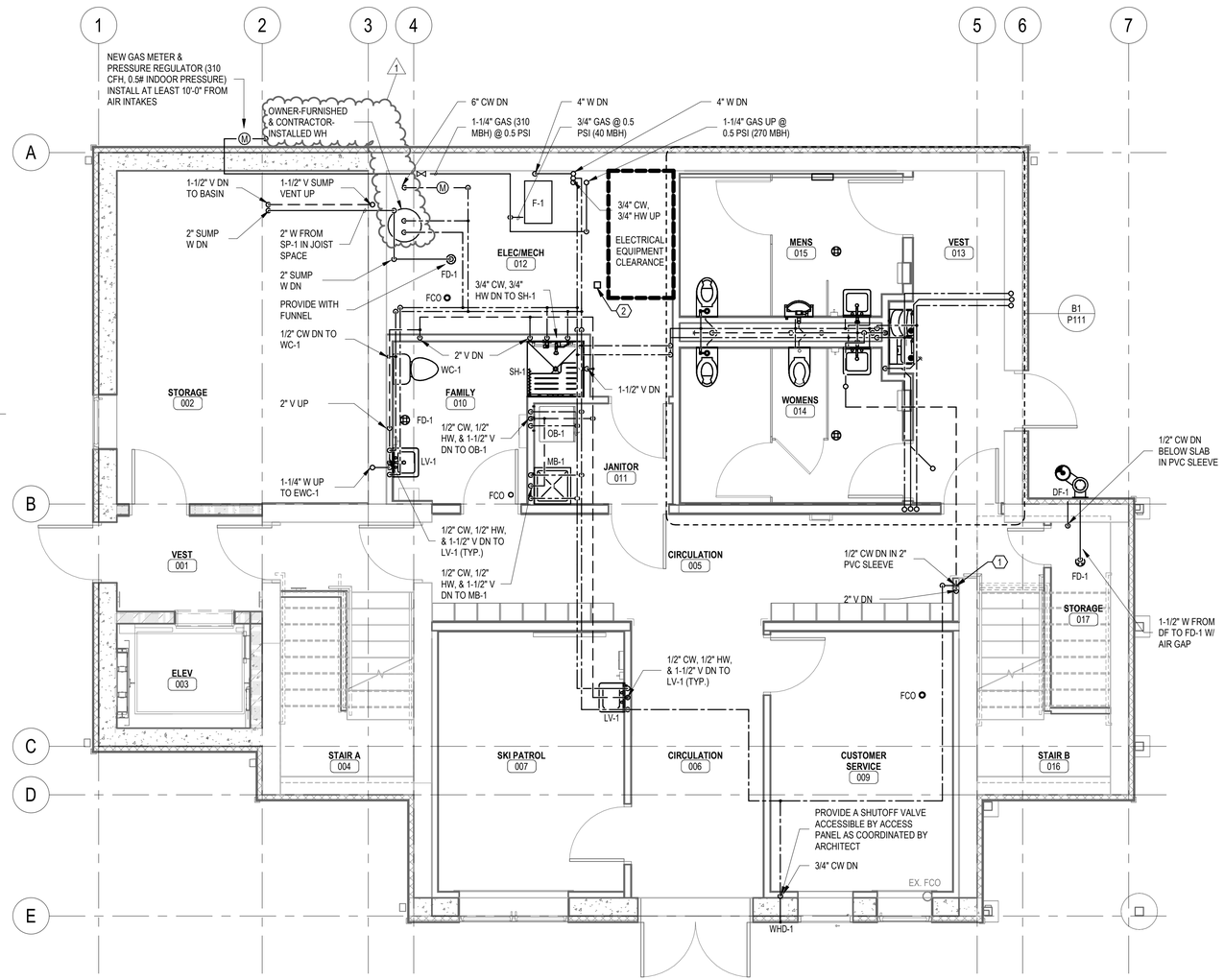
DULUTH, MN

DRAWING TITLE:
INTERIOR PARTITION TYPES, FLOOR ASSEMBLIES AND DETAILS

DRAWN BY: XXX
CHECKED BY: BNL
PROJ. NO: 150582
DRAWING NO: **A510**



B1 P111 **LOWER LEVEL RESTROOM PLUMBING PLAN**
1/2" = 1'-0"



A2 P111 **LOWER LEVEL PLUMBING PLAN**
1/4" = 1'-0"

GENERAL SHEET NOTES

A. ALL PLUMBING PIPING TO BE ROUTED WITHIN CEILING OR JOIST SPACES EXCEPT FOR ROOMS 011 & 012. MINIMIZE JOIST PENETRATIONS AND CONFIRM WITH STRUCTURAL ENGINEER BEFORE MODIFYING JOISTS IN ANY CAPACITY.

B. PROVIDE AND INSTALL ALL LAVATORIES WITH ASSE 1070 COMPLIANT THERMOSTATIC MIXING VALVES.

KEYED SHEET NOTES

1. PROVIDE COLD WATER PIPE TO EXTERIOR DRINKING FOUNTAIN WITH A SHUTOFF VALVE AND COMPRESSED AIR QUICK-CONNECT TO BLOW OUT THE BELOW-GRADE PIPING FOR WINTERIZING. PLACE SHUTOFF VALVE AND BLOWOUT CONNECTION NEAR FLOOR WITH A DRYWALL ACCESS PANEL. SEE ARCHITECTURAL PLANS OR SPECIFICATIONS FOR COORDINATION OF PANEL.

2. DIV 22 CONTRACTOR SHALL FURNISH THE TRANSFORMERS REQUIRED FOR SENSOR OPERATED WATER CLOSET FLUSH VALVES AND PROVIDE ALL LOW VOLTAGE WIRING BETWEEN THE TRANSFORMER AND FIXTURE TRIM. COORDINATE TRANSFORMER FINAL LOCATION WITH DIV 26 CONTRACTOR.

LHB
21 W. SUPERIOR ST., STE 500 | DULUTH, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

411 WEST 1ST STREET
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: ALEC J. ASHTON
Date: 02/12/2026 License Number: 57856

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
LOWER LEVEL PLUMBING PLAN

DRAWN BY: MJG
CHECKED BY: AJA
PROJ. NO: 150582
DRAWING NO: **P111**

Autodesk Docs://150582 Chester Bowl Chalet/150582 Chester Bowl MEP25.rvt
3/17/2026 8:19:40 AM

PLUMBING FIXTURE SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	DESCRIPTION	DOMESTIC WATER				SANITARY			NOTES
				COLD WATER		HOT WATER					
				FU	SIZE	FU	SIZE	DFU	DRAIN SIZE	VENT SIZE	
DF-1	MURDOCK	GYE14-L-SLPT	OUTDOOR WALL MOUNTED BOTTLER FILLER W/ ANGLED DRINKING FOUNTAIN AND SLOPE TOP IN GREEN	1	1/2"	0	0"	1	1 1/2"	1 1/2"	
EWC-1	ELKAY	LZSTL8WSSK	STAINLESS STEEL ADA COMPLIANT BI-LEVEL BOTTLE FILLER & WATER COOLER	0.5	1/2"	0	0"	0.5	1 1/2"	1 1/2"	
FD-1	ZURN	Z415B	CAST IRON FLOOR DRAIN W/ BRONZE TOP AND ADJUSTABLE COLLAR	0	0"	0	0"	2	<varies>	<varies>	
FD-2	ZURN	Z415B	CAST IRON DRY PAN FLOOR DRAIN W/ BRONZE TOP AND ADJUSTABLE COLLAR	0	0"	0	0"	2	4"	1 1/2"	
FS-1	ZURN	Z1900	12"x12" CAST IRON FLOOR SINK W/ ENAMEL COATING AND INTEGRAL STRAINER	0	0"	0	0"	2	2"	1 1/2"	
LV-1	AMERICAN STANDARD	9024004EC.020	20"x18" WALL HUNG WHITE VITREOUS CHINA LAVATORY W FAUCET HOLES 4" O.C.	1	1/2"	1	1/2"	1	1 1/2"	1 1/2"	NOTE 1
MB-1	ZURN	Z1986-25	24"x24" COMPOSITE MOLDED BASIN	1.5	3/4"	1.5	3/4"	3	2"	1 1/2"	NOTE 2
OB-1	OATEY	N/A	QUARTER TURN VALVE SUPPLY BOX CENTER OUTLET W/ HAMMER ARRESTORS	4	1/2"	4	1/2"	2	2"	1 1/2"	
SH-1	FREEDOM SHOWERS	APFQ3682BF75L	1-PIECE 36"x36"x82" WHITE FIBERGLASS ADA TRANSFER SHOWER	2	3/4"	2	3/4"	2	1 1/2"	1 1/2"	NOTE 3
SK-1	ELKAY	LRAD221955	SINGLE BOWL STAINLESS STEEL DROP IN SINK W/ 4" HOLE, LKAV3031 FAUCET	1.5	1/2"	1.5	1/2"	2	2"	1 1/2"	NOTE 4
SK-2	ELKAY	CHS1716SACMC	16-3/4"x15-1/2"x13" WALL HUNG STAINLESS STEEL HAND WASHING SINK W/ AUTOMATIC SENSING FAUCET	2	1/2"	2	1/2"	2	2"	1 1/2"	
SK-3	ELKAY	D12522	STAINLESS STEEL ADA COMPLIANT DROP IN SINK 19"x18"x6.5" W FAUCET HOLES 4" O.C	1.5	1/2"	1.5	1/2"	2	2"	1 1/2"	NOTE 4
UR-1	AMERICAN STANDARD	6590001.020	WHITE VITREOUS CHINA URINAL, WASHBROOK, W/ 0.5 GPF TOP SPUD SENSOR FLUSH VALVE	5	1 1/4"	0	0"	6	2"	1 1/2"	
WC-1	AMERICAN STANDARD	2989101.020	WHITE VITREOUS CHINA SKIRTED TWO-PIECE FLUSH TANK ELONGATED TOILET, CADET, 1.28 GPF	2.5	1/2"	0	0"	6	4"	2"	
WC-2	AMERICAN STANDARD	3351101.020	WHITE VITREOUS CHINA WALL-HUNG TOILET W/ HARD-WIRED AUTOMATIC 1.28 GPF FLUSH VALVE	40	1 1/2"	0	0"	6	4"	2"	
WHD-1	WOODFORD	B65	FREEZELESS WALL HYDRANT W/ VACUUM BREAKER & WALL BOX	2.5	1/2"	0	0"	0	0"	0"	

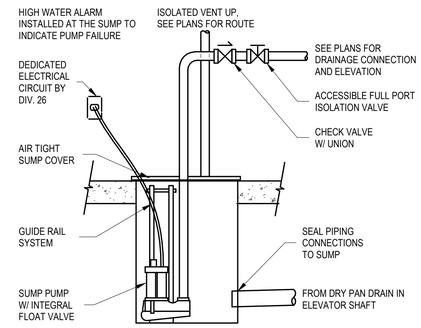
NOTE 1: PROVIDE W/ 0.5 GPM CHROME LAVATORY FAUCET WITHOUT LEVEL HANDLE SUCH AS DELTA 520-HGM-DST.
NOTE 2: PROVIDE W/ STAINLESS STEEL DRAIN W/ STRAINER & SERVICE FAUCET.
NOTE 3: PROVIDE W/ LEFT SIDE VALVE WALL, FOLD-UP L SHAPED SHOWER SEAT, GRAB BARS, CURTAIN ROD, & CENTER DRAIN. PROVIDE SHOWER HEAD AS STAINLESS STEEL ADA-COMPLIANT 1.75 GPM FIXTURE W/ OVERHEAD & HANDHELD FIXTURES. SHOWER VALVE BODY TO INCLUDE INTEGRAL STOPS & ASSE 1016 COMPLIANCE
NOTE 4: PROVIDE W/ FAUCET(S) AS 1.75 GPM MAX STAINLESS STEEL PULL DOWN FAUCET SUCH AS DELTA 19868LF W/ ESCUTCHEON.

WATER HEATER SCHEDULE (OWNER-FURNISHED & CONTRACTOR-INSTALLED)

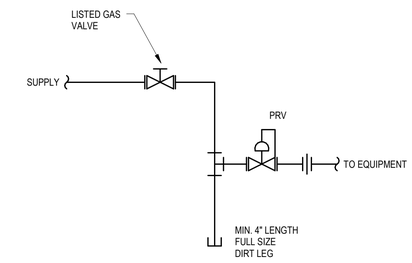
UNIT NO.	MANUFACTURER	MODEL	LOCATION	WATER STORAGE TEMP.	WATER DISCHARGE TEMP.	TEMP. RISE	ELECTRICAL REQUIREMENTS						NOTES
							LOAD						
							HP	A FLA	A MCA	WATTS	VOLTAGE	PHASE	
WH-1	A.O. SMITH	XE50T10H45U1	012	140 °F	120 °F	100 °F			29 A		208 V	1	

SUMP PUMP SCHEDULE

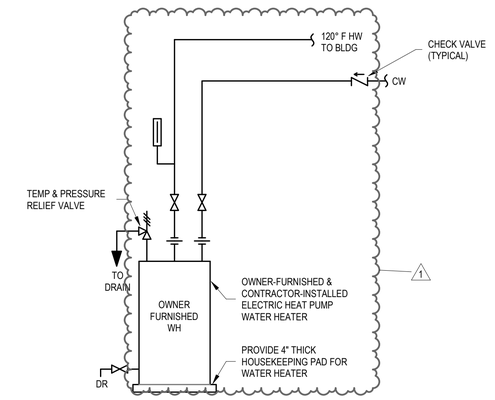
UNIT NO.	MANUFACTURER	MODEL	SERVES	MECHANICAL REQUIREMENTS		SUMP BASIN			ELECTRICAL REQUIREMENTS							NOTES
										LOAD						
				GPM	TOTAL HEAD	MANUFACTURER	DIAMETER	DEPTH	MOTOR RPM	HP	A FLA	A MCA	WATTS	VOLTAGE	PHASE	
SP-1	LIBERTY PUMPS	281-2	ELEVATOR SUMP	40.0 GPM	20	LIBERTY PUMPS	2' - 0"	7' - 0"	3450		8 A			120 V	1	1/2 HP



B3 P501 **ELEVATOR SUMP PUMP DETAIL**
NO SCALE



B4 P501 **GAS EQUIPMENT PIPING DETAIL**
NO SCALE



A4 P501 **WATER HEATER DETAIL - SINGLE - ELECTRIC**
NO SCALE

LHB
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NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: ALEC J. ASHTON
Date: 02/12/2026 License Number: 57856

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
PLUMBING DETAILS & SCHEDULES

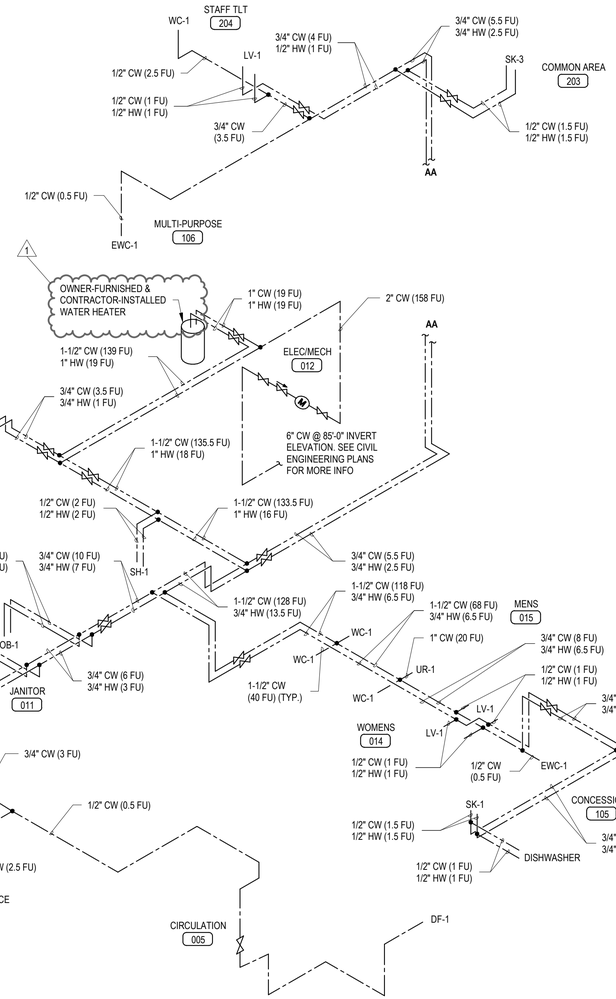
DRAWN BY: MJG
CHECKED BY: AJA
PROJ. NO: 150582
DRAWING NO: **P501**

GENERAL SHEET NOTES

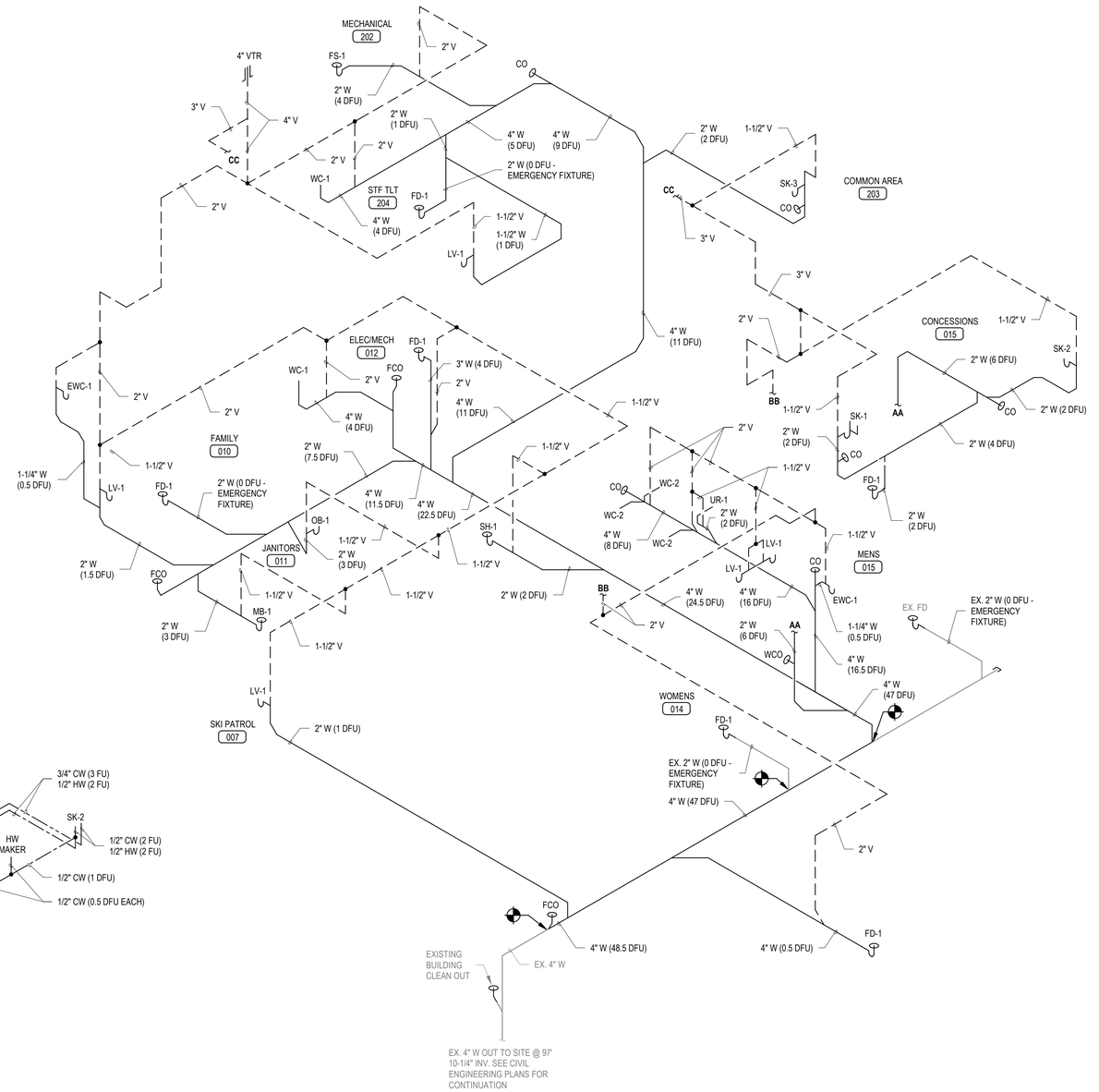
A. PVC SOLVENT WELD JOINTS MUST INCLUDE A PRIMER OF CONTRASTING COLOR TO THE PIPE AND CEMENT PER MINNESOTA PLUMBING CODE SECTION 705.6.2.

B. PIPE HANGERS AND SUPPORTS SHALL COMPLY WITH MINNESOTA RULES PART 4714.0313.

C. THE PLUMBING SYSTEM SHALL BE TESTED IN ACCORDANCE WITH MINNESOTA RULES, PARTS 47140609 & 4714.0712.



A1 P911 **DOMESTIC WATER RISER DIAGRAM**
NO SCALE



A3 P911 **SANITARY RISER DIAGRAM**
NO SCALE

LHB
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NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: ALEC J. ASHTON
Date: 02/12/2026 License Number: 57856

PROJECT NAME:
CHESTER BOWL
CHALET
1801 E. SKYLINE PARKWAY,
DULUTH, MN 55812

DRAWING TITLE:
PLUMBING RISER
DIAGRAMS

DRAWN BY: MJG
CHECKED BY: AJA
PROJ. NO: 150582
DRAWING NO:

P911

FURNACE SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	AIRFLOW RATE (CFM)	BACKUP GAS HEATING					COOLING COIL			ELECTRIC HEAT PUMP HEATING @ 17°F	DIMENSIONS			ELECTRICAL REQUIREMENTS						NOTES
					FUEL TYPE	INPUT MBH	OUTPUT MBH	STAGING	EFFICIENCY	LAT DB	LAT WB	TOTAL MBH @ 95°F	MBH	LENGTH	WIDTH	HEIGHT	HP	LOAD A FLA	LOAD A MCA	WATTS	VOLTAGE	PHASE	
F-1	TRANE	5TXC+S9V2B	011	900 CFM	GAS	40	38.8	2	95	60	58	23.8	14.7	1' - 6"	2' - 4"	4' - 4"		8 A			120 V	1	
F-2	TRANE	5TXC+S9X2B	202	1200 CFM	GAS	40	38.8	2	95	54	52	32.2	21	1' - 5 1/2"	2' - 4"	4' - 4"		9 A			120 V	1	
F-3	TRANE	5TXC+S9X2B	ATTIC	1200 CFM	GAS	60	58.2	2	95	54	52	32.2	21	1' - 8"	2' - 4"	4' - 8"		9 A			120 V	1	NOTE 1
F-4	TRANE	5TXC+S9V2B	ATTIC	900 CFM	GAS	40	38.8	2	95	60	58	23.8	14.7	2' - 4"	1' - 6"	4' - 4"		8 A			120 V	1	NOTE 1

1

NOTE 1: PROVIDE UNIT WITH AUXILIARY DRAIN PAN IN ACCORDANCE WITH SPECIFICATIONS.

ENERGY RECOVERY VENTILATOR SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	SUMMER CONDITIONS								WINTER CONDITIONS								ELECTRICAL REQUIREMENTS				NOTES
				OUTSIDE AIR	ROOM AIR			FRESH AIR			SUMMER EFFECTIVENESS %	OUTSIDE AIR		ROOM AIR			FRESH AIR			WINTER EFFECTIVENESS %	MCA	VOLTAGE	PHASE	
				DB	CFM	DB	WB	CFM	DB	WB		DB	WB	CFM	DB	WB	CFM	DB	WB					
ERV-1	FANTECH	HERO 120H	011	81 °F	100 CFM	76 °F	64.0 °F	115 CFM													1.0 A	120 V	1	NOTE 1
ERV-2	RENEWAIRE	HE10IN	204	81 °F	650 CFM	76 °F	64.0 °F	650 CFM	81 °F	67	60	-23	-23	650	70	53	650	38	33	64	3.9 A	208 V	1	NOTE 2

NOTES:
1. OPERATE UNIT BASED ON BUILDING OCCUPANCY SCHEDULE
2. ERV-2 TO USE PREMIUM CONTROLS TO OPERATE AS VARIABLE-AIR VOLUME UNIT.

1

DOAS COOLING COIL SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	SERVES	ROOM CONDITION COOLING DB	ROOM CONDITION COOLING WB	CFM	APD (IN. OF W.C.)	CAPACITY TOTAL COOLING CAPACITY (MBH)	CAPACITY SENSIBLE COOLING CAPACITY (MBH)	NOTES
CC-1	DAIKIN	5EN0906B	202	DEHUMIDIFICAITION	77	64	650 CFM	0.40	33.0	15	NOTE 1

1

NOTE 1: PROVIDE UNIT WITH AUXILIARY DRAIN PAN IN ACCORDANCE WITH SPECIFICATIONS.

AIR COOLED SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	REFRIGERANT	CAPACITIES COOLING OUTSIDE AIR (DB)	CAPACITIES COOLING RATED CAPACITY (MBH)	CAPACITIES HEATING OUTSIDE AIR	CAPACITIES HEATING RATED CAPACITY (MBH) @ 17°F	ELECTRICAL REQUIREMENTS LOAD HP	LOAD A FLA	LOAD A MCA	LOAD A WATTS	VOLTAGE	PHASE	NOTES
ODU-1	TRANE	5TWR4024A1000	R-454B	90	23.8	17 °F	14.7			13 A		208 V	1	
ODU-2	TRANE	5TWA4036A3000	R-454B	90	32.2	17 °F	21			17 A		208 V	3	
ODU-3	TRANE	5TWA4036A3000	R-454B	90	32.2	17 °F	21			17 A		208 V	3	
ODU-4	TRANE	5TWR4024A1000	R-454B	90	23.8	17 °F	14.7			13 A		208 V	1	
ODU-5	DAIKIN	DC6VSS3610A	R-32	90	36					22 A		208 V	1	

LOUVER SCHEDULE

UNIT NO.	SERVES	CFM	WIDTH	HEIGHT	FREE AREA (SQ. FT.)	MAX. FREE AREA VELOCITY	APD (IN. OF W.C.)	NOTES
L-1	FRESH AIR	650 CFM	2' - 0"	2' - 0"	1.64	400 FPM	0.04	NOTE 1
L-2	EXHAUST AIR	500 CFM	2' - 0"	2' - 0"	1.64	300 FPM	0.04	NOTE 1

NOTE 1: PROVIDE W/ AAMA 2605 COATING. COORDINATE COLOR WITH ARCHITECT.

2

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

2

UNIT NO.	MANUFACTURER	MODEL	DUTY	SIZE	VOLUME CONTROL	MATERIAL	FRAME TYPE	NOISE CRITERIA	FINISH	NOTES
A	TITUS	CT-580	SUPPLY	24" LINEAR	PLENUM MOUNTED	ALUMINUM	CEILING MOUNTED	<25 NC	WOOD GRAIN	NOTE 1
B	TITUS	OMNI-AA	SUPPLY	24"x24"	DUCT MOUNTED	ALUMINUM	LAY-IN	<25 NC	WHITE	
C	TITUS	301RL	SUPPLY	SEE PLANS	FACE ADJUSTABLE OBD	STEEL	SIDEWALL	<25 NC	WHITE	
D	TITUS	PXP-AA	RETURN	24"x24"	DUCT MOUNTED	ALUMINUM	LAY-IN	<30 NC	WHITE	
E	TITUS	350RL	RETURN	SEE PLANS	DUCT MOUNTED	STEEL	SIDEWALL	<30 NC	WHITE	
F	TITUS	PXP-AA	RETURN	24"x12"	DUCT MOUNTED	ALUMINUM	LAY-IN	<25 NC	WHITE	
G	TITUS	50F	EXHAUST	SEE PLANS	DUCT MOUNTED	ALUMINUM	SEE PLANS	<25 NC	WHITE	
H	FANTECH	MGS 6	RETURN	6" ROUND	DUCT MOUNTED	N/A	SIDEWALL	N/A	WHITE	
I	FAMCO	SWV6	SEE PLANS	6" ROUND	N/A	STEEL	SIDEWALL	N/A	GALVANIZED	

NOTE 1: PROVIDE W/ TYPE 11 BORDER & AG-35 ACCESSORY.

2

CEILING FAN SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	DUTY	MAX CFM	MAX. FAN RPM	FINISH	WEIGHT	ELECTRICAL REQUIREMENTS LOAD HP	LOAD A FLA	LOAD A MCA	WATTS	VOLTAGE	PHASE	NOTES
DF-1	BIG ASS FANS	MK-HK4-05	103	DESTRATIFICATION	7632 CFM	175	BAMBOO AIRFOILS, WHITE HARDWARE	15				25 W	120 V	1	NOTE 1
DF-2	BIG ASS FANS	MK-HK4-05	103	DESTRATIFICATION	7632 CFM	175	BAMBOO AIRFOILS, WHITE HARDWARE	15				25 W	120 V	1	NOTE 1

NOTE 1: PROVIDE W/ UNIVERSAL MOUNT AND 32" DOWNROD. DO NOT INCLUDE W/ LIGHTING OPTION. CONTROL VIA FIXED WALL MOUNT CONTROLLER.

ARCHITECTURAL WALL HEATER SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	MECHANICAL REQUIREMENTS CFM	MECHANICAL REQUIREMENTS MBH	DIMENSIONS LENGTH	DIMENSIONS WIDTH	DIMENSIONS HEIGHT	ELECTRICAL REQUIREMENTS LOAD HP	LOAD A FLA	LOAD A MCA	LOAD A WATTS	VOLTAGE	PHASE	NOTES
UH-1	INDEECO	933IW-4408	002	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1
UH-2	INDEECO	933IW-4408	006	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1
UH-3	INDEECO	933IW-4408	013	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1, 2
UH-4	INDEECO	933IW-4408	101	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1, 2
UH-5	INDEECO	933IW-4408	201	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1, 2
UH-6	INDEECO	933IW-4408	202	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1
UH-7	INDEECO	933IW-4408	012	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1
UH-8	INDEECO	933IW-4408	001	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1, 2
UH-9	INDEECO	933IW-4408	015	100 CFM	6.8	1' - 2"	0' - 4"	1' - 8"		10 A			208 V	1	NOTE 1, 2

1

NOTE 1: UNITS ARE TO BE PROVIDED WITH INTEGRAL THERMOSTATS LOCATED BEHIND COVER. SUBMIT UNIT MANUFACTURER'S COLOR OPTIONS TO ARCHITECT FOR COLOR SELECTION.
NOTE 2: PROVIDE W/ HEAVY GAUGE SECURITY COVER.

AIR CURTAIN SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	LOCATION	PLENUM WIDTH	MECHANICAL REQUIREMENTS CFM	MECHANICAL REQUIREMENTS FPM	MECHANICAL REQUIREMENTS MBH	ELECTRICAL REQUIREMENTS LOAD A FLA	LOAD A MCA	LOAD A WATTS	VOLTAGE	PHASE	NOTES
AC-1	QUIKSERV	QSV1025EJ-040-BK	009	24"	645 CFM	2100 FPM	13.7	16 A			208 V	1	

MECHANICAL SYSTEM CONTROL DESCRIPTION

All spaces are to be conditioned to the following conditions based upon the building's occupancy schedule.
- Occupied Cooling: 75°F
- Unoccupied Cooling: 80°F
- Occupied Heating: 70°F
- Unoccupied Heating: 65°F
- Building Maximum Humidity: 50% RH
- Multi-Purpose Room (103) CO2 Set-point: 1,000 ppm

All furnaces (F-1, F-2, F-3, & F-4) are to stage their heat pump heating and cooling circuits as well as their gas-fired furnace on to maintain space set-points. Space heating shall be preferentially performed by the heat pump until the set point cannot be met, at which point the respective unit's gas-fired furnace shall activate to maintain the space temperature. Programmable wall-mounted thermostats are to be used for all furnaces in order to set unoccupied and occupied scheduling operation.

ERV-1 provides conditioned outside air to F-1 for distribution to the Lower Floor spaces. It also provides exhaust airflow for Toilet Room 010. Unit is to run whenever building is in occupied mode and Furnace #1 is activated.

ERV-2 is to vary its airflow via fans using ECM motors for outside and exhaust air streams. Its outside and exhaust air fans are to operate as variable air volume systems based on the duct static pressure sensed in the fresh air distribution and exhaust air ductwork.

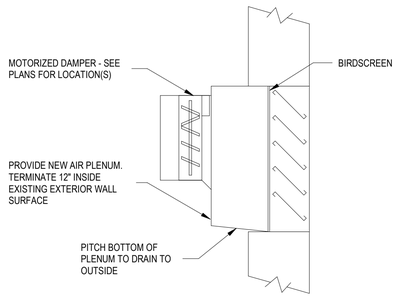
ERV-2 fresh air damper for F-2 & F-3 is to modulate to maintain a CO2 level of <1,000 ppm in the Multipurpose 103 room. ERV-2 fresh air dampers for F-4 are to open when occupancy sensed in Room 203. If no occupancy is sensed in Room 203 for 30 minutes (adj.), close fresh air damper to F-4.

ERV-2 exhaust air dampers are to modulate open based upon occupancy sensors in the rooms served.

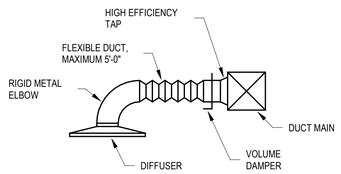
At all times, fresh air and exhaust air flow rates are to match. If there is a call for outside air with no call for exhaust, open exhaust air dampers serving Rooms 014 & 015 to allow equivalent airflow in and out. If there is a call for exhaust air with no call for outside air, open motorized damper serving Multipurpose 103's outside air path to allow equivalent airflow in and out.

1

ODU-5 is to operate as a dehumidification unit for ERV-2 and the Multipurpose space to control high humidity levels within the space.
ODU-5 is to turn on when the humidity in Multipurpose 103 exceeds a relatively humidity set point of 60% (adj.). The variable speed compressor is to modulate in order to maintain discharge air temperature/humidity of 55°F db / 55°F wb. ODU-5 is to turn off once the Multipurpose humidity has reached 40% for more than 10 minutes.



A2a LOUVER DETAIL
M501 NO SCALE



A2 TYPICAL DIFFUSER INSTALLATION DETAIL
M501 NO SCALE

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NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL
2	03/18/2026	ADDENDUM 02
1	03/04/2026	ADDENDUM 01
NO	DATE	REVISION

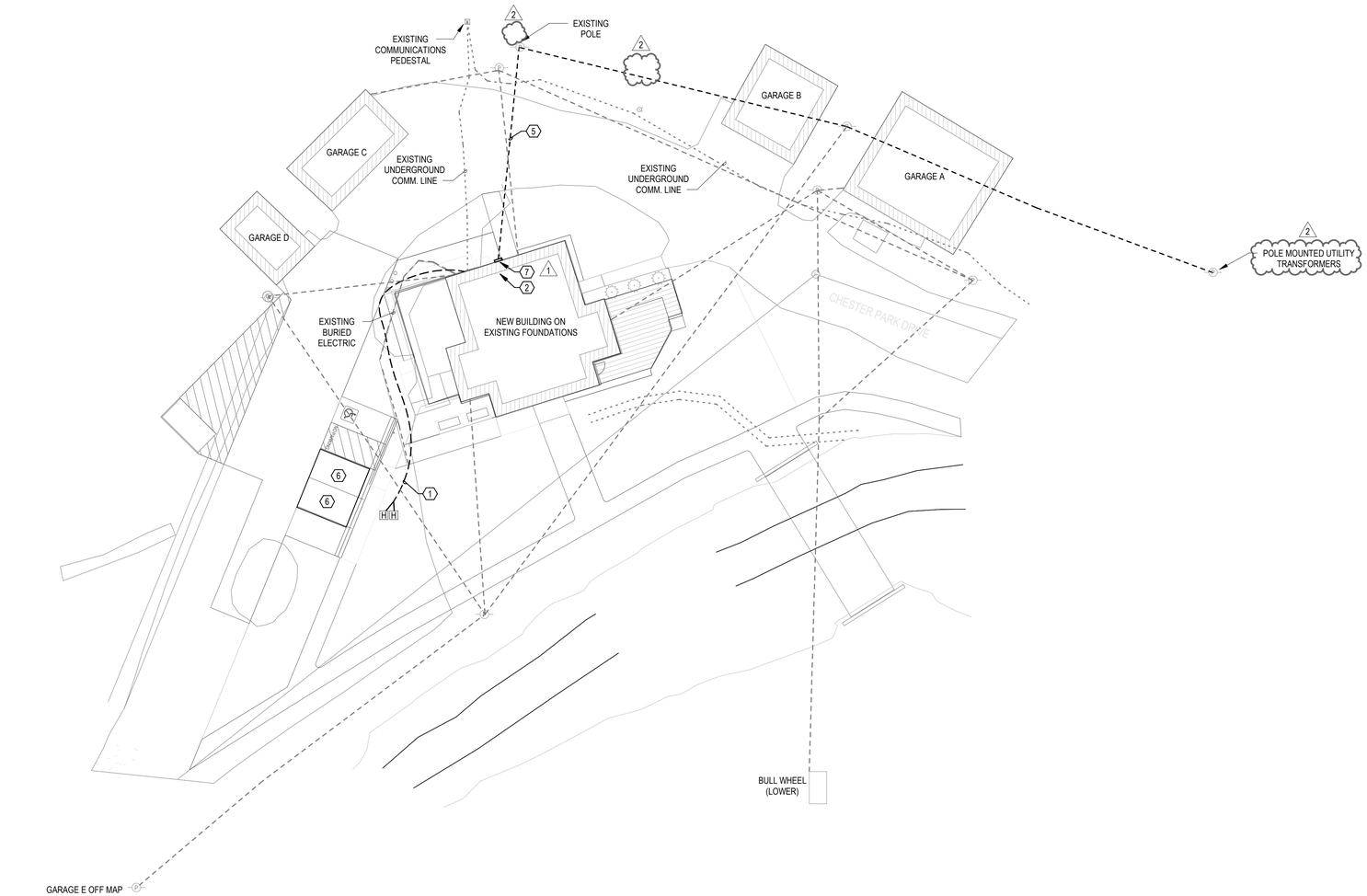
I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: ALEC J. ASHTON
Date: 02/12/2026 License Number: 57856

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
MECHANICAL DETAIL, SCHEDULES, & CONTROLS

DRAWN BY: MJG
CHECKED BY: AJA
PROJ. NO: 150582
DRAWING NO: **M501**



GENERAL SHEET NOTES

A. INSTALL LIGHTING AND POWER CONDUITS BETWEEN 24" (MINIMUM) AND 36" (MAXIMUM) BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE.

B. INSTALL TECHNOLOGY CONDUITS AT 36" MINIMUM BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE.

C. PROVIDE MINIMUM 1" CONDUIT SIZE FOR SITE LIGHTING, UNLESS NOTED OTHERWISE.

D. CONDUIT ROUTING SHOWN IS DIAGRAMMATIC ONLY; COORDINATE ACTUAL ROUTING WITH OTHER TRADES.

E. REFER TO ELECTRICAL SITE DETAILS FOR SPECIFIC INSTALLATION REQUIREMENTS.

F. REFER TO LIGHTING AND POWER PLANS FOR BUILDING MOUNTED FIXTURES AND DEVICES.

G. REFER TO SPECIFICATION SECTION 26 0519 FORE REQUIRED CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.

H. REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR EXTERIOR LIGHTING CONTROLS.

KEYED SHEET NOTES

1. PROVIDE (1) ONE 1 1/2" CONDUIT FOR POWER AND (1) ONE 1" CONDUIT FOR TECHNOLOGY TO SERVE FUTURE DUAL-PORT ELECTRICAL VEHICLE CHARGING STATION. ROUTE CONDUITS FROM SWITCHBOARD IN ELEC/MECH 012 TO HANDHOLES AT GENERAL LOCATION INDICATED. COORDINATE FINAL HANDHOLE LOCATIONS WITH OTHER TRADES.
2. APPROXIMATE LOCATION OF NEW ELECTRICAL SWITCHBOARD.
3. NOT USED.
4. NOT USED.
5. PROPOSED OVERHEAD SECONDARY TO NEW SERVICE MAST. COORDINATE WORK WITH LOCAL UTILITY.
6. FUTURE EV READY PARKING SPACE.
7. PROVIDE WALL MOUNTED CT AND METERING CABINET; REFER TO LOWER LEVEL POWER AND TECHNOLOGY PLAN.

A1 ES101 **ELECTRICAL SITE PLAN**
1" = 20'-0"

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NO	DATE	REVISION
2	03/18/2026	ADDENDUM 02
1	03/04/2026	ADDENDUM 01

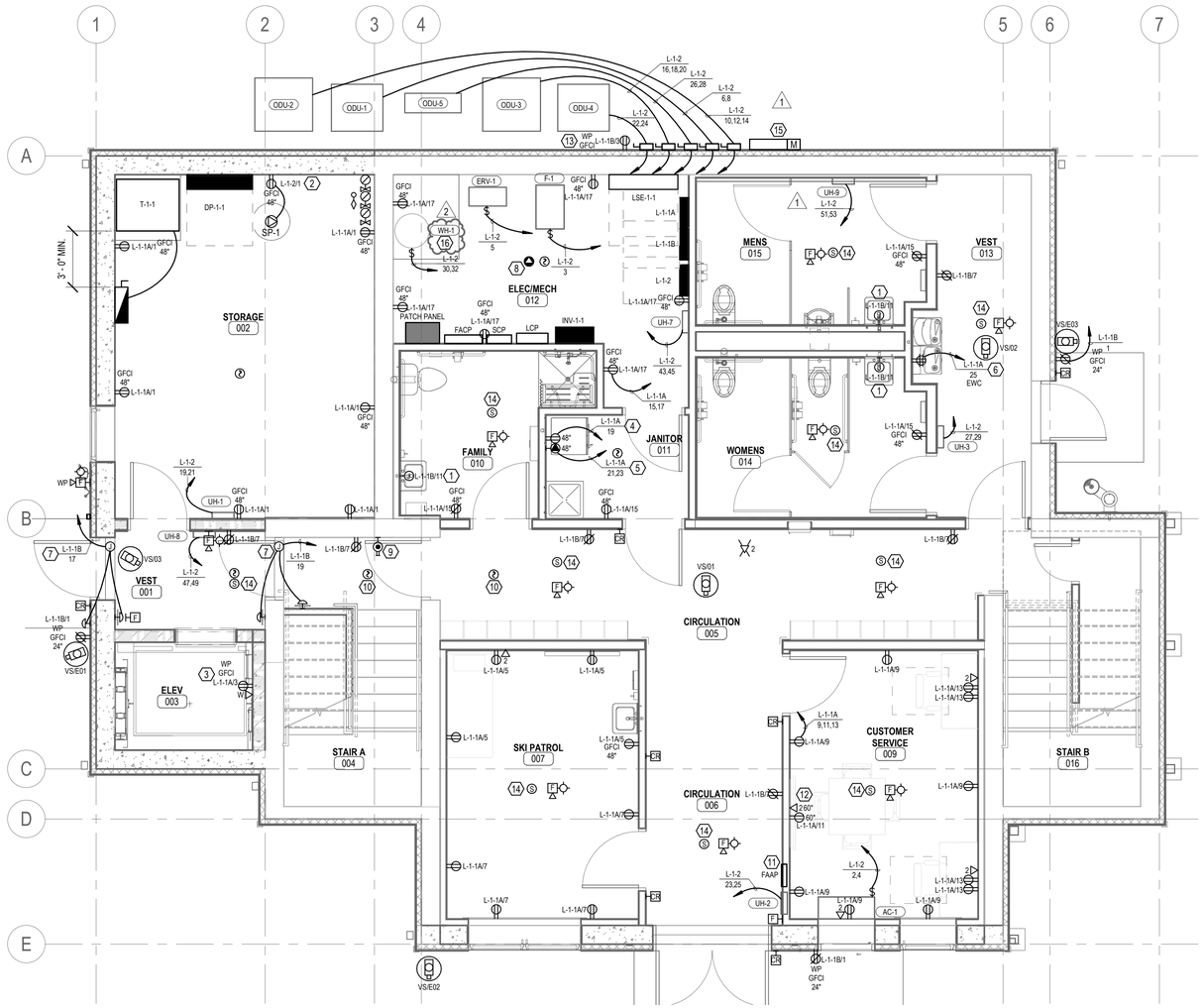
I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: JACOB D. MELBOSTAD
Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
ELECTRICAL SITE PLAN

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: **ES101**



A1 EP101 **LOWER LEVEL POWER & TECHNOLOGY PLAN**
1/4" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO "TYPICAL DEVICE MOUNTING DETAIL" FOR DEVICE MOUNTING HEIGHTS AND ADJACENCIES.

B. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT WALL-MOUNTED DEVICE LOCATIONS.

D. REFER TO EQUIPMENT AND PANELBOARD SCHEDULES FOR SPECIFIC EQUIPMENT CONNECTION INFORMATION.

E. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 27 CONTRACTOR.

F. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 28 CONTRACTOR.

2 G. ROUTE TECHNOLOGY SYSTEM CABLING IN CONDUIT FROM DEVICES BACK TO ELEC/MECH 012.

H. PROVIDE WORK FOR ALL ALTERNATE ITEMS (IF ANY). REFER TO NOTES ON DRAWINGS AND SPECIFICATIONS FOR ALTERNATE DESCRIPTIONS.

I. PROVIDE HORN/STROBE STANDARD (NON-VOICE) FIRE ALARM SYSTEM AS REQUIRED TO MEET STATE AND LOCAL CODE REQUIREMENTS.

J. REFER TO SPECIFICATIONS FOR TECHNOLOGY SYSTEM AND DEVICE INFORMATION.

K. CONFIRM TECHNOLOGY DEVICE FINAL LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK.

L. MOUNT CONDUIT AT CEILINGS AND WALLS IN EXPOSED AREAS. COORDINATE ROUTING WITH OTHER TRADES.

KEYED SHEET NOTES

1. PROVIDE DEDICATED CIRCUIT FOR HARDWIRED AUTOMATED FAUCET. TRANSFORMER FOR FAUCET SHALL BE PROVIDED BY DIV 22.
2. PROVIDE DEDICATED RECEPTACLE FOR SP-1 LOCATED IN SUMP BASIN.
3. PROVIDE DEDICATED CIRCUIT FOR GENERAL PURPOSE RECEPTACLE LOCATED IN ELEVATOR PIT.
4. PROVIDE DEDICATED CIRCUIT FOR OWNER FURNISHED WASHER.
5. PROVIDE DEDICATED RECEPTACLE FOR OWNER FURNISHED DRYER. COORDINATE POWER / CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
6. PROVIDE DEDICATED CIRCUIT FOR ELECTRIC WATER COOLER.
7. JUNCTION BOX FOR CONNECTION TO DOOR OPERATOR. PROVIDE POWER AND CONTROL CONNECTIONS BETWEEN DOOR ACTUATORS AND OPERATOR FOR PROPER OPERATION. COORDINATE WORK WITH DOOR HARDWARE.
8. PROVIDE CARBON MONOXIDE DETECTOR.
9. PROVIDE POWER FOR FIRE DOOR HOLD-OPEN DEVICE AND CONNECTION TO THE FIRE ALARM SYSTEM.
10. FIRE DOOR SMOKE DETECTOR.
11. COORDINATE MOUNTING HEIGHT OF FIRE ALARM ANNUNCIATION PANEL IN FIELD.
12. PROVIDE POWER AND DATA CONNECTIONS FOR MONITOR.
13. MOUNT RECEPTACLE 24" AFG.
14. CEILING MOUNTED SPEAKER. CONFIRM FINAL QUANTITY AND LOCATION WITH OWNER / MANUFACTURER PRIOR TO ROUGH IN.

1 15. PROVIDE WALL MOUNTED CT AND METERING CABINET. COORDINATE FINAL LOCATION AND INSTALLATION REQUIREMENTS WITH LOCAL UTILITY AND MECHANICAL CONTRACTOR.

2 16. OWNER FURNISHED CONTRACTOR INSTALLED EQUIPMENT. CONFIRM POWER REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALL.

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1	03/04/2026	ADDENDUM 01

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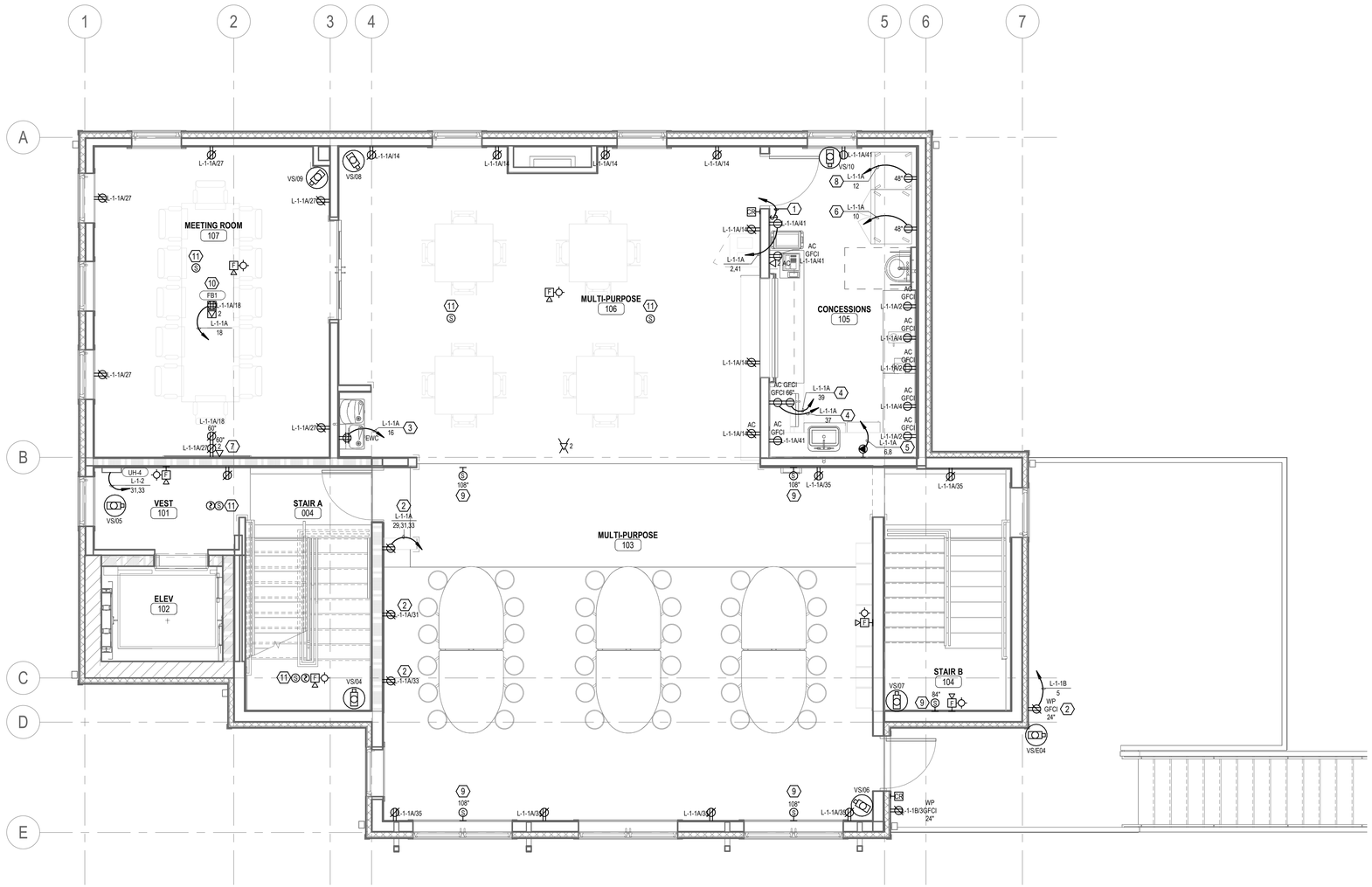
Signature:
Typed or Printed Name: JACOB D. MELBOSTAD
Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
LOWER LEVEL POWER & TECHNOLOGY PLAN

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: **EP101**



A1 MAIN LEVEL POWER & TECHNOLOGY PLAN

EP102 1/4" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO "TYPICAL DEVICE MOUNTING DETAIL" FOR DEVICE MOUNTING HEIGHTS AND ADJACENCIES.

B. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT WALL-MOUNTED DEVICE LOCATIONS.

D. REFER TO EQUIPMENT AND PANELBOARD SCHEDULES FOR SPECIFIC EQUIPMENT CONNECTION INFORMATION.

E. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 27 CONTRACTOR.

F. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 28 CONTRACTOR.

G. ROUTE TECHNOLOGY SYSTEM CABLING IN CONDUIT FROM DEVICES BACK TO ELEC/MECH 012.

H. PROVIDE WORK FOR ALL ALTERNATE ITEMS (IF ANY). REFER TO NOTES ON DRAWINGS AND SPECIFICATIONS FOR ALTERNATE DESCRIPTIONS.

I. PROVIDE HORN/STROBE STANDARD (NON-VOICE) FIRE ALARM SYSTEM AS REQUIRED TO MEET STATE AND LOCAL CODE REQUIREMENTS.

J. REFER TO SPECIFICATIONS FOR TECHNOLOGY SYSTEM AND DEVICE INFORMATION.

K. CONFIRM TECHNOLOGY DEVICE FINAL LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK.

L. MOUNT CONDUIT AT CEILINGS AND WALLS IN EXPOSED AREAS. COORDINATE ROUTING WITH OTHER TRADES.

KEYED SHEET NOTES

1. MOTORIZED SHADES CONTROL STATION; REFER TO UPPER LEVEL POWER AND TECHNOLOGY PLAN.
2. PROVIDE DEDICATED CIRCUIT FOR FOOD SERVING AREA.
3. PROVIDED DEDICATED CIRCUIT FOR ELECTRIC WATER COOLER.
4. PROVIDED DEDICATED CIRCUIT FOR MICROWAVE.
5. PROVIDE DEDICATED CIRCUIT FOR OWNER FURNISHED 208V, SINGLE-PHASE DISHWASHER. COORDINATE POWER / CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
6. PROVIDE DEDICATED CIRCUIT FOR OWNER FURNISHED COOLER. COORDINATE POWER / CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
7. PROVIDE POWER AND DATA CONNECTIONS FOR MONITOR.
8. PROVIDE DEDICATED CIRCUIT FOR OWNER FURNISHED FREEZER. COORDINATE POWER / CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
9. WALL MOUNTED SPEAKER CONFIRM FINAL QUANTITY AND LOCATION WITH OWNER / MANUFACTURER PRIOR TO ROUGH-IN.
10. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR BOX LOCATION AND ELECTRICAL SPECIFICATIONS FOR ADDITIONAL FLOOR BOX INFORMATION.
11. CEILING MOUNTED SPEAKER. CONFIRM FINAL QUANTITY AND LOCATION WITH OWNER / MANUFACTURER PRIOR TO ROUGH IN.

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NO	DATE	REVISION
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Signature:

Typed or Printed Name: JACOB D. MELBOSTAD

Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
MAIN LEVEL POWER & TECHNOLOGY PLAN

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: EP102

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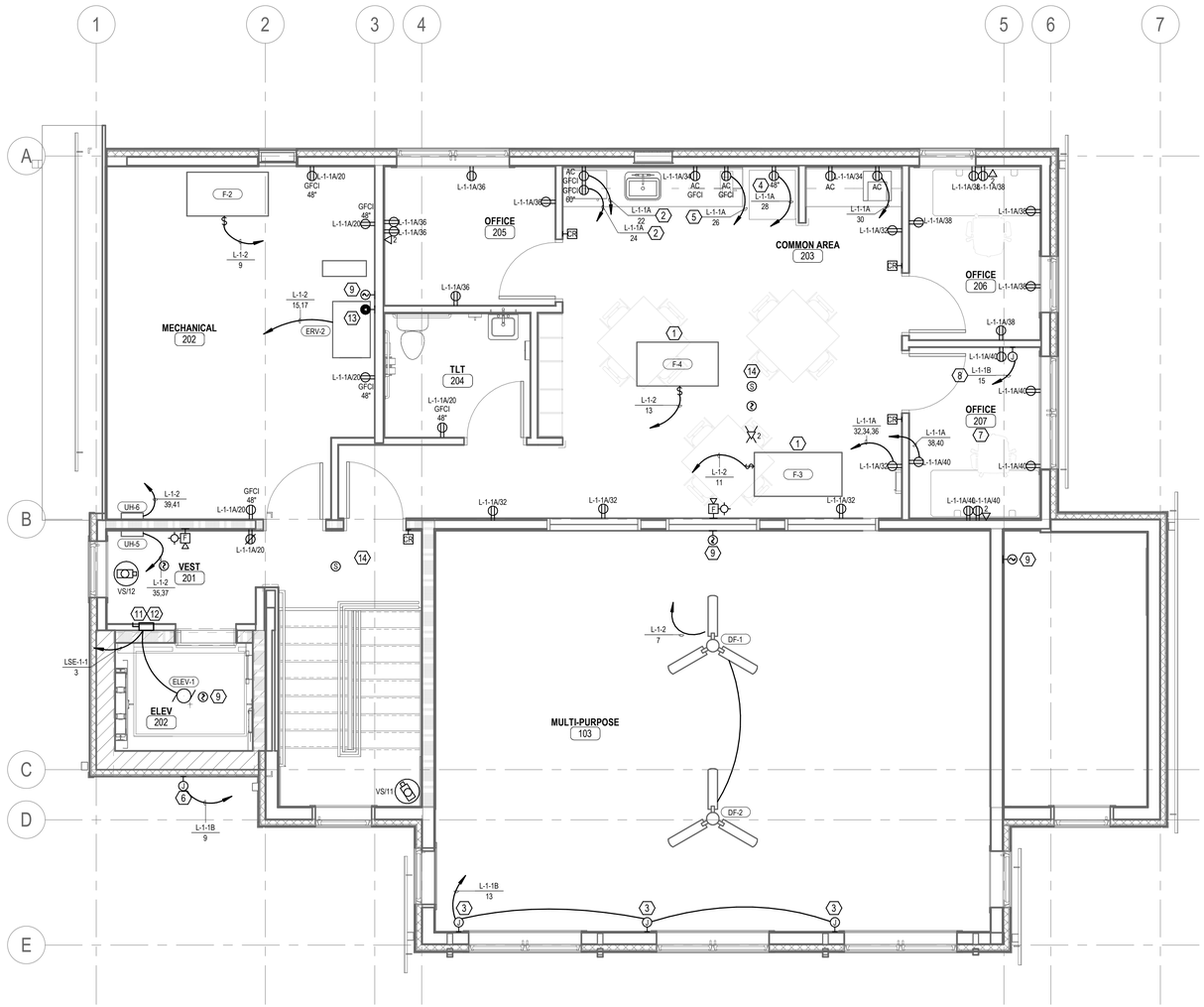

A1 UPPER LEVEL POWER & TECHNOLOGY PLAN

EP103 1/4" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO "TYPICAL DEVICE MOUNTING DETAIL" FOR DEVICE MOUNTING HEIGHTS AND ADJACENCIES.

B. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT WALL-MOUNTED DEVICE LOCATIONS.

D. REFER TO EQUIPMENT AND PANELBOARD SCHEDULES FOR SPECIFIC EQUIPMENT CONNECTION INFORMATION.

E. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 27 CONTRACTOR.

F. DIVISION 26 SHALL COORDINATE AND PROVIDE ROUGH-IN FOR THE SYSTEMS PROVIDED BY THE DIVISION 28 CONTRACTOR.

1 G. ROUTE TECHNOLOGY SYSTEM CABLING IN CONDUIT FROM DEVICES BACK TO ELEC/MECH 012.

H. PROVIDE WORK FOR ALL ALTERNATE ITEMS (IF ANY). REFER TO NOTES ON DRAWINGS AND SPECIFICATIONS FOR ALTERNATE DESCRIPTIONS.

I. PROVIDE HORN/STROBE STANDARD (NON-VOICE) FIRE ALARM SYSTEM AS REQUIRED TO MEET STATE AND LOCAL CODE REQUIREMENTS.

J. REFER TO SPECIFICATIONS FOR TECHNOLOGY SYSTEM AND DEVICE INFORMATION.

K. CONFIRM TECHNOLOGY DEVICE FINAL LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK.

L. MOUNT CONDUIT AT CEILINGS AND WALLS IN EXPOSED AREAS. COORDINATE ROUTING WITH OTHER TRADES.

KEYED SHEET NOTES

1. MECHANICAL EQUIPMENT LOCATED IN ATTIC ABOVE ACCESSIBLE CEILING.
2. PROVIDE DEDICATED RECEPTACLE FOR MICROWAVE.
3. PROVIDE DEDICATED CIRCUIT FOR MOTORIZED WINDOW SHADES; REFER TO ARCHITECTURAL DRAWINGS FOR WINDOW / SHADE LOCATIONS. REFER TO MAIN LEVEL POWER AND TECHNOLOGY PLAN FOR MOTORIZED SHADES CONTROL STATION LOCATION. COORDINATE FINAL JUNCTION BOX LOCATIONS WITH SHADE INSTALLER AND GENERAL CONTRACTOR SO THAT BOXES ARE NOT VISIBLE ON WALL.
4. PROVIDE DEDICATED RECEPTACLE FOR REFRIGERATOR.
5. PROVIDE DEDICATED RECEPTACLE FOR COFFEE MAKER.
6. PROVIDE DEDICATED CIRCUIT FOR CLOCK TOWER POWER. COORDINATE CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
7. REINSTALL SALVAGED TRACK TIMING SYSTEM FROM DEMOLITION IN THIS OFFICE. CONFIRM FINAL LOCATION WITH OWNER PRIOR TO ROUGH-IN.
8. PROVIDE DEDICATED CIRCUIT FOR PA SYSTEM CONTROLLER. REINTEGRATE SITE SPEAKERS INTO NEW SYSTEM. COORDINATE POWER / CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
9. MOUNT SMOKE DETECTOR HIGH IN SPACE.
10. PROVIDE DEDICATED RECEPTACLE FOR PRINTER
11. PROVIDE ELEVATOR DISCONNECT SWITCH. COORDINATE FINAL LOCATION WITH ELEVATOR INSTALLER.
12. PROVIDE DEDICATED CIRCUITS FOR ELEVATOR CAB POWER AND LIGHTING.
13. PROVIDE CARBON MONOXIDE DETECTOR.
14. CEILING MOUNTED SPEAKER. CONFIRM FINAL QUANTITY AND LOCATION WITH OWNER / MANUFACTURER PRIOR TO ROUGH IN.

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CITY OF DULUTH

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Signature:

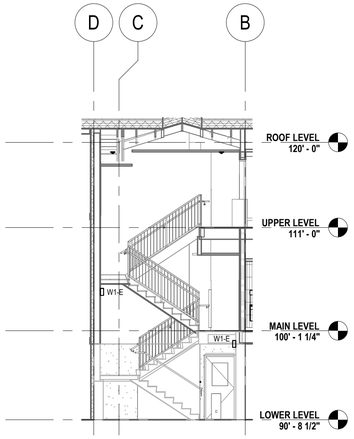
Typed or Printed Name: JACOB D. MELBOSTAD

Date: 02/12/2026 License Number: 56200

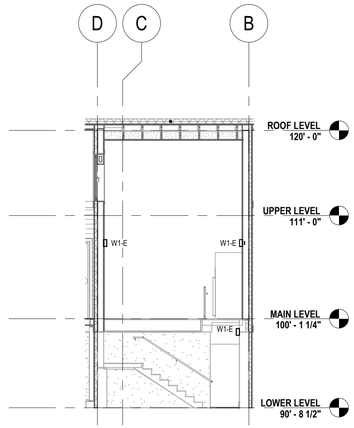
PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
UPPER LEVEL POWER & TECHNOLOGY PLAN

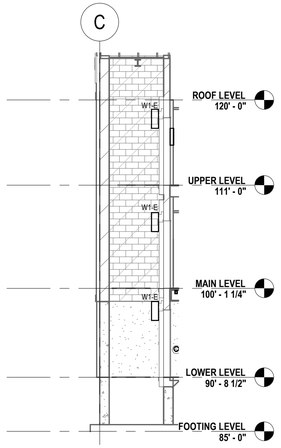
DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: EP103



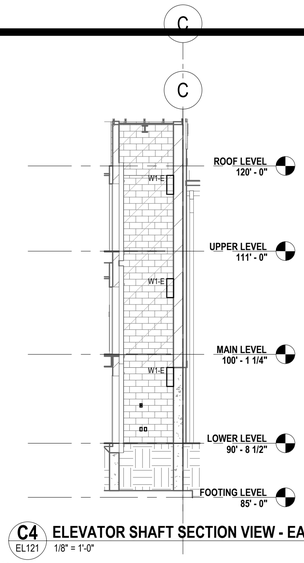
C1 EL121 **STAIR A SECTION VIEW**
1/8" = 1'-0"



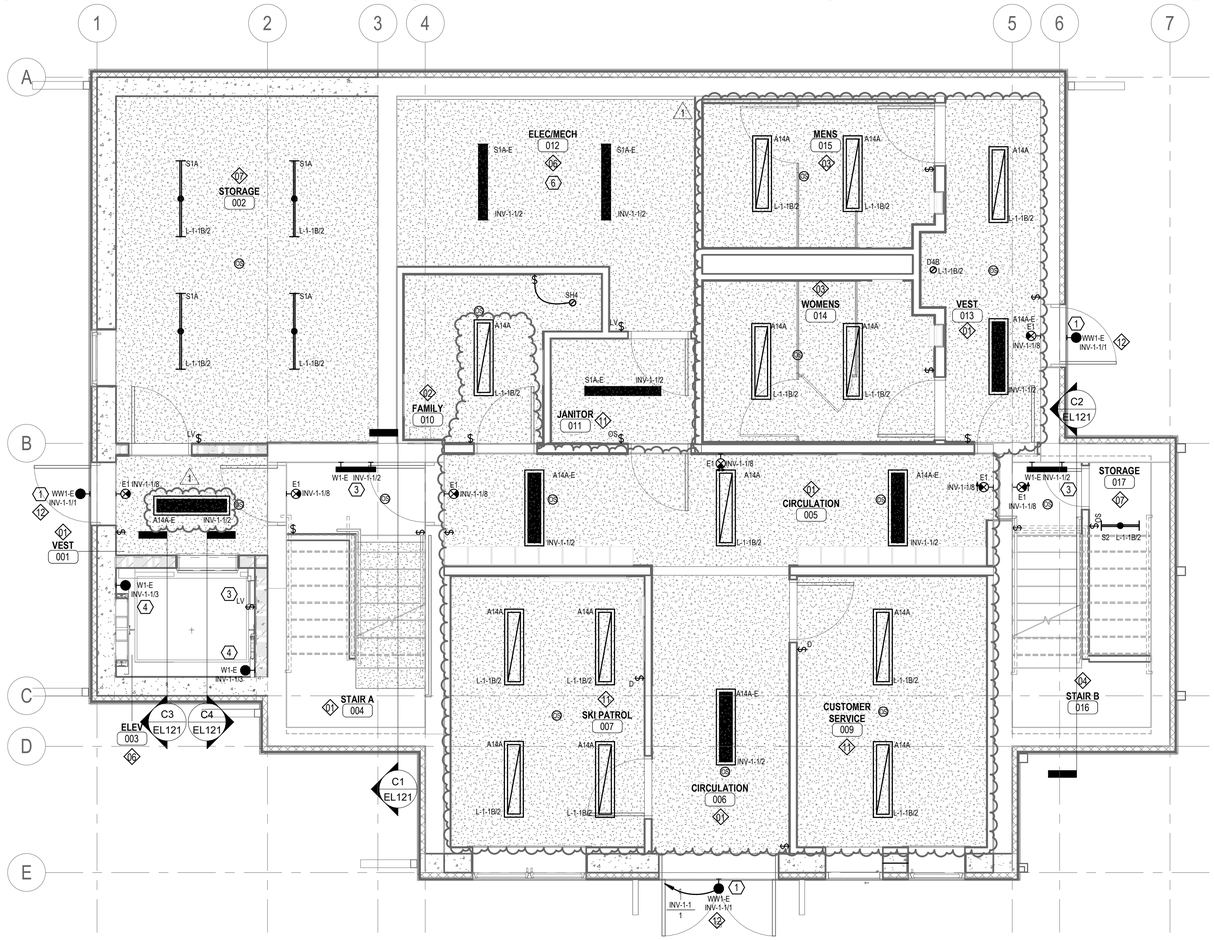
C2 EL121 **STAIR B SECTION VIEW**
1/8" = 1'-0"



C3 EL121 **ELEVATOR SHAFT SECTION VIEW - WEST**
1/8" = 1'-0"



C4 EL121 **ELEVATOR SHAFT SECTION VIEW - EAST**
1/8" = 1'-0"



A1 EL121 **LOWER LEVEL LIGHTING PLAN**
1/4" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LIGHTING FIXTURE LOCATIONS WITHIN CEILING.

B. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT BUILDING / WALL-MOUNTED LIGHTING FIXTURE AND CONTROLS LOCATIONS.

C. REFER TO LIGHTING SCHEDULES FOR SPECIFIC FIXTURE AND CONTROLS INFORMATION.

D. REFER TO SPECIFICATION SECTION 26 0519 FOR REQUIRED CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.

E. PROVIDE 6' FLEXIBLE METAL CONDUIT FOR RECESSED LIGHTING FIXTURES INSTALLED IN ACCESSIBLE LAY-IN CEILINGS.

F. PROVIDE LIGHTING CONTROL DEVICES PER MANUFACTURER'S RECOMMENDATIONS (CATALOG NUMBER, LOCATION AND QUANTITY); REFER TO SPECIFICATION SECTION 26 0943. DEVICES SHOWN ARE FOR GENERAL DESIGN INTENT ONLY.

G. MOUNT CONDUIT AT CEILINGS AND WALLS IN EXPOSED AREAS. COORDINATE ROUTING WITH OTHER TRADES.

H. COORDINATE LIGHTING FIXTURE AND FIRE SUPPRESSION LAYOUTS.

KEYED SHEET NOTES

1. MOUNT FIXTURE, CENTERED AT DOOR BETWEEN TOP OF DOOR FRAME AND BOTTOM OF WOOD SIDING TRIM.
2. ELEVATOR PIT LIGHT WALL SWITCH CONTROL.
3. MOUNT FIXTURE AT 8' - " AFF TO BOTTOM OF FIXTURE.
4. ELEVATOR PIT LIGHT. REFER TO SECTION FOR ELEVATOR SHAFT LIGHTING FIXTURE MOUNTING LOCATIONS.
5. ELEVATOR PIT LIGHT WALL SWITCH CONTROL.
6. SUSPEND FIXTURES IN THIS SPACE AT 7' - 0" AFF OR BELOW DUCTWORK, WHICHEVER IS LOWER. COORDINATE FIXTURE PLACEMENT WITH EQUIPMENT LAYOUT.

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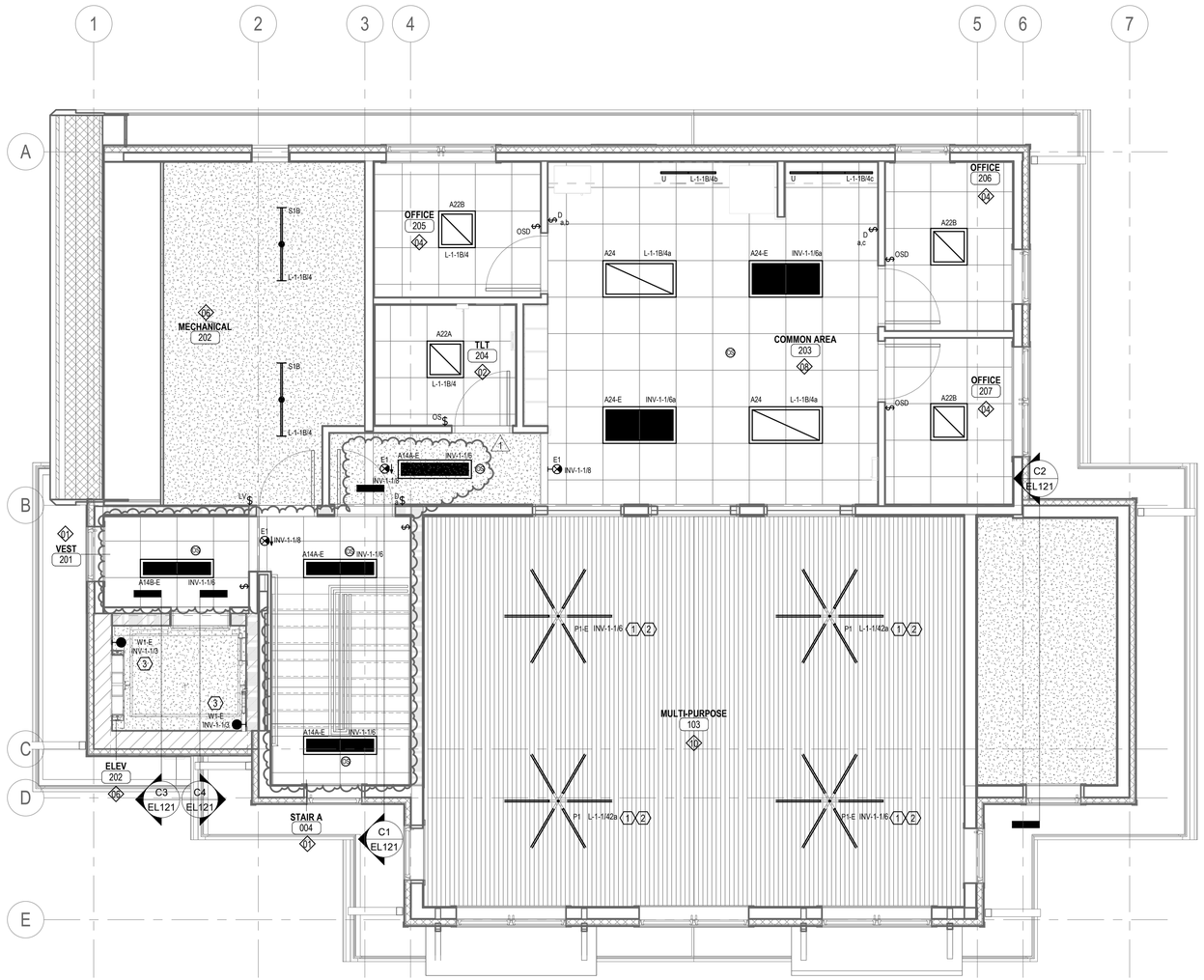
Signature:
Typed or Printed Name: JACOB D. MELBOSTAD
Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
LOWER LEVEL LIGHTING PLAN

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: **EL121**



A1 EL123 **UPPER LEVEL LIGHTING PLAN**
1/4" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LIGHTING FIXTURE LOCATIONS WITHIN CEILING.

B. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT BUILDING / WALL-MOUNTED LIGHTING FIXTURE AND CONTROLS LOCATIONS.

C. REFER TO LIGHTING SCHEDULES FOR SPECIFIC FIXTURE AND CONTROLS INFORMATION.

D. REFER TO SPECIFICATION SECTION 26 0519 FOR REQUIRED CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.

E. PROVIDE 6' FLEXIBLE METAL CONDUIT FOR RECESSED LIGHTING FIXTURES INSTALLED IN ACCESSIBLE LAY-IN CEILINGS.

F. PROVIDE LIGHTING CONTROL DEVICES PER MANUFACTURER'S RECOMMENDATIONS (CATALOG NUMBER, LOCATION AND QUANTITY); REFER TO SPECIFICATION SECTION 26 0943. DEVICES SHOWN ARE FOR GENERAL DESIGN INTENT ONLY.

G. MOUNT CONDUIT AT CEILINGS AND WALLS IN EXPOSED AREAS. COORDINATE ROUTING WITH OTHER TRADES.

H. COORDINATE LIGHTING FIXTURE AND FIRE SUPPRESSION LAYOUTS.

KEYED SHEET NOTES

1. INSTALL JUNCTION BOX FOR LIGHT FIXTURE SEMI-RECESSED IN SLOPED CEILING SO THAT THE FIXTURE HANGS PLUMB. PAINT JUNCTION BOX TO MATCH CEILING COLOR; COORDINATE WITH GENERAL CONTRACTOR.
2. ROTATE FIXTURE ARMS TO MATCH OFFSET PATTERN SHOWN ON LIGHTING PLAN.
3. REFER TO SECTION FOR ELEVATOR SHAFT LIGHTING FIXTURES MOUNTING LOCATIONS.

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NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: JACOB D. MELBOSTAD
Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
UPPER LEVEL LIGHTING PLAN

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: **EL123**

LIGHTING CONTROL DEVICE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER
OS	DUAL-TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR.	SEE SPECIFICATIONS
S	SWITCH.	SEE SPECIFICATIONS
D	DIMMER SWITCH.	SEE SPECIFICATIONS
OSD	DUAL-TECHNOLOGY WALL-MOUNTED OCCUPANCY SENSOR DIMMER SWITCH WITH ON / OFF AND UP / DN PUSHBUTTONS.	SEE SPECIFICATIONS
OS	DUAL-TECHNOLOGY WALL-MOUNTED OCCUPANCY SENSOR SWITCH WITH ON / OFF PUSHBUTTON.	SEE SPECIFICATIONS
TW	TUNABLE-WHITE SWITCH WITH PUSHBUTTONS FOR SELECTING 2700K, 3500K, 4000K, OR 5000K COLOR TEMPERATURES.	SEE SPECIFICATIONS
LV	LINE VOLTAGE SNAP SWITCH.	SEE SPECIFICATIONS
T	TIMER SWITCH.	SEE SPECIFICATIONS
K	DIGITAL KEYED SWITCH.	SEE SPECIFICATIONS
P	PILOT SWITCH.	SEE SPECIFICATIONS
LS	LIGHT LEVEL SENSOR WITH INTEGRAL PHOTOCELL, ADJUSTABLE TIME DELAY AND 3:1 DEADBAND SETTING.	SEE SPECIFICATIONS

GENERAL NOTES:

A. ALL DEVICES ABOVE SHALL BE LOW VOLTAGE UNLESS NOTED OTHERWISE.

B. DUAL-TECHNOLOGY SENSORS SHALL UTILIZE PASSIVE INFRARED (PIR) AND ULTRASONIC OR MICROPHONICS TECHNOLOGIES.

C. REFER TO SPECIFICATIONS FOR LIGHTING CONTROL SYSTEM INFORMATION.

D. DAYLIGHT ZONES SHALL BE CONTROLLED AUTOMATICALLY BY DAYLIGHT SENSOR ONLY; NO MANUAL CONTROLS.

LIGHTING FIXTURE SCHEDULE

	FIXTURE HOUSING			LIGHT SOURCE									BASIS OF DESIGN		APPROVED EQUALS	
TYPE	DESCRIPTION	LENS / DIFFUSER	MOUNTING	SOURCE	MINIMUM LUMEN OUTPUT (lm)	MINIMUM COLOR TEMP (KELVIN)	MINIMUM CRI	DRIVER	DIMMING	VOLT	WATT	EMERGENCY COMPONENTS	MFR	CATALOG SERIES	MFR	NOTE
A14A	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED GYP	LED	3,200	4000	85	0-10V	1%	MVOLT	29 W	---	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A14A-E	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED GYP	LED	3,200	4000	85	0-10V	1%	MVOLT	29 W	CENTRAL INVERTER	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A14B-E	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	3,200	4000	85	0-10V	1%	MVOLT	29 W	CENTRAL INVERTER	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A22-E	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	2,000	4000	85	0-10V	1%	MVOLT	14 W	CENTRAL INVERTER	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A22A	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	2,000	4000	85	0-10V	1%	MVOLT	14 W	---	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A22B	2' X 2' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	3,200	4000	85	0-10V	1%	MVOLT	23 W	---	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A24	2' X 4' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	4,000	4000	85	0-10V	1%	MVOLT	20 W	---	LITHONIA	CPX	PULSE JTH MLAZGAR	2
A24-E	2' X 4' FLAT PANEL FIXTURE WITH METAL FRAME, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	4,000	4000	85	0-10V	1%	MVOLT	20 W	CENTRAL INVERTER	LITHONIA	CPX	PULSE JTH MLAZGAR	2
D4A	4" DIAMETER ROUND SELF-FLANGED BEVEL TRIM, ADJUSTABLE DOWNLIGHT, 50 DEGREE DISTRIBUTION, MATTE-DIFFUSE FINISH.	SMOOTH CLEAR LENS	RECESSED LAY-IN	LED	1,500	4000	90	0-10V	1%	MVOLT	17 W	---	GOTHAM	IVO4	PULSE JTH MLAZGAR	---
D4B	4" DIAMETER ROUND SELF-FLANGED DOWNLIGHT, WIDE BATWING DISTRIBUTION, CLEAR REFLECTOR WITH MATTE-DIFFUSE FINISH.	SMOOTH CLEAR LENS	RECESSED LAY-IN	LED	1,500	4000	90	0-10V	1%	MVOLT	15 W	---	GOTHAM	IVO4	PULSE JTH MLAZGAR	---
E1	SINGLE-FACE LED EXIT SIGN WITH WHITE POWDER PAINT DIE-CAST ALUMINUM HOUSING, RED STENCIL LETTERING, CHEVRON ARROWS AS SHOWN ON PLANS.	---	UNIVERSAL	LED	---	---	---	---	---	MVOLT	5 W	CENTRAL INVERTER	LITHONIA	LES	PULSE JTH MLAZGAR	---
E2	DOUBLE-FACE LED EXIT SIGN WITH WHITE POWDER PAINT DIE-CAST ALUMINUM HOUSING, RED STENCIL LETTERING, CHEVRON ARROWS AS SHOWN ON PLANS.	---	UNIVERSAL	LED	---	---	---	---	---	MVOLT	5 W	CENTRAL INVERTER	LITHONIA	LES	PULSE JTH MLAZGAR	---
K24	2' X 4' BACK-LIT FLAT PANEL FIXTURE WITH EXTRUDED ALUMINUM FRAME, NSF RATING, COLOR: WHITE.	SATIN WHITE ACRYLIC LENS	RECESSED LAY-IN	LED	6,000	4000	90	0-10V	1%	MVOLT	43 W	---	LITHONIA	CPX	PULSE JTH MLAZGAR	---
P1	72" DIA. 3-ARM DIRECT/INDIRECT PENDANT, CYLINDRICAL CANOPY, 54" TOP STEM, 12" INTERMEDIATE STEMS, RAL PAINT FINISH TO BE DETERMINED WITH SHOP DRAWING REVIEW.	FROST	CEILING (STEM)	LED	1,739 (DIRECT)/ 1,083(INDIRECT)	4000	90	0-10V	1%	MVOLT	65 W	---	EUREKA	JUNCTION 74710	---	1
P1-E	72" DIA. 3-ARM DIRECT/INDIRECT PENDANT, CYLINDRICAL CANOPY, 54" TOP STEM, 12" INTERMEDIATE STEMS, RAL PAINT FINISH TO BE DETERMINED WITH SHOP DRAWING REVIEW.	FROST	CEILING (STEM)	LED	1,739 (DIRECT)/ 1,083(INDIRECT)	4000	90	0-10V	1%	MVOLT	65 W	CENTRAL INVERTER	EUREKA	JUNCTION 74710	---	1
S1A	4' LONG LENSED STRIP, COLD-ROLLED STEEL CHANNEL AND COVER, COLOR: PAINT AFTER FABRICATION BAKED WHITE ENAMEL.	CURVED, SEMI-FROST ACRYLIC LENS	SURFACE	LED	3,000	4000	85	0-10V	10%	MVOLT	30 W	---	LITHONIA	ZL1D	PULSE JTH MLAZGAR	---
S1A-E	4' LONG LENSED STRIP, COLD-ROLLED STEEL CHANNEL AND COVER, COLOR: PAINT AFTER FABRICATION BAKED WHITE ENAMEL.	CURVED, SEMI-FROST ACRYLIC LENS	SURFACE	LED	3,000	4000	85	0-10V	10%	MVOLT	30 W	CENTRAL INVERTER	LITHONIA	ZL1D	PULSE JTH MLAZGAR	---
S1B	4' LONG LENSED STRIP, COLD-ROLLED STEEL CHANNEL AND COVER, COLOR: PAINT AFTER FABRICATION BAKED WHITE ENAMEL.	CURVED, SEMI-FROST ACRYLIC LENS	SURFACE ANGLE	LED	3,000	4000	85	0-10V	10%	MVOLT	30 W	---	LITHONIA	ZL1D	PULSE JTH MLAZGAR	---
S2	2' LONG LENSED STRIP, COLD-ROLLED STEEL CHANNEL AND COVER, COLOR: PAINT AFTER FABRICATION BAKED WHITE ENAMEL.	CURVED, SEMI-FROST ACRYLIC LENS	SURFACE	LED	2,500	4000	85	0-10V	10%	MVOLT	22 W	---	LITHONIA	ZL1D	PULSE JTH MLAZGAR	---
SH4	4" DIAMETER ROUND SHOWER DOWNLIGHT, MEDIUM DISTRIBUTION, FLUSH LENSED TRIM WITH ANTI-MICROBIAL FINISH, IP66 RATED, WHITE FLANGE.	SMOOTH CLEAR LENS	RECESSED GYP	LED	1,000	4000	90	0-10V	1%	MVOLT	9 W	---	GOTHAM	EVO4	PULSE JTH MLAZGAR	---
U	UNDER CABINET ARCHITECTURAL GRADE WHITE FIELD CUTABLE TAPE LIGHT.	UV STABILIZED PREOTECTIVE COATING	SURFACE CHANNEL	LED	300LM/FT	4000	95	0-12V	1%	24V	4 W	---	WAC	INVISILED T24-CST WITH LED-T-CH5-AL CHANNEL	PULSE JTH MLAZGAR	
W1-E	2' LONG WALL LINEAR LED, MARINE GRADE HEAT TREATED EXTRUDED ALUMINUM, FINISH: WHITE.	OPAL POLYCARBONATE LENS	SURFACE WALL	LED	1,500LM/FT	4000	90	0-10V	1%	MVOLT	25 W	CENTRAL INVERTER	LUMINAIRE LED	VPF8L	PULSE JTH MLAZGAR	---
W2	12"L X 4"H X 3"D EXTRUDED ALUMINUM WALL DIRECT/INDIRECT SCONCE. RAL PAINT FINISH TO MATCH TYPE P1 & P1-E; TO BE DETERMINED WITH SHOP DRAWING REVIEW.	MATTE WHITE ACRYLIC	SURFACE WALL	LED	1,500	4000	90	0-10V	1%	MVOLT	15 W	---	CAMMAN	W310-12	PULSE JTH MLAZGAR	---
WW1-E	TRAPAZOIDAL FULL CUT-OFF WALL PACK, SINGLE-PIECE DIE-CAST ALUMINUM HOUSING, WITH FULLY GASKETED DOOR, COLD TEMPERATURE, WIDE DISTRIBUTION, FINISH: DARK BRONZE.	POLYCARBONATE	SURFACE WALL	LED	2,000	3000	90	0-10V	---	MVOLT	7 W	CENTRAL INVERTER	LITHONIA	WDGE2	PULSE JTH MLAZGAR	---

GENERAL NOTES:

A. UNIVERSAL AND MULTI-VOLT DRIVERS ACCEPTABLE.
B. WHERE "APPROVED EQUAL" IS LISTED IN THE MANUFACTURER COLUMN, FIXTURES MUST BE SUBMITTED AS A SUBSTITUTION FOR APPROVAL PRIOR TO BID SUBMISSION.
C. FIXTURES SHALL HAVE A MINIMUM REPORTED LIFE OF 50,000 HOURS.

SCHEDULE NOTES:

1. THIS IS A SOLE MANUFACTURER SPECIFIED FIXTURE TYPE. PROVIDE GMP COST OF $6,710.00 PER FIXTURE FOR THIS FIXTURE TYPE. COST INCLUDES FREIGHT BUT DOES NOT INCLUDE TAX, STORAGE OR INSTALLATION COSTS.

2. SELECTABLE STYLE FIXTURES ARE PERMISSIBLE, BUT NOT REQUIRED FOR THIS FIXTURE TYPE.

LHB
21 W. SUPERIOR ST., STE 500 | DULUTH, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

411 WEST 1ST STREET
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
1	03/18/2026	ADDENDUM 02

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:

Typed or Printed Name: JACOB D. MELBOSTAD

Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
ELECTRICAL SCHEDULES

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: E601

KEYED SHEET NOTES

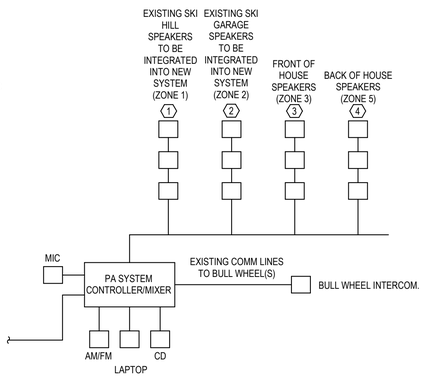
1. GARAGE B & C.
2. GARAGE A.
3. GARAGE E.
4. BULL WHEEL (LOWER)
5. GARAGE D.

TRANSFORMER SCHEDULE

IDENTIFICATION	KVA	PHASE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	MOUNTING STYLE	NOTES
T-1-1	225	3	208 V	120/240	FLOOR	1

SCHEDULE NOTES:

1. PROVIDE 4" HOUSEKEEPING PAD.



B1 PA SYSTEM SCHEMATIC DIAGRAM
E701 NOT TO SCALE

ELECTRICAL EQUIPMENT SCHEDULE

NO.	DESCRIPTION	LOCATION	LOAD HP	LOAD A FLA	LOAD A MCA	LOAD W	VOLT	PHASE	CONDUIT & WIRE SIZE	STARTER COMPONENT	CONTROL DEVICE COMPONENT	DISCONNECT COMPONENT	NOTES
AC-1	AIR CURTAIN	009		16			208	1	2#10, 1#10G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
ELEV-1	ELEVATOR	202		98			208	3	TBD	TBD	TBD	TBD	1
ERV-1	AIR TO AIR HEAT EXCHANGER	011			1		120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
ERV-2	ENERGY RECOVERY MODULE	204			4		208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
F-1	FURNACE	011		8			120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
F-2	FURNACE	202		9			120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
F-3	FURNACE	ATTIC		9			120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
F-4	FURNACE	ATTIC		8			120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---
ODU-1	SPLIT AC SYSTEM ACCU	EXTERIOR			13		208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	30A DS / 20A FUSE	---
ODU-2	SPLIT AC SYSTEM ACCU	EXTERIOR			17		208	3	3#10, 1#10G, 3/4"C	W/ UNIT	BY DIV 23	30A DS / 25A FUSE	---
ODU-3	SPLIT AC SYSTEM ACCU	EXTERIOR			17		208	3	3#10, 1#10G, 3/4"C	W/ UNIT	BY DIV 23	30A DS / 25A FUSE	---
ODU-4	SPLIT AC SYSTEM ACCU	EXTERIOR			13		208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	30A DS / 20A FUSE	---
ODU-5	SPLIT AC SYSTEM ACCU	EXTERIOR			22		208	1	2#10, 1#10G, 3/4"C	W/ UNIT	BY DIV 23	30A DS / 25A FUSE	---
SP-1	SUMP PUMP	002		8			120	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	CORD & PLUG	---
UH-1	UNIT HEATER	002		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-2	UNIT HEATER	006		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-3	UNIT HEATER	013		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-4	UNIT HEATER	101		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-5	UNIT HEATER	201		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-6	UNIT HEATER	202		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-7	UNIT HEATER	012		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-8	UNIT HEATER	001		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
UH-9	UNIT HEATER	015		10			208	1	2#12, 1#12G, 3/4"C	W/ UNIT	BY DIV 23	W/ UNIT	---
WH-1	WATER HEATER	012			29		208	1	2#10, 1#10G, 3/4"C	W/ UNIT	BY DIV 23	MRS BY DIV 26	---

GENERAL NOTES:

A. INPUT AND OUTPUT CONDUCTORS TO AND FROM VFD'S SHALL BE INSTALLED IN SEPARATE RACEWAYS, INDEPENDENT FROM ANY OTHER CONDUCTORS, AND SHALL NOT PASS THRU ANY COMMON WIREWAY OR RACEWAY.

SCHEDULE NOTES:

1. COORDINATE CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.

COPPER FEEDER SCHEDULE

TAGS	FEEDER AMPS	ACTUAL AMPS	CONDUCTOR SIZE	FEEDER AND CONDUIT SIZES A - 2 - WIRE WITH GROUND	B - 3 - WIRE WITH GROUND	C - 4 - WIRE WITH GROUND
1	20	20	12 AWG	3/4"C 2#12 & 1#12 GND	3/4"C 3#12 & 1#12 GND	3/4"C 4#12 & 1#12 GND
2	30	30	10 AWG	3/4"C 2#10 & 1#10 GND	3/4"C 3#10 & 1#10 GND	1"C 4#10 & 1#10 GND
3	40	50	8 AWG	3/4"C 2#8 & 1#10 GND	1"C 3#8 & 1#10 GND	1"C 4#8 & 1#10 GND
4	50	50	8 AWG	3/4"C 2#8 & 1#10 GND	1"C 3#8 & 1#10 GND	1"C 4#8 & 1#10 GND
5	60	65	6 AWG	1"C 2#6 & 1#10 GND	1"C 3#6 & 1#10 GND	1-1/4"C 4#6 & 1#10 GND
6	70	85	4 AWG	1"C 2#4 & 1#8 GND	1-1/4"C 3#4 & 1#8 GND	1-1/4"C 4#4 & 1#8 GND
7	80	85	4 AWG	1"C 2#4 & 1#8 GND	1-1/4"C 3#4 & 1#8 GND	1-1/4"C 4#4 & 1#8 GND
8	90	100	3 AWG	1-1/4"C 2#3 & 1#8 GND	1-1/4"C 3#3 & 1#8 GND	1-1/4"C 4#3 & 1#8 GND
9	100	100	3 AWG	1-1/4"C 2#3 & 1#8 GND	1-1/4"C 3#3 & 1#8 GND	1-1/4"C 4#3 & 1#8 GND
10	125	130	1 AWG	1-1/4"C 2#1 & 1#6 GND	1-1/2"C 3#1 & 1#6 GND	2"C 4#1 & 1#6 GND
11	150	150	1/0 AWG	1-1/4"C 2#1/0 & 1#6 GND	1-1/2"C 3#1/0 & 1#6 GND	2"C 4#1/0 & 1#6 GND
12	175	175	2/0 AWG	1-1/2"C 2#2/0 & 1#6 GND	2"C 3#2/0 & 1#6 GND	2"C 4#2/0 & 1#6 GND
13	200	200	3/0 AWG	1-1/2"C 2#3/0 & 1#6 GND	2"C 3#3/0 & 1#6 GND	2-1/2"C 4#3/0 & 1#6 GND
14	225	230	4/0 AWG	2"C 2#4/0 & 1#4 GND	2"C 3#4/0 & 1#4 GND	2-1/2"C 4#4/0 & 1#4 GND
15	250	255	250 KCMIL	2"C 2#250 & 1#4 GND	2-1/2"C 3#250 & 1#4 GND	3"C 4#250 & 1#4 GND
16	300	310	350 KCMIL	2-1/2"C 2#350 & 1#4 GND	3"C 3#350 & 1#4 GND	3"C 4#350 & 1#4 GND
17	400	380	500 KCMIL	2-1/2"C 2#500 & 1#3 GND	3"C 3#500 & 1#3 GND	3-1/2"C 4#500 & 1#3 GND
18	400	400	(2) 3/0 AWG	(2) 1-1/2"C 2#3/0 & 1#3 GND	(2) 2"C 3#3/0 & 1#3 GND	(2) 2-1/2"C 4#3/0 & 1#3 GND
19	500	510	(2) 250 KCMIL	(2) 2"C 2#250 & 1#2 GND	(2) 2-1/2"C 3#250 & 1#2 GND	(2) 3"C 4#250 & 1#2 GND
20	600	620	(2) 350 KCMIL	(2) 2-1/2"C 2#350 & 1#1 GND	(2) 3"C 3#350 & 1#1 GND	(2) 3"C 4#350 & 1#1 GND
21	800	855	(3) 300 KCMIL	(3) 2-1/2"C 2#300 & 1#1/0 GND	(3) 2-1/2"C 3#300 & 1#1/0 GND	(3) 3"C 4#300 & 1#1/0 GND
22	1000	1020	(4) 250 KCMIL	(4) 2"C 2#250 & 1#2/0 GND	(4) 2-1/2"C 3#250 & 1#2/0 GND	(4) 3"C 4#250 & 1#2/0 GND
23	1200	1240	(4) 350 KCMIL	(4) 2-1/2"C 2#350 & 1#3/0 GND	(4) 3"C 3#350 & 1#3/0 GND	(4) 3"C 4#350 & 1#3/0 GND
24	1600	1680	(4) 600 KCMIL	(4) 3"C 2#600 & 1#4/0 GND	(4) 3-1/2"C 3#600 & 1#4/0 GND	(4) 4"C 4#600 & 1#4/0 GND
25	1600	1675	(5) 400 KCMIL	(5) 2-1/2"C 2#400 & 1#4/0 GND	(5) 3"C 3#400 & 1#4/0 GND	(5) 3-1/2"C 4#400 & 1#4/0 GND
26	2000	2010	(6) 400 KCMIL	(6) 2-1/2"C 2#400 & 1#250 GND	(6) 3"C 3#400 & 1#250 GND	(6) 3-1/2"C 4#400 & 1#250 GND
27	2500	2660	(7) 500 KCMIL	(7) 3"C 2#500 & 1#350 GND	(7) 3-1/2"C 3#500 & 1#350 GND	(7) 3-1/2"C 4#500 & 1#350 GND
28	3000	3040	(8) 500 KCMIL	(8) 3"C 2#500 & 1#400 GND	(8) 3-1/2"C 3#500 & 1#400 GND	(8) 3-1/2"C 4#500 & 1#400 GND
29	4000	4180	(11) 500 KCMIL	(11) 3"C 2#500 & 1#500 GND	(11) 3-1/2"C 3#500 & 1#500 GND	(11) 4"C 4#500 & 1#500 GND
30	5000	5320	(14) 500 KCMIL	(14) 3"C 2#500 & 2#350 GND	(14) 3-1/2"C 3#500 & 2#350 GND	(14) 4"C 4#500 & 2#350 GND

GENERAL NOTES:

A. THESE FEEDERS ARE BASED ON THWN, THHN & XHHW CONDUCTORS AT 75 DEGREES C - COPPER WIRE.

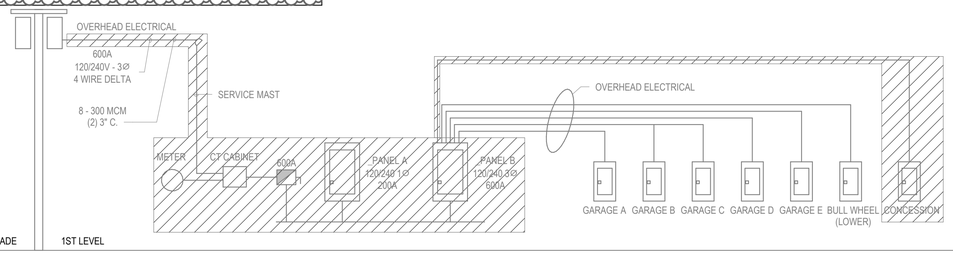
B. CONDUCTOR SIZES 12 TO 8 ARE BASED ON THWN, THHN & XHHW CONDUCTORS AT 60 DEGREES C - COPPER WIRE.

C. COPPER WIRE IN PVC SCHEDULE 80 CONDUIT EQUIPMENT GROUNDING CONDUCTORS ARE SIZED PER TABLE 250.122 (2023).

D. TEMPERATURE:

1. ALL FEEDERS USED IN THE TABLE ARE 75 DEGREE INSULATION MINIMUM. VERIFY THAT YOU ARE TERMINATING TO 75 DEGREE LUGS.
2. IF TERMINATION LUGS ARE 60 DEGREE RATED OR UNKNOWN DUE TO BEING PROVIDED BY OTHERS, USE "STANDARD FEEDER SIZES FOR 60 DEGREE INSULATION" SIZING SHEET.
3. IF CABLE IS UNDERGROUND, IT MAY NEED TO BE DERATED DUE TO EXCESS HEAT (NEC 310.15C AND 310.60). TO DO THIS USE FORMULA 310.15C OR USE A PROGRAM CALLED AMP CALC.

E. COPPER WIRE IN RIGID PVC CONDUIT (PVC), SCHEDULE 80 ARTICLE 352.



B3 ELECTRICAL POWER DISTRIBUTION DIAGRAM - DEMOLITION
E701 NOT TO SCALE

_PANEL B

ELEC/MECH 012
600 AMAIN CB
600 AMPS

VOLTAGE: 240/120 High LegV.3Ø4W.
AIC RATING:
SPECIAL: EXISTING PANEL TO BE DEMOLISHED

MAIN DEVICE

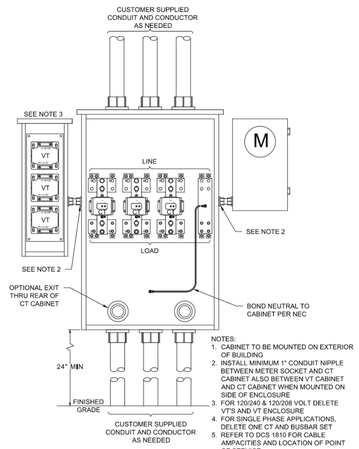
	POLES	BKR	SPECIAL	DESCRIPTION / NAMEPLATE
	3	600 A		

SECTION NO. 1

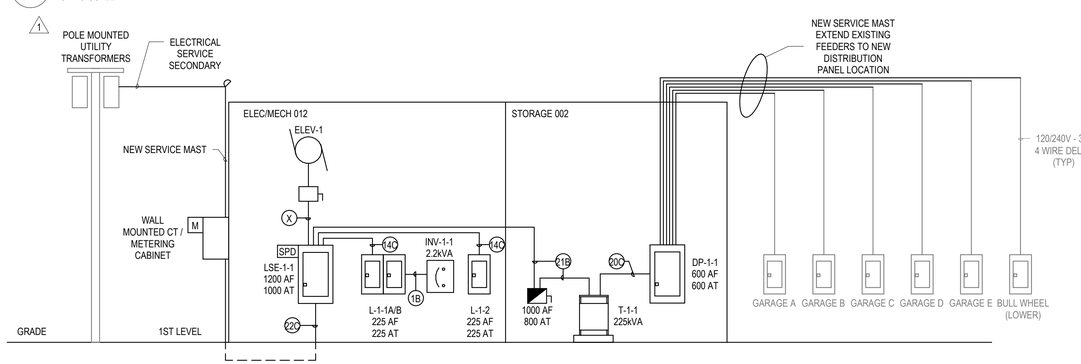
CKT	POLES	BKR	Load	DESCRIPTION / NAMEPLATE	NOTES
1	1	50 A	0 VA	GARAGE ACROSS FROM REST. DOOR / GARAGE BEHIND CHALET	
2	1	50 A	0 VA	SKI STORAGE GARAGE	
3	1	70 A	0 VA	QUANSIT HUT	
4	1	70 A	0 VA	CONCESSION STAND (REMOVED IN DEMOLITION)	
5	1	70 A	0 VA	ALPINE HILLS / CHAIRLIFT LTG / NEW LTG	
6	1	50 A	0 VA	OLD GARAGE	
7	1	50 A	0 VA	DECK LIGHTS / OUTLETS (REMOVED IN DEMOLITION)	
8	1	100 A	0 VA	LITTLE CHESTER / NVB (ABANDONED)	
9	1	70 A	0 VA	BIG CHESTER / SVB (ABANDONED)	

NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM, LOCATE AND DOCUMENT ALL ACTIVE, CONNECTED LOADS TO THIS SERVICE PRIOR TO DISCONNECTING AND REMOVING SWITCHBOARD. REFER TO DP-1-1 DISTRIBUTION PANEL SCHEDULE FOR ADDITIONAL INFORMATION.



MNPOWER CURRENT TRANSFORMER / VOLTAGE TRANSFOMRER - METERING CABINET
A2 E701 NOT TO SCALE



A3 ELECTRICAL POWER DISTRIBUTION DIAGRAM
E701 NOT TO SCALE

LHB
21 W. SUPERIOR ST., STE 500 | DULUTH, MN 55802 | 218.727.8446

CLIENT:
CITY OF DULUTH

411 WEST 1ST STREET
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
	02/12/2026	CD SUBMITTAL

NO	DATE	REVISION
2	03/18/2026	ADDENDUM 02
1	03/04/2026	ADDENDUM 01

I HEREBY CERTIFY that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature:
Typed or Printed Name: JACOB D. MELBOSTAD
Date: 02/12/2026 License Number: 56200

PROJECT NAME:
CHESTER BOWL CHALET
1801 E. SKYLINE PARKWAY, DULUTH, MN 55812

DRAWING TITLE:
ELECTRICAL DIAGRAMS & SCHEDULES

DRAWN BY: ARP
CHECKED BY: DAZ
PROJ. NO: 150582
DRAWING NO: **E701**