

LAKEFRONT LODGE RESTROOM

SECTION 13 34 23 - PRE-ENGINEERED ROMTEC BUILDING

Specification Date: 4/9/2026

SECTION 1: BUILDING PACKAGE OVERVIEW

1.1 SUMMARY

- A. **Owner** will provide a pre-engineered **Romtec** building package for onsite installation by the **building installer** and/or **contractor** (see definitions and scope of work in sections below).
- B. The following is an overview of the scope and products included in the **Romtec** building package.

1.2 OVERVIEW

- A. Building package design, engineering, and furnishing all specified building package components shall be provided by Romtec, Inc.
- B. The building and its concrete footings, foundation, and slab shall be engineered by **Romtec** to meet site specific conditions including wind and snow loading, local frost depth, and ground conditions.
- C. Building shall be designed to meet local codes and permitting authority approvals for permanent structures.
- D. The reviewing authority reserves the right to review or reject all submittals at its sole discretion.
- E. All work and materials shall comply with the latest industry building codes and regulations for the state where the project is located.
- F. Americans with Disabilities Act Accessibility Guidelines (ADAAG) will be followed in design, manufacture, and construction.

1.3 DESIGN & SUBMITTAL DOCUMENTATION

- A. **Romtec's** work shall include the design of the architectural, mechanical, structural, and electrical components that will be required for this building.
- B. The building will be designed as a complete building package to be delivered to the job site for construction on-site by the **building installer** and/or **contractor**.
- C. **Romtec** shall submit the packaged restroom building preliminary Scope of Supply and Design Submittal (SSDS), including the building plan view and elevation drawings.
- D. **Romtec** will provide complete submittal documentation in the **Romtec's** standard electronic submittal format for review.
- E. The preliminary SSDS will be reviewed by relevant parties and returned to **Romtec** with any required revisions to the terms, product data sheets, and/or building plan view and elevation drawings noted as comments.
- F. **Romtec** shall make any required corrections or revisions and resubmit the preliminary SSDS until the preliminary SSDS is approved by the relevant parties.
- G. Once the preliminary SSDS has been approved, **Romtec** will provide full sealed plan sets stamped by an engineer licensed in the state that the building is located for review by the permitting authority.
- H. Up to three (3) wet stamped sets of the plans and structural calculations shall be provided by **Romtec** before any additional fees apply. Standard plan set size is 11" x 17".
- I. Permitting authority will review the full sealed plan set and return with any required revisions or corrections noted as comments.
- J. **Romtec** shall provide one full round of sealed plan revisions in response to permitting authority comments before any additional fees are allowed.
- K. The following sections shall be included in **Romtec's** preliminary Scope of Supply and Design Submittal. Incomplete submittals will be rejected and returned for revision.
 - 1. INTRODUCTION
 - 2. BUILDING DESIGN,
 - (a) SUPPLIED ITEMS
 - (b) EXCLUDED ITEMS
 - (c) PLAN VIEW AND ELEVATION DRAWINGS
 - 3. PRODUCT DATA
 - 4. WARRANTY & LIMITATIONS

Note: Overall site plan is not part of **Romtec's** scope.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. **Romtec's** freight shall be based on delivering the product on a 48' to 53' flatbed or van truck and trailers, or as close to those dimensions as can legally access the site. Overall dimensions of the truck and trailers are: 70' overall length, 102" wide and 168" high.
- B. **Romtec** shall deliver organized building package components in stages as shrink-wrapped pallets that correspond to a typical sequence of construction. A bill of material stating the stages of palletized components shall be included with every delivery. All stages as applicable.

1. Stage 1 pallets shall include structural components such as block, frames, vents, beams, connectors, trusses, etc.
 2. Stage 2 pallets shall include second stage structural components such as filler wall material, windows, skylights, roofing, etc.
 3. Stage 3 pallets shall include structural finish components such as siding material, tile, doors etc.
 4. Stage 4 pallets shall include plumbing and electrical fixtures and other finish materials such as toilets, sinks, drinking fountains, electrical fixtures, accessories, etc.
- C. **Romtec** shall coordinate the delivery with the receiving entity (*owner, building installer, and/or contractor*) as appropriate.

1.5 WARRANTY

- A. The building package and all associated components provided by **Romtec** shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from the date of acceptance. Acceptance is the date of delivery of the building package, or, if delivery is delayed for any reason beyond **Romtec's** control, the date that the building and all its associated components were ready to deliver.
- B. **Romtec** shall pass through to owner all relevant manufacturers warranties for individual products and components of the building package.

SECTION 2: BUILDING PACKAGE PRODUCTS

2.1 MANUFACTURER

- A. Romtec, Inc.
18240 North Bank Road, Roseburg, OR 97470
Tel: 541-496-3541; Fax: 541-496-0803
Email: RIsales@romtec.com
Web: www.Romtec.com

2.2 BUILDING DESCRIPTION

- A. Refer to plans for quantities, dimensions, locations, and installation methods for the materials and items described in this section.
- B. Building dimensions shall match what is indicated on drawings.
- C. **Romtec** will supply the building package products to *owner*.
- D. **Owner** will supply the Romtec building package products to *building installer* and/or *contractor*.

2.3 PLUMBING FIXTURES & ACCESSORIES

- A. Toilet shall be floor mount, back supply, stainless steel.
 1. Flush valve shall be 1.6 gpf, polished chrom finish, fixture connection rear spud, single flush, sensor-operated, 24V, Royal concealed sensor hardwired water closet flushometer.
- B. Lavatory shall be stainless steel and wall hung.
 1. Faucets shall be a 2.2gpm, pivot action lever style faucet.
- C. Grab bars shall be stainless steel.
- D. Mirror shall be 18" x 36", framed with one-piece, roll-formed stainless steel with ¾" face and neatly mitered corners.
- E. Toilet paper dispenser shall be stainless steel, wall mount with three-roll capacity.
- F. Surface-mounted napkin disposal shall be fabricated of 22-gauge stainless steel with exposed surfaces in satin finish. Top attached by piano hinge.
- G. Surface mounted automatic soap/sanitizer dispenser, with face formed with contemporary contours. Capacity shall be 27 oz (800 ml). Dispenser shall accommodate liquid soap, liquid hand sanitizer, and/or gel sanitizer, and shall be equipped with hinged cover and completely concealed mounting plate. Vandal resistant filler hole cover and sight gauge. Corrosion-resistant liquid soap/gel sanitizer valve; peristaltic tube with self-contained valve/nozzle.
- H. Foundations model 5410339 horizontal diaper changing station, polyethylene body with stainless steel exterior.
- I. ProFlo PFMB2424S, 24" x 24" mop service basin with stainless steel drain, 24" vinyl bumper guard, 24" stainless steel wall guard set, mop hanger, service hose and service hose bracket.
 1. Mustee 63.600A, heavy duty, rough brass, chrome plated service faucet.
- J. Haws model 1119FR, ADA outdoor freeze-resistant vandal-resistant drinking fountain
 1. Haws model 1920FR, vandal-resistant outdoor freeze-resistant bottle filler with model 6469 strainer, 1920 drip tray.
 2. Haws model 6521FR, freeze resistant in-wall valve.
 3. Haws model BP32 back panel.
 4. Surface mount, stainless steel, guard rails.
- K. Woodford model 67 backflow protected automatic draining freezeless wall hydrant.

- L. Woodford model 24 anti-siphon protected wall faucet.
- M. ADA Restroom Signage.

2.4 ELECTRICAL

- A. Interior and exterior light fixtures
 - 1. Exterior lights to be LED downlights with cast-aluminum housing with corrosion-resistant paint in dark bronze. Polycarbonate lens.
 - 2. Exterior lights controlled by photocell.
 - 3. Interior surface mount, 48" LED light fixtures.
 - 4. Restroom lights controlled by motion sensor.
 - 5. Mech room lights controlled by switch (switches by installer).
- B. Electric tank, 20-gallon, 2.5kw water heater with thermal expansion tank and thermostatic mixing valves.
- C. Mechanical Room Only: Large wall heater LPW ComfortCraft Series 2.
- D. Mechanical exhaust package with inline fans, ducting, registers and heated intake air (ERV).
- E. ThinAir TA-SB brushed stainless steel hand dryers.
- F. Main breaker panel.
 - 1. Breaker Panel shall be 200 Amp, single-phase, rain tight.

Note: Breaker panel shall be sized to accept only the loads of the Romtec electrical fixture package. Romtec should modify the main breaker panel as needed to be most efficient based on any design changes.

2.5 STRUCTURE

- A. Concrete Masonry Units (CMU).
 - 1. Walls shall be constructed of 8"W x 16"L x 8"H smooth-face mortar joint concrete masonry units (concrete blocks).
 - 2. Blocks shall be manufactured to ASTM C90 designation for load bearing concrete masonry units.
 - 3. Block color to be **Gray**.
- B. Exterior wall finish shall be fiber cement lap siding (installer painted) over rigid insulation.
 - 1. Siding shall be mounted over OSB sheathing supplied by **building supplier**.
- C. Door system components
 - 1. Doors shall be Steelcraft® L14 standard laminated honeycomb core and 14-gauge galvanized steel.
 - 2. Door frame shall be pre-welded Steelcraft® 3-Sided flush frame, 14-gauge galvanized A-60 steel.
 - 3. Doors and frames to be powder coated **black**.
 - 4. Masonry door clips (3/16" dia.) for door frame shall be fitted between the doorframe and concrete blocks to bond frame to wall. Door clips allow full internal grouting of the frame during installation.
 - 5. Hinges shall meet ANSI A5112 with non-removable pin and two ball bearings.
 - 6. Door closure shall be LCN-4111, grade 1, heavy duty closure with cast iron body, full complement bearing, double heat-treated pinion journal.
 - 7. Door to have 0.038" gauge, stainless steel protection plates.
 - 8. Doors to have aluminum alloy 6063, T5 temper synthetic rubber polymer blend neoprene sweeps, model 200NA, anodized aluminum finish.
 - 9. Doors to have pull handles with stainless steel plates and deadbolt locks.

2.6 ROOFING

- A. Roof system shall consist of wood truss package.
 - 1. Includes the following items:
 - (a) Batt insulation.
 - (b) 1"x4" Cedar Trim
 - (c) Simpson anchors/ties
 - (d) Roof Sheathing
 - (e) Lumber for truss blocking, top-of-wall blocking, eave/vent blocking
 - (f) Vents
 - (g) Ice and water shield
 - (h) Interior trim boards
- B. Architectural Composition roofing shall have a 5-5/8 in. exposure and a nominal size of 13-1/4 in. x 39-3/8 in.
 - 1. Roofing color to be selected by the **owner** from the manufacturers standard color chart.

SECTION 3: BUILDING INSTALLER SCOPE

The installing contractor or subcontractor, hereafter designated as the **building installer**, is responsible for building package installation. **Building installer** work will generally include foundation/pad construction and building package assembly/construction.

Note: Romtec's scope is separate from the building installer's scope. Romtec, Inc., is the approved building package supplier, not a designated building installer.

3.1 CONSTRUCTION SUBMITTALS

- A. If required by **owner** and/or reviewing authority, **building installer** shall submit product data sheets and relevant information about the specified **building installer** supplied products below for review and approval.

3.2 WARRANTY

- A. **Building installer's** work shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from the date of acceptance. Acceptance is the date that installation work for the building package is completed, including any relevant final punch list. If final acceptance of the completed building is delayed for reasons beyond **building installer's** control, the warranty shall be one (1) year from the completion of **building installer's** installation work and demobilization.
- B. **Building installer** shall pass through to owner all relevant manufacturers warranties for individual products and components supplied by **building installer**.

3.3 STRUCTURE

- A. Masonry (concrete) grout shall be supplied and installed by **building installer**.
 - 1. Grout shall have a minimum compressive strength of 2,500 psi at 28 days, 9+/-1" slump, with max ½" aggregate, or as required in final approved plans.
 - 2. Fine or coarse grout may be used in accordance with 2009 UBC.
 - 3. All CMU block must be fully grouted and may not be wetted.

Note: If required for installation, building installer will be responsible for providing appropriate equipment and labor for notching CMU block for bond beams, cutting CMU block to make any required shapes, and/or grinding CMU block for fixture mounting.

- B. Rebar for walls shall be supplied and installed by **building installer**.
 - 1. All walls shall have # 4 and # 5 rebar. See final approved plans for spacing.
 - 2. All rebar used in the building must meet ASTM A615 manufacturing standards and is to be placed per the final approved plans.
- C. Interior block wall finish shall be latex epoxy paint supplied and installed by **building installer**.
- D. Ceiling finish shall be supplied and installed by **building installer** per the final approved plans.
- E. Interior floors to be sealed concrete finish supplied by **building installer**.
- F. Sealant for all exposed wood shall be supplied and installed by **building installer**.
- G. Sealant for all exterior CMU block is required, to be supplied and installed by **building installer**.
- H. Fiber cement siding is primed to be painted on-site by **building installer**.
- I. Rain gutters and downspouts are supplied and installed by **building installer**.

3.4 ELECTRICAL

- A. Electrical rough-in, installation and trim shall be provided by **building installer**.
 - 1. All underground and/or overhead service to building shall be as specified in the final site plan.
 - 2. **Building installer** is responsible for all necessary wire, connectors, grounding, conduit, and related items to install the building package electrical components and meet all relevant national, state, and local codes.
 - 3. **Building installer** shall supply and install all switches and outlets required to complete the building package installation.

3.5 CAST IN-PLACE CONCRETE FOR BUILDING PACKAGE

- A. All equipment, labor, trades, and materials for cast-in-place concrete shall be provided by **building installer**.
 - 1. Includes all materials and labor for building package foundations/footings and interior slabs.
- B. Footings for the building package are to be dug by the **building installer** and poured on-site to meet local code for permanent structures. A prefabricated, modular mat placed on compacted base is not an accepted equal to a site specific, site poured, engineered foundation.
- C. Engineered fill shall be ¾" minus crushed aggregate around footings, foundations, and slabs, or as required in the final approved plans.
- D. Slab vapor barrier shall be 6-mil continuous plastic under the concrete slab, or as required in the final approved plans.

- E. The foundation shall be installed as designed with all cast in-place concrete poured to dimensions specified, or as required in the final plans.
 - 1. Footings will be built to minimum 24" depth or greater if required by local frost depth or permitting authority.
 - 2. Minimum compressive strength of foundation concrete shall be 3,000 psi at 28 days, 4" +/-1" slump, with max ¾" aggregate, cured in accordance with ACI 308, or as required in approved final plans.
 - 3. Slabs shall have a fine broom finish with joints required in flat work as shown on plans.
 - 4. Steel rebar shall be installed as specified in final plans.
- F. **Building installer** shall supply and install concrete slab sealer.
 - 1. Concrete slab sealer shall be a water-based, transparent curing, sealing and dust proofing compound with two (2) coats to be applied per manufacturer's instructions.

3.6 PLUMBING

- A. Plumbing rough-in, installation and trim within 10' of the building footprint shall be provided by **building installer**.
 - 1. All underground water service and sewer drain(s) from building to be as specified in final approved site plan.
 - 2. Building water shutoff valve, drain, and all rough piping shall be as shown on final building plans. Final installation location to be determined onsite.
 - 3. Install the building package plumbing fixtures per the final approved plans.
 - 4. Piping shall be installed per the final approved plans with minimum pipe sizing per 2009 Uniform Plumbing Code Section 610.
- B. Floor drains in the building shall be supplied and installed by **building installer**.
 - 1. All floor drains shall be as shown on final approved plans.

3.7 OTHER MATERIALS & EQUIPMENT

- A. Unless otherwise specified, the following products and materials are supplied by **building installer** (if applicable).
 - 1. Building package installation
 - 2. Cast-in-place concrete foundations, footings, interior slabs
 - 3. Concrete slab sealer
 - 4. Mortar
 - 5. Concrete grout
 - 6. Rebar
 - 7. Latex epoxy paint
 - 8. Caulk for siding
 - 9. Plumbing rough in, installation and trim
 - 10. Electrical rough in, installation and trim
 - 11. Switches & outlets
 - 12. Typical fasteners; for example: roofing nails, staples, etc.
 - 13. Fasteners not included in product packaging
 - 14. Wood sealant for all decking, glulam beams, posts, and extensions
 - 15. All other items within the building footprint indicated on final plans or required by building codes to complete installation of the building package which are not specifically stated as supplied by **owner** or **contractor**.

3.8 DELIVERY, STORAGE, AND HANDLING

- A. The **building installer** will coordinate with **owner** and/or **Romtec** to receive delivery of the building package onsite. This includes all equipment and labor required for off-loading of the delivered building package.
- B. The **building installer** will assume responsibility for adequate protection and maintenance of delivered building package materials from weather, damage, and pilferage during installation work. Any failure to adequately protect building package materials that affects the warranty of those materials will be at **building installer's** expense.
- C. **Building installer** shall collect and maintain for final delivery to owner any operation & maintenance manuals included by individual product manufacturers with their respective product packaging. Any failure to collect, maintain, and/or deliver these O&M manuals to the **owner** that results in fees from **Romtec** for additional copies shall be at **building installer's** expense.

SECTION 4: CONTRACTOR SCOPE ITEMS

The items in this section may be provided by the same **building installer** as defined in Section 3 above (typically when a single entity is acting as both the **building installer** and **contractor**), or the items in this section may be provided by a separate entity such as a general contractor or site contractor, hereafter designated as **contractor** (typically when the **building installer** is a separate subcontractor). **Contractor** work will generally include site preparation and grading, excavations for structures, backfill and/or structural backfill, and any site or utility work outside the building package footprint.

Items in this section are generally to be completed prior to **building installer** beginning its installation work described in Section 3 above.

4.1 CONSTRUCTION SUBMITTALS

- A. If required by **owner** and/or reviewing authority, **contractor** shall submit product data sheets and relevant information about the specified **contractor** supplied products below for review and approval.

4.2 WARRANTY

- A. **Building installer's** work shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from the date of acceptance. Acceptance is the date that installation work for the building package is completed, including any relevant final punch list. If final acceptance of the completed building is delayed for reasons beyond **building installer's** control, the warranty shall be one (1) year from the completion of **building installer's** installation work and demobilization.
- B. **Building installer** shall pass through to **owner** all relevant manufacturers warranties for individual products and components supplied by **building installer**.

4.3 ELECTRICAL

- A. Incoming electrical utility lines to within approximately 10' of the building shall be provided by **contractor**.
 1. All underground and/or overhead service to building shall be as specified in the final site plan.
 2. Electric meter base and all rough wiring, switches, plugs and circuit breakers shall be as shown on final plans.
 3. **Contractor** supplies and installs the meter base and meter.

4.4 CAST IN-PLACE CONCRETE FOR BUILDING EXTERIOR

- A. All equipment, labor, trades, and materials shall be supplied by **contractor**.
 1. Includes all materials and labor for exterior/entry slabs and sidewalks.
- B. Refer to drawings for sidewalks and entry slabs.
 2. Minimum concrete compressive strength of 2,500 psi at 28 days.
 3. Remesh or rebar reinforcement shall be used in sidewalks.
 4. All sidewalks shall be finished with a fine broom with control joints installed per the final approved site plan.

4.5 PLUMBING

- A. Incoming plumbing to within approximately 10' of the building shall be provided by **contractor**.
 1. All underground water service and sewer drain(s) from building to be as specified in final approved site plan.
 2. Building water shutoff valve is to be supplied and installed by **contractor**.
 3. **Contractor** is responsible to ensure that incoming water pressure is sufficient to meet building package fixture demands.
 4. Minimum water pressure at toilet and urinal flush valves shall be 40 psi with minimum pipe sizing as per 2009 Uniform Plumbing Code Section 610, or as required in final approved plans.
- B. Water line drain valve shall be supplied and installed by **contractor**.
- C. Sewer line backflow check valve shall be supplied and installed by **contractor**.

4.6 OTHER MATERIALS & EQUIPMENT

- A. Unless otherwise specified, the following products and materials are supplied by **contractor**.
 1. All items not specifically listed as supplied by **owner** or **building installer**.
 2. Any item listed as supplied by "contractor" or "others".
- B. Unless specified in the plans or submittals, **contractor** supplies the following (if applicable):
 1. Incoming electrical, water, sewer, and gas utilities.
 2. Asphalt paving

3. Masonry pavers
4. Sidewalks
5. Landscaping
6. Site grading
7. Exterior/entry slabs
8. Drain valves and backflow check valves
9. Branch circuit breakers
10. Irrigation Equipment
11. Fire alarm and fire suppression equipment
12. Lighting equipment not attached to the building.
13. All other items exterior of the building footprint indicated on final plans or required by building codes which are not specifically stated as supplied by *owner* or *building installer*.

4.7 DELIVERY, STORAGE, AND HANDLING

- A. The *contractor* will assume responsibility for adequate protection and maintenance of the installed building package materials after completion of installation work by *building installer*. Any failure to adequately protect building package materials that affects the warranty of those materials will be at *contractor's* expense.

SECTION 5: OWNER'S SCOPE

5.1 ONGOING MAINTENANCE

- A. *Owner* is responsible for ongoing maintenance of the completed restroom building after completion of work by building installer and contractor.

5.2 SITE PLAN

- A. *Owner* (or owner's site engineer) is responsible for providing the final approved site plan to *Romtec* and/or *building installer*.

5.3 SPECIAL INSPECTION

- A. If required, special inspection(s) services shall be provided by *owner*.
- B. If special inspection(s) are required by the permitting authority or relevant agency(ies), then *Romtec*, *building installer*, and/or *contractor* shall provide reasonable assistance to the *owner* to accommodate the special inspection(s).

5.4 DELIVERY, STORAGE, AND HANDLING

- A. *Owner* will coordinate with *Romtec*, *building installer*, and/or *contractor* to receive delivery of the building package onsite.

ROMTEC

18240 NORTH BANK ROAD - ROSEBURG, OR 97470
(541)-496-3541 FAX (541)-496-0803


PROJECT INFORMATION

PROJECT NAME: LAKEFRONT LODGE RESTROOM
 PROJECT I.D. : LLR01
 SITE ADDRESS: 30525 LAKE SHORE BLVD.
 CITY / STATE: WILLOWICK, OH 44095

SHEET SCHEDULE	
SHEET	CONTENTS
G0	TITLE PAGE, SHEET & REVISION SCHEDULE
G1	GENERAL NOTES / SYMBOL LEGEND
G2	DESIGN CRITERIA AND CODE SUMMARY
A1.1	FLOOR PLAN
A1.2	ADA CLEARANCES
A1.3	ADA RESTROOM FIXTURE DETAILS
A1.4	INTERIOR ELEVATIONS VIEWS
A2.1	EXTERIOR ELEVATION VIEWS
A2.2	EXTERIOR ELEVATION VIEWS
A3.1	SECTION VIEWS
A3.2	SECTION VIEWS
A4.1	WALL FINISH SCHEDULE (INTERIOR/EXTERIOR)
A4.2	WALL FINISH DETAILS
A4.3	WALL FINISH DETAILS
A5.1	DOOR SCHEDULE
A5.2	DOOR DETAILS
A5.3	SIGN DETAILS
S7.1	FOUNDATION PLAN
S7.2	FOUNDATION DETAILS
S7.3	FOUNDATION DETAILS
S8.1	STRUCTURAL CMU PLAN
S8.2	STRUCTURAL CMU REBAR LAYOUT
S8.3	STRUCTURAL CMU DETAILS
S8.4	STRUCTURAL CMU ELEVATION VIEWS
S8.5	STRUCTURAL CMU ELEVATION VIEWS
S9.1	ROOF FRAMING PLAN
S10.1	ROOF CONNECTION DETAILS
S10.2	ROOF CONNECTION DETAILS
S10.3	ROOF CONNECTION DETAILS
R1	ROOFING PLAN
R2	ROOFING DETAILS
R3	ROOFING DETAILS
R4	ROOFING DETAILS
P1	PLUMBING SCHEDULE
P2	PLUMBING DETAILS
P3	PLUMBING DETAILS
P4	PLUMBING PLAN
P5	PLUMBING RISER DIAGRAM
M1	MECHANICAL PLAN
E1	ELECTRICAL SCHEDULE
E2	ELECTRICAL PLAN
E3	ELECTRICAL RISER DETAILS

REVISION SCHEDULE			
REV.	DATE	BY	DESCRIPTION
1	03/11/2026	NP	G2, A1.1, A1.2, A1.3, A1.4, A2.1, A2.2, A3.1, A3.2, A4.1, A4.3, A5.2, S7.1, S7.3, S8.1, S8.2, S10.1, S10.2, S10.3, R1, R4, P2, P4, M1, E1, E2

3/16/2026



Exp. 12/31/2027

ROMTEC
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO

SHEET TITLE: REVISION & SHEET SCHEDULE

PROJECT #: LLR01
 DATE: 02/05/2026
 DRAWN BY: NP

REV.	DATE	BY

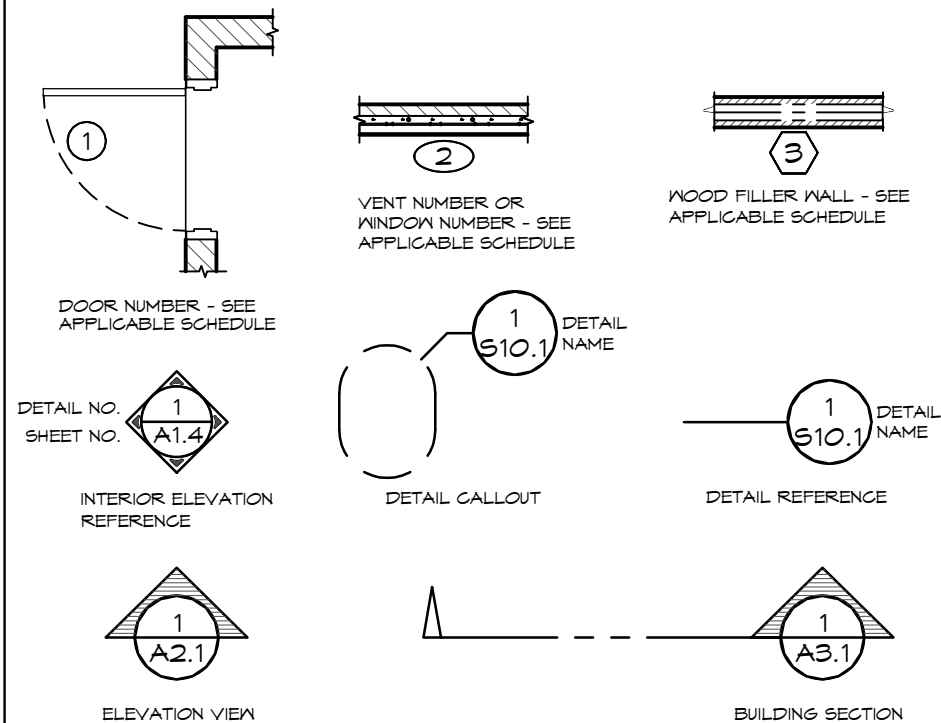
REVISIONS:

GO

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

SYMBOL LEGEND



ABBREVIATIONS

AB	ANCHOR BOLT	MO	MASONRY OPENING
ACT	ADULT CHANGING TABLE	MR	METAL ROOFING
AFF	ABOVE FINISHED FLOOR	MS	MILD STEEL
ATS	AUTOMATIC TRANSFER SWITCH	ND	NAPKIN DISPOSAL
BN	BOUNDARY NAIL	NTS	NOT TO SCALE
BOT	BOTTOM	OC	ON CENTER
BP	BREAKER PANEL	OCEW	ON CENTER EACH WAY
CJ	CONTROL JOINT	OSB	ORIENTED STRAND BOARD
CL	CENTER LINE	P	PHOTO EYE
CO	CLEAN OUT	PCC	PORTLAND CEMENT COMPANY
CMU	CONCRETE MASONRY UNIT	PEN	PANEL EDGE NAILING
db	NOMINAL BAR DIAMETER	PL	PLATE
DD	DIAPER DECK	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DISC	DISCONNECT	PT	PRESSURE TREATED
EM	ELECTRIC METER	PTD	PAPER TOWEL DISPENSER
EN	END NAIL	PV	PHOTO VOLTAIC
EW	EACH WAY	R4S	ROUGH FOUR SIDES
FA	FREE AIR	REQD	REQUIRED
FD	FLOOR DRAIN	RO	ROUGH OPENING
FF	FINISHED FLOOR	S4S	SURFACED FOUR SIDES
FG	FINISHED GRADE	SCH	SCHEDULE
FN	FIELD NAIL	SD	SOAP DISPENSER
FRP	FIBERGLASS REINFORCED PANEL	SIP	STRUCTURAL INSULATED PANEL
GB	GRAB BAR	SJ	SAW JOINT
GLB	GLUE LAMINATED BEAM	SM	SHEET METAL
HB	HOSE BIBB	SN	SHEAR NAILING
HD	HAND DRYER	SS	STAINLESS STEEL
HM	HOLLOW METAL (DOOR)	TBD	TO BE DETERMINED
HSS	HOLLOW STRUCTURAL SECTIONS	T&B	TOP & BOTTOM
HTR	HEATER	T&G	TONGUE & GROOVE
HYP	HYPOTENUSE	TLT	TOILET
I.S.	INSTALLER SUPPLIED	TP	TOILET PAPER DISPENSER
KSI	KIPS PER SQUARE INCH	TS	TIMER SWITCH
L	STRUCTURAL STEEL ANGLE	TSCD	TOILET SEAT COVER DISPENSER
LAV	LAVATORY	TYP	TYPICAL
LF	LIGHT FIXTURE	UNO	UNLESS NOTED OTHERWISE
MBP	MAIN BREAKER PANEL	VB	VAPOR BARRIER
MD	MAIN DISCONNECT	VTR	VENT THROUGH ROOF
MIN	MINIMUM	WH	WATER HEATER
MIR	MIRROR	WWM	WOVEN WIRE MESH
		W	WITH

GENERAL NOTES

- THIS PROJECT SHALL COMPLY WITH ALL CODES AND STANDARDS IDENTIFIED ON SHEET G2. ALL WORK SHALL MEET OR EXCEED INDUSTRY STANDARDS FOR MATERIALS, WORKMANSHIP, ETC.
- CONTRACTOR SHALL REVIEW THE DRAWINGS THOROUGHLY BEFORE PROCEEDING WITH ANY WORK. ANY DISCREPANCIES FOUND WITHIN THESE DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ROMTEC. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK HE KNOWS TO BE IN CONFLICT WITH OTHER WORK, OR IS NOT APPROVED BY CODE, UNTIL RESOLVED BY ROMTEC OR THE ENGINEER/ARCHITECT.
- CONTRACTOR SHALL MAINTAIN GENERAL LIABILITY INSURANCE AND WORKER'S COMP. INSURANCE AS PER SPECIFIC STATE MINIMUM REQUIREMENTS.
- FOOTINGS SHALL BE CONSTRUCTED ON UNDISTURBED NATIVE SOIL OR ENGINEER APPROVED FILL. CONTRACTOR TO VERIFY ASSUMED SOIL BEARING CAPACITY NOTED ON SHEET G2. SHOULD SOIL NOT MEET OR EXCEED THE ASSUMED SOIL BEARING CAPACITY, CONTRACTOR TO MODIFY SOIL CONDITIONS TO SATISFY CRITERIA OR NOTIFY THE STRUCTURAL ENGINEER TO REVISE DESIGN PER CONDITIONS ENCOUNTERED. BACKFILL AROUND BUILDING TO PROVIDE SLOPE AWAY FROM BUILDING NOT LESS THAN A 2% SLOPE FOR A MINIMUM DISTANCE OF 10' FROM THE BUILDING, PER 2021 IBC 1804.3.
- CAST-IN-PLACE CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS 4" +/- 1" SLUMP, WITH MAX 1" AGGREGATE, AND ALL MATERIALS IN ACCORDANCE WITH ACI 318 STANDARDS. FINE BROOM FINISH INTERIOR SURFACES AND EXTERIOR SLABS. JOINTS REQUIRED IN FLAT WORK, SEE FOUNDATION DETAILS FOR REQUIREMENTS.
 - CMU BLOCKS "MEDIUM WEIGHT DENSITY" ARE MANUFACTURED TO ASTM C90-02 STANDARDS WITH A MIN COMPRESSIVE STRENGTH $f_m = 1500$ PSI. ALL CMU BLOCKS MUST BE FULLY GROUTED IN 5 FT MAXIMUM LIFTS (EXCEPTION - HIGH LIFT GROUTING FOR 8'-8" WALLS MAYBE USED AS LONG AS CLEANOUT OPENINGS ARE PROVIDED AT THE BOTTOM OF EVERY CELL FOR EACH POUR ABOVE 5 FT). THE MORTAR TO BE USED SHALL BE TYPE S 1800 PSI MORTAR CONFORMING TO ASTM C270. MASONRY (CONCRETE) GROUT: 2500 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS 9" +/- 1" SLUMP, WITH MAX 1/2" AGGREGATE, AND TESTED IN ACCORDANCE TO MEET ACI 318. FINE OR COURSE GROUT MAY BE USED IN ACCORDANCE WITH 2021 IBC. CONSOLIDATE GROUT AT THE TIME OF PLACEMENT. CONSOLIDATE POURS EXCEEDING 12 IN. IN HEIGHT BY MECHANICAL VIBRATION, AND RECONSOLIDATE BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED. CONSOLIDATION AND RECONSOLIDATION ARE NORMALLY ACHIEVED WITH A MECHANICAL VIBRATOR. A LOW VELOCITY VIBRATOR WITH A 3/4 IN. HEAD IS USED.
- ANCHOR AND MACHINE BOLTS SHALL BE ASTM A307, UNLESS NOTED OTHERWISE BOLTS SHALL BE INSTALLED PER TURN-OF-NUT INSTALLATION METHOD, REQUIRED TURNS FOR PRE-TENSIONING FROM SNUG-TIGHT, U.N.O. IN THIS PLAN SET OR BY ANCHOR BOLT OR FASTENER MANUFACTURER. SCREWS AND MACHINE BOLT CALLOUTS ARE MINIMUM SIZE ALLOWED, ACTUAL SIZE MAY VARY. HOLLOW STRUCTURAL SECTION (HSS) SHALL BE ASTM A500 GRADE B, $F_y = 46$ ksi. WIDE FLANGE BEAMS SHALL BE ASTM A992, $F_y = 50$ ksi. STEEL PLATES & SHAPES SHALL BE ASTM A36, $F_y = 36$ ksi. CONCRETE REINFORCING STEEL (REBAR): 60 ksi. (GRADE 60). WOOD FRAMING SHALL BE #2 & BETTER DOUGLAS FIR, UNO. GLU-LAM BEAMS SHALL BE GRADE 24F-V4.
- QUESTIONS CONCERNING MATERIALS OR CONSTRUCTION CONTACT ROMTEC TECHNICAL ASSISTANCE AT: 541-496-3541
- ROMTEC SCOPE SUPPLY AND DESIGN SUBMITTAL (SSDS) IDENTIFY SPECIFIC MODEL, MANUFACTURER & BRAND OF ALL PLUMBING AND ELECTRICAL FIXTURES AND ACCESSORIES. REFER TO THE SSDS FOR SPECIFIC LIST OF ITEMS SUPPLIED BY ROMTEC, ANY ITEMS NOT LISTED IN THE SSDS IS ASSUMED SUPPLIED BY THE INSTALLER.
- THE OWNER / CONTRACTOR MAY EXERCISE DISCRETION IN SELECTING THE FINAL LOCATION FOR NON-DIMENSIONED ACCESSORIES AND FIXTURES (E.G., LIGHTS, COMFORT HEATERS, ETC.)

NOTE: ARCHITECT/ENGINEER IS NOT RESPONSIBLE FOR ANY SITE DESIGN OR ENGINEERING AND WILL NOT BE HELD ACCOUNTABLE OR LIABLE FOR ANY ISSUES RELATED TO THIS SITE. IT IS THE OWNER'S RESPONSIBILITY TO ACCURATELY LOCATE THIS BUILDING, SET FLOOR AND ADJACENT ELEVATIONS, DETERMINE SITE IS SUITABLE FOR CONSTRUCTION, VERIFY ALL UTILITIES, ETC.

RECYCLE

RECYCLE ALL USED SHIPPING MATERIALS AND LEFT OVER BUILDING MATERIALS

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023

LAKEFRONT LODGE RESTROOM

WILLOWICK, OHIO

GENERAL NOTES
SYMBOL LEGEND

PROJECT:

PROJECT #: LLR01

DATE: 02/05/2026

DRAWN BY: NP

REV. DATE: BY:

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **G1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

CODES AND STANDARDS

- 2024 OHIO BUILDING CODE (IBC 2021)
- 2014 OHIO PLUMBING CODE (IPC 2021)
- 2014 OHIO MECHANICAL CODE (IMC 2021)
- 2023 NATIONAL ELECTRICAL CODE - (NFPA 70, 2023)
- 2017 OHIO FIRE CODE (IFC 2015)
- 2017 OHIO BUILDING CODE (ICC/ANSI A117.1 AND ADAAG)
- 2021 INTERNATIONAL ENERGY CONSERVATION CODE AND ASHRAE 90.1-07-2009

ACI AMERICAN CONCRETE INSTITUTE, ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
 TMS THE MASONRY SOCIETY, TMS 402, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"

CODE SUMMARY:

OCCUPANCY CLASS.: U
 CONSTRUCTION: VB
 AREA: 223 FT²
 AREA ALLOWABLE: 5500 FT²
 HEIGHT: 1 STORY
 HEIGHT ALLOWABLE: 1 STORY
 OCCUPANT LOAD: 4

DESIGN LOADS

ROOF: SNOW LOAD 30 PSF
 ROOF: DEAD LOAD 15 PSF
 WALL DEAD LOAD 81 PSF
 IBC SEISMIC DESIGN CATEGORY B
 DESIGN WIND SPEED (ULTIMATE) 110 MPH
 EXPOSURE D
 ALLOWABLE SOIL BEARING 1500 PSF

SEISMIC DESIGN DATA:

RISK CATEGORY: II
 IMPORTANCE FACTOR: 1.0
 SS: 0.155
 S1: 0.049
 SITE CLASS: D
 SMS: 0.248
 SM1: 0.118
 SDS: 0.165
 SD1: 0.078
 SEISMIC DESIGN CATEGORY: B
 R = 5
 BASE SHEAR: V = 0.033 W

WIND DESIGN :

RISK CATEGORY: II
 WIND SPEED = 110 MPH
 EXPOSURE: D
 INTERNAL PRESSURE COEFE = ± 0.18

BEARING WALL SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALL

ANALYSIS METHOD: EQUIVALENT STATIC FORCE METHOD

SPECIAL INSPECTIONS

CONCRETE SPECIAL INSPECTION NOT REQUIRED PER IBC 1705.3
 EXCEPTION 2.3 [FOOTINGS]
 EXCEPTION 3 [SLAB]

SPECIAL INSPECTIONS (TMS 402-16)

MINIMUM VERIFICATION	REQUIRED FOR QUALITY ASSURANCE (a)			REFERENCE FOR CRITERIA
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 602
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS		R		ART. 1.5
PRIOR TO CONSTRUCTION, VERIFICATION OF f'_m AND f'_{AAC} , EXCEPT WHERE SPECIFICALLY EXEMPT BY THE CODE.		R		ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE.		R		ART. 1.5 & 1.6.3
DURING CONSTRUCTION, VERIFICATION OF f'_m AND f'_{AAC} FOR EVERY 5,000 sq. ft. (465 sq.m).		NR		ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF PORPORTIONS OF MATERIALS AS DELIVERED TO THE PROJECT SITE FOR PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT.		NR		ART. 1.4 B

(a) R=REQUIRED, NR=NOT REQUIRED

TABLE 4 -- MINIMUM SPECIAL INSPECTION REQUIREMENTS

MINIMUM SPECIAL INSPECTION	REQUIRED FOR QUALITY ASSURANCE (a)			REFERENCE FOR CRITERIA	
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 402	TMS 602
1. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. PROPORTION OF SITE-PREPARED MORTAR		P			ART. 2.1, 2.6 A, & 2.6 C
B. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		P			ART. 2.4 B & 2.4 H
C. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES		P			ART. 3.4 & 3.6 A
D. PRESTRESSING TECHNIQUE		P			ART. 3.6 B
E. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY		C(b)P(c)			ART. 2.1 C.1
F. SAMPLE PANEL CONSTRUCTION		P			ART. 2.1 C.1
2. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. GROUT SPACE		P			ART. 3.2 D & 3.2 F
B. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES		P		SEC. 10.8 & 10.9	ART. 2.4 & 3.6
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS		P		SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7	ART. 2.4 & 3.6
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		P			ART. 2.6 B & 2.4 G.1.b
3. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:					
A. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		P			ART. 1.5
B. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		P			ART. 3.3 B
C. SIZE AND LOCATION OF STRUCTURAL MEMBERS		P			ART. 3.3 F
D. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.		P		SEC. 1.2.1(e), 6.2.1 & 6.3.1	
E. WELDING OF REINFORCEMENT		C		SEC. 6.1.6.1.2	
F. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F(4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F(32.2°C))		P			ART. 1.8 C & 1.8 D
G. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE		C			ART. 3.6 B
H. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE		C			ART. 3.5 & 3.6 C
I. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS		C(b)P(c)			ART. 3.3 B.9 & 3.3 F.1.b
4. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		P			ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, & 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE LISTED TASK OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE.
 NR=NOT REQUIRED, P=PERIODIC, C=CONTINUOUS
 (b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.
 (c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

3/16/2026



Exp. 12/31/2027



www.romtec.com
 (541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.

www.structure1.com
 Klamath Falls Office
 250 Main Klamath Falls, Oregon 97603
 Phone: (541) 850-6300 Fax: (541) 850-6233
 info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM
 SHEET TITLE: DESIGN CRITERIA & CODE SUMMARY
 WILLOWICK, OHIO

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

G2

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

WALL TYPE SCHEDULE

8" REINFORCED CONCRETE
MASONRY BLOCK WALL WITH
MORTAR JOINTS, GROUTED SOLID
ALL CELLS RUNNING BOND PATTERN.

3/16/2026

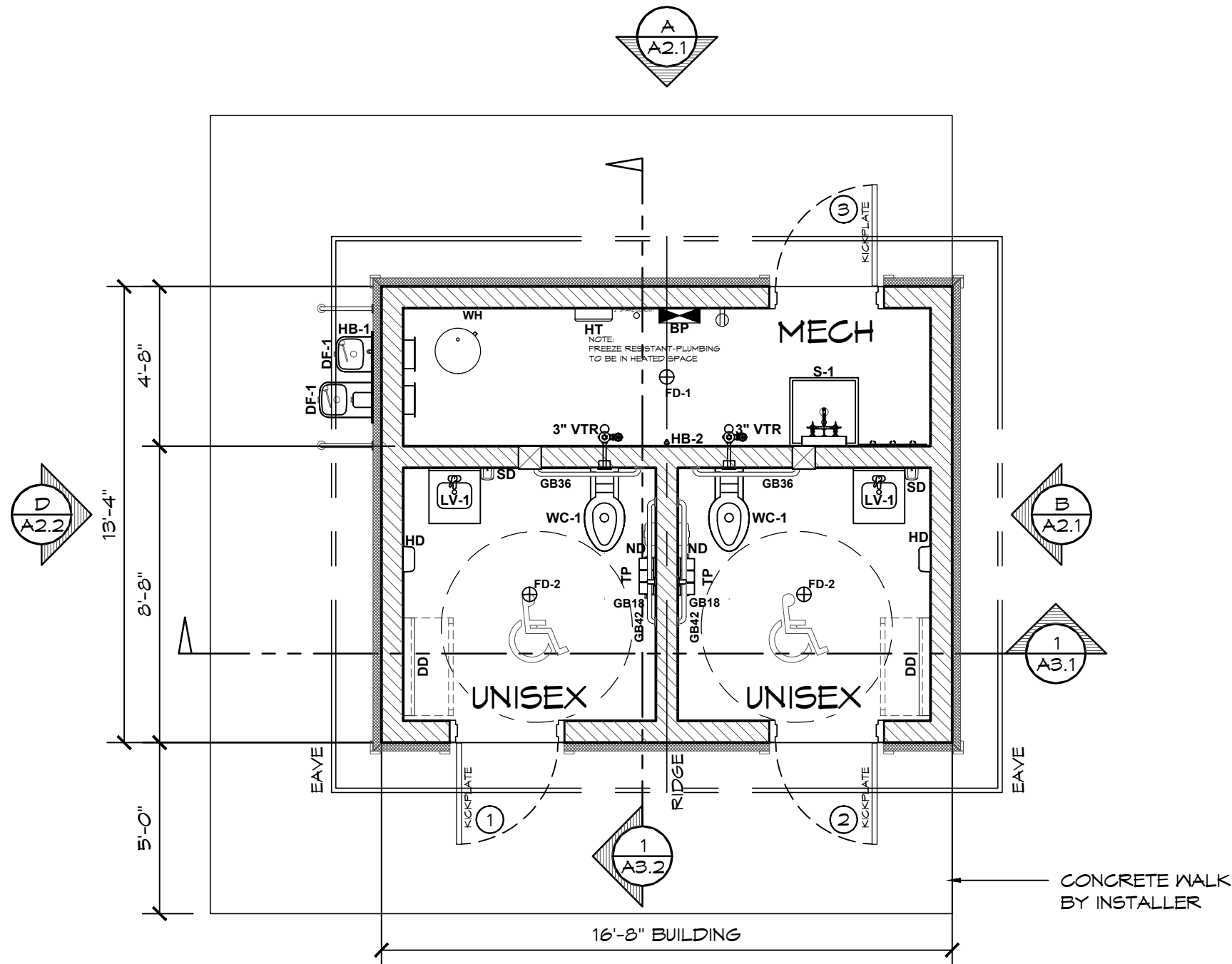


Exp. 12/31/2027

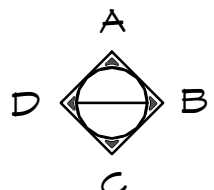
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023



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



PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: FLOOR PLAN

PROJECT #: LLR01
DATE: 02/05/2026

DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A1.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

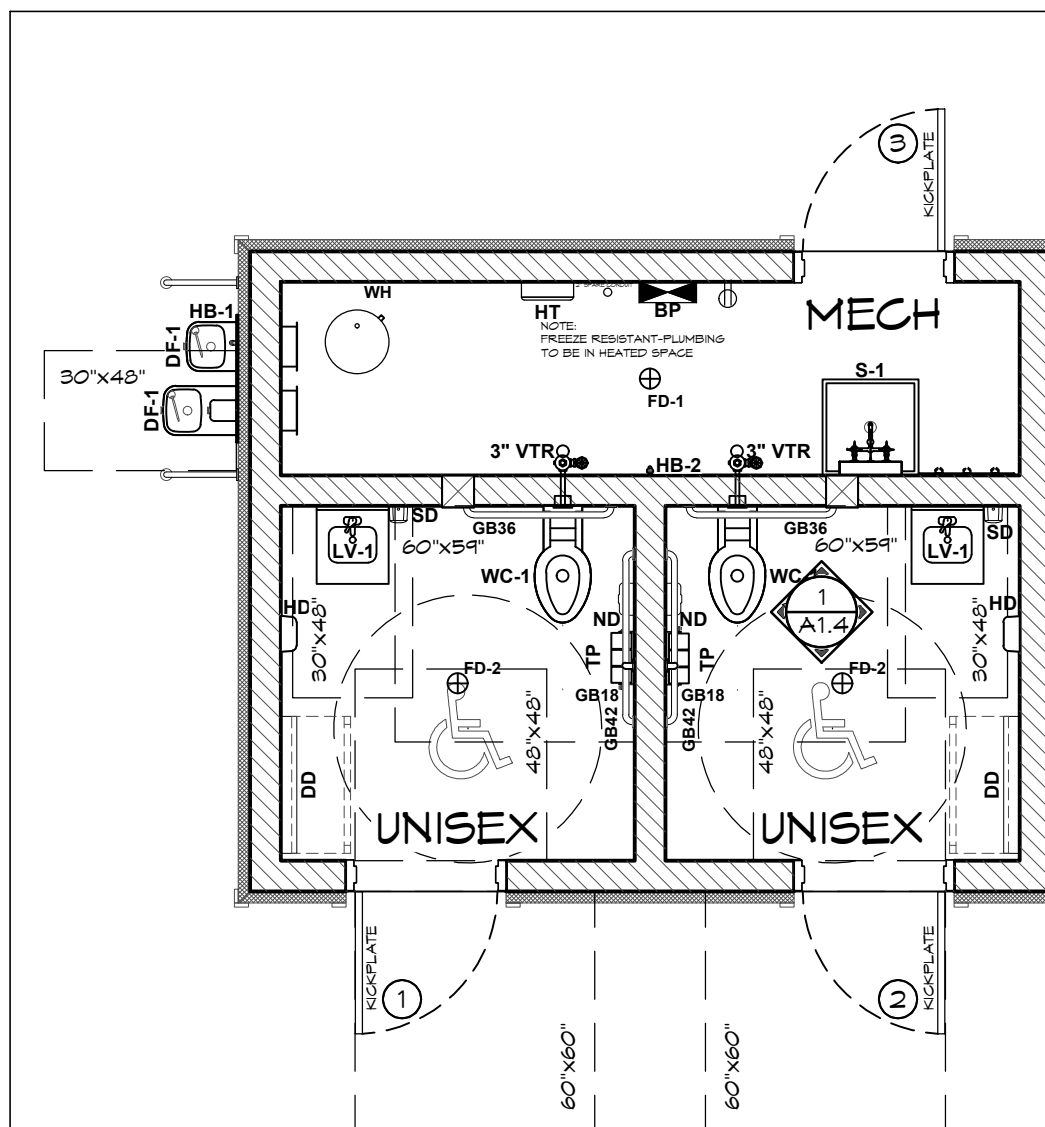


Exp. 12/31/2027

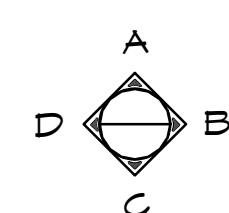
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



1 ADA RESTROOM FIXTURE CLEAR FLOOR AREA
SCALE: 1/4" = 1'-0"



PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ADA CLEARANCES

PROJECT #: LLR01
DATE: 02/05/2026

DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A1.2**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.



Exp. 12/31/2027

ROMTEC

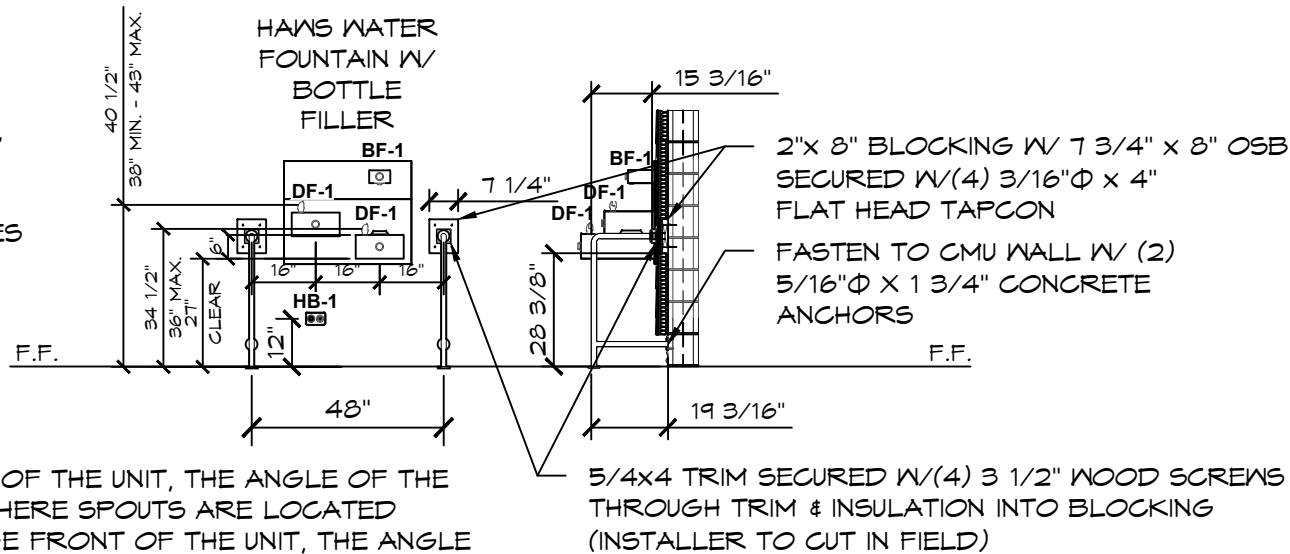
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-8300 Fax: (541) 850-6233
info@structure1.com

DRINKING FOUNTAIN NOTES:

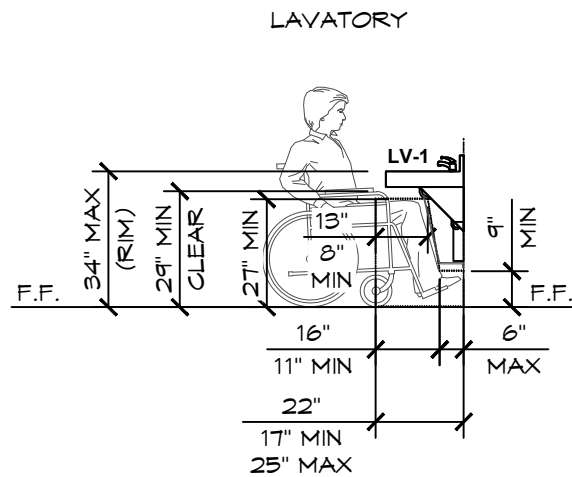
-THE ACCESSIBLE DRINKING FOUNTAIN SHALL BE A MINIMUM 18 INCHES (AND MAXIMUM 19 INCHES FOR WALL AND POST-MOUNTED CANTILEVERED DRINKING FOUNTAINS) IN DEPTH.

-THE SPOUT SHALL BE LOCATED 15 INCHES MINIMUM FROM THE VERTICAL SUPPORT AND 5 INCHES MAXIMUM FROM THE FRONT EDGE OF THE UNIT, INCLUDING BUMPERS. -THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES HIGH MINIMUM AND SHALL BE LOCATED 5 INCHES MAXIMUM FROM THE FRONT OF THE UNIT. THE ANGLE OF THE WATER STREAM SHALL BE MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE UNIT. WHERE SPOUTS ARE LOCATED LESS THAN 3 INCHES OF THE FRONT FACE OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 30 DEGREES MAXIMUM. WHERE SPOUTS ARE LOCATED BETWEEN 3 INCHES AND 5 INCHES MAXIMUM FROM THE FRONT OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 15 DEGREES MAXIMUM.

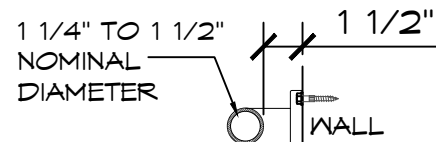


A. THE ACCESSIBLE SINK SHALL BE MOUNTED WITH THE COUNTER OR RIM NO HIGHER THAN 34" ABOVE FINISH FLOOR. KNEE CLEARANCE THAT IS AT LEAST 27" HIGH, 30" SIDE AND 19" UNDERNEATH THE SINK SHALL BE PROVIDED. HOT WATER AND DRAIN SHALL BE INSULATED OR OTHERWISE CONFIGURED SO AS TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER THE SINK. SECTION 11B- 606.

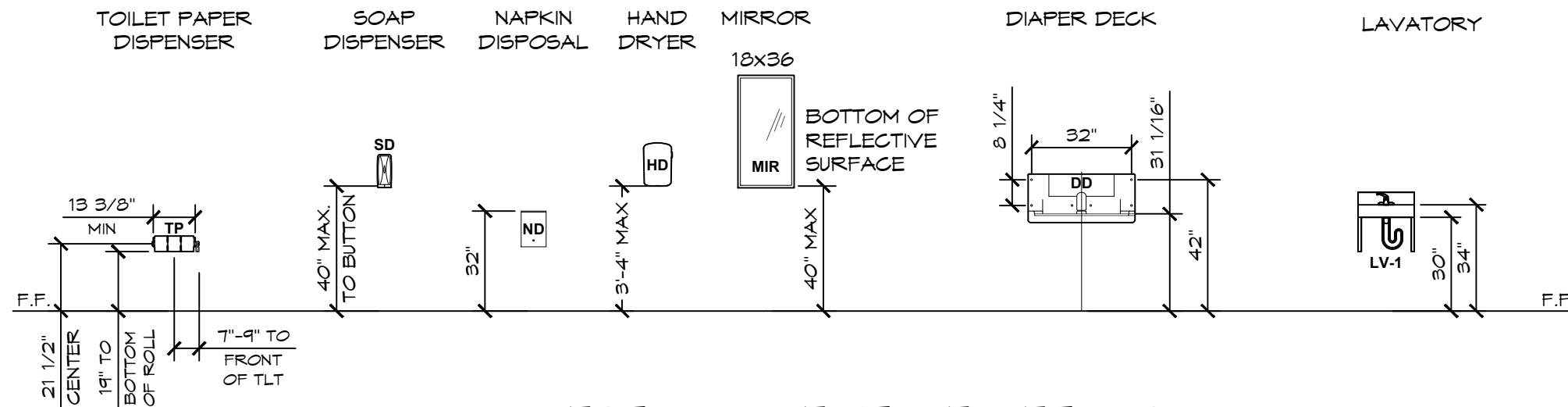
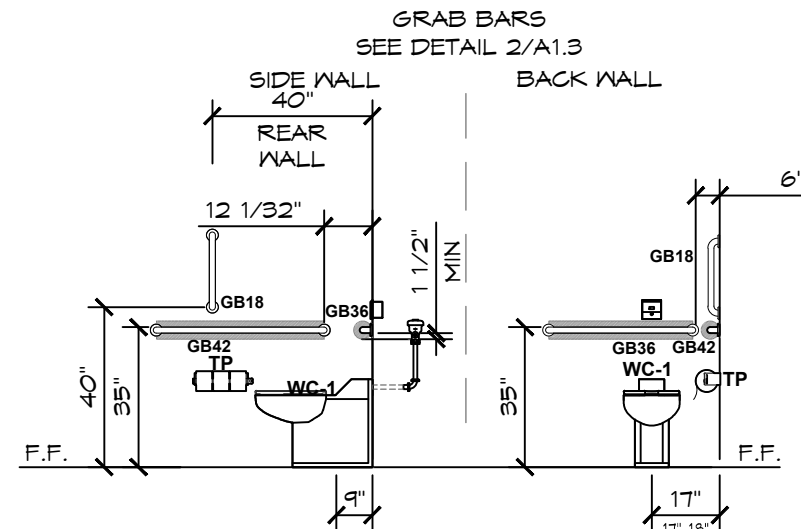
B. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. LEVER OPERATED, PUSH-TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE ACCEPTABLE. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS. SECTION 11B-606.4.



INSTALLED GRAB BARS MUST MEET 250# MINIMUM LOAD & GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS PER CODE.



FASTEN TO CMU WALL W/ (2) 5/16" x 1 3/4" CONCRETE ANCHORS



1 ADA RESTROOM FIXTURE DETAILS
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ADA RESTROOM FIXTURE DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A1.3**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



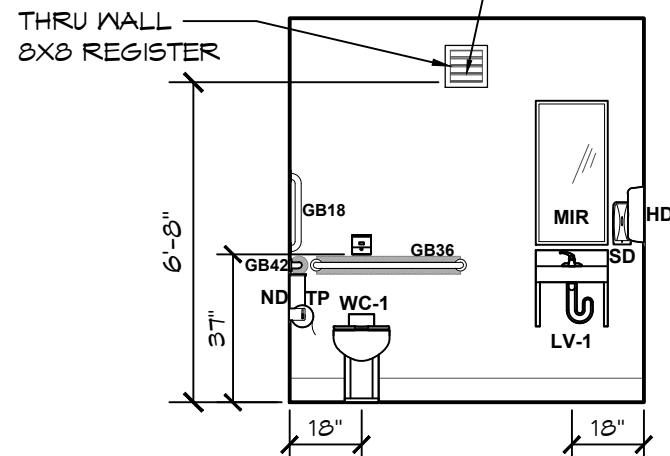
Exp. 12/31/2027

ROMTEC

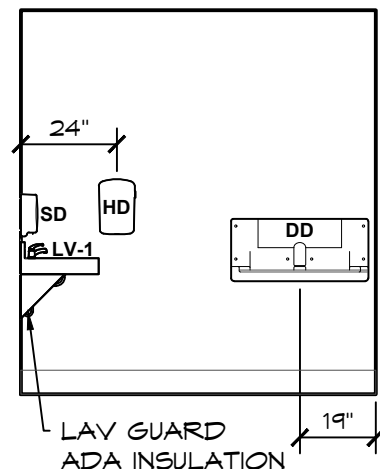
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

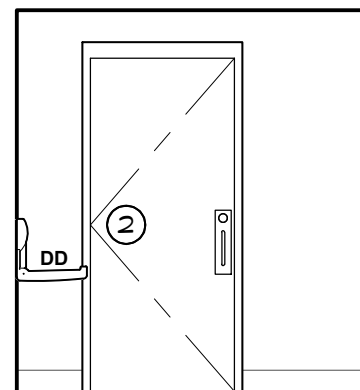
WALLS AND PARTITIONS WITHIN 2 FEET OF SERVICE SINKS, URINALS AND WATER CLOSETS SHALL HAVE SMOOTH, HARD, NONABSORBENT SURFACE, TO A HEIGHT OF NOT LESS THAN 4 FEET ABOVE THE FLOOR OR PER LOCAL CODE. FOR EXTERIOR/INTERIOR FINISH SCHEDULE REFER TO SHEET A4.1



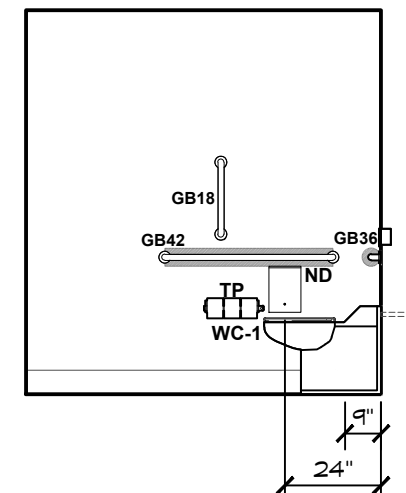
VIEW A



VIEW B



VIEW C



VIEW D

1 ADA RESTROOM INTERIOR ELEVATION VIEWS

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

PROJECT:

LAKEFRONT LODGE RESTROOM

WILLOWICK, OHIO

SHEET TITLE:

INTERIOR ELEVATION VIEWS

PROJECT #:

LLR01

DATE:

02/05/2026

DRAWN BY:

NP

REV. DATE: BY:

1 03/11/2026 NP

REVISIONS:

SHEET NO.

A1.4

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

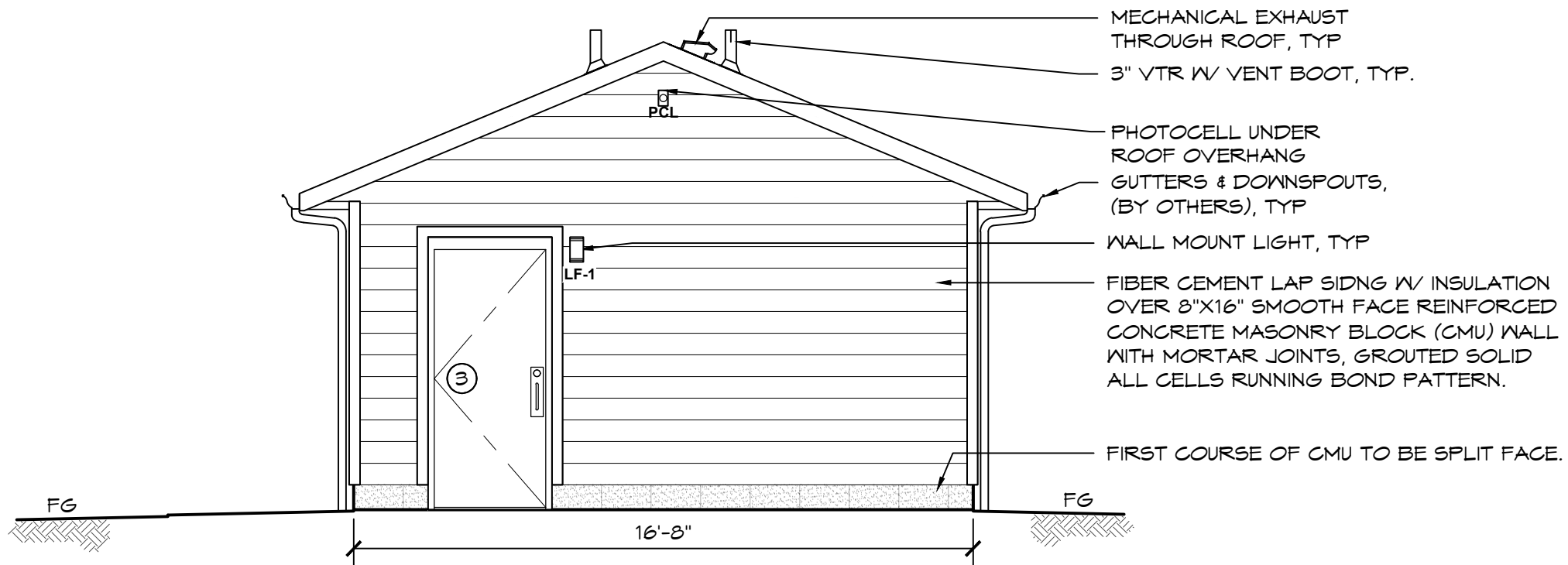


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



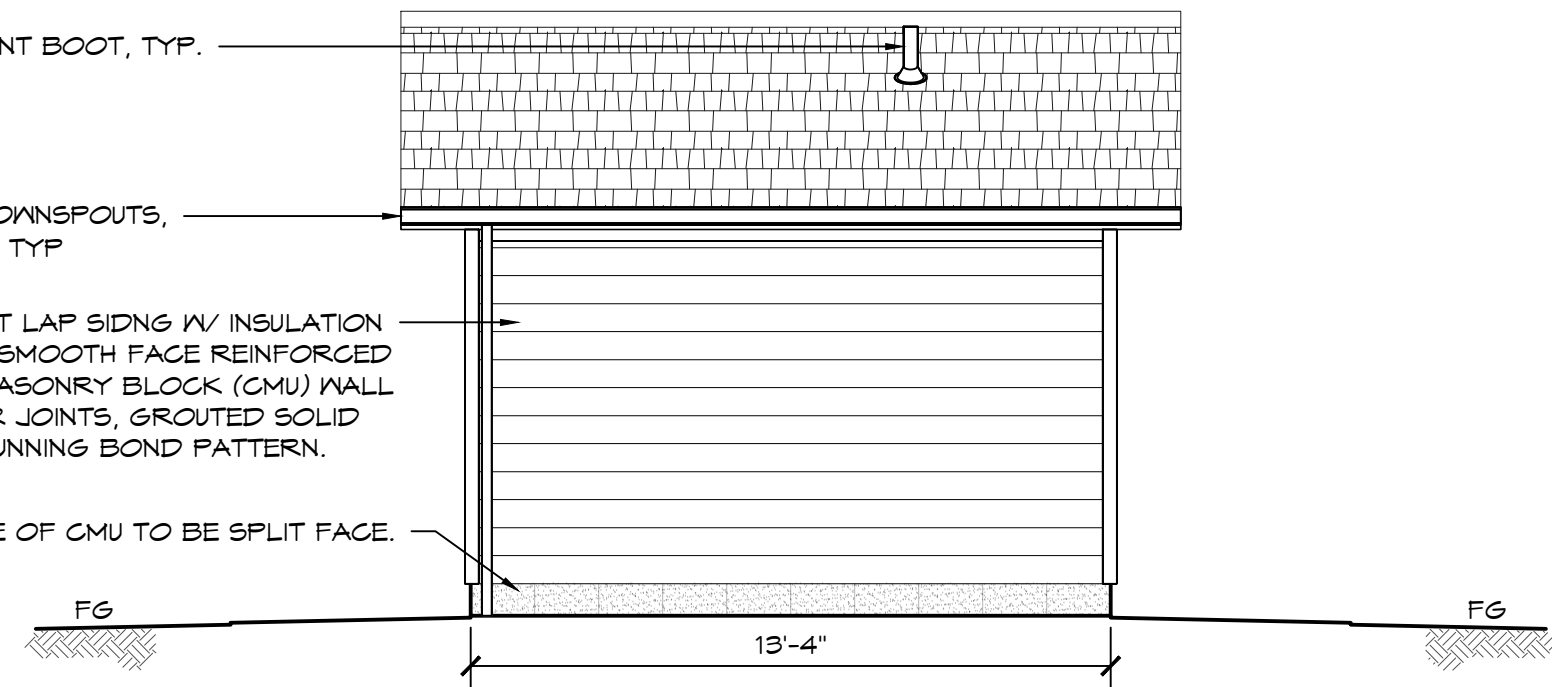
A ELEVATION VIEW
SCALE: 1/4" = 1'-0"

3" VTR W/ VENT BOOT, TYP.

GUTTERS & DOWNSPOUTS,
(BY OTHERS), TYP

FIBER CEMENT LAP SIDNG W/ INSULATION
OVER 8"X16" SMOOTH FACE REINFORCED
CONCRETE MASONRY BLOCK (CMU) WALL
WITH MORTAR JOINTS, GROUTED SOLID
ALL CELLS RUNNING BOND PATTERN.

FIRST COURSE OF CMU TO BE SPLIT FACE.



B ELEVATION VIEW
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: EXTERIOR ELEVATION VIEWS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
SHEET NO. **A2.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



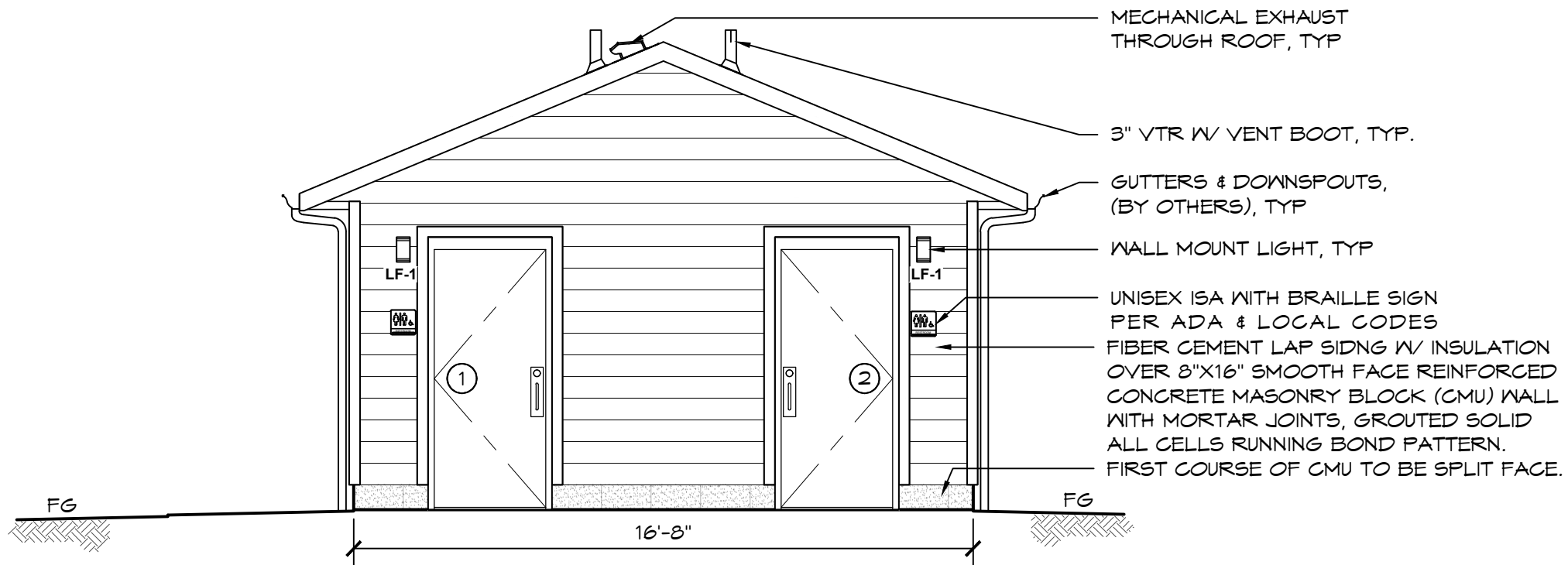
Exp. 12/31/2027

ROMTEC

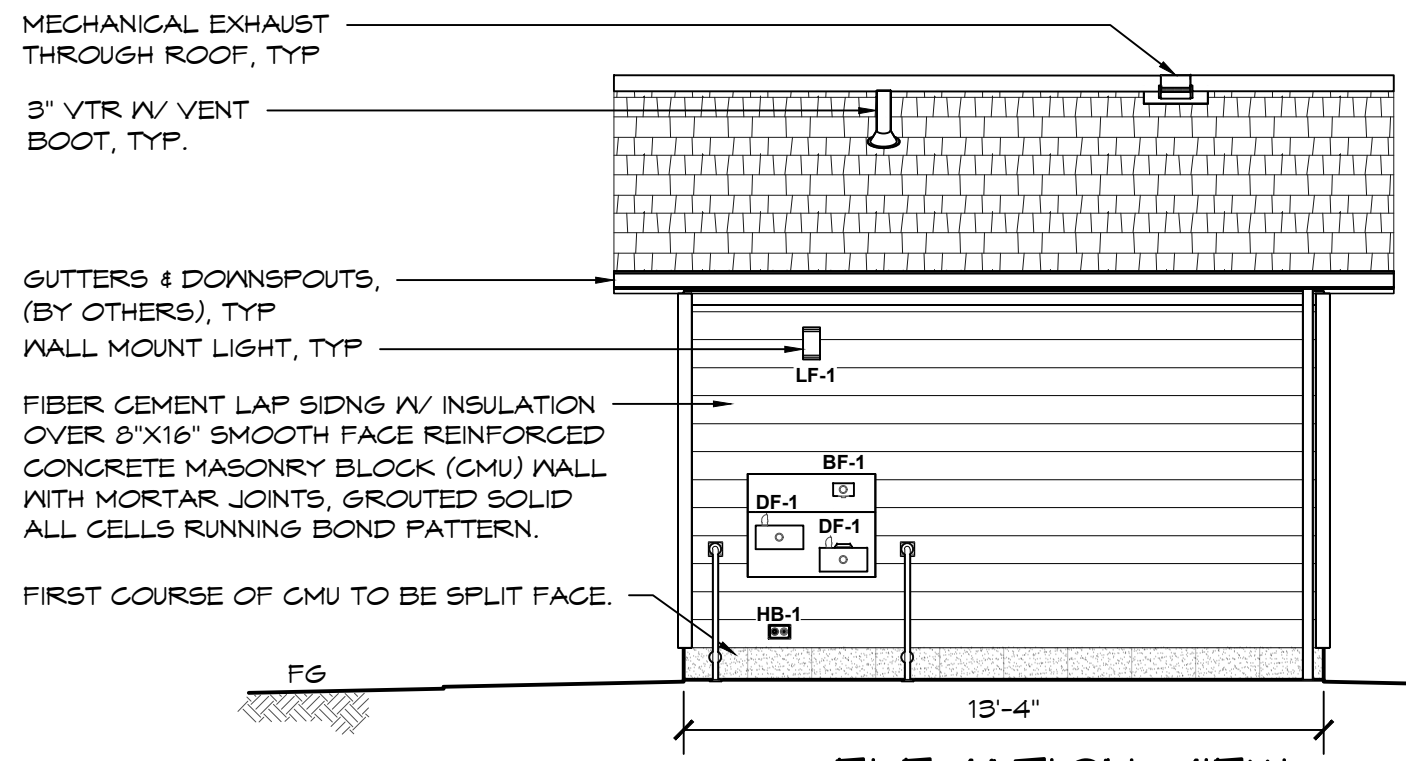
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.

www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



C ELEVATION VIEW
SCALE: 1/4" = 1'-0"



D ELEVATION VIEW
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: EXTERIOR ELEVATION VIEWS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
SHEET NO. **A2.2**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

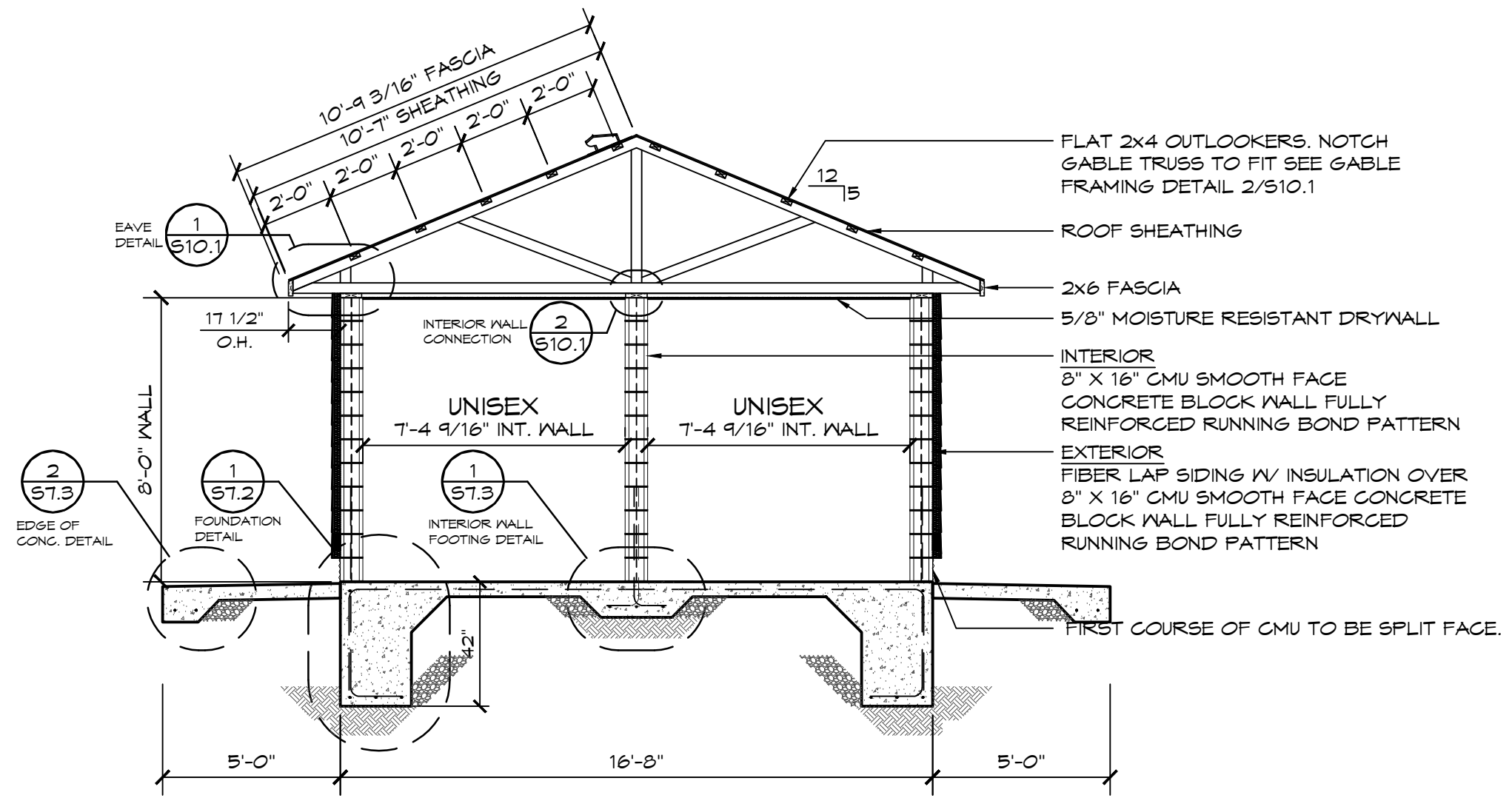


Exp. 12/31/2027

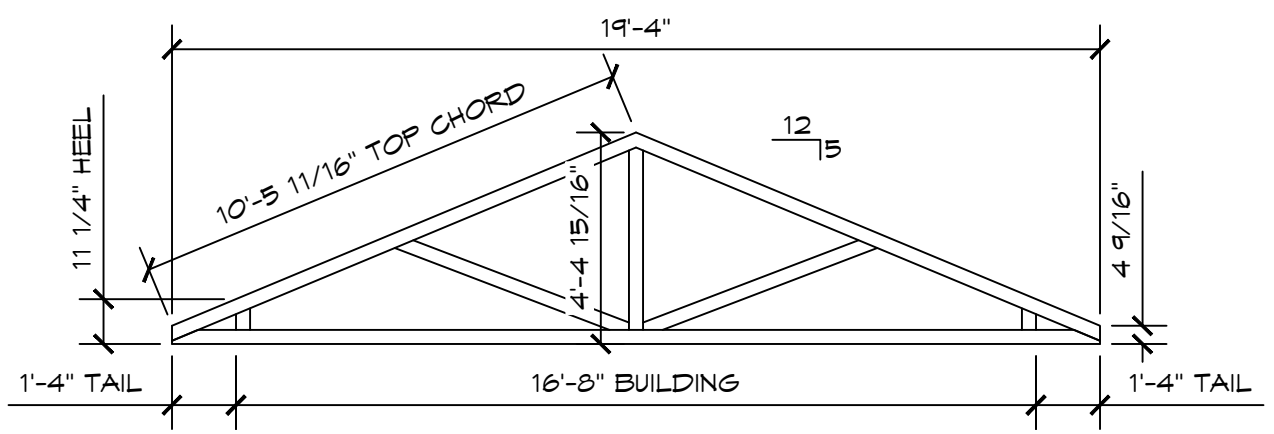
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

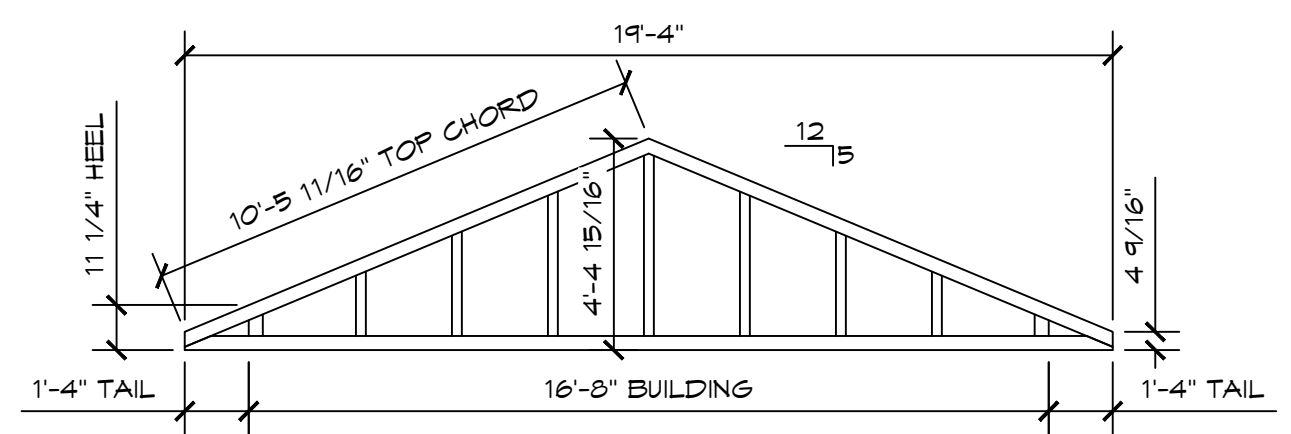
PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



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



T1 STANDARD TRUSS
SCALE: 1/4" = 1'-0"



T2 GABLE END TRUSS
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: SECTION VIEWS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE	BY
1	03/11/2026	NP

REVISIONS:
A3.1

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

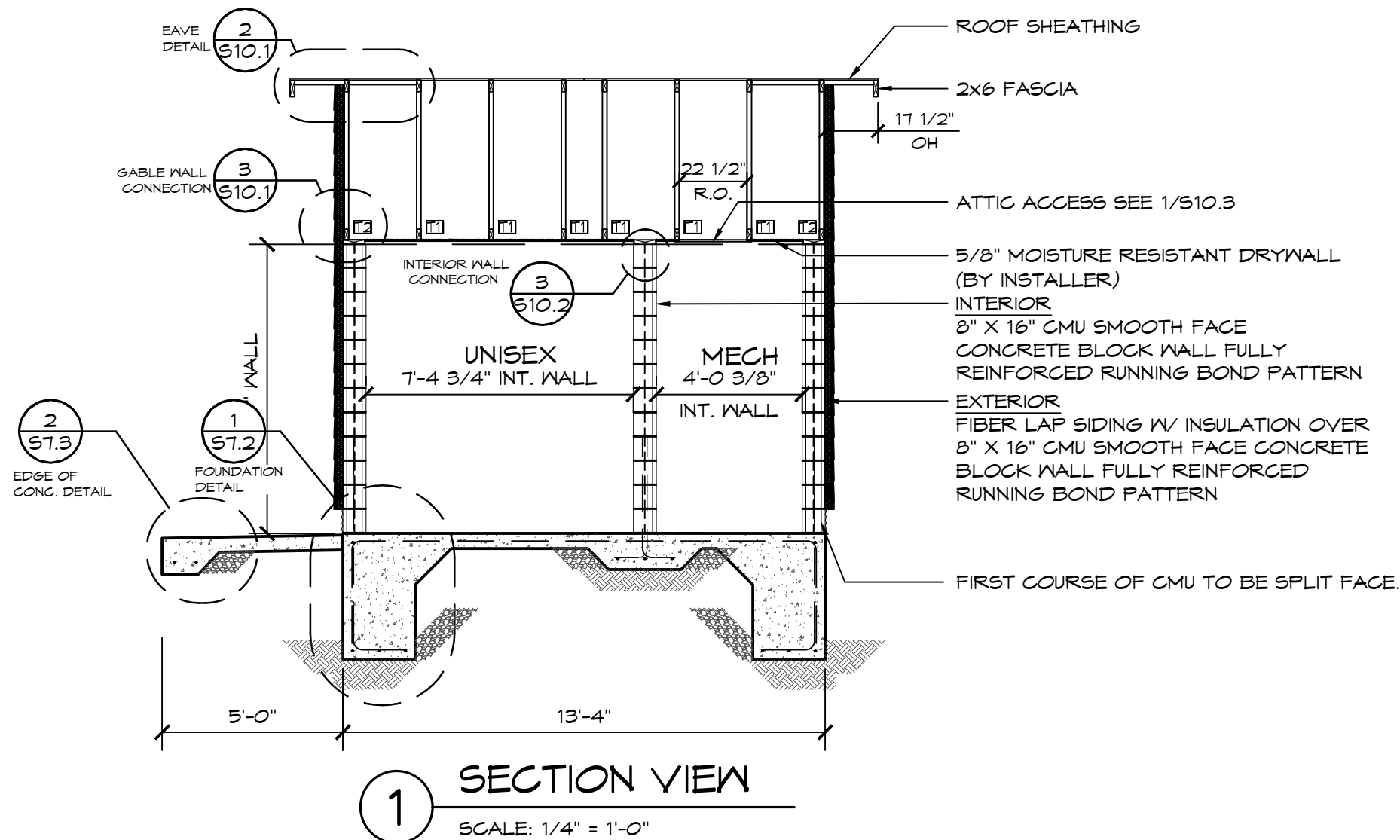


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023

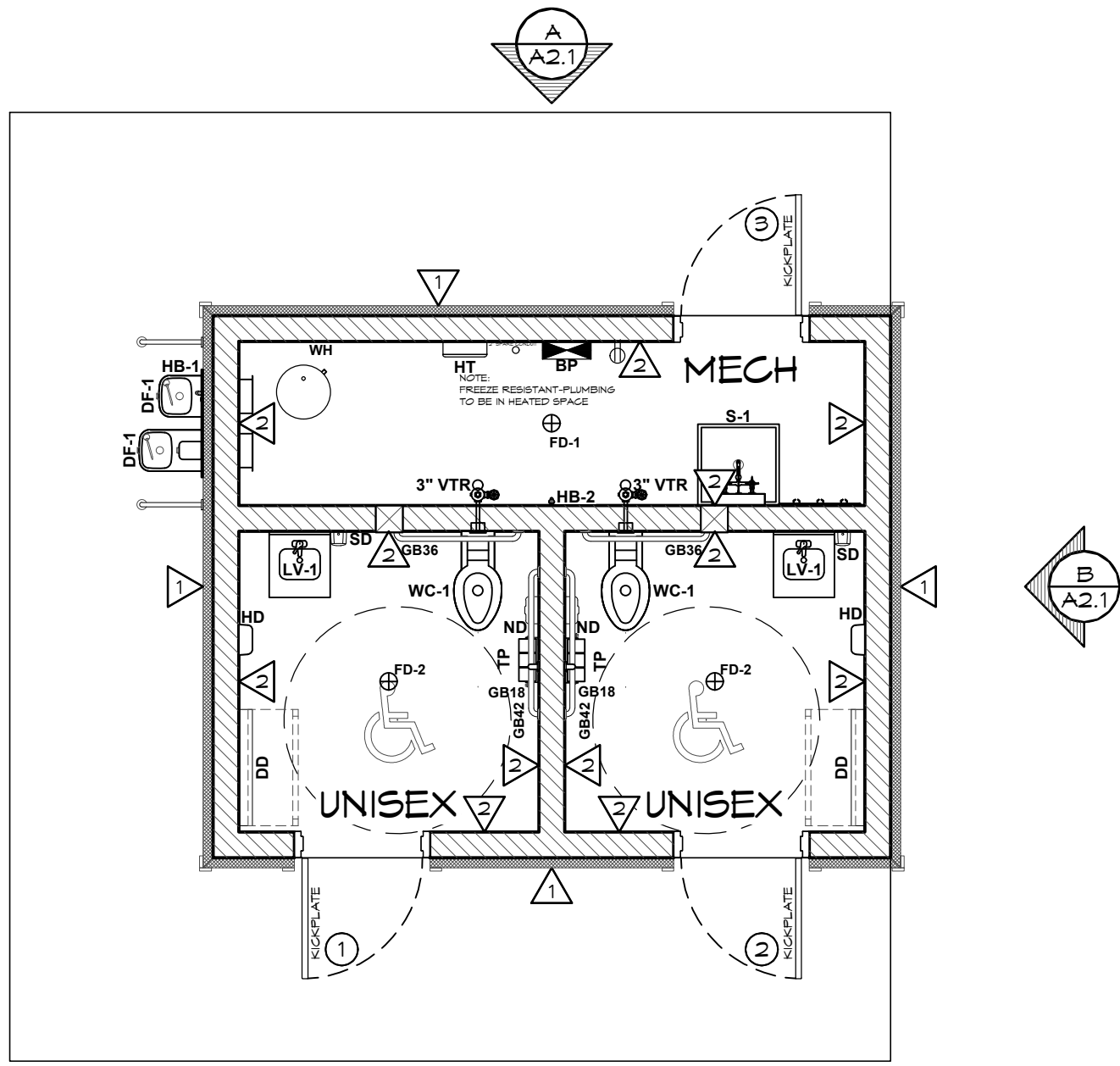


PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: SECTION VIEWS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
A3.2
SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.



1 WALL FINISH PLAN
 SCALE: 1/4" = 1'-0"

FINISH SCHEDULE			
NO.	LOCATION	FINISH	DETAIL
1	EXTERIOR SIDING	FIBER CEMENT LAP SIDING OVER 2" RIGID INSULATION	SEE PAGE A4.2
2	INTERIOR WALL	PRIMED & (2) COATS OF EPOXY PAINT CMU WALLS FLOOR TO CEILING (INSTALLER SUPPLIED)	
	CEILING	5/8" MOISTURE RESISTANT DRYWALL TO BE TEXTURED, PRIMED & PAINTED (INSTALLER SUPPLIED)	
	EXPOSED WOOD	ALL T&G, FASCIA, SUB FASCIA, AND GLULAM BEAMS AND COLUMNS TO BE SEALED WITH INSTALLER SUPPLIED CLEAR COAT FINISH APPLIED ONSITE BY INSTALLER	
	FLOOR	APPLY VAPOR CONTROL 1P PRIMER THEN EPOXY FLOOR WITH COROTECH SOLID V440, COROTECH V155 AND AGGREGATE V630 OR EQUAL.	
	COVE BASE IN RESTROOMS ONLY	COVE BASE INTEGRAL WITH FLOORING (THIS IS THE FLOOR PAINT CONTINUED UP THE WALL)	

3/16/2026

STATE OF OHIO
NABIL TAHA
PE78263
PROFESSIONAL ENGINEER

Exp. 12/31/2027

ROMTEC
 www.romtec.com
 (541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
 www.structure1.com
 Klamath Falls Office
 250 Main Klamath Falls, Oregon 97603
 Phone: (541) 850-6300 Fax: (541) 850-6233
 info@structure1.com
 ROMTEC 228-023

PROJECT: LAKEFRONT LODGE RESTROOM
 WILLONICK, OHIO

SHEET TITLE: WALL FINISH SCHEDULE
 (INTERIOR/EXTERIOR)

PROJECT #: LLR01

DATE: 02/05/2026

DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A4.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



Exp. 12/31/2027

ROMTEC

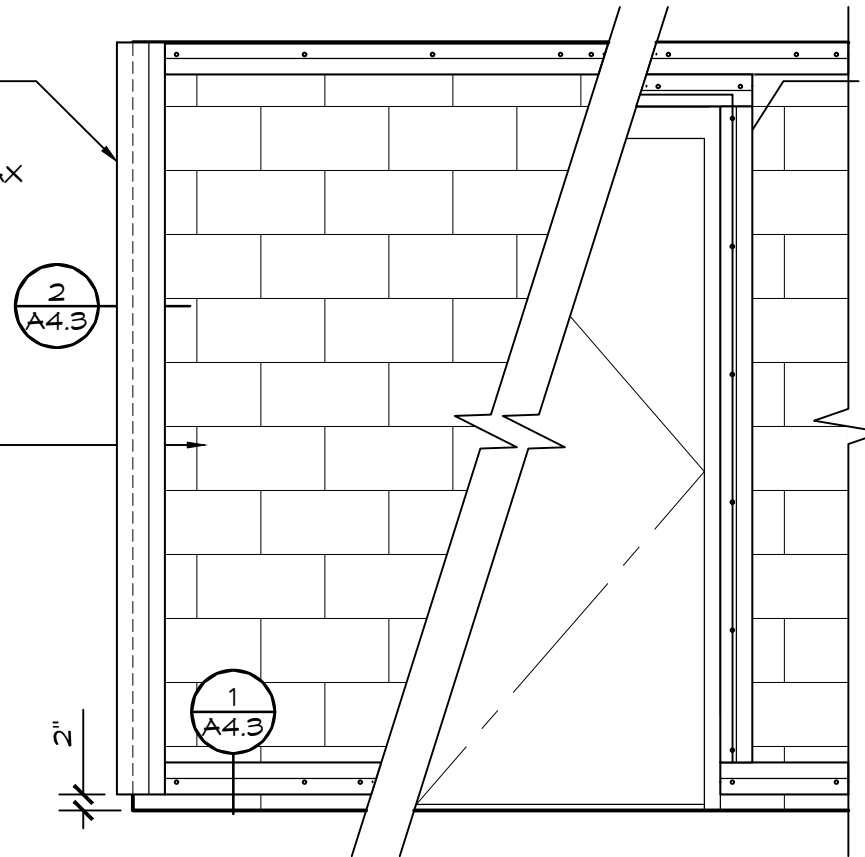
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

26GA FT-000-5145 J-CHANNEL.
VERTICALS @ CORNERS FASTEN TOP &
BOTTOM FASTEN W/ 3/16" X 1 1/4" FLAT
HEAD CONCRETE ANCHORS @ 16" O.C. MAX

2X2 P.T. FURRING IN J-CHANNEL
AROUND DOORS / OTHER OPENINGS
FASTEN W/ 1/4" X 4" GALV. SPLIT
ANCHOR BOLTS @ 16"OC MAX.

SMOOTH FACE REINFORCED CMU WALL.
INSTALLER TO SEAL CMU PER FINISH
SCHEDULE ON SHEET A4.1 BEFORE
INSTALLING FURRING STRIPS.



1 EXTERIOR WALL FURRING DETAIL
W/ RIGID INSULATION
SCALE: 1/2" = 1'-0"

EXTERIOR FINISH FIBER CEMENT LAP SIDING W/ 2" INSULATION	
SIDING NOTES (SEE A4.3)	
1	J-CHANNEL-26GA ROMTEC FT-000-5145 - AT CORNERS, J-CHANNEL-26GA ROMTEC FT-000-5145 - TOP & BOTTOM OF SMOOTH FACE CMU WALL AND AROUND OPENINGS. FASTEN W/ 3/16" X 1 1/4" FLAT HEAD CONCRETE ANCHORS @ 16" O.C. MAX.
2	2" RIGID INSULATION (R-13.1), SHALL BE FASTENED TO CMU W/ 3/16" X 4" FLAT HEAD CONCRETE ANCHORS & PLASTI-GRIP WASHERS IN THE PATTERN OF TWO ROWS OF FOUR EVENLY SPACED, USE VENTURE TAPE & SCREWS W/ WASHERS TO FASTEN (2 SHEETS TOGETHER @ SEAMS). GABLES USE #12 X 4" WOOD SCREWS INSTEAD OF CONCRETE ANCHORS.
3	1/2" P.T. PLYWOOD 1'-0" FROM F.F -1/2" PLYWOOD ABOVE - SHALL BE FASTENED THRU INSULATION TO CMU W/ 3/16" X 4" FLAT HEAD CONCRETE ANCHORS, 12" O.C. PERIMETER & 16" O.C. IN FIELD
4	#15 BUILDING PAPER - SECURED TO 7/16" OSB SHEATHING PER MANUFACTURE'S INSTALL INSTRUCTIONS.
5	3 1/4" FIBER CEMENT LAP PLANKS (7" REVEAL) ATTACH WITH 1 3/4" ROOFING NAILS @ 16" O.C. INTO FURRING
6	5/4x4 FIBER CEMENT TRIM - ATTACH WITH 2" GALV. FINISH NAILS @ 12" O.C., COUNTERSINK & FINISH

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: WALL FINISH DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP
REV. DATE: BY:
1 03/11/2026 NP

REVISIONS:
SHEET NO. **A4.2**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

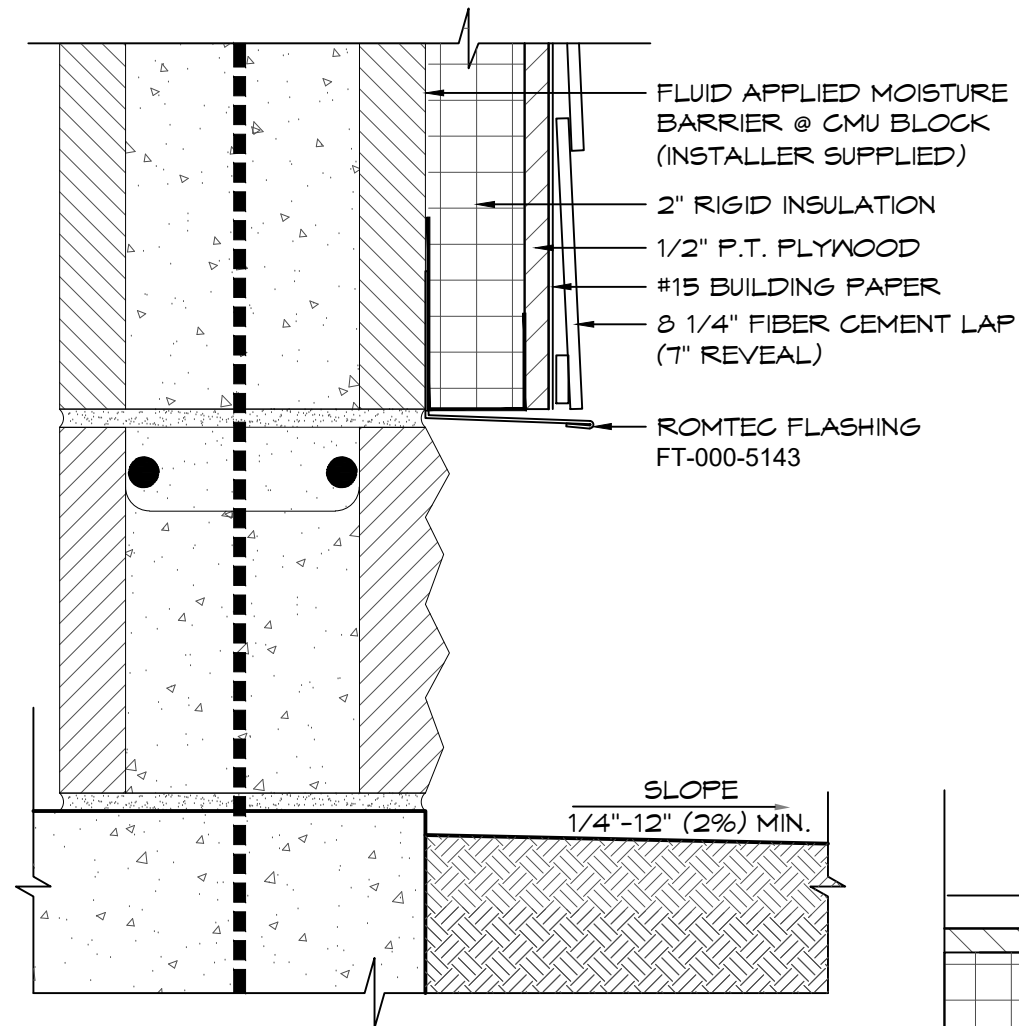


Exp. 12/31/2027

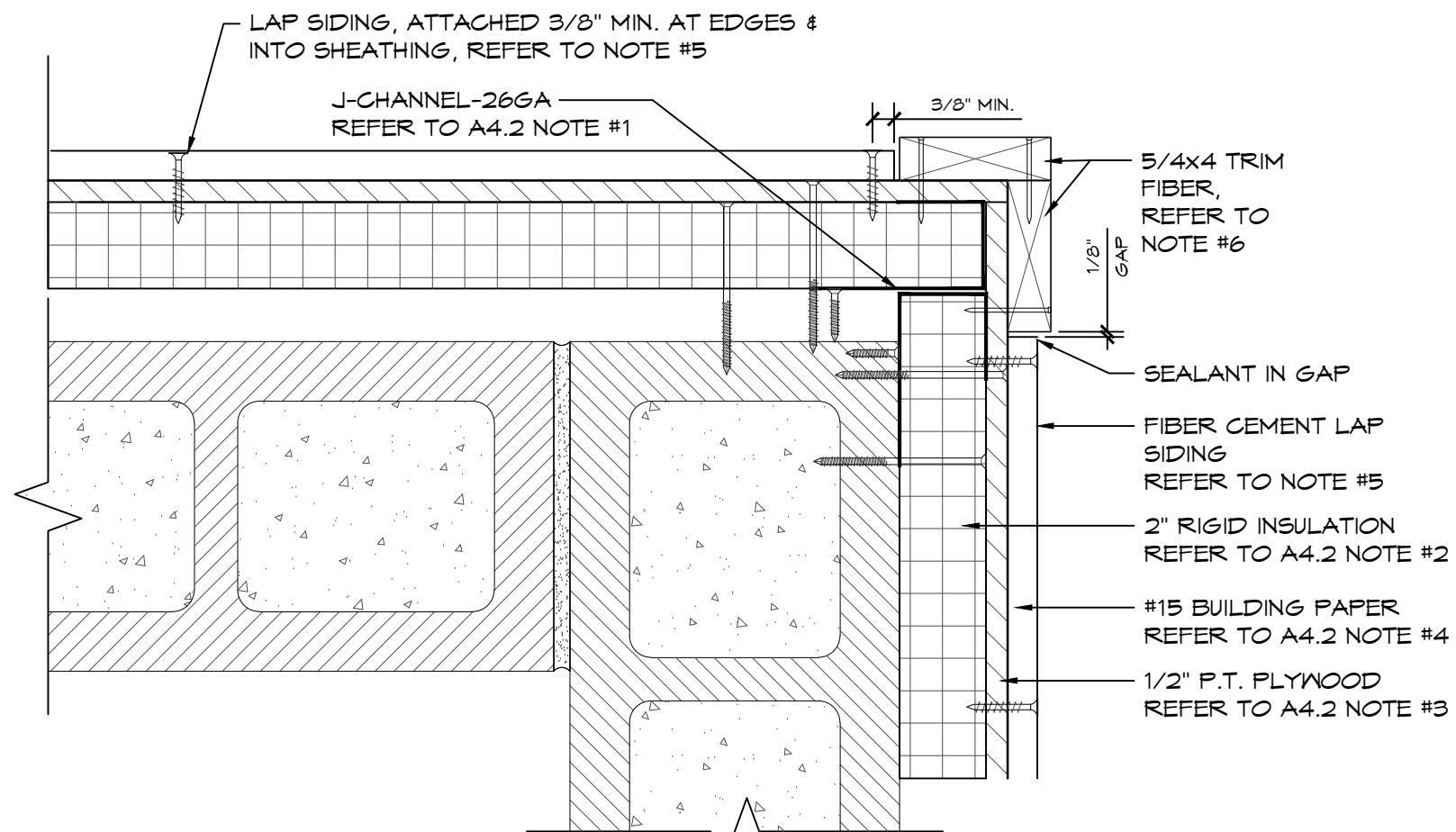
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-8300 Fax: (541) 850-6233
info@structure1.com



1 BOTTOM OF WALL DETAIL
SCALE: 3" = 1'-0"



2 CMU CORNER FINISH DETAIL
SCALE: 3" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP
SHEET TITLE: WALL FINISH DETAILS

REV.	DATE	BY
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A4.3**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

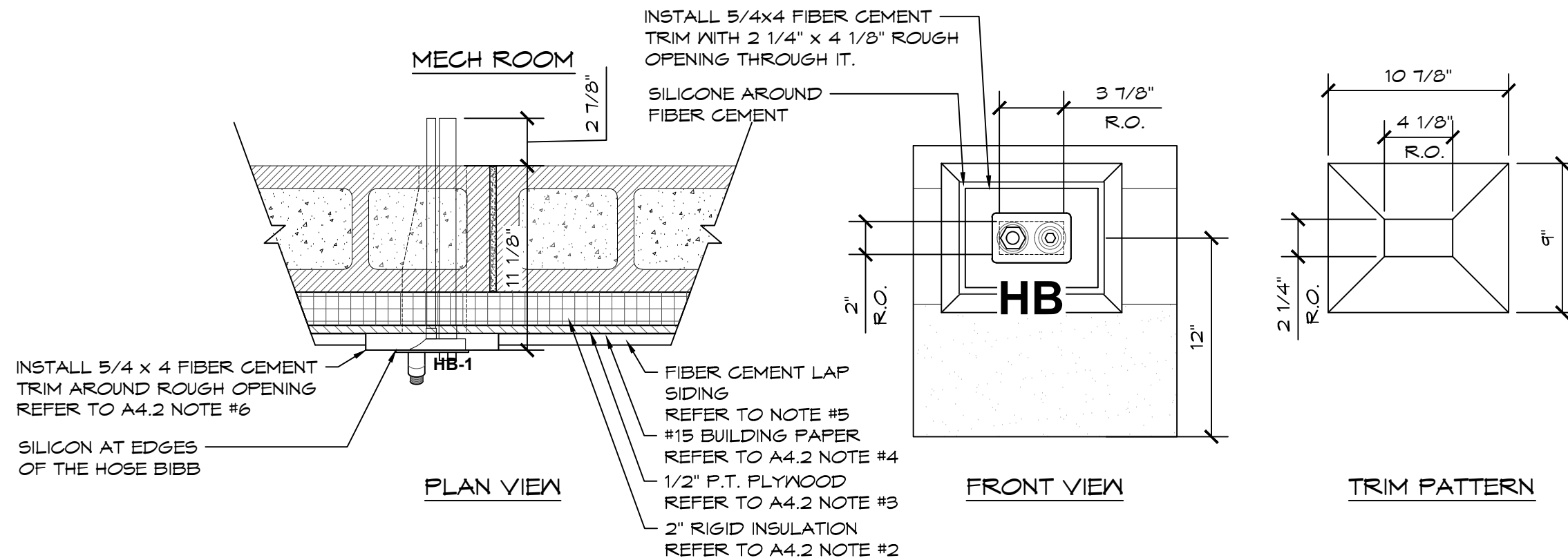


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



1 WALL HYDRANT MOUNTING DETAILS
SCALE: 1 1/2" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: WALL FINISH DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **A4.4**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

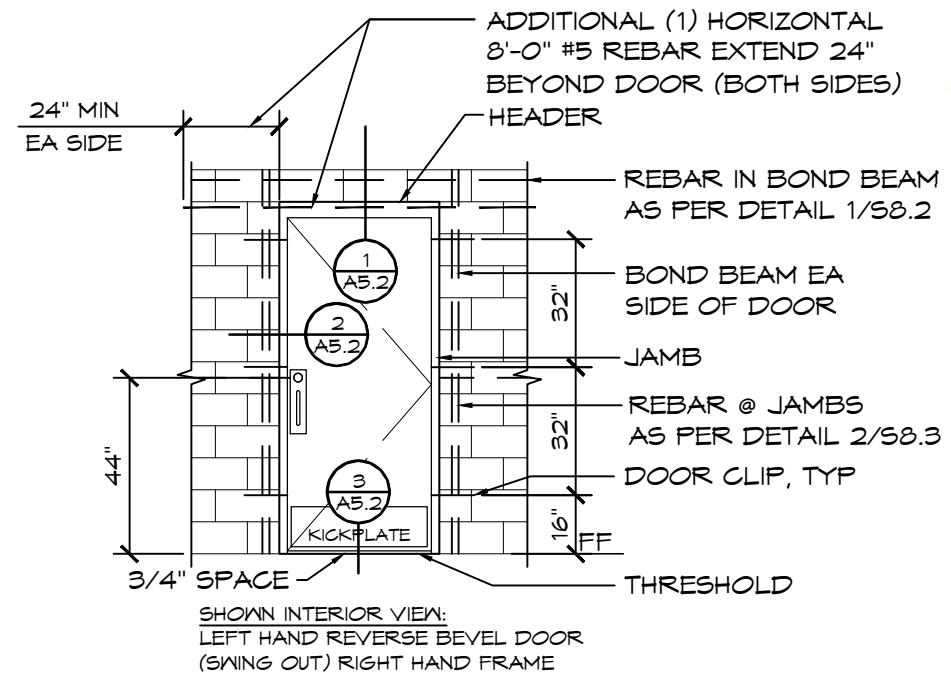
DOOR SCHEDULE

NO	SIZE (WxHxT)	DOOR	FRAME	SWING - DOOR / FRAME	HARDWARE GROUP	REMARKS
1	36"x84"x1 3/4"	SL14	F14	INTERIOR LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 1	SEE THRESHOLD DETAIL 3/A5.2
2	36"x84"x1 3/4"	SL14	F14	INTERIOR RIGHT HAND (REVERSE) SWING OUT / LEFT HAND	DO~ 1	SEE THRESHOLD DETAIL 3/A5.2
3	36"x84"x1 3/4"	SL14	F14	INTERIOR LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 2	SEE THRESHOLD DETAIL 3/A5.2

DOOR HARDWARE SCHEDULE (QTYS PER DOOR)

GROUP DO-1	GROUP DO-2	
3	3	EACH HINGE 4.5" x 4.5" S.S. (NRP)
1	1	DOOR CLOSER, (USE THRU BOLT ANCHORING OPTION)
1	-	DEADBOLT LOCKSET, SCHLAGE C KEYWAY - SINGLE CYLINDER DEADBOLT LOCK, SATIN FINISH - (KEY - OUTSIDE / THUMB-TURN - INSIDE)
-	1	DEADBOLT LOCKSET, SCHLAGE C KEYWAY - CLASSROOM LOCK, SATIN FINISH - (KEY - OUTSIDE / THUMB-TURN - INSIDE RETRACTS ONLY)
2	2	PULL PLATE, 4" X 16"
2	2	PULL HANDLE, 8" CENTER
1	1	KICK PLATE, 10" X 34"
1	1	SWEEP
6	6	WIRE DOOR CLIPS

NOTE: ALL DOORS MAY BE OPENED FROM THE INSIDE W/O KEY, SPECIAL KNOWLEDGE, OR EFFORT. 5# MAX OPENING EFFORT DOOR IS EQUIPPED W/ SINGLE-EFFORT, NON-GRASP HARDWARE. DOOR COMPLIES WITH ADA REQUIREMENT FOR AN INSIDE LOCK.



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

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM

WILLOWICK, OHIO

SHEET TITLE: DOOR SCHEDULE

PROJECT #: LLR01

DATE: 02/05/2026

DRAWN BY: NP

REV. DATE: BY:

REVISIONS:

A5.1

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

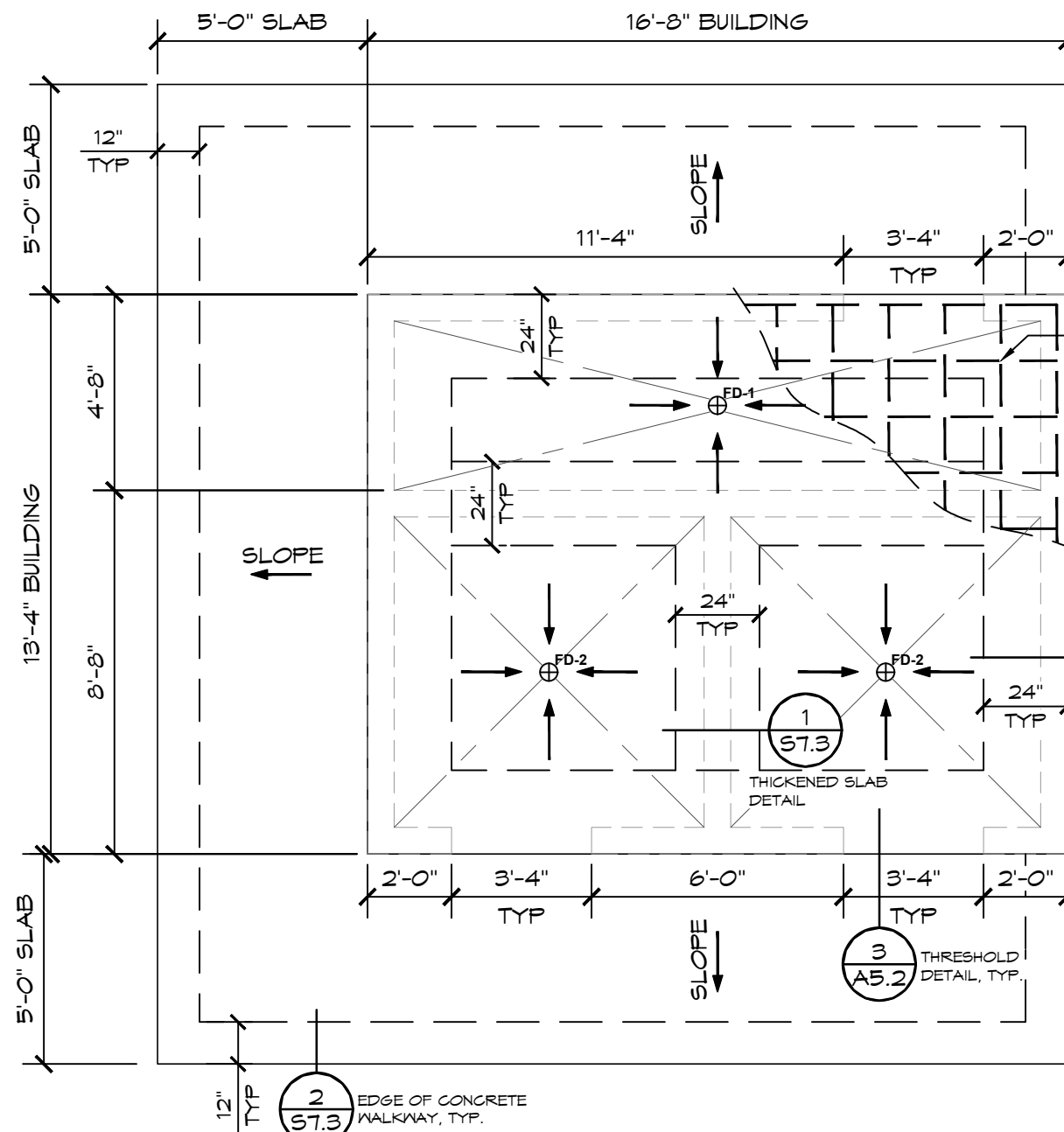


Exp. 12/31/2027

ROMTEC

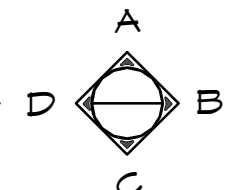
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



1 FOUNDATION PLAN

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



CONCRETE WALK
(BY INSTALLER)

5" CONC SLAB W/ #4
REBAR @ 16" OC EW OVER
6" ENGINEERED FILL

6MIL VAPOR BARRIER
BELOW SLAB, TYP.

RECYCLE

RECYCLE ALL USED SHIPPING
MATERIALS AND LEFT OVER
BUILDING MATERIALS

FOUNDATION NOTES:

1. FINISH FLOOR SLOPE IS 2% (1/4" PER FT) MAX & 1% (1/8" PER FT) MIN
2. VERIFY SIDEWALKS W/ OWNER
3. PROVIDE BLOCK-OUTS FOR PLUMBING, MECHANICAL, & ELECTRICAL AS REQD. CO-ORDINATE W/ SUBS.
4. REBAR MIN. BEND SHALL BE NOT LESS THAN 6db INSIDE DIA. AS PER TMS TMS 402-16 SECTION 6.1.8.2.
5. SAW JOINTS BY CONTRACTOR. SLAB APPEARANCE IS A PRIORITY. LOCATE JOINTS AT 10' O.C. MAX. SEE 3/S7.3.
6. MAXIMUM SLOPE OF EXCAVATION MAY BE LIMITED BY LOCAL SOIL CONDITIONS. INCREASE DEPTH OF FORMED CONCRETE AS REQD.
7. CONCRETE SLAB BENEATH FLOOR MOUNTED FIXTURES ARE TO BE GROUTED LEVEL AND SMOOTH.
8. UNDER FOOTINGS: UNDISTURBED NATIVE SOIL OR 12" FILL COMPACTED TO 90% ASTM D 1557 TO MEET OR EXCEED ALLOWABLE BEAR PRESSURE ON SHEET G2. UNDER SLAB: 6" FILL COMPACTED TO 90% ASTM D 1557 TO MEET OR EXCEED ALLOWABLE BEAR PRESSURE ON SHEET G2.

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: FOUNDATION PLAN

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **S7.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

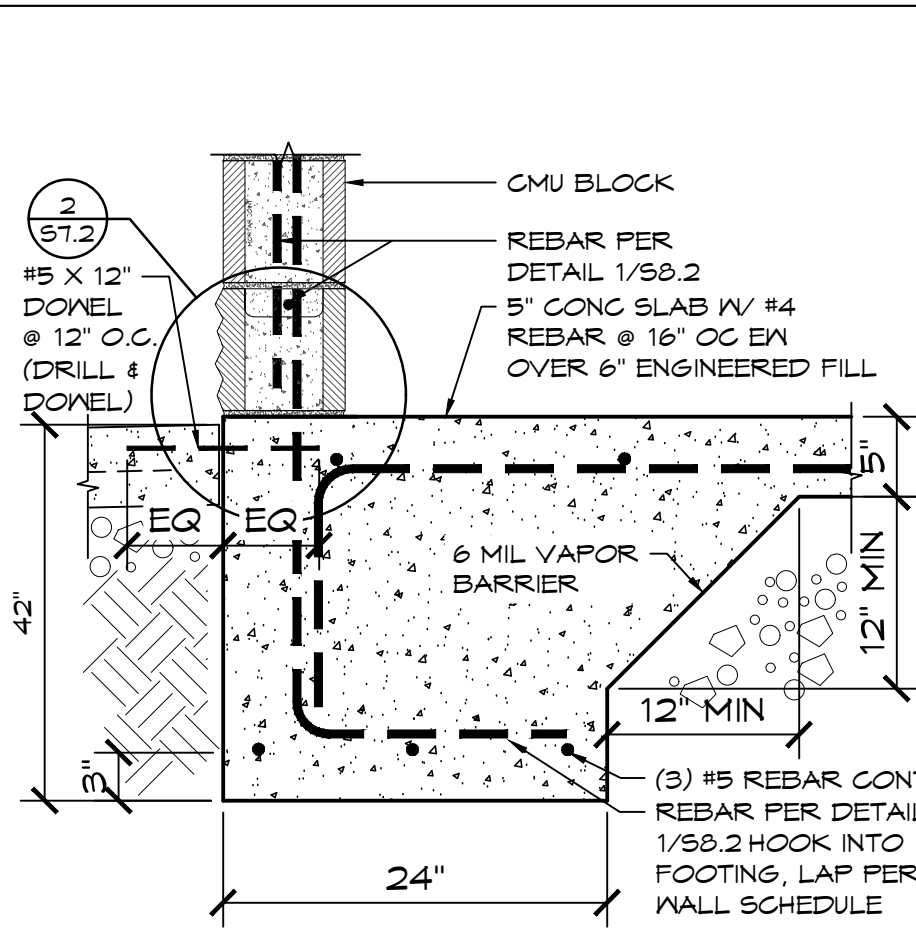


Exp. 12/31/2027

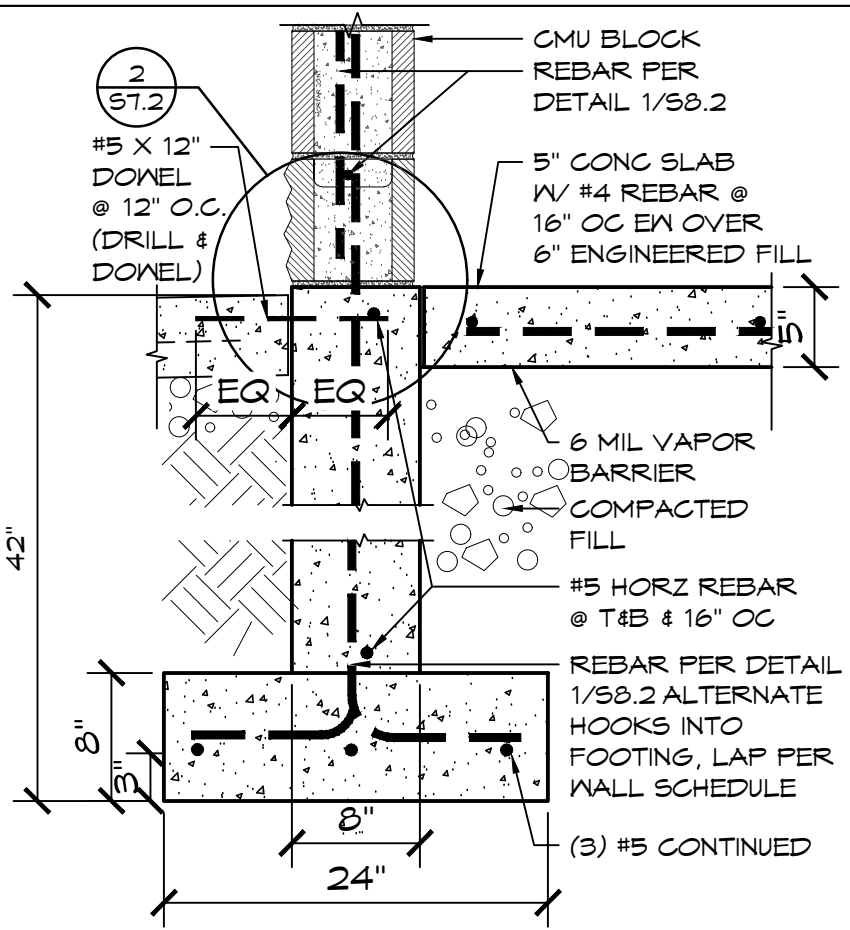
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

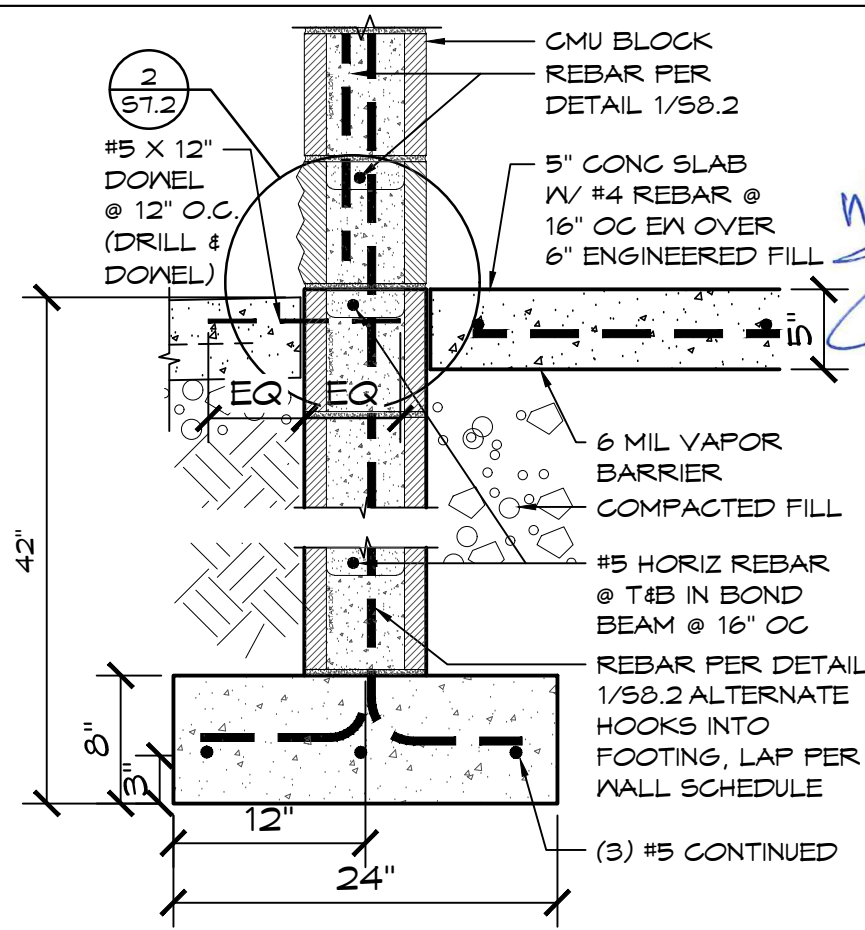
PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023



MONOLITHIC SLAB OPTION



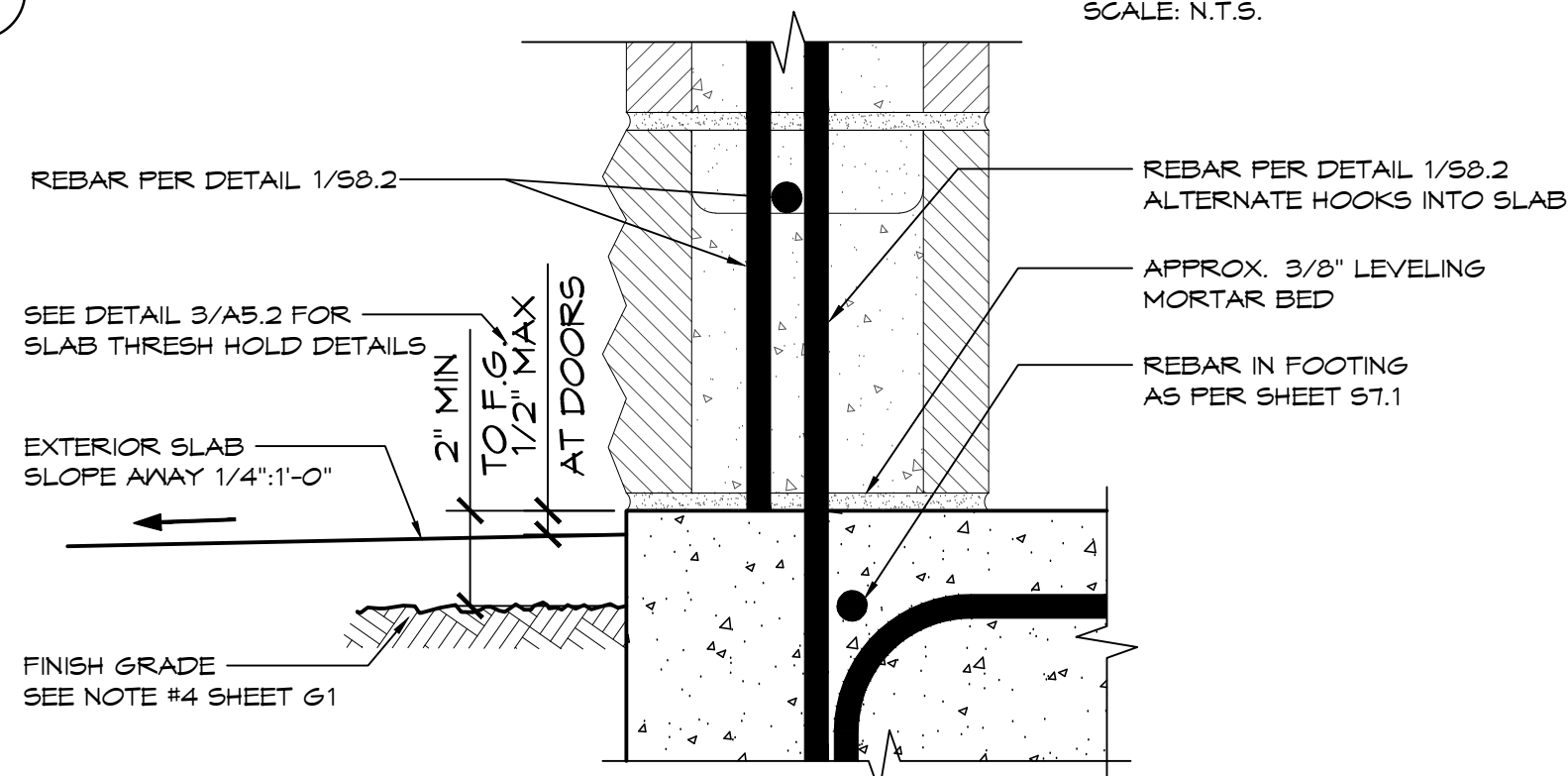
CONCRETE STEM WALL FOOTING OPTION
FOUNDATION DETAIL



CMU STEM WALL OPTION
BLOCK FOR STEM WALL SUPPLIED BY INSTALLER

SCALE: N.T.S.

1



2 WALL-SLAB CONNECTION - MONO
SCALE: 3" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: FOUNDATION DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **57.2**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

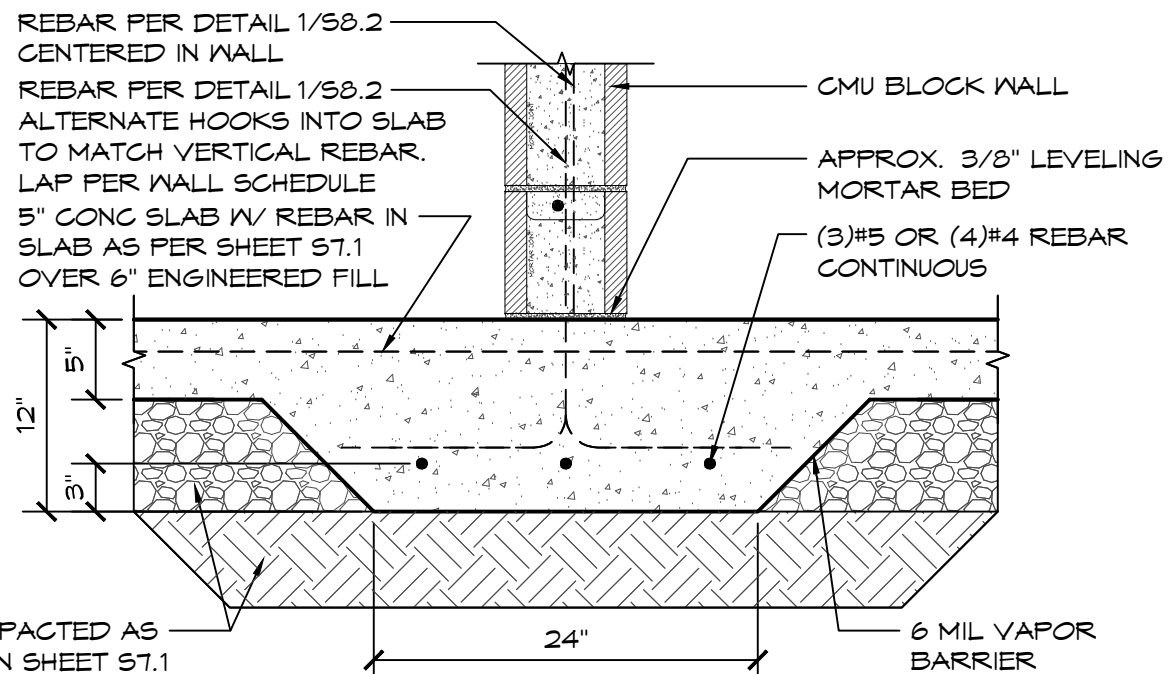


Exp. 12/31/2027

ROMTEC

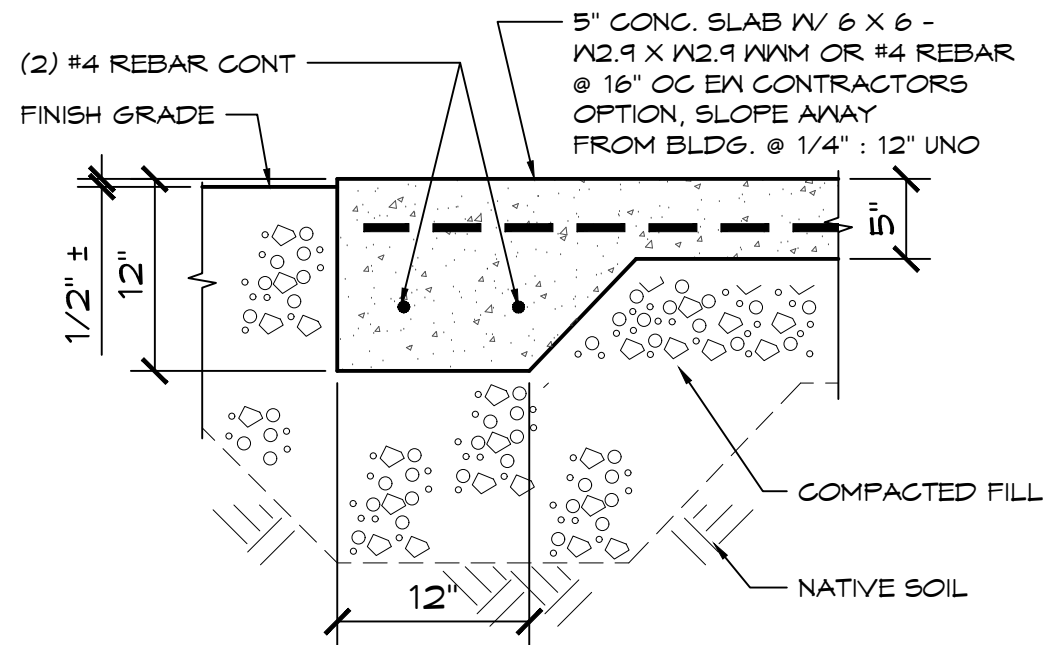
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

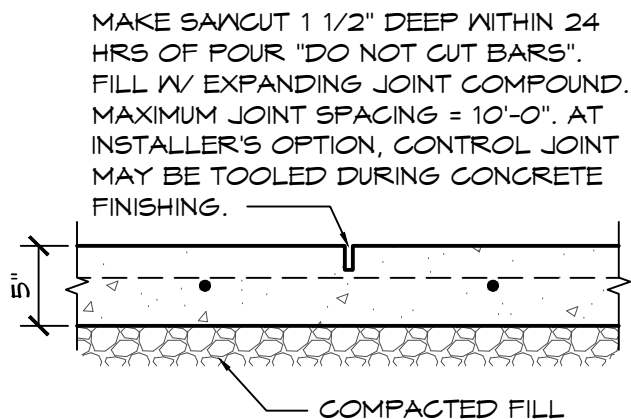


FILL COMPACTED AS NOTED ON SHEET S7.1

1 THICKENED SLAB AT INTERIOR WALL
SCALE: 1" = 1'-0"



2 EDGE OF CONC. WALKWAY
SCALE: 1" = 1'-0"



3 SAWCUT JOINT
SCALE: 1" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: FOUNDATION DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
S7.3
SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

WALL TYPE SCHEDULE

	8" REINFORCED CONCRETE MASONRY BLOCK WALL WITH MORTAR JOINTS, GROUTED SOLID ALL CELLS RUNNING BOND PATTERN.
---	---

THE CMU BLOCK LAYOUT SHALL BE PER THE BLOCK LAYOUT PLANS IN THE:
"FINAL"
 ROMTEC SCOPE OF SUPPLY AND DESIGN SUBMITTAL

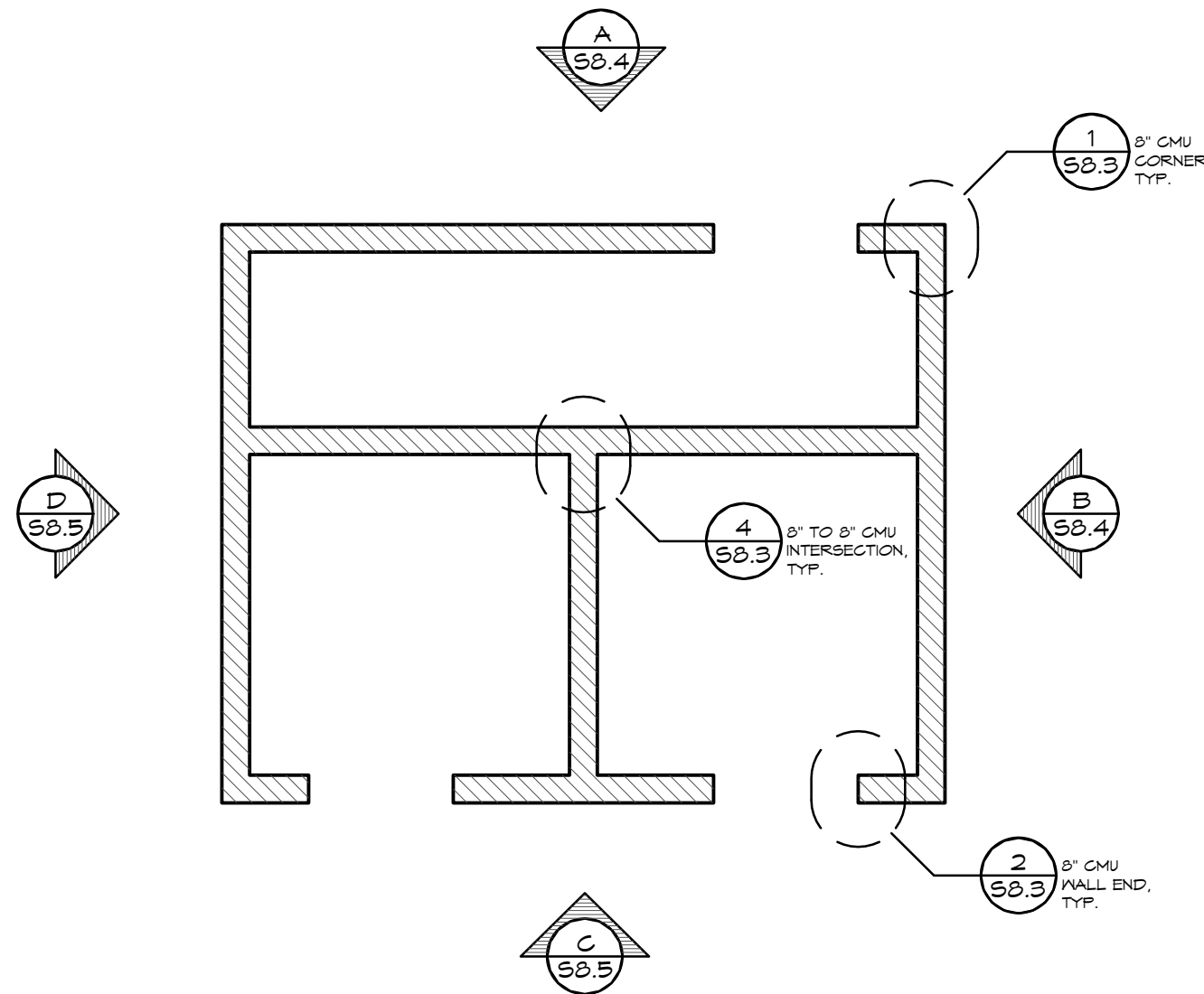


Exp. 12/31/2027

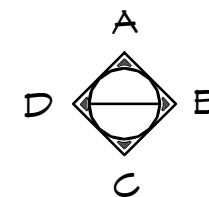
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
 www.structure1.com
 Klamath Falls Office
 250 Main Klamath Falls, Oregon 97603
 Phone: (541) 850-6300 Fax: (541) 850-6233
 info@structure1.com



1 STRUCTURAL CMU PLAN
 SCALE: 1/4" = 1'-0"



PROJECT: LAKEFRONT LODGE RESTROOM
 WILLONICK, OHIO
 SHEET TITLE: STRUCTURAL CMU PLAN

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
 SHEET NO. **S8.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 226-023

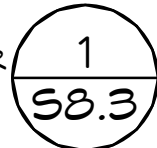
CMU REBAR SCHEDULE		
REBAR	MIN. LAP	BEND DIAMETER
#4	24"	3" MIN.
#5	30"	3-3/4" MIN.

CMU REBAR NOTES:
 - BENDS: MIN. INSIDE BEND DIAMETER SHALL BE NOT LESS THAN 6d AS PER TMS 402-16 SECTION 6.1.8.2
 - SPLICES: LAP SPLICES ARE PERMITTED AS PER TMS 402-16 SECTION 6.1.6.1.1

PIPES INSTALLED THROUGH CMU WALL NOTES:
 - SUPPLY: THE FIXTURE SUPPLY LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE AND THE PORTION OF PIPE LOCATED IN CMU WALL SHALL BE WRAPPED WITH 10MIL BLACK TAPE
 - WASTE PIPE: THE FIXTURE WASTE LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE.

(2) # 5 REBAR @ TOP COURSE
 (1) ADDITIONAL 8'-0" # 5 REBAR EXTEND 24" BEYOND DOOR OPENINGS
 VERTICAL # 4 REBAR @ 32" oc
 HORIZONTAL # 4 REBAR @ 32" oc
 # 4 REBAR EACH SIDE OF OPENINGS

CMU CORNER DETAIL



3 TYP. REBAR PLACEMENT DETAIL S8.3

2 CMU END WALL DETAIL S8.3

1ST COURSE HORIZONTAL REBAR BEND UP

F.F.

NOT SHOWN: (2) # 4 REBAR ABOVE & BELOW MAJOR OPENINGS EXTEND 24" BEYOND OPENINGS (>2'-0" WIDE EXCEPT DOOR OPENINGS)
 NOTE: HORIZONTAL REBAR TO GO AROUND VERTICAL REINFORCEMENT WITH STANDARD BEND AT ALL CORNERS, AND HORZ REBAR TO BEND UP OR DOWN AND LAP VERTICAL REBAR AT ALL OPENING LOCATIONS AS PER DETAILS ON S8.3

1 CMU REBAR LAYOUT DETAIL
 SCALE: 1/2" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
 SHEET TITLE: STRUCTURAL CMU REBAR LAYOUT
 WILLONICK, OHIO

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
 SHEET NO. **S8.2**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

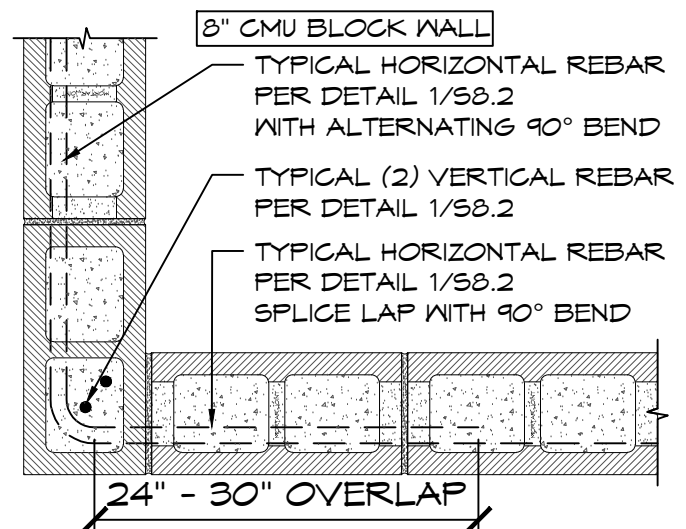


Exp. 12/31/2027

ROMTEC

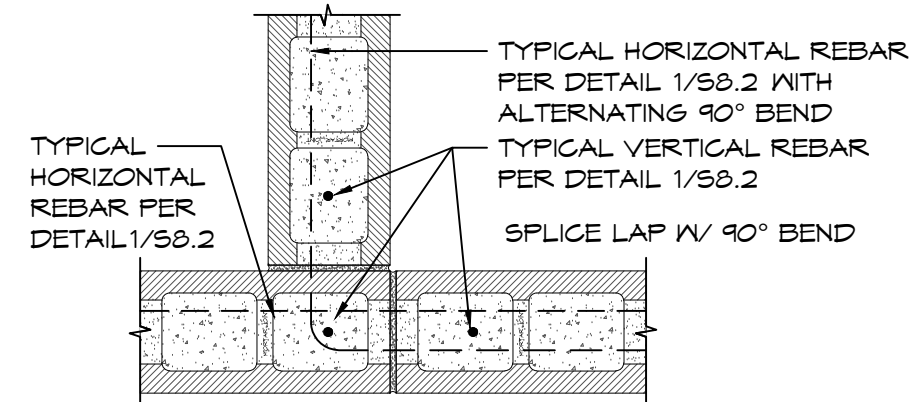
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



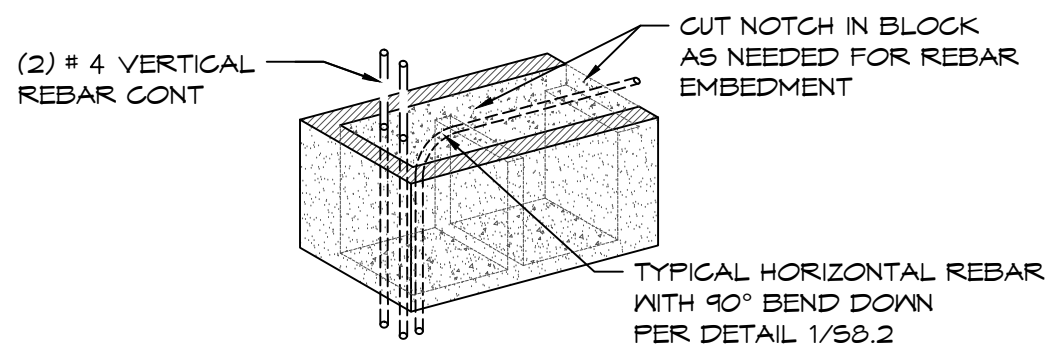
1 MORTAR JOINT
CMU CORNER DETAIL

SCALE: 1" = 1'-0"



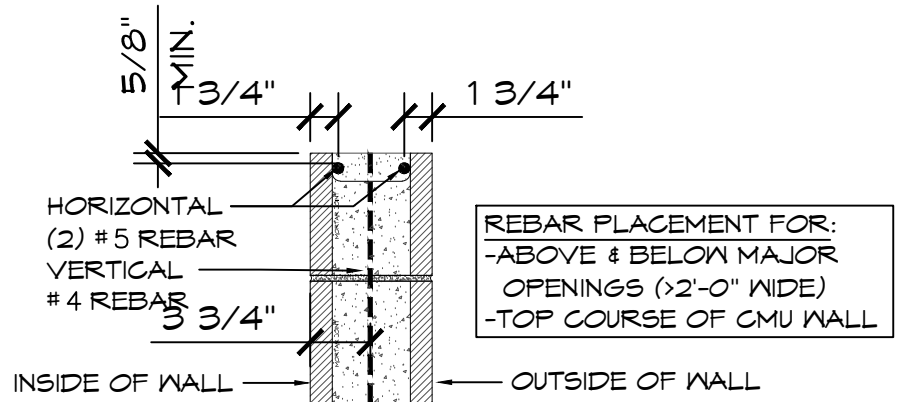
4 8" TO 8" MORTAR JOINT
CMU INTERSECTION DETAIL

SCALE: 1" = 1'-0"



2 MORTAR JOINT
CMU WALL END DETAIL

SCALE: 1" = 1'-0"



NOTE: REBAR INSTALLED AS PER
TMS 602-13/ACI 530.1-13/ASCE 6-13

3 8" CMU REBAR PLACEMENT

SCALE: 1" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: STRUCTURAL CMU DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:

REVISIONS:
58.3

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

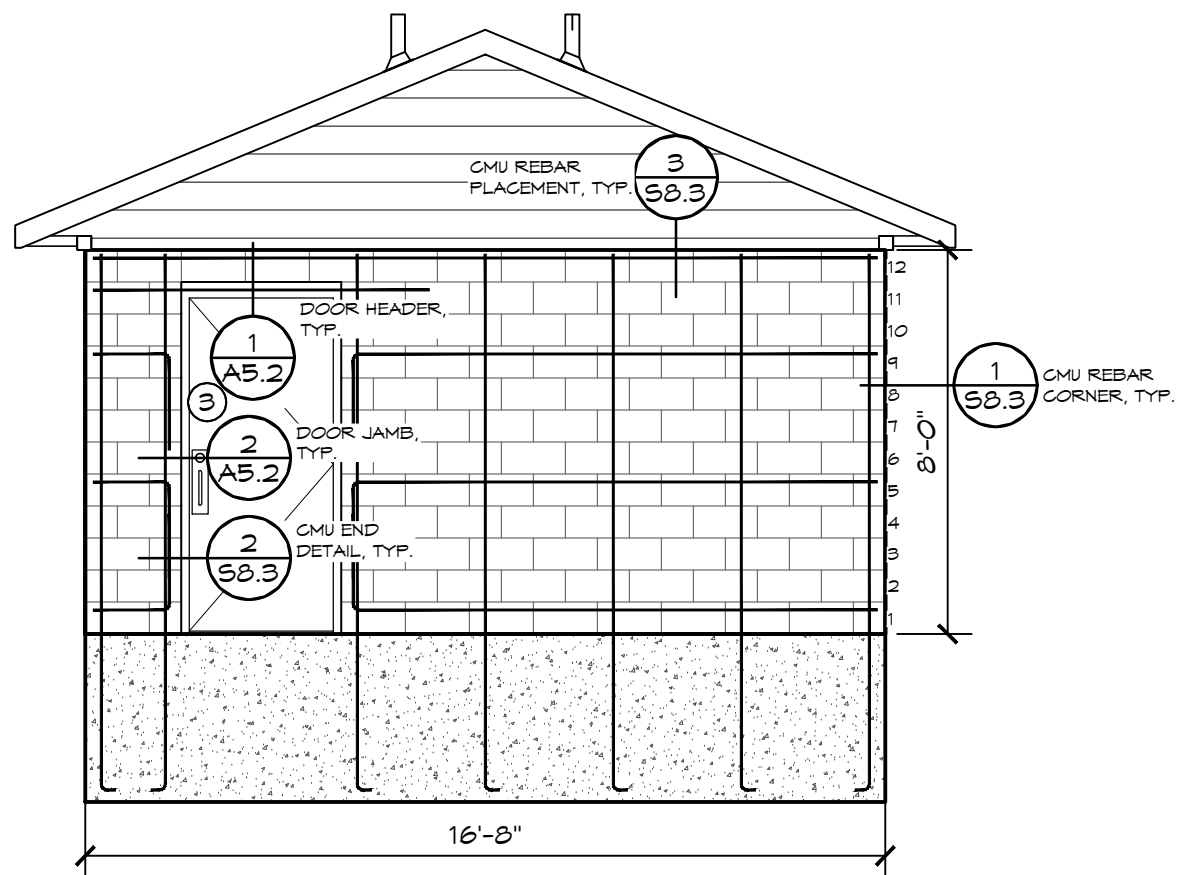


Exp. 12/31/2027

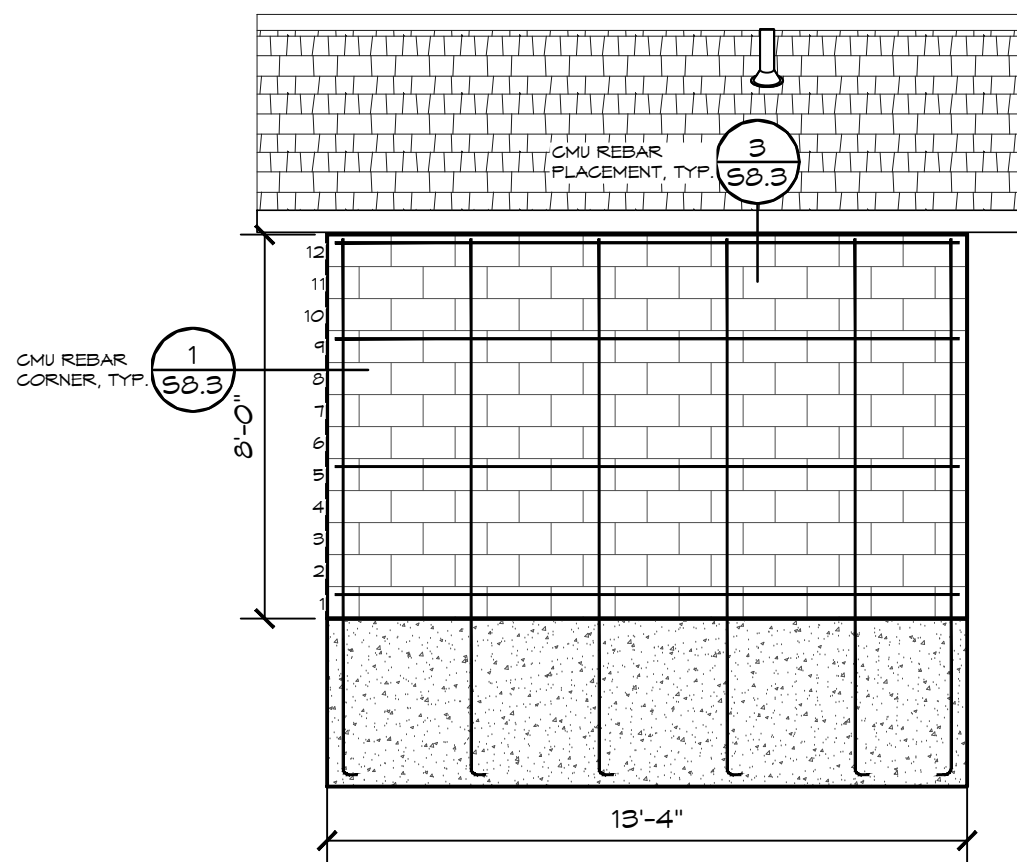
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



A CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"



B CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **S8.4**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

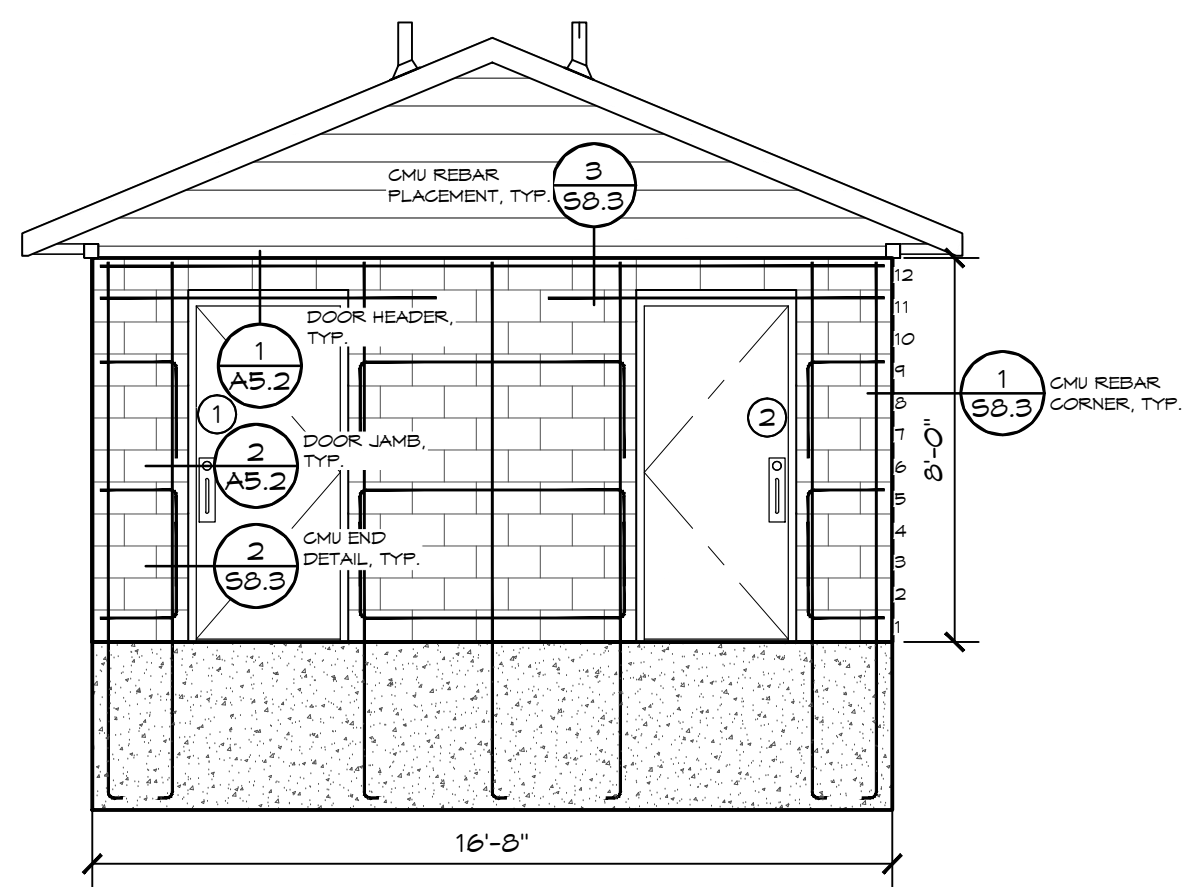


Exp. 12/31/2027

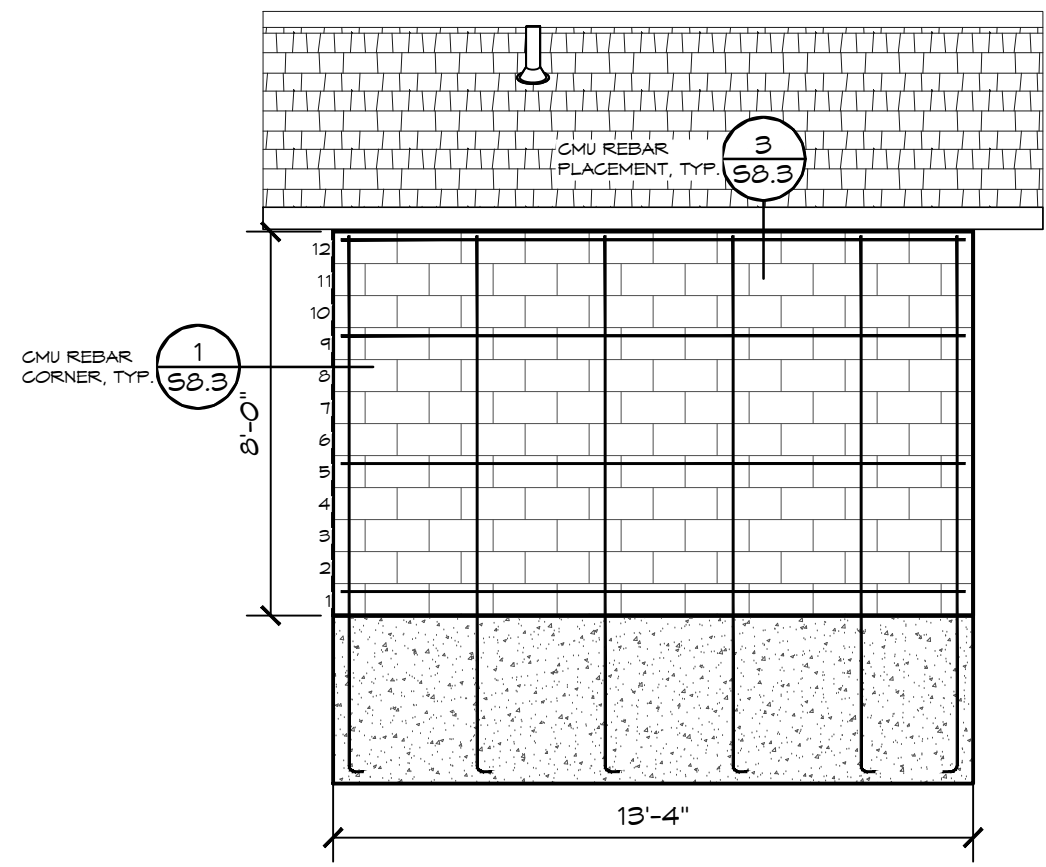
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



C CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"



D CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REVISIONS:
SHEET NO. **S8.5**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

1 VENTILATION REQUIRED				TOTAL
ATTIC FLOOR AREA	222 FT ²	X (FT ² X 150)	X (144 IN ² / 1 FT ²)	213 IN ²
2 EAWE INTAKE:				TOTAL
	FA			TOTAL
a. VENT (UNIT) 4X16	28 IN ²	X NO.	6	168 IN ²
b. VENT (UNIT) 6X16	42 IN ²	X NO.		0 IN ²
c. VENTED SOFFIT-LINEAR FT	5 IN ²	X LF		0 IN ²
SUM =				168 IN ²
d. TRUSS BLOCKING (VENTED)	15.29 IN ²	X LF	12	183.48 IN ²
ENTER LESSER OF THE SUM INTAKES OR d				168 IN ²
3 RIDGE / PEAK AREA VENT:				TOTAL
	FA			TOTAL
a. PEAK VENT (LINEAR FT)	25 IN ²	X LF	5.5	137 IN ²
b. ATTIC ROOF VENT (EXPEL)		X NO.		0 IN ²
c. ATTIC GABLE VENT (EXPEL)		X NO.		0 IN ²
SUM =				137 IN ²
4 TOTAL (ACTUAL) VENTILATION: MORE THAN #1				TOTAL
SUM OF TOTALS ON 2 + 3				305 IN ²
5 VENTILATION %: (EAWE TO BE 50%-60%)				TOTAL
TOTAL EAWE (#2) ÷ TOTAL VENTILATION (#4)				55.03%
TOTAL RIDGE (#3) ÷ TOTAL VENTILATION (#4)				44.97%

3/16/2026

STATE OF OHIO

NABIL TAHA

PE78263

PROFESSIONAL ENGINEER

Exp. 12/31/2027

ROMTEC

www.romtec.com

(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.

www.structure1.com

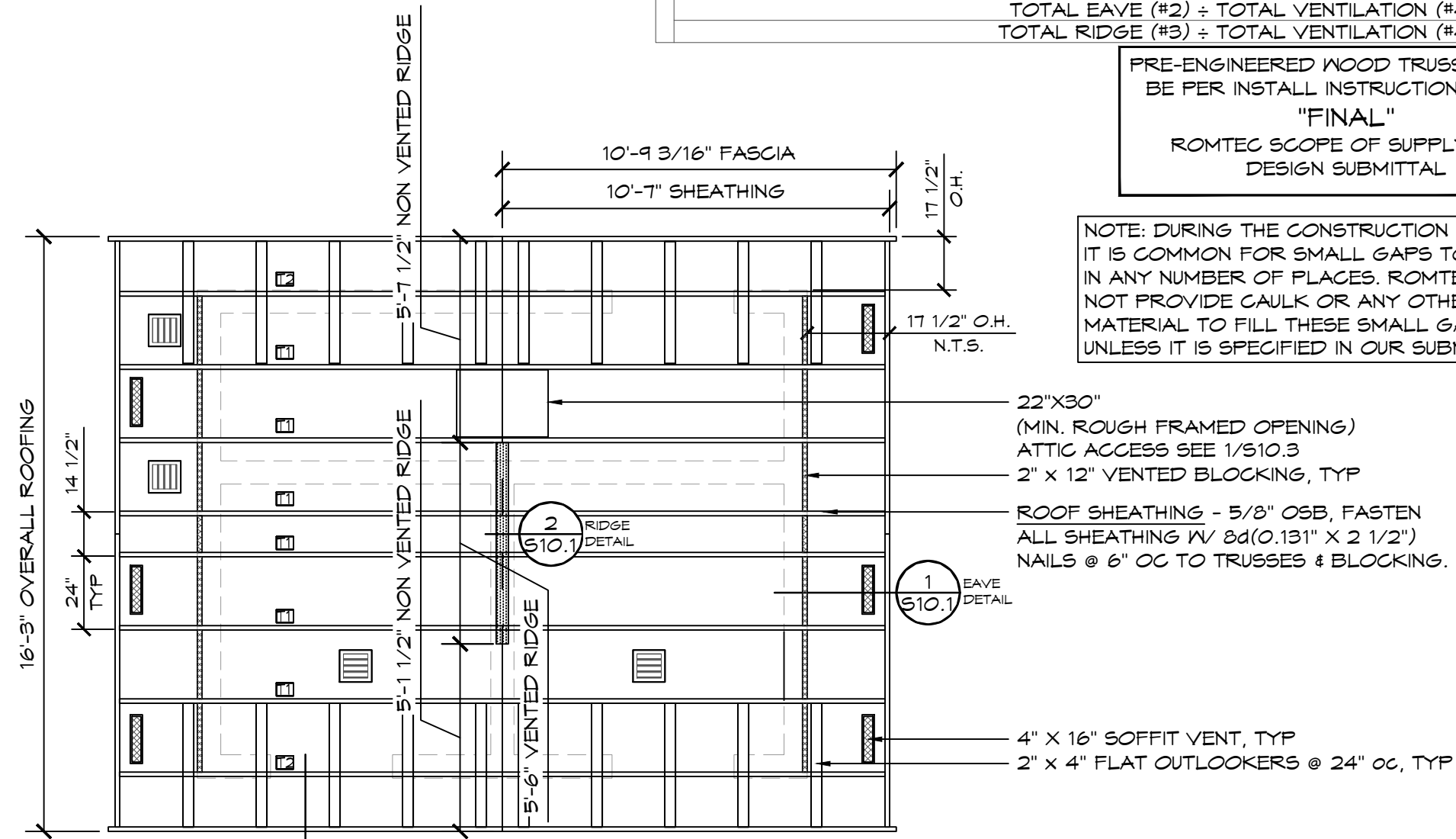
250 Main Klamath Falls, Oregon 97603

Phone: (541) 850-6300 Fax: (541) 850-6233

info@structure1.com

PRE-ENGINEERED WOOD TRUSSES SHALL BE PER INSTALL INSTRUCTIONS IN THE: "FINAL" ROMTEC SCOPE OF SUPPLY AND DESIGN SUBMITTAL

NOTE: DURING THE CONSTRUCTION PROCESS IT IS COMMON FOR SMALL GAPS TO APPEAR IN ANY NUMBER OF PLACES. ROMTEC DOES NOT PROVIDE CAULK OR ANY OTHER MATERIAL TO FILL THESE SMALL GAPS UNLESS IT IS SPECIFIED IN OUR SUBMITTAL



1 ROOF FRAMING PLAN

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

PROJECT: LAKEFRONT LODGE RESTROOM

WILLOWICK, OHIO

SHEET TITLE: ROOF FRAMING PLAN

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

SHEET NO. **S9.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

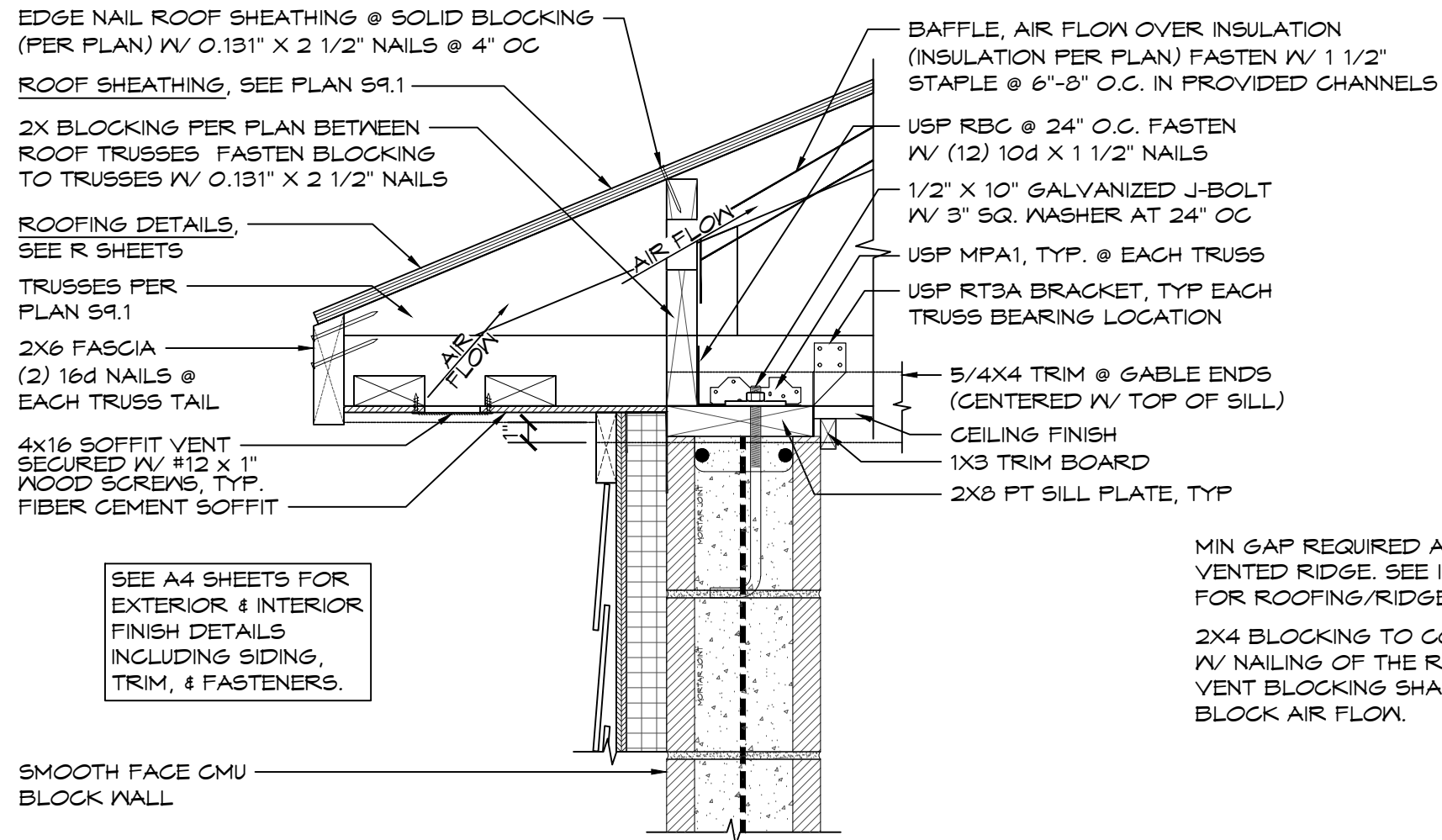


Exp. 12/31/2027

ROMTEC

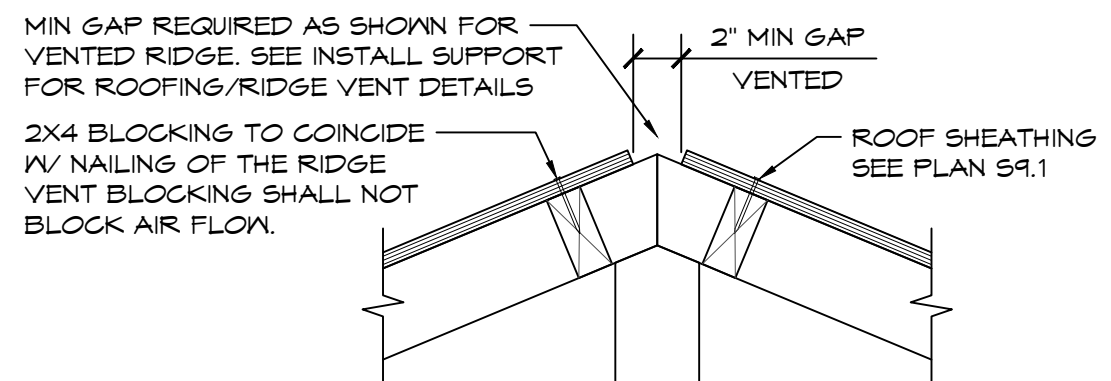
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

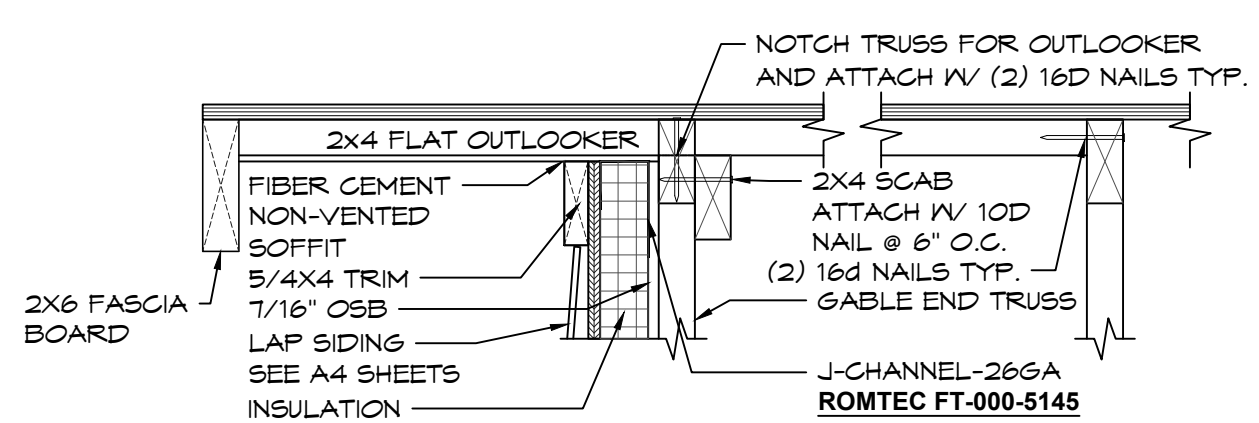


1 EAVE OVERHANG W/ TRUSS (ENERGY HEEL)
SCALE: 1 1/2" = 1'-0"

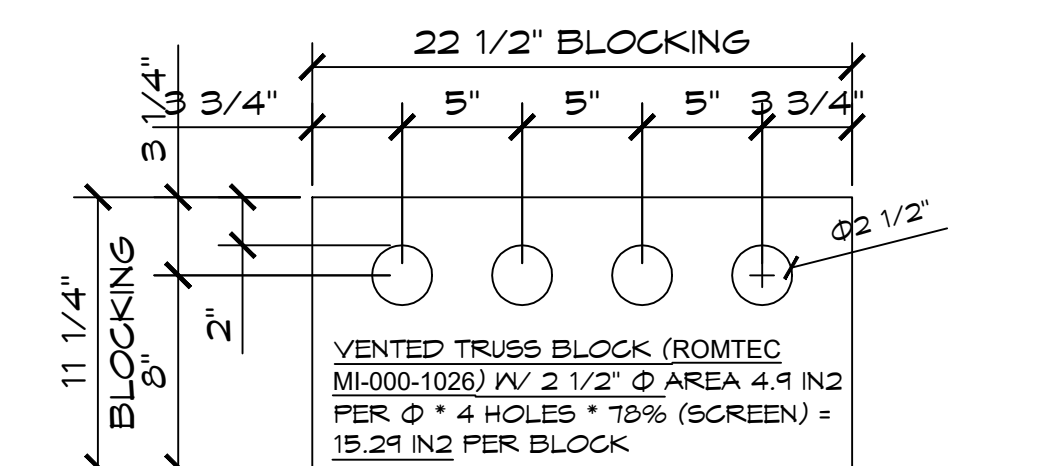
- A: INSULATION: R38
 - B: UNDERLAYMENT REQUIREMENTS: ICE & WATER SHIELD AT RIDGE AND EAVE TO 24" PAST WALL THAN #30 FELT IN FIELD.
 - C: CEILING FINISH: 5/8" GREEN GYPSUM BOARD CEILING FASTENED W/ #10 x 1 1/2" DRYWALL SCREWS (INSTALLER SUPPLIED)
- ROOF PITCH: 5:12 = 22.62°



3 VENTED RIDGE DETAIL
SCALE: 1 1/2" = 1'-0"



2 GABLE FRAMING DETAIL
SCALE: 1 1/2" = 1'-0"



4 2X12 VENTED BLOCK @ EAVES
SCALE: 1 1/2" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ROOF CONNECTION DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP
REVISIONS:		

SHEET NO. **S10.1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

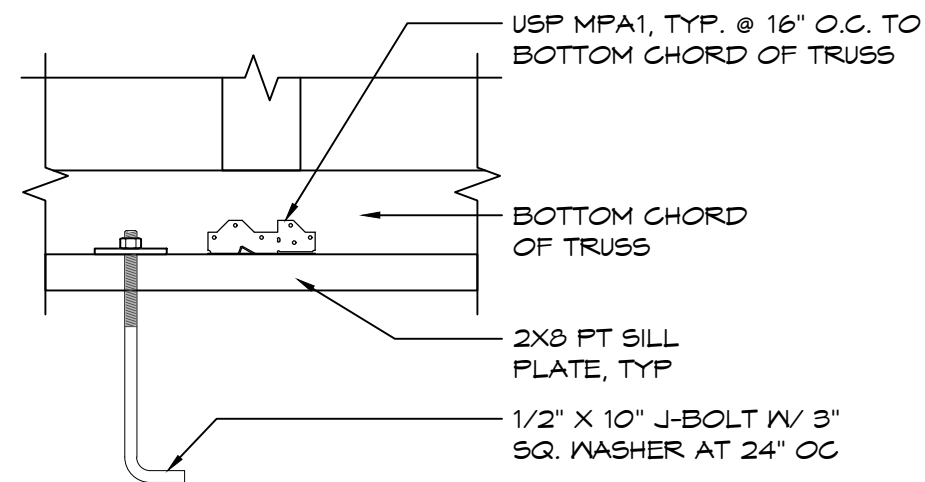


Exp. 12/31/2027

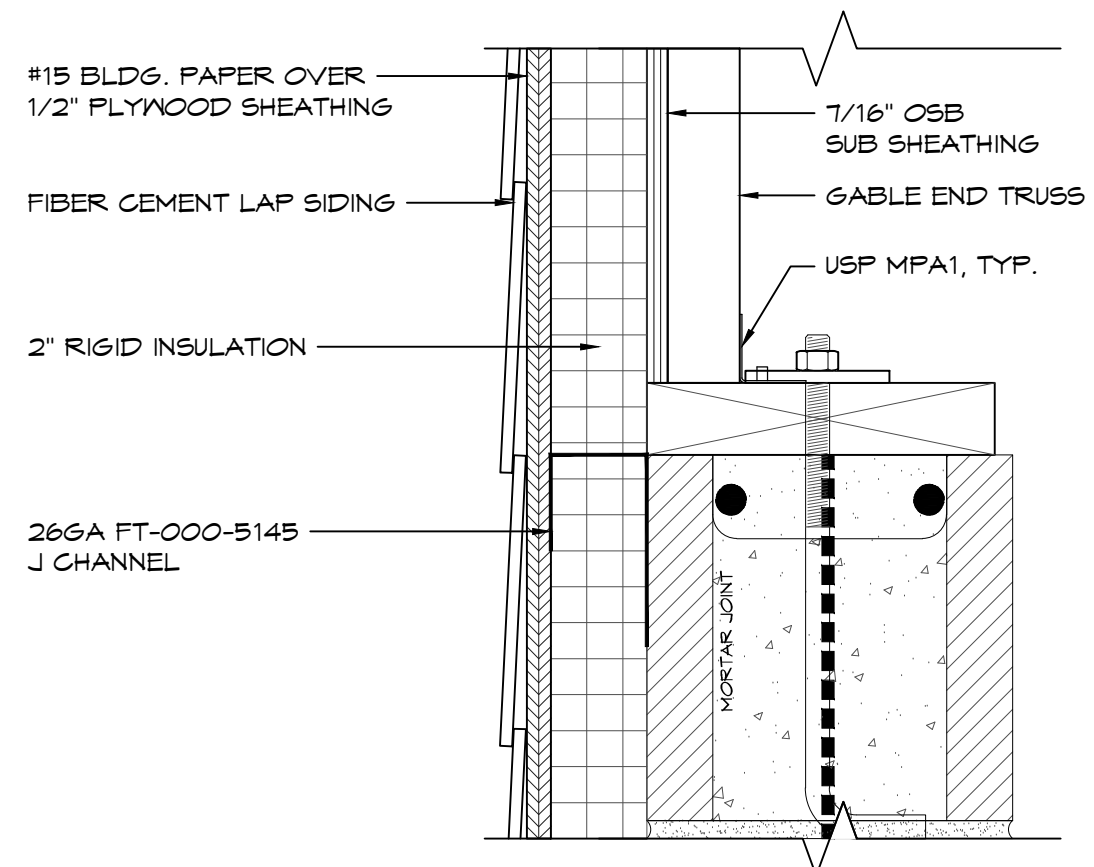
ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

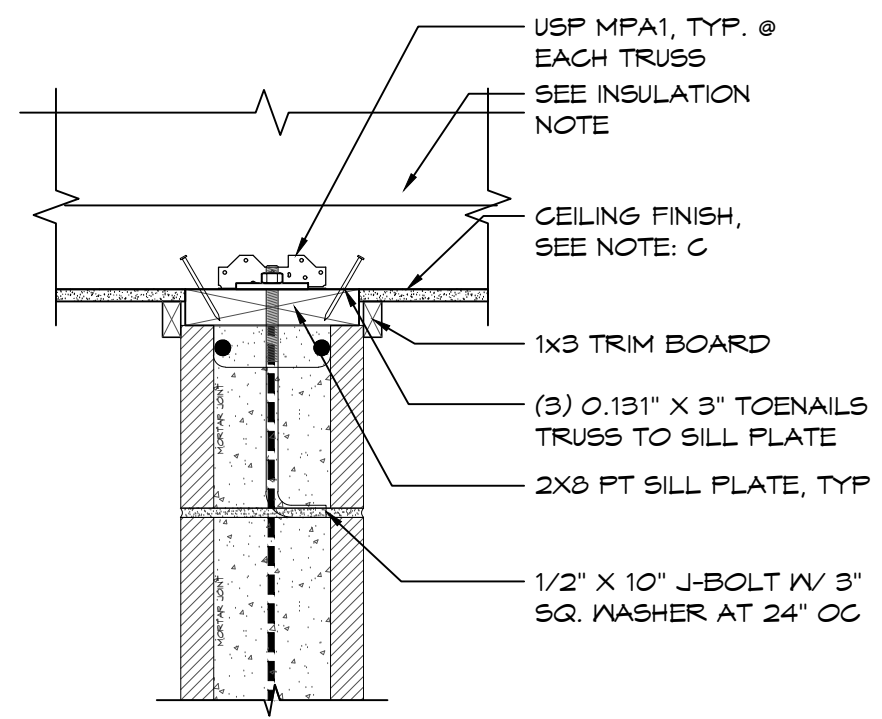
PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 226-023



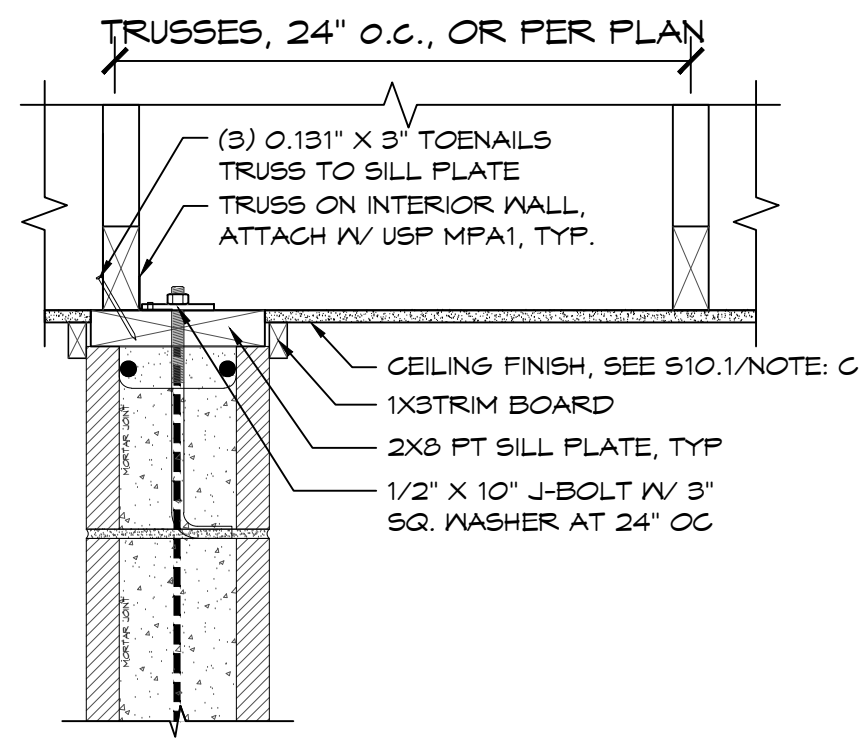
1 **GABLE TRUSS CONNECTION**
SCALE: 1 1/2" = 1'-0"



2 **TRANSITION DETAIL**
SCALE: 3" = 1'-0"



3 **INTERIOR WALL CONNECTION**
SCALE: 1 1/2" = 1'-0"



4 **INTERIOR WALL CONNECTION**
SCALE: 1 1/2" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ROOF CONNECTION DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
S10.2
SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



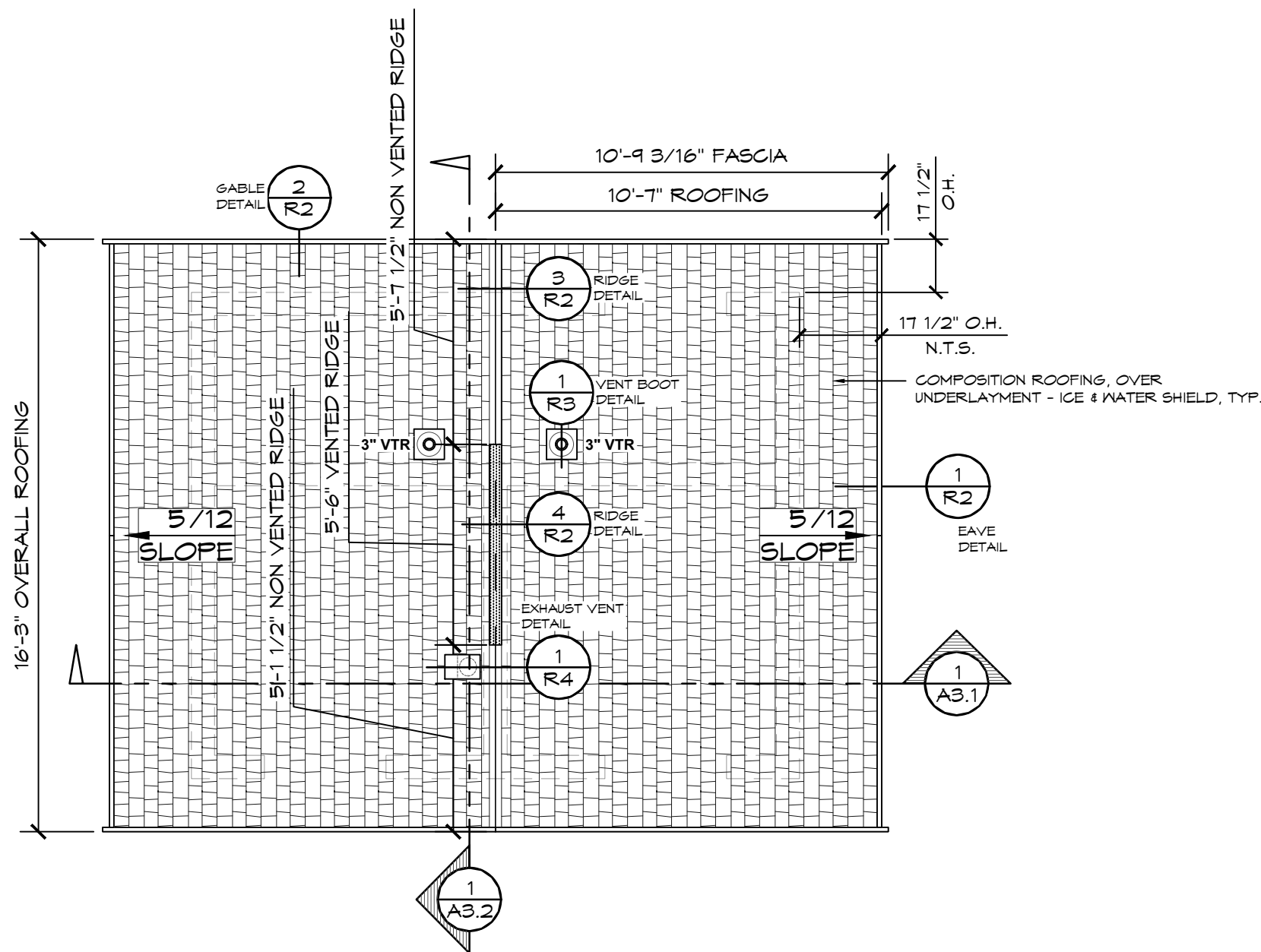
Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

NOTE:
FLASHING SECTIONS OVER
10'-6" IN LENGTH SHALL BE
OVERLAPPED BY 4" AND
EVERY EFFORT MUST BE
MADE TO ENSURE A
SYMMETRICAL APPEARANCE



1 ROOFING PLAN
SCALE: 1/4" = 1'-0"
A B C D

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ROOFING PLAN

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **R1**

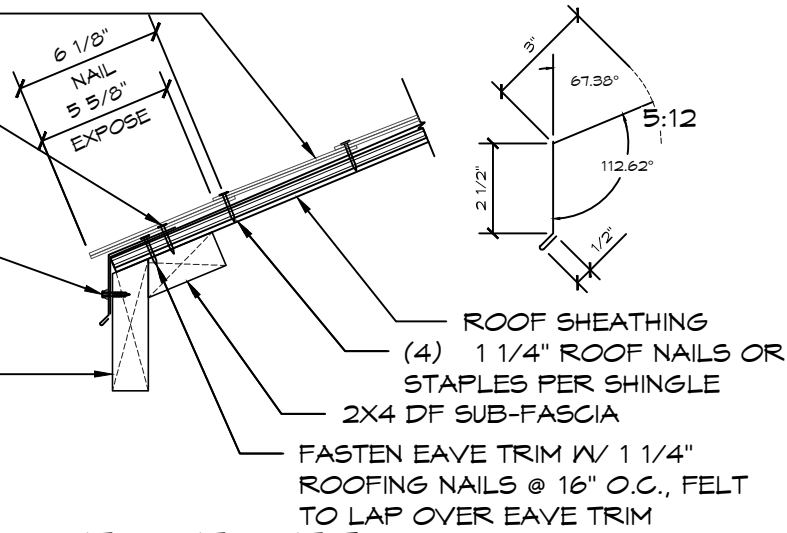
© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

COMPOSITION ROOFING
OVER UNDERLAYMENT

NAIL 6 5/8" STARTER
SHINGLE 2"-3" FROM EDGE
W/ (5) 1 1/4" ROOF NAILS
OR STAPLES PER SHINGLE

FASTEN EAVE TRIM **CE1**
W/ #14 - 1" WOODTITE
SCREWS @ 16" O.C.
ACROSS FACE OF TRIM

2X6 FASCIA BOARD



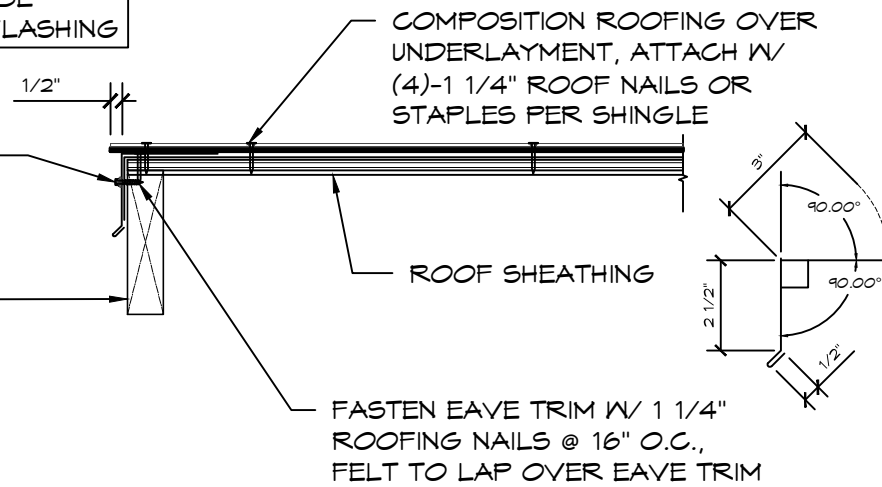
1 COMPOSITION - EAVE DETAIL

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

NOTE: EAVE FLASHING MUST BE
INSTALLED BEFORE GABLE FLASHING

FASTEN EAVE TRIM **CE1**
W/ #14 - 1" WOODTITE
SCREWS @ 16" O.C.
ACROSS FACE OF TRIM

2X6 FASCIA BOARD



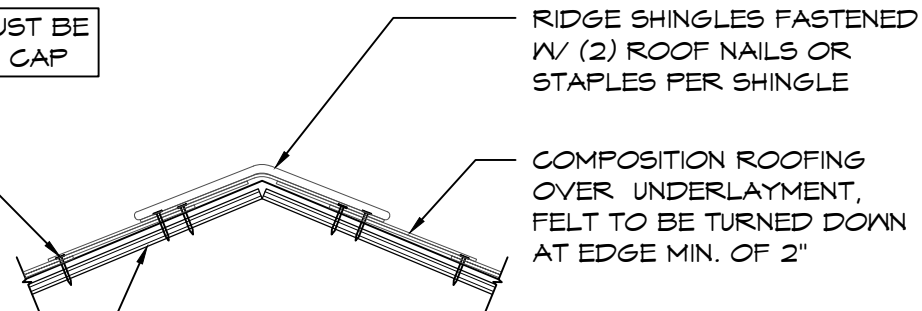
2 COMPOSITION - GABLE DETAIL

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

NOTE: GABLE FLASHING MUST BE
INSTALLED BEFORE RIDGE CAP

(4) 1 1/4" ROOF NAILS OR STAPLES PER SHINGLE

ROOF SHEATHING



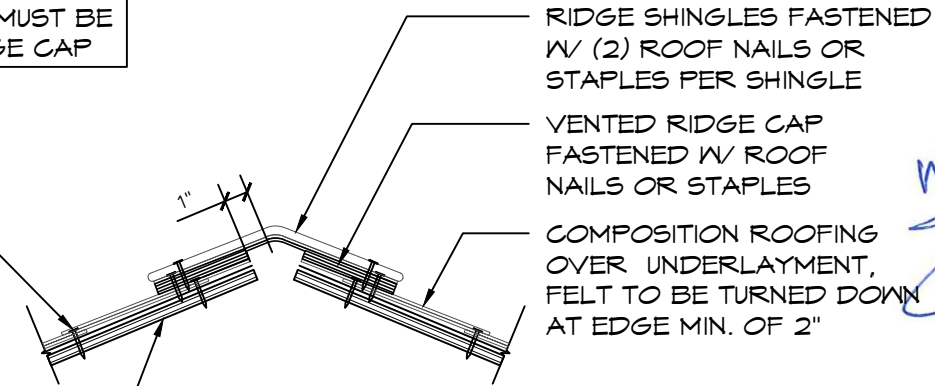
3 COMPOSITION - NON-VENTED RIDGE DETAIL

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

NOTE: GABLE FLASHING MUST BE
INSTALLED BEFORE RIDGE CAP

(4) 1 1/4" ROOF NAILS OR STAPLES PER SHINGLE

ROOF SHEATHING

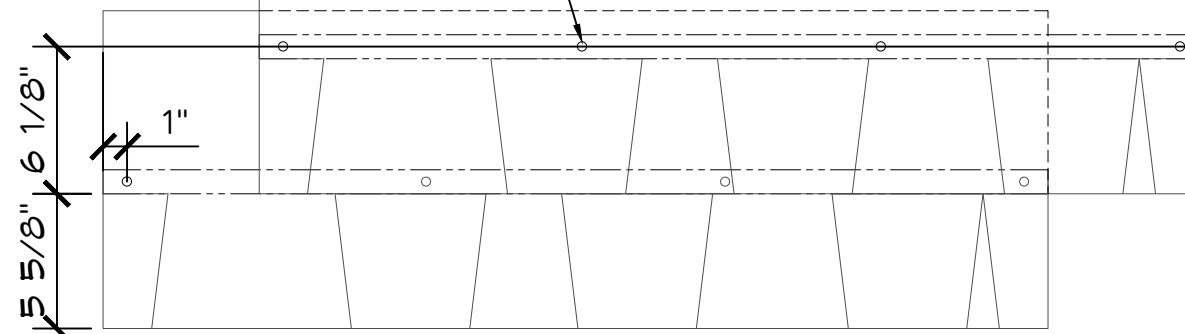


4 COMPOSITION - VENTED RIDGE DETAIL

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

1 1/4" ROOFING NAIL OR STAPLE, TYP. (4) PER SHINGLE

ARCHITECTURAL SHINGLE



5 COMPOSITION - TYP. INSTALL DETAIL

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

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-8300 Fax: (541) 850-6233
info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM
PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP
SHEET TITLE: ROOFING DETAILS
SHEET NO.: R2

REV.	DATE:	BY:

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

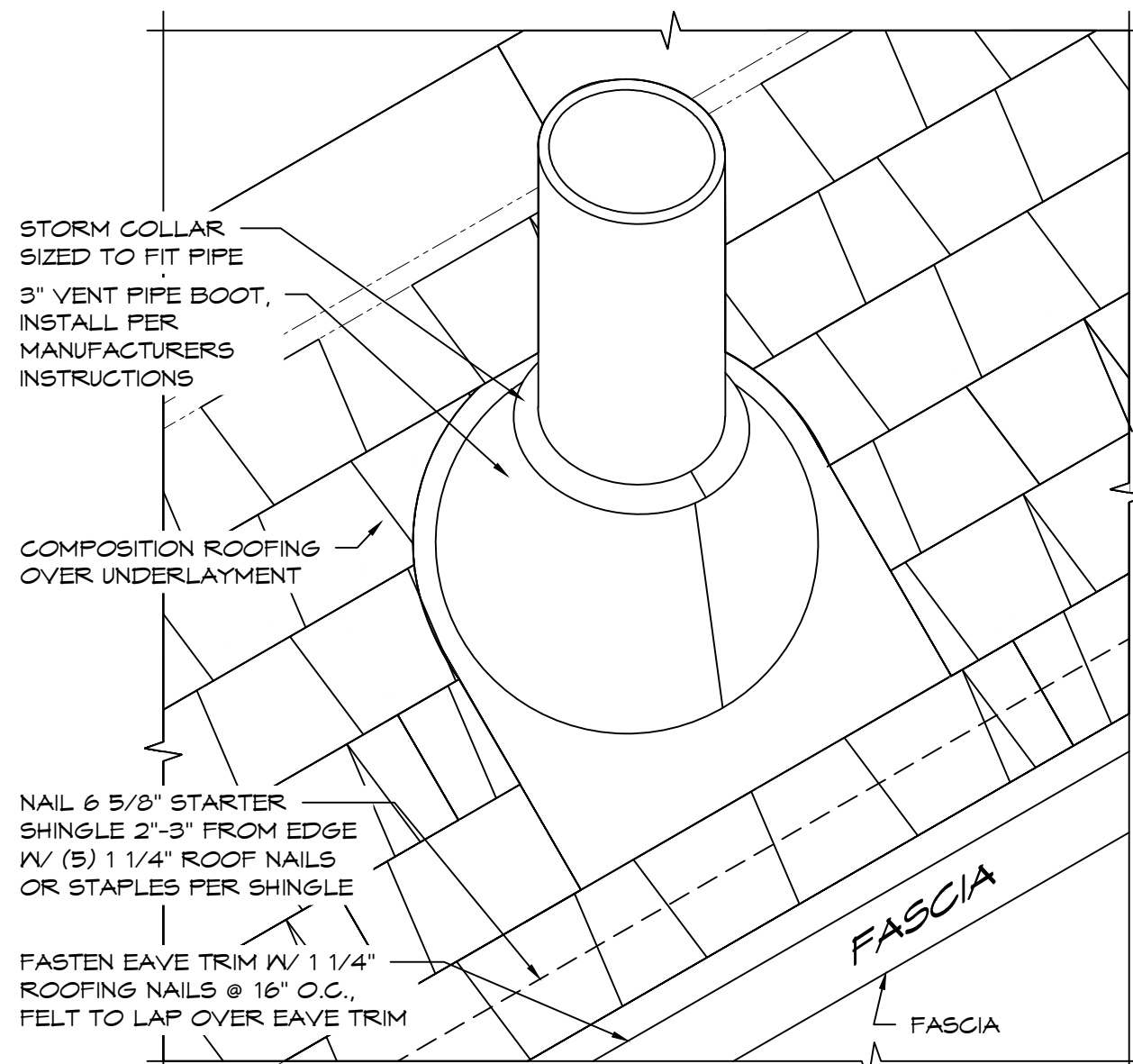


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



1 COMPOSITION - 3" VENT BOOT DETAIL
SCALE: N.T.S.

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ROOFING DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **R3**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



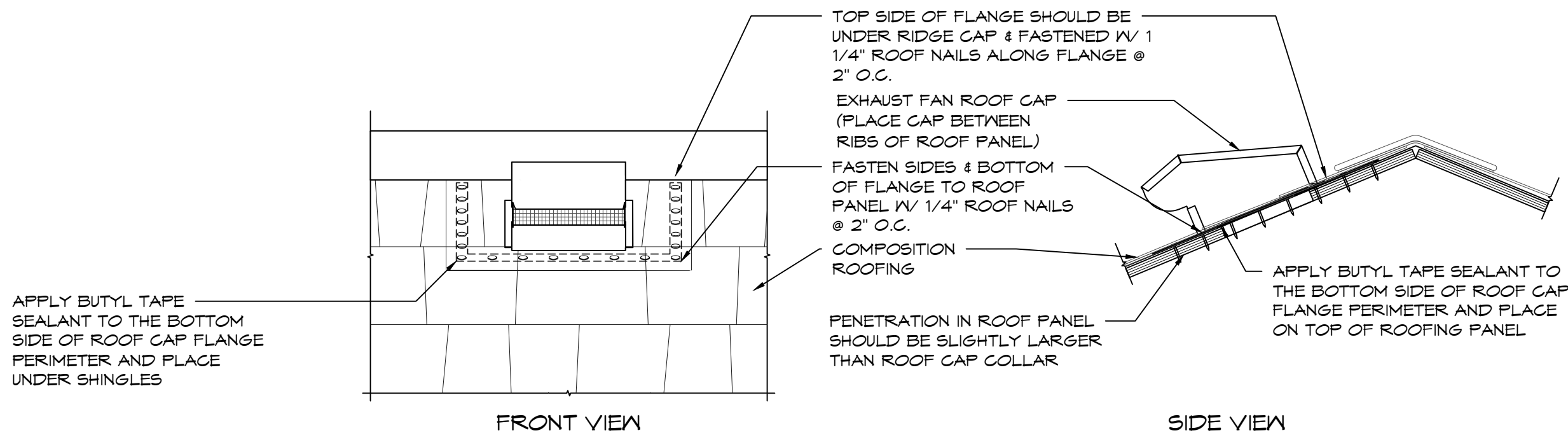
Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.

www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



1 EXHAUST FAN ROOF CAP DETAIL
SCALE: 1 1/2" = 1'-0"

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ROOFING DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
R4

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

INTERNATIONAL PLUMBING CODE

SYM	FIXTURE TYPE	SEWER	VENT	COLD WATER	HOT WATER	MIXED WATER	NO OF FIXT.	W. FIXT. UNITS/EA	TOTAL W. FIXT UNITS	DR. FIXT UNITS	TOTAL DR. FIXT. UNITS
WC-1	ADA TOILET	3"	2"	1"	X	X	2	10	10	4	8
LV-1	HAND SINK	1 1/4"	1 1/2"	1/2"	X	X	2	2	4	1	2
S-1	UTILITY/MOP SINK	2"	1 1/2"	1/2"	X	X	1	2.25	2.25	2	2
DF-1	DRINKING FOUNTAIN	1 1/2"	1 1/2"	1/2"	X	X	3	.25	.75	.5	1.5
HB-1	WALL HYDRANT ANTI-FREEZE	X	X	3/4"	X	X	1	2	2	NA	NA
HB-2	WALL FAUCET	X	X	1/2"	X	X	1	2	2	NA	NA
WH-1	WATER HEATER (TANK)	X	X	3/4"	3/4"	1/2"	1	NA	NA	NA	NA
FD-1	FLOOR DRAIN	3"	1 1/2"	X	X	X	1	NA	NA	2	2
FD-2	FLOOR DRAIN (EMERGENCY)	3"	1 1/2"	X	X	X	2	NA	NA	NA	NA
TOTAL									21	TOTAL	15.5

SIoux CHIEF
(3" W/6" STRAINER)

GENERAL PLUMBING NOTES:

- ALL PIPE (WATER, SEWER, VENT), JOINTS, AND WORK SHALL CONFORM TO INTERNATIONAL PLUMBING CODE, STATE CODES, COUNTY AND LOCAL CODES AND ORDINANCES.
- CONTRACTOR TO CONFIRM LOCATIONS OF SEWER AND WATER TIE-INS
- CONTRACTOR TO SOLIDLY BRACE ALL PIPING TIGHT AGAINST WALLS. FOR LONG OR COMPLICATED RUNS, SECURELY MOUNT USING UNISTRUT, IN STRAIGHT AND UNIFORM MANNER FOR FINISHED APPEARANCE. PIPING SHOWN IS DIAGRAMMATIC ONLY AND ACTUAL DESIGN BY CONTRACTOR.
- CONTRACTOR MAY CHANGE PIPE SIZING IN FIELD TO PROVIDE ADEQUATE WATER PRESSURE TO ALL PLUMBING FIXTURES AS APPROVED BY INSPECTOR. ROMTEC BUILDINGS ARE DESIGNED TO HAVE 40-60 PSI WATER PRESSURE FOR THE PLUMBING FIXTURES. IF THE SITE HAS A PRESSURE OTHER THAN THIS, IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE THE PRESSURE REDUCER OR BOOSTER PUMP NECESSARY.
- CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR GRAVITY DRAINING ALL PLUMBING FIXTURES TO SEPTIC OR SANITARY SEWER SYSTEM. INSTALLER TO PROVIDE A CLEAN-OUT BENEATH ALL SINKS AND LAVATORY AS REQUIRED BY CODE.
- CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR SUPPLYING WATER TO ALL PLUMBING FIXTURES AND INSTALL WATER SERVICE SHUTOFF VALVE; TYPICALLY LOCATED WITHIN THE MECHANICAL ROOM.
- IF THE SITE REQUIRES AN ACCESSIBLE BACK FLOW PREVENTER AND/OR PRESSURE REDUCER OR BOOSTER PUMP IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE.
- WHEN INCLUDED WATER HEATERS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ALL STATE, COUNTY, AND LOCAL CODES AND ORDINANCES.
- FLUSHOMETERS ASSOCIATED WITH TOILETS USE NO MORE THAN 1.6 GALLONS PER FLUSH. FLUSHOMETERS ASSOCIATED WITH URINALS USE NO MORE THAN 1.0 GALLON PER FLUSH. BOTH OF THE ABOVE SHALL MEET PERFORMANCE STANDARDS BY ANSI A112.19.2 H&S CODE, SECTION 17921.3(B)
- WHEN FIXTURES REQUIRE WALL CARRIERS THE WALL CARRIER SHALL BE SUPPLIED BY CONTRACTOR.
- UNLESS SPECIFIED IN THE ROMTEC SUBMITTAL, ROMTEC DOES NOT SUPPLY INSULATION OR "FREEZE PROTECTION" FOR PLUMBING. "THE OWNER MAY NEED TO WINTERIZE THEIR BUILDING."

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: PLUMBING SCHEDULE

PROJECT #: LLR01
DATE: 02/05/2026

DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

P1

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

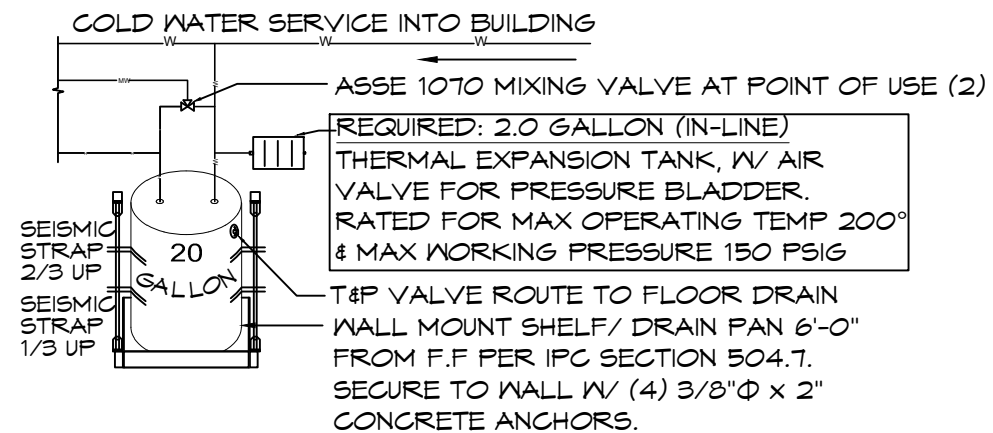


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com

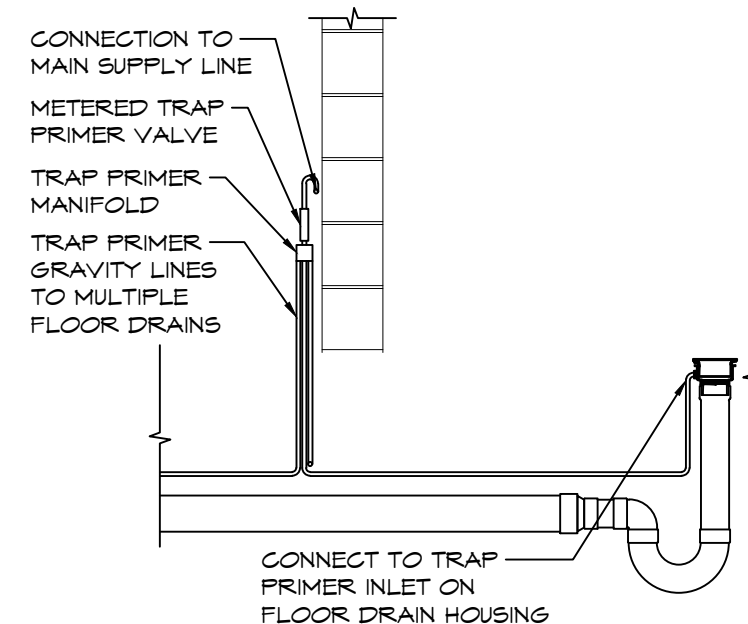


SHEET P1 ~ NOTE 8 ~ REQ. STRAP ANCHORING

1 WATER HEATER DETAIL

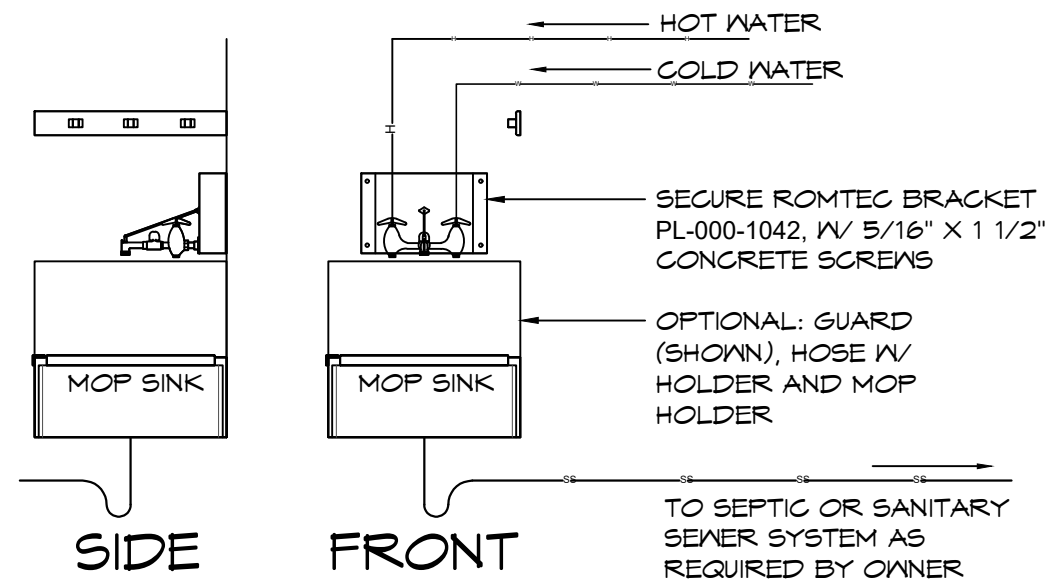
SCALE: 1/4" = 1'-0"

WALL MOUNT SHELF/ DRAIN PAN 6'-0" FROM F.F PER IPC SECTION 504.7



3 TRAP PRIMER DETAIL

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



2 24" x 24" MOP SINK

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

TO SEPTIC OR SANITARY SEWER SYSTEM AS REQUIRED BY OWNER

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: PLUMBING DETAILS

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

P2

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026

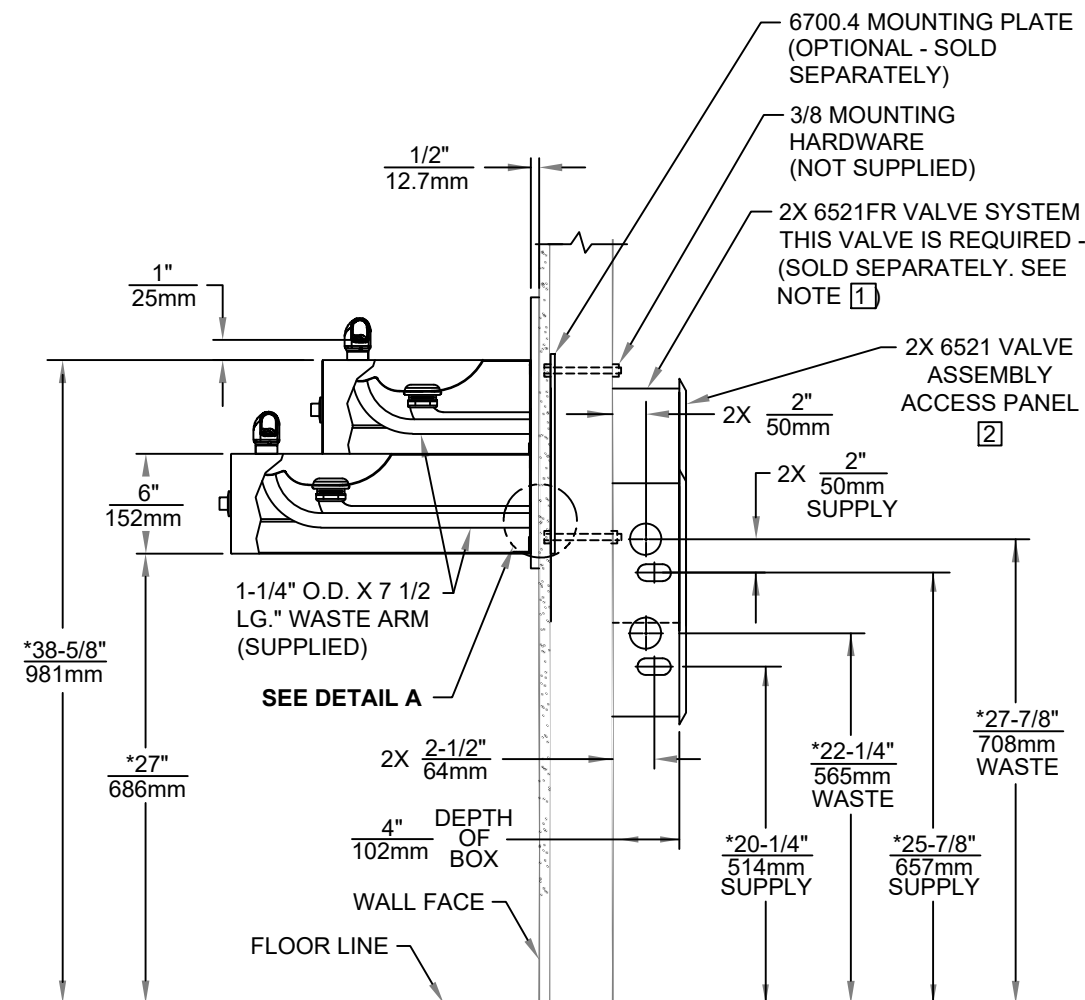
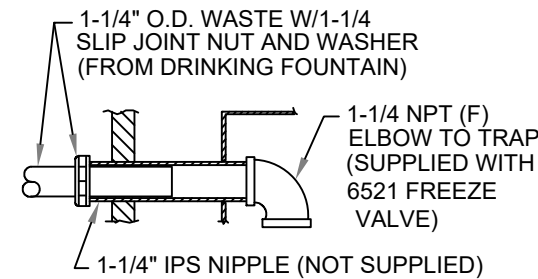
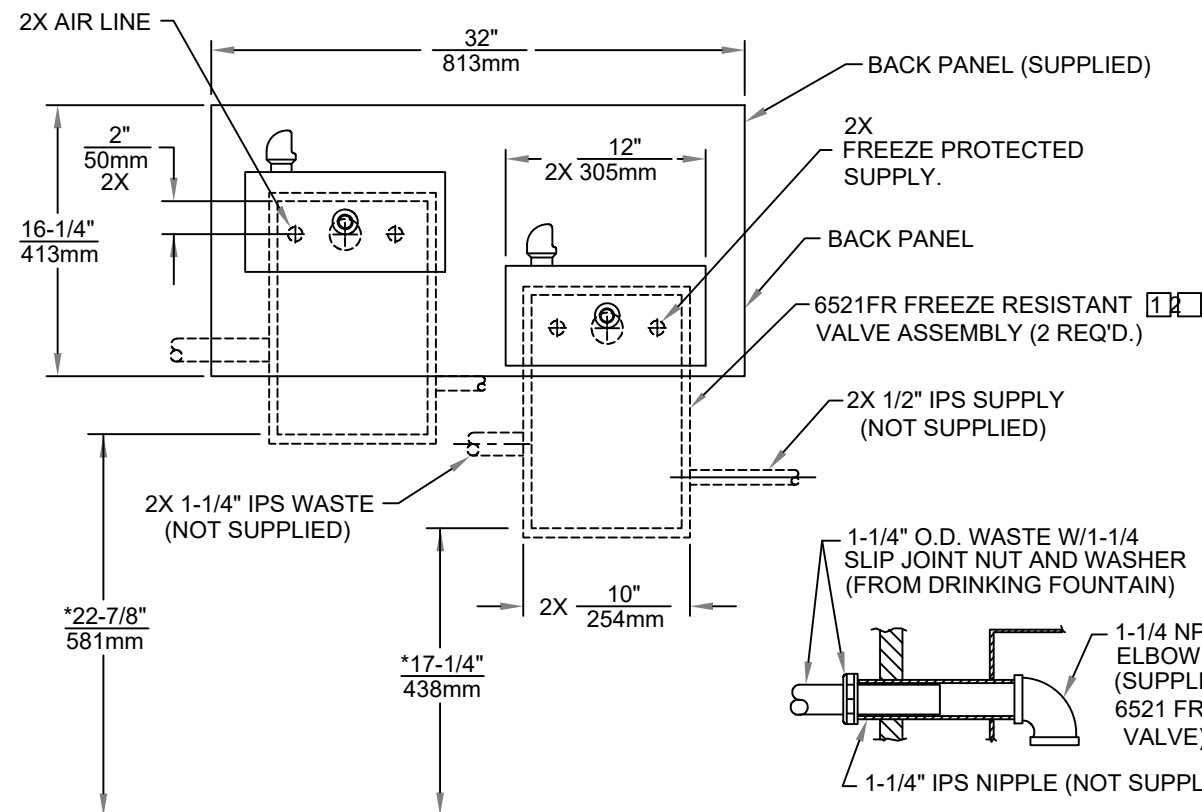
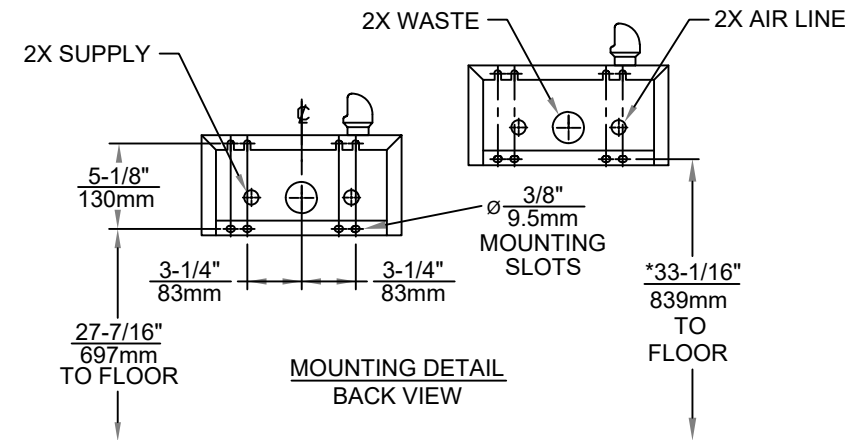
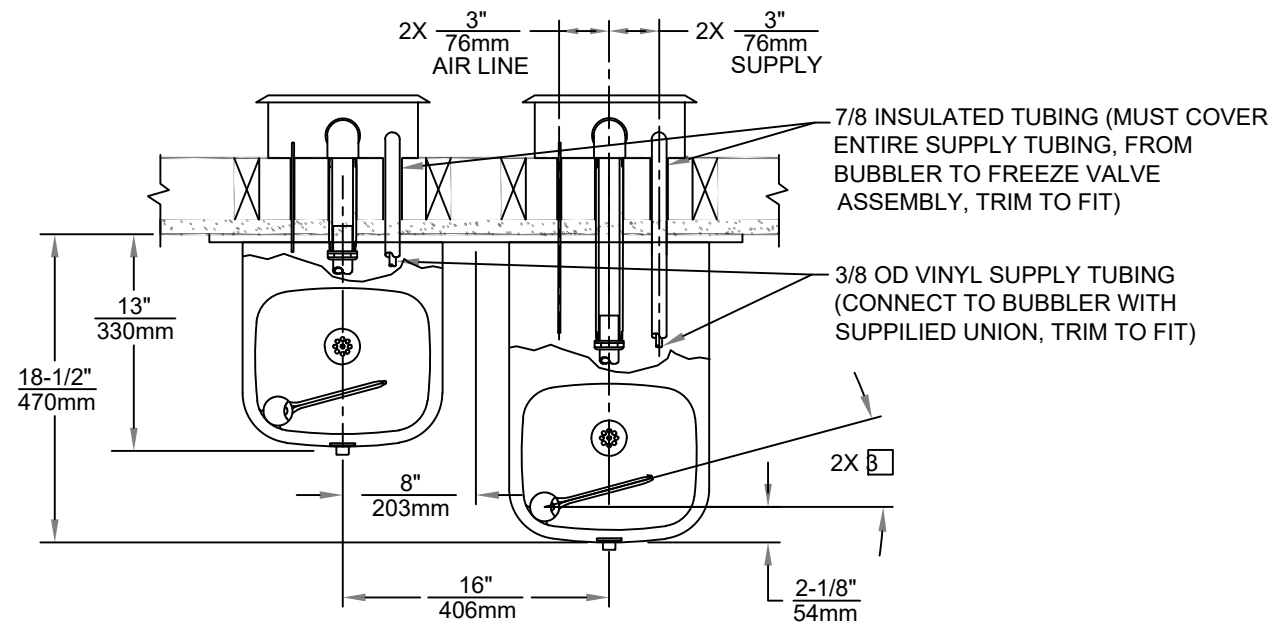


Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023



NOTES:

- 1 THIS FOUNTAIN REQUIRES THE USE OF MODEL 6521FR FREEZE RESISTANT VALVE ASSEMBLY (SOLD SEPARATELY OR AS PART OF PRODUCT BUNDLES (E.G., 1119FR WITH TWO 6521FR'S OR 1119FR WITH 1920FR (NOT SHOWN) AND THREE 6521FR'S). SEE 6521FR INSTALLATION INSTRUCTIONS FOR CONNECTION DETAILS.
- 2 VALVE ASSEMBLY MUST BE INSTALLED IN A WARM AREA. PROVISIONS SHOULD BE MADE TO ALLOW ACCESS TO ACCESS PANEL

- 3 MAXIMUM ADJUSTABLE RANGE IS 15° FROM PARALLEL TO BACK OF WALL.
- 4. HOLD ROUGH-IN DIMENSIONS ± 1/4" (6.4mm).
- 5. * WHEN INSTALLING THIS UNIT LOCAL, STATE OR FEDERAL CODES SHOULD BE ADHERED TO. FOR INSTALLATION HEIGHTS OTHER THAN SHOWN, DIMENSIONS MARKED (*) MUST BE ADJUSTED ACCORDINGLY.

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: PLUMBING DETAILS

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

P3

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

3/16/2026



Exp. 12/31/2027

ROMTEC

www.romtec.com
(541) 496-3541 FAX (541) 496-0803

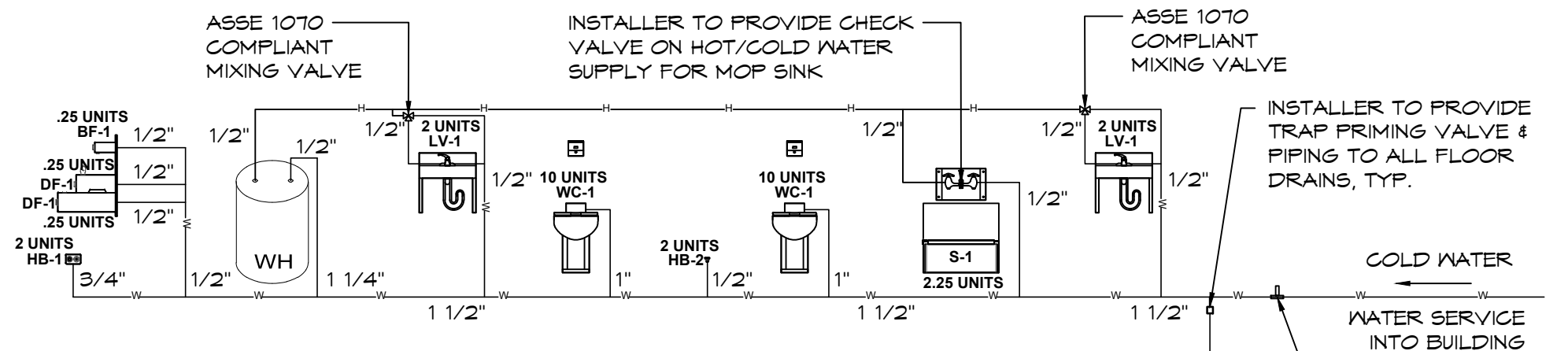
PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com
ROMTEC 228-023

WATER-PLUMBING LEGEND

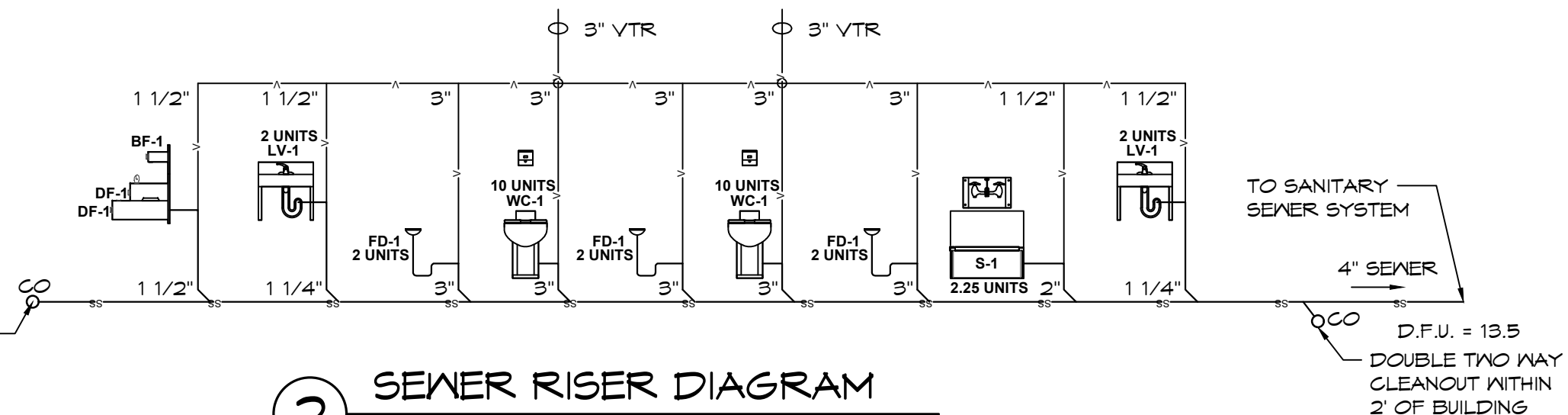
- W — COLD WATER
- MW — MIXED WATER
- H — HOT WATER

SEWER-PLUMBING LEGEND

- SS — SANITARY SEWER



1 WATER SUPPLY RISER DIAGRAM
SCALE: NTS



2 SEWER RISER DIAGRAM
SCALE: NTS

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: PLUMBING RISER DIAGRAM

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

P5

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

MINIMUM VENTILATION RATES:

PUBLIC SPACES

TOILET ROOMS (PER WC OR UR)
 EXHAUST AIRFLOW RATE
 50 CFM - OPERATES CONTINUOUSLY WHILE OCCUPIED
 70 CFM - OPERATES INTERMITTENTLY

3/16/2026

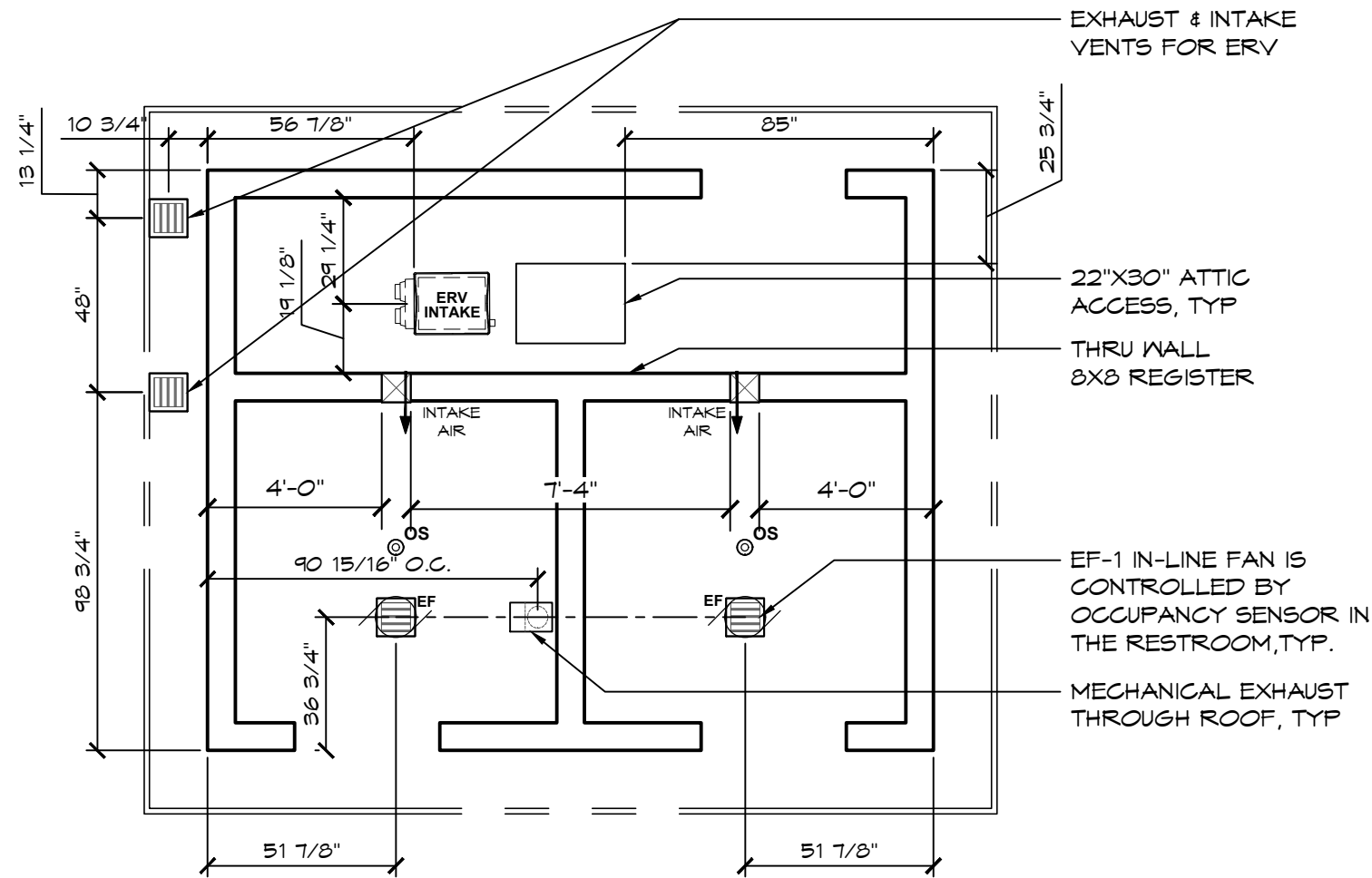


Exp. 12/31/2027



PSE Consulting Engineers, Inc.
 www.structure1.com
 Klamath Falls Office
 250 Main Klamath Falls, Oregon 97603
 Phone: (541) 850-6300 Fax: (541) 850-6233
 info@structure1.com

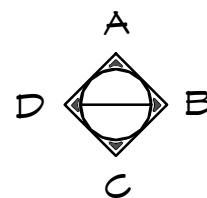
MECHANICAL EXHAUST SYSTEM SHALL
 BE INSTALLED PER INSTALL
 INSTRUCTIONS & DETAILS IN THE:
 "FINAL"
 ROMTEC SCOPE OF SUPPLY AND
 DESIGN SUBMITTAL



NOTES:

1. EXHAUST FANS AND ALL DUCTING TO BE MOUNTED USING DUCT HANGERS OR EQUIVALENT PER DIRECTIONS FURNISHED BY MANUFACTURE, IN ACCORDANCE WITH THE MECHANICAL CODE AND SMACNA STANDARDS.
2. ALL DUCTWORK: RIGID DUCT W/ R8.3 INSULATED WRAP (UL LISTED CLASS 1 AIR DUCT). PROVIDE SHEETMETAL FITTINGS AT MAIN DUCT RUNOUTS AND CONNECTIONS WITH A MINIMUM OF THREE SHEETMETAL SCREWS AND TAPED TO PROVIDE AN AIRTIGHT SEAL. SUPPORT FLEX AS DIRECTED BY MANUFACTURER, NOT TO EXCEED 4'-0".
3. THE DUCT DISCHARGES THRU A ROOF CAP W/ DAMPER, SCREEN AND COLLAR.
4. BUTTERFLY DAMPER PROVIDED IN THE DUCT LINE TO EACH REGISTER
5. FANS ARE CONTROLLED BY OCCUPANCY SENSORS LOCATED IN EACH ROOM.

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



PROJECT: LAKEFRONT LODGE RESTROOM
 SHEET TITLE: MECHANICAL PLAN
 PROJECT #: LLR01
 DATE: 02/05/2026
 DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:







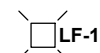
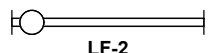






SHEET NO. **M1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL COMPLY WITH NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.
2. OWNER TO PROVIDE TEMPORARY POWER AS REQUIRED DURING COURSE OF CONSTRUCTION.
3. ELECTRICAL SERVICE EQUIPMENT SUPPLIED BY OTHERS UNDER SEPARATE SUBMITTAL.
4. THE AIC VALUES SHOWN ON THESE ROMTEC PLANS ARE TO BE MADE CLEARLY AVAILABLE TO THE ELECTRICAL ENGINEER OF RECORD THAT WILL DESIGN THE MAIN SERVICE.
5. THE INSTALLER SHALL FURNISH & INSTALL SPECIFICATION GRADE CIRCUIT BREAKERS, WIRING, CONDUIT, SWITCHES AND GFI RECEPTACLES THROUGHOUT. INTERIOR RECEPTACLES & SWITCHES SHALL HAVE STAINLESS STEEL COVERPLATES AND EXTERIOR RECEPTACLES SHALL BE INSTALLED WITH A WEATHERPROOF IN USE COVER.
6. ELECTRICAL CONDUIT IS TO BE RUN WITHIN THE WALL WHEN POSSIBLE, EXCEPT IN THE MECHANICAL ROOM.
7. FOR MECHANICAL ROOM ALL EXPOSED CONDUIT IS TO BE SURFACE MOUNTED AND RUN TIGHT TO CEILING AS REQUIRED.
8. COORDINATE AC OUTLET HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.

ELECTRICAL SCHEDULE & SYMBOL LEGEND:

QTY	SYMBOL	DESCRIPTION	QTY	SYMBOL	DESCRIPTION
1		200 AMP BREAKER PANEL	2		INLINE DUCT EXHAUST FAN SYSTEM
PER PLAN		HOME RUN TO BREAKER PANEL			S&P, TD-100 - 4": (26W) (0.22A)
PER PLAN		110 VAC DUPLEX RECEPTACLE, GROUND FAULT PROTECTED MOUNTED MIN OF 15" TO MAX OF 48" ABOVE THE FLOOR CONFIRM EXACT LOCATION & HEIGHT WITH OWNER OR OWNERS REPRESENTATIVE.	1		VENTILATOR CEILING MOUNT PANASONIC FV-06VE1 10-20-40 CFM / 10-20-30 CFM SUPPLY
1		SWITCH, SINGLE POLE MOUNTED A MAX OF 48" ABOVE THE FLOOR			
4		LIGHT FIXTURE, WALL MOUNT UL LISTED TO U.S. SAFETY STANDARDS FOR ALL WET LOCATIONS WALL MOUNT, LED DOWN LIGHT, LITHONIA OLLND: (9W) (.08A)			
4		48" LED VAPOR TIGHT CEILING/WALL MOUNT LIGHT LITHONIA CSVT L48 5000LM 40K 80CRI 4,298LM 40K: (35.3 W) (.2942 A)			
1		PHOTO CELL, w/ WEATHER PROOF COVER			
2		OCCUPANCY SENSOR CEILING MOUNT ACUITY SENSOR SWITCH CM PDT 10 W/ POWER PACK PP20 (INPUT 120/2TTVAC: OUTPUT 120/2TTVAC, 20A - GENERAL USE)			
2		HAND DRYER WALL MOUNT, THINAIR TA-5B: (915W) (8.318A)			
1		WALL HEATER WITH THERMOSTAT, SURFACE MOUNT (WALL CAN PART # LPWSMF-WD) KING, LPW1222T-52-WD-R: (1250-2750W) (10.4-18.7A MAX)			
1		TRANSFORMER SLOAN, EL-154: (50 VA (WATTS)) (.42A)			
1		TANK WATER HEATER (ELECTRIC) PROVIDE A WATER HEATER DISCONNECT CAPABLE OF SIMULTANEOUSLY DISCONNECTING ALL UNGROUNDED CONDUCTORS. THE DISCONNECTING MEANS SHALL BE WITHIN SIGHT OF. WHERE THE DISCONNECTING MEANS IS OUT OF THE LINE OF SIGHT FROM ANY SECTION THAT IS ABLE TO BE ENERGIZED, THE DISCONNECTING MEANS SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. 20 GAL TANK, AO SMITH EJCT-20 120 VOLT, 2500 WATTS, NON-SIMULTANEOUS			

3/16/2026



Exp. 12/31/2027



PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-8300 Fax: (541) 850-6233
info@structure1.com

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ELECTRICAL SCHEDULE

PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:

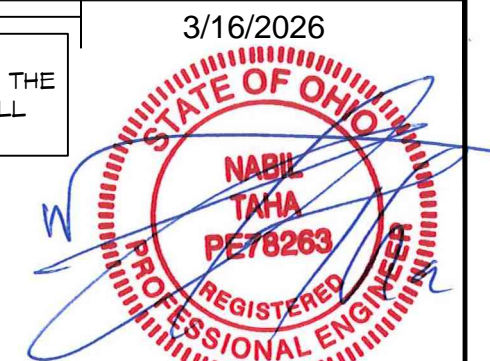
SHEET NO. **E1**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

ROMTEC HAS DESIGNED THIS ELECTRICAL SYSTEM TO MEET THE NEEDS OF THIS SPECIFIC FACILITY. SITE DESIGN AND ENGINEERING BY OTHERS. OWNER IS RESPONSIBLE TO PROVIDE ALL SERVICE AND/OR UTILITY ENTRANCE DESIGN. FIELD VERIFY THAT SERVICE CONDUCTOR SIZE IS ADEQUATE FOR VOLTAGE DROP. ANY ADDITIONAL POWER OR LIGHTING LOADS NOT SHOWN ON THESE PLANS SHALL BE ENGINEERED BY OTHERS.

NOTE:
SEE SHEETS A1.4, A2.1, & A2.2 FOR LOCATIONS - HEIGHTS OF ELECTRICAL FIXTURES.

NOTE: BREAKER PANEL MAY BE RELOCATED AT THE DISCRETION OF THE INSTALLER, PANEL MUST MAINTAIN ALL APPLICABLE CODE CLEARANCES.



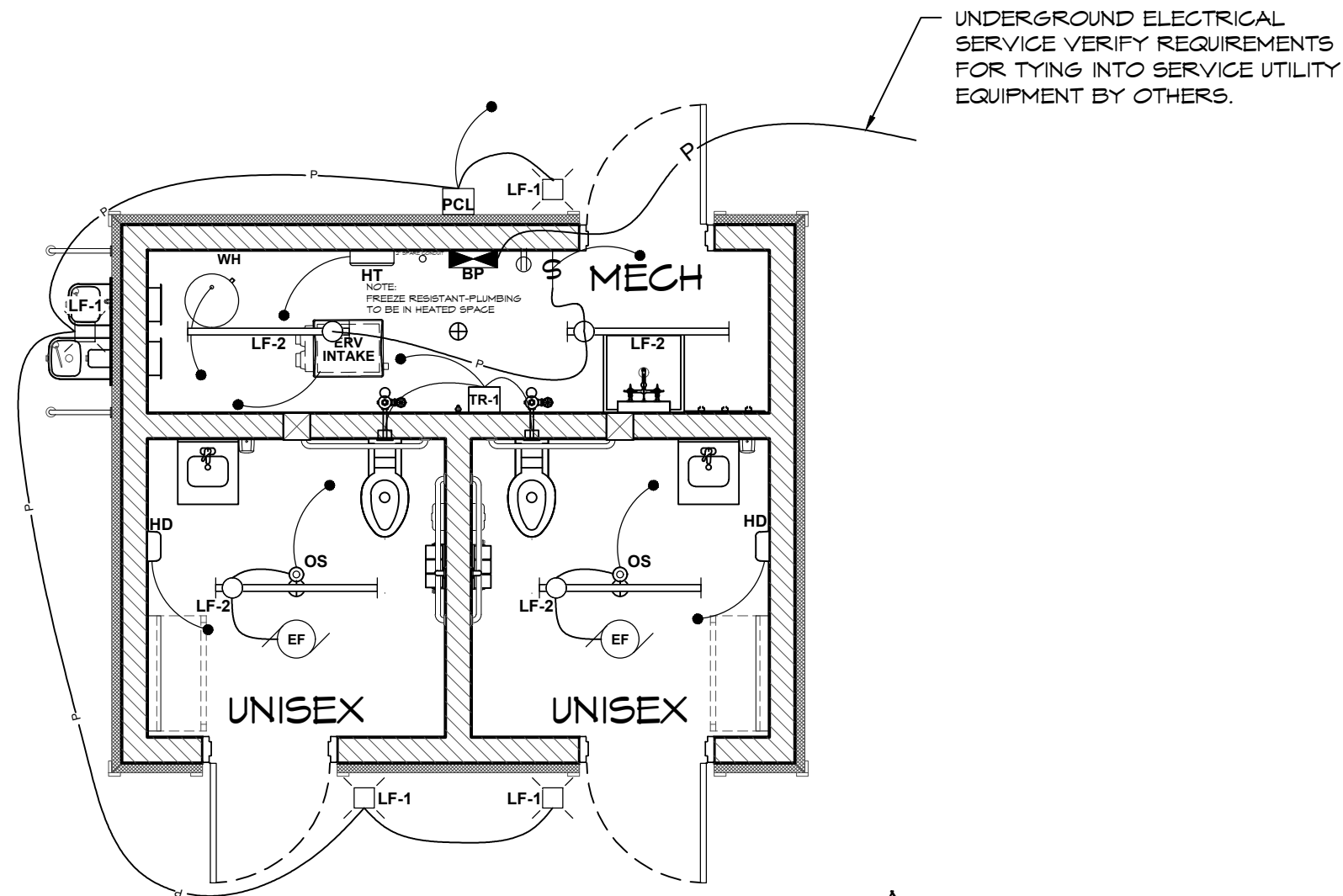
3/16/2026

Exp. 12/31/2027

ROMTEC

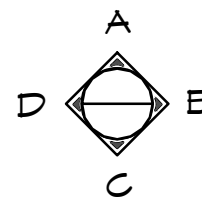
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



UNDERGROUND ELECTRICAL SERVICE VERIFY REQUIREMENTS FOR TYING INTO SERVICE UTILITY EQUIPMENT BY OTHERS.

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



PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ELECTRICAL PLAN

PROJECT #:	LLR01	
DATE:	02/05/2026	
DRAWN BY:	NP	
REV.	DATE:	BY:
1	03/11/2026	NP

REVISIONS:
E2

SHEET NO.

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.

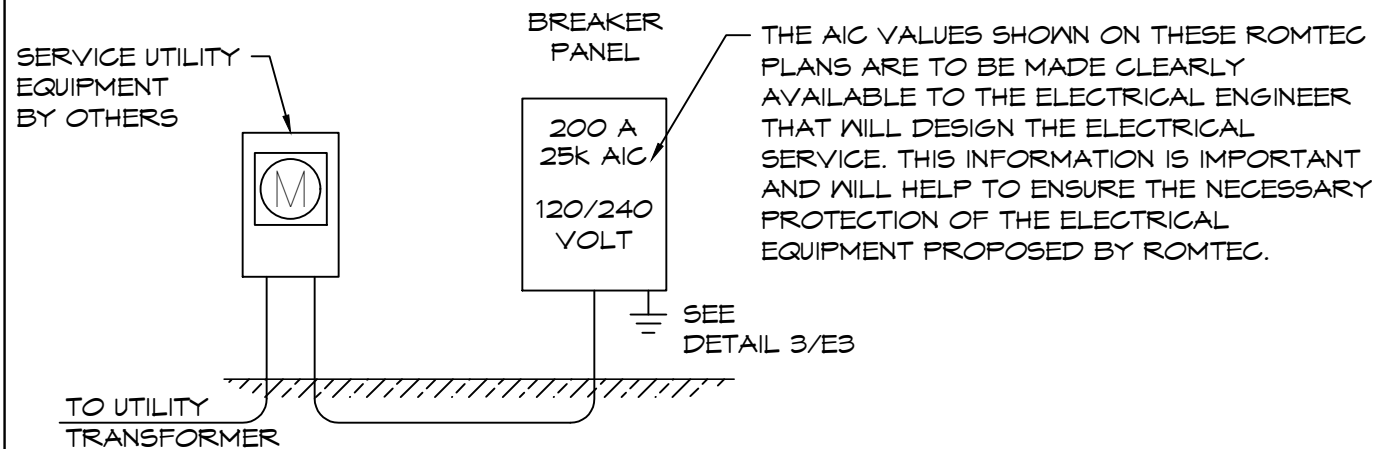


Exp. 12/31/2027

ROMTEC

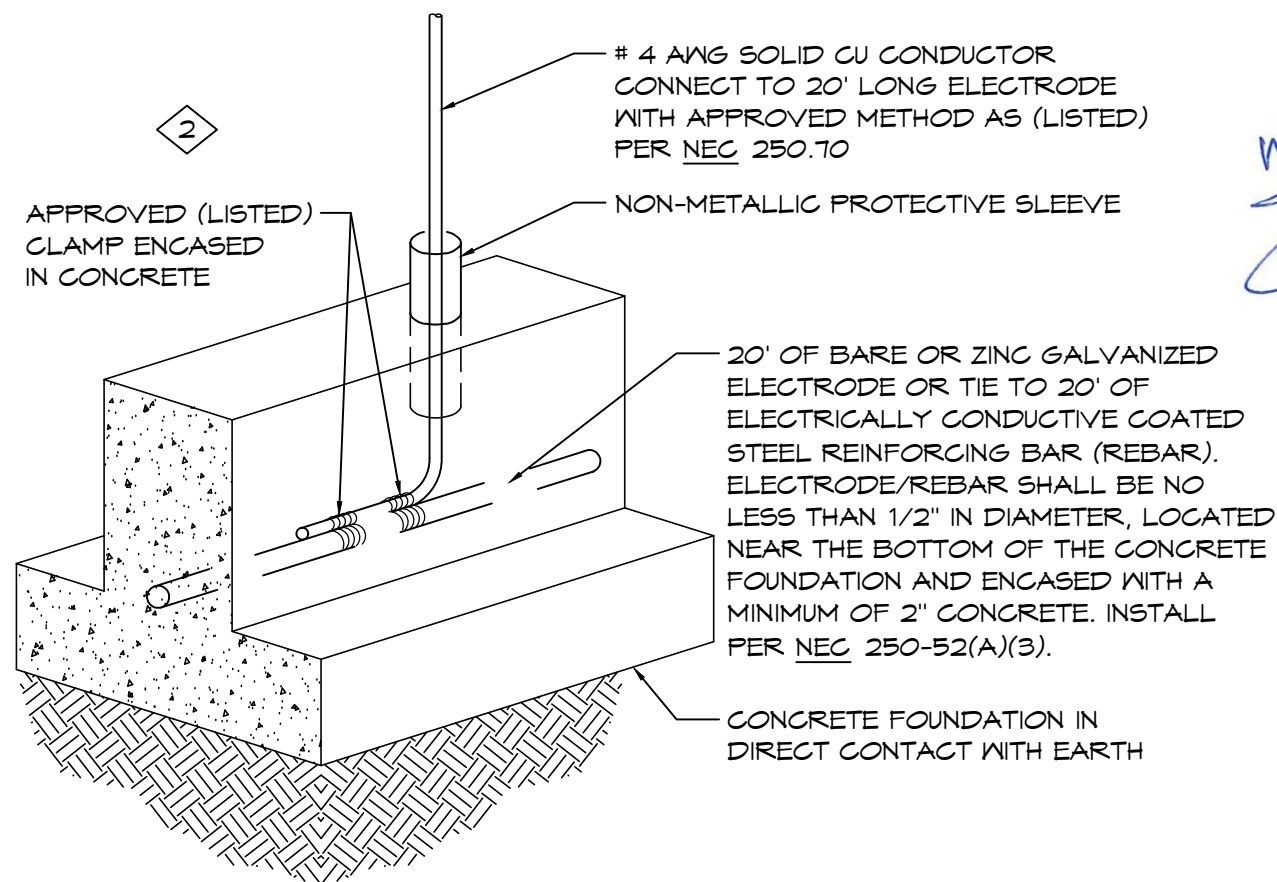
www.romtec.com
(541) 496-3541 FAX (541) 496-0803

PSE Consulting Engineers, Inc.
www.structure1.com
Klamath Falls Office
250 Main Klamath Falls, Oregon 97603
Phone: (541) 850-6300 Fax: (541) 850-6233
info@structure1.com



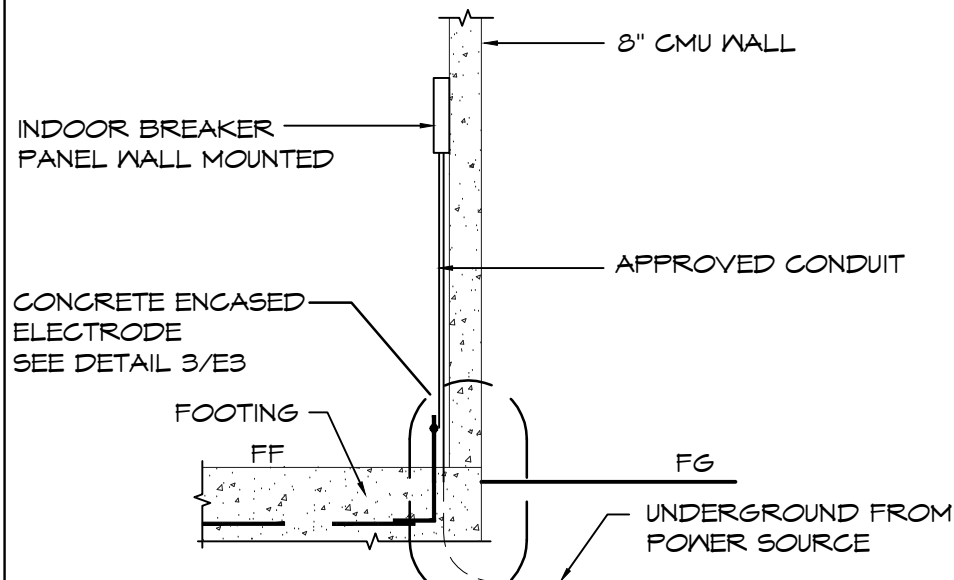
1 ONE-LINE DIAGRAM

SCALE: NONE



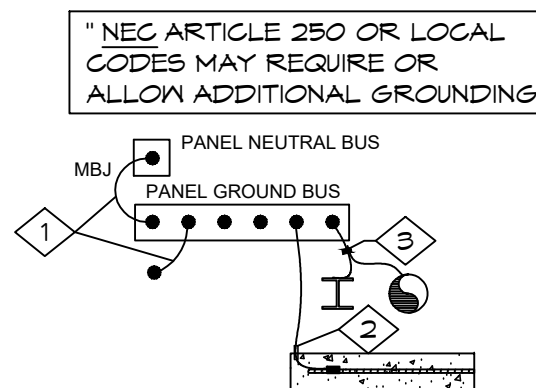
3 CONCRETE ENCASED SERVICE GROUND

SCALE: NONE



2 RISER DIAGRAM

SCALE: NONE



4 GROUNDING/BONDING DETAIL

SCALE: NONE

KEYED NOTES

- 1 #4 CU MAIN BONDING JUMPER AND EQUIPMENT BONDING JUMPER PER NEC 250.28(D), 250.102(C) AND TABLE 250.66. DO NOT BOND THE NEUTRAL TO THE GROUND BUS IF THIS IS NOT A SERVICE ENTRANCE
- 2 #4 CU TO CONCRETE ENCASED ELECTRODE PER NEC 250.52(A)(3), 250.66(B) AND 250.70
- 3 WHERE REQUIRED, BOND PIPING SYSTEMS AND EXPOSED STRUCTURAL STEEL PER NEC 250.104

PROJECT: LAKEFRONT LODGE RESTROOM
WILLOWICK, OHIO
SHEET TITLE: ELECTRICAL RISER DETAILS

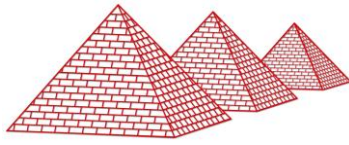
PROJECT #: LLR01
DATE: 02/05/2026
DRAWN BY: NP

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **E3**

© 2024 ROMTEC, INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS MAY NOT BE REPRODUCED, ADAPTED OR FURTHER DISTRIBUTED, AND NO BUILDINGS MAY BE CONSTRUCTED FROM THESE PLANS, WITHOUT THE WRITTEN PERMISSION OF ROMTEC, INC.



STRUCTURAL ENGINEERING CALCULATIONS

PROJECT: Lakefront Lodge Restroom

PROJECT LOCATION: 30525 Lake Shore Blvd
Willowick, OH 44095

PSE PROJECT NUMBER: Romtec 226-023

DATE: March 16, 2026

BY: Nabil Taha, Ph.D., P.E.

3/16/2026



Exp. 12/31/2027

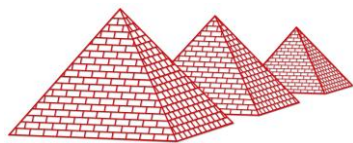
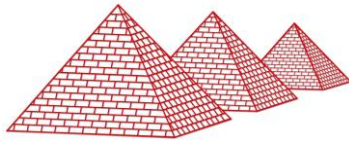
**PSE CONSULTING ENGINEERS INC.**PROJECT #: ROMTEC 226-023

Table of Contents:

Subject:	Page:
Page	
1- References / Software:	3
2- Design Criteria:	4 - 13
3- Analysis & Design:	15 - 29



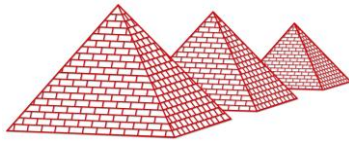
References:

1- Literature:

- a. 2024 Ohio Building Code (OBC),
based on the 2021 International Building Code (IBC)
- b. Design of Wood Structures, Donald E. Breyer 4th ED.
- c. Building Code Requirements for Masonry Structures, TMS 402
- d. Building Code Requirements for Concrete, ACI 318

2- Software:

- a. Wood Works Design Office,
American Forest & Paper Association
- b. Enercalc Structural Engineering Library,
Enercalc Engineering Software
- c. Engineering International Spreadsheets
Daniel T. Li



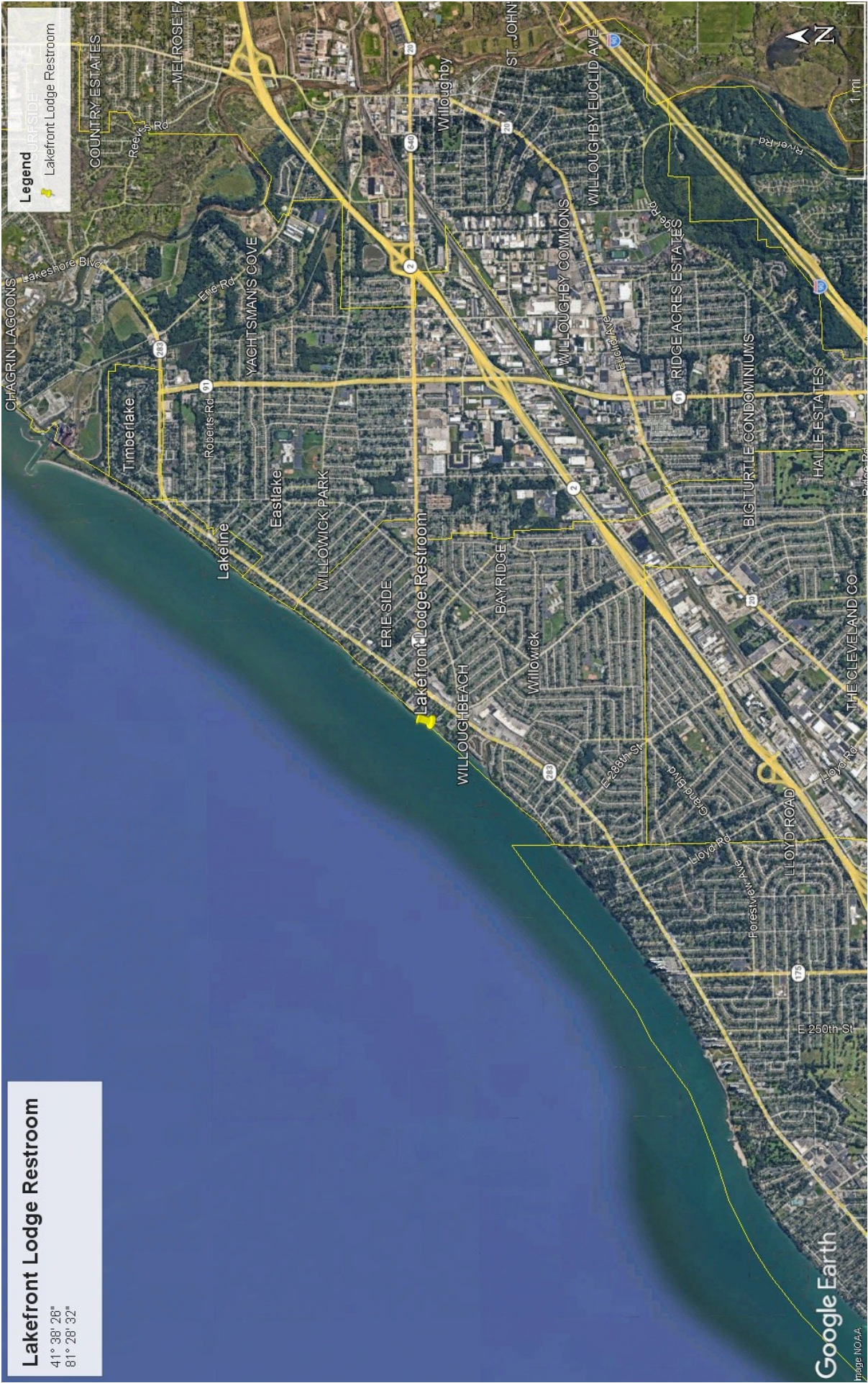
PSE CONSULTING ENGINEERS INC.

PROJECT #: ROMTEC 226-023

Design Criteria:

- 1- Location: 30525 Lake Shore Blvd
Willowick, OH 44095
(Lat. 41° 38' 26" Long. 81° 28' 32")
- 2- Seismic:
- | | |
|------------|-------|
| RC | II |
| SDC | B |
| Site Class | D |
| S_S | 0.155 |
| S_1 | 0.049 |
| S_{DS} | 0.165 |
| S_{D1} | 0.078 |
| I_E | 1.0 |
| R | 5 |
- 3- Wind: Ultimate wind speed 110 mph (3 s. gust)
Exposure D
RC II
- 4- Snow: 30 psf (flat roof)
- 5- Soil Bearing Capacity: 1500 psf (presumptive value from IBC)
- 6- Gravity Loads:
- | | |
|------------|--------|
| DL Floor: | 15 psf |
| LL Floor: | 40 psf |
| DL Roof: | 15 psf |
| CMU Walls: | 81 psf |
- 7- Deflection Criteria:
- | | |
|----------------------|-------|
| Floor LL Deflection: | L/480 |
| Roof TL Deflection: | L/180 |

**Other criteria assumed as stated in design calculations.



Lakefront Lodge Restroom
41° 38' 26"
81° 28' 32"

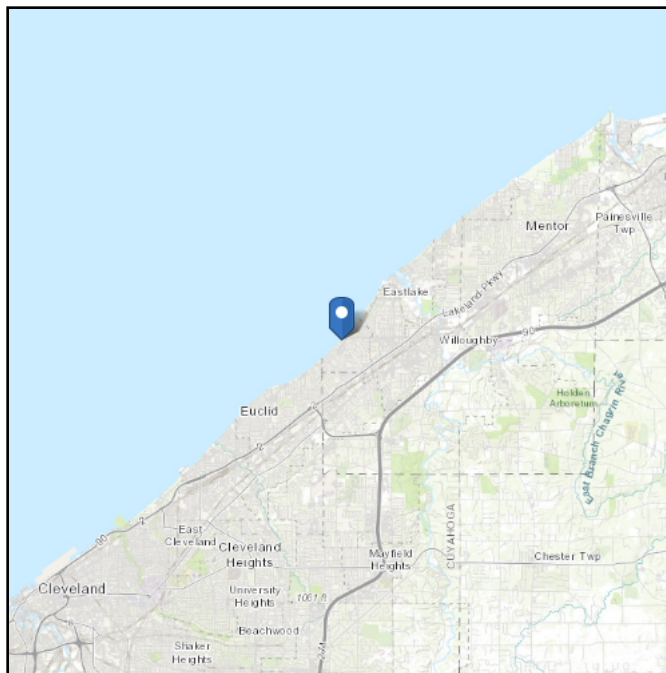
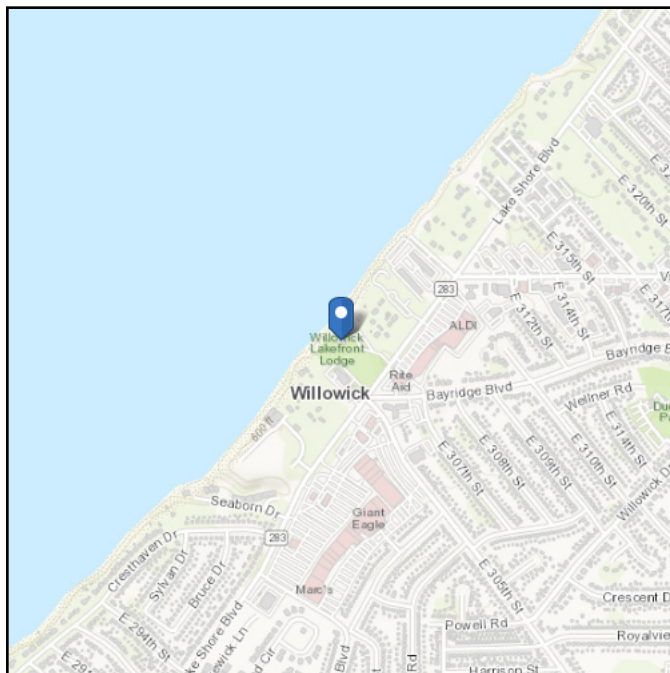


ASCE Hazards Report

Address:
30525 Lake Shore Blvd
Willowick, Ohio
44095

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 41.64081
Longitude: -81.475258
Elevation: 617.2249458371556 ft
(NAVD 88)



Wind

Results:

Wind Speed	109 Vmph
10-year MRI	75 Vmph
25-year MRI	82 Vmph
50-year MRI	87 Vmph
100-year MRI	93 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Mon Mar 02 2026

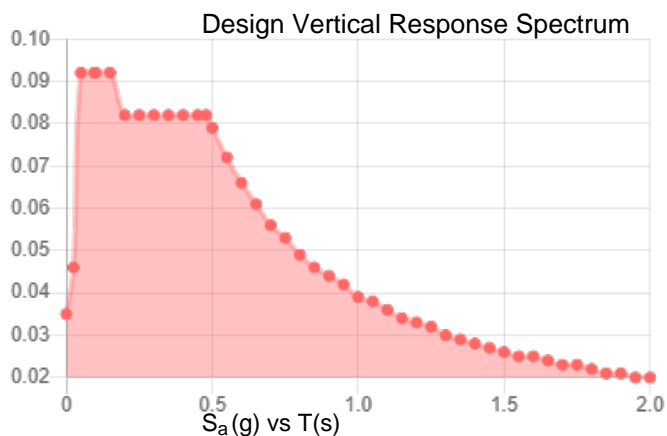
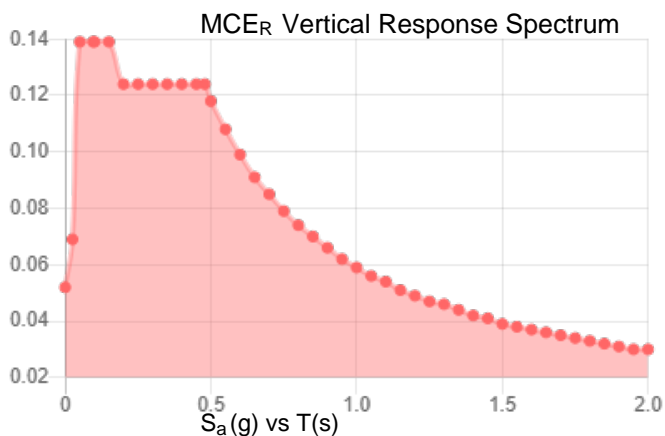
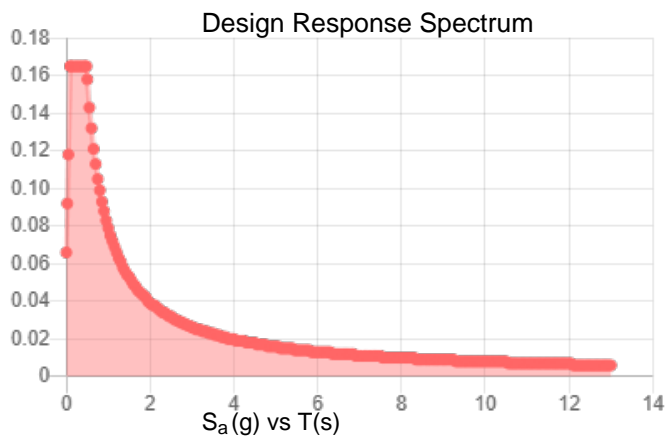
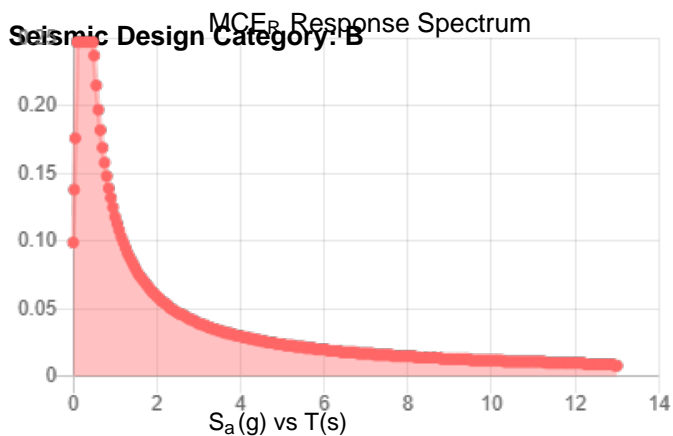
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	0.155	S_{D1} :	0.079
S_1 :	0.049	T_L :	12
F_a :	1.6	PGA :	0.085
F_v :	2.4	PGA _M :	0.136
S_{MS} :	0.247	F_{PGA} :	1.6
S_{M1} :	0.118	I_e :	1
S_{DS} :	0.165	C_v :	0.7



Data Accessed: Mon Mar 02 2026

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



Snow

Results:

Mapped Elevation:	617.2 ft
Data Source:	ASCE/SEI 7-16, Table 7.2-8
Date Accessed:	Mon Mar 02 2026

In "Case Study" areas, site-specific case studies are required to establish ground snow loads. Extreme local variations in ground snow loads in these areas preclude mapping at this scale.

Ground snow load determination for such sites shall be based on an extreme value statistical analysis of data available in the vicinity of the site using a value with a 2 percent annual probability of being exceeded (50-year mean recurrence interval).

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

Snow load values are mapped to a 0.5 mile resolution. This resolution can create a mismatch between the mapped elevation and the site-specific elevation in topographically complex areas. Engineers should consult the local authority having jurisdiction in locations where the reported 'elevation' and 'mapped elevation' differ significantly from each other.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

2021 IBC SEISMIC DESIGN

EQUIVALENT LATERAL FORCE PROCEDURE

JOB NUMBER Romtec 226-023

DESIGNER RMH

Design Information

DATA	VALUE	SOURCE
Site Class	D-Default	Site conditions, geotech report
S _s =	0.155	Seismic Design Parameters (Software)
S ₁ =	0.049	Seismic Design Parameters (Software)
S _{MS} =	0.248	Seismic Design Parameters (Calculated)
S _{M1} =	0.118	Seismic Design Parameters (Calculated)
I _E	1.0	ASCE 7-16 Table 1.5-2
Risk Category	2	ASCE 7-16 Table 1.5-1
R	5	ASCE 7-16 Table 12.2-1
h _n	11	Height per ASCE 7-16
C _t	0.02	ASCE 7-16 Table 12.8-2
T _L	12	Long-period Transition period (Software)

S_{MS}: Max considered spectral response acceleration for short periods

S_{M1}: Max considered spectral response acceleration for 1-second period

I_E: Seismic importance factor

R: Response modification factor

1) Design spectral response acceleration

S_{DS}: 5% Damped spectral response acceleration at short periods

S_{D1}: 5% Damped spectral response acceleration at 1 second period

S_{DS}=2/3(S_{ms}) S_{DS}= 2/3 X 0.248 S_{DS}= 0.165 [ASCE 7-16 Eq. 11.4-3]

S_{D1}=2/3(S_{m1}) S_{D1}= 2/3 X 0.1176 S_{D1}= 0.078 [ASCE 7-16 Eq. 11.4-4]

2) Seismic design category

From Table 11.6-1 ASCE 7-16 A Governing Design Category B
 From Table 11.6-2 ASCE 7-16 B

3) Determine design base shear (V)

A. ASCE 7-16, 11.4.8 Exception

T_s= 0.4741935 T = T_a = C_t (h_n^x) [ASCE 7-16, 12.8.2.1, Eq. 12.8-7]

T_a: Approximate Fundamental Period

T = 0.020 X 11^{0.75} T = 0.121

For Site Class D/D-Default: T is < 1.5 T_s

For site class D/-default C_s shall be calculated per Eq. 12.8-2

Equivalent Force Procedure

[ASCE 7-16, 12.8.1]

V = C_s x W

C_s: Seismic Response Coefficient

W: Total dead load and other applicable loads

B. [ASCE 7-16, 12.8.1.1, Eq. 12.8-2]

C_s = $\frac{S_{DS}}{R/I}$ C_s = $\frac{0.165}{5} \cdot 1.0$ C_s = 0.033

C. Nor greater than

C_s = $\frac{S_{D1}}{T(R/I)}$ [ASCE 7-16, 12.8.1.1, Eq. 12.8-3] OR C_s = $\frac{S_{D1} \cdot T_L}{T^2(R/I)}$ [ASCE 7-16, 12.8.1.1, Eq. 12.8-4]

C_s = $\frac{0.078 \times 1}{0.121 \times 5}$ C_s = 0.130 C_s = $\frac{0.078 \times 12 \times 1}{0.015 \times 5}$ C_s = 12.894

D. Nor less than [ASCE 7-16, 12.8.1.1, Eq. 12.8-5]

C_s = 0.044 (S_{DS}) (I) C_s = 0.044 X 0.165 X 1 C_s = 0.00727

Governing C_s = 0.033

V = C_s x W

V = 0.033 X W

Refer to sheet two for W and Calculated V

IBC SEISMIC DESIGN

VERTICLE FORCE DISTRIBUTION EQUIVALENT LATERAL FORCE PROCEDURE

JOB NUMBER Romtec 226-023

DESIGNER RMH

1. Determine dead load at each level of building.

Structural portion	DL (PSF)	Area (SF)	Length (FT)	Height (FT)	Total Weight (LB)	
a) Roof	Diaphragm elevation from the base level in ft				8	
Roof	15	318	NA	NA	4770	
Misc.	0	0	0	0	0	
Misc. (LBS)	0	NA	NA	NA	0	
c) 5th floor	Diaphragm elevation from the base level in ft				0	
Ext. Walls	15	NA	0	0	0	
Int. Walls	10	NA	0	0	0	
Floor	15	0	NA	NA	0	
Misc.	0	0	0	0	0	
Misc. (LBS)	0	NA	NA	NA	0	
d) 4th floor	Diaphragm elevation from the base level in ft				0	
Ext. Walls	15	NA	0	0	0	
Int. Walls	10	NA	0	0	0	
Floor	15	0	NA	NA	0	
Misc.	0	0	0	0	0	
Misc. (LBS)	0	NA	NA	NA	0	
e) 3rd floor	Diaphragm elevation from the base level in ft				0	
Ext. Walls	15	NA	0	0	0	
Int. Walls	10	NA	0	0	0	
Floor	15	0	NA	NA	0	
Misc.	0	0	0	0	0	
Misc. (LBS)	0	NA	NA	NA	0	
f) 2nd floor	Diaphragm elevation from the base level in ft				0	
Ext. Walls	0	NA	0	0	0	
Int. Walls	0	NA	0	0	0	
Floor	0	0	NA	NA	0	
Misc.	0	0	0	0	0	
Misc. (LBS)	0	NA	NA	NA	0	
g) 1st floor	CMU Walls	81	NA	82	8	53136
Walls	10	NA	0	0	0	
Misc.	0	0	0	0	0	
TOTAL DEAD LOAD (LB) =					57906	

2) Determine verticle force distribution at each level ASCE 7-16 12.8.3

$F_x = C_{vx} \times V$ ASCE 7-16 Eq. 12.8-11

$C_{vx} = \frac{w_x \times h_x^k}{\sum w_i h_i^k}$ ASCE 7-16 Eq. 12.8-12

F_x : Lateral seismic force at any level

V: Seismic base shear (Kips)

w_x & w_i : The portion of the total gravity load of the structure (W) located or assigned to level i or x

h_x & h_i : The height (ft) from the base to level i or x diaphragm.

k : An exponent related to the structures period (T) as follows;

$T \leq 0.5 \text{ sec } k = 1$

$T \geq 2.5 \text{ sec } k = 2$

$0.5 \leq T \leq 2.5$ Interpolate between 1 & 2

Refer to sheet one for V

$V = 0.033 \times W$

$V = 0.033 \times 57906$

$V = 1.915$ (kips)

$T = 0.1208$
 $k = 1$

Level (floor)	Wall Height (ft)	Diaphragm Height (Ft)	W_x (kips)	$W_x \cdot h_x^k$	C_{vx}	F_x (kips)	Allowable F_x (kips)
Roof	8	8	31.338	251	1.000	1.92	1.37
5	0	0	0.000	0	0.000	0	0.00
4	0	0	0.000	0	0.000	0	0.00
3	0	0	0.000	0	0.000	0	0.00
2	0	0	0.000	0	0.000	0.00	0.00
			31.338	251	1.000	1.92	1.4

Note: The Total Shear shown in the right hand column is an "allowable" load.

MecaWind v2545

Developed by Meca Enterprises Inc., <https://www.mecaenterprises.com>
www.mecaenterprises.com, Copyright © 2026

Calculations Prepared by:

Date: Mar 02, 2026

File Location: \\Force\ENG\PROJ\KF2026 Mult\Romtec\

226-023 OH LLR01 Lakefront Lodge Restroom\Dsg Engr\Admin\MECA Wind.wnd

General:

Reference Abbreviations: T: Table, F: Figure, E: Equation, §: Section, ¶: Paragraph

Wind Load Standard	= ASCE 7-16	Basic Wind Speed	= 110.0 mph
Exposure Classification	= D	Risk Category	= II
Structure Type	= Building	Basis for Wind Pressures	= ASD
MWFRS Analysis Method	= Ch 27 Pt 1	C&C Analysis Method	= None
Dynamic Type of Structure	= Rigid	Advanced Options	= False

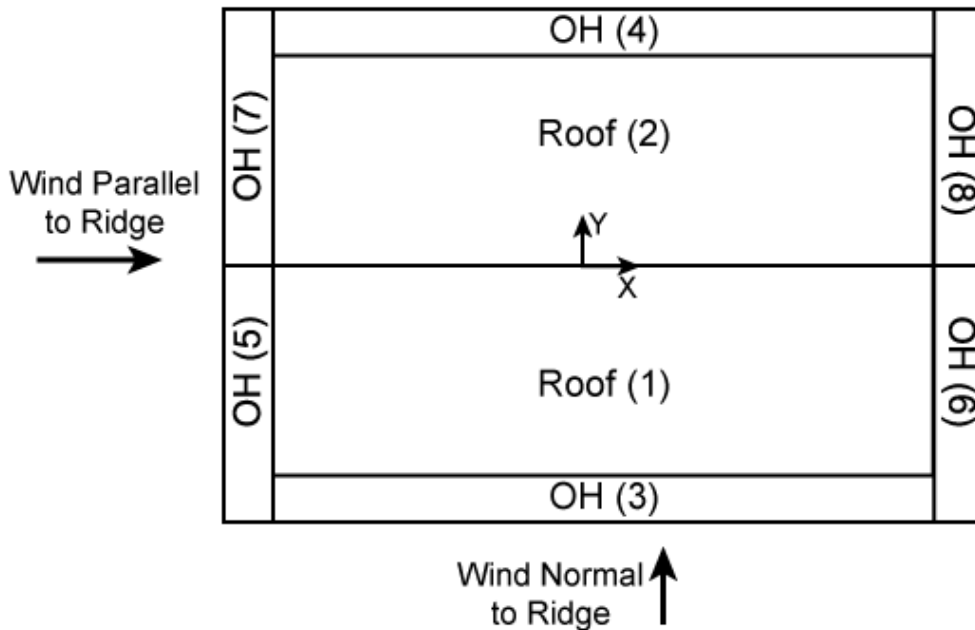
Building:

Roof = Roof Type	= Gabled	Encl = Enclosure Classification	= Enclosed
IsCust = Custom Roof	= False	W = Building Width	= 16.7000 ft
L = Building Length	= 13.3000 ft	R _{ht} = Ridge Height	= 11.479 ft
E _{ht} = Eave Height	= 8.000 ft	Pitch = Pitch of Roof	= 5.0 :12
θ = Slope of Roof	= 22.62 °	OH = Overhang Configuration	= All None
Par = Parapet	= None	z _i = Highest Opening Elevation	= 0.0000 ft
HT _{over} = Override Mean Roof Height	= False	Ht _{man} = Mean Roof Height	= 9.740 ft
RA _{over} = Override Roof Area	= False	GC _{pi_o} = Override GC _{pi} value	= False

Exposure Constants T:26.11-1:

α = 3-s Gust-speed exponent	= 11.500	Z _g = Nominal Ht of Boundary Layer	= 700.000 ft
â = Reciprocal of α	= 0.087	b = 3 sec gust speed factor	= 1.070
α _m = Mean hourly Wind-Speed Exponent	= 0.111	b _m = Mean hourly Windspeed Exponent	= 0.800
c = Turbulence Intensity Factor	= 0.150	ε = Integral Length Scale Exponent	= 0.1250

Main Wind Force Resisting System (MWFRS) Wind Calculations per Ch 27 Pt1



h = Mean structure height	= 9.740 ft	K _h = 2.01 • (15/Z _g) ^{2/α} T:26.10-1	= 1.030
K _{zt} = No Topographic Feature	= 1.000	K _d = Directionality Factor T:26.6-1	= 0.85
GC _{pi} = ± Internal Press Coef T:26.13-1	= ±0.18	LF = ASD Load Factor	= 0.60
K _e = Ground Elev Factor T:26.9-1	= 1.000	q _h = .00256 • K _h • K _{zt} • K _d • K _e • V ² • LF T:26.10-1	= 16.28 psf
q _{in} = - Internal Press: q _h	= 16.28 psf	q _{ip} = For +GC _{pi} use q _h	= 16.28 psf
A _{roof} = Roof Area	= 240.62 ft ²		

MWFRS Wind Loads [Normal to Ridge]

h = Mean Roof Height of Building	= 9.7396 ft	R _{ht} = Ridge Height Of Roof	= 11.4792 ft
B = Building Width Normal To Wind	= 13.3000 ft	L = Building Width Parallel To Wind	= 16.7000 ft

L/B = Ratio: L/B = 1.256
 θ = Slope of Roof = 22.62 °
 Cp_{LW} = Leeward Wall Coefficient = -0.449
 h/L = Ratio: h/L = 0.583
 Cp_W = Windward Wall Coefficient = 0.800
 Cp_{SW} = Side Wall Coefficient = -0.700

Gust Factor Calculation for Wind: [Normal to Ridge]

Gust Factor Category I Rigid Structures - Simplified Method

G₁ = Simplified: For Rigid Structures can use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Z_m = Equiv Struc Height: Max(0.6•h, Z_{min}) = 7.000 ft
 I_{zm} = Turbulence Intensity: c • (33/Z_m)^{1/6} E:26.11-1 = 0.194
 L_{zm} = Turbulence Integral Length Scale: ℓ • (Z_m/33)^ε E:26.11-9 = 535.472 ft
 B = Building Width Width Normal to Wind Direction = 13.300 ft
 Q = [1/(1+0.63•[(B+h)/L_{zm}]^{0.63})]^{0.5} E:26.11-8 = 0.959
 G₂ = Detailed: 0.925 • [(1+1.7•g_q•I_{zm}•Q) / (1+1.7•g_v•I_{zm})] E:26.11-6 = 0.905

Gust Factor Used in Analysis

G = Gust Factor: Min(G₁, G₂) = 0.850

Wall Wind Pressures [Normal to Ridge]

All wind pressures include a Load Factor (LF) of 0.6

Elev ft	GC _{pi}	q _i psf	K _z	K _{zt}	q _z psf	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
8.000	+0.18	16.28	1.030	1.000	16.28	8.14	-9.14	-12.61	17.28	9.60
8.000	-0.18	16.28	1.030	1.000	16.28	14.00	-3.28	-6.75	17.28	9.60

K_z = 2.01 • (15/Z_g)^{2/α} E:26.10-1
 GC_{pi} = +Internal Coef E:26.13-1
 q_{ip} = For +GC_{pi} use q_h
 Side = q_h • G • Cp_{SW} - q_{ip} • (GC_{pi}+) E:27.3-1
 Windward = q_z • G • Cp_W - q_{ip} • (GC_{pi}+) E:27.3-1
 +Press = Pressure Acting Toward Surface
 §27.1.5 = MWFRS Min Wall Pressure = 9.60 psf
 K_{zt} = No Topographic Feature
 q_z = .00256 • K_z • K_{zt} • K_d • K_e • V² • LF E:26.10-1
 q_{in} = - Internal Press: q_h
 Leeward = q_h • G • Cp_{LW} - q_{ip} • (GC_{pi}+) E:27.3-1
 Total = Windward - Leeward
 -Press = Pressure Acting Away from Surface

Roof Wind Pressures [Normal to Ridge]

All wind pressures include a Load Factor (LF) of 0.6

Component	Description	Location	Start ft	End ft	θ °	Basis	GC _{pi}	C _{pMin}	C _{pMax}	P _{min} psf	P _{max} psf	P _{min} psf
Roof	Leeward	2	All	All	22.62	N	+0.1800	-0.6	-0.6	-11.23	-11.23	4.80
Roof	Windward	1	All	All	22.62	N	+0.1800	0.073	-0.389	-1.92	-8.31	4.80
Roof	Leeward	2	All	All	22.62	N	-0.1800	-0.6	-0.6	-5.37	-5.37	4.80
Roof	Windward	1	All	All	22.62	N	-0.1800	0.073	-0.389	3.94	-2.45	4.80

Roof Pressures based upon Ch 27 Pt1:

Component = The building component for pressures
 Start = Start Dist from Windward Edge
 C_{pMin} = Smallest Coefficient Magnitude
 P_{min} = q_h • G • C_{pMin} - q_{ip} • GC_{pi} E:27.3-1
 GC_{pi} = +Internal Coef E:26.13-1
 P_{min} = Min Press projected on vertical plane §27.1.5
 §27.1.5 = MWFRS Min Wall Pressure = 9.60 psf
 +Press = Pressure Acting Toward Surface
 • The smaller uplift pressures due to C_{pMin} can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7
 Location = Reference Graphic in Output for Values
 End = End Dist from Windward Edge
 C_{pMax} = Largest Coefficient Magnitude
 P_{max} = q_h • G • C_{pMax} - q_{in} • GC_{pi} E:27.3-1
 Basis = P=Parallel to Ridge; N=Normal to Ridge
 θ = Roof Slope Relative to Wind
 Reduction = Reduction Factor (.906) for h/L ≥ 1 & 10 ≤ θ ≤ 15°
 -Press = Pressure Acting Away from Surface

MWFRS Wind Loads [Parallel to Ridge]

h = Mean Roof Height of Building = 9.7396 ft
 B = Building Width Normal To Wind = 16.7000 ft
 L/B = Ratio: L/B = 0.796
 θ = Slope of Roof = 22.62 °
 Cp_{LW} = Leeward Wall Coefficient = -0.500
 R_{ht} = Ridge Height Of Roof = 11.4792 ft
 L = Building Width Parallel To Wind = 13.3000 ft
 h/L = Ratio: h/L = 0.732
 Cp_W = Windward Wall Coefficient = 0.800
 Cp_{SW} = Side Wall Coefficient = -0.700

Gust Factor Calculation for Wind: [Parallel to Ridge]

Gust Factor Category I Rigid Structures - Simplified Method

G₁ = Simplified: For Rigid Structures can use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Z_m = Equiv Struc Height: Max(0.6•h, Z_{min}) = 7.000 ft
 I_{zm} = Turbulence Intensity: c • (33/Z_m)^{1/6} E:26.11-1 = 0.194
 L_{zm} = Turbulence Integral Length Scale: ℓ • (Z_m/33)^ε E:26.11-9 = 535.472 ft
 B = Building Width Width Normal to Wind Direction = 16.700 ft

$Q = [1/(1+0.63 \cdot [(B+h)/I_{zm}]^{0.63})]^{0.5} = 0.956$
 $G_2 = \text{Detailed: } 0.925 \cdot [(1+1.7 \cdot g_q \cdot I_{zm} \cdot Q)/(1+1.7 \cdot g_v \cdot I_{zm})] = 0.903$
Gust Factor Used in Analysis
 $G = \text{Gust Factor: Min}(G_1, G_2) = 0.850$

Wall Wind Pressures [Parallel to Ridge]
 All wind pressures include a Load Factor (LF) of 0.6

Elev ft	GC _{pi}	q _i psf	K _z	K _{zt}	q _z psf	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
11.479	+0.18	16.28	1.030	1.000	16.28	8.14	-9.85	-12.61	17.98	9.60
9.740	+0.18	16.28	1.030	1.000	16.28	8.14	-9.85	-12.61	17.98	9.60
8.000	+0.18	16.28	1.030	1.000	16.28	8.14	-9.85	-12.61	17.98	9.60
11.479	-0.18	16.28	1.030	1.000	16.28	14.00	-3.99	-6.75	17.98	9.60
9.740	-0.18	16.28	1.030	1.000	16.28	14.00	-3.99	-6.75	17.98	9.60
8.000	-0.18	16.28	1.030	1.000	16.28	14.00	-3.99	-6.75	17.98	9.60

$K_z = 2.01 \cdot (15/Z_p)^{2/\alpha}$
 $GC_{pi} = \text{+Internal Coef}$
 $q_{ip} = \text{For } +GC_{pi} \text{ use } q_h$
 $\text{Side} = q_h \cdot G \cdot C_{pSW} - q_{ip} \cdot (GC_{pi+})$
 $\text{Windward} = q_z \cdot G \cdot C_{pWW} - q_{ip} \cdot (GC_{pi+})$
 $\text{+Press} = \text{Pressure Acting Toward Surface}$
 $\text{§27.1.5} = \text{MWFRS Min Wall Pressure} = 9.60 \text{ psf}$

$K_{zt} = \text{No Topographic Feature}$
 $q_z = .00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot K_e \cdot V^2 \cdot LF$
 $q_{in} = \text{- Internal Press: } q_h$
 $\text{Leeward} = q_h \cdot G \cdot C_{pLW} - q_{ip} \cdot (GC_{pi+})$
 $\text{Total} = \text{Windward} - \text{Leeward}$
 $\text{-Press} = \text{Pressure Acting Away from Surface}$

Roof Wind Pressures [Parallel to Ridge]
 All wind pressures include a Load Factor (LF) of 0.6

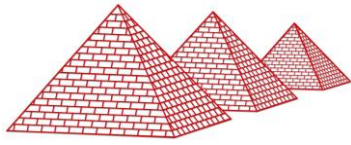
Component	Description	Location	Start ft	End ft	θ °	Basis	GC _{pi}	C _{pMin}	C _{pMax}	P _{min} psf	P _{max} psf	P _{min} psf
Roof	Roof 0 to h/2	1,2	0.000	4.870	0.0	P	+0.1800	-1.029	-0.18	-17.17	-5.42	4.80
Roof	Roof h/2 to h	1,2	4.870	9.740	0.0	P	+0.1800	-0.807	-0.18	-14.09	-5.42	4.80
Roof	Roof h to 2·h	1,2	9.740	13.300	0.0	P	+0.1800	-0.593	-0.18	-11.13	-5.42	4.80
Roof	Roof 0 to h/2	1,2	0.000	4.870	0.0	P	-0.1800	-1.029	-0.18	-11.31	0.44	4.80
Roof	Roof h/2 to h	1,2	4.870	9.740	0.0	P	-0.1800	-0.807	-0.18	-8.24	0.44	4.80
Roof	Roof h to 2·h	1,2	9.740	13.300	0.0	P	-0.1800	-0.593	-0.18	-5.27	0.44	4.80

Roof Pressures based upon Ch 27 Pt 1:

$\text{Component} = \text{The building component for pressures}$
 $\text{Start} = \text{Start Dist from Windward Edge}$
 $C_{pMin} = \text{Smallest Coefficient Magnitude}$
 $P_{min} = q_h \cdot G \cdot C_{pMin} - q_{ip} \cdot GC_{piE:27.3-1}$
 $GC_{pi} = \text{+Internal Coef}$
 $P_{min} = \text{Min Press projected on vertical plane}$
 $\text{§27.1.5} = \text{MWFRS Min Wall Pressure} = 9.60 \text{ psf}$
 $\text{+Press} = \text{Pressure Acting Toward Surface}$

$\text{Location} = \text{Reference Graphic in Output for Values}$
 $\text{End} = \text{End Dist from Windward Edge}$
 $C_{pMax} = \text{Largest Coefficient Magnitude}$
 $P_{max} = q_h \cdot G \cdot C_{pMax} - q_{in} \cdot GC_{piE:27.3-1}$
 $\text{Basis} = \text{P=Parallel to Ridge: N=Normal to Ridge}$
 $\theta = \text{Roof Slope Relative to Wind}$
 $\text{Reduction} = \text{Reduction Factor (.906) for } h \geq 1 \text{ \& } (0 \text{ to } h/2)$
 $\text{-Press} = \text{Pressure Acting Away from Surface}$

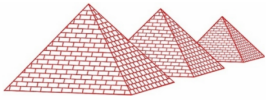
• The smaller uplift pressures due to C_{pMin} can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7



PSE CONSULTING ENGINEERS INC.
PROJECT #: ROMTEC 226-023

ANALYSIS & DESIGN:

Pages 15 - 29



PSE Consulting Engineers Inc.

Project Number Romtec 226-023
 Project Name Lakefront Lodge Restroom
 Subject Analysis

Designed by RMH
 Checked by _____

Date 3/2/2026
 Date _____

Masonry Headers

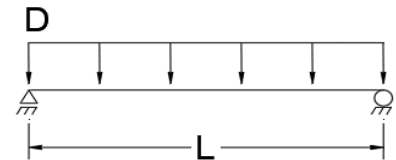
L: 3.33 ft

Distributed Load (D):

Trib: 2.5 ft
 Dead Load = 15 psf * 2.5 = 37.5 plf
 Snow Load = 30 psf * 2.5 = 75 plf
 Wall Dead Load 81 psf * 0.67 = 54.27 plf

Shear (V) = 278 lb. $V = \frac{WL}{2}$

Moment (M) = 231 lb.-ft. $M = \frac{WL^2}{8}$



USE 8" x 8" CMU W/ 1 - #5 Bar

Masonry Bearing Wall

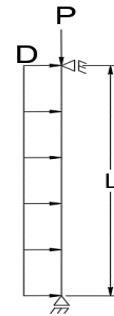
L: 8 ft

Trib: 10 ft

Load (P):
 Dead Load = 15 psf * 10.00 ft = 150.00 plf
 Snow Load = 30 psf * 10.00 ft = 300.00 plf

Distributed Load(D1):

Wind Load = 25.5 psf



USE 8" CMU W/ #4 Vert Bars @ 32" O.C.

Continuous Wall Footing

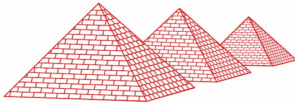
Loads from: Roof

Dead Load = 15 psf * 10 = 150 plf
 Snow Load = 30 psf * 10 = 300 plf

Loads from: Wall

Dead Load = 81 psf * 8 = 648 plf

USE Cont. x 24" x 8" Footing W/ 3 - #5 Bars



PROJECT :
 CLIENT :
 JOB NO. :
 DATE :

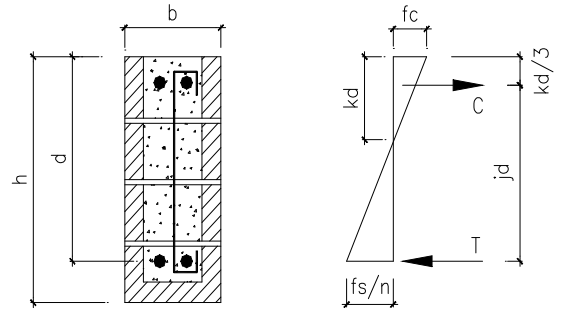
PAGE :
 DESIGN BY :
 REVIEW BY :

Masonry Beam Design Based on TMS 402-16/13

Masonry Headers

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES)	1	Yes
TYPE OF MASONRY (1=CMU, 2=BRICK)	1	CMU
MASONRY STRENGTH f_m' =	1.5	ksi
REBAR YIELD STRESS f_y =	60	ksi
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)	No	
SERVICE SHEAR LOAD V =	0.278	k
SERVICE MOMENT LOAD M =	0.231	ft-k
WIDTH b =	8	in
EFFECTIVE DEPTH d =	5	in
CLEAR SPAN L_c =	3.3	ft
LOAD TYPE (1=SEISMIC, 0=WIND, 5=GRAVITY)	5	Gravity Only
VERTICAL REINF. 0 #	4	@ 32 in o.c.
TENSION REINFORCEMENT	1	# 5



[THE BEAM DESIGN IS ADEQUATE.]

ANALYSIS

ALLOWABLE STRESS FACTOR	SF =	1.000
ALLOWABLE REINF. STRESS	(1.33 or 1.0) F_s =	32 ksi
ALLOWABLE MASONRY STRESS	$F_b=(SF)(0.33f_m')$ =	0.495 ksi
MASONRY ELASTICITY MODULUS	E_m =	1350 ksi, (TMS 402 4.2.2)
STEEL ELASTICITY MODULUS	E_s =	29000 ksi, (TMS 402 4.2.2)
EFFECTIVE WIDTH	b_w =	7.63 in [Satisfactory, $L_c < 32 b_w$]
MODULAR RATIO	n =	21.48
TENSION REINFORCEMENT RATIO	ρ =	0.008

THE NEUTRAL AXIS DEPTH FACTOR IS

THE LEVER-ARM FACTOR IS

$$k = \sqrt{2\rho n + (\rho n)^2} - \rho n = 0.442$$

$$j = 1 - \frac{k}{3} = 0.853$$

THE TENSILE STRESS IN REINFORCEMENT DUE TO FLEXURE IS

$$f_s = \frac{M}{A_s j d} = 2.1 \text{ ksi} < F_s \text{ [SATISFACTORY]}$$

THE COMPRESSIVE STRESS IN THE EXTREME FIBER DUE TO FLEXURE IS

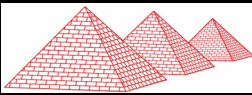
$$f_b = \frac{2M}{j k b_w d^2} = 0.08 \text{ ksi} < F_b \text{ [SATISFACTORY]}$$

THE SHEAR STRESS IN MASONRY IS

$$f_v = \frac{V}{b_w d} = 7.29 \text{ psi} < F_v = \text{MIN} \left[(SF) 1.125 \sqrt{f_m'} + 0.5 \left(\frac{A_v F_s d}{A_n S} \right), (SF) 2 \sqrt{f_m'} \right]$$

(TMS 402 8.3.5)

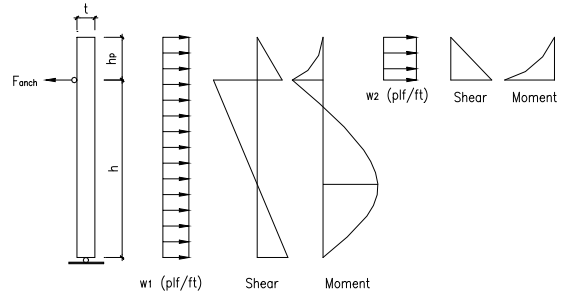
$$= 43.5711 \text{ psi [SATISFACTORY]}$$



Lateral Force for One-Story Wall Based on ASCE 7-16 & 2021 IBC

INPUT DATA

WALL THICKNESS $t = 8$ in, (203 mm)
 PARAPET HEIGHT $h_p = 0$ ft, (0.0 m)
 WALL HEIGHT $h = 8$ ft, (2.4 m)
 TOTAL WALL DENSITY $\rho = 125$ lbs/ft³ (2001 kg/m³)
 SEISMIC PARAMETER $S_{DS} = 0.165$ (ASCE 7 Sec 11.4)
 SEISMIC DESIGN CATEGORY SDC = B
 DIAPHRAGM FLEXIBLE ? (0=no, 1=yes) = 1 Yes
 SEISMIC IMPORTANCE FACTOR $I_e = 1$ (ASCE 7 Tab 11.5-1)
 WIND IMPORTANCE FACTOR $I_w = 1.0$ (ASCE 7 Tab 1.5-2)
 BASIC WIND SPEED $V = 110$ mph, (177 kph), (ASCE 7 Sec 26.5.1)
 EXPOSURE CATEGORY (B, C, D) = D
 TOPOGRAPHIC FACTOR $K_{zt} = 1$ Flat, (ASCE 7 Tab 26.8-1)



DESIGN SUMMARY

Out-of-plane force for wall design $w_1 = 25.5$ psf (Wind governs) , (1223 N/m²)
 Out-of-plane force for parapet design $w_2 = 58.3$ psf (Wind governs) , (2789 N/m²)
 Out-of-plane force for anchorage design $F_{anch} = 196$ plf (Horizontal direction) , (2858 N/m)
 (The governing seismic & wind forces have been reduced by 0.7 & 0.6 for ASD)

WIND ANALYSIS

Out-of-plane wind force for wall design (ASCE 7-16 Eq. 30.3-1)

$$w_{1,wind} = 0.6q_h K_d [(GC_p) - (GC_{pi})] = (0.00256 K_h K_z K_{zt} K_e V^2) K_d [(GC_p) - (GC_{pi})] = 25.5 \text{ psf}$$

Where : $K_h = 1.03$, $K_d = 0.85$, $GC_p = -1.39$, $GC_{pi} = 0.18$
 (mean roof h = 8 ft, changeable) $K_e = 1.00$ (corner ? Yes , TA = 10.67 ft²) (ASCE 7-16 Tab. 26.13-1)
 (ASCE 7-16 26.10-1) (ASCE 7-16 30.3.2)

Out-of-plane wind force for parapet design (ASCE 7-16 Eq. 30.8-1)

$$w_{2,wind} = 0.6q_p K_d [(GC_p) - (GC_{pi})] = (0.00256 K_h K_z K_{zt} K_e V^2) K_d [(GC_p) - (GC_{pi})] = 58.3 \text{ psf, (ASCE 7-16 30.8)}$$

Where : $K_h = 1.03$, $K_d = 0.85$, $GC_p = -1.40$, $GC_p = -2.40$, $GC_{pi} = 0.18$
 (ASCE 7-16 26.10-1) (ASCE 7-16 26.10-1) = 1.00 roof, (ASCE 7-16 30.3.2) (ASCE 7-16 Tab. 26.13-1)
 (TA = 0 ft²)
 wall, (ASCE 7-16 30.3.2)

Out-of-plane wind force for anchorage design

$$F_{anch,wind} = \frac{h}{2} w_{1,wind} + h_p \left(1 + \frac{h_p}{2h}\right) w_{2,wind} = 102 \text{ plf (Horizontal)}$$

SEISMIC ANALYSIS

Out-of-plane seismic force for wall design (ASCE 7, Sec.12.11.1)

$$w_{1,seismic} = MAX(0.4I S_{DS} W_p , 0.1W_p) = 0.10 W_p = 8.3 \text{ psf}$$

Where : $W_p = 83.3$ psf , $I_e = 1.0$
 (CBC/IBC Tab 1604.5 & ASCE 7 Tab 1.5-2)

Out-of-plane seismic force for parapet design (ASCE 7, Sec. 13.3.1)

$$w_{2,seismic} = MAX \left[0.3S_{DS} I_p W_p , MIN \left(\frac{1.4C_{AR} S_{DS} I_p W_p}{R_{po}} , 1.6S_{DS} I_p W_p \right) \right] = 0.20 W_p = 16.9 \text{ psf}$$

Where : $C_{AR} = 2.2$, $I_p = 1.0$, $R_{po} = 2.5$
 (ASCE 7 Tab. 13.5-1) (ASCE 7 Sec. 13.1.3) (ASCE 7 Tab. 13.5-1)

Out-of-plane seismic force for anchorage design

For masonry or concrete under seismic design category A & B, both flexible & rigid diaphragm (ASCE 7 Sec. 12.11.2)

$$F_{anch,seismic} = MAX \left[0.4S_{DS} I W_p \frac{(h+h_p)^2}{2h} , 0.1W_p \frac{(h+h_p)^2}{2h} , 400S_{DS} I , F_{min} \right] = 3.36 W_p = 280 \text{ plf (Horizontal)} \text{ (Applicable)}$$

Where : $F_{min} = 280$ plf
 (ASCE 7 Sec. 12.11.2 & 11.7.3)

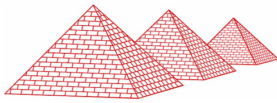
For seismic design category C and above, flexible diaphragm (ASCE 7 Sec. 12.11.2.1)

$$F_{anch,seismic} = MAX \left[0.8S_{DS} I W_p \frac{(h+h_p)^2}{2h} , 0.1W_p \frac{(h+h_p)^2}{2h} , 400S_{DS} I , F_{min} \right] = 3.36 W_p = 280 \text{ plf (Horizontal)} \text{ (Not applicable)}$$

For seismic design category C and above, rigid diaphragm (ASCE 7 Sec. 12.11.2 & Sec. 13.3.1)

$$F_{anch,seismic} = MAX \left\{ MAX \left[0.4S_{DS} I_p , MIN \left(\frac{1.4a_p S_{DS} I_p}{R_{po}} , 1.6S_{DS} I_p \right) \right] W_p \frac{(h+h_p)^2}{2h} , 400S_{DS} I , F_{min} \right\}$$

= 3.36 W_p = 280 plf (Horizontal) (Not applicable)
 Where : $C_{AR} = 2.2$, $R_{po} = 1.5$
 (ASCE 7 Tab. 13.5-1) (1.5, ASCE 7 13.4.2 or 2.5, ASCE 7 Tab 13.5-1)



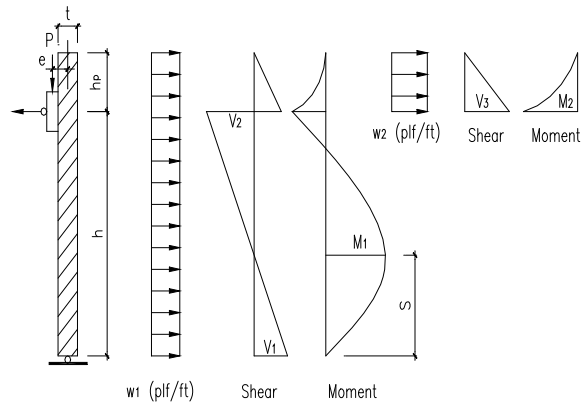
PROJECT :
 CLIENT :
 JOB NO. :
 DATE :

PAGE :
 DESIGN BY :
 REVIEW BY :

Allowable Stress Design of Masonry Bearing Wall Based on TMS 402-16/13 & 2021 IBC

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES)	1	Yes
TYPE OF MASONRY (1=CMU, 2=BRICK)	1	CMU
MASONRY STRENGTH f'_m	= 1.5	ksi
REBAR YIELD STRESS f_y	= 60	ksi
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)	No	
SERVICE GRAVITY LOAD P	= 450	lbs / ft
SERVICE LATERAL LOAD w_1	= 25.5	plf / ft
SERVICE PARAPET LOAD w_2	= 0	plf / ft
THICKNESS OF WALL t	= 6	in
PARAPET HEIGHT h_p	= 0	ft
WALL HEIGHT h	= 8	ft
ECCENTRICITY e	= 0	in
MASONRY SPECIFIC WEIGHT γ_m	= 125	pcf
WALL HORIZ. REINF.	1 # 4 @ 32	in o.c. (at middle)
WALL VERT. REINF.	1 # 4 @ 32	in o.c. (at middle)



[THE WALL DESIGN IS ADEQUATE.]

ANALYSIS

VERT. REINF. AREA AT EACH SIDE A_s	= 0.08	in ²
EFFECTIVE DEPTH (TMS 402 6.1.3.5) d	= 2.82	in
WIDTH OF SECTION b_w	= 12.00	in
EFFECTIVE THICKNESS t_e	= 5.63	in
MASONRY ELASTICITY MODULUS E_m	= 1350	ksi
STEEL ELASTICITY MODULUS E_s	= 29000	ksi

MODULAR RATIO n	= 21.48
REINFORCEMENT RATIO ρ	= 0.0022
ALLOWABLE STRESS FACTOR SF	= 1.000

THE NEUTRAL AXIS DEPTH FACTOR IS

$$k = \sqrt{2\rho n + (\rho n)^2} - \rho n = 0.26482$$

THE ALLOWABLE STRESS DUE TO FLEXURE IS

$$F_b = (SF)(0.33f'_m) = 495 \text{ psi}$$

THE ALLOWABLE REINF. STRESS DUE TO FLEXURE IS

$$F_s = (1.33 \text{ or } 1.0)(20) \text{ or } 32 = 32000 \text{ psi}$$

THE DISTANCE FROM BOTTOM TO M_1 IS

$$S = h + h_p - \left[\frac{(h+h_p)^2}{2h} - \frac{Pe}{hw_1} \right] = 4.0 \text{ ft}$$

THE GOVERNING MOMENTS AND AXIAL FORCES ARE

$$M_1 = \frac{1.05}{2w_1h^2} \left[Pe + \frac{w_1}{2}(h^2 - h_p^2) \right]^2 = 214 \text{ ft-lbs/ft}$$

$$P_1 = P + (\text{wall weight}) = 700 \text{ lbs / ft}$$

$$M_2 = \frac{w_2h_p^2}{2} = 0 \text{ ft-lbs/ft}$$

$$P_2 = P + (\text{wall weight}) = 450 \text{ lbs / ft}$$

THE GOVERNING SHEAR FORCES ARE

$$V_1 = (h + h_p)w_1 - \frac{(h+h_p)^2 w_1}{2h} + \frac{Pe}{h} = 102 \text{ lbs / ft}$$

$$V_2 = hw_1 - V_1 = 102 \text{ lbs / ft}$$

$$V_3 = h_p w_2 = 0 \text{ lbs / ft}$$

THE GOVERNING SHEAR STRESS IN MASONRY IS

$$f_v = \frac{\text{MAX}(V_1, V_2, V_3)}{t_e b_w} = 1.51 \text{ psi}$$

DETERMINE THE REGION FOR FLEXURE AND AXIAL LOAD (MDG-3 Tab 12.2.1, Fig 12.2-12 & 13, page 12-25).

$$\frac{M}{Pd} \leq \frac{t_e}{6d}$$

$$\frac{M}{Pd} \leq \left(\frac{t_e}{2d} - \frac{1}{3} \right)$$

$$\frac{M}{Pd} > \left(\frac{t_e}{2d} - \frac{1}{3} \right)$$

1. Wall is in compression and not cracked.

2. Wall is cracked but steel is in compression.

3. Wall is cracked and steel is in tension.

REGION 3 APPLICABLE FOR (M1, P1)

REGION 1 APPLICABLE FOR (M2, P2)

(cont'd)

CHECK REGION 1 CAPACITY

$$M_m = \frac{b_w t_e^2}{6} F_b - P \frac{t_e}{6} = \begin{cases} 2560 \text{ ft-lbs / ft} > M_1 & \text{[Not applicable]} \\ 2580 \text{ ft-lbs / ft} > M_2 & \text{[Satisfactory]} \end{cases}$$

CHECK REGION 2 CAPACITY

$$M_m = P \frac{t_e}{2} - \frac{2P^2}{3b_w F_b} = \begin{cases} 160 \text{ ft-lbs / ft} < M_1 & \text{[Not applicable]} \\ 104 \text{ ft-lbs / ft} > M_2 & \text{[Not applicable]} \end{cases}$$

CHECK REGION 3 CAPACITY (The moment maybe limited by either the masonry compression or steel tension, MDG-3 page 12-25).

$$M_m = \text{MIN} \left[\frac{1}{2} b_w k d F_b \left(d - \frac{k d}{3} \right) - P \left(d - \frac{t_e}{2} \right), A_s F_s \left(d - \frac{k d}{3} \right) + P \left(\frac{t_e}{2} - \frac{k d}{3} \right) \right]$$

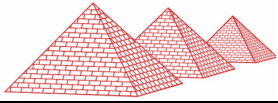
$$= \begin{cases} 474 \text{ ft-lbs / ft} > M_1 & \text{[Satisfactory]} \\ 474 \text{ ft-lbs / ft} > M_2 & \text{[Not applicable]} \end{cases}$$

THE ALLOWABLE SHEAR STRESS IS GIVEN BY (TMS 402 8.2.6)

$$F_v = (SF) 1.125 \left(\sqrt{f'_m} \right) = 43.571 \text{ psi} > f_v \quad \text{[Satisfactory]}$$

Technical References:

1. "Masonry Designers' Guide, Third Edition" (MDG-3), The Masonry Society, 2001.



PROJECT :
 CLIENT :
 JOB NO. :
 DATE :

PAGE :
 DESIGN BY :
 REVIEW BY :

Footing Design for Bearing Wall Based on 2021 IBC / ACI 318-19

Wall Footings

INPUT DATA & DESIGN SUMMARY

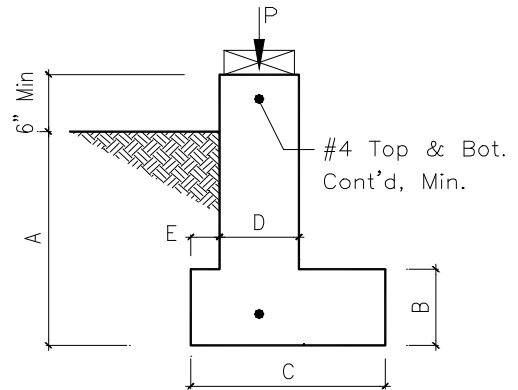
FOOTING SIZE A = 42 in
 B = 8 in
 C = 24 in
 D = 8 in
 E = 8 in

FOOTING CONCRETE STRENGTH f'_c = 2.5 ksi

AXIAL DEAD LOAD (per linear foot) P_{DL} = 0.798 k / ft
 AXIAL LIVE LOAD (per linear foot) P_{LL} = 0.3 k / ft
 LATERAL LOAD (0=WIND, 1=SEISMIC) = 0 Wind,SD
 LATERAL LOAD (per linear foot) P_{LAT} = 1.5 k / ft, SD
 (holddown force converted to load per linear foot)

SURCHARGE q_s = 0.1 ksf
 SOIL WEIGHT w_s = 0.11 kcf

ALLOWABLE SOIL PRESSURE Q_a = 1.5 ksf



THE FOOTING DESIGN IS ADEQUATE.

ANALYSIS

DESIGN LOADS (IBC 1605.2 & ACI 318 5.3)

CASE 1: DL + LL P = 1.10 k / ft 1.2 DL + 1.6 LL P_u = 1.44 k / ft
 CASE 2: DL + LL + 0.6(1.3) W P = 2.27 k / ft 1.2 DL + LL + 1.0 W P_u = 2.76 k / ft
 CASE 3: DL + LL + 0.6(0.65) W P = 1.68 k / ft 0.9 DL + 1.0 W P_u = 2.22 k / ft

CHECK SOIL BEARING CAPACITY(ACI 318 13.3.1.1)

Service Loads	CASE 1	CASE 2	CASE 3	
P	1.10	2.27	1.68	k / ft
e	0.0	0.0	0.0	in (from center of footing)
q_s C	0.20	0.20	0.20	k / ft, (surcharge load)
(0.15- w_s) Area	0.14	0.14	0.14	k / ft, (footing increased)
Σ P	1.4	2.6	2.0	k / ft
e	0.0	0.0	0.0	in
q_{max}	0.72	1.31	1.01	ksf
Q_a	1.50	1.50	1.50	ksf

Where

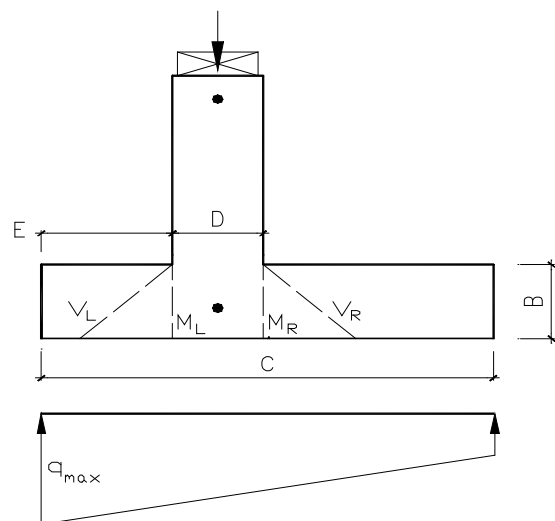
$$q_{max} = \begin{cases} \frac{(\Sigma P)\left(1 + \frac{6e}{C}\right)}{C}, & \text{for } e \leq \frac{C}{6} \\ \frac{2(\Sigma P)}{3(0.5C - e)}, & \text{for } e > \frac{C}{6} \end{cases}$$

[Satisfactory]

DESIGN FOR FLEXURE (ACI 318 14.5)

$$\phi M_n = MIN\left(5\lambda\phi\sqrt{f'_c}S, 0.85\phi f'_c S\right) = 1.60 \text{ ft-kips / ft}$$

where λ = 1.0 (ACI 318 19.2.4)
 ϕ = 0.6 (ACI 318 21.2)
 S = elastic section modulus of section
 = 128 in³ / ft



FACTORED SOIL PRESSURE

Factored Loads	CASE 1	CASE 2	CASE 3	
P_u	1.4	2.8	2.2	k / ft
e_u	0.0	0.0	0.0	in (from center of footing)
$\gamma q_s C$	0.32	0.32	0.32	k / ft, (factored surcharge load)
$\gamma[0.15AC - (0.15Ws) (C-D) (A-B)]$	1.08	1.08	0.81	k / ft, (factored footing & backfill loads)
ΣP_u	2.84	4.16	3.35	k / ft
e_u	0.0	0.0	0.0	in
E	8.0	8.0	8.0	in
$q_{u, max}$	1.42	2.08	1.67	ksf
$q_{u, VL}$	1.42	2.08	1.67	ksf
$q_{u, ML}$	1.42	2.08	1.67	ksf
$q_{u, MR}$	1.42	2.08	1.67	ksf
$q_{u, VR}$	1.42	2.08	1.67	ksf
$q_{u, min}$	1.42	2.08	1.67	ksf
$M_{u, L}$	0.19	0.33	0.24	ft-k / ft
$M_{u, R}$	0.19	0.33	0.24	ft-k / ft
$V_{u, L}$	0.00	0.00	0.00	k / ft
$V_{u, R}$	0.00	0.00	0.00	k / ft

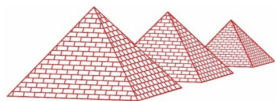
$$M_{u, max} = 0.33 \text{ ft-k / ft} < \phi M_n \quad [\text{Satisfactory}]$$

CHECK FLEXURE SHEAR (ACI 318 14.5)

$$\phi V_n = \frac{4}{3} \lambda \phi \sqrt{f_c'} B = 3.84 \text{ k / ft}$$

$$\text{where } \phi = 0.6 \text{ (ACI 318 21.2)}$$

$$V_{u, max} = 0.00 \text{ k / ft} < \phi V_n \quad [\text{Satisfactory}]$$



PSE Consulting Engineers Inc.

Project Number Romtec 226-023
 Project Name Lakefront Lodge Restroom
 Subject Analysis

Designed by RMH
 Checked by _____

Date 3/2/2026
 Date _____

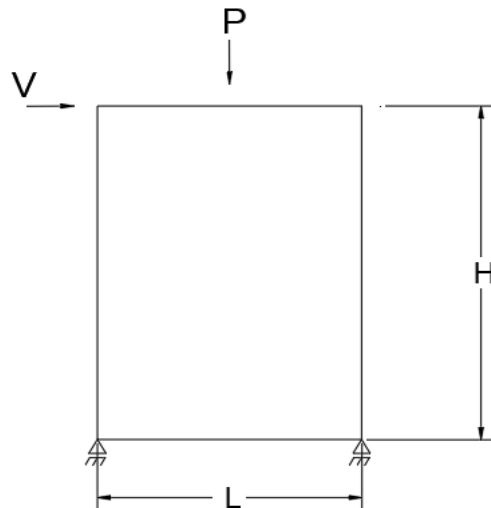
Masonry Shearwalls

P: Dead Load = 37.5 plf H: 8 ft.
 Roof Live Load = 75 plf L: 6 ft.

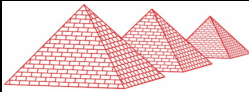
V: Wind
 Roof Load: 10 psf
 Pitch: 23 Degrees
 Load Area: 86.00 Sq.Ft.
 Wall Load: 18 psf
 Load Area: 54.00 Sq.Ft.

Seismic
 Total: 1370 Lbs
 Building Length: 13.3
 Trib. Width 6.7
 # of Wall Panels: 1

WL = 1308 Lbs
EL = 1028 Lbs



USE 8" CMU W/ #4 Vert Bars @ 32" O.C. & #4 Horz Bars @ 32" O.C.



PROJECT :
 CLIENT :
 JOB NO. :
 DATE :

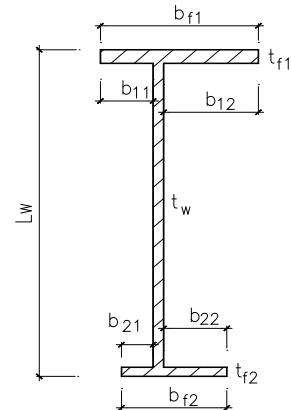
PAGE :
 DESIGN BY :
 REVIEW BY :

Masonry Shear Wall Design Based on TMS 402-16/13 & 2021 IBC (both ASD and SD)

Masonry Shearwalls

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES) **1** Yes
 (This option only for local jurisdiction amendments to the code, not part of TMS.)
 TYPE OF MASONRY (1=CMU, 2=BRICK) **1** CMU
 MASONRY STRENGTH $f_m' =$ **1.5** ksi
 REBAR YIELD STRESS $f_y =$ **60** ksi
 ALLOWABLE 30% INCREASING ? (Yes or No, IBC 1605.2) **No**
 SEISMIC PERFORMANCE CATEGORY **0** Wind
 (C,D,E, 0=WIND, 5=GRAVITY)
 MASONRY LAID IN RUNNING BOND ? (TMS 402 7.3.2.6) **Yes**
 SERVICE AXIAL LOAD $P =$ **0.678** kips, at middle of L_w
 SERVICE SHEAR LOAD $V_x =$ **1.308** kips, (in-plane force)
 SERVICE MOMENT LOAD $M_x =$ **10.464** ft-kips, (top flange, b_{f1} , compression)
 $M_y =$ **0.2** ft-kips, (out-of-plane, left b_{11} & b_{21} , compression)
 EFFECTIVE HEIGHT OF WALL $h_w =$ **8** ft
 LENGTH OF SHEAR WALL $L_w =$ **6** ft, (within vertical control joints)



THE WALL DESIGN IS ADEQUATE.

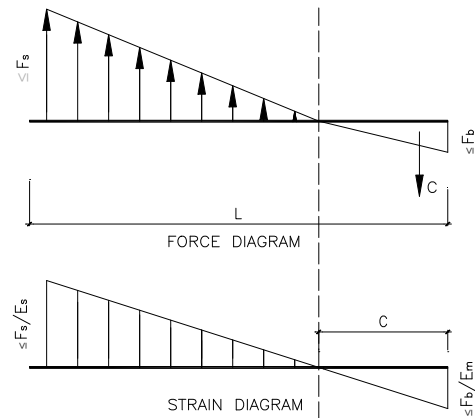
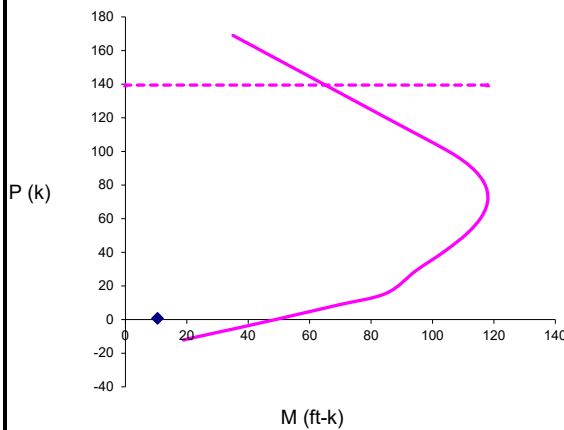
THICKNESS OF WALL $t_w =$ **6** in
 REINFORCING OF WALL **1** # **4** at each ends, with **4** in center to edge.
 A_{sh} , Horizontal **1** # **4** @ **32** in o.c.
 A_{sv} , Vertical **1** # **4** @ **32** in o.c.

TOP FLANGE (COMPRESSION) $b_{11} =$ **0** in , $b_{12} =$ **0** in , $b_{f1} =$ **6** in ,(TMS 402 5.1.1.2.3)
 $t_{f1} =$ **8** in , **1** # **4** @ **32** in o.c., Vertical

BOTTOM FLANGE $b_{21} =$ **0** in , $b_{22} =$ **0** in , $b_{f2} =$ **6** in ,(TMS 402 5.1.1.2.3)
 $t_{f2} =$ **8** in , **1** # **4** @ **32** in o.c., Vertical

ANALYSIS

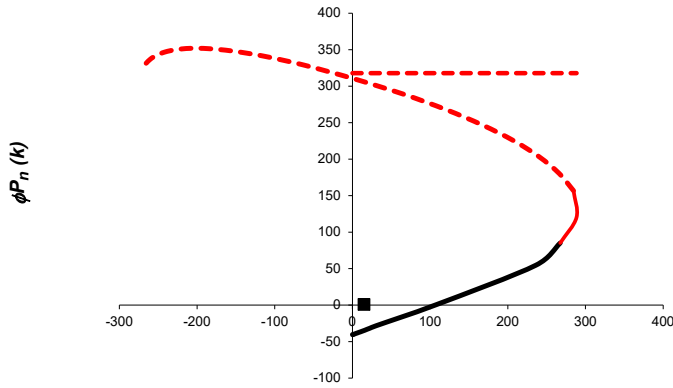
CHECK FLEXURAL & AXIAL CAPACITY BY ALLOWABLE STRESS DESIGN (ASD)



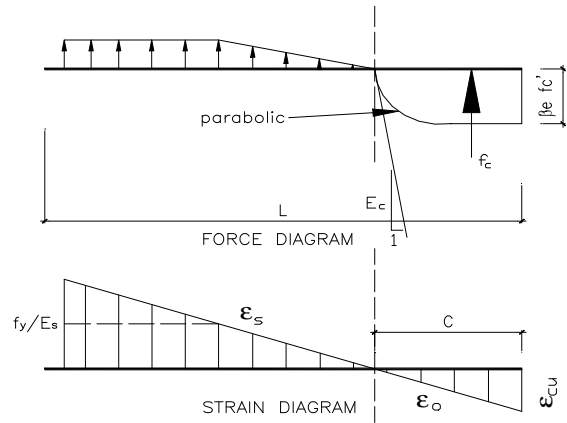
P (load) = **0.678** kips < P (allowable) = $P_a =$ **139.458** kips
 M (resultant) = $(M_x^2 + M_y^2)^{0.5} =$ **10.4659** ft-kips < M (allowable) = **50.3617** ft-kips [Satisfactory]
 Where $E_m =$ **1350** ksi, (TMS 402 4.2.2.2.1) $A_n =$ **411** in²
 $E_s =$ **29000** ksi, (TMS 402 4.2.2.1) $A_{st} =$ **0.75** in²
 Scale Factor = **1.000** , (TMS 402-11 2.1.2) $f_s \geq$ **0** ksi, (TMS 402 8.3.3.3)
 $F_b =$ **0.495** ksi, (TMS 402 8-18) $h / r =$ **59** , neglected conservatively flanges.
 $F_s =$ **32.00** ksi, (TMS 402 8.3.3.1) $P_a =$ **139.458** kips, (TMS 402 8.3.4.2.1)

(cont'd)

CHECK FLEXURAL & AXIAL CAPACITY BY STRENGTH DESIGN (SD)



ϕM_n (ft-k) Solid Black Line - Tension Controlled
 Solid Red Line - Transition
 Dash Line - Compression Controlled



$P_u = 1.2 P = 0.8136$ kips < $\phi P_n = 317.868$ kips, (TMS 402 9.3.4.1.1)
 $M_u = (1/0.7) (M_x^2 + M_y^2)^{0.5} = 14.9513$ ft-kips < $\phi M_n = 113.609$ ft-kips, at P_u level.
 [Satisfactory]
 Where $\epsilon_{mu} = 0.0025$, (TMS 402 9.3.2.c) $d = 71$ in
 $\phi = 0.9$, (TMS 402 9.1.4.1) $f'_m = 1.5$ ksi

CHECK SHEAR CAPACITY (ASD), (TMS 402 8.3.6)

$$F_v = MAX \left\{ (SF) \left[\frac{1}{4} \left(4 - 1.75 MIN \left(1, \frac{M_T}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] + 0.5 \frac{A_v F_y d}{A_n s}, (SF) \left[\frac{1}{2} \left(4 - 1.75 MIN \left(1, \frac{M_T}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] \right\}$$

$= 44$ psi > $1.5 f_v = 5$ psi [Satisfactory]
 (factor 1.5 from TMS 402 7.3.2.6.1.2)

$$F_{v, Maximum} = (SF) MIN \left[3, MAX \left(2, 2 + \frac{4}{3} \left(1 - \frac{M_T}{Vd} \right) \right) \right] \sqrt{f'_m} = 77$$

psi > $1.5 f_v$ [Satisfactory]

CHECK MINIMUM REINFORCEMENTS

$A_{sh,min} = 0.047$ in ² /ft	<	$A_{sh,actual} = 0.075$ in ² /ft	[Satisfactory]
$S_{sh,max} = 48$ in	>	$S_{sh,actual} = 32$ in	[Satisfactory]
$A_{sv,min} = 0.047$ in ² /ft	<	$A_{sv,actual} = 0.075$ in ² /ft	[Satisfactory]
$S_{sv,max} = 48$ in	>	$S_{sv,actual} = 32$ in	[Satisfactory]
$A_{total,min} = 0.135$ in ² /ft	<	$A_{total,actual} = 0.150$ in ² /ft	[Satisfactory]

CHECK MAXIMUM REINFORCEMENT PERCENTAGE

$$\rho_{max} = \frac{n f'_m}{2 f_y \left(n + \frac{f_y}{f'_m} \right)} = 0.0044 > \rho = 0.0005$$

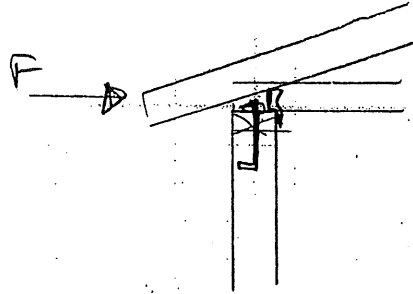
[Satisfactory] (TMS 402 8.3.4.4)



PROJECT NO. Romtec SHEET _____ OF _____
PROJECT NAME _____ DESIGNED BY Ralph DATE _____
SUBJECT Lateral CHECKED BY _____ DATE _____

Wall to Roof Anchorage

$$F = 196 \text{ plf}$$



Truss to Plate

$$F = 196 \text{ plf} \times 2 \text{ ft.} = 392 \text{ lb.}$$

$$\text{USE [USP MPAL @ Each Truss]} \text{ cap.} = 680 \text{ lb.} > 392 \text{ lb.}$$

Plate to Wall

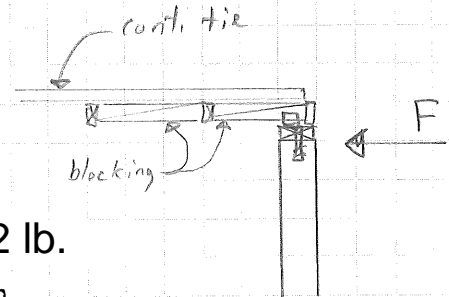
$$\text{USE [1/2" } \phi \text{ Anchor Bolt @ 24" o.c.]} \text{ cap.} = 380 \text{ lb} \times 1.6 = 608 \text{ lb.} > 392 \text{ lb.}$$



PROJECT NO. _____ SHEET _____ OF _____
PROJECT NAME _____ DESIGNED BY _____ DATE _____
SUBJECT Lateral CHECKED BY _____ DATE _____

Gable Wall Anchorage

$F = 196 \text{ plf}$



Wall to Plate

anchors @ 24" o.c., $V = 196 \text{ plf} \times 2 \text{ ft.} = 392 \text{ lb.}$

USE $[1/2" \text{ } \phi \text{ Anchor Bolt @ 24" o.c.}]$ cap. = $380 \text{ lb} \times 1.6 = 608 \text{ lb.}$
 $> 392 \text{ lb.}$

Plate to Blocking

blocking @ 48" o.c., $V = 196 \text{ plf} \times 4 \text{ ft.} = 784 \text{ lb.}$

USE $[2 - \text{USP MP34 Angles}]$ cap. = $525 \text{ lb} \times 2 = 1,050 \text{ lb.}$
 $> 784 \text{ lb.}$

Blocking to Continuous Tie

$V = 784 \text{ lb.}$

USE $[6 - 10d \text{ Nails}]$ cap. = $118 \text{ lb.} \times 1.6 \times 6 = 1,132 \text{ lb.}$
 $> 784 \text{ lb.}$

Installation:

- Use all specified fasteners. See Product Notes, page 17.
- **Bend tabs only once.**
- MP4F connects 2x framing with floor sheathing up to 5/8".
- MP6F connects 3x framing with floor sheathing up to 3/4", and is a better choice for connections where floor sheathing is between sole plate and rim board.

USP Stock No.	Ref. No.	Steel Gauge	Installation Type ^{2,4}	Fastener Schedule ⁵				Direction of Load ²	DF/SP Allowable Loads (Lbs.) ^{1,3,4}				S-P-F Allowable Loads (Lbs.) ^{1,3,4}				Corrosion Finish	Code Ref.
				Header or Stud		Joist or Plate			100%	115%	125%	160%	100%	115%	125%	160%		
				Qty	Type	Qty	Type											
MPA1	A35	18	Figure 1	6	8d x 1-1/2	6	8d x 1-1/2	F1	570	655	680	680	490	565	570	570	Stainless Steel	14, R9, F7
				6	8d x 1-1/2	6	8d x 1-1/2	F2	570	655	715	795	490	565	615	670		
				6	8d x 1-1/2	6	8d x 1-1/2	F3	280	320	350	445	180	205	225	290		
			Figure 2	6	8d x 1-1/2	3	8d x 1-1/2	A1	285	330	355	415	245	285	310	350		
				6	8d x 1-1/2	3	8d x 1-1/2	B1	285	330	350	350	245	285	295	295		
				6	8d x 1-1/2	3	8d x 1-1/2	C1	285	330	355	355	245	285	300	300		
			Figure 3	6	8d x 1-1/2	6	8d x 1-1/2	A2	505	505	505	505	425	425	425	425		
				6	8d x 1-1/2	6	8d x 1-1/2	B2	280	280	280	280	235	235	235	235		
				6	8d x 1-1/2	6	8d x 1-1/2	C2	375	375	375	375	315	315	315	315		
MP34	A34	18	Figure 4	4	8d x 1-1/2	4	8d x 1-1/2	F1	380	435	475	525	330	375	410	450	Stainless Steel	14, R9, F7
				4	8d x 1-1/2	4	8d x 1-1/2	F2	380	435	475	610	330	375	410	525		
				4	8d x 1-1/2	4	8d x 1-1/2	F3	185	215	230	295	120	140	150	190		
MP4F	LTP4	20	Type 1	6	8d x 1-1/2	6	8d x 1-1/2	V	565	650	705	845	485	560	610	710	Stainless Steel	14, R9, F7
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	650	705	845	485	560	610	710		
			Type 2	6	8d x 1-1/2	6	8d x 1-1/2	V	565	650	705	845	485	560	610	710		
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	650	660	660	485	555	555	555		
			Type 1	6	8d	6	8d	V	565	650	705	845	485	560	610	710		
				6	8d	6	8d	H	565	650	705	845	485	560	610	710		
MP6F	LTP5	20	Type 2	6	8d x 1-1/2	6	8d x 1-1/2	V	565	605	605	605	485	510	510	510	Stainless Steel	14, R9, F7
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	605	605	605	485	510	510	510		
			Type 1	6	8d x 1-1/2	6	8d x 1-1/2	V	565	605	605	605	485	510	510	510		
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	605	605	605	485	510	510	510		
			Type 1	6	8d	6	8d	V	565	605	605	605	485	510	510	510		
				6	8d	6	8d	H	565	605	605	605	485	510	510	510		
Type 2	6	8d	6	8d	V	565	605	605	605	485	510	510	510					
	6	8d	6	8d	H	565	605	605	605	485	510	510	510					

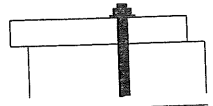
Angles & Straps



1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
 2) Refer to drawings for installation type and definition of the various load directions.
 3) If installing MP4F or MP6F over plywood, use 8d common nails for 100% of table load.
 4) Loads are shown per angle. When using a single anchor, joist must be constrained from rotation.
 5) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long
 New products or updated product information are designated in **blue font**.

Corrosion Finish
■ Stainless Steel ■ Gold Coat
■ HDG ■ Triple Zinc

Table 11E BOLTS: Reference Lateral Design Values, Z, for Single Shear (two member) Connections^{1,2,3,4}



for sawn lumber or SCL to concrete

Embedment Depth in Concrete t_e in.	Side Member t_s in.	Bolt Diameter D in.	G=0.67 Red Oak		G=0.55 Mixed Maple Southern Pine		G=0.50 Douglas Fir-Larch		G=0.49 Douglas Fir-Larch(N)		G=0.46 Douglas Fir(S) Hem-Fir(N)	
			Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.
6.0 and greater	1-1/2	1/2	770	480	680	410	650	380	640	380	620	360
		5/8	1070	660	970	580	930	530	920	520	890	470
		3/4	1450	890	1330	660	1270	590	1260	560	1230	520
		7/8	1890	960	1750	720	1690	630	1680	600	1640	550
		1	2410	1020	2250	770	2100	680	2060	650	1930	600
		1	2410	1020	2250	770	2100	680	2060	650	1930	600
	1-3/4	1/2	830	510	740	430	700	400	690	390	670	370
		5/8	1160	680	1030	600	980	550	970	550	940	530
		3/4	1530	900	1390	770	1330	680	1310	660	1270	600
		7/8	1970	1120	1800	840	1730	740	1720	700	1680	640
		1	2480	1190	2290	890	2210	790	2200	750	2150	700
		1	2480	1190	2290	890	2210	790	2200	750	2150	700
	2-1/2	1/2	830	590	790	520	770	470	760	460	750	440
		5/8	1290	800	1230	670	1180	610	1170	610	1120	570
		3/4	1840	1000	1630	850	1540	800	1520	780	1460	750
		7/8	2290	1240	2050	1080	1940	1020	1920	1000	1860	920
		1	2800	1520	2530	1280	2410	1130	2390	1080	2310	1000
		1	2800	1520	2530	1280	2410	1130	2390	1080	2310	1000
	3-1/2	1/2	830	590	790	540	770	510	760	500	750	490
		5/8	1290	880	1230	810	1200	730	1190	720	1170	670
		3/4	1860	1190	1770	980	1720	900	1720	880	1680	830
		7/8	2540	1410	2410	1190	2320	1100	2290	1070	2200	1020
		1	3310	1670	2970	1420	2800	1330	2770	1300	2660	1260
		1	3310	1670	2970	1420	2800	1330	2770	1300	2660	1260

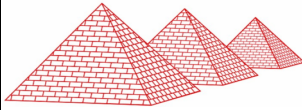
Embedment Depth in Concrete t_e in.	Side Member t_s in.	Bolt Diameter D in.	G=0.43 Hem-Fir		G=0.42 Spruce-Pine-Fir		G=0.37 Redwood (open grain)		G=0.36 Eastern Softwoods Spruce-Pine-Fir(S) Western Cedars Western Woods		G=0.35 Northern Species	
			Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.	Z_{II} lbs.	Z_{I} lbs.
6.0 and greater	1-1/2	1/2	590	340	590	340	550	310	540	290	530	290
		5/8	860	420	850	410	810	350	800	330	780	320
		3/4	1200	460	1190	450	1130	370	1120	360	1100	350
		7/8	1580	500	1540	490	1360	410	1330	390	1280	370
		1	1800	540	1760	530	1560	440	1520	420	1460	410
		1	1800	540	1760	530	1560	440	1520	420	1460	410
	1-3/4	1/2	640	360	630	350	580	320	580	310	560	310
		5/8	910	490	900	480	840	400	830	380	810	370
		3/4	1230	540	1220	530	1160	430	1140	420	1120	410
		7/8	1630	580	1610	570	1540	470	1520	460	1490	430
		1	2090	630	2060	610	1820	510	1770	490	1710	470
		1	2090	630	2060	610	1820	510	1770	490	1710	470
	2-1/2	1/2	730	410	730	400	700	360	690	340	680	340
		5/8	1070	540	1060	530	980	480	960	470	940	460
		3/4	1400	710	1380	700	1290	620	1270	600	1240	580
		7/8	1790	830	1770	810	1660	680	1640	660	1600	610
		1	2230	900	2210	880	2080	730	2060	700	2030	680
		1	2230	900	2210	880	2080	730	2060	700	2030	680
	3-1/2	1/2	730	470	730	470	700	430	690	410	690	400
		5/8	1140	620	1140	610	1090	550	1080	530	1070	520
		3/4	1650	780	1640	770	1540	680	1510	670	1470	660
		7/8	2100	960	2070	950	1910	870	1880	850	1840	820
		1	2550	1190	2520	1180	2340	1020	2310	980	2260	950
		1	2550	1190	2520	1180	2340	1020	2310	980	2260	950

1. Tabulated lateral design values, Z, for bolted connections shall be multiplied by all applicable adjustment factors (see Table 10.3.1).
2. Tabulated lateral design values, Z, are for "full-body diameter" bolts (see Appendix Table L1) with bolt bending yield strength, F_{yb} , of 45,000 psi.
3. Tabulated lateral design values, Z, are based on dowel bearing strength, F_e , of 7,500 psi for concrete with minimum $f'_c=2,500$ psi.
4. Six inch anchor embedment assumed.

BOLTS

DOWEL-TYPE FASTENERS





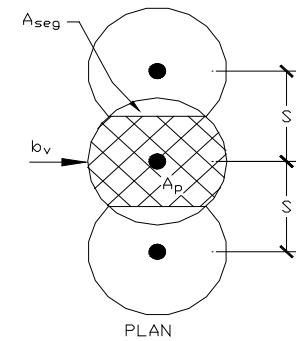
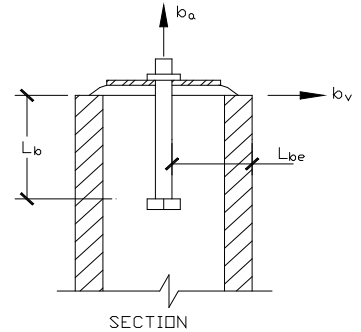
PROJECT :
 CLIENT :
 JOB NO. :
 DATE :

PAGE :
 DESIGN BY :
 REVIEW BY :

Fastener Anchorage in Tension & Perpendicular Shear Based on TMS 402-16/13

INPUT DATA & DESIGN SUMMARY

MASONRY STRENGTH	f_m'	=	1.5	ksi
FASTENER YIELD STRESS	f_y	=	60	ksi
SERVICE TENSION LOAD	b_a	=	0	kips / ft
SERVICE SHEAR LOAD	b_v	=	0.196	kips / ft
WALL THICKNESS	b	=	8	in
FASTENER DIAMETER	ϕ	=	1/2	in
EFFECTIVE EMBEDMENT	L_b	=	6	in
FASTENER SPACING	S	=	24	in
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)			Yes	



[THE ANCHORAGE DESIGN IS ADEQUATE.]

ANALYSIS

CHECK MIN. EMBEDMENT (TMS 402-16/13 6.3.6/6.2.6)

$$L_{b,min} = \text{MIN}[4\phi, 2] = 2.00 \text{ in} < L_b \text{ [SATISFACTORY]}$$

CHECK TENSION CAPACITY (TMS 402 8.1.3.3.1)

$$B_a = \text{MIN}[1.25A_{pt}(f_m')^{0.5}, 0.6A_b f_y] = 1.93 \text{ kips / fasteners}$$

$$> k S b_a \text{ [SATISFACTORY]}$$

Where $L_{be} = 3.57 \text{ in}$

$$L = \text{MIN}[L_b, L_{be}] = 3.57 \text{ in, conservative value}$$

$$\theta = \text{COS}^{-1}(0.5S / L) = 0.00 \text{ rad}$$

$$A_{seg} = L^2 [\theta - 0.5 \text{ SIN}(2\theta)] = 0.00 \text{ in}^2$$

$$A_{pt} = \pi L^2 - 2 A_{seg} = 39.93 \text{ in}^2 \text{ (TMS 402-16/13 6.3.2/6.2.2)}$$

$$A_b = \pi \phi^2 / 4 = 0.20 \text{ in}^2$$

$$k = 3/4$$

CHECK SHEAR CAPACITY (TMS 402 8.1.3.3.2)

$$B_v = \text{MIN}[1.25A_{pv}(f_m')^{0.5}, 350(A_b f_m')^{1/4}, 2.5A_{pt}(f_m')^{0.5}, 0.36A_b f_y] = 1.45 \text{ kips / fasteners}$$

$$> k S b_v \text{ [SATISFACTORY]} \quad \text{(Equation 8-7, 350 in TMS 402-13 increased to 580 in TMS 402-16)}$$

Where $A_{pv} = A_{pt} = 39.93 \text{ in}^2$, since $L = \text{MIN}[L_b, L_{be}]$ used above, (TMS 402-16/13 6.3.3/6.2.3)

CHECK COMBINED SHEAR AND TENSION CAPACITY (TMS 402 8.1.3.3.3)

$$(S b_a / B_a)^{(5/3)} + (S b_v / B_v)^{(5/3)} = 0.11 < 1.33 \text{ [SATISFACTORY]}$$



Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
 Project Title: 2602-013 Lakefront Lodge RR
 Project Type: New Construction

Construction Site:
 30525 Lake Shore Blvd
 Willowick, Ohio 44095

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
 Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts
1-Restrooms/Mech Room (Common Space Types:Restrooms)	222	0.77	171
Total Allowed Watts =			171

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Restrooms/Mech Room (Common Space Types:Restrooms)				
LED: LF2: Lithonia 48" LED CSVT 35.3: LED A Lamp 13W:	1	3	35	106
Total Proposed Watts =				106

Interior Lighting PASSES: Design 38% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Matthew Weldon - Energy Consultant

Name - Title

Matthew Weldon

Signature

3/5/2026

Date



Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
 Project Title: 2602-013 Lakefront Lodge RR
 Project Type: New Construction
 Exterior Lighting Zone: 1 (Developed rural area (LZ1))

Construction Site:
 30525 Lake Shore Blvd
 Willowick, Ohio 44095

Owner/Agent:

Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Walkway (Walkway < 10 feet wide)	601 ft of	0.5	Yes	300
Total Tradable Watts (a) =				300
Total Allowed Watts =				300
Total Allowed Supplemental Watts (b) =				350

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.

(b) A supplemental allowance equal to 350 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Walkway (Walkway < 10 feet wide, 601 ft of walkway length): Tradable Wattage				
LED: LF1: Lithonia OLLWD: LED A Lamp 13W:	1	4	9	36
Total Tradable Proposed Watts =				36

Exterior Lighting PASSES: Design 94% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Matthew Weldon - Energy Consultant
 Name - Title

Matthew Weldon
 Signature

3/5/2026
 Date



COMcheck Software Version COMcheckWeb Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: 2602-013 Lakefront Lodge RR
Location: Willowick, Ohio
Climate Zone: 5a
Project Type: New Construction

Construction Site: 30525 Lake Shore Blvd
Willowick, Ohio 44095
Owner/Agent:
Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Mechanical Systems List

Quantity System Type & Description

- 1 HVAC System (Unknown w/ PerimeterSystem): Heater only for freeze protection
Heating: 1 each - Unit Heater, Electric, Capacity = 9383 kBtu/h
No minimum efficiency requirement applies
- 1 Water Heater:
Electric Storage Water Heater, Capacity: 20 gallons
Proposed Efficiency: 1.65 SL, %/h (if > 12 kW), Required Efficiency: 1.65 SL, %/h (if > 12 kW)

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Matthew Weldon - Energy Consultant Matthew Weldon 3/5/2026
Name - Title Signature Date



Inspection Checklist

Energy Code: 2018 IECC

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C103.2 [PR3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C103.2 [PR4] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C103.2 [PR8] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C406 [PR9] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.12.2 , C403.12.3 [FO9] ³	Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. future connection to controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6] ³	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C404.6.3 [PL7] ³	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C404.7 [PL8] ³	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41] ³	Thermally ineffective panel surfaces of sensible heating panels have insulation \geq R-3.5.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.11.3 [ME61] ²	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.8.1 [ME65] ³	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <i>See the Mechanical Systems list for values.</i>
C403.8.3 [ME117] ²	Fans have efficiency grade (FEG) \geq 67. The total efficiency of the fan at the design point of operation \leq 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.12.1 [ME71] ²	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.2.2 [ME59] ¹	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.1 [ME59] ¹	Demand control ventilation provided for spaces >500 ft ² and >25 people/1000 ft ² occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow $>3,000$ cfm.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.7.2 [ME115] ³	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.7.6 [ME141] ³	HVAC systems serving guestrooms in Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.7.4 [ME57] ¹	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.5 [ME116] ³	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.11.1 , C403.11.2 [ME60] ²	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.4.1.4 [ME63] ²	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C408.2.2.1 [ME53] ³	Air outlets and zone terminal devices have means for air balancing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.5, C403.5.1, C403.5.2 [ME123] ³	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2..	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.2 [EL22] ¹	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern ≥ 50 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces ≤ 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1.2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aiseways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1.3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces ≥ 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas ≤ 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by $\geq 80\%$ of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.2, C405.2.2.1, C405.2.2.2 [EL21] ²	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2 [EL23] ²	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.4 [EL26] ¹	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.4 [EL27] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.5 [EL28] ^{null}	Manual controls required by the energy code are in a location with ready access to occupants and located where the controlled lights are visible, or identify the area served and their status.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.6 [EL30] ^{null}	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.6 [EL26] ²	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.7 [EL27] ²	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.8.2, C405.8.2.1 [EL28] ²	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.9 [EL29] ²	Total voltage drop across the combination of feeders and branch circuits <= 5%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.3, C408.2.5.3 [FI8] ³	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.2 [FI27] ³	HVAC systems and equipment capacity does not exceed calculated loads.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4.1 [FI47] ³	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.4.1.2 [FI38] ³	Thermostatic controls have a 5 °F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4.1.3 [FI20] ³	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4.2 [FI39] ³	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4.2.1, C403.2.4.2.2 [FI40] ³	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C404.3 [FI11] ³	Heat traps installed on supply and discharge piping of non-circulating systems.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C404.4 [FI25] ²	All piping insulated in accordance with section details and Table C403.11.3.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.4.1 [FI18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<i>See the Interior Lighting fixture schedule for values.</i>
C405.5.1 [FI19] ¹	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<i>See the Exterior Lighting fixture schedule for values.</i>

1 High Impact (Tier 1)
 2 Medium Impact (Tier 2)
 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.1 [FI28] ¹	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.3.1 [FI31] ¹	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.3.2 [FI10] ¹	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.4 [FI29] ¹	Preliminary commissioning report completed and certified by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5.1 [FI7] ³	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5.1 [FI16] ³	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5.3 [FI43] ¹	An air and/or hydronic system balancing report is provided for HVAC systems.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5.4 [FI30] ¹	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.3 [FI33] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------