

## BID PACKET TABLE OF CONTENTS



Knowledge that helps.  
Homes that fit.

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May 13, 2024



Knowledge that helps.  
Homes that fit.

PRG Inc. as Developer, and Benoz Enterprises performing as General Contractor, are accepting bids from sub-contractors and suppliers for the construction of five new single-family infill homes located at: **1000 30<sup>th</sup> Ave. North, 1818 Sheridan Ave. North, 2203 Oliver Ave. North, 2317 3<sup>rd</sup> St. North, and 2709 Humboldt Ave. North, Minneapolis, MN 55411.**

Section 3 Businesses and Minority and Women-owned Business Enterprises are encouraged to bid. See bid documents for the Divisions/Sections for which bids are being sought.

Copies of the bid documents – bid invite, bid section list, bid form, non-collusion affidavit, spec book, plans, site plan, survey and soils report - are available via the PRG website – <https://www.prginc.org/contractor-bids> Arrangements can also be made for pick up at the PRG office – 2017 East 38<sup>th</sup> Street, Minneapolis MN 55407.

Selection of subcontractors and suppliers will be based on but not limited to the following criteria: Price, references and demonstrated experience with this type of work, ability to perform within the time frame, compliance with Section 3 if applicable, compliance with the Small and Underutilized Business Enterprise Program (SUBP) hiring goals, if applicable, are licensed and insured, in good standing with the Minnesota Dept. of Labor and Industry and are not on US Government/HUD or State of Minnesota Dept. of Administration Suspended/Debarred Vendor list.

**Bids must be received by 1:00 PM, May 30, 2024** at the offices of PRG, Inc. 2017 E. 38<sup>th</sup> St. Minneapolis, MN 55407. Please submit bids using the provided bid forms. Upload completed bid forms via the PRG website or via email [prg@prginc.org](mailto:prg@prginc.org)

For any bidding questions call/email Benjamin Akhigbe of Benoz Enterprises at 612-508-7927 / [bakhigbe@aol.com](mailto:bakhigbe@aol.com) or Kevin Gulden at PRG – 612-721-7556 ext. 130 / [kevin@prginc.org](mailto:kevin@prginc.org) or Caliyah Rush at PRG – 612-721-7556 ext 210 / [caliyah@prginc.org](mailto:caliyah@prginc.org)

PRG reserves the right to reject any and all bids and waive informalities in the bidding process.

## **PRG Infill Single Family New Construction - Mpls Homes Round 4**

**Projects: 1000 30th Ave. North, 1818 Sheridan Ave. North, 2203 Oliver Ave. North,  
2317 3rd St. North and 2709 Humboldt Ave. North**

**Owner: PRG, Inc.**

**General Contractor/Builder: Benoz Enterprises**

PRG and Benoz Enterprises are seeking sub-contractor bids for the following Division/Bid Sections:

**Use the bid form provided to submit a bid**

You may bid on more than one bid section if you so choose and more than one project.

Fill out a separate bid form for each bid and each project.

See copy of PRG spec book and plans for more detail of each bid section.

### **BID DIVISION/SECTIONS**

**2300 Excavation/ Backfill/ Grading/Erosion Control**

**2450 Landscaping**

**2500 Water and Sewer Service**

**3100 Foundation**

**3150 Foundation Waterproofing**

**3200 Concrete Flatwork**

**4200 Masonry Block**

**6100 Rough Carpentry - Framing (Labor Only)**

**7300 Roofing (Labor Only)**

**7640 Siding/ Trim/ Soffit/ Fascia (Labor Only)**

**7660 Insulation & Air Sealing**

**9200 Drywall & Backerboard**

**9300 Painting - Exterior & Interior**

**9400 Woodwork / Finish Carpentry (Labor Only)**

**9600 Flooring - Tile/ Vinyl Plank/ Carpet**

**15100 Heating / Cooling / Ventilation**

**15500 Plumbing**

**16100 Electrical - Wiring/Switches & Outlets/ Light Fixtures**

**BID FORM – 1000 30<sup>th</sup> Ave./1818 Sheridan/2203 Oliver/2317 3<sup>rd</sup> St/2709 Humboldt**

**DUE: 1:00 PM May 30, 2024**

**TO: Benoz Enterprises & PRG Inc.**

**FROM: COMPANY NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**PHONE:** \_\_\_\_\_ **EMAIL:** \_\_\_\_\_

**CONTACT PERSON:** \_\_\_\_\_

1. The undersigned, having examined the proposed bid documents for the projects 1000 30<sup>th</sup> Ave North, 1818 Sheridan Ave. North, 2203 Oliver Ave. North, 2317 3<sup>rd</sup> St. North and 2709 Humboldt Ave. North and having visited the sites and examined the conditions affecting the Work, hereby proposes and agrees to furnish required labor, materials, and equipment, and to perform operations necessary to complete the work as required by the Specifications, Drawings, and bid documents for that portion of the work identified as:

2. **PROJECT ADDRESS:**   
(ex. 2709 Humboldt)

3. **DIVISION/SECTION #:**   
(ex. 9300-Painting- Ext & Interior)

4. **BID AMOUNT:**  \$

5. The undersigned includes the following items in addition to the Bid Form:  
A. Evidence of insurance or evidence of ability to acquire adequate insurance for the project.  
B. Non-collusion Affidavit

BIDDER \_\_\_\_\_  
By \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
Signature \_\_\_\_\_

Type of business entity: \_\_\_\_\_  
(corporation, Co-partnership, individual, etc.)

Organized under the laws of the State of \_\_\_\_\_

Officers of the Corporation: \_\_\_\_\_

Bid date this \_\_\_\_\_ day of \_\_\_\_\_, 2024

**PRG, Inc.**  
Non-collusion Affidavit of Prime Bidder

Contract No. \_\_\_\_\_

State of Minnesota)  
County of Hennepin) ss

\_\_\_\_\_, being first duly sworn, deposes  
and says that:

1) He is \_\_\_\_\_  
(owner, partner, officer, representative or agent)  
of \_\_\_\_\_, the Bidder that has submitted  
the attached Bid:

2) He is fully informed respecting the preparation and contents of the attached Bid and of  
all pertinent circumstances respecting such Bid:

3) Bid is genuine and is not a collusive or sham Bid:

4) Neither the said Bidder nor any of its officers, partners, owner, agents, representative,  
employees or parties in interest, including this affiant, has in any way colluded,  
conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or  
person to submit a collusive or sham Bid in connection with the Contract for which the  
attached Bid has been submitted or to refrain from bidding in connection with such  
Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or  
communication or conference with any other Bidder, firm or person to fix the price or  
prices in the attached Bid or of any other Bidder, or, to fix any overhead, profit or cost  
element of the bid price of any other Bidder, or to secure through any collusion,  
conspiracy, connivance or unlawful agreement any advantage against PRG or any person  
interested in the proposed Contract; and

5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by  
any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or  
any of its agents, representatives, owners, employees, or parties in interest, including this  
affiant.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
(Title)

Subscribed and sworn to before me

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

(Notary Public)

My Commission Expires \_\_\_\_\_

**PRG**  
**New Construction**  
**Spec Book**

**INFILL SINGLE FAMILY HOMES**

**Folk Plan**  
**Humboldt Plan**

**Locations:**  
**1000 30th Ave. North**  
**1818 Sheridan Ave. North**  
**2203 Oliver Ave. North**  
**2317 3rd Street North**  
**2709 Humboldt Ave. North**

**Minneapolis, MN 55411**

**May 2, 2024**

## GENERAL CONDITIONS

**A.** These specifications are in short outline form. All materials shall be installed according to the manufacturer's printed directions and/or industry standards. All materials furnished and work done under this contract shall comply with the building, electrical, plumbing and other applicable codes of the municipality in which the work is performed.

The general conditions herein set forth shall apply to any contract given under these specifications and shall be binding upon every Sub-contractor as well as the General Contractor.

**The surveys, plans, elevations, sections and detail drawings, together with these specifications, are to form the basis of the contract; where discrepancies in the spec are found the higher quality or greater quantity shall be provided.**

**B.** Contact Kevin Gulden or Kathy Wetzal-Mastel at 612-721-7556 or kevin@prginc.org with questions about the bid documents and to report any discrepancies between the plans and specifications. Scaled and dimensioned plans are available for review at:

PRG Inc.  
2017 E. 38<sup>th</sup> Street  
Minneapolis, MN 55407

# **SUPPLEMENT TO GENERAL CONDITIONS:**

PRG Infill Single Family Homes

## **PROJECT INFORMATION**

### **PROJECT ADDRESSES-**

1000 30th Ave. North, Mpls  
1818 Sheridan Ave. North, Mpls  
2203 Oliver Ave. North, Mpls  
2317 3rd St. North, Mpls  
2709 Humboldt Ave. North

### **OWNER & DEVELOPER**

PRG Inc.  
2017 E. 38<sup>th</sup> Street  
Minneapolis, MN 55407  
Contact: Kevin Gulden ([kevin@prginc.org](mailto:kevin@prginc.org))  
Caliyah Rush ([caliyah@prginc.org](mailto:caliyah@prginc.org))  
Phone: 612-721-7556

### **ENERGY-HERS RATER / ENERGY CONSULTANT**

Building Knowledge Inc.  
  
PO Box 1376  
Burnsville, MN 55337  
Contact: Pat O'Malley  
Phone: 612-597-4260  
Email: [pato@buildingknowledge.com](mailto:pato@buildingknowledge.com)

### **ATTACHMENTS**

- Attachments are incorporated into this document by reference.
- ATTACHMENT A: General Project Information
  - ATTACHMENT B: Contracting & Workforce Participation Goals (Funding Requirement)
  - ATTACHMENT C: MN Green Communities Criteria Intended Methods Worksheet (2023-2024 Overly to the 2020 GC criteria)
  - ATTACHMENT D: Sworn Construction Statement
  - ATTACHMENT E: Section 3 Clause
  - ATTACHMENT F: Minneapolis Residential Construction Management Agreement
  - ATTACHMENT G: Geotechnical – Soils and Shoring Report
  - ATTACHMENT H: Notice to Proceed
  - ATTACHMENT I: Change Order Form
  - ATTACHMENT J: Indoor air PLUS Version 1 (Rev. 04) Verficiation Checklist
  - ATTACHMENT K: DOE Zero Energy Ready Home Version 2 (Rev 1)(ZERH) Program Requirements
  - ATTACHMENT L: Energy Star Single-Family New Homes Version 3.2 (Rev.13) Prog. Requirements

**NOTICE TO PROCEED:** The Notice to Proceed shall be issued only after the following are received and approved by the Owner: Sworn Construction Statement and Certificate of Insurance. No work shall begin prior to issuance of Notice to Proceed and obtaining proper permits.

**PRE-CONSTRUCTION MEETING:** A Pre-construction meeting shall be held with the General Contractor, Site Supervisor, Architect, and the Owner within the first 2 weeks of notice to Proceed.



CONSTRUCTION PROGRESS MEETINGS: Construction progress meetings may take place on occasion on-site or at an alternate location. Such meetings are to be announced one week in advance during the construction period.

WALK-THROUGHS: In addition to the inspections required by code, two walk-throughs are required. In order to assist with scheduling, Contractor is to notify Owner that the work is ready a minimum of three (3) days before a walk-through is scheduled. Required walk-throughs:

- 1.) Framing, structural walk-through: after all framing/structural work is complete and before it is covered by insulation or finishes. Contractor shall make necessary framing changes (if any) as noted by engineer /architect during walk-through.
- 2.) Insulation walk-through: after insulation is installed and before it is covered by finishes. Contractor shall reinforce or reinstall insulation if required by energy rater/consultant.

TIME SCHEDULE: **All work shall be completed within 150 continuous days**, starting with the date of Notice to Proceed. With the exception of seasonal/weather-dependent work, (ie exterior concrete work) work not completed in 150 days shall be subject to liquidated damages per the Construction Contract. Requests for additional time due to factors outside the contractor's control must be detailed and approved via change order. Project completion is defined as issuance of the Certificate of Occupancy (CO) and all permits signed off by City of Minneapolis, State of MN electrical permit sign off, receipt of all full and final lien waivers including subcontractors and all site work and punchlist items completed.

CONTRACT: The form of Construction **Contract will be AIA Document A105-2007, Standard Form of Agreement between Owner and Contractor for** a Residential or Small Residential Project.

CHANGE ORDERS: No changes in the Work shall be allowed or compensated without a properly written and approved Change Order Proposal and Change Order using attached forms (ATTACHMENT I) as a template an electronic version can be made available. Changes made or substitutions installed without prior written approval by Owner shall be cause for replacement at Contractor's expense. Contractor may submit an alternate change order form if approved by owner.

PAYMENT REQUESTS: Each draw request for payment shall include the following documents: AIA Form G702 (Application & Certification for Payment), all relevant invoices to be paid (from both general contractor and all subs/suppliers) and the corresponding partial or full lien waivers. Please submit originals or legible copies with no white-outs or cross-outs. Draws shall be for work completed and products or materials installed. Purchased and/or on-site materials may be considered in payment if required documentation is submitted and certified by the Owner and Architect. 5% retainage on draws. Final Payment shall be issued only after the Owner receives a copy of the Certificate of Occupancy from the City of Minneapolis and all punch list items corrected and or addressed.

PERMITS: The General Contractor (and subcontractors as applicable) shall obtain all required permits and inspections. Contractor to provide Developer with copies of all permits and stamped plans upon request. Contractor and subcontractors are responsible for a permit fees and permit application fees.

## DIVISION 1 – REQUIREMENTS

### GENERAL REQUIREMENTS

PERMITS: The General Contractor (and subcontractors as applicable) shall obtain all required permits and inspections. Copies of stamped/signed plans: one to be submitted to the Owner and the other to remain on site at all times.

General Contractor to comply with all items/terms/conditions of the Minneapolis Residential Construction Management Agreement (CMA) (Hours of Operation/Noise Reduction/Approved Plans/Contact Information/Neighbor Notification/Dumpster and Street Use/Debris-Dumpster Maintenance/Building Materials-Deliveries/Idling of Vehicles/Crew Parking/Site and Surrounding Maintenance/Tracking Dirt/Dust Control/Winter Conditions/Restrooms-Portable Toilets/Damage to Public Property/Protection of Adjoining Property/Tree Protection/Survey/Erosion-Sediment Control/Changes to Site Plan and Complaints-Log. Any fines/citations resulting from a failure to comply with the terms of the CMA are the sole responsibility of the General Contractor.

CODES & STANDARDS: All work shall be in accordance with and conform to these codes, standards, requirements and regulations: Minnesota State Building Code, Minneapolis Housing Maintenance Code, Minneapolis Inspections Dept., the Minnesota and Minneapolis Health Departments. Minnesota Residential Energy Code – 2012 IECC.

**ENERGY-EFFICIENCY REQUIREMENTS: The project will need to meet the 2023-24 MN Overlay to the 2020 Enterprise Green Communities Criteria, follow Energy Star New Homes Version 3.2 (Rev 12) target home recommendations, meet Indoor airPLUS Version1 (Rev. 4) specifications/guidelines and achieve DOE Zero Energy Ready Homes (ZERH) Version 2 certification. Failure to meet requirements will result in additional work and performance testing at contractor's expense. (<http://www.greencommunitiesonline.org/tools/criteria/index.asp>) General contractor is to work as a partner with Owner/Project Manager and Energy Consultant (Building Knowledge Inc.) to meet these requirements.**

DONATED MATERIALS & OWNER PROVIDED MATERIALS: Materials provided by the Owner will be made ready for the General Contractor when needed. It will be the responsibility of the General Contractor to coordinate with the Owner and supplier to make sure all materials get to the site in a timely manner and installed as specified.

SAFETY & SECURITY: The General Contractor is responsible for the safety and security of the site. All contractors and workers shall take all necessary precautions, including complying with applicable Federal and Minnesota health and safety codes and regulations. All house and garage doors and windows shall be locked when the house is unoccupied, securing the house and garage against unintended entry. Contractor to notify owner when ready to have security system installed at owner's cost. Contractor responsible for all false alarm charges/fines from City of Minneapolis that result from improper use by contractor or sub-contractors from date of Notice to Proceed until Certificate of Occupancy is issued.

UTILITIES: Contractor is responsible for all utility charges from date of Notice to Proceed through the issuance of Certificate of Occupancy. If necessary PRG will pay utilities on behalf of the contractor during the construction period. A deduct change order in an amount equal to the utilities paid by PRG on behalf of the contractor will be executed at project closeout.

**SITE MAINTENANCE:** The Contractor is responsible for lawn mowing and snow removal of public sidewalk and is responsible for any fines or citations from the City of Minneapolis or penalties resulting from a failure to do so. Contractor is also responsible for snow removal of the private sidewalks and driveway at the site during construction. If the contractor fails to remove the snow or mow the lawn per the contract PRG reserves the right to hire third party and bill the contractor for these services. Contractor is responsible for watering and maintaining healthy lawn/sod for 30 days after installation. After 30 days Owner will inspect condition of sod and determine if any needs to be replaced at General Contractor's expense. Contractor shall provide an on-site portable restroom and follow City of Mpls requirements pertaining to.

**ADJACENT PROPERTIES:** Any damage to adjacent private property shall be repaired at the General Contractor's expense and in a timely manner. General Contractor and excavation sub-contractor are responsible for cost and installing necessary shoring/retention to avoid damage to neighboring property. Neighbors must receive prior notice and give permission for any work requiring access to their property. Clean up any construction debris on adjacent private or public property daily.

**PATCHING:** Each Subcontractor shall advise the General Contractor of the need and extent of patching that will be required for the proper execution of their respective work. The General Contractor shall be responsible for patching areas to match adjacent finished surfaces that result from other trades doing their work but are not the direct responsibility of a particular Subcontractor.

**QUALITY CONTROL:** General Contractor and all Subcontractors are to be familiar with the entire Specifications book and all plans/drawings and the work of others that may affect their own. Field verify all dimensions, sizes, elevations, and other existing conditions in the Specifications and on Plans/Drawings; report any discrepancies upon discovery to Owner and Architect. Surfaces and substrates shall be clean, smooth, plumb and level and properly prepared prior to applying finish materials; repair, reinforce or replace as necessary any missing or deteriorated surface or substrate. Cover and protect all finished surfaces (floors, counters, fixtures, etc.) during construction. General Contractor is responsible for final cleaning. (See FINAL CLEAN-UP section below.) All labor is to be performed in a "workman-like" manner, consistent with industry & trade standards and practices of the Metro area, and with manufacturers' installation instructions. All products, equipment and materials are to be furnished "in the box" new (unless specified as salvaged for reuse) and installed in strict accordance with the manufacturer's instructions. All products, equipment and materials are to be set in place, leveled and hooked up complete with all parts and in smooth and proper working order and ready to use. Materials, products or equipment that are damaged or defective in operation or appearance shall be replaced. All hardware and items with moving parts shall open, latch, lock and operate smoothly. All mounted items (including cabinets, handrails, towel bars, etc.) shall be attached to solid wood blocking. Contractor shall furnish material safety data sheets for all materials used.

**OWNER'S SELECTIONS:** Submit samples and manufacturer's literature in a timely manner as necessary for the Owner to select all products and materials with a choice of models, colors, styles, patterns, etc.

APPROVED EQUALS: Substitutions or approved equals are permitted only by prior written approval of Owner. Requests shall be accompanied by samples and documentation as necessary for comparison. Use of products, equipment and materials, colors or sizes other than specified, if not pre-approved, shall be cause for replacement at Contractor's expense.

**PRODUCT INFORMATION:** All manufacturer's printed product and equipment information, including warranties and owner's manuals, shall be saved in good condition and submitted in an organized fashion to the Developer at the end of construction in which to provide to the new homeowner.

**RADON TESTING:** Radon testing will take place after the house has been closed in. Coordinate with 3<sup>rd</sup> party testing company for the timing of the test. (General Contractor is not responsible for the cost of the radon test.)

**GENERAL CLEAN-UP:** The house interior and all yards shall be periodically cleaned up of construction debris to maintain a safe and orderly work site. The public sidewalk and boulevard and public alley shall be cleaned daily. No materials are to be dropped or stored on the boulevard or public sidewalk. The General Contractor shall be responsible for the collection, storage, removal from the site and recycling or disposal of all packaging, construction waste, debris and refuse.

**CONSTRUCTION WASTE MANAGEMENT PLAN:** Total construction waste to landfill or incinerator <2.5 lbs/SF of building.

Recycling and Recovery of the following Waste Materials:

2" Minus Material: Dirt, sheetrock dust, wood shavings, glass cuttings, asphalt shingle granules, small/broken aggregate, etc.

Aggregate: Concrete – precast or cast-in-place concrete, block, asphalt, terrazzo, plaster, brick, clay tile, quarry tile and ceramic tile, marble, and stone, etc.

Asphalt Shingles: Asphalt shingles, bundle wrappers (paper or plastic), cardboard boxes, incidental cans and bottles, tar paper, roof vents, eave and valley tin, etc.

Metals: Metal scrap - Iron, steel, copper, brass, and aluminum from the following sources – Structural members, piping, fasteners, steel studs, siding, wiring, ductwork and sheet metal goods, etc.

"Dirty" Wood: Painted wood and trim, plywood, particle board, oriented strand board, Masonite, wood doors, wood cabinets and furniture, etc.

"Clean" Wood: Unpainted, untreated dimensional lumber, timber beams & engineered wood products, wood shipping pallets, crates, etc.

Fiber: Cardboard – clean, corrugated cardboard used for packaging. Paper – clean paper from packaging, etc.

All construction waste to be placed in commingled dumpsters and transported to an off-site recycling facility

Carpet and carpet base determined to be recyclable shall be separated on-site and placed in a separate dumpster for removal and recycling.

Non-Recyclable Material: Gypsum wallboard, resilient flooring, post-consumer plastics, etc.

**FINAL CLEAN-UP:** Leave house "maid clean" at the completion of the work, including all finished surfaces, plumbing and electrical fixtures, appliances, tile, floor coverings, counters and cabinets, and both sides of window glass. Remove any stains and paint splatters on flooring, cabinets and

glass. Remove all non-permanent labels. Protect all finish floor circulation paths with temporary clear poly runners. Properly dispose of or recycle all debris. Remove all tools and construction materials.

PUNCH LIST: The Owner punch list walk-through shall be conducted after the final clean-up. Items not in accordance with the Specifications and Plans shall be listed and corrected to the satisfaction of the Owner. Assume some additional clean-up after punch list items are corrected.

VOLUNTARY ALTERNATES: All bidders are required to submit proposals per the Specifications and Plans/Drawings. No prior approvals will be issued for alternate products, materials or methods. The Owner may, however, accept voluntary alternates for products, materials or methods believed to be of equal quality and performance, and which may be of lower cost or greater availability. Any voluntary alternate should be listed separately from the submitted bid and identified as "voluntary alternate". These voluntary alternates will be evaluated by the Owner and Architect post bid. Owner will determine acceptance.

**FUNDING REQUIREMENTS:**

Minneapolis Disadvantaged Business Program:

Participation of Minority-owned Business Enterprises (MBEs) and Women-owned Business Enterprises (WBEs) is required on all construction projects exceeding \$100,000. Goals are established based on the number of certified WBEs and MBEs available in this marketplace and the types of work included in the project. An updated list of available certified SUBP contractors can be found at [www.mnucp.org](http://www.mnucp.org) (MN/UCP). SEE ATTACHMENT B FOR GOALS & ATTACHMENT D FOR DOCUMENTATION SUBMITTAL REQUIREMENTS.

**HUD Section 3:**

Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (as amended), requires that economic opportunities generated by certain HUD financial assistance for housing (including Public and Indian Housing) and community development programs shall, to the greatest extent feasible, be given to low and very low-income persons, particularly those who are recipients of government assistance for housing and to businesses that provide economic opportunities for these persons. SEE ATTACHMENT B FOR GOALS

**Davis Bacon & Prevailing Wage**

There is no Davis Bacon or prevailing wage on this project.

**INSURANCE REQUIREMENTS**

Contractor will provide to the Owner and the Owner's lenders a copy of a Certificate of Insurance, including Workers' Compensation insurance. Contractor shall obtain insurance with limits at least equal to those specified below:

TYPE OF INSURANCE		LIMITS
GENERAL LIABILITY	Each Occurrence	\$2,000,000
Damage to Rented Premises	Each Occurrence	\$ 100,000
Medical Expenses	Any One Person	\$ 5,000
Personal & Adv. Injury		\$1,000,000
General Aggregate		\$2,000,000
Products – Comp/Op Agg		\$1,000,000

AUTOMOBILE LIABILITY	Combined Single Limit	\$1,000,000
Any Autos		
EXCESS/UMBRELLA LIABILITY	Each Occurrence	\$1,000,000
	Aggregate	\$1,000,000
WORKERS' COMPENSATION		WC Statutory Limits
and	Each Accident	\$100,000
EMPLOYERS' LIABILITY	E.L.Disease – Each Employee	\$100,000
	E.L.Disease – Policy Limit	\$500,000

The policies obtained and maintained to provide the specified insurance must provide that the required coverage and limits cannot be materially changed or canceled without at least 30 days prior written notice to the Owner. PRG, Inc. shall be named as an Additional Insured, on a primary and non-contributory basis, as their interest may appear. Workers Compensation includes waiver of subrogation in favor of Certificate Holder.

Before beginning any work under this contract, the Contractor will provide to the Owner an insurance certificate showing compliance with these insurance specifications. It is understood that failure to provide the required insurance certificate, the Owner reserves the right to withhold payments to the Contractor until a properly executed Certificate of Insurance is provided. Contractor will provide liability insurance and workman's compensation insurance coverage in full until completion of the building certificates of insurance must be provided as a condition of the contract award.

#### QUALITY REQUIREMENTS

##### **MINNESOTA GREEN COMMUNITIES-**

##### **ALL ASPECTS OF THE PROJECT ARE REQUIRED TO COMPLY WITH THE GREEN COMMUNITIES CRITERIA PROMOTING ENERGY CONSERVATION, OPERATIONAL SAVINGS AND SUSTAINABLE BUILDING PRACTICES IN AFFORDABLE HOUSING DESIGN.**

All interior materials shall be no/low -VOC. The following requirements and other requirements described in specifications must be strictly followed:

☐ All paints and primers must meet the Green Seal GS-11 Environmental Standard

<http://www.greenseal.org/certification/standards/paints.cfm>

☐ Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District and meet Green Seal GS-36 Env. Standard - <http://www.aqmd.gov/rules/reg/reg11/r1168.pdf>

☐ All caulks and sealants, including floor finishes, must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District <http://www.baaqmd.gov/dst/regulations/rg0851.pdf> and may not exceed 250 grams of VOC per liter of coating as thinned to the manufacturer's maximum recommendation, excluding the volume of any water, exempt compounds, or colorant added to the tint bases.

☐ All particleboard components shall meet ANSI A208.1 for formaldehyde emission limits or all exposed particleboard edges shall be sealed with a low-VOC sealant or have a factory applied low-VOC sealant prior to installation.

All MDF shall meet Formaldehyde emissions requirements of ANSI A208.2 or all exposed MDF edges shall be sealed with a low-VOC sealant or have a factory applied low-VOC sealant prior to installation.

All work shall be executed in a workmanlike manner in accordance with the plans and specifications.

Project Manager to be notified immediately by General Contractor or Sub-contractor should any discrepancy or other question arises pertaining to the working drawings and/or specifications. The General Contractor shall be held responsible for any errors, discrepancies or omissions which result from the General Contractor failure to notify the Architect and Project Manager before construction and/or fabrication of the work.

On-site verification of all dimensions and conditions shall be the responsibility of the General Contractor and Sub-contractors. Noted dimensions take precedence over scale. The General Contractor and Sub-contractors shall report to the Owner all conditions which prevent the proper execution of their work.

The General Contractor agrees to a warranty period in accordance with state statute. In regards to the manufacturing warranty on individual equipment, the manufacturer's warranty will apply to all materials and equipment incorporated in the building. Warranties shall begin with the issuance of the Certificate of Occupancy.

The General Contractor will identify all subcontractors and suppliers contributing work and materials totaling more than \$1000 and provide the Owner a list of such subcontractors and suppliers in the form of a sworn construction statement – Attachment D. Sub-contractors shall: insure that all work is done in a professional workmanlike manner by skilled mechanics and shall replace any materials or items damaged by Sub-contractor's performance. Sub-Contractors and suppliers are hereby notified that they are to confer and cooperate fully with each other during the course of construction to determine the exact extent and overlap of each other's work and to successfully complete the work.

Each Sub-contractor, unless specifically exempted by the terms of his/her sub-contract agreement, shall be responsible for cleaning up and removing from the job site all trash and debris not left by other Sub-contractors. General Contractor will determine how soon after Subcontractor completes each phase of his work that trash and debris must be removed from the site.

#### SPECIAL INSPECTIONS / TESTING

Energy Rater (Building Knowledge Inc.) to complete initial, interim and final testing upon completion of project and issuance of Certificate of Occupancy. A blower door test may be conducted after installation of insulation and vapor barriers. The test should be used to find and fix leaks prior to installation of drywall. A final blower door test shall be conducted once the house is complete. Address all deficiencies identified by the Energy Rater.

#### PEST CONTROL

Seal all wall, floor, and joint penetrations with low-VOC caulking or other appropriate non-toxic sealing methods to prevent pest entry. Provide rodent- and corrosion-proof screens (e.g., copper or stainless steel mesh or rigid metal cloth) for openings greater than ¼ inch.

## DIVISION 2 – SITE WORK

### 2300 EXCAVATION / BACKFILL / GRADING / EROSION CONTROL

It is the responsibility of the General Contractor to contact the survey company of record to request the site be staked for excavation. **Cost of staking the site for excavation is the responsibility of the General Contractor. Contact Kemper & Associates Inc. to have the site staked. Phone 651-631-0351 or kemper@pro-ns.net**

Excavate to depths as required for construction as shown on drawings. Footings to rest on undisturbed soil, fill any excess cut with concrete. The excavation shall be large enough to permit inspection of footings after the foundation has been completed.

**Do not include pricing for soil corrections or excavation shoring in bid/construction contract. If either is necessary upon receipt of soils report or determined during excavation, they will be handled via post-bid addendum or change order.**

**A Soil Engineer must inspect the hole and approve the soil before foundation footings are installed. The General Contractor must provide the Owner with a copy of the Engineer's report.** The General Contractor shall investigate sub-surface conditions, before and during grading of site, for filled excavations or buried structures such as cesspools, cisterns, and existing foundations. If any such structures are found and sub-surface conditions vary from plans or specifications, a soils engineer and structural engineer shall be consulted immediately, prior to the placing of any foundations.

All water shall be removed from foundation excavation prior to placing concrete. Backfill shall be clean, on-site soil, placed in 18" layers and compacted.

All topsoil and organic material shall be removed from within the building area. Any fill shall be granular inorganic fill placed in maximum 8" lifts and compacted to 92% standard density ASTM D-698.

**It shall be the Contractor's responsibility to get the excavations and fills thoroughly checked by a competent Soils Engineer prior to the placement of footings to prevent detrimental differential settlement. Variations to the above shall be at the discretion of the Soils Engineer.**

Final grade as shown on elevations, is to slope away from structure 5% (3" per 5'-0") for 10' out from the foundation. Beyond 10' away from the building, the grade shall slope away from the structure at 1/4" per 1'-0" unless noted otherwise on plans.

Provide 6" min. topsoil at areas of excavation.

### EROSION CONTROLS

Implement best practices for erosion and sedimentation control during construction. Install silt fencing and other measures as required by the City of Minneapolis.

Areas under porches or decks shall be covered in poly and landscape rock and fully enclosed with ventilated skirting detailed in the plans.

### SITE DEMOLITION

Remove any volunteer growth, shrubs or trees not identified on site plan to remain. It is the responsibility of the General Contractor to do their due diligence and visit the site as part of the bidding process and determine which trees/growth needs to be removed per site plan in order to excavate the site properly and frame the structure. General Contractor is responsible for the cost of any tree/growth removal as part of the excavation or framing/construction process. General Contractor to seek approval from Project Manager before removing any trees/growth not shown per site plan.



#### **2400 DRIVEWAY BITUMINOUS**

~~DRIVEWAY: Install new bituminous driveway per site plan—3” rolled bituminous hot mix asphalt (MnDOT 2341) installed over new class 5 base, compacted to a minimum of 4”; assure proper slope for drainage away from overhead garage door. See 3200 Concrete Flatwork for concrete driveway.~~

#### **2450 LANDSCAPING**

The Contractor is responsible for providing temporary erosion control measures during the construction process.

Landscaping Plan - Install black plastic edging and landscape fabric 3' out around the entire perimeter of the house and around sides of garage. Install dark brown cedar mulch in this space (NO RED MULCH). Install new rolled sod over entire yard and as necessary to ensure no bare soil. Install new sod over new topsoil - clean black dirt thoroughly compacted to minimize settling before installing sod. Water new sod until grass is firmly established (minimum of 30 days). Replace any dead sections of sod until date of final certification by Developer or 30 days after issuance of Certificate of Occupancy by City of Minneapolis. No plantings – shrubs or flowers – to be provided. Use of any fertilizers or pre-emergents on lawn to be organic and non-toxic.

#### **2500 WATER & SEWER SERVICE**

Contact and/or subcontractor to provide and install new sewer and new copper water service per plans and per code. **Water Meter to be located in Utility/Mech area (see plan for specific location). Locating water meter in future Family Room area is not acceptable.**

### **DIVISION 3 – CONCRETE - FOUNDATION & FLATWORK**

1. All reinforced concrete work shall be done in accordance with the “Building Code Requirements for Reinforced Concrete,” ACI 318, latest edition, and the “Specifications for Structural Concrete for Buildings,” ACI 301, latest edition. All strengths noted below are 28-day strengths.

a. Interior slabs on grade: 3000psi

Water/Cement Ratio (by weight): .5

Slump: 4”

b. Footings: 3,000psi

c. All other poured in place structural concrete: 4,000 psi

d. Exterior concrete shall have 5% minimum entrained air.

2. Provide necessary insulating blankets to ensure concrete cures when temperatures indicate a barrier is needed.

#### **REINFORCING STEEL**

Reinforcing steel shall conform to ASTM A-615, Grade 60.

Welded Wire Mesh shall conform to the latest revised ASTM A-185. Smooth wire fabric shall conform to ASTM A-85, yield strength 60 KSI.

All bars in concrete shall be lapped a minimum of 36 bar diams. (2'-0" min.) at all splices unless noted otherwise.

Splices of horizontal rebar in walls and footings shall be staggered 4'-0" minimum.

Dowels for walls and columns shall be the same size and spacing as the wall/column reinforcing unless noted otherwise.

All bending of reinforcing steel shall conform to the latest adopted edition of the International Residential Code.

### 3100 FOUNDATION

Provide and install footings and foundation walls and slab for the house and porches.

Foundation (widths and depths) and reinforcing as shown on plans are superseded by any local codes or ordinances, which require increases of the same.

Install Delta Footing Barrier (or equal) as a capillary break between the footings and foundation walls.

1. All footing elevations shown are to top of footings.
2. All footings to be centered under walls or columns above, unless noted otherwise.
3. Provide 3" clear cover for all footing reinforcement. Footing rebar shall be #5 continuous. Foundation wall reinforcement shall be #5 rebar at 24" o.c. Each way with dowels to match. Add one #4 bar continuous at the top of the wall.
4. Provide wall footing reinforcing in stock lengths and bend in field as required. Lap bars minimum 42" diameters and stagger splices.
5. Cast dowels in footings to match bars above where reinforced walls or columns occur. Column and wall reinforcing dowels to project 30 bar diameters above top of footing unless noted otherwise. Provide 90-degree bend in footing dowels and straight dowels in wall footings, unless noted otherwise.
6. Sill Fastening: Exterior non-bearing and exterior bearing walls." diameter x 10" anchor bolts with 2" diameter washers, 7" into concrete, spaced at 6'-0" maximum, plus 12" from corners and splices unless otherwise noted on plans.
7. Shore all walls adequately before backfilling and compacting.
8. Wall footings shall be stepped 1 vertical to 2 horizontal at elevation changes unless noted otherwise.
9. No part of the structure shall be placed on frozen soil or foundation. If the building will be under construction during freezing weather, all interior footings shall be depressed 3'-6" below construction grade or insulated for frost protection.

Pipes may pass through structural concrete in sleeves, but shall not be embedded therein. Pipes or ducts exceeding one-third the slab or wall thickness shall not be placed in the structural concrete unless specifically detailed.

Do not place concrete until all reinforcement, conduit, outlet boxes, anchors, sleeves, bolts, or other embedded materials and items are securely and properly fastened in their proper places and position. Sub-contractor shall verify installation of anchor bolts, straps and other anchorage material and items prior to placement of concrete.

Basement floor to be a minimum 3.5" thick and reinforced with welded wire fabric (WWF) with a smooth, steel trowel finish. **Minimum 6-8" base of 3/4" stone aggregate** covered by **2" XPS rigid insulation** and 6 mil vapor barrier. Lap joints in vapor barrier 12" minimum.

### 3130 FOUNDATION DRAINAGE

Provide an exterior and interior perimeter drain tile system consisting of a 4" plastic drain tile sloped to and terminating in a collection **sump** basket with sump pump.

Surround pipe in gravel and wrap gravel in filter fabric.

Install a plastic sump cover designed specifically for sealing a Radon vent to the sump hole. The cover must be bolted down. Provide an outlet and install sump pump. Install piping to discharge sump to daylight per location shown on site plan. **Include backwater/check valve.**

Sump Basin to be PlumbStar USA 18" x 22" Sump Basin (model # PSU1011) with **sump cover,**

**The Original Radon – Sump Dome also by Plumbstar USA (model # PSU1015).**

### 3140 RADON-CONTROL

Provide a sub-slab vent for the Radon Gas by 8" of 3/4-inch stone. Grade and tamp soil to provide solid base. Install the 3/4" stone and install a 6" PVC Tee connected to a 4" PVC pipe in the stone base vented above the roof line to a Schedule 20 PVC varmint guard cap and flashed to the roof with a metal based neoprene boot. The vent should be installed a minimum of 12" above the roof and a minimum of 10' away from any window or other opening that could bring the exhausted radon gases into the residence. Install a continuous 6 mill plastic vapor barrier between the stone and the concrete sealed carefully to the vent pipe. Pour a 4", 3000 psi concrete slab. Float and steel trowel finish. Seal all cracks and control joints with a low VOC polyurethane caulk.

**Install an Energy Star rated radon fan in the attic per plan wired directly to the electrical panel from a junction box installed within 6' of the fan. Use rubber boots to connect the fan to the 4" vent, RadonAway RP140C or approved equal.** Provide and install a manometer for ongoing monitoring of system functionality.

### 3150 FOUNDATION WATERPROOFING

Provide and install Tuff-N-Dri liquid applied waterproofing with Warm-n-Dri R-15 rated foundation/insulation board or R-15 rated XPS rigid insulation board on the exterior of the concrete foundation walls. Tuff-N-Dri waterproofing needs to be adequately cured before applying foundation/insulation board.

### 3200 CONCRETE FLATWORK

Provide and install new basement slab/floor. Basement floor to be a minimum 3.5" thick and reinforced with welded wire fabric (WWF) with a smooth, steel trowel finish. **Minimum 6-8" base of 3/4" stone covered by 2" XPS rigid insulation.** Tape joints in rigid insulation prior to pouring basement slab.

Provide and install new garage slab/floor. Floor to be a minimum of three and one-half (3.5) inches thick with thickened edges and reinforced with welded wire fabric (WWF).

Provide and install new driveway, minimum 4" thickness, 4000 PSI. Install on sound subsoil with Class 5 base material as needed for proper uniformity and drainage. Use clean sound aggregates. Light broom finish. Grade driveway area shall be compacted before installed. Assure proper slope for drainage away from overhead garage door.

Provide and install new walks. Walks from public sidewalk to front porch/stoop, walk from garage to rear entry and carriage walk shall be 4'-0" wide. Both front and rear walks shall have 4" thick concrete with 6x6 10/10 WWF and a 6" layer of class 5 base material. Light broom finish. Grade under sidewalk areas shall be compacted before walks are installed.

For all Concrete Flatwork detail see plans and site plan.

**General Contractor is responsible for inspecting/documenting the condition of the public sidewalk at the time of bidding and commencement of construction and for replacing all sections of public sidewalk that have or are damaged during construction or removed to provide utility access.**

## **DIVISION 4 – MASONRY**

### **4200 – MASONRY BLOCK**

Provide and install a minimum of one course of 6" CMU at the perimeter of the garage slab.  
Provide anchor bolts at 6'-0" o.c. Maximum.

## **DIVISION 5 – METALS**

Bolts, nuts, and screws shall conform to ASTM A-307 Grade "A".  
Structural steel shall be ASTM A-36 unless noted otherwise. Tube steel shall be ASTM A-500 Grade B (Fy=46ksi) unless noted otherwise.

## **DIVISION 6 – CARPENTRY / FRAMING**

### **6100 ROUGH CARPENTRY - FRAMING**

1. Studs, joists, rafters, foundation plates, or sill, planking 2 inches or more in depth, beams, stringers, posts, structural sheathing and similar load-bearing members shall be of at least the minimum grades set forth in the International Residential Code, current applicable edition.

2. Sizes noted and referenced are nominal sizes. See plans for net size when specified.  
All lumber to be kiln dried, free from imperfections which might impair its strength or durability.  
**All composite wood products including plywood and OSB shall meet Formaldehyde emissions requirements of ANSI/HPVA HP-1-2016 & California standard 93120 for low-VOC content. If not compliant with California 93120 must have all exposed edges sealed with low-VOC sealant.**

Sub Floor: OSB, formaldehyde-free, glued and nailed per drawings, except at floors to receive ceramic tile which shall have plywood as the subfloor.

Wall Sheathing: 15/32" OSB unless noted otherwise or approved.

House Wrap: Tyvek, Typar or equal

Roof Sheathing: ½" CDX plywood

Studs: 2"x 4" construction grade 16" o.c. at interior unless noted otherwise 2"x 6" construction grade 16" o.c. at exterior.

Supporting bearing partitions: Bearing partitions perpendicular to joists shall not be offset from the supporting girders, walls or partitions more than the joist depth. Joists under and parallels to bearing partitions shall be doubled.

Underlayment: Provide per recommendations of finish flooring material manufacturer.

Floor and Roof Trusses: Provide all trusses and structural elements required to structure the roof and floors as indicated in the drawings. Truss shop drawings to be provided to Architect and Owner for review. Shop drawings shall include a plan layout plus detailed truss drawings. Note: trusses to be designed to support future solar panels.

a. Manufacturer shall supply to the Architect, Owner and the Building Department calculations and shop drawings for approval of design loads, prior to fabrication. A Professional Engineer registered in the State of Minnesota shall sign all calculations and shop drawings. It shall be the responsibility of the manufacturer to obtain Building Department approval of calculations and shop drawings prior to fabrication.

b. All connectors shall be ICBO approved and of adequate strength to resist stresses due to the loadings involved.

c. Cross bridging and/or bracing shall be provided and detailed as required to adequately brace all trusses. Bridging, headers, corner bracing, nailing, blocking, furring to be according to standard building practices, local codes and ordinances.

d. High roof trusses shall be designed for 40 psf snow load (which may be reduced for slope) plus dead loads. Low trusses (garage and porch) shall be designed for 40 psf snow load (with increases according to Minnesota Building Code Section 1365.0600) plus dead load.

#### STRUCTURAL NOTES & GENERAL NOTES

Structural members including slabs, beams, trusses, columns, and walls are designed for “inplace” loads. Contractor is responsible for bracing, without overstressing, all structural elements as required at any stage until completion of this project. All construction shall be done in accordance with the “International Residential Code” Current Edition, unless noted otherwise.

Contractor shall verify all dimensions and conditions on site before construction is begun. All observed discrepancies shall be reported immediately to the Architect.

#### Design Loads:

Roof Live load 40 psf

Floor Live load 40 psf

Partition 10 psf

Deflection Criteria L/480

#### COLUMNS AND POSTS

Columns and posts located on concrete floors or decks exposed to the weather or to water splash or in basements and which support permanent structures shall be supported by concrete piers or metal pedestals projecting above floor unless approved wood of natural resistance to decay or treated wood is used. The pedestals shall project at least 6 inches above exposed earth and at least 1 inch above such floors.

#### PLATES, SILLS, AND SLEEPERS

All foundation plates or sills and sleepers on a concrete slab, which is in direct contact with earth, and sills which rest on concrete foundations, shall be pressure treated wood all marked or branded by an approved agency. Wood Ledgers (Sill Plates): Pressure treated wood properly anchored and sill sealed. Wood embedded in the ground or in direct contact with the earth and used for the support of permanent structures shall be treated wood. Wood joists or the bottom of wood floors closer than 18 inches, or wood girders closer than inches to the ground under-floor areas and their supports, shall be treated wood or all heartwood of approved naturally durable species as listed in the IRC, applicable edition.

## **DIVISION 7 – THERMAL & MOISTURE PROTECTION**

### **7300 ROOFING**

Shingles: 240#, fiberglass-based asphalt shingle, GAF Timberline, Certainteed Landmark, Owens Corning Duration, dimensional/architectural look shingle, or approved equal.

Ice and Dam Shield: Waterguard Ice Barrier or equal. Provide to 2'-0" back from interior face of exterior wall. Provide at each side of valleys. Also provide at roof to wall connections on vertical wall surface to 2'-0" above line of roofing under flashing. Fasten roofing materials with roofing nails – use no staples.

#### FLASHING

Flashing and counter flashing. Exterior openings exposed to the weather shall be flashed in such a manner as to make them weatherproof. Flashing and counter flashing shall be provided at the junction of the roof and vertical surfaces (walls, etc.). All flashing, counter flashing and coping,

when of metal, shall be of not less than No. 18 U.S. gauge corrosion-resistant metal. Valleys must be metal, inverted "V" Type, 26 gauge. Roof valley flashing shall be provided for shingles as follows: Flash and counter flash at all roof to wall conditions. (Use Waterguard Ice Barrier or equal up side of wall 2'-0" at this condition.) Where exposed to weather, flash all horizontal wood trim butting to exterior finish.

ATTIC VENTILATION – next page-

Roof and Soffit Venting: Continuous soffit venting, ridge vents to be Shingle Vent II by AirVent, Inc. and additional roof vents as necessary to meet code requirements. Coordinate location of any required additional vents with Project Manager.

#### **7640 EXTERIOR SIDING / TRIM / SOFFIT / FASCIA**

Exterior Siding and related trim and accessories: LP Smart Side, pre-finished engineered lap siding, shakes, board and batten and trim. See plans/drawings for siding/trim/accessories sizing/dimensions and location. Note: Lap siding to be 8" cedar wood grain finish (6-7/8" reveal). Trim to be textured finish. LP Smartside shingles/shakes, panels and trim boards to be prefinished, LP Diamond Kote or LP ExpertFinish. Developer to provide color selections. Siding and trim to be installed per manufacturer's instructions/specifications and per the plans. **Shakes/shingles on Craftsman plan to be installed straight-edge not staggered. Board and batten on Folk plan to be 7/16" thick textured LP Panel with 1"x3" textured LP Trim.** Soffit and Fascia to be aluminum, manufactured by Rollex, Alcoa or approved equal. Minimum .024 gauge. Project Manager to select color. Provide Tyvek or equivalent high-performance house wrap and install per manufacturer's instructions.

#### **7650 GUTTERS AND DOWNSPOUTS**

Provide 5" box type, .032 painted seamless aluminum gutters, 3"x4" downspouts and extensions. Provide 12"x13" concrete splash blocks. Gutters must be installed at roof and porch. No gutter shall empty directly onto another roof surface. All downspouts must empty at grade. Downspouts to be located at all four corners of the house.

#### **7660 INSULATION & AIR SEALING**

**Walls: R-20- batts at all 2x6 exterior walls with 1" R-5 rigid insulation over exterior sheathing and under siding.**

**Cantilever: Insulate to R-30 with batt insulation.**

**Rim joists: 3" of closed-cell sprayed polyurethane foam. (to R-21)**

**Attic/Ceilings: Attic insulation to be R-60 plus blown fiberglass with 6 mil poly vapor barrier.**

**Foundation –insulate to R-15 – Exterior – 3" XPS rigid insulation with R-15 rating and/or R-15 rated (3-1/2") Warm-N-Dri foundation board. Refer to plans for detail.**

**Basement slab – install 2" of XPS rigid foam board (with R-10 rating) insulation under concrete basement slab.**

**Install batt insulation on all interior bathroom walls as sound insulator.**

Seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal all top plate and bottom plate penetrations. If the foundation masonry wall is open core concrete block seal the tops of the block with expanding foam. Seal all penetrations created by plumbing, gas lines, electrical boxes and outlets. Seal large accessible gaps around windows between house framing and window frame, do not use high expansive foam on these. Take care to seal all joints without excess sealant. Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with fire rated caulk.

Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation. Provide rodent and corrosion-proof screens for openings greater than .25 inches.

#### VAPOR BARRIER -

Install vapor barriers on the warm side of all walls and 2nd floor ceilings as shown on Drawings. Vapor barriers to be 6 mil polyethylene. All rips or improperly sealed joints shall be repaired prior to installation of gypsum sheathing.

## DIVISION 8 – DOORS AND WINDOWS

### 8200 DOORS – EXTERIOR & INTERIOR

#### Exterior Doors to be Energy Star rated with .25 U-Value or less and .25 SHGC

Front entry door shall be 36 in. x 80 in. less than 1/2 Lite Fiberglass Prehung Front Door , **Energy Star qualified with .25 U-Value or less and .25 SHGC** or approved equal. Paint to finish. Developer to select color.

- Rear entry door shall be 36 in. x 80 in. Blinds between glass 1/2 Lite Fiberglass Prehung Door, **Energy Star qualified with .25 U-Value or less and .25 SHGC**, or approved equal. Paint to finish.
- Garage service door shall be flush metal - bored for deadbolt lock. Paint to finish.
- Storm door at front entry Andersen 3000 Series Self-Storing Storm Door full view and back entry: Larsen midview aluminum storm door. Developer to select finish color.
- 16'x7' Overhead Garage door shall be pre-finished paneled 24-gauge steel door and ½ horsepower power chain drive overhead door operation and all track and hardware required. Midland Valucraft Plus or equal. Color to be determined by Project Manager.

#### INTERIOR DOORS

Interior doors shall be 34" Masonite solid core 2-Panel, square, or approved equal, Project Manager to approve. See plans for sizes and swings.

#### DOOR HARDWARE/MISC

- Exterior and Interior door hardware to be Kwikset Juno, oil rubbed bronze or approved equal.
- Equip front and rear door with deadbolts and deadlocking latches.
- Deadbolts shall contain hardened inserts or equivalent.
- Locksets to be single cylinder 1-1/2" throw tumbler dead bolts in addition to key in knob entrance locks (keyed alike). Provide solid backing at latch area of entry doors.
- Overhead and sectional garage doors shall be secured with a cylinder lock, pad with a hardened steel shackle, metal side bar bolt or equivalent when not otherwise locked by electrical power operation.
- All entry doors to be weather-stripped.
- Sills to be of width to provide full seal for bottom of storm door.
- All interior and exterior doors shall have three hinges – oil rubbed bronze finish.

**8500 WINDOWS**

All windows to have a U-Factor/Value of .25 or less with SHGC of any rating. Install Andersen 100 Series – Low-E Smart Sun w/ HeatLock with Argon, U-Value of .25 or less with SHGC of any.

See window schedule. Tempered glass shall be used where identified/required by law/code. Obscure glass to be used in bathrooms in U-factor and SHGC can be met. Interior finish color to be white. Project Manager to select exterior finish color and approve window Finelight grille pattern. Approximate rough openings are noted on plan. Submit shop drawings with rough openings on all windows to General Contractor. All windows must have locks and lifts. Interior jambs to be painted to match interior trim. Install screens at all windows, including all basement windows. All storm/screen units must be made of fiberglass screen cloth. Provide window grids per plans. Provide and install 1” vinyl or metal mini-blinds at all windows, interior mount.

**DIVISION 9 – FINISHES**

ROOM FINISH SCHEDULE

ROOM	FLOOR	BASE	TRIM	WALLS	CLG’S
Rear Entry	LVP	Painted	Painted	Painted	Smooth
Powder (1/2 Bath)	LVP	Painted	Painted	Painted	Smooth
Front Entry	LVP	Painted	Painted	Painted	Smooth
Hall-1 <sup>st</sup> Floor	LVP	Painted	Painted	Painted	Smooth
Living Room	LVP	Painted	Painted	Painted	Smooth
Dining	LVP	Painted	Painted	Painted	Smooth
Kitchen	LVP	Painted	Painted	Painted	Smooth
Bedrooms	Carpet	Painted	Painted	Painted	Knockdown
Hall – 2 <sup>nd</sup> floor	Carpet	Painted	Painted	Painted	Knockdown
Loft/Stairs	Carpet	Painted	Painted	Painted	Knockdown
Bath-Upper	TILE	TILE	Painted	Painted	Knockdown
Basement	Concrete	N/A	N/A		taped rock

Closet finish to match room in which it is located.

**9200 DRYWALL & BACKERBOARD**

ALL GYPSUM WALLBOARD TO BE COMPOSED OF AT LEAST 25% POST-CONSUMER RECYCLED CONTENT OR AT LEAST 50% POST-INDUSTRIAL RECYCLED CONTENT.

Gypsum board – Interior walls shall be 1/2” drywall taped and sanded. Interior ceilings shall be 5/8” drywall taped and finished per finish schedule. All gypsum wallboard shall be installed in accordance with the provisions of the applicable codes. **All drywall in bathrooms to be paper-less drywall – Georgia Pacific DensArmor Plus, or approved equal.**

Provide all metal trim, nails, screws, tapes, compound and adhesive. Provide protective edges at exposed gypsum board edges, especially at basement stair.

Gypsum wallboard shall not be installed until weather protection for installation is provided. All edges and ends of gypsum wallboard shall occur on the framing, members, except those edges and ends which are perpendicular to the framing members. All edges and ends of gypsum wallboard shall be in moderate contact except in concealed spaces where fire resistive construction or diaphragm action is not required.

The size and spacing of fasteners shall comply with code. Fasteners shall be spaced not less than 3/8-inch from edges and ends of gypsum wallboard. Fasteners at the top and bottom



plates of vertical assemblies, or the edges and ends of horizontal assemblies, or the edges and ends of horizontal assembly's perpendicular to support, and at the wall line may be omitted except on fire-resistive assemblies. Fastener's shall be applied in such a manner as not to fracture the face paper with the fastener head.

#### BACKER BOARD

Install 1/2" fiberglass reinforced cement composition boards such as DurockR or HardieBacker™ in areas specified to accept ceramic tile. Space edges 1/4" from adjoining surfaces and fasten with minimum 1-1/4" long No. 8 x 0.375" HD self-drilling corrosion-resistant ribbed wafer-head screws (i.e. High-Low Rock On screws) designed specifically for backer board. Use product specified by manufacturer for particular application (such as walls or floors). For floors bond backer board to plywood subfloor with thin set mortar using a 1/4' square notched trowel. On walls, all edges of backer boards must be supported by full face 2' framing secured to the structure. On floors, backer board must be installed on 3/4' plywood over joists 16" on center or the joist/subfloor assembly must meet the manufacturer's specifications.

#### 9300 PAINTING – EXTERIOR & INTERIOR

Delivery, Storage, and Handling to conform to applicable code for flame/fuel/smoke rating requirements for finishes. Hirshfield's, Sherwin Williams or approved equal—note requirement on VOC's. All paints to meet Green Seal Standard GS-11.

#### EXTERIOR

Prime and paint or stain all exposed surfaces including all siding, trim, porch posts, rails, spindles, decking and skirting.

Apply all finish coats as soon as possible or within 180 days of installation.

Siding and Trim - Apply two coats of high-quality acrylic latex paint, Sherwin Williams or Hirshfield's SELECT 1000 – Professional 100% Acrylic Exterior Coating.

Follow the coating manufacturer's application and maintenance instructions.

Re-prime factory primed hardboard where needed with Hirshfield's #4250 Acrylic Primer.

Unprimed factory hardboard also requires 1 coat of #4250 Acrylic Primer.

Cedar decking components – Apply 2 coats of Cabot Wood Toned Deck and Siding Stain or approved equal. Project Manager to select finish and color.

#### INTERIOR

PRIMER: Sherwin Williams or Hirshfield's Contractor Select Hi-Build Primer or Owner approved substitute.

PAINTS: Walls to be painted with Sherwin Williams or Hirshfield's Contractor Select High Hide low odor low VOC interior flat finish paint or Owner approved substitutes. Doors and trim/millwork to be painted with Satin finish paint, Sherwin Williams Hirshfield's Platinum Ceramic interior satin latex enamel paint or approved substitute. Submit two samples to Owner of 2"x 2" in size of paint samples for both interior and exterior selections for approval. **Interior Paint VOC levels not to exceed 50 g/l (grams/liter) for flats and non-flats, 100 g/l for floors and 250 g/l for any anti-corrosive paints used.** No spray texture in kitchen or baths.

Deliver products to site in scaled and labeled containers; inspect to verify acceptance.

Container labeling to include manufacturer's name, type of paint, brand name, brand code, VOC level, coverage, surface preparation, drying time, clean-up color designation, and instructions for mixing and reducing. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area, unless required otherwise by manufacturer's instructions. Take precautionary measures to prevent fire hazards and spontaneous combustion.

#### Extra Stock

Provide a one-gallon container of each color to owner. Leave in basement. Label each container with color, texture, locations of usage, in addition to the manufacturer's label.

#### Inspection

Verify that all surfaces are ready to receive work as instructed by the product manufacturer. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application. Beginning of installation means acceptance of existing surfaces.

#### Preparation

Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces of finishing. "Bagging" will not be accepted. Correct minor defects and clean surfaces which affect painting work.

Protect elements surrounding the work to be painted from damage or disfiguration. Repair damage to other surfaces caused by work of this section. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces. Remove empty paint containers from site.

CEILINGS & WALLS: Apply products in accordance with manufacturer's instructions. Do not apply finishes to surfaces that are not dry. Apply each coat to uniform finish. Prime back and field cut surfaces of interior and exterior woodwork with primer paint. Gypsum wallboard to receive one coat of primer, and two coats of latex, up to 3 colors to be selected. Walls under sinks must be painted. All woodwork to be painted, – color to be determined by owner. Interior surfaces of closet doors shall be finished the same as the outer side. Closets must be painted.

Tape and paint basement stairwell walls, and paint treads, stringers, and risers.

### **9400 WOODWORK / FINISH CARPENTRY**

#### INTERIOR

Trim: Install new paint-grade millwork, square edge style throughout the house, baseboards 1x6 with ¾" shoe and door & window casings 5-1/2" Header trim and 3-1/2" side casing. Note: First floor Powder (½ bath) to have wood base/trim to match rest of first floor. (upper bath to have ceramic tile base). See plans for typical door and window trim.

Railings: Paint grade wood, color to be selected by Project Manager.

Posts & Balusters: Paint grade square balusters and box newel painted to match rail.

#### EXTERIOR

See plans for exterior column, post, rail, baluster and skirting detail.

#### ATTIC ACCESS

Install picture frame trim around attic access with a minimum size of 22"x30".

Attic access must be openable to check insulation at final inspection.

### **9600 FLOORING – TILE / LUXURY VINYL PLANK (LVP)/ CARPET**

#### TILE

Daltile 12 x 24 Porcelain Tile Nova Falls Gray – Model # NP101224HD1P6 SKU # 1002820802 available @ Home Depot or approved equal. Grout color: light gray to match tile color. Ceramic to have a screwed and glued cement board underlayment as per manufacture recommendations. Tile flooring to have ceramic tile base.

#### LVP- Luxury Vinyl Plank

LVP to be EJ Welch – Style: Rigid Core, Color: #6009-3, 48"x9" wide planks, minimum 15 yr. warranty, SCS FloorScore certified, or approved equal. Underlayment for LVP flooring: FloorMuffler UltraSeal underlayment or approved equal.

## CARPETING

Carpeting and pad to be Carpet & Rug Institute (CRI) Green Label Plus certified: EJ Welch, Style: Better Plus, Color: #641 Smooth Sail or TrafficMaster – Thoroughbred II Color: Chestnut – Model # EF286-1858 SKU # 763022 @ Home Depot. or approved equal.

Carpet pad to be 6 lb. min. density, 1/2" min. gauge recycled fiber or prime pad. Stretch carpet to eliminate puckers, scallops & ripples. Cover entire floor including closets using tackless strips to fasten carpet at walls and metal transition strips at transitions to other floor surfaces.

## DIVISION 10 – CABINETS / SPECIALTIES & ACCESSORIES

### 10100 CABINETS

Kitchen cabinets and bath vanities to be Mid Continent-Signature Series-Maple -Concord style door, painted finish or Armstrong Rutledge, maple, painted finish, or approved equal. Shaker style door (Flat panel square) with slab drawer front and laminate interiors. Finish paint color to be selected by Project manager. Contractor to provide and install cabinet door and drawer hardware (pulls) to be selected by Project Manager. Kitchen and bath cabinets to be certified under the Kitchen Cabinet Manufacturers Association's (KCMA) Environmental Stewardship Cert. Program.

### 10200 COUNTER TOPS & VANITY TOPS

Kitchen countertops to be granite or approved equal with 4" backsplash. Color/style to be selected by Project Manager. Vanity Tops to be cultured marble – solid white or same granite as kitchen countertop.

### 10300 BATHROOM ACCESSORIES

Toilet accessories shall be approved or selected by Project Manager.

2 towel bars at upper bath.

1 towel ring at upper bath.

1 robe hook at upper bath.

1 towel ring at first floor Powder Room (1/2 bath).

Toilet paper holder at each bath.

Mirrors: plate glass as noted on prints. Pencil edge, 36" high and full width of vanity top.

### 10400 CLOSET ACCESSORIES

Provide & install metal brackets, white melamine shelving and wood clothes rods per plans.

### 10500 POSTAL SPECIALTIES

Mailbox at main entry door with full size magazine capability to meet postal service requirements, finish/color to be selected by Project Manager.

House numbers at front of home and at garage facing alley to be metal and no less than 4" in size.

To be selected by Project Manager

### TYPICAL MOUNTING HEIGHTS – FROM FLOOR

Shower head – to center of arm: 6'-4"

Shower curtain rod: 6'-6"

Towel bar/ring: 4'-0"

Closet Shelf & rod: 5'-2"

Electrical panel: 5'-0"

Electrical outlets: 12"  
Electric outlets above counter: 6" above top of backsplash.  
Light switch: 4'-0"  
Thermostats: 5'-0" to top  
Telephone jack: 12"  
Wall telephone: 4'-6"  
Heat supply registers in floor  
Cold air returns: 8" to bottom of walls.

## **DIVISION 11 – EQUIPMENT - APPLIANCES**

### **11100 RESIDENTIAL EQUIPMENT (APPLIANCES)**

**All refrigerators, dishwashers, clothes washers and clothes dryers to be Energy Star qualified.** Furnish & install, appliances to be hooked up, leveled & ready to operate.

Refrigerator-Whirlpool WRS331SDHM 21 cu ft. refrigerator & ice-maker, Energy Star-rated; or approved equal

Dishwasher-Whirlpool – WDF520PDAM: 24" wide built-in, tall tub, 3 cycle, 4 option, Energy Star rated or approved equal

Gas Range-Whirlpool - WFG510S0AS: 30" wide free-standing, with pilotless electronic ignition, sealed burners, self- cleaning oven, anti-tip device and clock/timer, or app. equal.

Microwave/ Vent Hood Combination (venting to exterior)-Whirlpool - MH31017AS: 30" wide, 1.7 cu. ft., 1000-watt oven, 2-speed venting 170/300 cfm, or approved equal.

Washer – GE -GTW680BSJSW: Energy Star rated - top load, 3.8 cu. ft. 27.5" wide 27" deep, 43" high & PFWMH4PR 4' washer hoses, or approved equal.

Dryer-GE -GTD65GBSJWS: natural gas, Energy Star rated, front load 7.0 cu. ft. 29" wide, 27.75" deep, 43" high, or approved equal.

Dehumidifier - Provide and install an Energy Star "basement-rated" dehumidifier, with hose extension to floor drain in order to drain continuously.

## **DIVISION 15 - Mechanical & Plumbing`**

### **15100 – HEATING / COOLING / VENTILATION**

Building Performance Standard - **Project to follow under Energy Star New Homes Version 3.2 (Rev. 13) and be certified under DOE Zero Energy Ready Home (ZERH) Single Family Homes National Program Requirements Version 2.** Heating Contractor shall provide all necessary labor and material and perform all heating work of every nature whatsoever in the installation of heating plant of sufficient size to properly heat all finished parts of the house as per the requirements of the I.R.C. Forced Air System: Forced air heating shall in all cases shall conform to local ordinances. The heating plant shall be sized and selected as follows: Use the Air Conditioning Contractors of America (ACCA) 8th Edition of their Manual J Heat loss calculation tool <http://www.acca.org/tech/manual J/> (calculate manual J based on the new building envelope), and use ACCA's Manual S for equipment selection. NOTE: Provide both Manual J & S reports with initial Draw documents. Size furnace to the living unit considering any areas which may be added or subtracted from the plan.

Provide a central ducted cold air return and ensure easy access, good fit for easy replacement of air filter. **Install MERV 8 or better furnace air filter.** An exterior return air filter box shall be installed on one side, both sides, or bottom of new furnace. Seal all exposed duct joints as a part of this item with Duct Mastic.

General design, furnish and install forced air duct work to furnace to heat living areas and basement to min. of 68 degrees F. with outside temp –20 degrees F. Provide transfer ducts for balanced pressure between rooms: Tamarack Return Air Pathway (RAP) 12.6 (12" x 6") Sound and light restricted by-pass grill to air balance forced air system. Install in stud cavity between specified room and common space to provide return air. Seal to wall finish and install flange trim.

Heat loss/gain calculations shall be in accordance with the procedures contained in the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) "Handbook of Fundamentals" or other nationally recognized procedure.

Submit shop drawings to General Contractor for approval. Shop drawings shall include heat loss calculations, furnace data, grill and register data and duct layout.

**The City of Minneapolis enforces the Administrative section of the Energy Code which prohibits the use of the permanent furnace during the construction period. If heat is required, provide and install a temporary unit(s). Protect all duct openings from debris during construction and vacuum out ducts prior to installing registers/grills. Verify furnace filter is 8 MERV or better, new and clean at time of final inspection.**

**HEATING:** Upon completion of construction **(after all dust producing construction activities)**, install high-efficiency, dual stage, **96% AFUE** or greater, sealed combustion natural gas furnace with variable speed ECM motor: Goodman GMVC96 or approved equal on 2" concrete pad. New furnace to be vented with PVC piping per manufacturer's specifications. New furnace will have minimum limited warranties of: 20 years on heat exchangers; 5 years on parts. Include auto set back thermostat controls, vent pipe & new shut-off valve.

**COOLING:** Install 1.5 ton, minimum **14 SEER** or better air conditioner with AHRI matched evaporator coil – Goodman GSX or approved equal.

**VENTILATION: Whole-house mechanical ventilation system efficiency 1.2cfm/W balanced with heat exchange, 65% ASRE.**

**ERV: Install Broan AI Series / Virtuo - B160E65RT (top ports)/B160E65RS (side ports) 150 CFM ERV. Install Broan wall control unit VAUTOW (VC0184) to be located adjacent to system.**

**BATHROOM FANS:** Install **Energy Star** rated low sone ceiling mounted exhaust fans w/light, vented to the exterior. Upper floor bath 80 CFM minimum and ½ Bath 50 CFM Install rigid metal duct, vent to the exterior ideally through a wall/gable end using a 4" hooded vent with damper.

All duct seams shall be sealed with duct mastic. Insulate the ductwork with foil faced R 6 minimum duct insulation. Air seal fan/light assembly to the ceiling with low VOC caulk. Ventilation system must satisfy the fresh air requirements of ASHRAE 62.2-2010. **DRYER:** entire vent to be 4" rigid metal vent tubing from the specified dryer location, vented to the exterior, with a back-flow preventer and NO screening at DryerBox. **No flex ducting at dryer.** Do not fasten with nails, screws or other fasteners that protrude into the interior of the exhaust duct. Seal all seams in the system with duct mastic or aluminum foil tape (no duct tape) or clamps. Heating contractor to vent all bath fans, range hood fan and dryer vent.

Kitchen Range hood or OTR Microwave/Hood vented to outside, intermittent rate of 100 CFM.

**Ventilate the home with outside air at the highest rate and duration practical during the period between finishing and occupancy.**

**THERMOSTAT:** Z-Wave Plus programmable touchscreen thermostat, Energy Star rated, located on main floor. NOTE: Z-WAVE PLUS THERMOSTAT IS NEEDED TO COMMUNICATE WITH THE TO BE INSTALLED LYRIC PANEL/SECURITY SYSTEM.

## 15500 PLUMBING

Plumbing contractor shall provide all labor and materials and perform all plumbing work of every nature whatsoever to be done. All plumbing shall be properly installed and all connections thoroughly tested, and shall be installed according to local ordinance.

See plan for water line/meter location. Provide gas line connection and pipe to clothes dryer and range locations. Provide for all fixtures, supply lines, drain lines. full port ball type shut-off valves & escutcheon plates.

**WATER PIPING:** PEX tubing and Type M copper tubing may be used for water piping when piping is above ground, as U.P.C. No exposed pex in finished areas. Exposed pipe in finished areas to be chromed copper with matching Escutcheons

Standards. NOTE: All copper is to be soldered (no compression fittings) & all PVC fittings glued. All PEX to be Zurn or approved equal with polymer fittings No water, soil, or waste pipe shall be installed or permitted outside of a building or in an exterior wall, unless where necessary, adequate provision is made to protect such pipe from freezing. Piping subject to undue corrosion, erosion, or mechanical damage shall be protected in an approved manner. Insulate exposed hot and cold water mains with closed cell polyethylene slip-on pipe insulation, sized to fit the pipe's diameter. Seal seams with either 5 mil Pipe Insulation sealing tape or Closure Clips designed for pipe insulation placed every 4 inches. Seal all butt joints between sections of pipe with 5 mil Pipe Insulation sealing tape. Neatly miter all angled junctions.

**WATER HEATER:** Provide a Energy Star rated, 50-gallon heat pump water heater with a UEF equal or greater than 3.75 and First Hour Rating of 67 gallons or better. Rheem Performance Prestige ProTerra model PROPH50 T2 RH375-30 or AO Smith Voltex model HPTU-50N or approved equal.

Include pressure & temperature relief valve/discharge tube to within 6" of floor, condensate line, owner's use and care manual and all duct work if required to vent to exterior. Provide separate 30 amp electrical circuit. HWH to be installed with a polypropylene (plastic) drain pan (not aluminum).

**PLUMBING FIXTURES:** to be as follows:

**All bathroom sink faucets and showerhead to be WaterSense labeled.**

**TUB & SHOWER:** Sterling Advantage™, 60" x 30" x 72" Product #: 61030126 with backer boards; complete with lever operated pop up drain and overflow, PVC waste, single lever shower diverter, shower rod.

**TUB & SHOWER FAUCET:** Delta tub/shower faucet and a shower head with a maximum 1.5 GPM flow rate. Provide shower curtain rod screwed into wall.

**PEDESTAL SINK:** Sterling 442124 Sacramento 21" x 18" with 4" faucet holes, or approved equal. Color to be white.

**PEDESTAL & VANITY FAUCETS:** Sterling 1.0 GPM or less, or approved equal

**TOILETS:** American Standard FloWise Compact Cadet 1.28 GPF low-flo toilet in white, or any commode tested through the latest "Maximum Performance" (MaP) testing sponsored by Canadian Water and Wastewater Association (CWWA), the California Urban Water Conservation Council (CUWCC), the U.S.-Canadian Alliance for Water Efficiency (AWE) and Veritec Consulting Inc. that has shown to score 800 or better on the MaP Flush Performance test (grams of solid waste removed in a single flush). Include a manufacturer's approved plastic or pressed wood white seat, supply pipe, shut-off valve, and wax seal.

**KITCHEN SINK:** 22 gauge 33"x22"x7" double bowl, stainless steel, self rimming kitchen sink.

**KITCHEN FAUCET:** Delta, chrome faucet, rated at **1.5 GPM or less**, with a lifetime drip-free warranty, **Tub/Shower Faucet:** chrome plated brass shower head with a maximum 1.5 gallons per minute flow rate. Include arm where required. Note: any low-flow showerhead should be controlled by a valve that has been designed, tested, and verified to function safely at the reduced flow rate.

**HOSE BIBBS:** Provide 2 anti-siphon, frost-proof hose bibs as located on plan.

Floor drains: Provide in utility area basement – see plan.

Gas Dryer: Pipe to dryer location and provide valve. Gas Range: Pipe to range location and provide valve. Install water line to refrigerator. Provide hookups for washer and dryer. Location shown on plan.

Plumber to provide spec sheets showing fixtures installed meet the specified flow rates.

## **DIVISION 16 –ELECTRICAL**

### **16100 ELECTRICAL WIRING / SWITCHES & OUTLETS / LIGHTING FIXTURES**

All work shall be in accordance with all codes, rules and regulations of governing agencies and shall comply with the requirements of the serving power and communications companies. Aluminum wire shall not be used in electrical wiring within the dwelling unit.

#### **INSTALLATION**

1. All equipment installed outdoors and exposed to weather shall be “weather-proof”.
2. Receptacles in kitchen and bathroom shall be installed above work top unless otherwise noted on plans.
3. Receptacles shall be installed vertically at 12” (approx.) above floor.
4. Wall switches to be above floor as determined by the Architect (42” above floor, unless noted otherwise).
5. Provide two 20-amp small appliance circuits at the Kitchen, Dining Room, and Pantry.
6. Provide a separate 20-amp laundry circuit at basement laundry.
7. Provide ground fault circuit interrupter (GFI) protection at all Bathroom, Powder Room, outdoor receptacles, garages and within 4’-0” of the kitchen sink.
8. Receptacles shall be installed to that no point along with floor line in any wall space more than 6 feet, measured horizontally, from an outlet in that space.
9. In kitchen and dining areas a receptacles outlet shall be installed at each counter space wider than 12 inches.
10. A receptacle outlet shall be installed in any usable wall space 2 feet or more in width.
11. All equipment and materials furnished and installed under this section, shall be guaranteed by the Contractor for a period of one year from the date of acceptance of the work by the Owner

Service to be 200 Amp. Provide 200 Amp. /20 circuit breaker capacity. Minimum 6 circuits.

Circuit breaker service location shall be in Mechanical area.

Provide separate furnace circuits.

Service wiring to be provided for: Range, micro-hood, bath fans, TV-cable outlets, sump pump and attic radon fan. Install underground service to garage. All by electrical contractor.

#### **SWITCHES AND OUTLETS**

Provide wall switches and duplex receptacle outlets as indicated and as required by the current National Electric Code. Switches to be silent type. Color shall be white for switches, outlets and cover plates.

Provide outlet for for portable basement dehumidifier unit and sump pump. **Install audible GFCI outlet at sump pump outlet.**

Garbage Disposer: install on circuit separate from dishwasher and provide outlet and switch.

Provide dedicated outlet for range and dryer with 20 Amp service.

Provide switched outlet for radon control fan in attic.

**Provide outlet for security system next to electrical panel box.**

Exterior receptacles: Provide one GFCI WP at each exterior door as indicated on drawings.

Garage: two outlets and a ceiling-mounted receptacle for a garage door opener.

**Garage: install a 208/240V 30A receptacle in garage. Identify this circuit in the electrical panel as "Electric Vehicle Charging."**

**Solar PV Ready: Install 1" electric metallic tube (EMT) conduit or other 1" code compliant conduit from the attic space to within 8 feet of the electric service panel in mechanical area that terminates to a junction box. Cap and label both ends "Solar PV Ready".**

**Install or reserve space in electrical panel for future installation of a dual pole circuit breaker for use by the PV system. Label as "Future PV" in electrical panel.**

**ASHP Ready- Individual branch circuit outlet installed to facilitate future wiring for heat pump installation. Circuit labeled as "For future Heat Pump."**

Door Chimes: Provide front door operation. "Nutone" or equal by electrical.

Smoke Detectors: Provide and install hardwired photoelectric smoke detectors with battery back-up, one per floor, as well as one per bedroom, and others to code.

**Carbon Monoxide Detector: Provide and install hardwired carbon monoxide detectors in each sleeping room and additional if needed per code requirements.**

Telephone / data / cable TV - Cat5 wiring and receptacles to be provided, three (3) jacks: one each at Kitchen, Living Room and Bedroom #1.

#### **LIGHTING –**

**All light fixtures to be Energy Star qualified, bulbs provided to be LEDs only with minimum efficacy of 45 lumens/watt.** Exterior fixtures equipped with daylight sensors (photocells) or timers/ motion sensors. Any selectable lighting to be set @ 3000K. Contractor is responsible for providing light fixtures and ceiling fans. **Owner/Project Manager will select fixtures with the \$1,800 light fixture allowance.** Electrician to install light fixtures per plans.

At rear of house provide a double flood motion light at sufficient elevation to illuminate rear yard; controlled by an interior switch. Garage to have motion or dusk-to-dawn photo sensor light above overhead door and wall mount fixture at service door with switch on interior of garage.

#### **SECURITY SYSTEM**

Owner will provide for security system and installation. Coordinate with Owner, electrical and other sub-contractors on installation of system by others. Basic system should include wiring of all exterior first floor doors, installation of motion detectors at first floor and basement. Contractor is responsible for all false alarm call and fines from City of Minneapolis during construction until the issuance of the Cert of Occupancy.

**Items highlighted in Green are either Enterprise Green Communities requirements, Energy Star for New Homes V3.2 requirements, or DOE Zero Energy Ready Home (ZERH) Version 2 requirements. Items highlighted in orange are Indoor airPLUS construction specifications as part of EPA Indoor airPLUS V1 (Rev. 04). Any questions regarding these requirements please contact the Project Manager.**



# PRG – INFILL SINGLE FAMILY

## FOLK ELEVATION

1818 SHERIDAN AVE. N., MPLS.

### SQUARE FOOTAGES

FOUNDATION	- 912 SQ. FT. UNFINISHED
MAIN FLOOR	- 912 SQ. FT. FINISHED
UPPER FLOOR	- 944 SQ. FT. FINISHED
GARAGE	- 440 SQ. FT.
PORCHES	- 120 SQ. FT.

### ZONING REQUIREMENTS

ZONED UN2 – URBAN NEIGHBORHOOD DISTRICT SUBJECT TO BF12 – INTERIOR 2 BUILT FORM OVERLAY DISTRICT

MINIMUM LOT AREA – 5,000 SQ. FT.

MINIMUM LOT WIDTH – 40 FEET

MINIMUM FLOOR AREA RATION – 0.5 OR 2,500 SQ. FT. OF GROSS FLOOR AREA, WHICHEVER IS GREATER

MAXIMUM LOT COVERAGE – 45% BY STRUCTURES

MAXIMUM IMPERVIOUS SURFACE COVERAGE – 60%

MAXIMUM HEIGHT – 2.5 STORIES OR 28 FT. (THE HIGHEST POINT OF A GABLE, HIP OR GAMBREL ROOF SHALL NOT EXCEED 33 FEET)

BUILDING SETBACKS DETERMINED BY ZONING DISTRICT (THE REQUIRED FRONT YARD SHALL BE INCREASED WHERE THE ESTABLISHED FRONT YARD OF THE CLOSEST PRINCIPAL BUILDING ORIGINALLY DESIGNED FOR RESIDENTIAL PURPOSES LOCATED ON THE SAME BLOCK FACE ON EITHER SIDE OF THE PROPERTY EXCEEDS THE FRONT YARD REQUIRED BY THE ZONING DISTRICT. IN SUCH CASE, THE REQUIRED FRONT YARD SHALL BE NOT LESS THAN SUCH ESTABLISHED FRONT YARD PROVIDED THAT WHERE THERE ARE PRINCIPAL STRUCTURES ORIGINALLY DESIGNED FOR RESIDENTIAL PURPOSES ON BOTH SIDES OF THE PROPERTY. THE REQUIRED FRONT YARD SHALL BE NOT LESS THAN THAT ESTABLISHED BY A LINE JOINING THE NEAREST FRONT CORNERS OF BOTH BUILDINGS.)

BUILDING SETBACKS: SIDE – DETERMINED BY LOT WIDTH

BUILDING SETBACKS: REAR – DETERMINED BY LOT WIDTH

### ACCESSORY STRUCTURES:

A DETACHED ACCESSORY STRUCTURE SHALL NOT EXCEED THE HEIGHT OF THE PRINCIPAL STRUCTURE OR 12 FT., WHICHEVER IS LESS.

THE MAXIMUM FLOOR AREA OF ALL DETACHED ACCESSORY STRUCTURES, AND ANY ATTACHED ACCESSORY USE DESIGNED OR INTENDED TO BE USED FOR THE PARKING OF VEHICLES, SHALL NOT EXCEED 676 SQ. FT. OR 10% OF THE LOT AREA, WHICHEVER IS GREATER, NOT TO EXCEED 1,000 SQ. FT.

NO DETACHED ACCESSORY BUILDING OR OPEN PARKING SPACE SHALL BE LOCATED CLOSER THAN 6 FEET FROM A DWELLING.

THE INTERIOR SIDE YARD REQUIREMENT FOR A DETACHED ACCESSORY BUILDING MAY BE REDUCED TO 1 FOOT WHEN THE ENTIRE ACCESSORY BUILDING IS LOCATED IN THE REAR 40 FEET OR REAR 20% OF THE LOT, WHICHEVER IS GREATER, PROVIDED THAT THE PRINCIPAL STRUCTURE ON THE ADJOINING LOT HAS ITS REAR WALL AT LEAST 40 FEET FROM THE REAR LOT LINE.

THE REAR YARD REQUIREMENT FOR A DETACHED ACCESSORY BUILDING MAY BE REDUCED TO 1 FOOT, EXCEPT WHERE VEHICLE ACCESS DOORS FACE THE REAR LOT LINE, IN WHICH CASE NO REDUCTION OF THE REQUIRED YARD IS PERMITTED. (AS PER CITY OF MINNEAPOLIS ZONING CODE)

### SHEET INDEX

CS – COVER SHEET

A1 – FOUNDATION PLANS

A2 – MAIN AND UPPER FLR. PLANS / INT. ELEV.

A3 – ELEVATIONS / ROOF PLANS

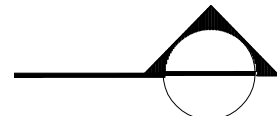
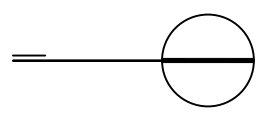

A4 – SECTIONS / DETAILS

E5 – ELECTRICAL PLANS

BW – BRACEWALL PLANS

BW2 – BRACEWALL DETAILS

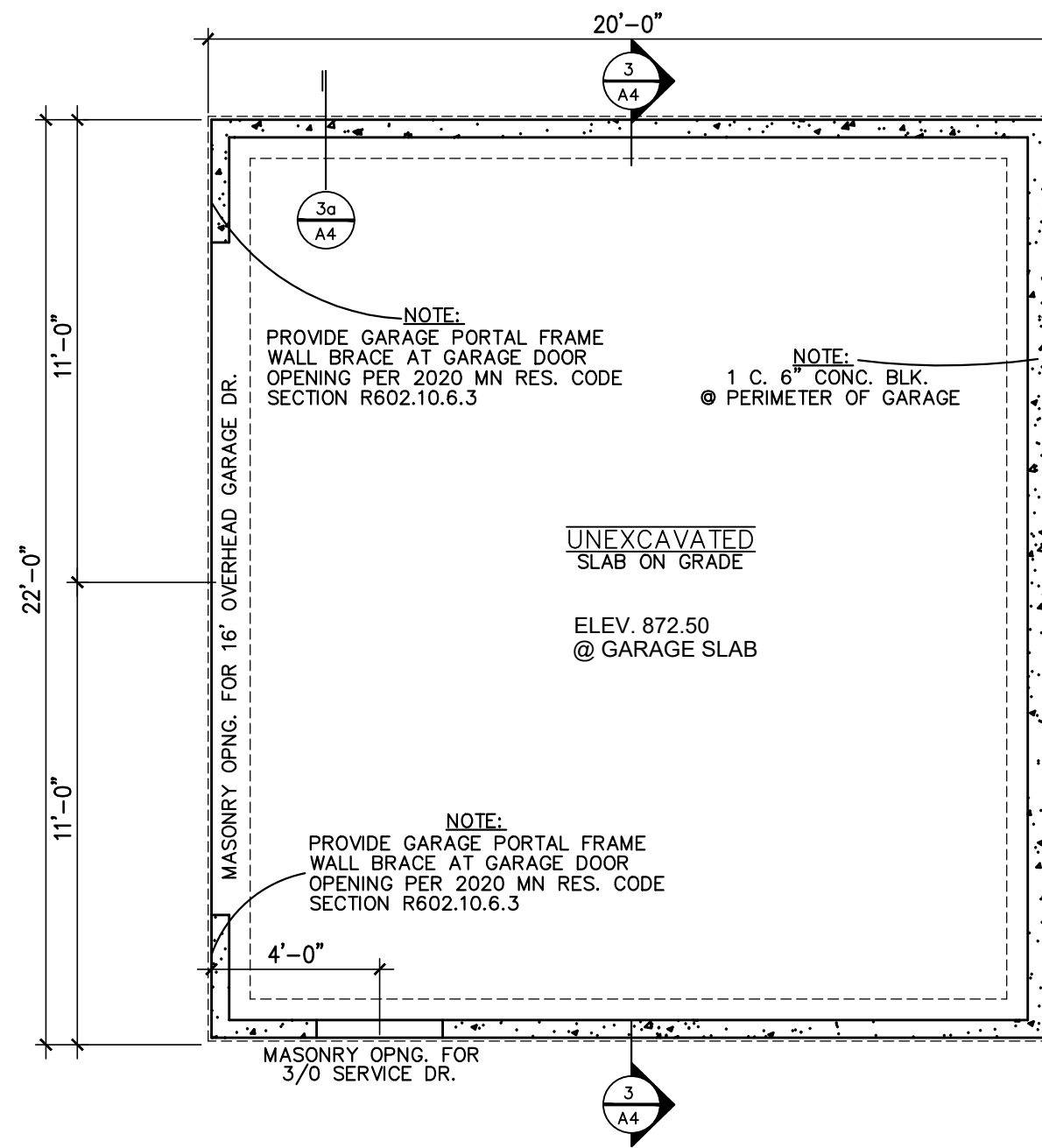
### SYMBOLS

-  – SECTION CUT THROUGH
-  – DETAIL CUT THROUGH
-  – ELEVATION MARKER

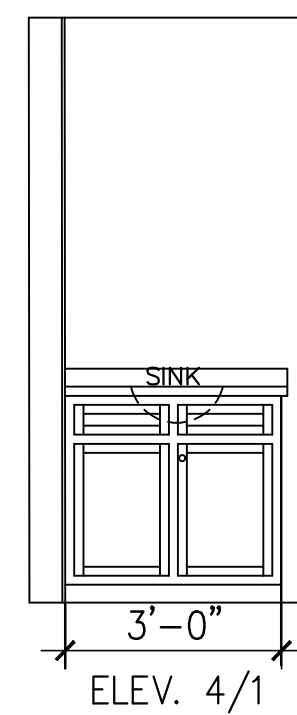


REV. DATE: 4-26-2024

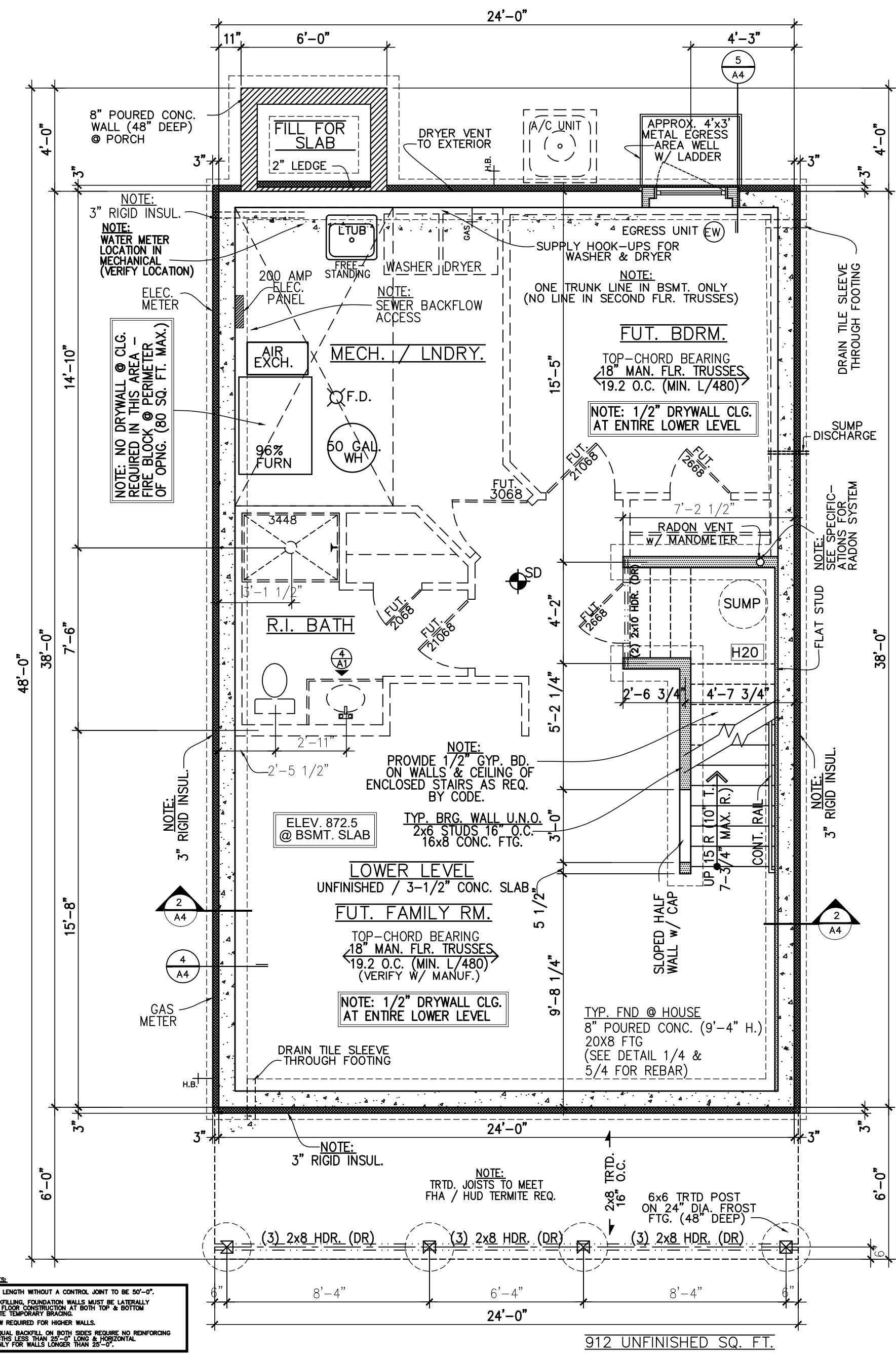
CS



2 GARAGE FDN. PLAN  
SCALE: 1/4" = 1'-0"



3 FUT. BATH VANITY ELEV.  
SCALE: 3/8" = 1'-0"



UNIT	LABEL	ROUGH OPENING
A	2W - 2040 SH	4'-0" x 4'-0"
B	2020 AWN.	2'-0" x 2'-0"
C	2W - 2020 AWN.	4'-0" x 2'-0"
D	2050 SH	2'-0" x 5'-0"
E	2W - 3656 SH	7'-0" x 5'-6"
F	* 3050 SH	3'-0" x 5'-0"
G	3036 SH	3'-0" x 3'-6"
H	* 2 - 3050 SH	6'-0" x 5'-0"
J	* 3650 SH	3'-6" x 5'-0"
K	* 2 - 3650 SH	7'-0" x 5'-0"
L	2040 FX	2'-0" x 4'-0"
M	5020 FX	5'-0" x 2'-0"
N	2040 SH	2'-0" x 4'-0"
EW	* 3040 CSMT.	3'-0" x 4'-0"

\* DENOTES EGRESS PER IRC REQ.

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

DATE: 4-28-2024  
DRAWN BY: MBG  
REVISED:  
REVISED:  
REVISED:

APPROVED FOR CONSTRUCTION  
INITIALS: \_\_\_\_\_  
DATE: \_\_\_\_\_

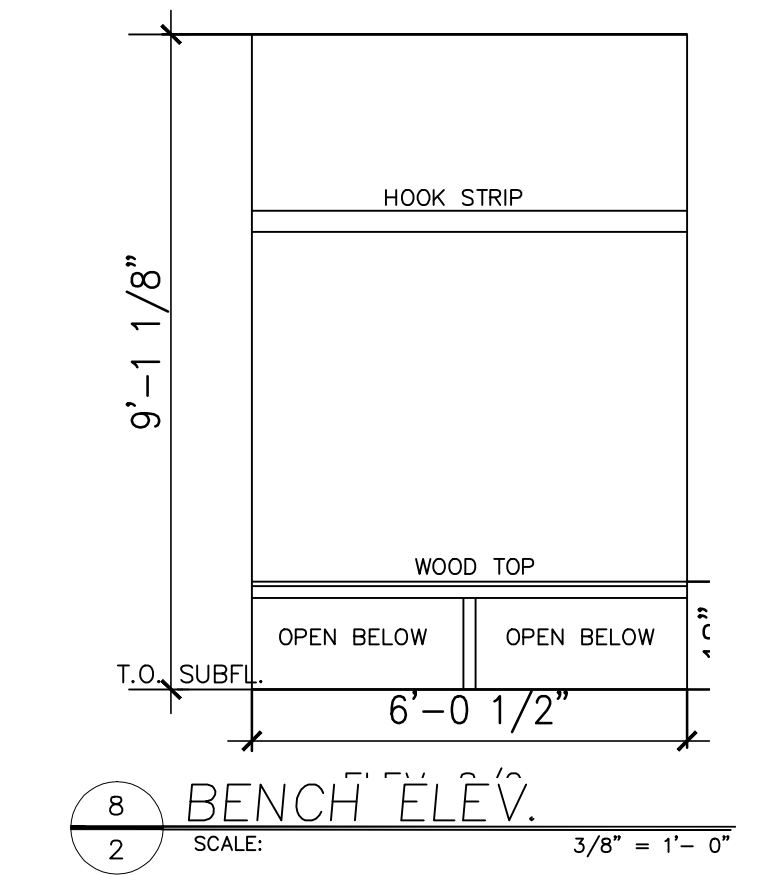
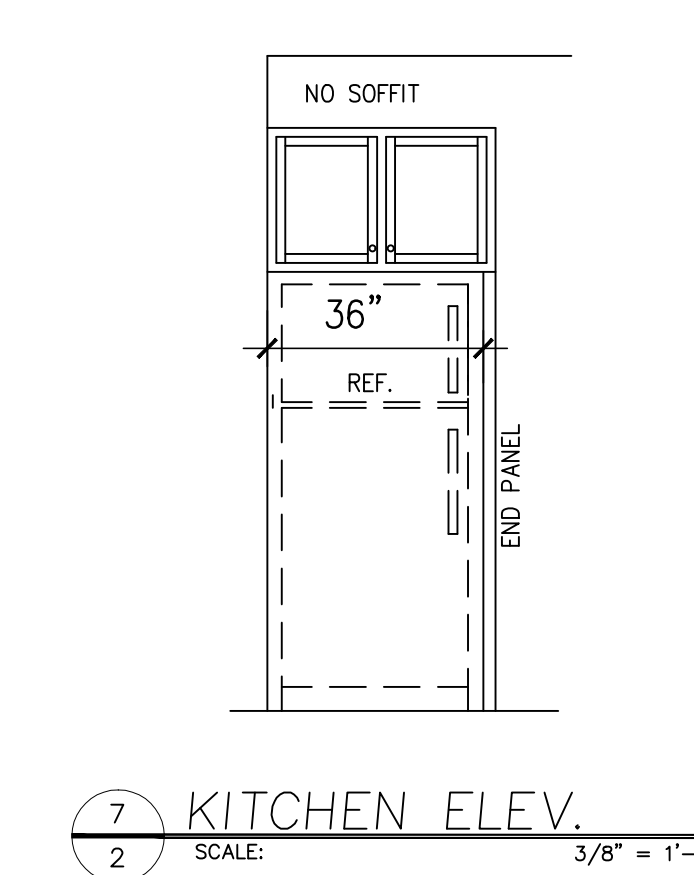
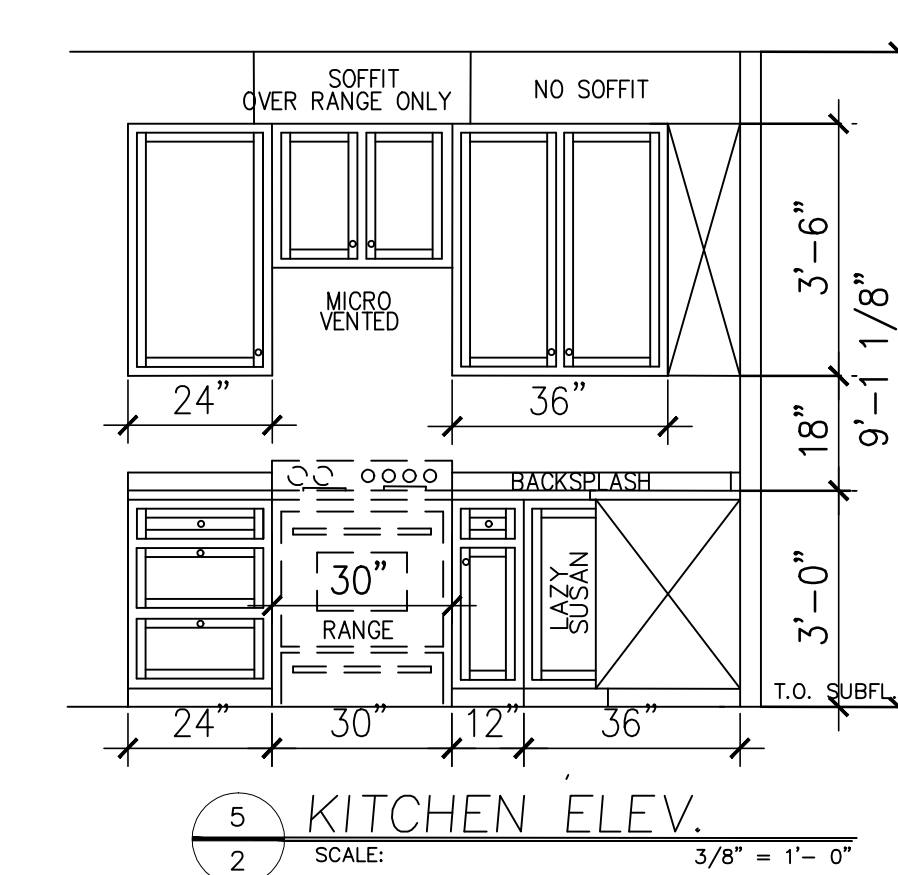
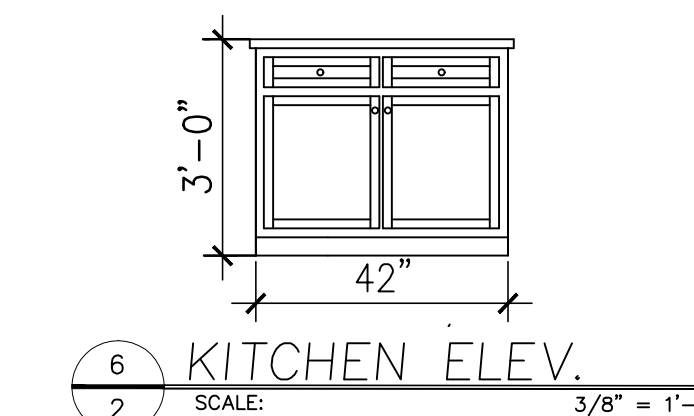
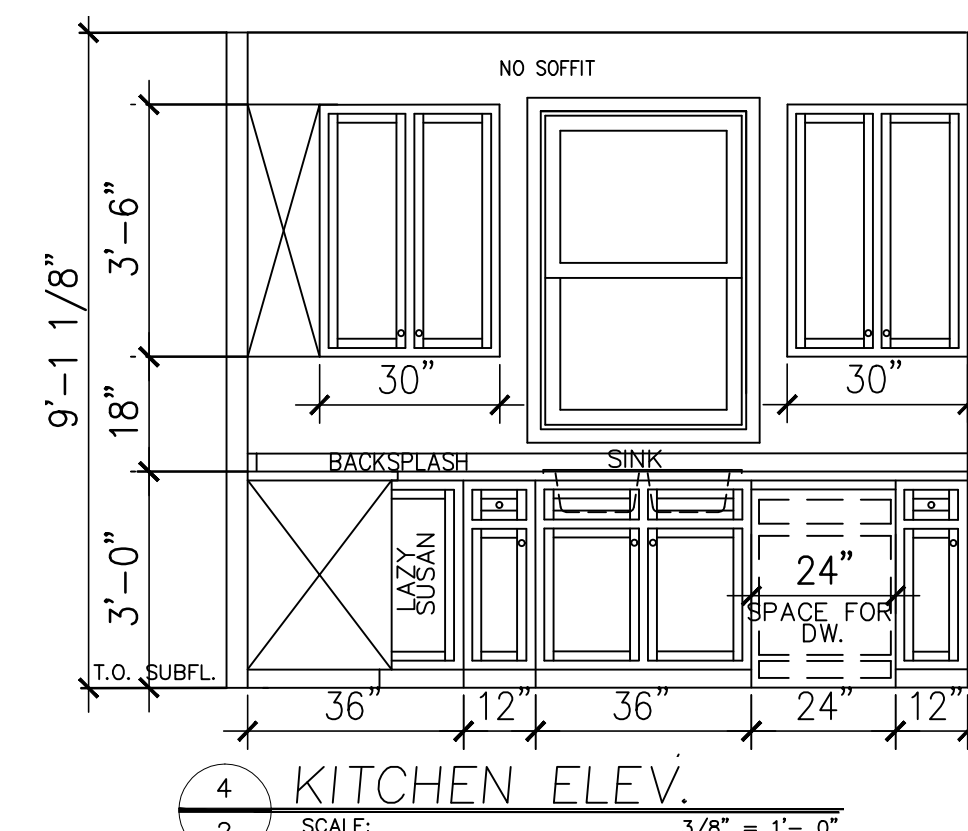
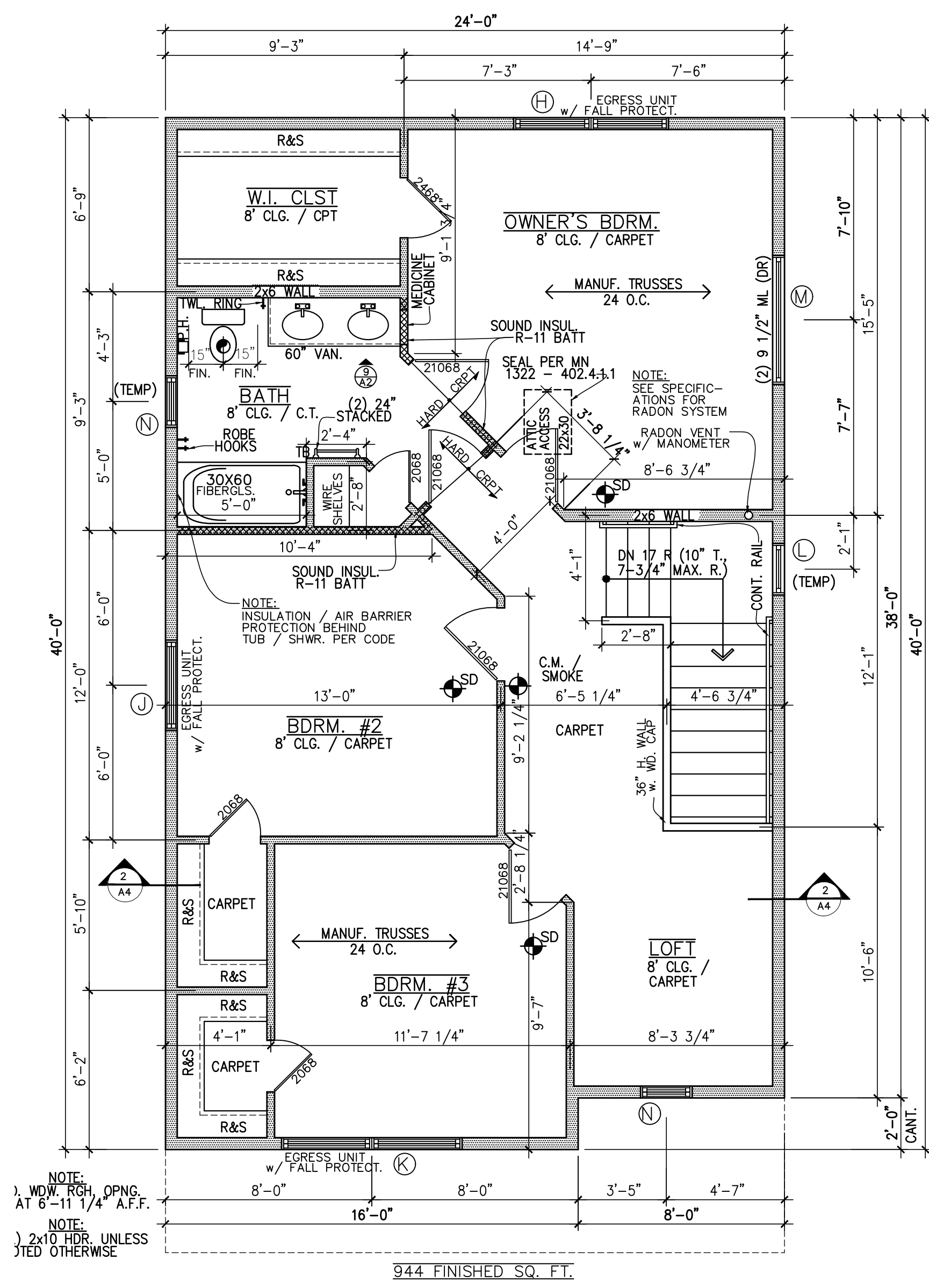
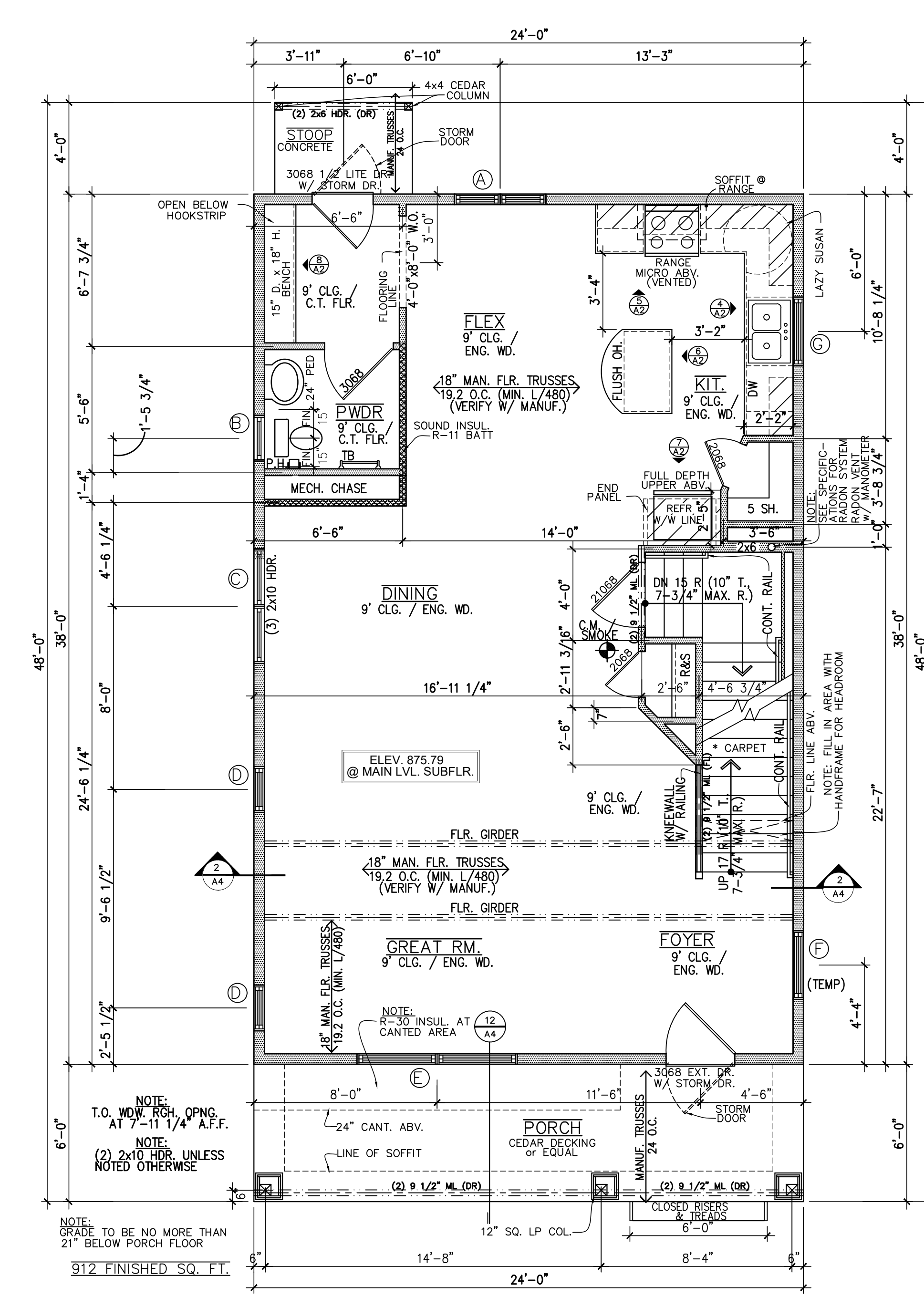
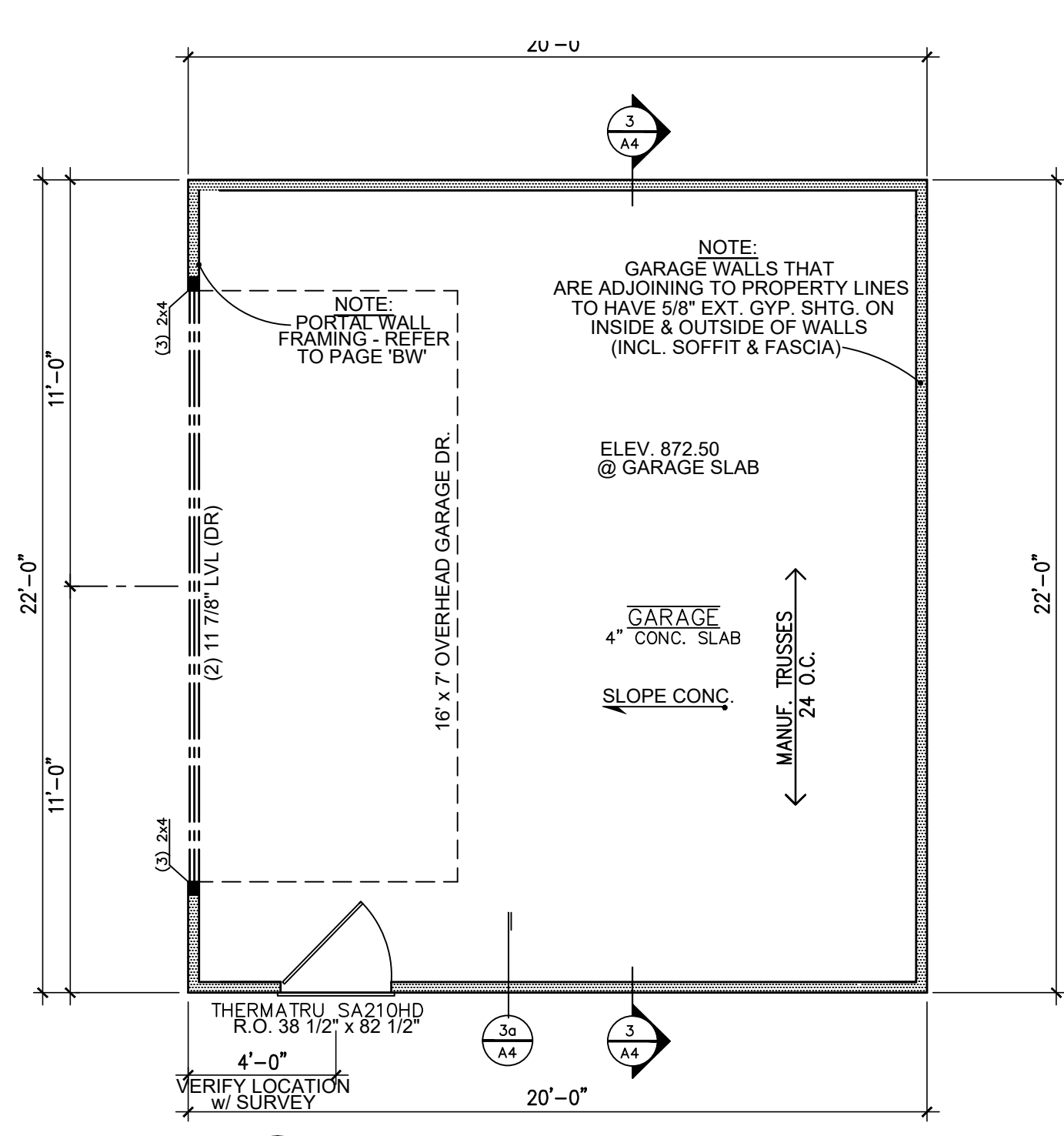
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OWNER: PRG - INFILL SINGLE FAMILY  
PROJECT ADDRESS: 1818 SHERIDAN AVE. N., MPLS.  
DEVELOPMENT: (FOLK)

LOT:  
BLOCK:  
ADD.:

PN:  
TITLE: FDN  
SHEET: A1



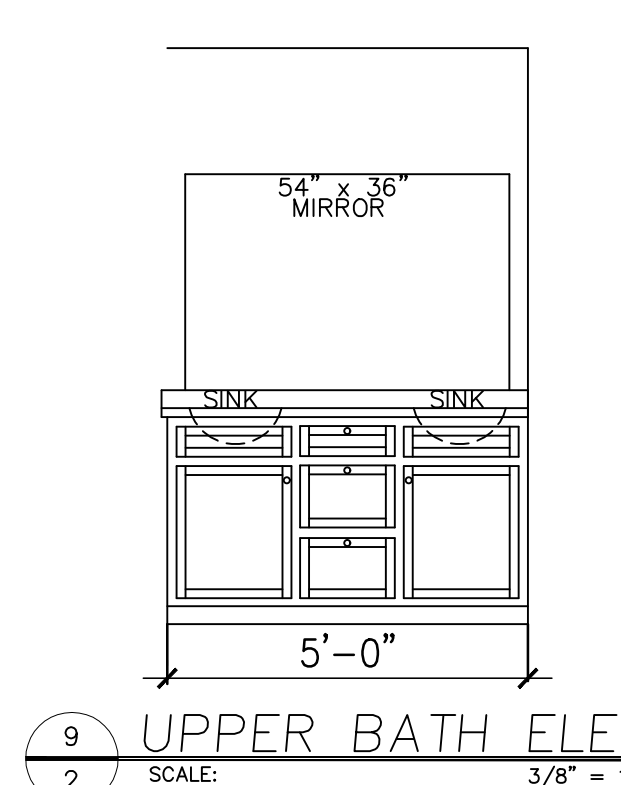
- GENERAL NOTES**
- MAIN LEVEL CLG. HT. TO BE 9'-1 1/8"
  - WDW. NOMENCLATURE REFERS TO ANDERSEN 100 WDWs. (SUPPLIER TO VERIFY RGH. OPNG.)
  - MAIN LEVEL WINDOWS FRAMED AT 7'-11 1/4" (U.O. NOTED)
  - EXTERIOR WALLS TO BE 2x6 (U.O. NOTED)
  - INTERIOR WALLS TO BE 2x4 (U.O. NOTED)
  - WINDOW HEADERS TO BE (2) 2 x 10 (U.O. NOTED)

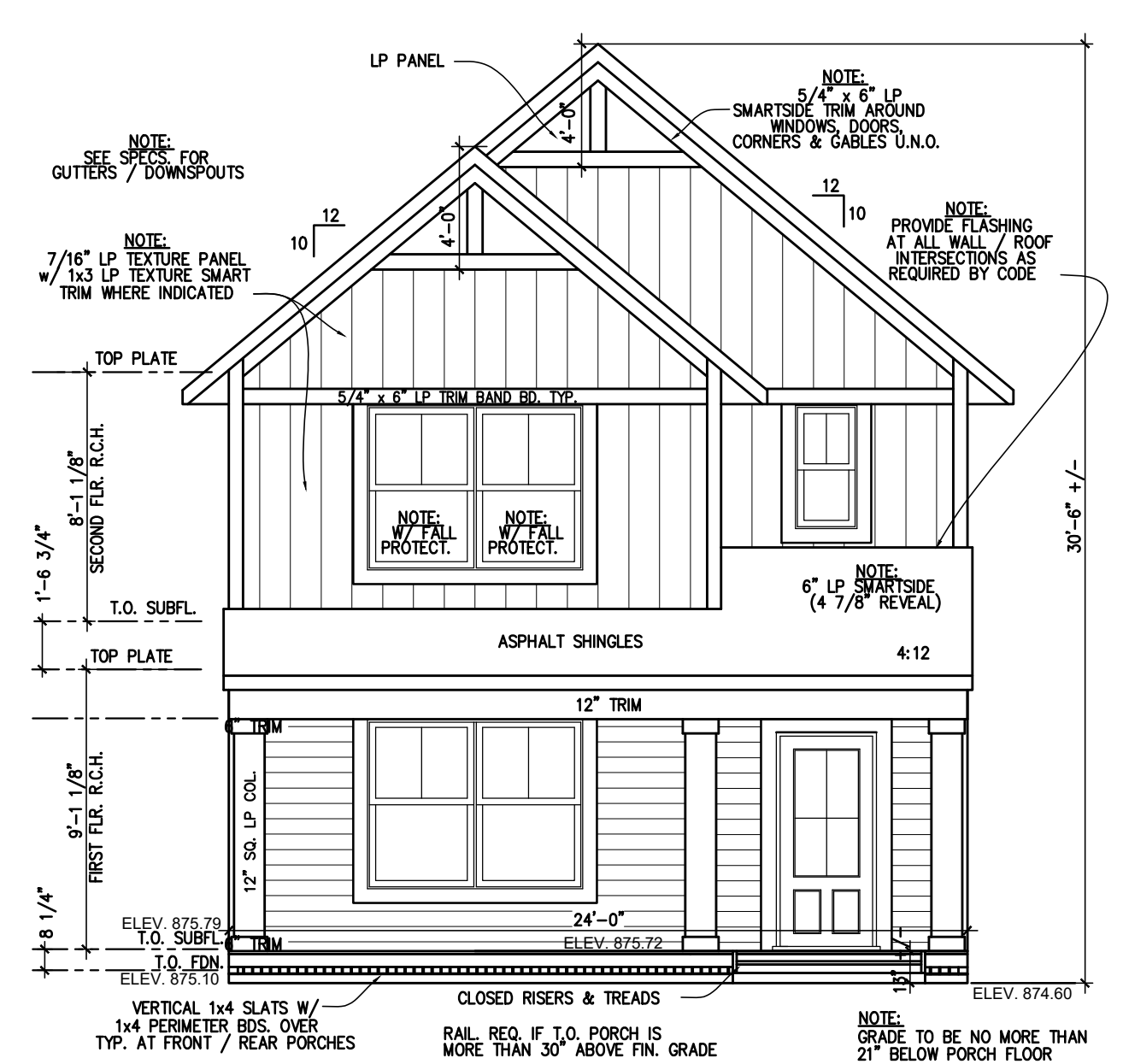
- GENERAL NOTES**
- UPPER LEVEL CLG. HT. TO BE 8'-1 1/8"
  - WDW. NOMENCLATURE REFERS TO ANDERSEN 100 WDWs. (SUPPLIER TO VERIFY RGH. OPNG.)
  - UPPER LEVEL WINDOWS FRAMED AT 6'-11 1/4" (U.O. NOTED)
  - EXTERIOR WALLS TO BE 2x6 (U.O. NOTED)
  - INTERIOR WALLS TO BE 2x4 (U.O. NOTED)
  - WINDOW HEADERS TO BE (2) 2 x 10 (U.O. NOTED)

**WINDOW SCHEDULE (ANDERSEN 100 SERIES)**

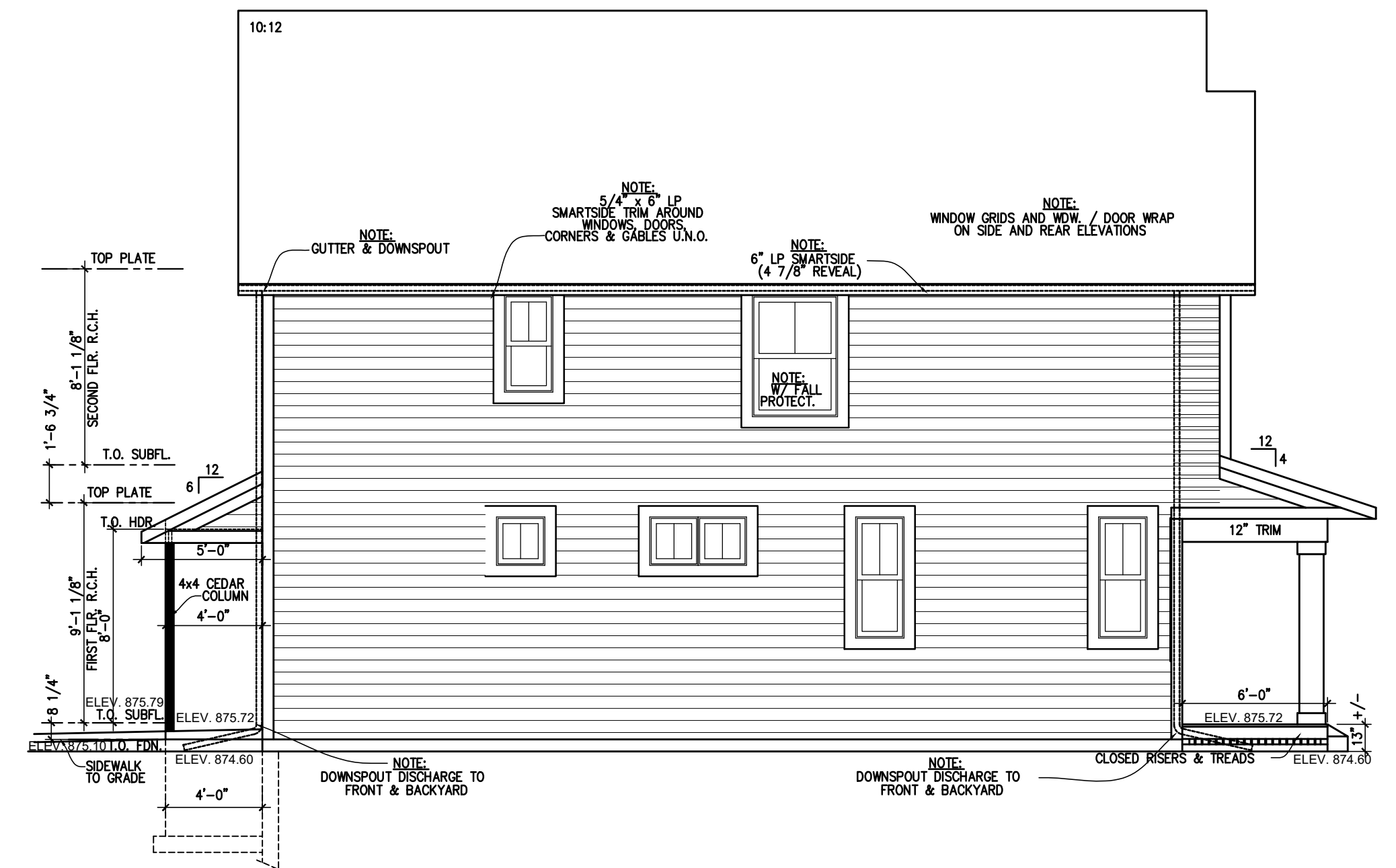
UNIT	LABEL	ROUGH OPENING
A	2W - 2040 SH	4'-0" x 4'-0"
B	2020 AWN.	2'-0" x 2'-0"
C	2W - 2020 AWN.	4'-0" x 2'-0"
D	2050 SH	2'-0" x 5'-0"
E	2W - 3656 SH	7'-0" x 5'-6"
F	* 3050 SH	3'-0" x 5'-0"
G	3036 SH	3'-0" x 3'-6"
H	* 2 - 3050 SH	6'-0" x 5'-0"
J	* 3650 SH	3'-6" x 5'-0"
K	* 2 - 3650 SH	7'-0" x 5'-0"
L	2040 FX	2'-0" x 4'-0"
M	5020 FX	5'-0" x 2'-0"
N	2040 SH	2'-0" x 4'-0"
EW	* 3040 CSMT.	3'-0" x 4'-0"

\* DENOTES EGRESS PER IRC REQ.

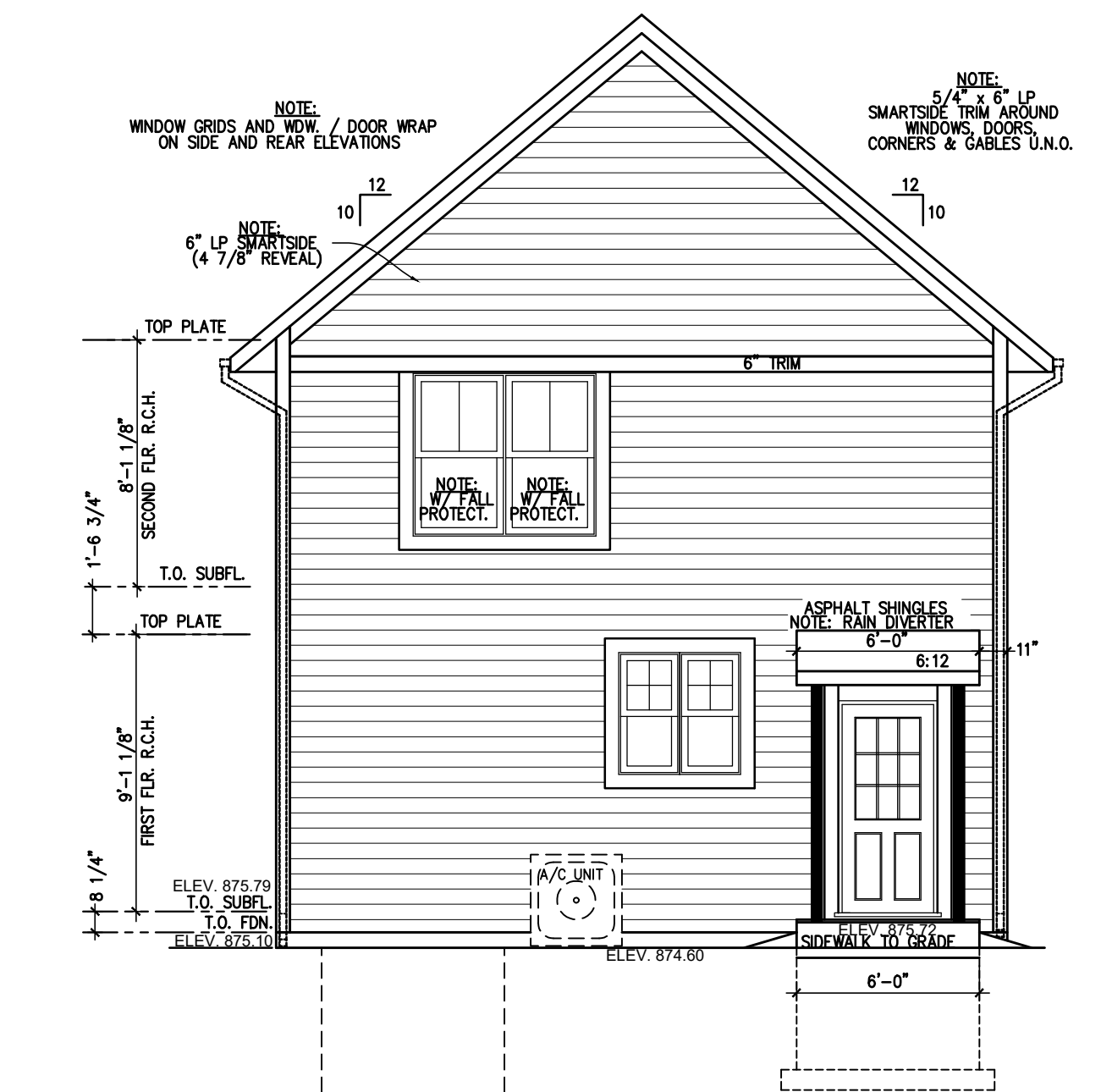




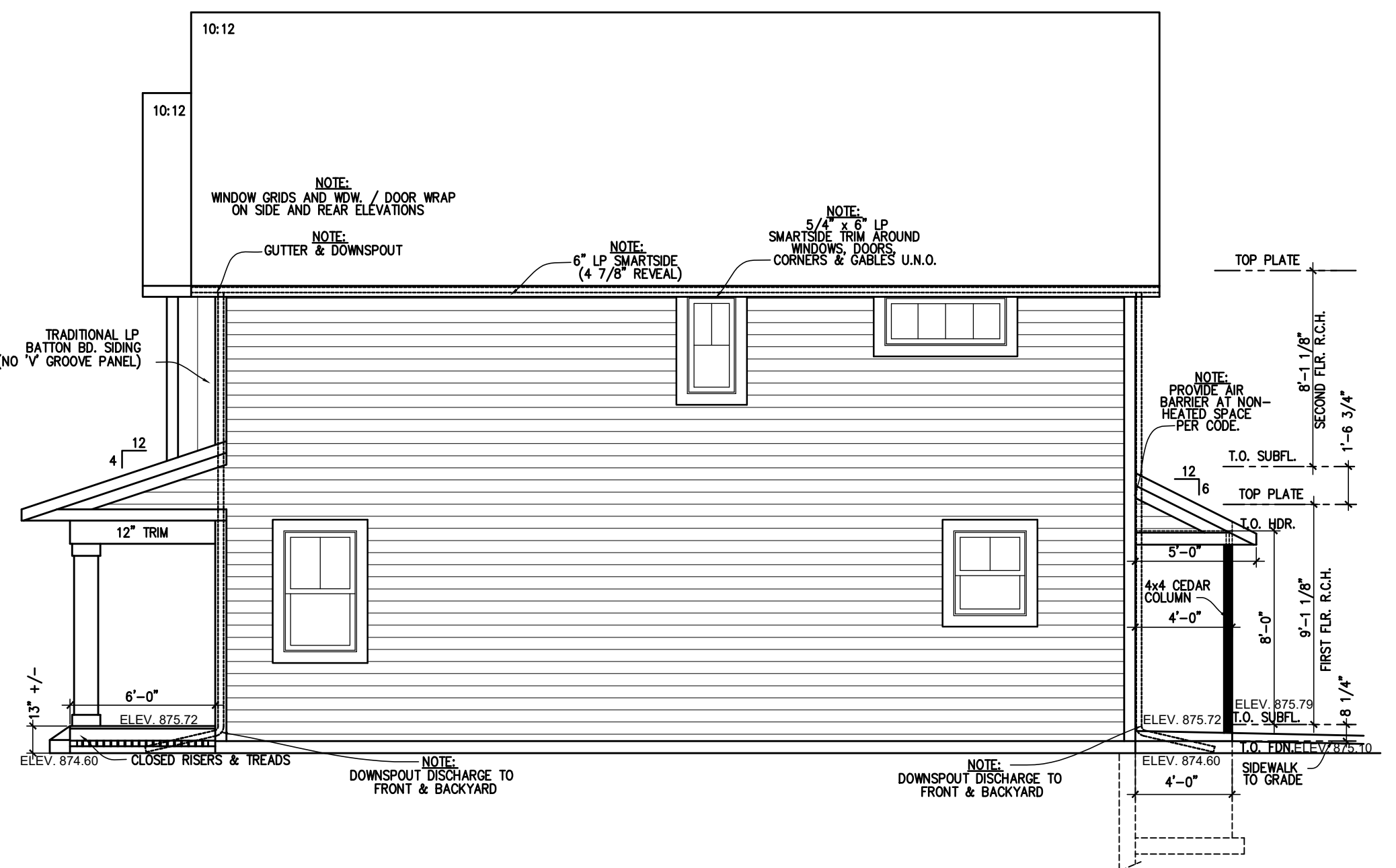
1 FRONT ELEVATION  
3 SCALE: 3/16" = 1'-0"



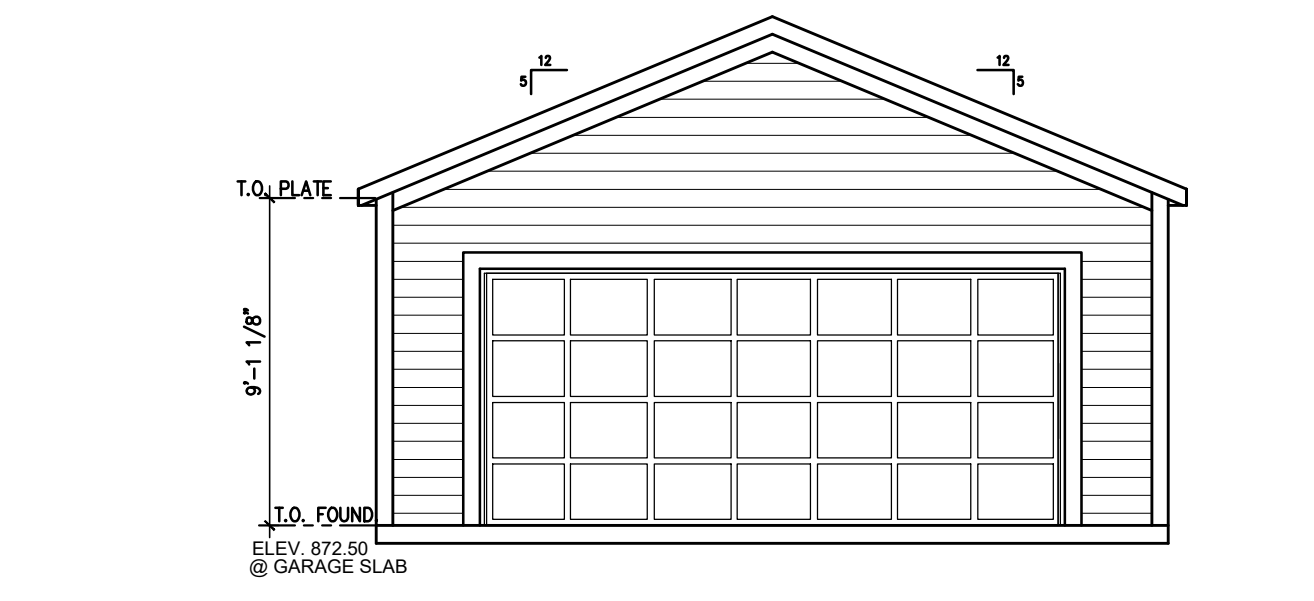
3 LEFT ELEVATION  
3 SCALE: 3/16" = 1'-0"



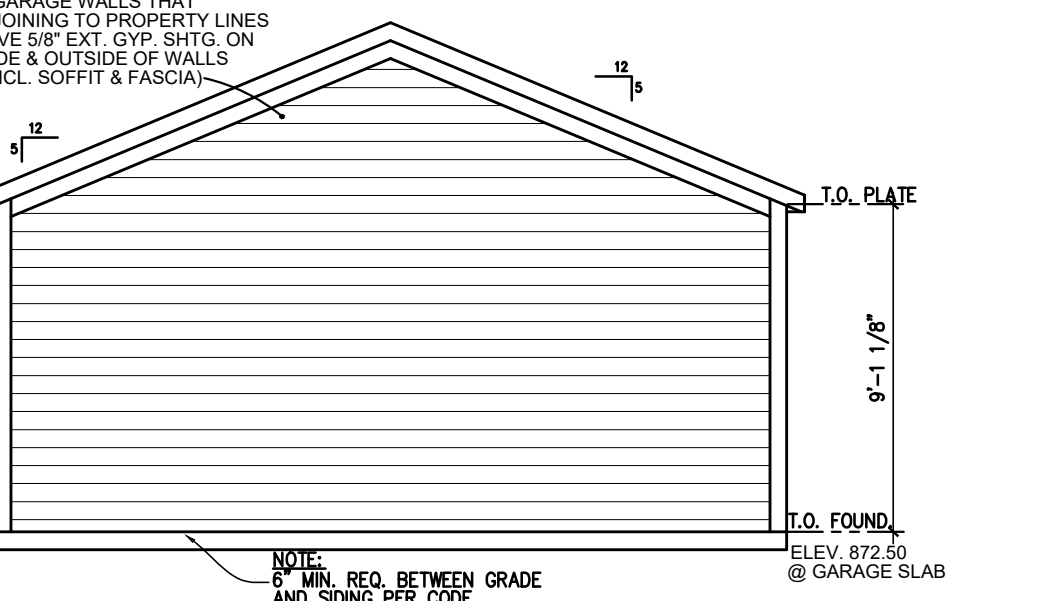
2 REAR ELEVATION  
3 SCALE: 3/16" = 1'-0"



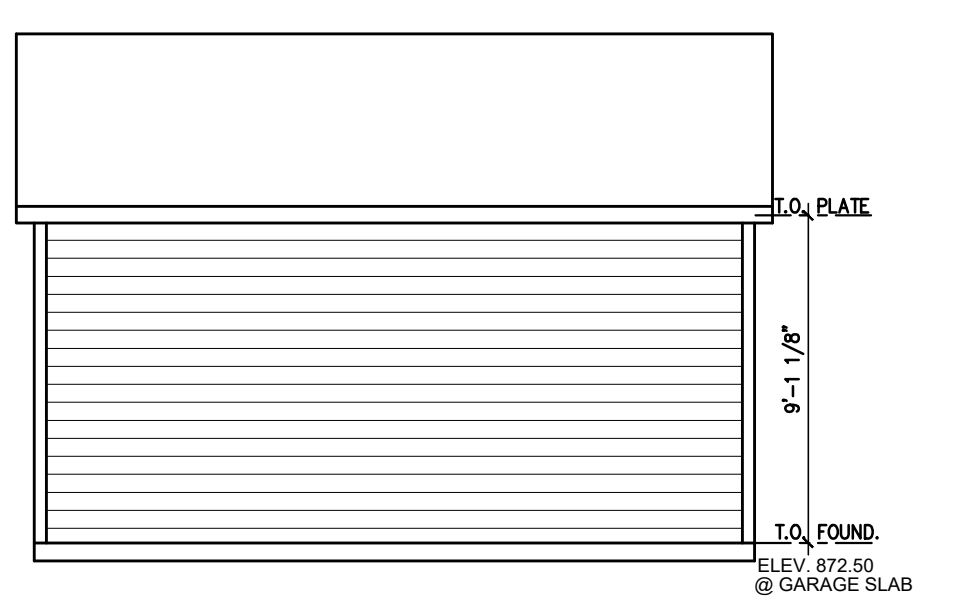
4 RIGHT ELEVATION  
3 SCALE: 3/16" = 1'-0"



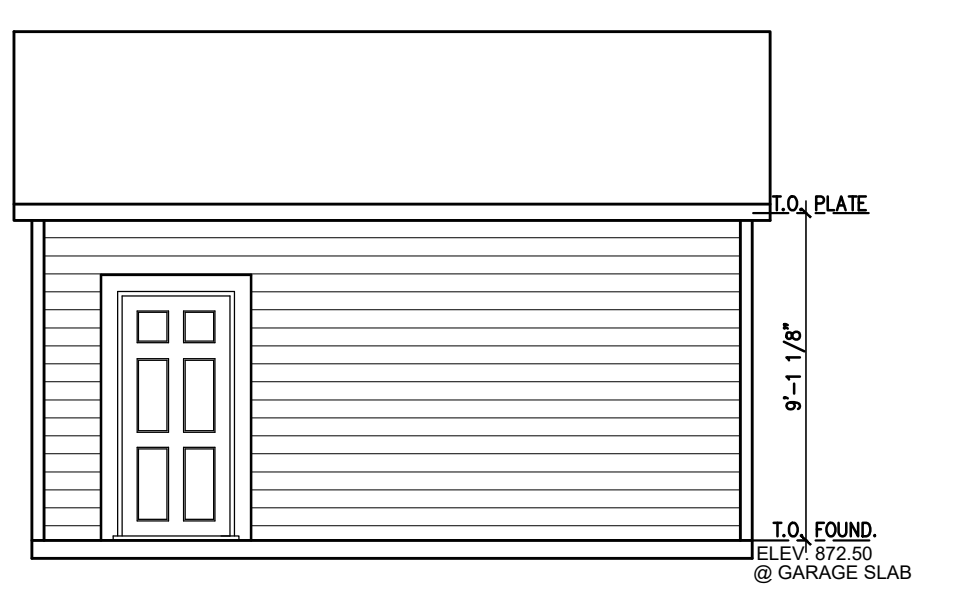
5 GARAGE ELEV.  
3 SCALE: 3/16" = 1'-0"



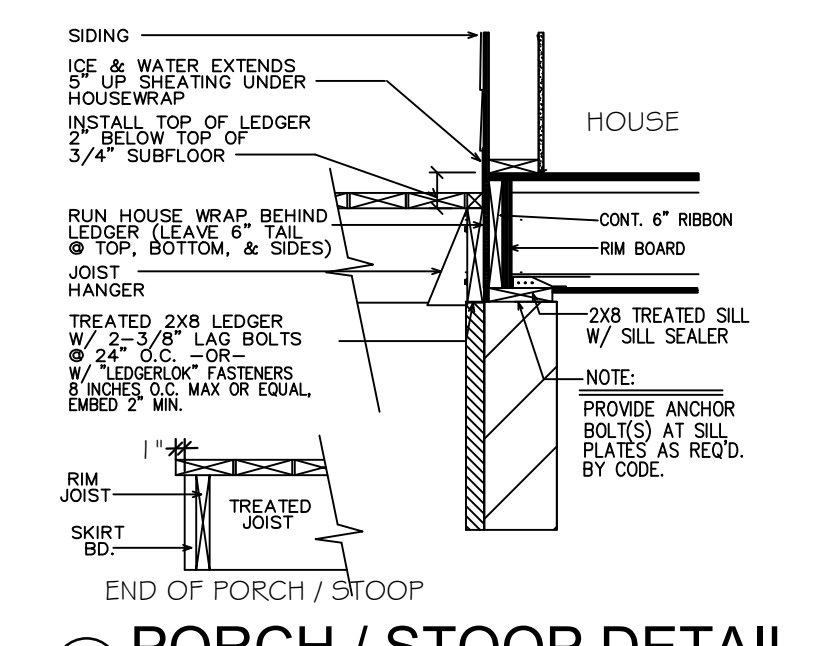
6 GARAGE ELEV.  
3 SCALE: 3/16" = 1'-0"



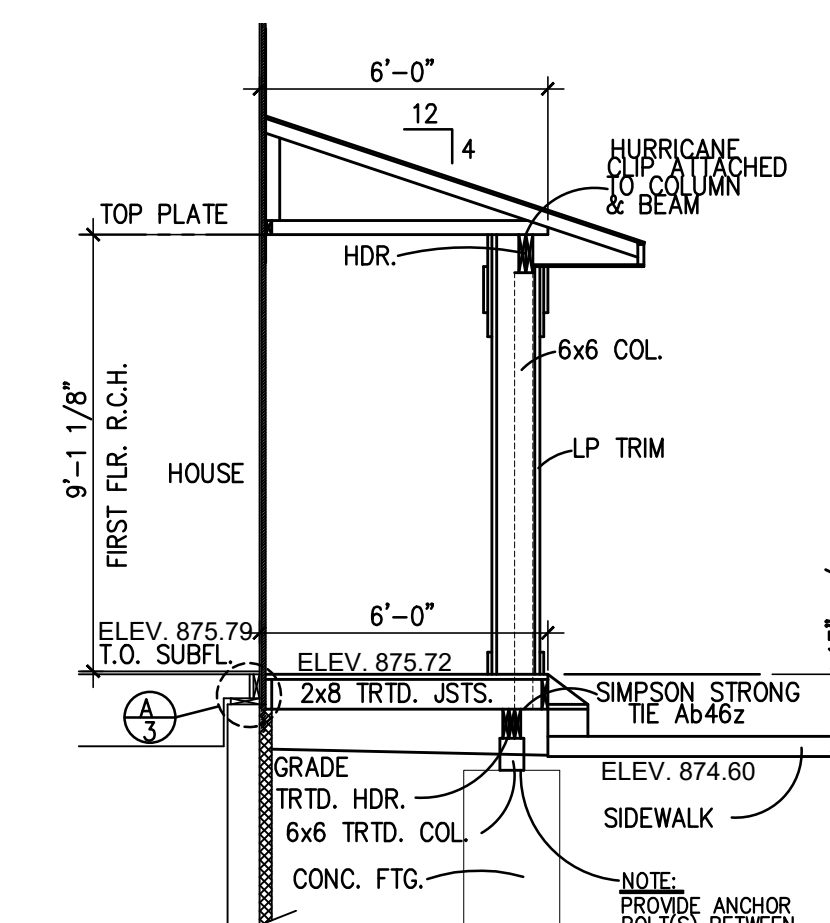
7 GARAGE ELEV.  
3 SCALE: 3/16" = 1'-0"



8 GARAGE ELEV.  
3 SCALE: 3/16" = 1'-0"

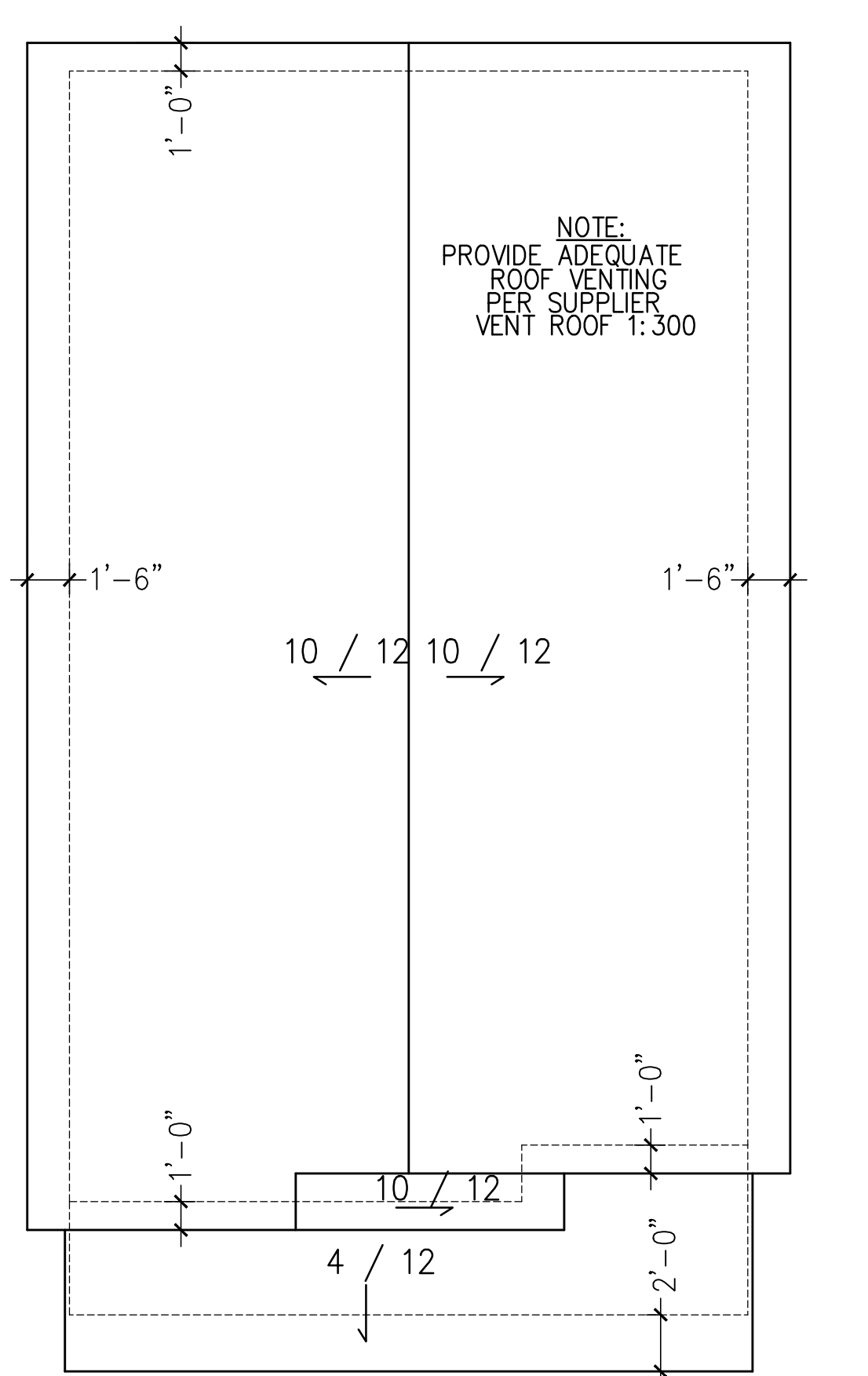


3 PORCH / STOOP DETAIL  
SCALE: NO SCALE

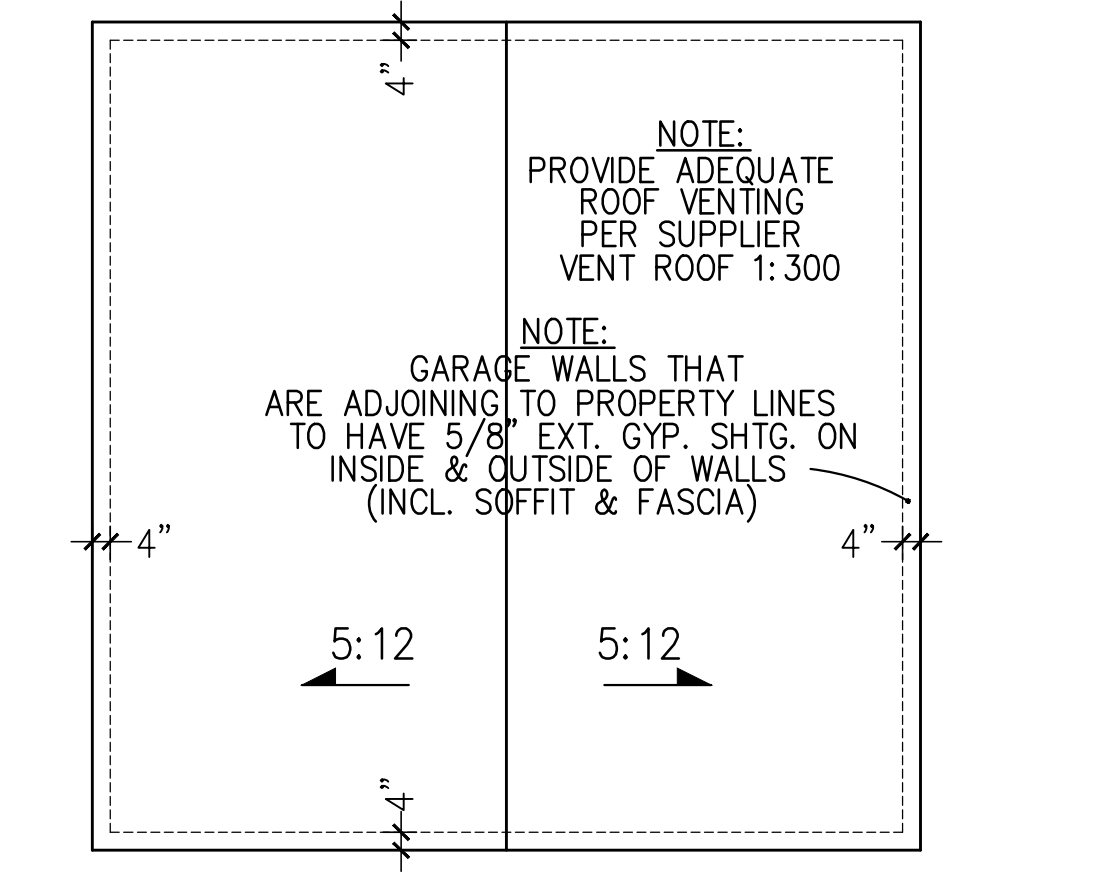


3a FRONT PORCH SECTION  
3 SCALE: 1/4" = 1'-0"

WINDOWS WITH SILLS LESS THAN 36" ABV. FLOOR AND OVER 6'-0" TO GRADE OR SURFACE BELOW SHALL BE LIMITED TO A 4 INCH MAX. OPNG. UNLESS FALL PREVENTION DEVICES PER ASTM F 2090 ARE INSTALLED (SECTION R312.2.1)



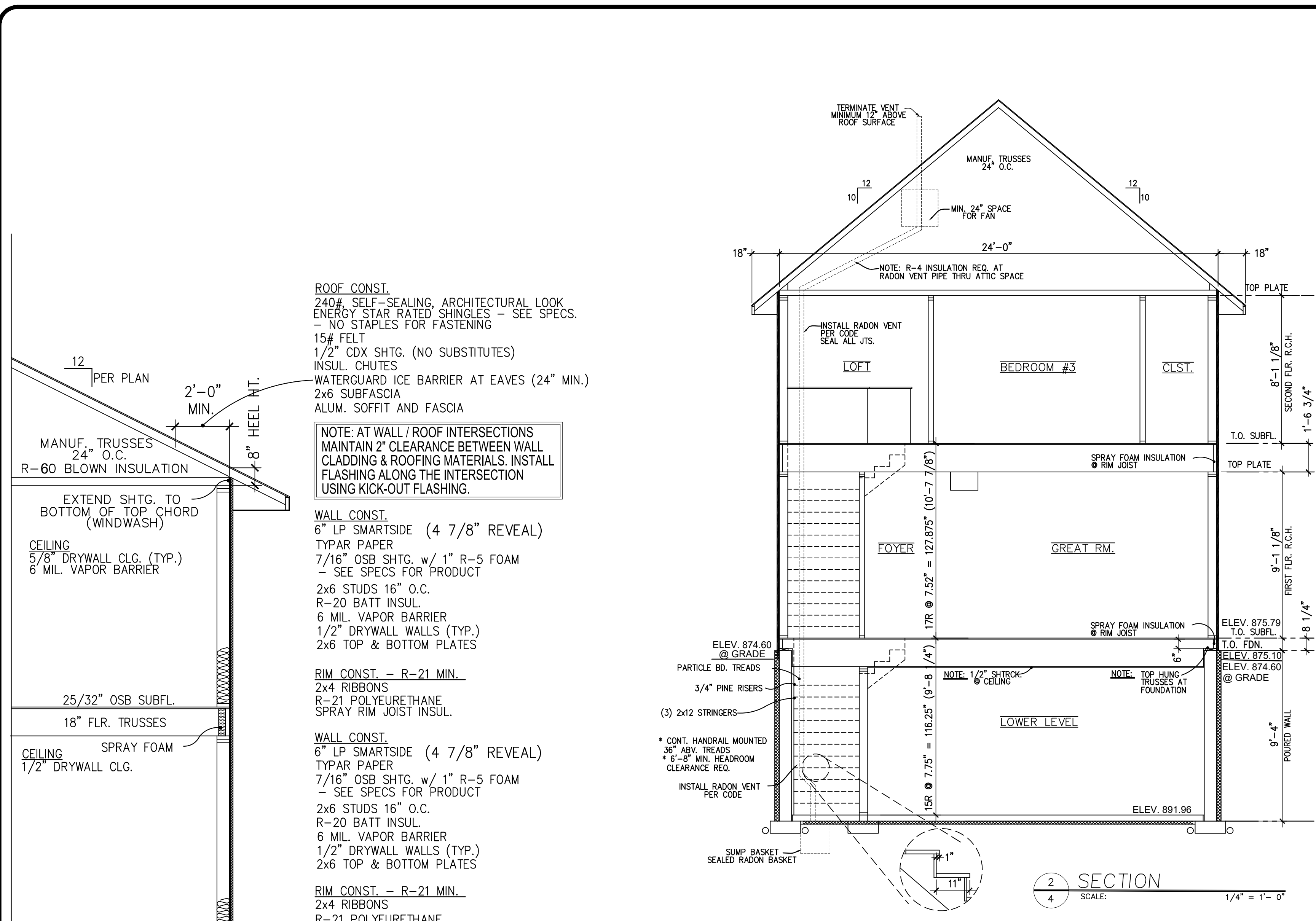
8 ROOF PLAN  
3 SCALE: 3/16" = 1'-0"



9 GARAGE ROOF PLAN  
3 SCALE: 3/16" = 1'-0"

DATE: 4-26-2024  
DRAWN BY: MBG  
REVISIONS:  
REVISOR:  
REVISION DATE:  
APPROVED FOR CONSTRUCTION:  
INITIALS: \_\_\_\_\_  
DATE: \_\_\_\_\_  
GENERAL NOTES & DISCLAIMERS:  
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OWNER: PRG - INFILL SINGLE FAMILY  
PROJECT ADDRESS: 1818 SHERIDAN AVE. N., MPLS.  
DEVELOPMENT: (FOLK)  
LOT:  
BLOCK:  
ADD.:

PN:  
TITLE: ELEV  
SHEET: A3



**ROOF CONST.**  
 240# SELF-SEALING, ARCHITECTURAL LOOK ENERGY STAR RATED SHINGLES - SEE SPECS. - NO STAPLES FOR FASTENING  
 15# FELT  
 1/2" CDX SHTG. (NO SUBSTITUTES)  
 INSUL. CHUTES  
 WATERGUARD ICE BARRIER AT EAVES (24" MIN.)  
 2x6 SUBFASCIA  
 ALUM. SOFFIT AND FASCIA

**NOTE: AT WALL / ROOF INTERSECTIONS MAINTAIN 2" CLEARANCE BETWEEN WALL CLADDING & ROOFING MATERIALS. INSTALL FLASHING ALONG THE INTERSECTION USING KICK-OUT FLASHING.**

**WALL CONST.**  
 6" LP SMARTSIDE (4 7/8" REVEAL)  
 TYPAR PAPER  
 7/16" OSB SHTG. w/ 1" R-5 FOAM - SEE SPECS FOR PRODUCT  
 2x6 STUDS 16" O.C.  
 R-20 BATT INSUL.  
 6 MIL. VAPOR BARRIER  
 1/2" DRYWALL WALLS (TYP.)  
 2x6 TOP & BOTTOM PLATES

**RIM CONST. - R-21 MIN.**  
 2x4 RIBBONS  
 R-21 POLYURETHANE SPRAY RIM JOIST INSUL.

**WALL CONST.**  
 6" LP SMARTSIDE (4 7/8" REVEAL)  
 TYPAR PAPER  
 7/16" OSB SHTG. w/ 1" R-5 FOAM - SEE SPECS FOR PRODUCT  
 2x6 STUDS 16" O.C.  
 R-20 BATT INSUL.  
 6 MIL. VAPOR BARRIER  
 1/2" DRYWALL WALLS (TYP.)  
 2x6 TOP & BOTTOM PLATES

**RIM CONST. - R-21 MIN.**  
 2x4 RIBBONS  
 R-21 POLYURETHANE SPRAY RIM JOIST INSUL.

**FDN. WALL CONST.**  
 8" POURED CONC. (9'-4" H.)  
 w/ #5 REBAR 27" O.C. VERTICAL & (1) #4 CONT. HORIZ. @ TOP & MID-HEIGHT OF WALL  
 3" R-15 ENERGY FIBERBOARD DRAINING INSUL. BELOW GRADE - 3" R-15 XP THERMAL PANEL INSUL. w/ WEATHER-RESISTANT PROTECTIVE COVERING FROM TOP OF FDN. TO 6" BELOW GRADE  
 NOTE: FASTENED PER R402.1.1 #2

WATERPROOFING (REQUIRED TO EXTEND OVER TOP OF FOUNDATION TO INTERIOR OF WALL)

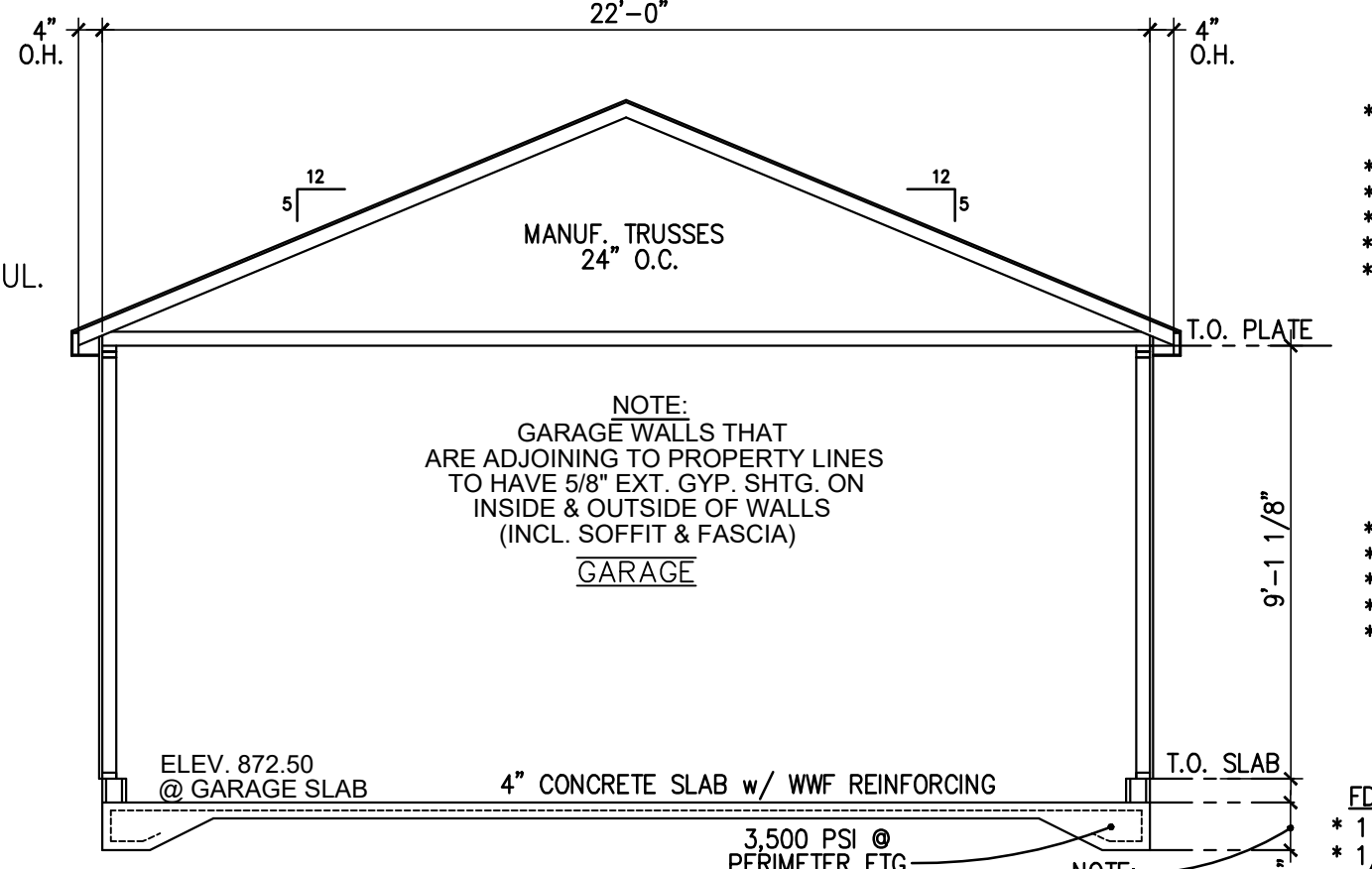
(WATERPROOFING AT TOP OF FOOTING FOR A CAPILLARY BREAK)  
 DRAIN TILE PER R405.1

20x8 CONC. FTG. (5,000 PSI)  
 W/ (2) #5 CONT. REBAR (42" LAP, STAGGERED SPLICES)

**RIM DETAIL**  
 SCALE: NO SCALE

**1 SECTION**  
 SCALE: 3/8" = 1'-0"

COMPRESSION STRENGTH OF CONCRETE	
POURED WALLS	4,000 PSI
CONCRETE FOOTINGS	5,000 PSI
CONCRETE FLOOR	3,000 PSI
GARAGE PERIMETER FOOTING	3,500 PSI



**3 GARAGE SECTION**  
 SCALE: 1/4" = 1'-0"

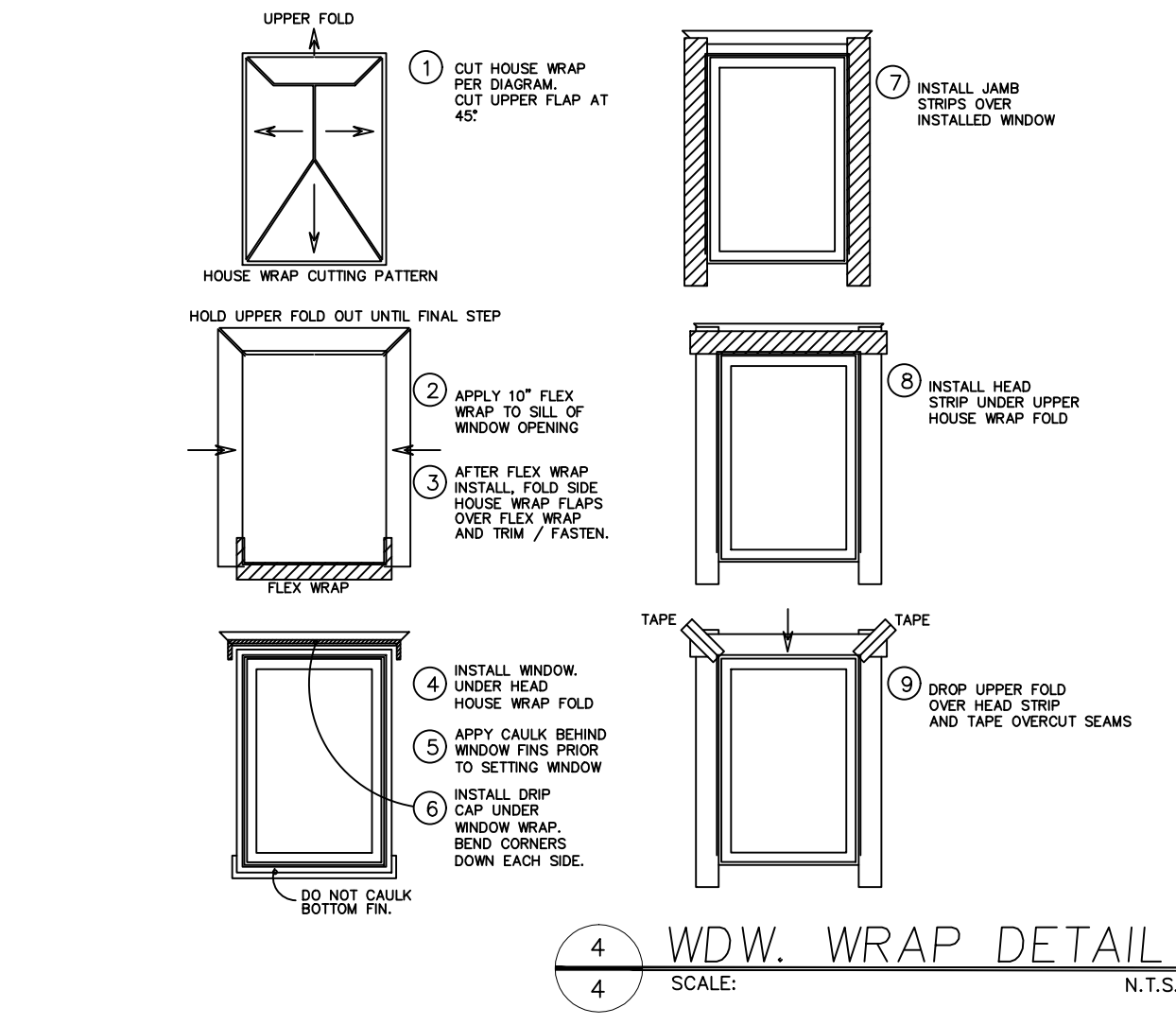
**3a GARAGE FTG. DETAIL**  
 SCALE: 1/2" = 1'-0"

**ROOFING**  
 • 240# SELF-SEALING, ARCHITECTURAL LOOK SHINGLES - NO STAPLES FOR FASTENING  
 • 15# FELT  
 • 7/16" OSB SHTG.  
 • WATERGUARD ICE BARRIER AT EAVES  
 • 2x6 SUB-FASCIA  
 • ALUM. FASCIA & SOFFIT

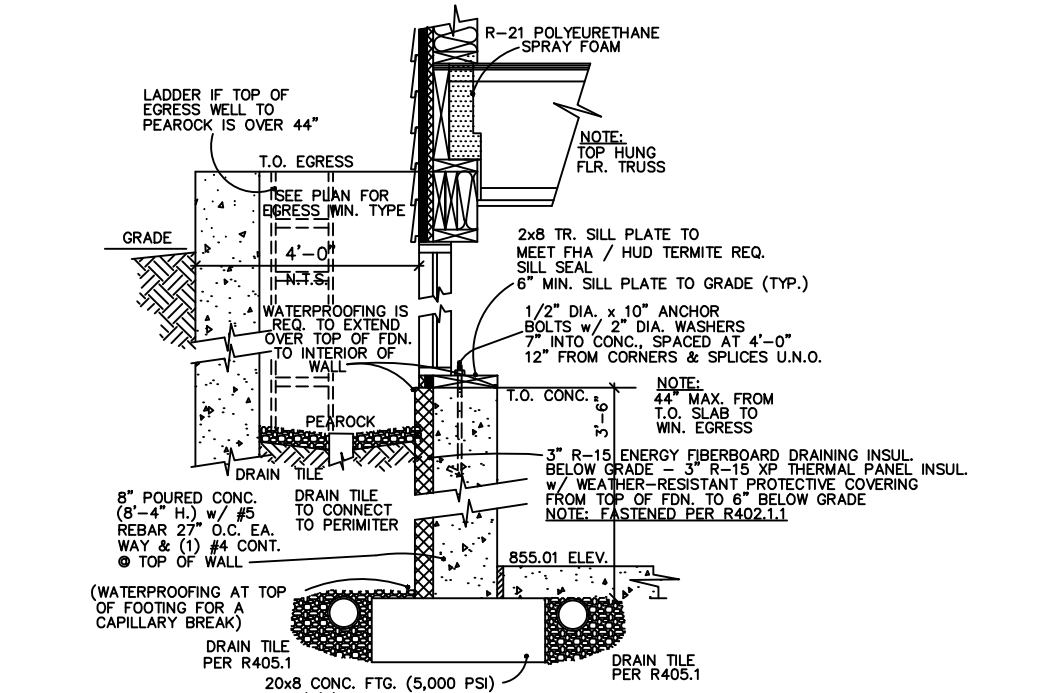
**WALLS**  
 • 6" LP SMARTSIDE (4 7/8" REVEAL)  
 • TYPAR PAPER  
 • 15/32 OSB SHTG. TYP.  
 • 2x4 STUDS 16" O.C.  
 • 2x4 TOP & BOTTOM PLATES (TRTD. BOTTOM)

**FDN.**  
 • 1 C. 6" CONC. BLK.  
 • 1/2" DIA. 5" x 18" ANCHOR BOLTS w/ 2" DIA. WASHERS 7" INTO SLAB, CORE FILL BLOCK, SPACED AT 4" MAX O.C. (12" FROM CORNERS & SPLICES U.N.O.)

**12 SECTION THRU PORCH ATTACHMENT**  
 SCALE: 3/8" = 1'-0"



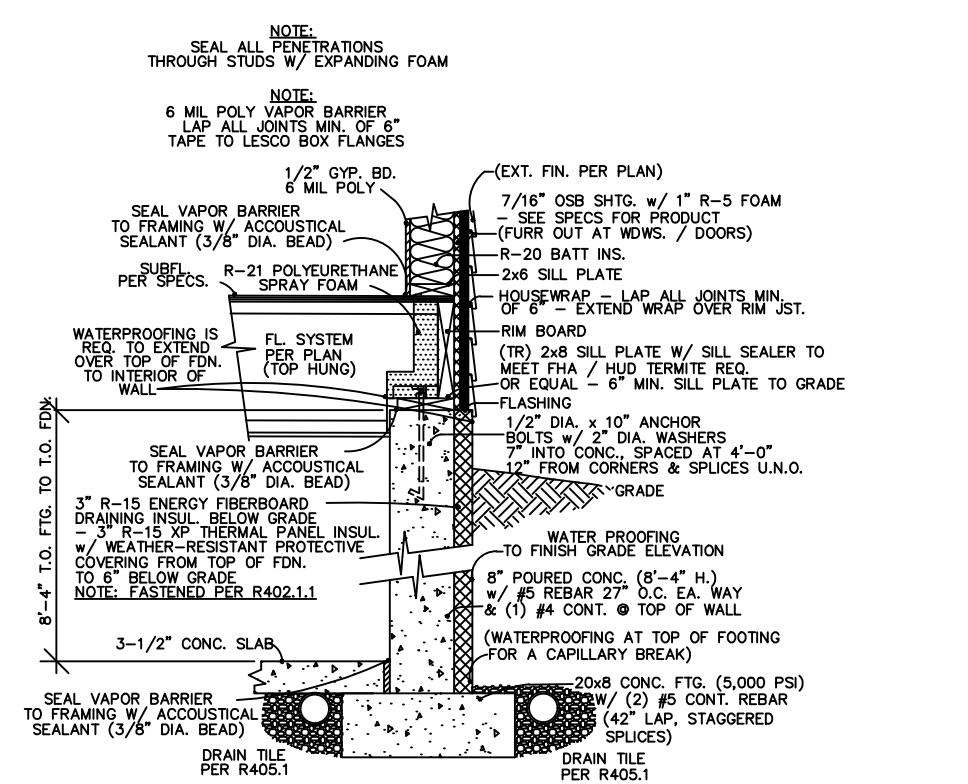
**4 WDW. WRAP DETAIL**  
 SCALE: N.T.S.



**6 EGRESS WDW. DETAIL**  
 SCALE: 1/2" = 1'-0"

**7 DETAIL @ INT. WALL**  
 SCALE: 1/2" = 1'-0"

**10 FRAMING DETAILS**  
 SCALE: 1/2" = 1'-0"



**5 TYP. FDN. DETAIL**  
 SCALE: 1/2" = 1'-0"

**8 TUB @ EXT. WALL**  
 SCALE: 1/2" = 1'-0"

**9 EXT. TRIM @ WDW.**  
 SCALE: 1/2" = 1'-0"

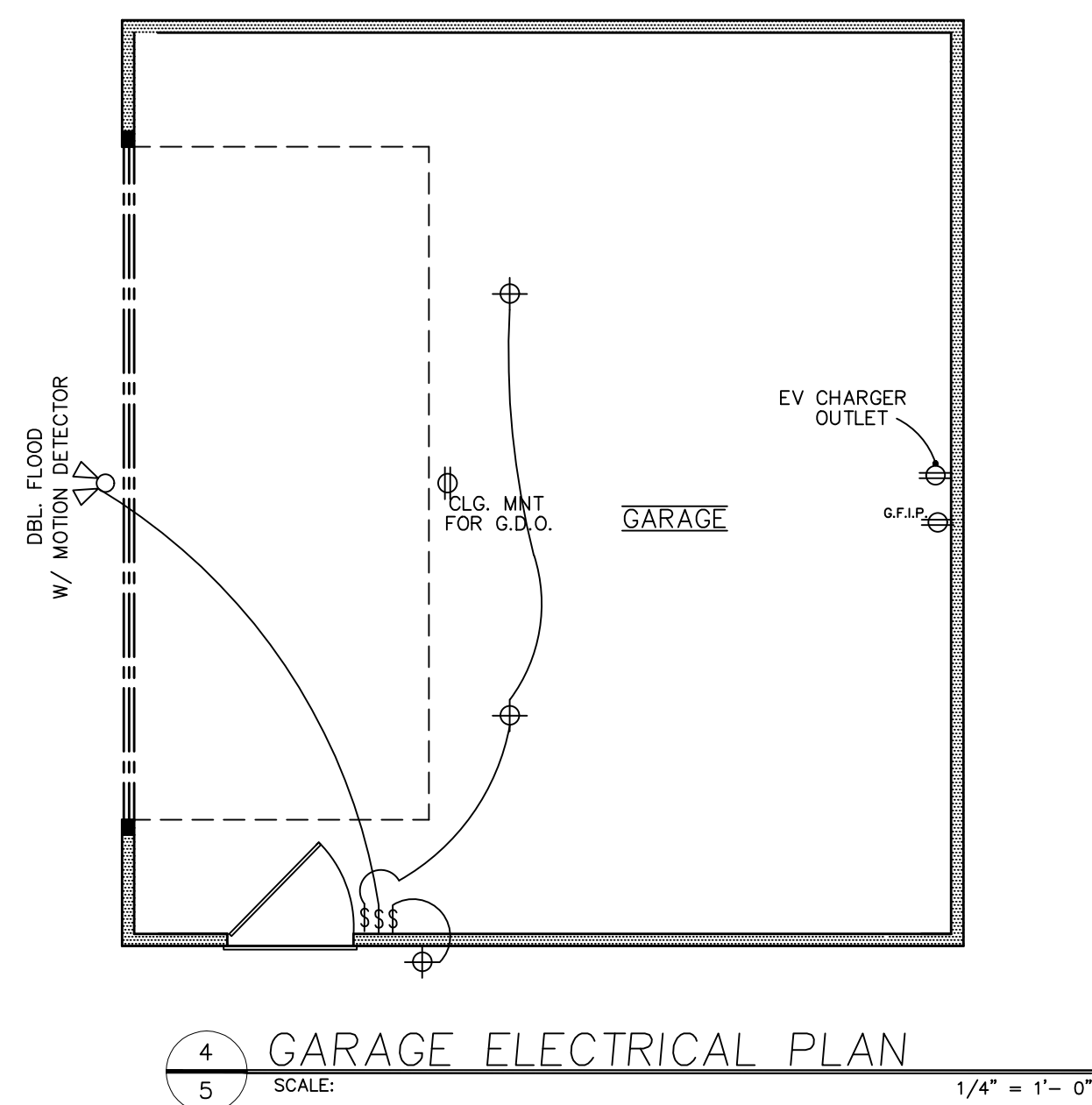
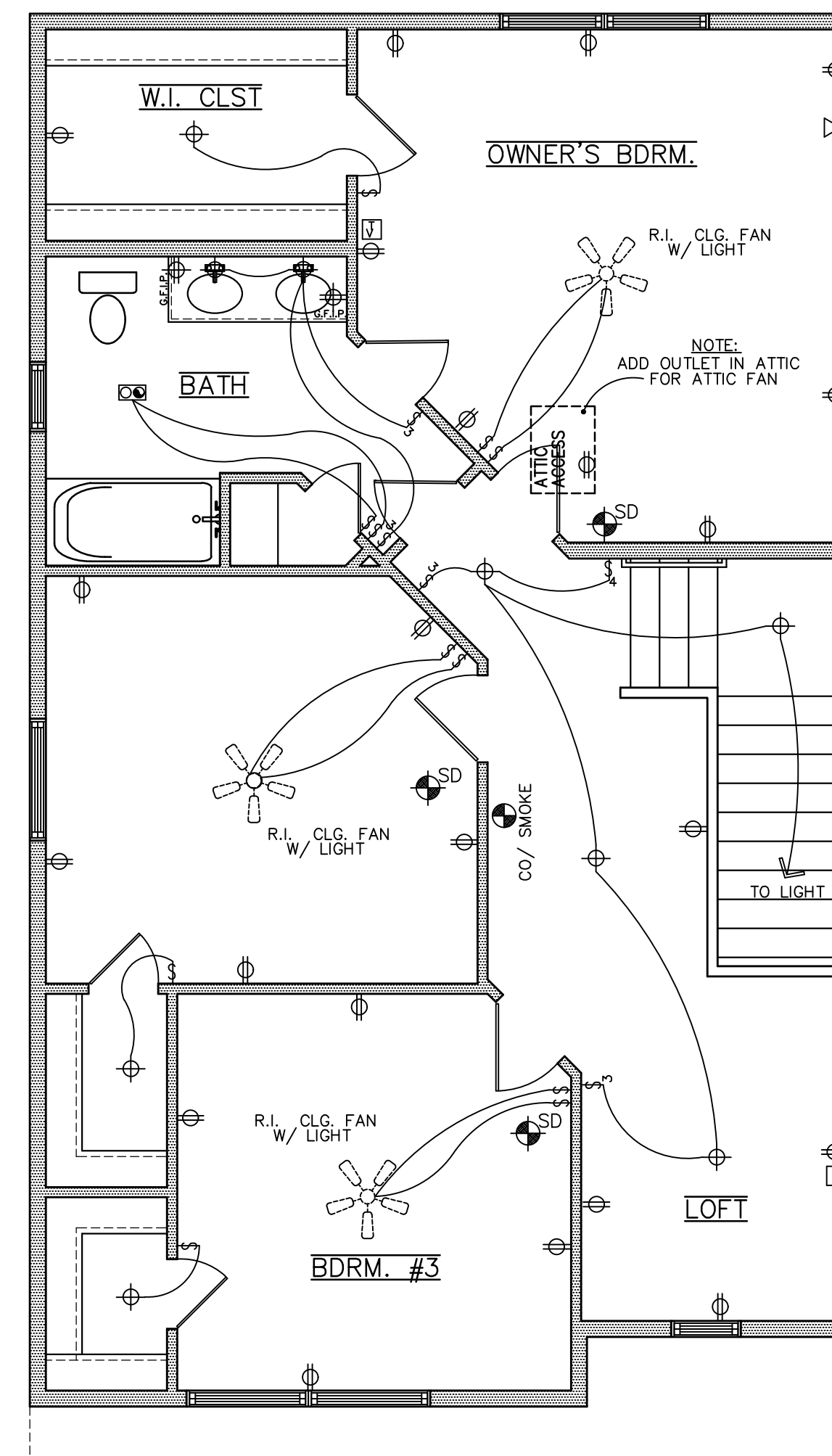
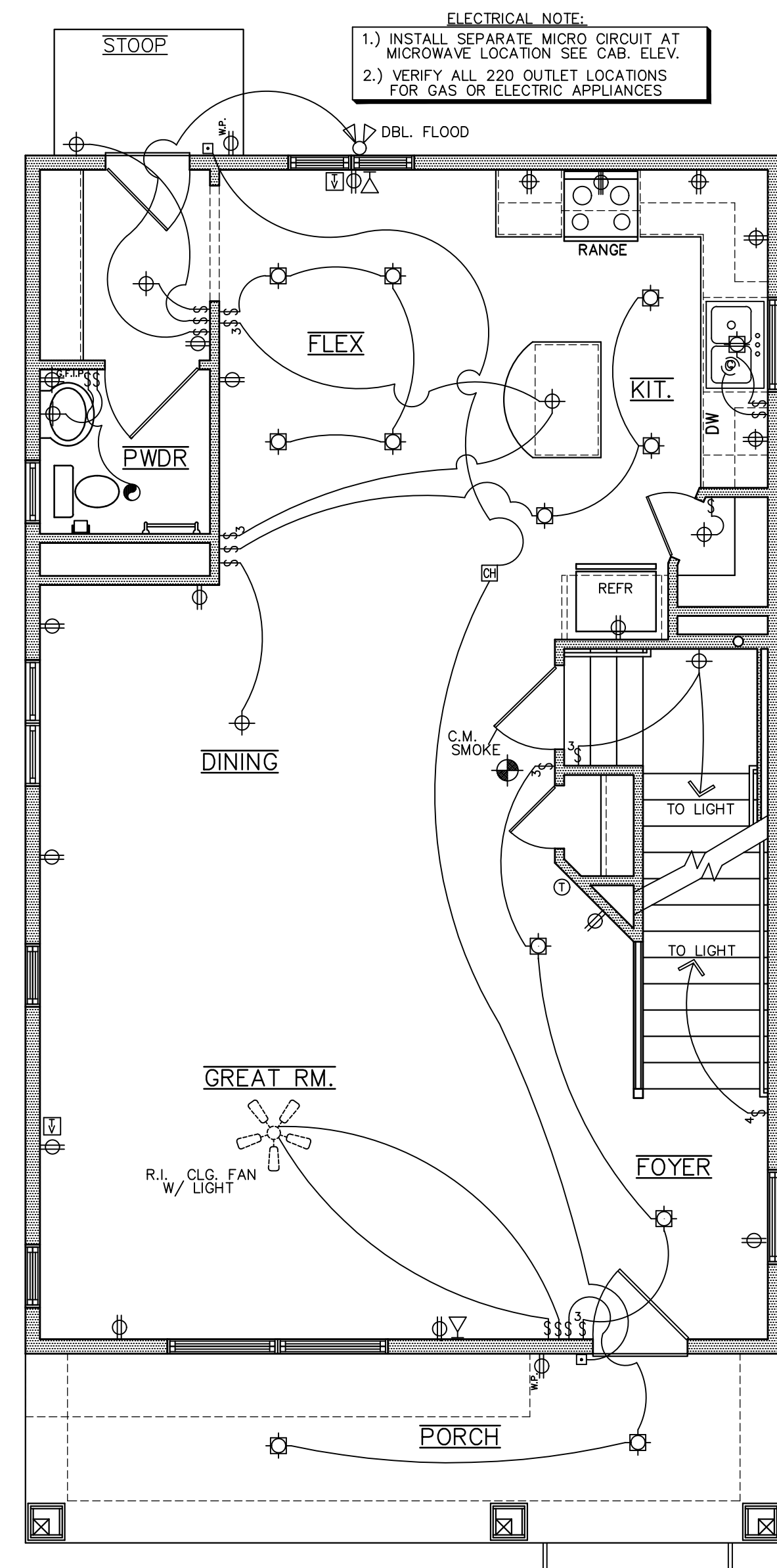
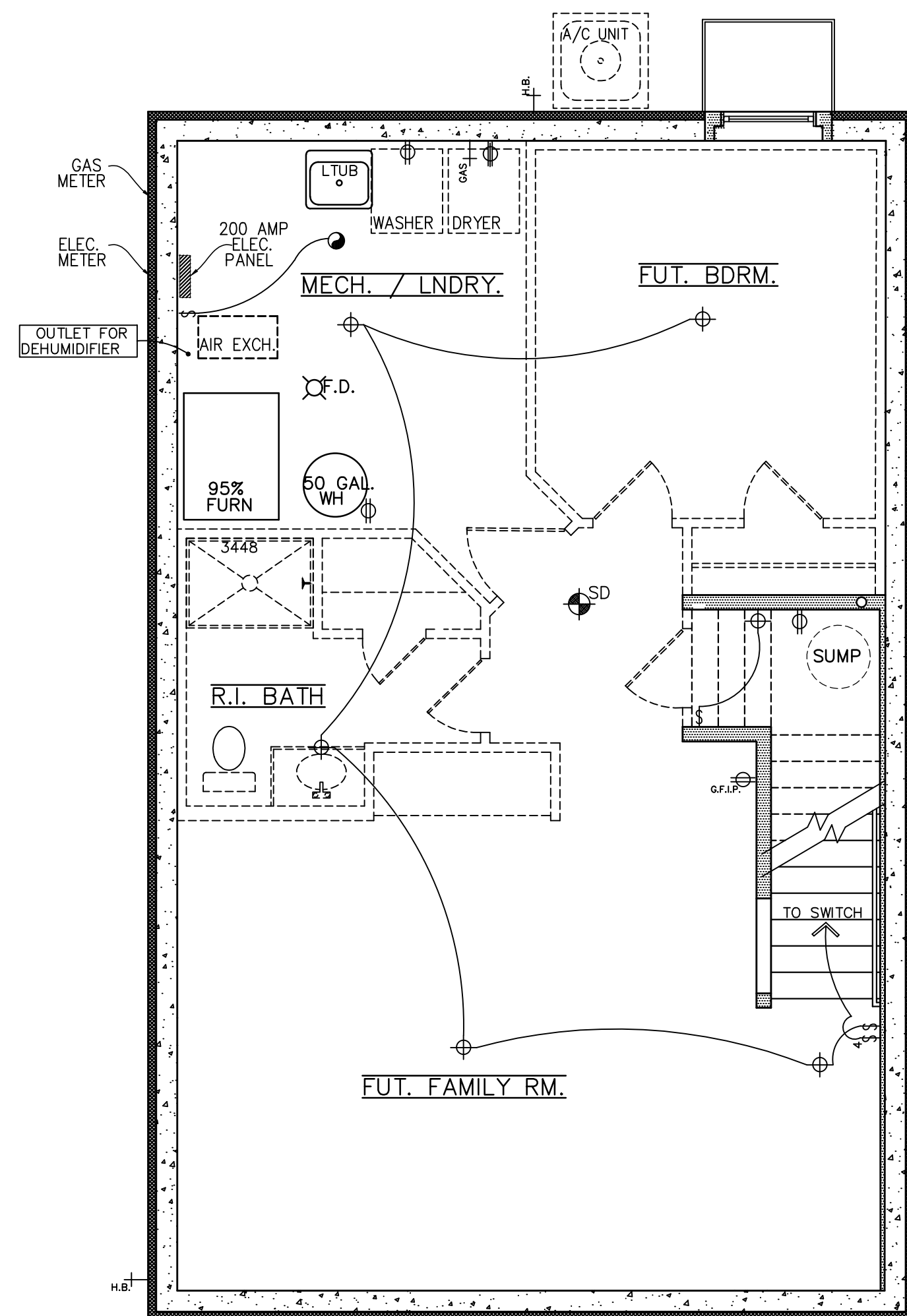
**11 DETAIL @ ROOF OVERHANG**  
 SCALE: 1/2" = 1'-0"

**14 RADON DETAIL**  
 SCALE: N.T.S.

NOTE: THIS DETAIL IS FOR FRAMING PURPOSES ONLY. REFER TO PLAN OR WORK ORDER FOR RAIL AND FINISH TYPE(S)

**13 STAIR DETAIL**  
 SCALE: 3/8" = 1'-0"

DATE: 4-26-2024  
 DRAWN BY: MBC  
 REVISIONS:  
 REVISION:  
 REVISION:  
 REVISION:  
 APPROVED FOR CONSTRUCTION: \_\_\_\_\_  
 INITIALS: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
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 OWNER: PRG - INFILL SINGLE FAMILY  
 PROJECT ADDRESS: 1818 SHERIDAN AVE. N., MPLS.  
 DEVELOPMENT: (FOLK)  
 LOT:  
 BLOCK:  
 ADD.:  
 PN:  
 TITLE: SECT  
 SHEET: A4



ELECTRICAL KEY

- ⊕ DUPLEX CONVENIENCE OUTLET
  - ⊕ DUPLEX OUTLET ABOVE COUNTER
  - ⊕ WEATHERPROOF DUPLEX OUTLET
  - ⊕ DUPLEX OUTLET (GROUND FAULT PROTECTED)
  - ⊕ HALF-SWITCHED DUPLEX OUTLET
  - ⊕ DUPLEX OUTLET IN FLOOR
  - ⊕ 220 VOLT OUTLET
  - ⊕ WALL SWITCH
  - ⊕ THREE-WAY SWITCH
  - ⊕ FOUR-WAY SWITCH
  - ⊕ CEILING MOUNTED INCANDESCENT LIGHT FIXTURE
  - ⊕ WALL MOUNTED INCANDESCENT LIGHT FIXTURE
  - ⊕ RECESSED INCANDESCENT LIGHT FIXTURE
  - ⊕ RECESSED INCANDESCENT EYE BALL FIXTURE
  - ⊕ LIGHT FIXTURE WITH PULL CHAIN
  - ⊕ TRACK LIGHT
  - ⊕ FLOURESCENT LIGHT FIXTURE
  - ⊕ EXHAUST FAN
  - ⊕ EXHAUST FAN/LIGHT COMBINATION
  - ⊕ CHIMES
  - ⊕ SMOKE DETECTOR
  - ⊕ CARBON MONOXIDE DETECTOR
  - ⊕ TELEPHONE
  - ⊕ TELEVISION
  - ⊕ THERMOSTAT
  - ⊕ ELECTRIC METER
  - ⊕ ELECTRIC PANEL
  - ⊕ SPEAKER
  - ⊕ FAN/LIGHT COMBO PREWIRE, PROVIDE ADEQUATE SUPPORT
  - ⊕ 4 BULB FIXTURE
  - ⊕ 3 BULB FIXTURE
  - ⊕ GARAGE DOOR OPENER OUTLET
  - ⊕ FLUORESCENT LIGHT PER SPEC
- 200 AMP SERVICE LIGHTING PACKAGE: T.B.D.  
LINE TO DRYER: T.B.D.

DATE: 4-28-2024  
DRAWN BY: MBG  
REVISED: \_\_\_\_\_  
REVISED: \_\_\_\_\_

APPROVED FOR CONSTRUCTION  
INITIALS: \_\_\_\_\_  
DATE: \_\_\_\_\_

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OWNER: PRG - INFILL SINGLE FAMILY  
PROJECT ADDRESS: 1818 SHERIDAN AVE. N., MPLS.  
DEVELOPMENT: (FOLK)

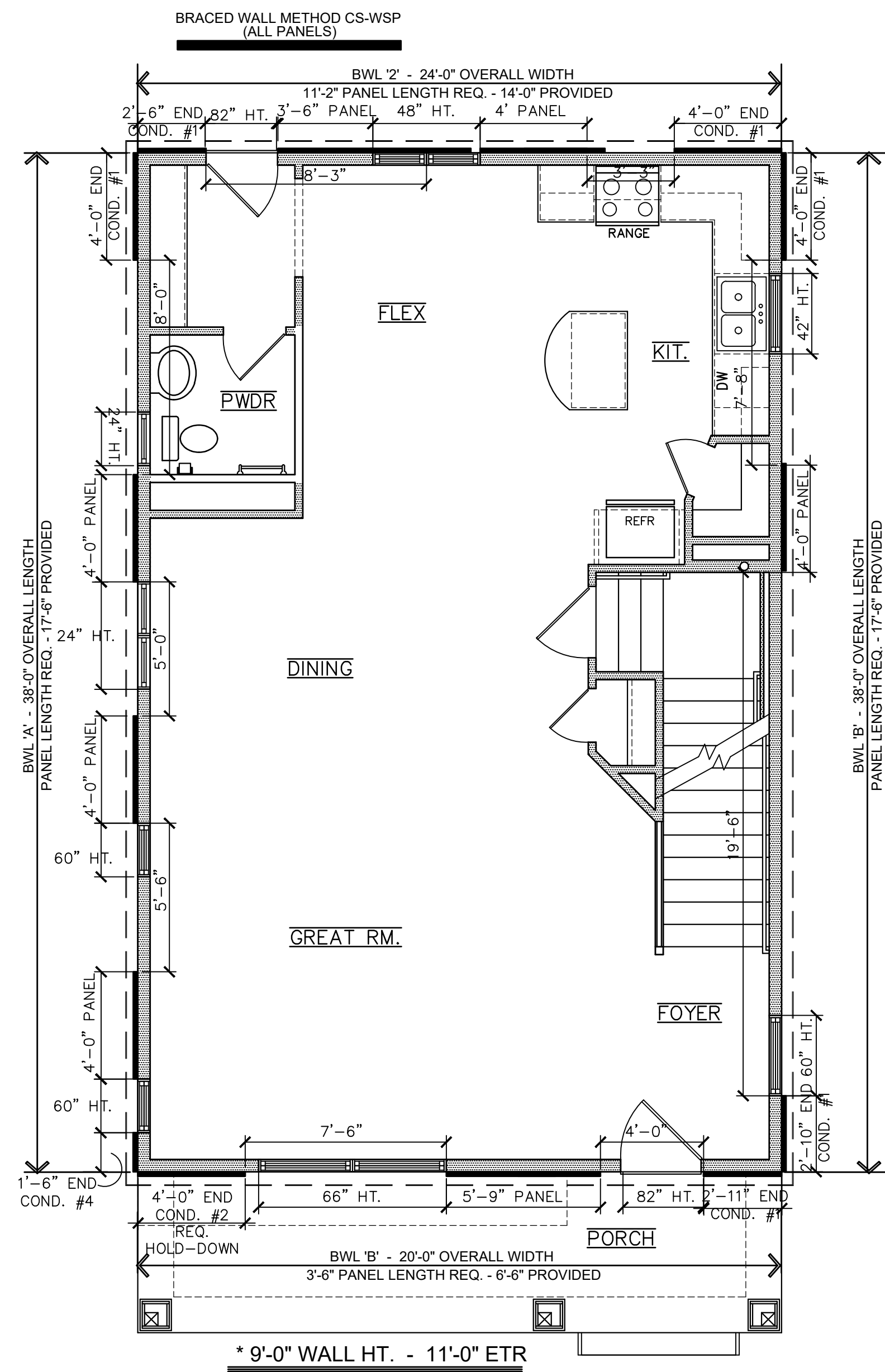
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BLOCK: \_\_\_\_\_  
ADD.: \_\_\_\_\_

PN: \_\_\_\_\_  
TITLE: ELEC  
SHEET: E5

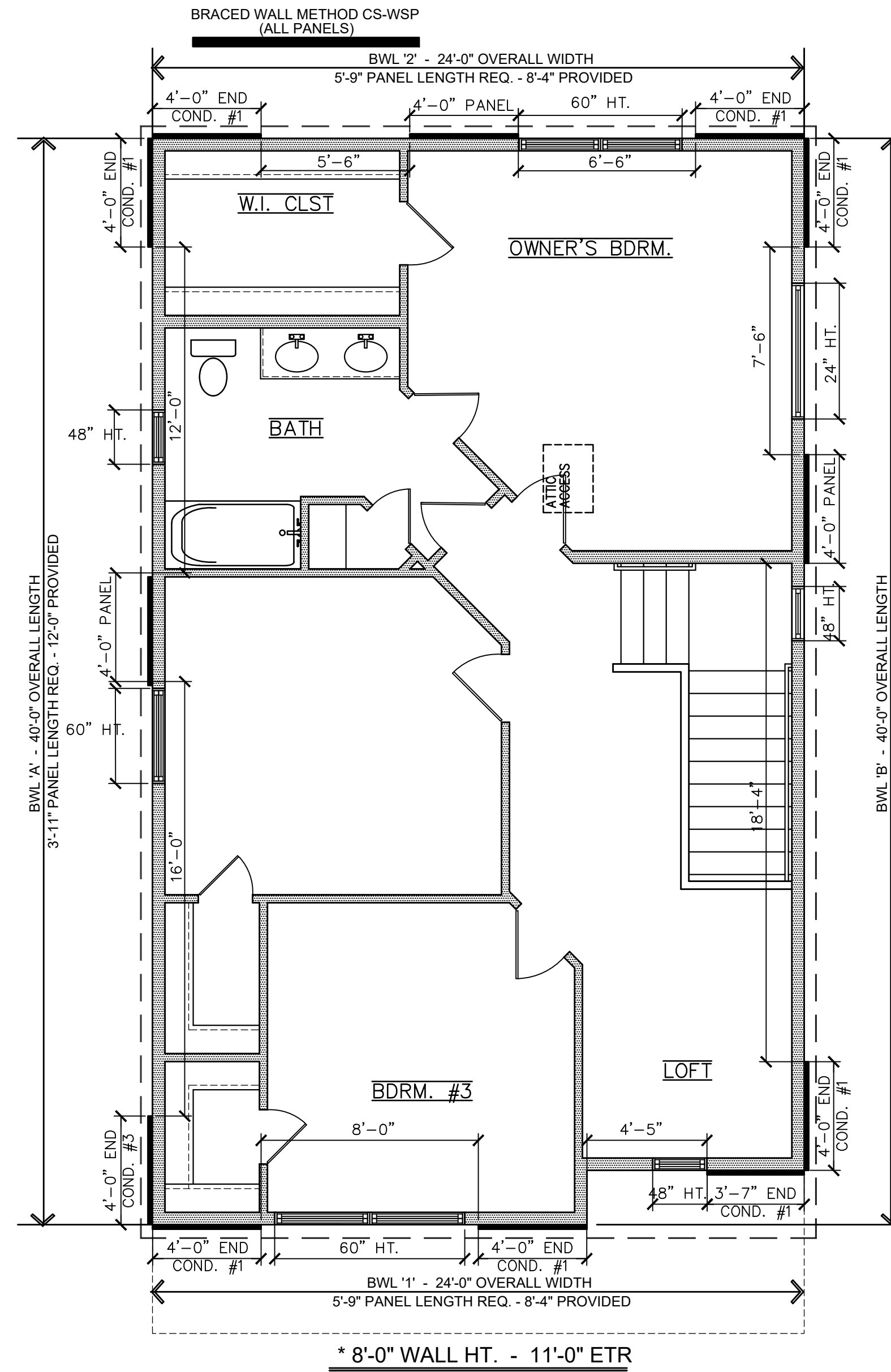
# CONVENTIONAL BRACED WALL METHOD CS-WSP

## R602.10.7

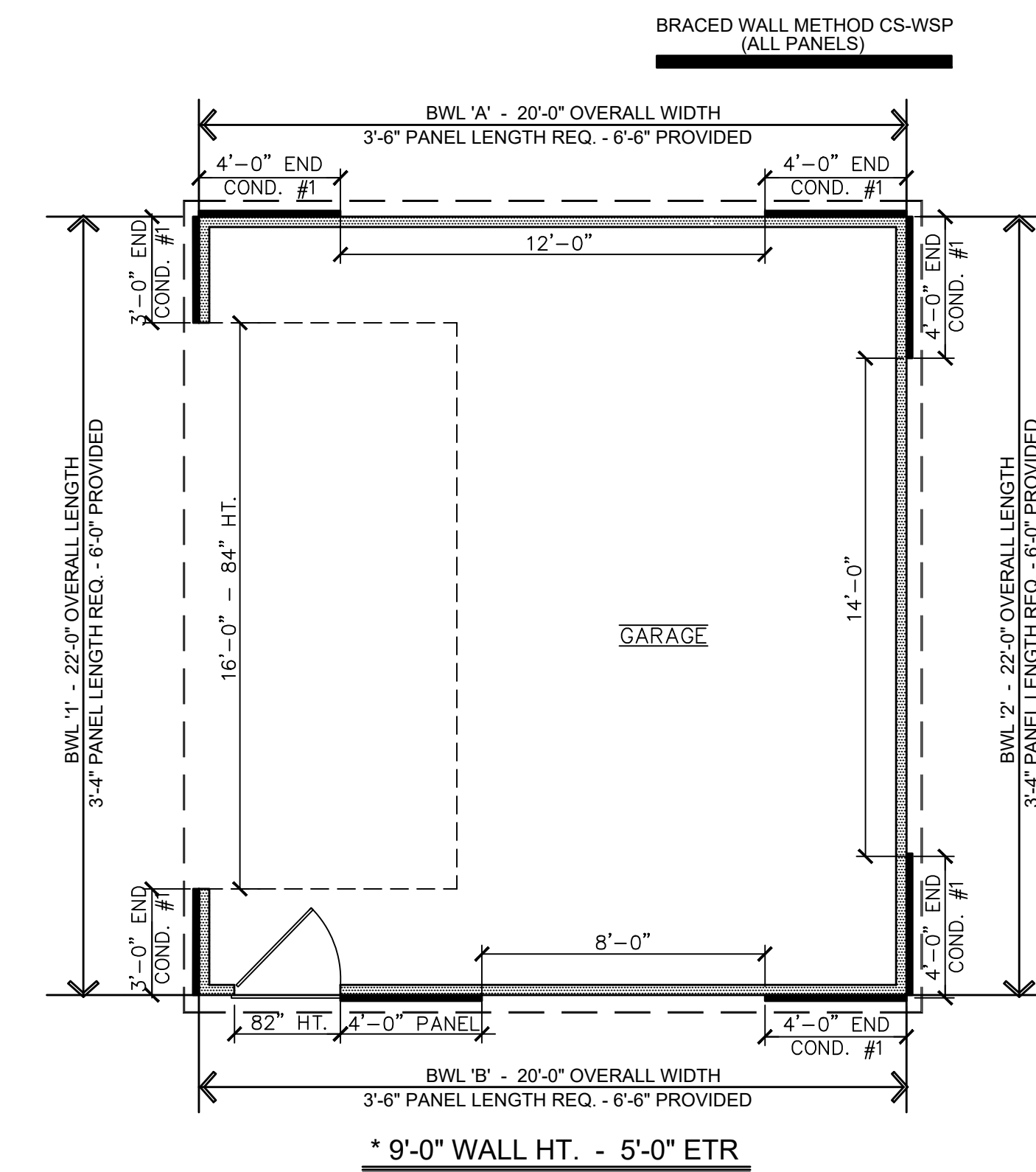
Ends of Braced Wall  
Lines with Continuous  
Sheathing



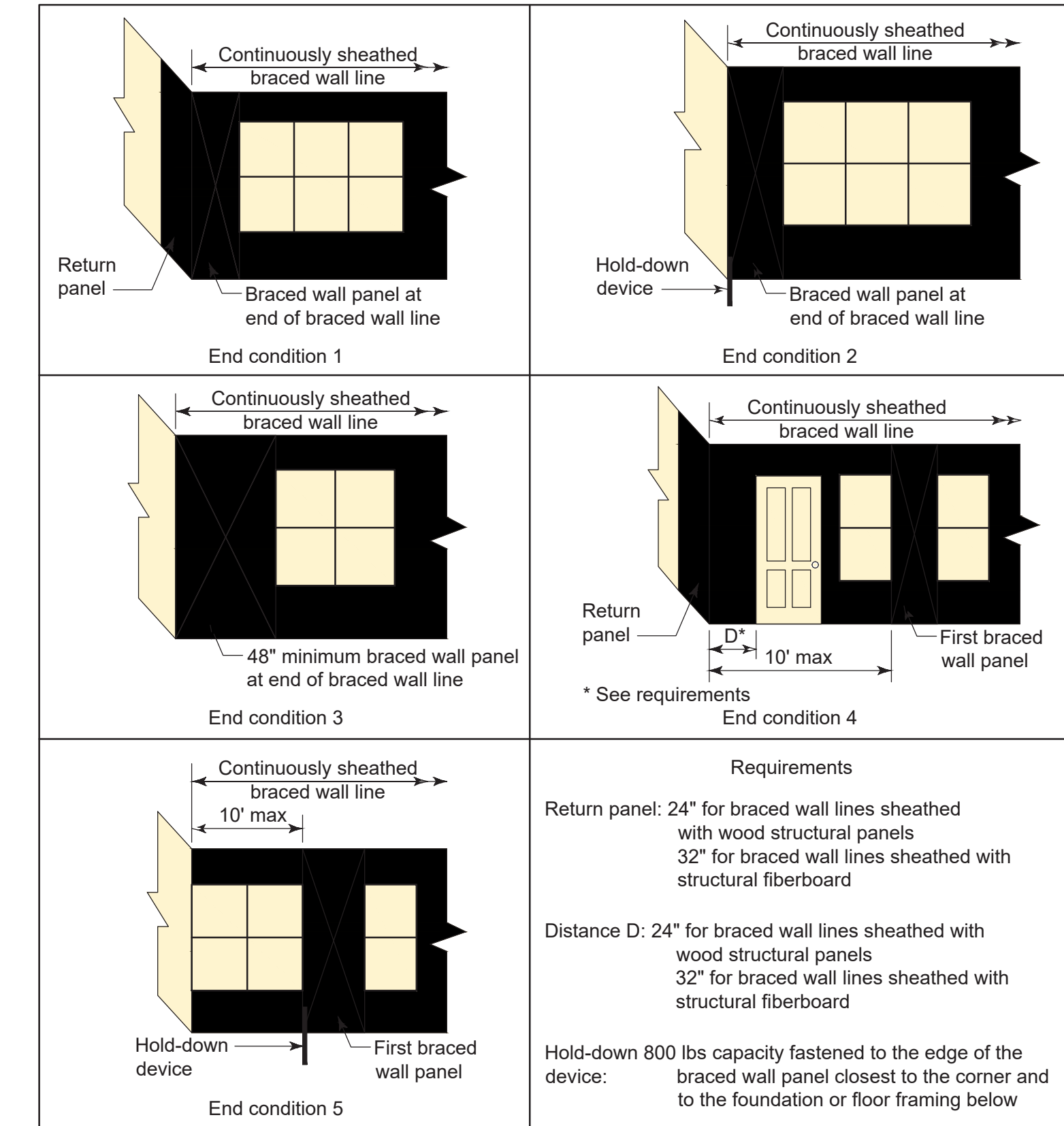
1 MAIN FLR. BRACE WALL  
SCALE: 1/4" = 1'-0"



2 UPPER FLR. BRACE WALL  
SCALE: 1/4" = 1'-0"



3 GARAGE BRACE WALL  
SCALE: 1/4" = 1'-0"



End conditions for braced wall lines with continuous sheathing

DATE: 4-26-2024  
DRAWN BY: MBG  
REVISED: \_\_\_\_\_  
REVISED: \_\_\_\_\_

APPROVED FOR CONSTRUCTION  
INITIALS: \_\_\_\_\_  
DATE: \_\_\_\_\_

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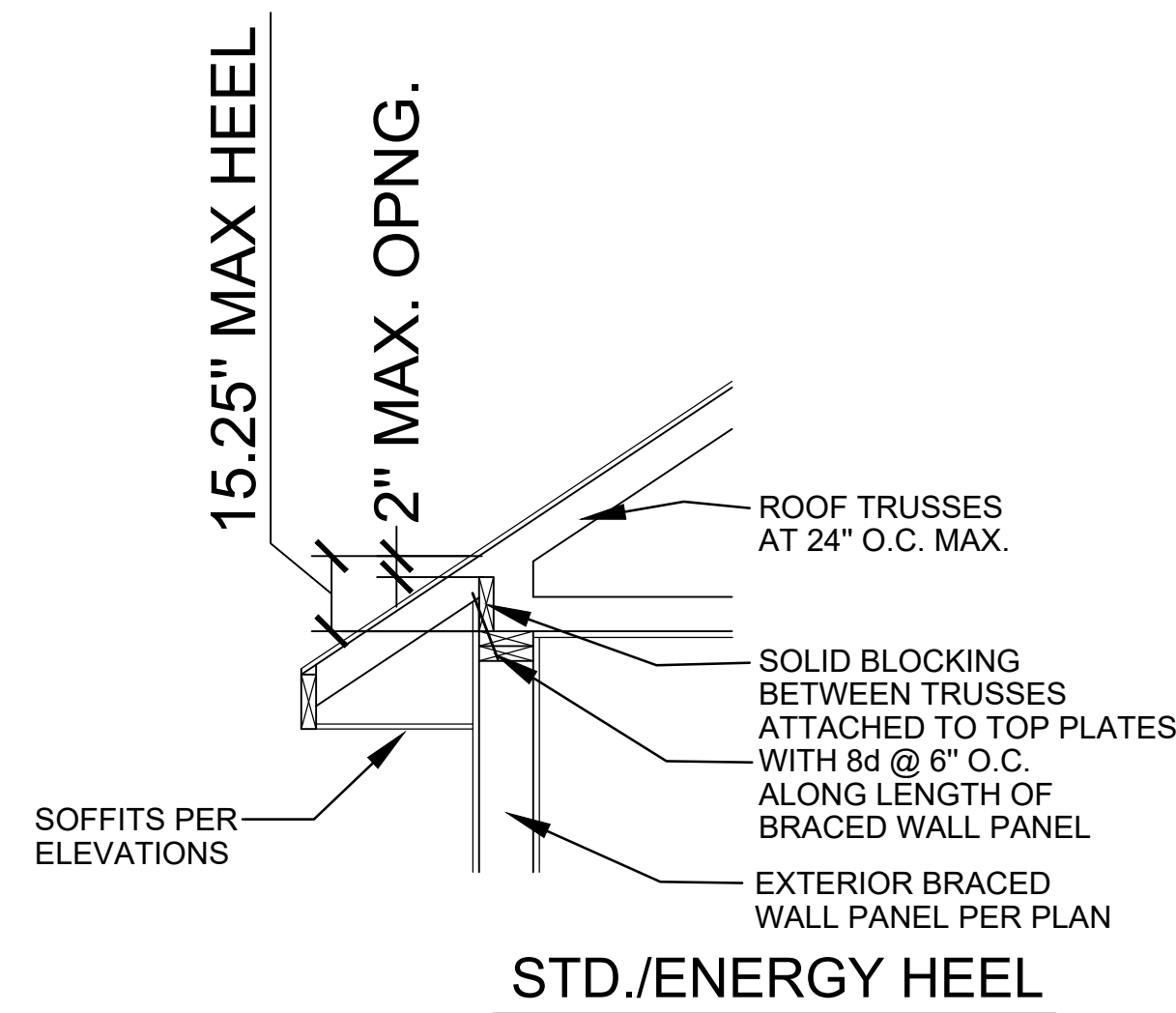
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DEVELOPMENT: (FOLK)

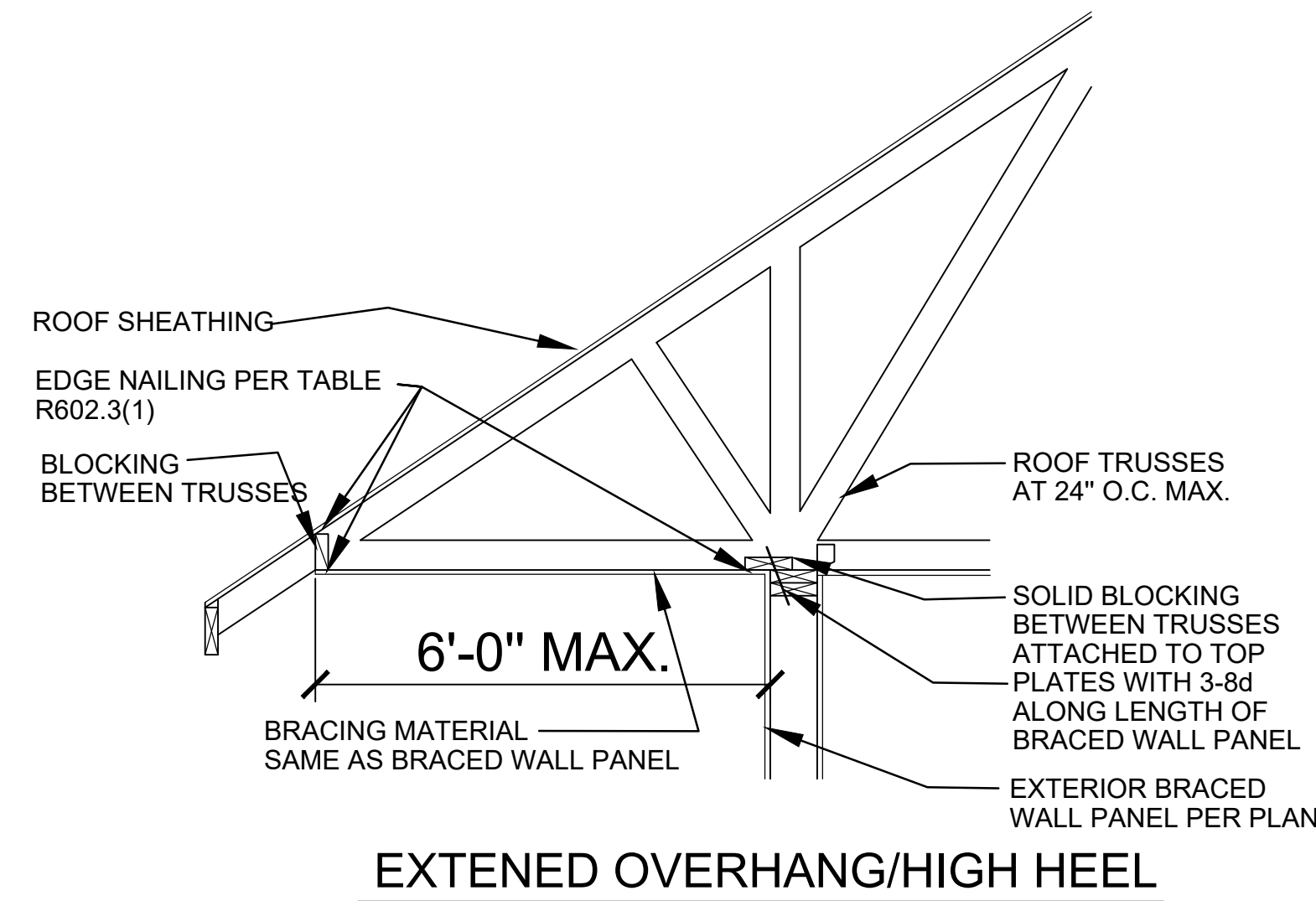
LOT:  
BLOCK:  
ADD.:

PN:  
TITLE: BW  
SHEET: BW

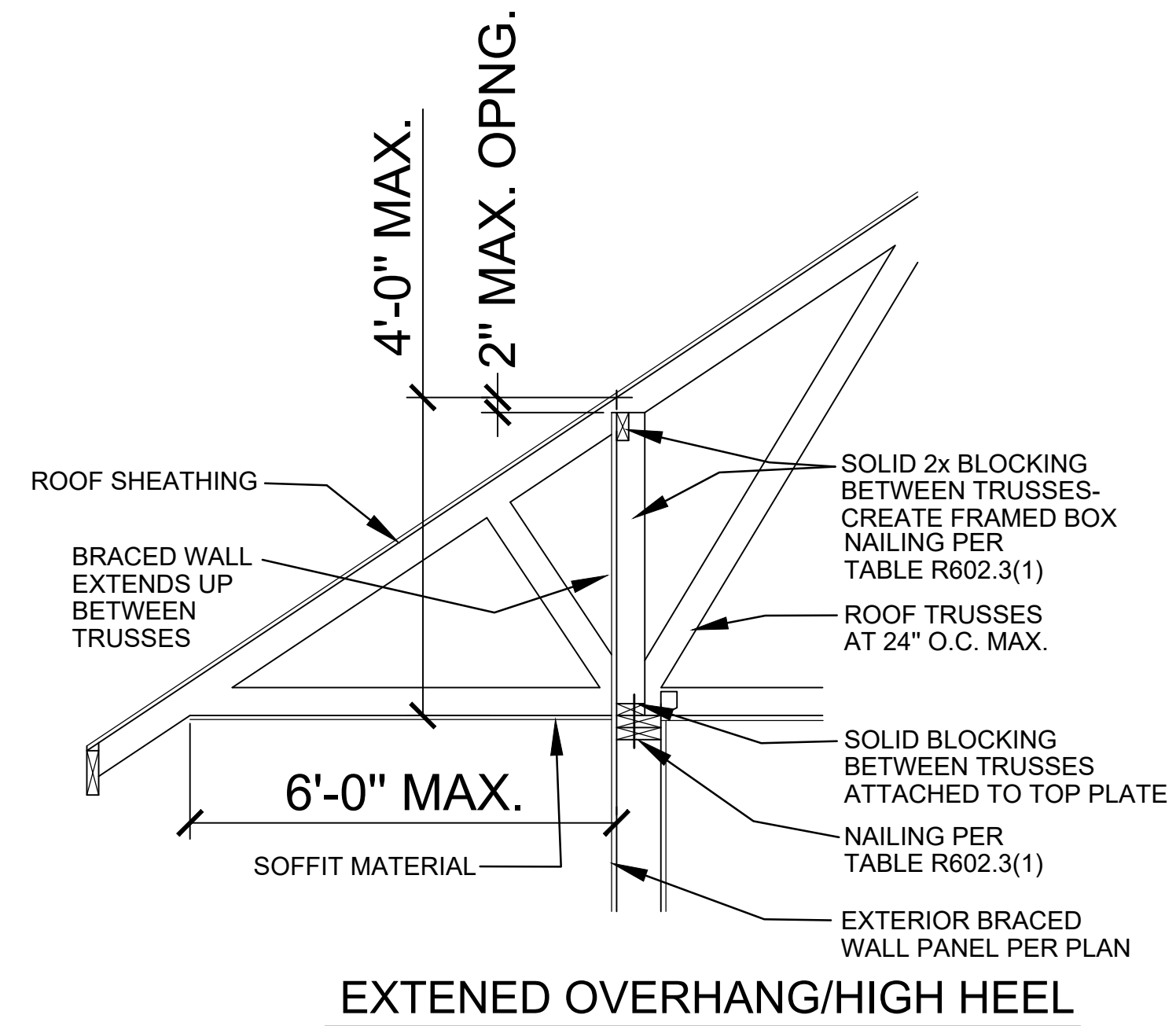
PROVIDE PORTAL FRAME WALL BRACE AT GARAGE DOOR OPENING PER 2020 MN RES. CODE SECTION R602.10.6.3



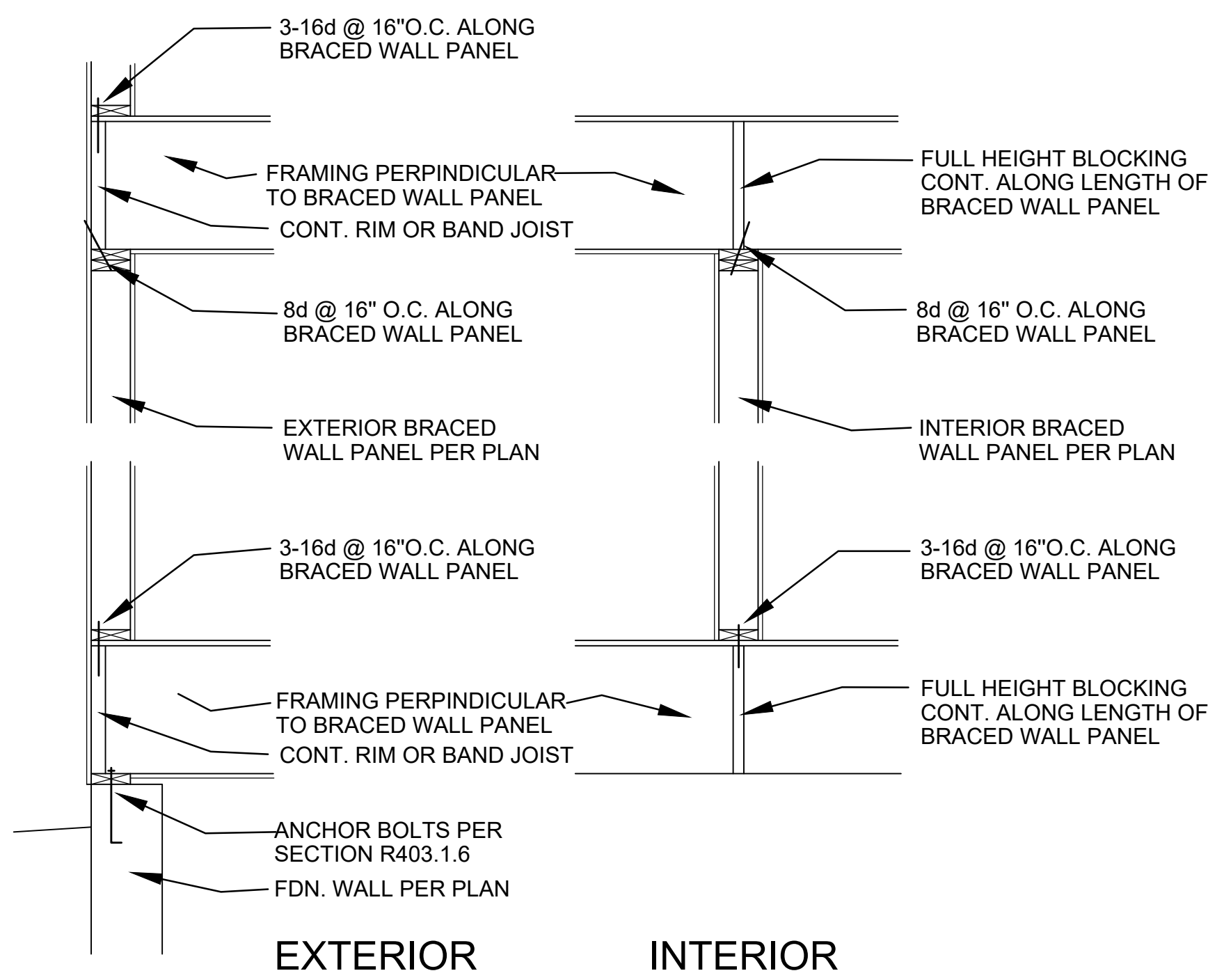
**BRACED WALL PANEL CONNECTION PERPENDICULAR TO ROOF FRAMING**  
PER SECTION R602.8.2



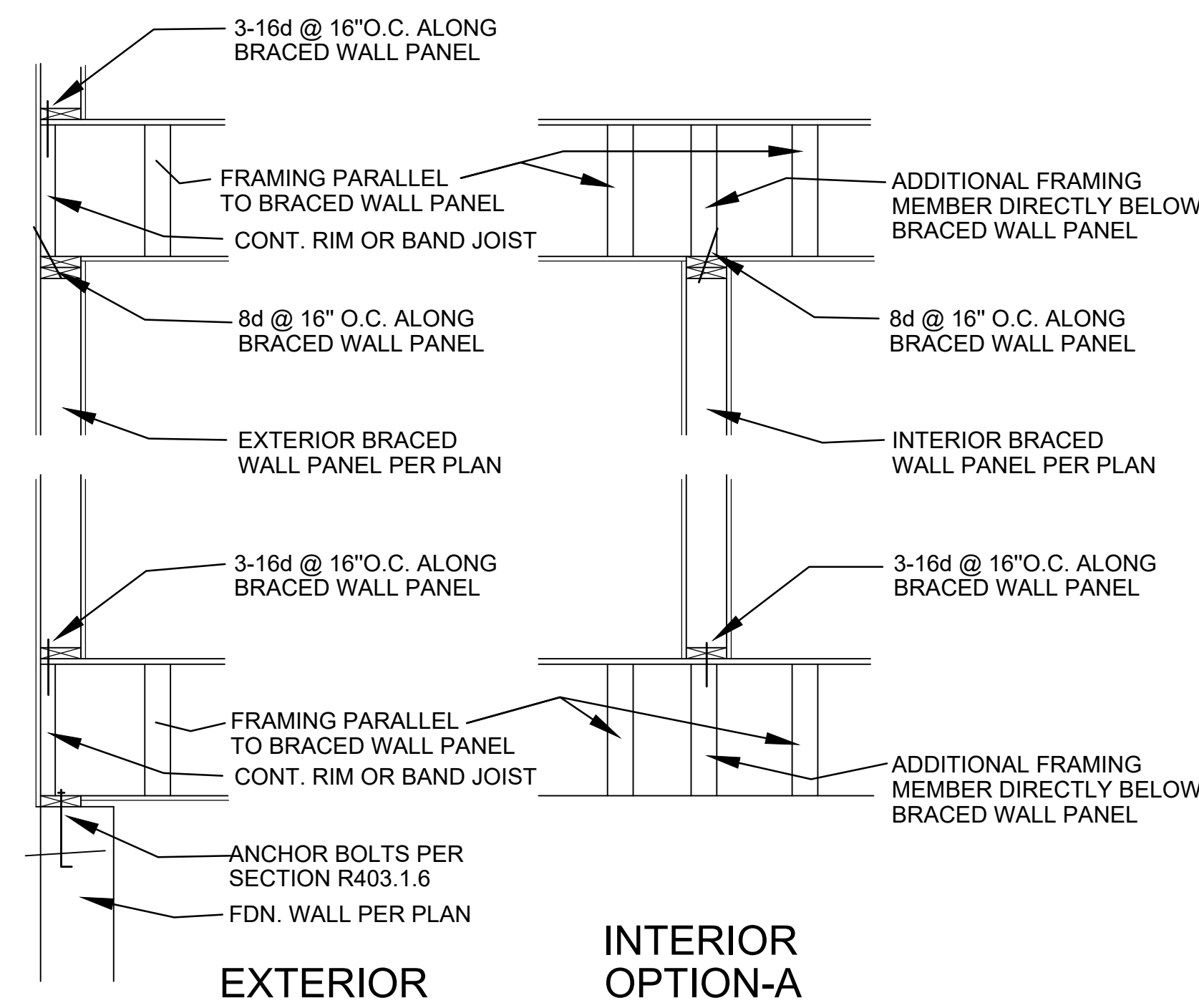
**BRACED WALL PANEL CONNECTION PERPENDICULAR TO ROOF FRAMING**  
PER SECTION R602.8.2



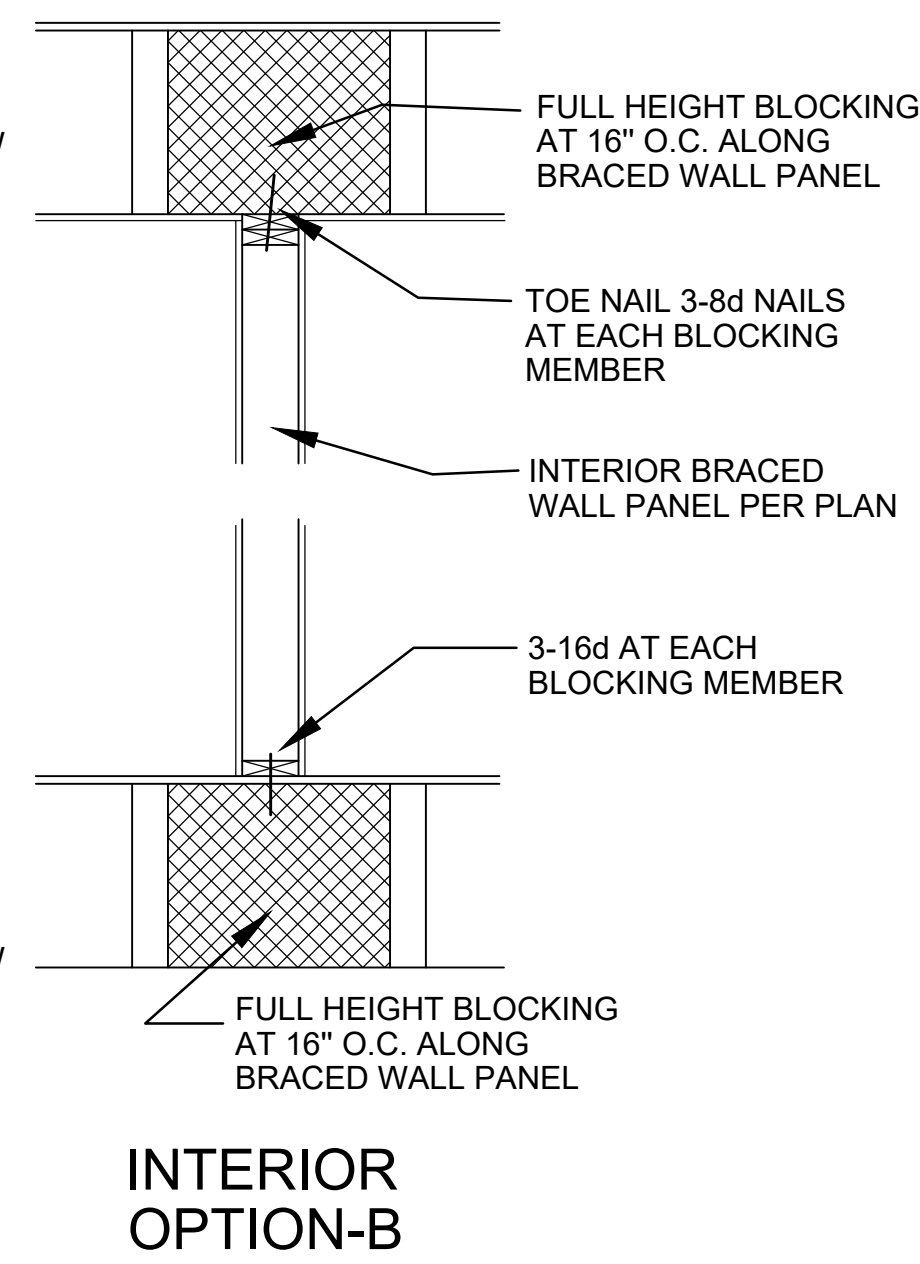
**"OPT." BRACED WALL PANEL CONNECTION PERPENDICULAR TO ROOF FRAMING**  
PER SECTION R602.8.2



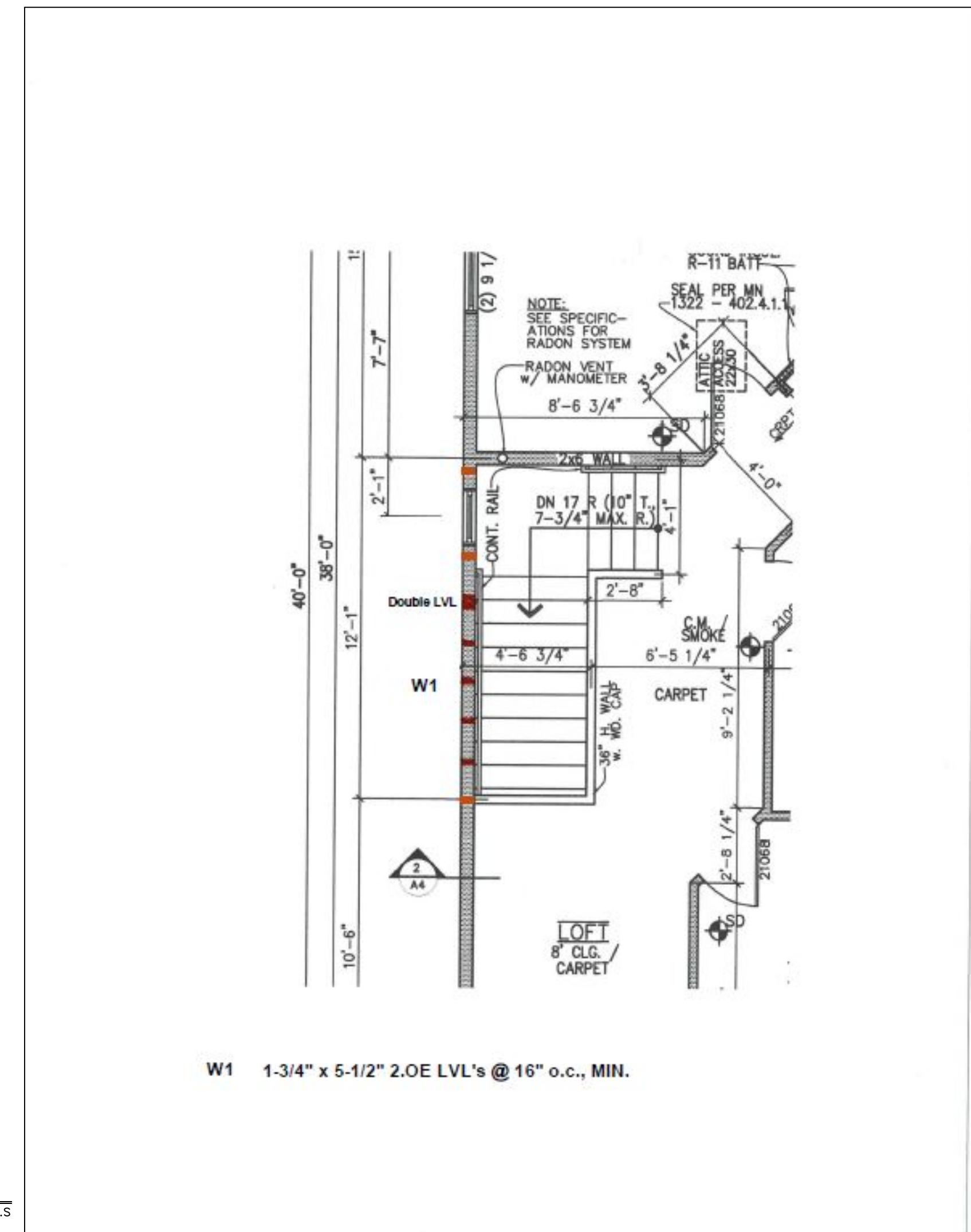
**BRACED WALL PANEL CONNECTION PERPENDICULAR TO FLOOR/CEILING FRAMING**  
PER SECTION R602.10.8



**BRACED WALL PANEL CONNECTION PARALLEL TO FLOOR/CEILING FRAMING**  
PER SECTION R602.10.8



**INTERIOR OPTION-B**



# BRACED WALL PANEL CONNECTION DETAILS

SCALE: N.T.S.

TALL WALL ENG. SCALE: N.T.S.

DATE: 4-26-2024  
DRAWN BY: MBG  
REVISED:  
REVISED:

APPROVED FOR CONSTRUCTION  
INITIALS:  
DATE:

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PROJECT ADDRESS: 1818 SHERIDAN AVE. N., MPLS.  
DEVELOPMENT: (FOLK)

LOT:  
BLOCK:  
ADD.:

PN:  
TITLE: BW2  
SHEET: BW2



**KEMPER & ASSOCIATES INC.**  
 PROFESSIONAL LAND SURVEYORS  
 721 OLD HIGHWAY 8 N.W.  
 NEW BRIGHTON, MINNESOTA 55112  
 651-631-0351  
 FAX 651-631-8805  
 email: kemper@pro-ns.net  
 www.kempersurveys.com

# 1818 SHERIDAN AVENUE NORTH

## CITY OF MINNEAPOLIS, HENNEPIN COUNTY, MINNESOTA

(PROPOSED SITE & GRADING AND EROSION CONTROL PLAN)



FRONT OF PROPOSED RESIDENCE  
 AT 1564 HILLSIDE AVE. N.  
 (PRG "FOLK" PLAN)

### ZONING REQUIREMENTS

**ZONED UN2 - URBAN NEIGHBORHOOD DISTRICT**

**SUBJECT TO BF12 - INTERIOR 2 BUILT FORM OVERLAY DISTRICT**

MINIMUM LOT AREA - 5,000 SQ. FT.  
 MINIMUM LOT WIDTH - 40 FEET  
 MAXIMUM FLOOR AREA RATIO - 0.5  
 MAXIMUM LOT COVERAGE - 45%  
 MAXIMUM IMPERVIOUS SURFACE COVERAGE - 60%  
 MAXIMUM HEIGHT - 2.5 STORIES, 28 FEET, (THE HIGHEST POINT OF A GABLE, HIP OR GAMBREL ROOF SHALL NOT EXCEED 33 FEET)

**BUILDING SETBACKS:**  
 FRONT - 20 FEET (THE REQUIRED FRONT YARD SHALL BE INCREASED WHERE THE ESTABLISHED FRONT YARD OF THE CLOSEST PRINCIPAL BUILDING ORIGINALLY DESIGNED FOR RESIDENTIAL PURPOSES LOCATED ON THE SAME BLOCK FACE ON EITHER SIDE OF THE PROPERTY EXCEEDS THE FRONT YARD REQUIRED BY THE ZONING DISTRICT. IN SUCH CASE, THE REQUIRED FRONT YARD SHALL BE NOT LESS THAN SUCH ESTABLISHED FRONT YARD)  
 SIDE - 5 FEET (HEIGHT LESS THAN 42')  
 REAR - 5 FEET (HEIGHT LESS THAN 42')  
 (AS PER CITY OF MINNEAPOLIS ZONING CODE)

**ACCESSORY STRUCTURES:**  
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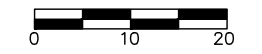
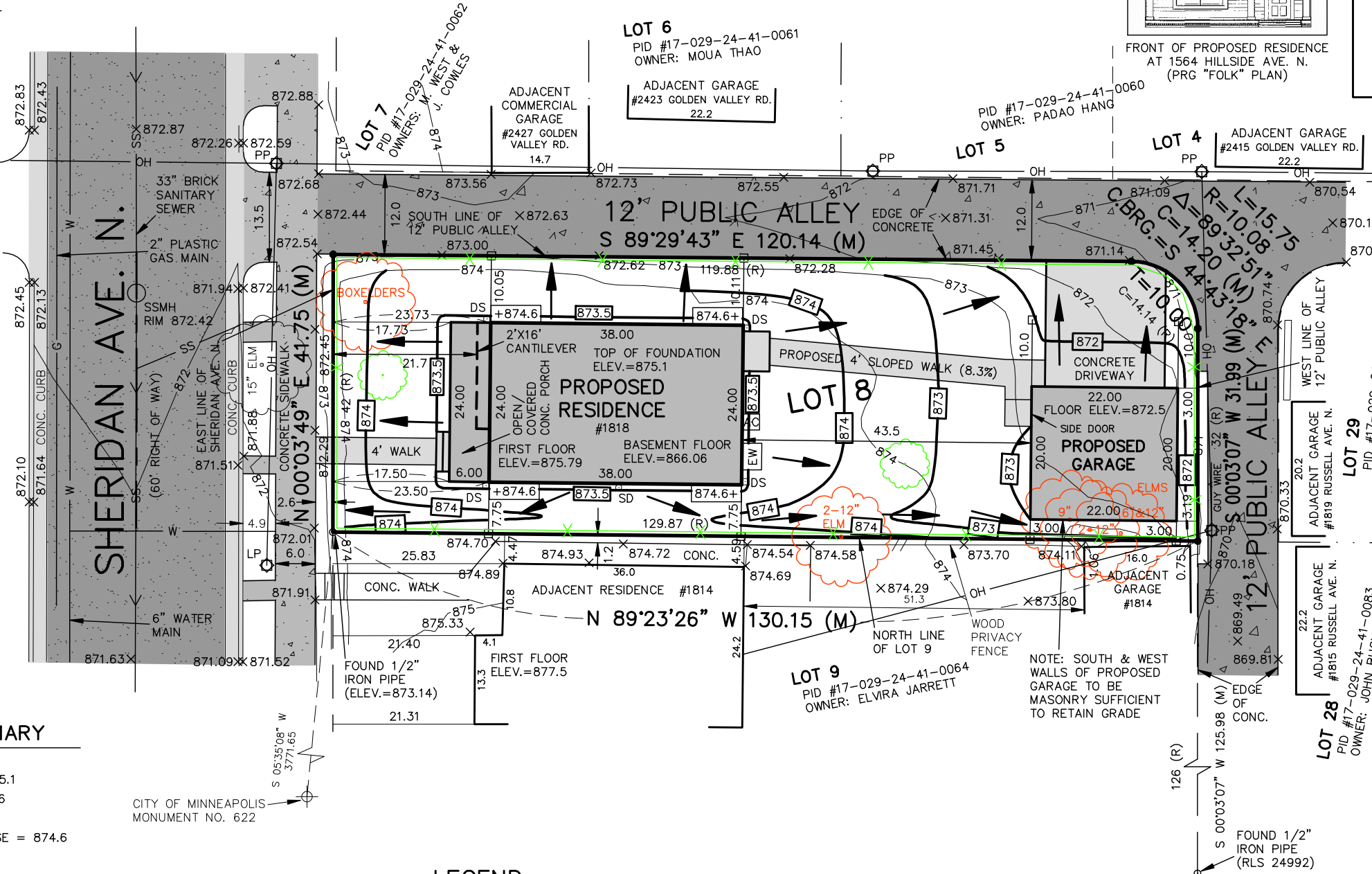
### PROPOSED HARDCOVER SUMMARY

HOUSE FOOTPRINT=912 SQ. FT.  
 FRONT PORCH & STEPS=156 SQ. FT.  
 REAR STOOP=24 SQ. FT.  
 GARAGE FOOTPRINT=440 SQ. FT.  
 CONCRETE DRIVEWAY=339 SQ. FT.  
 CONCRETE WALKS=252 SQ. FT.  
 TOTAL IMPERVIOUS SURFACE COVERAGE=2,123 SQ. FT. (39.1% OF LOT AREA)

### PROPOSED ELEVATION SUMMARY

FIRST FLOOR = 875.79  
 TOP OF FOUNDATION = 875.1  
 BASEMENT FLOOR = 866.06  
 GARAGE FLOOR = 872.5  
 GRADE ADJACENT TO HOUSE = 874.6

PREPARED FOR:  
 KEVIN GULDEN, PROJECT MANAGER  
 KATHY WETZEL-MASTEL, EXECUTIVE DIRECTOR  
 PRG, INC.  
 2017 38TH ST. E.  
 MINNEAPOLIS, MINNESOTA 55407  
 612-721-7556  
 kevin@prginc.org  
 kathy@prginc.org  
 FAX 651-925-0422



1 INCH EQUALS 20 FEET

BASIS FOR BEARINGS:  
 HENNEPIN COUNTY COORDINATE SYSTEM (NAD83, 1996)

BASIS FOR ELEVATION:  
 CITY OF MINNEAPOLIS MONUMENT NO. 622 AT THE INTERSECTION OF THOMAS AVE. N. & OAK PARK AVE.  
 ELEV.=856.62 (NGVD29)

(VIA REAL TIME GPS MEASUREMENTS UTILIZING MINNESOTA DEPARTMENT OF TRANSPORTATION VRS NETWORK)

CONTOUR INTERVAL=1 FOOT

### LEGAL DESCRIPTION

QUIT CLAIM DEED  
 DOC. NO. A09919824

Lot 8, Block 3, Eastlawn Addition to Minneapolis, Hennepin County, Minnesota

LOT 8 =  
 5,428 SQ. FT.  
 OR 0.1246 ACRES

### LEGEND

- |                |                                  |        |                                  |     |   |         |                                |
|----------------|----------------------------------|--------|----------------------------------|-----|---|---------|--------------------------------|
| — 883 —        | EXISTING CONTOUR LINE            | — OH — | OVERHEAD UTILITY LINES           | (M) | DENOTES DIMENSION MEASURED DURING THE COURSE OF THIS SURVEY | — 873 — | PROPOSED CONTOUR LINE          |
| × 882.42       | EXISTING SPOT ELEVATION          | — SS — | SANITARY SEWER                   | (R) | DENOTES RECORD DIMENSION AS PER PLAT OF EASTLAWN ADDITION   | + 874.6 | PROPOSED SPOT ELEVATION        |
| PP             | POWER POLE                       | — W —  | WATER MAIN/SERVICE               | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | →       | DIRECTION OF PROPOSED DRAINAGE |
| SSMH           | SANITARY SEWER MANHOLE           | — G —  | GAS MAIN/SERVICE                 | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | □       | PROPOSED OFFSET STAKE          |
| LP             | LIGHT POLE                       | (Tree) | TREE TO BE REMOVED               | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | ✕       | PROPOSED SILT FENCE            |
| (Green Circle) | PROPOSED 2" CALIPER CANOPY MAPLE | (Dot)  | PROPOSED 2" CALIPER CANOPY MAPLE | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | DS      | PROPOSED DOWN SPOUT            |
|                |                                  | (Dot)  | PROPOSED 2" CALIPER CANOPY MAPLE | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | SD      | PROPOSED SUMP DISCHARGE        |
|                |                                  | (Dot)  | PROPOSED 2" CALIPER CANOPY MAPLE | (•) | DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"           | AC      | PROPOSED AIR CONDITIONER       |



CERTIFICATION  
 I HEREBY CERTIFY THAT THIS SURVEY, PLAN, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

*Mark D. Kemper*  
 MARK D. KEMPER, PLS 18407

DATED THIS 17TH DAY OF APRIL, 2024

# CERTIFICATE OF SURVEY

24009 (24009SP.DWG) D.B. TODD HOLEN

**KEMPER & ASSOCIATES INC.**

PROFESSIONAL LAND SURVEYORS

721 OLD HIGHWAY 8 N.W.  
NEW BRIGHTON, MINNESOTA 55112  
651-631-0351  
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# 1818 SHERIDAN AVENUE NORTH

CITY OF MINNEAPOLIS, HENNEPIN COUNTY, MINNESOTA

(EXISTING CONDITIONS MARCH, 2024)



FRONT OF 1818 SHERIDAN AVENUE NORTH  
CITY OF MINNEAPOLIS, HENNEPIN COUNTY, MN

**ZONING REQUIREMENTS**

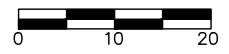
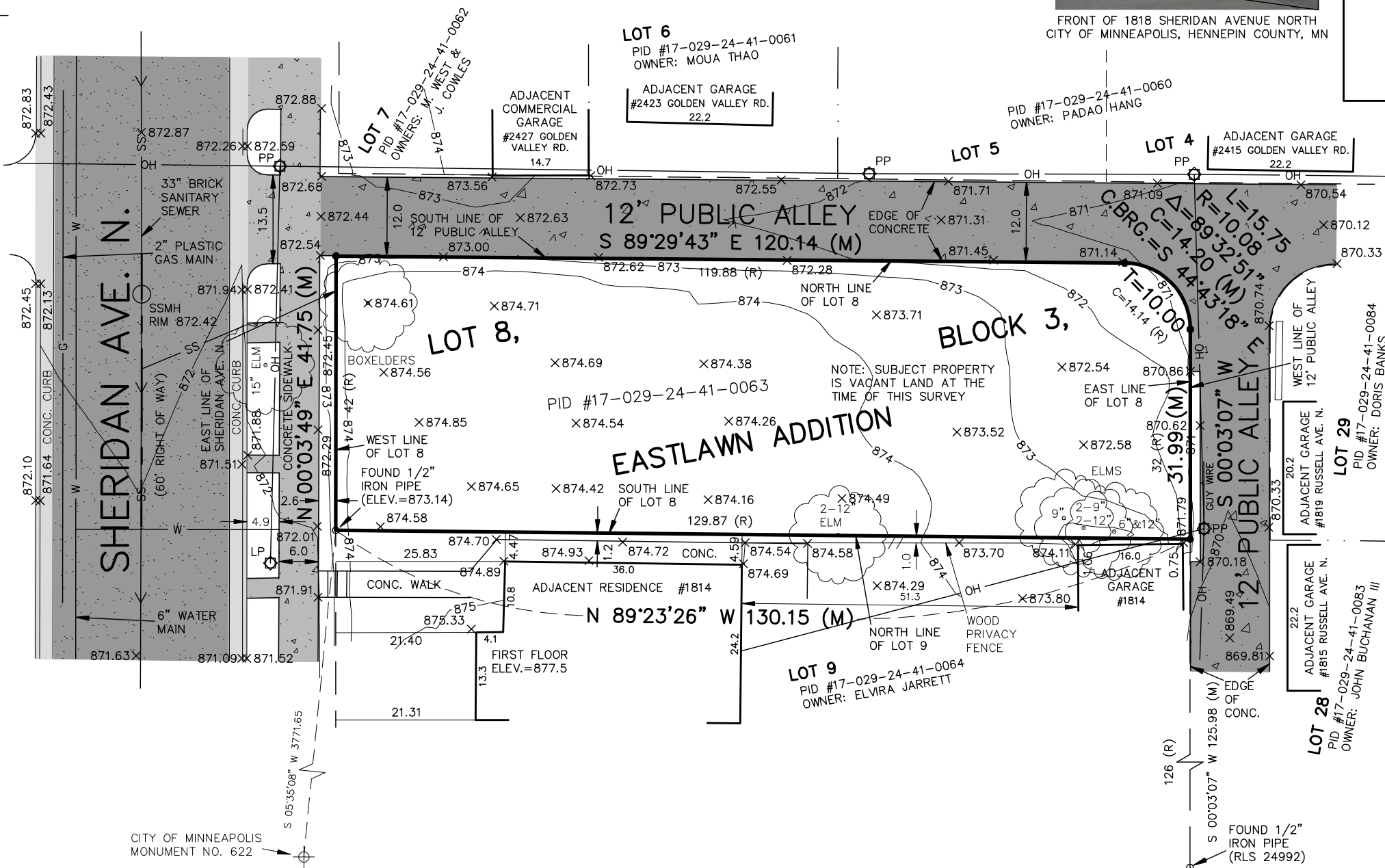
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(VIA REAL TIME GPS  
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MINNESOTA DEPARTMENT  
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VRS NETWORK)

CONTOUR INTERVAL=1 FOOT

**LEGAL DESCRIPTION**

QUIT CLAIM DEED  
DOC. NO. A09919824

Lot 8, Block 3, Eastlawn  
Addition to Minneapolis,  
Hennepin County,  
Minnesota

LOT 8 =  
5,428 SQ. FT.  
OR 0.1246 ACRES



REAR OF 1818 SHERIDAN AVENUE NORTH  
CITY OF MINNEAPOLIS, HENNEPIN COUNTY, MN

PREPARED FOR:  
KEVIN GULDEN, PROJECT MANAGER  
KATHY WETZEL-MASTEL, EXECUTIVE DIRECTOR  
PRG, INC.  
2017 38TH ST. E.  
MINNEAPOLIS, MINNESOTA 55407  
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FAX 651-925-0422

## CERTIFICATE OF SURVEY

24009 (24009.DWG) D.B. TODD HOLEN

**LEGEND**

- 883— EXISTING CONTOUR LINE
- OH— OVERHEAD UTILITY LINES
- SS— SANITARY SEWER
- W— WATER MAIN/SERVICE
- G— GAS MAIN/SERVICE
- ×882.42 EXISTING SPOT ELEVATION
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- SSMH SANITARY SEWER MANHOLE
- LP LIGHT POLE
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- (R) DENOTES RECORD DIMENSION AS PER PLAT OF EASTLAWN ADDITION
- DENOTES SET SURVEY MONUMENT MARKED "KEMPER 18407"



CERTIFICATION  
I HEREBY CERTIFY THAT THIS SURVEY, PLAN,  
OR REPORT WAS PREPARED BY ME OR  
UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED PROFESSIONAL LAND  
SURVEYOR UNDER THE LAWS OF THE STATE  
OF MINNESOTA.

*Mark D. Kemper*  
MARK D. KEMPER, PLS 18407

DATED THIS 20TH DAY OF MARCH, 2024

## GEOTECHNICAL EXPLORATION AND FACTUAL SHORING REPORT

*1818 Sheridan Avenue North*

*City of Minneapolis*

*Minneapolis, Minnesota*

*NTI Project No. 19.MSP09066.000*

***Prepared For:***

City of Minneapolis  
Community Planning and Economic Development  
105<sup>th</sup> Avenue South, Suite 600  
Minneapolis, Minnesota 55401

I hereby certify that this plan,  
specification, or report was prepared by  
me or under my direct supervision and  
that I am a Duly Licensed Professional  
Engineer under the Laws of the State of  
Minnesota.



---

Steven D. Gerber

Date: 12/19/2019 Reg. No. 45298



**NTI**<sup>™</sup>  
NORTHERN  
TECHNOLOGIES, LLC

6160 Carmen Avenue East  
Inver Grove Heights, MN 55076  
P: 651.389.4191 F: 651.389.4190  
[www.NTIgeo.com](http://www.NTIgeo.com)

Unearthing confidence<sup>™</sup>

December 19, 2019

City of Minneapolis  
Community Planning and Economic Development  
Attention: Mr. Abdulkadir Jama  
105<sup>th</sup> Avenue South, Suite 600  
Minneapolis, Minnesota 55401

RE: Geotechnical Exploration and Factual Shoring Report  
**1818 Sheridan Avenue North**  
Minneapolis, Minnesota  
NTI Project No. 19.MSP09066.000

We briefly summarize below our geotechnical recommendations for the proposed project. The summary must be read in complete context with our report:

- Our borings encountered existing fill generally consisting of clayey sand and poorly graded sand. These soils would generally be classified as Type C in OSHA 1926 Subpart P. The native soils were generally loose to dense clayey sand soils and would generally be classified as Type C.
- The planned construction is single family residential with a one level basement. Since it appears that the adjacent house to the south has a basement level and an alley to the north, there should be limited risk of undermining the adjacent structure to the south. Consequently, shoring should not be necessary to protect the neighboring residential structure to the south.
- Provided that all of the other requirements listed in OSHA 1926 are met, the shoring would not be required for excavations up to 7 ½ feet to meet OSHA requirements as those requirements were suspended by OSHA in 1995. Consequently, shoring is not necessarily needed for OSHA compliance. Note that sloping 2 feet horizontal for every 5 feet vertical is required for excavations of 8 feet or greater and that the contractor is required to provide a “competent individual”.
- **The contractor should be aware that steep cuts in soils will generally ravel and flatten over time.** Excavations should be backfilled as soon as practical and the neighbor’s property should be closely observed for deformation.
- NTI is available for consultation and site observations at the time of the excavation, for an additional fee, upon request by either the City of Minneapolis or the developer.

In accordance with your request and subsequent authorization, Northern Technologies, LLC (NTI) conducted a Geotechnical Exploration for the above referenced project. Our services included advancement of exploration borings and preparation of an engineering report with recommendations developed from our geotechnical services. Our work was performed in general accordance with our proposal dated August 30, 2019.



Soil samples obtained at the site will be held for 60 days at which time they will be discarded. Please advise us in writing if you wish to have us retain them for a longer period. You will be assessed an additional fee if soil samples are retained beyond 60 days.

We appreciate the opportunity to have been of service on this project. If there are any questions regarding the soils explored or our review and recommendations, please contact us at your convenience at (763) 433-9175.

Northern Technologies, LLC

A handwritten signature in black ink, appearing to read "Richard S. Jett".

Richard S. Jett, E.I.T.  
Staff Engineer

A handwritten signature in blue ink, appearing to read "Steven D. Gerber".

Steven D. Gerber, P.E.  
Senior Engineer



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## **1.0 INTRODUCTION**

### **1.1 Site / Project Description**

The site is currently an empty lot with minimally maintained grasses and a few trees. The site is relatively flat.

NTI understands that the proposed project will be the construction of a single-family residence, likely with a full basement level. This report is factual in nature only with the exception of generalized site preparation parameters, OSHA soil classification of the site soils, and design lateral earth pressure parameters for design of temporary shoring by others. This report would need to be amended with formalized engineering recommendations for foundation design.

### **1.2 Scope of Services**

The purpose of this report is to present a summary of our geotechnical exploration and provide a factual engineering report regarding the soil conditions encountered onsite. Our scope of services was limited to the following:

1. Staking the boring locations in the field and coordinate underground public utility locates.
2. Explore the project subsurface by means of two (2) standard penetration borings (SPT) extending to a nominal termination depth 14.5 feet below existing grade.
3. Prepare a factual report presenting the findings of our field exploration.
4. Provide recommendations for site preparation.
5. Recommendations for allowable slope geometry.
6. Recommendations for groundwater management.

## **2.0 EXPLORATION PROGRAM RESULTS**

### **2.1 Exploration Scope**

NTI performed the subsurface exploration with a truck mounted drill rig. Soil samples were generally collected in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Testing (SPT) and Split-Barrel Sampling of Soils".

NTI located the borings relative to existing site features and estimated the elevations of the borings using Mntopo LiDAR maps.



## 2.2 Subsurface Conditions

Please refer to the boring logs within the appendices for a detailed description and depths of stratum at the borings. The boreholes were backfilled with auger cuttings or neat cement grout, as per appropriate local and state statutes. Minor settlement of the boreholes will occur. Owner is responsible for final closure of the boreholes. Based on results of the current geotechnical exploration, Table 1 provides a general depiction of subsurface conditions at the project site. Additional comment on the evaluation of recovered soil samples is presented within the report attachments.

**Table 1: Subsurface Stratigraphy at the Soil Borings<sup>1</sup>**

Stratum	Depth to Base of Stratum	Material Description	Notes
Surface	3.0 to 12.0 inches	Topsoil	This material contained organic matter but it may not necessarily meet specifications, such as MnDOT, for topsoil.
Existing Fill	4.0 to 6.5 feet below the existing ground surface	Undocumented fill soils generally consisting of clayey sand (SC) and poorly graded sand (SP).	Variably compacted.
Native Soils	Termination depths of the borings at 14.5 feet below existing ground surface	Glacial till deposits consisting of clayey sand (SC).	The relative densities of the clayey sand soils were loose to dense.

1 Table summary is a generalization of subsurface conditions and may not reflect variation in subsurface strata occurring on site. The general geologic origin of retained soil samples is listed on the boring logs.

## 2.3 Groundwater Conditions

The drill crew observed the borings for groundwater at the completion of drilling activities. These observations and measurements are noted on the boring logs.

Overall, the site soils are conducive to movement of groundwater both laterally and vertically. The moisture content of such soils can vary annually and per recent precipitation. Such soils and other regional dependent conditions may produce groundwater entry of project excavations. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

We direct your attention to other report sections and appendices attachments concerning groundwater issues and subsurface drainage.

## 2.4 Laboratory Test Program

Our analysis and recommendations within this report are based upon our interpretation of the standard penetration resistance determined while sampling soils, laboratory test results, and experience with similar soils from other sites near the project. The results of such tests are summarized on the boring logs or attached test forms.





### 3.0 ENGINEERING REVIEW AND RECOMMENDATIONS

The following recommendations are based on our present knowledge of the project. We ask that you or your design team notify us immediately if significant changes are made to project size, location or design as we would need to review our current recommendations and provide modified or different recommendations with respect to such change(s).

#### 3.1 Site Preparation

Site preparation should begin with the demolition and removal of any existing structures, including foundations and appurtenances within the proposed building area. Stripping will include the removal of all vegetation and topsoil. We recommend that any utilities within the proposed building area be removed and their trenches backfilled with properly compacted backfill.

Based on the conditions encountered in the recovered samples from the soil borings, topsoil stripping and soil corrections are anticipated to extend to depths listed in Table 2.

**Table 2: Summary of Soil Correction<sup>1</sup>**

Boring Number	Existing Ground Elevation <sup>2</sup> (feet)	Depth (feet)	Estimated Excavation Elevation (feet)	Unsuitable Soil / Material
SB-1	875.0	6.5	868.5	Topsoil/Undocumented Fill
SB-2	874.0	4.0	870.0	Topsoil/Undocumented Fill

1. Borings contained trace organic materials and/or apparent fill materials within the collected samples. These areas and other areas exposed during the site grade may require deeper corrections dependent upon the materials encountered during the site grading activities.
2. Based on elevations at the boring locations as noted above in Section 2.1, Exploration Scope.

NTI cautions that the existing undocumented fill soils may not be uniform across the site. The quantity of material suitable for reuse is difficult to accurately predict due to the limited number of borings that were performed. In addition, due to the assumed previous presence of a single-family residence, there is the potential for construction debris or previously constructed floor slabs and/or foundation elements to be encountered during site excavations.

It should be understood that soil conditions can vary between borings. It should also be understood that the distance to property lines are approximate; precise measurements would require the services of a professional land surveyor. Strong consideration should be given to surveying the property lines prior to construction. In no case should the edge of an excavation come within 4 feet of an existing structure's foundation.



### 3.2 Shoring Discussion

Excavation sidewalls should be benched or sloped to provide safe working conditions. The following Table 3 should be referenced for OSHA soil type classification in accordance with 1926 OSHA Subpart P Excavations and Trenches manual. These recommendations are based upon the information collected from the limited site exploration only; conditions may vary in the field.

**Table 3: 1926 OSHA Subpart P Simple Slope Parameters**

Soil Classification	Correlating OSHA Soil Type	Maximum Allowable Slope Geometry <sup>1</sup>
Sand (SP) Clayey Sand (SC)	Type C	1 foot Vertical to 1.5 foot Horizontal

1. 1 V to 1.5 H is used for the case of Type B overlying Type C soils.

**NOTE:** *This table is for temporary simple slopes of vertical height of 20 feet or less only and may need to be modified in the field due to layering of soil types.*

NTI assumes that the planned house basement excavation will be about 7 ½ to 8 feet deep, with local deeper soil corrections needed to remove existing fill materials.

- If a minimum setback of 15 feet can be maintained from the property boundary to the street right of way, and at least 20 feet to the alley to the east and north, shoring would not be required for the street and both alley sides of the lot to protect the streets and alleys. (In no case should the setback be less than those allowed by the City, unless otherwise granted by variance.)
- The planned construction is single family residential with a one level basement. Since it appears that the adjacent house to the south has a basement level, there should be limited risk of undermining the adjacent structure. Consequently, shoring should not be necessary to protect the neighboring residential structure.
- Provided that all of the other requirements listed in OSHA 1926 are met, the shoring would not be required for excavations up to 7 ½ feet to meet OSHA requirements as those requirements were suspended by OSHA in 1995. Consequently, shoring is not necessarily needed for OSHA compliance. Note that sloping 2 feet horizontal for every 5 feet vertical is required for excavations of 8 feet or greater and that the contractor is required to provide a “competent individual”.
- **The contractor should be aware that steep cuts in soils will generally ravel and flatten over time.** Excavations should be backfilled as soon as practical and the neighbors property should be closely observed for deformation.
- If a deeper excavation were found necessary, in order to maintain the stability of the existing, neighboring building foundations, there should be no excavation with 4 feet of the adjacent foundations, plus an additional 2 feet horizontal for each foot vertical below the bottom of the existing building foundation. Shoring would be required if an excavation met this criteria.



Any oversizing that is required should be performed in accordance with the diagram and table included in Appendix A. The Geotechnical Engineer of Record or their designated representative should be on site during project excavations to determine that unsuitable materials have been properly removed and adequate bearing support is provided by the exposed soils. Such observations and testing on the native soil should be performed prior to the placement of engineered fill and construction of footings.

### 3.3 Temporary Shoring and Lateral Earth Pressure Parameters

Recommendations for design parameters for lateral earth pressures for below-grade walls can be found in Table 4.

**Table 4: Estimate of Equivalent Fluid Weight of Retained Soils**

Type of Retained Soil	Unit Weight (pcf)	Friction Angle (deg.)	“At Rest” Condition (pcf)	“Active” Condition (pcf)	“Passive” Condition (pcf)
Sand, Sand with Silt (SP, SP-SM)	120	30	60	40	360
Clayey Sand (SC)	125	27	70	50	300

The recommendations for equivalent fluid weight are based solely on the assumed structural fill material. These recommendations do not consider hydrostatic pressure, sloping ground, and/or surcharge loads, and do not include a factor of safety. The design professional is cautioned that actual loads imparted to the structure will be dependent on soil and groundwater conditions, site geometric considerations and surcharge loads imparted to the structure.

## 4.0 CONSTRUCTION CONSIDERATIONS

### 4.1 Excavation Stability

Site safety is the responsibility of the contractor and through the course of their means and methods of construction, may elect to install shoring to maintain a stable excavation, as determined by the contractor’s “competent individual”. Excavations may need to be widened and sloped, or temporarily braced, to maintain or develop a safe work environment.

Also, contractors should comply with local, state, and federal safety regulations including current OSHA excavation and trench safety standards. Temporary shoring must be designed in accordance with applicable regulatory requirements.

In addition, the Contractor is still solely responsible for assessing the stability of and executing project excavations using safe methods. The contractor is also responsible for naming the “competent individual” as per Subpart P of 29 CFR 1926.6 (Federal Register - OSHA).



## 4.2 Groundwater Control

Temporary sump pits and pumps located outside of the proposed foundation lines will likely be suitable for control of perched water. NTI cautions that such inflows may be heavy dependent upon seasonal fluctuations and recent rain events. Recommendations for this type of water control are described in greater detail in Appendix B.

## 4.3 Engineered Fill & Winter Construction

The Geotechnical Engineer of Record or their designated representative should observe and evaluate excavations to verify removal of uncontrolled fills, topsoil and/or unsuitable material(s), and adequacy of bearing support of exposed soils. Such observation should occur prior to construction of foundations or placement of engineered fill supporting excavations.

Engineered fill should be approved by the Geotechnical Engineer of Record prior to placement. In addition, the engineered fill should be tempered for correct moisture content and then place and compact individual lifts of engineered fill to criteria established within the appendices attachment.

Frozen soil should never be used as engineered fill or backfill nor should you support foundations on frozen soils. Moisture freezing within the soil matrix of fine grained and/or cohesive soils produces ice lenses. Such soils gain moisture from capillary action and, with continued growth, heave with formation of ice lenses within the soil matrix. Foundations constructed on frozen soils have the potential to settle once ice lenses thaw.

You should protect excavations and foundations from freezing conditions or accumulation of snow, and remove frozen soils, snow, and ice from within excavations, fill section or from below proposed foundations. Replacement soils should consist of similar materials as those removed from the excavation with moisture content, placement and compaction conforming to report criteria.

## 5.0 CLOSURE

This report is presented as a factual report only and should not be utilized for final design without consultation with NTI. As the widely spaced, small diameter borings provide only a limited amount of data regarding the existing fill, the existing fill may contain soft zones, debris or significantly greater amounts of unsuitable materials than could be reasonably inferred from the boring information. Unsuitable materials may not be discovered during construction and may remain buried within the fill below the slabs and pavements, resulting in greater than anticipated settlements of the slabs and pavements. These risks cannot be eliminated without completely removing the fill, but can be reduced by thorough exploration and testing during site preparation and construction.

Site safety, excavation support, and dewatering requirements are the responsibility of others.



Our conclusions and recommendations are predicated on observation and testing of the earthwork directed by Geotechnical Engineer of Record. Our opinions are based on data assumed representative of the site. However, the area coverage of borings in relation to the entire project is very small. For this and other reasons, we do not warrant conditions below the depth of our borings, or that the strata logged from our borings are necessarily typical of the site. Deviations from our recommendations by plans, written specifications, or field applications shall relieve us of responsibility unless our written concurrence with such deviations has been established.

This report has been prepared for the exclusive use of the City of Minneapolis and its agents for specific application to the proposed 1818 Sheridan Avenue North in Minneapolis, Minnesota. Northern Technologies, LLC has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Northern Technologies, LLC makes no other warranty, express or implied.



## APPENDIX A

**GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES**

**FIELD EXPLORATION PROCEDURES**

**GENERAL NOTES**

**WATER LEVEL SYMBOL**

**DESCRIPTIVE TERMINOLOGY**

**RELATIVE PROPORTIONS**

**PARTICLE SIZES**

**CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES**

**EXCAVATION OVERSIZE**



## GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES

We visually examined recovered soil samples to estimate distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We then classified the soils according using the Unified Soil Classification System (ASTM D2488). A chart describing this classification system and general notes explaining soil sampling procedures are presented within appendices attachments.

The stratification depth lines between soil types on the logs are estimated based on the available data. In-situ, the transition between type(s) may be distinct or gradual in either the horizontal or vertical directions. The soil conditions have been established at our specific boring locations only. Variations in the soil stratigraphy may occur between and around the borings, with the nature and extent of such change not readily evident until exposed by excavation. These variations must be properly assessed when utilizing information presented on the boring logs.

We request that you, your design team or contractors contact NTI immediately if local conditions differ from those assumed by this report, as we would need to review how such changes impact our recommendations. Such contact would also allow us to revise our recommendations as necessary to account for the changed site conditions.

## FIELD EXPLORATION PROCEDURES

### ***Soil Sampling – Standard Penetration Boring:***

Soil sampling was performed according to the procedures described by ASTM D-1586. Using this procedure, a 2 inch O.D. split barrel sampler is driven into the soil by a 140 pound weight falling 30 inches. After an initial set of six inches, the number of blows required to drive the sampler an additional 12 inches is recorded (known as the penetration resistance (i.e. “N-value”) of the soil at the point of sampling. The N-value is an index of the relative density of cohesionless soils and an approximation of the consistency of cohesive soils.

### ***Soil Sampling – Power Auger Boring:***

The boring(s) was/were advanced with a 6 inch nominal diameter continuous flight auger. As a result, samples recovered from the boring are disturbed, and our determination of the depth, extend of various stratum and layers, and relative density or consistency of the soils is approximate.

### ***Soil Classification:***

Soil samples were visually and manually classified in general conformance with ASTM D-2488 as they were removed from the sampler(s). Representative fractions of soil samples were then sealed within respective containers and returned to the laboratory for further examination and verification of the field classification. In addition, select samples were submitted for laboratory tests. Individual sample information, identification of sampling methods, method of advancement of the samples and other pertinent information concerning the soil samples are presented on boring logs and related report attachments.



## GENERAL NOTES

<i>DRILLING and SAMPLING SYMBOLS</i>		<i>LABORATORY TEST SYMBOLS</i>	
<b>SYMBOL</b>	<b>DEFINITION</b>	<b>SYMBOL</b>	<b>DEFINITION</b>
C.S.	Continuous Sampling	W	Moisture content-percent of dry weight
P.D.	2-3/8" Pipe Drill	D	Dry Density-pounds per cubic foot
C.O.	Cleanout Tube	LL, PL	Liquid and plastic limits determined in accordance with ASTM D 423 and D 424
3 HSA	3 1/4" I.D. Hollow Stem Auger	Q <sub>U</sub>	Unconfined compressive strength-pounds per square foot in accordance with ASTM D 2166-66
4 FA	4" Diameter Flight Auger		
6 FA	6" Diameter Flight Auger		
2 1/2 C	2 1/2" Casing		
4 C	4" Casing		
D.M.	Drilling Mud	Pq	Penetrometer reading-tons/square foot
J.W.	Jet Water	S	Torvane reading-tons/square foot
H.A.	Hand Auger	G	Specific Gravity – ASTM D 854-58
NXC	Size NX Casing	SL	Shrinkage limit – ASTM 427-61
BXC	Size BX Casing	Ph	Hydrogen ion content-meter method
AXC	Size AX casing	O	Organic content-combustion method
SS	2" O.D. Split Spoon Sample	M.A.	Grain size analysis
2T	2" Thin Wall Tube Sample	C*	One dimensional consolidation
3T	3" Thin Wall Tube Sample	Q <sub>C</sub>	Triaxial Compression

\* See attached data Sheet and/or graph

## WATER LEVEL SYMBOL

Water levels shown on the boring logs were determined at the time and under the conditions indicated. In sand, the indicated levels can be considered relatively reliable for most site conditions. In clay soils, it is not possible to determine the ground water level within the normal scope of a test boring investigation, except where lenses or layers of more pervious water bearing soil are present; and then a long period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol for cohesive or mixed soils may not indicate the true level of the ground water table. The available water level information is given at the bottom of the log sheet.

## DESCRIPTIVE TERMINOLOGY

<i>RELATIVE DENSITY</i>		<i>CONSISTENCY</i>	
<b>TERM</b>	<b>N<sub>60</sub> Value (corrected)</b>	<b>TERM</b>	<b>N<sub>60</sub> Value (corrected)</b>
Very Loose	0 – 4	Soft	0-4
Loose	5 – 8	Medium	5-8
Medium Dense	9 – 16	Rather Stiff	9 – 15
Dense	16 – 30	Stiff	16 – 30
Very Dense	Over 30	Very Stiff	Over 30

## RELATIVE PROPORTIONS

<b>TERMS</b>	<b>RANGE</b>
Trace	0 – 5%
A little	5 – 15%
Some	15 – 30%

## PARTICLE SIZES

<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>U.S. SIEVE SIZE</b>
Boulders		Over 3"
		3" to 3/4"
Gravel	Coarse	3/4" to #4
	Medium	#4 to #10
	Fine	#10 to #200
Sand	Coarse	#4 to #10
	Medium	#10 to #40
Silt and Clay	Fine	#40 to #200
		Determined by Hydrometer Test

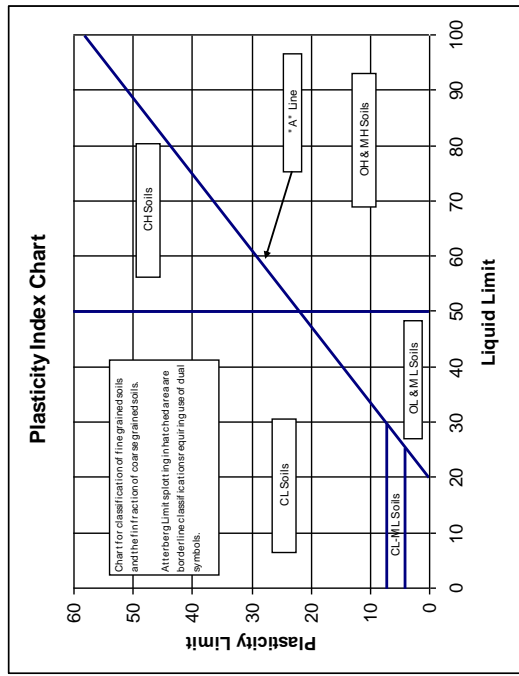




## CLASSIFICATION of SOILS for ENGINEERING PURPOSES

ASTM Designation D-2487 and D2488 (Unified Soil Classification System)

Major Divisions	Group Symbol	Typical Name	Classification Criteria	
<b>Course Grained Soils</b> More than 50% retained on No. 200 sieve *	<b>Gravels</b> 50% or more of coarse fraction retained on No. 4 sieve.	<b>Clean Gravels</b> GW	Well-graded gravels and gravel-sand mixtures, little or no fines. $C_u = D_{60} / D_{10}$ greater than 4. $C_z = (D_{30})^2 / (D_{10} \times D_{60})$ between 1 & 3.	
		<b>Gravels with Fines</b> GP	Poorly graded gravels and gravel-sand mixtures, little or no fines. Not meeting both criteria for GW materials.	
		<b>Gravels with Fines</b> GM	Silty gravels, gravel-sand-silt mixtures. Atterberg limits below "A" line, or P.I. less than 4.	
		<b>Gravels with Fines</b> GC	Clayey gravels, gravel-sand-clay mixtures. Atterberg limits above "A" line with P.I. greater than 7.	
	<b>Sands</b> More than 50% of coarse fraction passes No. 4 sieve.	<b>Clean Sands</b> SW	Well-graded sands and gravelly sands, little or no fines. $C_u = D_{60} / D_{10}$ greater than 6. $C_z = (D_{30})^2 / (D_{10} \times D_{60})$ between 1 & 3.	
		<b>Clean Sands</b> SP	Poorly-graded sands and gravelly sands, little or no fines. Not meeting both criteria for SW materials.	
		<b>Sands with Fines</b> SM	Silty sands, sand-silt mixtures. Atterberg limits below "A" line, or P.I. less than 4.	
		<b>Sands with Fines</b> SC	Clayey sands, sand-clay mixtures. Atterberg limits above "A" line with P.I. > 7.	
		<b>Classification on basis of percentage of fines.</b> Less than 5% passing No. 200 Sieve: GW, GP, SW, SP More than 5% passing No. 200 Sieve: GM, GC, SM, SC From 5% to 12% passing No. 200 Sieve: Borderline Classification requiring use of dual symbols.		
		<b>Fine Grained Soils</b> More than 50% passes No. 200 sieve *		
<b>Silts and Clays</b> Liquid Limit of 50% or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.		
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.		
	OL	Organic silts and organic silty clays of low plasticity.		
	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.		
	CH	Inorganic clays of high plasticity, fat clays.		
	OH	Organic clays of medium to high plasticity.		
	Pt	Peat, muck and other highly organic soils.		

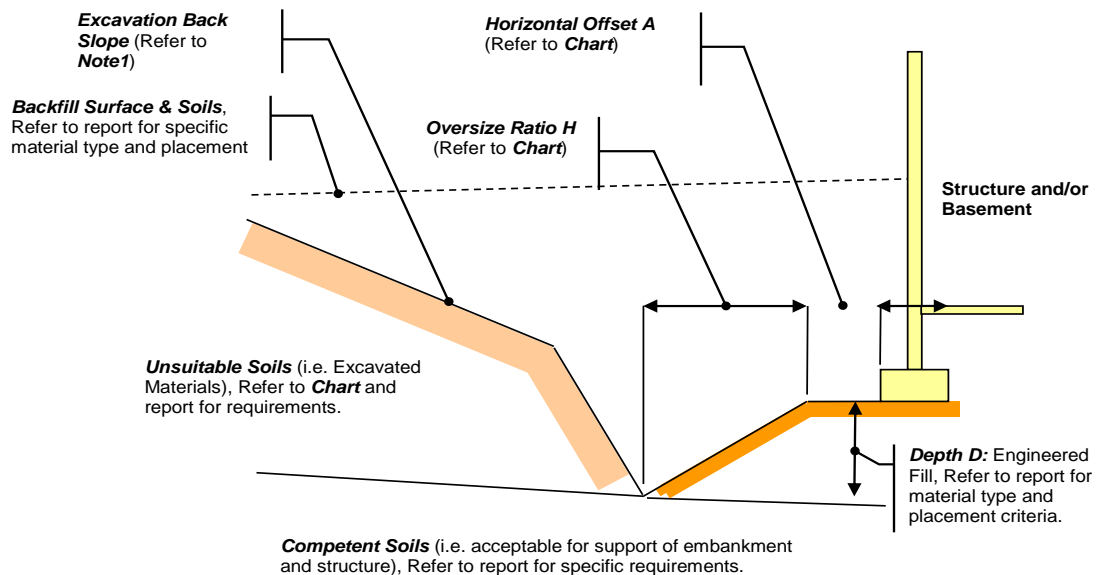




## EXCAVATION OVERSIZE

Excavation oversize facilitates distribution of load induced stress within supporting soils. Unless otherwise superseded by report specific requirements, all construction should conform to the minimum oversize and horizontal offset requirements as presented within the diagram and associated chart.

Figure 1: Excavation Oversize



### Definitions

- Oversize Ratio H:** The ratio of the horizontal distance divided by the engineered fill depth (i.e. # Horizontal / Depth D). Refer to Chart for specific requirements.
- Horizontal Offset A:** The horizontal distance between the outside edge of footing or critical position and the crest of the engineered fill section. Refer to Chart for specific requirements.

**Note 1:** Excavation depth and sidewall inclination should not exceed those specified in local, state or federal regulations including those defined by Subpart P of Chapter 27, 29 CFR Part 1926 (of Federal Register). Excavations may need to be widened and sloped, or temporarily braced, to maintain or develop a safe work environment. Contractor is solely responsible for assessing stability under “means and methods”.

Condition	Unsuitable Soil Type	Horizontal Offset A	Oversize Ratio H
Foundation Unit Load equal to or less than 3,000 psf.	SP, SM soils, CL & CH soils with cohesion greater than 1,000 psf	NA	Equal to or greater than one (1) times Depth D
Foundation Unit Load greater than 3,000 psf	SP, SM soils, CL & CH soils with cohesion less than 1,000 psf	NA	Equal to or greater than one (1) times Depth D
Foundation Unit Load equal to or less than 3,000 psf.	Topsoil or Peat	2 feet or width of footing, whichever is greater	Equal to or greater than two (2) times Depth D
Foundation Unit Load greater than 3,000 psf	Topsoil or Peat	5 feet or width of footing, whichever is greater	Equal to or greater than two (3) times Depth D



## APPENDIX B

### GROUNDWATER ISSUES

### PLACEMENT and COMPACTION OF ENGINEERED FILL



## GROUNDWATER ISSUES

***The following presents additional comment and soil specific issues related to measurement of groundwater conditions at your project site.***

Note that our groundwater measurements, or lack thereof, will vary depending on the time allowed for equilibrium to occur in the borings. Extended observation time was not available during the scope of the field exploration program and, therefore, groundwater measurements as noted on the borings logs may or may not accurately reflect actual conditions at your site.

Seasonal and yearly fluctuations of the ground water level, if any, occur. Perched groundwater may be present within sand and silt lenses bedded within cohesive soil formations. Groundwater typically exists at depth within cohesive and cohesionless soils.

Documentation of the local groundwater surface and any perched groundwater conditions at the project site would require installation of temporary piezometers and extended monitoring due to the relatively low permeability exhibited by the site soils. We have not performed such groundwater evaluation due to the scope of services authorized for this project.

We anticipate that pits and sump pumps that discharge out of the excavation would be suitable for control of groundwater if excavations encountered perched water. However, we caution such seepage from such formations and any water entry from excavations below the groundwater table may be heavy and will vary based on seasonal and annual precipitation, and ground related impacts in the vicinity of the project.



## PLACEMENT and COMPACTION OF ENGINEERED FILL

***Unless otherwise superseded within the body of the Geotechnical Exploration Report, the following criteria shall be utilized for placement of engineered fill on project. This includes, but is not limited to earthen fill placement to improve site grades, fill placed below structural footings, fill placed interior of structure, and fill placed as backfill of foundations.***

Engineered fill placed for construction, if necessary should consist of natural, non-organic, competent soils native to the project area. Such soils may include, but are not limited to gravel, sand, or clays with Unified Soil Classification System (ASTM D2488) classifications of GW, SP, or SM. Use of silt or clayey silt as project fill will require additional review and approval of project Geotechnical Engineer of Record. Such soils have USCS classifications of ML, MH, ML-CL, MH-CH. Use of topsoil, marl, peat, other organic soils construction debris and/or other unsuitable materials as fill is not allowed. Such soils have USCS classifications of OL, OH, Pt.

Engineered fill, classified as clay, should be tempered such that the moisture content at the time of placement is equal to and no more than 3 percent above the optimum content for as defined by the appropriate proctor test. Likewise, engineered fill classified as gravel or sand should be tempered such that the moisture content at the time of placement is within 3 percent of the optimum content.

All engineered fill for construction should be placed in individual 8 inch maximum depth lifts. Each lift of fill should be compacted by large vibratory equipment until the in-place soil density is equal to or greater than the criteria established within the following tabulation.

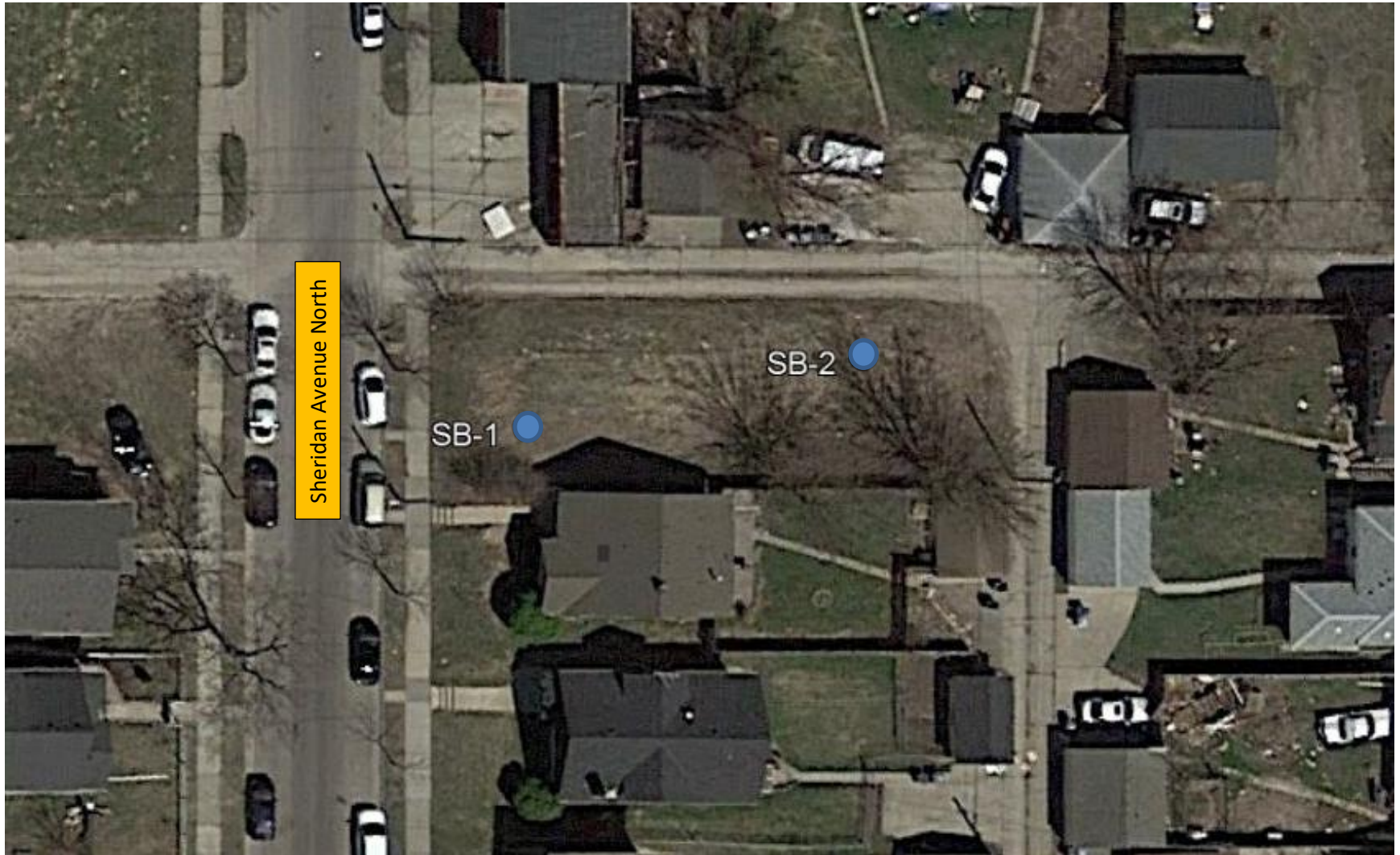
Type of Construction	Compaction Criteria (% respective Proctor) <sup>1</sup>	
	Clay	Sand or Gravel
General Embankment Fill	Min. 95	Min. 95
Engineered Fill below Foundations	Min. 98	Min. 98
Engineered Fill below Floor Slabs	Min. 95	Min. 95
Note 1 Unless otherwise required, compaction shall be based on the Standard Proctor Test (ASTM D698).		

Density tests should be taken during engineered fill placement to document earthwork has achieved necessary compaction of the material(s). Recommendations for interior fill placement and backfill of foundation walls are presented within other sections of this report.



## APPENDIX C

**BORING LOCATION DIAGRAM**  
**SOIL BORING LOGS**



Boring Location Diagram  
1818 Sheridan Avenue North  
Minneapolis, Minnesota  
NTI Project #: 19.MSP09066.000  
NOTE: Boring locations are approximate.

Completed Soil Borings: ●





Northern Technologies, LLC  
 6160 Carmen Avenue E  
 Inver Grove Heights, Minnesota 55076  
 P: 651-389-4191

**BORING NUMBER SB-1**

PAGE 1 OF 1

CLIENT City of Minneapolis PROJECT NAME 1818 Sheridan Avenue North  
 PROJECT NUMBER 19.MSP09066.000 PROJECT LOCATION Minneapolis, Minnesota  
 DATE STARTED 10/10/19 COMPLETED 10/10/19 GROUND ELEVATION 875 feet HOLE SIZE 6 1/2 in.  
 DRILLING CONTRACTOR NTI GROUND WATER LEVELS:  
 DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No Groundwater observed  
 LOGGED BY Drew Faherty CHECKED BY Steve Gerber AT END OF DRILLING ---  
 CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---  
 NOTES Elevation estimated using MnTOPO LiDAR maps.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
0.3		TOPSOIL (3.0 inches)										
1.5		POORLY GRADED SAND, (SP) brown, fine to coarse grained, moist, trace gravel <b>(Undocumented Fill)</b>	SS 1	56	1-1-1 (2)							
			SS 2	56	2-2-2 (4)							
4.0		CLAYEY SAND, (SC) brown, fine to coarse grained, moist, trace gravel, trace organics <b>(Undocumented Fill)</b>										
5		CLAYEY SAND, (SC) light brown, fine to medium grained, moist, trace gravel <b>(Undocumented Fill)</b>	SS 3	78	3-6-7 (13)							
6.5		CLAYEY SAND, (SC) light brown, fine to coarse grained, moist, medium dense to dense, trace gravel (Glacial Till)	SS 4	67	3-7-7 (14)							
			SS 5	39	3-8-10 (18)							
			SS 6	83	3-7-8 (15)							
			SS 7	100	3-6-8 (14)	1.8						
14.5		Bottom of borehole at 14.5 feet.										

NTI LOG - GENERAL (USE THIS ONE) - NTI-2017-09-14.GDT - 11/4/19 13:33 - X11-PROJECTS2019 PROJECTS MINNEAPOLIS SHORING PHASE 4\_GEO\_19.MSP\_09066.000 ENGINEERING REPORTS \818 SHERIDAN AVE\818 SHERIDAN AVE.GPJ





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 6160 Carmen Avenue E  
 Inver Grove Heights, Minnesota 55076  
 P: 651-389-4191

# BORING NUMBER SB-2

PAGE 1 OF 1

CLIENT City of Minneapolis PROJECT NAME 1818 Sheridan Avenue North  
 PROJECT NUMBER 19.MSP09066.000 PROJECT LOCATION Minneapolis, Minnesota  
 DATE STARTED 10/10/19 COMPLETED 10/10/19 GROUND ELEVATION 874 feet HOLE SIZE 6 1/2 in.  
 DRILLING CONTRACTOR NTI GROUND WATER LEVELS:  
 DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No Groundwater observed  
 LOGGED BY Drew Faherty CHECKED BY Steve Gerber AT END OF DRILLING ---  
 CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---  
 NOTES Elevation estimated using MnTOPO LiDAR maps.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		TOPSOIL (12.0 inches)										
1.0		CLAYEY SAND, (SC) brown, fine to coarse grained, moist, trace gravel <b>(Undocumented Fill)</b> NOTE: No recovery in Sample No. 1. Auger cuttings sampled.	SS 1	0	2-4-5 (9)							
4.0		CLAYEY SAND, (SC) brown, fine to coarse grained, moist, loose to dense, trace gravel (Glacial Till)	SS 2	78	2-2-3 (5)							
5			SS 3	56	2-3-4 (7)							
			SS 4	89	3-7-9 (16)							
10			SS 5	67	3-9-10 (19)							
13.0		CLAYEY SAND, (SC) reddish brown, fine to coarse grained, moist, dense, trace gravel (Glacial Till)	SS 6	67	5-7-10 (17)							
14.5			SS 7	67	7-8-9 (17)							
Bottom of borehole at 14.5 feet.												

NTI LOG - GENERAL (USE THIS ONE) - NTI-2017-09-14.GDT - 11/4/19 13:33 - X11-PROJECTS2019 PROJECTS MINNEAPOLIS SHORING PHASE 4\_GEO\_19.MSP\_09066.000ENGINEERING REPORTS\1818 SHERIDAN AVE\1818 SHERIDAN AVE.GPJ