Harry S Truman National Historic Site

223 North Main Street Independence, MO 64050

Replace Roof, Repair Wood Eaves on Frank Wallace and George Wallace Houses
PMIS 324393

PROJECT SPECIFICATIONS

NATIONAL PARK SERVICE
2026-03-27

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DIVISION 1 SHORT FORM GENERAL REQUIREMENTS

PART 1 – GENERAL

ITEM 1 - DESCRIPTION OF WORK

1.1 Background: The Frank and George Wallace Homes at HSTR are vital components of the maintained cultural landscape of the Truman Home family compound, and are integral to the Harry S Truman Historic District National Historic Landmark. The homes belonged to Frank and Natalie Wallace, and George and May Wallace, brothers and sisters-in-law of First Lady Bess Wallace Truman. Homes date to 1915/ 1916 and was the Wallaces' home until their deaths in 1960 and 1991 respectively. Although not open to the public, the exterior of the homes are used as a visual exhibit to provide visitors context as to the historic character of the Truman Home compound and the closeness of the family. This project will repair and replace the asphalt shingle roof and the wood rot on the soffit and facia of both homes. Contractors or the NPS Maintenance Action Team will perform the replacement of the roof and the new wood will be primed and painted before it is installed. This project has important components of the structure that will greatly aid in the ongoing maintenance of the structures.

1.2 Work Covered by the Contract Documents:

A. Project Location: 601 and 605 W Truman Rd (MO-12), Independence, MO 64050

B. Work consists of: The roof surface and wood eaves on the Frank Wallace (2,414 SF) and George Wallace (2,200 SF) Homes need to be replaced. The old asphalt shingle roof will be removed first. The contractor will examine the deck and determine if there is damage to the sheathing. They will also look for moist areas, or mildew, and rot and mitigate. Then the flashing will be examined and repaired or replaced. The drip edge and underlayment will be installed. Then the asphalt shingle will be replaced. This project will also repair and replace approximately 30 SF of wood rot on the soffit and facia on each home. The new wood will be primed and painted before it is installed.

C. All work will be performed under a single contract.

D. Period of performance: Work shall be completed within 30 calendar days of the start date provided on the Notice to Proceed.

a. Clarification: The Notice to Proceed will be issued with a period of performance that is all inclusive of supply lead times, material deliveries, decommissioning, installation, anticipated average weather days for location, final commissioning, and acceptance of completed work. The contractor will be expected to provide a project schedule with adequate critical path details to ensure all work is completed within the stated calendar days from issuance of the Notice to Proceed. If weather impacts project beyond typical average weather patterns, contractor shall provide documentation in request for additional days.

1.3 Existing Condition Protections:

A. Preservation of Historical and Archeological Fabric:
   i. The Historic and Archeological Data Preservation Act of 1974 provides for the preservation of historical and archeological data that might otherwise be lost as the result of alterations to the terrain caused by a federal or federally licensed activity or program.
   ii. IF, in connection with operations under this contract, the Contractor, subcontractors, or employees of any of them, discovers, encounters or becomes aware of any possible historical or archeological remains or data, objects or sites of cultural value on the project area, such as historical ruins, graves or grave markers, fossils, or artifacts not specifically noted within the contract. The Contractor shall immediately suspend all operations in the vicinity and continue work in other areas outside a 50 foot radius of discovery and notify the Contracting Officer immediately. When safe to do so, follow up in writing with photographs within 2 days, giving the location and nature of the findings. No objects of cultural resource value may be removed. Contracting Officer will contact other entities as required.
   iii. Where appropriate by reason of discovery, the Contracting Officer may order delays in the time of performance and/or changes in the work. If such delays and/or changes are ordered, the time of performance and contract price shall be adjusted in accordance with Changes clause.
   iv. The Contractor will be responsible for protecting the cultural resources within and adjacent to the project area from damage. In addition, the Contractor will be liable for all damage to the cultural resources caused by their actions or the actions of their agents or representatives. The Contractor shall immediately notify the Contracting Officer or their representative if any damage occurs to any cultural resource and immediately suspend work in the area in which damage has occurred until authorized to proceed.
   v. The Contractor agrees to include this language within all subcontracts.

B. The structure involved in the work of this Contract is a designated historic structure listed in the National Register of Historic Places. Every precaution shall be taken by the Contractor to prevent damage to existing historical materials, structural components of the building and to the surrounding area. Should any damage be incurred as a result of the Contractor's operations at the site, it shall be repaired, or the damaged materials replaced in kind by the Contractor to the satisfaction of the Contracting Officer at no additional expense to the Government.
C. Protection of Landscaping and Surrounding Structures: The Contractor shall take all necessary measures to provide protection for all trees, fencing, walks and other landscape features and surrounding structures near the work site as noted with the contract. Any such surrounding features damaged, scarred or broken as a result of the Contractor's operations at the site outside of agreed upon documented extents, shall be treated, repaired or replaced in kind to the satisfaction of the Contracting Officer at no additional expense to the Government.

ITEM 2 – PROTECTING EXISTING UTILITIES

2.1 Protecting Existing Utilities: Notify Contracting Officer (CO), Contracting Officer's Representative (COR) and utility companies as required to request location services prior to and to coordinate any excavation/digging operations, and/or for demolition if within Scope of Work.

2.2 Contractor shall be responsible for locating and preventing damage to known utilities on site or indoors. If contractor damage occurs, alert CO and COR as soon as safely possible, and repair utility at no additional expense to the Government. If damage occurs to an unknown utility, contact CO and COR as soon as safely possible.

2.3 Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Government or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated below:

A. Notify CO and COR not less than two business days in advance of proposed utility interruptions.

B. Hours for Utility Shutdowns: Shutdowns shall not exceed 2 to 3 hours. Temporary provisions will be needed by the Contractor for periods longer than stated allowance or if required for critical systems as determined by COR.

ITEM 3 - CONTRACTOR'S USE OF PREMISES

3.1 Conduct of Operations: At all times the contractor shall conduct operations in conformance with the rules and regulations promulgated by the Secretary of the Interior for the National Park Service, and applicable park rules and regulations prescribed by the Park Superintendent. https://www.nps.gov/hstr/learn/management/lawsandpolicies.htm

A. Communications: Contractor shall provide the Contracting Officer and COR with methods of communications including land and/or cell phone numbers (note some areas of work have limited service coverage), email and in case of emergency 24-hour contact options for duration of time operations.

B. No signs or advertisements (except those specified herein and as required for safety) shall be displayed on the construction site or within the park unless approved by the Contracting Officer.

C. Smoking is not permitted within any Federal building or within 25 feet of entrances, operable windows, or outdoor air intakes.

D. Public Use of Site: Contractor shall at all times conduct operations to ensure the least inconvenience to the public. The park is closed to the public on Mondays and Tuesdays and they are preferred workdays.

3.2 On-site work hours: Work shall be generally performed during normal business working hours of 8:00 am to 5:00 pm., Monday through Friday, except when otherwise indicated. Work on Saturdays, Sundays, Federal holidays, early morning, or at night may not be performed without

prior consent from the CO and COR. Submit requests for work outside of the stated normal business hours to the CO and COR for approval at least 48 hours in advance of the work.

The following Federal holidays are observed by the National Park Service:
New Year's Day
Inauguration Day
Martin Luther King, Jr's Birthday
Washington's Birthday
Memorial Day
Juneteenth National Independence Day
Independence Day
Labor Day
Columbus Day
Veterans Day
Thanksgiving Day
Christmas Day

- Note: Any of the above holidays falling on a Saturday will be observed on the preceding Friday; holidays falling on Sunday will be observed on the following Monday. The specific day that each holiday is recognized for each year can be found at the following site: Federal Holidays (opm.gov).

3.3 Contractor Use of Site:

A. General: Contractor shall have limited use of the site for construction operations. Limit use of premises to construction area as shown on site plan. Do not disturb portions of Project site beyond areas in which the Work is indicated.

B. Driveways and Entrances: Keep driveways, access roads, and entrances serving premises clear and available to Government, Government's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize use of driveways and entrances.

C. Do Not disturb site outside of noted disturbance area, including earthwork, and clearing of vegetation, to:

1. Property Line

Contractor shall provide appropriate matts for equipment on turf areas to reduce soil compaction. Contractor shall remediate soil compaction as directed to do so by the CO/COR.

D. Utilities
1. General: Cost or use charges for temporary facilities shall be included in the Contract Sum as required.

2. Water Service: Water from existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations without any additional permit costs. Use resources

wisely and minimize waste of water.

3. Electric Power Service: Electric power from existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations without any additional permit costs. Power may or may not meet your construction power tool requirements, provide generators if questionable. Use power in a resourceful manner and avoid excess power waste.

4. Sanitary Operations:

a. Toilets: Contractor shall be able to use the existing park restroom facilities in Noland House Wednesday - Friday, specific location to be discussed during the preconstruction meeting. The restroom facilities shall be kept in immaculate condition. At the discretion of Park personnel and/or COR; contractor may lose the use of the restroom facilities if they are not kept clean and orderly. Restroom use will be a “One strike and you’re out” policy. If restroom privileges are revoked Contractor will be required to provide a toilet for contracting personnel, sufficiently lighted and ventilated toilet facilities in weatherproof, sight proof, handicap accessible (if required), sturdy enclosures with privacy locks. Coordinate with COR for approved location.

E. Security and Protection facilities:

1. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with state and federal environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

2. Cleaning of Equipment: The Contractor shall ensure that prior to moving on to the Project Area, all equipment, is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Ensure that all equipment has been pressure washed and is free of exotic species prior to start-up of operations and moving of equipment to Project Area. Equipment shall be considered free of soil, seeds, and other debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools are not required.

3. Contractor will protect plantings and trees around the homes as they are part of the cultural landscape.

4. Pest Control: Follow best practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at project completion. Perform control operations lawfully, using environmentally safe materials.

5. Temporary Enclosures: Not required.

6. Hot Work Permit: Not Required

3.4 Storage - Staging Areas:

A. Confine Storage of materials and equipment to the project staging area noted on the plans/aerial. Specific storage units shall be provided by the contractor and exact location within staging area shown in appendix A below may be discussed at the preconstruction

briefing. All storage units provided by the contractor shall be in a clean and acceptable condition to the COR. Security of the materials and equipment on site is the Contractor's responsibility.

3.5 Preservation of Natural Features:

3.6 Hauling Restrictions: Contractor shall verify and be responsible for the path accessing the site and obtaining / maintaining all local, state and federal permits/licenses associated with hauling/road requirements and dumping of materials associated with the project.

3.7 Waste Removal, Recycling, and General Housekeeping:

A. Keep project site in a neat, orderly, and safe condition at all times.

1. Contractor is responsible for providing dumpsters for waste and recycling and for removing all waste created by the project. Contractor shall recycle to the highest degree possible and empty dumpsters as necessary to avoid debris on site. Coordinate with COR for approved dumpster locations prior to commencing construction.

2. Dispose of waste materials and recycling legally outside the park. The contractor shall not use park dumpsters.

3. Address Recycling: Government goal is to salvage and recycle as much nonhazardous construction waste as possible. Use sustainable methods to the extent possible during this project, recycling material as much as possible within local means. Maintain accurate documentary records for submittal of all recycled materials used including fly ash and slag cement.

4. For all waste and recycling removals offsite, contractors shall provide estimates and/or tickets to quantify material weights and report back to the park, submit to COR for review and record filing.

3.8 Occupancy Requirements for Buildings:

A. Existing Buildings:

1. Full Government Occupancy: Government will occupy buildings that will be under construction during the entire contract period. Cooperate with Government during construction operations to minimize conflicts and facilitate Government usage. Perform the Work so as not to interfere with Government's day-to-day operations. Maintain existing exits, unless otherwise indicated. Contractor will maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from the CO or COR. Contractor will maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

B. New /Existing Buildings Unoccupied:

1. N/A

3.9 Photo Documentation:

A. Contractor must provide existing condition, progress, and completion photos. All photos shall be in focus, show maximum range of depth of field general photo and then close up detail photo as needed. Shall be in JPEG digital form and submitted preferably electronically via SharePoint dropbox link provided or optional via CD-R Archival Gold or DVD-R Archival Gold media with printed labels and 8 mega pixels minimum within 7 days from time of taken or as approved by COR.

B. Existing Condition Images:

1. Before starting construction, take color, dated, digital images of project site and adjacent property/roads/etc. that may be impacted by construction activity/traffic. Include existing items to remain or be salvaged from different vantage points and with context for location identification.

C. Construction Progress Images:

1. Document all sub-surface work/ trenches etc. prior to backfill with photos covering enough overall field view to show location and then zoom in for details. (Locations and dimensions shall also be noted on as built drawing set.)
2. Maintain organized index for photos with date, description, etc.
3. Additional images as needed when questions or emergency situations occur. Submit within 24 hours.

D. Completion Images:

1. Document all completed work within scope of work.
2. Maintain organized index for photos with date, description, etc..
3. Additional images as needed when questions or emergency situations occur. Submit within 24 hours.

3.10 Fire and Life Safety:

A. As a minimum, conduct one weekly 15 minute "toolbox" safety meetings. These meetings shall be conducted by a foreman or supervisor and attended by all construction personnel at the worksite. Topics need to coincide with work scheduled for the following week. Document and submit meeting minutes to the CO and COR within one day after the meeting and document the meetings on the daily reports.

B. Comply with the requirements of NFPA 241 (Standard for Safeguarding Construction, Alteration, and Demolition Operations). Take all necessary precautions to prevent fire during construction. Provide adequate ventilation during use of volatile or noxious substances.

C. Store and handle hazardous materials in accordance with manufacturers and OSHA 29CFR1926 Subpart D requirements 1926 | Occupational Safety and Health Administration

(osha.gov). Maintain readily available, on site, MSDS/Safety Data Sheets (SDS) for each chemical.

1. Immediately report all spills of hazardous materials to the CO, COR, and park.
2. Maintain a spill emergency response kit.
3. Train employees how to respond to a spill and use the emergency response kit.

3.11 Noise and Acoustics Management

A. Contractor shall not have personal radios or other media sources and they shall not be broadcast within NPS property.

B. Noise Control: Perform operations to minimize noise. Perform noise-producing work in less sensitive hours of the day or week as directed by the Contracting Officer or COR.

C. Repetitive and/or intermittent, high-level noise: Permitted only during Daytime.
   a) Coordinate with COR prior to execution

ITEM 4 - COMMENCEMENT, PROSECUTION, AND COMPLETION

4.1 The Contractor shall commence work in accordance with the terms and conditions of the contract. Contractor shall coordinate and incorporate long lead and delivery time items within the schedule.

ITEM 5 - EXAMINATION OF THE SITE

5.1 All bidders are urged to visit the job site and examine existing conditions before submitting bids. Contractors will be accountable for understanding existing conditions. No cost changes for items visible during site visit will be allowed.

ITEM 6 - ABBREVIATIONS

6.1 The list of abbreviations, standards and organizations which may be used in/referred within the Construction Specifications or Special Provisions, may be found linked from the listed page below. On the home page, follow the link under **"Contracting and Procurement"** labeled **"NPS Reference Standards."** https://www.nps.gov/orgs/1671/do-business-with-us.htm

ITEM 7 - ACCIDENT PREVENTION

7.1 Description: The work of this section consists of establishing and implementing an effective accident prevention program (APP) and providing a safe environment for all personnel and visitors.

7.2 Submittals:

A. Accident Prevention (Safety) Plan (APP): Submit a **site-specific** accident prevention (safety) plan. The Plan shall be written to comply with OSHA and project requirements (a generic plan is not acceptable) including but not limited to the following:

1. Name and qualifications of responsible supervisor to carry out the program.
2. First aid and rescue procedures.

3. Training, both initial and continuing.
4. Outline of each phase of the work, the hazards associated with each major phase, and the methods proposed to provide for property protection and safety of the public, National Park Service personnel, and Contractor's employees. Identify the work included under each phase, with a Job Hazard Analysis (JHA)/Job Safety Analysis (JSA), etc. A sample JHA template may be provided upon request.
5. Planning for possible emergency situations, such as cave-ins, earthquake, explosions, fires, floods, power outages, slides, and windstorms. Such planning shall take into consideration the nature of construction, site conditions, and degree of exposure of persons and property.
6. Contractor to identify nearest location of medical facility for emergencies
7. Recognition that works will be performed in remote areas with limited communication or cell phone coverage if applicable.
8. Supplemental hazard specific plans may be required IAW 29 CFR 1926 or 1910.

B. Meeting and Inspection Reports: Safety Meetings: As a minimum, conduct 15 minute "toolbox" safety meetings. These meetings shall be conducted by a foreman and attended by all construction personnel at the worksite. Submit a report of safety meetings and inspections to CO and COR within one day after the meeting and document the meetings on the daily reports.

7.3 Qualification of Employees:

A. Ensure that employees are physically qualified to perform their assigned duties in a safe manner to include operators of vehicles and equipment. Provide operating instructions for all equipment.

B. Do not allow employees to work whose ability or alertness is impaired because of drugs, fatigue, illness, intoxication, or other conditions that may expose themselves or others to injury.

7.4 Accident Reporting: The Contractor shall report all accidents to the CO and COR as soon as safely possible and assist the CO and COR and other officials as required in the investigation of the accident.

7.5 First Aid Facilities: Provide access to facilities for the number of employees and appropriate to the hazards associated with the types of ongoing construction work at the site.

7.6 Emergency Instructions: Post telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and police in conspicuous locations at the work site.

7.7 Personal Protective Equipment (PPE): It is the Contractor's responsibility to require all those working on or visiting the site to wear necessary protective equipment at all times.

A. PPE must meet requirements of applicable ANSI standards. Selection shall conform to OSHA 29CFR 1926 Subpart E.

B. A hard hat use area shall be designated by the Contractor. The hard hat area shall be posted by the Contractor in a manner satisfactory to the Contracting Officer.

C. All PPE will be serviceable at all times. At a minimum, maintain 2 sets of PPE including hard hats and all other Accident Prevention Plan required equipment.

7.8 Hazardous Materials: It shall be the responsibility of all operators and contractors, functioning within the park to properly cleanup, mitigate and remediate if necessary, all unauthorized discharges of hazardous materials or non-hazardous chemical and biological products released from fleet and/or other support vehicles or stationary sources. Response shall be consistent with guidelines established by federal, state, and local regulations, and as outlined within the operator's Safety or Hazardous Materials Business Plan.

A. If a spill, leak, or other release occurs, the operator shall as soon as possible, without impeding cleanup, notify the local 911 Emergency Response, COR and or the National Park Service Emergency Dispatch.

ITEM 8 - PRECONSTRUCTION CONFERENCE

8.1 If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer’s notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed. See Item 9.1C below.

ITEM 9 - SUBMITTALS

9.1 General Contracting Submittal Procedures:

A. General: Prepare and submit submittals required by individual Technical Specification Sections. Types of submittals are indicated in individual specific sections.

1. CM-16 Transmittal Form: All submittals shall be transmitted via electronic email using National Park Service form CM-16 form. The form will be provided by the Contracting Officer. No action will be taken on a submittal item unless accompanied by the CM-16 transmittal form. Submit completed CM-16 forms to the CO and the COR

B. Submittal List: administrative required submittals are listed below in 9.1.C and does not include technical section submittal requirements included in each technical section.

C. Preconstruction Conference Submittal: Satisfactory evidence of liability insurance coverage and workman’s compensation, and any applicable bonds, must be submitted within 10 calendar days of Notice of Award. The following items are to be submitted prior to the Preconstruction Conference or as specified at the CO’s discretion. The timeline for the documents to be submitted will be addressed at the pre-construction conference for those items that were not received and approved prior. Notice to Proceed may not be issued, and the Contracting Officer will consider other contractual remedies if not resolved as directed. Work shall not commence until written Notice to Proceed has been issued. Contracting Officer will notify Contractor of tentative date for the Pre-Construction Conference:

1. Letter designating Project Superintendent.
2. Construction Schedule. (Must include shop drawings, procurement time including long lead time items, mobilization, trade work progression and completion at minimum.)
3. A comprehensive breakdown of the Schedule of Values.
4. Accident Prevention (Safety) Plan (see section 7 of this document).
5. A list of Subcontractors for this project.
6. Written statements from subcontractors certifying compliance with applicable labor standard clauses (SF1413).
7. Quality Control Plan.
8. Waste Management Plan. **REQUIRED for this project.**
9. Historic Preservation Treatment Plan Submitted to AHJ (Authority Having Jurisdiction). **REQUIRED for this project**

9.2 Project Submittal Process (Shop Drawings, Product Data, and Samples): Contracting Officer will provide sample cover sheet and a list of required submittals is included in each technical specification or attached at the end of this document.

A. Shop Drawings: Indicate all coordinating materials and work impacting the installation coordination, connection details, anchorage requirements, hardware locations, and installation details and locations.

1. Submit Shop Drawings according to Part 9.1 of this section to include one digital file (.PDF or .TIF) and two full size hardcopy documents to COR.

B. Product Data: Provide component construction and specification data sheets, anchorage requirements and any other product specific data.

1. Submit Product Data according to Part 9.1 of this section to include one digital file (.PDF or .TIF) to COR.

C. Samples: Submit 2 color samples 4” x 6” minimum in size for all product color selections. Paint samples shall be actual paint finish drawdown for all project colors.

1. Submit Samples CM-16 Transmittal Form according to Part 9.1 of this section to include one digital file (.PDF or .TIF) and physical samples of actual material to COR.

D. For submittals specified above, forward submittals to Contracting Officer and COR at least 15 days before need for approval (depends on length of project).

E. After approving submittals, Contracting Officer and/or COR will return one copy to the Contractor. If submittals are not approved, Contracting Officer will return all copies to Contractor with reasons for rejection. Resubmit, identifying changes. Any work done before approval shall be at Contractor's own risk.

9.3 Approved Equals: All brand names noted are subject to ‘or equal’ products. If an item in this solicitation is identified as “brand name or equal” or lists more than 1 manufacturer, the description of the proposed item must reflect the characteristics and level of quality that will satisfy the Government’s needs as demonstrated by the salient physical, functional, or performance characteristics that “equal” products must meet and/or exceed that as specified in

the solicitation or relevant specification. Contractor shall incorporate and be responsible for all collateral costs due to the or equal proposed as required to provide a complete project.

A. For each item proposed as an “approved equal,” submit supporting data, including:

1. Drawings and samples as appropriate.
2. Comparison of the characteristics of the proposed item with that specified and with the salient characteristics provided.
3. Changes required in other elements of the work because of the substitution.
4. Name, address, and telephone number of vendor.
5. Manufacturer’s literature regarding installation, operation, and maintenance, including schematics for electrical and hydraulic systems, lubrication requirements, and parts lists. Describe availability of maintenance service, and state source of replacement materials.

B. A request for approval constitutes a representation that General Contractor:

1. Has investigated and shall provide documentation in request showing that the proposed item is equal or superior in all respects to the salient characteristics specified.
2. Will meet or exceed warranties for the proposed item specified.
3. Has determined that the proposed item is compatible with interfacing items.
4. Will coordinate the installation of an approved item and make all changes required in other elements of the work because of the substitution.
5. Waives all claims for additional expenses that may be incurred as a result of the substitution.

C. Approved Equals will be evaluated and approved/disapproved during the submittal process.

9.4 Schedule of Values: Submit the Schedule of Values a minimum of one week prior to the Preconstruction Conference for COR review. Schedule of Values shall include defined work line items with cost break downs including labor, material, and equipment for COR approval.

9.5 Progress Reporting: The initial Construction Schedule and Schedule of Values are required a minimum of one week prior to the Preconstruction Conference. After the Notice to Proceed is issued and after on-site work begins, progress will be documented via daily logs and by providing an updated Construction Schedule and Schedule of Values when requested, but minimally with each pay application. Submit digital copy electronically (PDF preferred) of all required documents. Construction Schedules are normally in bar chart form and indicate estimated starting and completion dates for each part of the work. For a pay application to be reviewed and processed in a timely manner, the following information must either be submitted prior to or accompany submission of the pay application:

A. Daily/weekly progress reports during construction as part of the administration process.

B. Updated Schedule of Values: Breakdown each lump-sum item into component work activities used in the schedule, for which progress payments may be requested. The Schedule of Values will form the basis for payment. The work activities broken out within the schedule of values shall be integrated into and made a logical part of the construction baseline schedule submitted under this specification. The total costs for the component work activities shall equal the contract price for that lump-sum item. The Contracting Officer may request data to

verify accuracy of dollar values. A sample Schedule of Values format may be provided upon request.

ITEM 10 – TEMPORARY SERVICES

10.1 It is the Contractor's responsibility to provide temporary services, equipment, tools, and skilled labor as required for the chosen means and methods to perform the work in accomplishing this Contract.

ITEM 11 - PROJECT CLOSEOUT

11.1 Description: The work of this section consists of final cleanup, closeout submittals, final inspection procedures working toward Final Acceptance.

11.2 Cleaning: Remove all tools, equipment, surplus materials, and rubbish. Move attic stock to location coordinated with COR. At time of final inspection, project shall be thoroughly clean and ready for intended use. Inspector holds the right to reschedule if project is not ready for inspection.

11.3 Completion and Final Inspection: Contractor shall submit written certification of project completion and request a final inspection to the Contracting Officer and COR. The Contracting Officer or designee will make an inspection within 10 days of receipt of request or at a mutually agreeable time.

A. If the work is determined to be complete following the final inspection with minor comments, the COR will prepare and provide the Contractor a Punch List noting outstanding items to be addressed.
B. If the work is not determined to be complete following the final inspection, the Contracting Officer will notify Contractor in writing, stating reasons. Contractor, after completing the work according to the Contract Documents, shall resubmit completion and request a new final inspection. Re-inspection costs may be charged against the Contractor in accordance with the Inspection of Construction contract clause.

C. Contractor shall complete the Punch List within 30 calendar days, or a time directed by the CO.

D. Once Contractor completes all items of work on the Punch List and all contractually required items are accepted, Contracting Officer will issue Letter of Final Acceptance of Work and request the final pay application.

E. If the Contractor fails to complete the work within the time frame, the Contracting Officer may correct the work with an appropriate reduction in contract price or charge for re-inspection costs in accordance with the Inspection of Construction contract clause.

F. Disposition of any permits and warranties required by the specifications in this section.

11.4 Final Acceptance of the Work: After all punch list deficiencies have been corrected, a Letter of Final Acceptance will be issued. A Release of Claims document must be executed and submitted to the Contracting Officer before final payment can occur.

11.5 Warranties

A. Construction Warranty shall be based on date of final acceptance of the work and remain in effect for one year.

B. Provide all manufacturer warranty information of products installed organized by Division. All contact information, extent of coverage and conditions shall be clearly noted as well as date of overall final acceptance.

C. Information shall include operation and maintenance manuals for each warranted product.

ITEM 12 - DEFINITION OF CONTRACT LINE ITEMS

12.1 Summary

A. The intent of this section is to explain, in general, what is and what is not included in a contract line item, and the limits or cut off points where one item ends, and another begins.

B. If no contract line item exists for a portion of the work, include the costs in a related item.

12.2 List of Contract Line Items

A. Contract Line-Item No. CLIN 010 Replace Roofing and Soffits on FW and GW

1. This item consists of CLIN 010 Replace Roofing and Soffits on FW and GW.
2. Payment will be made per the contract and percentage of completion level.

END OF SECTION

SECTION 073113

ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Project Location: 601 and 605 W Truman Rd (MO-05), Independence, MO 64050

B. Building(s) Name/Identifier: Frank Wallace Home and George Wallace Home

1.2 SUMMARY

A. Section Includes:

1. Selective Demolition.
2. Glass-fiber-reinforced asphalt shingles.
3. Underlayment materials.
4. Vents and plumbing stack boots.
5. Sheet metal flashing and trim.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Asphalt shingles.
2. Underlayment materials.
3. Asphalt roofing cement.
4. Elastomeric flashing sealant.
5. Vents and plumbing stack boots.
6. Sheet metal flashing and trim.

B. Sustainable Design Submittals:

1. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.

C. Shop Drawings: For sheet metal flashing and trim.

D. Samples: For each exposed product and for each color and blend specified.

1.5 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Research reports for synthetic underlayment.

C. Sample warranty.

1. Material warranty.

2. Roofing installer warranty.

1.6 SUBMITTAL COORDINATION

A. Submittal List: A submittal list has been attached to the end of this Specification Section. The intent is to provide an overall summary of the submittal requirements and not a comprehensive list. The requirements of the individual Specification Sections, terms and conditions of the Contract still apply regardless of what is shown on the submittal list.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.9 WARRANTY

A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.

1. Materials Warranty Period: 30 years from date of Substantial Completion, prorated, with first 10 years nonprorated.

2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 130 mph (58.1 m/s) for 15 years from date of Substantial Completion.

3. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 20 years from date of Substantial Completion.

B. Roofing Installer’s Warranty: Roofing installer to provide and sign a Roofing Installer’s Warranty in which Installer agrees to repair or replace components of asphalt-shingle roofing that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with American Society of Testing Materials (ASTM) E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D7158/D7158M, Class H.

C. Shingles:

1. Mineral granular-surfaced asphalt shingles.

a. Self-sealing.
b. Three tab.
c. Fungus-resistant.
d. Impact resistant shingles, Class 4.
e. Type I, weighing not less than 290 pounds per 100 square feet.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D3462/D3462M, laminated, multi-ply overlay construction; glass-fiber reinforced, mineral-granule surfaced, and self-sealing.

1. Basis of Design: Atlas Pinnacle Pristine High Performance Shingles.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal:

a. Atlas Molded Products; a Division of Atlas Roofing Corporation.
b. CertainTeed Corporation.
c. GAF.
d. Owens Corning.
e. Tamko Building Products, Inc.
f. Other Approved Equals.

3. Strip Size: Manufacturer's standard approximately 42 inch.
4. Algae Resistance: Granules resist algae discoloration.
5. Impact Resistance: Underwriters Laboratory (UL) 2218, Class 4.
6. Fire Resistance: UL 790 for Class A.
7. Color and Blends: Match color to existing three-tab shingles. The Contractor is responsible for providing sample color matches. COR to approved final color.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.3 UNDERLAYMENT MATERIALS

A. Synthetic Underlayment: UV-resistant polypropylene, polyolefin, or polyethylene polymer fabric with surface coatings or treatments to improve traction underfoot and abrasion resistance; evaluated and documented to be suitable for use as a roof underlayment under applicable codes by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Basis of design: RhinoRoof U20, as manufactured by InterWrap, Inc.

    a. Product requirements include the following minimum characteristics listed below:

        1) Permeability ASTM E96 - .05 perms.
        2) Water Transmission ASTM D4869 – pass.
        3) Tear Strength ASTM D4533 – MD 30 lbs (14 kg).
        4) Tensile Strength ASTM D751 – MD 80 lbs (36 kg).
        5) Bursts Strength ASTM D751 – 150 psi (1033 kPa)
        6) Nominal Thickness ASTM D1777 – 6 mils (0.15 mm).
        7) Width Per Roll – 36 inches.

2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Atlas Roofing Corporation.
    b. CertainTeed Saint-Gobain.
    c. GAF.
    d. Owens Corning.
    e. Tamko Building Products, Inc.
    f. Other Approved Equals.

B. Valleys, Eaves, Rake, and Roof/Wall Intersections: Install Self-Adhering, Polymer-Modified Bitumen Sheet: ASTM D1970/D1970M, minimum 55-mil- (1.4-mm-) thick sheet; glass-fiber-mat-reinforced, polymer-modified asphalt; with slip-resistant top surface and release backing; cold applied. Material to be supplied in 36 inch wide rolls. Provide primer for adjoining concrete, masonry, and metal surfaces to receive underlayment as recommended by the manufacturer. Approved product includes but is not limited to the following:

    1. Grace Ice & Water Shield; Grace Construction Products.
    2. WinterGuard Waterproofing underlayment; CertainTeed.
    3. RhinoRoof Granulated Self-Adhered underlayment.
    4. Other Approved Equals.

2.4 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.

B. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, sharp-pointed, with a 3/8- to 7/16-inch- (10- to 11-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through sheathing less than 3/4 inch (19 mm) thick.

    1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Synthetic Underlayment Fasteners: As recommended in writing by synthetic-underlayment manufacturer for application indicated.

2.5 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Full Roof Tear-off: Removal of existing roofing system down to existing roof deck or structure.
2. Temporarily protect existing roofing system and components that are to remain as required from damage.
3. Existing roof drains and roof drainage shall be protected during each stage of reroofing, and roof-drain plugs shall be installed when demolition is taking place so that debris cannot be lost down the drains. Contractor shall remove all drain plugs when demolition is completed in the area affecting the drain.
4. Do not remove more roof than can be replace in a day, and the roof will be made watertight each night.
5. Remove debris and materials so as not to impose excessive loads on supporting roof, structure or framing.
6. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Reinstall items in locations indicated, or in original locations as required. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
3. Lightning protection to be removed and reinstalled by a certified installer.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

D. Inspect deck after tear-off of roofing system.

1. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify COR.
   a. Do not proceed with installation until directed by COR.
2. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify COR.
   a. Do not proceed with installation until directed by COR.

E. Disposal of Demolished Materials:

1. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain NPS's property, remove demolished materials from Project site.
   a. Do not allow demolished materials to accumulate on-site.
   b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
2. Burning: Do not burn demolished materials.
3. Disposal: Transport demolished materials off NPS's property and legally dispose of them.

F. Cleaning:

1. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

2.6 SHEET METAL FLASHING AND TRIM

A. Performance Requirements:

1. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

2. Sheet Metal Standard for Flashing and Trim: Comply with National Roofing Contractors Association’s (NRCA's) "The NRCA Roofing Manual" and Sheet Metal and Air Conditioning Contractors National Association’s (SMACNA's) "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

3. Single Ply Roofing Industry (SPRI) Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:

   a. Design Pressure: 30 psf vertical design pressure.

4. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

B. Sheet Metal:

1. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

2. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet according to ASTM A 653/A 653M, G90 coating designation or aluminum-zinc alloy-coated steel sheet according to ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; prepainted by coil-coating process to comply with ASTM A 755/A 755M.

   a. Surface: Smooth, flat.
   b. Exposed Coil-Coated Finish:

      1) Two-Coat Fluoropolymer. American Architectural Manufacturers Association (AAMA) 621. Fluoropolymer finish containing not less than 70 percent Polyvinylidene Fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

   c. Color: Match color to existing. The Contractor is responsible for providing sample color matches. COR to approved final color.

   d. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

C. Underlayment Materials:

1. Synthetic Underlayment: Laminated or reinforced, woven polyethylene or polypropylene, synthetic roofing underlayment; bitumen free; slip resistant; suitable for high temperatures over 111 deg C (220 deg F); and complying with physical requirements of ASTM D 22/D 226M for Type I and Type II felts.

D. Miscellaneous Materials:

1. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

2. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

a. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

1) Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed Ethylene Propylene Diene Monomer (EPDM) or Polyvinyl Chloride (PVC) sealing washers under heads of exposed fasteners bearing on weather side of metal.
2) Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

b. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.

3. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 13 mm (1/2 inch) wide and 3 mm (1/8 inch) thick.

4. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

5. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

E. Fabrication General:

1. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

a. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
b. Obtain field measurements for accurate fit before shop fabrication.
c. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.

d. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

2. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of ¼ inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

   a. Form expansion joints of intermeshing hooked flanges, not less than 25 mm (1 inch) deep, filled with butyl sealant concealed within joints.
   b. Use lapped expansion joints only where indicated on Drawings.

4. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

6. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

7. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.

F. Miscellaneous Roof Sheet Metal Fabrications:

1. Roof-Edge Flashing and Cap Flashing: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long, sections. Furnish with 6-inch- wide, joint cover plates.

   a. Joint Style: Butted with expansion space and 6-inch-wide, concealed backup plate.
   b. Fabricate from the Following Materials:

      1) Aluminum-Zinc Alloy-Coated Steel: .0.024 inch thick.

2. Roof-Penetration Flashing: Fabricate from the following materials:

   a. Aluminum-Zinc Alloy-Coated Steel: 0.024 inch thick.

3. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch (1.6 mm) thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches (102 mm) from pipe onto roof.

4. The chimney flashing material currently consists of Lead Coated Copper, and shall be replace with In-Kind Materials. The mortar joints are packed with lead wool. The mortar joints shall be repacked with In-Kind Materials

PART 3 - EXECUTION

3.1 INSTALLATION OF UNDERLAYMENT MATERIALS

A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

B. Synthetic Underlayment:

1. Install on roof deck parallel with and starting at the eaves.

    a. Lap sides and ends and treat laps as recommended in writing by manufacturer, but not less than 2 inches (51 mm) for side laps and 6 inches (152 mm) for end laps.
    b. Stagger end laps between succeeding courses at interval recommended in writing by manufacturer, but not less than 72 inches (1829 mm).
    c. Fasten with underlayment nails in accordance with manufacturer's written instructions.
    d. Cover underlayment within period recommended in writing by manufacturer.

2. Install in single layer on roofs sloped at 4:12 and greater.

3. Install in double layer on roofs sloped at less than 4:12.

4. Install synthetic underlayment over areas protected by self-adhering, polymer-modified bitumen sheet unless otherwise specified in this Section or indicated on Drawings.

    a. Lap sides of underlayment over self-adhering sheet not less than 4 inches (102 mm) in direction to shed water.
    b. Lap ends of underlayment not less than 6 inches (152 mm) over self-adhering sheet.

5. Terminate synthetic underlayment extended up not less than 4 inches (102 mm) against sidewalls, curbs, chimneys, and other roof projections.

C. Self-Adhering, Polymer-Modified Bitumen Sheet: Install, wrinkle free, on roof deck in locations indicated on Drawings.

1. Comply with low-temperature installation restrictions of underlayment manufacturer.
2. Install lapped in direction that sheds water.

    a. Lap sides not less than 4 inches (102 mm).
    b. Lap ends not less than 6 inches (152 mm), staggered 24 inches (610 mm) between succeeding courses.
    c. Roll laps with roller.

3. Prime concrete, masonry, and metal surfaces to receive self-adhering sheet if required in writing by the manufacturer for installation of their underlayment.
4. Cover underlayment within seven days.

3.2 INSTALLATION OF SHEET METAL FLASHING AND TRIM

A. Examination:

1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

a. Verify compliance with requirements for installation tolerances of substrates.
b. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
c. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

2. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Underlayment Installation:

1. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.

C. General Installation:

1. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

a. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
b. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
c. Space cleats not more than 300 mm (12 inches) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
d. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
e. Torch cutting of sheet metal flashing and trim is not permitted.
f. Do not use graphite pencils to mark metal surfaces.

2. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

a. Coat concealed side of sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
b. Underlayment: Where installing sheet metal flashing and trim directly on Cementitious or wood substrates, install underlayment and cover with slip sheet.

3. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 3 m (10 feet) with no joints within 600 mm (24 inches) of corner or intersection.

a. Form expansion joints of intermeshing hooked flanges, not less than 25 mm (1 inch) deep, filled with sealant concealed within joints.

b. Use lapped expansion joints only where indicated on Drawings.

4. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

5. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

6. Seal joints as required for watertight construction.

   a. Embed hooked flanges of joint members not less than 1 inch into sealant.
   b. Form joints to completely conceal sealant.
   c. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
   d. Do not install sealant-type joints at temperatures below 40 deg F.

D. Roof-Drainage System Installation:

1. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

2. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints a minimum of 4 inches (100 mm) in direction of water flow.

E. Roof Flashing Installation:

1. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

2. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.

3. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 100 mm (4 inches) over base flashing. Install stainless-steel draw band and tighten.

4. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

F. Cleaning and Protection:

1. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

2. Clean off excess sealants.

3. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

G. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

3.3 INSTALLATION OF ASPHALT SHINGLES

A. General: Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip at least 7 inches (178 mm) wide with self-sealing strip face up at roof edge per manufacturer’s written instructions.

1. Extend asphalt shingles 1/2 inch (13 mm) over fasciae at eaves and rakes.
2. Install starter strip along rake edge.

C. Fasten asphalt shingle strips with a minimum of four roofing nails, but not less than the number indicated in manufacturer's written instructions for roof slope and design wind speed indicated on Drawings and for warranty requirements specified in this Section.

1. Locate fasteners in accordance with manufacturer's written instructions.

2. Where roof slope is less than 4:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.

3. When ambient temperature during installation is below 50 deg F (10 deg C), hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.

D. Closed-Cut Valleys: Extend asphalt shingle strips from one side of valley 12 inches (305 mm) beyond center of valley.

1. Use one-piece shingle strips without joints in valley.

2. Fasten with extra nail in upper end of shingle. Install asphalt shingle courses from other side of valley and cut back to a straight line 2 inches (51 mm) short of valley centerline.

3. Trim upper concealed corners of cut-back shingle strips.

4. Do not nail asphalt shingles within 6 inches (152 mm) of valley center.

5. Set trimmed, concealed-corner asphalt shingles in a 3-inch- (76-mm-) wide bed of asphalt roofing cement.

E. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips.

1. Maintain uniform width of exposed open valley as required to match the original valley dimensions. Widen exposed portion of open valley 1/8 inch in 12 inches (1:96) from highest to lowest point.

2. Extend shingle a minimum of 4 inches (102 mm) over valley metal.

3. Set valley edge of asphalt shingles in a 3-inch- (76-mm-) wide bed of asphalt roofing cement.

4. Do not nail asphalt shingles to metal open-valley flashings.

F. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing-shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds.

1. Fasten with roofing nails of sufficient length to penetrate sheathing.

G. Base Flashing: Extend flashing 2 inches above the top edge of the base shingle to 1 ½ inches above the butt edge of the covering of the shingle. Extend up vertical surfaces beneath wall covering 5 inches minimum and onto roofing a minimum of 4 inches. Install flashing under each shingle course. Secure top edge of flashing by nailing to substrate. At chimney, extend up vertical surfaces 8 inches minimum and onto roofing 4 inches minimum. The chimney reglets shall be composed of lead wool. Reglets are used to adhere the flashing to the chimney. Solder lap vertical joints. Miter and solder lap corners.

H. **:** Apron Flashing: Where roof slopes away from vertical surfaces: Extend vertical surfaces 4 inches or to the first brick joint, and onto roof surfaces a minimum of 4 inches. Secure top edge to the walls sheathing. Hem the bottom edged ½ inch. Lap seams at vertical joints 3 inches minimum and apply sealant, engaging hemmed edges. Miter and solder joints, and extend around corners 3 inches. Install bottom edges tight against roofing. Attach clips to substrate with concealed fasteners. Reinforce clips by double bending back over the bottom edge of the flashing. Counter flash all top edges.

END OF SECTION

SECTION 099113

EXTERIOR PAINTING

PART 1 -

PART 2 - GENERAL

SCOPE OF WORK

A. Project Location: 601 and 605 W Truman Rd (MO-05), Independence, MO 64050

B. Building(s) Name/Identifier: Frank Wallace Home and George Wallace Home

SUMMARY

A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
   1. Steel and iron.
   2. Galvanized metal.
   3. Aluminum (not anodized or otherwise coated).
   4. Wood.

DEFINITIONS (Master Painters Institute-MPI)

A. Master Painters Institute (MPI) (http://www.specifypaint.us & http://paintinfo.com/)

B. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

   1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

   2. Include Safety Data Sheet (SDS).

B. Samples: Submit 2 color samples 4” x 6” minimum in size for all product color selections.

C. Paint samples shall be actual paint finish drawdown for all project colors.

2.5 QUALITY ASSURANCE

D. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Contracting Officer’s Representative (COR) will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 1 sq. ft
b. Other Items: COR will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by COR at no added cost to Owner.

PART 3 - PRODUCTS

MANUFACTURERS

A. MPI Listing Manufactures as shown on the MPI Approved Products Lists.

B. Products: Subject to compliance with requirements, provide product listed in the Exterior Painting Schedule for the paint category indicated.

3.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: To match existing. As selected by Contracting Officer’s Representative (COR) from manufacturer's full range.

PART 4 - EXECUTION

4.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
   1. Wood: 15 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

   1. Application of coating indicates acceptance of surfaces and conditions.

PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Maintenance Repainting Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

   1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

   2. Limit use of power washing on Historic Structures to the extent necessary. Any power washing should be done in a manner to avoid damage to the structure and substrate.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

   1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

   2. Note presence of encapsulated lead based paint. Use all precautions required by law and removal methods appropriate to meet OSHA standards. Provide all protective measures necessary for facility to remain occupied during the work and for staff/visitor safety. Dispose of all debris and protective measures as required by law.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

G. Aluminum Substrates: Remove loose surface oxidation.

H. Wood Substrates:

   1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.

2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Maintenance Repainting Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
4. Paint entire exposed surface of window frames and sashes.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance from corner to corner of wall area.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by COR, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

EXTERIOR PAINTING SCHEDULE

A. Galvanized-Metal Substrates:

1. Alkyd System MPI EXT 5.3B:

a. Prime Coat: Primer, alkyd, exterior, flat (MPI Gloss Level 1), MPI #8
b. Topcoat: Alkyd, exterior, flat (MPI Gloss Level 1), MPI #8.

B. Aluminum Substrates:

1. Alkyd System MPI EXT 5.4F:

a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.
b. Topcoat: Alkyd, exterior, semi-gloss (MPI Gloss Level 5), MPI #94.

C. Wood Substrates: Exposed framing.

1. Latex over Alkyd Primer System MPI EXT 6.2A:

a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
a. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 4), MPI #10.

D. Wood Substrates: Dressed Wood (trim, Architectural woodwork, Doors, Windows, Wood board siding and wood fences).

1. Latex System over Alkyd Primer System MPI EXT 6.3A:

a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
b. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 4), MPI #10.

E. Wood Substrates: Wood-based panel products.

1. Latex over Alkyd Primer System MPI EXT 6.4G:

a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
b. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 4), MPI #10.

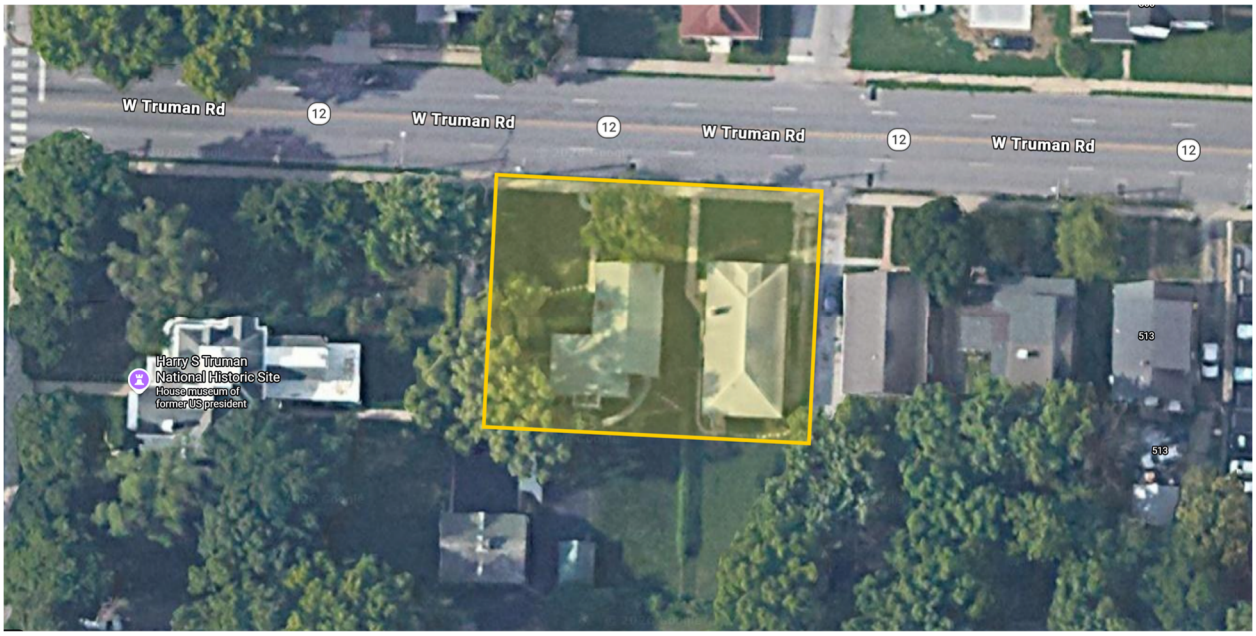
END OF SECTION

SUBMITTAL LIST

HSTR PMIS# 324393 Replace Roof and Repair Soffit - FW and GW Homes

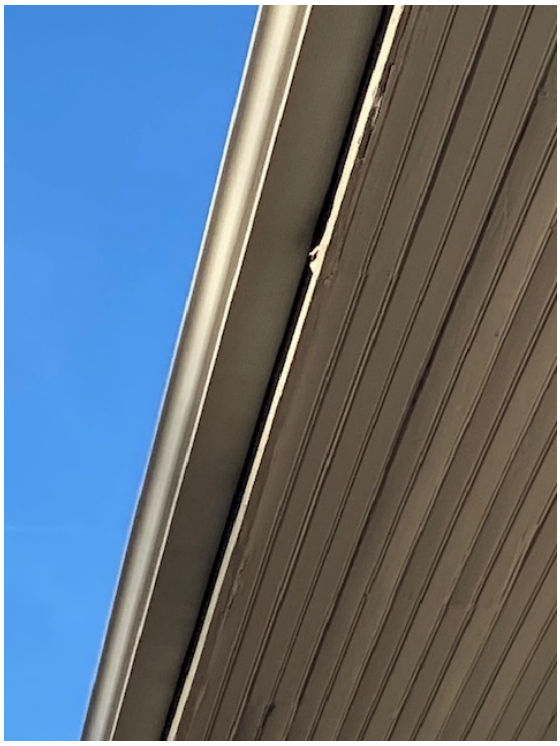
SUBMITTAL			REQUIREMENTS (indicate with an "X")							
			INFORMATIONAL				ACTION			
Spec. Sec.	Par. No.	Description	CERT./LAB TEST	REPORT/CALC. OR PLAN	Mfg. DATA & INSTRUCTIONS		SHOP DRAWING	SAMPLE	Mfg. DATA & INSTRUCTIONS	Maintenance Materials
01	7.2	Accident Prevention (Safety) Plan (APP)		X						
01	9.1	Precnstruction Conference Submittal		X						
01	11.3	Completion and Final Inspection								
73113	1.4	Product Data					X			
73113	1.4	Sustainable Design Product Test Reports					X			
73113	1.4	Shop Drawing					X			
73113	1.4	Samples for each product for each color specified						X		X
73113	1.5	Product Test Reports	X							
73113	1.5	Research Reports	X							
73113	1.5	Sample Warranties	X							
73113	1.7	Maintenance Data			X					
099113	1.4	Safety Data Sheets							X	
99113	1.4	Maintenance Materials: Extra Paint								X
99113	1.4	Samples for each product for each color specified						X		
099113	3.5	Exterior Steel and Iron Substrate						X	X	
099113	3.5	Exterior Galvanized-Metal Substrate						X	X	
099113	3.5	Exterior Aluminium Substrate						X	X	
099113	3.5	Exterior Wood Substrate-Exposed Framing						X	X	
099113	3.5	Exterior Wood Substrate-Dressed Wood						X	X	
099113	3.5	Exterior Wood Substrate-Wood panel products						X	X	

Appendix A Site Plan



Appendix B Hover Scans and Project Photos

Frank Wallace Soffit



George Wallace Soffit

Hover **Complete Measurements**

601 West Truman Road
INDEPENDENCE, MO 64050

FOR REFERENCE ONLY - CONTRACTOR TO VERIFY ALL DIMENSIONS AND TAKE OFFS

VIEW 3D MODEL

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PROPERTY ID: 18317806
MODEL ID: 18306325
FRANK WALLACE
26 SEP 2025

Areas	Siding	Other
Facades	727 ft^2	753 ft^2
Openings	361 ft^2	36 ft^2
Trims*	536 ft^2	26 ft^2
Unknown (no photos)*	-	85 ft^2
Total	1624 ft^2	900 ft^2

*Any trim or unknown material that touches siding is included in the 'Siding' column. If it does not touch siding, then it's included in the 'Other' column.

Openings	Siding	Other
Quantity	23	4
Tops Length	67′ 7″	13′
Sills Length	71′ 9″	13′
Sides Length	156′ 2″	20′ 8″
Total Perimeter	295′ 6″	46′ 7″

Corners	Siding	Other
Inside Qty	2	14
Inside Length	11′	28′ 7″
Outside Qty	6	25
Outside Length	43′ 7″	176′ 10″

Accessories	Siding	Other
Shutter Qty	0	0
Shutter Area	0 ft^2	0 ft^2
Vents Qty	1	0
Vents Area	8 ft^2	0 ft^2

Trim	Siding	Other
Level Starter	158′ 5″	245′ 4″
Sloped Trim	14′ 8″	3′ 3″
Vertical Trim	15′ 11″	62′ 8″

Roofline	Length	Avg. Depth	Soffit Area
Eaves Fascia	215′ 8″	-	-
Level Frieze Board	209′ 2″	1′ 8″	750 ft^2
Rakes Fascia	-	-	-
Sloped Frieze Board	-	-	0 ft^2

SIDING WASTE TOTALS

Siding & Trim Only*	Area	Squares
Zero Waste	1008 ft^2	10¼
+10%	1109 ft^2	11¼
+18%	1190 ft^2	12

+ Openings < 20ft^2	Area	Squares
Zero Waste	1330 ft^2	13½
+10%	1464 ft^2	14¾
+18%	1570 ft^2	15¾

+ Openings < 33ft^2	Area	Squares
Zero Waste	1370 ft^2	13¾
+10%	1508 ft^2	15¼
+18%	1617 ft^2	16¼

*The first three rows of the Siding Waste Factor table are calculated using the total ft^2 of siding facades, ft^2 of trim touching siding, and ft^2 of unknowns touching siding.

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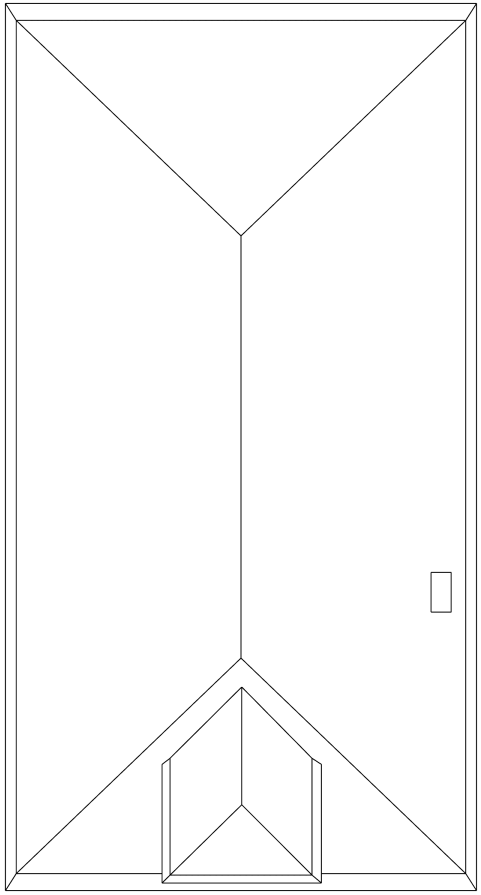
Roof	Area	Total	Length
Roof Facets	2384 ft^2	14	-
Ridges / Hips	-	14	154′ 7″
Valleys	-	4	16′ 11″
Rakes	-	0	-
Eaves	-	7	215′ 8″
Flashing	-	3	13′ 8″
Step Flashing	-	6	16′ 7″
Drip Edge/Perimeter	-	-	215′ 8″

Roof Pitch*	Area	Percentage
7 / 12	2199 ft^2	92.24%
2 / 12	168 ft^2	7.05%
6 / 12	17 ft^2	0.71%



Example Waste Factor Calculations

	Zero Waste	+5%	+10%	+15%	+20%
Area	2384 ft^2	2503 ft^2	2622 ft^2	2742 ft^2	2861 ft^2
Squares	24	25⅓	26⅓	27⅔	28⅔

The table above provides the total roof area of a given property using waste percentages as noted. Please consider that area values and specific waste factors can be influenced by the size and complexity of the property, captured image quality, specific roofing techniques, and your own level of expertise. Additional square footage for Hip, Ridge, and Starter shingles are not included in this waste factor and will require additional materials. This table is only intended to make common waste calculations easier and should not be interpreted as recommendations.

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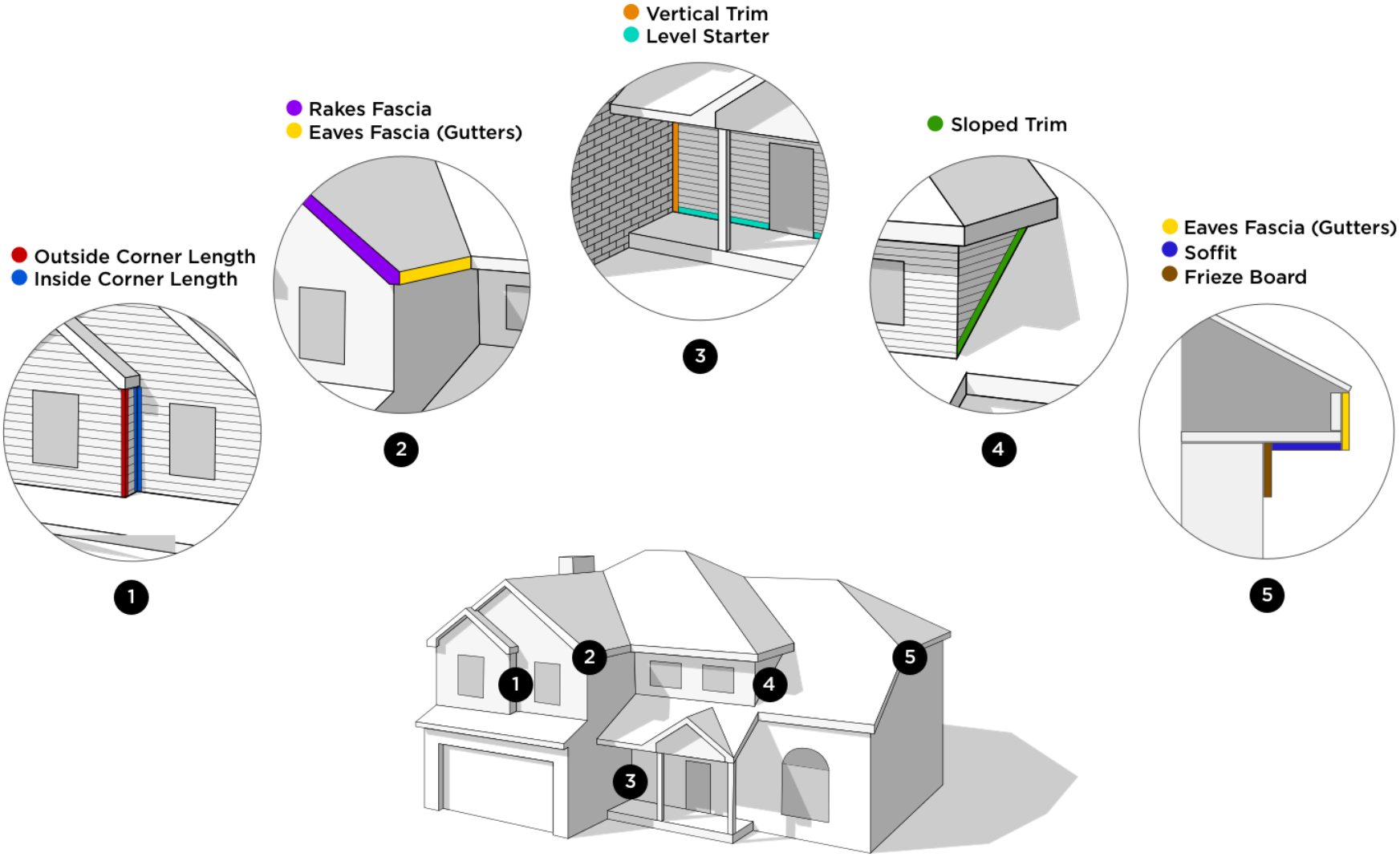

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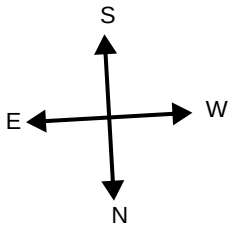

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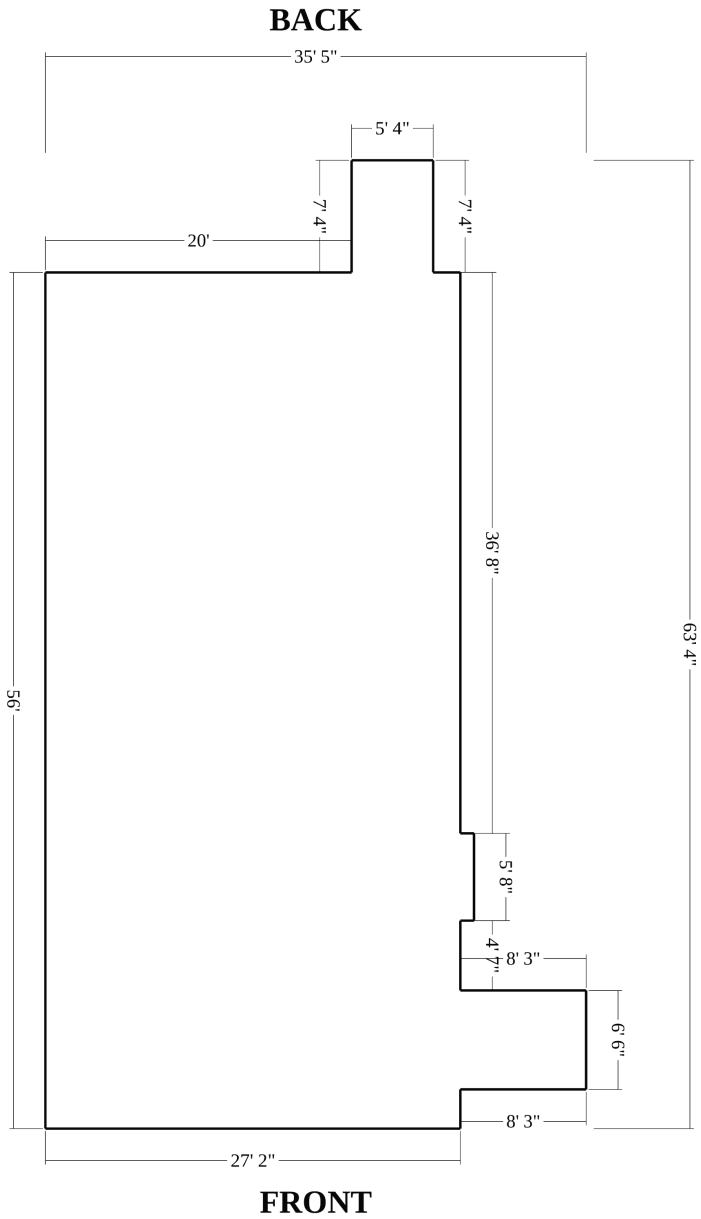
Footprint Perimeter: 199′ 2″

Footprint Area: 1618 ft^2



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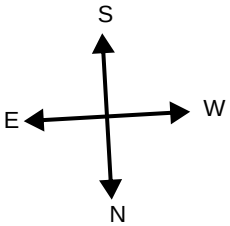

Siding Per Elevation

FRONT			RIGHT			LEFT			BACK		
SI-1	-	118 ft^2	SI-3	-	6 ft^2	SI-12	-	244 ft^2	SI-9	-	9 ft^2
SI-2	-	22 ft^2	SI-4	-	23 ft^2	SI-13	-	6 ft^2	SI-10	-	28 ft^2
SI-5	-	9 ft^2	SI-6	-	7 ft^2				SI-11	-	80 ft^2
			SI-7	-	143 ft^2						
			SI-8	-	32 ft^2						
149 ft^2			**211 ft^2**			**250 ft^2**			**117 ft^2**		

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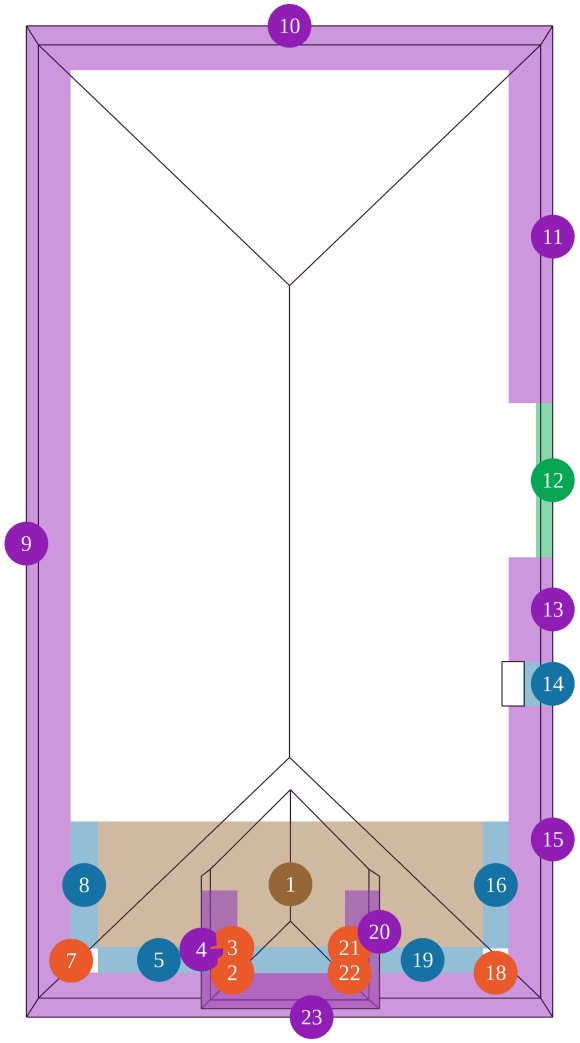
Soffit Summary

Depth	Type	Count	Total Length	Total Area
0″ - 1″	eaves	6	9′ 4″	0 ft²
1″ - 6″	eaves	2	3′ 1″	0 ft²
12″ - 18″	eaves	1	9′ 7″	10 ft²
18″ - 24″	eaves	5	33′ 7″	55 ft²
	-	1	5′ 9″	9 ft²
24″ - 48″	eaves	9	186′ 3″	499 ft²
> 48″	eaves	1	23′ 11″	186 ft²
		Totals	**271′ 4″**	**759 ft²**



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Soffit Breakdown

num	Type	Depth	Length	Area	Pitch
1	eave	93″	23′ 11″	186 ft²	7 / 12
2	eave	0″	1′ 7″	0 ft²	7 / 12
3	eave	1″	1′ 7″	0 ft²	7 / 12
4	eave	27″	7′ 4″	16 ft²	6 / 12
5	eave	19″	7′ 7″	12 ft²	7 / 12
6	eave	0″	1′ 7″	0 ft²	7 / 12
7	eave	1″	1′ 6″	0 ft²	7 / 12
8	eave	20″	7′ 10″	13 ft²	7 / 12
9	eave	33″	58′ 9″	161 ft²	2 / 12
10	eave	33″	32′ 8″	89 ft²	2 / 12
11	eave	33″	20′ 8″	57 ft²	2 / 12
12	eave	12″	9′ 7″	10 ft²	2 / 12
13	eave	33″	6′ 6″	18 ft²	2 / 12
14	eave	22″	2′ 9″	5 ft²	2 / 12
15	eave	33″	16′ 7″	45 ft²	2 / 12
16	eave	19″	7′ 10″	12 ft²	7 / 12
17	eave	0″	1′ 6″	0 ft²	7 / 12
18	eave	0″	1′ 7″	0 ft²	7 / 12
19	eave	19″	7′ 6″	12 ft²	7 / 12
20	eave	26″	5′ 2″	11 ft²	6 / 12
21	eave	1″	1′ 7″	0 ft²	7 / 12
22	eave	0″	1′ 7″	0 ft²	7 / 12
23	eave	33″	29′ 11″	82 ft²	2 / 12
24	eave	26″	8′ 10″	19 ft²	6 / 12
25	-	19″	5′ 9″	9 ft²	7 / 12

Feature is too small to label on the plan diagram

\- Feature could not be labelled with complete certainty

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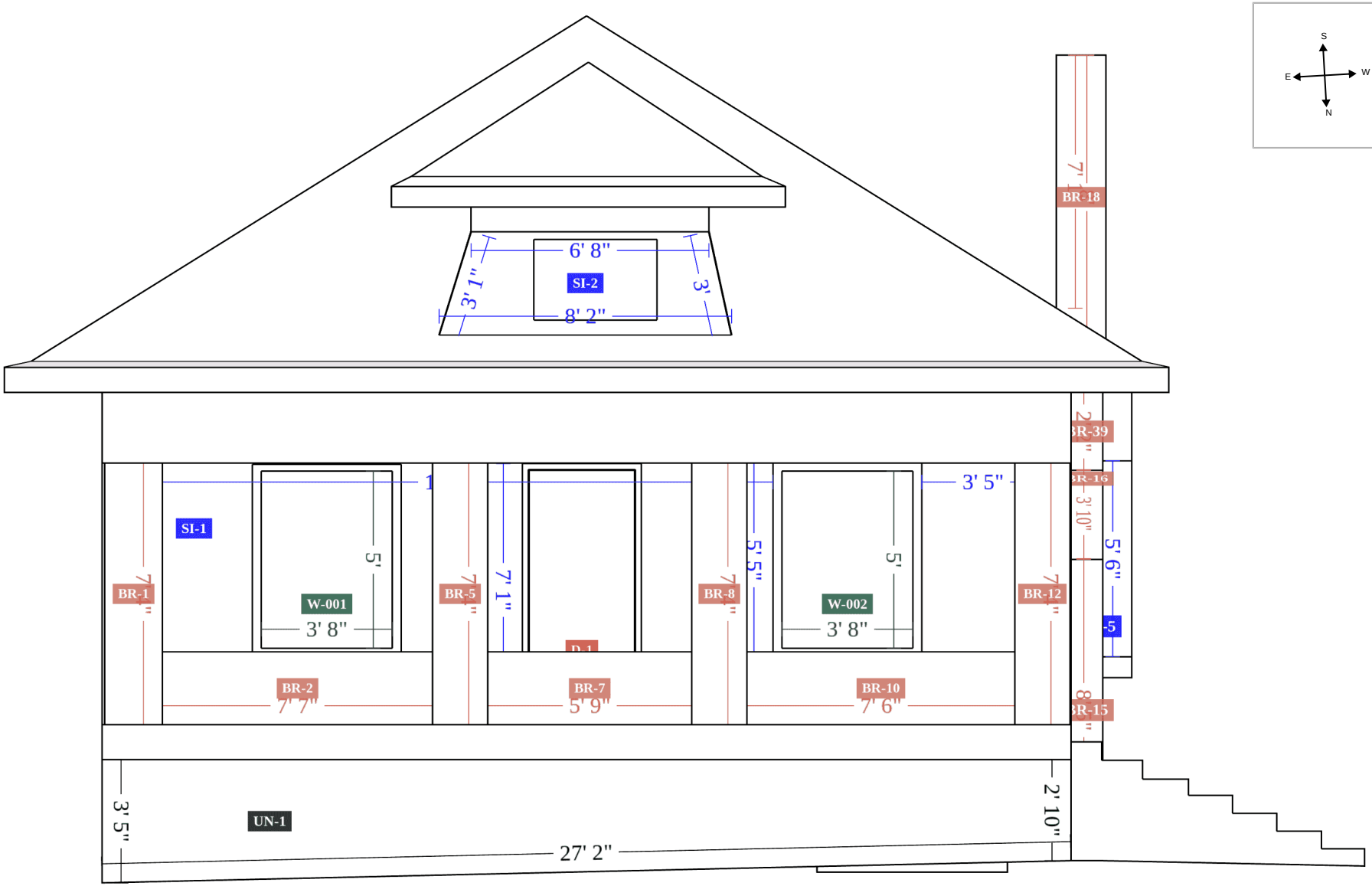

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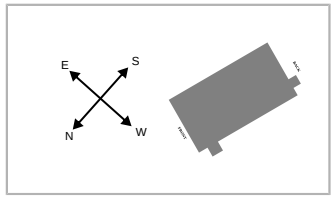

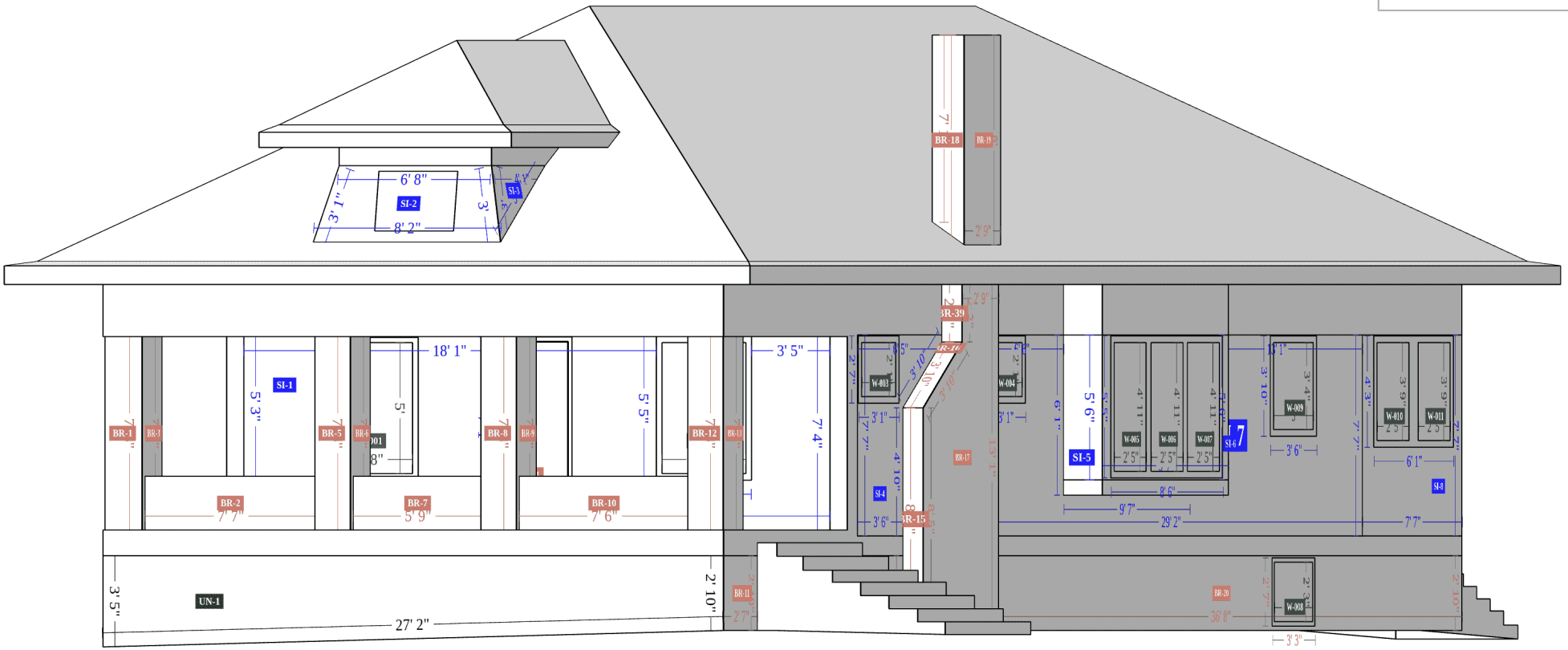

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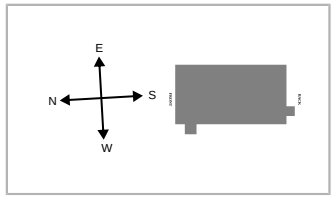

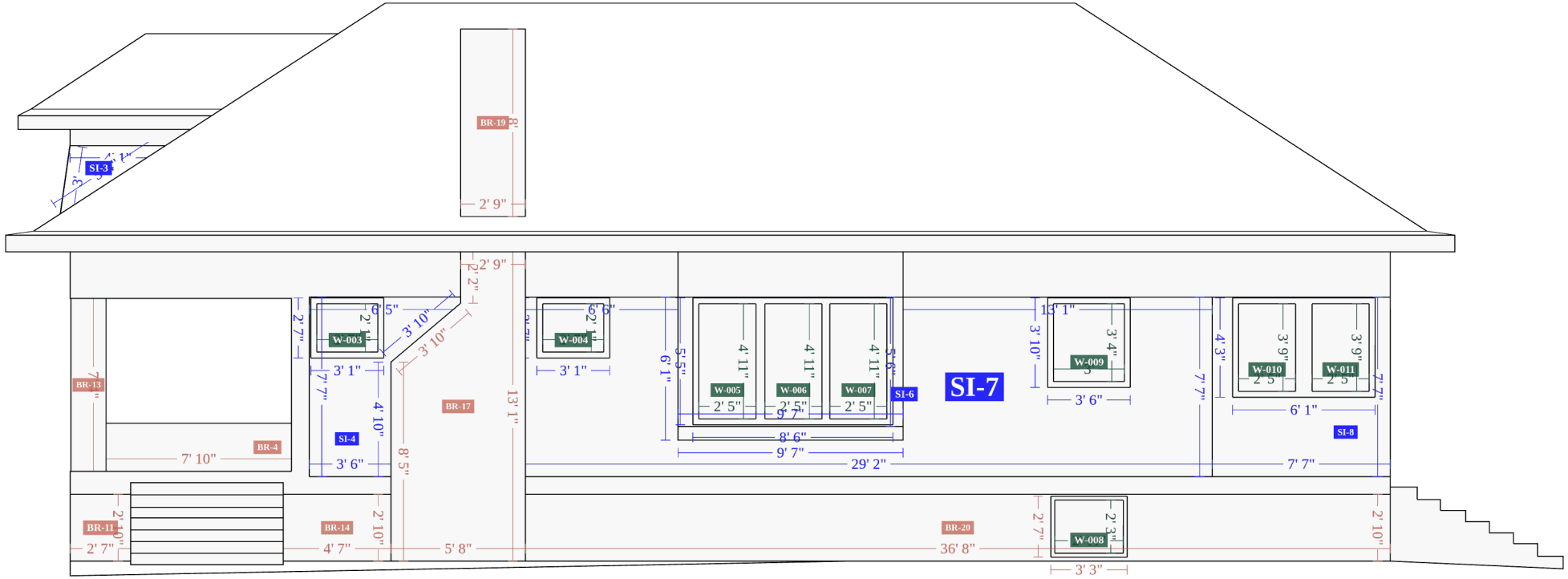

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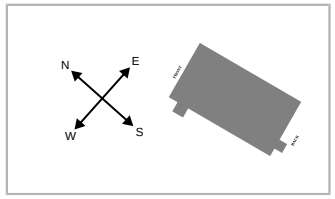

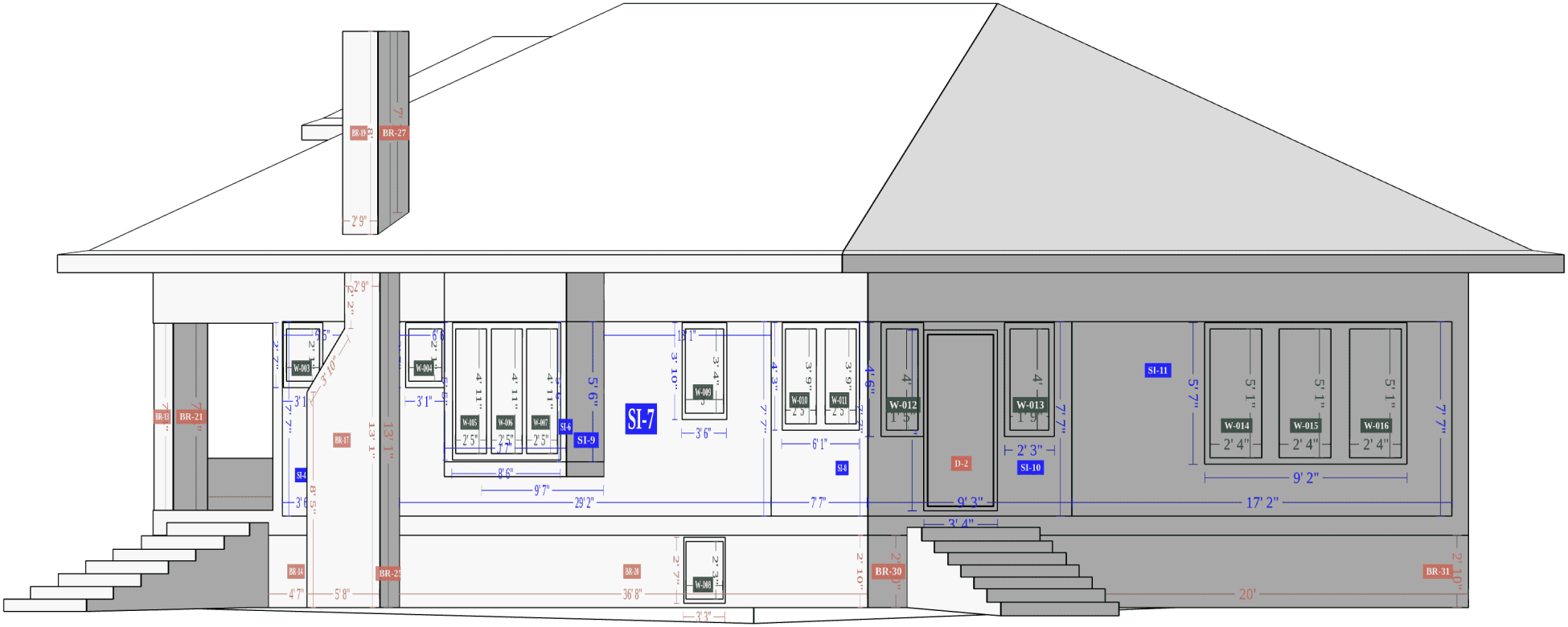

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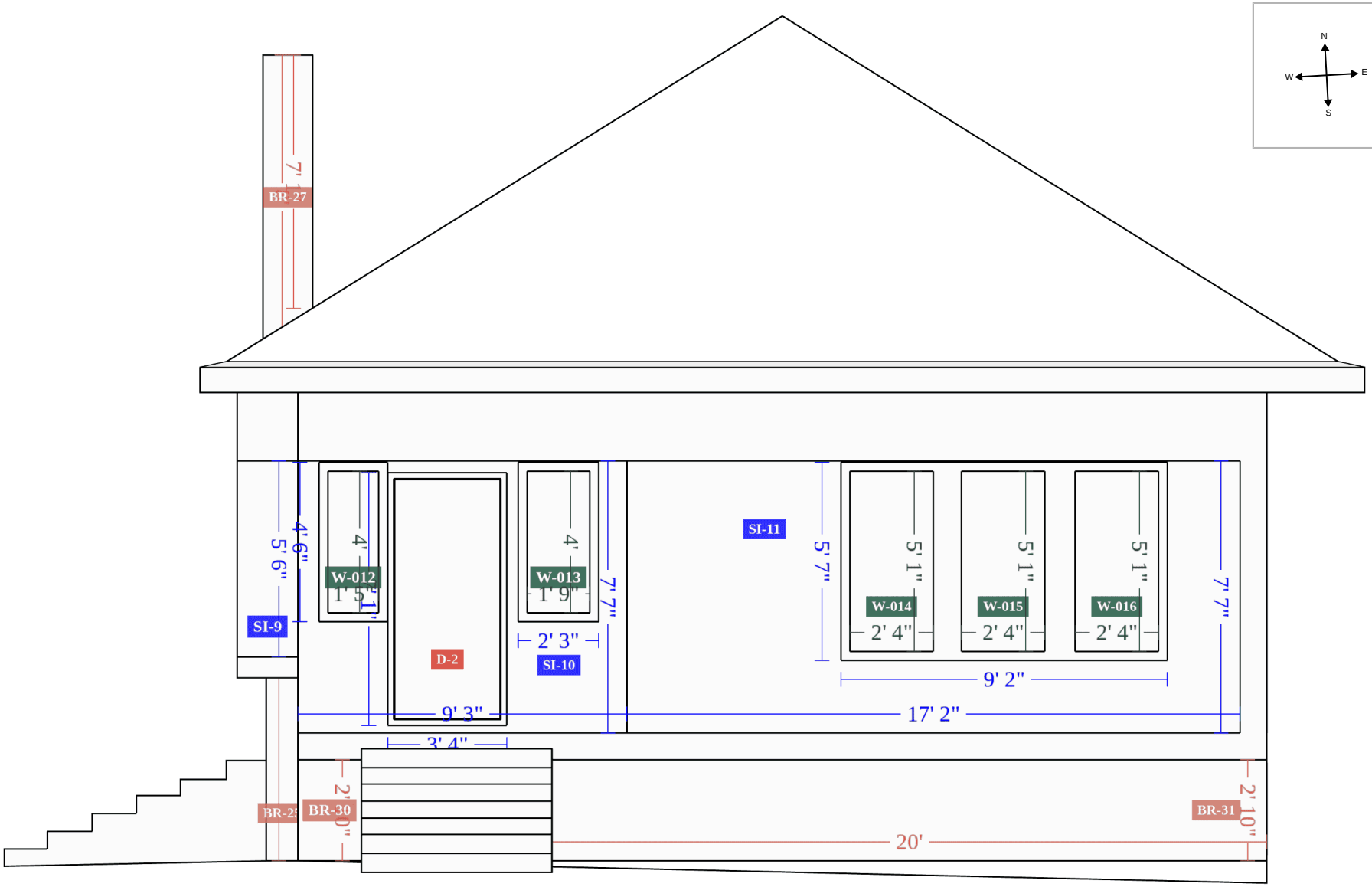

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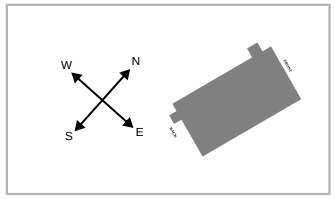

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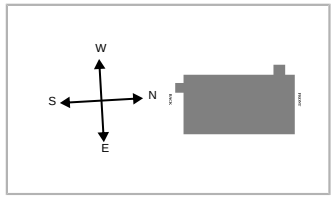

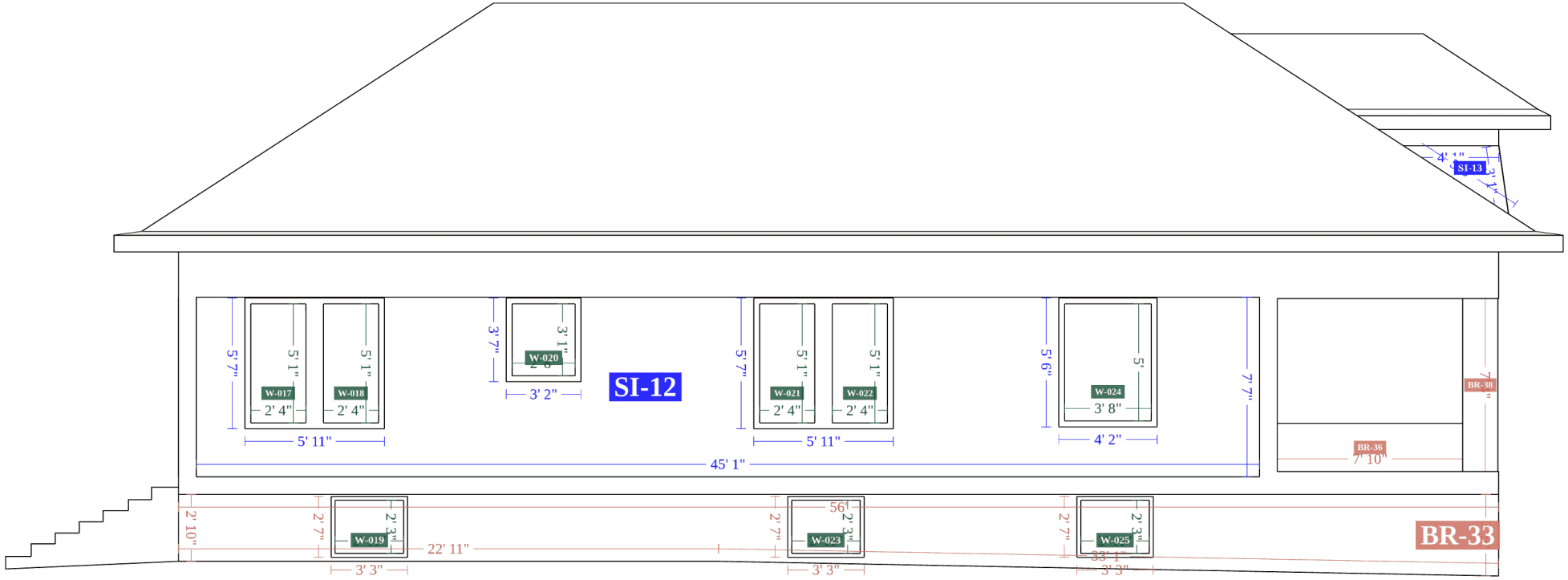

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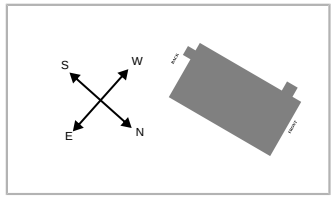

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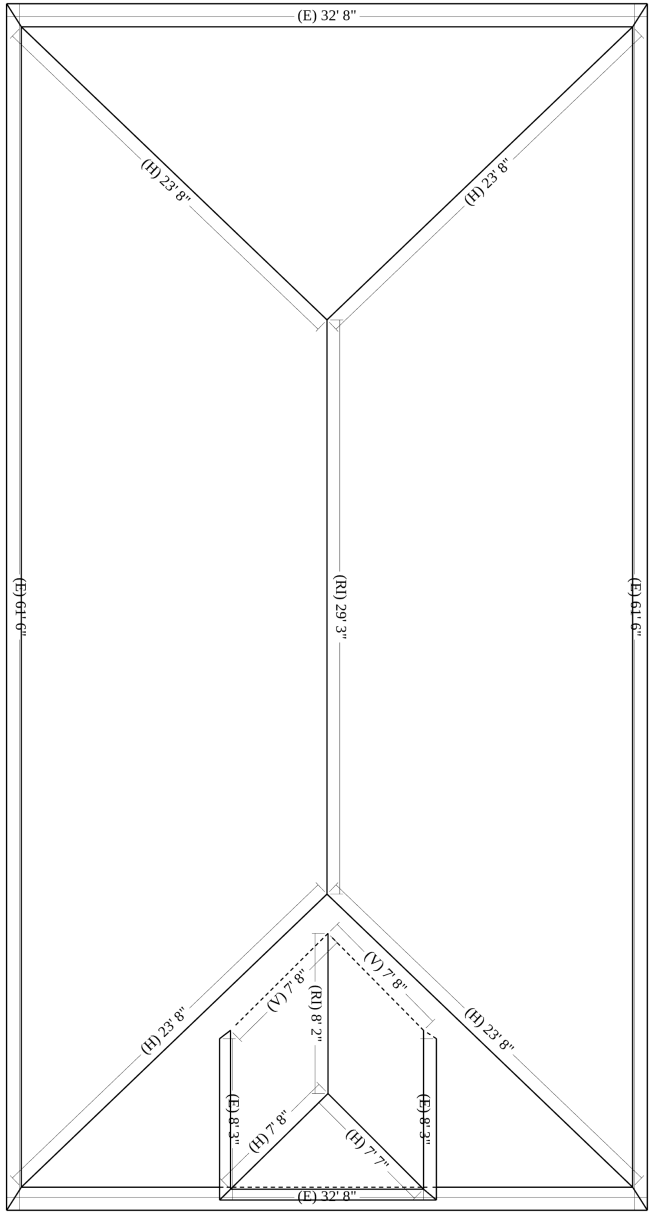
Roof	Length
Ridges (RI)	37′ 5″
Hips (H)	117′ 2″
Valleys (V)	16′ 11″
Rakes (RA)	-
Eaves (E)	215′ 8″
Flashing (F)*	13′ 8″
Step Flashing (SF)*	16′ 7″
Transition Line (TL)	206′ 6″

*Please view the 3D model for more detail (e.g. flashing, step flashing and some other roof lines may be difficult to see on the PDF)



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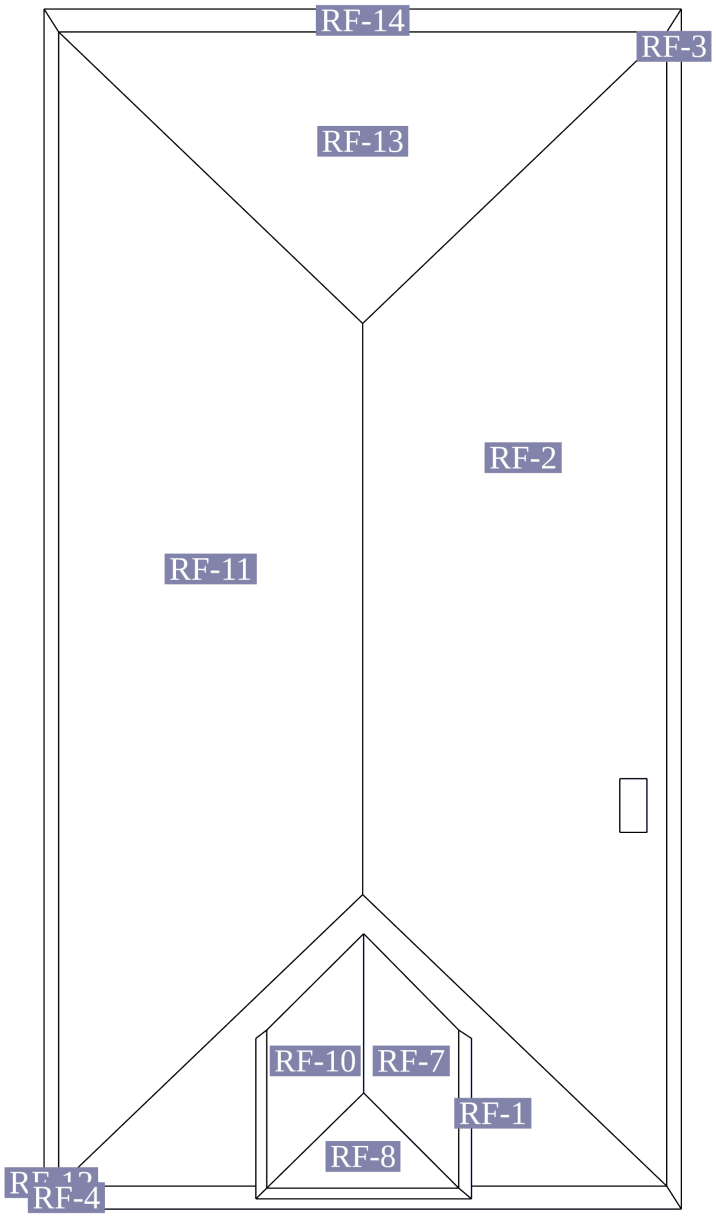
Roof Facets

Facet	Area	Pitch
RF-1	183 ft^2	7/12
RF-2	805 ft^2	7/12
RF-3	46 ft^2	2/12
RF-4	38 ft^2	2/12
RF-5	6 ft^2	6/12
RF-6	6 ft^2	6/12
RF-7	47 ft^2	7/12
RF-8	29 ft^2	7/12
RF-9	5 ft^2	6/12
RF-10	48 ft^2	7/12
RF-11	810 ft^2	7/12
RF-12	46 ft^2	2/12
RF-13	277 ft^2	7/12
RF-14	38 ft^2	2/12



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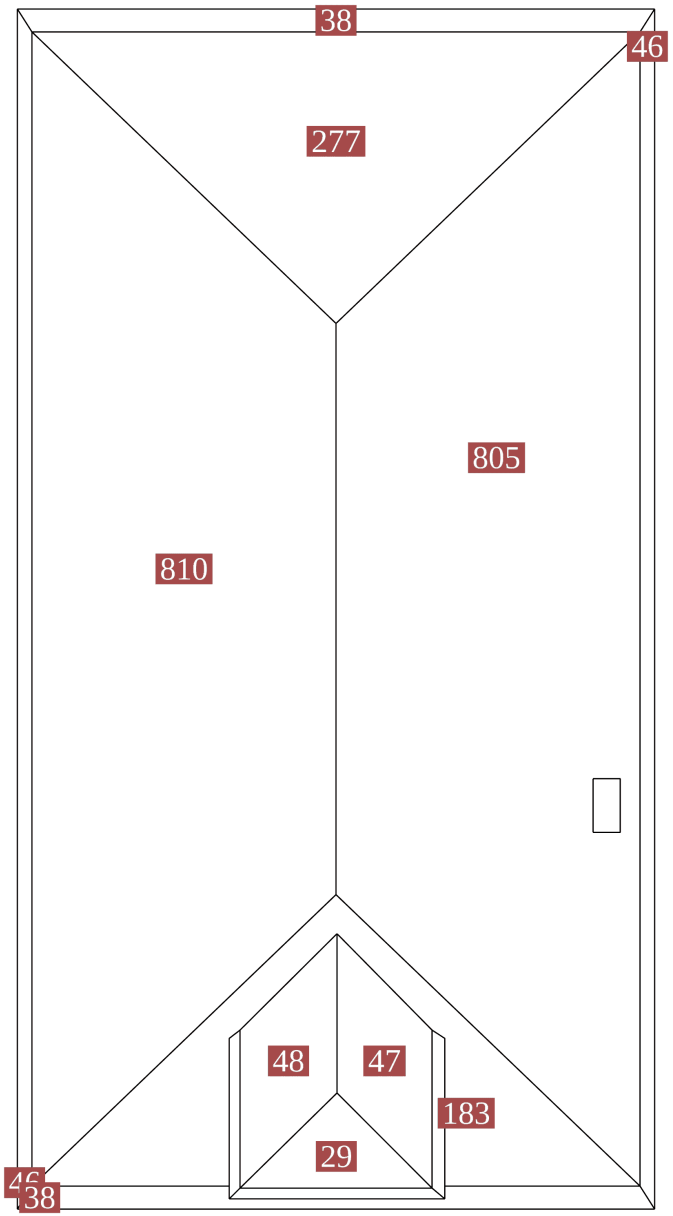

Roof	Facets	Total
Total	14	2384 ft^2

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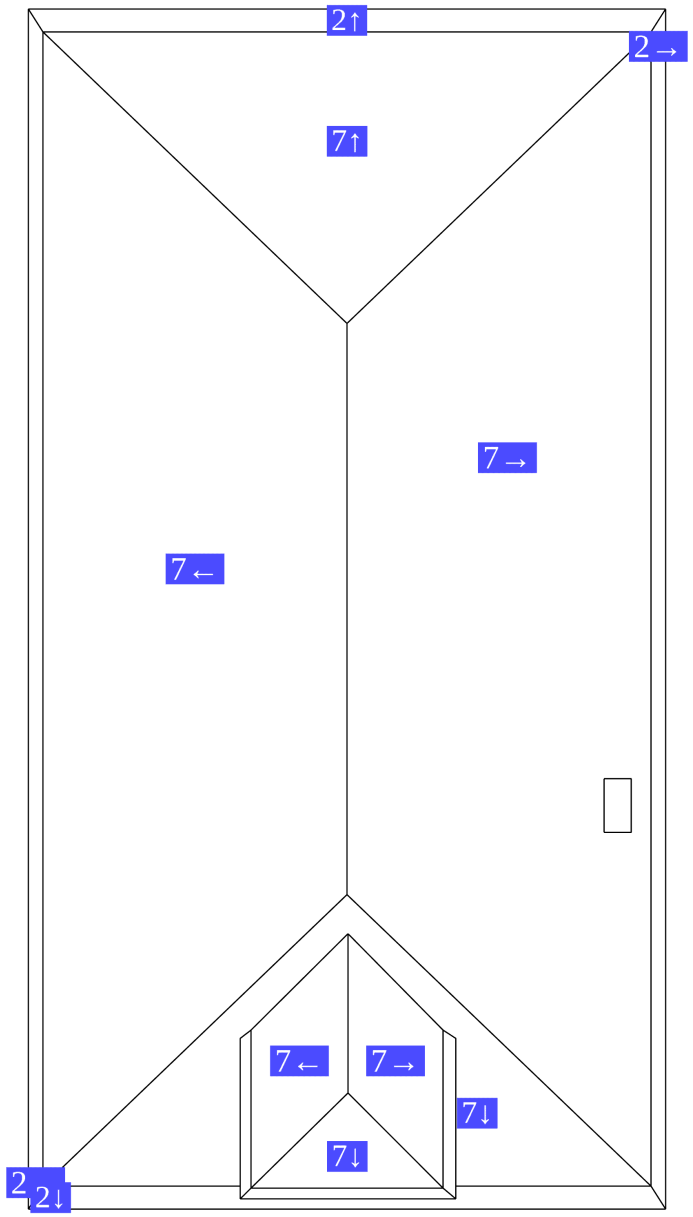
Roof Pitch	Area	Percentage
7 / 12	2199 ft^2	92.24%
2 / 12	168 ft^2	7.05%
6 / 12	17 ft^2	0.71%



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Hover **Complete Measurements**

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VIEW 3D MODEL

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PROPERTY ID: 18317589
MODEL ID: 18306106
GEORGE WALLACE
25 SEP 2025

Areas	Siding	Other
Facades	847 ft^2	522 ft^2
Openings	407 ft^2	14 ft^2
Trims*	389 ft^2	-
Unknown (no photos)*	-	-
Total	1643 ft^2	536 ft^2

*Any trim or unknown material that touches siding is included in the 'Siding' column. If it does not touch siding, then it's included in the 'Other' column.

Openings	Siding	Other
Quantity	26	2
Tops Length	-	7′ 1″
Sills Length	80′ 10″	7′ 1″
Sides Length	154′ 4″	7′ 11″
Total Perimeter	235′ 2″	22′ 2″

Corners	Siding	Other
Inside Qty	6	7
Inside Length	41′ 9″	11′ 11″
Outside Qty	10	24
Outside Length	73′ 1″	117′ 6″

Accessories	Siding	Other
Shutter Qty	0	0
Shutter Area	0 ft^2	0 ft^2
Vents Qty	1	0
Vents Area	6 ft^2	0 ft^2

Trim	Siding	Other
Level Starter	190′ 10″	167′ 2″
Sloped Trim	8′ 11″	38′ 8″
Vertical Trim	15′ 5″	38′ 8″

Roofline	Length	Avg. Depth	Soffit Area
Eaves Fascia	168′ 6″	-	-
Level Frieze Board	157′ 1″	1′ 11″	540 ft^2
Rakes Fascia	52′ 9″	-	-
Sloped Frieze Board	47′ 1″	2′ 4″	105 ft^2

SIDING WASTE TOTALS

Siding & Trim Only*	Area	Squares
Zero Waste	1146 ft^2	11½
+10%	1260 ft^2	12¾
+18%	1350 ft^2	13¾

+ Openings < 20ft^2	Area	Squares
Zero Waste	1532 ft^2	15½
+10%	1685 ft^2	17
+18%	1806 ft^2	18¼

+ Openings < 33ft^2	Area	Squares
Zero Waste	1553 ft^2	15¾
+10%	1708 ft^2	17¼
+18%	1830 ft^2	18½

*The first three rows of the Siding Waste Factor table are calculated using the total ft^2 of siding facades, ft^2 of trim touching siding, and ft^2 of unknowns touching siding.

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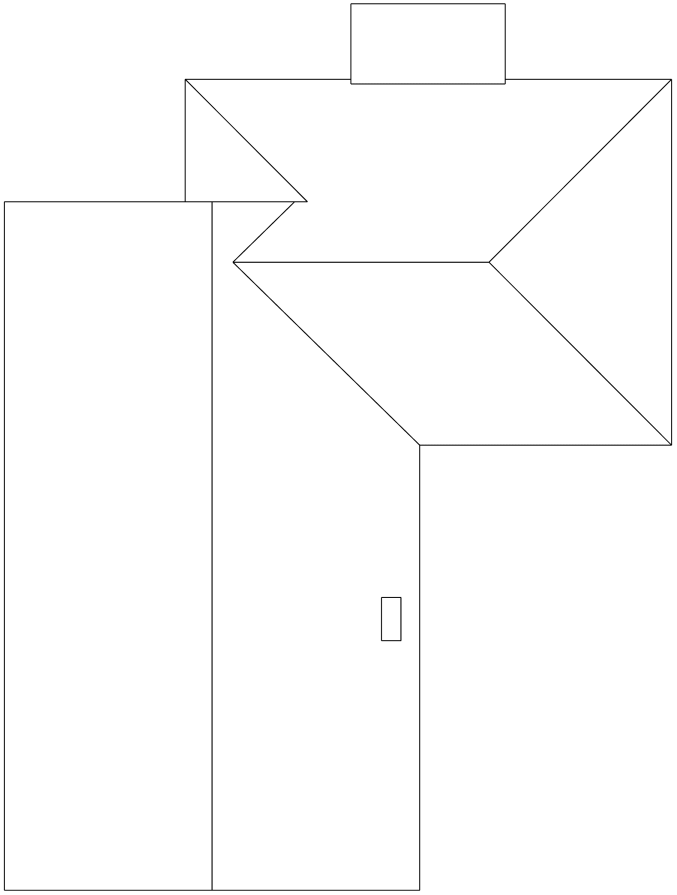
Roof	Area	Total	Length
Roof Facets	2061 ft^2	7	-
Ridges / Hips	-	5	110′ 7″
Valleys	-	2	24′ 6″
Rakes	-	4	52′ 9″
Eaves	-	11	168′ 6″
Flashing	-	2	5′ 8″
Step Flashing	-	7	11′ 6″
Drip Edge/Perimeter	-	-	221′ 3″

Roof Pitch*	Area	Percentage
7 / 12	2008 ft^2	97.43%
0 / 12	53 ft^2	2.57%



Example Waste Factor Calculations

	Zero Waste	+5%	+10%	+15%	+20%
Area	2061 ft^2	2164 ft^2	2267 ft^2	2370 ft^2	2473 ft^2
Squares	20⅔	21⅔	23	24	25

The table above provides the total roof area of a given property using waste percentages as noted. Please consider that area values and specific waste factors can be influenced by the size and complexity of the property, captured image quality, specific roofing techniques, and your own level of expertise. Additional square footage for Hip, Ridge, and Starter shingles are not included in this waste factor and will require additional materials. This table is only intended to make common waste calculations easier and should not be interpreted as recommendations.

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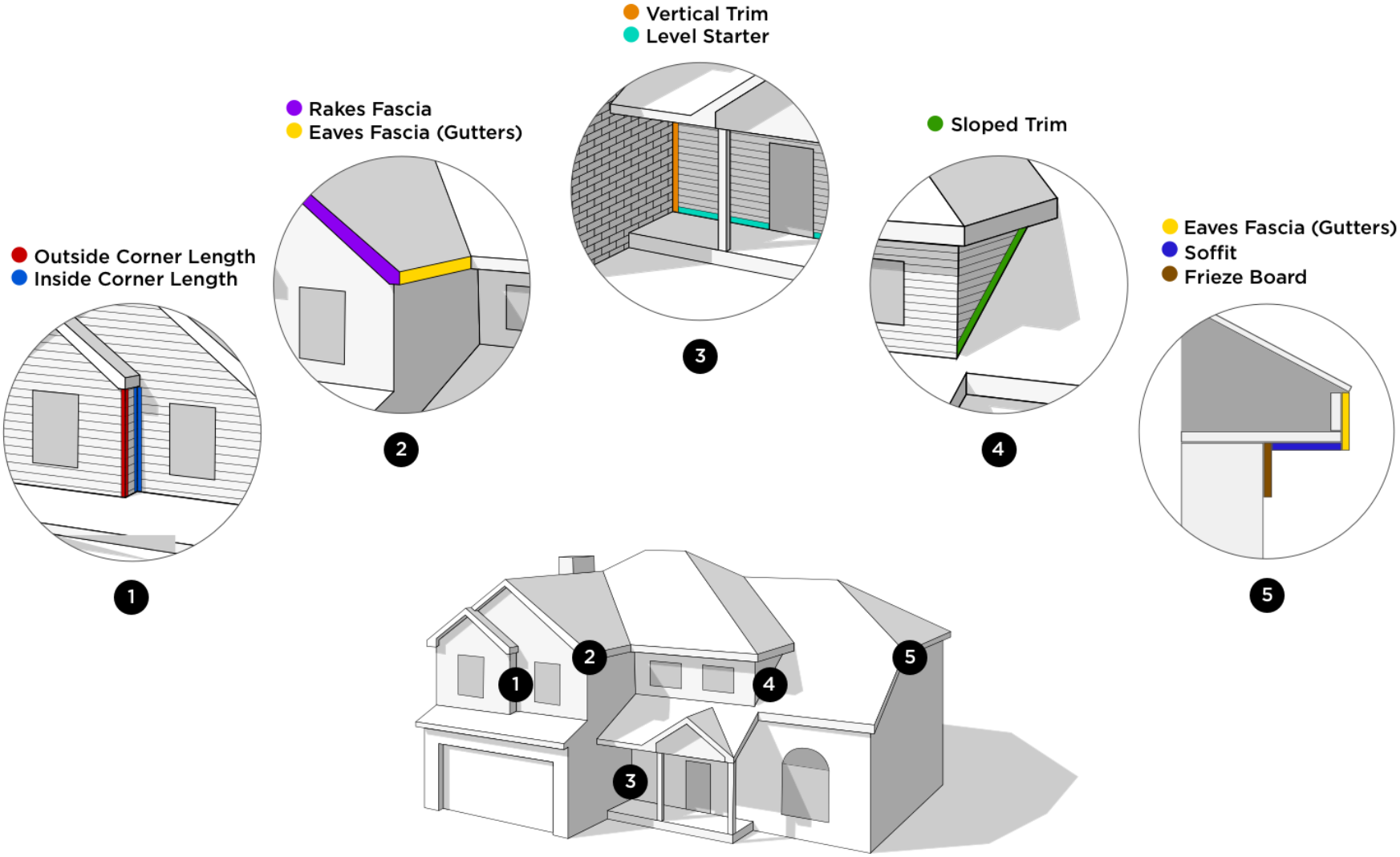

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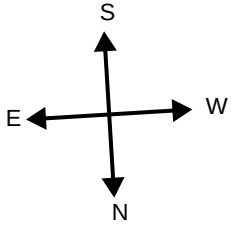
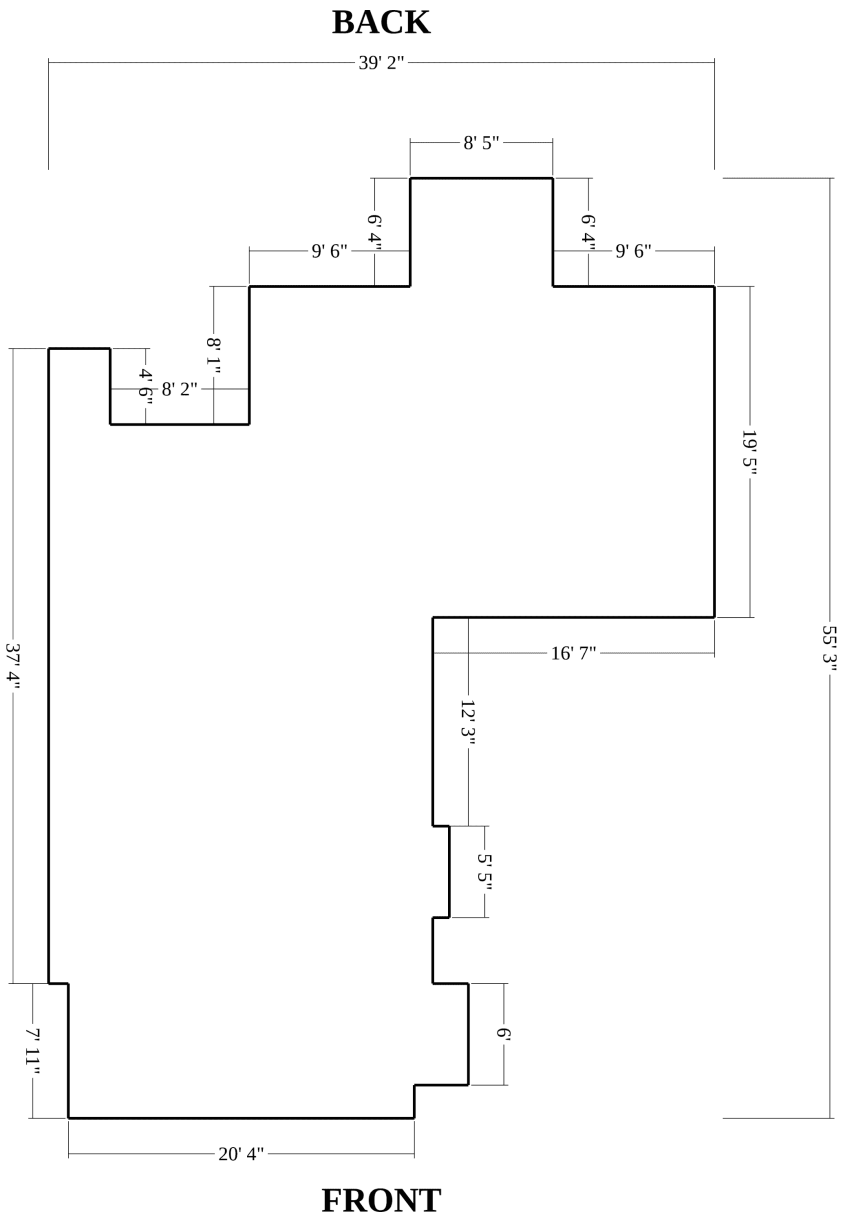


Number of Stories: 1

Footprint Perimeter: 203′ 10″

Footprint Area: 1407 ft^2



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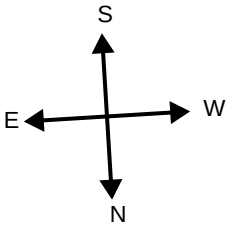

Siding Per Elevation

FRONT			RIGHT			LEFT			BACK		
SI-1	-	42 ft^2	SI-5	-	21 ft^2	SI-16	-	41 ft^2	SI-10	-	12 ft^2
SI-2	-	12 ft^2	SI-6	-	47 ft^2	SI-17	-	24 ft^2	SI-11	-	45 ft^2
SI-3	-	50 ft^2	SI-8	-	95 ft^2	SI-18	-	113 ft^2	SI-12	-	39 ft^2
SI-4	-	40 ft^2	SI-9	-	41 ft^2	SI-19	-	23 ft^2	SI-13	-	38 ft^2
SI-7	-	78 ft^2	SI-21*	-	1 ft^2	SI-20	-	18 ft^2	SI-14	-	24 ft^2
									SI-15	-	43 ft^2
222 ft^2			**205 ft^2**			**219 ft^2**			**201 ft^2**		

* Facet is not visible due to size or location

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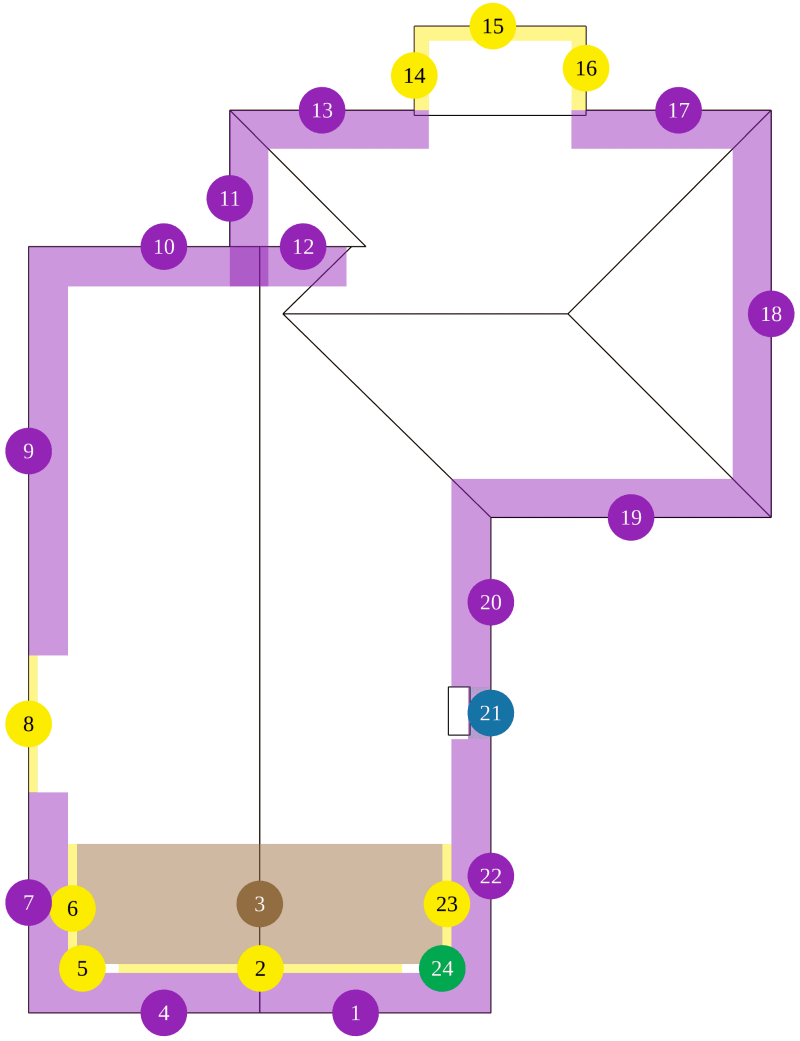
Soffit Summary

Depth	Type	Count	Total Length	Total Area
6″ - 12″	eaves	8	58′ 3″	38 ft²
12″ - 18″	eaves	1	6″	1 ft²
18″ - 24″	eaves	1	3′ 1″	5 ft²
24″ - 48″	rakes	4	44′ 5″	105 ft²
	eaves	9	129′ 11″	345 ft²
> 48″	eaves	1	21′ 6″	152 ft²
		Totals	**257′ 9″**	**645 ft²**



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Soffit Breakdown

num	Type	Depth	Length	Area	Pitch
1	rake	28″	12′ 10″	30 ft²	7 / 12
2	eave	6″	16′ 8″	9 ft²	7 / 12
3	eave	85″	21′ 6″	152 ft²	7 / 12
4	rake	28″	12′ 10″	30 ft²	7 / 12
5	eave	8″	6″	0 ft²	7 / 12
6	eave	6″	7′ 7″	4 ft²	7 / 12
7	eave	32″	13′	34 ft²	7 / 12
8	eave	7″	8′ 1″	5 ft²	7 / 12
9	eave	32″	24′ 1″	64 ft²	7 / 12
10	rake	28″	12′ 10″	30 ft²	7 / 12
11	eave	29″	10′ 5″	22 ft²	7 / 12
12	rake	28″	5′ 10″	14 ft²	7 / 12
13	eave	29″	11′ 9″	26 ft²	7 / 12
14	eave	10″	4′ 1″	4 ft²	0 / 12
15	eave	10″	9′ 3″	8 ft²	0 / 12
16	eave	10″	4′ 11″	4 ft²	0 / 12
17	eave	31″	11′ 9″	28 ft²	7 / 12
18	eave	31″	18′ 1″	57 ft²	7 / 12
19	eave	31″	12′ 6″	43 ft²	7 / 12

num	Type	Depth	Length	Area	Pitch
20	eave	32″	12′ 3″	29 ft²	7 / 12
21	eave	18″	3′ 1″	5 ft²	7 / 12
22	eave	32″	16′ 2″	43 ft²	7 / 12
23	eave	6″	7′ 1″	4 ft²	7 / 12
24	eave	13″	6″	1 ft²	7 / 12

Feature is too small to label on the plan diagram

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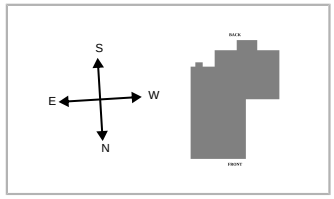

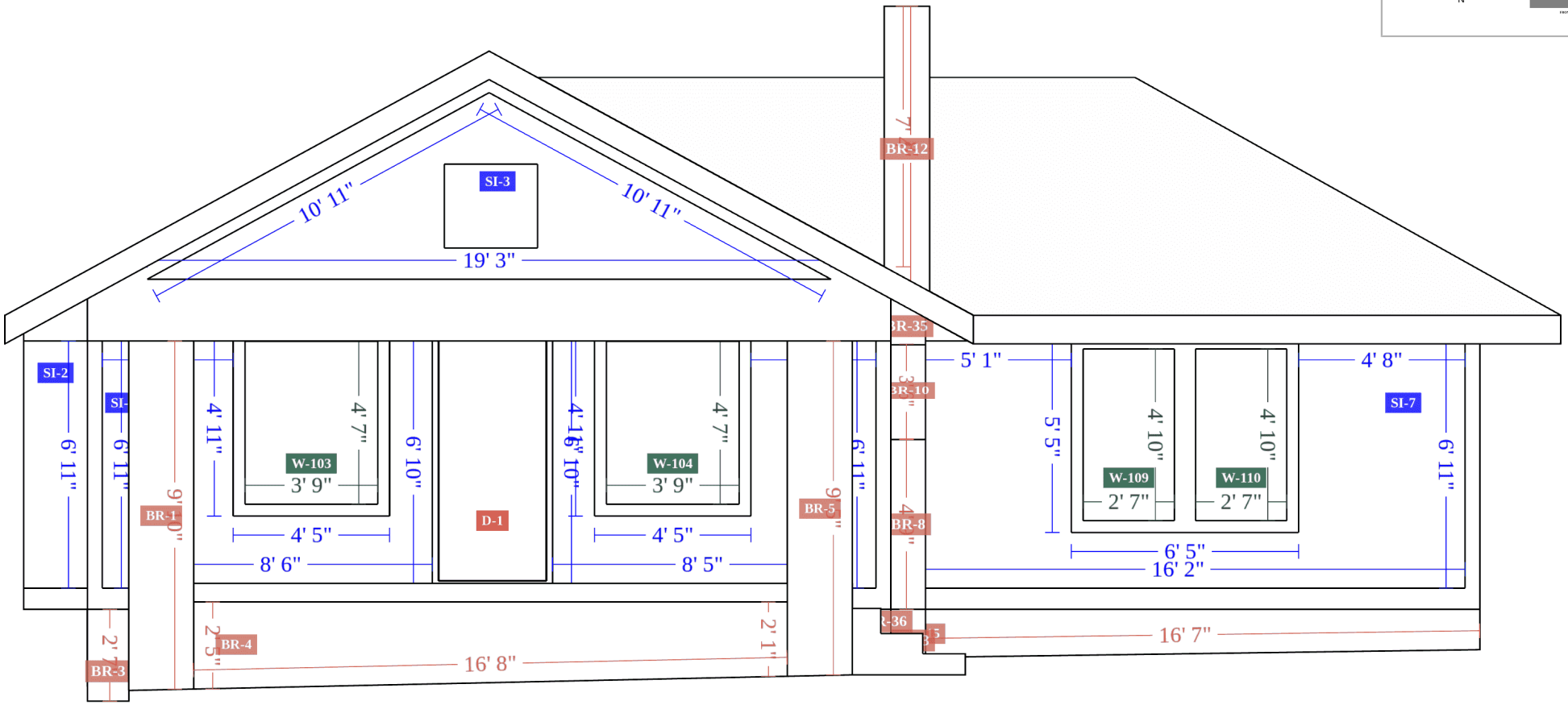

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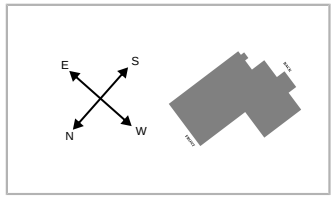

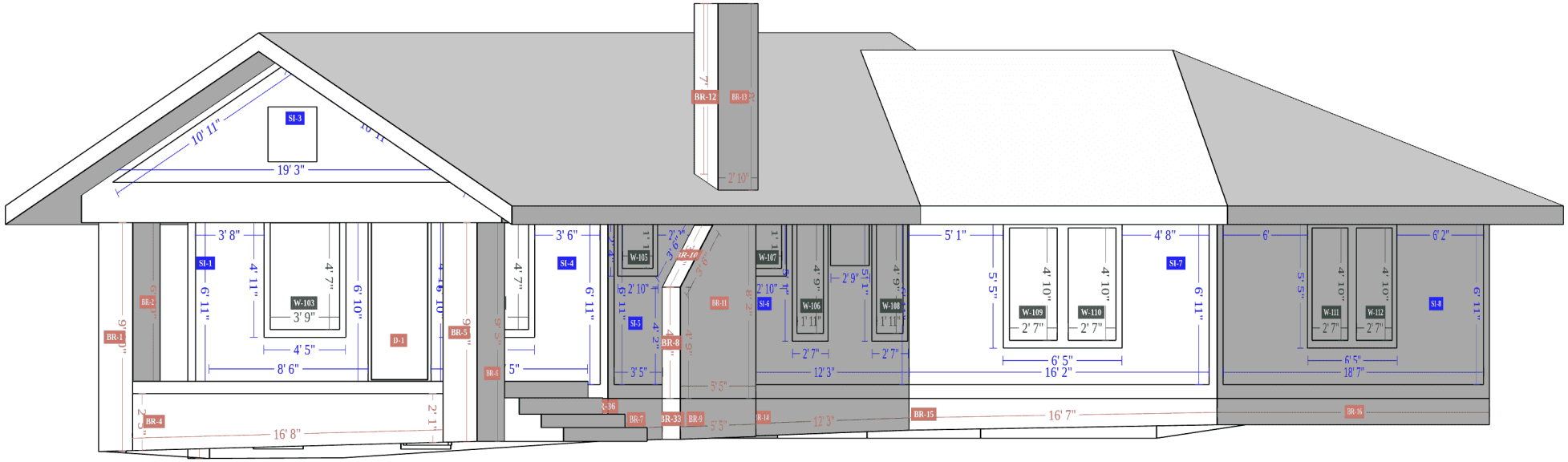

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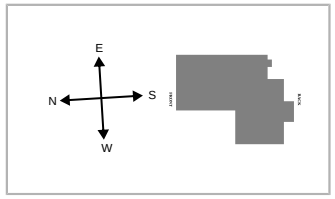

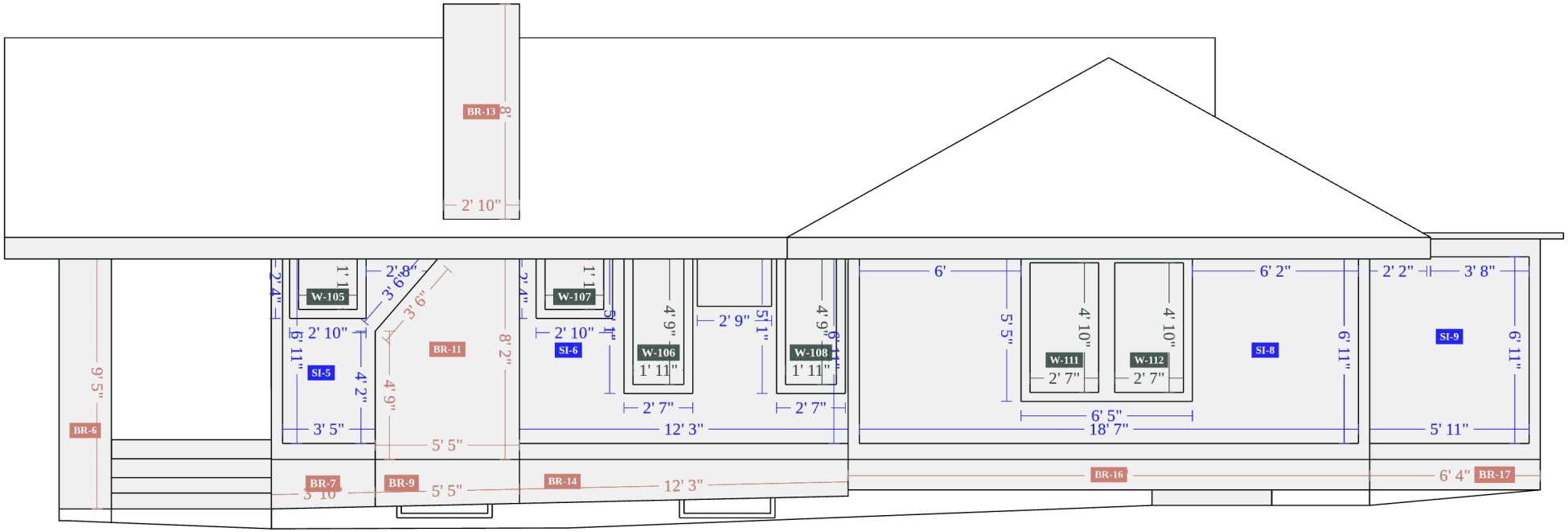

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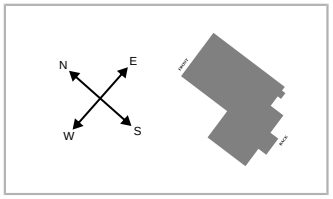

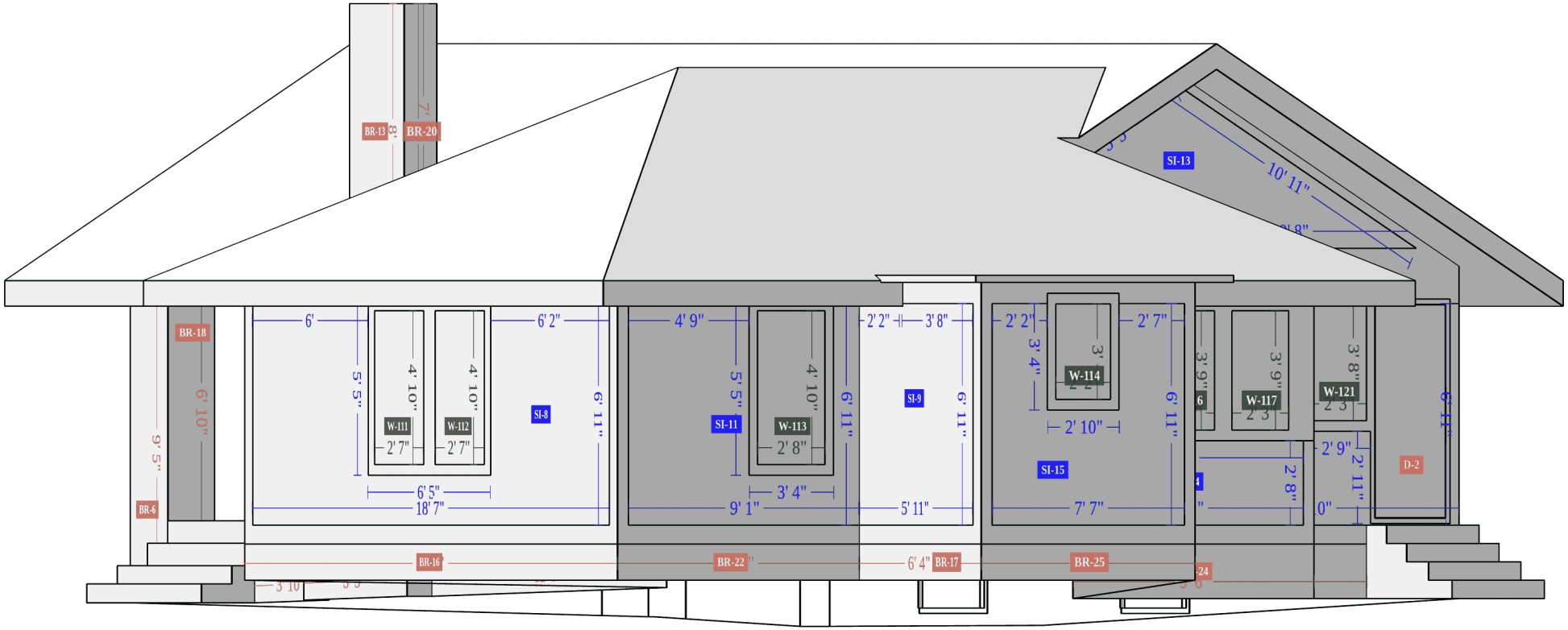

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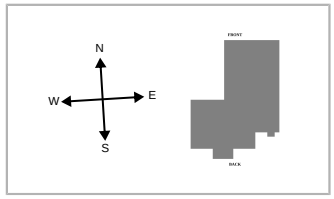

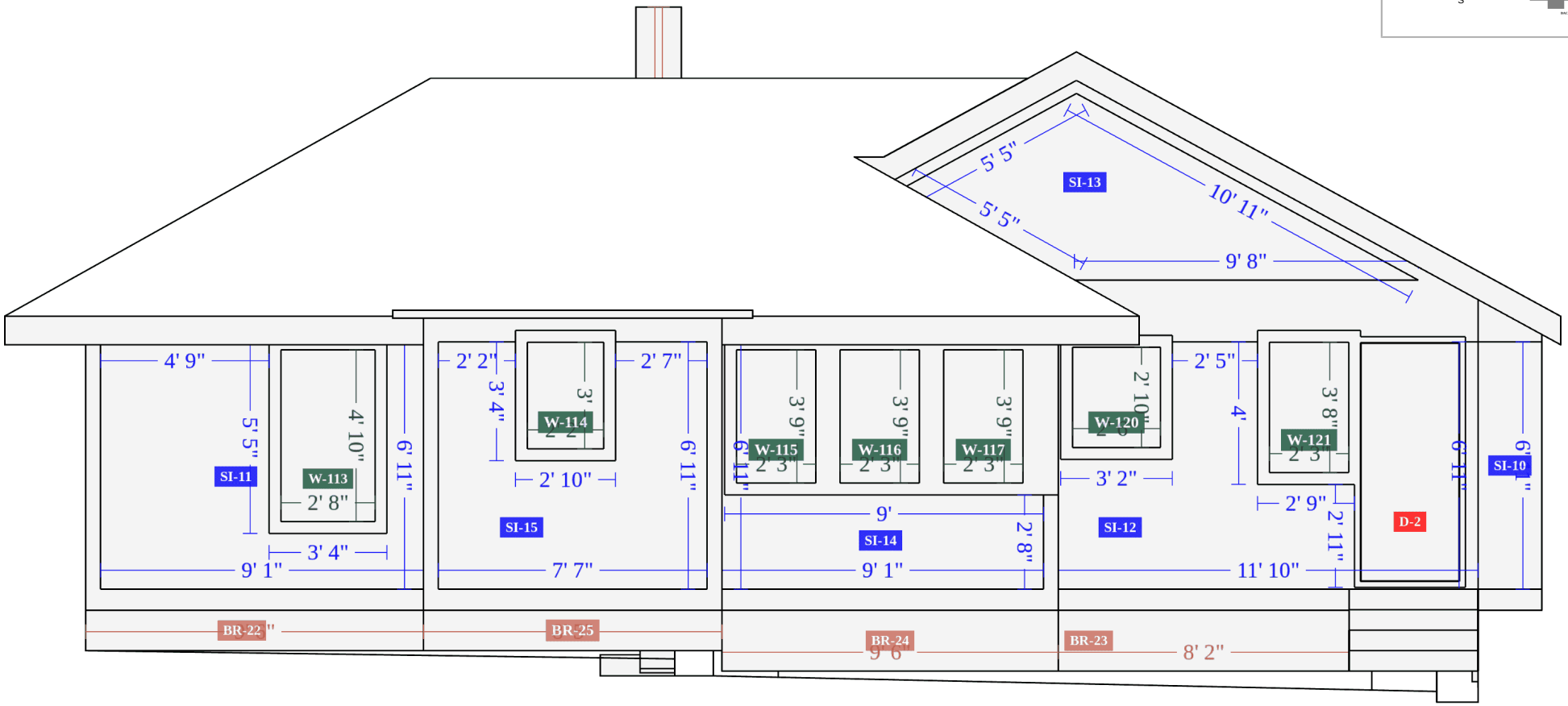

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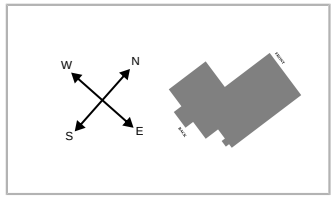

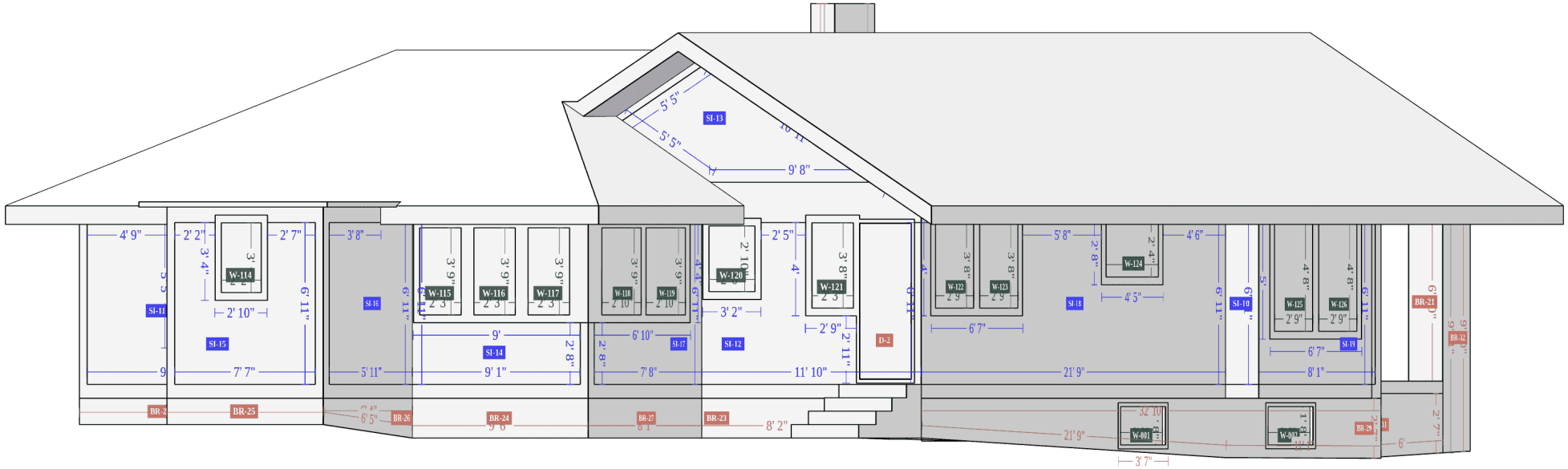

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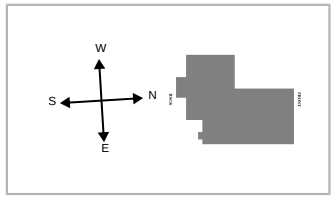

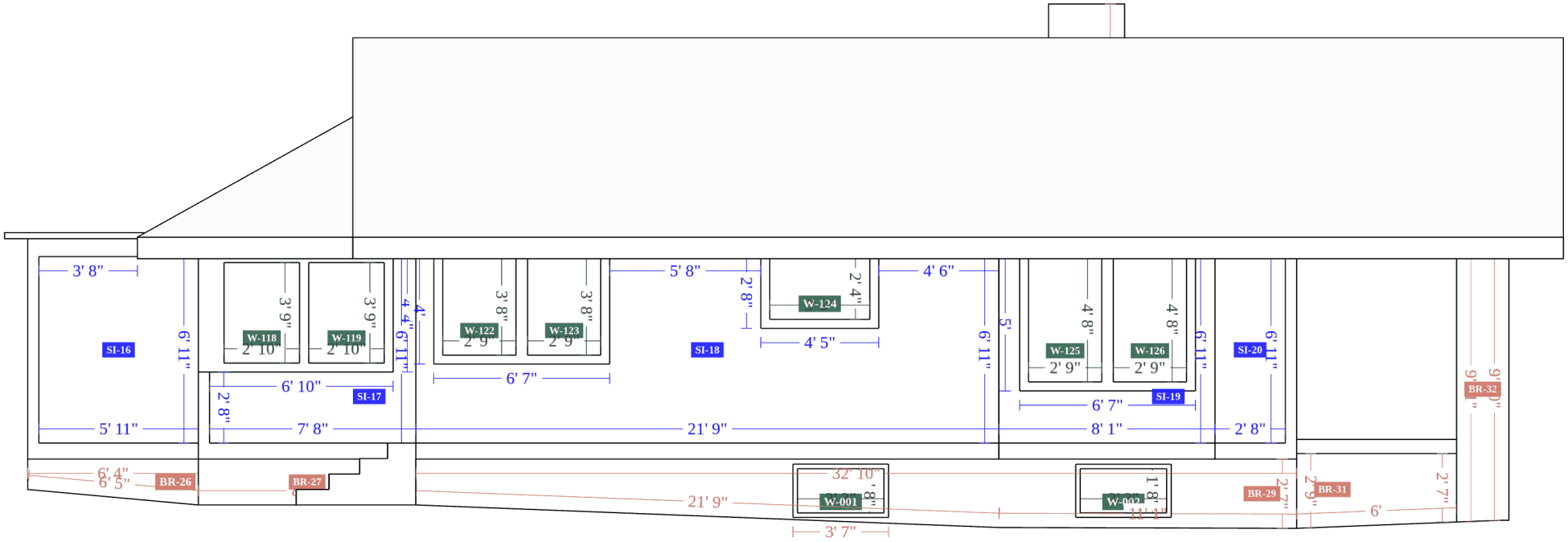

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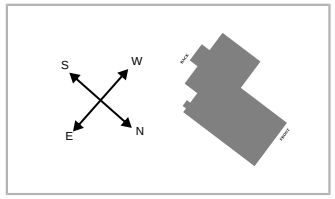

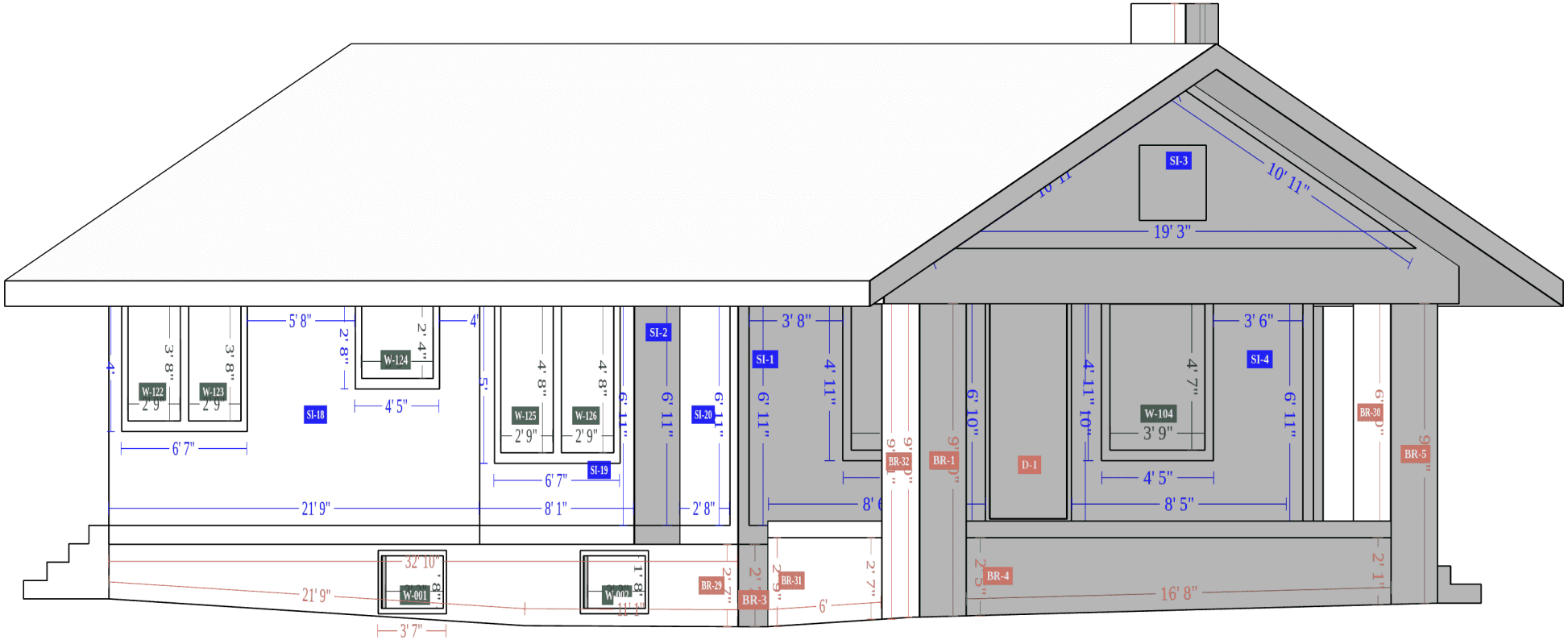

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Doors

Opening	Width x Height
D-1	36″ x 82″
D-2	32″ x 80″

*Door height and width have been snapped to standard

Entire Doors

Opening	Width x Height	Area
D-1	37″ x 82″	21 ft^2
D-2	33″ x 81″	19 ft^2
Total	-	40 ft^2

*Total door square footage includes entire door package (e.g. with transoms, sidelites, etc.)

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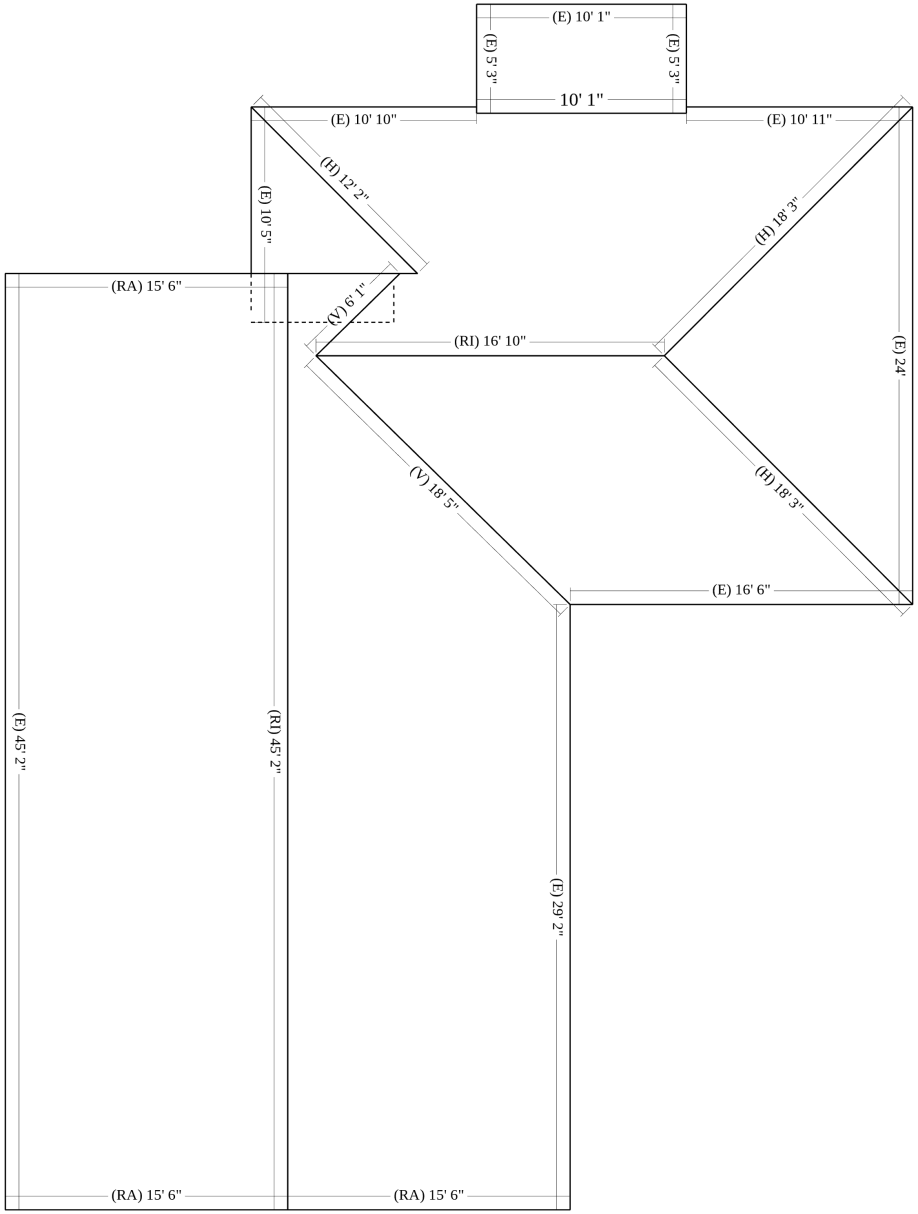
Roof	Length
Ridges (RI)	61′ 11″
Hips (H)	48′ 8″
Valleys (V)	24′ 6″
Rakes (RA)	52′ 9″
Eaves (E)	168′ 6″
Flashing (F)*	5′ 8″
Step Flashing (SF)*	11′ 6″
Transition Line (TL)	-

*Please view the 3D model for more detail (e.g. flashing, step flashing and some other roof lines may be difficult to see on the PDF)



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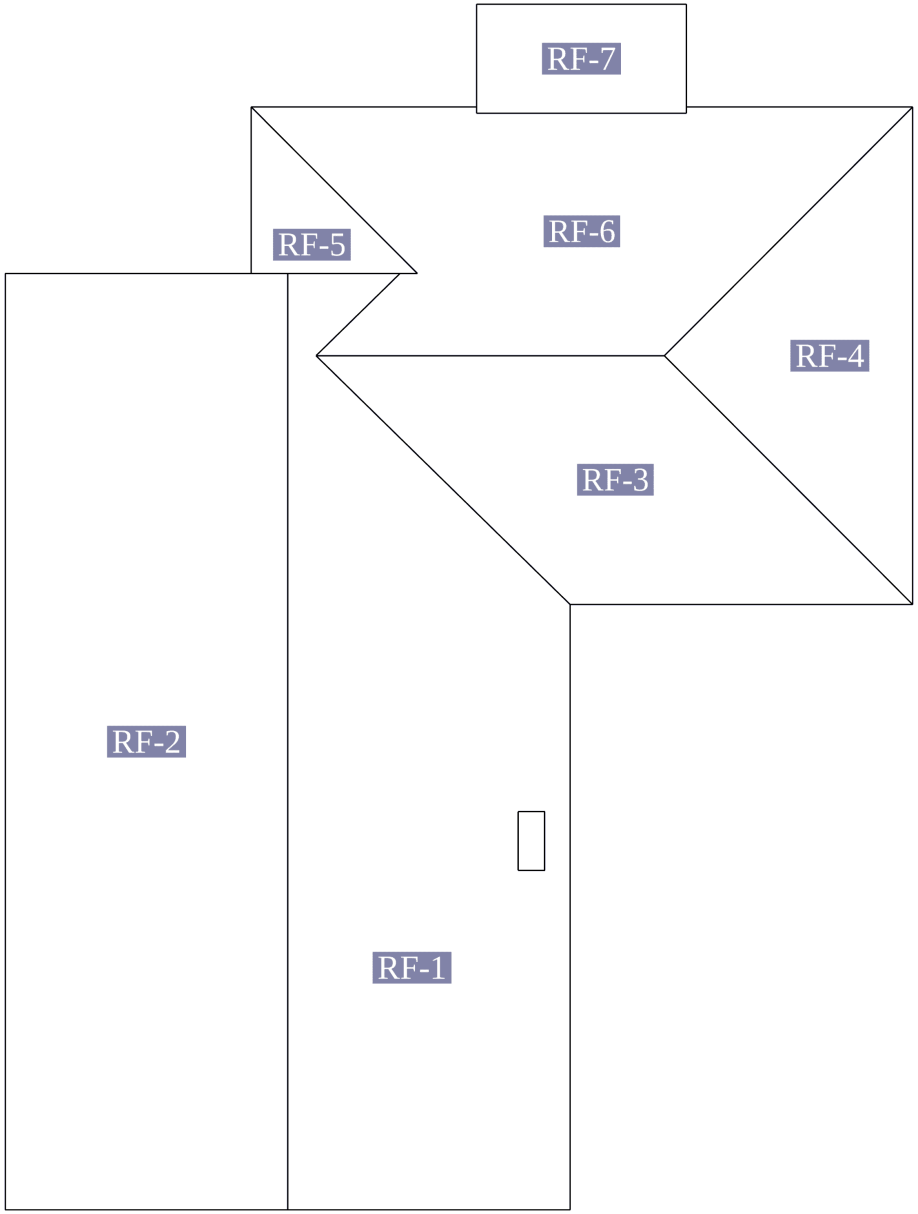

Roof Facets

Facet	Area	Pitch
RF-1	566 ft^2	7/12
RF-2	701 ft^2	7/12
RF-3	229 ft^2	7/12
RF-4	165 ft^2	7/12
RF-5	55 ft^2	7/12
RF-6	292 ft^2	7/12
RF-7	53 ft^2	0/12

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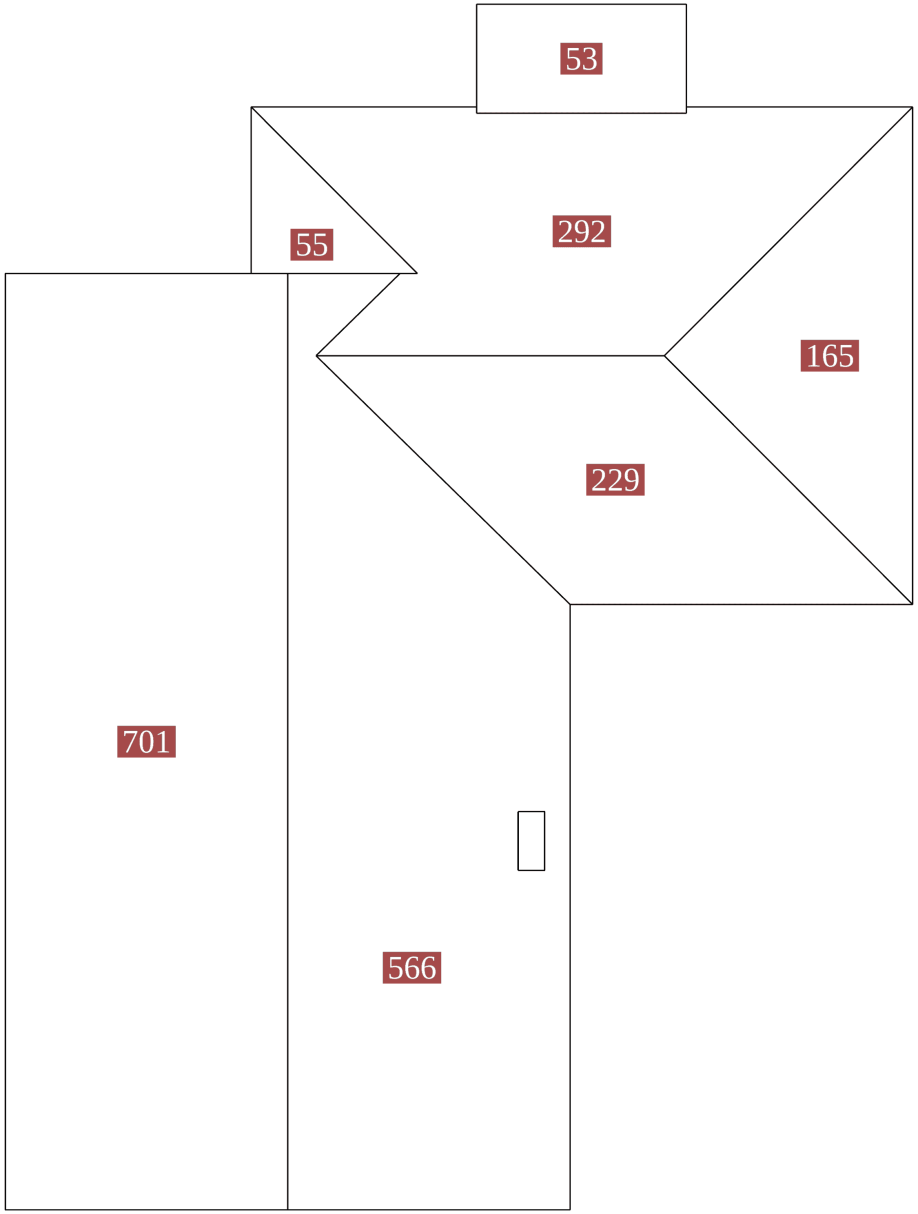

Roof	Facets	Total
Total	7	2061 ft^2

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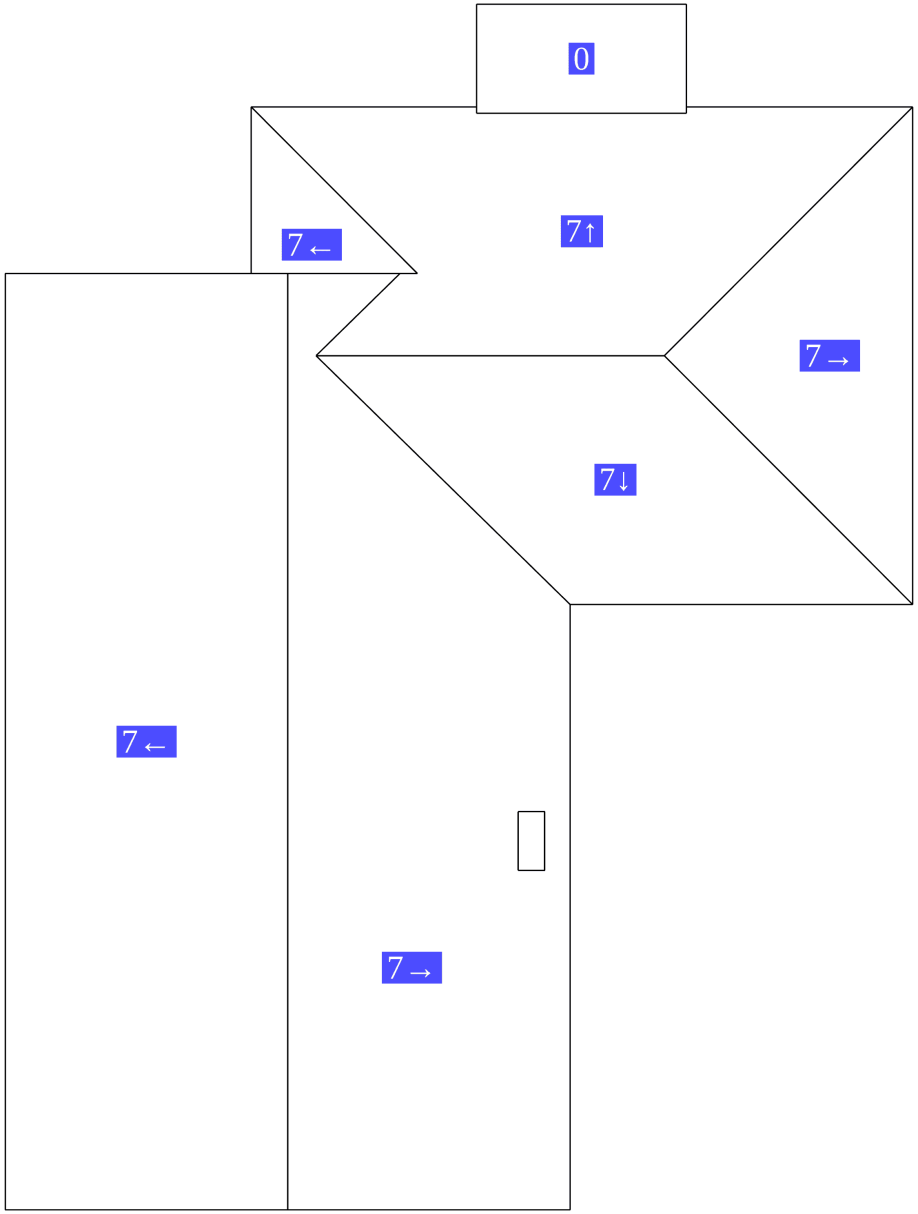
Roof Pitch	Area	Percentage
7 / 12	2008 ft^2	97.43%
0 / 12	53 ft^2	2.57%



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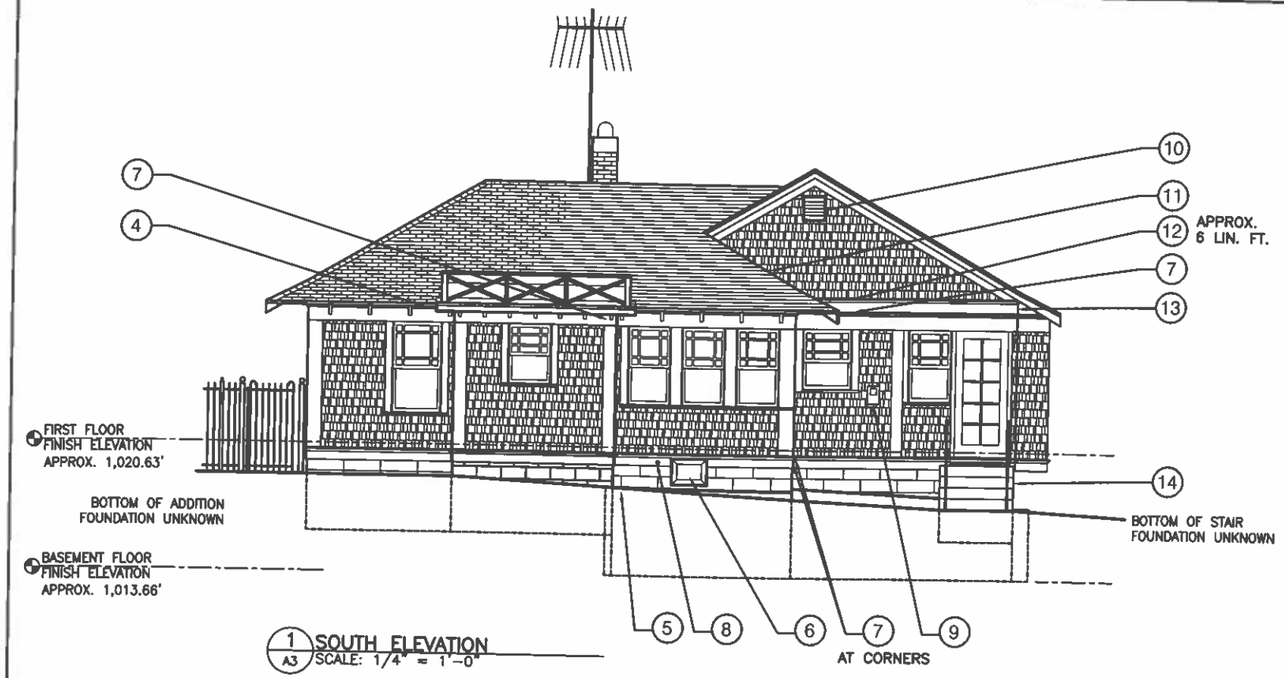
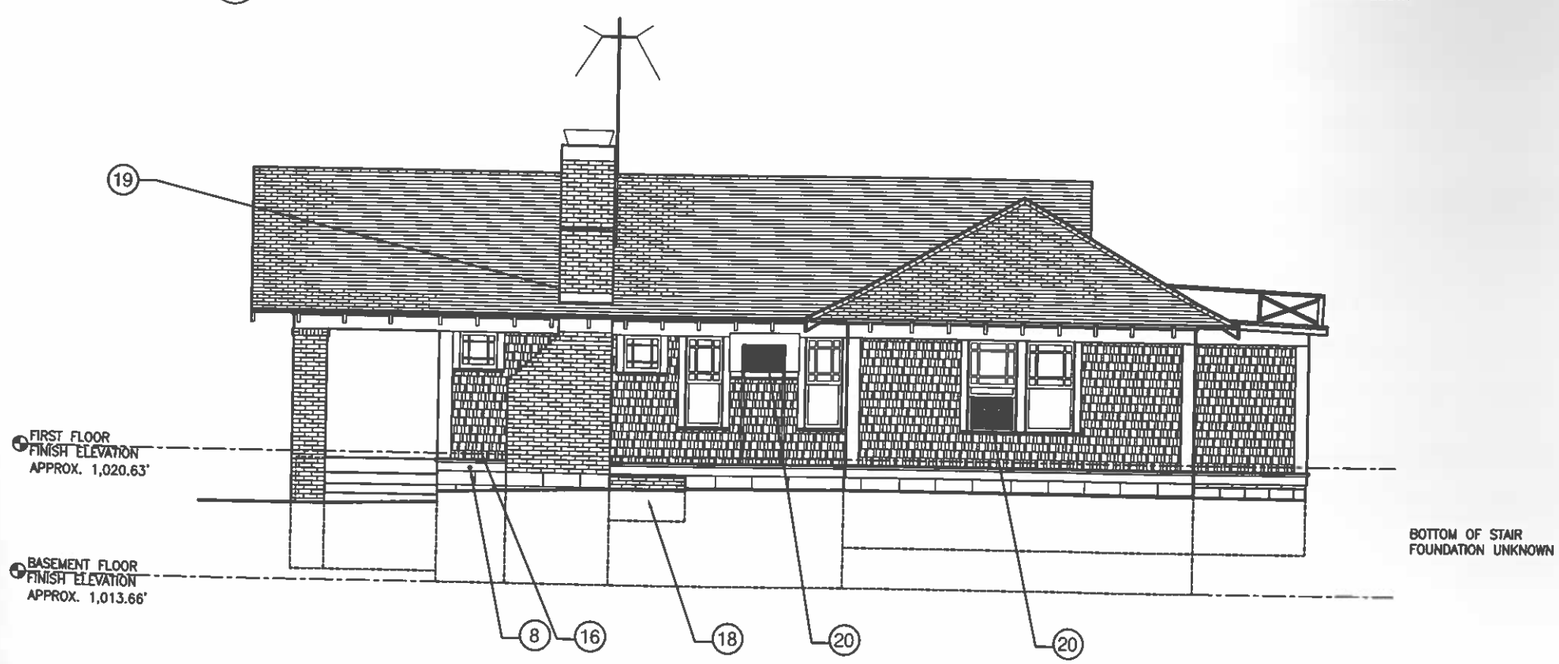
Appendix C Existing Drawings



1 / A3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



2 / A3 WEST ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. GUTTERS AND DOWNSPOUTS ARE NOT SHOWN ON DRAWINGS FOR CLARITY. ALL GUTTERS AND DOWNSPOUTS SHALL BE CAREFULLY REMOVED, AND REINSTALLED IN THEIR EXISTING LOCATIONS. ALL DOWNSPOUT ATTACHMENTS SHALL BE RETAINED AND ALL MATERIALS SHALL BE PAINTED. WHERE EXISTING DOWNSPOUT BOOTS EXIST, REPLACE, IN KIND (CAST IRON OR TERRA COTTA).

B. ROOFING, FLASHING REPLACEMENT, AND DRIP EDGES NOT INDICATED ON DRAWINGS. ALL NEW 30-YEAR, CUSTOM, 3-TAB ASPHALT SHINGLE ROOFING TO BE INSTALLED TO MATCH EXISTING. ALL NEW UNDERLAYMENT, FLASHINGS, DRIP EDGES, AND ROOF PENETRATION COLLARS TO BE REPLACED TO MATCH EXISTING.

C. TEMPORARILY DISCONNECT ANY GROUNDING WIRES FROM ANTENNAE, ETC. DURING CONSTRUCTION AND TEMPORARILY GROUND TO ANOTHER SOURCE. RECONNECT IN ORIGINAL LOCATIONS, PER MECHANICAL ENGINEER, UPON COMPLETION OF CONSTRUCTION.

D. EXISTING CHIMNEY CAP TO REMAIN. PREP, PRIME, AND PAINT CAP TO MATCH THE EXISTING FINISH. THE EXISTING WATER HEATER VENTS THROUGH THE CHIMNEY. THIS WILL BE RETAINED UPON COMPLETION OF CONSTRUCTION. THE EXISTING ANTENNAE MAY BE TEMPORARILY REMOVED DURING CONSTRUCTION, BUT MUST BE REINSTALLED TO MATCH THE EXISTING INSTALLATION AND CONFIGURATION.

E. EXISTING BASEMENT WINDOWS 001/W1 AND 001/W2 SHALL BE SALVAGED (JAMB AND SASH) AND REINSTALLED IN NEW FOUNDATION TO MATCH THE EXISTING INSTALLATION. WINDOW 001/W3 IS DETERIORATED AND WILL REQUIRE A TOTAL JAMB AND SASH REPLACEMENT, AS NOTED BELOW.

DESCRIPTION OF WORK:

1. REPLACE MISSING SIDING SHINGLE, IN KIND.
2. REPLACE & RESTORE MISSING PORCH RAILINGS (IN NPS STORAGE). MATCH HISTORIC INSTALLATION, AS SEEN IN BRICK COLUMNS.
3. REPLACE & RESTORE MISSING YARD LIGHT (IN NPS STORAGE). INSTALL NEW CONCRETE PAD FOR INSTALLATION. INSTALL NEW CONDUIT TO POLE FROM HOUSE. COORDINATE SWITCH LOCATION WITH OWNER.
4. REPAIR HOLE IN VERTICAL WOOD EAVE TRIM, IN KIND.
5. REPLACE EXISTING DOWNSPOUT BOOT, IN KIND (IRON OR TERRA COTTA. PAINT CAST IRON WHITE TO MATCH TRIM AND DOWNSPOUT.
6. CAREFULLY REMOVE EXISTING COAL CHUTE. PREP, PRIME, AND PAINT, AND REINSTALL TO MATCH EXITING INSTALLATION IN NEW FOUNDATION WALL.
7. WOOD TRIM DUTCHMAN REPAIR.
8. CAREFULLY REMOVE EXISTING HOSE BIBB (IF REQUIRED) AND REINSTALL IN EXISTING LOCATION AFTER FOUNDATION REPLACEMENT. UTILIZE ALL EXISTING EXPOSED COMPONENTS FOR HISTORIC AUTHENTICITY.
9. PAINT EXISTING,NON-FUNCTIONAL BOX
10. REPAIR EXISTING METAL LOUVERED VENT (STRAIGHTEN BENT SECTIONS). INSTALL INSECT SCREENING ON INSIDE FACE. PREP, PRIME, AND PAINT.
11. INSTALL NEW STEPPED FLASHING, INTEGRAL WITH WOOD SHINGLES.
12. REPLACE DETERIORATED, DECORATIVE TRIM BOARD TO MATCH EXISTING IN DIMENSION AND OVERALL PROFILE. SCARF JOIN NEW MATERIAL.
13. PAINT EXISTING NON-FUNCTIONING LIGHT FIXTURE TO REMAIN.
14. SALVAGE (2) EXISTING IRON HANDRAILS. DEMOLISH STEPS. INSTALL NEW FOUNDATION SUPPORT AND CONSTRUCT NEW CUSTOM-PROFILE CONCRETE STEPS TO MATCH THE EXISTING STEPS IN OVERALL DIMENSIONS AND PROFILES. REINSTALL EXISTING RESTORED AND PAINTED RAILINGS IN NEW STAIR.
15. RESTORE EXISTING PORCH CEILING FIXTURE. PREP, PRIME, AND PAINT METAL FIXTURE AND CLEAN GLASS GLOBE. (CAREFULLY REMOVE AND STORE DURING CONSTRUCTION).
16. TEMPORARILY REMOVE EXISTING HOSE COIL DURING CONSTRUCTION. PREP, PRIME, AND PAINT BLACK AND REINSTALL IN ORIGINAL LOCATION.
17. REPAIR TOP SPLAYED PORTION OF RAFTER TAILS (TYPICAL FOUR LOCATIONS ON EAST SIDE OF HOUSE).
18. EXISTING WINDOW WELL TO BE CAREFULLY DOCUMENTED AND DECONSTRUCTED. ALL BRICK SHALL BE SALVAGED. A NEW FOUNDATION WILL BE CONSTRUCTED WITH AN INTEGRAL DRAIN. RECONSTRUCT ABOVE-GRADE PORTION OF WINDOW WELL WITH SALVAGED BRICK TO MATCH THE EXISTING CONSTRUCTION AND COURSING.
    WINDOW 001/W3 IS DETERIORATED AND MUST BE REMOVED AND REPLICATED TO MATCH THE EXISTING SASH CONFIGURATION, LITE PATTERN, AND MUNTIN PROFILES.
19. REPOINT LOWER FOUR COURSES OF BRICK CHIMNEY AND RE-FLASH ALL AROUND, TYPICAL, TO MATCH EXISTING.
20. TEMPORARILY REMOVE EXISTING WINDOW A/C UNITS AND STORE DURING CONSTRUCTION. REINSTALL IN EXISTING LOCATIONS AFTER CONSTRUCTION. TEMPORARILY SEAL OPENINGS TO PREVENT WATER AND EXTERIOR INFILTRATION DURING CONSTRUCTION. DO NOT HARM THE SURROUNDING, HISTORIC FABRIC WITH TEMPORARY PROTECTION.
21. REPAIR SECTION OF BOARD WHERE SQUARE HOLE WAS CUT FOR ROUND HVAC VENT.
22. INSTALL NEW, CUSTOM, ALUMINUM STORM WINDOW TO MATCH EXISTING STORM WINDOWS.
23. REPAIR (2) HOLES IN SIDING SHINGLES AND SHEATHING.
24. REPAIR SEVERAL ROWS OF SIDING SHINGLES TO MEET AT CORNER.
25. OPTION: REPLACE (2) DETERIORATED, RUSTING CUSTOM METAL STORM WINDOWS TO MATCH EXISTING STORMS.
26. REPAIR CORNER DECORATIVE TRIM BOARD AND RE-SET WHITE BAND BOARD NEAR CORNER OF HOUSE.
27. RESTORE EXISTING IRON STAIR RAILING AND REINSTALL IN ORIGINAL LOCATION ON NEWLY-CONSTRUCTED STAIRS.

SCHEMATIC DRAWINGS

ALL DIMENSIONS ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD. THE

Susan Richards Johnson & Associates, Inc.	DESIGNED: AG CADD AG/CE	SUB SHEET NO. A.4	TITLE OF SHEET FOUNDATION & REHABILIATION GEORGE WALLACE HOUSE	DRAWING NO. 492 80035