

SECTION 00 0101
PROJECT TITLE PAGE

712 E. MAGNOLIA AVE. SPECIFICATION

BID SET 8/31/12

**INVEST SAINT PAUL INITIATIVE
NEIGHBORHOOD STABILIZATION PROGRAMS
AND REBUILDING PLAN 2009-2013**



OWNER

The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Roxanne Young
(651) 266-6581
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HRA Scope Writer

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HRA Construction Manager

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SECTION 00 0110
TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

Division 00 Procurement and Contracting Requirements

00 0101	Project Title Page
00 0110	Table of Contents
00 4002	HRA Bid Invitation
00 4003	HRA Instructions to Bidders
00 4101	HRA Bid Submission Documents
00 4102	Line Item Bid Sheet

SPECIFICATIONS

Division 01 General Requirements

01 0010	HRA General Requirements
01 2000	Price and Payment Procedures
01 6000	Product Requirements
01 6116	Volatile Organic Compound (VOC) Content Restrictions
01 7000	Execution Requirements
01 7419	Construction Waste Management and Disposal
01 7700	Closeout Procedures and Submittals
01 8113	Sustainable Design Requirements

Division 02 Existing Conditions

02 4100	Demolition
02 8200	Asbestos Remediation
02 8313	Lead Hazard Control Activities

Division 03 Concrete

03 3000	Cast-in-Place Concrete
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Division 04 Masonry

04 0100	Maintenance of Masonry
04 2200	Concrete Unit Masonry
04 2300	Glass Unit Masonry

Division 06 Wood, Plastics, and Composites

06 1000	Rough Carpentry
06 2000	Finish Carpentry

Division 07 Thermal and Moisture Protection

07 2113	Rigid Foam Insulation
07 2119	Foamed-In-Place Insulation
07 2126	Blown Insulation
07 2500	Weather Barriers
07 2700	Air Barrier System (sealing of bypasses)
07 3113	Asphalt Shingles
07 4620	Fiber Substrate Siding

- 07 6200 Sheet Metal Flashing and Trim
- 07 7123 Manufactured Gutters and Downspouts

Division 08 Openings

- 08 1429 Wood Doors
- 08 1613 Fiberglass Doors
- 08 3323 Residential Overhead Doors
- 08 5413 Fiberglass Windows

Division 09 Finishes

- 09 0120 Repair of Plaster and Gypsum Board
- 09 0160 Hardwood Flooring Restoration
- 09 2116 Gypsum Board Assemblies
- 09 3000 Tiling
- 09 6800 Carpeting
- 09 9000 Painting and Coating
- 09 9723 Concrete and Masonry Coatings

Division 10 Specialties

- 10 5623 Closet Storage Shelving

Division 11 Equipment

- 11 3100 Residential Appliances

Division 12 Furnishings

- 12 1110 Mailbox and House Numbers
- 12 1111 Bathroom Furnishings
- 12 3530 Residential Casework

Division 22 Plumbing

- 22 3000 Plumbing Equipment
- 22 4000 Plumbing Fixtures and Piping

Division 23 Heating, Ventilating, and Air-Conditioning

- 23 0000 Residential Ventilation
- 23 5400 Forced Air Furnace and Ducts
- 23 6213 Forced Air A/C

Division 26 Electrical

- 26 0001 Power, Wiring and Devices
- 26 5101 Lighting

Division 28 Electronic Safety and Security

- 28 1600 Intrusion Detection

Division 31 Earthwork

- 31 2200 Grading

Division 32 Exterior Improvements

- 32 1313 Concrete Paving
- 32 9223 Sodding
- 32 9300 Plants

END OF TABLE OF CONTENTS

SECTION 00 4002
HRA BID INVITATION

PART 1 GENERAL

1.01 CONTACT TRANSLATION

- A. In Hmong - Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, Amy Filice 651-266-6568;
- B. In Spanish - Atención. Si desea recibir asistencia gratuita para traducir esta información, llame a Amy Filice 651-266-6568;
- C. In Somali - Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac, Amy Filice 651-266-6568.

1.02 PROJECT SUMMARY

- A. Project description: This is a Residential Renovation project located at 803 Jessamine Street. This project is funded by Neighborhood Stabilization Program through the Housing and Redevelopment Authority of Saint Paul, Minnesota. This project is not required to conform to Federal and/or Little Davis Bacon requirements.

1.03 NOTICE TO PROSPECTIVE BIDDERS

- A. These documents constitute an invitation to bid to General Contractors for the construction of the project described within this bid manual.

1.04 OWNERSHIP INFORMATION

- A. The Owner, The Housing and Redevelopment Authority of Saint Paul, Minnesota, hereinafter, referred to as Owner.
- B. Owner's Project Manager: Roxanne Young
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Phone Number: (651) 266- 6581
Email: roxanne.young@ci.stpaul.mn.us

1.05 OWNER'S CONSULTANT(S)

- Owner's Project Specification Consultant: Paul Ormseth, LLC
- 1. Specification Writer's Name: Paul Ormseth
 - 2. Address: 423 Landmark Center, 75 West 5th Street, Saint Paul, MN 55102
 - 3. Phone Number: 612.715.5020
Email: paulormseth@gmail.com
- A. Owner's Construction Manager Consultant: Paul Ormseth, LLC
 - 1. Construction Manager's Name: Paul Ormseth
 - 2. Address: 423 Landmark Center, 75 West 5th Street, Saint Paul, MN 55102
 - 3. Phone: 612.715.5020
 - 4. Email: paulormseth@gmail.com

1.06 IMPORTANT BID DATES

- A. Bids Issued: Friday, August 31, 2012
- B. Mandatory Pre-Bid Site Tour: Thursday, September 6, 2012 from 10:00 A.M. to 11:30
- C. **BID DUE DATE ON OR BEFORE:** Friday, September 21, 2012 at 2:00 p.m.
- D. Bid Delivery Location: The offices of The Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Suite: 1100
- E. Public Bid Opening and Location: Friday, September 21, 2012 at 2:15 p.m. at the Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100

- F. Executed Contract: Within 30 days of the bid award.
- G. Construction Start Date (Approximate): ASAP after contract execution
- H. Construction Completion Date: 150 days from the time of issued Notice to Proceed.

END OF BID INVITATION

**SECTION 00 4003
HRA INSTRUCTIONS FOR BIDDERS**

PART 1 GENERAL BID DIRECTIONS

1.01 Each Bidder shall fully inform him / herself and any subcontractors prior to bidding as to all existing conditions and limitations including compliance requirements under which the work is to be performed and shall include in the bid a sum to cover the cost of all items necessary to perform the work as set forth in the Bid Project Manual. The submission of a bid shall be construed as conclusive evidence that the Bidder has made such examination.

1.02 Bid Forms

- A. The Bid Submission forms are available online at <http://www.stpaul.gov/nsp>.
- B. Each bid must be submitted on the Bid Submission forms identified in the provided checklist. It is expected that the Contractor retain a copy of their entire submittal for their records. The copy of the bid submitted must be signed at every place that a signature is requested.

1.03 Corrections

- A. Erasures or other changes in the bid must be dated and initialed over the signature of the bidder.

1.04 Bid Envelope

- A. Place bid in envelope with the contractor name and address in the upper left-hand corner as the return address, and list the property address in the middle of the envelope as the addressee. Seal envelope.

1.05 Interpretations of Scope of Work

- A. Every request for an interpretation shall be in writing, unless otherwise documented by the Specification Writer. Questions will be taken until 3 days before bids are due.
- B. Interpretations will be in the form of an addenda which will be on file at the website, and in the offices of the Specification Writer at least three calendar days before bids are opened.
- C. It shall be the bidder's responsibility to make inquiry as to addenda issued.
 - 1. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda.

1.06 Conflict with Documents

- A. When a conflict arises between the Drawings or the Scope of Work, the Drawings shall govern.

1.07 Materials Approved:

- A. Where items of equipment and material are specifically identified herein by a trade name, model or catalog number, only such specified items may be used in the base bid.
- B. Contractors desiring approval of substitute products may submit data cut sheets and product information for approval during the bidding cycle.
- C. Contractors will be notified only by addendum of additional approved products.
- D. Material identifications made in work specifications are considered as minimal quality for acceptance in bidding and installation.

1.08 Allowances:

- A. The Contractor shall include in the bid proposal the cash allowances listed.
- B. Unless otherwise indicated, the lump sum amount shall be for the material / product.
- C. Labor to install the material / product must be submitted separately.

1.09 Alternates:

- A. The Contractor must submit bids for each alternate listed in the Alternates List.

- B. If pricing is not listed for Alternates the bid may be disqualified.

1.10 Time for Receiving Bids:

- A. Bids are to be delivered to the HRA's office.
- B. Bids received prior to the time of opening will be securely kept.
- C. Bids received by phone or fax will not be considered.
- D. Modification of bids already submitted will be considered if received prior to the hour set for receiving the bids and written confirmation of such modification - with the signature of the bidder - is placed in the mail and postmarked and / or delivered to the HRA prior to the time set for bid opening.

1.11 Opening of Bids:

- A. At the time and place fixed for the opening of bids, every bid received within the time fixed for receiving bids will be opened irrespective of any irregularities.
- B. The opening of the bids will be an "open process" (open to the public).

1.12 Withdrawal of Bids:

- A. Bids may be withdrawn in writing, by phone, or by fax prior to the time fixed for opening; provided that written confirmation of any phoned or faxed withdrawal is placed in the mail and postmarked and / or delivered prior to the time set for bid opening.
- B. Negligence on the part of the bidder in preparing their bid confers no right of withdrawal or modification of his bid after such bid has been opened.

PART 2 BID ANALYSIS PROCESS

2.01 Contractor Selection Date: Earliest Practical Date

- A. This project is funded by the Neighborhood Stabilization Program (NSP), a federal stimulus program created to rehabilitate vacant housing or construct new housing on vacant lots within targeted areas of the City of Saint Paul.
- B. The Housing and Redevelopment Authority of Saint Paul, Minnesota reserves the right to check the qualifications of contractors for each project; previous experience working on projects with the Housing and Redevelopment Authority of Saint Paul, Minnesota, will not automatically deem a contractor qualified.

2.02 Minimum Contractor Qualifications

- A. Please note the following minimum qualifications that apply to all bidders:
 - 1. **Quality Workmanship and Qualifications**
 - a. Three references from jobs with similar work (include on Contractor Qualification form)
 - b. Two financial references (included on Contractor Qualification Form)
 - c. At least 2 years of experience as a General Contractor (HRA will verify)
 - d. Review of standing with Secretary of State, Federal Excluded Parties list, City of Saint Paul Debarment list, Department of Labor and Industry, Better Business Bureau (HRA will verify)
 - e. Houses with historic features or located within a historic district may require demonstration of quality workmanship for historic renovation at the discretion of HRA staff.
 - 2. **Financial Capacity**
 - a. Demonstrated ability to pay two months of construction costs for each project awarded (these amounts are added together if more than one project is under construction). Financial capacity documentation must be in the name of the General Contractors organization or the principal of that organization.
 - 1) For a 120 day project, the contractor shall demonstrate the ability to pay 50% of bid amount.

- 2) For a 90 day project, the contractor shall demonstrate the ability to pay 65% of the bid amount.
- 3) Demonstration of capacity can be in the form of:
 - (a) Line of credit from banking or lending institution
 - (b) Cash balances from banking or lending institution
3. **Ability to Perform**
 - a. Up-to-date submittals to Affirmative Action, Section 3, and Vendor Outreach programs.
 - b. Adherence to timelines confirmed from professional references.
 - c. Use of certified subcontractors for environmental remediation including:
 - 1) Insulation: contractor must be on Xcel Energy approved contractor list
 - 2) Asbestos: contractor must be certified for asbestos removal by the State of Minnesota
 - 3) Lead: either general contractor or subcontractor must be certified for lead abatement by the State of Minnesota
 - 4) Radon: contractor must be on Minnesota Department of Health approved radon mitigation list.
4. **Bid Award Policy**
 - a. Contractors that meet the criteria for qualification above, yet have not worked with The Housing and Redevelopment Authority of Saint Paul, Minnesota on a Neighborhood Stabilization Program project previously will initially be awarded one house, even if the contractor is low bidder for more than one house.
 - b. Once the contractor demonstrates quality workmanship, financial capacity, and ability to perform timely completion, they may be awarded more than one house at the same time for subsequent bids on a case-by-case basis.
5. **Other Qualifications**
 - a. Each property has its own unique characteristics and challenges. Variables include items relating to environmental conditions, historic nature of structures, etc.
 - b. Depending on the specific property, there may be other qualifications needed by the bidder which will be specified by the HRA in its request for bids.

PART 3 POST AWARD REQUIREMENTS

3.01 CONSTRUCTION CONTRACT REQUIREMENTS

- A. The bidder agrees that, if selected by the HRA, the bidder will enter into a contract with the HRA no later than 30 calendar days from bid award and will submit the following information to the HRA as a condition to entering into that contract; refer to Bid Rehab Manual for attachments:
 1. Certificates of Insurance as required by the Construction Contract and proof of Insurance and Bonding.
 2. Final Sworn Construction Statement Affidavit and Sworn Construction Statement that list contractors, material suppliers, and subcontractors, who will work under the contract and the cost of their work.
 3. Proof of a valid license as a Residential builder in the State of Minnesota and proof of valid licenses as required by the City of Saint Paul for work to be done.
 4. Bidders may be required to submit payment and performance bonds as a condition of the construction contract. Verify with Scope Writer prior to submitting bid.
 5. Proof of compliance with requirements attached for Affirmative Action, Vendor Outreach Program, and Section 3, including an Acknowledgement and Final Section 3 Action Plan.
 6. Construction Schedule must be submitted to the Insert Construction Management Firm Name to enter into the Contract.
- B. Attendance of a Pre-Construction Conference
 1. The selected Contractor and all Subcontractors will be required to attend a Pre-Construction Conference.

2. Time, date, and place of the Pre-Construction Conference will be announced by the Insert Construction Management Firm Name and/or HRA.
- C. Computerized System for Compliance Tracking and Reporting:
 1. The Contractor is required to use the B2Gnow/LCPtracker reporting system. Refer to attachment.

PART 3 WAGE REQUIREMENTS

4.01 The following are wage requirements associated with this Projects

- A. Federal Davis-Bacon and/or Little Davis-Bacon Wages are not required for this project.

END OF SECTION

**SECTION 00 4101
HRA BID SUBMISSION DOCUMENTS**

SECTION 1 GENERAL

1.01 BID SUBMISSION DOCUMENTS, located at <http://www.stpaul.gov/nsp>

- A. Bid Submittal Checklist
- B. Bid Cover Sheet
- C. Bid Proposal and Non-Collusive Affidavit
- D. Preliminary Section-3 Action Plan
- E. Contractor Application / Statement of Qualifications
- F. Itemized Cost Breakdown and Scope of Work Bid (Section 004102)

END OF SECTION

**SECTION 00 4102
LINE ITEM BID SHEET**

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

DIVISION 01 - GENERAL REQUIREMENTS

01 0010 – HRA General Requirements \$ _____

DIVISION 02 - EXISTING CONDITIONS

02 4100 - Demolition \$ _____

02 8200 - Asbestos Remediation \$ _____

02 8313 – Lead Hazard Control Activities \$ _____

DIVISION 03 - CONCRETE

03 3000 - Cast in Place Concrete \$ _____

DIVISION 04 - MASONRY

04 0100 - Maintenance of Masonry \$ _____

04 2223 - Concrete Unit Masonry \$ _____

04 2300 - Glass Unit Masonry \$ _____

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

06 1000 - Rough Carpentry \$ _____

06 2000 - Finish Carpentry \$ _____

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 2113 - Rigid Foam Insulation \$ _____

07 2119 - Foamed-In-Place Insulation \$ _____

07 2126 - Blown Insulation \$ _____

07 2500 - Weather Barriers \$ _____

07 2700 – Air Barrier System \$ _____

07 3113 - Asphalt Shingles \$ _____

07 4620 - Fiber Substrate Siding \$ _____

07 6200 - Sheet Metal Flashing and Trim \$ _____

07 7123 - Manufactured Gutters and Downspouts \$ _____

DIVISION 08 - OPENINGS

08 1429 - Wood Doors \$ _____

08 1613 – Fiberglass Doors \$ _____

08 3323 - Overhead Garage Door \$ _____

08 5413 - Fiberglass Windows \$ _____

DIVISION 09 - FINISHES

09 0120 - Repair of Plaster and Gypsum Board \$ _____

09 0160 - Hardwood Flooring Restoration \$ _____

09 2116 - Gypsum Board Assemblies \$ _____

09 3000 - Tiling \$ _____

09 6800 - Carpeting \$ _____

09 9000 - Painting and Coating	\$ _____
09 9723 - Concrete and Masonry Coatings	\$ _____
DIVISION 10 - SPECIALTIES	
10 5623 - Closet Storage Shelving	\$ _____
DIVISION 11 - EQUIPMENT	
11 3100 - Residential Appliances	\$ _____
DIVISION 12 - FURNISHINGS	
12 1110 - Mail Box and House Numbers	\$ _____
12 1211 - Bathroom Furnishings	\$ _____
12 3530 - Residential Casework	\$ _____
DIVISION 22 - PLUMBING	
22 3000 - Plumbing Equipment	\$ _____
22 4000 - Plumbing Fixtures and Piping	\$ _____
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING	
23 0000 - Residential Ventilation	\$ _____
23 5400 - Forced Air Furnace and Ducts	\$ _____
23 6213 - Forced Air A/C	\$ _____
DIVISION 26 - ELECTRICAL	
26 1001 - Power, Wiring and Devices	\$ _____
26 5101 - Lighting	\$ _____
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY	
28 1600 - Intrusion Detection	\$ _____
DIVISION 31 - EARTHWORK	
31 2200 - Grading	\$ _____
DIVISION 32 - EXTERIOR IMPROVMENTS	
32 1313 - Concrete Paving	\$ _____
32 9223 - Sodding	\$ _____
32 9300 - Planting	\$ _____

END OF SECTION

SECTION 01 0010
HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBILITY

- A. All labor, material, supplies, tools, or other costs or items needed for complete construction of the project, including permits, temporary facilities, safety, security and utilities during construction, are the responsibility of the Contractor.
- B. The General Contractor and each Subcontractor shall inspect the existing conditions that affect its work before starting. Commencing work signifies acceptance of the previous work. All measurements and dimensions indicated in the Drawings and Specifications are to be verified prior to bid submittal and construction.
- C. The General Contractor shall be responsible for the coordination of all subcontractors working on, or furnishing material for use on this project. In addition, the General Contractor shall be responsible for the coordination of all work performed under separate contracts.

1.02 CONTRACTOR'S USE OF PREMISES

- A. During the construction period the General Contractor and its Subcontractors shall have full use of the premises for construction operations, including use of the site. All use of the site shall be under control and supervision of the General Contractor.
- B. General Contractor and its Subcontractors will be limited to construction work between the hours of 7:00 am and 6:00 pm on weekdays and 8:00 am to 4:00 pm on Saturday. Work at any other times will be allowed only with the Owner's and Project Manager's consent.

1.03 MATERIALS & MATERIAL STORAGE

- A. The General Contractor shall provide all materials, hardware, and fixtures required to accomplish the Scope of Work, unless otherwise indicated.
- B. The General Contractor shall use materials specified throughout unless approved in writing by Owner and Project Manager before ordering and installing.
- C. The General Contractor is responsible for verification of all measurements. Materials transported to the job site and stored are the General Contractor's responsibility until installed and accepted by the Owner and Project Manager.
- D. The General Contractor shall deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
- E. Damaged or stolen materials and equipment must be replaced as part of the work at no additional cost to the Owner. Damaged property that is removed shall belong to the General Contractor, unless otherwise stated in writing.

PART 2 PERFORMANCE REQUIREMENTS

2.01 ENERGY CONSERVATION, see Section 01 8113 SUSTAINABLE DESIGN REQUIREMENTS

PART 3 PRICE AND PAYMENT PROCEDURES

3.01 SCHEDULE OF VALUES

- A. Form to be used: Sworn Construction Statement.

3.02 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Execute certification/pay application by signature of authorized officer.
- C. Submit two copies of each Application for Payment to Construction Manager.

PART 4 CONTRACT MODIFICATION PROCEDURES

4.01 HRA WINTER WORK POLICY

- A. The Housing and Redevelopment Authority of the City of St. Paul (HRA) recognizes that there are weather related exterior items that cannot be completed in winter conditions (“Weather Conditional Work”), including but not limited to:
 - 1. Exterior painting
 - 2. Sod
 - 3. Foundation plantings
 - 4. Rain garden installation
 - 5. Concrete sidewalks, steps, landings, curbs, garage slabs, and asphalt driveways
- B. The HRA defines winter conditions as “temperatures consistently below a high of 50 degrees Fahrenheit”. Winter conditions are typically in effect from November 15th through April 15th each year, although there is potential for an earlier or later start and end date depending on weather.
- C. In the case of NSP homes where a notice to proceed is issued between October and February, the time parameter of winter conditions could mean that the entire timeline for construction completion (typically 90-120 days) is within winter conditions.
- D. It is the responsibility of the contractor to communicate, to the Owner, the exterior line items in the scope of work that are Weather Conditional Work as a component of the timeline submission required prior to issuance of a notice to proceed.
- E. Contractors are also responsible for ensuring that all Weather Conditional Work is completed within the manufacturer’s or industry standards recommended temperature range.
- F. The Contractor is responsible for prioritizing Weather Related Work when winter conditions are not present, in order to complete the house within the construction timeline whenever possible.
- G. The HRA’s objective is to ensure that remodeling work on NSP projects is substantially complete within the timeline for construction completion (90-120 days) so that the project can be issued a certificate of occupancy and sold to a new homeowner; the contractor is responsible for ensuring that temporary, structurally sound solutions are implemented when Weather Related Work will effect the ability to secure a Certificate of Occupancy.
- H. In the event that winter conditions are present throughout the 120 day construction contract period, the HRA will escrow 1 and 1/2 times the cost for Weather Conditional Work (150%), to be completed within 30 days of the end of winter conditions.

4.02 SUBSTITUTIONS

- A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the General Contractor after award of the Contract are considered to be requests for substitutions.
- B. Submit requests according to procedures required for change-order proposals.
- C. Substitution requests shall include a complete list of changes or modifications needed in the Scope of Work in order to accommodate the proposed substitution.
- D. Provide samples and product data, including drawings and descriptions of products as well as fabrication and installation procedures, where applicable or where requested by the Owner or Project Manager.
- E. Indicate the substitution’s effect on the Contractor’s Construction Schedule, if any. Indicate cost information, including a proposal of the net change, if any, in the Contract Sum. Acceptance will be in the form of a written Change Order signed by the Owner and Project Manager.

PART 5 COMPLIANCE INFORMATION AND REQUIREMENTS

5.01 See HRA NSP website for compliance requirements.

- A. <http://www.stpaul.gov/nsp>
- B. Review the document labeled: Section II - Compliance Information and Requirements.

1. It contains additional information on:
 - a. Insurance
 - b. B2Gnow/LCP Tracker, Contract Compliance Monitoring System
 - c. Vendor Outreach Program
 - d. Affirmative Action
 - e. Sustainable Green Policy
 - f. Section 3
 - g. Two Bid Policy
 - h. Limited English Policy
 - i. Xcel Energy Participating Contractors' List
 - j. Radon Mitigation Contractors' List

5.02 SECURITY PROCEDURES

- A. General Contractor is responsible for maintaining security of the site, including:
 1. locking buildings at the end of each work day;
 2. boarding window or door openings;
 3. installing security fencing;
 4. providing temporary barricades, bracing or railings;
 5. and any other work or facilities necessary to maintain a safe and secure site, including compliance with all health, safety, building, and other codes and laws.
- B. Any tools or materials or other property stored on the site prior to installation are the responsibility of the General Contractor and its Subcontractors are responsible for insuring their own such property against loss by theft or other cause.

5.03 JOB CONDITIONS

- A. The General Contractor shall notify the Owner and Project Manager of repair not covered in the Scope of Work that is necessary for satisfactory completion of the Project.
- B. Defects that become evident as work progresses shall be reported not concealed.
- C. Ensure safe passage of all employees during the course of demolition or other persons as necessary by erecting barriers, bracing, or other temporary supports as required.

5.04 SAFETY AND CLEAN UP

- A. The General Contractor must keep the site clean at all times during construction.
- B. In no event can debris be stored outside overnight unless it is inside a dumpster.
- C. All floors are to be picked up and kept broom clean at the end of the work day.
- D. No combustible debris shall be thrown, stored, or burned on the property, adjacent parcels, sidewalks, streets, or alleys.
- E. Debris created from work at the property must be disposed of immediately.
- F. Any debris caused by the General Contractor or its Subcontractor shall be removed from the work area in the General Contractor's containers and disposed of off site by the General Contractor.

PART 6 SPECIAL PROCEDURES

6.01 ASBESTOS ABATEMENT, see Asbestos Remediation Section 02 8200

6.02 VOLATILE ORGANIC COMPOUND CONTENT RESTRICTIONS, see Section 01 6116

6.03 LEAD BASED PAINT, see Lead Hazard Control Activities Section 02 8313

6.04 WASTE MANAGEMENT, see section 01 7419

PART 7 SUBMITTALS

7.01 GENERAL

- A. Coordinate preparation and processing of submittals with performance of construction activities.

- B. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
- C. Prior to submitting any samples and product data, contractor shall review and approve data for compliance with project requirements. Contractor shall stamp data and shop drawings as approved by its entity before submitting to Construction Manager for review.
- D. Submit product data for review in triplicate (one each to be retained by Construction Manager and Owner, and one returned after review to Contractor)
- C. Provide the following submittals required for performance of the Work, including the following:
 - 1. Administrative Submittals.
 - 2. Construction Schedule
 - 3. Samples/Product Data.

7.02 ADMINISTRATIVE SUBMITTALS

- A. Provide as required in the Contract Documents. Such submittals include, but are not limited to, the following:
 - 1. Sworn Construction Statement
 - 2. Required permits.
 - 3. Applications for Payment.
 - 4. Insurance certificates.
 - 5. List of subcontractors.
 - 6. Proof of qualifications for Asbestos and Lead remediation

7.03 CONSTRUCTION SCHEDULE

- A. A construction schedule must be submitted to the Owner and Project Manager with the bid, unless requested otherwise in writing. Construction shall be completed within 120 days of notice to proceed.

7.04 SAMPLES, PRODUCT DATA AND SHOP DRAWINGS:

- A. Submit Samples as specified to be physically identical with the material or product proposed.
- B. Samples include partial sections of manufactures or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
- C. Provide product samples, product data and/or shop drawings for the following where included in the scope of work and for any other requirements mentioned in the specifications or drawings:
 - 1. Paint colors
 - 2. Stucco sample
 - 3. Windows
 - 4. Doors and hardware
 - 5. Kitchen cabinets product data and shop drawings
 - 6. Plumbing fixtures
 - 7. Lighting fixtures
 - 8. Stair railings
 - 9. Tile
 - 10. Interior trim samples
 - 11. Exterior trim and siding samples (garage)
 - 12. Window order
 - 13. Sketch site plan showing areas of yard to be disturbed by equipment and location of materials storage.

END OF SECTION

SECTION 01 2000
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 PAYMENT DOCUMENTS

- A. All documents required to create a complete Payment Application can be downloaded from <https://sites.google.com/site/nspconstructiondocs/>
- B. Payment Application form to be used: Application and Certificate for Payment provided by the HRA.
 - 1. Columns A, B, C should not change during the course of construction and should directly relate to the Sworn Construction Statement provided at the start of construction. As draws progress, columns D, E and F change to reflect work completed.
- C. Additional Documents to be submitted with each pay application:
 - 1. Monthly Employment Utilization (MEU) Form
 - 2. Identification of Prime and Subcontractor Form
 - a. An updated Sub ID sheet must be attached to help HR/EEO staff track subcontractor utilization.
 - 3. B2Gnow
 - a. Ensure each subcontractor is logging into the B2Gnow system and logging payments received.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement. The Owner will process the payment within 30 days.
- B. Applications for payment must be signed by an authorized officer of the general construction firm
- C. Use data from approved Sworn Construction Statement. Provide dollar value in each column for each line item for portion of work performed.
- D. Submit one signed copy of the Application for Payment, complete with all required attachments, to the Construction Manager.

1.03 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Price or Contract Time, Construction Manager will issue instructions directly to Contractor.
- B. Execution of Change Orders: Construction Manager will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- C. After execution of Change Order, promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
 - 1. Change orders shall be listed as lump sums on the bottom of the pay application and referred to on the cover sheet.
 - 2. Include each line item of the change order as a separate line item in the pay application and the amount of the contractor adjustments.

1.04 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.
- B. Additional documents:
 - 1. Final lien waivers from all subcontractors/material providers
 - 2. Monthly Employment Utilization (MEU) Form
 - 3. Project Employment Utilization (PEU) for City Funded Projects
 - 4. Lead Clearance
 - 5. NEC Certificate of Completion

6. Waste Management Plan Report
 7. Permit Sign-offs/Certificate of Code Compliance
 8. Winter Work/Weather Related Work Escrow
 9. Certificate of Substantial/Final Completion
- C. See Section 01 7700 - Closeout Procedures and Submittals, for additional information.

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- D. Substitution Submittal Procedure:
 - 1. Submit two copies of request for substitution for consideration. Limit each request to one proposed substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 3. The Construction Manager will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

SECTION 01 6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Implement the following procedures in an effort to improve indoor air quality during homeowner's occupancy.
- B. Construction Indoor Air Quality (IAQ) Management
 - 1. Provide low-emitting products

1.02 DEFINITIONS

- A. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
 - 1. Adhesives, sealants, and sealer coatings.
 - 2. Carpet.
 - 3. Carpet cushion.
 - 4. Resilient floor coverings.
 - 5. Wood flooring.
 - 6. Paints and coatings.
 - 7. Insulation.
 - 8. Gypsum board.
 - 9. Acoustical ceilings and panels.
 - 10. Cabinet work.
 - 11. Wall coverings.
 - 12. Composite wood and agrifiber products used either alone or as part of another product.
 - 13. Other products when specifically stated in the specifications.
- B. Interior of Building: Anywhere inside the exterior weather barrier.
- C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All VOC-Restricted Products: Provide products having VOC content of types and volume not greater than those specified in State of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current GREENGUARD Children & Schools certification; www.greenguard.org.
 - b. Current Carpet and Rug Institute Green Label Plus certification; www.carpet-rug.org.
 - c. Current SCS Floorscore certification; www.scs-certified.com.
 - d. Current SCS Indoor Advantage Gold certification; www.scs-certified.com.
 - e. Product listing in the CHPS Low-Emitting Materials Product List at www.chps.net/manual/lem_table.htm.
 - f. Current certification by any other agencies acceptable to CHPS.
 - g. Report of laboratory testing performed in accordance with CHPS requirements for getting a product listed in the Low-Emitting Materials Product List; report must include laboratory's statement that the product meets the specified criteria.

- B. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Report of laboratory testing performed in accordance with requirements.
 - b. Published product data showing compliance with requirements.
 - c. Certification by manufacturer that product complies with requirements.
- C. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current GreenSeal Certification.
- D. Paints and Coatings applied within building waterproof envelope:
 - 1. Comply with VOC Content limits (as noted in Criterion 6.1) of Green Seal Standard GS-11 "Paints," First Edition; Standard GC-03 "Anti Corrosive Paints," and MPI GPS-2-8, as follows (in grams/Liter):
 - a. Flat: 50
 - b. Non-flat: 50
 - c. Anti-Corrosive and Anti Rust: 250
 - d. Floor Coatings: 100
- E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- F. Carpet, Carpet Cushion, and Adhesive: Provide products having VOC content as specified in Section 09 6800.
- G. Carpet Cushion: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
 - b. Published product data showing compliance with requirements.
 - c. Certification by manufacturer that product complies with requirements.
- I. Cabinet Materials: Low VOC
 - 1. Provide wood cabinets with self closing hinges and adjustable shelves from the Schrock Select (available at Menards), Mid-Continent Cabinetry (available at All Inc), or MINNCOR (available at MINNCOR) design lines or approved equal.
 - 2. Cabinets are to have plywood sides and bases. Drawer boxes shall be plywood with dovetail joinery.
 - 3. Cabinets to be constructed with maple; full overlay doors and flat or 5 piece. Alternative styles may be approved by the HRA.
- J. Other Product Categories: Comply with limitations specified elsewhere.

END OF SECTION

SECTION 01 7000
EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Construction Manager of any discrepancies discovered.
- C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.03 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.

4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove samples of installed work for testing when requested.
 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.04 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

3.05 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.06 FINAL CLEANING

- A. Use cleaning materials that are non-hazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

END OF SECTION

SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. HRA Policy for this project is dependent on diversion of 50 percent, by weight, of potential landfill trash/waste by recycling and/or salvage.
- D. The following recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:

1.02 SUBMITTALS

- A. ACTION SUBMITTALS
 - 1. CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT(CWM) PLAN
 - a. Analysis of estimated job-site waste to be generated, including types and quantities of compostable, recyclable, and salvageable materials.
 - b. Description of means and methods to achieve 50 percent diversion requirement for compostable, recyclable, and salvageable materials, including those that may be donated to charitable organizations.
 - c. Identification of the carpet product's composition as polymer, nylon or polypropylene
 - d. Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services.
 - B. FINAL WASTE MANAGEMENT REPORT: General Contractor is responsible to submit at completion of construction and prior to contract close-out, in electronic format.
 - 1. All information required in Waste Management Progress Reports
 - 2. Legible copies of on-site logs, manifests, weight tickets, and receipts.
 - 3. Final calculations, including total amount (by weight or volume) of diverted construction and demolition waste, and the total amount (by weight or volume) of landfilled waste.

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor and Construction Manager.
- C. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
- D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- E. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- F. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- G. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

3.02 UNACCEPTABLE METHODS OF WASTE DISPOSAL

- A. Burning or incinerating on or off project site
- B. Burying on project site, other than fill.
- C. Dumping or burying on other property, public or private, other than official landfill.
- D. Illegal dumping or burying.

END OF SECTION

**SECTION 01 7700
CLOSEOUT PROCEDURES AND SUBMITTALS**

PART 1 GENERAL

1.01 SUBMITTALS

- A. All documents required to create a complete Final Payment Application can be downloaded from <https://sites.google.com/site/nspsconstructiondocs/>
- B. Notify Construction Manager when work is considered ready for Substantial Completion.
 - 1. Make sure the work is mostly complete and cleaned for inspection.
- C. Substantial Completion Submittals:
 - 1. Project Record Documents: Submit documents listed below to Construction Manager:
 - a. Final Pay Application
 - b. Monthly Employment Utilization (MEU) Form
 - c. Project Employment Utilization (PEU) for City Funded Projects
 - d. Lead-based Paint Hazard Clearance Testing
 - e. Energy Modeling/NEC Compliance Report
 - f. Final Waste Management Report, see Section 01 7419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
 - g. Permit Closeout/Code Compliance
 - h. Winter Work/Weather Related Work Escrow
 - i. Final Lien Waivers
 - j. Material Allowance Reconciliation Change Order (if necessary).
- D. Notify Construction Manager when work is considered finally completed. All Punch List items shall be completed and approved by Construction Manager and HRA Project Manager.
- E. Final Completion Submittals:
 - 1. Project Record Documents: Submit documents listed below to Construction Manager:
 - a. Building Maintenance Manual and Warranty documents for following:
 - 1) Appliance and building systems
 - (a) HVAC equipment
 - (b) Lighting equipment
 - (c) Kitchen and Laundry Appliance Manuals
 - 2) Water-using equipment and controls installed:
 - (a) Hot water delivery system(s)
 - (b) Clothes washer
 - b. Signed Certificate of Substantial Completion
 - c. Punch List Items Completed

PART 3 EXECUTION

2.01 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

- A. Refer to Section 02 8313 Lead Hazard Control Activities, Quality Assurance for clearance testing requirements.

2.02 ENERGY MODELING

- A. See Section SECTION 01 8113 Sustainable Design Requirements for energy conservation testing requirements.

2.03 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.

END OF SECTION

SECTION 01 8113
SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY CONSERVATION

- A. This property is participating in Xcel Energy's Home Performance with Energy Star program.
 - 1. All insulation and HVAC work shall be performed by Xcel Energy's approved contractor list.
 - 2. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be responsible for all work completed.
 - 3. General Contractors will be responsible for submitting documentation required of the Home Performance with Energy Star program
- B. The "Residential Energy Specification" provided by the Neighborhood Energy Connection (NEC) (attached in appendix) is a part of the Scope of Work for this property. Contractor shall be responsible for achieving energy improvements outlined by the energy specification and shall coordinate relevant work with the NEC as follows:
 - 1. Refer to energy model that shows the building's projected energy performance, attached in appendix
 - 2. Coordinate with NEC which shall conduct a mid-construction pre-drywall thermal enclosure inspection
 - 3. Coordinate with NEC which shall verify the final performance of the building with performance testing
- C. Energy Efficient Lighting
 - 1. The Owner/Project Manager shall select specific locations of fixtures and switches in each area.
 - 2. All lighting fixtures will be purchased new, unless otherwise indicated.
 - 3. No plastic lighting fixtures are acceptable.
 - 4. No fluorescent tub light fixtures are acceptable in living spaces.
 - 5. Provide Energy Star certified CFL or LED light bulbs for all fixtures.
 - 6. All light fixtures are to have color corrected bulbs.
 - 7. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
 - 8. Provide and install lighting fixtures and switches.
 - 9. Review fixtures with Owner prior to installation.
 - 10. All electrical outlets and cover plates are to be replaced throughout the building.
- D. Energy Efficient Appliances
 - 1. All appliances must be purchased new and be Energy Star certified or high efficiency models when Energy Star certification is not possible.

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

- A. Comply with Construction Waste Management and Disposal Plan. Section 01 7419

3.02 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

- A. Change all air filters regularly during construction with filters specified for the specific furnace. Replace all air filters immediately prior to Substantial Completion with the specified permanent filters.

END OF SECTION

**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

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1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. At yard, remove per drawings: existing garage, concrete paving, fencing, landscape timbers, plants
- C. At house exterior, remove per drawings: siding, trim, roofing and gutters, miscellaneous wires and attachments, windows, exterior doors.
- D. At basement, remove per drawings: concrete block walls, chimney, interior stairs, exterior stairs and doorway, windows, wood partitions, wood and steel columns, ceiling tile system, appliances, heating and plumbing system, obsolete wiring, accessories, attachments.
- E. At first floor, remove per drawings: carpet, window coverings, trim, doors, cabinets, wall and ceiling finishes, insulation, heating and plumbing system, framing, stairs to basement, stairs to second floor, chimney.
- F. At second floor, remove per drawings: carpet, window coverings, trim, doors, cabinets, wall and ceiling finishes, insulation, heating and plumbing system, framing, stairs, chimney, attic scuttles.
- G. Throughout house, clean and remove mold (contractor shall determine mold remediation method).

1.01 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Protect hardwood floors for possible refinishing later.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
- B. If hazardous materials are discovered during removal operations, stop work and notify Construction Manager and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- C. Perform demolition in a manner that maximizes salvage and recycling of materials. Inform Project Manager of potential strategies to reuse construction material. Only move forward with reusing of construction materials with Project Manager's consent.

3.02 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements
- B. Protect existing utilities to remain from damage.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. For asbestos abatement see Sections 02 8200
- B. Remove existing work as indicated on the drawings and as required to accomplish new work. Refer to drawings for detailed itemization and location of demolition work. Protect existing work to remain.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove all demolition debris and dispose of legally off site.
- B. See Section 01 7419 Construction Waste Management And Disposal

END OF SECTION

SECTION 02 8200
ASBESTOS REMEDIATION

PART 1 GENERAL

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1.01 LOCATIONS

- A. See hazardous materials survey for building components identified as containing asbestos. Contractor is responsible for abating all components identified in report.
- B. Asbestos at pipe insulation identified in report at basement .

1.02 DESCRIPTION OF WORK AND CONTRACTOR RESPONSIBILITIES

- A. Provide all labor, equipment, material supervision and subcontracting for the removal and disposal of all Asbestos-Containing Material (ACM) as specified in the attached Asbestos Test.
- B. Per Minnesota statute, Contractor shall provide a (5) day notification to the Minnesota Department of Health prior to beginning asbestos abatement activities, IF the abatement scope meets certain project criteria. See the MDH website for additional information:

<http://www.health.state.mn.us/divs/eh/asbestos/prof/notification.html>
- C. When work areas include both friable and nonfriable types of ACM, Contractor shall prepare work area using procedures for friable asbestos removal.

1.03 SUBMITTALS

- A. Proof that the Contractor is qualified to perform Asbestos Remediation in the State of Minnesota.
- B. Test Reports: Indicate Complete Remediation of Project.

END OF SECTION

SECTION 02 8313
LEAD HAZARD CONTROL ACTIVITIES

PART 1 GENERAL

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1.01 LOCATIONS

- A. See hazardous materials survey for building components identified as containing lead. Contractor is responsible for abating all components identified in report.
- B. Exterior
 - 1. Painted wood canopy support (demolish canopy, Section 02 4100)
 - 2. Painted wood fascia (replace, Section 06 2000)
 - 3. Metal siding (replace, Section 07 4620)
 - 4. Painted wood cellar windows (replace with glass block, Section 04 2300)
 - 5. Metal fascia & soffits and wood beneath (replace, Section 06 2000)
- C. Garage
 - 1. Painted wood siding (demolish garage, Section 02 4100)
 - 2. Painted wood fascia (demolish garage, Section 02 4100)
 - 3. Painted wood window casing (demolish garage, Section 02 4100)
- D. Basement
 - 1. Painted wood closet door (demolish wood partitions, Section 02 4100)
 - 2. Painted wood door jamb (demolish wood partitions, Section 02 4100)
- E. Main Floor
 - 1. Living Room painted wood shelf support (demolish closet, Section 02 4100)
 - 2. Living Room painted wood closet door jamb (demolish closet, Section 02 4100)
 - 3. Bathroom painted drywall walls (demolish drywall finishes, Section 02 4100)
 - 4. Stairway painted wood wall (replace wall finish, Section 09 2116)
 - 5. Stairway painted wood stair skirt (demolish stairs, Section 02 4100)
- F. Second Floor
 - 1. Stairway painted wood baseboard (demolish stairs, Section 02 4100)
 - 2. Stairway painted wood door components (demolish stairs, Section 02 4100)
 - 3. Front bedroom painted plaster closet walls (encapsulate, Section 09 9000)
 - 4. Front bedroom painted wood closet shelf support (demolish, Section 02 4100)
 - 5. Front bedroom painted wood closet door jamb (encapsulate, Section 09 9000)
 - 6. Front bedroom painted wood window well (replace windows, see Section 08 5413 Fiberglass Windows)
 - 7. Front bedroom vinyl mini-blinds (demolish, Section 02 4100)
 - 8. Front bedroom varnished wood floor (encapsulate, Section 09 9000)

1.02 GENERAL INFORMATION

- A. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance." As a component of Title X, Sections 1012 and 1013, rehabilitation projects receiving more than \$25,000 of federal funds must abate all lead.
- B. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulations. of Title X, Sections 1012 and 1013

1.03 PRICE AND PAYMENT PROCEDURES

- A. Provide a price for the appropriate methods of abatement required by this scope of work.

1.04 SUBMITTALS

- A. Project Plan: prepare a written project plan and communicate it to the Construction Manager and Project Manager. Plan shall include:
 - 1. Start-up date and how long the project is expected to last.
 - 2. Areas to be abated and precautions to take.
 - 3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
 - 4. Location of areas that may be restricted.
- B. Test Reports: Indicate Lead Based Paint Clearance.
 - 1. Submitted at final draw

1.05 QUALITY ASSURANCE

- A. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed to conduct lead hazard reduction work are allowed to bid on projects involving lead hazard reduction work. See Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 for applicable safety precautions, disposal regulations, and other compliance regulations that apply to abatement activities.
- B. Per Minnesota statute, Contractor shall provide a (5) day notification to the Minnesota Department of Health prior to beginning lead abatement activities. During lead abatement, a MN Licensed Lead Abatement Supervisor shall be on site and workers conducting lead abatement shall be MN Licensed Lead Abatement Workers. See the MDH website for additional information:

<http://www.health.state.mn.us/divs/eh/lead/prof/notification.html>
- C. Lead-Based Paint Hazard Clearance Testing
 - 1. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party Clearance Technician for clearance testing.
 - 2. The Clearance Technician will conduct a visual assessment of completed work, take dust samples, have dust samples analyzed, and prepare a Clearance Report.
 - 3. If sample results fail, Minnesota rules 4761.2670 subpart 2 and subpart 3 must be repeated. If test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at no additional cost to the Owner until clearance standard is met.
 - 4. When the Clearance Report indicates that clearance standards have been met, and all other requirements of this section have been met, the Construction Manager and Owner will approve the final pay application.
 - 5. Lead clearance testing is to be paid for by Contractor and included in the contract price.

PART 3 EXECUTION

2.01 ABATEMENT

- A. When the Risk Assessment process determines that a project contains a lead-based paint hazard, comply with the abatement measures defined by:
 - 1. HUD in 24 CFR Part 35 Subpart A through R 35.1325 http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/lshr
 - 2. EPA in 40 CFR 745.227(e). <http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-sec745-227.pdf>
 - 3. Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 <http://www.health.state.mn.us/divs/eh/lead/rule.html>
- B. Comply with the abatement methods listed below:

1. **Component Replacement:** The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
2. **Paint Removal:** The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
3. **Enclosure:** The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
4. **Encapsulation:** The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
5. **Soil Removal:** The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
6. **Soil Cultivation:** The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
7. **Paving:** The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Garage slab with thickened edge, 4" slab thickness, comply with IRC requirements
- B. New front porch foundation and steps.

1.02 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280).

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal Portland type.

2.04 CONCRETE MIX DESIGN

- A. Normal Weight Concrete:
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 psi (20.7 MPa).

PART 3 EXECUTION

3.01 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.02 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.

3.04 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Maximum Variation of Surface Flatness:
 - 1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 ft (3 m).
- B. Correct the slab surface if tolerances are less than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Concrete Slabs: Wood float finish to requirements of ACI 302.1R

3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

END OF SECTION

**SECTION 04 0100
MAINTENANCE OF MASONRY**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Existing limestone house foundation walls, above grade exterior surfaces, to 6" below grade.
- B. Rebuild exterior stonework at portion of east basement wall indicated on the plans.
- C. Existing limestone house foundation walls interior, all masonry visible and accessible in basement.
- D. Repair of rubble wall at north end of basement after the existing CMU partitions have been removed. Condition of wall is unknown. For bidding purposes assume that the wall is in a condition similar to the visible walls in the rest of the basement. Include cost of repair work based on this assumption.

1.02 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 3 EXECUTION

2.01 REBUILDING

- A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.

2.02 REPOINTING

- A. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch (6 mm) depth or until sound mortar is reached.
- B. Pre-moisten joint and apply mortar. Pack tightly in maximum 1/4 inch (6 mm) layers. Form a smooth, compact concave joint to match existing.

2.03 CLEANING NEW MASONRY

- A. Verify mortar is fully set and cured.
- B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

END OF SECTION

SECTION 04 2200
CONCRETE UNIT MASONRY

PART 1 GENERAL

\$ _____

1.02 LOCATIONS

- A. CMU infill (1) basement window
- B. CMU infill basement exterior doorway

1.02 SECTION INCLUDES

- A. Concrete block
- B. Mortar and grout
- C. Reinforcement and anchorage

1.03 REFERENCES

- A. IBC Chapter 21 and ACI 530-05, MSJC Building Code Requirements and Specification for Masonry Structures
- B. ASTM C90 - Hollow Load Bearing Concrete Masonry Units

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The concrete masonry manufacturer shall have a minimum of five (5) years experience manufacturing CMU at their current facility.
- B. Single-Source Responsibility: Obtain concrete masonry units from one source and by a single manufacturer.

PART 2 PRODUCTS

2.01 CONCRETE BLOCK

- A. Hollow concrete masonry units shall be normal weight units per ASTM C90 requirements Fm = 2000 psi.

2.02 MORTAR AND GROUT

- A. Mortar shall be Type "M" per ASTM C270. Minimum 28 day compressive strength = 2500 psi.
- B. Coarse grout per ASTM C476. Minimum 28 day compressive strength = 3000 psi.
- C. Masonry cement shall not be used in mortar or grout.

2.03 JOINT REINFORCEMENT

- A. Reinforcing Bars: Deformed steel, ASTM A-615, Grade 60

PART 3 EXECUTION

3.01 PREPARATION

- A. Verify that field conditions are acceptable and ready to receive masonry.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.02 COURSING

- A. Establish lines, levels and coursing indicated.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units

1. Bond: running
2. Coursing: one unit and one mortar joint to equal 8 inches
3. Mortar joints: concave

3.03 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints, except lay first course above footings and slabs in full bed of mortar.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Interlock intersections and external corners.
- D. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- E. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges.

3.04 PROTECTION OF WORK

- A. Prevent grout mortar or soil from staining the face of masonry to be left exposed or painted.
- B. Protect newly laid masonry from exposure to precipitation, excessive drying, freezing, soiling, backfill and other harmful elements.
- C. During erection, cover top of walls with waterproof sheeting at end of each workday. Cover partially completed structure when work is not in progress.

3.05 REINFORCEMENT AND ANCHORAGE

- A. Install masonry reinforcement, horizontal and vertical, as indicated on the drawings.
- B. Place and consolidate grout fill without displacing reinforcement.
- C. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.
- D. Consolidate grout by rodding or vibrating.

3.06 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution. Do not use high-pressure spray for cleaning masonry. Use non-metallic tools in cleaning operations.

END OF SECTION

**SECTION 04 2300
GLASS UNIT MASONRY**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Basement, (4) existing window openings
- B. At south basement window, provide and install one galvanized window well

1.02 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 GLASS UNITS

- A. Hollow Glass Units: Permanently seal hollow unit by heat fusing joint; with joint key to assist mortar bond.

2.02 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Erect glass units and accessories in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 06 1000
ROUGH CARPENTRY**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. New garage framing, see site plan for location and see 2.05 below
- C. New front porch framing
- D. Basement
 - 1. New beam, infill existing stairwell
 - 2. New columns
 - 3. New stair, stair well, partitions, doorway
- E. First floor
 - 1. New walls and openings indicated on drawings
 - 2. New beam at kitchen ceiling
 - 3. New stairs to second floor
 - 4. Fur down kitchen ceiling
 - 5. New stairs to basement
 - 6. Framing as needed for new forced air ductwork
 - 7. Modify existing openings as needed for new doors and windows
- F. Second floor
 - 1. New walls and openings indicated on drawings
 - 2. New stairs from first floor with guard rail in den
 - 3. Framing as needed for new forced air ductwork
 - 4. New attic scuttles
 - 5. Modify existing openings as needed for new windows

PART 2 PRODUCTS

2.01 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6)
 - 1. Grade: No. 2
- D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16)
 - 1. Grade: No. 2
- E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Grade: No. 2
 - 2. Boards: Standard or No. 3.

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions. Provide hangers manufactured by Simpson or equal.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.
- C. Building Paper: Water-resistant asphalt saturated building paper.

2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

2.05 GARAGE FRAMING KIT

- A. New garage to be constructed from garage framing kit purchased from Menards, including framing lumber, wood trusses, sheathing, service door, small window
- B. Design #74105 22'x22' two-car garage with 16'x7' garage door opening.
- C. Purchase separately garage door specified in Section 08 3323; siding and trim specified in Section 07 4620
- D. See Section 03 3000 Cast-in-Place Concrete for garage slab.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.

3.02 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Install structural members full length without splices unless otherwise specifically detailed.
- C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.
- D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.

END OF SECTION

**SECTION 06 2000
FINISH CARPENTRY**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. House exterior per drawings
 - 1. Front porch trim
 - 2. Window and door casings, SmartSide manufactured trim products
 - 3. Cornerboards, fascias, soffits, SmartSide manufactured trim and soffit products
- C. Garage exterior
 - 1. Garage corner boards, window and door trim, fascias and soffit, SmartSide manufactured trim products
- D. First floor interior
 - 1. Field-built wood jambs at all new windows
 - 2. New casing at all windows and doors, 2 1/4" ranch
 - 3. New baseboard throughout, 2 1/4" ranch
 - 4. Handrail at stair to second floor
 - 5. Handrail at stair to basement
- E. Second floor interior
 - 1. Field-built wood jambs at all new windows
 - 2. New casing at all windows and doors, 2 1/4" ranch
 - 3. New baseboard throughout, 2 1/4" ranch
 - 4. Handrail at stair from first floor
 - 5. Guardrail at stairwell in den
 - 6. 2 1/4" ranch casing around attic scuttles
- F. Miscellaneous adjustments and repairs throughout the house called out on the drawings shall be included in this section line item.

1.02 RELATED SECTIONS

- A. Section 09 9000 Painting and Coating, for trim finish and color.
- B. Section 07 4620 Fiber Substrate Siding

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI Architectural Woodwork Standards for Premium Grade.

2.02 LUMBER MATERIALS

- A. Composite trim at garage and house: Smartside exterior trim, or equal. Smooth (not wood grain) appearance.
- B. New interior trim throughout, pine species, clear grain, paint finish
 - 1. Door and window casing: 2 1/4" ranch
 - 2. Base trim: 2 1/4" ranch

PART 3 EXECUTION

3.01 CARPENTRY STANDARDS

- A. Set and secure materials and components in place, plumb and level.
- B. Use finish nails of sufficient length to penetrate framing 1".
- C. Mitre all lap joints, and break all lap joints over framing.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.

3.02 COMPOSITE TRIM

- A. Composite lumber products: install according to manufacturer's instructions. Miratec boards installed smooth side out.

3.03 EXTERIOR MOLDINGS

- A. PVC exterior moldings: Azek or equal.

END OF SECTION

**SECTION 07 2113
RIGID FOAM INSULATION**

PART 1 GENERAL

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1.01 LOCATION

- A. Attic access hatch doors shall be insulated to R-44

1.02 Comply with NEC Energy Specifications

PART 2 PRODUCTS

2.01 MATERIALS

- A. Rigid Foam Insulation
 - 1. Extruded Poly Styrene (XPS)

PART 3 EXECUTION

3.01 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 07 2119
FOAMED-IN-PLACE INSULATION**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

A. Exterior house walls

1. Where exterior wall finishes are removed (intention of demolition drawings is that opening of exterior walls is to be minimized)

1.02 Comply with NEC ENERGY SPECIFICATIONS

PART 2 PRODUCTS

2.01 MATERIALS

A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.

1. Closed Cell Content: At least 90 percent.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 07 2126
BLOWN INSULATION**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Attics
- B. Roof slants
- C. Dining room bay window roof
- D. Exterior walls where interior finishes are left intact

1.02 NEC ENERGY SPECIFICATION

- A. Comply with NEC energy specification.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
 - 1. R-Value: Attic R-50

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.
- B. Place insulation pneumatically to completely fill stud, joist, and rafter spaces.
- C. Pour insulation to completely fill stud, joist, and rafter spaces to a density of 3.5 lbs per cubic foot per cavity.
- D. Completely fill intended spaces. Leave no gaps or voids.

END OF SECTION

**SECTION 07 2500
WEATHER BARRIERS**

PART 1 GENERAL

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1.01 LOCATION

- A. Entire house
- B. Garage

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Weather Barrier Membrane: Spunbonded polyolefin, non-woven, non-perforated, weather barrier
 - 1. Manufacturer: DuPont Tyvek HomeWrap or like product to be approved by Owner.
- B. Seam Tape: DuPont Tyvek or like product
- C. Flashing: DuPont Tyvek or like product
- D. Fasteners: DuPont Tyvek or like product

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer's recommendations.
- B. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturers recommended fasteners, spaced 12-18 inches vertically on center along stud line, and 24 inches on center, maximum horizontally.

END OF SECTION

**SECTION 07 2700
AIR BARRIER SYSTEM**

PART 1 GENERAL

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1.01 Comply with NEC ENERGY SPECIFICATIONS, including air seal rim joist

PART 2 PRODUCTS

2.01 ADHESIVES AND SEALANTS

- A. Comply with VOC requirements in Section 01 6116

PART 3 EXECUTION

3.01 INSTALLATION

- A. Seal attic bypasses. Weatherstrip attic access hatch. Refer to NEC energy specification.
- B. Mechanical work: Seal penetrations from unconditioned spaces with joint sealant and provide flashing. Seal flue openings with flashing and fire-rated joint sealant
- C. Pest Management Measures
 - 1. For openings in the building envelope less than 1/4 inch, including pipe and electrical penetrations, completely seal to avoid pest entry.
 - 2. Install rodent-and corrosion proof screens for openings greater than 1/4 inch

END OF SECTION

**SECTION 07 3113
ASPHALT SHINGLES**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Reroof entire house roof including lower roofs
- B. Roof entire new garage roof

1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

PART 2 PRODUCTS

2.01 SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462; Class A fire resistance.
 - 1. Self-sealing type.
 - 2. Manufacturer: GAF ELK, Timberline 30 Year HD shingles
 - 3. Style: Architectural Shingle.
 - 4. Color: Weathered Wood

2.02 ACCESSORIES

- A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch (2.67 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.

PART 3 EXECUTION

3.01 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions.

END OF SECTION

SECTION 07 4620
FIBER SUBSTRATE SIDING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Entire house exterior
- B. Garage

1.02 SECTION INCLUDES

- A. Primed hardboard siding.
- B. Matching soffit panels and trim.
- C. Sealing panel joints and penetrations.
- D. Building paper.
- E. Flashings within siding installation.

1.03 REFERENCES

- A. ANSI/AHA A135.6 - Hardboard Siding.

1.04 SUBMITTALS

- A. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods, including nailing patterns.
 - 4. Applicable model code authority evaluation report (including but not limited to ICBO, SBCCI, BOCA, CCMC).
- B. Siding manufacturer's requirements for products to be installed by others.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products off the ground, on a flat surface, and under a roof or separate waterproof covering.

1.06 WARRANTY

- A. Manufacturer's Standard Warranty: 50 year transferable limited warranty with 5 year 100 percent repair and replacement warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: LP SmartSide, which is located at: 414 Union St. Suite 2000 ; Nashville, TN 37219; Toll Free Tel: 888-820-0325; Email: request info (marketing.center@lpcorp.com); Web: www.lpcorp.com/smartside
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 6000.

2.02 MATERIALS

- A. Lap Siding: "Foundations" Series as manufactured by LP SmartSide
 - 1. Style: Smooth surface; 7 7/8 inches wide; square edges.
 - 2. Length: 16 feet
- B. Soffit Panels: As manufactured by LP SmartSide.
 - 1. Description: Embossed surface hardboard complying with ANSI/AHA A135.6, with resin and linseed oil impregnated surface; thermoset acrylic latex primed finish; no grooves, square edges.
 - 2. Style: Smooth grain

- C. Trim and Fascia: As manufactured by LP SmartSide.
 - 1. Style: Smooth grain

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions and drawing details.
 - 1. Read warranty and comply with terms necessary to maintain warranty coverage.
 - 2. Install in accordance with conditions stated in model code evaluation service report.
 - 3. Properly space joints to allow for equilibration.
- B. Allow products to adjust to ambient conditions before starting installation.
- C. Do not install to green wood or crooked structural framing. Do not install over rain soaked or buckled materials. Do not install if excessive moisture is present in the interior, including that from curing concrete and plaster.
- D. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.
- E. Install sheet metal flashing above door and window casings and horizontal trim in field of siding.
- F. Do not install siding less than 6 inches (150 mm) from ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.
- G. Do not cut siding to fabricate trim; use trim components manufactured for the purpose.
- H. After installation, seal joints except lap joints of lap siding. Seal around penetrations. Paint exposed cut edges

3.02 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION

SECTION 07 7123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Main roof, install new gutters, east and west
- B. Lower rear roof, install new gutters, east and west (5" gutter where upper roof empties into lower roof gutter)
- C. Locate downspouts and tie to drainage system according to Landscape Plan

1.02 DESIGN REQUIREMENTS

- A. Conform to applicable code for size and method of rain water discharge.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M); 0.032 inch (0.8 mm) thick.
 - 1. Finish: Plain, shop pre-coated with modified silicone coating.
 - 2. Color: To match the exterior trim.

2.02 COMPONENTS

- A. Gutters: K style profile, seamless, one-piece aluminum gutter and guard, 4" except 5" where upper roof empties into lower roof gutter
- B. Gutter Guard: seamless, one-piece aluminum gutter and guard
- C. Downspouts: SMACNA Rectangular profile.
 - 1. Size: 3X5
- D. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Gutter Supports: Brackets.
 - 2. Downspout Supports: Straps.
- E. Fasteners: Galvanized steel , with soft neoprene washers.

2.03 ACCESSORIES

- A. Splash Blocks: Precast concrete type, size and profiles indicated; minimum 3000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.
- B. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation.
- C. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.

3.02 LOCATION

- A. Install new gutters at all existing gutter locations, and as noted on drawings
- B. Locate downspouts according to Landscape Plan
- C. Install splash blocks at all downspouts

END OF SECTION

SECTION 08 1429
WOOD DOORS

PART 1 GENERAL

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1.01 LOCATIONS

- A. New interior doors per door schedule on drawings.

1.02 SECTION INCLUDES

- A. Wood doors, stile and rail design.
- B. Frames for pre-hung doors.
- C. Hardware for interior doors.

PART 2 PRODUCTS

2.01 INTERIOR WOOD DOORS

- A. Quality Level: Premium Grade, in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Wood products that Emit Low or No Formaldehyde
- C. Wood products that Emit Low or No VOC
- D. Interior Doors: 1-3/8" thick unless otherwise indicated
 - 1. Wood surface: Paint-grade maple or birch, primed.
 - 2. Door Type: Six-panel solid and hollow core per door schedule on drawings

2.02 HARDWARE

- A. Interior hardware to be Schlage Andover latchset with knob and Andover Rosette, Satin Nickel
- B. See door schedule for hardware designation for new doors and latch set replacement.
- C. Submit manufacturer's data before ordering.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and AWI/AWMAC Quality Standards requirements.
- B. Trim door width by cutting equally on both jamb edges.
- C. Trim door height by cutting bottom edges to a maximum of 3/4 inch (19 mm).
- D. Machine cut for hardware.
- E. Coordinate installation of doors with installation of frames and hardware.

3.02 TOLERANCES

- A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

END OF SECTION

**SECTION 08 1613
FIBERGLASS DOORS**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Front entry door, see schedule on drawings
- B. Side entry door, see schedule on drawings

1.02 SECTION INCLUDES

- A. Fiberglass Entrance Doors

1.03 REFERENCES

- A. American Architectural Manufacturer Association (AAMA)
 - 1. AAMA 1304; Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
- B. ASTM International
 - 1. ASTM E283; Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - 2. ASTM E330; Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Pressure Difference
 - 3. ASTM E331; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
 - 4. ASTM E547; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference

1.04 SUBMITTALS

- A. Refer to Section [01 33 00 Submittal Procedures] [Insert section number and title].
- B. Product Data: Submit door manufacturer current product literature, including installation instruction.

1.05 WARRANTY

- A. Manufacturer standard warranty indicating that doors will be free from material and workmanship defects from the date of substantial completion for the time periods indicated below:
 - 1. Door System: 25 Years.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. JELD-WEN Fiberglass Doors; 3305 Lakeport Blvd.; Klamath Falls, OR 97601, USA; Phone 877.535.3462, fax 541.882.3455; website www.jeld-wen.com.
- B. Basis of Design: Doors are based on the JELD-WEN's Smooth Pro Fiberglass.
 - 1. Smooth-Pro, Design SP-60

2.02 MATERIALS

- A. Stiles and Rails: Engineered wood (laminated veneer lumber), composite capped.

2.03 FIBERGLASS ENTRANCE DOORS

- A. Thickness: 1-3/4 inch
- B. Door Style: Solid
- C. Door Shape: Squared Top
- D. Finish: Paint surface in field, see selection sheet for color

- E. Entry hardware
 - 1. Schlage Camelot Avanti entry lockset

2.04 PREHUNG HARDWOOD SYSTEMS

- A. Profile: Single Door
- B. Jamb: Solid pine wood.
- C. Width: Custom as required for existing opening
- D. Casing: none (field case)
- E. Hinges: Solid brass concealed-bearing.
 - 1. Size: 4 by 4 square.
 - 2. Finish:
 - 3. Sills: Aluminum

2.05 FABRICATION

- A. Skins are adhered to engineered wood frames with core materials and bonding agents that permanently lock skin to frame.

2.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver doors, materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store doors as recommended by manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install doors in accordance with manufacturer's installation guidelines and recommendations.

3.02 EXAMINATION

- A. Inspect door prior to installation.
- B. Inspect rough opening for compliance with door manufacturer recommendations. Verify rough opening conditions are within recommended tolerances.

3.03 INSTALLATION

- A. Install jamb assembly.
 - 1. Caulk sill along outside edge and ½ inch in from edge of subfloor.
 - 2. Set door unit into center of opening and tack in place.
 - 3. Shim hinge then latch side jambs straight. Inspect jamb for square, level and plumb.
 - 4. Shim and fasten top of unit where sidelight joins door jamb.
 - 5. Fasten hinge side jamb to studs.
 - 6. Verify door opens freely and weatherstrip meets door evenly.
 - 7. Verify door sweep contacts threshold evenly.
 - 8. Fasten latch side jamb to studs.
- B. Caulk outside perimeter of door unit between brickmold and wall face, along front side of threshold, and between jamb sides and threshold.

3.04 PROTECTION

- A. Protect installed doors from damage.

END OF SECTION

SECTION 08 5413
FIBERGLASS WINDOWS

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. New windows at existing openings and new Bathroom #1. Entire window to be replaced, (9) openings total, per drawings and window schedule.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
1. E 283: Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
 2. E 330: Standard Test Method for Structural Performance of Exterior Windows, Curtains Walls, and Doors by Uniform Static Air Pressure Difference.
 3. E 547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
 4. E2190: Standard Specification for insulating Glass Unit Performance and Evaluation.
 5. C 1036: Standard Specification for Flat Glass.
 6. E 90-09: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission of Airborne Sound Transmission Loss of Building Partitions and Elements.
- B. Insulating Glass Manufactures Alliance / Insulating Glass Certification Council (IGMA / IGCC).
- C. American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standard Association (AAMA /WDMA/CSA):
1. AAMA/WDMA/CSA 101/I.S.2/A440-05: Standard/Specification for Windows, Doors, and Unit Skylights
 2. AAMA/WDMA/CSA 101/I.S.2/A440-08: Standard/Specification for Windows, Doors, and Unit Skylights
 3. ANSI/AAMA/NWWDA 101/I.S. 2-97: Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.
 4. ANSI/101/I.S. 2/NAFS-02: North American Fenestration Standard, Voluntary Performance Specification for Windows, skylights and Glass Doors.
- D. Window and Door Manufacturers Association (WDMA): Hallmark Certification Program.
- E. American Architectural Manufactures Association (AAMA): 623-10: Voluntary Specification, Performance Requirements and Test Procedures for Organic coatings on Fiber Reinforced Thermoset Profiles.
- F. American Architectural Manufacturers Association (AAMA): 613: Voluntary Performance Requirements and Test Procedures for Organic Coatings on Plastic Profiles.
- G. National Fenestration Rating Council (NFRC): 101: Procedure for Determining Fenestration Product Thermal Properties.

1.02 SYSTEM DESCRIPTION

- A. Window units shall be designed to comply with AAMA/NWWDA/CSA 101 / I.S.2/A440-05 and AAMA/WDMA/CSA 101 / I.S.2/A440-08.
1. IFCA,IFAWN: (C-LC40/LC-PG40-C), (AP-LC40/LC-PG40-AP)
 2. IFSWT: (FW-LC40/LC-PG40-FW)
 3. IFSWP: (FW-LC40/LC-PG40-FW)

- B. Air leakage shall not exceed the following when tested at 1.57 according to ASTM E 283: .03 cfm per square foot of frame.
- C. No water penetration shall occur when units are tested at the following pressure according to ASTM E 547:
 - 1. IFCA,IFAWN: (C-LC40/C-LC-PG40 -6.0 psf),(AP-LC40/LC-PG40-AP-6.0 psf)
 - 2. IFSWT: (FW-LC40/LC-PG40-FW-6.0 psf)
 - 3. IFSWP: (FWLC40/LC-PG40-FW-6.0 psf)
- D. Units shall be designed to comply with ASTM E 330 for structural performance when tested at the following pressures:
 - 1. IFCA,IFAWN: (C-LC40/LC-PG40-C-60 psf), (AP-LC40/LC-PG40-AP-60- psf)
 - 2. IFSWT: (FW-LC40/LC-PG40-FW-60 psf)
 - 3. IFSWP: (FW-LC40/LC-PG40-FW-60 psf)

1.03 SUBMITTALS

- A. Product Data: Submit catalog data
- B. Window order prepared by lumber yard, before placing order

1.04 DELIVERY

- A. Comply with provisions of Section 01 65 00.
- B. Deliver in original packaging and protect from weather.

1.05 STORAGE AND HANDLING

- A. Store window units in an upright position in a clean and dry storage area above ground and protect from weather

1.06 WARRANTY

- A. Windows shall be warranted to be free from defects in manufacturing, materials, and workmanship for a period of ten (10) years from purchase date.
- B. Window glass shall be warranted to be free from defects in manufacturing, materials and workmanship for period of twenty (20) years from the purchase date.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

- A. Description: All Ultrex Double Hung as manufactured by Integrity Windows and Doors, West Fargo, North Dakota or equal fiberglass window
- B. Description: All Ultrex Casement as manufactured by Integrity Windows and Doors, West Fargo, North Dakota or equal fiberglass window

2.02 GLAZING

- A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E 2190. STC ratings are certified to the level in accordance with ASTM E 90-09.
- B. Glazing method: 11/16 inch insulated glass.
- C. Glass type: LoE2 with Argon Gas.
- D. Glazing seal: Silicone bedding at exterior and a glazing boot to interior.
- E. See window schedule for safety glazing and obscured glass locations

2.03 FINISH AND OPTIONS

- A. Finish

1. Exterior: Pultruded Fiberglass. Factory baked on acrylic urethane.
 2. Interior: Pultruded Fiberglass. Factory baked on acrylic urethane.
 3. Color: Cashmere exterior with Stone White interior
- B. Hardware color: White.
- C. Jamb extension: 2" (standard)
- D. Simulated divided lites at double hung Types A, B, C, D; see window schedule and elevation drawing, Sheet 6
- E. Insect screen: Screen mesh, 18 by 16: Charcoal fiberglass. Frame finish: Stone White

PART 3 EXECUTION

3.01 WINDOW REPLACEMENT

- A. At each existing window opening on the main floor, remove entire existing window (frame and sash) and interior and exterior casings.
- B. Window sizes on the drawings and window schedule will fit in existing rough opening. At kitchen and bathroom, match existing head heights, sill height will be higher to accommodate new countertop and cabinets, frame new rough opening.
- C. At exterior, remove stucco around rough opening in order to install new windows, flashings and metal drip cap at head (above field-applied brick mold) according to manufacturer's instructions.
- D. Case exterior of window with brickmold at jambs and head. Sill extension at sill. At interior, painted wood field extension jambs and window trim, except at kitchen and bath--drywall returns at jamb and head with painted wood sill (See window detail on drawings and Section 06 2000 Finish Carpentry).
- E. Patch stucco basecoat around window openings (new finish coat over entire exterior).

3.02 INSTALLATION

- A. Assemble and install window unit according to manufacturer's instructions
- B. Install sealant and related backing materials at perimeter of unit or assembly iDo not use expansive foam sealant.
- C. Install accessory items as required.
- D. Use finish nails to apply trim and moldings.

3.03 CLEANING

- A. Remove visible labels and adhesive residue according to manufacturer's instructions.
- B. Leave windows and glass in a clean condition.

END OF SECTION

SECTION 09 0160
HARDWOOD FLOORING RESTORATION

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. First floor, sand and refinish existing hardwood flooring in living room and dining room
- B. Patch radiator pipe holes in wood flooring to remain with matching wood plug

1.02 RELATED SECTIONS

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

PART 3 EXECUTION

3.01 RESTORATION

- A. Use Low VOC, Water Based cleaner
- B. Buff with a high speed industrial buffer and cotton pads

END OF SECTION

SECTION 09 2116
GYPSUM BOARD INSTALLATION

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. New gypsum board finish at Basement Space #1 at stairwell and new wood-framed partition
- B. New gypsum board finish throughout first floor except where contractor elects to retain plaster or drywall finish in living room
- C. New gypsum board finish throughout second floor except where contractor elects to retain plaster or drywall finish in bedroom and den
- D. Install drywall as a substrate for tile wainscot in Bathroom #2, except tub/shower surround to have cement backerboard as substrate
- E. For other patching and repair, see Section 09 0120 Repair of Plaster and Gypsum Board Surfaces

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 1/2 inch
 - b. Ceilings: 5/8 inch

2.03 ACCESSORIES

- A. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Ready-mixed vinyl-based joint compound.
 - 3. Powder-type vinyl-based joint compound.
 - 4. Chemical hardening type compound.

PART 3 EXECUTION

3.01 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.02 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Tile flooring at Kitchen, side house entrance, Bath #1
- B. Tile flooring at Bath #2
- C. Tile wainscot and tub/shower surround at Bath #2 (cement backer board at tub surround)

1.02 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

- A. Floor and wall tile, see selection sheet

2.03 GROUT MATERIALS

- A. Standard Grout: Any type specified in ANSI A118.6 or A118.7.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Install tile in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- B. Caulk all inside corners in lieu of grout.

SECTION 09 6800
CARPETING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. First floor: Bedroom #1, stairs to second floor
- B. Second floor: Bedroom #2, Den, stairs down
- C. See materials and selection sheet

1.02 FIELD CONDITIONS

- A. Maintain minimum 70 degrees F (21 degrees C) ambient temperature 24 hours prior to, during and 24 hours after installation.
- B. Ventilate installation area during installation and for 72 hours after installation.

PART 2 PRODUCTS

2.01 CARPET

- A. Carpet Type Shaw Anso Yarn Texture Serenity Garden: Tufted, nylon, conforming to the following criteria:
 - 1. FHA Approved
 - 2. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.02 CUSHION

- A. Cushion: Cellular rubber:
 - 1. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.03 ACCESSORIES

- A. Tackless Strip: Carpet gripper, of type recommended by carpet manufacturer to suit application, with attachment devices.
- B. Adhesives - General: Compatible with materials being adhered; maximum VOC content of 50 g/L; CRI Green Label certified ; in lieu of labeled product, independent test report showing compliance is acceptable.
- C. Seam Adhesive: Recommended by manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Lay out carpet and locate seams in accordance with shop drawings:
 - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
 - 2. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.

3.02 STRETCHED-IN CARPET

- A. Install tackless strips with pins facing the wall around entire perimeter, except across door openings. Use edge strip where carpet terminates at other floor coverings.
- B. Double cut carpet seams , with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to all cut edges immediately.
- C. Join seams by hand sewing. Form seams straight, not overlapped or peaked, and free of gaps.
- D. Following seaming, hook carpet onto tackless strip at one edge, power stretch, and hook firmly at other edges. Follow manufacturer's recommendations for method and amount of stretch.
- E. The carpet should be stretched to eliminate puckers, scallops and ripples.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Lead abatement, encapsulate:
 - 1. Bedroom #2 closet surfaces per lead report (closet over stairs)
 - 2. Bedroom #2 wood floor, prior to carpeting
- B. Exterior, paint per selection sheet
 - 3. House siding and trim
 - 4. Fiberglass entrance doors, frame and casing, exterior and interior
 - 5. Garage exterior, see selection sheet
- C. Interior, paint per selection sheet
 - 1. Basement new drywall and door (See Section 09 9723 for masonry walls)
 - 2. First floor ceilings, walls, doors, window jambs and casings, door casings, base trim
 - 3. Stairs to basement, walls, ceiling and stair treads and risers
 - 4. Stairway to second floor, walls and ceiling
 - 5. Second floor ceilings, walls, doors, window jambs and casings, door casings, base trim

1.02 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.03 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Paints and Coatings: Sherwin Williams Low VOC or any manufacturer listed in MPI Approved Products List (at www.paintinfo.com) approved by Project Manger.
- B. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- C. See material and color selections
- D. Stains: Minwax Low VOC or any other manufacturer approved by Project Manager

2.02 VOC REQUIREMENTS

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

2.03 PAINT SYSTEMS

- B. Primer coat at bare wood surfaces and new drywall surfaces, primer manufacturer to be same as paint manufacturer.
- C. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.
- D. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

- E. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by Construction Manager from the manufacturer's full line.
- F. Refer to Materials and Colors Selection Sheet for color and sheen
- G. Provide smooth texture throughout.

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

- A. At locations indicated, paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.
- B. Paint the surfaces as follows:
 - 1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
 - 2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
 - 3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
 - 4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
 - 5. Paint surfaces impacted by new work, paint entire wall when patching work performed.
- C. Do not paint or finish the following items:
 - 1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
 - 2. Items indicated to receive other finish.
 - 3. Items indicated to remain naturally finished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

3.02 APPLICATION

- A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.
- B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.
- C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
- E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.

END OF SECTION

**SECTION 09 9723
CONCRETE AND MASONRY COATINGS**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Basement floor, throughout
- B. Basement exterior foundation walls, throughout, DryLock by ULG, or like product

PART 2 PRODUCTS

2.01 MATERIALS

- A. Coatings - General: Provide complete systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.

PART 3 EXECUTION

3.01 CLEANING

- A. Prior to coating, hand wash all surfaces

3.01 PRIMING

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.02 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

END OF SECTION

SECTION 10 5623
CLOSET STORAGE SHELVING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Provide closet rods and shelving at these locations
 - 1. First floor closet below stairs
 - 2. Bedroom #1
 - 3. Bedroom #2, both closets

1.02 SECTION INCLUDES

- A. Wall mounted wire closet shelving.
- B. Accessories.

PART 2 PRODUCTS

2.01 SHELVING APPLICATIONS

- A. Shelf Depth: 12 inches, unless otherwise indicated.
- B. Coat Closet:
 - 1. Wall-to-wall shelf with integral hanger rod.

2.02 MATERIALS

- A. Wire Shelving: Factory-assembled coated wire mesh shelf assemblies for wall-mounting, with all components and connections required to produce a rigid structure that is free of buckling and warping.
 - 1. Construction: Cold-drawn steel wire with average tensile strength of 100,000 psi (690 MPa) resistance welded into uniform mesh units, square, rigid, flat, and free of dents or other distortions, with wires trimmed smooth.
 - 2. Coating: PVC or epoxy, applied after fabrication, covering all surfaces.
 - 3. PVC Coating: 9 to 11 mils thick.
 - 4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils thick.
 - 5. Standard Mesh Shelves: Cross deck wires spaced at 1 inch (25.4 mm).
 - 6. Close-Mesh Shelves: Cross deck wires spaced at 1/2 inch (12.7 mm).
 - 7. Shelf and Rod Units: Integral hanging rod at front edge of shelf.
 - 8. Free-Sliding Hanging Rod: Integral hanging rod that permits uninterrupted sliding of
 - 9. hangers the full width of the shelf.
- B. Mounting Hardware: Provide manufacturer's standard mounting hardware; include support braces, wall brackets, back clips, end clips, poles, and other accessories as required for complete and secure installation; factory finished to match shelving.
- C. Fasteners: As recommended by manufacturer for mounting substrates.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions, with shelf surfaces level.
- B. Cap exposed ends of cut wires.
- C. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate
- D. Support braces as recommended by manufacturer.
- E. Mounting Heights: confirm with Construction Manager prior to installation

END OF SECTION

SECTION 12 1110
HRA MAIL BOX AND HOUSE NUMBERS

PART 1 GENERAL

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1.01 LOCATIONS

- A. One set of house numbers and mailbox at front entrance, location as directed by Construction Manager
- B. One set of house numbers at garage, above door facing alley

PART 2 PRODUCTS

2.01 Mailbox

- A. Gibraltar Mailboxes, Designer Lockable Wall Mount Mailbox or similar, submit for approval by Construction Manager.

2.02 Address Numbers

- A. 2 sets of (3), black, flush mount, metal

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 12 1111
BATHROOM FURNISHINGS**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Provide all new bathroom accessories at each bathroom, including 2 towel bars, toilet paper holder and shower curtain rod.

PART 2 PRODUCTS

2.01 TOWEL BARS

- A. Install a metal bath set comprised of two 24" towel bars and toilet paper holder
- B. See selection sheet for manufacturer and model

2.02 SHOWER CURTAIN ROD

- A. Install a shower curtain rod using wall anchors.
- B. See selection sheet for manufacturer and model

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

END OF SECTION

**SECTION 12 3530
RESIDENTIAL CASEWORK**

PART 1 GENERAL

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1.01 LOCATIONS

- A. All new kitchen cabinets and countertops per drawings
- B. New bathroom vanity at each bathroom

1.02 SUBMITTALS

- A. Shop Drawings: Indicate casework locations, large scale plans, elevations, clearances required, rough-in and anchor placement dimensions and tolerances, and color sample.

1.03 QUALITY ASSURANCE

- A. Products: Complying with KCMA A161.1 and KCMA Certified.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. The HRA has approved Shrock Select, Medallion or Mid-Continent

2.02 COMPONENTS

- A. Cabinets per 1.01 above, per drawings and selection sheet
- B. Cabinet Construction: Plywood sides and bases.
- C. Door and Drawer Fronts: Solid wood.
- D. Drawer Box Construction: Plywood with dovetail joinery
- E. Kitchen countertop: plastic laminate over particle board, integral back splash, per drawings and selection sheet

2.03 HARDWARE

- A. Hardware: see Materials and Selection Sheet

2.04 FABRICATION

- A. Shop assembles casework for delivery to site in units easily handled and to permit passage through building openings.
- B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

2.05 FINISHES

- A. Exposed To View Surfaces: Stain, seal, and varnish - see Materials and Selection Sheet

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install casework, components and accessories in accordance with manufacturer's instructions.
- B. Set casework items plumb and square, securely anchored to building structure.

END OF SECTION

**SECTION 22 3000
PLUMBING EQUIPMENT**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Remove existing water heater in basement and replace with new side-vented water heater, per NEC energy specification.
- B. Provide new vent opening through the existing basement wall and patch around opening as required to seal wall
- C. Coordinate water utility replacement of existing water meter

1.02 SUBMITTALS

- A. Manufacturer's product data

PART 2 PRODUCTS

2.01 RESIDENTIAL WATER HEATER

- A. New 40 gallon water heater complying with NEC energy specification.

PART 3 EXECUTION

3.01 WATER HEATER INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any. Provide all required piping, equipment and accessories.
- B. Hot water heater shall be installed by a contractor whose principal occupation is the sale and installation of plumbing, heating, and/or air conditioning equipment and shall be installed in compliance with all applicable codes.
- C. Provide new gas piping from shut-off valve to fixture.
- D. Provide water piping with backflow prevention.
- E. Provide side vent with power vent.
- F. Provide electrical outlet.
- G. Discharge tube shall be directed to the drain.
- H. Recycle the existing HWH.

END OF SECTION

SECTION 22 4000
PLUMBING FIXTURES AND PIPING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. At laundry area in basement, provide and install:
 - 1. Utility sink with washing machine hookup
- B. At kitchen, provide and install:
 - 2. New sink and faucet
- C. At Bathroom #1, provide and install:
 - 1. Toilet
 - 2. Lav (integral vanity countertop)
 - 3. Lav faucet
 - 4. Fiberglass shower unit (36" x 36")with shower controls
- D. All new supply and waste piping throughout house. Connect waste lines to existing cast iron drain at basement slab. Reconfigure main stack at slab to avoid new structural point load.
- E. Backflow preventer at exterior hose bib.
- F. Gas piping for appliances and new furnace.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Refer to selection sheet for fixture selections

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install new fixtures with trap, easily removable for servicing and cleaning.
- B. Install new PVC or ABS waste and vent piping
- C. Install flexible PEX piping with a minimum number of couplings to new fixtures. Install mechanical connectors and shut off valves for each fixture.
- D. Six pipe to 1990 CABO minimums per table 2406.5
- E. Include clothes washer hook up.
- F. Furnish and install all water piping and shut-off valves necessary to complete work.
- G. Seal around plumbing penetrations in all exterior surfaces, surfaces that border on unconditioned spaces, between floors, and throughout the exterior of the building.
- H. Clean out basement floor drain at end of construction period and verify operation and function. Install new drain cover.

END OF SECTION

**SECTION 23 0000
RESIDENTIAL VENTILATION**

PART 1 GENERAL

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- 1.01 A. Refer to NEC energy specification

PART 2 PRODUCTS

2.01 BATHROOM VENT FAN/LIGHT FIXTURE:

- A. All vent fans shall be energy star rated ceiling mounted fan/light fixtures rated for a minimum 100 watt exterior ducted vent fan capable of a minimum of 80 CFM
- B. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger
- C. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.
- D. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.
 - 1. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
 - 2. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

2.02 DUCT ASSEMBLIES

- A. Low Pressure Supply (Heating Systems): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- B. Low Pressure Supply (System with Cooling Coils): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- C. General Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- D. Kitchen Cooking Hood Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

2.03 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

2.04 KITCHEN HOOD EXHAUST DUCTWORK

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, SMACNA Kitchen Ventilation Systems and Food Service Equipment Fabrication & Installation Guidelines and NFPA 96.

END OF SECTION

SECTION 23 5400
FORCED AIR FURNACE AND DUCTS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Comply with NEC energy specification
- B. New furnace per NEC energy specification
- D. New supply and return ducting, design by contractor (drawings show ducting concept for bidding purposes only)

1.02 SUBMITTALS

- A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- B. Product data indicating Heating, Cooling equipment and Ducts are in compliance with Air Conditioning Contractors of America (ACCA) Manuals, Parts J, S, and D. Alternate Compliance paths are as Follows:
 - 1. ASHRAE Handbooks

PART 2 PRODUCTS

2.01 GAS FIRED FURNACES

- A. See NEC specification
- B. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating element, controls, air filter, humidifier, and accessories; wired for single power connection with control transformer.
 - 1. Safety certified by CSA in accordance with ANSI Z 21.47.
 - 2. Venting System: Direct.
 - 3. Combustion: Sealed
 - 4. Air Flow Configuration: Upflow.
 - 5. Heating: Natural gas fired.
- C. Performance:
 - 1. HVAC contractor will be responsible to determine heat load using Manual J.
- D. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
- E. Primary Heat Exchanger:
 - 1. Material: Hot-rolled steel
 - 2. Shape: Tubular type.
- F. Secondary Heat Exchanger:
 - 1. Material: Aluminized steel.
 - 2. Coating: Polypropylene.
- G. Gas Burner:
 - 1. Atmospheric type with adjustable combustion air supply,
 - 2. Gas valve, two stage provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
 - 3. Electronic pilot ignition, with electric spark igniter.
- H. Supply Fan: Centrifugal type rubber mounted with direct drive with adjustable variable pitch motor pulley.
- I. Motor: Refer to Section 22 0513; 1750 rpm two-speed, permanently lubricated, hinge mounted.
- J. Air Filters: 1 inch (25 mm) thick glass fiber, disposable type arranged for easy replacement.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with NFPA 90A.
- B. Install gas fired furnaces in accordance with NFPA 54.
- C. Provide vent connections in accordance with NFPA 211.
- D. The Contractor shall have all HVAC ducting cleaned by a professional duct cleaning company after all interior repairs are completed.

END OF SECTION

**SECTION 23 6213
FORCED AIR A/C**

PART 1 GENERAL

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1.01 LOCATIONS

- A. New air-conditioning equipment for forced air system, per NEC energy specification

1.02 SUBMITTALS

- A. Product Data: Provide rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams. Include equipment served by condensing units in submittal, or submit at same time, to ensure capacities are complementary.
- B. Design Data: Indicate pipe and equipment sizing.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

- A. Units: Self-contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of cabinet, compressors, condensing coil and fans, integral sub-cooling coil, controls, liquid receiver, wind deflector, and screens.
- B. Performance Ratings: 16 SEER, 13 EER split system

2.02 CASING

- A. House components in welded steel frame with galvanized steel panels with weather resistant, baked enamel finish.

2.03 CONDENSER COILS

- A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide sub-cooling circuits. Air test under water to 425 psig (2900 kPa), and vacuum dehydrate. Seal with holding charge of nitrogen.

2.04 FANS AND MOTORS

- A. Weatherproof motors suitable for outdoor use, single phase permanent split capacitor or 3 phase, with permanent lubricated ball bearings and built in current and thermal overload protection.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide piping for refrigeration system as required.
- B. Provide connection to refrigeration piping system and evaporators. Refer to Section 23 2300. Comply with ASHRAE Std 15.
- C. Provide concrete pad for mounting outside condenser unit.

END OF SECTION

SECTION 26 0001
POWER, WIRING AND DEVICES

PART 1 GENERAL

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1.01 LOCATIONS

- A. Entire house shall comply with St. Paul Bulletin 80-1
- B. Remove all obsolete low voltage wiring and devices throughout house
- C. At kitchen, provide all new concealed wiring, receptacles and switches.
- D. At bathroom, provide all new concealed wiring, receptacles and switches.
- E. Replace all existing smoke and CO detectors and provide hard wired smoke and CO detectors to meet code.
- F. All new receptacle and switch devices and cover plates throughout the house.
- G. Electrical service and wiring for new water heater, furnace, exhaust fans and kitchen and laundry appliances.
- H. (2) all new weatherproof outlets, near front door and at rear of house
- I. Underground power supply to garage, for lighting and garage door opener.
- J. All new exhaust fans in bathrooms per NEC energy specification
- K. Index all circuits at existing panel.

1.02 SUMMARY OF BULLETIN 80-1 (Property Maintenance Code)

- A. All hazardous, improper and/or illegal wiring shall be removed or required to comply with the present Electrical Code. This will include other buildings on the property such as garages, sheds, etc.
- B. Minimum size for all new services for single residential occupancies shall be 100 ampere, 240 Volt.
- C. No additions or extensions will be allowed on an existing ampere services.
- D. The Following are minimum requirements for new service installation:
 - 1. **Electrical outlets required:** Every habitable room 120 square feet or less in area, of a dwelling or dwelling unit of a multiple dwelling shall contain at least two separate and remote duplex outlets. Additional outlets shall be required for each additional 80 square feet or fraction thereof. Most new outlets must be Arc-Fault Circuit Interrupters (AFCI) protected according to Section 210.12 of the 2008 National Electrical Code.
 - 2. **In Kitchens:** Three separate and remote duplex outlets shall be required. At least one of the required duplex outlets shall be supplied by a separate twenty ampere circuit. Any receptacle installed above the counter top shall be of the Ground Fault Circuit Interrupter (GFCI) type, replace outlets that do not meet GFCI requirements.
 - 3. **Every public hall, water closet compartment, bathroom, laundry room and furnace room must contain at least one electric light fixture.** In addition to the light fixture, every bathroom and laundry room must have at least one duplex outlet. The required duplex outlet in each laundry room must be on a separate twenty ampere circuit. The required duplex outlet in each bathroom must be of the (GFCI) type. Any existing outlets in any bathroom must be converted to a GFCI-protected outlet or removed. The required GFCI outlet in the bathroom must be immediately adjacent to the sink. If a bathroom is added or gutted as part of the update, a 20 ampere circuit will be required per NEC 210.11(C)(3).
 - 4. **Every common hall and inside stairway** in every residential structure or dwelling unit shall be adequately lit with an illumination of at least five lumens per square foot in the darkest portion of the normally traveled stairs and passageways.
 - 5. **All exterior exits and entryways** are required to be illuminated a minimum of one footcandle at grade level for security.

6. **Exterior lighting** at garages is required to be adequate so as to not endanger health or safety. An average of one footcandle at the pavement is required. Exterior lighting must be in conformance with other city codes.
7. **Basement:** One lighting outlet is required for each 200 square feet of floor space. At least one of the required basement lighting outlets shall be switched from the head of the stairs.
8. **Smoke Detectors:**
 - a. All single-family dwelling shall have a hard-wired (120 volt electrical, not battery) battery-backup smoke detector installed near (not in) the bedrooms. If there are legal bedrooms on more than one level, the detector shall be installed on the level that has the greater number of bedrooms. If there are an equal number of bedrooms on more than one level, the detector shall be installed on the upper level near the bedrooms.
 - b. If the project includes building construction that requires a Building Permit, additional hard wired interconnected and/or battery-type smoke detectors are required per the Building Code.
9. **Metallic Light Fixtures (Luminaries):** If within five feet horizontally or eight feet vertically of grounded surfaces (metallic piping, concrete floor, etc.) must be grounded.
10. **Residential Closet Lights:** All closet lights must either be a florescent fixture (luminaries) or an enclosed incandescent fixture of the types required by the present Electrical Code. Fixtures must not be directly over the storage area in a closet; they must either be moved or eliminated and blanked off.
11. **Service conduits run in outside walls:** If a 100-ampere service is changed from fuses to circuit breakers, the meter is already outside, and the existing conduit is run in the outside wall, the conduit may be re-used. If the service is an upgrade (increase in amperage), conduit in the wall may not be re-used.

1.02 SECTION INCLUDES:

- A. Electrical work to meet requirements of Bulletin 80-1 reproduced above.
- B. Overhead Garage Door Opener: see Section 08 3323
- C. Certify Electrical Distribution: Electrician shall inspect all exposed wiring, motors, fixtures and devices for malfunction, shorts and hosing code compliance. Non-functioning and dangerous equipment and wiring shall be replaced
- D. Install new electrical to garage
- E. Provide switching for three exterior outdoor lights
- F. New electrical wiring, outlets, lighting and switching at kitchen to meet current electrical code.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Conduit and Cable: Provide materials that meet code requirements.
- C. Devices and Cover plates: Provide all White devices. Provide heavy duty residential grade devices.
- D. Smoke/CO Detectors: Hard wired w/ battery-back up type units
- E. Doorbell system: Repair existing or provide a new system containing a low voltage transformer, power connection, buzzer and front door button.
- F. Equipment Wiring: Provide the correct power supply on separate circuit, with over current protection including all connectors for the water heater, boiler, microwave, refrigerator, dishwasher
- G. Bathroom Vent Fan/Light Fixture: comply with NEC specification
 1. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.

2. Ducting: Install 4" metal duct and vent to the exterior, verify location with project manager, using a 4" hooded vent with damper.
 - a. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
 - b. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.
- H. GFCI Receptacles: Verify required locations throughout.

2.02 MATERIALS

- A. All materials shall be UL approved and/or National Electrical Code rated.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Building Codes: The extent of electrical work indicated in the Scope of Work is stated generally to indicate end result of work. The Contractor is responsible for making a thorough inspection of the site to determine the full extent of work required to achieve the end results. All electrical work must meet current building code requirements and must pass City of Saint Paul field inspection. Any work that does not meet codes or pass inspection must be corrected to the satisfaction of the city inspector at no additional cost to the Owner.
- C. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.
- D. All new wiring, when passing through living areas, shall be concealed.
- E. All receptacles and switches to be white, replace beige and other
- F. All new outlet covers and switch plates to be white
- G. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.
- H. All patching shall match the surrounding surface.

END OF SECTION

**SECTION 26 5101
LIGHTING**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Exterior
 - 1. Ceiling light at front porch
 - 2. Wall-mount light at side door
 - 3. Garage security light
- B. Basement
 - 1. (2) new porcelain ceiling fixtures at each basement space
 - 2. Light at basement stairs, switched from top and bottom
- C. First floor
 - 1. (6) ceiling lights: living room, kitchen, dining, side entry, bathroom, bedroom
 - 2. Pendant at kitchen sink
 - 3. Wall-mount light at bathroom sink
 - 4. Light at stairs to second floor, switched from top and bottom
- D. Second floor
 - 1. (3) ceiling lights: den, bedroom, bathroom
 - 2. Wall-mount light at bathroom sink
- E. Compact fluorescent bulbs per NEC energy specification

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- C. Wire mold and surface mount boxes for receptacles.
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

END OF SECTION

**SECTION 28 1600
INTRUSION DETECTION**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Provide and install a security system, to include a minimum of hardwired control panel with cellular transmitter (no phone line required), 3 hardwired keypads, three (3) Door sensors, motion detector, low temperature monitoring and siren.
- B. Include a monthly monitoring service at a rate not to exceed \$50/month.
- C. Contracts for monitoring must be month to month, not an extended period.
- D. Monitoring shall begin upon completion of construction and be paid by Owner.

1.02 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.01 ALARM CONTROL PANEL

- A. Control Panel: Modular construction with surface wall-mounted enclosure.
- B. Power supply: Adequate to serve control panel modules, remote detectors, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode for 24 hours.

2.02 INITIATING DEVICES

- A. Magnetic Switches:
- B. Motion Detectors:

2.03 SIGNAL DEVICES

- A. Alarm Bells: NFPA 72, electric single stroke, 8 inch (200 mm) bell with operating mechanism behind dome. Sound Rating: 81 dB at 10 feet (3 M).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in cable.
- C. As soon as System is installed contact HRA Project Manager Roxanne Young at Roxanne.Young@ci.stpaul.mn.us to inform her to apply for a security permit.

3.02 CLOSEOUT ACTIVITIES

- A. Demonstrate normal and abnormal modes of operation, and required responses to each.

END OF SECTION

SECTION 31 2200

GRADING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Regrade west side yard per landscape drawings
- B. Regrade around new garage and prepare for new walkways, concrete apron, and new sod.

PART 3 EXECUTION

3.01 ROUGH GRADING

- A. When excavating through roots, perform work by hand and cut roots with sharp axe.

3.02 FINISH GRADING

- A. Build up ground slope at foundation wall using clean fill.
- B. New fill shall have an approximate slope of $\frac{1}{4}$ " per foot and extend away from the foundation wall approximately five feet.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Vigorously tamp or roll new fill to achieve settled depth.
- E. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of sub grade.

END OF SECTION

**SECTION 32 1313
CONCRETE PAVING**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Garage apron, see landscape plan
- B. New walk along entire west side of house, see landscape plan
- C. West walk shall include a 36" x 36" landing (one riser height) at the new side door location

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

- A. Concrete Sidewalks: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick

2.02 FORM MATERIALS

- A. Wood form material, profiled to suit conditions.

PART 3 EXECUTION

3.01 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.

3.02 COLD AND HOT WEATHER CONCRETING

- A. Follow recommendations of ACI 305R when concreting during hot weather.
- B. Follow recommendations of ACI 306R when concreting during cold weather.

3.03 FINISHING

- A. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge: 1/4 inch (6 mm) radius.

END OF SECTION

**SECTION 32 9223
SODDING**

PART 1 GENERAL

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1.01 LOCATIONS

- A. New sod at areas of yard indicated on the landscape plan
- B. New sod at all existing bare spots
- C. Resod all areas impacted by construction activities or grading

PART 2 PRODUCTS

2.01 MATERIALS

- A. Sod: TPI, Certified Turf grass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft (100 sq m). Minimum age of 18 months, with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.

PART 3 EXECUTION

3.01 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.
- D. Water sodded areas immediately after installation. Saturate sod to 4 inches (100 mm) of soil.

3.02 MAINTENANCE

- A. General Contractor is responsible for the maintenance of sod until project closeout.

END OF SECTION

**SECTION 32 9300
PLANTS**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Quantities, types and locations indicated on the landscape plan

PART 2 PRODUCTS

2.01 PLANTS

- A. Plants: Species, size and quantity identified in Landscape Plan, grown in climatic conditions similar to those in locality of the work.

2.02 MULCH MATERIALS

- A. Mulching Material: Hardwood species wood shavings, free of growth or germination inhibiting ingredients.

PART 3 EXECUTION

3.01 RAINGARDEN INSTALLATION

- A. Remove 18 inches of soil leaving compacted 1 to 3 side slopes rising to finished grade.
- B. Deeply till and break apart basin floor
- C. Add 2 inches of leaf compost and till into soil.
- D. Finish rain garden by hand grading a flat, level basin and 3 to 1 side slope, as indicated on Landscape Plan.
- E. Add 3 inches of shredded hard wood mulch, as with slopes
- F. Install edging as indicated on Landscape Plan.
- G. Ensure that downspout runoff enters the rain garden.

3.02 PLANTING

- A. Set plants vertical according to the Landscape Plan.
- B. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.03 MAINTENANCE

- A. Provide maintenance through project close-out. Owner will pay for water.

END OF SECTION

	Location	Description	Manufacturer / Model	Finish / Sheen	Color	Notes
Lighting	Front Entry	Ceiling Mount	Westinghouse, Country Club Model 6682300		Black	Available at Menards
	Side Entry	Wall Mount	Van Buren Outdoor fixture, by Patriot		Black	Available at Menards
	Garage	Security	300 Watt DualBrite Motion Security Light		Black	Available at Menards
	Basement	Ceiling	Porcelain			(4) new
	Basement stairs	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Living Ceiling	Flush Mount	Carlton by Royce Model RFM5209ES		Pewter Finish	
	Dining Ceiling	Flush Mount	Carlton by Royce Model RFM5209ES		Pewter Finish	
	Kitchen Ceiling	Flush Mount	Carlton by Royce Model RFM5209ES		Pewter Finish	
	Kitchen pendant	Pendant	Carlton by Royce Model RMP5209ES1		Pewter Finish	
	Side entry ceiling	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Bathroom 1 ceiling	Flush Mount	Carlton by Royce Model RFM5209ES		Pewter Finish	
	Bathroom 1 vanity	Sconce	Carlton by Royce Model RV5209ES1		Pewter Finish	
	Bedroom 1	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Stairs to second floor	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Den	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Bedroom 2	Flush Mount	Twin Pack, 15"		Brushed Nickel	Available at Menards
	Bathroom 2 ceiling	Flush Mount	Carlton by Royce Model RFM5209ES		Pewter Finish	
Bathroom 2 vanity	Sconce	Carlton by Royce Model RV5209ES1		Pewter Finish		
Outlet and switch plate covers				White		
Plumbing Fixtures	Basement	Laundry Utility Sink	Single bowl, 24"		White	Fiberglass
	Basement	Laundry Faucet	74998 by Moen		Chrome	
	Kitchen	Kitchen Sink	2212 by Moen		Stainless	Available at Menards
	Kitchen	Kitchen Faucet	7825 by Moen		Chrome	Available at Menards
	Bathroom 1&2	Vanity top with integral lav	RCXX22SPW by Imperial Marble		White	XX=31 at Bath 1, XX=37 at Bath 2
	Bathroom 1&2	Lav faucet	CA84003CBN by Moen		Nickel	
	Bathroom 1&2	Toilet	Cadet Flowise by American Standard		White	
	Bathroom 1&2	Towel bar	DN6818 by Moen		Nickel	
	Bathroom 1&2	Toilet paper holder	DN6808 by Moen		Nickel	
	Bathroom 1&2	Shower rod			Nickel	
	Bathroom 1 only	Tub	2083102.020 by American Standard		White	32 x 60, Available at Menards
	Bathroom 1 only	Shower system and tub spout	82008CBN by Moen		Nickel	Available at Menards
	Bathroom 2 only	Shower enclosure	Classic 36" x 36" acrylic base and wall kit		White	Available at Menards
	Bathroom 2 only	Shower control and shower head	82006SRN by Moen		Nickel	Available at Menards
Casework	Kitchen	Cabinets per drawings	Schock, Medallion or Midcontinent	Maple, natural		Full overlay 5-piece door, flat drawer
	Kitchen	Door hardware	Pull H63 by Schrock		Brushed Nickel	
	Kitchen	Drawer hardware	Pull H63 by Schrock		Brushed Nickel	
	Kitchen	Countertops	1755-1 by Wilsonart		Canyon Black	
	Bathroom 1&2	Vanity	MDW-XX21 by Pace	Maple, natural		XX=30 at Bath 1, XX=36 at Bath 2
	Bathroom 1&2	Medicine cabinet	SMC-2530	Maple, natural		
	Bathroom 1&2	Cabinet hardware	Pull H63 by Schrock		Brushed Nickel	

Interior Finishes	Ceilings Throughout	Ceiling paint	Sherwin Williams Low VOC	Flat	Ceiling White	
	Trim Throughout	Trim paint	Sherwin Williams Low VOC	Satin	Pure White SW7005	
	Living Room	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
	Kitchen & Dining	Wall paint	Sherwin Williams Low VOC	Satin	Bittersweet Stem SW7536	
	Rear entry and basement stair	Wall paint	Sherwin Williams Low VOC	Satin	Nacre SW6154	
	Basement stair treads & risers	Trim paint	Sherwin Williams Low VOC	Satin	Ethereal Mood SW 7639	
	Bathroom 1	Wall paint	Sherwin Williams Low VOC	Satin	Bittersweet Stem SW7536	
	Bedroom 1	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
	Second floor stairs	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
	Den	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
	Bedroom 2	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
	Bathroom 2	Wall paint	Sherwin Williams Low VOC	Satin	Bittersweet Stem SW7536	
	Closets	Wall paint	Sherwin Williams Low VOC	Egg shell	Nacre SW6154	
Floors Basement	Concrete floor paint			Gray		
Walls Basement- exterior	Masonry	DryLock				
Tile & Carpet	First floor flooring	Porcelain tile	Cliff Pointe by DalTile		Rock	Available at Menards
	Second floor flooring	Porcelain tile	Cliff Pointe by DalTile		Rock	Available at Menards
	Bath 2 walls	Porcelain tile	Porcealto by DalTile		Rosa Antico	Available at Menards
	Carpet flooring where indicated	Nylon carpet	Serenity Garden by Shaw		Barn Wood	Available at Seestedt's
Exterior Finishes	Both house and garage:					
	Body	Color 1	Sherwin Williams Low VOC		SW6207 Retreat	
	Door and Window Trim	Color 2 (trim)	Sherwin Williams Low VOC		SW7012 Creamy	
	Doors	Color 3	Sherwin Williams Low VOC		SW7548 Portico	
	Roof	Shingles	GAF Elk Timberline 30 yr HD		Weatherwood	
	Gutters/Downspouts	Prefinished Aluminum			Tan	