SECTION 00 0101

HRA PROJECT TITLE PAGE

HRA MASTER SPECIFICATION 851 3rd St

NEIGHBORHOOD STABILIZATION PROGRAMS AND REBUILDING PLAN 2009-2013

District 5

PDF processed with CutePDF evaluation edition www.CutePDF.com

The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Marty McCarthy
651-266-6552
Marty.McCarthy@ci.stpaul.mn.us

HRA Scope Writer
MarpeDevelopment
2233 Hamline Ave N
Roseville, MN 55113 Suite 125
Mark Pasvogel Jr
651-226-5060
Mark@marpedevelopment.com

HRA Construction Manager
MarpeDevelopment
2233 Hamline Ave N
Roseville, MN 55113 Suite 125
Mark Pasvogel Jr
651-226-5060
Mark@marpedevelopment.com

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 for Bidders

00 4101 - HRA Bid Submission Documents

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 and Closeout Requirements

01 7419 - Construction Waste Management and Disposal

01 7700 - Closeout Procedure and Submittals

Division 02 -- Existing Conditions

02 4100 – Demolition

02 8200 – Asbestos Remediation

02 8313 – Lead Hazard Control Activities

Division 03 -- Concrete

03 0100 - Maintenance of Concrete

03 3000 - Cast-in-Place Concrete

Division 04 -- Masonry

04 0100 - Maintenance of Masonry

Division 06 -- Wood, Plastics, and Composites

06 1000 - Rough Carpentry

06 2000 - Finish Carpentry

Division 07 -- Thermal and Moisture Protection

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 4646 - Fiber Cement Siding

07 6200 - Sheet Metal Flashing and Trim

07 7123 - Manufactured Gutters and Downspouts

Division 08 – Openings

08 1100 - Exterior Insulated Metal Doors and Frames

08 3323 - Overhead Garage Doors

08 5313 - Vinyl Windows

Division 09 -- Finishes

09 2116 - Gypsum Board and Durarock Installation

09 3000 - Tiling

09 6800 - Carpeting

09 0160 - Hardwood Flooring Restoration

09 9000 - Painting and Coating

09 9723 - Concrete and Masonry Coatings

Division 10 -- Specialties

10 5623 - Closet Storage Shelving

10 7446 - Window Wells

Division 11 -- Equipment

11 3100 - HRA Residential appliances

Division 12 -- Furnishings

12 1110 - Mail box and house numbers

12 1111 - Bathroom Furnishings

12 3530 - Residential Casework

Division 13 -- Special Construction

Division 14 -- Conveying Equipment

Division 21 -- Fire Suppression

Division 22 -- Plumbing

22 3000 - Plumbing Equipment

22 3300 - Fuel Fired Domestic Hot Water Heater _Hybrid Water Heater_

22 4000 - Plumbing fixtures and piping

Division 23 -- Heating, Ventilating, and Air-Conditioning (HVAC)

23 0000 - Residential Ventilation

23 5214 - Gas-Fired Ultra Efficient Boiler

23 6210 - Multi Zone Ductless Mini Split A_C

Division 26 -- Electrical

26 0001 - Power, wiring and devices

26 5101 - HRA Lighting

Division 27 -- Communications

Division 28 -- Electronic Safety and Security

28 1600 - Intrusion Detection

Division 31 -- Earthwork

31 2200 - Grading

Division 32 -- Exterior Improvements

32 9223 - Sodding

32 9300 - Plants

Division 33 -- Utilities

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 traducer 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 HRA Master Specification **851 3rd St, St Paul**. This project is funded by Neighborhood Stabilization Program through the 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: Marty McCarthy
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Phone Number: 651-266-6552
Email: marty.mccarthy@ci.stpaul.mn.us

1.05 OWNER'S CONSULTANT(S)

Owner's Project Specification Consultant: Marpedevelopment

1. Specification Writer's Name: Mark Pasvogel Jr
2. Address: 2233 Hameline Ave N, Roseville MN 55113 Suite 125
3. Phone Number: 651-226-5060
   Email: Mark@marpedevelopment.com

A. Owner's Construction Manager Consultant: Marpedevelopment

1. Construction Manager's Name: Mark Pasvogel Jr
2. Address: 2233 Hameline Ave N, Roseville MN 55113 Suite 125
3. Phone: 651-226-5060
4. Email: Mark@marpedevelopment.com

1.06 IMPORTANT BID DATES

A. Bids Issued: 7/20/12

B. Mandatory Pre-Bid Site Tour: Insert 07/226/2012 from 10:00 am to 11:30 pm

C. **BID DUE DATE ON OR BEFORE:** 08/10/2012 no later than insert time 4:00 PM local time.

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: The Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100

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.

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

HRA LINE ITEM BID SHEET

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

DIVISION 02 - EXISTING CONDITIONS

024100 - Demolition	$_____
028200 - Asbestos Remediation	$_____
028313 - Lead Hazard Control Activities	$_____

DIVISION 03 - CONCRETE

033000 - Cast in Place Concrete	$_____

DIVISION 04 - MASONRY

040100 - Maintenance of Masonry	$_____

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

061000 - Rough Carpentry	$_____
062000 - Finish Carpentry	$_____

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

072119 - Foamed-In-Place Insulation	$_____
072126 - Blown Insulation	$_____
072500 - Weather Barriers	$_____
072700 - Air Barrier System	$_____
073113 - Asphalt Shingles	$_____
074646 - Fiber Cement Siding	$_____
076200 - Sheet Metal Flashing and Trim	$_____
077123 - Manufactured Gutters and Downspouts	$_____

DIVISION 08 - OPENINGS

081100 - Exterior Insulated Metal Doors and Frames	$_____
083323 - Overhead Garage Door	$_____
085313 - Vinyl Windows	$_____

DIVISION 09 - FINISHES

090120 - Repair of Plaster and Gypsum Board	$_____
092116 - Gypsum Board Assemblies	$_____
093000 - Tiling	$_____
090160 - Hardwood Flooring Restoration	$_____
099000 - Painting and Coating	$_____
099723 - Concrete and Masonry Coatings	$_____

DIVISION 10 - SPECIALTIES

105623 - Closet Storage Shelving	$_____
107446 - Window Wells	$_____

DIVISION 11 - EQUIPMENT

113100 - HRA Residential Appliances	$_____

DIVISION 12 - FURNISHINGS

121110 - HRA Mail Box and House Numbers	$_____
121111 - Bathroom Furnishings	$_____
123530 - Residential Casework	$_____

DIVISION 22 - PLUMBING

223000 - Plumbing Equipment	$_____
223300 - Fuel Fired Domestic Hot Water (Hybrid Water Heater)	$_____
224000 - Plumbing Fixtures	$_____

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

23 0000 - Residential Ventilation	$_____
23 5214 - Gas-Fired Ultra Efficient Boiler	$_____
23 6210 - Multi Zone Ductless Mini Split A_C	$_____

DIVISION 26 - ELECTRICAL

261001 - Power, Wiring and Devices	$_____
265101 - HRA Lighting	$_____

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

281600 - Intrusion Detection	$_____

DIVISION 31 - EARTHWORK

312200 - Grading	$_____

DIVISION 32 - EXTERIOR IMPROVMENTS

329223 - Sodding	$_____
329300 - Planting	$_____

END OF SECTION

SECTION 01 0010

HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBLITY

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 REQUIRMENTS

2.01 ENERGY CONSERVATION

A. General

1. This property must go through Xcel Energy's Home Performance with Energy Star program.
2. This means that all insulation and HVAC work must be performed by Xcel Energy's approved contractor list.
3. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be held responsible for all work completed.
4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. Provide Energy Efficient Lighting
   1. All fixtures should have energy efficient CFLs or LED lamps that are within the maximum wattage allowable.
   2. The Owner and Project Manager shall select specific locations of fixtures and switches in each area.
   3. All lighting fixtures will be purchased new, unless otherwise indicated in the scope of work.
   4. No plastic lighting fixtures are acceptable.
   5. No fluorescent tube light fixtures are acceptable in living spaces.
   6. Provide light bulbs for all fixtures. All light fixtures are to have color corrected bulbs. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
   7. Provide and install lighting fixtures and switches.
   8. Review fixtures with Owner and Project Manager prior to installation.
   9. All electrical outlets and cover plates are to be replaced throughout the building, unless otherwise indicated in the scope of work.

2.02 ENERGY EFFICIENT APPLIANCES

A. All appliances must be purchased new and be Energy STAR certified or high efficiency models when Energy STAR certification is not possible.

B. High-efficiency appliances meet the following standards:

C. Clothes washers must have a CEE Tier 2 or higher, a minimum Energy Factor of 2.0 or greater, and a water factor 6.0 or less.

D. Clothes Dryers must be a minimum 7.0 cubic feet capacity, have a sensor dry system, and have 5 Temperature Levels - High, Medium High, Medium, and Low & Ultra Low

E. Dishwashers must be CEE Tier 2 or higher, with a minimum Energy Factor of 0.68 or greater, and a maximum annual energy use of 325 kilowatt-hours or less.

2.03 LOW FLOW PLUMBING FIXTURES

A. New plumbing fixtures should be water conserving fixtures with a faucet flow rate of 2.0 GPM or less and a commode flush rate of 1.3 GPF or less.

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 manufacturers 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 REQUIRMENTS

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,

A. If asbestos is found on this project follow the necessary requirements for proper abatement. A contractor must be licensed by the Minnesota Department of Health to perform asbestos-related work. Asbestos-related work includes the work area preparation, enclosure, removal, or encapsulation of asbestos-containing material.

6.02 LOW VOC, see section 01 6116

6.03 LEAD BASED PAINT

A. General Information
   1. 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".
   2. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulation requirements.
   3. All projects receiving over $25,000 of HUD funds per unit for rehabilitation must abate all Lead-based paint hazards.

B. **Removal Procedures**
   1. Risk Assessments:
      a. A Risk Assessment must be completed by a licensed Lad-Based Paint Risk Assessor on all properties built before 1/1/78 (excluding emergency rehab cases).
      b. The Owner or Project Manager arranges and pays for the Risk Assessment.
      c. The Risk Assessment report will summarize the nature and scope of known lead-based paint hazards.

C. Scope of Work: The Project Manager prepares the Scope of Work incorporating lead hazard reduction work based on the Risk Assessment report.

D. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed Lead Abatement Supervisors are allowed to bid on projects involving lead hazard reduction work.

E. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Owner and Project Manager. It 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.

F. The selected General Contractor performs the work, using lead hazard control measures where indicated in the Scope of Work.

G. The General contractor will notify the Project Manager when work is complete.

H. A Clearance Test for lead-based paint dust is required upon completion of the Lead Based Paint Hazard Reduction Project Plan.
   1. The Clearance Test must be performed by a State licensed Clearance Examiner.
   2. It is the responsibility of the General Contractor to arrange and pay for any and all of the Clearance Tests that may be required. If the Clearance Test indicates lead levels lower than acceptable amounts, the General Contractor's lead reduction and control work is complete and the final construction payment application may be processed.
   3. If the Clearance Test is found to contain lead levels above an acceptable amount, the General Contractor must clean the work area again and request another Clearance Test at no additional cost to the Owner, until the Clearance Test is passed.
   4. The Final payment application will not be processed until all areas are determined to be free of hazardous lead levels.

I. Additional Information:
   1. General Contractor must obtain and review the following documents, which provide more detailed information on lead paint hazards and reduction and control measures:
      a. Minnesota Department of Lead program, "Safely Working with Lead While Remodeling the Older Home" pamphlet series. 1-651-215-0890.
         1) U.S. Environmental Protection Agency, "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers, and Schools" 21 page booklet. <http://www.epa.gov/lead/pubs/rrpamph.pdf>
         2) U.S. Department of Housing and Urban Development, "Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work:" English and Spanish versions available. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/healthyhomes/lead>
         3) U.S. Department of Housing and Urban Development, "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing". October 1996. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/lbp/hudguidelines>
         4) U.S. Environmental Protection Agency, "Model Lead-Based Paint Abatement Worker Training Course." English and Spanish versions available. <http://www.epa.gov/lead/pubs/abateworker.htm>
         5) U.S. Environmental Protection Agency, "Lead Safety for Renovation, Repair, and Remodeling: Student Manual". <http://www.epa.gov/lead/pubs/rrp_8hr_studentmanual_feb09.pdf>

J. Abatement:
   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.

6.04 WASTE MANAGEMENT, see section 01 7419

PART 6 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. 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.

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:

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 and/or product data 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. Masonry and mortar color samples.
   3. Windows.
   4. Doors and hardware.
   5. Bathroom accessories.
   6. Kitchen cabinets.
   7. Plumbing fixtures.
   8. Lighting fixtures.
   9. Foundation waterproofing.
   10. Stair railings.
   11. Tile.
   12. Carpet.
   13. Interior trim samples.
   14. Exterior trim and siding samples.

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 sumps on the bottom of the pay application and refered 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

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 Owner'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, trowel able, 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 fire stopping 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.scscertified.com.
      d. Current SCS Indoor Advantage Gold certification; www.scscertified.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 Green Seal GS-36.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current Green Seal 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. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 GENERAL

A. Incorporate procedures and processes during construction and prior to occupancy as described herein

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 nonhazardous.

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.

3.07 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Review Section 01 7700 CLOSEOUT PROCEDURES AND SUBMITTALS.

C. Notify Construction Manager when work is considered ready for Substantial Completion.

D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Construction Manager's review.

E. Notify Construction Manager when work is considered finally complete.

F. Complete items of work determined by Construction Manager's final inspection.

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 SUBMITALS

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 MANAGMENT 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

2.01 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.

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/nspconstructiondocs/

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) Toilets
            (c) Faucets
            (d) Shower head(s)
            (e) Dishwasher
            (f) 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. 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 from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

2.02 ENERGY MODELING (NEC)

A. Contractor must work with the Neighborhood Energy Connection (NEC) who will:
   1. Create an energy model with the building plans and specifications to show the building's projected energy performance in the design stages
   2. Conduct a mid-construction pre drywall thermal enclosure inspection

SECTION 01 8113

SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY CONSERVATION

A. This property must go through Xcel Energy's Home Performance with Energy Star program.
   1. All insulation and HVAC work must 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 held responsible for all work completed.
   3. General Contractors will be responsible for submitting documentation required of the Home Performance with Energy Star program and will be responsible for achieving Energy Improvements outlined by Neighborhood Energy Connection.
   4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
   5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. 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.

C. 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.
   2. High-efficiency appliances meet the following standards

1.02 QUALITY ASSURANCE

A. The Neighborhood Energy Connection (NEC), through its Peak Performance Homes custom consulting program, certifies independent consultants who provide developers with specific information about how to increase the energy efficiency of their buildings.

PART 2 PRODUCTS

2.01 LOW-EMITTING MATERIALS

A. 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.
   3. Drawer boxes shall be plywood with dovetail joinery.
   4. Cabinets to be constructed with maple; full overlay doors and flat or 5 pieces. Alternative styles may be approval by the HRA.

PART 3 EXECUTIONS

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.
   1. Replace all air filters immediately prior to Substantial Completion with the specified permanent filters.

END OF SECTION

SECTION 02 4100

DEMOLITION

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

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

PART 3 EXECUTION

2.01 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.
   1. Inform Project Manager of potential strategies to reuse construction material.
      a. Only move forward with reusing of construction materials with Project Manager's consent.

2.02 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

2.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.

B. Remove existing work as indicated and as required to accomplish new work.

C. Services (Including but not limited to Site, Building Interior, Building Exterior, HVAC, Plumbing, and Electrical): Remove existing systems and equipment as indicated.

D. **Interior Demolition to Include:**

   1. FRONT PORCH REMOVAL: Temporary brace porch roof. Remove porch floor decking, floor joists, box beam header, stairs, and lattice. Detach columns and concrete block pillars and store for reuse.
      Location: Exterior, Front Porch, per plans

   2. REMOVE EXTERIOR TRIM: Fascia board, window/door trim, or soffit that is damaged, rotted or deteriorated.
      Location: Exterior, soffit, fascia, and window/door trim. Only if it is damaged, rotted, deteriorated, or missing.

3. CARPET REMOVAL: Remove all carpeting throughout the dwelling. Include carpet tack strips, staples, and padding in removal.
Location: Throughout the house

4. PLASTER WALL REMOVAL: Remove plaster from walls in the main level kitchen, laundry, bathroom, living room exterior wall that is covering the existing window, and the living/dining room side of the center hallway to dining/living room marriage wall in order for new ductwork, electrical, and plumbing to be run to the 2nd floor.
Location: Main level kitchen, laundry, bath, living room, dining room. See plans.

5. BASE SHOE REMOVAL: Remove all base shoe molding.
Location: Throughout the house

6. REMOVE INTERIOR DOOR HARDWARE: Remove interior door knobs and hinges in preparation for replacement.
Location: Main level interior doors

7. REAR PORCH REMOVAL: Temporary brace porch roof. Remove porch floor decking, floor joists, box beam header, stairs, and lattice
Location: Rear entry porch

8. SIDING REMOVAL: Remove all layers of siding, vinyl & wood, down to the wall sheathing
Location: Exterior walls

9. UNDERLAYMENT REMOVAL: Remove luon plywood underlayment.
Location: Throughout the house

10. WINDOW TREATMENT REMOVAL: Remove all window treatments and window blinds from throughout the house. Include the removal of any brackets, clips, and nails from the walls or casing.
Location: Throughout the house

11. COUNTERTOP REMOVAL: Remove countertop from base cabinet
Location: All kitchens, bathrooms, and any in the basement

12. CABINET, VANITY, AND SHELVING REMOVAL: Remove wood cabinets, shelving, and vanities from the house
Location: Throughout the house

13. INTERIOR DOOR REMOVAL: Remove all interior doors, frames, and jambs on the 2nd floor and the basement to rear entry landing door. Also, remove the interior door slab going from the front foyer to the living room, and the interior door slab going from the dining room to the main level hallway, and from the kitchen to the dining room.
Location: Throughout the house, See plans

14. VINYL FLOORING REMOVAL: Remove all vinyl flooring in the house
Location: Throughout the house

15. COMPLETE INTERIOR WALL: Remove non-bearing wall and coverings, including studs and wall coverings both sides if present
Location: See Proposed Plans

16. PLASTER CEILING REMOVAL: Remove plaster ceilings to the floor joists in order for new ductwork, electrical, and plumbing to be run to the 2nd floor.
Location: Main level kitchen, laundry, & bathroom

18. GARAGE REMOVAL: Complete garage removal including floor slab and apron.
Location: Exterior, rear yard

19. BASEMENT GUTTING: Remove all non-bearing framing members, drywall, cabinets, floor coverings etc. Leaving bearing posts, stairs, basement stairway walls, and 1st floor joists exterior foundation walls, concrete floor, electrical service, plumbing main, ECT.
Location: Basement

20. BUILT IN DRESSER REMOVAL: Remove the built in dresser system in the Southeast bedroom closet
Location: Main level Southeast bedroom

21. SIDEWALK REMOVAL: Break up brick or concrete sidewalk with pneumatic tool and haul away
Location: Exterior, front, side & rear yard sidewalks. See site plan

22. REMOVE WALL TILE: Remove tile or backsplash materials from all kitchen and bathroom walls.
Location: Main level kitchen and bathroom

23. REMOVE EXTERIOR RAILINGS: Remove all wood or metal railings from the exterior of The dwelling and/or yard

24. CHIMNEY REMOVAL: Tear out existing chimney from roof to basement footing,
Location: Chimney from roof to basement footing

25. ASPHALT OR FIBERGLASS SHINGLE REMOVAL: Remove all asphalt and/or wood Shingles, felt paper, vents, plumbing caps, and nails down to the roof decking.
Location: Exterior dwelling roof

26. TILE FLOOR REMOVAL: Remove tile flooring throughout the house
Location: Throughout the house

27. PANELING REMOVAL: Remove paneling wall coverings throughout the house
Location: Throughout the house

28. DROP SOFFIT REMOVAL: Remove all drop soffits in the kitchen and main level laundry rooms. Maintain any structural headers beneath the drop soffits.
Location: Main level kitchen and laundry rooms

29. APPLIANCE REMOVAL: Remove all existing appliances throughout the house and Recycle/dispose of in an approved manner. To include: microwaves, dishwashers, Ovens/ranges, refrigerators, washers and dryers.
Location: Throughout the house

30. GUTTER/DOWNSPOUT REMOVAL: Remove all existing edge mounted gutters and downspouts from the exterior of the dwelling
Location: Exterior of dwelling

31. CHAINLINK FENCE REMOVAL: Remove all chain link fencing, posts, and chain link fence remnants from the property.
Location: Exterior

32. PORCH CEILING REMOVAL: Remove porch ceiling on rear porch only.
Location: Exterior, rear porch ceiling

33. WALLPAPER REMOVAL: Remove all wallpaper and adhesive from walls where present Throughout the dwelling.
Location: Throughout the house

SECTION 02 8200

ASBESTOS REMEDIATION

PART 1 GENERAL **$_____**

1.01 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. When work areas include both friable and no friable types of ACM, Contractor's shall prepare work area using procedures for friable asbestos removal.

1.02 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.

PART 3 EXECUTION

2.01 LOCATIONS

A. Review the Asbestos report, included in this Manual, for locations.

B. Basement

END OF SECTION

SECTION 02 8313

LEAD HAZARD CONTROL ACTIVITIES

PART 1 GENERAL **$_____**

1.01 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.

1.02 PRICE AND PAYMENT PROCEDURES

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

1.03 SUBMITTALS

A. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Construction Manager and Project Manager. It 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

1.04 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.

PART 3 EXECUTION

2.01 ABATEMENT

A. When the Risk Assessment process determines that a Project contains a lead-based paint hazard, the General Contractor shall comply with the abatement measures defined by 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

and by the 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

and lead hazard reduction methods defined in Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700

http://www.health.state.mn.us/divs/eh/lead/rule.html

   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.

2.02 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. 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 risk assessor from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

B. The Clearance Technician will conduct a visual assessment of completed work, take dust samples, have dust samples analyzed, and prepare a Clearance Report.

C. 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.

D. 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.

2.03 LOCATIONS

A. Review Lead Report, attached in this Manual. Contractor is responsible for ensuring treatments meet abatement requirements as defined in federal and state statute.

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL **$_____**

1.01 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. CONCRETE APRON: Fill with up to 4” gravel, form with 4” lumber, place #10 WWM and expansion joints, pour and finish driveway apron.

Location: Exterior, front of garage

B. MONOLITHIC FOOTINGS AND SLAB (SINGLE POUR): Dig, form, place reinforcement, 4" gravel fill, 6 x 6 #10 woven wire mesh. Pour and finish concrete, Bottom of slab footing 12", top of footing below slab 12" wide, Slab thickness 4", 1/2" steel bars drilled into existing building, two 1/2" continuous steel bars in footing. 22’ W x 22’ D.

Location: Exterior, garage slab

C. PARTITION BLOCK: Install one course of 6” partition block on existing monolithic footing with ½” anchor bolts 12” from each end and every 6’ after. Core fill around bolts.

Location: Exterior garage slab

D. SIDEWALK, CONCRETE INSTALL: Install 4” gravel, 4” concrete, leveling, forming, pouring, and finishing, remove forms.

Location: Exterior, front, side, and rear yard. See Site Plan

E. Repair surface defects, including tie holes, immediately after removing formwork.

F. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
1. "Wood float" as described in ACI 302.1R; Garage Floor/Apron.
2. "Steel trowel" as described in ACI 301.1R; Basement Floor.

G. PLINTH BLOCKS: Located at basement floor to support floor joist support post, to meet city code. Install plinth blocks on new strip footings. Ensuring a positive connection from strip footing to plinth block and plinth block to bearing post.

Location: Basement on new footings

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 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. REPOINT BRICK WALL: Cut joints in existing block wall and re-point; Re-point with Type N mortar or less.

Location: Interior and exterior foundation walls as needed

B. 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. Premoisten 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.

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
   2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
   3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Lumber fabricated from old growth timber is not permitted.

C. Provide wood harvested within a 500 mile (805 km) radius of the project site; see Section 01 6000 for requirements for locally-sourced products.

D. Lumber salvaged from deconstruction or demolition of existing buildings or structures is permitted in lieu of sustainably harvested lumber provided it is clean, denailed, and free of paint and finish materials, and other contamination; identify source; see Section 01 6000 for requirements for reused products.

E. Lumber fabricated from recovered timber (abandoned in transit) is permitted in lieu of sustainably harvested lumber, unless otherwise noted, provided it meets the specified requirements for new lumber and is free of contamination; identify source.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes.

B. Moisture Content: S-dry or MC19.

C. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
   1. Grade: No. 2.

D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   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.
   2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.

B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
   1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.

C. Building Paper: Water-resistant Kraft 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.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

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 member's 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.

E. 2" X 4" WOOD STUDS EXTERIOR: Frame bearing wall, exterior: green treated sole plate with sill seal foam, two 2" x 4" top plate. Include headers for doors and window. Studs at 16" O.C. The framing materials for this item have been pre-purchased by the HRA. Please include all necessary fasteners and labor. **The framing and sheathing materials for this item have been pre-purchased by the HRA.**

Location: Garage, See proposed plans

F. GARAGE SHEATHING: Install ½" OSB sheathing on new framed walls, gables, and roof with steel plywood clips. **The framing and sheathing materials for this item have been pre-purchased by the HRA.** Please include all necessary fasteners and labor.

Location: Garage, See proposed plans

G. INSTALL SUBFLOOR: Install Plywood CDX, glued and nailed to joists, T & G ¾" sub floor.

Location: 1st & 2nd floors where masonry chimney is to be removed & where interior walls are to be removed.

H. DWELLING SHEATHING: Install 3/4" OSB sheathing over new framing for window or door addition or subtraction locations, roof location where chimney is to be removed.

Location: Throughout the dwelling. See plans.

I. TRUSS ROOF: Gable roof trusses, shop built by others and delivered to job, placed by hand, tie down straps, includes 2 gable ends 24" OC. The framing materials for this item have been pre-purchased by the HRA. Please include all necessary fasteners and labor.

Location: Garage roof

J. PORCH CEILING: Install an oak beaded ceiling, center beaded one side and center V-joint other side 5/8” x 1 1/2” porch ceiling.

Location: Exterior, rear porch ceiling

K. 2” X 4” WOOD STUDS INTERIOR: Non- bearing wall: Sole plate, one cap, framing for interior doors, closets, and corners; 16” OC, 2” x 4” framed non-bearing wall

Location: See plans for new interior wall locations

L. WOOD BEAM OR HEADER: Install solid, properly sized, wood beam or header, on new 8” round fiberglass columns, with construction grade pine.

Location: Exterior, front & rear porch

M. DECK SURFACE: Install Douglas fir, tongue & groove porch floor decking on the porch floor. Deck laid right angles to joists; 1/8” gap, installed with approved fasteners, and sealed 2 coats of approved weather-proof sealer prior to installation.

Location: Exterior, front & rear porch

N. CEDAR BAND: Install porch floor perimeter cedar band AND porch header trim on all three sides of new porch roof beam or header.

Location: Exterior, front & rear porch

O. POSTS AND COLUMNS: Install fiberglass 8” round colonial portico column with base and capitols.

Location: Exterior, front & rear porch. See Proposed Plans

P. ATTIC SCUTTLE: Cut in and frame a 22 1/2” W x 48” L attic scuttle hole to access the peak attic.

Location: 2nd floor & attic

Q. 2” X 4” EXTERIOR BEARING WALL FRAMING: 16” OC, 2” x 4” framed bearing wall. Properly sized headers, sill plates, cripples, trimmers, and king studs to meet building code.

Location: All window or door openings that are to be altered

END OF SECTION

SECTION 06 2000

FINISH CARPENTRY

PART 1 GENERAL **$_____**

1.01 RELATED SECTIONS

A. See Section 09 9000 Painting and Coating, for trim finish and color.

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 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled as specified in Section 01 6000.

C. Provide wood harvested within a 500 mile (805 km) radius of the project site.

2.04 FABRICATION

A. Shop assembles work for delivery to site, permitting passage through building openings.

2.05 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. Finish work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards, Section 5 - Finishing for Grade specified and as follows:

PART 3 EXECUTION

3.01 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Use finish nails of sufficient length to penetrate framing 1".

D. Miter all lap joints, and break all lap joints over framing.

E. 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.

F. TRIM EXISTING DOOR OPENING: Install casing on one side only on an exterior door trim. Size and profile to match that of the existing on the main level.

Location: Exterior doors

G. WOOD HANDRAIL: Install an oak graspable handrail on standard hardware, spaced no more than 6’ apart, at a height of 34” – 38” off of the stair tread to meet code. Install returns back to the wall on all handrails.

Location: All stairways

H. BASE: Replace all base trim on the 2nd level. Install base trim where missing damaged, where wall board is to be removed, or on new wall locations on the main level. Install base at the height as the existing. Router to match the profile of existing base on the main level. All base sizes & styles should match the base and trim on the main level.

Location: Throughout the dwelling

I. PRE-HUNG DOOR: Install an Interior 1-3/8", 6-panel, hollow core door, 2 sides casing, and privacy lock. Door unit to be finished white to match the paint color of the rest of the millwork. 6-panel door style to match that of the existing main level interior doors.

Location: Main floor basement to rear entry landing door, main level laundry door, and all interior doors on the 2nd floor.

J. CASING/WIWNDOW STOOLS & APRON: Install casing trim where missing, damaged, or on new wall, window or door locations. Router to match the profile of existing casing on the main floor. All casing sizes & styles should match in each room location. All casings should match the main floor casing detail.

Location: Throughout the dwelling

K. BASE SHOE: Install ½" x ¾" base shoe on all base, where tile, sheet vinyl, or hardwood flooring is specified on the plans.

Location: Throughout the dwelling

L. WINDOW/DOOR EXTENSION JAMBS: Provide & install quality pine window extension jambs for new full frame replacement windows and exterior door jambs as needed.

Location: Throughout the dwelling. See plans for window & door locations.

M. SPINDLED OPEN RAILING: Install open spindled guard railing around the perimeter of the staircase at the top of the 2nd floor. Include newel posts, birch handrail with easement and newel cap, and pine balusters.

Location: 2nd floor staircase perimeter

N. REPAIR BUILT-IN BUFFET: Adjust the drawers for operation and repair the doors as needed. Remove & replace the hinges, knobs, and pulls and prepare buffet set for painting. Knobs, pulls, and hinges to be chosen by the project manager.

Location: Dining Room

O. WOOD VENEER: Install a paint grade ¼" wood veneer on the openings in which interior door slabs and hardware are to be removed, or on openings in which interior door slabs have previously been removed.

Location: Front entry to living room, dining room to main level hallway, and both openings in the kitchen.

P. INTERIOR DOOR HARDWARE: Replace the interior door hardware on the main level interior doors that are to remain. Install a door knob protector plate to cover the existing knob bores in the door, and then install the new knob. Install new hinges on the door slab and jamb of like size to that of the existing. Project manager to choose the style and finishes of the interior door hardware.

Location: Main level interior doors that are to remain

Q. HOOKSTRIP: Install two maximum length hook strips at the rear entryway. Install on the East exterior wall and the basement marriage wall. Install coat hooks o the new hook strip spaced 6" apart over the length of the hook strip. Project manager to choose the style and finish of the hooks. Hook strip should match in color and wood species as that of the millwork used throughout the house.

Location: Rear entryway East exterior wall and basement marriage wall

END OF SECTION

SECTION 07 2119

FOAMED-IN-PLACE INSULATION

PART 1 GENERAL **$_____**

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.

3.02 LOCATION

A. Insulate and air seal to rim joist cavities to an R-value of R-19.

1. SIDE ATTIC INSULATION: Install closed cell foam insulation to maximum depth on the side attic exterior walls & roof slants.

Location: 2nd Floor side attics

END OF SECTION

SECTION 07 2126

BLOWN INSULATION

PART 1 GENERAL **$_____**

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

B. Dense Pack Insulation: Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pours and bulk for pneumatic placement.
   1. R-Value: 19 if possible
   2. Density: 3.5 Lbs. per Cubic Foot for the entire cavity

C. Ventilation Baffles: Formed plastic.

PART 3 EXECUTION

3.01 INSTALLATION-PLEASE REFER TO NEC SPEACIFICATIONS

1. PEAK ATTIC INSULATION: Blow in cellulose in peak attic to R-50 using blown in cellulose insulation.

   Location: Peak Attic

2. ATTIC HATCH PANEL: Attic access hatch ceiling panel shall be insulated to R-50 and an insulation dam shall be constructed around the opening. Opening shall be weather stripped and secured with a latch to provide for a tight seal.

   Location: 2nd floor & attic.

3. DENSE PACK WALL INSULATION: Drill, dense pack insulate, and plug all exterior wall cavities from the exterior of the dwelling with cellulose insulation. Perform insulation work once both layers of siding have been removed.

   Location: Dwelling exterior walls throughout

4. FIBERGLASS BATT INSULATION: Install fiberglass batt insulation between all exterior wall stud cavities or, ceiling collar cavities that are opened during the demolition phase of construction, or new exterior framed walls. The General Contractor is required to call the NEC for inspection prior to installing drywall.

   Location: Throughout the dwelling.

A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.

B. Drill 2 inch (50 mm) diameter insulation access ports in fascia boards to permit equipment access.

C. Place insulation pneumatically to completely fill stud, joist, and rafter spaces.

D. Pour insulation to completely fill stud, joist, and rafter spaces to a density of 3.5 lbs. per cubic foot per cavity.

E. Completely fill intended spaces. Leave no gaps or voids.

F. Carefully seal all drilled holes with wood or foam plugs and patch all holes to match surrounding materials if the surface is exposed.

G. In balloon framed houses insures that blown cellulose is blocked from entering floor cavities such as second floor flooring.

END OF SECTION

SECTION 07 2500

WEATHER BARRIERS

PART 1 GENERAL **$_____**

1.01 UNIT PRICES

A. Tyvek material has been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Siding
   2. **Pre-purchased materials:**
      A. Tyvek House wrap

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Weather Barrier Membrane: Spun bonded polyolefin, non-woven, non-perforated, weather barrier
   1. Manufacturer: DuPont Tyvek Home Wrap 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

E. Interior Vapor Retarder: 6 Mil heavy plastic (polyethylene) sheeting
   1. On inside face of masonry and concrete walls use vapor retarder sheet, self-adhesive type,
      a. Install to cover ground in crawl space and 6" up foundation walls
      b. Overlap seams by 2' and secure with Tyvek tape.

PART 3 EXECUTION

3.01 INSTALLATION-REFER TO NEC SPECIFICATIONS-

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

B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer’s recommendations.

D. 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.

E. HOUSE WRAP: Install Tyvek house wrap on exterior walls and gables prior to siding. Tyvek house wrap material has been pre-purchased by the HRA for this project. Provide fasteners, house wrap tape, and labor.

Location: Exterior, siding house and new garage. See Plans.

END OF SECTION

SECTION 07 2700

AIR BARRIER SYSTEM (SEALING OF BYPASSES)

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Minnesota.

PART 2 PRODUCTS

2.01 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]
   1. Multipurpose construction adhesives: 70 g/L

PART 3 EXECUTION

3.01 INSTALLATION

A. SEAL ATTIC BYPASSES: Seal all attic bypasses to include, but not limited to, chimneys, soil stacks, end walls, dropped ceilings, open plumbing walls, round duct work, electrical work, and attic access points. Seal all bypasses prior to insulating the attic.

Location: Attic

B. AIR CHUTES: Install baffles or chutes between all rafters to allow for air movement prior to insulating the attic.

Location: Attic

C. AIR SEAL RIM JOISTS: Seal all cracks and holes in all open rim joists, throughout the dwelling, using caulk or foam.

Location: Throughout the dwelling

D. Provide continuous air barriers.
   1. Install continuous interior air barrier around the building
   2. Install continuous external air barrier between all conditioned space and unconditioned space.

E. **Compartmentalization of dwelling units:**
   1. Walls
      a. Seal exterior wall corners with joint sealant [and/or foam]
      b. Seal vertical walls at all penetrations with joint sealant [and/or foam]
      c. Seal window frame with low expanding foam
      d. Seal bottom plates on exterior walls with a foam gasket [and/or caulk, foam]
   2. Floors
      a. Provide complete seal at joists supporting conditioned space with joint sealant [and/or foam]
   3. Ceilings
      a. Install continuous top and bottom plates, and sheathing to create a six-sided air barrier on all attic knee walls and seal with foam [and/or caulk].
      b. Install blocking at exposed edges of insulation at joists and rafters
      c. Truss framing: Install blocking at the top and bottom of each framing bay.
      d. Seal attic hatches with joint sealant [and/or foam].
      e. Provide sealing around skylight shaft with joint sealant [and/or foam]
      f. Install baffles between all rafters or trusses to direct the flow of air over and above the attic insulation.
      g. Recessed lighting when below unconditioned attic: Install insulation contact, airtight rated (ICAT) and seal to drywall with gasket [and/or caulk, foam]
   4. Garage Isolation Air Barrier (when attached to dwelling unit)

a. Install continuous air barrier between the conditioned living space and any garage space and seal with foam [and/or caulk].
b. Seal between all walls separating conditioned and garages spaces with foam [and/or caulk].
c. All pipe and conduit penetrations shall be sealed with material compatible with the adjacent materials and resilient to temperature fluctuations and providing fire-resistive characteristics of required by authorize having jurisdictions.
d. Floor trusses: Seal and block floor trusses and joists between conditioned space and garage with foam [and/or caulk].

5. Bathtub and Shower Enclosures
   a. Use mold-resistant material [plywood, oriented strand board (OSB), sheathing boards, moisture resistant gypsum] behind bathtub or shower enclosures, and extend the mold-resistant material the full length and width of the wall(s) on which the bathtub or shower enclosure abuts. Seal at all joints.
   b. Install spray foam at framing behind bathtub or shower enclosure prior to setting tub or shower.

F. **Continuity of External Air Barrier**

1. Roof
   a. Install 4-inch to 6 inch "peal and seal" self-adhering waterproofing strips over joints in roof decking before installing the roof underlayment and cover.
2. Mechanical work
   a. Seal holes from penetrations from unconditioned spaces with joint sealant and provide flashing.
   b. Seal flue openings with flashing and fire-rated joint sealant
3. Building Envelope
   a. Air barrier must be continuous around building, including all components that act together as the exterior air barrier (sheet or liquid membrane with compatible tapes, caulks, flashing). Foam or caulk all exterior sheathing joints and intersections.
   b. Install weather-stripping hard-fastened to the door or frame at entranceways.
   c. Seal the roof curb at ductwork penetrations.
   d. Install continuous air barrier at the intersection of the porch roof and conditioned space.
   e. Air seal and insulate exterior sheathing on bottom of cantilevered floor.
   f. Lap and Foam or caulk exterior rigid insulation over the seams of the exterior wall sheathing.
4. Fireplace Enclosures
   a. Seal fireplace flue and wall penetrations with fire-rated caulking along with flashing or UL-rated collars.
5. Use air sealing with polyurethane caulk for following areas:
   a. Slab openings
   b. Slab penetrations
   c. Control or expansion joints
   d. Sump cover
6. Pest Management Measures
   a. For openings in the building envelope less than 1/4 inch, including pipe and electrical penetrations:
      1) Completely seal to avoid pest entry.
   b. Install rodent-and corrosion proof screens for openings greater than 1/4 inch.

SECTION 07 3113

ASPHALT SHINGLES

PART 1 GENERAL **$_____**

1.01 UNIT PRICES

A. **Roofing material has been purchased by the HRA for this project.** Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.

1. Vendor: Lampert Roofing
2. Pre-purchased materials:
   a. GAF Elk Timberline 30 year HD Shingles
   b. Timbertex
   c. Ice and Water Shield
   d. 15 lb. felt.

1.02 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: Birchwood.

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

1. ASPHALT OR FIBERGLASS SHINGLES: Install GAF Timberline High Definition shingles; color Weather wood. Install GAF/ELK Timbertex ridge cap; color Birchwood. Install all code required ice & water shield 6 feet up from all roof eaves and in all valleys and 15 # felt. All shingles, ridge cap shingles, ice& water, and 15 # felt have been pre-purchased by the HRA for this project. Provide & install 1 1/4” galvanized roofing nails, Broan 636 bath fan covers, “W” style valley flashing, kick out flashing, dormer flashing, and step flashing as needed.

   Location: Exterior, dwelling & new garage roof.

2. OSB PLYWOOD: Patch in roof sheathing where masonry chimney and roof vents will be removed per concrete and masonry section of work scope.

   Location: Exterior roof.

3. DRIP EDGE: Provide and install aluminum style “D” roof edge on all rakes and eaves of the dwelling roof prior to the installation of asphalt shingles.

   Location: Exterior dwelling & garage roof.

4. RIDGE VENT: Install a Continuous roof ridge vent with louvered side openings- include cutting existing shingles and sheathing

   Location: Exterior dwelling roof

5. Install shingles in accordance with manufacturer's instructions.

3.02 LOCATION

A. House

B. Garage

END OF SECTION

SECTION 07 4646

FIBER CEMENT SIDING/TRIM

PART 1 GENERAL **$_____**

1.01 UNIT PRICE

A. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. **Pre-primed LP Siding. (House & Garage Only)**

PART 2 PRODUCTS

2.01 SIDING

A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type a Grade II; with machined edges, for nail attachment.
   1. Style: Standard lap style.
   2. Texture: Smooth.
   3. Length: 12 Ft. (3.7 m), nominal.
   4. Width (Height): 5-1/4 inches (133 mm).
   5. Thickness: 5/16 inch (8 mm), nominal.
   6. Finish: Factory applied primer. Finish painting to be applied by contractor.
   7. Color: As selected by Construction Manager from manufacturer's full range of available colors.
   8. Warranty: 50 year limited; transferable.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions and recommendations.
   1. Read warranty and comply with all terms necessary to maintain warranty coverage.

B. LP SHAKE SIDING: Provide & Install LP Certainteed, staggered shake. Provide & install all Certainteed Cedar Impressions corners, master and split-mini mount blocks, dryer & intake vent covers, aluminum drip caps, caulking, galvanized nails, etc.

B. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.

C. LP Smartboard LAP SIDING: Install and Provide 6" Lap LP Smartboard siding. Provide & install all LP Smartboard corners, exterior trim/band boards, master and mini mount blocks, aluminum drip caps, caulking, galvanized nails, labor, etc. All LP Smartboard siding & accessories are required to be installed to all manufacturers' specifications.

D. EXTERIOR WNIDOW & DOOR TRIM: Install LP Smartboard trims on all exterior windows and door trim. Per manufacture's specifications.

Location: Exterior, windows and doors. See Plans.

Location: House front elevation gables

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Aluminum: ASTM B209 (ASTM B209M); 0.032 inch (0.8 mm) thick; anodized finish of color as selected.
   1. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mils (0.018 mm) thick.

B. Pre-Finished Aluminum Soffit, Trim and Facia: ASTM B209 (ASTM B209M); ____ inch (____ mm) thick; plain finish shop pre-coated with modified silicone coating.
   1. Manufacturer: Alsco Perfect Trim Plus

PART 3 EXECUTION

3.01 INSTALLATION

A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

B. Seal metal joints watertight.

C. FASCIA OR FRIEZE: Remove and replace fascia & with #2 Pine 1" x nominal boards.

Location: Exterior fascia, crown molding. Only areas that have been damaged rotted, deteriorated, or missing.

D. SOFFIT: Remove and replace soffits with a pine ½" plywood soffit furring strips for new aluminum center vented soffit. Leave the center section on these soffits open on all eaves for proper ventilation.

Location: Exterior soffits

E. ALUMINUM FASCIA: Install 6" EDCO white custom bent aluminum fascia on all rakes, eaves, and box end returns.

Location: Exterior, fascia house and new garage. See Plans.

F. ALUMINUM SOFFIT: Install EDCO white aluminum, center vented soffit panels, f-channel and soffit channel on all rakes, eaves, and box end returns.

Location: Exterior, soffit house and new garage. See Plans.

G. EXTERIOR WNIDOW & DOOR TRIM: Cap all existing window & door exterior trim with EDCO white aluminum coil. Miter all corners and caulk to prevent water & air infiltration. Repair any window or door trim that is damaged, rotted, deteriorated, or missing prior to capping with aluminum coil.

Location: Exterior, windows and doors.3.02

LOCATIONS:

A. Exterior of the house - soffit, trim, fascia, doors and windows.

END OF SECTION

SECTION 07 7123

MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL **$_____**

1.01 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

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 Pads: 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

1. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.
2. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation.
3. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.
4. GUTTERS AND DOWNSPOUTS: Provide and install 5” aluminum seamless gutters, with oversized, 6” downspouts. Fastened to home with the proper hangers for installation on a fascia including a crown. All downspout extensions shall be hinged and extend a minimum of 6’ out where applicable. Install rain leaders at the base of each downspout. Gutters & downspouts to be EDCO white aluminum seamless.

   Location: Exterior on all eaves of house

END OF SECTION

SECTION 08 3323

OVERHEAD GARAGE DOORS **$_____**

PART 2 PRODUCTS

1.01 COILING DOORS

A. Exterior Coiling Doors: Aluminum slat curtain.
   1. Guides: Formed track; galvanized steel.
   2. Electric operation.
   3. Mounting: Within framed opening.
   4. Exterior lock and latch handle.

1.02 ELECTRIC OPERATION

A. Electric Operators: Chain Drive Garage Door Opener
   1. Motor Rating: 1/3 hp (250 W); continuous duty.
   2. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   3. Controller Enclosure: NEMA 250 Types 1.
   4. Opening Speed: 12 inches per second (300 mm/s).
   5. Brake: Adjustable friction clutch type, activated by motor controller.
   6. Manual override in case of power failure.

B. Control Station: Standard three button (OPEN-STOP-CLOSE) momentary control for each operator.
   1. 24 volt circuit.

C. Safety Edge: Located at bottom of curtain, full width, electro-mechanical sensitized type, wired to stop operator upon striking object, hollow neoprene covered.

PART 3 EXECUTION

2.01 INSTALLATION

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

B. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

C. Complete wiring from disconnect to unit components.

D. GARAGE DOOR, STEEL: Install a 4 section 4 panel non-insulated overhead door. Including weather tight stops, hardware and exterior, vinyl brick mold and jamb trim, 16’-0” x 7’-0” garage door.

2.02 LOCATION

A. Garage

END OF SECTION

SECTION 08 1100

EXTERIOR INSULATED METAL DOORS AND FRAMES

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 EXTERIOR PREHUNG METAL DOOR

A. Front Doors:
   1. Product: Rochester, Patina- A73190

B. Rear/Side Doors:
   1. Product: Master craft, Half Lite w/ Blinds - LT-10

C. Garage Service Door:
   1. Product: Master craft, 6-Panel - E-1.

2.02 ALUMINUM STORM DOORS

A. Front Door
   1. Product: Larson, Oakley, or approved equivalent

B. Rear/Side Doors
   1. Product: Larson, Oakley, or approved equivalent

2.03 ACCESSORIES

A. DOOR HARDWARE: Door hardware finish to be black finish
   1. Front Door Hardware: Schlange Avanti
   2. Interior Door Hardware: Schlange Avanti

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors and installed door frames before hanging doors.
   1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
   2. Reject doors with defects

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

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use expanding foam to insulate between the door frame and the rough opening.

C. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.

D. Align and fit doors in frames with uniform clearances set by manufacturer.

E. Seal edges of doors, edges of cutouts, and mortises after fitting and machining

F. EXTERIOR DOOR REMOVAL: Remove door, frame and trim from existing exterior wall. Remove nails and store casing for reuse at the millwork stage if in good condition.

   Location: All exterior entrance doors and storm doors

G. ENTRANCE DOORS: Install an insulated steel paneled, 1-3/4” thick, 6” exterior trim and wood frame, and entrance lock and dead bolt, aluminum sill and weather stripping.
   Refer to sections 2.01 & 2.03 above.

   Location: Front & rear exterior doors

H. ALUMINUM STORM/SCREEN COMBINATION DOORS: Install a full view, with 1 tempered glass and 1 screen insert, colonial fringe, handle, kick panel, premium white combination door by Larson or approved equivalent. **Refer to section 2.02 above.**

Location: On exterior trim of all exterior entrance doors

I. SERVICE DOOR: Install a steel 6-panel exterior garage service door including a door knob and deadbolt. Steel door, entry knob, and pine shims need to be installed. Please include threshold seal, caulking, galvanized casing nails, drip cap, and labor as required for this item.

Location: Garage

3.03 SYSTEMS INTEGRATION

A. Coordinate with low-voltage security contractor to install contacts in door.

3.04 ADJUSTING

A. Adjust Doors for smooth operation.

B. Operation: Rehang or replace doors that do not swing or operate freely.

3.05 LOCATIONS

A. Front Entrance - Door and Storm

B. Side Entrance - Door and Storm

C. Rear Entrance - Door and Storm

D. Garage Service door

END OF SECTION

SECTION 08 5313

VINYL WINDOWS

PART 1 GENERAL **$_____**

1.01 PERFORMANCE REQUIREMENTS

A. Performance Requirements: Energy Star Rated to meet Minnesota climate conditions. Climate Zone 6 for 2006 IECC, ASHRAE 90.1-2007 and ENERGY STAR.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Windows: Extruded, hollow, tubular, ultra-violet resistant polyvinyl chloride (PVC) with integral color; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
   1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440 R15.
   2. Configuration: double hung and fixed double hung sash.
   3. Color: Color as selected.

B. Insect Screens: 14/18 mesh, steel strands.

C. Fasteners: Stainless steel.

2.02 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]:
   1. Multipurpose Construction Adhesives: 70 g/L
   2. Structural Glazing Adhesives: 100 g/L

2.03 HARDWARE

A. Double Hung Sash: Metal and nylon spiral friction slide cylinder, each sash, each jamb.

B. Sash lock: Lever handle with cam lock.

PART 3 EXECUTION

3.01 INSTALLATION

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

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Insulate any voids between the window frame and the rough opening with foam insulation.

E. Floor to sill height on new window openings should be consistent to that of the existing window openings in each window

F. **VINYL WINDOWS:** Install vinyl replacement "pocket" windows by Atrium or equivalent. Low-E/argon glass. Energy Star rated with full height insect screens. Grilles on front elevation windows. Grille pattern to be chosen by project manager. General Contractor is required to do a walk through with the project manager prior to ordering of the new windows.

G. All bedroom windows to be double hung windows unless they do not meet egress window requirements for bedrooms. In this case, install at least one casement window in bedroom. **Location to be chosen by the project manager.**

H. On the South living room wall, install a 4 window set to include a center picture window, transom, and two double hung side flankers in same openings. **SEE PLANS, SHEET NUMBER A5.**

I. On the West living room wall, after the plaster has been removed and the window openings have been located, install three casement piano windows in same openings. Swing of the windows to be chosen by the project manager. **SEE PLANS, SHEET NUMBER A5**

J. On the dining room bay window, located on West elevation, install a 4 window set to include a center picture window, transom, and two double hung side flankers in same openings.

SEE PLANS, SHEET NUMBER A5.

K. On the kitchen West AND South walls, raise the existing window sill height to 42" off of the finished floor and install two twin casement windows. These windows will need to be a full frame replacement window with new jambs, sill, casing, and exterior trim to match that of the windows throughout the dwelling in same locations. **SEE PLANS, SHEET NUMBER A5.**

L. On the rear entryway South wall, install a picture window in same opening. This window will need to have tempered glass as it is next to the rear exterior door. General Contractor is required to verify prior to ordering the window. **SEE PLANS, SHEET NUMBER A5.**

M. On the main level, northeast bedroom, east wall install a double hung window in same opening, UNLESS egress window requirements are not met. In this case, install a casement window in same opening. Project manager to choose the swing of the casement window if this is required. This window will need to have tempered glass as the interior door swings into the window when it is opened. General Contractor is required to verify prior to ordering the window. **SEE PLANS, SHEET NUMBER A5.**

N. On the main level bathroom, on the East wall, install a pre-formed glass block window unit with operable center vent and insect screen. This window is located in the tub/shower surround area. Size of windows to be the maximum size of the existing opening. Glass block window should be sealed on the interior & exterior perimeter in order to prevent air/moisture infiltration. **SEE PLANS, SHEET NUMBERS A4 & A5.**

O. On the main level, southeast bedroom, east wall install a double hung window in same opening, UNLESS egress window requirements are not met. In this case, install a casement window in same opening. Project manager to choose the swing of the casement window if this is required. This window will need to have tempered glass as the interior door swings into the window when it is opened. General Contractor is required to verify prior to ordering the window. **SEE PLANS, SHEET NUMBER A5.**

P. On the main level, southeast bedroom closet, South wall install a picture window in the same opening. **SEE PLANS, SHEET NUMBER A5.**

Q. **Glass Block Windows-Venting**: Install pre manufactured glass block windows with operable center vent and insect screen. Size of windows to be the maximum size of the existing masonry opening. Glass block window should be sealed on the interior & exterior perimeter in order to prevent air/moisture infiltration.

Location: Basement windows. SEE PLANS, SHEET NUMBER A5

R. **Window Removal:** Remove window from wall, including wood stops. Remove nails and store wood stops for reuse at the millwork stage if in good condition.

Location: All windows throughout the home

S. On the 2nd floor master bedroom, South wall, install two double hung window sin same openings, UNLESS egress window requirements are not met. In this case, install two casement windows in same openings. The swing of the casement windows should be one right hand and one left hand swing so they open out away from one another if this is required. These windows may need to be tempered glass if the height from the finished floor to the window glass is less than 18". General Contractor is required to verify prior to ordering the windows. **SEE PLANS, SHEET NUMBER A5.**

T. On the 2nd floor master bedroom closet, West wall, install a double hung window in the same opening. This window may need to be tempered glass if the height from the finished floor to the window glass is less than 18". General Contractor is required to verify prior to ordering the window. **SEE PLANS, SHEET NUMBER A5.**

U. On the 2nd floor stair landing, on the South wall, install two double hung windows in the same opening. These windows will need to be tempered glass as they are within 5 feet of a staircase. General Contractor is required to verify prior to ordering the windows. **SEE PLANS, SHEET NUMBER A5.**

V. On the 2nd floor master bathroom, on the West wall, install a pre-formed glass block window unit with operable center vent and insect screen. This window is located in the tub/shower surround area. Size of windows to be the maximum size of the existing opening. Glass block window should be sealed on the interior & exterior perimeter in order to prevent air/moisture infiltration. **SEE PLANS, SHEET NUMBERS A4 & A5.**

W. STORM WINDOWS: Provide and install and non-operable, picture window style storm window with a white aluminum frame. This window will be installed on the exterior side of the living room stained glass window on the South Wall.

Location: Living room south exterior wall

3.02 ADJUSTING

A. Adjust hardware for smooth operation and secure weather tight closure.

3.03 APPLICATIONS

A. Water Management: Walls, Exterior Windows
   1. Provide weather-resistive barrier/house wrap
   2. Provide pathway for liquid water to exit exterior wall assembly
   3. Provide pan flashing, side flashing, and head flashing

END OF SECTION

SECTION 09 2116

GYPSUM BOARD & DURAROCK INSTALLATION

PART 1 GENERAL **$_____**

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 (13 mm).
      b. Ceilings: 1/2 inch (13 mm).

B. Backing Board for Wet Areas: One of the following products: **DURAROCK**
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.

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.

C. GYPSUM DRYWALL ON CEILING: Install ½" gypsum drywall on ceilings screwed to joists or furring, taped, finished and sanded.

   Location: All ceilings opened during demolition including full kitchen, laundry, and both bathroom ceilings. Install ¾" wood furring strips and ½" drywall on all loose or deteriorated plaster ceilings that cannot be repaired by skim coating with Dura bond.

D. GYPSUM DRYWALL ON WALL: Install ½" gypsum drywall on walls screwed into studs or furring, taped, finished and sanded, 3 coats

   Location: All new wood framed walls or walls opened during demolition; including full kitchen, laundry, and both bathroom walls. Install ¼" drywall on all loose or deteriorated plaster walls that cannot be repaired by skim coating with Dura bond

E. DUROCK BACKER BOARD: Install a water resistant ½" thick backer board underlayment for ceramic tile walls, including thin set mortar, joint tape and galvanized screws. Install a water resistant ¼" thick backer board underlayment for ceramic tile floors, including thin set mortar, joint tape and galvanized screws.

Location: Kitchen backsplash & 1st floor bathroom tub/shower surround walls. Kitchen, main level laundry, front & rear entryways, and both bathroom floors.

F. SKIM COATING: Skim coat all cracked or peeling walls and ceiling to remain during demolition. Skim coat all textured walls for a smooth finish.

Location: Throughout the dwelling

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, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

SECTION 09 3000

TILING

PART 1 GENERAL **$_____**

1.01 ALLOWANCES-<u>NONE-</u>

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-<u>SEE COLOR & MATERIAL SHEET</u>

A. Glazed Wall Tile Type Ceramic
   1. Colors: White Subway Tile and Flroim 12”*12”

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.

B. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.

C. Thresholds: Marble, white, honed finish; 2 inches (50 mm) wide by full width of wall or frame opening; 1/2 inch (12 mm) thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.

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, thresholds, and stair treads and grout 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. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

3.02 INSTALLATION - FLOORS

A. TILE FLOORING: Install a ceramic tile floor in bathrooms, front & rear entryways, kitchen and main level laundry room.
   Set 12”x 12” tiles in thin set mortar. Grout and seal with silicone type sealer. Install over 1/4” Dura rock moisture-resistant board. Owner to pick out tile & grout colors and tile installation pattern. **<u>See Color & Material Sheet</u>**

   Location: Both bathrooms, front & rear entryways, kitchen and main level laundry room. **<u>See plans</u>**

B. Over wood substrate with backer board underlayment, install in accordance with The Tile Council of North America Handbook Method F144, for cementitious backer boards, with standard grout.

3.03 INSTALLATION - FLOORS - MORTAR BED METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook method F141, with standard grout, unless otherwise indicated.

3.04 INSTALLATION – SHOWERS-BATHTUB WALLS-KITCHEN BACKSPLASH

A. CERMANIC TILE WALLS: Install ceramic tile on **kitchen base cabinet backsplash** and **1st floor bathroom tub/shower surround walls.** Install over ½" Dura rock moisture-resistant wallboard; set 6" x 3" white subway tiles with 2" x 6" white bullnose tiles around the outer perimeter of the walls and the inside jamb (butting the glass block) and outer perimeter of the glass block window unit in thin set mortar, set tile cap, grout and seal with silicone type sealer. Owner to pick out tile & grout colors.

   Location: Kitchen backsplash above all base wall cabinet countertops to the bottom of the upper wall cabinets & 1st floor bathroom tub/shower surround from the top of the tub to the ceiling. SEE PLANS.

B. At tiled shower receptors install in accordance with The Tile Council of North America Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

C. At bathtub walls install in accordance with The Tile Council of North America Handbook Method B412, over cementitious backer units with waterproofing membrane.

D. Grout with standard grout as specified above.

E. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms.

SECTION 09 0160

HARDWOOD FLOORING RESTORATION

PART 1 GENERAL **$_____**

1.01 RELATED SECTIONS

A. See Section 099000 Painting and Coating.

B. See Section 01 6116 Volatile Organic Compound Content Restrictions

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 RESTORATION

A. Restore hardwood floors: Counter sink all nails and fill holes. Remove the quarter round molding and protect the wall molding with painters tape. Drum sand and edge floor finishing with 120 grit sandpaper to completely remove the existing finish. Vacuum and wipe floor with slightly water dampened rag, until no dust is present.

B. Apply a coat of Minwax Low-VOC Water Based Polyurethane base coat followed by 3 coats of Minwax Low-VOC Water Based polyurethane for floors.
   1. Product may not exceed 250 grams of VOC per Liter

3.02 WOOD FLOORING INSTALLATION

A. Install flooring and adhesive in accordance with manufacturer's recommendations.
   1. HARDWOOD FLOOR REFINISHING: Sand hardwood floors to the original raw wood. Apply three coats of low or now VOC polyurethane.
      Location: 1st floor living room, dining room, hallway, both bedrooms, and both bedroom closets. See plans

   2. TOOTH IN HARDWOOD FLOOR: Remove existing patched hardwood floor where column bases have been removed. Stagger seams and tooth in new wood flooring to match the same size, style, and wood species as the existing floor.
      Location: Living room/dining room

   3. Install laminate flooring plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
   4. Roll flooring immediately after installation with minimum 100 pounds roller.
   5. Install flooring wall to wall before installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings.

B. Transition Pieces: Install coordinated transitions and molding pieces in accordance with manufacturer's recommendations.

3.03 LOCATIONS

A. First Floor:
   1. Throughout

END OF SECTION

SECTION 09 6800
CARPETING

PART 1 GENERAL **$_____**

1.01 ALLOWANCES-NONE

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 EXECUTIONS

3.01 INSTALLATION

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. CARPETING: Furnish and install interior carpeting, including padding.
      Location: Entire 2nd Floor EXCEPT FOR bathroom. Main & basement staircases. See plans.

3.02 STRETCHED-IN CARPET

A. Install tackles 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 tack less 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.

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL **$_____**

1.01 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.

1.02 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 an any manufacturer listed in MPI Approved Products List (at www.paintinfo.com) approved by Project Manager.
   1. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
   2. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

B. Stains: Minwax Low VOC or any other manufacturer approved by Project Manager

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. Flat: 50 grams/Liter
      b. Non-Flat: 50 grams/Liter
      c. Floor Coating: 100 grams/Liter
      d. Anti-Corrosive: 250 grams/Liter

2.03 PAINT SYSTEMS

A. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.

B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

C. 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.

D. Provide colors as directed by Construction Manager.

E. Provide smooth texture throughout.

2.04 EXTERIOR PAINT SYSTEMS-SEE COLOR & MATERIAL SHEET

A. Wood Traffic Surfaces:
   1. Applications include but are not limited to Decks.
   2. EXT 6.5D Deck Stain: Wood Preservative MPI #37, Deck Stain MPI #33.

   3. PAINT COLUMNS: Paint 8” round colonial portico columns. Paint two coats of exterior, low or no VOC paint. Project manager to choose paint finish, colors, and scheme for columns.
      Location: Front and rear porch

4. PAINT EXTERIOR AND INTERIOR FOUNDATION: Paint exterior foundation, with 2 coats of, low or no VOC exterior paint. Paint interior basement foundation walls with 2 coats of Dry-Lock or like product. Project manager to select the exterior foundation color and finish

5. PAINT PORCH BEAM OR HEADER TRIM: Paint, up to 12" fascia or porch header trim, two faces and one edge. 2 coats of exterior, low or no VOC, paint or solid stain. Project manager to choose the color and finish of paint or solid stain.
Location: Front & rear porch header and trim

6. PORCH CEILING: Stain porch ceiling, 1 coat of stain and 2 coats of varnish. Stain and varnish to be low or no VOC. Project manager to choose the stain color
Location: Exterior, rear porch

7. WOOD DECK FLOOR, STAIRS, AND BAND BOARD: Stain/seal or clear finish, 2 coats. 1 coat of exterior stain, 2 coats of exterior water sealer. Low or no VOC stain & water sealer. Stain color and finish to be chosen by the project manager.
Location: Front & rear porch

8. 2 TO 6 PANEL ENTRANCE DOOR: Paint all exterior entrance doors with two coats of low or no VOC paint. Paint colors and finishes to be chosen by the project manager.
Location: All exterior entry doors

2.05 INTERIOR PAINT SYSTEMS

A. Dressed Lumber:

1. Applications include but are not limited to doors, door frames, window frames, window casings, trim, baseboards, and moldings.

2. PAINT MOLDING: Paint base, ceiling molding, chair rail or door or window trim, 2 coats with white semi-gloss, low or no VOC paint.
Location: Throughout the dwelling

4. TEXTURE CEILING FINISH: Scrape existing texture. Spray finish drywall ceiling with knockdown (orange peel) texture.
Location: All ceilings EXCEPT for kitchen, bathrooms. Leave kitchen and bathroom ceilings smooth.

5. INTERIOR DOOR: Paint interior door, both sides of 6-panel door including casing and jamb, 2 coats of white semi-gloss. Low or no VOC paint.
Location: All interior doors throughout the dwelling

6. WALLS: Paint smooth finish plaster or plasterboard, with roller; Prime and paint 2 coats on interior walls with low or no VOC paint. Paint colors and finishes to be chosen by the project manager.
Location: Throughout the house

7. CEILINGS: Paint smooth finish or texture finish plaster or plasterboard, prime and 1 coat with flat white ceiling paint. Low or no VOC paint.
Location: Throughout the house

8. PAINT BUILT-IN BUFFET: Paint built in buffet; include drawers and doors, 2 coats with white semi-gloss, low or no VOC paint.
Location: Dining room

9. PAINT RADIATORS: Clean/blow out all debris in radiators with compressed air. Paint all radiators with a high temp low or no VOC paint. Paint colors should match the wall color in each room in order for the radiator to blend in with the wall.
Location: Throughout the house

PART 3 EXECUTIONS

3.01 SCOPE -- SURFACES TO BE FINISHED

A. 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 described in PART 2 and 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.

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.

3.03 LOCATIONS

A. Throughout House
   1. Walls and Ceilings: Flat Sherwin Williams Low VOC
      a. Wall Color: **See Color & Material Sheet**
      b. Ceiling Color: **See Color & Material Sheet**
   2. Interior Trim: Semi-gloss Sherwin Williams Low VOC
      a. Trim Color: **See Color & Material Sheet**

B. Kitchen and Bath
   1. Walls and Ceilings: Eggshell Sherwin Williams Low VOC
      a. Wall Color: **See Color & Material Sheet**

b. Ceiling Color: **See Color & Material Sheet**

C. Exterior:

1. Rear & Front Porch Floor- Clear coat sealer
2. Stain Front Porch Skirt- Solid base white stain

END OF SECTION

SECTION 09 9723

CONCRETE AND MASONRY COATINGS

PART 1 GENERAL **$_____**

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 EXECUTIONS

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.

3.03 LOCATIONS

A. Basement Foundation Walls - Dry Lock by ULG, or like product.

B. Basement Floor - concrete floor grey

END OF SECTION

SECTION 10 5623

CLOSET STORAGE SHELVING

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, with installation instructions.

PART 2 PRODUCTS

2.01 SHELVING APPLICATIONS

A. Shelf Depth: 12 inches (305 mm), unless otherwise indicated.

B. Other Bedroom Closets:
   1. Wall-to-wall shelf with free sliding hanger rod.
   2. Not less than 4 feet (1.25 m) of shoe shelf.

C. Coat Closets:
   1. Wall-to-wall shelf with integral hanger rod.

D. Linen Closets:
   1. Wall-to-wall shelves spaced at 13 inch (330 mm) vertically, not less than 16 inches (408 mm) deep.

E. Storage Closets:
   1. Wall-to-wall storage shelves, stacked at 13 inch (330 mm) vertically, not less than 12 inch (305 mm) deep.

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 (0.23 to 0.028 mm) thick.
   4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils (0.76 to 1.27 mm) 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 hangers the full width of the shelf.
   9. Shoe Shelves: Same wire spacing as standard mesh shelves; angled wall brackets; upturned front lip.

B. Fasteners: As recommended by manufacturer for mounting substrates.

3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions, with shelf surfaces level.

B. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate support braces as recommended by manufacturer.

3.02 LOCATIONS

A. Closets Throughout

END OF SECTION

SECTION 10 7446
WINDOW WELLS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Product: St. Paul Corrugating Lux-Right Area Walls, Economy Grade, or like product approved by Construction Manager or Project Manager.

B. Manufactured from 18 gauge, pre-galvanized, regular spangle steel sheets.

C. Limitations: Care should be used in selecting the style and grade of larger and deeper window wells, which should be specified in heavier gauge and properly supported during backfill and while other construction activity is taking place.

2.02 ACCESSORIES

A. Fasteners: Use masonry nails, self-drilling anchors or other approved fasteners..

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Window wells should be extended beyond the rough opening for the window by at least 3". Some building codes will require additional clearance.

C. Top of the window wells should be 2" above the established grade line and down at least 12" below the windowsill.

D. Install proper gravel for drainage.

3.02 LOCATIONS

A. All basement windows that require a window well by code.

END OF SECTION

SECTION 11 3100

HRA RESIDENTIAL APPLIANCES

$_____

PART 1 GENERAL

1.01 SUMMARY

A. All appliances must be purchased new and Energy Star certified or high efficiency models when Energy Star certification is not possible.

B. All appliances must meet the Sustainable Design Requirements covered in Section 018113

1.02 PRICE AND PAYMENT PROCEDURES

A. **Appliances have been pre-purchased by the HRA for this project.** Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.

1. Vendor: All, Inc. Appliances
2. Product: Stainless Steel
   A. REFRIGERATOR: FFHT2126LS/K Energy Star Rated 21 cu Ft. top mount refrigerator, stainless steel, with icemaker.
   Location: Kitchen
   B. RANGE: FFGF3053LS Frigidaire 30" Free-Standing Gas Range, Self-Clean, Clock.
   Location: Kitchen
   C. MICROWAVE/HOOD: FFMV162LS over the Range Micro/Hood, to be vented to the exterior.
   Location: Kitchen
   D. DISHWASHER: FGHD2433KF Energy Star 24" Built-In Dishwasher, including dishwasher cord.
   Location: Kitchen
   E. WASHER: FAFW3801LW Energy Star Residential Front Load Washer
   Location: Basement
   F. DRYER: FAQG7001LW Residential Gas Dryer
   Location: Basement

All of the above appliances have been pre-purchased by the HRA for this project. Provide installation of all above appliances.

1.03 SUBMITTALS

A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

1.04 QUALITY ASSURANCE

A. Electric Appliances: Listed and labeled by UL and complying with NEMA standards.

B. Gas Appliances: Bearing design certification seal of AGA.

PART 3 EXECUTION

2.01 INSTALLATION

A. All appliances shall be uncrated, cleaned and readied for use.

B. Installation shall include all cord attachments, wiring, and plumbing as gas hook ups necessary for appliance operation.

C. Install in accordance with manufacturer's instructions.

D. Anchor built-in equipment in place.

2.02 LOCATIONS

A. Kitchen

B. Basement

END OF SECTION

SECTION 12 1110

HRA MAIL BOX AND HOUSE NUMBERS

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 APPLICATIONS

PART 3 EXECUTIONS

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. MAILBOX: Remove existing mailboxes. Install a black wall hung mailbox.

Location: Exterior, front of house

C. ADDRESS NUMBERS: Provide & install “floating” black address numbers for the house and the garage.

Location: On the front porch header & centered above the overhead door on the garage facing the alley.

SECTION 12 1111

BATHROOM FURNISHINGS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 TOWEL SETS

A. Install a metal bath set comprised of a hand towel ring, 24" towel bar and toilet paper holder

B. Manufacturer: **See Color & Material Sheet**

1. Hand Towel Ring: **See Color & Material Sheet**
2. Towel Bar: **See Color & Material Sheet**
3. Toilet Paper Holder **See Color & Material Sheet**

C. Brushed nickel

2.02 MEDICINE CABINET

A. Manufacturer: **See Colors & Material Sheet**

B. Brushed nickel

2.03 SHOWER CURTAIN ROD

A. Install a show curtain rod using wall anchors.

B. Manufacturer: **See Colors & Material Sheet**

C. Brushed nickel

2.04 MIRRORS

A. MIRRORS: Provide & install a wall mirror ¼" thick with polished edges, attached to Wall with clips or adhesive.

B. Mirror width should be consistent to that of the new vanities.

Location: All Bathrooms

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. **See Color & Material Sheet**

END OF SECTION

SECTION 12 3530

RESIDENTIAL CASEWORK

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: See Section 01 2100 - Allowances, for cash allowance affecting this section

B. Allowance covers material and not labor

C. Door and Drawer Fronts: Solid wood.

D. Drawer Box Construction: Plywood with dovetail joinery

1.02 SUBMITTALS

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

C. Cabinet Construction: Plywood sides and bases.

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. Kitchen Cabinets: See Kitchen Design- **SEE MATERIAL & COLOR SHEET**

B. Bathroom Vanity Cabinets and countertop: **SEE MATERIAL & COLOR SHEET**

D. Kitchen Countertop: Post formed plastic laminate over particle board, coved to back splash.

1. Side Splash: Plastic laminate over particle board, square internal intersections to back splash and top surface, contoured to suit counter top profile.

SEE MATERIAL & COLOR SHEET

2.03 HARDWARE

A. Hardware: Manufacturer's standard.

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.

PART 3 EXECUTIONS

3.02 INSTALLATION

1. KITCHEN LAMINATE COUNTERTOPS: Provide & install post formed plastic laminate over particle board, covered to the backsplash with minimal seams. Laminate countertops to butt at a 45 degree at all adjoining inside corners. Back and side splashes to be of like material with minimal seams. Owner/HRA to pick color of countertops from standard Wilson Art colors.

Location: Kitchen See Plans & Color/Material Sheet

2. Set casework items plumb and square, securely anchored to building structure.

3.03 LOCATIONS

A. Kitchen

B. Baths

END OF SECTION

SECTION 22 3000

PLUMBING EQUIPMENT

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

A. Product Data:

1. Provide Owner's Manuals for all equipment.

PART 2 PRODUCTS

PART 3 EXECUTIONS

3.01 INSTALLATION

A. Provide a city plumbing permit

B. PLUMBING ROUGH-IN: Remove all plumbing fixtures to include: sinks, faucets, fiberglass tub, toilets, etc. Remove existing vent and stack, from the basement through the roof and redo for new kitchen layout. Rough in and redo water supplies for new kitchen layout. Install hook ups for the dishwasher and an ice maker for the refrigerator for new kitchen layout. Rough in for the new toilet location in the second floor bathroom. Rough in for the new double vanity in the 2nd floor bathroom. Rough in for new tub location in 2nd floor bathroom. Rough in for new shower location in 2nd floor bathroom. Rough in laundry box and laundry tub sink for new main level laundry location. Cut out old lead waste for bathroom group and replace with new ABS piping and fittings. Remove all pitted cast iron waste and replace with new ABS piping.

Location: Throughout the house. See plans.

C. HOSE BIBB: Furnish and install one frost free hose bibb with shut off valve.

Location: Exterior

D. WATER METER: Raise water meter off the floor 12” x 48” per city code.

Location: Basement

E. WATER SUPPLIES: Stub hot and cold water supplies to each fixture and faucet in wirsbo aqua pex and fitting. Starting at water meter throughout the house. Run 1” water supply to first junction.

Location: Throughout the house

F. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.

G. Coordinate with plumbing piping and related fuel piping work to achieve operating system.

H. Provide water & gas supply & flue piping

I. DRAIN TILE: Break-up concrete slab out 1 foot from exterior block wall.
Install interior drain tile system around foundation perimeter. Patch concrete slab.
Location: Basement

J. SUMP PUMP: Install new sump pump for draining of interior drain tile system and pipe out a discharge through the basement rim joist.
Location: Basement

K. DISPOSER: Provide & install a Badger 555 garbage disposal
Location: Kitchen

L. CLEAN OUT: Install clean out within 10' of waste leaving the building; per code.

3.02. **LOCATIONS**

1. Plumbing Piping, water, gas supply and flue piping- new throughout

END OF SECTION

SECTION 22 3300

FUEL FIRED DOMESTIC HOT WATER HEATER (HYBRID WATER HEATER)

PART 1 GENERAL **$_____**

1.02 WARRANTY

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

B. Provide 15 year manufacturer warranty for residential no leak.

PART 2 PRODUCTS

2.01 BASE BID MANUFACTURER

A. Product: Eternal Advanced Hybrid Water Heating System GU145
   1. Stainless steel heat exchanger with built in 2 gallon reserve tank
   2. Self-cleaning: utilizes turbulent flow to flush sediment out
   3. Digital display for adjusting temperature and easy diagnostics

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. Basement

END OF SECTION

SECTION 22 4000

PLUMBING FIXTURES AND PIPING

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 SINKS- See Color & Material Sheet

A. Kitchen Sink:
   1. Sink: Install a 22 gauge 33"x22"x8" double bowl, stainless steel, self-rimming kitchen sink. Manufacturer: Moen, Model number 2212, or like product to be approved by Project Manger
   2. Faucet: **See Color & Material Sheet**

B. Laundry Tub: **See Color & Material Sheet**
   1. Sink: Install single bowl, 24" fiberglass laundry tray to fin under faucet.
   2. Faucet: 1.5 GPM

C. Bathroom Vanities: **See Color & Material Sheet**
   1. Sink: 31 inch solid recessed oval bowl vanity top Manufactured by Imperial Marble. Model number RCxx22SPW
   2. Faucet: Single lever faucet with 1.5 GPM maximum flow rate- **See Color & Material Sheet**

2.02 DUAL FLUSH TOILET- American Standard Cadet Toilets.

A. Dual Flush Water Closets: ASME A112.19.14; high efficiency and low consumption, vitreous china, dual flush, tank type.
   1. Bowl: Elongated.
   2. Flush Actuator: Manufacturer's standard.
   3. Rough in: 12 inch (305 mm).
   4. Seat: Manufacturer's standard or recommended elongated closed front seat with lid.
   5. Color: White.

2.03 BATHTUBS-See Color & Material Sheet

A. Bathtub: ASME A112.19.4M porcelain on steel bathtub with slip resistant surface contoured front apron, 60 inches (1500 mm) long, White color.

B. Bath and Shower Trim: ASME A112.18.1; concealed shower and over rim supply with diverter spout, pressure balanced mixing valve, bent shower arm with adjustable spray ball joint showerhead with maximum 1.5 gallons per minute (5.6 liters per minute) flow and escutcheon, lever operated pop-up waste and overflow.

PART 3 EXECUTION

3.01 INSTALLATION

C. Install flexible PEX piping with a minimum number of couplings to all fixtures. Install mechanical connectors and shut off valves if appropriate for each fixture.
   1. Sixe pipe to 1990 CABO minimums per table 2406.5
   2. Include clothes washer hook up.

D. Furnish and install all water piping and shut-off valves necessary to complete work.

E. Retrofit the water meter to comply with existing code.

F. Install components level and plumb.

G. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9005, color to match fixture.

H. Seal around plumbing penetrations in all exterior surfaces, surfaces that border on unconditioned spaces, between floors, and through the exterior of the building.

I. Clean out basement floor drain at end for construction period and verify operation and function.
   1. Install new drain cover.

3.02 LOCATIONS

A. Exterior:
   1. Hose bibb - located east side of home.

B. Basement:
   1. Laundry tub installation
   2. Floor drain
   3. Laundry appliance hook up
   4. Domestic Water
   5. Indirect-Fired Water Heater

C. Main Level:
   1. Kitchen:
      a. Kitchen Sink
      b. Dishwasher

D. 1st Floor
   1. Bathroom:
      a. Dual Flush Toilet-**American Standard**
      b. 1-Vanity Sink
      c. Bath Tub/Shower

E. 2nd Floor
   1. Bathroom:
      a. Dual Flush Toilet-**American Standard**
      b. 2-Vanity Sinks
      c. Bath Tub/Shower

END OF SECTION

SECTION 23 0000

RESIDENTIAL VENTILATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 BATHROOM VENTS 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

2.03 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.

2.04 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.

PART 3 EXECUTION

3.01 INSTALLATION

LOCATION: All bathrooms throughout the dwelling

END OF SECTION

SECTION 23 5214

GAS-FIRED ULTRA EFFICENT BOILER

PART 1 GENERAL **$_____**

1.01 REQUIRMENTS

A. Furnish and install packaged, modulating, sealed combustion, power-vented, high efficiency gas-fired boiler with cast aluminum heat exchangers that use outside air for combustion.

B. Boiler shall be 92.8% minimum DOE efficient as required by National Energy Conservation Act or ASHRAE 90.1

C. Boiler shall maintain a minimum temperature of 70 degrees F when outdoor temperature is -10 degrees F.

D. 2 - Zone system with 2 programmable thermostats; one in each zone.
   1. Zone 1: 1st Floor
   2. Zone 2: 2nd Floor

PART 2 PRODUCTS

2.01 ULTRA EFFICENT BOILER

A. Acceptable boiler manufacturer(s) include(s): Weil-McLain or approved by Project Manager

B. Boiler: Weil-McLain Ultra 3 Series or like product to be approved by Project Manager

C. Boiler Construction: Cast aluminum mon block heat exchanger

D. Efficiency:
   1. Annual Fuel Utilization Efficiency: 92.8.

2.02 HOT WATER BOILER TRIM

A. ASME rated pressure relief valve, 30 psig (207 kPa).

B. Low water cut-off to prevent burner operation when boiler water falls below safe level.

C. High limit temperature controller with manual reset for burner to prevent boiler water temperature from exceeding safe system temperature.

D. Boiler air vent.

2.03 FUEL BURNING SYSTEM

A. Collector and Draft Hood: Non-metallic vent pipe.

B. Controls: Pre-wired, factory assembled electronic controls in control cabinet with flame scanner or detector, programming control, relays, and switches. Provide pre-purge and post-purge ignition and shut-down of burner in event of ignition pilot and main flame failure with manual reset.

2.04 ACCESSORIES

A. Radiator Baseboard: Design and install aluminum fin, baseboard radiator system with 1" copper tube including end caps and angle trim on the exterior wall in each room.

B. Power control wiring

C. Expansion Tank

D. Circulation Pump

E. Set-back Thermostat

PART 3 EXECUTION

3.01 INSTALLATION

A. GAS PIPING: Replace all corroded gas piping. Install gas lines to the range, furnace, water heater, and dryer to meet code. Include final connection to the appliances and 24 hour air test.

Location: Kitchen, main level laundry and basement

B. PROGRAMMABLE THERMOSTAT: Provide and install a digital Honeywell programmable thermostat or equivalent.

Location: 1st floor dining room

C. DRYER VENT: Provide and install a dryer vent to meet code.

Location: Main level laundry room

D. Install microwave & properly vent to the exterior per code.

Location: Kitchen

E. REMOVE & REPLACE EXISTING BOILER: Install an Energy Star rated Peerless Purifier Model # PF-110 or equivalent boiler with an AFUE of 96.7%. 110,000 BTU. Include PVC venting, gas piping, drain piping, and reconnecting to the hot water piping.

Location: Basement

F. RELOCATE RADIATOR: Relocate the radiator in the new 2nd floor master bathroom to accommodate for the new layout.

Location: 2nd floor master bathroom

G. Install in accordance with NFPA 90A.

H. Install gas fired furnaces in accordance with NFPA 54.

I. Provide vent connections in accordance with NFPA 211.

J. The Contractor shall have all HVAC ducting cleaned by a professional duct cleaning company after all interior repairs are completed inside the house.

K. Provide connection of natural gas service in accordance with requirements of NFPA 54 and applicable codes.

L. Provide all piping to radiators.

M. Provide water, gas, and flue piping

3.02 LOCATIONS

A. Boiler - basement

B. Install all new heat piping throughout. 1st floor one zone and 2nd floor second zone.

END OF SECTION

SECTION 23 6210

MULTI ZONE DUCTLESS MINI SPLIT A/C

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

1.02 QUALITY ASSURANCE

A. The units shall be tested by a Nationally Recognized Testing Laboratory and bear the ELT Label

1.03 WARRANTY

A. Provide five year manufacturer warranty for All Parts.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Multi Zoned Ductless Mini Split A/C:
   1. Cooling system only with wireless remote controller for each zone.

2.02 QUAD ZONED SYSTEM

A. Basis of Design Manufacturer: Mitsubishie Mr. Slim.

B. Other Acceptable Manufacturers:
   1. SANYO
   2. LG
   3. Other manufacture that meets the specifications and approved by the HRA Project Manager.

C. Description: The system shall consist of multiple slim silhouettes, compact, wall mounted indoor fan coil section with wireless remote controller and slim silhouette horizontal discharge outdoor unit with constant speed compressor.
   1. Size:

D. Design Criteria:
   1. Provide a complete system that meets the cooling load of the subject house.
   2. Performance Ratings: Seasonal Energy Efficiency Rating of 16+

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. All wiring shall be in accordance with the National Electrical Code (N.E.C.).

3.02 LOCATIONS

A. Zones:
   1. 1 and 2: first floor
   2. 3 and 4: second floor

END OF SECTION

SECTION 26 0001

POWER, WIRING AND DEVICES

PART 1 GENERAL **$_____**

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

A. All hazardous, improper and/or illegal wiring shall be removed or required to 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 outlet 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 new receptacle installed for the counter top shall be of the Ground Fault Circuit Interrupter (GFCI) type.

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 foot-candle 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 foot-candle 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 form 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 (luminaire) 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. Rewire house to code

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. Replace existing electrical service with a residential, 150 amp, single phase, 3 wire electric services to the basement.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Conduit and Cable: Provide materials that meet code requirements.

B. New Service: Include a main disconnect, 22 circuit panel board, meter socket, weather head, service cable, and ground rod and cable. Seal exterior service penetrations.
   1. New service panel shall conform to the BOCA Existing Structures code.

C. Devices and Cover plates: Provide all White or Ivory devices per Project Managers Selection. Provide heavy duty residential grade devices.

D. Smoke/CO Detectors: Hard wired w/ battery-back up type units

E. Doorbell system: 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 connecters for the Water Heater, Boiler, Microwave, Refrigerator, and Dishwasher.
   1. Kitchen Receptacles to be 20 amp Circuits:
      a. Install small appliance circuits along counter tops to code.
         1) Evenly dividing the number of countertop appliance receptacles between 2 circuits.
         2) GFCI receptacles when they fall within 6 feet of sink.
      b. Individual circuits for permanently installed appliances; range, dishwasher, exteriorly vented Microwave with Range hood and refrigerator to code.

G. Bathroom Vent Fan/Light Fixture: Shall be Energy Star rated ceiling mounted fan/light fixture rated for a min 100 watt exterior ducted vent fan capable of a minimum of 80 CFM
   1. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger
   2. 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.
   3. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end 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: Install flush mounted, ground fault circuit interrupted ivory duplex receptacle adjacent to lavatory using copper Romex.

2.02 MATERIALS

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

PART 3 EXECUTION

3.01 INSTALLATION-

SEE MATERIAL & COLOR SHEET ON ALL ITMES DEALING WITH MATERIAL

1. GENERAL: Electrical Contractor to secure an electrical permit prior to starting work and will be responsible for all inspections. Inspect the entire electrical system. Repair, replace, and install new as per plans, project manager, and code requirements. Surface metal raceways and boxes for outlets, switches, and fixtures not permitted in finished living areas. Knob & tube wiring to be replaced when exposed and accessible. Electricians to make an inspection and remove hazards after interior walls are demolished; per plans. All light fixtures to be energy star rated by including CFL light bulbs or approved equivalent. Lighting fixtures to be chosen by the Owner

   Location: Throughout the dwelling

2. Wire dwelling to a minimum of Bulletin 80-1. Add new outlets on arc fault breakers where new wall or open walls exist.

   Location: Throughout the dwelling

3. Provide & install interlocked smoke detectors in all bedrooms and one a common area on each level. Install interlocked combination smoke and carbon monoxide detectors in hallways within 10 feet of each bedroom door. Detectors to be on an arc fault circuit.

   Location: Throughout the dwelling

4. Install GFI outlets in all code required areas.

   Location: Throughout the dwelling

5. Install exterior, weather protected, GFI outlets.

   Location: One on the front exterior wall & one on the rear exterior wall

6. Provide & install a 3-way switch at all stairways. Provide & install 3-way switches in all hallways over 6 feet long. Provide & install 3-way switches where passing through rooms. Verify all new switch locations with the **Project Manager.**

   Location: Throughout the dwelling

7. Every room and closet to have a switch and a light. Verify locations with the project manager.

   Location: Throughout the dwelling

8. Provide & install exterior lights at all exits. **SEE MATERIAL & COLOR SHEET**

   Location: Exterior

9. Wire all bathrooms to code with a light over the vanity. Wire the bathroom fan/light combo units with 2 switches, provided and installed by the HVAC Contractor, in each bathroom. (.80 CFM 0.3 sone rated energy star fan or better; light kit to accept CFL Edison based bulbs).

   Location: All bathrooms

10. Provide & install electrical boxes under all light fixtures.

    Location: Throughout the dwelling

11. Provide & install one cable outlet and one phone jack in each location below.

    Location: Master bedroom & Living room

12. Wire new furnace and central air units and all mechanicals.

    Location: Basement & exterior

13. Provide & install a laundry circuit for gas dryer. Verify location with project manager. Add sump pump outlet near new interior drain tile sump pump.

    Location: Basement

14. Provide & install a GFI outlet above the water heater and one for the security system.

    Location: Basement

15. Provide & install a hard-wired doorbell for the front door.

    Location: Front entry door exterior wall

16. Wire above kitchen countertops to plan. Provide for dishwasher and disposal with counter switch. Provide & install a microwave outlet. Install under mount cabinet lighting with above counter switching to include hi-low rocker switches on the body. Kitchen walls to be opened 48" high up from the sub-floor at countertop locations.

    Location: Kitchen

17. Provide new underground service and wire new garage. Wire, provide, and install two interior lights, two wall outlets, one garage door opener outlet, a motion floor light above the service door, and one motion wall sconce above the overhead garage door.

    Location: Garage

18. Install a paddle fan/light combo unit in the master bedroom and the living room with two switches.

    Location: Master bedroom & living room

19. Replace the existing 60 amp electrical service with a new 100 amp, 30 space citcuit breaker panel.

    Location: Basement

20. Install in accordance with manufacturer's instructions.
21. 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.
22. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.
23. All new wiring, when passing through living areas, shall be concealed.
24. All new receptacles and switches
25. All new outlet covers and receptacles: White
26. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.
27. All patching shall match the surrounding surface.

3.02 LOCATIONS

A. Throughout
   1. House
   2. Garage

END OF SECTION

SECTION 26 5101

HRA LIGHTING

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 INTERIOR LIGHTING

A. Lighting

1. Product Series: Brush Nickel Finish-**See Color & Material Sheet**

B. Other Acceptable Manufacturers: To be approved by Owner

2.02 EXTERIOR LIGHTING

A. Garages: DualBrite 300 watt motion security light with shields: Model SL-5318-WH-D

B. Exterior Wall Mount Front Door: **See Color & Material Sheet**

1. Patriot Lighting
   a. Van Buren outdoor

C. Exterior Wall Mount Back Door: **See Color & Material Sheet**

1. Patriot Lighting
   a. Van Buren Outdoor

2.03 BASEMENT LIGHTING

A. Stairway: One fixture on stairway landing and one at the bottom of the stairway. One switch at the top of the basement stairway to control these two lights.

B. Provide switched light in laundry area and Mechanical area.

C. Additional ceiling mounted pull chain lights in various locations throughout the basement where necessary.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. All new wiring when passing through living areas shall be concealed.

C. Wire mold and surface mount boxes for receptacles.

D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaries.

3.02 LOCATIONS-See Color and Material Sheet

A. BASEMENT:

1. Replace all with new Energy Efficient Bulbs

B. MAIN LEVEL: **See SECTION 26 0001 #6 in installation POWER, WIRING AND DEVICES**

1. Front Entry – Ceiling fixture, 3-way wall switch at latch side of door.
2. Living-room – Ceiling fixture, switches at front entry doorway.
3. Kitchen - Ceiling Mounted
4. Side Entry - ceiling light
5. Stairway to basement- ceiling light on 1/2 up landing, switch at top.
6. Bathroom-Vanity Light, wall switch. Fan and Ceiling light have separate wall switches.

C. UPPER LEVEL: **See SECTION 26 0001 #6 in installation POWER, WIRING AND DEVICES**

1. Hall - ceiling light, wall switch
2. Bedroom 1 - Ceiling fixture
3. Bedroom 2 - Ceiling fixture
4. Bedroom 3 - Ceiling fixture
5. Bathroom - Vanity Light and Fan switch 2-way wall switch...

D. EXTERIOR: **See SECTION 26 0001 #6 in installation POWER, WIRING AND DEVICES**

1. Front porch - Wall fixture, wall switch interior next to front door.
2. Rear entry - wall sconce, wall switch interior next to front door.

END OF SECTION

SECTION 28 1600

INTRUSION DETECTION

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. Provide and install a security system, to include a minimum of hardwired control panel with cellular transmitter (no phone line required), 2 hardwired keypads, two (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 by email to inform him/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 **$_____**

PART 3 EXECUTION

2.01 ROUGH GRADING

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

2.02 FINISH GRADING

A. FINISH GRADING: Placing topsoil delivered by truck, finish grading 6”

Location: 6’ wide around the perimeter of home.

B. YARD CLEAN UP: Remove all debris and volunteer growth from yard.

Location: Exterior yard

C. Build up ground slope at foundation wall using clean fill.

D. New fill shall have an approximate slope of 1/12 and extend away from the foundation wall approximately five feet.

E. Adjust slope for new window wells

F. Remove roots, weeds, rocks, and foreign material while spreading.

G. Vigorously tamp or roll new fill to achieve settled depth.

H. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

2.03 LOCATIONS

A. See Site Plan.

This house does have a rain garden

END OF SECTION

SECTION 32 9223

SODDING

PART 1 GENERAL **$_____**

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. SOD: Install sod; labor, and materials, Install 2" deep black dirt prior to laying sod.

Exterior: Entire yard

B. Moisten prepared surface immediately prior to laying sod.

C. Lay sod immediately after delivery to site to prevent deterioration.

D. 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.

E. 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.

3.03 LOCATION

A. See Landscape Plan/Rain garden plan

END OF SECTION

SECTION 32 9300

PLANTS

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: See Section 01 2100 - Allowance of $1500 for plants, mulch and other material included in Landscape Plan.

B. This allowance does not cover sod, materials for a retaining wall or labor

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 1 side slopes rising to finished grade.

B. Deeply till and break apart basin floor beyond compaction.

C. Add 2 inches of leaf compost and till into soil.

D. Finish Rain garden by hand grading a flat, level basin and 2 to 1 side slope, as indicated on Landscape Plan.

E. Add 2-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 at no extra cost to Owner; Owner will pay for water.

3.04 LOCATION

A. As indicated by the Landscape Plan/Rain Garden Plan

END OF SECTION

Color and Material Schedule

Project Address: 851 3rd St

Contractor: Unknown

	Location	Description	Manufacturer	QA	Fixture Color	Sku #	Model #	Vendor	Light Bulb Color	
Lighting	Kitchen Island Track Fixtures	ICE track light	Quantus	4	Brush Nickel	**349-6121**		Menards	Soft White/353-4340	
	Kitchen Island Track	4" 1-Circuit Track	Illumine	1	Satin Nickel Finish			Menards		
	Kitchen Island Track Canopy	Track Canopy	Illumine	1	Satin Nickel Finish	**349-6515**		Menards		
	Kitchen Light over sink	Scope Collection 1-Light Glass/Metal	Thomas lighting	1	BrushNickel			Menards	Soft White	
	Under Mount Cabinet Lighting	Provided by Electrical Contractor	Electrical Contractor	**See Kithen Layout**	Satin Nickel Finish					
	Dining Room	5 light Chandelier	Patriot Lighting	1	BrushNickel	**350-1936**		Menards	Soft White	
	Living Room	52" Tri-Mount Fan	Tempo	1	Satin Nickel Finish	**355-6782**		Menards	Soft White/CFL	
	Master Bedroom	44" Tri-Mount	Elani	1	Satin Nickel Finish	**355-7533**		Menards	Soft White/	
	Bathroom	Vanity Strip CHR 24" 4-LT	Patriot Lighting	1	Chrome	**352-9180**		Menards	Soft White	
	Bedroom/2nd Floor Hallway	Flushmount Ceiling 13"	Patriot Lighting	2	Satin Nickel Finish	**350-1936**		Menards	Soft White	
	Back Office Space	Flushmount Ceiling 13"	Patriot Lighting	1	Satin Nickel Finish	**350-1936**		Menards	Soft White	
	Garage Side Door light	Kaitlyn Ext Wall LT sm	Patriot Lighting	1	Black			Menards	Soft White	
	Front Entry Porch/Back Entry Porch	Kaitlyn Ext Wall LT sm	Patriot Lighting	2	Black	**356-4871**		Menards	Soft White	
	Outlet and Switchplate Covers	White	White		White			Menards	Soft White	
	Closets	11" Twin-Pack	Patriot Lighting	2	Brush Nickel	**351-4201**		Menards	Soft White	
Plumbing Fixtures	Kitchen	Kitchen Sink	Kaitlyn Ext Wall LT sm	1	Stainless		**2212**	Menards		
	Bathroom Vanity Sinks	Recessed Oval Bowl Vanity Top	Imperial Marble	3	White		**RCxx22SPW**	Menards		
	Bathrooms	Toilet	American Standard	2	White			Plumbing Contractor		
	Bathrooms	Bathtub	Sterling	2	White		**2630/2631**	Menards		
Kitchen/Bathroom Furnishings	Kitchen	Kitchen Cabinets	Midcontinent, Full overlay 5-Piece Drawer	1	Cranberry			Menards		
	Kitchen	Kitchen Cabinet Door Hardware/Doors	Hickory Hardware, Victorian	See plans	Brush Nickel		**P3101-SN**	Menards or Home Depot		
	Kitchen	Kitchen Cabinet Door Hardware/Drawers	Hickory Hardware, Victorian	See plans	Brush Nickel		**P3104-SN**	Menards or Home Depot		
	Kitchen	Kitchen Faucet/Bayhill Dropdown	Moen	1	Brush Nickel	**6734823**		Menards		
	Kitchen	Kitchen Counter Top	Wilson Art	1	White Juparana	**4931**		Menards		
	Bathroom Downstaris Vanity	24" Eurostone Collection Vanity bas and sink	Eurostone	1	White	**6058895**	**486**	Menards		
	Bathroom Downstairs	Mirror	36"	1	Mirror			Home Depot		
	Bathroom Downstairs	Curved Shower Rod	Moen	1	Polished Chrome			Menards		
	Bathroom Downstairs	Toilet Paper Holder	Porter	1	Polished Chrome	**6754088**		Menards		
	Bathroom Downstairs	Towel Ring	Porter	1	Polished Chrome	**6754089**		Menards		
	Bathroom Downstairs	Towel Bar	Porter	1	Polished Chrome	**6754089**		Menards		
	Bathroom Downstairs	Shower/Trim	Moen	1	Polished Chrome	**6735018**		Menards		
	Bathroom Upstairs	Tub/Shower Kit	Kohler	1	Polished Chrome	**107-837**		Home Depot		
	Bathroom Upstairs	Mirror	60"*36"	1	Mirror			Home Depot		
	Bathroom Upstairs	DBL Robe Hook	Porter	1	Polished Chrome	**6754090**		Menards		
	Bathroom Upstairs	24" Towel Bar	Porter	2	Polished Chrome	**6754086**		Menards		
	Bathroom Upstairs	Towel Ring	Porter	1	Polished Chrome	**6754089**				
	Bathroom Upstairs	Toilet Paper Holder	Porter	1	Polished Chrome	**6754088**	**DN6808xx**	Menards		
	Bathroom Upstairs	Bathroom Faucet	PricePfister/Ashfield	2	Polished Chrome	**6732195**		Home Depot		
Flooring	Den, Living Room, Bedrooms/Dining Room/Downstairs Hallway	Wood Flooring	White Oak	See plans	Natural					
	Master Bedroom/Hallways	Carpet	Designers Choice/Nylon/Texture/Carpet		Latte			Seestedt's Flooring		
	Master Bedroom Closet	Carpet	Designers Choice/Nylon/Texture/Carpet		Latte			Seestedt's Flooring		
	Back Office Space/Kids Play Area	Carpet	Designers Choice/Nylon/Texture/Carpet		Latte			Seestedt's Flooring		
	Kitchen	Ceramic Tile	TORRE VENATO		Crema			Seestedt's Flooring		
	Laundry	Ceramic Tile	TORRE VENATO		Crema			Seestedt's Flooring		
	Mudroom	Ceramic Tile	Florim, Istone		Stone Grey			Seestedt's Flooring		
	Bathrooms	Ceramic Tile	TORRE VENATO		Crema			Seestedt's Flooring		
Appliances	Kitchen	Gas Range	Energy Star	1	Stainless			All Inc		
	Kitchen	Microwave Hood	Energy Star	1	Stainless			All Inc		
	Kitchen	Refrigerator	Energy STAR, 30" wide	1	Stainless			All Inc		
	Kitchen	Dishwasher	Energy STAR, 24" GE Model GSD1300NWW	1	Stainless			All Inc		
	Basement	Washer	Energy STAR, 18 cubic feet	1	Stainless			All Inc		
	Basement	Dryer	Energy STAR	1	Stainless			All Inc		
Doors	Front Entry	Steel Entry Door	Craftsman/6-Lite.	1	Chestnut Mahogany	**174-370**		Home Depot		
	Side Door	Steel Entry Door	Half Lite W Blinds, Mstercraft	1			**LT-10**	Menards		
	Rear Entry	Steel Entry Door	Half Lite W Blinds, Mstercraft	1			**LT-10**	Menards		
	Interior doors	Interior Door	See Door Schedule	See plans	White	**See plans**	**See plans**	Menards		
	Interior Door Hardware	Hardware	Sienna, Schlage	See plans	Brush Nickel		**221-399x**	Menards		
	Front Door Hardware	Hardware	Camelot/Avanti, Schlage	1				Menards		
	Back/Side Door Hardware	Hardware	Schlage/Deadbolt	2				Menards		
Trim	Throughout Upper Level/Caseing	Caseing Trim	Marco/Pino Imprimado	All	White	**741-804**		Home Depot		
	Throughout Upper Level/Base	Base Trim	Pino Imprimado	All	White	**400-954**		Home Depot		
Exterior Finishes/Coatings	Siding/House/Garage	LP Smartboard	LP Smartboard		Grain Texture					
	Roof/House/Garage	Pre-Purchased	Timberline 30 year HD shingle							
	Door and Window Trim	LP Smartboard	LP Smartboard		Grain Texture					
	Soffit/Fascia	Aluminum color			White					
	Deck/Porch	Stain color	Cedar		Natural					
	Exerior Body Color	Exterior Paint	Sherwin Williams No VOC, SW 2819		Downing Slate	**Flat**				
	Exterior Shakes Color	Exterior Paint	Sherwin Williams No VOC, SW 0010		Wicker Work	**Flat**				
	Exterior Trim/Soffict/Door	Exterior Paint	Sherwin Williams No VOC, SW 7001		Marshmellow	**Flat**				
	Exterior Columns	Exterior Paint	Sherwin Williams No VOC, SW		White	**Satin**				
	Gutters/Downspouts	Aluminum color	Edco		White			United Products		
Interior Coatings	Bedrooms	Wall Paint	Sherwin Williams No VOC, SW 7058		Magnetic Gray	**Flat**		Fine Texture Finish		
	Kitchen and Full Bath Upstairs	Wall Paint	Sherwin Williams No VOC, SW 7068		Attitude Gray	**Eggshell**		Smooth Ceilings		
	Full Bath Downstairs	Wall Paint	Sherwin Williams No VOC, SW 7061		Night Owl	**Eggshell**		Smooth Ceilings		
	Living Room	Wall Paint	Sherwin Williams No VOC, SW 7059		Unusual Gray	**Flat**		Knock Down Finsh		
	Dining Room	Wall Paint	Sherwin Williams No VOC, SW 7061		Night Owl	**Flat**		Knock Down Finish		
	Foyer/Entry	Wall Paint	Sherwin Williams No VOC, SW 7061		Night Owl	**Flat**		Knock Down Finish		
	Closets	Wall Paint	Sherwin Williams No VOC, SW		White	**Flat**		Fine Texture Finish		
	Den	Wall Paint	Sherwin Williams No VOC, SW			**Flat**		Knock Down Finish		
	Hallways	Wall Paint	Sherwin Williams No VOC, SW 7059		Unusual Gray	**Flat**		Fine Texture Finish		
	Ceiling Throughout House	**Ceiling Paint**	**Sherwin Williams No VOC, SW**			**Flat**				
	Trim Throughout House	Trim	Sherwin Williams No VOC,		White	**Satin**				